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FISSION URANIUM CORP.

TECHNICAL REPORT ON THE PRELIMINARY ECONOMIC ASSESSMENT OF THE PATTERSON LAKE SOUTH PROPERTY, NORTHERN SASKATCHEWAN, CANADA

NI 43-101 Report

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1 SUMMARY

EXECUTIVE SUMMARY

Roscoe Postle Associates Inc. (RPA), BGC Engineering Inc. (BGC), DRA Taggart (DRA), and Arcadis Canada Inc. (Arcadis) were retained by Fission Uranium Corp. (Fission Uranium) to prepare a Preliminary Economic Assessment (PEA) on the Patterson Lake South Property (the Project, or the PLS Property), located in northern Saskatchewan, Canada. The purpose of this report is to summarize the results of the PEA. This Technical Report conforms to NI 43-101 *Standards of Disclosure for Mineral Projects*.

Fission Uranium is a Canadian exploration company, which is primarily engaged in the acquisition, evaluation, and development of uranium properties with a view to commercial production. It holds a 100% interest in the PLS Property.

Currently, the major asset associated with the Project is the high grade Triple R uranium deposit.

The PEA is based on a combination of open pit and underground mining, and processing of 1,000 tonnes per day (tpd) via acid leaching, solvent extraction, and precipitation. The Project has the potential to produce up to 15 million lb U_3O_8 per year in the form of yellowcake.

This report is considered by RPA to meet the requirements of a Preliminary Economic Assessment as defined in Canadian NI 43-101 regulations. The economic analysis contained in this report is based, in part, on Inferred Resources, and is preliminary in nature. Inferred Resources are considered too geologically speculative to have mining and economic considerations applied to them and to be categorized as Mineral Reserves. There is no certainty that economic forecasts on which this PEA is based will be realized.

CONCLUSIONS

In RPA's opinion, the PEA indicates that positive economic results can be obtained for the Project. The economic analysis shows a post-tax internal rate of return (IRR) of 34.2%, and a post-tax net present value (NPV) (at a discount rate of 10%) of C$1,019 million at a long term price of US$65 per lb U_3O_8.

RPA offers the following conclusions by area:

GEOLOGY AND MINERAL RESOURCES

The Triple R deposit is a large, basement hosted, structurally controlled, high grade uranium deposit. Drilling has outlined mineralization with three-dimensional continuity, and size and grades that can potentially be extracted economically. Fission Uranium's protocols for drilling, sampling, analysis, security, and database management meet industry standard practices. The drill hole database was verified by RPA and is suitable for Mineral Resource estimation work.

RPA estimated Mineral Resources for the Triple R deposit using drill hole data available as of July 28, 2015. At cut-off grades of 0.20% U_3O_8 for open pit and 0.25% U_3O_8 for underground, Indicated Mineral Resources are estimated to total 2,011,000 tonnes at an average grade of 1.83% U_3O_8 containing 81 million pounds of U_3O_8. Inferred Mineral Resources are estimated to total 785,000 tonnes at an average grade of 1.57% U_3O_8 containing 27 million pounds of U_3O_8. Gold grades were also estimated and average 0.59 g/t for the Indicated Resources and 0.66 g/t for the Inferred Resources. Mineral Reserves have not yet been estimated for the Triple R deposit.

The R600W zone, not currently included in Mineral Resources, is defined by 13 drill holes from the 2015 winter drill program. The R600W zone has a total grid east-west strike length of 60 m. Additional drilling is recommended.

The deposit is open in several directions. There is excellent potential to expand the resource with step-out drilling. There are, in addition to the Triple R deposit, other targets on the property to be drill tested.

MINING AND GEOTECHNICAL CONSIDERATIONS

The Triple R deposit is a structurally controlled east-west trending sub-vertical high-grade uranium deposit. The deposit is overlain by 50 m to 100 m of sandy overburden, with the high grade mineralization located near the bedrock-overburden contact. Although the bedrock is generally competent, rock strengths in the mineralization have been degraded by radiological alteration. The deposit extends under Patterson Lake, and a key technical challenge to developing the operation will be water control related to Patterson Lake and saturated sandy overburden.

The PEA proposes a perimeter dyke and slurry cut-off wall – proven techniques successfully implemented at a number of Canadian mining operations, including the Diavik diamond mine and the Meadowbank gold mine. The development scenario does not require any new, untested, conceptual mining or construction methods. A number of issues impact estimates of construction time and cost for the dyke and slurry wall:

- Thickness and nature of lakebed sediments, affecting the stability of the perimeter dyke.
- Number and size of boulders within the sandy overburden, affecting the excavation of the slurry wall.
- Assessment of the extent of a Cretaceous mudstone unit that may affect the stability of the sandy overburden.

As part of the PEA, an Open Pit vs. Underground trade-off study was conducted to determine the optimum mining method for developing the deposit. A hybrid option was selected, consisting of open pit mining of the smallest possible footprint that covers the high-grade resources (>4% U_3O_8), in parallel with underground mining of the remainder of the deposit. Advantages include:

- Extraction of high-grade uranium without the use of specialized, high-cost, remote underground mining methods, such as those used at Cameco's Cigar Lake Mine.
- Maximizing resource extraction – no crown pillar at the overburden/bedrock contact, no losses at depth (beyond the extents of a pit-only scenario).
- Minimizing the length of the dyke and slurry wall.
- Minimizing the footprint of disturbance within Patterson Lake.

Open pit mining of mineralized material and uranium bearing waste is proposed to be carried out by the owner. Overburden stripping and barren waste mining will be done by a contractor with a dedicated mining fleet (larger equipment) given the total volume to be excavated and the higher production rate required.

Underground mining will be carried out by contractor, using conventional longhole retreat methods in both transverse and longitudinal orientations.

MINERAL PROCESSING AND METALLURGICAL TESTING

Metallurgical test work completed to date indicates that a recovery of 95% is a reasonable assumption for the PEA.

The process route developed by DRA for the Project is based on unit processes commonly used effectively in uranium process plants across the world, including northern Saskatchewan uranium mines, while utilizing some new innovations in some of these unit process designs to optimise plant performance.

While the Triple R deposit contains gold values that may be recoverable, a high-level economic analysis by RPA has shown this to have limited impact on overall project profitability at current market conditions and gold recovery was thus excluded from this design. Should market forces change in the future, gold recovery could be reasonably easily engineered into the existing design and constructed without impacting throughput of the uranium process plant.

ENVIRONMENTAL AND SOCIOLOGICAL CONSIDERATIONS

Key areas of consideration arising from the review of environmental and sociological aspects include:

- Consultation: While Fission Uranium has done preliminary community outreach and consultation, the level of consultation is very local and it will not be sufficient to support government Duty to Consult requirements and move the Project into the environmental assessment process. Fission Uranium will need to address this soon to avoid project delays.

- Lake Impact: Given the location of the deposit, impacts to Patterson Lake are inevitable. Regardless of the design, minimizing impacts to the lake will be very important, and it will be very important to ensure that the lake remains navigable to fish and boats.

- Baseline Studies: Fission Uranium has been forward-looking by starting environmental baseline and monitoring work. The work has been somewhat selective and should be sufficient to start the environmental assessment process, however, it is not currently sufficient to support an environmental assessment document.

- Risk: The main physical danger to the operation is forest fire and Fission Uranium has maintained close relationships with the local Wildfire Management base in Buffalo Narrows.

- Radiation Management during Exploration: Fission Uranium has developed a centrifuge system for effectively removing potentially radioactive cuttings and fines from drilling fluids. This material is effectively handled and disposed of at an operating uranium mine. Fission Uranium has a radiation protection program in place and appears to be following it.

RISKS AND UNCERTAINTIES

RPA, BGC, DRA, and Arcadis have assessed critical areas of the Project and identified key risks associated with the technical and cost assumptions used. In all cases, the level of risk refers to a subjective assessment as to how the identified risk could affect the achievement of the Project objectives. The risks identified are in addition to general risks associated with mining projects, including, but not limited to:

- general business, social, economic, political, regulatory and competitive uncertainties;
- changes in project parameters as development plans are refined;
- changes in labour costs or other costs of production;
- adverse fluctuations in commodity prices;
- failure to comply with laws and regulations or other regulatory requirements;
- the inability to retain key management employees and shortages of skilled personnel and contractors.

A summary of key Project related risks is shown in Table 1-1. The following definitions have been employed by RPA in assigning risk factors to the various aspects and components of the Project:

- **Low Risk** - Risks that could or may have a relatively insignificant impact on the character or nature of the deposit and/or its economics. Generally can be mitigated by normal management processes combined with minor cost adjustments or schedule allowances.
- **Moderate Risk** - Risks that are considered to be average or typical for a deposit of this nature. These risks are generally recognizable and, through good planning and technical practices, can be minimized so that the impact on the deposit or its economics is manageable.
- **High Risks** - Risks that are largely uncontrollable, unpredictable, unusual, or are considered not to be typical for a deposit of a particular type. Good technical practices and quality planning are no guarantee of successful exploitation. These risks can have a major impact on the economics of the deposit including significant disruption of schedule, significant cost increases, and degradation of physical performance.

TABLE 1-1 RISKS AND UNCERTAINTIES
Fission Uranium Corp. – Patterson Lake South Property

Project Element	Issue	Risk Level	Mitigation
Geology	Resource tonnes and grade estimates	Low	Infill drilling is required in areas classified as Inferred. There is upside potential to increase resources along strike and at depth.
Mining	Thickness and nature of lakebed sediments	Low	Conduct geotechnical assessment.
	Boulders in sandy overburden	Moderate	Conduct geotechnical assessment.
	Potential for low-stability Cretaceous mudstone unit in pit area	Low	Conduct geotechnical assessment.
	Ground conditions within the radiologically-altered rock	Low	Geotechnical drilling and analysis will further refine ground support requirements.
Process	Uranium recovery	Low	Test work supports recovery assumption. Additional test work will allow optimization of flowsheet.
Environment and Permitting	Permitting	Moderate	Begin EA process and wider consultation
	Management of exposure to radiation	Low	Issues are well-understood for North Saskatchewan operations.
Construction Schedule	Seasonal impact on dyke-building and slurry wall construction	Moderate	Requires detailed planning and control. Further information on geotechnical conditions will refine schedule estimates.
Pre-production Capital Cost Estimate	Dyke-building and slurry wall construction	Moderate	Geotechnical data collection and analysis will result in refined cost estimates.
Operating Cost Estimate	Cost of key materials and supplies	Low	Close management of purchasing and logistics.

RECOMMENDATIONS

RPA recommends that Fission Uranium advance the Project to the pre-feasibility stage, and offers the following recommendations by area:

GEOLOGY AND MINERAL RESOURCES

- The PLS Property hosts a significant uranium deposit and merits considerable exploration and development work. The primary objectives are to advance engineering work, expand the Triple R resource, and explore elsewhere on the property. Work will include:
    - 18,000 m for Triple R step-out and infill drilling; and
    - 6,000 m of drilling for a property-wide exploration.

MINING AND GEOTECHNICAL CONSIDERATIONS

- A geotechnical investigation of soil mechanics should be undertaken to support the open pit development and the dyke and cut-off wall design, with a primary focus on addressing the risks identified above. The program will require approximately ten geotechnical boreholes drilled around the perimeter of the pit and dyke to depths of 50 m to 90 m, combined with a geophysics program.

- A geotechnical investigation of rock mechanics should be undertaken to support the open pit and underground design. The program will require drilling of approximately ten oriented core geotechnical holes in rock: four for the main pit, four for the underground (two for the crown and two for the rock mass), and two short holes for a small separate zone (the R00E pit). The total length is estimated at 2,000 m for the program.

- Mining of a greater proportion of the deposit by open pit methods appears to be economically feasible, however the trade-off is complex, involving both qualitative and quantitative factors. As resource drilling continues and the Project advances to further studies, this trade-off should be revisited and optimized.

MINERAL PROCESSING AND METALLURGICAL TESTING

- To prove the performance and efficiency of the processing steps post leach, it is recommended that further test work be conducted in the next study phase. This test work should include:

    - Solid/liquid separation test work to size the counter-current decantation (CCD) circuit as efficiently as possible;

    - Uranium solvent extraction test work;

    - Impurity removal test work;

    - Yellowcake precipitation test work.

ENVIRONMENTAL AND SOCIOLOGICAL CONSIDERATIONS

- Conduct a community outreach and consultation program addressing a wider body of Project stakeholders.

- Continue baseline study field work.

- Begin the environmental assessment (EA) process, in parallel with engineering work.

BUDGET

RPA, BGC, DRA, and Arcadis propose the following budget for work carrying through to the end of a Pre-Feasibility Study:

TABLE 1-2 PROPOSED BUDGET
Fission Uranium Corp. - Patterson Lake South Property

Item	$ M
Drilling (~24,000 m)	10.0
Geotechnical Program - Soils	2.0
Geotechnical Program - Rock	2.0
Metallurgical Test Work	0.5
Social, Permitting and Environmental Work	3.5
Pre-Feasibility Study	2.0
Total	**20.0**

ECONOMIC ANALYSIS

The economic analysis was prepared using the following assumptions:

- No allowance has been made for cost inflation or escalation.
- No allowance has been made for corporate costs.
- The capital structure is assumed to be 100% equity, unleveraged.
- The model is assessed in constant Canadian Dollars.
- No allowance for working capital has been made in the financial analysis.
- The Project has no salvage value at the end of the mine life.

ECONOMIC CRITERIA

Economic criteria that were used in the cash flow model include:

- Long-term price of uranium of US$65 per pound U_3O_8, based on long-term forecasts.
- 100% of uranium sold at long-term price.
- The recovery and sale of gold was excluded from the cash flow model.
- Exchange rate of C$1.00 = US$0.85.
- Life of mine processing of 4,807 kt grading 1.00% U_3O_8.
- Nominal 350 kt of processed material per year during steady state operations.
- Mine life of 14 years.
- Leach recovery of 98.4%, solvent extraction recovery of 96.8%, and CCD recovery of 99.97%, for overall recovery of 95.3%, based on test work.

- Total recovered yellowcake of 100.8 million pounds.
- Transportation costs of C$740.00 per tonne yellowcake, with assumed destination of Port Hope, Ontario.
- Royalties calculated in accordance with *"Guideline: Uranium Royalty System, Government of Saskatchewan, June 2014".*
- Unit operating costs of C$346 per tonne of processed material, or C$16.50 per pound of yellowcake.
- Pre-production capital costs of C$1,095 million, spread over three years.
- Sustaining capital costs (including reclamation) of C$239 million, spread over the mine life.

Table 1-3 CASH FLOW SUMMARY
Fission Uranium Corp. - Patterson Lake South Project

	UNITS	TOTAL	Yr -3	Yr -2	Yr -1	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15
MINING																				
Open Pit																				
Ore Tonnes mined per year	kt	1,561	-	-	116	198	401	387	252	137	68	-	-	-	-	-	-	-	-	-
U3O8 Grade	%	2.21%	0.00%	0.00%	1.03%	3.11%	1.52%	1.49%	2.66%	4.42%	3.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Contained U3O8	'000 lbs U3O8	76,022	-	-	2,637	13,572	13,428	12,722	14,792	13,395	5,476	-	-	-	-	-	-	-	-	-
Overburden	kt	42,251	-	-	23,161	19,090	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waste Rock	kt	13,356	-	-	400	4,026	5,244	2,883	666	104	32	-	-	-	-	-	-	-	-	-
Total Moved	**kt**	**57,168**	**-**	**-**	**23,677**	**23,314**	**5,646**	**3,271**	**918**	**242**	**101**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total Moved by Owner	kt	3,664	-	-	516	701	700	702	702	242	101	-	-	-	-	-	-	-	-	-
Stripping Ratio (incl. OVB)	W:O	35.6	-	-	203.2	116.7	13.1	7.4	2.6	0.8	0.5	-	-	-	-	-	-	-	-	-
Stripping Ratio (w/o OVB)	W:O	8.6	-	-	3.5	20.3	13.1	7.4	2.6	0.8	0.5	-	-	-	-	-	-	-	-	-
Underground																				
Ore Tonnes mined per year	ktpa	3,246	-	-	-	-	-	4	97	215	287	349	352	355	356	354	351	351	175	-
U3O8 Grade	%	0.42%	0.00%	0.00%	0.00%	0.00%	0.00%	0.64%	0.56%	0.40%	0.61%	0.37%	0.40%	0.35%	0.37%	0.49%	0.37%	0.40%	0.38%	0.00%
Contained U3O8	'000 lbs U3O8	29,806	-	-	-	-	-	50	1,197	1,876	3,872	2,880	3,067	2,711	2,908	3,829	2,895	3,064	1,457	-
Total Mine Production																				
Ore Tonnes mined per year	kt	4,807	-	-	116	198	401	391	350	352	356	349	352	355	356	354	351	351	175	-
U3O8 Grade	%	1.00%	0.00%	0.00%	1.03%	3.11%	1.52%	1.48%	2.07%	1.97%	1.19%	0.37%	0.40%	0.35%	0.37%	0.49%	0.37%	0.40%	0.38%	0.00%
Contained Pounds	'000 lbs U3O8	105,828	-	-	2,637	13,572	13,428	12,772	15,989	15,271	9,348	2,880	3,067	2,711	2,908	3,829	2,895	3,064	1,457	-
PROCESSING																				
Mill Feed																				
Tonnes Processed	kt	4,807	-	-	-	279	350	350	349	349	349	350	351	354	350	348	351	351	326	-
Head Grade	%	1.00%	0.00%	0.00%	0.00%	2.26%	1.91%	1.61%	1.95%	1.95%	1.33%	0.42%	0.40%	0.36%	0.37%	0.46%	0.40%	0.40%	0.39%	0.00%
Contained U3O8	'000 lbs U3O8	105,828	-	-	-	13,915	14,713	12,430	15,019	15,044	10,223	3,278	3,126	2,827	2,845	3,494	3,075	3,067	2,772	-
Process Recovery																				
Recovery	%	95%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%
Recovered U_3O_8	'000 lbs U3O8	100,801	-	-	-	13,253.6	14,014.1	11,839.7	14,305.9	14,329.3	9,737.5	3,122.5	2,977.5	2,692.8	2,710.0	3,328.0	2,928.6	2,921.5	2,639.9	-
Recovered U3O8 - OP Portion	'000 lbs U3O8	72,411				13,254	14,014	11,840	14,250	13,256	8,541	1,829	-	-	-	-	-	-	-	-
Recovered U3O8 - UG Portion	'000 lbs U3O8	28,390				-	-	-	56	1,073	1,196	1,293	2,977	2,693	2,710	3,328	2,929	2,922	2,640	-
REVENUE																				
Metal Prices	**Input Units**																			
Long-Term U3O8 Price	US$ / lb U3O8	$ 65				$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65
Exchange Rate	US$ / C$	$ 0.85				$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85
Realized Price	C$ / lb U3O8	$ 76				$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76
Total Gross Revenue	**C$ '000**	**$ 7,708,309**				**1,013,513**	**1,071,666**	**905,391**	**1,093,981**	**1,095,773**	**744,632**	**238,779**	**227,689**	**205,919**	**207,235**	**254,497**	**223,950**	**223,411**	**201,875**	**-**
Transportation	C$ '000	$ 33,835				4,449	4,704	3,974	4,802	4,810	3,269	1,048	999	904	910	1,117	983	981	886	-
Net Smelter Return	**C$ '000**	**$ 7,674,474**				**$ 1,009,064**	**$ 1,066,962**	**$ 901,417**	**$ 1,089,179**	**$ 1,090,963**	**$ 741,363**	**$ 237,731**	**$ 226,689**	**$ 205,015**	**$ 206,325**	**$ 253,379**	**$ 222,967**	**$ 222,430**	**$ 200,989**	**$ -**
Royalties																				
Gov't SK Gross Revenue Royalty	C$ '000	$ 556,399	-	-	-	73,157	77,355	65,353	78,965	79,095	53,749	17,235	16,435	14,864	14,959	18,370	16,165	16,126	14,572	-
Total Royalties	**C$ '000**	**$ 556,399**				**$ 73,157**	**$ 77,355**	**$ 65,353**	**$ 78,965**	**$ 79,095**	**$ 53,749**	**$ 17,235**	**$ 16,435**	**$ 14,864**	**$ 14,959**	**$ 18,370**	**$ 16,165**	**$ 16,126**	**$ 14,572**	**$ -**
Net Revenue	**C$ '000**	**$ 7,118,075**				**$ 935,907**	**$ 989,607**	**$ 836,064**	**$ 1,010,213**	**$ 1,011,869**	**$ 687,614**	**$ 220,495**	**$ 210,254**	**$ 190,152**	**$ 191,367**	**$ 235,009**	**$ 206,802**	**$ 206,304**	**$ 186,417**	**$ -**
Unit NSR - Tonnes Processed	C$ / t proc	$ 1,481				$ 3,355	$ 2,829	$ 2,389	$ 2,894	$ 2,896	$ 1,971	$ 630	$ 598	$ 538	$ 546	$ 675	$ 590	$ 588	$ 572	$ -
Unit NSR - Pounds Produced	C$ / lb U3O8	$ 71				$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ -
OPERATING COSTS																				
Open Pit Mining	C$ '000	140,340	-	-	-	30,594	38,541	38,117	17,171	9,346	6,572	-	-	-	-	-	-	-	-	-
Underground Mining	C$ '000	598,192	-	-	-	-	-	28,619	39,577	53,475	54,622	54,480	55,312	54,097	53,800	53,944	52,112	50,590	47,563	-
Processing	C$ '000	548,763	-	-	-	36,599	40,145	41,261	42,556	43,029	43,152	40,815	39,326	39,371	37,083	36,659	36,609	36,637	35,522	-
Surface & GA	C$ '000	375,646	-	-	-	25,135	25,124	27,586	27,575	27,575	27,575	27,166	27,165	27,165	27,166	27,166	26,415	26,415	26,416	-
Total Operating Cost	**C$ '000**	**1,662,941**	**-**	**-**	**-**	**92,327**	**103,810**	**135,584**	**126,879**	**133,425**	**131,920**	**122,461**	**121,804**	**120,633**	**118,048**	**117,769**	**115,137**	**113,642**	**109,502**	**-**
UNIT OPERATING COSTS																				
Open Pit Mining	C$ / t ore	90				154	96	98	68	68	96	-	-	-	-	-	-	-	-	-
Underground Mining	C$ / t ore	184				-	-	8,052	407	249	190	156	157	153	151	152	148	144	271	-
Combined Mining	C$ / t proc	154				110	110	191	163	180	175	156	157	153	154	155	149	144	146	-
Processing	C$ / t proc	114				131	115	118	122	123	124	117	112	111	106	105	104	104	109	-
Surface & GA	C$ / t proc	78				90	72	79	79	79	79	78	77	77	78	78	75	75	81	-
Total Operating Cost	**C$ / t proc**	**346**				**331**	**297**	**387**	**364**	**382**	**378**	**350**	**347**	**341**	**337**	**338**	**328**	**324**	**336**	**-**
Open Pit Mining	C$ / lb U3O8	1.94				2.31	2.75	3.22	1.20	0.71	0.77	-	-	-	-	-	-	-	-	-
Underground Mining	C$ / lb U3O8	21.07				-	-	-	705.71	49.83	45.66	42.12	18.58	20.09	19.85	16.21	17.79	17.32	18.02	-
Combined Mining	C$ / lb U3O8	7.33				2.31	2.75	5.64	3.97	4.38	6.28	17.45	18.58	20.09	19.85	16.21	17.79	17.32	18.02	-
Processing	C$ / lb U3O8	5.44				2.76	2.86	3.48	2.97	3.00	4.43	13.07	13.21	14.62	13.68	11.02	12.50	12.54	13.46	-
Surface & GA	C$ / lb U3O8	3.73				1.90	1.79	2.33	1.93	1.92	2.83	8.70	9.12	10.09	10.02	8.16	9.02	9.04	10.01	-
Unit Operating Cost	**C$ / lb U3O8**	**16.50**				**6.97**	**7.41**	**11.45**	**8.87**	**9.31**	**13.55**	**39.22**	**40.91**	**44.80**	**43.56**	**35.39**	**39.31**	**38.90**	**41.48**	**-**
Operating Cash Flow	C$ '000	**$ 5,455,134**	**-**	**-**	**-**	**843,580**	**885,797**	**700,480**	**883,334**	**878,443**	**555,694**	**98,034**	**88,451**	**69,519**	**73,319**	**117,241**	**91,666**	**92,661**	**76,915**	**-**
	C$ / t proc	$ 1,135																		
CAPITAL COST																				
Pre-Production Direct Cost																				
Open Pit Mining	C$ '000	$ 363,063	$ 139,112	$ 109,691	$ 114,260	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Processing	C$ '000	$ 198,234	$ -	$ 79,294	$ 118,941	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Infrastructure	C$ '000	$ 116,714	$ 9,512	$ 12,532	$ 94,670	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Direct Cost	**C$ '000**	**$ 678,011**	**$ 148,624**	**$ 201,517**	**$ 327,870**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Indirect Costs																				
EPCM / Owners / Indirect Cost	C$ '000	$ 208,623	$ 39,555	$ 66,467	$ 102,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Costs	**C$ '000**	**$ 886,634**	**$ 188,179**	**$ 267,985**	**$ 430,470**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Contingency	C$ '000	$ 208,506	$ 47,045	$ 66,996	$ 94,465	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Initial Capital Cost	**C$ '000**	**$ 1,095,139**	**$ 235,224**	**$ 334,981**	**$ 524,935**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Sustaining Capital																				
OP Mining	C$ '000	$ 76,356	$ -	$ -	$ -	$ 76,356	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
UG Mining Equipment	C$ '000	$ 62,895	$ -	$ -	$ -	$ -	$ 14,383	$ 19,040	$ 14,842	$ 8,951	$ 3,669	$ -	$ 2,011	$ -	$ -	$ -	$ -	$ -	$ -	$ -
UG Mine Development	C$ '000	$ 26,174	$ -	$ -	$ -	$ -	$ -	$ 6,128	$ 12,265	$ 5,390	$ 2,366	$ -	$ -	$ -	$ -	$ 24	$ -	$ -	$ -	$ -
Infrastructure	C$ '000	$ 23,894	$ -	$ -	$ -	$ -	$ -	$ 11,947	$ -	$ -	$ 11,947	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Sustaining Capital	**C$ '000**	**$ 189,320**	**$ -**	**$ -**	**$ -**	**$ 76,356**	**$ 14,383**	**$ 37,115**	**$ 27,108**	**$ 14,340**	**$ 17,982**	**$ -**	**$ 2,011**	**$ -**	**$ -**	**$ 24**	**$ -**	**$ -**	**$ -**	**$ -**
Reclamation and Closure	C$ '000	$ 50,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 50,000	$ -
Total Capital Cost	**C$ '000**	**$ 1,334,459**	**$ 235,224**	**$ 334,981**	**$ 524,935**	**$ 76,356**	**$ 14,383**	**$ 37,115**	**$ 27,108**	**$ 14,340**	**$ 17,982**	**$ -**	**$ 2,011**	**$ -**	**$ -**	**$ 24**	**$ -**	**$ -**	**$ 50,000**	**$ -**
CASH FLOW																				
Operating Cash Flow	C$ '000	$ 5,455,134	$ -	$ -	$ -	$ 843,580	$ 885,797	$ 700,480	$ 883,334	$ 878,443	$ 555,694	$ 98,034	$ 88,451	$ 69,519	$ 73,319	$ 117,241	$ 91,666	$ 92,661	$ 76,915	$ -
Operating Cash Flow less Capital Costs	C$ '000	$ 4,120,675	$ (235,224)	$ (334,981)	$ (524,935)	$ 767,224	$ 871,414	$ 663,365	$ 856,226	$ 864,103	$ 537,712	$ 98,034	$ 86,440	$ 69,519	$ 73,319	$ 117,216	$ 91,666	$ 92,661	$ 26,915	$ -
Pre-Tax Cashflow	C$ '000	$ 4,120,675	$ (235,224)	$ (334,981)	$ (524,935)	$ 767,224	$ 871,414	$ 663,365	$ 856,226	$ 864,103	$ 537,712	$ 98,034	$ 86,440	$ 69,519	$ 73,319	$ 117,216	$ 91,666	$ 92,661	$ 26,915	$ -
Cumulative Pre-Tax Cashflow	C$ '000		$ (235,224)	$ (570,204)	$ (1,095,139)	$ (327,916)	$ 543,498	$ 1,206,863	$ 2,063,089	$ 2,927,192	$ 3,464,905	$ 3,562,939	$ 3,649,378	$ 3,718,897	$ 3,792,216	$ 3,909,432	$ 4,001,098	$ 4,093,759	$ 4,120,675	$ 4,120,675
Taxes																				
Less SK Profit Royalties	C$ '000	$ 657,879	$ -	$ -	$ -	$ -	$ 97,109	$ 103,400	$ 133,141	$ 134,330	$ 83,861	$ 15,732	$ 13,946	$ 11,314	$ 11,890	$ 18,677	$ 14,713	$ 14,860	$ 4,906	$ -
EBITDA	C$ '000	$ 4,797,254	$ -	$ -	$ -	$ 843,580	$ 788,688	$ 597,080	$ 750,193	$ 744,113	$ 471,834	$ 82,302	$ 74,505	$ 58,205	$ 61,430	$ 98,563	$ 76,952	$ 77,801	$ 72,009	$ -
Less Deductions	C$ '000	$ 1,443,737	$ 928	$ 652	$ 94,145	$ 391,541	$ 220,434	$ 171,168	$ 136,526	$ 105,920	$ 82,394	$ 63,134	$ 47,172	$ 35,329	$ 26,287	$ 19,575	$ 14,578	$ 10,861	$ 23,095	$ -
Taxable Earnings	C$ '000	$ 3,353,517	$ (928)	$ (652)	$ (94,145)	$ 452,039	$ 568,254	$ 425,912	$ 613,667	$ 638,193	$ 389,439	$ 19,168	$ 27,333	$ 22,875	$ 35,143	$ 78,988	$ 62,375	$ 66,940	$ 48,915	$ -
Corporate Taxes @ 27%	C$ '000	$ 931,295	$ -	$ -	$ -	$ 122,051	$ 153,429	$ 114,996	$ 165,690	$ 172,312	$ 105,149	$ 5,175	$ 7,380	$ 6,176	$ 9,489	$ 21,327	$ 16,841	$ 18,074	$ 13,207	$ -
Net Profit	C$ '000	$ 2,422,222	$ (928)	$ (652)	$ (94,145)	$ 329,989	$ 414,825	$ 310,916	$ 447,977	$ 465,881	$ 284,291	$ 13,992	$ 19,953	$ 16,699	$ 25,654	$ 57,662	$ 45,533	$ 48,866	$ 35,708	$ -
After-Tax Cash Flow	C$ '000	$ 2,531,500	$ (235,224)	$ (334,981)	$ (524,935)	$ 645,173	$ 620,876	$ 444,969	$ 557,395	$ 557,461	$ 348,703	$ 77,126	$ 65,114	$ 52,028	$ 51,941	$ 77,212	$ 60,111	$ 59,727	$ 8,803	$ -
Cumulative	C$ '000		$ (235,224)	$ (570,204)	$ (1,095,139)	$ (449,966)	$ 170,910	$ 615,879	$ 1,173,274	$ 1,730,734	$ 2,079,438	$ 2,156,564	$ 2,221,678	$ 2,273,706	$ 2,325,647	$ 2,402,859	$ 2,462,970	$ 2,522,698	$ 2,531,500	$ 2,531,500
PROJECT ECONOMICS																				
Pre-Tax Payback Period	yrs	1.4	0	0	0	1.00	0.38	-	-	-	-	-	-							
Pre-Tax IRR	%	46.7%																		
Pre-tax NPV @ 8%	C$ '000	$2,128,943																		
Pre-tax NPV @ 10%	C$ '000	$1,814,797																		
Pre-tax NPV @ 12%	C$ '000	$1,548,467																		
Post-Tax Payback Period	yrs	1.7	0	0	0	1.00	0.72	-	-	-	-	-	-							
Post-Tax IRR	%	34.2%																		
Post-Tax NPV @ 8%	C$ '000	$1,224,795																		
Post-Tax NPV @ 10%	C$ '000	$1,019,895																		
Post-Tax NPV @ 12%	C$ '000	$846,699																		

CASH FLOW ANALYSIS

Based on the economic criteria discussed previously, a summary of the cash flow is shown in Table 1-4.

TABLE 1-4 SUMMARY OF CASH FLOW
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Value
Gross Revenue	C$ millions	7,708.3
Less: Transportation	C$ millions	(33.8)
Net Smelter Return	C$ millions	7,674.5
Less: Provincial Revenue Royalties	C$ millions	(556.4)
Net Revenue	C$ millions	7,118.1
Less: Total Operating Costs	C$ millions	(1,662.9)
Operating Cash Flow	C$ millions	5,455.2
Less: Capital Costs	C$ millions	(1,334.5)
Pre-Tax Cash Flow	C$ millions	4,120.7
Less: Provincial Profit Royalties	C$ millions	(657.9)
Less: Taxes	C$ millions	(931.3)
Post-Tax Cash Flow	C$ millions	2,531.5

Based on the input parameters, a summary of the Project economics is shown in Table 1-5.

TABLE 1-5 SUMMARY OF ECONOMIC RESULTS
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Value
Pre-Tax		
Net Present Value at 8%	C$ millions	2,128.9
Net Present Value at 10%	C$ millions	1,814.8
Net Present Value at 12%	C$ millions	1,548.5
Internal Rate of Return	%	46.7
Payback Period	years	1.4
After-Tax		
Net Present Value at 8%	C$ millions	1,224.8
Net Present Value at 10%	C$ millions	1,019.9
Net Present Value at 12%	C$ millions	846.7
Internal Rate of Return	%	34.2
Payback Period	years	1.7

SENSITIVITY ANALYSIS

The cash flow model was tested for sensitivity to variances in head grade, process recovery, input price of yellowcake, Canadian to United States dollar exchange rate, overall operating costs, and overall capital costs. The resulting post-tax $NPV_{10\%}$ sensitivity is shown in Figure 1-1 and Table 1-6.

FIGURE 1-1 SENSITIVITY ANALYSIS

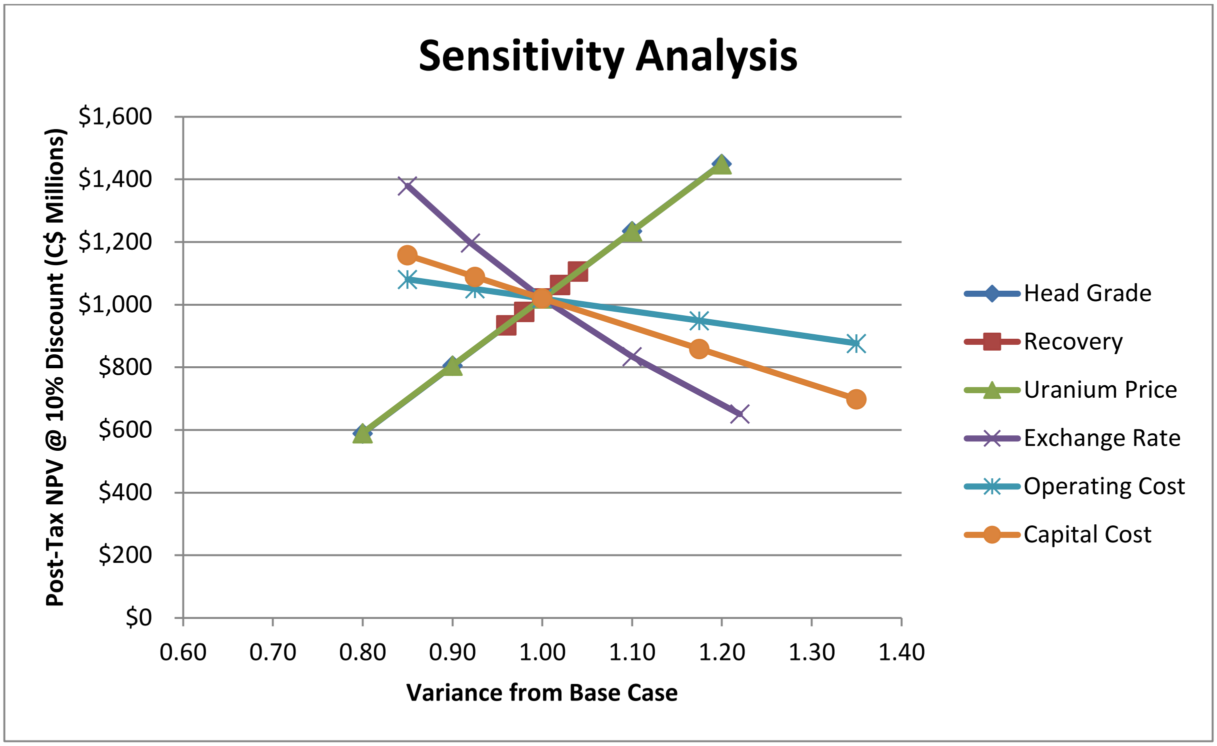


TABLE 1-6 SUMMARY OF SENSITIVITY ANALYSIS
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Low Case	Mid-Low Case	Base Case	Mid-High Case	High Case
Head Grade	%	0.80%	0.90%	1.00%	1.10%	1.20%
Overall Recovery	%	91.4%	93.3%	95.3%	97.2%	99.1%
Uranium Price	C$ / lb U_3O_8	$61	$69	$76	$84	$92
Exchange Rate	US$/C$	0.72	0.78	0.85	0.94	1.04
Operating Costs	C$/lb	14.0	15.3	16.5	19.4	22.3
Total Capital Cost	C$ millions	1,134	1,234	1,334	1,568	1,802
Adjustment Factor						
Head Grade	%	-20%	-10%	NA	10%	20%
Overall Recovery	%	-4%	-2%	NA	2%	4%
Uranium Price	%	-20%	-10%	NA	10%	20%
Exchange Rate	%	-15%	-8%	NA	10%	22%
Operating Costs	%	-15%	-8%	NA	18%	35%
Capital Cost	%	-15%	-8%	NA	18%	35%
Post-Tax NPV @ 10%						
Head Grade	C$ millions	589.2	805.0	1,019.9	1,234.7	1,449.6
Overall Recovery	C$ millions	934.0	976.9	1,019.9	1,062.9	1,105.8
Uranium Price	C$ millions	590.2	805.5	1,019.9	1,234.2	1,448.5
Exchange Rate	C$ millions	1,379.3	1,197.1	1,019.9	834.4	651.1
Operating Costs	C$ millions	1,080.9	1,050.4	1,019.9	948.6	876.3
Capital Cost	C$ millions	1,157.7	1,088.8	1,019.9	859.1	698.3

As shown in Figure 1-1, Project cash flow is most sensitive to the price of uranium, head grade, and process recovery. Yellowcake is primarily traded in United States dollars, whereas capital and operating costs for the Project are generally priced in Canadian dollars. Therefore, the Canadian and United States exchange rate also exerts significant influence over Project economics. In addition to the sensitivity analysis shown in Figure 1-1, an extended sensitivity analysis was undertaken solely on uranium price. The results are displayed in Figure 1-2, and Table 1-7.

FIGURE 1-2 URANIUM PRICE SENSITIVITY ANALYSIS

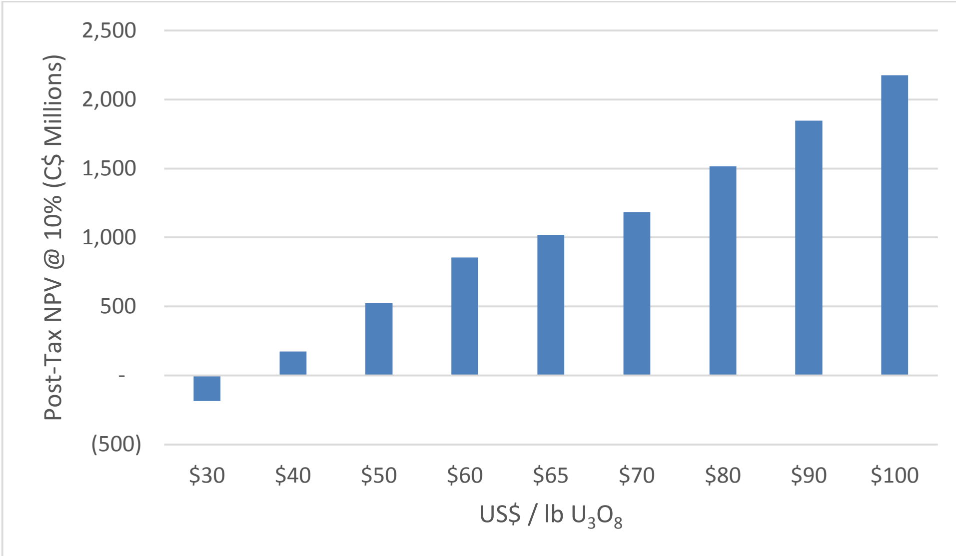


TABLE 1-7 URANIUM PRICE SENSITIVITY ANALYSIS
Fission Uranium Corp. – Patterson Lake South Property

Uranium Price (US$ / lb U_3O_8)	**Uranium Price** (C$ / lb U_3O_8)	**Post-Tax NPV @ 10%** (C$ Millions)
30	35	(186)
40	47	174
50	59	524
60	71	855
65 (Base Case)	76	1,020
70	82	1,185
80	94	1,514
90	106	1,847
100	118	2,175

TAXES, PROVINCIAL ROYALTIES, AND DEPRECIATION

Taxes and depreciation for the Project were modelled based on input from Fission Uranium's tax advisors and auditors.

In Saskatchewan, multiple royalties are applied to uranium projects. Royalties generally fall into two categories: revenue royalties and profit royalties. An explanation of the various royalties is provided below:

- Resource Surcharge of 3% of net revenue (where net revenue is defined as gross revenue less transportation costs directly related to the transporting of uranium to the first point of sale)

- Basic Royalty of 5% of net revenue (as defined above), less a Saskatchewan Resource Credit of 0.75% of net revenue, for an effective royalty rate of 4.25%
- Tiered profit royalty, with a 10% royalty rate on the first C$22.00 profit per kilogram of yellowcake, followed by 15% royalty on profits exceeding C$22.00 per kilogram

In the tiered profit royalty, the basic royalty and resource surcharge are not deductible for calculating profit royalties. Profits for the purposes of royalties are calculated by taking the net revenue, subtracting the full value of operating costs, capital costs, and exploration expenditures. Revenue royalties were included in the “pre-tax” cash flow results, while profit royalties are considered a tax, and are included in “post-tax” results.

Federal and provincial taxes were applied at a rate of 15% and 12%, respectively.

TECHNICAL SUMMARY

PROPERTY DESCRIPTION

The PLS Property consists of 17 contiguous mineral claims covering an area of 31,039 ha located in northwestern Saskatchewan, approximately 550 km northwest of the city of Prince Albert. It is centred at approximately 57°37’ N Latitude and 109° 22’ W Longitude within 1:50,000 scale NTS map sheets 74F/11 (Forrest Lake) and 74F/11 (Wenger Lake). The Property straddles all-weather gravel Highway 955 which leads northward to the past-producing Cluff Lake mine. The Triple R deposit is located on claim S-111376.

The PLS claims were ground staked and are considered to be legacy claims. As of the effective date of this report, all claims are in good standing and are registered in the name of Fission Uranium. Assessment credits are available for multiple annual renewals.

EXISTING INFRASTRUCTURE

With the exception of an all-weather gravel road which traverses the property, there is no permanent infrastructure on the property.

HISTORY

The Property was geologically mapped as part of a larger area by the Geological Survey of Canada in 1961.

In 1969, Wainoco Oil and Chemicals Ltd. completed photogeologic mapping and airborne radiometric and magnetic surveys. No interesting structures or anomalies were detected.

Canadian Occidental Petroleum Ltd. (CanOxy) completed extensive exploration on and around the property from 1977 to 1981 including an airborne electromagnetic (EM) survey; ground EM and magnetic, geological, geochemical, alphameter (radon), and radiometric surveys; and diamond drilling.

In 1977, CanOxy discovered a very strong six station alphameter (radon) anomaly with dimensions of 1.2 km by 1.7 km on current claim S-111375. This anomaly coincides with high uranium in soil values and anomalous scintillometer (radiometric) values. It was suggested that this alphameter anomaly was responding to radioactive exotic boulders within the till of the Cree Lake Moraine, however, no follow-up work was done.

CanOxy's ground EM survey delineated the Patterson Lake Conductor Corridor that cuts across the middle of Patterson Lake on claim S-111376, and extends onto claim S-111375. Several disrupted conductors and inferred cross cutting features were identified as priority 1, 2, and 3 drill targets on claim S-111376.

CanOxy drill tested an airborne EM conductor on the west shore of Patterson Lake within claim S-111376. Drill hole CLU-12-79 intersected a 6.1 m wide sulphide-graphite "conductor" that contained anomalous uranium, copper, and nickel concentrations. Strong hematite and chlorite alteration was observed in the regolith and basement rock, and two curious spikes in radioactivity were detected in the fresh basement.

GEOLOGY AND MINERALIZATION

The east-west elongate Athabasca Basin lies astride two subdivisions of the Western Churchill Province, the Rae Subprovince on the west and the Hearne Subprovince to the east. These are separated by the northeast trending Snowbird Tectonic Zone, which beneath the Athabasca Basin is called the Virgin River-Black Lake shear zone. In the western Athabasca Basin, where the property is located, lithologies belonging to the Lloyd Domain of the Talston Magmatic Zone (TMZ) underlie the Athabasca Basin. The TMZ is dominated by a variety of plutonic rocks and an older basement complex. The basement complex varies widely in composition from amphibolites to granitic gneisses to high grade pelitic gneisses.

The PLS Property lies within the northeastern limits of the Cretaceous Mannville Group which covers a large portion of western Saskatchewan. The Mannville Group consists of interbedded non-marine sands and shales overlain by a thin, non-marine calcareous member which is overlain by marine shales, glauconitic sands, and non-marine salt-and-pepper sands. The marine sequence is overlain by a paralic and non-marine sequence having a diachronous contact with the marine sequence.

The PLS Property is covered by a thick layer of sandy to gravelly Quaternary glacial material. The Quaternary material ranges in thickness from less than 10 m in the south east portion of the property to greater than 100 m directly west of Patterson Lake. No outcrop has been discovered on the property to date.

Drilling to date indicates that the Athabasca Group is not present on the property; although it may be possible that "islands" of Athabasca sandstone exist within the northeast extent of the property. Regolith underlies and is distributed approximately parallel to the Pleistocene overburden and Cretaceous sediments.

The PLS Property covers two geological domains; the western portion covers the Clearwater Domain while the eastern portion covers the Lloyd Domain. To date, drilling has been focused on the basement rocks of the Lloyd Domain as the Clearwater Domain is primarily interpreted to be granitic in nature and therefore not as prospective for unconformity style uranium mineralization. In the vicinity of PLS mineralization the basement rocks are comprised of a northeast trending belt of variably graphitic pelitic gneisses bounded to the northwest and southeast by apparently thick packages of quartzo-feldspathic semi-pelitic gneiss

Uranium mineralization at the PLS Property is hosted primarily within metasedimentary basement lithologies and, to a much lesser extent, within overlying sandstone currently thought to be Devonian in age. Additional work is recommended to determine the age of the overlying sandstone, and if it is confirmed to be Devonian, work is required to determine why these rocks are mineralized.

Basement hosted mineralization at the property occurs in a wide variety of styles, the most common of which occurs within the graphitic pelitic gneiss and appears to be fine grained disseminated and fracture filling uranium minerals with a strong association with hydrocarbon/carbonaceous matter. Uranium minerals, where visible, appear to be concordant with the regional foliation and dominant structural trends identified through oriented core and fence drilling. Typically, mineralization within the graphitic pelitic gneiss is associated with pervasive, strong, grey-green chlorite and clay alteration. The pervasive clay and chlorite alteration eliminates the primary mineralogy of the host rock with only a weakly defined remnant texture remaining. Locally, intense rusty limonite-hematite alteration in the pelitic gneisses strongly correlates with high grade uranium mineralization and a “rotten”, wormy texture. Subordinate styles of uranium mineralization within the graphitic pelitic gneiss which are often associated with very high grade uranium include: semi-massive and hydrocarbon rich; intensely clay altered (kaolinite) with uranium-hydrocarbon buttons; and massive metallic mineralization. These zones of very high grade mineralization generally occur along the contact of the graphitic pelitic gneiss and silicified south side semi-pelite and comprise a high grade mineralized spine. This spine may represent a zone of intense structural disruption which has been completely overprinted by alteration and mineralization. However, drill holes which undercut the strongly mineralized spine have failed to show signs of significant structural damage. Particularly well mineralized drill holes are often associated with thin swarms of dravite-filled breccia.

Uranium mineralization within the north and south semi-pelites which bound the graphitic pelite generally occurs as fine grained disseminations and is almost always associated with pervasive whitish-green clay and chlorite alteration with local pervasive hematite.

MINERAL RESOURCES

RPA updated the Mineral Resource estimate for the Triple R deposit using drill hole data available to July 28, 2015 (Table 1-8). Estimated block model grades are based on chemical assays only. Gold grades were also estimated. Mineral Reserves have not been estimated for the Triple R deposit.

TABLE 1-8 MINERAL RESOURCE SUMMARY
Fission Uranium Corp. – Patterson Lake South Property

Classification	Tonnes	% U_3O_8	g/t Au	Pounds U_3O_8	Ounces Au
Indicated					
Open Pit	1,149,000	2.45	0.62	62,104,000	23,000
Underground	863,000	1.00	0.56	19,007,000	15,000
Total Indicated	**2,011,000**	**1.83**	**0.59**	**81,111,000**	**38,000**
Inferred					
Open Pit	74,000	8.61	1.64	14,060,000	4,000
Underground	711,000	0.84	0.56	13,097,000	13,000
Total Inferred	**785,000**	**1.57**	**0.66**	**27,157,000**	**17,000**

Notes:
1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are reported within the preliminary pit design at a pit discard cut-off grade of 0.2% U_3O_8 and outside the design at an underground cut-off grade of 0.25% U_3O_8 based on a long-term price of US$65 per lb U_3O_8 and PEA cost estimates.
3. A minimum mining width of 2.0 m was used.
4. Numbers may not add due to rounding.

A set of cross-sections and level plans were interpreted to construct three-dimensional wireframe models for a number of mineralized zones at a minimum grade of 0.05% U_3O_8. Wireframes of the High Grade domain were created at a minimum grade of approximately 5% U_3O_8. The High Grade domain consists of several lenses within the Main Zone, the largest continuous zone within the R780E area. Prior to compositing to two metre lengths, high U_3O_8 assays were cut to 55% in the High Grade domain, to 10% U_3O_8 in all other domains, and to 7% U_3O_8 outside the wireframes, designated as Low Grade Halo.

Block model grades were interpolated by inverse distance cubed. Density values were estimated from more than 2,000 measurements to be 2.25 t/m^3 for the R00E Zone, 2.32 t/m^3 for the Main Zone and other zones in the R780E area, 2.35 t/m^3 for the High Grade domain, and 2.39 t/m^3 for the Low Grade Halo. Classification into the Indicated and Inferred categories was guided by the drill hole spacing and the continuity of the mineralized zones.

Table 1-9 compares the current Mineral Resource estimate to the initial Mineral Resource estimate announced in January 2015.

TABLE 1-9 COMPARISON TO PREVIOUS RESOURCE ESTIMATE
Fission Uranium Corp. - Patterson Lake South Property

	Tonnage(t)	U_3O_8 (%)	U_3O_8 (lb)
Current Estimate			
Indicated	2,011,000	1.83	81,111,000
Inferred	785,000	1.57	27,157,000
January 2015 Estimate			
Indicated	2,291,000	1.58	79,610,000
Inferred	901,000	1.30	25,884,000
Difference			
Indicated	-280,000	0.25	1,501,000
Inferred	-116,000	0.27	1,273,000
Percent Difference			
Indicated	-12%	16%	2%
Inferred	-13%	21%	5%

The increase in average grades is due to the higher cut-off grade of 0.2% U_3O_8 for open pit and 0.25% U_3O_8 for underground resources compared with the previous cut-off grade of 0.1% U_3O_8 for all resources. This change in cut-off grade is also responsible for the decrease in resource tonnages; however, that decrease is offset by current reporting of underground tonnage below the open pit resources.

Overall, the current Indicated Mineral Resources contain approximately 1.5 million more pounds of U_3O_8 than the January 2015 estimate and the Inferred Mineral Resources contain approximately 1.3 million more pounds of U_3O_8 than the January 2015 estimate.

MINING METHODS AND GEOTECHNICAL CONSIDERATIONS

The PLS Project hosts the Triple R deposit, a structurally controlled east-west trending sub-vertical high grade uranium deposit. The deposit is overlain by 50 m to 100 m of sandy overburden, with the high grade mineralization located near the bedrock-overburden contact. The deposit extends under Patterson Lake, and will require a ring dyke and slurry wall to effectively isolate the deposit from the lake.

GEOTECHNICAL CONDITIONS

BGC reviewed available geotechnical information and provided analysis on open pit slopes, underground stope sizing, and mining-related infrastructure.

Unconfined compressive strength (UCS) testing shows that the average UCS for unaltered semi-pelites (both north and south) ranges from 80 MPa to 110 MPa. Alteration has a significant impact on the UCS of each rock type, with an average ranging from 42 MPa to 46 MPa in the semi-pelites, to 30 MPa in the pelites.

In addition to UCS, Rock Mass Rating (RMR_{76}) was reviewed. Statistically, the RMR_{76} values range from 44 to 79, with an average value of 63 and a standard deviation of 10. The RMR_{76} values cluster in two distributions: 40 to 60 and 60 to 80, corresponding to Fair Rock to Good Rock. Based on the geological logs, the distinction between the two ranges appears to correspond to altered versus unaltered rock.

RING DYKE

As the deposit extends under Patterson Lake, a dyke needs to be constructed that isolates the deposit from the lake. The total linear length of the dyke is approximately 2,550 m. The dyke has a top berm width of 25 m, and slope angles of approximately 30º. The dyke will be built to a height of four to five metres above the lake elevation. The estimated quantity of rock fill required to build the dyke is approximately 1.2 million m^3.

To build the dyke, fill material must be brought in from a borrow pit located approximately 30 km away from the site. Trucks would bring the material to the dyke location and continually advance the structure into Patterson Lake. The dyke would be initiated from both the north and south shore location, and meet approximately at the eastern extent of the dyke. Bulldozers and other equipment would continually pack and shape the fill material as it extends into the lake. The dyke core would then be vibro-compacted using specialized equipment. It is likely that fine-grained, soft lacustrine sediments are present at the lakebed surface which, if extensive, may require removal by dredging as part of foundation preparation activities. Rapid loading of lakebed sediments during dyke fill placement could result in slope instability from undrained shear failure. The potential for construction induced failure, including the potential for static liquefaction of underlying silts and fine sands should be investigated at the next Project stage. The thickness of soft lakebed sediments (if present) is currently unknown and will require confirmation at the next phase of study.

SLURRY WALL

The ring dyke alone is not sufficient to prevent water flowing into the open pit. To effectively isolate the pit from Patterson Lake, a system of slurry walls is proposed. Slurry walls have been used effectively in a number of northern Canadian mining projects, notably Diavik diamond mine and Meadowbank gold mine. The slurry wall concept was based on discussions between BGC and Bauer Foundations Canada Inc. (Bauer), the contractor responsible for cut-off wall construction at Diavik and the lead contractor responsible for the construction of the proposed new Diavik dyke cut-off. Bauer has experience constructing diaphragm walls to depths of more than 100 m in coarse, bouldery, overburden deposits. The trench excavation for that project was completed by means of a combination of clamshell and hydromill technology. The former was used to remove particles up to cobble and small boulders, while the latter was used to advance through boulders that were too large to remove by clamshell.

Bauer expects that similar equipment could be used to construct a diaphragm wall to bedrock at PLS, including a socket into the bedrock surface.

The slurry wall will completely circumnavigate the deposit (including the shore-based portion), with a total linear length of approximately 3,300 m. The slurry wall is planned to be one metre thick, with average depths of 60 m from the working surface.

DEWATERING

After completion of the slurry wall, the enclosed pit will be dewatered. The enclosed pit contains an estimated 17.4 million m^3 of water, which would be pumped out of the pit over the course of one year. To accomplish this, six twelve-inch diameter pumps would be sourced from an equipment rental company.

OPEN PIT

Mining of mineralized material and uranium bearing waste is proposed to be carried out by the owner. The overburden stripping and barren waste mining will be exclusively done by a contractor with a dedicated mining fleet (larger equipment) given the total volume to be excavated and the higher production rate required.

The combination of owner-operated mining and contractor mining will be carried out using conventional open pit methods consisting of the following activities:

- Drilling performed by conventional production drills.
- Blasting using an emulsion explosive and a down-hole delay initiation system.

- Loading and hauling operations performed with hydraulic shovels, front-end loaders, and underground haulage trucks (mineralized material and some waste) and rigid frame trucks (overburden and remainder of waste).

The production equipment will be supported by bulldozers, a grader, and a water truck. Support fleets will be separated into contractor and owner fleets in order to minimize the amount of contractor equipment that is in contact with radioactive material.

UNDERGROUND

The mining method for the underground will be longhole retreat mining in both transverse and longitudinal methods based on current block model information. The mining will retreat from the Exhaust Air Raises (EAR) towards the Fresh Air Raises (FAR), and will be mined in blocks ranging from three to four levels for transverse mining. In the longitudinal areas of mining, the lenses will be mined bottom up.

The ventilation system will be a push-pull system with two FARs and three EARs. The ventilation in the underground workings will be used once in the ore production areas. The air will be forced ventilated with a positive flow in the transverse and longitudinal headings (air will be pumped into the headings). Push-pull ventilation systems have been used extensively in uranium mines in the Athabasca Basin.

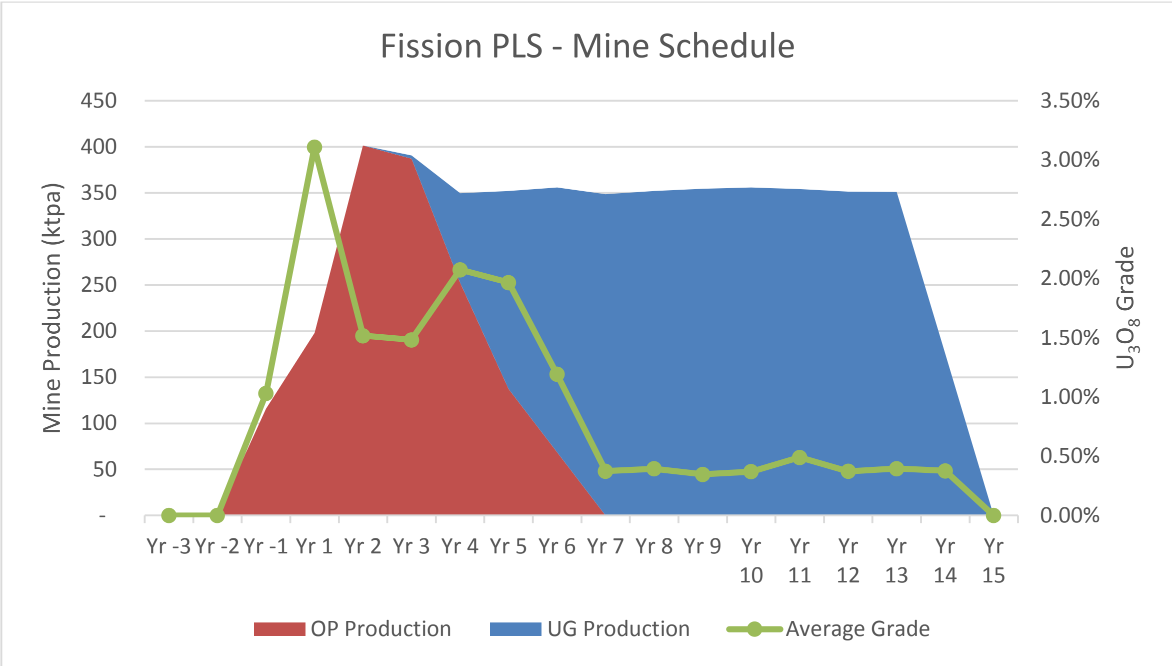
LIFE OF MINE PLAN

A three-year pre-production period is envisaged for the Project. The critical path for completing construction revolves around completing the dyke and slurry wall, dewatering of the enclosed pit, and removal of overburden. In Year -3, the dyke will be completed by starting at both the north and south terminal points and linking the two at the eastern extent of the dyke. Rock material will be sourced from a location within Fission's claim boundaries, approximately 30 km south and east of the deposit. Concurrently in Year -3, the shore-portion of the slurry wall will commence. Slurry wall construction is weather dependent, and can only be accomplished during the period of April to October. In Year -2, the remaining portion of the slurry wall will be completed, as well as some surface buildings and other infrastructure. The process plant will begin construction in Year -2. Year -1 will see the enclosed pit being dewatered, overburden being removed, and all remaining surface and infrastructure facilities completed. Overburden removal will carry over into Year 1.

Operations begin with high grade mineralization being mined from an open pit from Year -1 to Year 6. Underground mining begins with capital development in Year 3 and continues to Year 14.

The mine production schedule is shown in Figure 1-3.

FIGURE 1-3 LIFE OF MINE PRODUCTION SCHEDULE



MINERAL PROCESSING

The conceptual mill design will have a nominal feed rate of 350,000 tonnes per annum, operate 350 days per year, and be able to produce nominally 15 million pounds per year of uranium concentrate. The mill design will have an estimated recovery of 95%, and is designed in a way that can accommodate fluctuations in ore grade that are expected when mining moves from open pit to underground.

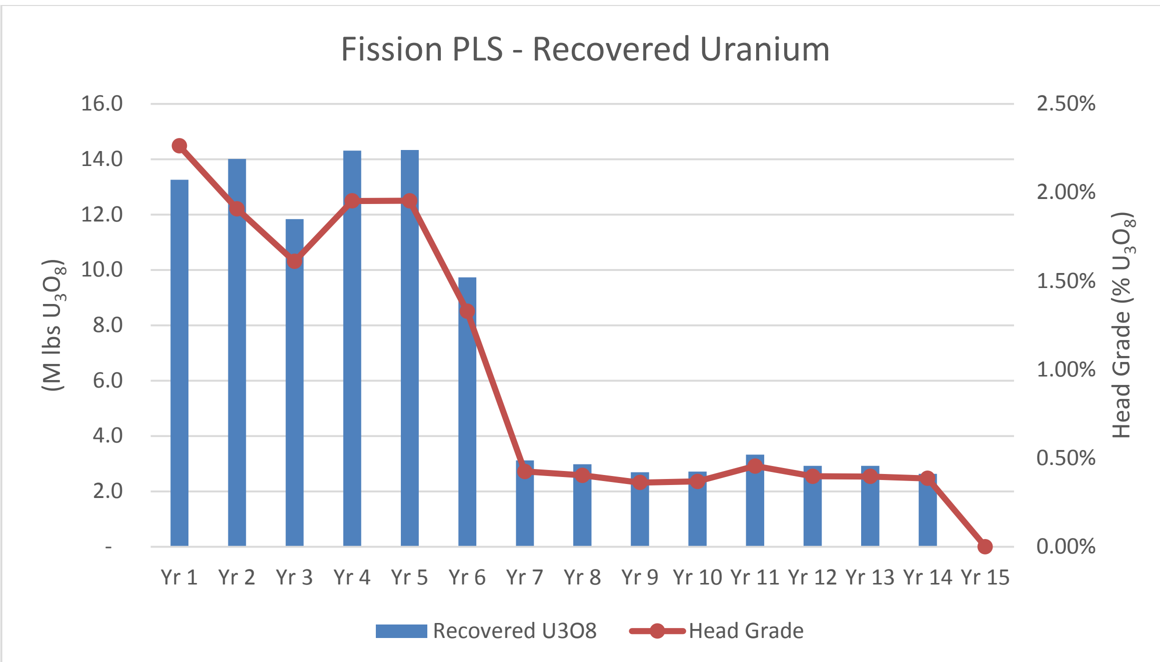
The unit processes for uranium recovery are:

1. Grinding
2. Acid leaching using hydrogen peroxide as oxidant
3. Counter current decantation and clarification
4. Solvent extraction using strong acid stripping
5. Molybdenum removal from the pregnant aqueous solution

6. Gypsum precipitation
7. Yellowcake precipitation with hydrogen peroxide
8. Yellowcake thickening and drying
9. Tailings neutralization
10. Effluent treatment with monitoring ponds to confirm quality of effluent discharge

The process schedule and recovered uranium schedule are shown in Figure 1-4.

FIGURE 1-4 RECOVERED URANIUM SCHEDULE



PROJECT INFRASTRUCTURE

Project infrastructure will consist of:

- Access Road: Highway 955 cuts through the PLS Property and will need to be rerouted to direct local traffic around the mine site. The highway diversion will consist of approximately 3.5 km of new highway construction and will direct traffic further west of the mine site.
- Power Supply: A 12 megawatt diesel power generating station is planned for the property, consisting of six two megawatt generators. A power grid will be established on site to distribute the power to the underground mine, open pit mine, tailings area, and camp.
- Propane: Liquefied propane gas (LPG) will be used in several areas of the Project, including in the process plant, and for heating air as it enters the underground mine.

- Fuel Storage: In addition to LPG, the site will require diesel for several applications, as well as small amounts of gasoline for light-duty vehicles on surface. Areas needing diesel include the central power plant, surface mobile mine equipment, and underground mine equipment.

- Explosives: An explosives storage area is planned for the Project, and will be located in an area that is a suitable distance away from other buildings and offices.

- Surface Buildings: Required buildings include a maintenance shop, process building, dry facility, warehousing, and administration building.

- Permanent Camp: Sized to house 250 people on a fly-in, fly-out rotation.

- Airstrip: An airstrip will be constructed at the Project, and will function as the primary mechanism for moving people to and from the work site.

- Miscellaneous Services: Allowances were made for miscellaneous services such as a site-wide fire protection system, sanitary waste disposal system, potable water system, and water effluent treatment system.

- Tailings Storage Facility (TSF): A TSF will be constructed to accommodate the estimated two million m^3 of tailings generated over the life of the Project.

- Waste Rock and Overburden Dumps and Stockpiles.

ENVIRONMENTAL, PERMITTING, AND SOCIAL CONSIDERATIONS

In support of the PEA, a review of the licensing, permitting and environmental aspects of the Project were examined through a literature search, examination of the appropriate Acts and regulations, a review of the conceptual project, discussions with Fission Uranium, examination of some documents and a site visit.

Overall, the Project appears to be in compliance with applicable regulations governing exploration, drilling and land use, and Fission Uranium staff and contractors are aware of their duties with respect to environmental and radiation protection. There have been some issues related to excess clearing of trails and near water bodies, but Fission Uranium has worked to repair those transgressions and reclaim them. The operations are neat and orderly and the level of clearing and disturbance is commensurate with similar projects in northern Saskatchewan. The PLS Project is visited frequently by Saskatchewan Conservation officers to ensure compliance. Locally, this is a high profile project that gets a lot of scrutiny.

There were six key area of consideration arising from the review:

1. While Fission Uranium has done preliminary community outreach and consultation, the level of consultation is very local and it will not be sufficient to support government Duty to Consult requirements and move the Project into the environmental assessment process. Fission Uranium will need to address this soon to avoid project delays.

2. Given the location of the deposit, impacts to Patterson Lake are inevitable. Regardless of the design, minimizing impacts to the lake will be very important, and it will be very important to ensure that the lake remains navigable to fish and boats.

3. To avoid significant project delays related to Schedule 2 of the Metal Mining Effluent Regulations, any tailings management area must avoid using fish bearing waters.

4. Fission Uranium has been forward looking by starting environmental baseline and monitoring work. The work has been somewhat selective and should be sufficient to start the environmental assessment process, however, it is not currently sufficient to support an environmental assessment document.

5. The main physical danger to the operation is forest fire and Fission Uranium has maintained close relationships with the local Wildfire Management base in Buffalo Narrows.

6. Fission Uranium has developed a centrifuge system for effectively removing potentially radioactive cuttings and fines from drilling fluids. This material is effectively handled and disposed of at an operating uranium mine. Fission Uranium has a radiation protection program in place and appear to follow it.

The Project is at a stage whereby, with proper planning, all of the above items can be addressed in a timely fashion within an orderly project approvals process. Some of the items, particularly consultation, need to be started very soon in order not to materially affect Project timing. This will require consultation with the Canadian Nuclear Safety Commission and the Saskatchewan Government to ascertain the level of First Nations, Métis and stakeholder consultation they expect.

CAPITAL AND OPERATING COSTS

Capital costs have been estimated for the Project based on comparable projects, first-principles, subscription-based cost services, budgetary quotes from vendors and contractors, and information within RPA's project database. RPA is responsible for capital costs related to mining and certain infrastructure, while DRA is responsible for capital costs related to the process plant and other infrastructure. Arcadis and BGC have provided input, where appropriate, to develop the capital cost estimate. Broadly, pre-production capital costs are divided among four areas: open pit mining, processing, general infrastructure, and project indirect expenses. Sustaining capital costs are related to the entire underground mine, some remaining capital costs from the open pit, and miscellaneous infrastructure that is built after commercial production has been declared.

TABLE 1-10 SUMMARY OF CAPITAL COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Cost
Open-Pit Mining	C$ millions	363.1
Processing	C$ millions	198.2
Infrastructure	C$ millions	116.7
Subtotal Pre-Production Direct Costs	**C$ millions**	**678.0**
Pre-Production Indirect Costs	C$ millions	208.6
Subtotal Direct and Indirect	**C$ millions**	**886.6**
Contingency	C$ millions	208.5
Initial Capital Cost	**C$ millions**	**1,095.1**
Sustaining, Closure, and Misc.	C$ millions	239.3
Total	**C$ millions**	**1,334.5**

Note: Dyke and slurry wall construction costs are included in open pit mining. Underground development is part of sustaining capital, as it occurs during operations.

Operating costs were estimated for the Project and allocated to one of mining, processing, or general and administration (G&A). Life of Mine operating costs are summarized in Table 1-11.

TABLE 1-11 LIFE OF MINE OPERATING COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	LOM Cost (C$ millions)	Unit Cost (C$/t processed)	Unit Cost (C$/lb U_3O_8)
Mining			
Open Pit Mining	140.3	90	1.94
Underground Mining	598.2	184	21.07
Combined Mining	738.5	154	7.33
Processing	548.8	114	5.44
General and Administration	375.6	78	3.73
Total	**1,662.9**	**346**	**16.50**

2 INTRODUCTION

Roscoe Postle Associates Inc. (RPA), BGC Engineering Inc. (BGC), DRA Taggart (DRA), and Arcadis Canada Inc. (Arcadis) were retained by Fission Uranium Corp. (Fission Uranium) to prepare a Preliminary Economic Assessment (PEA) on the Patterson Lake South Property (the Project, or the PLS Property), located in northern Saskatchewan, Canada. The purpose of this report is to summarize the results of the PEA. This Technical Report conforms to NI 43-101 *Standards of Disclosure for Mineral Projects*.

Fission Uranium is a Canadian exploration company, which is primarily engaged in the acquisition, evaluation, and development of uranium properties with a view to commercial production. It holds a 100% interest in the PLS Property.

Currently, the major asset associated with the Project is the high grade Triple R uranium deposit.

The PEA is based on a combination of open pit and underground mining, and processing of 1,000 tonnes per day (tpd) via acid leaching, solvent extraction, and precipitation. The Project has the potential to produce up to 15 million lbs U_3O_8 per year in the form of yellowcake.

SOURCES OF INFORMATION

Site visits were carried out by David A. Ross, M.Sc., P.Geo., Principal Geologist with RPA, from March 17 to 19 and from September 7 to 9, 2014. Mr. Ross examined core from several drill holes (PLS13-64, PLS13-75, PLS14-129, PLS14-183, PLS14-186), visited active drill sites, and reviewed logging and sampling methods. Jason Cox, P.Eng., Principal Mining Engineer with RPA, and Mark Wittrup, P.Geo., P.Eng., Vice-President Western Operations with Arcadis, visited the site from June 16 to 17, 2015, accompanied by representatives from BGC. Mr. Cox reviewed drill core and examined potential infrastructure locations. Mr. Wittrup reviewed permits, exploration procedures, and potential infrastructure locations.

Discussions have been held with:

- Ross McElroy, P.Geol., President and COO, Fission Uranium;
- Kanan Sarioglu, B.Sc., P.Geo., Project Geoscientist, Mineral Services Canada Inc.;
- Sam Hartmann, B.Sc., P.Geo., Project Manager, Fission Uranium;

- Raymond Ashley, P.Geoph., VP Exploration, Fission Uranium;
- J. Andrew Jeffrey, B.Sc. (Geol), Consultant;
- Grant Lockhart, B.Sc., B.A.Sc., Project Manager, Fission Uranium;
- Tony Gonzales, B.Sc.(Spec), Project Manager, Fission Uranium;
- Caroline Harke: M.Sc.(Geol), Consultant;
- Richard Elkington, Operations Manager, Fission Uranium, and
- Bob Hemmerling, Office Manager, Fission Uranium.

Fission Uranium contracts Mineral Services Canada Inc. (MSC) to assist in various aspects of the exploration and drilling. Several MSC reports were used and referenced in this Technical Report. MSC is part of the MS Group, a consulting company and laboratory that specializes in providing expert services to the exploration and mining industry. The MS Group operates out of offices in Vancouver, Canada, and Cape Town, South Africa.

The PEA was prepared by independent consultants led by RPA, who carried out resource estimation and mining work, assisted by BGC (geotechnical aspects), DRA (process and infrastructure), and Arcadis (environmental and radiological considerations).

Mr. Cox is responsible for Sections 2, 15, and 24, and shares responsibility with his co-authors for Sections 1, 3, 22, 25, 26, and 27 of this report. Mr. Ross is responsible for Sections 4 through 12, 14, and 23, and shares responsibility with his co-authors for Sections 1, 3, 25, 26, and 27 of this report. Mr. David M. Robson, P.Eng., MBA, RPA Mining Engineer is responsible for Sections 16, 18, and 19, and shares responsibility with his co-authors for Sections 1, 3, 21, 22, 25, 26, and 27 of this report. Mr. Mark Wittrup, P.Eng., P.Geo., of Arcadis, is responsible for Section 20, and shares responsibility with his co-authors for Sections 1, 3, 25, 26, and 27 of this report. Mr. Volodymyr Liskovych, P.Eng., Ph.D., Senior Process Engineer of DRA, is responsible for Sections 13 and 17, and shares responsibility with his co-authors for Sections 1, 3, 21, 25, 26, and 27 of this report.

LIST OF ABBREVIATIONS

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

a	annum	kWh	kilowatt-hour
A	ampere	L	litre
bbl	barrels	lb	pound
btu	British thermal units	L/s	litres per second
°C	degree Celsius	m	metre
C$	Canadian dollars	M	mega (million); molar
cal	calorie	m^2	square metre
cfm	cubic feet per minute	m^3	cubic metre
cm	centimetre	µ	micron
cm^2	square centimetre	MASL	metres above sea level
cpm	counts per minute	µg	microgram
cps	counts per second	m^3/h	cubic metres per hour
dia	diameter	mi	mile
dmt	dry metric tonne	min	minute
dwt	dead-weight ton	µm	micrometre
°F	degree Fahrenheit	mm	millimetre
ft	foot	mph	miles per hour
ft^2	square foot	mV	millivolts
ft^3	cubic foot	MVA	megavolt-amperes
ft/s	foot per second	MW	megawatt
g	gram	MWh	megawatt-hour
G	giga (billion)	oz	Troy ounce (31.1035g)
Gal	Imperial gallon	oz/st, opt	ounce per short ton
g/L	gram per litre	pCi	picocuries
Gpm	Imperial gallons per minute	ppb	part per billion
g/t	gram per tonne	ppm	part per million
gr/ft^3	grain per cubic foot	psia	pound per square inch absolute
gr/m^3	grain per cubic metre	psig	pound per square inch gauge
ha	hectare	RL	relative elevation
hp	horsepower	s	second
hr	hour	st	short ton
Hz	hertz	stpa	short ton per year
in.	inch	stpd	short ton per day
in^2	square inch	t	metric tonne
J	joule	tpa	metric tonne per year
k	kilo (thousand)	tpd	metric tonne per day
kcal	kilocalorie	US$	United States dollar
kg	kilogram	USg	United States gallon
km	kilometre	USgpm	US gallon per minute
km^2	square kilometre	V	volt
km/h	kilometre per hour	W	watt
kPa	kilopascal	wmt	wet metric tonne
kVA	kilovolt-amperes	wt%	weight percent
kW	kilowatt	yd^3	cubic yard
		yr	year

3 RELIANCE ON OTHER EXPERTS

This report has been prepared by RPA, BGC, DRA, and Arcadis for Fission Uranium Corp. (Fission Uranium). The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to RPA, BGC, DRA, and Arcadis at the time of preparation of this report,
- Assumptions, conditions, and qualifications as set forth in this report, and
- Data, reports, and other information supplied by Fission Uranium and other third party sources.

For the purpose of this report, RPA, BGC, DRA, and Arcadis have relied on ownership information provided by Fission Uranium. RPA, BGC, DRA, and Arcadis have not researched property title or mineral rights for the PLS Property and express no opinion as to the ownership status of the PLS Property. RPA did review the status of the mineral claims on the web site of the Saskatchewan Ministry of Economy (http://economy.gov.sk.ca/mining). The information for the mineral claims constituting the PLS Property are as noted in Section 4 of this report as of August 27, 2015, the date of RPA's review.

RPA has relied on Fission Uranium and their tax advisors for guidance on applicable taxes, royalties, and other government levies or interests, applicable to revenue or income from the Project.

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

4 PROPERTY DESCRIPTION AND LOCATION

The PLS Property is located in northern Saskatchewan, approximately 550 km north-northwest of the city of Prince Albert and 150 km north of the community of La Loche (Figure 4-1). The Property is accessible by vehicle along all-weather gravel Highway 955, which bisects the property in a north-south direction.

The Universal Transverse Mercator (UTM) co-ordinates for the approximate centre of the property are 600,000mE, 6,387,500mN (NAD83 UTM Zone 12N). The geographic co-ordinates for the approximate centre of the Property are 57°37' N latitude and 109° 22' W longitude. The property is located within 1:50,000 scale NTS map sheets 74F/11 (Forrest Lake) and 74F/12 (Wenger Lake). It is irregularly shaped and extends for approximately 29 km in the east-west direction and for approximately 19 km in the north-south direction. The approximate centre of Triple R deposit is located at UTM coordinates 598,000mE, 6,390,000mN (NAD83 UTM Zone 12N).

LAND TENURE

The PLS Property consists of 17 contiguous mineral claims covering an area of 31,039 ha (Figure 4-2). The Triple R deposit is located on claim S-111376. Table 4-1 lists the relevant tenure information for the property.

TABLE 4-1 LAND TENURE
Fission Uranium Corp. – Patterson Lake South Property

Claim	Effective Date	Anniversary Date	Good Standing Date	Area (ha)	Status
S-110707	28-Mar-07	27-Mar-16	25-Jun-36	812	Active
S-110955	31-May-07	30-May-16	28-Aug-36	1,327	Active
S-111375	13-Jun-08	12-Jun-16	10-Sep-36	2,493	Active
S-111376	13-Jun-08	12-Jun-16	10-Sep-36	3,310	Active
S-111377	13-Jun-08	12-Jun-16	10-Sep-36	1,645	Active
S-111783	30-Apr-10	29-Apr-16	28-Jul-36	1,004	Active
S-112217	13-Dec-11	12-Dec-15	12-Mar-22	1,202	Active
S-112218	13-Dec-11	12-Dec-15	12-Mar-22	1,299	Active
S-112219	13-Dec-11	12-Dec-15	12-Mar-22	987	Active
S-112220	13-Dec-11	12-Dec-15	12-Mar-22	1,218	Active
S-112221	13-Dec-11	12-Dec-15	12-Mar-23	2,621	Active
S-112222	13-Dec-11	12-Dec-15	12-Mar-22	846	Active
S-112282	22-Jun-11	21-Jun-16	19-Sep-35	3,789	Active
S-112283	22-Jun-11	21-Jun-16	19-Sep-23	1,003	Active
S-112284	22-Jun-11	21-Jun-16	19-Sep-35	2,021	Active
S-112285	22-Jun-11	21-Jun-16	19-Sep-22	5,404	Active
S-112370	23-Nov-11	22-Nov-16	20-Feb-36	58	Active

The mineral claims constituting the PLS Property were ground staked and are therefore designated as non-conforming legacy claims. As of December 6, 2012, the property and component claims locations were defined as electronic mineral claim parcels within the Mineral Administration Registry of Saskatchewan (MARS). As of the effective date of this report, the mineral claims are all in good standing and are all registered in the name of Fission Uranium. As of June 30, 2015, assessment credits totalling $8,900,780.90 were available for claim renewal. Assessment credits totalling $465,585 are required to renew the property claims upon their respective annual anniversary dates. In the absence of sufficient assessment credits, there is a provision in Saskatchewan to keep the claims in good standing by making a deficiency payment or a deficiency deposit.

On March 7, 2013, Fission Energy announced that it had entered into an agreement (the Agreement) with Denison whereby Denison agreed to acquire all the issued and outstanding shares of Fission Energy. Under this Agreement, Fission Energy spun out certain of its assets, including its 50% interest in the PLS Property, into a newly formed, publicly traded company, Fission Uranium by way of a court-approved plan of arrangement.

Pursuant to the Agreement, Denison acquired a portfolio of uranium exploration projects including Fission Energy's 60% interest in the Waterbury Lake uranium project, as well as Fission Energy's exploration interests in all other properties in the eastern part of the Athabasca Basin, its interests in two joint ventures in Namibia, plus its assets in Quebec and Nunavut. Fission Uranium's assets consisted of the remaining assets of Fission Energy including the 50% interest in the PLS Property.

Subsequently, Fission Uranium acquired its joint venture partner, Alpha Minerals Inc., and now holds a 100% interest in the PLS Property.

On July 28, 2015, Denison and Fission announced that they had entered into the Arrangement Agreement, which replaced an earlier binding letter agreement announced on July 6, 2015. Pursuant to the Arrangement Agreement, Denison has agreed to combine its business with Fission by way of a court-approved plan of arrangement. Information regarding the plan of arrangement is contained in information circulars, and special meetings for shareholders are expected to occur in October 2015.

MINERAL RIGHTS

In Canada, natural resources fall under provincial jurisdiction. In the Province of Saskatchewan, the management of mineral resources and the granting of exploration and mining rights for mineral substances and their use are regulated by the Crown Minerals Act and The Mineral Tenure Registry Regulations, 2012, that are administered by the Saskatchewan Ministry of the Economy. Mineral rights are owned by the Crown and are distinct from surface rights.

In Saskatchewan, a mineral claim does not grant the holder the right to mine minerals. A Saskatchewan mineral claim in good standing can be converted to a lease upon application. Leases have a term of 10 years and are renewable. A lease proffers the holder with the exclusive right to explore for, mine, work, recover, procure, remove, carry away, and dispose of any Crown minerals within the lease lands which are nonetheless owned by the Province. Surface facilities and mine workings are therefore located on Provincial lands and the right to use and occupy lands is acquired under a surface lease from the Province of Saskatchewan. A surface lease carries a maximum term of 33 years, and may be extended as necessary, to allow the lessee to develop and operate the mine and plant and thereafter to carry out the reclamation of the lands involved.

Fission Uranium does not currently have surface rights associated with the PLS Property.

ROYALTIES AND OTHER ENCUMBRANCES

RPA is not aware of any royalties due, back-in rights, or other encumbrances by virtue of any underlying agreements.

PERMITTING

RPA is not aware of any environmental liabilities associated with the PLS Property.

RPA understands that Fission Uranium has all the required permits to conduct the proposed work on the PLS Property. RPA is not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform the proposed work program on the PLS Property.

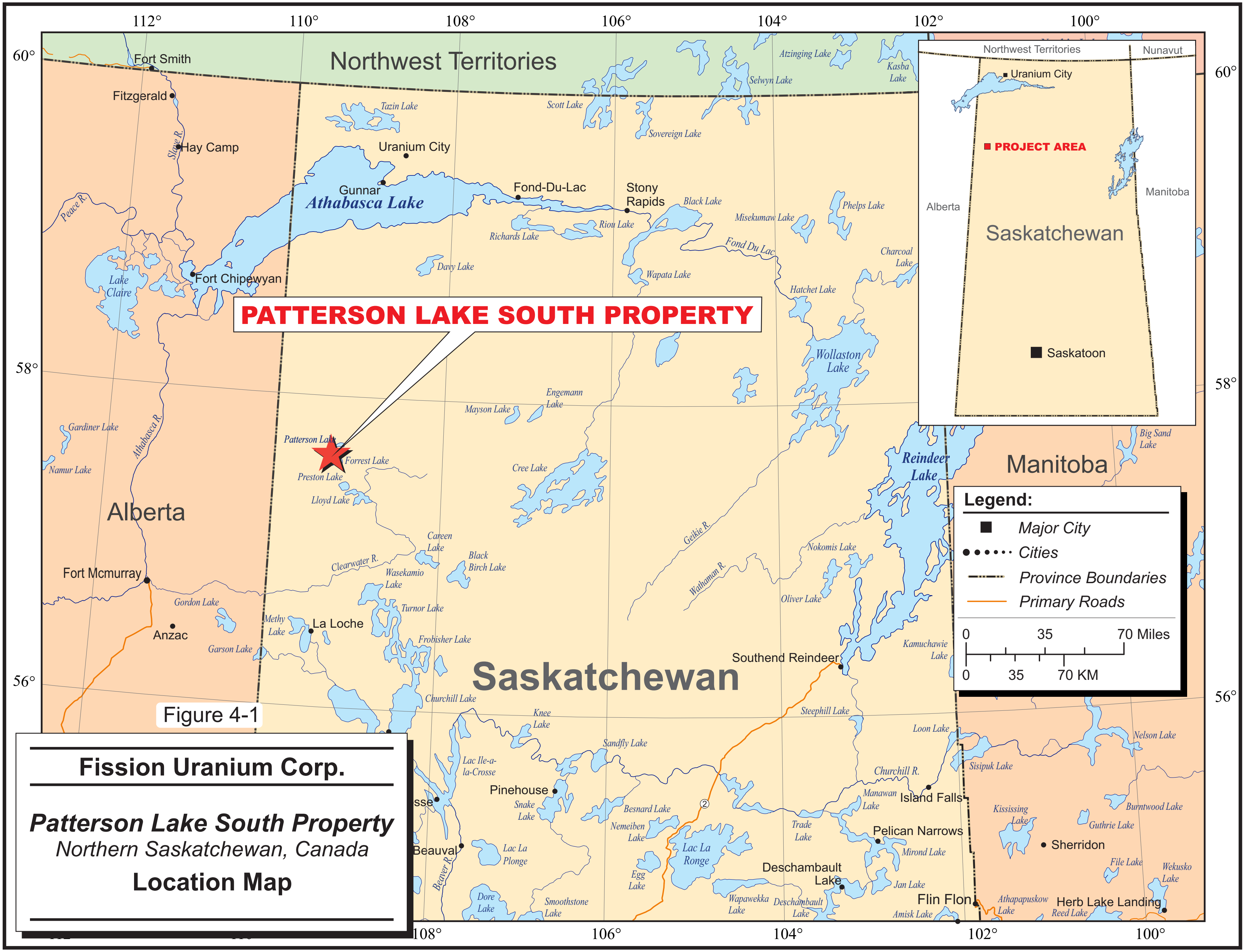


Figure 4-1

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Location Map

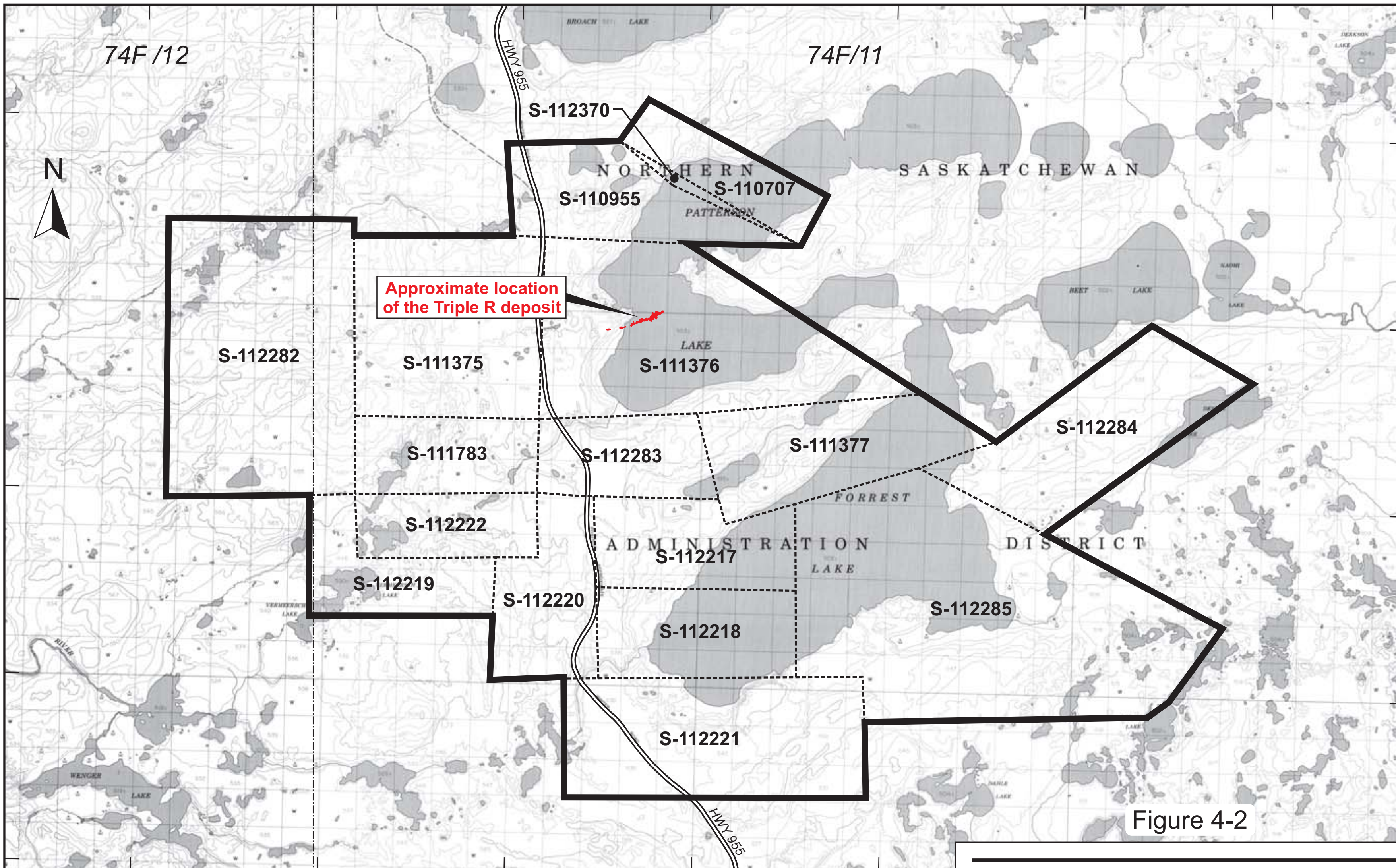


Figure 4-2

585,000m E 590,000m E 595,000m E 600,000m E 605,000m E

Contour Interval:
10 metres

0 2 4 6 8 10
Kilometres

NTS: 74F/11 & 74F/12
NAD83, Zone 12

September 2015

Source: Base Map © Canada Copyrights Reserved, 1976.

RPA

Fission Uranium Corp.

Patterson Lake South Property
Northern Saskatchewan, Canada
Claim Map

www.rpacan.com

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

ACCESSIBILITY

The PLS Property is located approximately 550 km north-northwest of the city of Prince Albert, Saskatchewan. Prince Albert is serviced by multiple flights daily from Saskatoon. The Property can be reached by driving northward along paved Highway 155 for a distance of approximately 300 km to the community of La Loche. At La Loche, the all-weather gravel Highway 955 (Cluff Lake Mine Road) heads northwards and enters the PLS Property at the 144 km marker. Highway 955 bisects the property in a north-south direction. Two four-wheel drive roads branch off from Highway 955 allowing access to the east and west halves of the property.

CLIMATE

The PLS Property is located within the Mid-Boreal Upland Ecoregion of the Boreal Shield Ecozone (Marshall and Schutt, 1999). The summers are short and cool and the winters are long and cold. The ground is snow covered for six to eight months of the year. The ecoregion is classified as having a sub-humid high boreal ecoclimate. Table 5-1 illustrates the climatic data for the two most proximal Environment Canada weather stations.

TABLE 5-1 CLIMATIC DATA - CLUFF LAKE AND FORT CHIPEWAYAN
Fission Uranium Corp. - Patterson Lake South Property

	Cluff Lake (SK) 58°22'N 109°31'W	Fort Chipewayan (AB) 58°46'N 111°07'W
Mean January temperature	-20.4°C	-21.9°C
Mean July temperature	16.9°C	14.1°C
Extreme maximum temperature	36.0°C	34.7°C
Extreme minimum temperature	-49.0°C	-50.0°C
Average annual precipitation	451.0 mm	365.7 mm
Average annual rainfall	N/A	250.4 mm
Average annual snowfall	162.8 cm	116.9 cm

Despite the harsh conditions, drilling and geophysical surveys can be performed year round. Surface geochemical surveys are generally restricted to the snow free months.

LOCAL RESOURCES

Various services are available at La Loche including temporary accommodations, fuel, and emergency medical services. A greater range of services is available at Prince Albert. Fixed wing aircraft are available for charter at Fort McMurray in Alberta, and Buffalo Narrows, La Loche, and La Ronge in Saskatchewan. Helicopters are available for charter at Fort McMurray and La Ronge.

INFRASTRUCTURE

With the exception of all-weather gravel Highway 955, there is no permanent infrastructure on the property.

PHYSIOGRAPHY

The topography of northern Saskatchewan is characterized by low hills, ridges, drumlins, and eskers, with lakes and muskeg common in the low-lying areas. Outcrop of the underlying Athabasca sandstone and basement rocks is rare. Numerous lakes and ponds generally show a northeasterly elongation imparted by the most recent glaciation. Elevation varies between 500 MASL and 565 MASL.

Loamy, grey soils produce taller trees than in the Shield. Aspen, white spruce, jack pine, black spruce, and tamarack are common.

Wildlife consists of moose, woodland caribou, mule deer, white-tailed deer, elk, black bear, timber wolf, and beaver. Birds include white-throated sparrow, American redstart, bufflehead, ovenbird, and hermit thrush. Fish include northern pike, pickerel, whitefish, lake trout, rainbow trout, and perch.

The Property is at the resource development stage. RPA is of the opinion that, to the extent relevant to the mineral project, there is a sufficiency of surface rights and water.

6 HISTORY

PRIOR OWNERSHIP

All of the claims comprising the PLS Property were ground staked from February 2007 to December 2011. Claim S-110707 was originally staked on behalf of ESO Uranium Corporation (ESO). Claim S-110955 was originally staked on behalf of Strathmore Minerals Corp (Strathmore) and transferred to Fission Energy in its plan of arrangement. In January 2008, Fission Energy and ESO entered into a 50/50 joint venture and contributed the claims existing at that time. As part of the agreement, Fission Energy contributed mineral claims S-110954 and S-110955 while ESO contributed S-110707 and S-110723. Mineral claims S-110954 and S-110723 were eventually allowed to lapse. Subsequently, additional claims were staked for the benefit of the joint venture, including S-111376 which is now known to host the Triple R deposit.

Pursuant to an agreement with Denison in 2013, Fission Energy spun out some of its assets into a newly formed company, Fission Uranium, including a 50% interest in the property. Fission Uranium subsequently acquired ESO's successor company, Alpha Minerals Inc., to hold a 100% interest in the property.

EXPLORATION AND DEVELOPMENT HISTORY

The following description of historic exploration work conducted on the PLS Property and its immediate vicinity is taken from Armitage (2013).

The Property was geologically mapped as part of a larger area by W.F. Fahrig for the Geological Survey of Canada (GSC) in 1961 (Hill, 1977). Another geological mapping project completed in 1961 by L.P. Tremblay of the GSC covered the property and Firebag River Area at a scale of four miles to the inch (Hill, 1977).

In 1969, photogeologic mapping and airborne radiometric and magnetic surveys were completed on the property for Wainoco Oil and Chemicals Ltd. The surveys did not detect any notable structures or anomalies (Atamanik, Downes and van Tongeren, 1983).

CanOxy completed extensive exploration on and around the property from 1977 to 1981. Exploration comprised an airborne Questor INPUT electromagnetic (EM) survey; ground horizontal loop EM (HLEM) and magnetic geophysical surveys, geological, geochemical, alphameter (radon), and radiometric surveys; and diamond drilling.

In 1977, CanOxy discovered a very strong six station alphameter (radon) anomaly with dimensions of 1.2 km by 1.7 km on what is now claim S-111375. This anomaly coincides with high uranium in soil values and anomalous scintillometer (radiometric) values. It was suggested that this alphameter anomaly was responding to radioactive exotic boulders within the till of the Cree Lake Moraine, however, no follow-up work was done (Hill, 1977).

CanOxy's 1977 ground EM survey delineated the Patterson Lake Conductor Corridor that traverses the center of Patterson Lake on claim S-111376, and extends onto claim S-111375. Several disrupted conductors and inferred cross cutting features were identified as priority 1, 2, and 3 drill targets on claim S-111376.

CanOxy drill hole CLU-12-79 was positioned based on an airborne EM conductor, which was later refined by ground EM surveys. This drill hole is located on the northernmost conductor of the Patterson Lake conductor corridor, and is on the west shore of Patterson Lake within claim S-111376. Drill hole CLU-12-79 was highlighted by a 6.1 m wide sulphide-graphite "conductor" that contained anomalous uranium, copper, and nickel concentrations. Strong hematite and chlorite alteration was observed in the regolith and fresh basement rock, and two curious spikes in radioactivity occur in the fresh basement lithologies (Robertson, 1979).

HISTORICAL RESOURCE ESTIMATES

No resource estimates have been prepared by previous owners.

PAST PRODUCTION

There has been no production from the PLS Property up to the effective date of the report.

7 GEOLOGICAL SETTING AND MINERALIZATION

REGIONAL GEOLOGY

The most significant uranium metallogenic district in Canada is the Athabasca Basin, which covers over 85,000 km^2 in northern Saskatchewan and northeastern Alberta (Figure 7-1). The basin itself is a relatively undeformed and unmetamorphosed clastic sequence of Paleoproterozoic to Mesoproterozoic rocks known as the Athabasca Group, lying unconformably on the deformed and metamorphosed rocks of the Western Churchill Province of the Archean Canadian Shield.

The east-west elongate Athabasca Basin lies astride two subdivisions of the Western Churchill Province, the Rae Subprovince (Craton) on the west and the Hearne Subprovince (Craton) to the east. These are separated by the northeast trending Snowbird Tectonic Zone, which beneath the Athabasca Basin is called the Virgin River-Black Lake shear zone. In the western Athabasca Basin, where the PLS Property is located, lithologies belonging to the Lloyd Domain of the Talston Magmatic Zone (TMZ) underlie the Athabasca Basin. The TMZ is dominated by a variety of plutonic rocks and an older basement complex (McNicoll et al., 2000). The basement complex varies widely in composition from amphibolites to granitic gneisses to high grade pelitic gneisses.

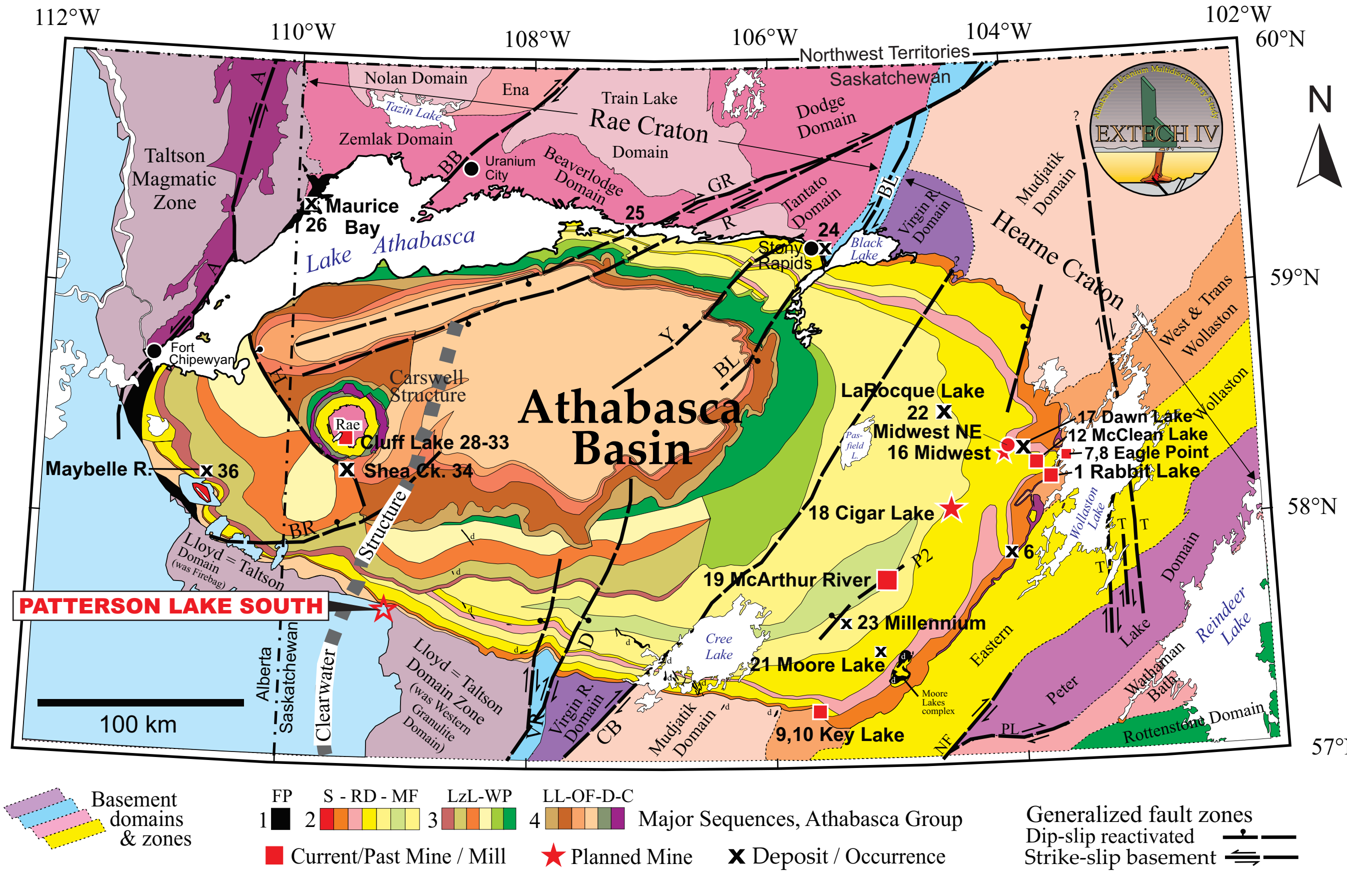


Figure 7-1

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Regional Geology and Uranium Deposits

September 2015

Source:
After GSC - Mineral Deposits of Canada, Unconformity Associated Uranium Deposits.

LOCAL GEOLOGY

The following description of the local geology is taken from Armitage (2013).

The PLS Property lies within the northeastern limits of the Cretaceous Mannville Group which covers a large portion of western Saskatchewan (Figure 7-2). The Lexicon of Canadian Geologic Units describes the lithology of the Mannville Group as "interbedded non-marine sands and shales overlain by a thin, non-marine calcareous member which is overlain by marine shales, glauconitic sands, and non-marine salt-and-pepper sands. The marine sequence is overlain by a paralic and non-marine sequence having a diachronous contact with the marine sequence."

Regionally discontinuous Devonian La Loche Formation exists beneath the Cretaceous sediments. The Lexicon describes the lithology of the La Loche Formation as "regolithic, poorly sorted breccia; fine to coarse grained, white to medium brownish grey arkosic sandstones and conglomeratic sandstones, with thin interbeds of sandy mudstone toward the top; arkosic grit and edgewise conglomerates and silty grits with festoon bedding toward the top." The La Loche Formation is thought to be a reworked regolith lying on the Precambrian surface.

The Mannville Group lies adjacent southwest of the Athabasca Group sandstone and conglomerate with lesser dolomite and shale (Yeo et al., 2001). The Smart Quartz Arenite member of the Athabasca is in contact with the Lower Mannville member.

Basement rocks of the Rae Subprovince consist of the Clearwater Domain and the Lloyd Domain, formerly known as the Western Granulite Domain. Although not well defined due to limited exposure and mapping, the Clearwater Domain is recognized by the following three lithologic groups: equigranular granite, porphyritic granite, and felsic gneiss. The felsic gneisses resemble those of the Virgin River and Mudjatik Domains, and contrast sharply with the Western Granulite blue quartz gneisses (Lewry and Sibbald, 1977). The Clearwater Domain represents a mobile zone with middle amphibolite facies metamorphic conditions, where Hudsonian age tectonic and metamorphic events are probable. Three episodes of fold forming movements have been recognized in felsic gneisses of the Clearwater Domain (Lewry and Sibbald, 1980).

Western Granulite (East Lloyd) rocks comprise a sequence of layered granodioritic to dioritic gneisses, with subordinate anorthosites, anorthositic gabbros, granites, and minor quartzitic and pelitic paragneisses. Blue quartz commonly occurs in the gneisses. Metamorphic mineral paragenesis indicates a static pyroxene granulite facies metamorphism overprinted by a lower amphibolite facies event (Atamanik, Downes and van Tongeren, 1983).

PROPERTY GEOLOGY

The following description of the property geology is taken from Mineral Services Canada Inc. (2014a).

QUATERNARY GEOLOGY

The PLS Property is covered by a thick layer of sandy to gravelly Quaternary glacial material. The Quaternary material ranges in thickness from less than 10 m in the southeast portion of the property to greater than 100 m directly west of Patterson Lake. No outcrop has been discovered on the property to date. Eskers, drumlins and other glacial features show a general north-easterly trend imparted by the most recent glaciation. A roughly north-south orientation is present in the glacial features in the vicinity of the radioactive boulder field west of Patterson Lake, which is interpreted to reflect a glacial outwash plain. Occasional drill holes west of Patterson Lake also intersect apparently thick intervals of glacial lodgement till. The lodgement till is comprised of dark grey to black silty matrix material with subangular pebble to gravel sized Athabasca and basement clasts throughout.

PHANEROZOIC MANNVILLE GROUP

Intermittently on the PLS Property, particularly to the west of Patterson Lake, intervals of dark grey, Cretaceous age Mannville Group mudstone have been intersected. The thickness of Cretaceous sediments appears highly variable, which is likely a result of being washed away during drilling, however, it has been intersected in lengths in excess of 20 m (e.g., PLS12-017). Thin seams of coal are occasionally present within the mudstone.

LA LOCHE FORMATION SANDSTONE

Thin lenses of Devonian La Loche Formation sandstone occur on the PLS Property, with the highest proportion cored to date occurring in the R00E and R780E mineralized zones. The sandstone is generally medium grained, brownish in colour when fresh and contains numerous poorly sorted subangular basement and Athabasca sandstone clasts. The matrix around mineral and lithic clasts is well developed and made up of carbonate (MSC12/018R, 2012). Typical thicknesses of Devonian sandstone range widely, from tens of centimetres to over ten metres. The sandstone is interpreted to be the remaining infill of a basement low over mineralization and the sandstone has been found to taper off rapidly away from the mineralized zone.

Alteration within the sandstone, when present, is dominated by pervasive chlorite and illite, which turns the drill core whitish green to dark green. Pervasive pink-red hematite alteration also commonly occurs in more competent intervals of sandstone.

Due to the limited amount of sandstone drilled on the property to date, no significant structures have been noted within.

CRYSTALLINE BASEMENT

The PLS Property covers two geological domains; the western portion covers the Clearwater Domain while the eastern portion covers the Lloyd Domain. To date, drilling has been focused on the basement rocks of the Lloyd Domain as the Clearwater Domain is primarily interpreted to be granitic in nature and therefore not as prospective for unconformity-style uranium mineralization. In the vicinity of PLS mineralization (i.e., along the PLG-3B EM conductor) the basement rocks are comprised of a northeast trending belt of variably graphitic pelitic gneisses bounded to the northwest and southeast by apparently thick packages of quartzo-feldspathic semi-pelitic gneiss.

Variably graphitic pelitic gneisses comprise the core of the north-east trending belt along the PLG-3B EM conductor and dip steeply to the south-east. The pelitic gneisses appear to be dominantly comprised of an intercalated sequence of fine grained ribbony graphite-sulphide pelite and medium grained garnet porphyroblast pelite with subordinate garnetite, graphitic mylonite, and cataclasite. In the eastern portion of the R780E zone a lens of silicified pelite to semi-pelite occurs within the pelitic gneisses. Also occurring in the eastern R780E is a broad zone of intense presumable hydrothermal alteration, which has altered the host rock to bright green clay minerals and sugary quartz. Throughout this zone the primary lithology is completely obscured by the intense alteration, however, petrography has determined that the remaining mineralogy is comprised of clay minerals, chlorite, tourmaline, and silica. The silica-chlorite-tourmaline zone commonly hosts low grade uranium mineralization throughout with a stronger zone of mineralization along its lower north side flank. A thin, intermittent mafic granofel occurs within the pelitic gneiss along the northern contact with the semi-pelite.

The north and south semi-pelitic gneisses which constrain the pelitic gneisses are comprised of approximately 60% quartz and plagioclase, 20% biotite, 15% garnet and trace pyrite, sillimanite, and graphite. Uranium mineralization is commonly intersected in both the north and south side semi-pelites and is often associated with zones of strong alteration (clay and hematite) and ductile deformation. The northern semi-pelite has also been found to host lenses of dark green to black, fine grained mafic granofel. The mafic granofels are interpreted to be roughly concordant with the regional geology (i.e., steeply dipping to the southeast).

Away from mineralization, the basement rocks immediately in the PLS area are either paleoweathered or weakly altered to fresh. The paleoweathered rock displays the typical downward gradational profile of a thin bleached and strongly kaolinite altered zone to a hematite dominated and then into a chlorite dominated zone. The paleoweathering profile can extend several meters into the basement rock and completely alters the primary mineralogy to secondary clay minerals and quartz. Away from paleoweathered areas, later-stage hydrothermal alteration is common throughout the basement. In particular, a broad zone of alteration occurs around mineralization where fresh basement is rarely encountered. Dark green chlorite alteration of garnet, biotite, and Al-silicates along with whitish green clay alteration of feldspar is the most abundant type of basement alteration. Patchy pink to red hematite occurs in the basement lithologies and is often associated with elevated radioactivity. Similarly, patchy, blebby limonite alteration almost entirely occurs with moderate to strong intervals of radioactivity. Along the variably graphitic pelitic gneiss and southern semi-pelitic gneiss contact a broad zone of silicification almost completely overprints the semi-pelite. This silicified unit was initially logged as quartzitic gneiss, but later was logged as a silicified version of the southern semi-pelite based on textural observations and the gradational nature of the contact between the southern semi-pelite and silicified semi-pelite.

On a regional scale the paleotopography around the PLG-3B EM conductor is flat lying. The R600W, R00E, and R780E mineralized zones occur in basement topographic lows and are separated by relative highs. In the vicinity of the mineralized zones the basement surface shows many small scale offsets, which are interpreted to be caused by a series of stacked faults. Based on a limited amount of processed oriented core data and closely spaced grid drilling the dominant structural trends along the PLG-3B EM conductor appear to be concordant with the regional geology, i.e., steeply dipping to the southeast. Significant northeast and northwest trending faults interpreted from DC resistivity surveys crosscut the PLG-3B conductor and appear to be associated with broad, strong zones of uranium mineralization. These faults are yet to be positively identified in drill core. Around zones of intense uranium mineralization microbreccia, Dravite filled breccia, graphitic cataclasite and mylonite occur, however, the intense alteration associated with uranium mineralization often makes these features difficult to identify.

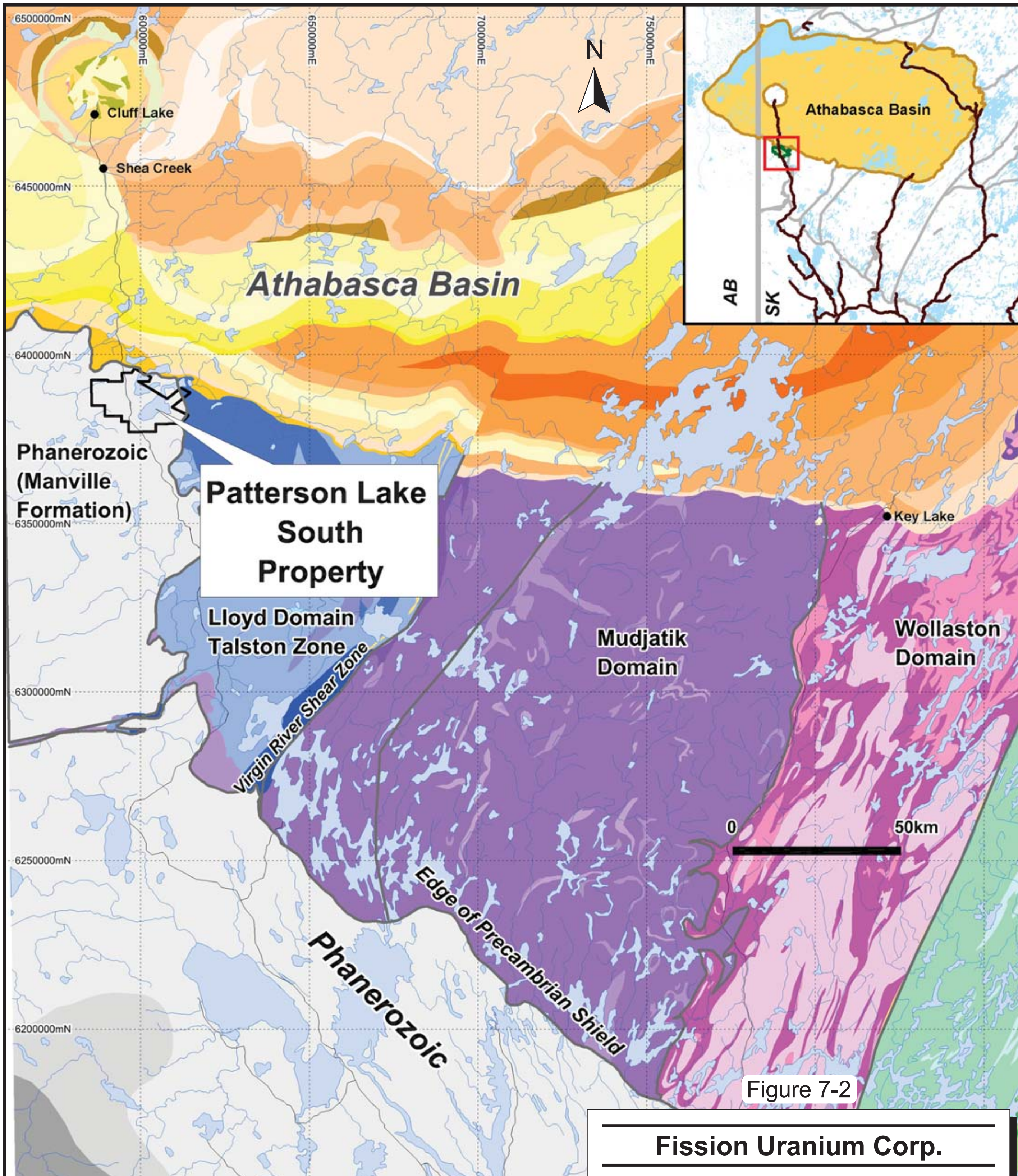


Figure 7-2

Fission Uranium Corp.

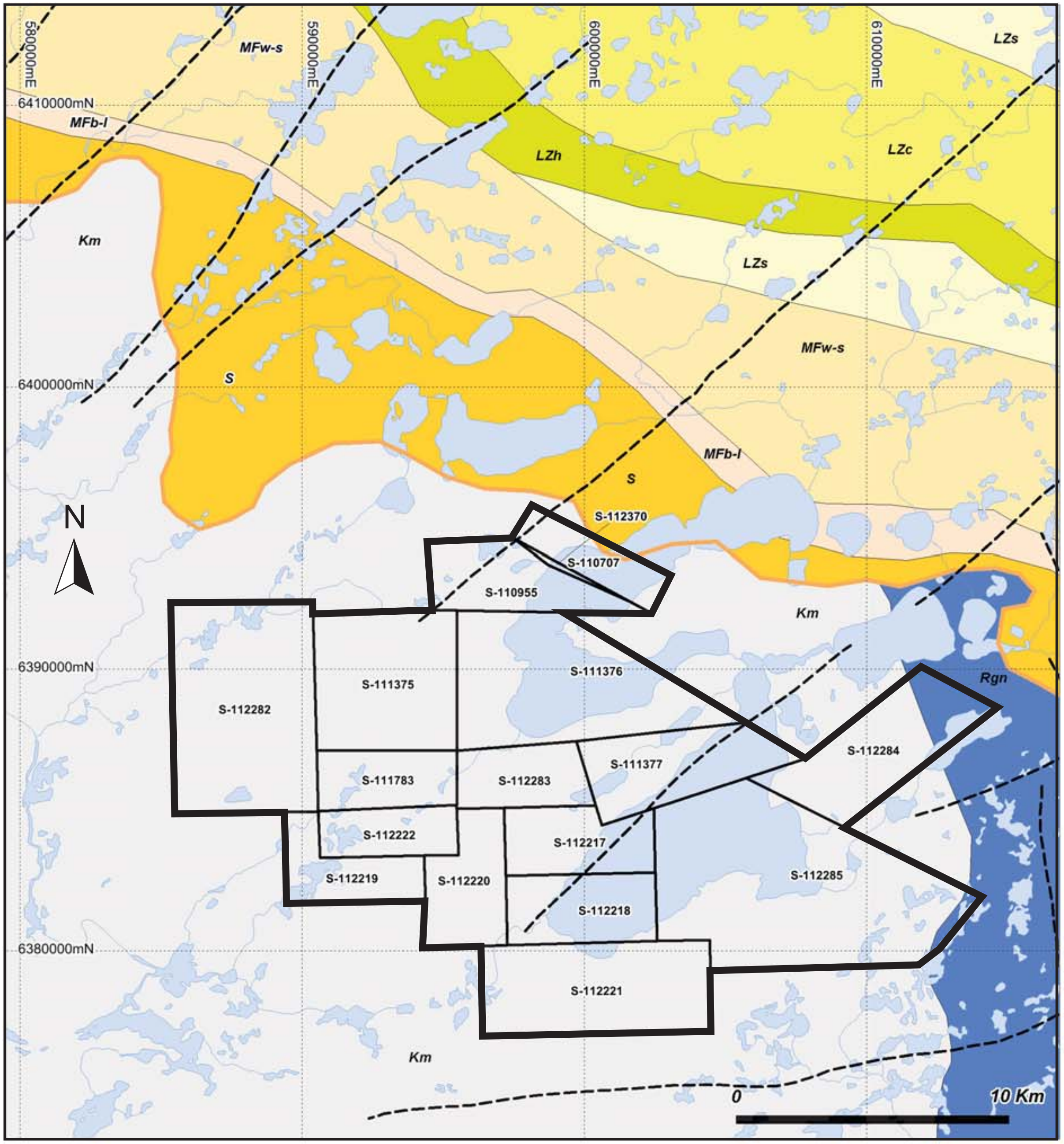
Patterson Lake South Property

Northern Saskatchewan, Canada

Local Geology

September 2015 ***Source: Fission Energy Corp., 2014.***

RPA



Legend:

Phanerozoic

Km	*Mannville Group*

Athabasca Group

LZs	*Lazenby Lake: Quartzanerite with pebbly layers*
LZc	*Lazenby Lake: Quartzanerite > siltstone + mudstone*
LZh	*Lazenby Lake: Pebbly quartzanerite + conglomarate*
MFw-s	*Manitou Falls: Quartzarenite*
MFb-l	*Manitou Falls: Lower conglomeratic quartzarenite*
S	*Smart: Quartzarenite, local pebbly mudstone*

Archean Basement

Rgn	*Granite - granodiorite gneiss*

Patterson Lake South Holdings

Lake

River

Fault

Estimated Athabasca Bassin Margin

Figure 7-3

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Property Geology

September 2015

Source: Fission Energy Corp., 2015.

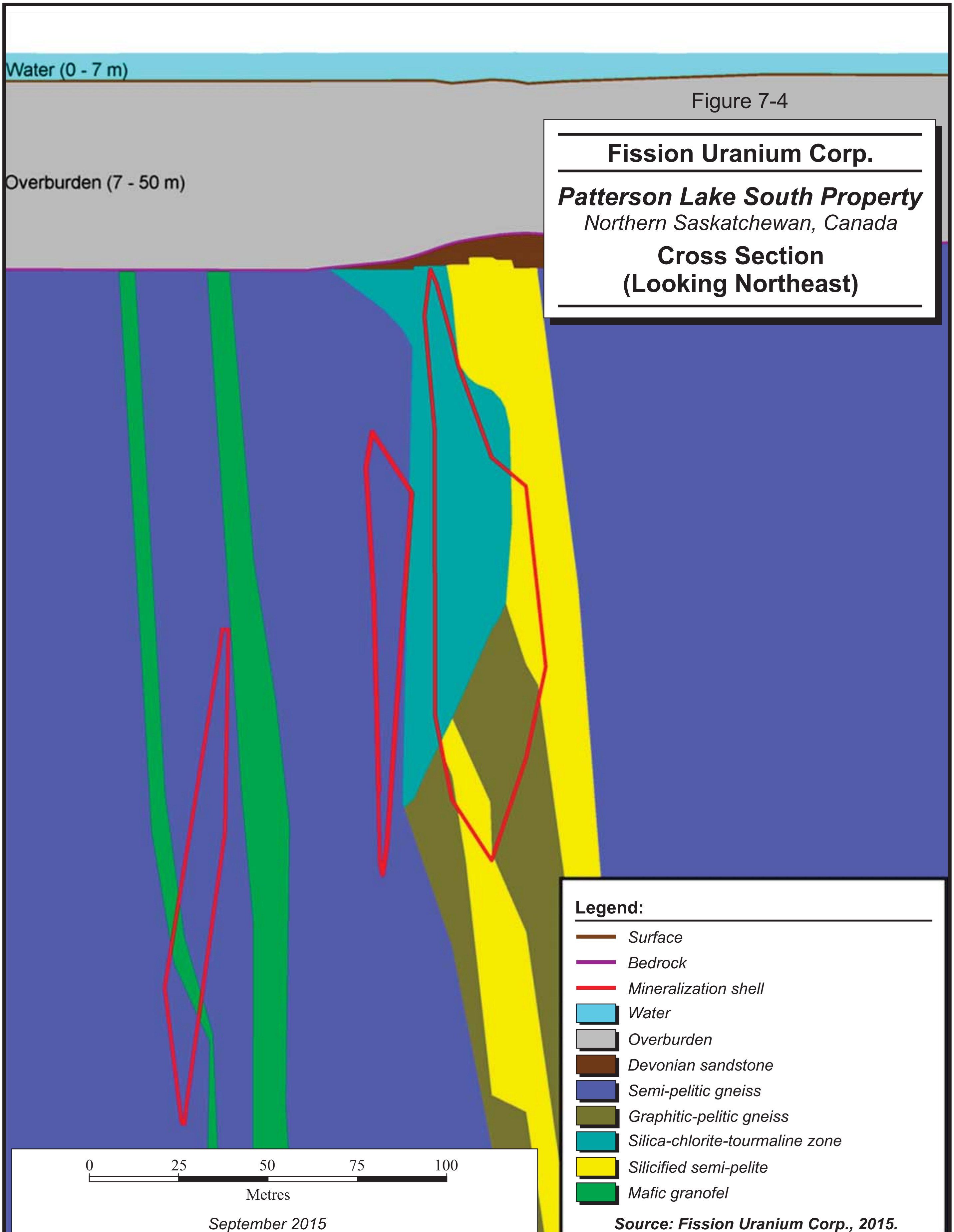


Figure 7-4

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Cross Section (Looking Northeast)

September 2015

Source: Fission Uranium Corp., 2015.

MINERALIZATION

Parts of the following description of the mineralization on the PLS Property is taken from Mineral Services Canada Inc. (2014a).

Uranium mineralization at the PLS Property is hosted primarily within metamorphosed basement lithologies and, to a much lesser extent, within overlying sandstone currently thought to be Devonian in age. Additional work is recommended to determine the age of the overlying sandstone, and if it is confirmed to be Devonian, work is required to determine why these rocks are mineralized.

Mineralization within the sandstone typically occurs as fine grained disseminations, sooty blebs, and rarely semi-massive uranium mineralization. Uranium concentrations within the sandstone are generally low to moderate, however, grades greater than 1.0% U_3O_8 have been intersected. Mineralized sandstone is typically strongly clay and chlorite altered, though locally can be pervasively hematite stained a deep red. Relative to basement hosted mineralization, only a very small amount of mineralized sandstone has been intersected on the PLS Property to date.

Basement hosted mineralization at the PLS Property occurs in a wide variety of styles, the most common of which appears to be fine grained disseminated and fracture filling uranium minerals strongly associated with hydrocarbon/carbonaceous matter within the graphitic pelitic gneiss. Uranium minerals, where visible, appear to be concordant with the regional foliation and dominant structural trends identified through oriented core and fence drilling (i.e., steeply dipping to the southeast). Typically, mineralization within the graphitic pelitic gneiss is associated with pervasive, strong, grey-green chlorite and clay alteration. The dominant clay species identified through PIMA analysis are kaolinite and magnesium-chlorite interpreted to be sudoite. The pervasive clay and chlorite alteration eliminates the primary mineralogy of the host rock with only a weakly defined remnant texture remaining. Locally, intense rusty limonite-hematite alteration in the pelitic gneisses strongly correlates with high grade uranium mineralization and a “rotten”, wormy texture.

Less common styles of uranium mineralization within the graphitic pelitic gneiss which are often associated with very high grade uranium include: semi-massive and hydrocarbon rich; intensely clay altered (kaolinite) with uranium-hydrocarbon buttons; and massive metallic mineralization. These zones of very high grade mineralization generally occur along the contact of the graphitic pelitic gneiss and silicified south side semi-pelite and comprise a high grade mineralized spine. This spine may represent a zone of intense structural disruption which has been completely overprinted by alteration and mineralization. However, drill holes which undercut the strongly mineralized spine have failed to show signs of significant structural damage. Particularly well mineralized drill holes are often associated with thin swarms of dravite-filled breccia.

Uranium mineralization within the north and south semi-pelites which bound the graphitic pelite generally occurs as fine grained disseminations and is almost always associated with pervasive whitish-green clay and chlorite alteration with local pervasive hematite. The mineralized zones within the semi-pelites are interpreted to be stacked structures parallel to the regional strike and dip along the PLG-3B conductor.

Results of the detailed mineralogical work at the PLS Property indicate that the dominant uranium mineral present is uraninite, with subordinate amounts of coffinite, possible brannerite and U-Pb oxide/oxyhydroxide. Uranium minerals occur mainly as anhedral grains and polycrystalline aggregates with irregular terminations; irregularly developed veinlets, locally showing extremely complex intergrowths with silicates; micrometric inclusions and dendritic intergrowths with silicates; and very fine grained dissemination intercalated with clays. In the samples studied, uranium minerals also occur as fine grained inclusions in carbonaceous matter (hydrocarbon).

DISTRIBUTION AND MORPHOLOGY

To date, uranium mineralization has been discovered in four target areas on the PLS Property; R600W, R00E, R780E, and R1620E (Figure 7-5). The R600W, R00E, and R780E mineralized zones all occur within a corridor of variably graphitic pelitic gneiss flanked to the north and south by semi-pelitic gneiss over a 2.3 km strike length of the PLG-3B EM conductor. The R1620E zone is currently intersected only by two drill holes and is located on the PLG-3C EM conductor which, based on geology, is considered to be the eastern extension of the PLG-3B EM conductor.

No significant uranium mineralization has been intersected in exploration drilling away from the PLG-3B and 3C conductors.

R00E ZONE

The R00E mineralized zone was the first mineralized zone discovered on the PLS Property and was intersected during the fall 2012 drill program. The sixth drill hole of the campaign, PLS12-022, was a vertical hole drilled from the western shore of Patterson Lake testing for the up-dip extension of the strong alteration and weak mineralization intersected in PLS12-016 (0.07% U_3O_8 over 1.0 m). PLS12-022 intersected a total of 12.5 m of uranium mineralization beginning at the top of bedrock (55.3 m) including a main zone averaging 1.1% U_3O_8 over 8.5 m from 70.5 m to 79.0 m.

The R00E zone is currently defined by 41 drill holes intersecting uranium mineralization over a combined grid east-west strike length of 125 m and a maximum grid north-south width of 47 m. Uranium mineralization at R00E trends northeasterly, in line with the corridor of variably graphitic pelitic gneiss.

At R00E, uranium mineralization is generally found within several metres of the top of bedrock which occurs at a depth of 50 m to 60 m vertically from surface. Several holes (e.g., PLS13-037, PLS13-039) drilled along the southern edge of the mineralization have intersected the down dip uraniferous root over 100 m below the top of bedrock. Uranium mineralization at R00E is hosted within the variably graphitic pelitic gneisses, northern semi-pelitic gneiss, and Devonian sandstone. No uranium mineralization has been intersected to date in the silicified semi-pelite (which bounds the graphitic pelite to the south) or in the southern semi-pelite.

As the R00E zone is interpreted to be roughly flat lying at the top of bedrock, vertical holes have dominantly been utilized to delineate mineralization. Vertical holes intersect the mineralized zone roughly perpendicular and therefore provide an approximate true thickness. Table 7-1 lists a selection of significant mineralized drill hole intersections at the R00E zone.

Drilling since the effective date of the previous Mineral Resource estimate did not affect the interpretation of the R00E zone; therefore, the resource model in that area has not changed.

TABLE 7-1 ZONE R00E SIGNIFICANT INTERSECTIONS
Fission Uranium Corp. - Patterson Lake South Property

HoleID	Interval Length (m)	Average grade (% U_3O_8)	Hole Dip
PLS12-024	18.0	1.8	-89°
PLS13-043	22.0	4.8	-89°
PLS13-049	18.5	1.9	-88°
PLS13-059	20.5	8.6	-73°
PLS13-079	17.5	6.0	-74°

Note: Average grades are based on uncut chemical assay values.

R780E ZONE

The R780E zone was discovered during the winter 2013 drill program with drill hole PLS13-038. PLS13-038 targeted an intense radon-in-water anomaly occurring along the PLG-3B conductor, approximately 390 m east of the PLS discovery hole. Drill hole PLS13-038 intersected a 34.0 m wide zone of very strong uranium mineralization, beginning at 87.0 m, averaging 4.9% U_3O_8.

The R780E zone is currently defined by 237 drill holes over a grid east-west strike length of 950 m and a maximum grid north-south width of 93 m. Similar to R00E, R780E mineralization trends approximately northeast, in line with the corridor of variably graphitic pelitic gneiss. Representative sections and plans from the R780E zone are provided in Section 14, Mineral Resources.

As with the R00E zone, R780E uranium mineralization has varying thickness, from tens of centimetres along the flanks to very wide intervals within the graphitic pelites, as seen in PLS14-187 which intersected high grade uranium mineralization over 100 m in vertical core length. In section view, R780E mineralization generally occurs as sub-vertically and southeast dipping zones, concordant with the regional dip. A very high grade spine of uranium mineralization occurs within the main zone and has been traced as a series of lenses across almost the entire strike length of the R780E zone. The high grade spine occurs along the contact between the variably graphitic pelitic gneiss and silicified semi-pelite.

At the western R780E zone, uranium mineralization extends to near the top of bedrock. Moving eastward, the top of mineralization appears to be plunging at approximately -7°. In general, the western R780E mineralization morphology is similar to the R00E, spatially restricted to the northern semi-pelite, variably graphitic pelitic gneiss, and Devonian sandstone. Moving eastward through the R780E zone, mineralization has been intersected within the variably graphitic pelitic gneiss, northern semi-pelite, and Devonian sandstone and, unlike the R00E zone, strong mineralization has been cored in the silicified semi-pelite and southern semi-pelite.

Initial drilling at the R780E zone consisted of only vertical holes for three main reasons: testing for subhorizontal mineralization similar to the R00E zone, limitations with the reverse circulation (RC) drill rig used to pre-case holes, and summer barge drilling where angled holes were not technically achievable. Many holes during the winter 2014 program and almost all holes from the summer 2014 and winter 2015 drill programs were angle holes, mostly drilled south to north in order to intersect both contacts of the mineralized bodies. Table 7-2 lists a selection of significant drill hole intersections at the R780E zone.

The Mineral Resource estimate for the R780E zone has been updated with results of the winter 2015 drill program.

TABLE 7-2 ZONE R780E SIGNIFICANT INTERSECTIONS
Fission Uranium Corp. - Patterson Lake South Property

Hole ID	Interval Length (m)	Average Grade (% U_3O_8)	Hole Dip
PLS13-038	34.0	4.9	-89°
PLS13-053	49.5	6.3	-86°
PLS13-075	54.5	9.1	-88°
PLS14-129	38.0	13.7	-90°
PLS14-164	91.0	4.3	-90°
PLS14-187	102.5	6.0	-90°
PLS14-248	47.5	13.2	-70°
PLS15-303	13.5	3.3	-70°
PLS15-337	4.0	5.4	-70°
PLS15-365	14.0	2.5	-70°
PLS15-375	51.5	2.1	-72°

Note: Average grades are based on uncut chemical assay values.

R600W ZONE

The R600W mineralized zone, located 600 m west of R00E, was discovered during the fall 2013 exploration drill program. The seventh drill hole of the program, PLS13-116, was an angle hole drilled to the north, targeting a radon-in-soil anomaly along the western end of the PLG-3B conductor. The drill hole intersected a thin zone of anomalous radioactivity hosted in the northern semi-pelite and a follow-up vertical hole was drilled targeting the graphitic pelitic corridor to the south. Drilling during the 2015 winter program intersected high grade mineralization. R600W is covered by 100 m of overburden.

The R600W zone is currently defined by 13 drill holes with a total grid east-west strike length of 60 m. Similar to the R00E and R780E zones, mineralization trends northeasterly in line with the corridor of graphitic pelitic gneiss. Table 7-3 lists a selection of significant drill hole intersections at the R600W zone. Additional drilling is recommended.

TABLE 7-3 ZONE R600W SIGNIFICANT INTERSECTIONS
Fission Uranium Corp. - Patterson Lake South Property

Hole ID	Interval Length (m)	Average Grade (% U_3O_8)	Hole Dip
PLS15-343	40.0	3.7	-69°
PLS15-352	45.0	7.9	-74°
PLS15-367	45.5	1.0	-79°
PLS15-372	11.5	0.5	-78°

Note: Average grades are based on uncut chemical assay values.

R1620E ZONE

The R1620E mineralized zone was discovered during the winter 2014 drill program. Hole PLS14-196 tested a moderate radon-in-water anomaly along the PLG-3C EM conductor, which is interpreted to be the extension of the PLG-3B EM conductor. PLS14-196 intersected 28.5 m of uranium mineralization beginning at a depth of 100.0 m down hole which averaged 0.2% U_3O_8.

The R1620E zone is currently defined by three drill holes. Uranium mineralization at the R1620E occurs in graphitic pelitic gneiss and appears to be associated with the graphitic pelitic gneiss – silicified semi-pelite contact. Additional drilling is recommended.

Mineral Resources were not estimated for the R1620E zone. Additional drilling is recommended.

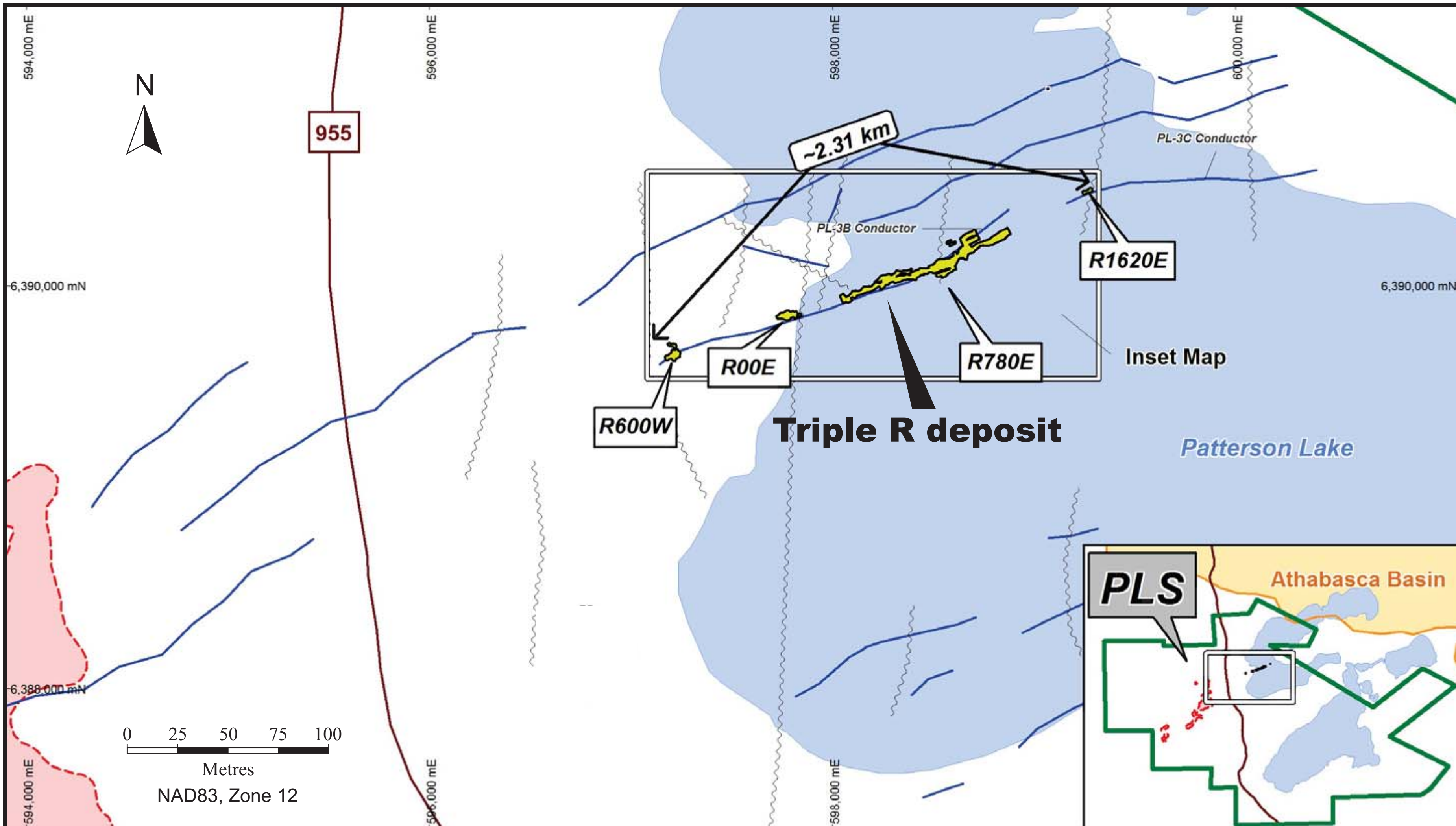


Figure 7-5

Legend

- Patterson Lake South Holdings 100% Fission Uranium Corp.
- Highway
- EM Conductors
- Interpreted Fault
- 2012 Outline of Mineralized Boulder Field
- R00E / R780E Mineralized Outline (Jan. 5, 2015) R600W / R1620E Mineralized Outline (Jun. 15, 2015) - Composite Intervals >0.05% U3O8 / 0.5M
- Radioactive Intersection (Previously Reported)

September 2015

Source: Fission Uranium Corp., 2015.

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Location of Target Areas

8 DEPOSIT TYPES

The target mineralization on the PLS Property is an Athabasca unconformity-type uranium deposit, though the Triple R deposit is south of the perimeter of the Athabasca Basin and no longer has Athabasca Basin sandstone above it. Jefferson et al. (2007) offered the following definition for the geological environment of this type of mineralization:

> Unconformity-associated uranium deposits are pods, veins, and semi-massive replacements consisting of mainly uraninite, close to basal unconformities, in particular those between Proterozoic conglomeratic sandstone basins and metamorphosed basement rocks. Prospective basins in Canada are filled by thin, relatively flat-lying, and apparently un-metamorphosed but pervasively altered, Proterozoic (~1.8 Ga to <1.55 Ga), mainly fluvial, redbed quartzose conglomerate, sandstone and mudstone. The basement gneiss was intensely weathered and deeply eroded with variably preserved thicknesses of reddened, clay-altered, hematitic regolith grading down through a green chloritic zone into fresh rock. The basement rocks typically comprise highly metamorphosed interleaved Archean to Paleoproterozoic granitoid and supracrustal gneiss including graphitic metapelite that hosts many of the uranium deposits. The bulk of the U-Pb isochron ages on uraninite are in the range of 1600 Ma to 1350 Ma. Mines comprise various proportions of two ore categories. Monometallic, generally basement-hosted uraninite fills veins, breccia fillings, and replacements in fault zones. Polymetallic, commonly subhorizontal, semi-massive replacement uraninite forms lenses just above or straddling the unconformity, with variable amounts of uranium, nickel, cobalt and arsenic; and traces of gold, platinum-group elements, copper, rare-earth elements and iron.

Fundamental aspects of the Athabasca unconformity-type uranium deposit model are reactivated basement faults and two distinct hydrothermal fluids. Typically rooted in basement graphitic-pelitic gneiss, brittle reactivated faults are manifest upward with brittle expression through the overlying sandstones and provide plumbing for the requisite mineralizing system. One of the necessary fluids is reducing, originates in the basement, and is channelled along basement faults.

Two end-members of the deposit model have been defined (Quirt, 2003). A sandstone-hosted egress-type (e.g., Midwest A) involved the mixing of oxidized, sandstone brine with relatively reduced fluids issuing from the basement into the sandstone. Basement-hosted, ingress-type (e.g., Triple R, Rabbit Lake) deposits formed by fluid-rock reactions between oxidizing sandstone brine entering basement fault zones and the wall rock. Both types of mineralization and associated host-rock alteration occurred at sites of basement-sandstone fluid interaction where a spatially stable redox gradient/front was present. Although either type of deposit can be high grade, with a few per cent to 20% U_3O_8, they are not physically large. In plan view, the deposits can be 100 m to 150 m long and a few metres to 30 m wide and/or thick. Egress-type deposits tend to be polymetallic (U-Ni-Co-Cu-As) and typically follow the trace of the underlying graphitic pelites and associated faults, along the unconformity. Ingress-type, essentially monomineralic U deposits, can have more irregular geometry.

Unconformity-type uranium deposits are surrounded by extensive alteration envelopes. In the basement, they are relatively narrow but become broader where they extend upwards into the Athabasca Group for tens to even 100 m or more above the unconformity. Hydrothermal alteration is variously marked by chloritization, tourmalinization (high boron, dravite), hematization (several episodes), illitization, silicification/de-silicification, and dolomitization (Hoeve, 1984).

Figure 8-1 illustrates various models for unconformity-type uranium deposits of the Athabasca Basin.

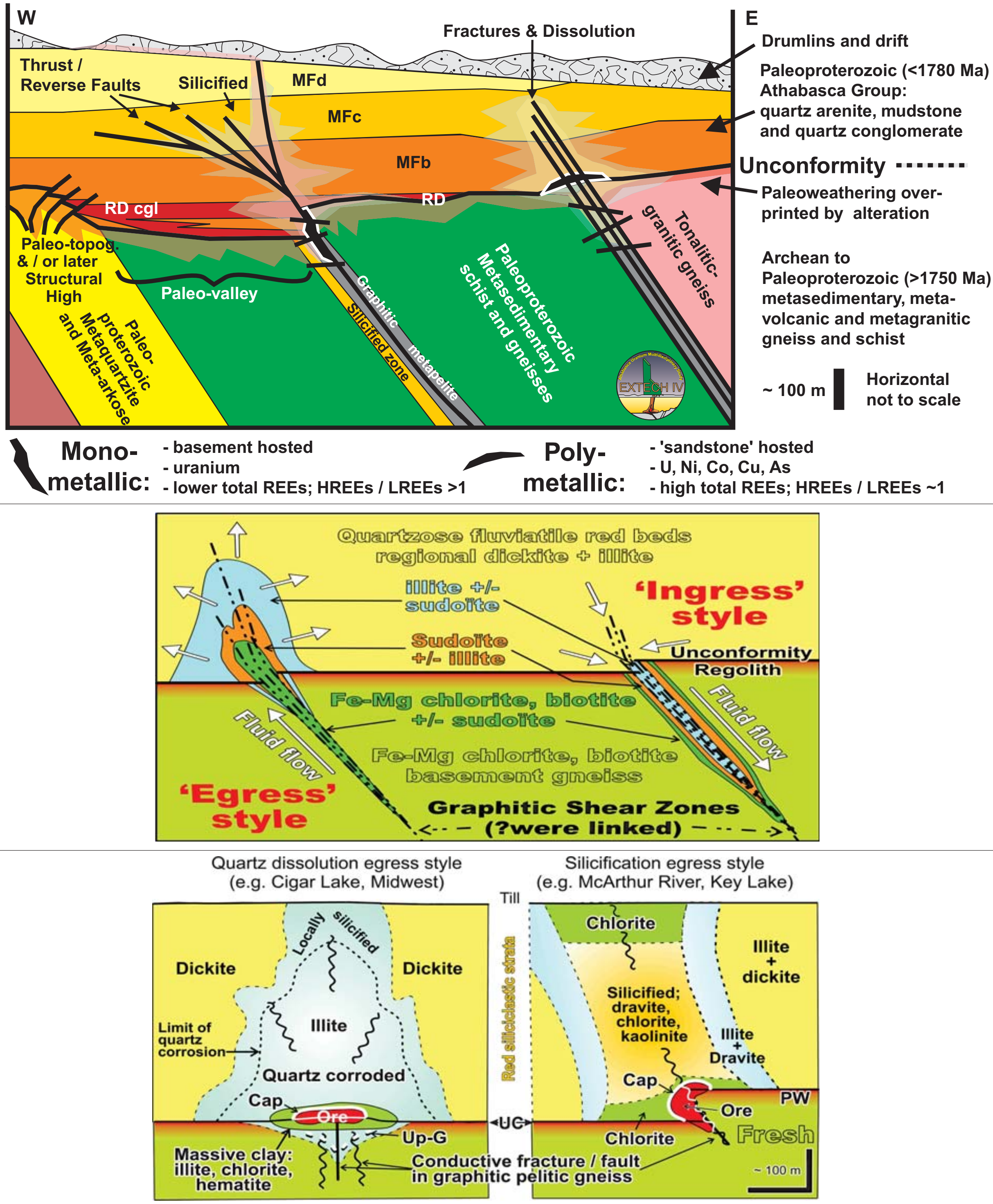


Figure 8-1

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Illustration of Various Models for Unconformity Type Deposits of the Athabasca Basin

September 2015

Source: From Jefferson et al., 2007.

9 EXPLORATION

With the exception of drilling, exploration work performed on the PLS Property by Fission Energy, ESO, and their successor companies since 2007 is summarized in this section. Work completed on the property and its immediate vicinity by other parties prior to 2007 is summarized in Section 6 of this report. Drilling completed on the property since 2011 is summarized in Section 10 of this report.

RADON AND GROUND RADIOMETRIC SURVEYS

2008 RADON AND RADIOMETRIC SURVEYS

From early to mid-October 2008, a preliminary Electret Ion Chamber (EIC) radon detection survey consisting of 280 sample locations on the northernmost portion of the property was completed by RadonEx Ltd. (RadonEx). A radiometric gamma survey was done concurrently with the radon survey. Sample locations were spaced 200 m apart along four east-west running lines. Locations were 100 m apart along Highway 955 and both branching four-wheel drive roads. Up to five tightly spaced sample locations were completed for each CanOxy alphameter anomaly on the property. Step-out and confirmation sample locations were completed as time allowed. Radon sampling was not conducted during or within 24 hours of a precipitation event.

Radon and radiometric values were generally low across the PLS Property (Armitage, 2013).

2011 RADON AND RADIOMETRIC SURVEYS

Throughout June 2011, a radon survey consisting of 462 sample locations on two grids was completed. A radiometric total count gamma-ray survey was carried out concurrently with the radon survey. Sample locations were spaced at 100 m intervals along north-south oriented lines, which were spaced 200 m apart. Grids 1 and 2 are located west and east of Highway 955, respectively. Radon sampling was not conducted during or within 24 hours of a precipitation event.

Radon values show strong anomalies related to the historical CanOxy alphameter anomalies and the 2009 airborne radioactive hotspots on Grid 1. Strong radon anomalies are associated with historical CanOxy electromagnetic conductors on Grid 2.

Three sample locations of interest are located in the northwest corner of Grid 1, away from the bulk of coincident radon and radiometric anomalies found in the south half of Grid 1.

The southeast corner of Grid 2 shows radon and radiometric anomalies south of the EM conductors. There are five radiometrically anomalous sample locations (PR11-404 to 408) in a column with only one of these locations (PR11-407) having strongly anomalous radon values. East of this anomalous radiometric column, sample location PR11-420 shows anomalous radon (1.65 pCi/m^2/sec) with a low radiometric value (50 cps) (Ainsworth, 2011b).

2013 RADON AND GROUND RADIOMETRIC SURVEYS

During January and February 2013, RadonEx conducted an EIC radon in lake water (radon-in-water) and radon in lake sediment (radon-in-sediment) survey on the property (Charlton, Owen and Charlton, 2013). Time-domain EM (TDEM and VTEM) conductors with coincident resistivity lows located along strike of the discovery hole PLS12-022 were targeted. Station spacing was 20 m on 60 m north-south oriented lines within four main areas across Patterson Lake. A total of 186 radon-in-water and 167 radon-in-sediment samples were collected.

In Areas 1 and 2, the western side of the survey, an east-west to east-northeast–west-southwest (ENE-WSW) trend appears in both sets of data. In Areas 3 and 4, the eastern side of the survey, the correlation between sediment and water results is less evident and results in these areas were generally lower than in the western section of the lake.

During April 2013, RadonEx conducted additional EIC radon-in-water and radon-in-sediment surveying on Patterson Lake (Charlton, Owen and Charlton, 2013b). Station spacing was generally 20 m and line spacing was generally 60 m. This survey was intended to infill areas from a previous radon-in-water and sediment survey, and to extend the coverage. A total of 151 sediment samples and 220 water samples were collected.

Most of the sediments collected were fine sand with small pebbles and small amounts of organic matter. Two areas were characterized by sediments with high iron content and pebbles with iron nodules, namely, the southwest portion of the survey area, where the highest concentration of anomalous radon readings is located, and the northeast portion of the survey area, where a few moderately anomalous readings were collected during the February 2013 radon survey. Iron enrichment in the northeast portion of the survey area is much less prominent than in the southwest portion of the grid.

A clear ENE-WSW trend in the radon-in-water results is coincident with the strong VTEM conductor and with the Triple R deposit. The trend also appears in the radon-in-sediment results to a lesser degree.

During August 2013, an EIC radon detection survey consisting of 434 sample locations was completed by RadonEx. A radiometric gamma survey was performed concurrently with the radon survey. Samples were located at 10 m intervals. Survey lines were from 100 m to 450 m in length and spaced from 10 m to 40 m.

The survey area extended approximately 700 m westward from discovery diamond drill hole PLS12-022 on the west shore of Patterson Lake, and was conducted to locate any additional mineralization down-ice and westward of the known mineralized zone.

Results suggested generally moderate variations in radon flux measurements across the survey area. Measurements appeared to increase towards the north end of the two north-reaching extension lines

2014 RADON SURVEYS

From January to March 2014, RadonEx conducted additional EIC radon-in-water and radon-in-sediment surveying on the property (Charlton, Owen and Charlton, 2014). The surveys covered four separate areas: three on Patterson Lake and one on nearby Forrest Lake. In total, the surveys consisted of 2,610 radon-in-water sample stations and 266 radon-in-sediment sample stations. Station spacing was generally 20 m and line spacing was generally 60 m, locally 30 m. The survey was intended to locate radon anomalous zones and trends along previously located geophysical conductor corridors interpreted from TDEM and VTEM surveys.

At Area A, covering the area of the mineralized zone and the primary conductive corridor, a series of discontinuous radon trends is evident and eleven radon-in-water anomalies and trends are chosen for potential drill testing. The top ten Area A radon-in-water results compare well with the R780E Zone radon-in-water results from 2013. A discordant set of radon anomalies is suggestive of east-southeast striking cross-faulting.

At Area B, in the northeastern section of Patterson Lake, two parallel radon trends are recognized, of which the north one is very strong and appears to correspond to a conductor axis. Radon trends are suggestive of north trending cross-faulting through the grid area.

The Area C radon coverage in the southwest part of Patterson Lake reveals two anomalous parallel radon trends, which partially correlate to conductors. Area C radon-in-water results compare very favourably with the 2013 R780E results. A north-trending fault is interpreted to displace and reorient the radon trends.

Area D is a large irregular grid covering northern parts of Forrest Lake. Water depths are much greater here, particularly in the D-2 area (>70 m), where the bottom is covered with a thick layer of organics. Radon signatures are masked and muted in this part of the lake and no radon targets are identified at D-2.

In the D-1 area to the northeast, where the lake is shallower, five extremely high radon-in-water anomalies were found, including some of the highest radon-in-water results yet recorded on the property.

During August 2014, Remote Exploration Services (Pty) Ltd (RES) conducted a RadonX radon cup survey over the 600W Zone at PLS (RES, 2014). In total, 580 cups were deployed in a grid with 20 m line spacing and 10 m cup spacing along line. The total area of the grid was 0.11 km^2. The survey was conducted in order to compare and confirm results from 2013 RadonEx radon cup surveying over the same grid area.

The survey results confirmed zones of anomalous and highly anomalous radon flux values (RnV) that in general are centred on or slightly to the north of the main ENE-WSW trending EM conductor that is associated with the mineralization. The orientation of this EM conductor parallels the interpreted strike of major fault structures in the area. Faults are known conduits for radon gas emanating from uraniferous mineralized bodies.

The western zone of anomalous RnV correlates with a delineated mineralized zone defined from drilling. Additionally, there is a northwest trend of slightly anomalous to anomalous RnV that intersects the north-northeast trend and could represent subordinate structures in this direction

During October 2014, RES conducted a radon cup survey over three separate areas east of Forrest Lake, approximately 10 km southeast of the Triple R deposit (RES, 2014b). In total, 867 cups were deployed. The grids consisted of 30 m line spacing and 20 m cup spacing along each line. The total area of the three grids encompassed 0.481 km^2.

The three grids targeted high priority conductors identified by airborne VTEM surveying and/or ground TDEM surveying, namely the PLV-68A conductor (Grid S1), the PLV-63D conductor (Grid S3), and the PLV-63C conductor (Grid S4). Areas and trends of anomalous radon flux measurements were observed on each of the three grids.

A helium-hydrogen-neon soil gas survey consisting of 110 stations was conducted by Petro-Find Geochem Ltd. in October 2014. The survey provided coverage along trend to the east and over top of the R600W zone, and was also designed to duplicate previous radon-in-soil measurement locations. Helium anomalies coincided with the R600W zone mineralization and with at least one prominent radon gas anomaly to the north.

AIRBORNE SURVEYS

2007 MEGATEM MAGNETIC AND ELECTROMAGNETIC SURVEY

During November 2007, prior to the execution of the PLS joint venture between Fission Energy and ESO Uranium, Fission and ESO completed a fixed wing combined electromagnetic (MEGATEM) and magnetic airborne survey over their respective mineral claims: S-110954 and S-110955 (Fission Uranium) and S-110707 and S-110723 (ESO). The results of the survey were of very low resolution (Armitage, 2013).

2009 AIRBORNE MAGNETIC AND RADIOMETRIC SURVEY

In mid-October 2009, Special Projects Inc. (SPI) completed a combined fixed wing LiDAR, radiometric and high resolution airborne magnetic geophysical survey over the northern portion of the property totalling approximately 3,342 line-km. Flight lines were oriented at 135° and were spaced at 50 m intervals. The aeromagnetic survey successfully delineated different basement lithologies. A structural interpretation was completed which identified the traces of surface and basement faults, shear zones, and areas of structural complexity (McElroy and Jeffrey, 2010). The airborne radiometric spectrometer survey outlined a number of uraniferous hot-spots within a 3.9 km long by 1.4 km wide area, which was subsequently found to be the result of a radioactive boulder field that contained boulders composed of massive or semi-massive uranium oxide minerals. This radioactive area extended south of claim S-111375, which led to the staking of claim S-111783 in April 2010.

2012 GEOTECH MAGNETIC AND ELECTROMAGNETIC SURVEY

In mid-February 2012, Geotech Ltd. completed a detailed, combined helicopter-borne versatile time-domain electromagnetic (VTEMplus) survey with Z and X component measurements and a horizontal magnetic gradiometer survey over the entirety of the property. Flight lines totalling 1,711.3 line-km and oriented at 135° were flown at 200 m line spacing.

The survey was instrumental in defining conductive packages over the property. Figure 9-1 illustrates the results of the survey.

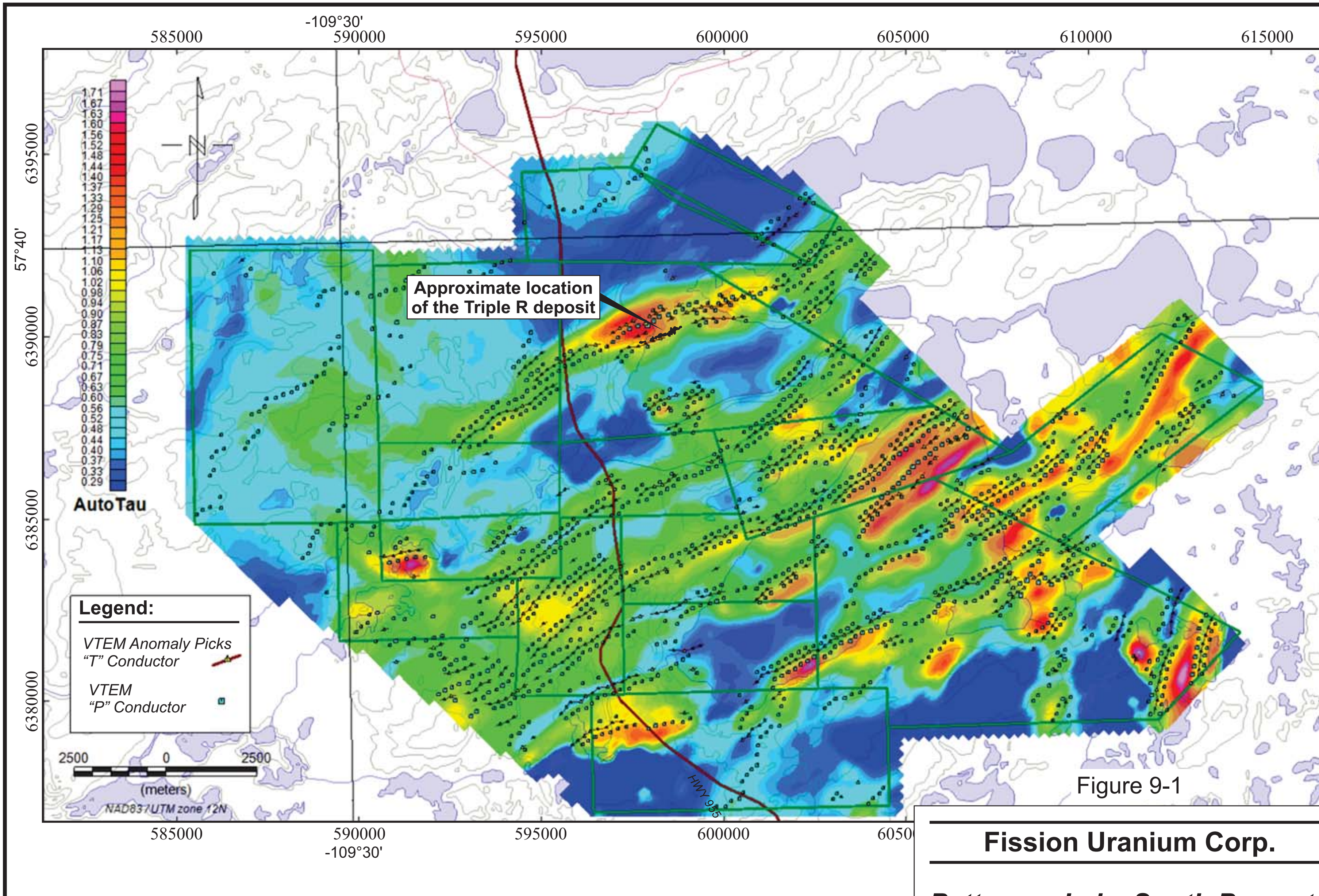


Figure 9-1

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

2012 VTEM Interpretation

September 2015

Source: D. Bingham, 2013-2014.

RPA

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2012 AIRBORNE RADIOMETRICS AND MAGNETIC SURVEY

From mid- to late September 2012, SPI completed a combined fixed wing LiDAR, radiometric, and magnetic survey over the southern portion of the property totalling 5,611.5 line-km of which 5,147.3 line-km were flown within the property boundary. The flight lines were oriented at 126° and were spaced at 50 m intervals.

The data was merged with the previous 2009 SPI high resolution survey to create a seamless magnetic grid over the Property area.

From the analysis of the field data, it was apparent that the geological setting of the property area is complicated and that there are numerous lineaments related to contacts and structures between basement units.

The property area has several predominant trends. The survey area is divided into three magnetic zones: a central zone (A) of relatively low magnetism characterized as predominantly northeast magnetic trends (conforming to the general domain orientation of the Athabasca Basin), a western zone (B) of relatively high magnetism with predominant northwest magnetic trends, and an eastern zone (C) of low magnetism with predominant north-northeast trends (Bingham, 2012).

Figure 9-2 illustrates the results of the merged, processed magnetic data and the three magnetic zones as interpreted by Bingham (2012)

In April 2014, SPI was commissioned to survey two blocks over the Triple R deposit and over part of the Forrest Lake conductor trend. The blocks were flown with orthogonal line directions and 50 m line spacing. The purpose of the survey was to provide a more detailed magnetic grid for better definition of structures, lithology, and magnetite depletion. Total survey coverage was 2,136 line-km.

During October 2014 Eagle Mapping Ltd. was contracted to obtain high resolution airborne LiDAR survey data from a 154 km^2 area encompassing the known mineralization.

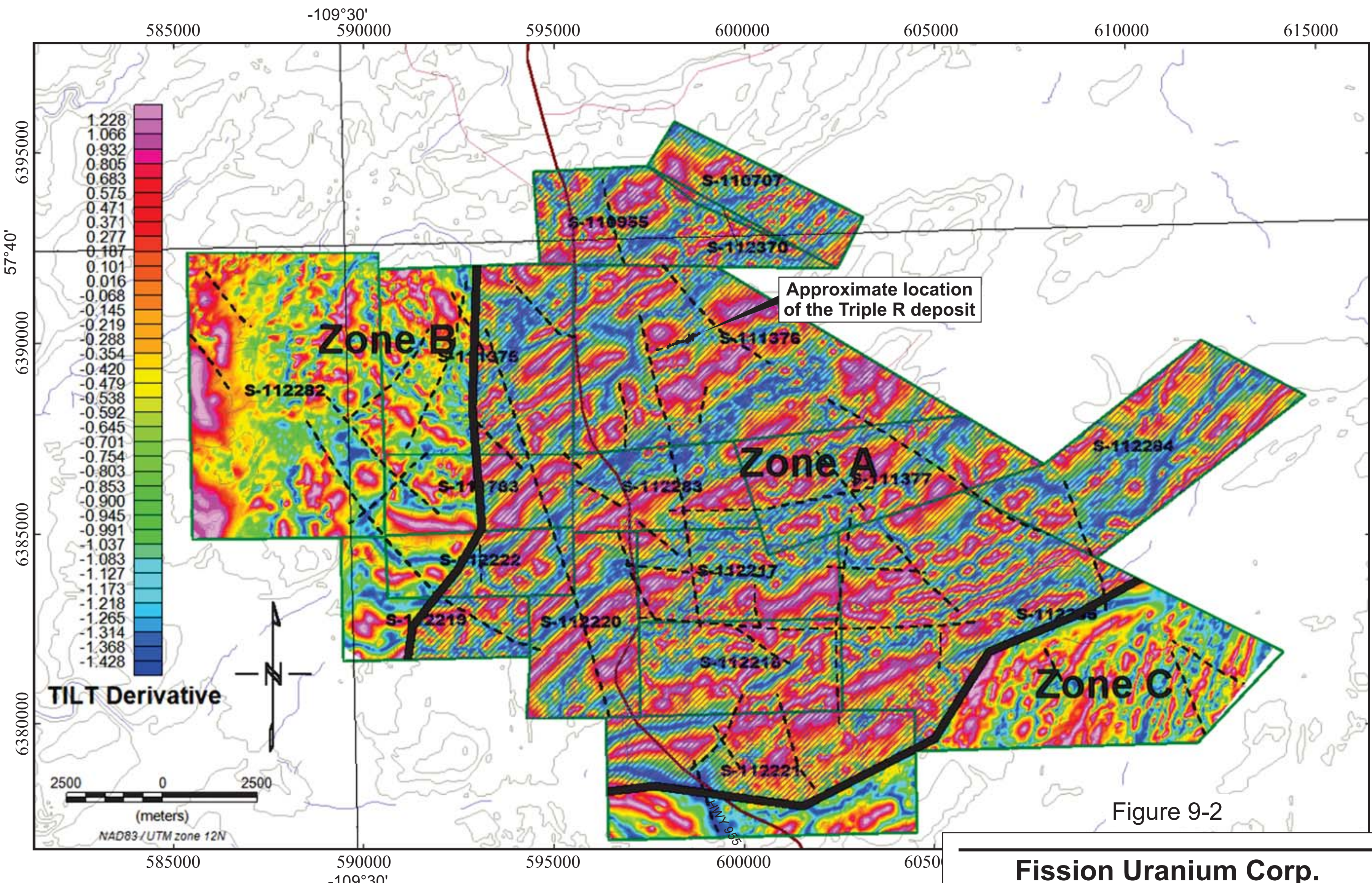

Figure 9-2

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Interpreted Major Structures and Tilt Derivative Magnetics

September 2015

Source: D. Bingham, 2013-2014.

RPA

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TRENCHING AND BOULDER SURVEYS

Several trenching and boulder surveys have been carried out on the property since 2011. Results are compiled in Figure 9-3.

JUNE 2011 BOULDER PROSPECTING

In June 2011, 89 radioactive hotspots from the 2009 airborne radiometric survey were investigated on the ground. The radioactive hotspots were spread out over an area of approximately 3.9 km long by up to 1.4 km wide that trended north-northeast to south-southwest.

Eight soil samples were also taken (PS11-01 to PS11-08), with only one of these samples having off-scale radioactivity.

Based on this small sample set, the strong pathfinder elements for the high grade uranium oxide include Au, B, Co, Cr, Cu, Li, Mo, Pb, Sb, Sr, Th, W, Zr, and most rare earth elements (REE). Nickel was not found to be a strong pathfinder element (Ainsworth, 2011b).

OCTOBER 2011 TRENCHING AND BOULDER PROSPECTING

From mid- to late October 2011, a program consisting of trenching and boulder prospecting was completed on mineral claims S-111375, S-111376, and S-111783.

A total of 18 trenches were excavated to assess the uraniferous boulder field that had been discovered in June 2011. The uraniferous boulders lie between two major terminal moraines of the Cree Lake Moraine. The trenches were located on three lines traversing the terrain in the up-ice direction. These trenches covered the region from the westernmost moraine to the northeast where surficial material bearing uraniferous boulders is overlain by non-radioactive overburden. The trenches were located on the ground using a handheld Garmin GPS unit.

A total of 25 soil samples and 21 boulder samples were recovered from the trenches.

The magnetic susceptibility of the materials was measured in trenches using an Exploranium KT-9 Kappameter. In general, the magnetic susceptibility of the surficial materials is much lower, less than 0.5 x 10-3 SI units, than in rock.

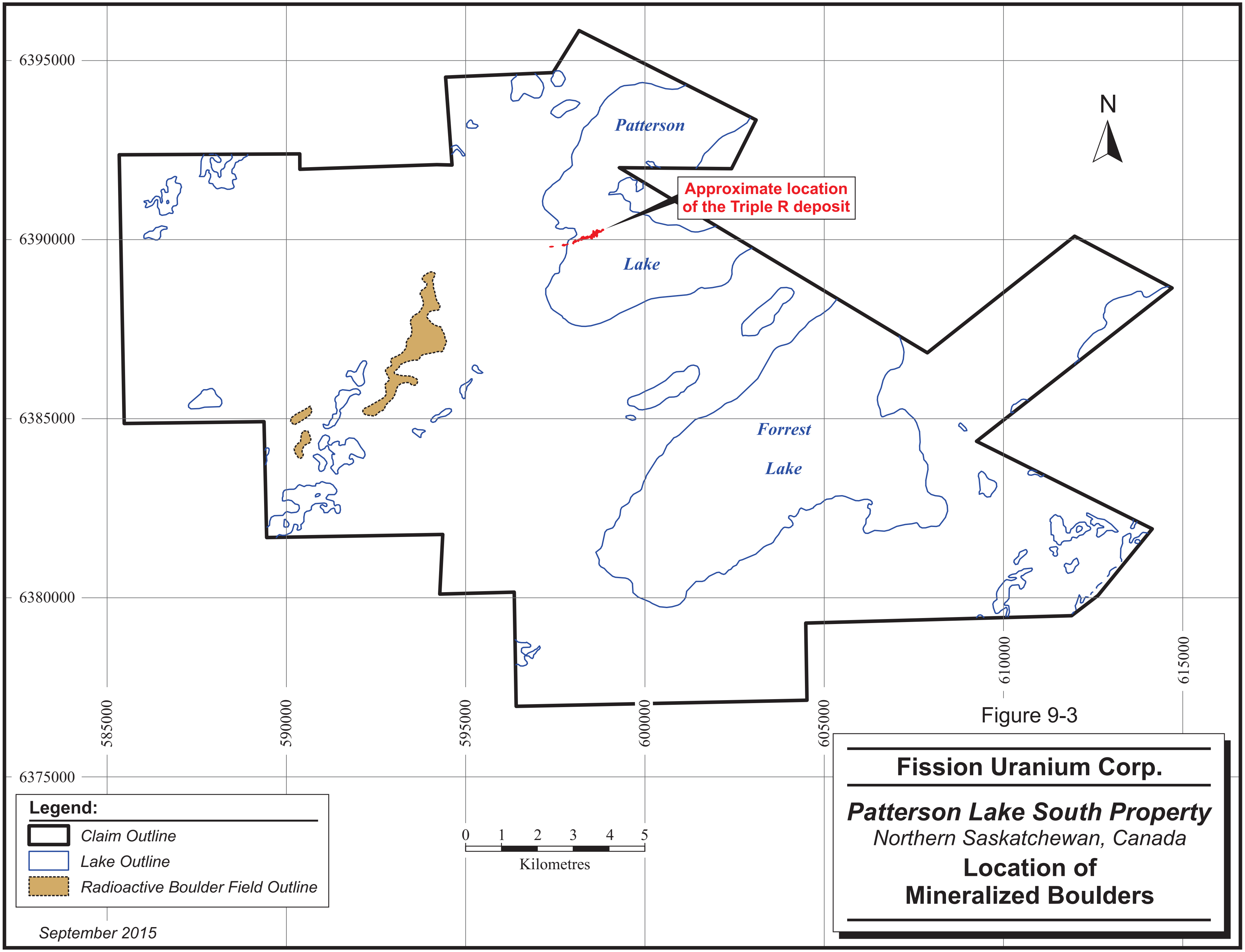

Figure 9-3

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Location of Mineralized Boulders

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An Exploranium GR-110 scintillometer was used to measure radioactivity. If a strongly radioactive area was found near the profile, the profile readings were located away from that area or otherwise recorded in the notes. In general, the radioactivity reflected the stratigraphy more strongly than the magnetic susceptibility, however, this may be a result of the values occurring over a wider range.

A total of 25 soil samples were recovered from trenches PT11-01 to PT11-16. Maximum radiometric values of the in-situ soil samples ranged from 80 cps to 2,418 cps. Uranium-in-soil values ranged from below detection limits (< 2 ppm U) to 336 ppm. All samples identified as non-radioactive assayed below detection limits, and all soils identified as radioactive assayed above detection limits, indicating a correlation between radioactivity and uranium values.

Eight boulders were found in trench PT11-08, three were found in trench PT11-06, two were found in each of trenches PT11-03, PT11-05, PT11-10 and PT11-11, and one was found in each of trenches PT11-12 and PT11-14. A total of 21 uraniferous boulders were recovered from the trenches (Ainsworth and Thomas, 2012).

In mid- to late October 2011, the boulder survey consisted of prospecting with an Exploranium GR-110 handheld scintillometer while trenches were being excavated or backfilled, and while traversing between trenches. The survey resulted in the discovery of many uraniferous boulders. Where radiometric readings were elevated, hand-dug test pits were excavated until a uranium mineralized boulder was found or no obvious radioactive source was located.

Forty-nine of the boulder samples (PB11-67 to PB11-115) were recovered within claims S-111375 and S-111783. All 49 uranium oxide mineralized boulders were found within the limits of the June 2011 boulder field over an area of approximately 4.9 km long by up to 0.9 km wide. These were composed of massive or semi-massive uranium oxide minerals, or were basement rocks that contained blebs and/or finely disseminated uranium oxide minerals. The boulder samples ranged from gravel sized up to 25 cm x 30 cm x 40 cm. Radioactivity of these boulders ranged from 701 cps to >9,999 cps (off-scale), and assays ranged from 0.07% U_3O_8 to 31.4% U_3O_8 (Ainsworth and Thomas, 2012).

OCTOBER 2012 BOULDER PROSPECTING

From early to mid-October 2012, radioactive hotspots in two separate areas identified by the September 2012 SPI airborne survey were investigated on the ground.

Boulder surveying in the Patterson Lake area recovered 40 radioactive boulders with 17 of those samples having off-scale radioactivity (>9,999 cps). Thirty-six of these 40 boulder samples were composed of massive or semi-massive uranium oxide minerals, or were basement rocks that contained visible blebs and/or finely disseminated uranium oxide minerals. The boulder samples ranged from gravel sized to 30 cm in the longest dimension, and assayed from 9 ppm U to 40.0% U_3O_8. These additional boulder samples increased the size of the Patterson Lake boulder field to approximately 7.35 km long by up to 1.0 km wide.

The strong pathfinder elements for the high grade uranium oxide are consistent with previous surveys, namely: Au, B, Co, Cr, Cu, Li, Mo, Pb, Sb, Sr, Th, W, Zr, and most REE.

Boulder prospecting in the Forest Lake area recovered eight radioactive boulders with radioactivity ranging from 139 cps to 1,060 cps. No visible uranium mineralization was observed in any of the basement boulders that comprised lithologies of quartz-feldspar gneiss, schist, and quartz-feldspar-mafic granite and pegmatite. These boulders ranged from cobble sized to over 80 cm in the longest dimension. The boulders assayed from 6 ppm U to 84 ppm U (Ainsworth, 2012b).

GROUND GEOPHYSICAL SURVEYS

2008 SELF-POTENTIAL SURVEY

In early October 2008, a preliminary self-potential (SP) survey consisting of three lines totalling 8.7 km was completed. SP stations were spaced at 20 m intervals along the lines. Negative values represent most SP anomalies. Lithologic conditions targeted in this survey were clay altered zones, which are conductive and exhibit a negative SP anomaly.

The SP survey values ranged from -339 mV to +124 mV. Four anomalies were delineated (Ainsworth and Beckett, 2008).

2011 AND 2012 DC RESISTIVITY, HLEM AND SQUID-EM SURVEYS

Geophysics carried out during November and December 2011 and February through April 2012 consisted of DC Resistivity, MaxMin HLEM, and very Small Moving Loop SQUID-EM (SQUID-EM) surveys. The ground geophysics was carried out on the PLS Main Grid area as a follow-up over a radioactive uraniferous boulder field located five kilometres to the southwest that had been discovered in June 2011. Survey totals were 30.58 km of MaxMin HLEM, 83.60 km of resistivity, and 14.40 km of SQUID-EM.

The DC Resistivity was successful in defining a number of potential targets based on conductivity, changes in the width of conductive packages, and more subtle features indicating possible cross structures. The Resistivity and VTEM were initially used for drill targeting with a limited amount of ground SQUID-EM used to follow up some VTEM targets (Bingham, 2012).

2012 AND 2013 RESISTIVITY AND SQUID-EM SURVEYS

Geophysics carried out during 2012 and 2013 consisted of DC Resistivity, SQUID-EM surveys on the PLS West Grid area, and SQUID-EM surveys and Small Moving Loop Transient EM survey coverage on the PLS Main Grid area. Survey totals were 24.6 line-km of resistivity and 30.9 line km of EM surveys.

The extended resistivity data of both the PLS Main Grid and PLS West Grid appeared to be more effective in mapping the expected conductive Cretaceous sediments in this area.

Three conductors were outlined with the ground SQUID-EM survey on the PLS West Grid. The south conductor is the most prospective due to strike length, conductivity, and an association with an enhanced basement resistivity low in the vicinity of the conductor on lines 2400E and 2600E. Line 2400E shows a marked increase in amplitude and conductivity. The west end of the central conductor may have a structural association. The north conductor is of low priority mostly due to its apparent shallow dip.

On the PLS Main Grid, the SQUID-EM surveys in-filled and located the south (mineralized), central, and north conductors along the main conductor trends. The amplitude of the south (mineralized) “B” conductor is very weak and flat lying on lines 7200E and 7400E. The south (mineralized) “B” conductor is interpreted as much deeper and weaker on the east extent (Lines 7000, 7200, and 7400) (Bingham, 2013).

2013 AND 2014 RESISTIVITY AND SQUID-EM SURVEYS

Geophysics carried out during late 2013 and early 2014 consisted of DC Resistivity and very Small Moving Loop SQUID-EM surveys conducted by Discovery Int'l Geophysics Inc. (Discovery). During the periods July to August 2013 and September to October 2013, pole-dipole resistivity surveys were completed over the Verm and Far East Grids. During December 2013, pole-dipole resistivity surveys were carried out over the Area B and Forrest Lake grids. During December 2013 to February 2014, Discovery carried out HT SQUID Small Moving Loop TEM surveys over the Area B, Far East, Forrest Lake, and Verm grids. A total of 93.9 km of pole-dipole DC Resistivity and 43.7 km of Small Moving Loop EM surveys were conducted.

The 2013-2014 geophysical surveys were successful in defining priority ground targets based on a combination of resistivity and EM surveys over priority areas based on previous VTEM surveys. Additional follow-up work is recommended.

2014 AND 2015 LAKE BOTTOM SPECTROMETER SURVEY

A proprietary lake bottom spectrometer survey system developed by SPI was operated during April-May 2014 at Area A, covering the area of known mineralization and the primary conductive corridor, and at Area B in the northeastern section of Patterson Lake. The system consisted of a 150 $in.^3$ sodium-iodide crystal with digitizing electronics for remote data acquisition and control, housed in a temperature controlled casing. The survey was carried out from lake ice utilizing snowmobile/sled and a Novatel L1-L2 Glonass GPS. A total of 1,185 measurements were collected at 20 m stations along 50 m spaced lines that were designed to run parallel to the EM conductor trend in the target areas.

Analysis of the results indicate that the system detected uranium mineralization at 585E and 1080E, and elsewhere anomalous uranium values generally coincided with RadonEx EIC radon-in-water values.

During the same timeframe as the lake bottom spectrometer survey, SPI utilized a proprietary four channel ground penetrating radar (GPR) system towed behind a tracked vehicle to complete approximately 180,000 water depth measurements in the central and northeast areas of Patterson Lake. The water depths matched up well with depths from diamond drilling and earlier radon-in-water surveys.

10 DRILLING

As of the effective date of this report, Fission Uranium and its predecessor companies have completed 144,661.5 m of drilling in 467 holes on the PLS Property. Table 10-1 lists the holes by drilling program. Figure 10-1 illustrates the collar locations of the drill holes.

TABLE 10-1 DIAMOND DRILLING PROGRAMS
Fission Uranium Corp. - Patterson Lake South Property

Drilling Program	Type	Number of Holes	Holes	Metres Drilled
Nov-Dec 2011	Diamond Drilling	7	PDD11-01 - PDD11-07	837.7
Feb-Apr 2012	Diamond Drilling	16	PLS12-001 - PLS12-016	2179.4
Oct-Nov 2012	Diamond Drilling	9	PLS12-017 - PLS12-025	1658.5
Oct-Nov 2012	Dual Rotary	12	PLSDR12-001 - PLSDR12-012	1547.9
Jan-Apr 2013	Diamond Drilling	46	PLS13-026 - PLS13-071	9942.1
Jul-Nov 2013	Diamond Drilling	53	PLS13-072 - PLS13-124	15,564.0
Jan-Apr 2014	Diamond Drilling	92	PLS14-125 - PLS14-216	34,252.1
Jul-Sep 2014	Diamond Drilling	82	PLS14-217 - PLS14-298	28,344.6
Jan-Apr 2015	Diamond Drilling	88	PLS15-299 - PLS15-386	28,297.5
July-Sep 2015	Diamond Drilling	62	PLS15-387 – PLS15-444	22,037.7
Total		**467**		**144,661.5**

Drill data from the summer of 2015 was not used to estimate Mineral Resources since chemical assay data was not yet available. The effective date of the Mineral Resource estimate reported in Section 14 is July 28, 2015.

DIAMOND DRILLING

Since November 2011, 467 diamond drill holes have been completed on the property. Of these, 358 are located within the Triple R deposit area. The initial drill program in 2011 was contracted to Aggressive Drilling Ltd. from Saskatoon, Saskatchewan, that used a skid-mounted Boart Longyear LF-70 drill. From February 2012 to April 2013, the drilling was contracted to Hardrock Diamond Drilling Ltd. from Penticton, British Columbia, which used Atlas Copco CS-10 and CS-1000 skid-mounted drills. From July 2013 onwards, drilling was carried out by Bryson Drilling Ltd. from Archerwill, Saskatchewan, using Zinex Mining Corp A5 diamond drills.

Unless the hole was pre-cased using an RC drill, the usual procedure was to drill through the overburden with HQ (60.3 mm diameter) equipment and sink HW (117.65 mm) casing until the rods became stuck or bedrock was reached. If the HQ rods became stuck, the hole was deepened using NQ (47.6 mm diameter) equipment until competent bedrock was reached at which time NW (91.95 mm) casing was reamed into bedrock.

Until the summer of 2014, all holes drilled from the lake were oriented vertically. Holes drilled during the 2011 and winter 2012 drilling programs were tested for dip deviation with acid tests. The fall 2012 drilling program holes were either acid tested or surveyed with a Reflex EZ-Shot instrument. Upon completion, all holes drilled in 2013 were surveyed using an Icefields gyro survey tool. The Icefields gyro was replaced in 2014 by a Stockholm Precision Tools north seeking gyro. For the winter 2015 drill program, an Icefields gyro shot instrument was used to survey all drill holes. From the summer 2013 drill program onwards, drill holes were also surveyed while drilling was underway using a Reflex EZ-Shot at 50 m intervals.

All holes were systematically probed within the rods using a Mount Sopris 500 m (4MXA-1000) or 1,000 m (4MXC-1000) winch, Matrix logging console, and either a 2PGA-1000 or 2GHF-1000 total gamma count probe upon completion of the hole. Handheld Exploranium GR-110 total count gamma-ray scintillometers were used to measure the radioactivity of the return water and core until the winter 2014 program, after which Radiation Solutions RS-121 total count gamma-ray scintillometers were used.

The collars of the 2011 and winter 2012 program holes were located using a handheld Garmin GPSMAP 60CSx instrument. During the winter 2013 program, drilled holes were located using a Trimble GeoXH handheld GPS instrument and a Trimble 5800 base station for differential correction. From the summer 2013 drill program onwards, all holes were located using a Trimble R10 GNSS real time kinematic (RTK) system. All drill hole positions from the 2012 fall program onwards were surveyed again upon completion of the hole to account for moving of the drill, due to the either ground conditions or drilling difficulty. All roads and traverses travelled were located with a handheld Garmin GPSMAP 60CSx or Trimble instrument noted above.

Initially, the core from the first drilling programs was stored at the Big Bear Lodge on Grygar Lake, but since August 2013, all the core has been stored at a purpose-built storage facility located west of Patterson Lake.

DUAL ROTARY DRILLING

From October to November 2012, twelve 4.5 in. (11.43 cm) diameter dual rotary drill holes totalling 1,547.9 m were completed by J.R. Drilling Ltd. of Cranbrook, British Columbia, using a Foremost DR-12 drill. The drilling was meant to penetrate the glacial sediments overlying bedrock so that the specific (and more radioactive) till sheet hosting uranium mineralized boulders could be traced back to bedrock source by gamma probing the overburden. Additionally, some rotary drill hole collars were planned to also test bedrock VTEM and time-domain EM (TDEM) conductors by drilling approximately 20 m into solid bedrock. The overburden and basement material was collected on site in sampling buckets at one metre intervals. Each bucket was measured using an Exploranium GR-110G total count gamma-ray scintillometer, and a one to three kilogram sub-sample was removed for logging.

Each drill hole was logged using a Mount Sopris 2PGA-1000 gamma probe. Additionally, holes PLSDR12-001 and PLS12-009 through PLSDR12-012 were surveyed using a custom downhole spectrometer probe, built and operated by Special Projects Inc. A Trimble GeoXH handheld GPS instrument and a Trimble 5800 base station for differential corrections were utilized to locate all dual rotary drill hole locations.

According to Ainsworth (2012b), accurate and precise sample collection for geochemical analysis was challenging due to several factors. Sample volume returned through the cyclone was at times overwhelming, and was further complicated by the large influx of groundwater. The drilling itself introduced sample bias especially in terms of size fraction and relative abundance. It was found that fine materials were prone to be either washed or blown away. Since the maximum size of returned samples was approximately two centimetres to three centimetres, it can be presumed that material larger than small pebbles was either pushed out of the way or crushed by the advancing drill bit and casing.

The current working depth of each rotary hole was determined by marking the casing every metre. The inaccuracies of this method were confirmed by comparing the determined final depth to the gamma probe wire line measured final depth; discrepancies of several metres were common.

Caving of material around the casing and subsequent transport to surface introduced sample contamination, especially in thick sand units beneath the water table.

REVERSE CIRCULATION DRILLING

In January 2013, the process of pre-drilling the casings of most holes was initiated. Northspan Explorations Ltd. (Northspan) was contracted to set the casing to a targeted depth of one metre to two metres above bedrock. Northspan used either a Hornet XL or Attacus RC drill to sink the HW (117.65 mm) casing. No samples were recovered during the RC drilling. A Trimble GeoXH handheld GPS instrument and Trimble 5800 base station for differential corrections were utilized to locate all drill collar locations during the winter 2013 program. From the summer 2013 drill program onwards, all holes were located using a Trimble R10 GNSS real time kinematic (RTK) system.

DRILL CORE SAMPLING

Core recovery is generally very good, allowing for representative samples to be taken and accurate analyses to be performed.

The drill core was placed sequentially in wooden core boxes at the drill by the drillers. Twice daily, the core boxes were transported by Fission Uranium personnel to the core logging and sampling facility where depth markers were checked and the core was carefully reconstructed. The core was logged geotechnically on a run by run basis including the number of naturally occurring fractures, core recovery, rock quality designation (RQD), and range of radiometric counts per second. The core was scanned using an Exploranium GR-110G total count gamma-ray scintillometer until the winter 2014 program, after which Radiation Solutions RS-121 scintillometers were used. During the 2015 winter program and onwards clay mineralogy was identified in the field using an ASD Inc. TerraSpec Halo near infrared mineral analyzer.

The core was descriptively logged utilizing a Panasonic Tough Book laptop computer by a Fission Uranium geologist paying particular attention to major and minor lithologies, alteration, structure, and mineralization. Logging and sampling information was entered into a spreadsheet based template which was integrated into the Project digital database.

All drill core was photographed wet with a digital camera, before splitting.

Fission Uranium's sampling protocol calls for representative samples to be taken of both sandstone and basement lithologies. At least one representative sample of sandstone

(Devonian or Athabasca) was taken when intersected. In thicker zones of sandstone (>5 m), representative samples were taken at 2.5 m intervals. Representative samples of basement lithologies consisting of 50 cm of split core (halved) were taken every 10 m within the basement, starting immediately in bedrock.

In addition to the representative samples, point samples were taken in both sandstone and basement lithologies.

All sandstone and basement intervals with handheld scintillometer readings greater than 300 cps, or containing significant faults and associated alteration, were continuously sampled with a series of 50 cm split core samples. In areas of strong to intense alteration, evenly spaced 50 cm split core samples were taken from the start of the alteration. The spacing of the samples varied with the width of the alteration zone as follows: one metre spacing for alteration zones less than or equal to five metres long, two metre spacing for alteration zones between five metres and 30 m long and, five metre spacing for alteration zones more than 30 m long.

Samples for density measurements were taken in both sandstone and basement lithologies. Because of the limited thickness of sandstone intersected on the property, Sarioglu (2014) recommended that a least one sandstone sample be taken for density measurement per hole, where possible. Density samples in mineralized basement or sandstone giving handheld scintillometer readings greater than 300 cps were taken at 2.5 m intervals. No density samples were taken in barren sandstone from the 2014 summer drill program onwards. Basement samples for density outside the mineralized zone were taken at 20 m intervals until the winter 2014 drill program, after which no barren basement density samples were taken.

Core marked for sampling was split in half using a manual core splitter. Half the core was returned to the core box and the other half was placed in plastic sample bags and secured with an impulse sealer.

Split core samples were tracked using three part ticket booklets. 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 an Excel spreadsheet and stored on the Fission Uranium 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.

Core trays were marked with aluminum tags. All core from holes drilled on the property is stored on core racks at Fission Uranium's core logging facility.

The plastic sample bags were put into five-gallon sample pails and sealed and were held in a secure area until they were ready for transportation. The samples were picked up on site by Marsh Expediting and transported by road to La Ronge before transhipment to Saskatchewan Research Council (SRC) in Saskatoon. SRC operates in accordance with ISO/IEC 170:2005 (CAAN-P-4E) General Requirements of Mineral Testing and Calibration Laboratories) and is also compliant with CAN-P-1579, Guidelines for Mineral Analysis Testing Laboratories.

At SRC, sandstone and basement samples were prepared in separate areas of the laboratory to minimize the potential for contamination. Sample preparation in the laboratory involved drying the samples and sorting them according to radioactivity before jaw crushing.

In RPA's opinion, the logging and sampling procedures meet or exceed industry standards and are adequate for the purpose of Mineral Resource estimation.

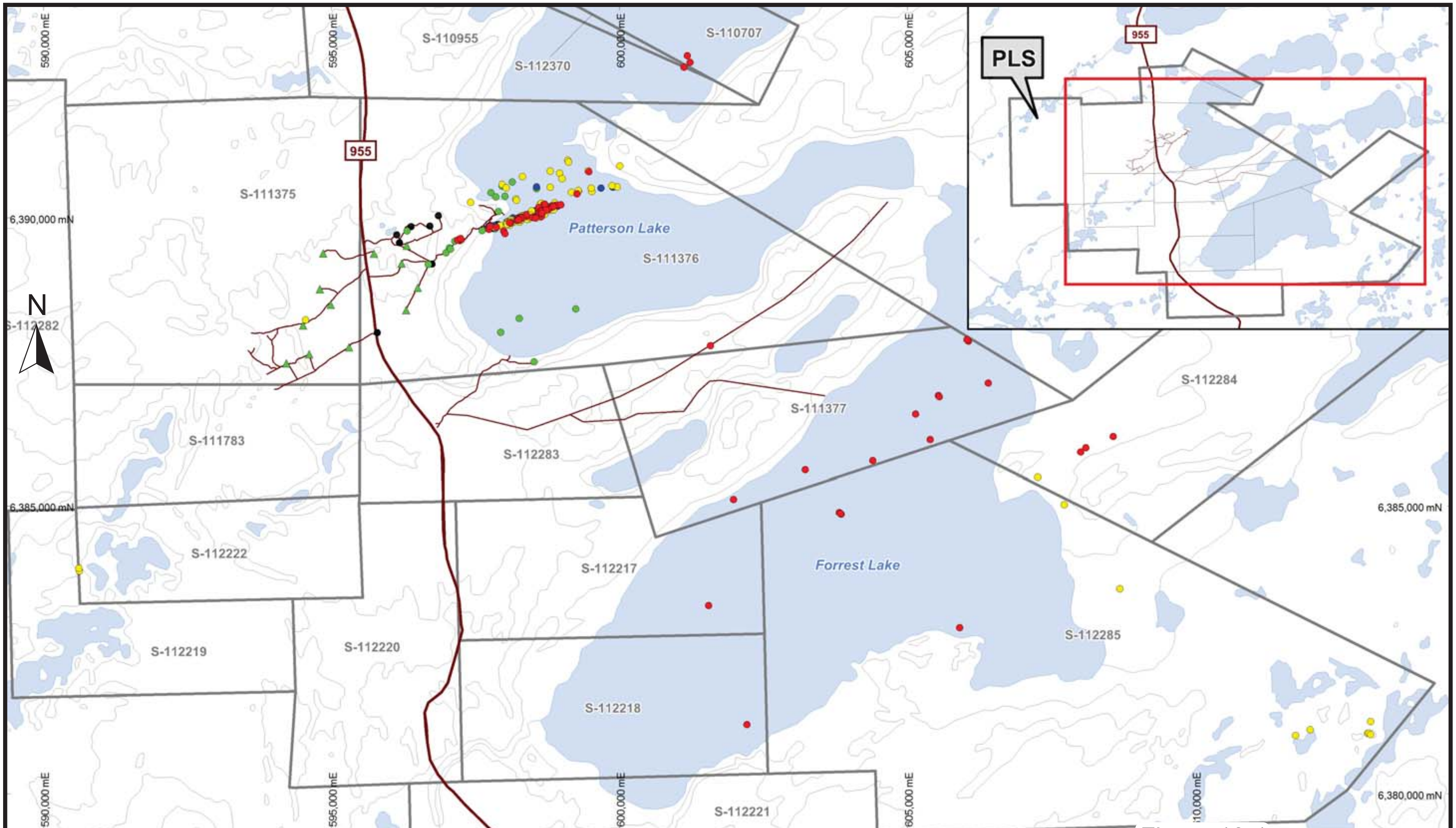


Figure 10-1

Legend:

Claim Boundary	Water Course	2015 Diamond Drill Hole Location
S-111376 Claim Number	Topographic Contour	2014 Diamond Drill Hole Location
Water Body	Highway	2013 Diamond Drill Hole Location
	Access Trail	2012 Diamond Drill Hole Location
		2012 Rotosonic Drill Hole Location
		2011 Diamond Drill Hole Location

0 1 2 3 4 5
Kilometres

September 2015

Source: Fission Energy Corp., 2015.

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Drill Hole Location Plan

RPA

www.rpacan.com

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

SAMPLE PREPARATION AND ANALYSIS

DRILL CORE GEOCHEMICAL ANALYSIS

All geochemistry core samples were analyzed by the ICP1 package offered by SRC, which includes 62 elements determined by inductively coupled plasma optical emission spectrometry (ICP-OES). All samples were also analyzed for boron until the end of the winter 2012 drill program and uranium by fluorimetry (partial digestion). Uranium by fluorimetry was replaced at SRC in late 2012 by inductively coupled plasma mass spectrometry (ICP-MS) analysis, which was discontinued on Fission Uranium's samples after the winter 2013 drill program.

For partial digestion analysis, samples were crushed to 60% passing -2 mm and a 100 g to 200 g sub-sample was split out using a riffler. The sub-sample pulverized to 90% passing -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 was digested in a mixture of HNO_3:HCl in a hot water bath for an hour before being diluted by 15 mL of de-ionized water. The samples were then analyzed using a Perkin Elmer ICP-OES instrument (models DV4300 or DV5300). For total digestion analysis, an aliquot of pulp was digested to dryness in a hot block digester system using a mixture of concentrated HF:HNO_3:$HCLO_4$. The residue was then dissolved in 15 ml of dilute HNO_3 and analyzed using the same instrument(s) as above.

Select samples with low concentrations of uranium (<100 ppm) identified by the partial and/or total ICP-OES analysis were also analyzed by fluorimetry (2012) and ICP-MS (winter 2013). After being analyzed by ICP-OES, an aliquot of digested solution was pipetted into a 90% Pt - 10% Rh dish and evaporated. A NaF/LiF pellet was placed on the dish and fused on a special propane rotary burner then cooled to room temperature. The uranium concentration of the sample was then read using a Spectrofluorimeter. Uranium by fluorimetry has a detection limit of 0.1 ppm (total) or 0.02 ppm (partial). In the fall of 2012 uranium analysis by fluorimetry was replaced at SRC with uranium by ICP-MS. For ICP-MS partial digestions an aliquot of sample pulp is digested in a mixture of concentrated nitric hydrochloric acid (HNO_3:HCl) in a test tube in a hot water bath, then diluted using deionized water.

For boron analysis, an aliquot of pulp was fused in a mixture of NaO_2/$NaCO_3$ in a muffle oven. The fused melt was dissolved in de-ionized water and analyzed by ICP-OES.

DRILL CORE ASSAY

Drill core samples from mineralized zones were sent to SRC for uranium assay. The laboratory offers an ISO/IEC 17025:2005 accredited method for the determination of U_3O_8 in geological samples. The detection limit is 0.001% U_3O_8. Samples were crushed to 60% -2 mm and a 100 g to 200 g sub-sample was split out using a riffle splitter. The sub-sample was pulverized to 90% -106 µm using a standard puck and ring grinding mill. An aliquot of pulp was digested in a concentrated mixture of HNO_3:HCl in a hot water bath for an hour before being diluted by de-ionized water. Samples were then analyzed by a Perkin Elmer ICP-OES instrument (models DV4300 or DV5300).

In addition to uranium assaying, all samples from mineralized zones were also assayed by SRC for gold and, until mid-summer 2014, platinum group elements (Pt, Pd). Samples are prepared using the same method as described above. An aliquot of sample pulp was mixed with fire assay flux in a clay crucible and a silver inquart was added prior to fusion. The mixture was fused at 1,200°C for 90 minutes. After the mixture had fused, the slag was poured into a form which was cooled. The lead bead was recovered and chipped until only the precious metal bead remains. The bead was then parted in diluted HNO_3. The precious metals were dissolved in aqua regia and then diluted for analysis by ICP-OES and/or Atomic Absorption Spectrometry (AAS). The analysis has a detection limit of 2 ppb for all three elements. SRC participates in CANMET (CCRMP/PTP-MAL) proficiency testing for elements assayed using this method.

DRILL CORE PIMA ANALYSIS

Core chip samples for clay analysis were sent to Rekasa Rocks Inc, a private facility in Saskatoon, for analysis on a PIMA spectrometer using short wave infrared spectroscopy. Samples were 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 were 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.

DRILL CORE PETROGRAPHIC ANALYSIS

Samples collected for petrography were sent to Vancouver Petrographics Ltd, Langley, British Columbia, for the preparation of thin sections and polished slabs. Petrographic analysis was performed in the office of Mineral Services Canada Inc. (MSC) using a Nikon Eclipse E400 microscope equipped with transmitted and reflected light.

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.

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. Fission Uranium's program includes the following components:

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

2) Determination of accuracy – achieved by regular insertion of standards or materials of known composition;

3) Checks for contamination – by insertion of blanks.

Results from the QA/QC program are reviewed on an ongoing basis as received from the laboratory and a formal report is compiled by MSC at the end of each drill campaign.

PROTOCOLS FOR DUPLICATES

Four types of duplicate samples are submitted:

a) ***Field duplicates***: These are quarter core duplicates split in Fission Uranium's core facility. The field duplicate contains all levels of error: core splitting, sample size reduction, sub-sampling of the pulp, and the analytical error. One duplicate is to be inserted for every 20 regular samples. For mineralized drill holes, at least two field duplicate samples should be taken, one from the mineralized zone and one from unmineralized basement. In thicker mineralized zones (> 20 m), a field duplicate should be taken every 20 samples. For each drill hole, the field duplicates should be retained and inserted into the batch at the end of the hole and assigned sample numbers following on from the last sample in the hole.

b) ***Preparation duplicates***: These are sample splits taken after the coarse crush but before pulverizing. A preparation duplicate should be inserted for each field duplicate submitted. The preparation duplicates are taken by the laboratory. To facilitate this, during sampling, an empty sample bag with a Fission Uranium sample tag is inserted into the batch after each field duplicate with instructions for the laboratory to prepare and insert a preparation duplicate of the previous sample.

c) ***Pulp duplicate***: This is a split of the pulp material that is weighed and analyzed separately. Similar to the preparation duplicate, the pulp duplicates are inserted for each field duplicate by inserting an empty bag with a Fission Uranium sample tag and instructions for the laboratory to prepare and insert a duplicate of the pulp from the previous sample.

d) ***Umpire pulp duplicates:*** *Umpire* pulp duplicates are submitted to a third party laboratory to make an additional assessment of laboratory bias. Fission Uranium arranged the consignment of 150 preparation and 150 pulp duplicates from the 2014 summer drill program to be analysed at SGS Minerals in Lakefield, Ontario. The sample preparation and analytical methods were similar to those at SRC.

PROTOCOLS FOR STANDARDS AND BLANKS

Certified reference materials (CRM) were obtained from Canadian Centre for Mineral and Energy Technology (CANMET). These include UTS-3 (0.060% U_3O_8), DH-1A (0.310% U_3O_8), and BL-5 (8.36% U_3O_8) which represent low, medium and high grade references, respectively. Blank material was sourced from the remaining half split core of previously analyzed samples that returned uranium concentrations below detection limits for the 2013 program and massive quartz veins intersected on the property during the 2014 program.

One blank was inserted for each drill hole that intersects mineralization. Blank reference samples were not submitted for holes that did not intersect mineralization.

One of each reference sample type was inserted into the sample batch for each drill hole that intersected mineralization. CRM containers were shaken prior to use to ensure homogeneity and 15 g of material was required per sample. Samples were taken with clearly marked plastic spoons to avoid cross contamination between containers. For holes that did not intersect mineralization, only the low grade reference sample was inserted.

QA/QC RESULTS

Results from the QA/QC program are documented in various reports by MSC. RPA relied on these reports in addition to independent verifications and review of QA/QC data. In summary, results indicated that the resource database is suitable to estimate Mineral Resources for the Triple R deposit.

Tables 11-1 and 11-2 summarize the different types of QA/QC samples and sample counts. Prior to the winter 2012 drill program, the only QA/QC procedures implemented on samples from the PLS Property were those performed internally by SRC as discussed below.

TABLE 11-1 SUMMARY OF QA/QC SOURCE AND TYPE BY YEAR
Fission Uranium Corp. - Patterson Lake South Property

	2011 Fall	2012 Winter	2012 Fall	2013 Winter	2013 Summer	2014 Winter	2014 Summer	2015 Winter
Blanks (pulp)	N	N	N	Y	N	N	N	N
Blanks (rock)	N	N	N	N	Y	Y	Y	Y
Fission CRMs	N	N	N	Y	N	N	N	N
CANMET CRMs	N	N	N	N	Y	Y	Y	Y
Field Duplicate, Prep & Pulp Duplicates								
Partial and total (ppm) duplicates (1/4 split)	N	Y	Y	Y	Y	Y	N	N
Partial and total (ppm) duplicates (1/2 split)	N	N	N	N	N	Y	Y	Y
U_3O_8 wt.% duplicates (1/4 split)	N	N	Y	Y	Y	Y	N	N
U_3O_8 wt.% duplicates (1/2 split)	N	N	N	N	N	Y	Y	Y
SRC CRMs for U_3O_8	N	Y	Y	Y	Y	Y	Y	Y
SRC CRMs for Au	N	Y	Y	Y	N	N	N	N
SRC ICP repeats	Y	Y	Y	Y	Y	Y	Y	Y
SRC U_3O_8 wt.% repeats	N	N	Y	Y	Y	Y	Y	Y
SRC Au repeats	N	Y	Y	Y	Y	Y	Y	Y
Umpire lab repeat analyses	N	N	Y	Y	Y	Y	Y	Y

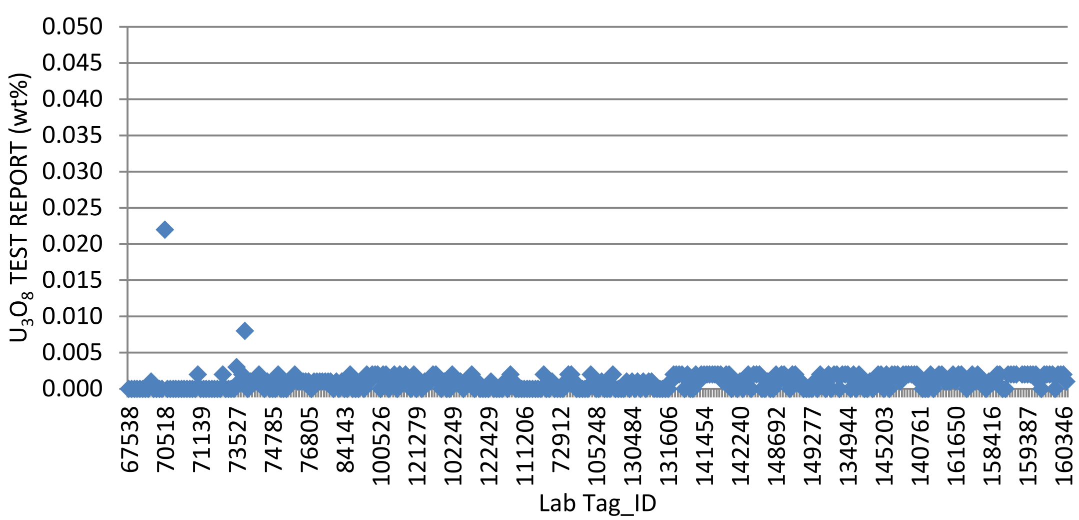
TABLE 11-2 SUMMARY OF QA/QC SAMPLING INSERTIONS BY YEAR
Fission Uranium Corp. - Patterson Lake South Property

	Fall 2011	Winter 2012	Fall 2012	Winter 2013	Summer 2013	Winter 2014	Summer 2014	Winter 2015	Total
Drill Holes	7	16	9	46	53	92	82	88	393
Total No. Samples	49	530	518	4,791	9,058	26,732	17,045	15,039	73,762
Blanks	0	0	0	39	49	114	74	64	340
Field Duplicates	0	53	42	151	425	1,269	800	660	3,400
Coarse Reject Duplicates	0	53	42	151	425	1,269	800	660	3,400
Pulp Duplicates	0	53	42	151	425	1,269	800	660	3,400
Fission CRMs	0	0	0	119	151	273	203	201	947
SRC CRMs	3	48	132	672	1,503	3,953	2,462	2,099	10,872
SRC Repeats	2	30	69	545	1,749	4,094	2,174	1,865	10,528
Umpire lab repeats	0	0	0	0	0	0	0	300	300
Total QA/QC	5	237	327	1828	4727	12241	7313	6509	33187

Note:
1. Counts are for the entire PLS Property. Results for the umpire lab repeat samples have not all been received.

Figure 11-1 plots the results of 340 blank samples sorted by increasing sample analysis date. A failure criterion for blank samples is met when a sample returns >0.005% U_3O_8, which is a concentration five times greater than the detection limit of the instrument (0.001% U_3O_8). Two sample failures occurred with a maximum of 0.022% U_3O_8. Fission Uranium chose not to take corrective steps after reviewing the grades, failure rate, and other QA/QC results from these two batches.

FIGURE 11-1 BLANK RESULTS



A total of 947 CRM samples were submitted by Fission Uranium for analysis at SRC. Figures 11-2 to 11-4 plot results for the summer 2013 to winter 2015 for the low, medium, and high grade CRMs. Failure criteria for CRM samples are met when either (a) two consecutive samples return values outside two standard deviations from the mean, on the same side of the mean, or (b) any sample returns a value outside three standard deviations from the mean.

Figure 11-2 plots results of 306 low grade CRMs and shows no failures.

Figure 11-3 plots results for 263 medium grade CRMs and shows an even spread above and below the expected value during the summer 2013 drill program, while later samples mostly plot below the expected values. Many samples returned results less than two standard deviations from the expected mean. The acceptable results from the other two CRMs, the duplicates, and repeats of the medium grade CRMs, all suggest that the lower than expected results are due to an issue with the CRM itself rather than a possible bias with the analytical methods. RPA recommends that results from CRM DH-1A be further investigated and explained.

Figure 11-4 plots results for 257 high grade CRMs and indicates two samples consecutive samples outside two standard deviations and one sample outside three standard deviations.

Overall the results of the CRM submissions, methods, and follow-up work by Fission Uranium are acceptable.

FIGURE 11-2 CRM – UTS-3 (LOW GRADE STANDARD)

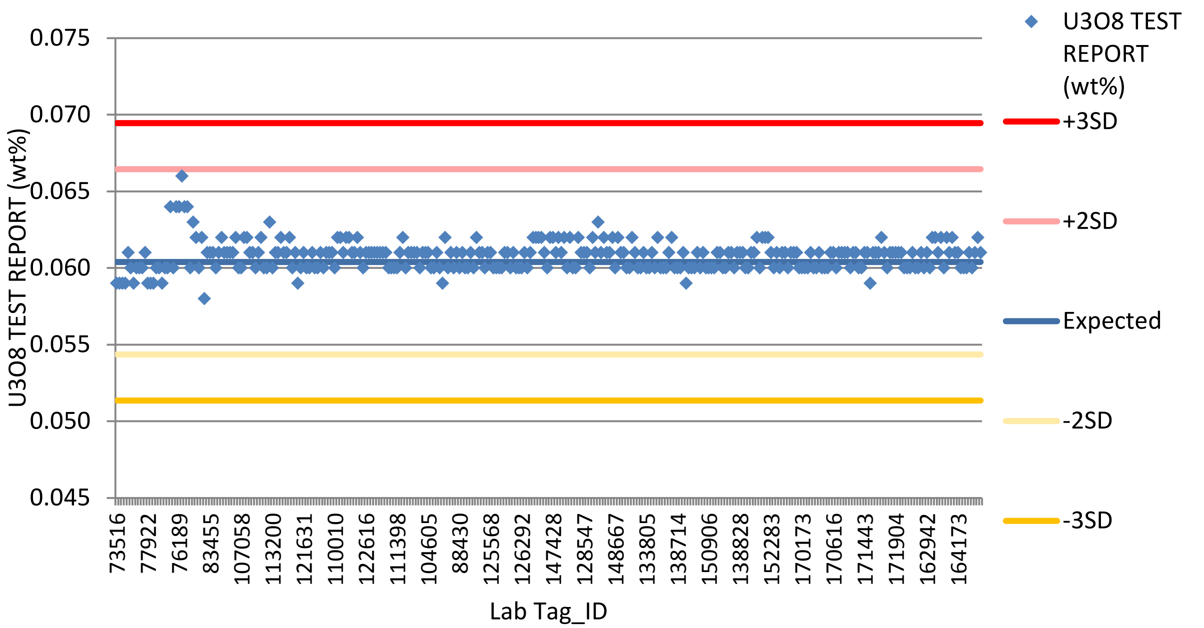


FIGURE 11-3 CRM – DH-1A (MEDIUM GRADE STANDARD)

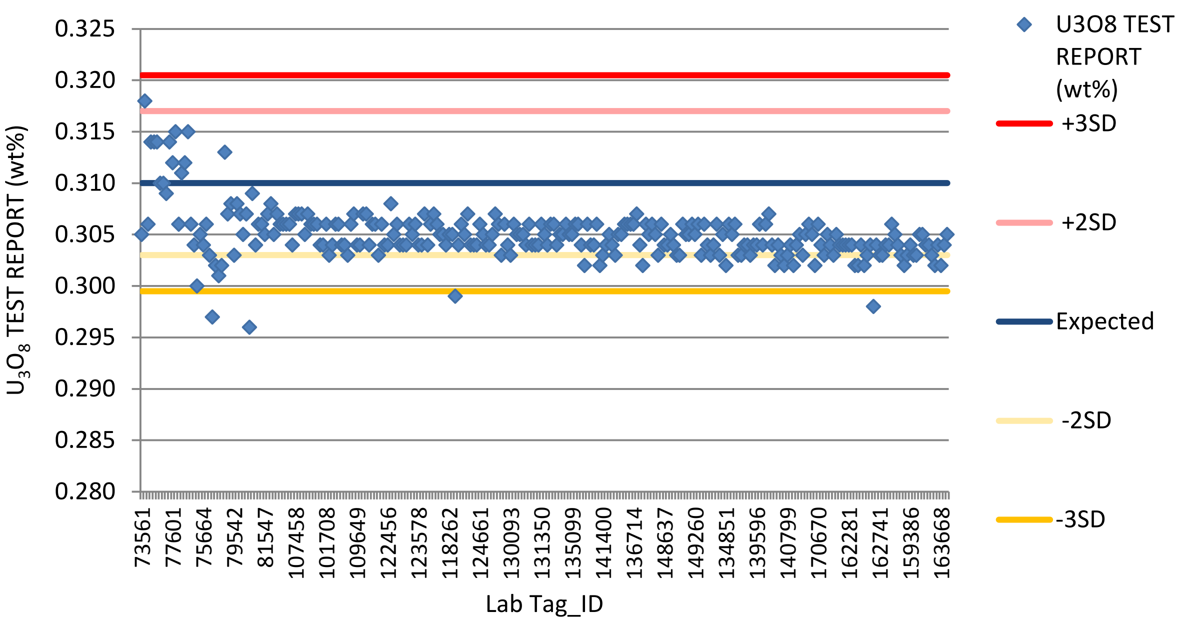
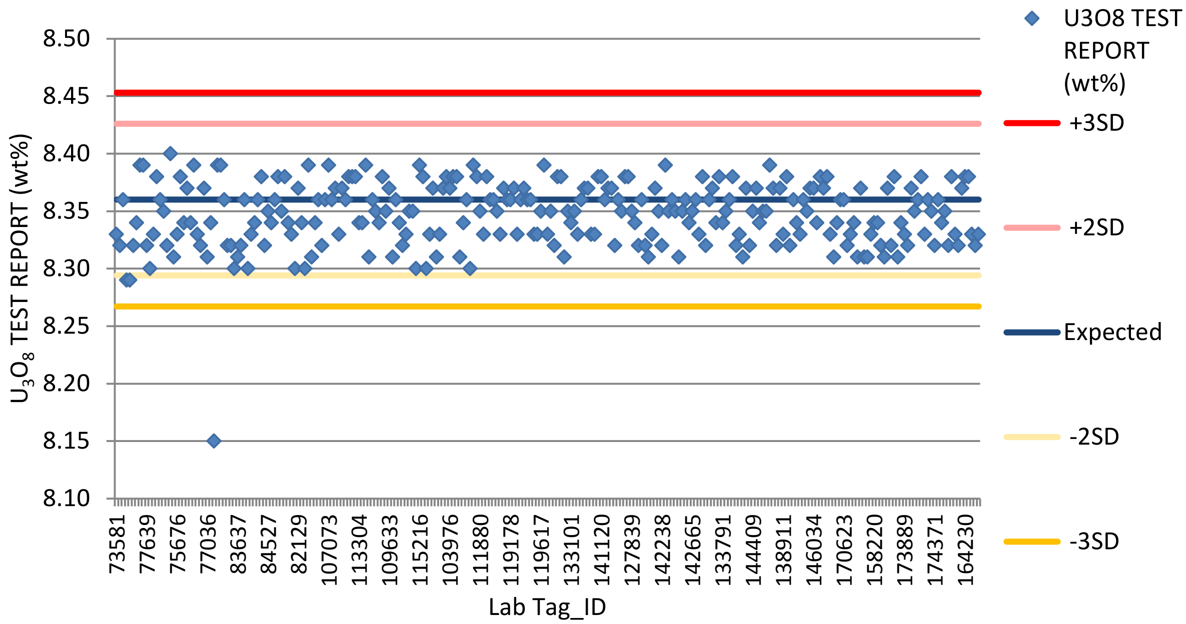


FIGURE 11-4 CRM – BL-5 (HIGH GRADE STANDARD)



Figures 11-5 to 11-7 plots results from the field, preparation, and pulp duplicate programs. Fission Uranium's protocols call for reject and pulp duplicates to be taken from the field duplicate; therefore reject and pulp results are plotted against the field duplicate results for Figures 11-6 and 11-7. Results are as expected, with better repeatability for the pulps and preparation duplicates.

FIGURE 11-5 FIELD DUPLICATE RESULTS

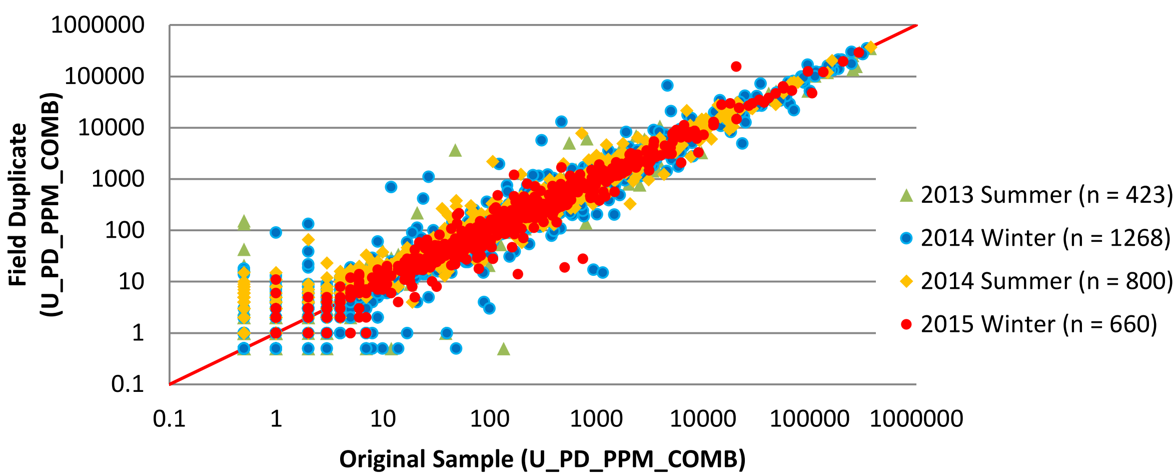


FIGURE 11-6 COARSE REJECT DUPLICATE RESULTS

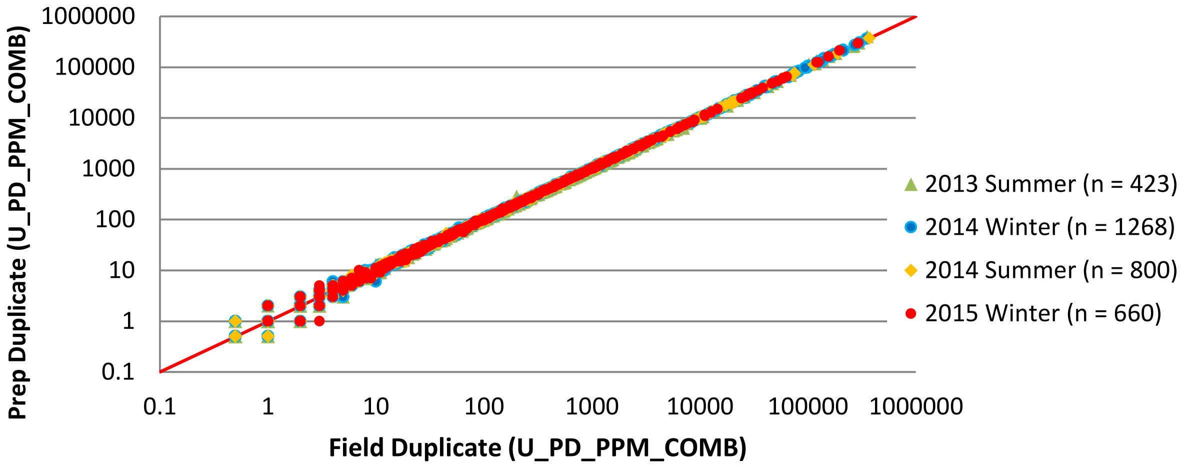


FIGURE 11-7 PULP DUPLICATE RESULTS

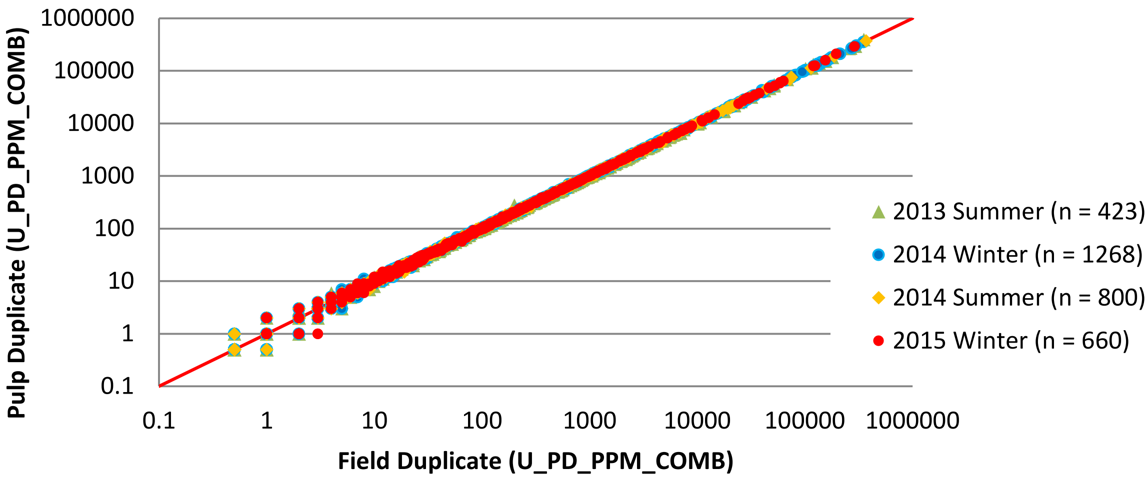
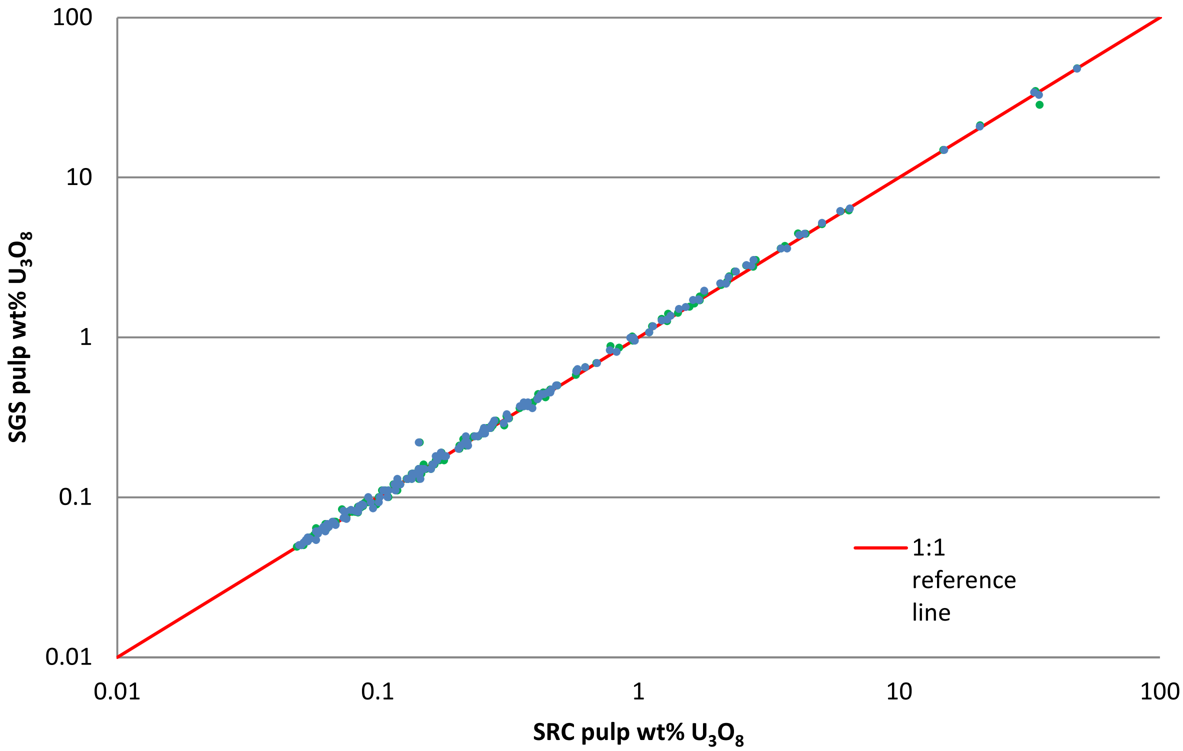


Figure 11-8 compares the results of the umpire duplicates sent at SGS with the original results from SRC. Forty on of sixty samples with an original result less than 1.0% U_3O_8 returned slightly high results at SGS. One duplicate sample with an original result of 34.6% U_3O_8 from SRC returned 28.4% U_3O_8 from SGS. MSC suggests that this difference may be due to analytical error or slight differences in the analytical methodology combined with complications arising from the carbonaceous material during the digestion stage. Additional investigation and umpire analyses are recommended.

FIGURE 11-8 SRC VS SGS DUPLICATE RESULTS



Based on the data validation and the results of the standard, blank, and duplicate analyses, RPA is of the opinion that the assay database is of sufficient quality for Mineral Resource estimation.

SRC INTERNAL QA/QC PROGRAM

Quality control was maintained by all instruments at SRC being calibrated with 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. Five U_3O_8 reference standards are used: BLA2, BL3, BL4A, BL5, and SRCUO2 which have concentrations of 0.502% U_3O_8, 1.21% U_3O_8, 0.148% U_3O_8, 8.36% U_3O_8, and 1.58% U_3O_8, respectively. Four gold standards were also used by SRC for the Project: OXG83, OXL75, OXL78, and SJ10, which have gold concentrations of 1,002 ppb, 5,876 ppb, 5,876 ppb, and 2,643 ppb, respectively. With the exception of SRCUO2, all reference materials are certified and provided by CANMET. One in every 40 samples was analyzed in duplicate. All quality control results must be within specified limits otherwise corrective action was taken. If for any reason there was a failure in an analysis, the subgroup affected was reanalyzed.

SRC has developed and implemented a laboratory management system which operates in accordance with ISO/IEC 17025:2005 (CAN-P-4E), General Requirements for the Competence of Mineral Testing and Calibration laboratories. The laboratory also participates in a Certified Interlaboratory Testing Program (CCRMP/PTP-MAL) for gold using lead fusion fire assay with an AAS finish. All processes performed at the laboratory are subject to a strict audit program, which is performed by approved trained quality professionals.

SRC is independent of Fission Uranium.

SECURITY AND CONFIDENTIALITY

Drill core was delivered directly to Fission Uranium's core handling facility. After logging, splitting, and bagging, core samples for analysis were stored in a secured shipping container at the same facility. The samples were picked up on site by Marsh Expediting and transported by road to La Ronge before transhipment to SRC in Saskatoon. The shipping container was kept locked or under direct supervision of the Fission Uranium staff. A sample transmittal form was prepared that identified each batch of samples.

SRC considers customer confidentially and security 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 described above are completed, analytical data are securely sent using electronic transmission of the results, by SRC to Fission Uranium. 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 spreadsheet file containing only the analytical results.

In RPA's opinion, the sample security and shipping procedures meet or exceed industry standards, and the QA/QC program as designed and implemented by Fission Uranium is adequate and the assay results within the database are suitable for use in a Mineral Resource estimate.

12 DATA VERIFICATION

RPA reviewed and verified the resource database used to estimate the Mineral Resources for the Triple R deposit. The verification included a review of the QA/QC methods and results, verifying assay certificates against the database assay table, standard database validation tests, and three site visits including drill core review. No limitations were placed on RPA's data verification process. The review of the QA/QC program and results is presented in Section 11, Sample Preparation, Analyses and Security.

RPA considers the resource database reliable and appropriate to prepare a Mineral Resource estimate.

SITE VISIT AND CORE REVIEW

RPA visited the property twice during active drilling campaigns, once during a winter drill program and again during a summer drill program (there was no active drilling taking place during the third visit). During the March 2014 visit, RPA visited several ice-based drills and reviewed all core handling, logging, sampling, and storage procedures. During the September 2014 visit, RPA visited barge-based drills and again reviewed all aspects of the drill campaign, from core handling through to sample shipment.

RPA examined core from several drill holes and compared observations with assay results and descriptive log records made by Fission Uranium geologists. As part of the review, RPA verified the occurrences of mineralization visually and by way of a handheld scintillometer. Holes reviewed included but were not limited to: PLS13-64, PLS13-75, PLS14-129, PLS14-183, and PLS14-186. There are no known outcrops of significance on the property to visit.

DATABASE VALIDATION

RPA performed the following digital queries. 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 80%, overlapping intervals, missing collar data, negative widths, and data points past the specified maximum depth in the collar table.
- Lithology, Scintillometer, 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.

INDEPENDENT VERIFICATION OF ASSAY TABLE

The geochemical table contains 68,243 records. RPA verified approximately 4,824 records representing 7% of the data for gold and uranium values against 53 different laboratory certificates received directly from SRC. No discrepancies were found.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

DRA reviewed test work completed to date for the PLS Project PEA for Fission Uranium.

SRC completed a suite of test work with the objective to determine the optimum leaching efficiency and conditions, as reported in "Uranium Leaching Process Development, SRC Publication, No 13223-1C14" (the SRC report) published in June 2014.

The objective of the SRC metallurgical test program was to develop the optimum uranium leaching process in terms of leaching efficiency through the investigation of different variables, such as grind size, leach temperature, leach time, free acid levels, and oxidation and reduction potential (ORP).

The SRC report was further studied by MSC, and formed part of the report titled "Patterson Lake South : Mineralogy and Metallurgical Test Work on Uranium Ore" (the MSC report) published in October 2014.

SAMPLE SELECTION

Forty-one individual assay reject samples from the Triple R deposit with confirmed mineralization were selected and submitted to SRC and SGS for analysis. Sample selection was based on uranium content, lithology, and location within the deposit, to obtain a spatially representative coverage of samples with varying uranium content. The individual assay reject samples were homogenized into five composite samples that represent specific lithologies from spatially distinct portions of the deposit.

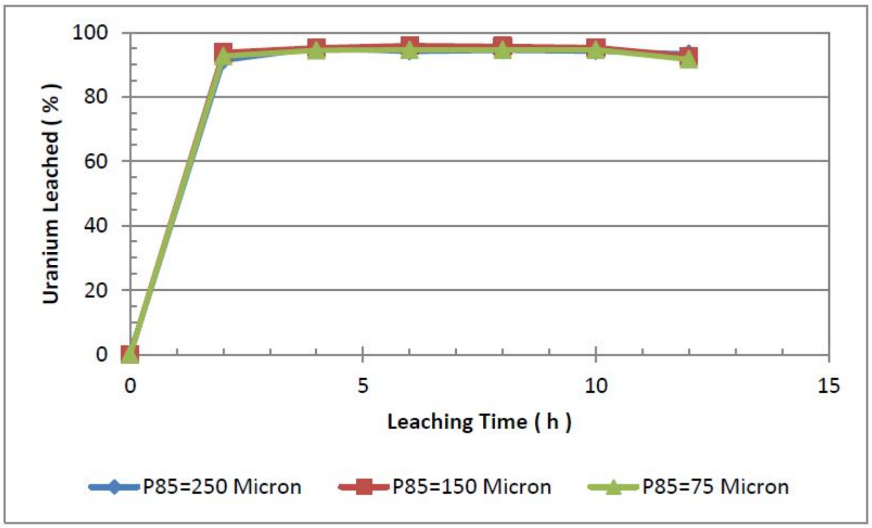
RPA and DRA consider the metallurgical test samples to be representative of the deposit.

DEVELOPMENT OF THE URANIUM LEACHING PROCESS

For the leach test work, SRC fixed some parameters, including the leaching agent (sulphuric acid (H_2SO_4) at 96.3% concentration), the pressure (atmospheric) and the pulp density (50% to 55% solids).

The optimum grind size was determined through a series of grinding-leaching tests on the master composite sample. No significant effect on uranium leaching efficiency was found when the grind size was varied in the range of P_{85} (85% passing product size) of between 75 µm and 250 µm. This indicates that the uranium-bearing minerals can be sufficiently liberated at a relatively coarse grinding size of P_{85} of 250 µm, which is also quite typical of other Saskatchewan uranium mills (Figure 13-1).

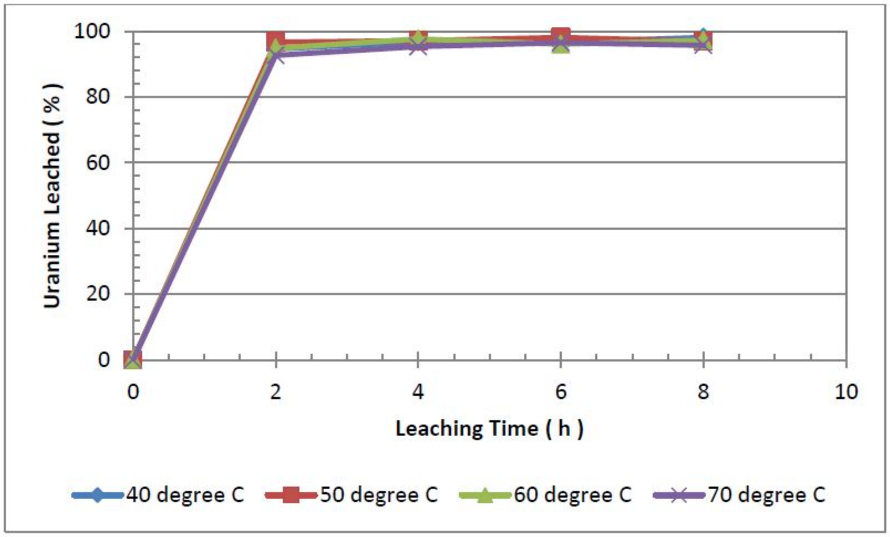
FIGURE 13-1 METALLURGICAL GRIND TEST



Source: SRC Report, 2014

The leaching temperature was investigated on a master composite sample ground to the optimum P_{85} of 250 µm. Leach temperatures between 40°C and 70°C were tested, and it was found that leaching at a temperature higher than 50°C did not improve the uranium leaching efficiency. Leaching at a temperature lower than 50°C slightly slowed the leaching process. Based on this a leaching temperature range between 45°C and 55°C with an optimum at 50°C is therefore recommended (Figure 13-2).

FIGURE 13-2 TEMPERATURE LEACH TEST



Source: SRC Report, 2014

During the optimum grind test the leach was carried on for 12 hours and during the temperature test the leach was carried on for eight hours. Both of the tests showed that the leaching was effectively completed before six hours and this was selected as the leach time (Figure 13-1 and 13-2).

The free acid levels were investigated using the optimum P_{85} of 250 µm on the master composite sample. It was found that a free acid level of 25 g/L is necessary to maximize uranium leaching efficiency. A free acid level lower than 20 g/L will result in re-precipitation of uranium and a free acid level higher than 30 g/L will lead to acid waste. The acid consumption was found to be approximately 2.5 kg acid/kg U_3O_8 in the feed.

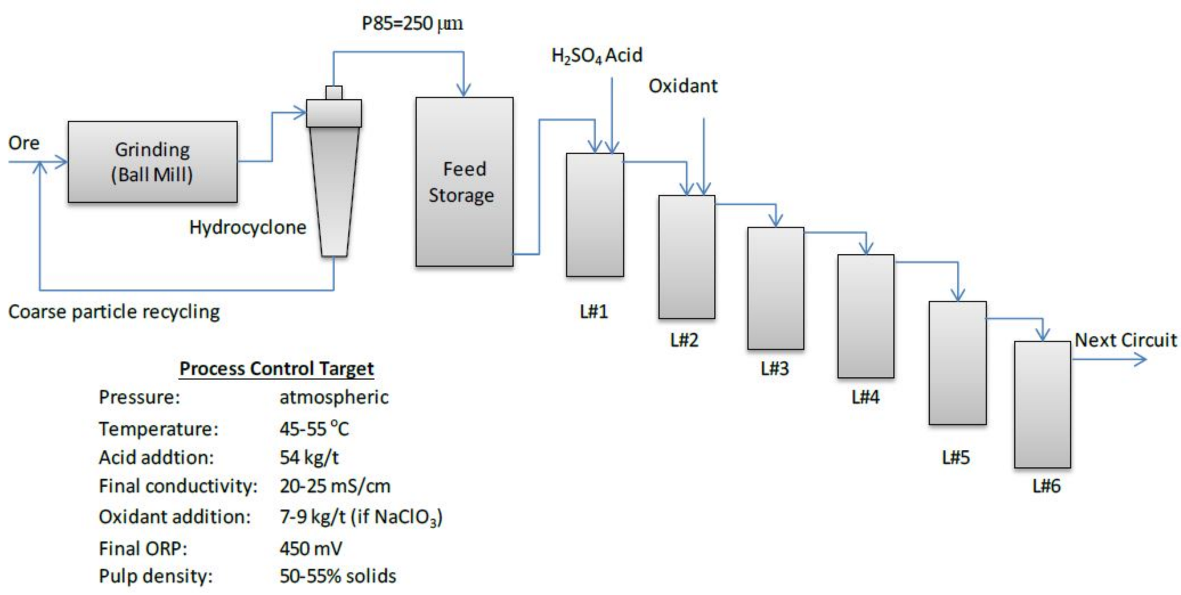
There was no significant difference found in uranium leaching when the ORP was controlled in the range of 450 mV to 550 mV. In DRA's experience, this is typical of uranium operations.

Sodium chlorate ($NaClO_3$), hydrogen peroxide (H_2O_2), and ferric sulphate $Fe_2(SO_4)^3$ are used in the uranium industry as oxidants. Testing with the master composite found that all three were effective oxidants. To reach the 450 mV to 550 mV ORP target, 7.2 kg/t ore $NaClO_3$, 2.9 kg/t ore H_2O_2 or 32.8 kg/t ore $Fe_2(SO_4)^3$ were needed. These dosages are relatively high in comparison to what is used at typical Saskatchewan uranium mills. This is likely due to the existence of reductive carbonaceous materials in the ore, as discussed in the MSC report. Due to the high grade of the ore, the dosage in terms of kg oxidant/kg U_3O_8 is relatively low.

$NaClO_3$ is recommended for use due to the ease of handling, lower dosage, and lower cost per kg U_3O_8 treated.

Using the conditions above, 98.4% of the total uranium in the master composite sample was leached in six hours under atmospheric pressure. This represents a relatively fast atmospheric leaching processes in uranium processing. This led to the development of a flowsheet proposed by SRC (Figure 13-3) and further developed by DRA that consisted of closed-circuit grinding, with cyclones capable of achieving the P_{85} 250 µm grinding target. The leaching circuit includes a storage tankage with minimum capacity of one hour feed storage and six leaching tanks with nominally one hour residence time each. H_2SO_4 acid is added at full strength in the first tank and the first hour of leaching is completed. The slurry from the first leach tank flows by gravity to the second leach tank where oxidant can be added. The leaching slurry again gravity flows to the third leaching tank, and so on until the sixth tank. The pH will be monitored throughout the process, and acid will be added as required to ensure that the free acid level is maintained. The leached slurry is then pumped to the solid/liquid separation and purification steps described in the Process Plant Design Section of this report.

FIGURE 13-3 PROPOSED METALLURGICAL FLOW SHEET



Source: SRC Report, 2014

VARIABILITY TESTS ON THE FIVE COMPOSITE SAMPLES

Variability testing was performed using 250 g splits of the five individual composite samples to test the effect of differing ore nature on the leach process. The leaching process as shown in Figure 13-3 was used. The leach sample feed and leach residue uranium and gold assay values are provided along with the leach results for each composite sample in Table 13-1 below.

TABLE 13-1 VARIABILITY TESTING
Fission Uranium Corp. - Patterson Lake South Property

Sample ID		Feed Mass (g)	Feed U (ppm)	Feed Au (g/t	Residue Mass (g)	Residue U (ppm)	Residue Au (g/t)	U Recovery (%)
Comp.1	R000E-PEL	250	23,250	0.044	232	339	0.144	98.7
Comp.2	R000E-SPEL	250	5,445	0.017	239	87	0.036	98.5
Comp.3	R390E-PEL	250	20,300	1.840	235	137	2.021	99.4
Comp.4	R780E-PEL	250	30,850	2.330	231	1,630	2.449	95.0
Comp.5	R780E-QTZ	250	10,200	0.609	245	92	0.695	99.1

Source: SRC Report, 2014

The results showed that:

- Uranium leach recovery for Composites 1, 2, 3 and 5 were ranging from 98.5% to 99.4%. These leaching efficiencies were higher than the 98.4 % of total uranium leached in the master composite.

- The uranium leaching of Composite 4 (95.0%) is significantly lower than that of the other composite samples and of the master composite. Based on SRC's experience, the higher uranium grade of Composite 4 is not considered to be the reason for the low leaching efficiency. The indications are that this reduction in leach efficiency was due to uranium particles sitting in a carbonaceous and/or graphitic matrix shielding it from the leaching conditions. The possible higher abundance of brannerite, $(U,Ca,Ce)(Ti,Fe)_2O_6$, which is highly refractory and difficult to leach, could also be a contributing factor to the lower overall leaching efficiency of Composite 4.

- Gold was found in the uranium leaching tails. Detailed gold recovery tests are recommended to determine the financial suitability of recovering the gold.

- Although carbonaceous material was seen as the likely cause for the reduced leaching efficiency of Composite 4 further analysis of the leaching solution did not show the presence of significant organic carbon (13 ppm). At this stage the presence of carbon in the ore is therefore not expected to impact negatively on downstream solvent extraction processes.

MINERALOGICAL TESTING

The objective of the mineralogy test work was to determine the mineralogical characteristics of the samples through a combination of analytical methods. The results show that:

- Although discrepancies occur between the results obtained with different analytical methods, the composites are made up of varying amounts of quartz, chlorite, kaolinite, illite, and muscovite. Carbonate minerals, Ti-oxides, feldspars, and pyrite are present in lesser amounts in all samples. Graphite is detected in some composite samples. Uranium occurs in all the composites as uraninite/uranophane, with lesser coffinite, brannerite, and U-Pb minerals. Fourmarierite, metaschoepite, umohoite, vandendriesscheite, and other (U, Pb)-oxides also possibly occur.

- The grain size of the U-minerals (defined as the 50% passing value) varies from 33 µm in Composite 2 to 63 µm in Composite 5.

- Free and liberated U-minerals (particles in which U-minerals comprise ≥80 % of the total particle area) account for 49% to 60% of all U-minerals in Composites 1, 3, 4, and 5. The lower abundance of free and liberated U-minerals in Composite 2 (23%) is likely due to the finer grain size of the U-minerals in this sample. Non-liberated U-minerals typically occur as complex intergrowths with silicates, carbonates, or "soft" silicates (clays/chlorite/micas).

- The relative abundance of exposed U-minerals (i.e., unlocked U-minerals, strictly surrounded by <100 % gangue minerals) is similar in Composites 1, 3, 4, and 5 (98.2% to 98.9%) and is lower in Composite 2 (97.0%).

- All five composite samples contain carbon. In Composites 2 and 5, the total carbon values are low and most of the carbon is accounted for by the presence of graphite and/or carbonate. In Composites 1, 3, and 4, graphite and carbonate only account for part of the total carbon, implying that carbonaceous matter (bitumen) is present. Estimates indicate carbonaceous matter contents of approximately 1% in Composites 1 and 3, and 2.5% in Composite 4. The results from the metallurgical and mineralogical tests show that there is a good correlation between the uranium recovery and the abundance of exposed U-minerals for Composites 1, 2, 3, and 5. This suggests that unless fully locked, the U-minerals will be recovered by leaching. Finer U-mineral grain size, decreased liberation, and decreased exposure do not appear to have had a significant adverse effect upon uranium recovery in Composite 2 (98.5%).

The lower uranium recovery (95.0%) in Composite 4 is attributed to the presence of organic carbon (either as graphite or more likely as carbonaceous matter) that encloses and locks U-minerals (identified as vandendriesscheite) that are finer than the +250 µm grinding size. This was confirmed by additional testing on concentrated uranium leach tails. The possible higher abundance of brannerite, $(U,Ca,Ce)(Ti,Fe)_2O_6$, which is highly refractory and difficult to leach, could also be a contributing factor to the lower overall leaching efficiency of Composite 4.

Variation in the metallurgical and mineralogical characteristics of the uranium mineralization with lithology was also investigated. Pelitic composites are characterized by higher uranium grades, higher carbonaceous matter content, and similar or lower uranium recovery efficiencies than the semi-pelitic and quartzitic composites. This is likely related to the presence of a carbonaceous uranium mineralization horizon in the pelitic unit. Carbonaceous mineralization also occurs in the quartzitic unit, but only within local fractures. No carbonaceous mineralization has been observed to date in semi-pelites. The composites used in this study have a maximum total organic carbon (graphite and carbonaceous matter) content of 4.3% C_g. In view of its potential importance both in terms of uranium grade and leaching efficiency, additional work is recommended to further investigate the effect of organic carbon on uranium leaching and to better evaluate the spatial and genetic relationship between organic carbon and uranium mineralization in the Triple R deposit.

It is not possible to comment in a meaningful way on the spatial variations of the metallurgical and mineralogical characteristics of the uranium mineralization as only three composites are of the same (pelitic) lithology. No systematic variation is observed in these three samples in terms of uranium grade, recovery, liberation, exposure, or mineralogy. The gold grade, quartz, and U-mineral contents and the grain size of the U-minerals vary slightly along strike of the deposit, however, further study is required to confirm and interpret these observations.

FURTHER RECOMMENDED TEST WORK

The process route developed by DRA for the PLS Project is based on unit processes commonly used effectively in uranium process plants across the world, including northern Saskatchewan uranium mines, while utilizing some new innovations in some of these unit process designs to optimise plant performance. To prove the performance and efficiency of the steps post leach, it is recommended that further test work be conducted in the next study phase. This test work should include:

- Solid/liquid separation test work to size the counter current decantation (CCD) circuit as efficiently as possible
- Uranium solvent extraction test work
- Impurity removal test work
- Yellowcake precipitation test work

14 MINERAL RESOURCE ESTIMATE

RPA updated the Mineral Resource estimate for the Triple R deposit using drill hole data available to July 28, 2015 (Table 14-1). Estimated block model grades are based on chemical assays only. Gold grades were also estimated. Mineral Reserves have not been estimated for the Triple R deposit.

TABLE 14-1 MINERAL RESOURCE SUMMARY
Fission Uranium Corp. – Patterson Lake South Property

Classification	Tonnes	% U_3O_8	g/t Au	Pounds U_3O_8	Ounces Au
Indicated					
Open Pit	1,149,000	2.45	0.62	62,104,000	23,000
Underground	863,000	1.00	0.56	19,007,000	15,000
Total Indicated	**2,011,000**	**1.83**	**0.59**	**81,111,000**	**38,000**
Inferred					
Open Pit	74,000	8.61	1.64	14,060,000	4,000
Underground	711,000	0.84	0.56	13,097,000	13,000
Total Inferred	**785,000**	**1.57**	**0.66**	**27,157,000**	**17,000**

Notes:
1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are reported within the preliminary pit design at a pit discard cut-off grade of 0.20% U_3O_8 and outside the design at an underground cut-off grade of 0.25% U_3O_8 based on a long-term price of US$65 per lb U_3O_8 and PEA cost estimates.
3. A minimum mining width of 2.0 m was used.
4. Numbers may not add due to rounding.

RPA is not aware of any known environmental, permitting, legal, title, taxation, socioeconomic, marketing, political, or other relevant factors that could materially affect the current resource estimate.

RESOURCE DATABASE

The resource estimate was prepared using drill hole data available to July 28, 2015. This includes holes up to and including PLS14-386 for a total of 405 drill holes. Of these, 296 holes representing 97,262 m of drilling are located within the area of the Mineral Resources (Table 14-2). The wireframe models representing the mineralized zones are intersected by 257 drill holes.

Fission Uranium maintains a complete set of drill hole plus other exploration data for the entire Property in Dassault Systèmes GEOVIA GEMS software (GEMS). Data were exported to Excel and then imported to RPA's GEMS project for resource modelling. Table 14-2 lists the records for drill hole data in or near the Triple R deposit.

TABLE 14-2 GEMS DATABASE RECORD COUNT
Fission Uranium Corp. - Patterson Lake South Property

Table Name	Number of Records*
Hole-ID	296
Survey	11,272
U_3O_8 Chemical Assays	68,243
Lithology	5,716
Scintillometer	44,771
Density	12,050
Full width mineralized intersections	652
Composites	5,477

Note:
1. * In the area of the Triple R deposit only. The number of full width intercepts and composites do not include those within the Halo domain.

Section 12, Data Verification, describes the verification steps made by RPA. In summary, no discrepancies were identified and RPA is of the opinion that the GEMS drill hole database is valid and suitable to estimate Mineral Resources for the Triple R deposit.

GEOLOGICAL INTERPRETATION AND 3D SOLIDS

Wireframe models of mineralized zones were used to constrain the block model grade interpolation process. RPA interpreted and constructed wireframe models using a nominal cut-off grade of 0.05% U_3O_8 and a minimum core length of two metres. Wireframes of the High Grade (HG) domain were created at a minimum grade of approximately 5% U_3O_8. The interpretation for most zones was guided by preliminary grade-shell wireframes created in Leapfrog modelling software.

RPA built the wireframe models using 3D polylines on east looking vertical sections spaced 15 m apart. Infill polylines were added to accommodate for irregular geometries. Polylines were "snapped" to assay intervals along the drill hole traces such that the sectional interpretations “wobbled” in 3D space. Polylines were joined together in 3D using tie lines and the continuity was checked using a longitudinal section and level plans.

As discussed in Section 10, many drill holes were oriented vertically, which produces challenges when interpreting steeply dipping mineralization. To the extent possible, RPA used information available from the angle holes to locate the hanging wall and footwall contacts of the mineralized zones and to interpret their true thickness. The sectional outlines of the mineralized zones based on angle holes were commonly extrapolated or interpolated to sections with vertical drilling only. This resulted in relatively regular outlines of the mineralized domains in plan view. RPA notes that most holes drilled since the previous resource estimate were angle holes. RPA recommends that this approach be continued.

In total, RPA interpreted, built, and used 22 wireframe models of the mineralization, also known as domains (Table 14-3 and Figures 14-1 and 14-2). Wireframes were assigned to zones as identified by Fission Uranium disclosures. The R00E zone is located at the western end and the much larger R780E zone is located along strike to the east. The R00E and R780E zones have an overall strike length of approximately 1.2 km, with the R00E measuring approximately 125 m in strike length and the R780E zones measuring approximately 900 m in strike length. A 225 m gap separates the R00E zone to the west and the R780E zones to the east. Mineralization remains open along strike both to the western and eastern extents, and at depth.

The R780E zones are located beneath Patterson Lake, which is approximately six metres deep in the area of the deposit. The R00E and R780E zones are covered by approximately 50 m of overburden. The deposit extends from immediately beneath the overburden to a maximum depth of 330 m below the topographic surface.

TABLE 14-3 SUMMARY OF WIREFRAME MODELS
Fission Uranium Corp. - Patterson Lake South Property

Zone	Wireframe Name	GEMS Block Code	Wireframe Volume (m^3)
R00E	R00_1	601	57,228
	R00_2	602	4,003
R780E (Main)	MZ	101	1,137,325
R780E (High grade)	HG	1001	58,117
R780E (Other Zones)	FW_1	201	32,716
	FW_2	202	4,435
	FW_3	203	52,118
	FW_4	204	46,471
	FW_5	205	38,531
	FW_6	206	6,522
	LZ_1	301	11,769
	LZ_2	302	19,417
	LZ_3	303	35,386
	LZ_4	304	6,260
	LZ_5	305	64,962
	LZ_6	306	18,756
	LZ_7	307	2,426
	LZ_8	308	30,711
	EAST_1	401	115,057
	HW_1	501	61,361

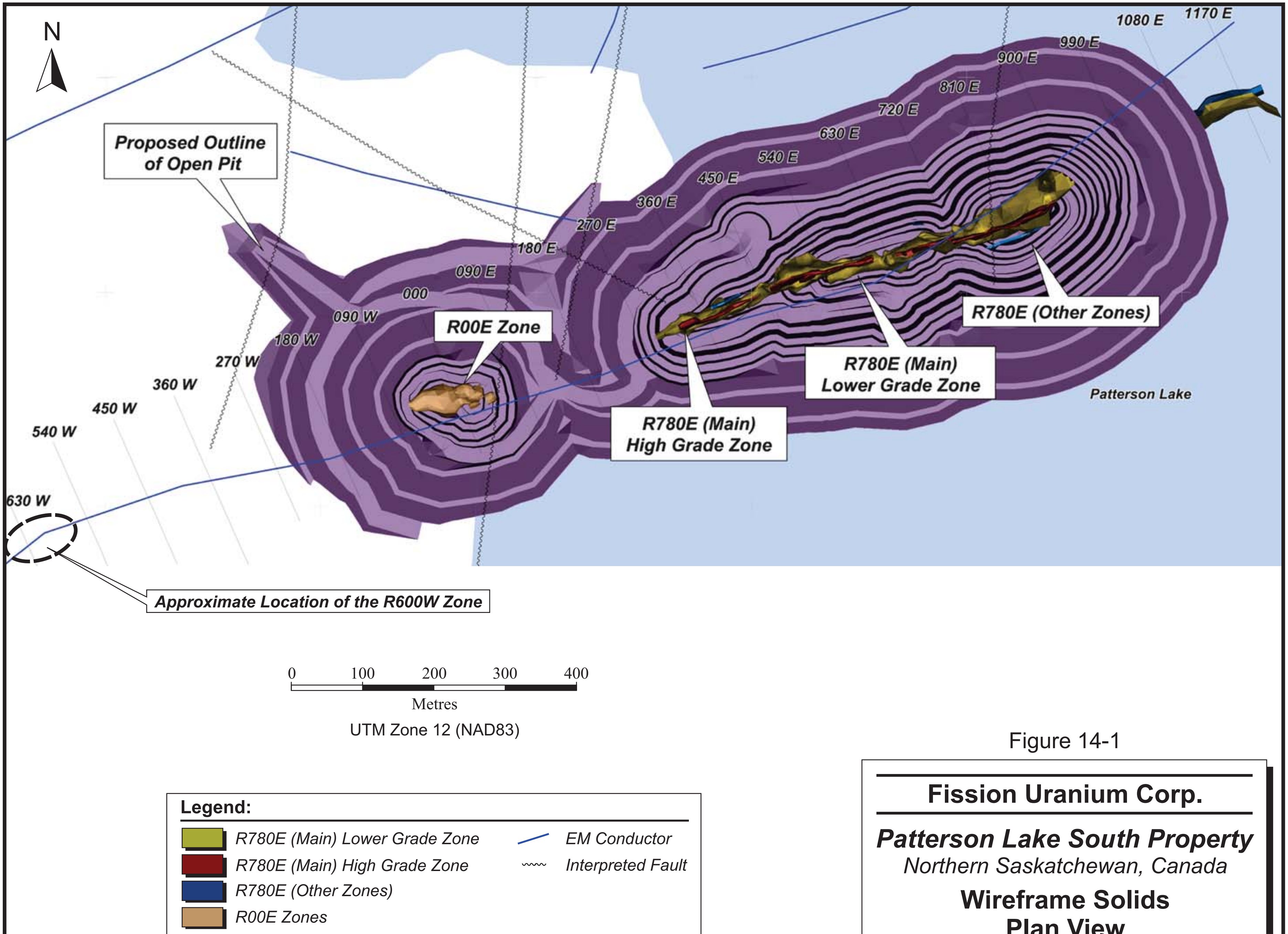


Figure 14-1

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

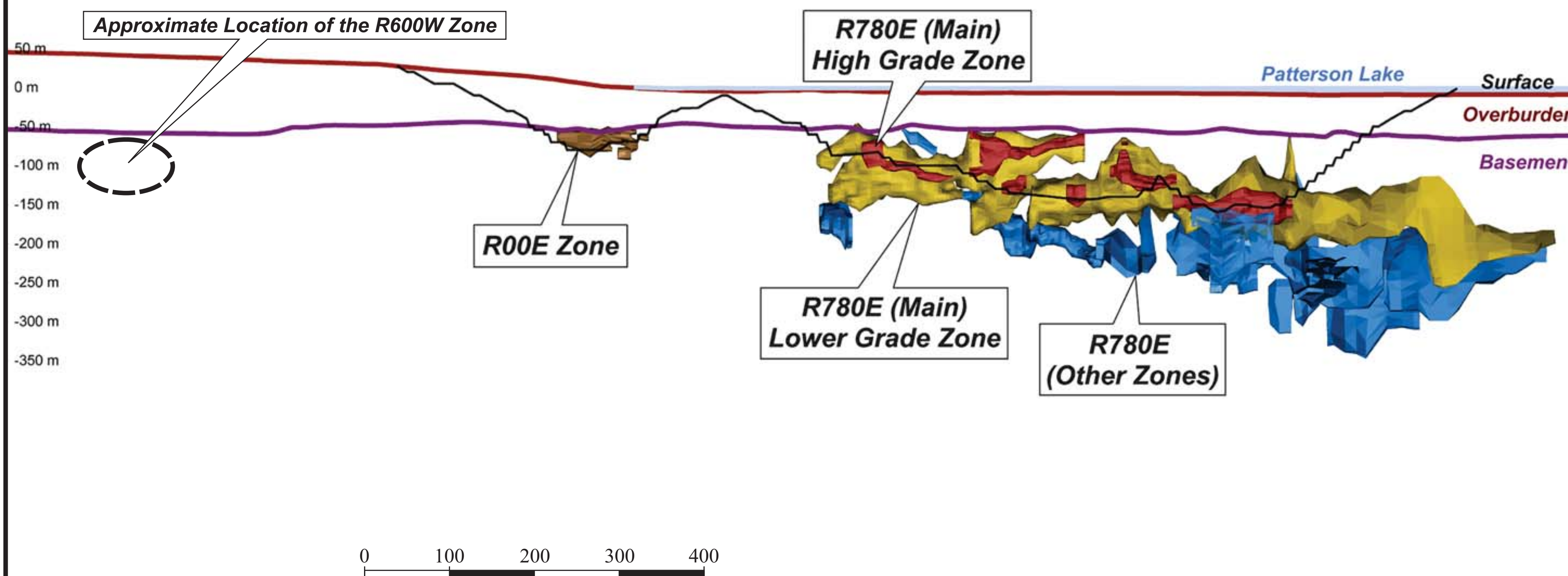
Wireframe Solids Plan View

September 2015

Source: Fission Uranium Corp., 2015.

www.rpacan.com

Looking Northwest



UTM Zone 12 (NAD83)

Legend:

- R780E (Main) Lower Grade Zone
- R780E (Main) High Grade Zone
- R780E (Other Zones)
- R00E Zones
- Proposed Open Pit

Figure 14-2

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Wireframe Solids
Longitudinal Section

September 2015

Source: Fission Uranium Corp., 2015.

The HG domain consists of seven lenses within the R780E Main Zone (MZ), the largest continuous domain within the R780E area. Collectively, these two domains make up more than 80% of the contained pounds of U_3O_8 in the Mineral Resource. Both domains are elongated in the grid east-west direction and dip steeply to the south. The MZ measures approximately 740 m along strike. Both the down dip and true thickness of the MZ vary due to the irregular shape of the mineralization, however, in general, the down dip measurement ranges between 50 m and 80 m, and the true thickness is in most places between 20 m and 30 m but can be as little as two metres to a maximum of 45 m.

The HG domain alone contains more than half the contained pounds of U_3O_8 classified as Indicated Resources. It was modelled as seven steeply dipping wireframe solids located within the R780E MZ. The high grade zones span over 500 m of strike length, measure from 10 m to 40 m down dip, and generally range from three metres to ten metres thick.

A number of other wireframe solids make up a smaller portion of the Mineral Resources. Most of the secondary domains are oriented similarly to the MZ, that is, elongated east-west, dipping steeply to the south. Some, including R00E, were modelled with a horizontal orientation. Additional drilling is recommended to better define the geometry of mineralization.

STATISTICAL ANALYSIS

Assay values located inside the wireframe models were tagged with domain identifiers and exported for statistical analysis. Results were used to help verify the modelling process. Basic statistics by domain are summarized in Table 14-4.

TABLE 14-4 STATISTICS OF RESOURCE ASSAY VALUES BY DOMAIN
Fission Uranium Corp. - Patterson Lake South Property

	MZ	HG	FW_1	FW_2	FW_3	FW_4
No. of Cases	14,480	906	138	25	98	205
Minimum (%U_3O_8)	0.00	0.01	0.00	0.01	0.00	0.00
Maximum (%U_3O_8)	43.50	65.70	6.96	1.74	2.08	3.84
Median (%U_3O_8)	0.10	12.15	0.13	0.17	0.12	0.13
Mean (%U_3O_8)	0.63	16.44	0.43	0.29	0.26	0.25
Std. Dev. (%U_3O_8)	2.15	14.04	0.82	0.37	0.40	0.42
Coeff. of Variation	3.43	0.85	1.92	1.27	1.54	1.67
	FW_5	**FW_6**	**LZ_1**	**LZ_2**	**LZ_3**	**LZ_4**
No. of Cases	394	109	150	204	235	48
Minimum (%U_3O_8)	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (%U_3O_8)	34.80	44.90	24.70	39.40	43.70	2.48
Median (%U_3O_8)	0.08	0.31	0.23	0.10	0.28	0.10
Mean (%U_3O_8)	1.08	2.25	2.34	1.94	1.48	0.27
Std. Dev. (%U_3O_8)	3.27	6.30	4.61	4.96	4.89	0.46
Coeff. of Variation	3.04	2.80	1.97	2.55	3.31	1.73
	LZ_5	**LZ_6**	**LZ_7**	**LZ_8**	**EAST_1**	**HW_1**
No. of Cases	635	219	57	445	537	321
Minimum (%U_3O_8)	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (%U_3O_8)	7.59	5.72	1.43	13.90	20.80	2.63
Median (%U_3O_8)	0.11	0.20	0.09	0.13	0.12	0.07
Mean (%U_3O_8)	0.31	0.78	0.28	0.39	0.74	0.19
Std. Dev. (%U_3O_8)	0.69	1.22	0.39	0.99	2.28	0.32
Coeff. of Variation	2.25	1.57	1.37	2.58	3.07	1.75
	R00_1	**R00_2**				
No. of Cases	828	48				
Minimum (%U_3O_8)	0.00	0.03				
Maximum (%U_3O_8)	48.80	35.10				
Median (%U_3O_8)	0.25	0.63				
Mean (%U_3O_8)	1.65	5.52				
Std. Dev. (%U_3O_8)	4.63	8.95				
Coeff. of Variation	2.81	1.62				

CUTTING HIGH GRADE VALUES

Where the assay distribution is skewed positively or approaches log-normal, erratic high grade assay values can have a disproportionate effect on the average grade of a deposit. One method of treating these outliers in order to reduce their influence on the average grade is to cut or cap them at a specific grade level. In the absence of production data to calibrate the cutting level, inspection of the assay distribution can be used to estimate a “first pass” cutting level.

Review of the resource assay histograms within the wireframe domains and a visual inspection of high grade values on vertical sections suggest cutting erratic values to 55% in the HG domain (Figure 14-3), to 10% U_3O_8 in all other domains defined by wireframe solids (Figure 14-4), and to 7% U_3O_8 outside the wireframes, designated as Low Grade Halo (Figure 14-5).

For the MZ domain, by cutting 127 high values to 10% U_3O_8, the average grade was reduced from 0.63% U_3O_8 to 0.55% U_3O_8 and the coefficient of variation was reduced from 3.43 to 2.53. For the HG domain, by cutting 12 high values to 55% U_3O_8, the average grade was reduced from 16.44% U_3O_8 to 16.37% U_3O_8 and coefficient of variation was reduced from 0.85 to 0.84. Table 14-5 lists descriptive statistics for the domains affected by cutting.

FIGURE 14-3 HISTOGRAM OF RESOURCE ASSAYS IN HIGH GRADE DOMAIN

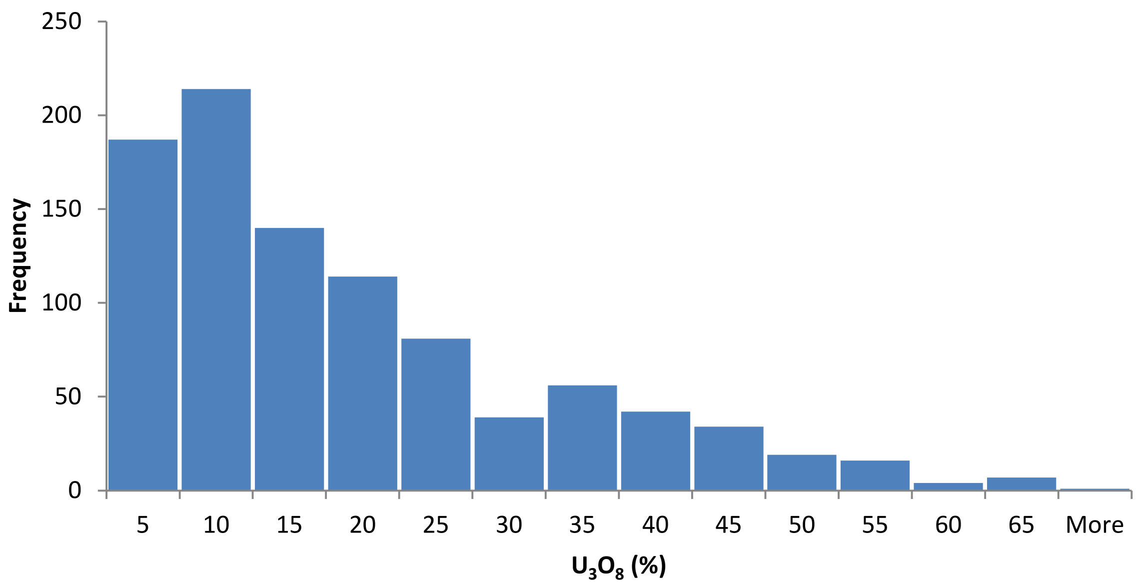


FIGURE 14-4 HISTOGRAM OF RESOURCE ASSAYS IN MAIN ZONE DOMAIN

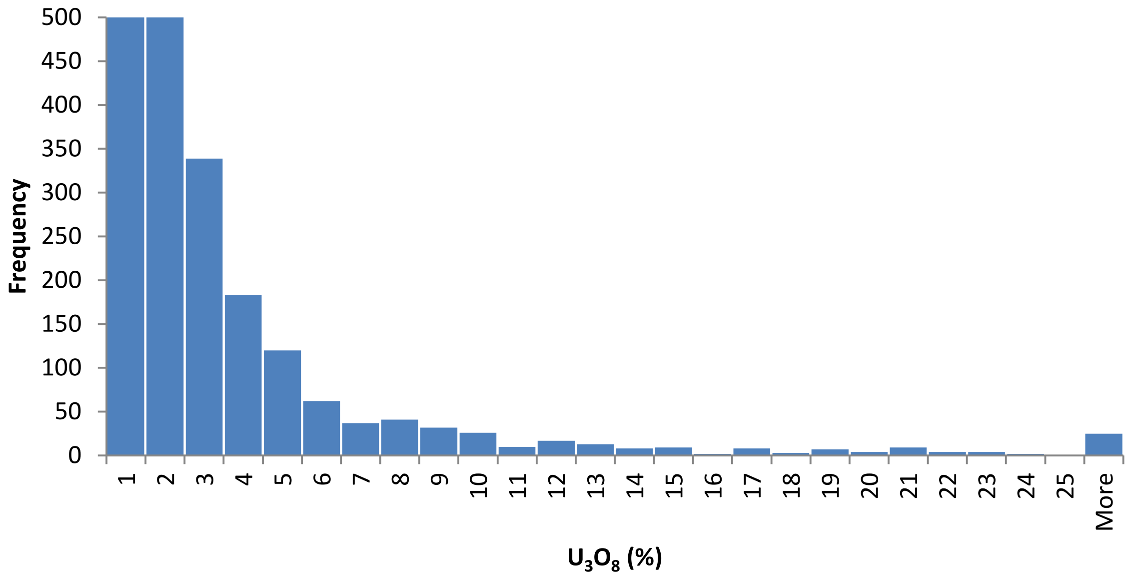


FIGURE 14-5 HISTOGRAM OF RESOURCE ASSAYS IN LOW GRADE HALO

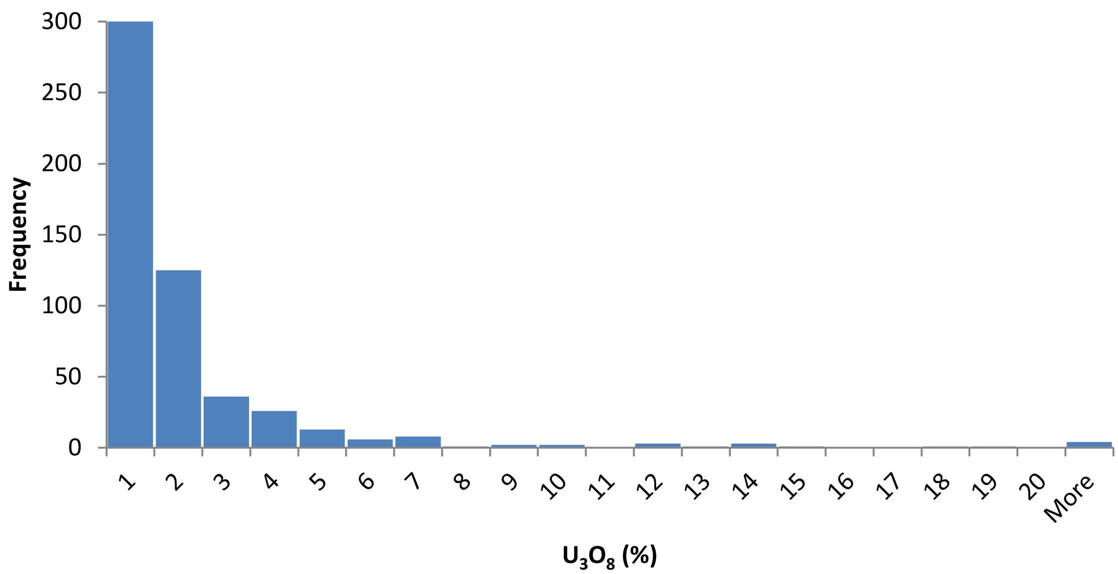


TABLE 14-5 STATISTICS OF CUT ASSAY VALUES IN DOMAINS AFFECTED BY CUTTING
Fission Uranium Corp. - Patterson Lake South Property

	MZ	FW_5	FW_6	LZ_1	LZ_2	LZ_3
No. of Cases	14,480	394	109	150	204	235
Minimum (%U_3O_8)	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (%U_3O_8)	10.00	10.00	10.00	10.00	10.00	10.00
Median (%U_3O_8)	0.10	0.08	0.31	0.23	0.10	0.28
Mean (%U_3O_8)	0.55	0.88	1.44	1.86	1.46	0.96
Std. Dev. (%U_3O_8)	1.39	2.04	2.53	3.00	2.69	1.90
Coeff. of Variation	2.53	2.33	1.76	1.62	1.84	1.98
	LZ_8	**EAST_1**	**R00E_1**	**R00E_2**		
No. of Cases	445	537	828	48		
Minimum (%U_3O_8)	0.00	0.00	0.00	0.03		
Maximum (%U_3O_8)	10.00	10.00	10.00	10.00		
Median (%U_3O_8)	0.13	0.12	0.25	0.63		
Mean (%U_3O_8)	0.38	0.65	1.19	3.34		
Std. Dev. (%U_3O_8)	0.87	1.66	2.33	4.07		
Coeff. of Variation	2.32	2.55	1.95	1.22		

COMPOSITING

Sample lengths range from 25 cm to 3.0 m within the wireframe models, however, 99% of the samples were taken at 0.5 m intervals. Given this distribution, and considering the width of the mineralization, RPA chose to composite to two metre lengths. Assays within the wireframe domains were composited starting at the first mineralized wireframe boundary from the collar and resetting at each new wireframe boundary. Assays were cut prior to compositing. Composites less than 0.5 m, located at the bottom of the mineralized intercept, were removed from the database. Table 14-6 shows the composite statistics by domain.

TABLE 14-6 DESCRIPTIVE STATISTICS OF COMPOSITE VALUES BY DOMAIN
Fission Uranium Corp. - Patterson Lake South Property

	MZ	FW_1	FW_2	FW_3	FW_4	FW_5
No. of Cases	3,837	36	7	27	55	114
Minimum (% U_3O_8)	0.00	0.02	0.08	0.01	0.01	0.00
Maximum (% U_3O_8)	10.00	2.34	0.59	0.94	1.40	9.74
Median (% U_3O_8)	0.15	0.21	0.25	0.15	0.19	0.12
Mean (% U_3O_8)	0.54	0.43	0.27	0.25	0.25	0.78
Std. Dev. (% U_3O_8)	1.07	0.50	0.18	0.25	0.25	1.63
Coeff. of Variation	1.97	1.17	0.68	1.00	0.98	2.08
	FW_6	**LZ_1**	**LZ_2**	**LZ_3**	**LZ_4**	**LZ_5**
No. of Cases	29	41	62	68	13	171
Minimum (% U_3O_8)	0.00	0.01	0.00	0.00	0.03	0.00
Maximum (% U_3O_8)	8.57	6.77	7.77	10.00	0.51	3.14
Median (% U_3O_8)	0.57	1.12	0.28	0.33	0.18	0.14
Mean (% U_3O_8)	1.36	1.79	1.25	0.85	0.21	0.29
Std. Dev. (% U_3O_8)	1.94	2.12	1.82	1.48	0.16	0.44
Coeff. of Variation	1.43	1.19	1.46	1.74	0.76	1.51
	LZ_6	**LZ_7**	**LZ_8**	**EAST_1**	**HW_1**	**R00E_1**
No. of Cases	57	17	117	139	82	213
Minimum (% U_3O_8)	0.00	0.00	0.01	0.00	0.00	0.03
Maximum (% U_3O_8)	4.50	0.64	3.92	9.05	1.19	10.00
Median (% U_3O_8)	0.39	0.20	0.19	0.18	0.11	0.34
Mean (% U_3O_8)	0.77	0.24	0.37	0.65	0.18	1.16
Std. Dev. (% U_3O_8)	0.92	0.19	0.53	1.40	0.21	2.01
Coeff. of Variation	1.20	0.82	1.45	2.16	1.15	1.73
	R00E_2	**HG**				
No. of Cases	12	250				
Minimum (% U_3O_8)	0.14	0.60				
Maximum (% U_3O_8)	9.32	53.18				
Median (% U_3O_8)	0.95	13.60				
Mean (% U_3O_8)	3.32	16.38				
Std. Dev. (% U_3O_8)	3.68	11.37				
Coeff. of Variation	1.11	0.69				

CONTINUITY ANALYSIS

RPA generated downhole, omni-directional, and directional variograms using the two-metre composite U_3O_8 values located within the mineralized wireframes. The downhole variogram suggests a relative nugget effect of approximately 20% (Figure 14-6). Long range directional variograms were focused in the plane of mineralization, which most commonly strikes east-west and dips steeply to the south. To improve the variogram for the MZ, only composite values ranging from 0.05% U_3O_8 to 8% U_3O_8 were used (Figure 14-7). Most ranges were interpreted to be approximately 15 m. Ranges for the HG domain also varied from 10 m to 20 m (Figure 14-8).

RPA also visually reviewed and contoured the drill hole results to identify trends of high grade mineralization. Several shallow to moderately eastward plunging higher grade zones were identified and these were mostly modelled as part of the HG domain within the MZ.

FIGURE 14-6 DOWNHOLE VARIOGRAM

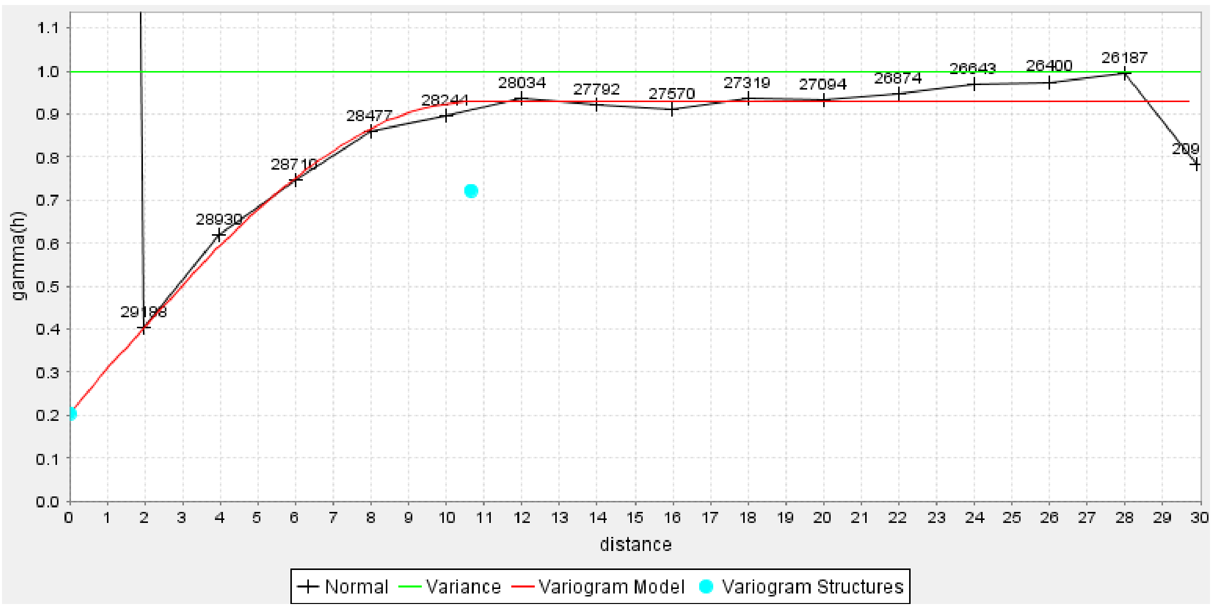


FIGURE 14-7 DIRECTIONAL VARIOGRAMS FOR MZ

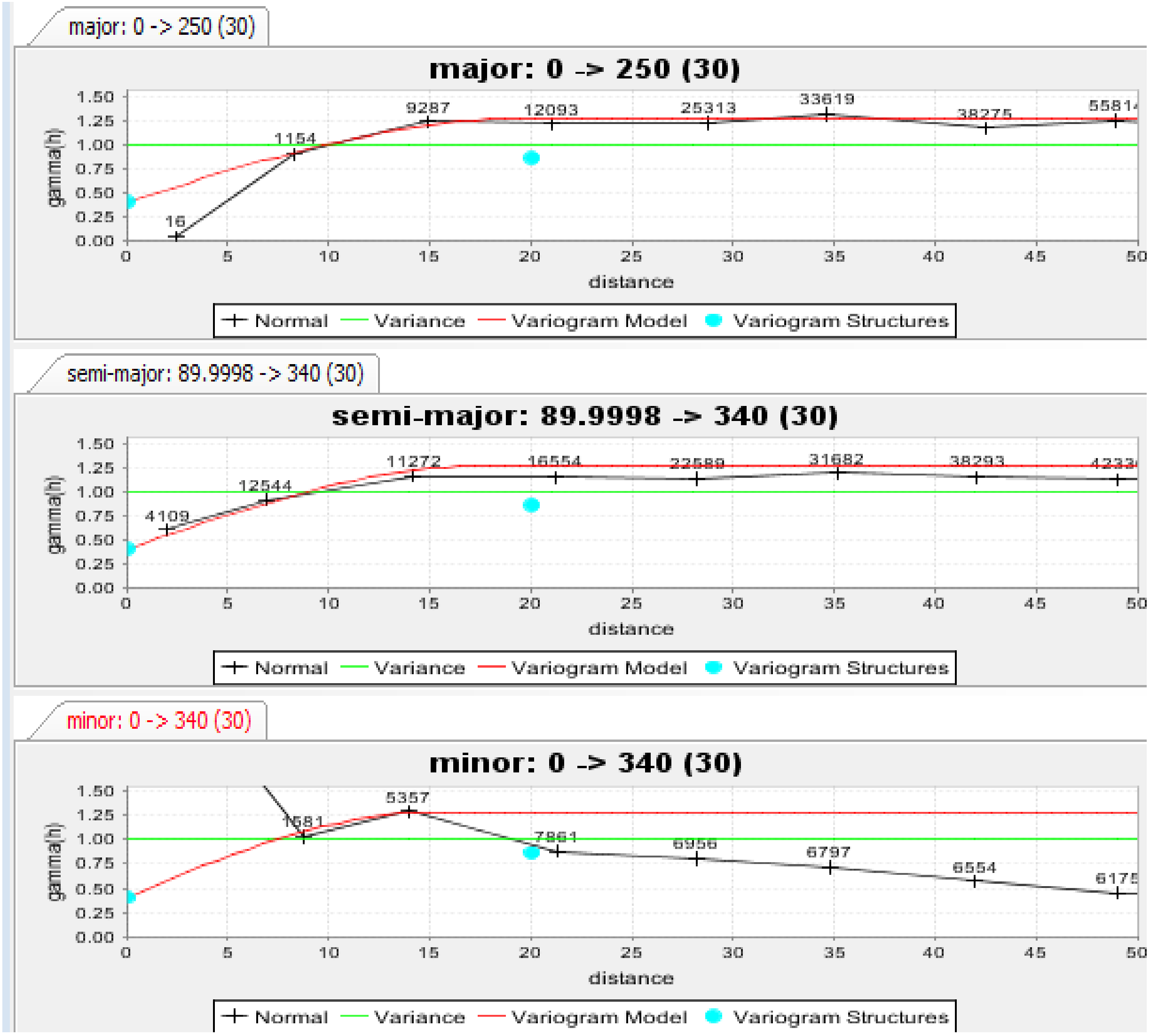
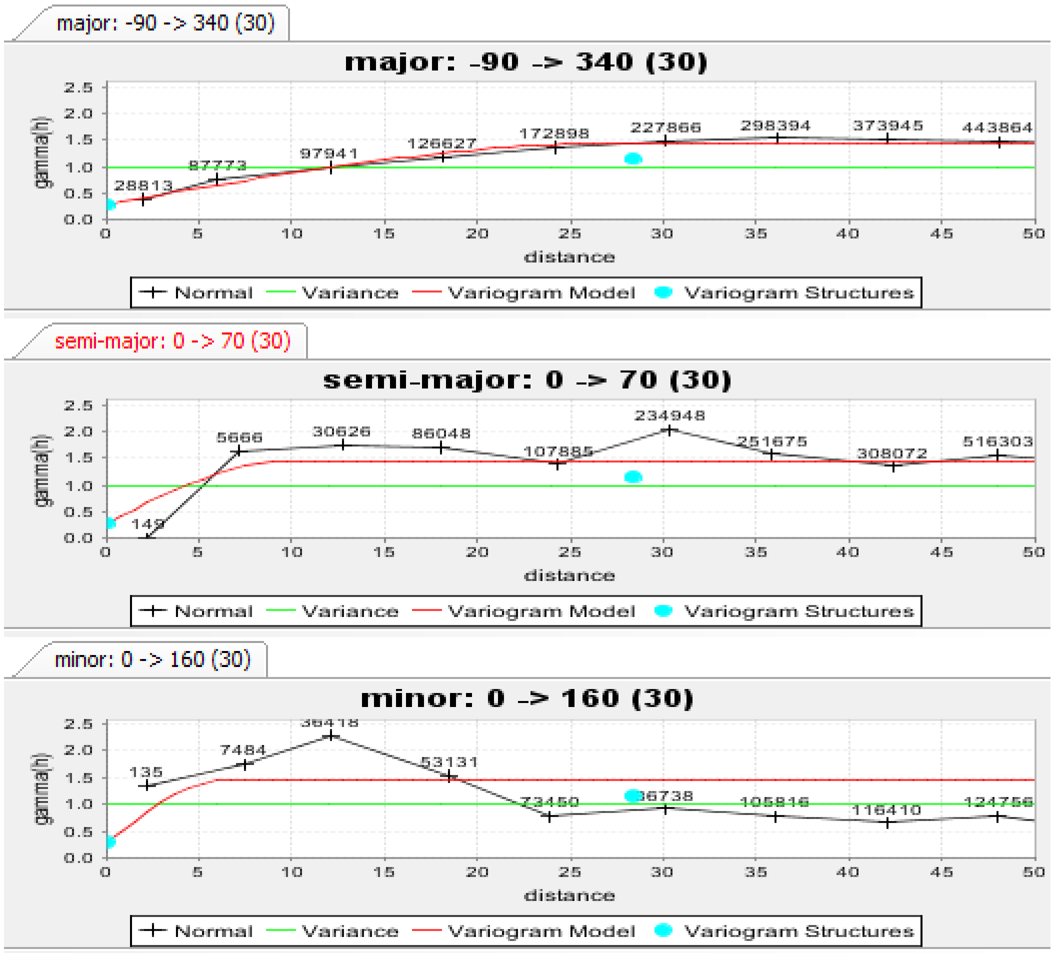


FIGURE 14-8 DIRECTIONAL VARIOGRAMS FOR HIGH GRADE DOMAIN



INTERPOLATION PARAMETERS

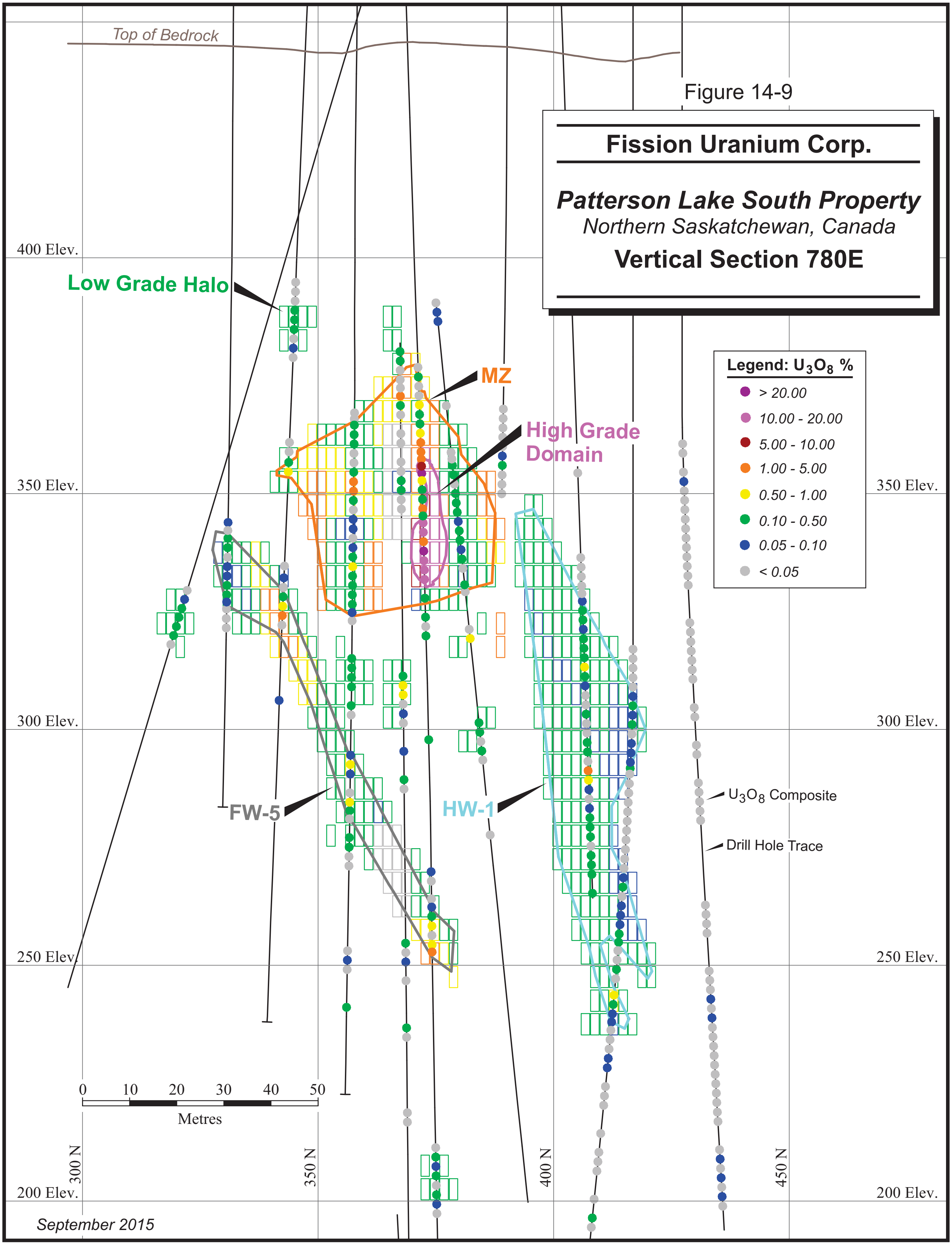
Grade interpolations for U_3O_8 and gold were carried out using inverse distance cubed (ID^3) in a single pass with a minimum of two to a maximum of seven composites per block estimate. The search ellipse varied slightly by domain (Table 14-7). Hard boundaries were used to limit the use of composites between domains. Most search ellipses are 50 m by 50 m by 10 m for a 5:5:1 anisotropic ratio. Since the Low Grade Halo domain is unconstrained, RPA limited the search ellipse to 10 m by 10 m by 5 m, which is equivalent to two blocks. Figures 14-9 to 14-12 illustrate the results.

TABLE 14-7 BLOCK ESTIMATE SEARCH STRATEGY BY DOMAIN
Fission Uranium Corp. - Patterson Lake South Property

Domain	Rotation Type	Rotation (degrees)	X (m)	Y (m)	Z (m)
HG	ZYZ	none	50	10	50
MZ	ZYZ	none	50	10	50
EAST_1	ZXZ	0,-20,0	50	10	50
EAST_2	ZXZ	none	50	10	50
FW_1	ZXZ	0,-20,0	50	10	50
FW_2	ZXZ	0,-20,0	50	10	50
FW_3	ZXZ	0,-20,0	50	10	50
FW_4	ZXZ	0,-20,0	50	10	50
FW_5	ZXZ	0,-20,0	50	10	50
FW_6	ZXZ	0,-20,0	50	10	50
HW_1	ZXZ	0,-20,0	50	10	50
LZ_1	ZYZ	none	50	50	10
LZ_2	ZXZ	0,-20,0	50	50	10
LZ_3	ZXZ	0,-20,0	50	10	50
LZ_4	ZXZ	0,-20,0	50	10	50
LZ_5	ZXZ	0,-20,0	50	10	50
LZ_6	ZXZ	0,-20,0	50	10	50
LZ_7	ZXZ	none	25	5	25
LZ_8	ZXZ	0,-20,0	50	10	50
R00_1	ZYZ	none	50	50	10
R00_2	ZYZ	none	50	50	10
HALO	ZYZ	none	10	4	10

Note:

1. GEMS ZYZ rotation nomenclature is used above. Positive rotation around the X axis is from Y towards Z, around the Y axis is from Z toward X, and around the Z axis is from X toward Y. Rotations are with respect to the rotated model.


Top of Bedrock
Figure 14-9
Fission Uranium Corp.
Patterson Lake South Property
Northern Saskatchewan, Canada
Vertical Section 780E
400 Elev.
350 Elev.
300 Elev.
250 Elev.
200 Elev.
Low Grade Halo
MZ
High Grade Domain
FW-5
HW-1
Legend: U3O8 %
> 20.00
10.00 - 20.00
5.00 - 10.00
1.00 - 5.00
0.50 - 1.00
0.10 - 0.50
0.05 - 0.10
< 0.05
U3O8 Composite
Drill Hole Trace
0 10 20 30 40 50
Metres
300 N
350 N
400 N
450 N
September 2015

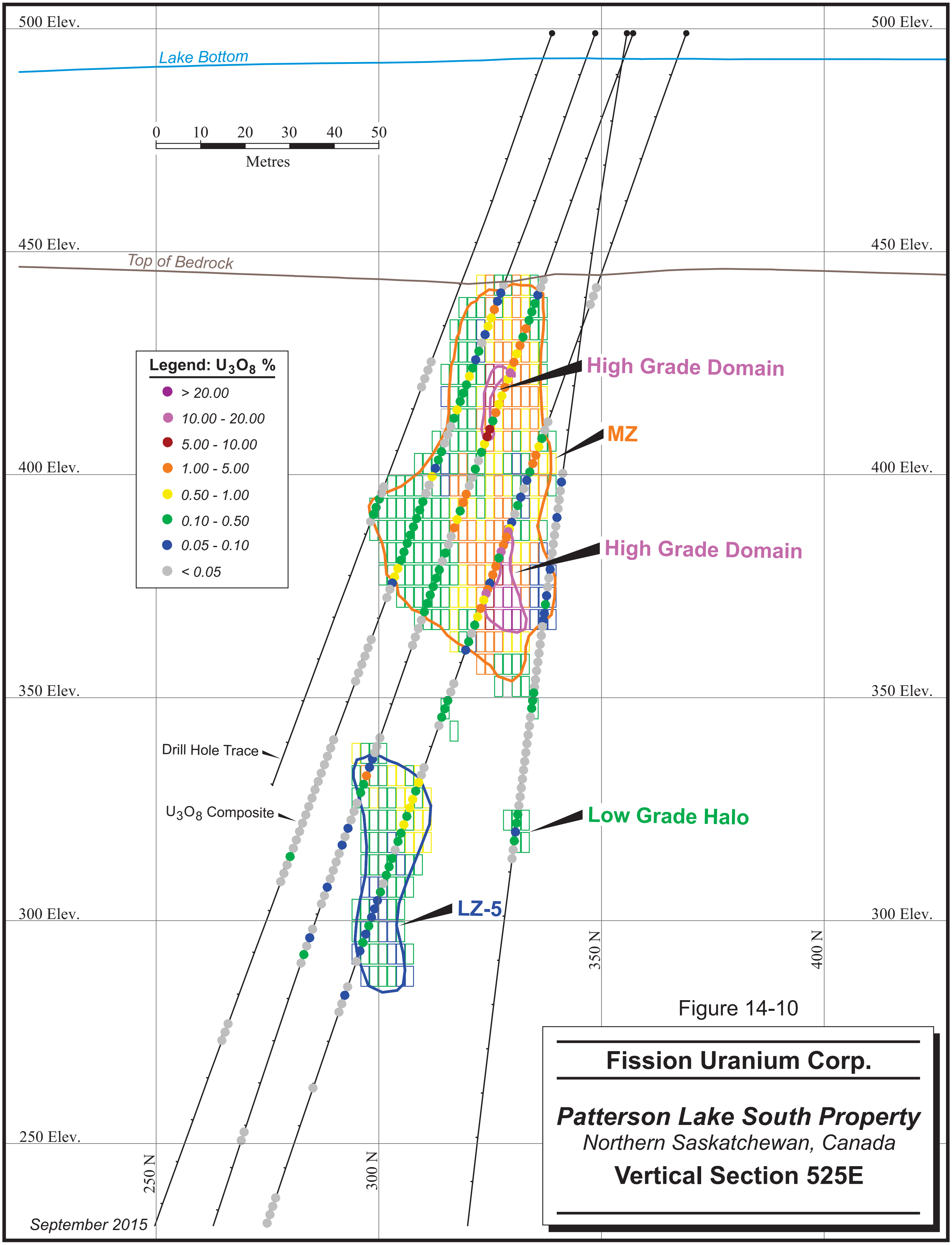


Figure 14-10

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Vertical Section 525E

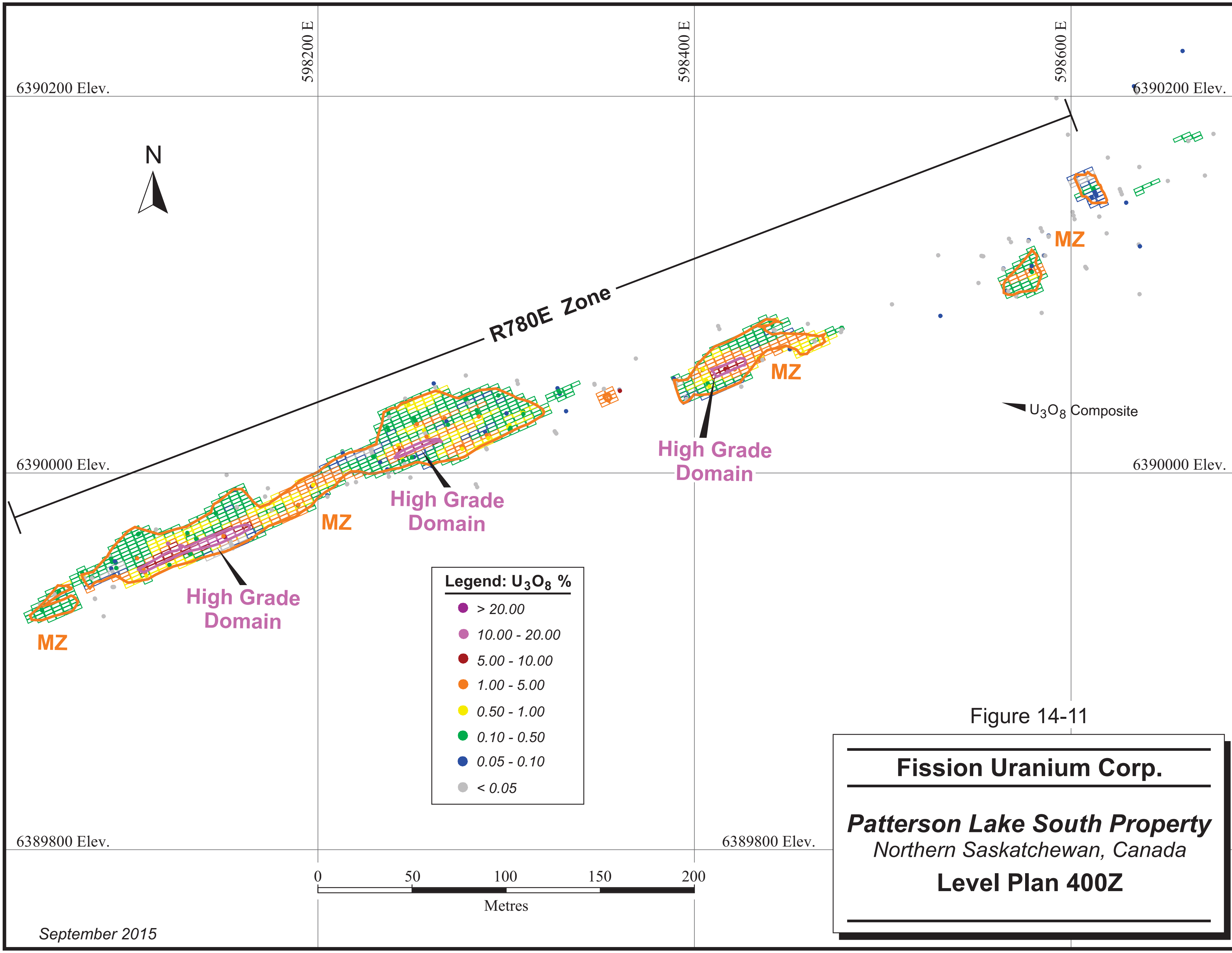


Figure 14-11

Fission Uranium Corp.

Patterson Lake South Property

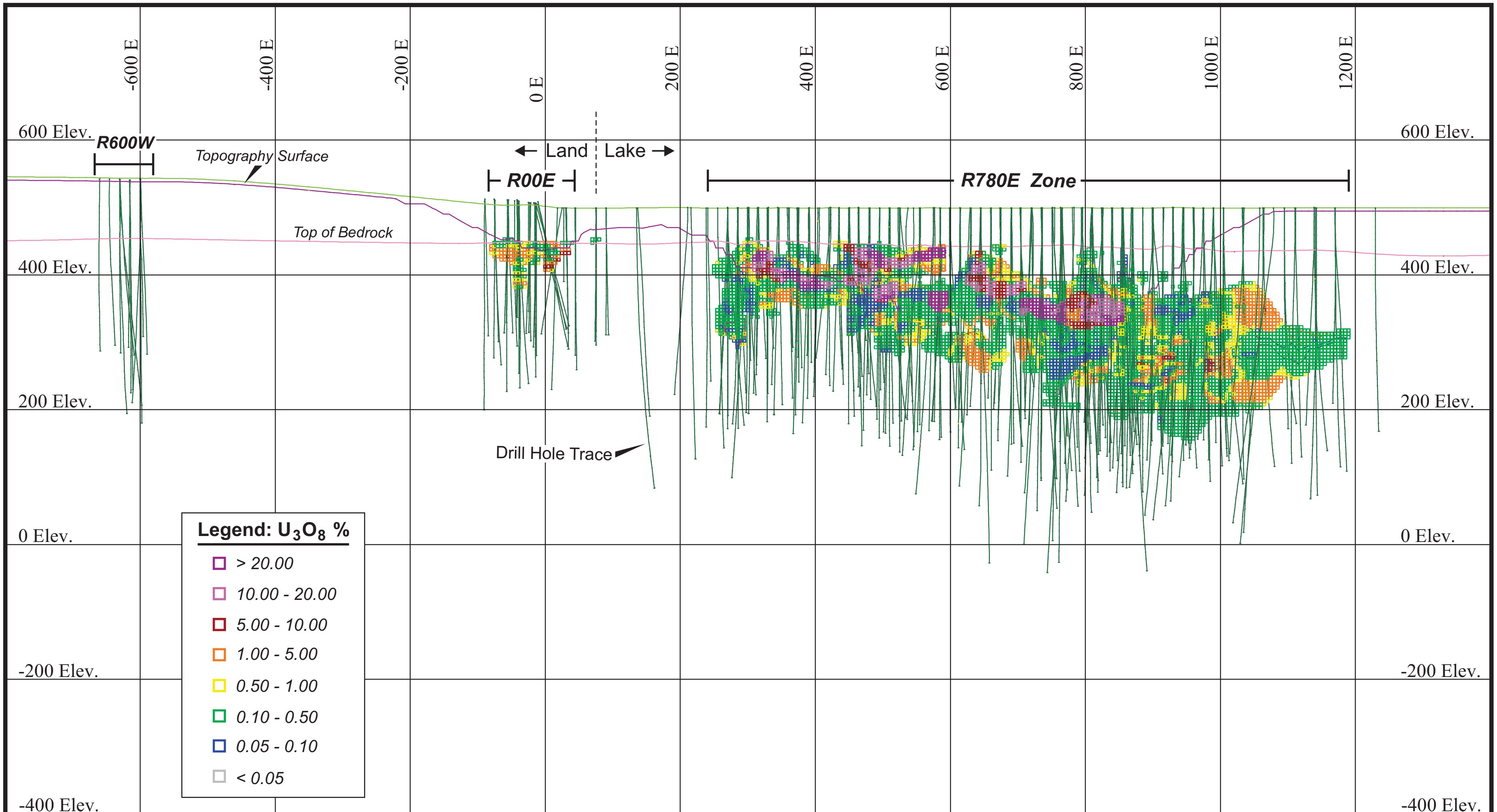
Northern Saskatchewan, Canada

Level Plan 400Z

September 2015

RPA

www.rpacan.com



NOTE:
The High Grade Domain has been overprinted on the MZ Domain for this figure to illustrate its location.

0 100 200 300 400
Metres

Figure 14-12

Fission Uranium Corp.

Patterson Lake South Property
Northern Saskatchewan, Canada

Longitudinal Section
(Looking North)

September 2015

RPA
www.rpacan.com

DENSITY

Bulk density estimates are used to convert volume to tonnage and, in some cases, can be used to weight block grade estimates. For example, high grade uranium deposits of the Athabasca Basin have bulk densities that commonly vary with grade due to the very high density of pitchblende/uraninite compared to host lithologies. Bulk density also varies with clay alteration and in situ rock porosity. When modelling high grade uranium deposits, it is common to estimate bulk density values throughout the deposit and to weight uranium grades by density, since small volumes of high grade material contain large quantities of uranium oxide.

RPA carried out correlation analyses of the bulk density measurements against uranium grades. Unlike most deposits in the Athabasca Basin, the high grade uranium mineralization at the Triple R deposit has relatively low density values. Uranium grade ranges of 20% U_3O_8 to 60% U_3O_8 within the Athabasca Basin more commonly exhibit density values ranging from 3.0 g/cm^3 to 6.0 g/cm^3 correlated with grade. Triple R high grade mineralization is often associated with carbon which may account for the lower than expected density values. In general, the average density of mineralization commonly ranges from 2.2 t/m^3 to 2.4 t/m^3.

Since bulk density does not have a clear correlation with grade, RPA did not weight grades by density in the block interpolation. Block grade values and density values were estimated independently.

Block densities were estimated from the density measurements using ID^3 and a similar search strategy as used for uranium grade. Hard boundaries were used between domains. The Triple R resource database includes more than 12,050 density measurements. Table 14-8 compares the average densities of the blocks within the mineralized zones to the average densities of measurements associated with grades greater than 0.1% U_3O_8.

TABLE 14-8 COMPARISON OF ESTIMATED BLOCK DENSITIES AND MEASURED CORE DENSITIES BY ZONE
Fission Uranium Corp. - Patterson Lake South Property

Zone	Blocks (t/m^3)	Measurements (t/m^3)
HG	2.37	2.37
MZ	2.34	2.32
R00E	2.26	2.26
HALO	2.42	2.38
OTHER	2.36	2.33
Total	2.35	2.33

BLOCK MODEL

The GEMS block model is rotated 23.8° and is made up of 437 columns, 380 rows, and 108 levels. The model origin (lower-left corner at highest elevation) is at UTM coordinates 597,219.8 mE, 6,389,129.6 mN and 540 m elevation. Each block is two metres wide, five metres high, and five metres along strike. A partial block model is used to manage blocks partially filled by mineralized rock types, including blocks along the edges of the deposit. A partial model has parallel block models containing the percentage of mineralized rock types contained within each block. The block model contains the following information:

- domain identifiers with rock type;
- estimated grades of U_3O_8 and gold;
- the percentage volume of each block within the mineralization wireframe models;
- tonnage factors, in tonnes per cubic metre;
- the distance to the closest composite used to interpolate the block grade; and
- the resource classification of each block.

MINERAL RESOURCE REPORTING CRITERIA

Mineral Resources are reported within the preliminary pit design at a pit discard cut-off grade of 0.2% U_3O_8 and outside the preliminary pit design at an underground cut-off grade of 0.25% U_3O_8. The cut-off grade is based on a long-term price of US$65 per lb U_3O_8 and PEA cost estimates.

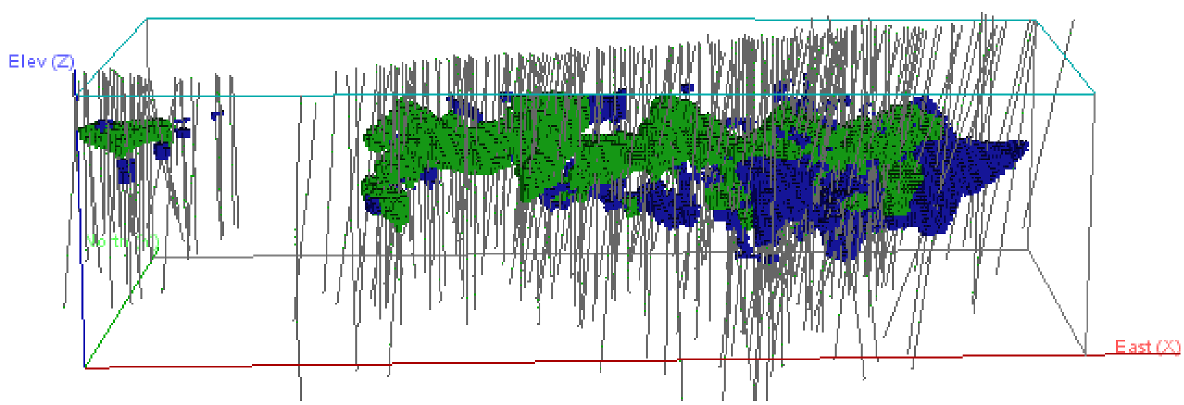
The preliminary pit design is described in Section 16, and the assumptions on estimated operating costs used to calculate the cut-off grades are in Section 21.

CLASSIFICATION

Definitions for resource categories used in this report are consistent with those defined by CIM (2014) and adopted by NI 43-101. In the CIM classification, a Mineral Resource is defined 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". Mineral Resources are classified into Measured, Indicated, and Inferred categories. A Mineral Reserve is defined as the "economically mineable part of a Measured and/or Indicated Mineral Resource" demonstrated by studies at Pre-Feasibility or Feasibility level as appropriate. Mineral Reserves are classified into Proven and Probable categories. Mineral Reserves have not yet been estimated for the Triple R deposit.

Mineral Resources were classified as Indicated or Inferred based on drill hole spacing and the apparent continuity of mineralization (Figure 14-13). Most of the MZ domain was classified as Indicated owing to the closely spaced drilling throughout the length of the zone. In these areas of Indicated Mineral Resources, drill hole sections are spaced 15 m apart along strike and vertical holes are spaced approximately 10 m along each section. Angle holes are spaced from 15 m to 45 m apart, averaging 30 m, in the along strike direction. Three of the eight high grade lenses were classified entirely as Indicated. Almost the entire R00E Zone was classified as Indicated. All material outside the wireframes, within the Low Grade Halo domain, was classified as Inferred.

FIGURE 14-13 3D VIEW OF THE MINERAL RESOURCE CLASSIFICATION



Green = Indicated
Blue = Inferred

MINERAL RESOURCE REPORTING

At cut-off grades of 0.20% U_3O_8 for open pit and 0.25% U_3O_8 for underground, Indicated Mineral Resources are estimated to total 2,011,000 tonnes at an average grade of 1.83% U_3O_8 containing 81,111,000 pounds of U_3O_8. Inferred Mineral Resources are estimated to total 785,000 tonnes at an average grade of 1.57% U_3O_8 containing 27,157,000 pounds of U_3O_8. Gold grades were also estimated and average 0.55 g/t for the Indicated Resources and 0.66 g/t for the Inferred Resources.

Table 14-9 reports Mineral Resources by potential mining method, Zone and Sub-Zone. The Zones are those areas traditionally referred to by Fission Uranium in press releases and on its website and are generally defined by differences in location with respect to local grid easting. The Sub-Zones refer to the different types of interpreted wireframes and can also be referred to as domains. The HG domain consists of several lenses within the MZ. The MZ is the largest zone at both R00E and R780E. Other Zones refer to smaller mineralized zones adjacent to the MZ. The Low Grade Halo is material located outside the interpreted wireframe models interpolated with a restricted search ellipse.

TABLE 14-9 TONNAGE AND GRADE BY ZONE AND SUB-ZONE – JULY 28, 2015
Fission Uranium Corp. - Patterson Lake South Property

	Tonnage	U_3O_8 grade (%)	Au grade (g/t)	U_3O_8 pounds	Au ounces
Indicated Open Pit					
R780E HG	107,000	17.98	2.75	42,565,000	10,000
R780E MZ	952,000	0.82	0.42	17,130,000	13,000
R00E	89,000	1.23	0.13	2,409,000	380
Total	**1,149,000**	**2.45**	**0.62**	**62,104,000**	**23,000**
Indicated Underground					
R780E HG	5,000	23.27	3.34	2,514,000	1,000
R780E MZ	645,000	0.85	0.54	12,082,000	11,000
R00E	16,000	2.07	0.17	712,000	90
R780E OTHER	197,000	0.85	0.58	3,699,000	4,000
Total	**863,000**	**1.00**	**0.56**	**19,007,000**	**15,000**
Indicated Open Pit and Underground					
R780E HG	112,000	18.22	2.78	45,079,000	10,000
R780E MZ	1,597,000	0.83	0.47	29,211,000	24,000
R00E	105,000	1.35	0.14	3,121,000	470
R780E OTHER	197,000	0.85	0.58	3,699,000	4,000
Total	**2,011,000**	**1.83**	**0.59**	**81,111,000**	**38,000**
Inferred Open Pit					
R780E HG	23,000	25.27	3.85	12,845,000	3,000
R780E MZ	23,000	1.62	1.18	802,000	1,000
R00E	3,000	2.04	0.03	133,000	0
HALO	21,000	0.54	0.24	248,000	160
R780E OTHER	5,000	0.31	0.20	31,000	0
Total	**74,000**	**8.61**	**1.64**	**14,060,000**	**4,000**
Inferred Underground					
R780E HG	2,000	22.77	2.48	1,053,000	170
R780E MZ	35,000	0.93	0.87	723,000	1,000
R00E	5,000	4.15	0.84	501,000	150
HALO	120,000	0.52	0.35	1,386,000	1,000
R780E OTHER	547,000	0.78	0.58	9,433,000	10,000
Total	**711,000**	**0.84**	**0.56**	**13,097,000**	**13,000**
Inferred Open Pit and Underground					
R780E HG	25,000	25.06	3.73	13,898,000	3,000
R780E MZ	58,000	1.20	0.99	1,526,000	2,000
R00E	8,000	3.41	0.56	634,000	150
HALO	141,000	0.52	0.34	1,634,000	2,000
R780E OTHER	552,000	0.78	0.58	9,465,000	10,000
Total	**785,000**	**1.57**	**0.66**	**27,157,000**	**17,000**

Notes:
1. CIM definitions were followed for Mineral Resources.

2. Mineral Resources are reported within the preliminary pit design at a pit discard cut-off grade of 0.20% U_3O_8 and outside the design at an underground cut-off grade of 0.25% U_3O_8 based on a long-term price of US$65 per lb U_3O_8 and PEA cost estimates.
3. A minimum mining width of 2.0 m was used.
4. Numbers may not add due to rounding.

Table 14-10 reports Mineral Resources at different cut-off grades and demonstrates that the Triple R deposit is relatively insensitive to cut-off grade up to 0.3% U_3O_8.

TABLE 14-10 TONNAGE AND GRADE BY CUT-OFF – JULY 28, 2015
Fission Uranium Corp. - Patterson Lake South Property

Classification	Cut-Off % U_3O_8	Tonnes	Grade % U_3O_8	Grade g/t Au	Pounds U_3O_8	Ounces Au
Indicated	0.30	1,693,000	2.13	0.67	79,324,000	37,000
	0.25	1,891,000	1.93	0.62	80,516,000	38,000
	0.20	2,136,000	1.74	0.57	81,729,000	39,000
	0.15	2,443,000	1.54	0.51	82,909,000	40,000
	0.10	2,766,000	1.37	0.46	83,797,000	41,000
Inferred	0.30	671,000	1.79	0.74	26,472,000	16,000
	0.25	778,000	1.58	0.67	27,123,000	17,000
	0.20	917,000	1.38	0.59	27,809,000	18,000
	0.15	1,091,000	1.18	0.52	28,479,000	18,000
	0.10	1,378,000	0.96	0.43	29,271,000	19,000

Notes:
1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are reported within the preliminary pit design at a pit discard cut-off grade of 0.20% U_3O_8 and outside the design at an underground cut-off grade of 0.25% U_3O_8 based on a long-term price of US$65 per lb U_3O_8 and PEA cost estimates. For the purposes of this table, the open pit and underground Mineral Resources are combined.
3. A minimum mining width of 2.0 m was used.
4. Numbers may not add due to rounding.

COMPARISON TO PREVIOUS ESTIMATE

Table 14-11 compares the current Mineral Resource estimate to the initial Mineral Resource estimate announced in January 2015. The increase in average grades is due to the higher cut-off grade of 0.2% U_3O_8 for open pit and 0.25% U_3O_8 for underground resources compared with the previous cut-off grade of 0.1% U_3O_8 for all resources. This change in cut-off grade is also responsible for the decrease in resource tonnages; however, that decrease is offset by current reporting of underground tonnage below the open pit resources and additional areas identified from winter 2014 drilling.

Overall, the current Indicated Mineral Resources contain approximately 1.5 million more pounds of U_3O_8 than the January 2015 estimate and the Inferred Mineral Resources contain approximately 2.2 million more pounds of U_3O_8 than the January 2015 estimate.

TABLE 14-11 COMPARISON TO PREVIOUS RESOURCE ESTIMATE
Fission Uranium Corp. - Patterson Lake South Property

	Tonnage(t)	U_3O_8 (%)	U_3O_8 (lb)
Current Estimate			
Indicated	2,011,000	1.83	81,111,000
Inferred	785,000	1.57	27,157,000
January 2015 Estimate			
Indicated	2,291,000	1.58	79,610,000
Inferred	901,000	1.30	25,884,000
Difference			
Indicated	-280,000	0.25	1,501,000
Inferred	-116,000	0.27	1,273,000
Percent Difference			
Indicated	-12%	16%	2%
Inferred	-13%	21%	5%

MINERAL RESOURCE VALIDATION

RPA validated the block model by visual inspection, volumetric comparison, swath plots, and block grade estimation using an alternative method. Visual comparison on vertical sections and plan views, and a series of swath plots found good overall correlation between the block grade estimates and supporting composite grades.

The estimated total volume of the wireframe models is 1,803,500 m^3, while the volume of the block model at a zero grade cut-off is 1,802,600 m^3. Results by wireframe are listed by domain in Table 14-12.

TABLE 14-12 VOLUME COMPARISON
Fission Uranium Corp. - Patterson Lake South Property

Domain	Volume Wireframes (m^3 x1,000)	Volume Blocks (m^3 x1,000)	Difference
MZ	1,137.3	1,137.3	0%
HG	58.1	57.4	-1%
EAST_1	115.1	114.9	0%
FW_1	32.7	32.5	-1%
FW_2	4.4	4.5	1%
FW_3	52.1	52.2	0%
FW_4	46.5	46.4	0%
FW_5	38.5	38.7	1%
FW_6	6.5	6.7	3%
HW_1	61.4	61.7	0%
LZ_1	11.8	11.8	1%
LZ_2	19.4	19.2	-1%
LZ_3	35.4	35.2	-1%
LZ_4	6.3	6.2	-1%
LZ_5	65.0	64.8	0%
LZ_6	18.8	18.7	0%
LZ_7	2.4	2.4	-1%
LZ_8	30.7	30.7	0%
R00E	61.2	61.1	0%
Total	**1,803.5**	**1,802.6**	0%

15 MINERAL RESERVE ESTIMATE

A Mineral Reserve is defined as the "economically mineable part of a Measured and/or Indicated Mineral Resource" demonstrated by studies at Pre-Feasibility or Feasibility level as appropriate. Mineral Reserves are classified into Proven and Probable categories. Mineral Reserves have not yet been estimated for the PLS Project.

16 MINING METHODS

The Project hosts the Triple R deposit, a structurally controlled east-west trending sub-vertical high grade uranium deposit. The deposit is overlain by 50 m to 100 m of sandy overburden, with the high grade mineralization located near the bedrock-overburden contact. The deposit extends under Patterson Lake, and will require a ring dyke and slurry wall to effectively isolate the deposit from the lake.

As part of the PEA, an Open Pit vs. Underground trade-off study was conducted to determine the optimum mining method for developing the orebody. Factors for consideration in determining the optimum extraction method include:

- Regulatory and permitting considerations
- Environmental footprint and impact on biological and aquatic wildlife
- Radiological considerations, and impacts of radiation exposure to site personnel
- Safety implications with respect to water inflow and geotechnical considerations
- Overall extraction factor of the orebody with respect to crown pillar considerations
- Extraction factor of specific high-grade ore pods, with respect to worker safety
- Review of constructability and project complexity for each of the options
- Empirical trade-off of capital and operating costs for each of the selected options

Upon evaluation of these factors, an optimum mine development plan was proposed that forms the basis of the PEA.

RPA recommends a hybrid option, consisting of open pit mining of the smallest possible footprint that covers the high grade resources (>4% U_3O_8), in parallel with underground mining of the remainder of the deposit.

MINING METHODS

OPEN PIT

Mining of mineralized material and uranium bearing waste is proposed to be carried out by the owner. The overburden stripping and barren waste mining will be exclusively done by a contractor with a dedicated mining fleet (larger equipment) given the total volume to be excavated and the higher production rate required.

The combination of owner-operated mining and contractor mining will be carried out using conventional open pit methods consisting of the following activities:

- Drilling performed by conventional production drills.
- Blasting using an emulsion explosive and a down-hole delay initiation system.
- Loading and hauling operations performed with hydraulic shovels, front-end loaders, and underground haulage trucks (mineralized material and some waste) and rigid frame trucks (overburden and remainder of waste)

The production equipment will be supported by bulldozers, a grader, and a water truck. Support fleets will be separated into contractor and owner fleets in order to minimize the amount of contractor equipment that is in contact with radioactive material.

UNDERGROUND

The mining method for the underground will be longhole retreat mining in both transverse and longitudinal methods based on current block model information. The mining will retreat from the Exhaust Air Raises (EAR) towards the Fresh Air Raises (FAR), and will be mined in blocks ranging from three to four levels for transverse mining. In the longitudinal areas of mining, the lenses will be mined bottom up.

The ventilation system will be a push-pull system with two FARs and three EARs. The ventilation in the underground workings will be used once in the ore production areas. The air will be forced ventilated with a positive flow in the transverse and longitudinal headings (air will be pumped into the headings). Push-pull ventilation systems have been used extensively in uranium mines in the Athabasca Basin.

GEOTECHNICAL ANALYSIS AND DESIGN

Geotechnical analysis and design was carried out by BGC. The following is a summary of their report, titled "Preliminary Economic Assessment Level Mine Geotechnical Study", dated September 2015.

ROCK CHARACTERISTICS

One of the parameters collected by Fission Uranium personnel during the exploration drilling was the Rock Quality Designation, or RQD (Deere and Deere, 1988). Data was provided from the entire exploration program. In the interest of time, because the data could easily be imported into a database without significant manipulation and because the holes from this time interval intersected a good cross section of the Project site, only holes from the 2013 to 2015 programs were analyzed. These represent 93% of the holes drilled.

Based on the lithologies indicated in the boreholes, the results were analyzed based on three rock types: north semi-pelites, south semi-pelites, and altered rocks, which includes the altered and unaltered pelites of the mineralized zone and the altered semi-pelites.

Point Load and UCS testing was conducted by the University of Saskatchewan on rock samples provided by Fission Uranium and the data was provided for use in this study. For the purposes of this study, the analysis focused on the 54 UCS test results. Testing was performed based on the following rock lithologies:

- South semi-pelite - fresh and altered
- Pelite (fresh and altered)
- North semi-pelite (fresh and altered)

The test results are summarized in Table 16-1.

TABLE 16-1 UNCONFINED COMPRESSIVE STRENGTH TESTING
Fission Uranium Corp. - Patterson Lake South Property

Unit	Rock Condition	# of Samples	UCS (MPa)			
			Average	Max	Min	St. Dev
North Semi-Pelite	All Results	19	**75**	165	7	42
	Fresh	10	**105**	165	54	31
	Altered	9	**42**	76	7	23
Pelite	All Results	17	**63**	148	13	44
	Fresh	7	**110**	148	68	29
	Altered	10	**30**	54	13	12
South Semi-Pelite	All Results	18	**63**	121	12	32
	Fresh	9	**80**	119	51	23
	Altered	9	**46**	121	12	31

The results in Table 16-1 show that the average UCS for the unaltered semi-pelites (both north and south) range from 80 to 110 MPa. Alteration has a significant impact on the UCS of each rock type, with an average ranging from 42 to 46 MPa in the semi-pelites, to 30 MPa in the pelites.

In addition to UCS, Rock Mass Rating (RMR_{76}) was calculated by BGC on hole PLS15-363. Statistically, the RMR_{76} values range from 44 to 79, with an average value of 63 and a standard deviation of 10. The RMR_{76} values cluster in two distributions: 40 to 60 and 60 to 80, corresponding to Fair Rock to Good Rock. Based on the geological logs, the distinction between the two ranges appears to correspond to altered versus unaltered rock.

The rock mass classification described above is based on a single borehole within the rock mass, located in the middle of the south wall of the proposed R780E pit. Much of the core, particularly in the mineralized rock, had been split prior to measurement. Complete geotechnical data will be required, particularly for the altered and mineralized zone, to refine the rock mass classifications and geotechnical parameters assumed herein.

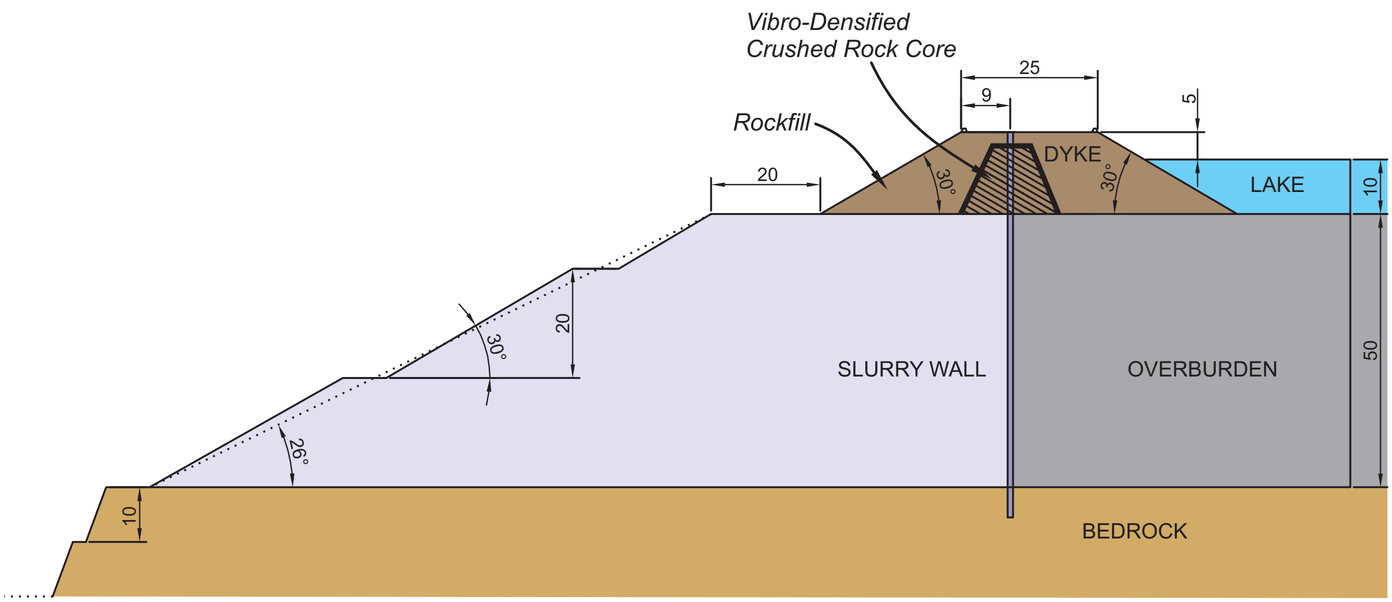
Comparison of the RQD values measured by BGC with those measured by site personnel for hole PLS15-363 show that, where the RQD is 80 or higher, the agreement between the two RQD observations is reasonably consistent. However, where the RQD drops below 80, the values measured by site personnel are much lower. It is believed that the RQD measured by site personnel counts many mechanical breaks as natural joints, resulting in lower values.

Groundwater conditions for the underground excavations have been assumed to be dry. Some water inflow can be expected in areas of lower RQD or along faults, particularly if they are continuous through to the surface sediments.

RING DYKE

As the deposit extends under Patterson Lake, a dyke needs to be constructed that isolates the deposit from the lake. The total linear length of the dyke is approximately 2,550 m. The dyke has a top berm width of 25 m, and slope angles of approximately 30º. The dyke will be built to a height of approximately four to five metres above the lake elevation. The estimated quantity of rock fill required to build the dyke is 1.2 million m^3.

To build the dyke, fill material must be brought in from a borrow pit located approximately 30 km away from the site. Trucks would bring the material to the dyke location and continually advance the structure into Patterson Lake. The dyke would be initiated from both the north and south shore location, and meet approximately at the eastern extent of the dyke. Bulldozers and other equipment would continually pack and shape the fill material as it extends into the lake. The dyke core would then be vibro-compacted using specialized equipment. It is likely that fine-grained, soft lacustrine sediments are present at the lakebed surface which, if extensive, may require removal by dredging as part of foundation preparation activities. Rapid loading of lakebed sediments during dyke fill placement could result in slope instability from undrained shear failure. The potential for construction induced failure, including the potential for static liquefaction of underlying silts and fine sands should be investigated at the next project stage. The thickness of soft lakebed sediments (if present) is currently unknown and will require confirmation at the next phase of study. The dyke schematic is shown in Figure 16-1.



NOTE: All measurement shown are in metres.

Figure 16-1

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Ring Dyke Dimensions

September 2015

SLURRY WALL

The ring dyke alone is not sufficient to prevent water flowing into the open pit. To effectively isolate the pit from Patterson Lake, a system of slurry walls is proposed. Slurry walls have been used effectively in a number of northern Canadian mining projects, notably Diavik diamond mine and Meadowbank gold mine. The slurry wall concept was based on discussions between BGC and Bauer Foundations Canada Inc. (Bauer), the contractor responsible for cut-off wall construction at Diavik and the lead contractor responsible for the construction of the proposed new Diavik dyke cut-off. Bauer has experience constructing diaphragm walls to depths of more than 100 m in coarse, bouldery overburden deposits. The trench excavation for that project was completed by means of a combination of clamshell and hydromill technology. The former was used to remove particles up to cobble and small boulders, while the latter was used to advance through boulders that were too large to remove by clamshell.

Bauer expects that similar equipment could be used to construct a diaphragm wall to bedrock at PLS, including a socket into the bedrock surface. They caution that the time for construction (and cost) will be heavily dependent on the frequency and size of boulders in the overburden. For example, the time required to remove boulders by grinding with the hydromill is on the order of 20 to 30 times greater than advancing an equivalent distance in material that can be more easily excavated. The greatest concern is with respect to boulders that are larger than the width of the trench, which is expected to range from 1.0 m to 1.5 m.

From the 2012 diamond drill hole logs, the estimated maximum size of boulders encountered in each drill hole ranged from 11 cm (cobble size) up to 46 cm in thickness. These thicknesses, if representative, suggest that cut-off wall construction may require little grinding, however, these observations must be viewed with caution since they were inferred from drill performance and the nature of the drill cuttings, which may be unreliable. The 2012 dual rotary drill holes would have allowed for a more representative assessment of the overburden soils compared to the diamond drill holes and these records did not report any boulders within the glaciofluvial sand. However, these holes were drilled more than 1 km west of the proposed pit and may not be representative of the conditions around the pit where the wall would be constructed. Since 2013, the drill hole casing was advanced directly to bedrock and the overburden was not sampled. The records from these drill holes did report the presence of boulders, although the frequency and size of boulders was not described.

For the purposes of estimating the time and cost of constructing the wall, BGC has assumed that one percent of the volume of overburden would comprise boulders of a size that would require grinding by hydromill. This assumption was based on a review of the number and size of boulders reported on the exploration drill hole logs, however, it should be considered as approximate given the uncertainty with respect to the overburden sampling methods. As this assumption may have a significant impact on the construction costs, the potential frequency, size, and nature of the boulders along the proposed cut-off wall alignment will need to be evaluated at future stages of the Project.

Determination of the required socket depth into bedrock will require characterization of the rock mass, measurements of the hydraulic conductivity of the bedrock and seepage analyses to estimate the volume of water that could potentially flow into the pit. For the purposes of this assessment, it has been assumed that the total depth of required cutoff in bedrock is 2.5 m. A bedrock cutoff that is deeper than 2.5 m would likely involve installation of a pressure grout curtain.

The slurry wall will completely circumnavigate the deposit (including the shore-based portion), with a total linear length of approximately 3,300 m. The slurry wall is planned to be one metre thick, with average depths of 60.7 m from the working surface. A summary of the slurry wall system is shown in Figure 16-2.

FIGURE 16-2 SLURRY WALL SYSTEM

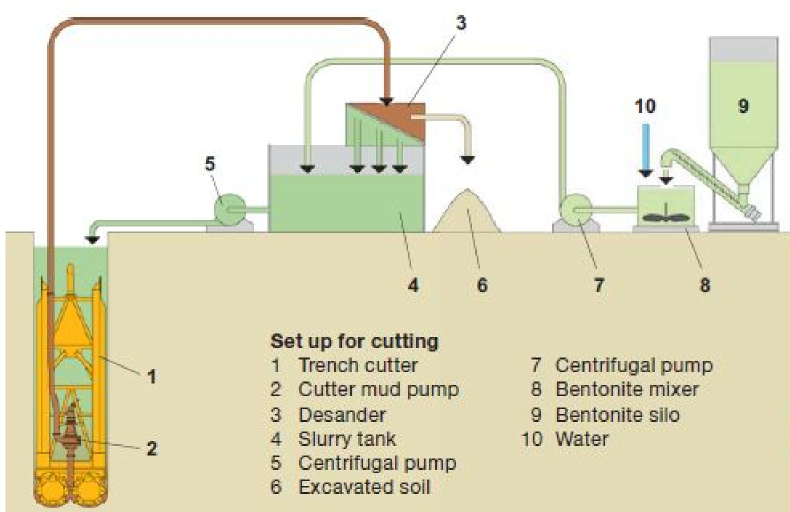


Photo Credit: Bauer Maschinen GmbH, 1/2015

The sequence of developing the slurry wall follows a primary-secondary method, and is shown in Figure 16-3.

FIGURE 16-3 SLURRY WALL CONSTRUCTION SEQUENCE

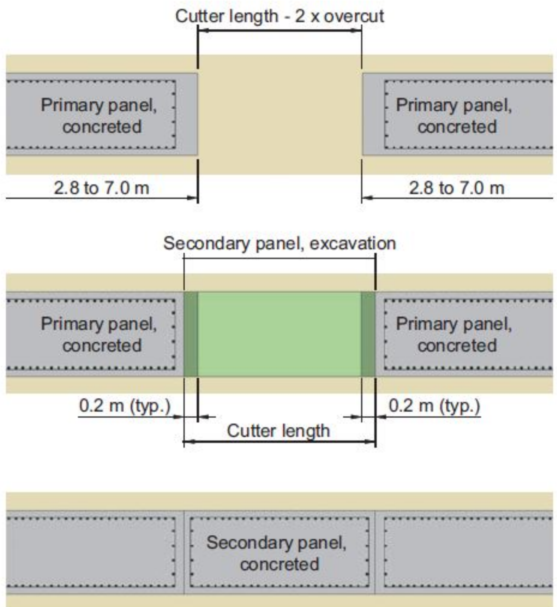


Photo Credit: Bauer Maschinen GmbH, 1/2015

An example of dyke and slurry wall under construction is shown in Figure 16-4. This photo shows slurry wall construction at the Diavik diamond mine, located in Northwest Territories, Canada.

FIGURE 16-4 EXAMPLE OF SLURRY WALL CONSTRUCTION – DIAVIK DIAMOND MINE

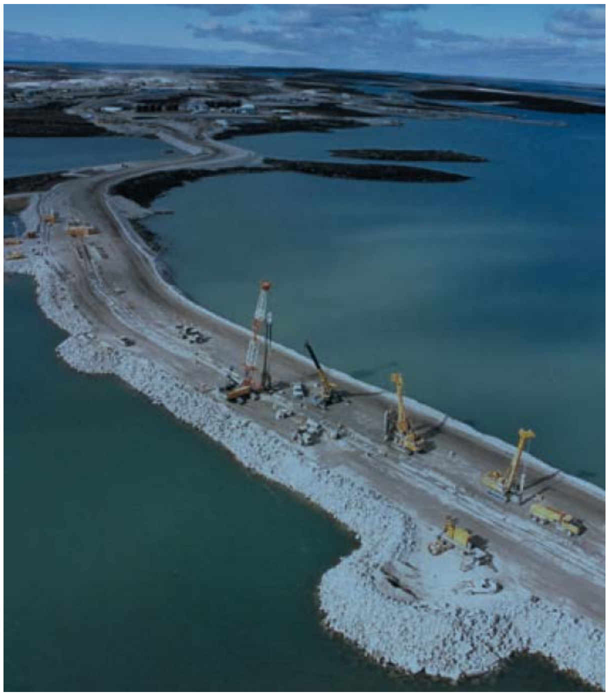


Photo Credit: Bauer Maschinen GmbH, 1/2015

DEWATERING

After completion of the slurry wall, the enclosed pit will be dewatered. No allowance has been made for the treatment of this water, as it is assumed to be of equivalent quality to the surrounding lake (confirmation of this assumption should be carried out in future studies). The enclosed pit contains an estimated 17.4 million m^3 of water, which would be pumped out of the pit over the course of Year -1. To accomplish this, six 12 in. diameter pumps would be sourced from an equipment rental company. Hydro-seeding would then take place on the exposed overburden, to assist in preventing erosion. Hydro-seeding would take place over approximately 400,000 m^2.

The concept of overburden removal by pumping should be considered in future studies, as the pumps that were evaluated to perform the initial dewatering are capable of pumping solids up to 75 mm in diameter. This concept may provide an opportunity to both lower capital costs and improve construction timelines.

OPEN PIT

The slope design angles described below are preliminary in nature. The data used in the analyses are based on the following sources:

- Generalized published data available for the study area;
- Exploration drilling, logging, and interpretation done by Fission Uranium and their contractors;
- A site visit by Mr. James Tod, of BGC, on June 16 and 17, 2015, during which he inspected core from several boreholes, did check-logging and collected geotechnical data.

All overburden observed during the site visit was composed of fine sand with gravel, cobbles, and boulders. Boulders were typically on the scale of 0.3 m, however, larger ones on the order of one metre diameter were also observed. The material was relatively compact in road cuts, but was easily disturbed. The water table in the overburden is expected to be at or near the level of the local bodies of water, and the material is expected to be highly permeable. No water was observed on the slopes.

The overburden stratigraphy, interpreted by BGC based on the available drilling records from the 2012 and 2013 exploration program (Armitage, 2013), is expected to consist primarily of glaciofluvial sand and boulders. This material is expected to be loose with a low fines content, and a corresponding high permeability.

The onshore stratigraphic profile at the western edge of the pit is comprised of glaciofluvial sand with boulders above clayey lodgement till. The lodgement till is underlain by discontinuous layers of confined glaciofluvial sand and gravel material and Cretaceous mudstone of the Mannville Formation. Based on the available information, it appears that these units "pinch-out" near the western pit boundary. Thin layers of Devonian-age sandstone were locally observed above the basement bedrock in this area. The contact surface of the basement bedrock is generally level and is typically encountered at an elevation of 450 MASL. Along the interpreted section, the total thickness of overburden is approximately 80 m at the western edge of the pit.

The stratigraphy at the eastern edge of the pit (i.e., beneath the lake) is less complex and generally comprises glaciofluvial sand with boulders directly above the basement bedrock. The clayey glacial till, underlying glaciofluvial sand and gravel deposit and the Cretaceous mudstone did not appear to be present above the basement bedrock in this area. The basement bedrock beneath the lake slopes from elevation 450 MASL at the western shoreline to approximately 435 MASL at the eastern side of the pit. The corresponding overburden thickness ranges from 45 m to 55 m.

As actual strength data for the overburden materials is not available, material properties for the overburden soils were estimated by BGC based on typical values for the interpreted soil types and on engineering judgement.

Stability analyses were performed using the limit equilibrium software package Slope/W by Geo-Slope International Limited, assuming 30 m bench heights with a 30° bench face angle and 8 m bench width in the overburden slopes above the proposed pit. The overburden slopes were considered to be completely dewatered based on a proposed low-permeability cutoff wall behind the slope and the implementation of well points to draw the piezometric level in the pit to at or below the toe of the overburden slope. The purpose of these analyses was to identify potential stability concerns and to support the conceptual design of the open-pit excavation. Note that the analyses did not include the potential for blast- or seismic-induced liquefaction of the overburden materials. Additional geotechnical investigation will be required during subsequent levels of study to better characterize the overburden materials, and their properties.

Results from the modelling show that an inter-ramp slope angle of 26° in overburden corresponds to a Factor of Safety (FoS) of 1.5, which is considered acceptable for long-term stability of overburden slopes. The 26° inter-ramp slope angle in the overburden materials is considered suitable for the current stage of study. These slopes will require measures to mitigate erosion.

A range of open pit slope design criteria is presented in Table 16-2. The recommended bench face angle of 70° was used by RPA along with double benches in ore and waste.

TABLE 16-2 CONCEPTUAL OPEN PIT SLOPE DESIGN CRITERIA FOR ROCK
Fission Uranium Corp. - Patterson Lake South Property

Bench Configuration	Bench Height (m)	Bench Width (m)	Bench Face Angle (degrees)	Interramp Slope Angle (degrees)	Overall Slope Angle[3] (degrees)	Location
Double Bench - Waste (Unaltered semi-pelite)	20	8.5	65 **70**	48 **52**	46 **49**	

			75[1]	55	53	North and South Pit Walls
Single Bench - Mineral (Pelite and altered pelite, altered semi-pelite)	5	5.5	65 **70** 75[1]	33 **34** 36	31 **33** 34	East and West Pit Walls
Double Bench[2] **- Mineral** (Pelite and altered pelite, altered semi-pelite)	10	6.5	65 **70** 75[1]	42 **45** 47	40 **43** 45	East and West Pit Walls

Notes:

1. Bench face angles steeper than 70° will likely require controlled blasting.
2. In BGC's experience, a double bench configuration provides better rockfall catchment than a single bench, particularly when working with 5 m benches. It is recommended to pre-split the entire double bench face to avoid horizontal offset between benches.
3. The overall slope angle is for illustration only, and is based on the assumption that a single 21 m ramp, including catchments, is present in each wall. Actual slope design should use the inter-ramp slope angles shown and be adjusted for actual ramp conditions.

Overall slope stability and the potential for large-scale failure through the rock mass was evaluated using industry standard limit equilibrium stability analysis methods with Slide (Rocscience). The analyses were carried out for the proposed overall pit slopes using upper and lower bound rock mass strength criterion for the rock mass. The impact of the water table on the slope stability was also assessed. A minimum FoS of 1.3 was used as the acceptance criteria. Based on this assessment, all slopes met the required FoS assuming a moderately de-watered state.

For waste dumps of overburden material consisting of glaciofluvial bouldery sand, for the current stage of design, a 26° (2H:1V) overall slope angle is recommended. This assumes 30 m lifts, a 30° bench face angle and an eight metre berm between lifts. A maximum of two lifts is assumed.

For waste dumps of good quality blasted rock, a dump face angle of 38° is recommended, assuming the rock is free draining. These should be constructed in 50 m lifts, with an 11 m berm in between for a maximum of two lifts. This results in an overall dump slope angle of 1.5H:1V, or 34°.

The entire sequence of dyke construction, slurry wall, dewatering, and overburden removal is shown in Figure 16-5.

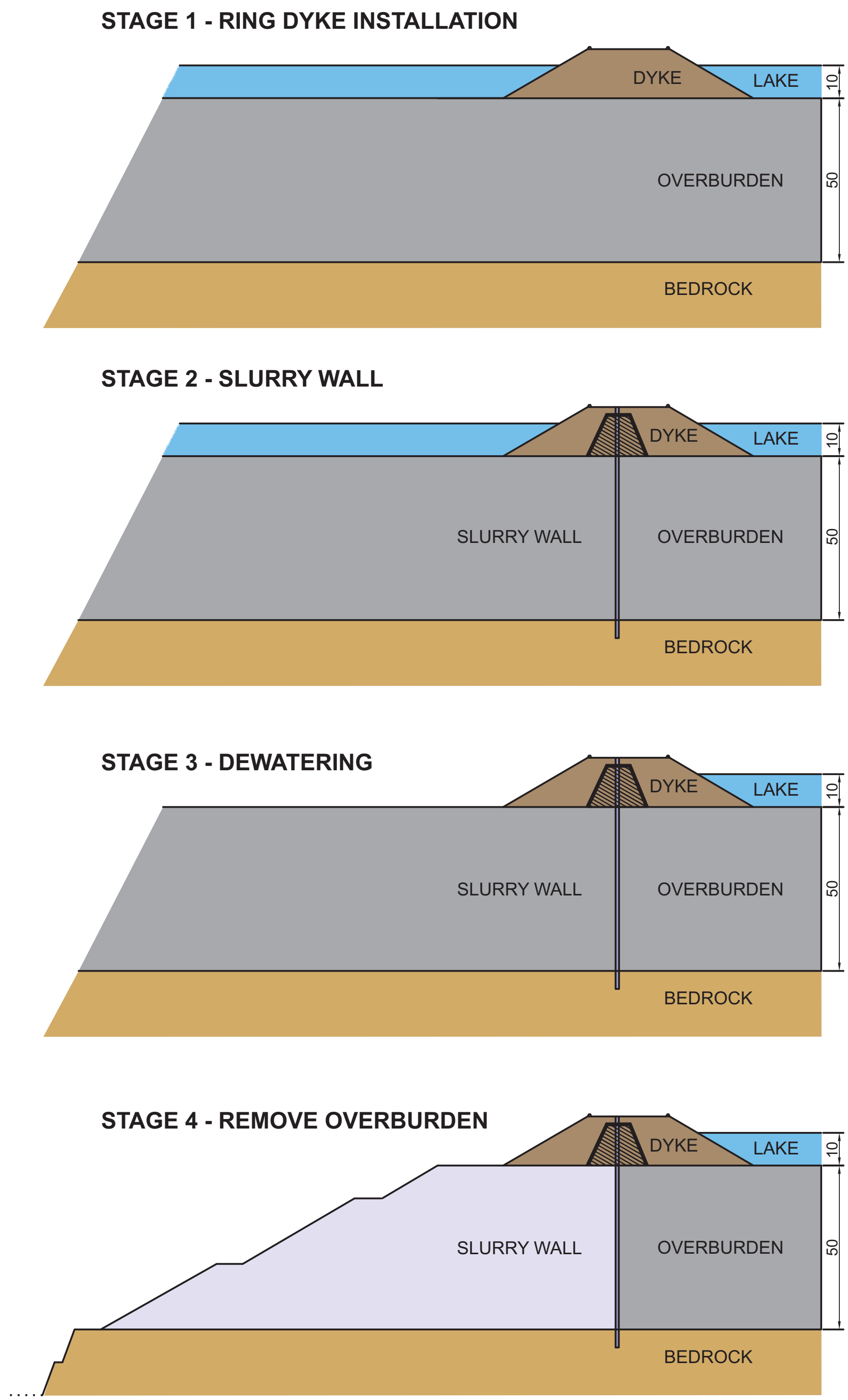


Figure 16-5

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Open Pit Establishment Sequence

NOTE: All measurement shown are in metres.

September 2015

UNDERGROUND

Due to the thickness of overburden at the site, access to the underground will be developed from within one of the open pits. Rock mass quality is expected to be variable depending on the rock type and the level of alteration. The quality of the rock mass dictates that most of the development should be in the unaltered north semi-pelites in the footwall of the mineralized zones.

Additional studies will be necessary to determine the nature of the faults identified from the geophysics, the impact of faulting on the rock mass, and the support requirements for development through the fault structures. Structural data will also need to be obtained for the rock mass to determine the potential wedge type blocks that may form in the backs of development.

Systematic reinforcement is recommended for all accesses. Reinforcement design will depend on the rock mass classifications determined in future design studies.

Stope Dimensions

Stope dimensions were analyzed using an empirical open stope design methodology known as Mathews-Potvin, or the Stability Graph Method (Potvin, 1988). As defined in Section 3.3.2, the Q' value of 16.7 was used for the unaltered rock (north and south semi-pelites), and the Q' value of 2.2 was used for the altered rock (altered north and south semi-pelites and pelites) that surround and comprise the mineralized zone.

Input parameters for the analyses are shown in Table 16-3. Values for Sigma 1 (major principal stress) were estimated using Examine2d Version 8 (Rocscience 2012). In the absence of available structural data, joint sets were assumed to be present parallel to all surfaces (B = 0.3). Gravitational failures were assumed for the stope backs (C = 2) and gravity fall or slabbing failure was assumed for the stope walls (C = 8).

TABLE 16-3 INPUT PARAMETERS FOR STABILITY GRAPH ANALYSES
Fission Uranium Corp. - Patterson Lake South Property

Depth	Q'		UCS		Induced	UCS/Sig1		A		B	C	N'	
	min	avg	min	avg	Stress	min	avg	min	max			min	avg
Backs - Pelite													
100 m	2.2	16.7	30	110	8	3.8	13.8	0.30	1.42	0.3	2	0.39	14.25
200 m	2.2	16.7	30	110	15	2.0	7.3	0.10	0.70	0.3	2	0.13	7.01
300 m	2.2	16.7	30	110	23	1.3	4.8	0.02	0.41	0.3	2	0.03	4.14
Hangingwall / Footwall - Pelite													
100 m	2.2	16.7	30	110	0.6	50.0	183.3	1.00	1.00	0.3	8	5.28	40.08
200 m	2.2	16.7	30	110	1	30.0	110.0	1.00	1.00	0.3	8	5.28	40.08
300 m	2.2	16.7	30	110	1.4	21.4	78.6	1.00	1.00	0.3	8	5.28	40.08
End walls - Pelite													
100 m	2.2	16.7	30	110	8	3.8	13.8	0.30	1.00	0.3	8	1.57	40.08
200 m	2.2	16.7	30	110	15	2.0	7.3	0.10	0.70	0.3	8	0.53	28.06
300 m	2.2	16.7	30	110	23	1.3	4.8	0.02	0.41	0.3	8	0.11	16.55

The results of the empirical analyses are summarized in Table 16-4. Analyses were conducted for the backs of the stopes and for wall stability at varying stope heights. In all cases the hangingwalls, footwalls, and end walls of the stopes have been assumed to be vertical. Preliminary mining blocks provided by RPA indicate a 15 m sublevel interval (floor to floor), with a 15 m strike length.

The lower bound rock quality in Table 16-4 represents the altered rock (Q' = 2.2); the average rock quality represents the unaltered semi-pelites in the hangingwall and footwall (Q' = 16.7). Designs in both are presented to show the potential range for stope dimensions, particularly if future studies improve the rock mass classifications in the altered rock.

Ground support in the form of cable bolts can be successfully installed and monitored in stope backs but not in stope walls. Hence, stope design is based on recommended dimensions for supported stope backs and unsupported stope walls, as shown by the highlighted cells in Table 16-4.

From Table 16-4, the stope span and strike length of the stope back, which are located in the altered rock, will be the controlling factor for stope design. Using the stable values for the hydraulic radius shown above, it is recommended that the stope span be limited to a maximum of 10 m, which gives a maximum strike length of 15 m. Consequently, the design 15 m strike length assumed by RPA should be maintained. For a 15 m strike length, the stope height is expected to be stable up to 25 m in height. However, given the constraints on ore grade and the limited knowledge available for the rock mass structure, a maximum 20 m stope height should be considered.

TABLE 16-4 RESULTS OF STABILITY GRAPH ANALYSIS OF STOPE DIMENSIONS

Fission Uranium Corp. - Patterson Lake South Property

STOPE DIMENSIONS USING STABILITY GRAPH

BACK STABILITY

Depth	Q'	Calculated N'	Stable (m)	Avg. Transition (m)	Unsupported (H curve)² (m)	Upper Support (m)	Average Support (m)	Lower Support (m)	Unsupported Back Stope Span (m) 7	10	15	25	Supported Back Stope Span (m) 7	10	15	25
			STABILITY GRAPH INTERCEPTS (m) [1]						STOPE STRIKE LENGTH (m)							
Lower Bound Rock Quality for the Back																
100 m	**2.2**	0.39	1.62	2.52	2.45	3.41	4.86	6.30	16	10	7	6	> 100	> 100	28	16
200 m	**2.2**	0.13	1.07	1.78	1.64	2.48	3.85	5.21	6	5	4	4	> 100	33	16	11
300 m	**2.2**	0.03	0.60	1.09	0.93	1.58	2.79	4.00	3	2	2	2	27	13	9	7
Average Rock Quality for the Back																
100 m	**16.7**	14.25	6.28	8.05	9.32	9.82	10.80	11.77	> 100	> 100	> 100	73	> 100	> 100	> 100	> 100
200 m	**16.7**	7.01	4.80	6.39	7.16	7.98	9.19	10.40	> 100	> 100	> 100	34	> 100	> 100	> 100	69
300 m	**16.7**	4.14	3.94	5.38	5.89	6.83	8.16	9.49	> 100	> 100	55	22	> 100	> 100	> 100	47

HANGING WALL / FOOTWALL STABILITY

Depth	Q'	Calculated N'	Stable (m)	Avg. Transition (m)	Unsupported (H curve)² (m)	Upper Support (m)	Average Support (m)	Lower Support (m)	Unsupported Sidewall Stope Height (m) 15	20	25	Supported Sidewall Stope Height (m) 15	20	25
			STABILITY GRAPH INTERCEPTS (m) [1]						STOPE STRIKE LENGTH (m)					
Lower Bound Rock Quality for the Hangingwall/Footwall														
100 m	**2.2**	5.28	4.31	5.83	6.45	7.34	8.62	9.90	92	36	27	> 100	> 100	56
200 m	**2.2**	5.28	4.31	5.83	6.45	7.34	8.62	9.90	92	36	27	> 100	> 100	56
300 m	**2.2**	5.28	4.31	5.83	6.45	7.34	8.62	9.90	92	36	27	> 100	> 100	56
Average Rock Quality for the Hanging Wall/Footwall														
100 m	**16.7**	40.1	9.27	11.29	13.69	13.32	13.70	14.09	> 100	> 100	> 100	> 100	> 100	> 100
200 m	**16.7**	40.1	9.27	11.29	13.69	13.32	13.70	14.09	> 100	> 100	> 100	> 100	> 100	> 100
300 m	**16.7**	40.1	9.27	11.29	13.69	13.32	13.70	14.09	> 100	> 100	> 100	> 100	> 100	> 100

ENDWALL STABILITY

Depth	Q'	Calculated N'	Stable (m)	Avg. Transition (m)	Unsupported (H curve)² (m)	Upper Support (m)	Average Support (m)	Lower Support (m)	Unsupported Endwall Stope Span (m) 7	15	25
			STABILITY GRAPH INTERCEPTS (m) [1]						STOPE HEIGHT (m)		
Lower Bound Rock Quality for the Endwall											
0 to 100 m	**2.2**	1.6	2.73	3.93	4.11	5.13	6.57	8.02	> 100	18	12
100 to 175 m	**2.2**	0.5	1.81	2.77	2.74	3.73	5.18	6.63	25	9	7
175 to 250 m	**2.2**	0.1	1.02	1.70	1.56	2.38	3.73	5.09	6	4	4
Average Rock Quality for the Endwall											
0 to 100 m	**16.7**	40.1	9.27	11.29	13.69	13.32	13.70	14.09	> 100	> 100	> 100
100 to 175 m	**16.7**	28.1	8.10	10.05	11.99	11.99	12.62	13.24	> 100	> 100	> 100
175 to 250 m	**16.7**	16.6	6.64	8.45	9.86	10.27	11.17	12.08	> 100	> 100	93

Notes:
1. "Stable" represents the limit curve boundary between the stable zone and unsupported transition zone.
   - Relationship used: log N' = -0.965 + 2.65 log HR where HR is the shape factor (hydraulic radius).
   " Upper Support" represents the limit curve boundary between the unsupported zone and the potentially stable with support zone.
   - Relationship used: log N' = -2.22 + 3.4 log HR.
   "Lower Support" represents the limit curve boundary between the potentially stable with support zone and the supported transition zone.
   - Relationshiup used: log N' = -5.0 + 5.75 log HR.
2. Hadjigeorgiou's unsupported (H) curve.

Based on the information available at the time of this study, the maximum recommended stope dimensions are:

- Span (hangingwall to footwall dimension): 10 m (assuming cable bolt supported stope backs)
- Strike length: 15 m
- Stope height: 20 m (floor to floor)

All dimensions considered herein assume that good blasting practices will be employed so that damage to the walls and stope backs will be minimized to enhance stability. It is also assumed that the paste backfill will be of good quality and placed in a timely manner, and that the backs of all stopes will be supported with cable bolts.

Stand-Up Time

Stand up time is expected to be sufficient for the average PLS ore for the stope dimensions recommended above. Nonetheless, filling should be sequenced to follow immediately after ore excavation.

In poorer quality ground, operational adjustments may have to be made to ensure mucking and filling can take place in a timely manner. An assessment of the rock mass quality on a stope by stope basis is recommended to determine the quality of the rock mass for each stope block, and the alterations to the stope dimensions and support at the work face to mine the stope safely.

Crown Pillar Dimensions

The crown pillar above the underground workings at PLS will be located in the deeper part of the deposit, to the east of the R780E pit. It is understood that the stopes will be backfilled with paste backfill. Based on rules of thumb, a crown pillar thickness of double the stope span is possible. However, given the presence of the lake overlying the underground mine, the unknown limits and distribution of the alteration zone, and the overlying dyke and cutoff wall surrounding the proposed open pit, BGC recommended that a 50 m crown pillar in rock be assumed for this conceptual study.

Given the overburden conditions above the proposed underground mine, timely backfilling of the stopes is required and tight filling is necessary to prevent unravelling of the stope backs below the crown pillar, which could result in potentially catastrophic inflow into the underground workings in the event of a crown pillar failure or chimney failure of the rock allowing connection to the bedrock/overburden interface.

HYDROGEOLOGY

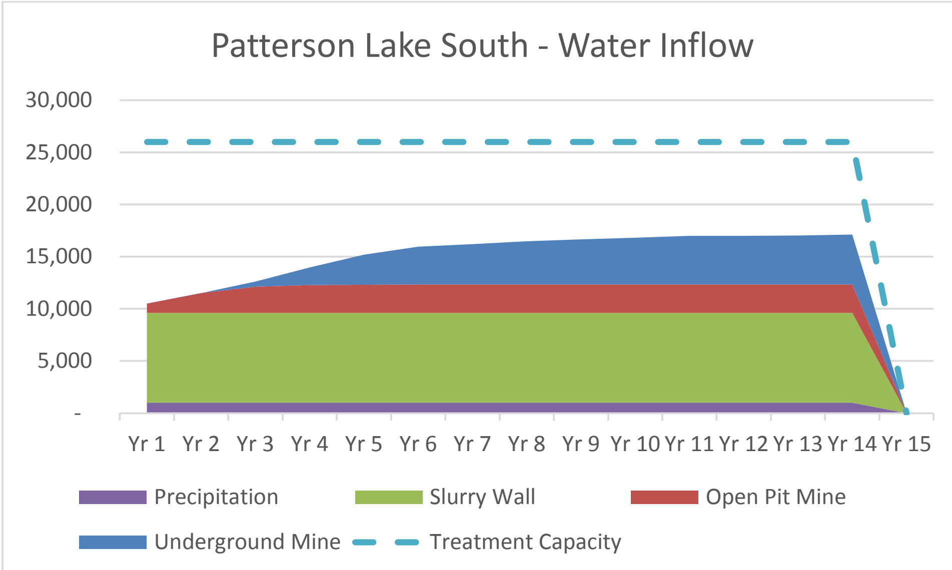
A detailed hydrological study has not been conducted on the Project. Allowances were made to estimate water inflow into both the open pit and underground mine, and a pumping and treatment system was planned accordingly. Four potential sources of water inflow are summarized in Table 16-5.

TABLE 16-5 HYDROLOGY INPUTS
Fission Uranium Corp. - Patterson Lake South Property

Water Source	Inflow Rate	Variable	Steady State Inflow
Underground mine development	2.0 m^3 / day / 10 m of drift development	23,833 m	Variable by Year
Open pit bedrock exposure	2.0 m^3 / day / 200 m^2 of exposed bedrock	271,500 m^2	Variable by Year
Slurry wall seepage	2.6 m^3 / day / m of linear slurry wall	3,323 m	8,640 m^3 / day
Precipitation into open pit and other catchment areas	0.38 m / yr / m^2 of surface area	956,800 m^2	986 m^3 / day

The inflow factors for underground mining, open pit mining, and slurry wall seepage were sourced from comparable projects. The expected precipitation was sourced from data collected at the Cluff Lake, Saskatchewan, national weather station. All water collected during production years is planned to be treated and discharged back to the environment. No allowance has been made for treating the water pumped during the initial pit drawdown. A radiological assessment of the saturated water adjacent to the mineralized zones must be undertaken during the next phase of project development. Using a 1.5 factor of safety, a water treatment and pumping system capable of handling 26,000 m^3 per day is planned. Total expected water inflow over the life of the Project is shown in Figure 16-6.

FIGURE 16-6 LIFE OF MINE WATER INFLOW



RADIATION PROTECTION

When considering the design of the mine, radiological protection of site personnel is paramount. In the context of uranium mining, radiation exposure comes from gamma rays, alpha particles, beta particles, radon gas, and the decay of radon gas into what is known as radon progeny. The primary concern from a radiation protection point of view relates to exposure from gamma radiation and radon progeny. Gamma radiation affects both underground and open pit mining, while radon progeny is generally only a concern in underground mining. The CNSC sets out rigorous standards for the amount of radiation exposure that a worker can receive over a set time interval (typically a five year window). It is then up to the company to establish yearly, quarterly, monthly, weekly, and daily radiation exposure limits that a worker is permitted to receive.

The four tenets used to minimize radiation exposure are time, distance, shielding, and ventilation.

- Time: minimize the time that a worker needs to spend in an area of radioactivity
- Distance: maximize the distance that a worker needs to be in relation to a radioactive area
- Shielding: maximize the shielding that protects a worker from the source of radioactivity
- Ventilation: plan an effective ventilation system that consistently removes air-borne contaminants such as radon progeny and gas

The approach to mine design taken by RPA was to isolate the deposit into distinct high-grade and low-grade zones. The high-grade zones identified in the resource estimate cannot be safely extracted using conventional underground mining methods. A complex, remote mine method such as those used at Cameco's Cigar Lake or McArthur River mines would have to be developed. In consultation with radiological experts at Arcadis, mineralization grading 4% was set as the inflection point at which conventional underground mine methods could be considered. Therefore, the open pit was designed to capture all material greater than 4% U_3O_8 content. Managing radiation exposure from high grade material in an open pit mine environment is much easier compared to underground mining. Ventilation is generally a non-factor, time spent extracting ore is considerably less, personnel can work at a greater distance away from the ore, and shielding techniques are easier to implement.

In the underground mine plan, the tenets of time, distance, shielding, and ventilation have all been considered. The ventilation system is planned in a way that utilizes "single-pass ventilation", where fresh air brought through raises is used only once in an ore-heading before it is discharged to the exhaust system. Ventilation from waste headings may be re-used provided that it meets accepted standards for air quality. Shielding will be incorporated into both the mine mobile equipment, and ground support practices used at the mine. Similarly, minimizing the time – and maximizing the distance – a worker is in the vicinity of mineralization has been incorporated into the mine design.

MINE DESIGN

OPEN PIT

Pit optimization analyses were run on the Mineral Resource to determine the economics of extraction by open pit methods. The parameters used in the pit optimization runs are presented in Table 16-6.

TABLE 16-6 WHITTLE PIT OPTIMIZATION PARAMETERS
Fission Uranium Corp. - Patterson Lake South Property

Parameter	Unit	Input
Pit Slopes (OVB)	degrees	30
Pit Slopes (Rock)	degrees	45
Ore Mining Cost	US$/tonne	15.00
Waste Mining Cost	US$/tonne	3.00
Process Cost	US$/tonne	62.51
Tailings Cost	US$/tonne	0.98
G&A Cost	US$/tonne	7.00
Process and G&A Cost	US$/tonne	70.49
Mining Extraction	%	100
Mining Dilution	%	0
Met. Recovery	%	95
Raised COG	%	0.1
U_3O_8 Price	$/lb U_3O_8	65.00
Shipping	$/lb U_3O_8	0.65
Contingencies	$/lb U_3O_9	3.77
Royalties	$/lb U_3O_8	9.10
Total Charges	$/lb U_3O_8	13.52
Block Size	m	5x2x5

Due to the high value of the mineralized material, economic pits at high strip ratios approximately 40 to 50:1 (waste:mineral) were achieved.

The key criteria in selecting the open pit shell were that it captured the high grade pod and minimized the length of the slurry wall in order to reduce capex. Pit 10 (Table 16-7) with a revenue factor of 0.33 was selected as it was the pit with the smallest footprint that was able to capture all of the high grade pods. Mining of a greater proportion of the deposit by open pit methods is certainly economically feasible, however the trade-off is complex, involving both qualitative and quantitative factors. As resource drilling continues and the Project advances to further studies, this trade-off should be revisited and optimized.

TABLE 16-7 WHITTLE PIT OPTIMIZATION RESULTS
Fission Uranium Corp. - Patterson Lake South Property

Pit	Revenue Factor	U_3O_8 Price (US$/lb)	Total Rock (kt)	Total Ore (kt)	Strip Ratio (w:o)	U_3O_8 Contained (klb)	U_3O_8 Grade (%)
1	0.24	15.60	4,095	27	151.4	8,098	13.67
2	0.25	16.25	32,001	315	100.5	60,607	8.72
3	0.26	16.90	33,119	415	78.8	64,581	7.05
4	0.27	17.55	34,459	493	68.9	67,538	6.21
5	0.28	18.20	34,972	558	61.7	69,146	5.62
6	0.29	18.85	35,083	607	56.8	69,979	5.23
7	0.30	19.50	35,799	658	53.4	71,123	4.90
8	0.31	20.15	36,260	706	50.4	71,956	4.63
9	0.32	20.80	37,319	759	48.2	73,117	4.37
10	**0.33**	**21.45**	**43,482**	**868**	**49.1**	**76,820**	**4.02**
11	0.35	22.75	43,621	932	45.8	77,435	3.77
12	0.36	23.40	44,416	981	44.3	78,134	3.61
13	0.37	24.05	48,364	1,086	43.6	80,275	3.35
14	0.38	24.70	50,099	1,144	42.8	81,232	3.22
15	0.39	25.35	51,199	1,199	41.7	81,938	3.10
16	0.40	26.00	52,353	1,259	40.6	82,641	2.98
17	0.41	26.65	52,510	1,293	39.6	82,891	2.91
18	0.42	27.30	54,885	1,398	38.3	84,148	2.73
19	0.43	27.95	55,480	1,443	37.4	84,540	2.66
20	0.44	28.60	55,514	1,474	36.7	84,703	2.61
21	0.45	29.25	83,187	1,884	43.2	92,769	2.23
22	0.46	29.90	83,234	1,918	42.4	92,936	2.20
23	0.47	30.55	83,509	1,960	41.6	93,187	2.16
24	0.48	31.20	83,611	1,996	40.9	93,358	2.12

A pit design was carried out using geotechnical inputs and ramps based on equipment sizes. The mine design criteria are presented in Table 16-8.

TABLE 16-8 OPEN PIT MINE DESIGN CRITERIA
Fission Uranium Corp. - Patterson Lake South Property

Parameter	Unit	Overburden	Waste	Ore
Face Angle	(degrees)	30	70	70
Overall Slope Angle	(degrees)	26	49	43
Bench Height	(m)	20	20	10
Berm	(m)	8	8.5	6.5
Ramp Angle	(%)		10	
Standard Ramp Width	(m)		22	
Single Ramp Width	(m)		11	
Safety Berm between Overburden and Bedrock	(m)		10	

The open pits were staged in three pushbacks and the final pit design is presented in Figures 16-7 to 16-10. The ramp design uses a series of switchbacks to minimize the ramps in the north and south walls in order to reduce the overall footprint of the open pit and to reduce length of slurry wall. The ramps are designed at 22 m for two way traffic of 100 t trucks for the removal of waste and overburden. As the pit deepens, the stripping ratio decreases significantly and the ramps are reduced to an 11 m width to accommodate smaller equipment used to mine the mineralized material.

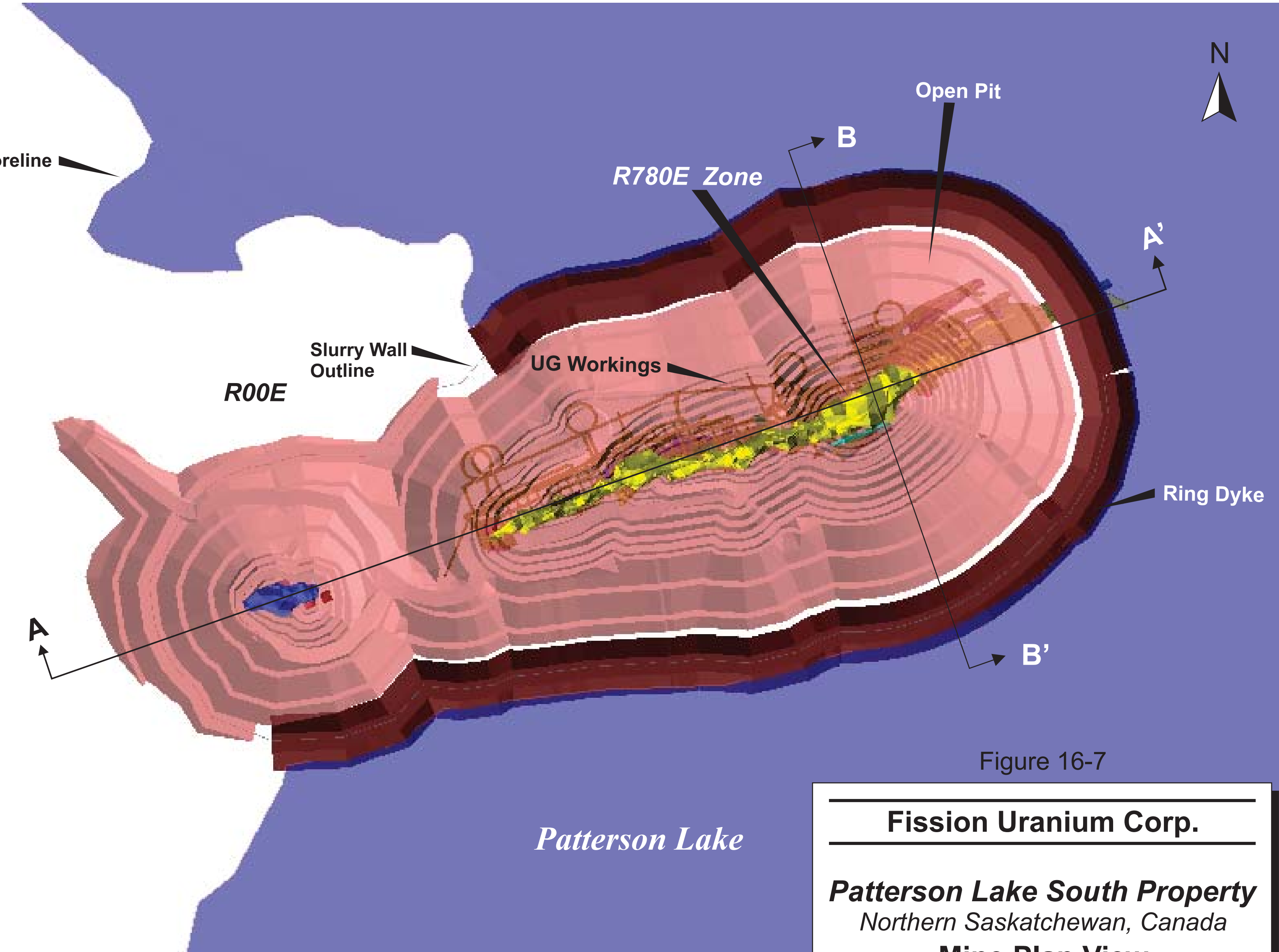


Figure 16-7

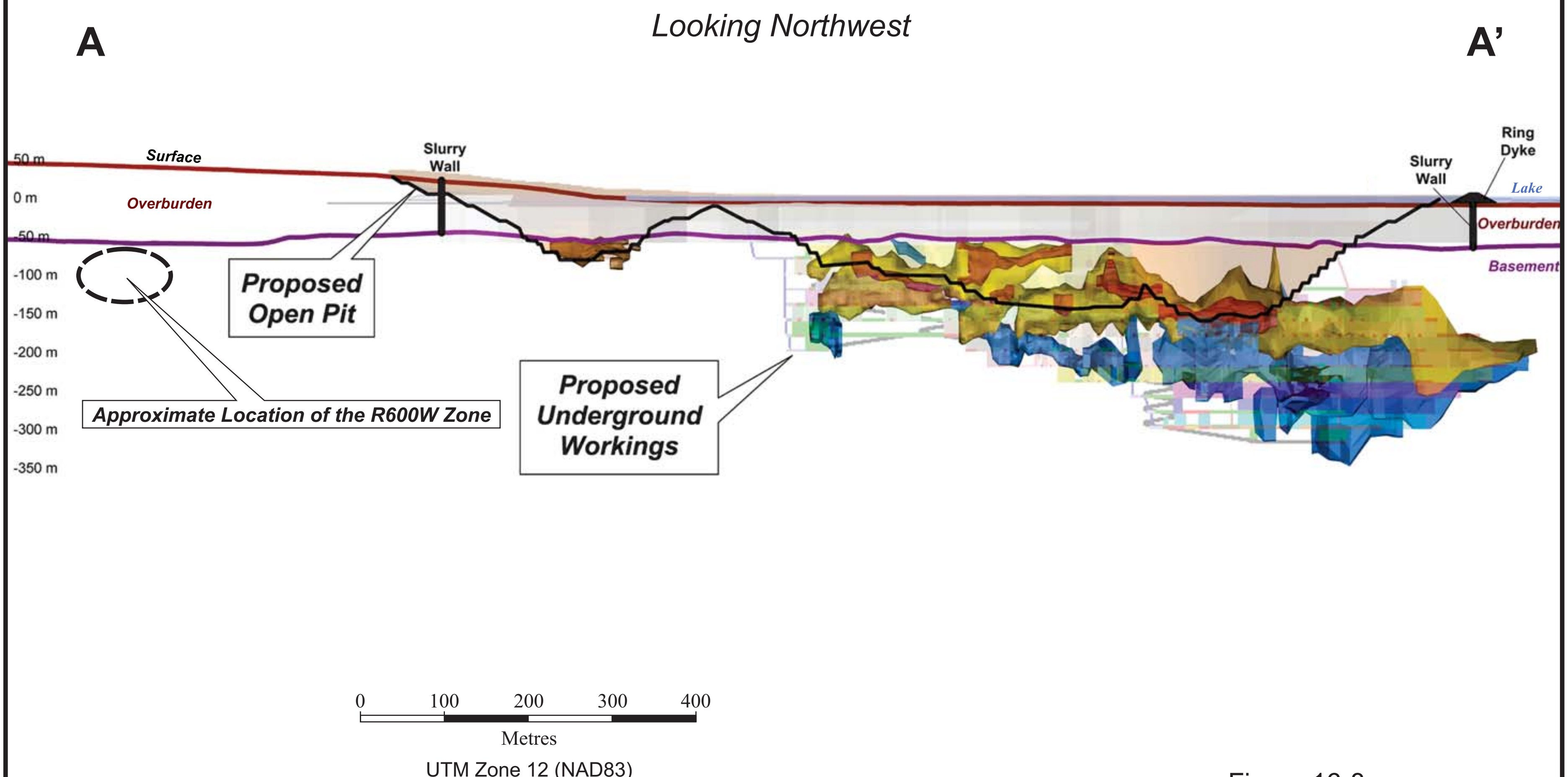
Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Mine Plan View

September 2015



Legend:

- R780E (Main) Lower Grade Zone
- R780E (Main) High Grade Zone
- R780E (Other Zones)
- R00E Zone
- Proposed Open Pit

Figure 16-8

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Mine Long-Section View

Source: Fission Uranium Corp., 2015.

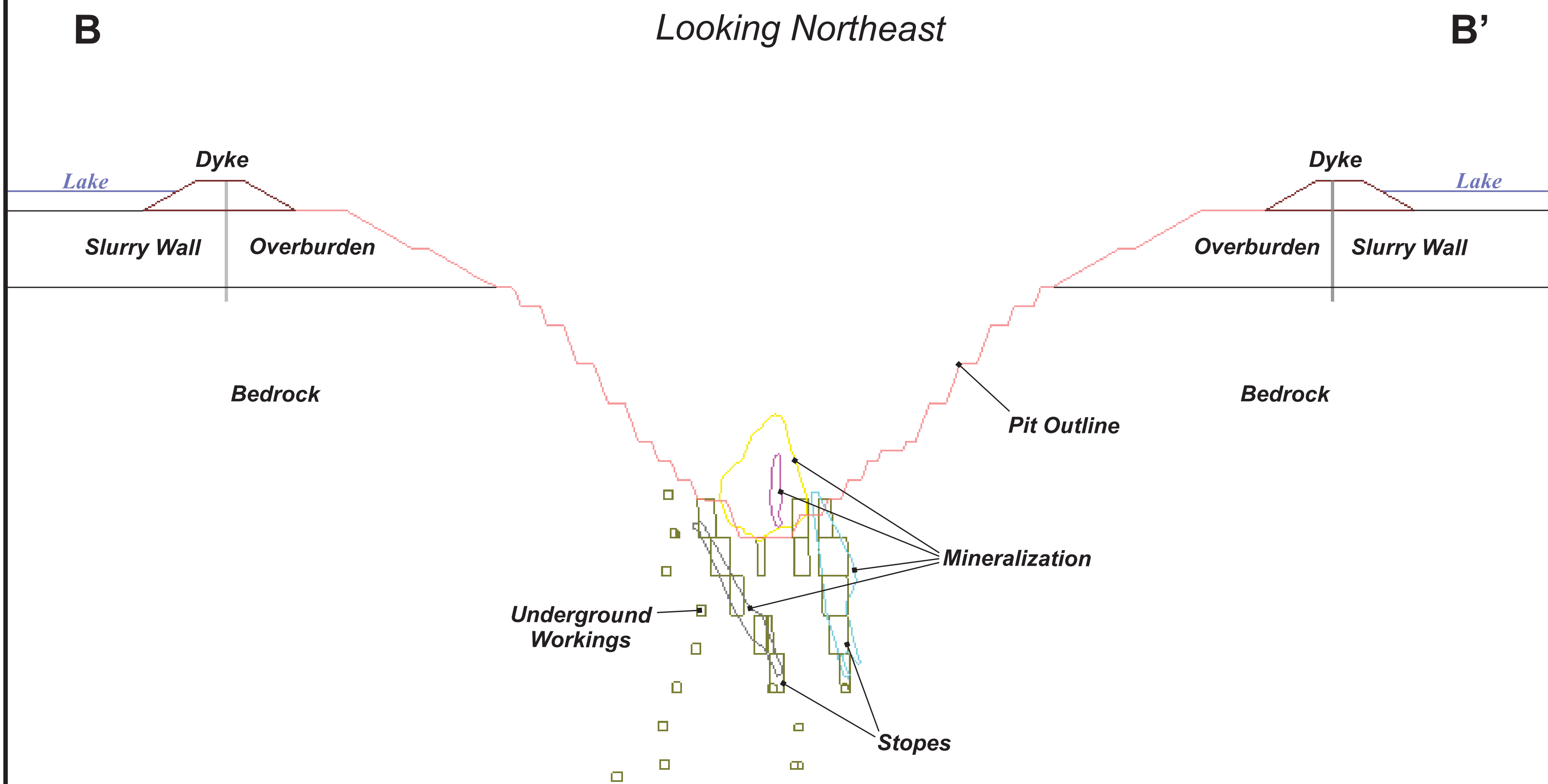


Figure 16-9

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Mine Cross-Section View

September 2015

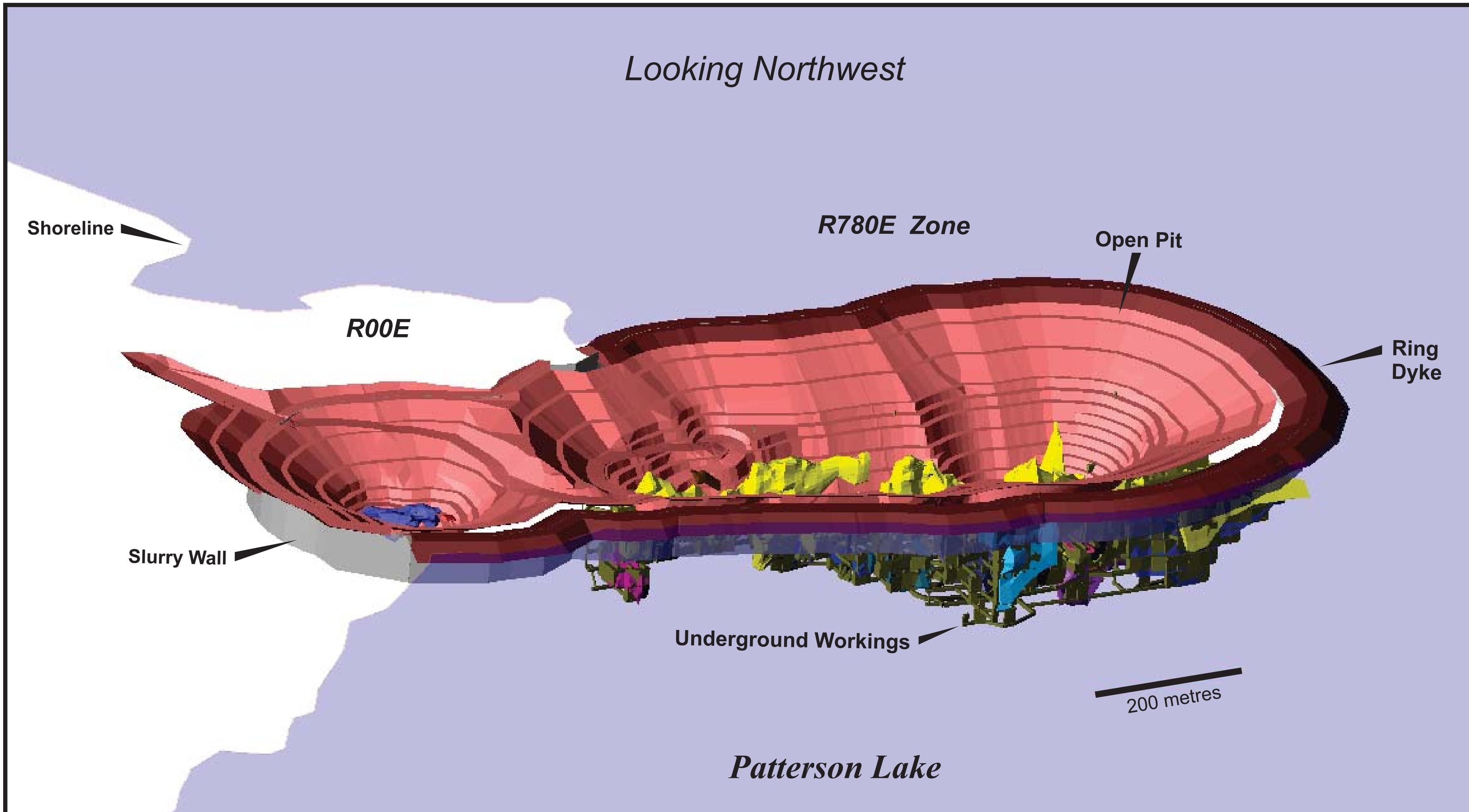


Figure 16-10

Fission Uranium Corp.

Patterson Lake South Property
Northern Saskatchewan, Canada
Mine Isometric View

September 2015

UNDERGROUND

The mining method for the underground mining is longhole retreat. Both transverse and longitudinal mining will be done. Transverse mining makes up the majority of the mining on the west and middle areas of the orebody as shown in Figure 16-11. Longitudinal mining is done in the east end of the orebody where there are multiple narrow lenses. The development sizes are listed in Table 16-9. The retreat mining is done from the EAR towards the FAR so that crews are always in the best ground.

TABLE 16-9 UNDERGROUND DESIGN CRITERIA
Fission Uranium Corp. - Patterson Lake South Property

Parameter	Unit	Width	Height	Arch
Ramp	(m)	5	5	1
Level Access / Haulage	(m)	5	5	1
Vent Access	(m)	4	4	1
Cross Cut (ore dev.)	(m)	4	4	1
Vent Raise - Round	(m)	3		

Underground stopes are planned on 20 m sub-levels. Stope lengths are 15 m in strike and 10 m in width (hangingwall to footwall). For depths 200 m or less the height can increase up to 33 m (stopes under the pit and upper levels).

Stopes were designed using Deswik Stope Optimizer (DSO). Table 16-10 has the parameters used to create the stopes.

TABLE 16-10 DSO DESIGN CRITERIA
Fission Uranium Corp. - Patterson Lake South Property

Parameter	Value
Height	20
Strike Length	15
Minimum Mining Width	2
Maximum Mining Width	100
Cut Off Value	0.1% Uranium
% Dilution allowable	65%

Cut-off grades for stope design were established using preliminary cost estimates for mining, processing, and general and administration. After completing the cost estimate contained within this PEA, the underground mining cut-off grade, on a break-even basis, is approximately 0.25% U_3O_8. In the current life-of-mine plan, there are some stopes grading between 0.1%

U_3O_8 and 0.25% U_3O_8, which could be considered incremental. RPA recommends that further stope grade optimization be carried out in future studies. This optimization would likely result in lower tonnes, higher grades, and improved economics.

The development mining cycle in ore includes the following items:

- Development drilling.
- Blasting.
- Mucking.
- Mechanical scaling.
- Shotcrete – used for immediate support and shielding.
- Bolting and screening.

The production mining cycle includes the following items:

- Cablebolting – Action takes place as soon as a drift is completed. Item is done for the entire stoping area.
- Production Drilling/Blasting – Action takes place after cablebolting. Item is done for the entire stoping area.
- Mucking.
- Backfill.
- Cure time.

Mucking of the next adjacent stope does not take place until backfilling is completed.

Ventilation Raises will either be drop raises or alimak raises between levels. Alimak or raisebore raises will be driven to surface and breakthrough into the bedrock of the pit. The ventilation system for the mine is a push pull system with two fresh air raises and three exhaust raises, as shown in Figure 16-12. A total of 310 m^3/s will be required at peak production with all zones active. The exhaust fans will expel 255 m^3/s out the vent raises, while the remaining air will exhaust the portal, as shown in Figure 16-13. The air exhausting the portal is fresh air that does not go through production areas. The central FAR will contain a ladder system for secondary means of egress. The ventilation is designed to be a single pass use through an ore heading. Once the air has been contaminated in an ore heading it goes immediately to exhaust. Therefore only one ore heading can be mined at a time in a ventilation branch between the FAR and EAR. The ventilation system is design to allow multiple levels to be open in the mine so that up to four stopes can be in various stages of production during mining.

Mining of the mineralization of the underground commences as phase two of the open pit is near completion. A portal will access the underground workings from the pit ramp on the 420 RL in phase two of the pit. Underground production will start as the last benches are mined in phase three.

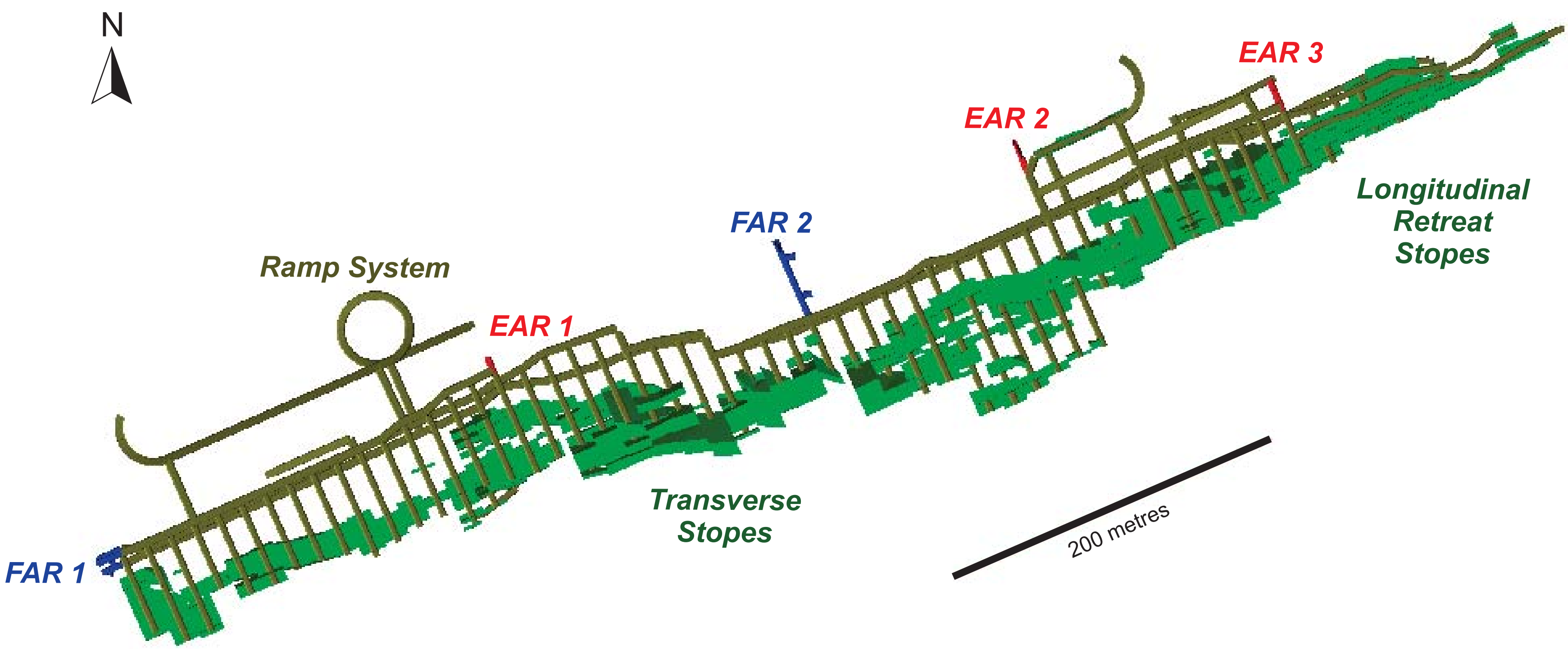


Figure 16-11

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Sample Underground Mine Plan

September 2015

RPA

www.rpacan.com

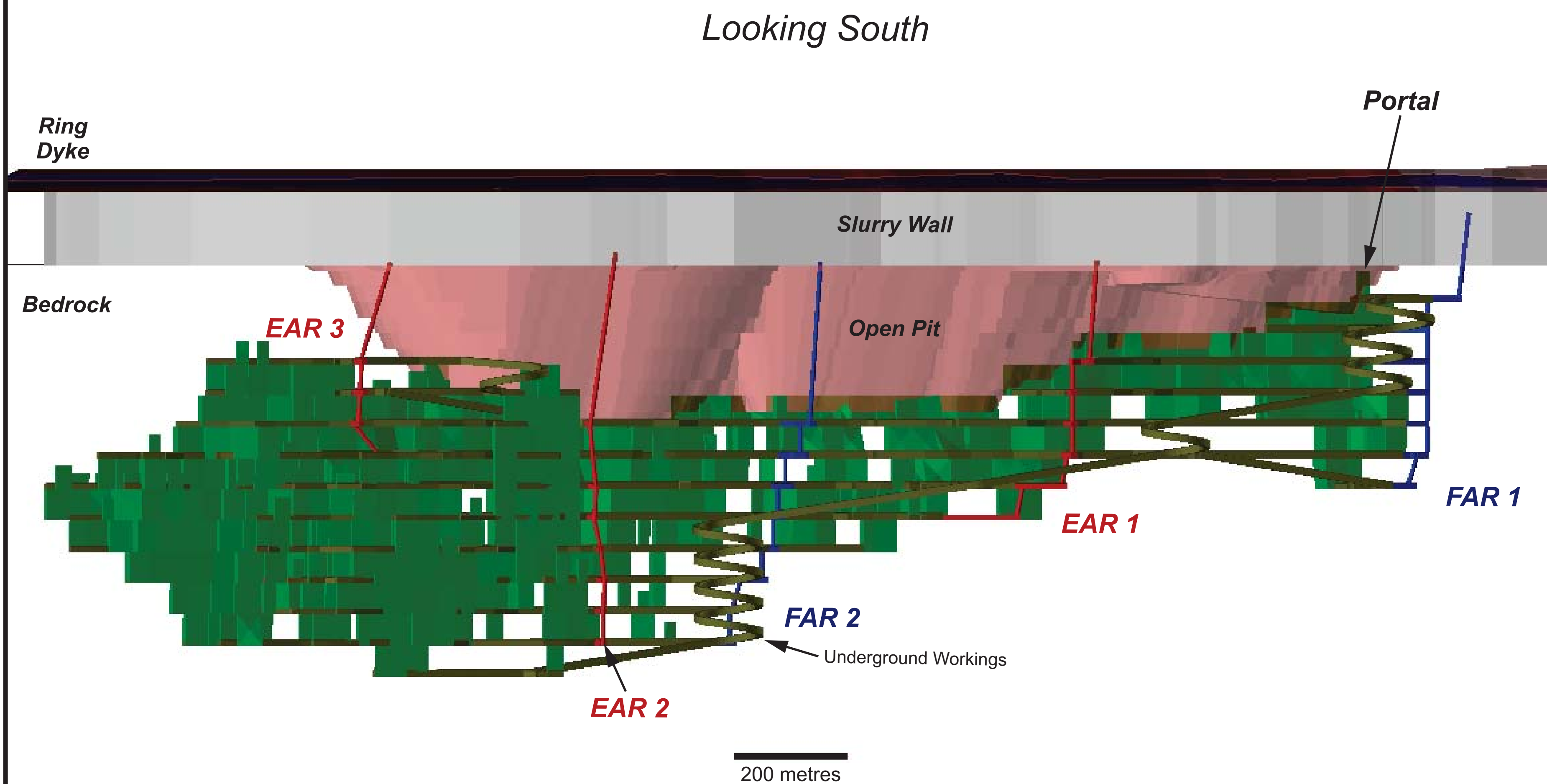


Figure 16-12

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

View of Ventilation System

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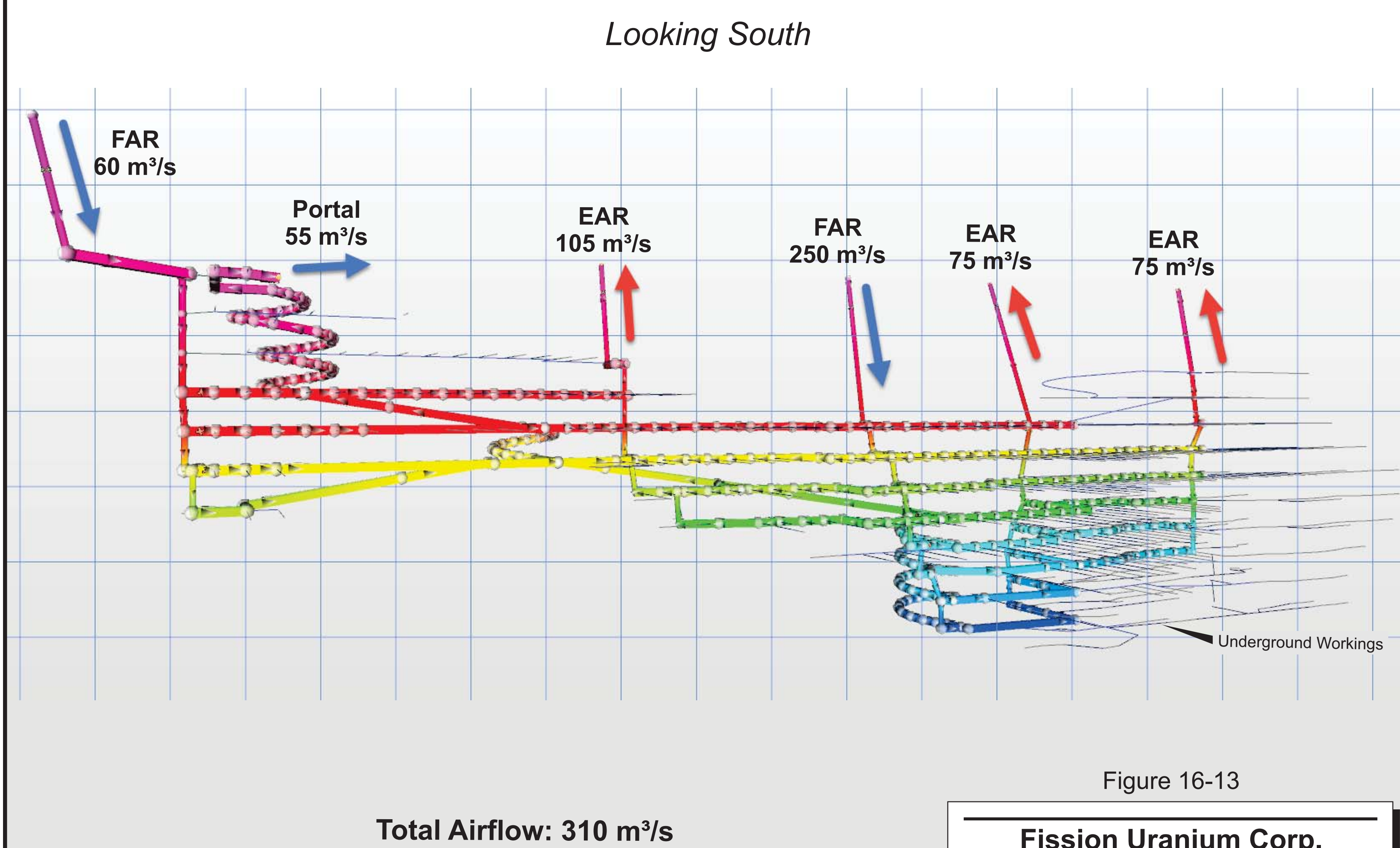


Figure 16-13

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Ventilation System Planned Airflow

September 2015

GROUND SUPPORT

Ground support for the underground mine portion of the Project is designed both for radiological protection, and traditional ground support. It is envisaged that in waste drifts, ground support will include screen and grouted rebar across the back and shoulders of the drift, and split sets installed in the lower walls. In ore headings, shotcrete will be installed in addition to the previously mentioned ground support requirements. Shotcrete provides a radiological shielding to underground mine personnel. The thickness of shotcrete will vary according to the ore grade, with a minimum of 50 mm to be applied. Ground support for stope excavations will include the installation of cable bolts into the hanging-wall of the stope undercut and overcut. Installing cable bolts has the added benefit of reducing dilution.

MINE EQUIPMENT

OPEN PIT

The owner's mine equipment fleet for the open pit operation is listed in Table 16-11. The owner's fleet will operate exclusively in bedrock, and is designed to move approximately 2,000 tpd of total material. The owner fleet will be used to mine mineralized material (to be sent to the stockpile) as well as some waste. All other waste and overburden will be mined by contractor.

The owner fleet will include 40 t underground haul trucks that will be used in the open pit. The decision to use the underground trucks is based on the relatively short life and small daily tonnage of the open pit. Once the open pit life ceases, trucks can be moved to the underground operation with relative ease. The use of one single type of truck for open pit and underground makes maintenance, scheduling, and operator training easier for the mine.

The contractor equipment fleet is summarized in Table 16-12. The equipment fleets were selected based on comparison to operations of similar size and using internal RPA databases.

TABLE 16-11 OWNER OPEN PIT MINE EQUIPMENT
Fission Uranium Corp. – Patterson Lake South Property

Type	Specification	Quantity
Major Equipment		
Front Hydraulic Excavator	5 m^3	2
Underground Haul Truck	40 t	3
Percussion Drill	20 cm	2
Bulldozer	180 kW	3
Grader	230 kW	1
Water/Sand Truck		1
Service/Tire Truck		3
Bulk Truck/Blaster		1
Support Equipment		
Electric Cable Reeler		1
Fuel and Lube Truck		1
Utility Backhoe		2
Mobile Crane		1
Shop Forklift		2
Flat Bed Truck		2
Pick Up Truck		5
Mechanic's Service Truck		1
Electrical Bucket Truck		1
Light Stands		4
Mine Comm./Dispatch System		1

TABLE 16-12 CONTRACTOR MINE EQUIPMENT
Fission Uranium Corp. – Patterson Lake South Property

Type	Specification	Quantity
Major Equipment		
Backhoe Hydraulic Excavator	8 m^3	2
Loader (excavator assist/spare and utility)	10 m^3	1
Haul Truck	100 t	12
Bulldozer	180 kW	4
Grader	230 kW	1
Water/Sand Truck		1
Service/Tire Truck		3
Support Equipment		
Fuel and Lube Truck		1
Utility Backhoe		2
Mobile Crane		1
Flat Bed Truck		2
Pick Up Truck		7
Mechanic's Service Truck		1
Electrical Bucket Truck		1
Light Stands		4

UNDERGROUND

Underground mining equipment is listed in Table 16-13. It is envisaged that the owner will purchase all of the equipment.

TABLE 16-13 UNDERGROUND MINE EQUIPMENT
Fission Uranium Corp. – Patterson Lake South Property

Description	Quantity
2 Boom Jumbo	2
3 yd LHD	2
6 yd LHD	4
40t Haul Truck - TH 540	5
Rock Bolter	2
Production Drill	2
Cable Bolt Drill	1
Lube Truck	1
ANFO Loader Truck	1
Flat Deck Truck w. Crane	1
Transmixer	2
Shotcrete Sprayer	2
Personnel Carrier	2
Scissor Lift	3
Small Vehicles	6
Grader	1

UNDERGROUND MINE INFRASTRUCTURE

SHOTCRETE PLANT

All ore headings, as well as areas with poor ground conditions, will require shotcrete. A wet shotcrete system is planned to be installed on surface. The shotcrete will be transported to working areas where it will be applied with mechanized shotcrete sprayers.

BACKFILL

Backfill of mined-out stopes will be completed using a cemented rock fill and uncemented rock fill combination. Cemented rock fill will be produced using a combination of cement slurry, and either waste rock or sand available on site. The cement slurry will be delivered to the underground via slick line, and then hauled to its final destination.

VENTILATION

As discussed in the mine design section, ventilation will be established using a combination of fresh air raises and exhaust air raises. Air will down-cast through the fresh air raises, and up-cast through both the portal and exhaust raises.

DEWATERING

An extensive dewatering system is planned for both the underground mine and the entire site. As discussed in the hydrogeology section, a pumping system is planned to handle water inflow into the mine. All water entering the mine will be pumped to the process plant where it will be treated and released to the environment. A recycling system will be used to supply water for any mine equipment usage, provided that it is of suitable quality.

MAINTENANCE

An underground service bay will be established for minor repairs and maintenance. All major equipment maintenance will be completed at the central maintenance shop on surface.

POWER

An underground mine electrical station will be established that is fed from the primary power plant on surface. Branching off from the underground main station, a series of electrical substations will be established as required.

COMMUNICATIONS

A fibre-optic communications system is planned for the underground mine. The fibre-optic system has the capacity to handle data for equipment tracking, radiation monitoring, and video monitoring.

A summary of underground mine infrastructure is planned in Table 16-14.

TABLE 16-14 UNDERGROUND MINE INFRASTRUCTURE
Fission Uranium Corp. – Patterson Lake South Property

Stationary Mine Infrastructure	Qty
Fresh Air Raise Fans and Ducting	2
Fresh Air Raise Air Heater House	2
Exhaust Air Raise Fans and Ducting	3
Backfill Plant	1
Wet Shotcrete Plant	1
Air Compressors	2
Radiation Monitoring (Lump Sum)	1
Main dewatering pumps	8
Stope and Development Fans	40
Underground Service Bay	1
Mine Surface Stores/Facilities	1
Mine Control Center	1
Mine Office	1
Explosives Storage	1
Fuel & Lube Storage & Dispensing	1
Refuge Stations	4
Mine Rescue Supplies (Lump Sum)	1

LIFE OF MINE PLAN

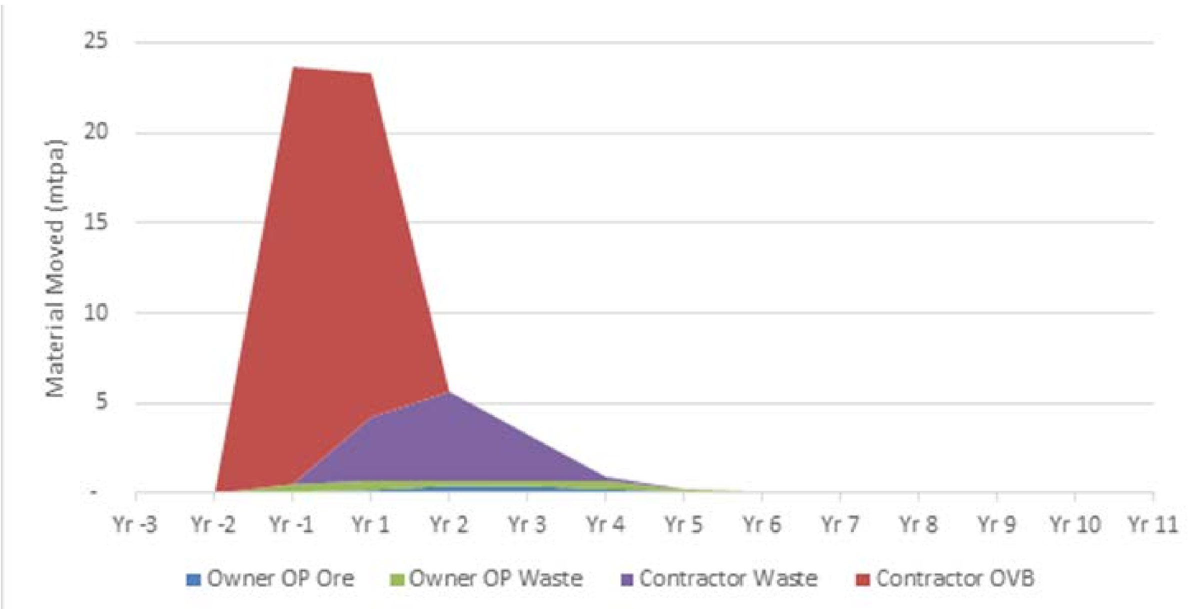
CONSTRUCTION SCHEDULE

A three-year pre-production period is envisaged for the Project. The critical path for completing construction revolves around completing the dyke and slurry wall, dewatering of the enclosed pit, and removal of overburden. In Year -3, the dyke will be completed by starting at both the north and south terminal points and linking the two at the eastern extent of the dyke. Rock material will be sourced from a location within Fission's claim boundaries, approximately 30 km south and east of the deposit. Concurrently in Year -3, the shore-portion of the slurry wall will commence. Slurry wall construction is weather dependent, and can only be accomplished during the period of April to October. In Year -2, the remaining portion of the slurry wall will be completed, as well as some surface buildings and other infrastructure. The process plant will begin construction in Year -2. Year -1 will see the enclosed pit being dewatered, overburden being removed, and all remaining surface and infrastructure facilities completed. Overburden removal will carry over into Year 1.

OPERATIONS

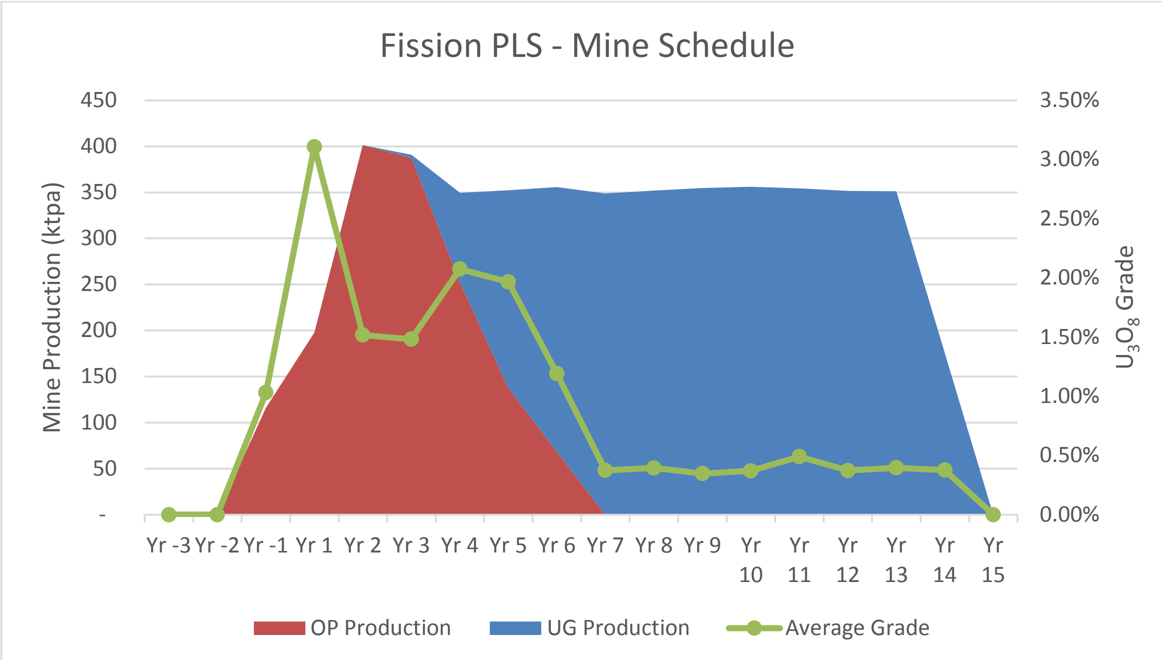
RPA has envisaged a life of mine plan that sees high grade ore being mined from an open pit from Year -1 to Year 6. Underground mining begins with capital development in Year 3 and continues to Year 14. The material movement schedule for the open pit is shown in Figure 16-14. The deposit is situated under 50 m to 100 m of sand overburden, which will be moved by a contractor. The contractor will also assist with peak waste movement.

FIGURE 16-14 OPEN PIT MATERIAL MOVEMENT



The mine production schedule is shown in Figure 16-15.

FIGURE 16-15 LIFE OF MINE PRODUCTION SCHEDULE



It is envisaged that two separate stockpiles will be constructed at the Project, to allow for optimum process blending. The process schedule and recovered uranium schedule are shown in Figure 16-16.

FIGURE 16-16 LIFE OF MINE PROCESS SCHEDULE

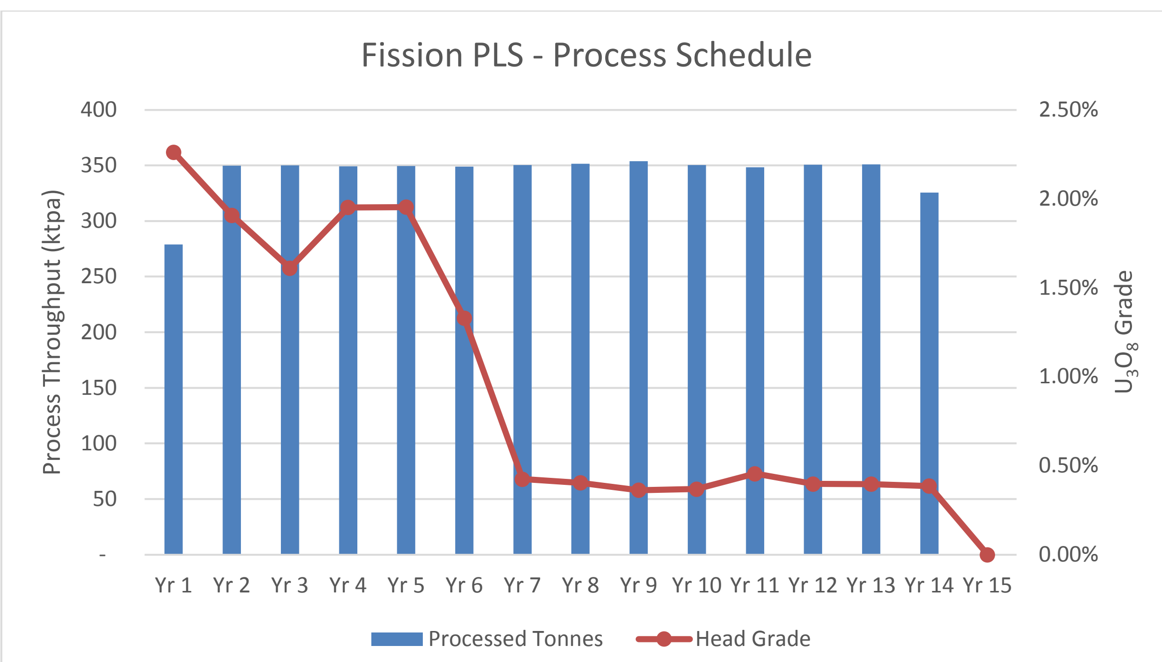
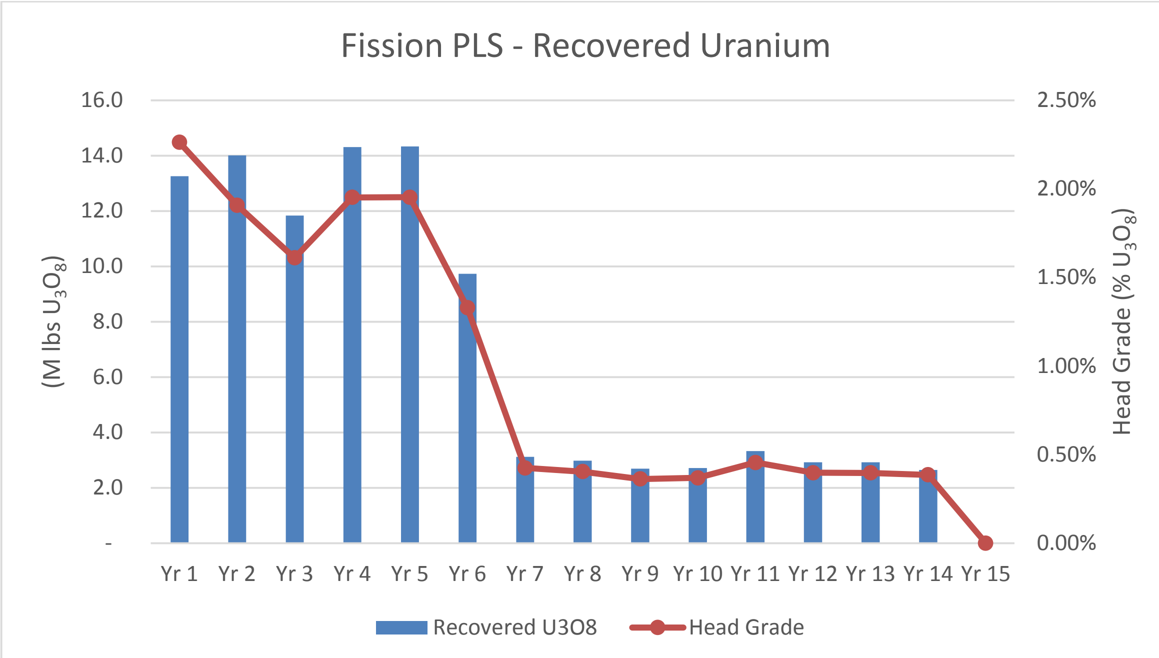


FIGURE 16-17 RECOVERED URANIUM SCHEDULE



The mine and processing plans are summarized in Tables 16-15 to 16-17.

TABLE 16-15 OPEN PIT MINE SCHEDULE

Fission Uranium Corp. - Patterson Lake South Property

Open Pit Mining	Units	Total	Yr 1	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8
Waste Overburden	kt	42,251	23,161	19,090	-	-	-	-	-	-	-
Waste Bedrock	kt	13,356	400	4,026	5,244	2,883	666	104	32	-	-
OP Production	kt	1,561	116	198	401	387	252	137	68	-	-
OP Ore Grade	%	2.21	1.03	3.11	1.52	1.49	2.66	4.42	3.63	-	-
Contained Pounds	klbs U_3O_8	76,022	2,637	13,572	13,428	12,722	14,792	13,395	5,476	-	-
Strip Ratio (incl. OVB)	W:O	35.6	203.2	116.7	13.1	7.4	2.6	0.8	0.5	-	-
Strip Ratio (exlc. OVB)	W:O	8.6	3.5	20.3	13.1	7.4	2.6	0.8	0.5	-	-

TABLE 16-16 UNDERGROUND MINE SCHEDULE

Fission Uranium Corp. - Patterson Lake South Property

Underground Mining	Units	Total	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14
UG Production	kt	3,246	4	97	215	287	349	352	355	356	354	351	351	175
UG Ore Grade	%	0.42	0.64	0.56	0.40	0.61	0.37	0.40	0.35	0.37	0.49	0.37	0.40	0.38
Contained Pounds	klbs U_3O_8	29,806	50	1,197	1,876	3,872	2,880	3,067	2,711	2,908	3,829	2,895	3,064	1,457
Capital Development	m	8,103	1,947	3,979	1,426	741	-	-	-	-	9	-	-	-
Operating Development	m	15,730	600	1,888	4,523	2,994	1,227	1,402	814	776	932	107	150	317
Total Horizontal Development	**m**	**23,833**	**2,548**	**5,867**	**5,949**	**3,734**	**1,227**	**1,402**	**814**	**776**	**941**	**107**	**150**	**317**
Vertical Development	m	983	205	364	329	85	-	-	-	-	-	-	-	-

TABLE 16-17 PROCESSING SCHEDULE
Fission Uranium Corp. - Patterson Lake South Property

Processing	Units	Total	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Tonnes	kt	4,807	279	350	350	349	349	349	350
Ore Grade	%	1.00%	2.26%	1.91%	1.61%	1.95%	1.95%	1.33%	0.42%
Contained Pounds	klbs U_3O_8	105,828	13,915	14,713	12,430	15,019	15,044	10,223	3,278
Process Recovery	%		95	95	95	95	95	95	95
Recovered Uranium	klbs U_3O_8	100,801	13,254	14,014	11,840	14,306	14,329	9,737	3,122
Open Pit Portion	klbs U_3O_8	72,411	13,254	14,014	11,840	14,250	13,256	8,541	1,829
Underground Portion	klbs U_3O_8	28,390	-	-	-	56	1,073	1,196	1,293

Processing (cont'd)	Units	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14
Tonnes	kt	351	354	350	348	351	351	326
Ore Grade	%	0.40%	0.36%	0.37%	0.46%	0.40%	0.40%	0.39%
Contained Pounds	klbs U_3O_8	3,126	2,827	2,845	3,494	3,075	3,067	2,772
Process Recovery	%	95	95	95	95	95	95	95
Recovered Uranium	klbs U_3O_8	2,977	2,693	2,710	3,328	2,929	2,922	2,640
Open Pit Portion	klbs U_3O_8	-	-	-	-	-	-	-
Underground Portion	klbs U_3O_8	2,977	2,693	2,710	3,328	2,929	2,922	2,640

17 RECOVERY METHODS

INTRODUCTION

DRA completed design and costing for the process plant and related infrastructure facilities for the PEA. DRA Taggart's team has design, construct and commissioning experience on a multitude of Uranium process plant within Africa and process plant facilities in general worldwide including facilities in Canada.

The process route selected for the Project is based on unit processes commonly used effectively in uranium process plants across the world, including northern Saskatchewan uranium mines, while utilizing some new innovations in some of these unit process designs to optimize plant performance.

While the Triple R deposit contains gold values that may be recoverable, a high-level economic analysis by RPA has shown this to have limited impact on overall project profitability at current market conditions and gold recovery was thus excluded from this design. Should market forces change in the future it could, however, be reasonable easily engineered into the existing design and constructed without harming throughput from the uranium process plant as can be seen from the high level flowsheet in Figure 17-1.

The conceptual mill design will have a nominal feed rate of 350,000 tpa, operate 350 days per year, and be able to produce nominally 15 million lb per year of uranium concentrate. The mill design will have an estimated recovery of 95.25%, and is designed in a way that can accommodate fluctuations in ore grade that are expected when mining moves from open pit to underground.

The unit processes for uranium recovery are:

1. Grinding
2. Acid leaching using hydrogen peroxide as oxidant
3. CCD and clarification
4. Solvent extraction (SX) using strong acid stripping
5. Molybdenum removal from the pregnant aqueous solution
6. Gypsum precipitation
7. Yellowcake precipitation with hydrogen peroxide

8. Yellowcake thickening and drying
9. Tailings neutralization
10. Effluent treatment with monitoring ponds to confirm quality of effluent discharge

The conceptual uranium recovery flowsheet is presented in Figure 17-1.

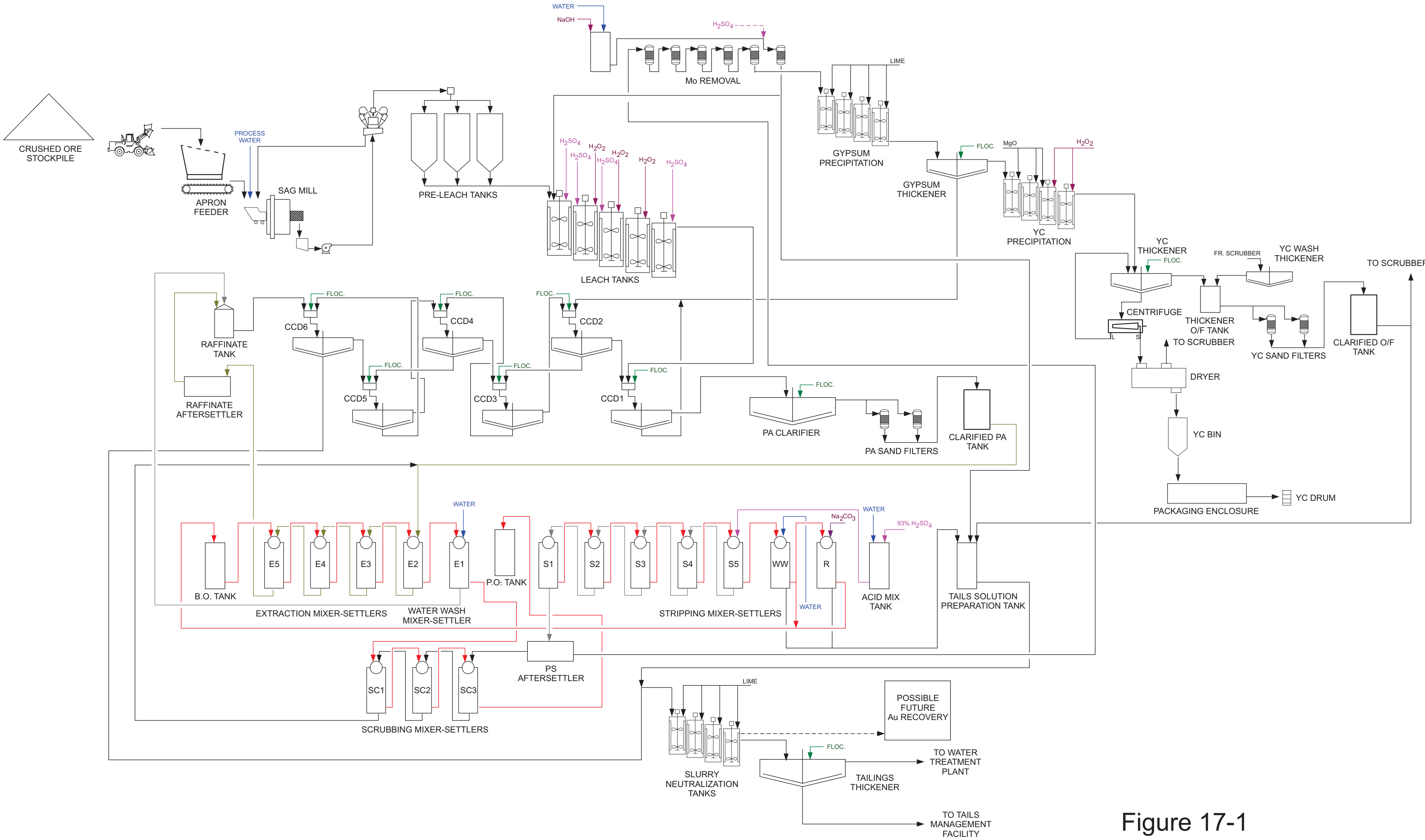


Figure 17-1

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Uranium Process Flow Sheet

September 2015

Source: DRA TAGGART, 2015.

RPA

www.rpacan.com

SELECTED CONCEPTUAL UNIT PROCESS DESCRIPTION

ORE RECEIVING

The mined ore will be delivered to the ore stockpile by truck. The ore stockpile pad will be located in near proximity to the mill and the ore will be stored in separate piles according to its uranium content. Grade control personnel will direct the mill feed loader operator on the make-up combination from the piles to provide mill feed within limits specified by mill operations. The ore will be fed to a stationary grizzly over a dump hopper, using a front end loader. Any oversize material on the grizzly will be broken with a hydraulic rock breaker. Ore from the dump hopper will be fed to the SAG mill feed chute at a controlled rate using an apron feeder.

GRINDING AND CLASSIFICATION

The mill building will be located close to the stockpiles and attached to the process plant building. The grinding circuit consisting of a single stage ball mill (ROM mill) in closed circuit with cyclones. The ball mill will be fitted with a discharge trommel screen. Trommel undersize will flow into the cyclone feed pump box and trommel oversize will be collected for retreatment through the grinding circuit. Space provision has been made in the design for a scats conveyor to be installed should it be required. This should be confirmed in grinding testing in the next stages of the Project. The ball mill discharge will be pumped to the classifying cyclones.

Cyclone overflow with a d_{80} of 250 µm will gravitate to the storage pachucas in the main processing building. The cyclone underflow will return to the ball mill for further grinding. The circuit design is based on an estimated circulating load of 250%.

PULP STORAGE AND LEACHING

The milled ore slurry will gravitate from the cyclone overflow launder into the pulp storage pachucas. The air-agitated pulp storage pachucas will provide the surge capacity between the leach circuit and the grinding circuit and further serve to blend the feed grade to reduce grade spikes to the leach circuits. They will also be available for leach feed blending to supplement mill feed blending from the stockpiles.

The pulp storage pachuca contents will be pumped to the leach tanks. Uranium dissolution takes place in an acidic and oxidizing environment and sulphuric acid and hydrogen peroxide will be added to provide this environment in the leach tanks. The leach tanks will be designed to gravity flow from one to the next and will have sufficient freeboard to not cause spillage.

The slurry discharged from the last tank will have adequate free acid to inhibit re-precipitation of uranium. This slurry is pumped to a CCD thickener feed tank.

CCD THICKENING AND CLARIFICATION

Solid/liquid separation of the slurry is accomplished by CCD thickeners. The leach discharge enters the first of the CCD thickeners and wash solution enters the last of the thickeners and these two counter current streams then provide a clear uranium-bearing pregnant aqueous solution and a washed leach residue containing minimum amounts of uranium. The wash solution consist of raffinate from the Solvent Extraction (SX) circuit and process water with sulphuric acid can added as required to maintain the required wash ratio. Flocculant is added to aid the settling of the solids and to achieve the required overflow clarity. The underflow from the final CCD thickener is pumped to the slurry neutralization tanks.

The overflow from the first CCD thickener, containing most of the uranium will be pumped to the clarifier for clarification. Flocculent is injected into the clarifier feed to aid clarification. The clarifier underflow is periodically pumped back the second CCD thickener circuit to recover any recoverable uranium. This clarifier overflow will be further polished by filtration through a bank of sand filters. The clarified pregnant aqueous solution is stored in a PLS surge tank from where it is pumped to the SX circuit. The pregnant aqueous sand filter rejects, containing the removed solids, will also be pumped to the second CCD thickener feed tank.

Test work in the next phase of the Project and more detailed engineering design could optimize the design and efficiency in the CCD circuit with the potential to halve the number of pumps required in this area, as well as optimising the water balance and the re-use of acid that will have operating cost benefits.

SOLVENT EXTRACTION

The SX circuit acts as a liquid phase filter to further remove impurities and to produce a clarified high grade uranium solution suitable for yellowcake precipitation. The SX circuit consists of mixer/settlers plus other required equipment.

Pregnant aqueous solution from clarification is contacted counter-currently with acidified stripped organic (recycled stripped organic plus fresh make-up organic) in a ratio of 1.2:1 in a multi stage extraction circuit. There are five extraction mixer settlers in series. The uranium in the pregnant aqueous transfers to the organic solvent while most of the impurities remain in the aqueous phase (raffinate). Loaded organic flows to the water scrub mixer-settlers where it is washed with water to minimize impurity and particulate carryover to the stripping circuit. There are three scrub mixer settlers in series.

In the stripping circuit, consisting of five strip mixer settlers, uranium is transferred from the loaded organic phase back to an aqueous phase by counter-current mixer-settlers using a pH profile by adding sulphuric acid solution. The resulting loaded strip solution will be pumped to the product precipitation area. The stripped organic is water washed to adjust acid carryover and remove any entrained particulates before being recycled to the extraction stage.

A bleed stream of the stripped organic is regenerated with sodium carbonate solution (primarily for molybdenum control) prior to being recycled back to extraction. Spent regenerant and crud will be pumped to waste neutralization. Organic losses are minimized by the provision of after-settlers on each aqueous stream exiting the SX unit.

Test work during the next phase of the Project could lead to the optimization of the organic-aqueous ratios which could reduce the operating cost and/or the size of the SX circuit reducing both capital and operating cost. Recent developments in SX design specific to higher grade ores in other minerals could also potentially be applied to this high grade uranium deposit. These newer designs once modelled and designed following test work has been shown in other mineral to reduce acid consumption and increase recovery through the circuit.

MOLYBDENUM AND SULPHATE REMOVAL

The loaded strip solution still contains some minor impurities that needs to be removed before product precipitation. Molybdenum removal is accomplished by contacting the loaded strip solution with activated carbon in activated carbon columns. The carbon columns alternate between loading and stripping cycles. The solution discharging the last loading column goes to the gypsum precipitation circuit for sulphate removal prior to precipitation. During the carbon stripping cycle, the carbon is first contacted with a dilute acid to recover any absorbed uranium (which is recycled to leaching) and then contacted with diluted caustic soda solution to strip the molybdenum. The spent caustic solution is pumped to the tails solution neutralization tank.

The loaded strip solution is high sulphate and will be partially neutralized with lime to control the pH to a level that will provide suitable uranium precipitation conditions in the next unit process. The resulting gypsum precipitate will also contain some uranium which has to be recovered. This gypsum precipitate is removed and settled in the gypsum thickener before being pumped to back to the CCD circuit to re-dissolve any precipitated uranium. The overflow from the gypsum thickener advances to the uranium precipitation circuit.

YELLOWCAKE PRECIPITATION AND CLARIFICATION

Uranium precipitation is achieved in agitation tanks using hydrogen peroxide as precipitant. The pH is carefully maintained during the precipitation stage by the addition of magnesia. The uranium peroxide precipitate slurry is discharged to the yellowcake thickener to thicken the solids prior to washing in the centrifuge. The overflow from the thickeners will be clarified in sand filters and the clarified solution stored in the clarified tank prior to being pumped to the tails solution neutralization tank.

YELLOWCAKE DRYING AND STORAGE

The washed centrifuge cake is fed to the indirect LPG fired dryer, which produces a dried yellowcake product of hydrated uranium peroxide ($UO_4\ XH_2O$). This dried product discharges to the storage bin located directly underneath the dryer. Any dust generated by the rotation of the dryer screw is captured by a venturi scrubber using clarified barren strip solution as the scrubbing fluid. The scrubbing fluid is returned to the yellowcake wash thickener.

Based on the production rate of the product there will be two units installed. The one will be able to process 9,000,000 lb per year while the other will process 6,000,000 lbs per year. As the uranium feed grade changes either or both of the units will be operated.

PACKAGING AND PRODUCT STORAGE

A semi-automated packaging system is used for product packaging. The main components of the system are:

- Sectional roller conveyor, with some selected sections operated automatically
- A series of air locking sections
- A drum filling station
- A drum lidding station
- A drum weighing station
- A drum washing and drying station

Final product will be packaged in standard 450 kg drums for shipment by truck to the uranium refinery.

POTENTIAL RECOVERY OF MINOR METALS

MOLYBDENUM

Molybdenum is a mineral commonly associated with uranium deposits. The PLS ore composite sent to SRC contained 997 ppm molybdenum (0.0997%). From the test work at SRC approximately 52% of the molybdenum is leached using the leach conditions specified. The molybdenum in the aqueous solution during moves into the organic solution during solvent extraction and if not removed will interfere with the uranium transfer. It is removed from the organic through regeneration and is discarded to tailings. The remainder stays in the pregnant strip solution and if present in sufficient amounts, will precipitate with the yellowcake which could incur refinery penalties.

To minimize the molybdenum content entering the SX circuit it is removed from the pregnant strip solution by adsorbing it in activated carbon and when the carbon is saturated, it is stripped from the carbon with caustic soda solution. The caustic soda solution containing the molybdenum and other impurities is normally discarded as process tailings. To recover the molybdenum would require two separate processing circuits, one to recover it from the residue and the other from the pregnant solution. DRA is not aware of any northern Saskatchewan uranium producers pursuing recovery of Mo from the leached residue. Most producers remove Mo purely to minimize penalty charges and not for the sales purposes.

COBALT

From the SRC test work cobalt is not leached from the ore and stays with the residue. The cobalt grade in the PLS ore is only 0.0044% (SRC) and is not deemed to be commercially recoverable.

TAILINGS NEUTRALIZATION

The solution from the tails solution preparation tank is pumped to the solution neutralization tank where lime, barium chloride and ferric sulphate, if required, are added. The discharge from this tank is pumped to the first tailings residue neutralization tank.

Air is injected into the agitated neutralization tanks to maintain oxidizing condition. Slaked lime is added to adjust the slurry pH. Barium chloride will also be added to provide some barium ions in the tailings supernatant water to assist in controlling radium levels in the tailings pore water. The treated slurry is discharged to the tailings thickener from where the underflow is pumped to the Tailings Management Facility (TMF). The tailings thickener overflow will be pumped either to the TMF or the water treatment plant.

WATER TREATMENT PLANT

The water treatment plant will be designed for multi-stage treatment of the tailings thickener overflow, TMF water, site run-off, and mill sewage streams. As shown in Figure 17-2, the first stage of treatment in the water treatment plant involves the precipitation of heavy metals at an elevated pH. The feed streams enter the reaction circuit where lime slurry is added to raise the pH for the precipitation of heavy metals. Air is added to maintain oxidizing conditions and to strip radon gas out of solution. The precipitation tank slurry overflows to the hydroxide precipitation clarifier where flocculant is added to expedite the solid/liquid separation. The underflow from the hydroxide precipitation clarifier is pumped; as necessary to maintain a sludge bed in the clarifier to the combined sludge tank.

The overflow from the hydroxide precipitation clarifier is pumped to the radium reaction circuit. Barium chloride is added to precipitate radium and sulphuric acid is added to reduce the pH and to ensure sufficient sulphate ions to co-precipitate the radium. Ferric sulphate may be added as required to precipitate any As, Mo, Se and other transition metals.

Air is added to the reaction tanks to maintain oxidizing conditions and to strip radon gas out of solution. The precipitation solution overflows to the radium clarifier. Flocculant is added as required added to the clarifier feed to aid in solid/liquid separation. The radium precipitation clarifier underflow will be pumped, when required to maintain a sludge bed in the clarifier, to the combined sludge tank.

The overflow from the radium clarifier is pumped to the radium polishing tanks where barium chloride is added to precipitate any radium that did not precipitate in the previous stage. Lime is added to raise the pH in order to precipitate any residual metals remaining in solution. The overflow from the radium polishing tanks enters the radium polishing clarifier where flocculant is added to aid in solid/liquid separation. The underflow from the pH adjustment clarifier is pumped; when necessary to maintain the required sludge bed in the clarifier, to the combined sludge tank. The overflow from the radium polishing clarifier will be pumped to the final pH adjustment tank before being discharged to the monitoring ponds. If the effluent does not meet the discharge criteria, the water is recycled back to the water treatment plant for further treatment or as an alternate, discharged to the tailings management facility.

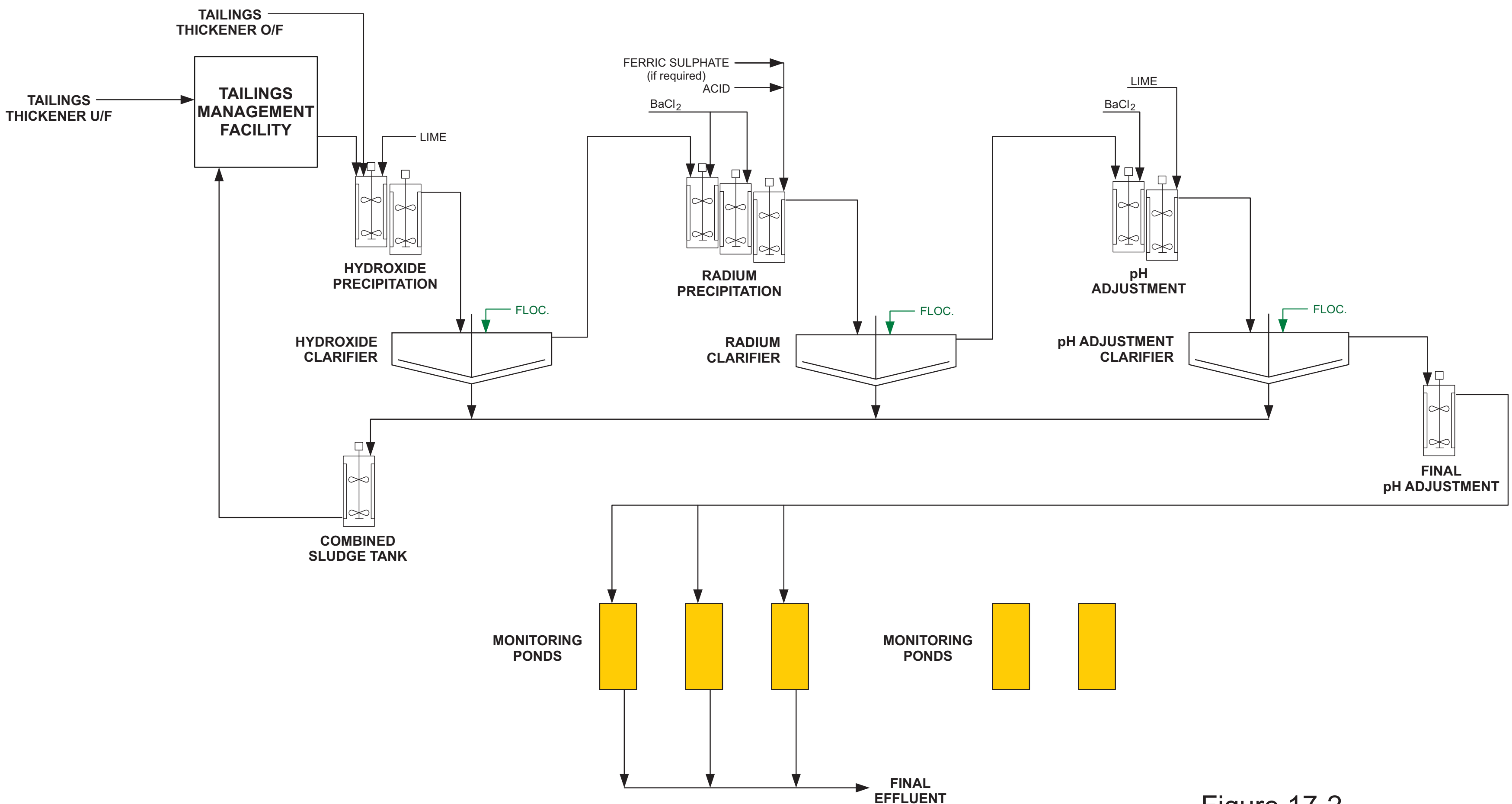


Figure 17-2

Fission Uranium Corp.

Patterson Lake South Property
Northern Saskatchewan, Canada

Tailings Management and Water Treatment Process

September 2015

Source: DRA TAGGART, 2015.

18 PROJECT INFRASTRUCTURE

SITE LAYOUT

The Project is located adjacent to Patterson Lake South, approximately 550 km north-northwest of the city of Prince Albert and approximately 150 km north of the community of La Loche, Saskatchewan. The property is accessible by vehicle along all-weather Highway 955 which bisects the property in a north-south direction. The site layout is shown in Figure 18-1.

ACCESS ROAD

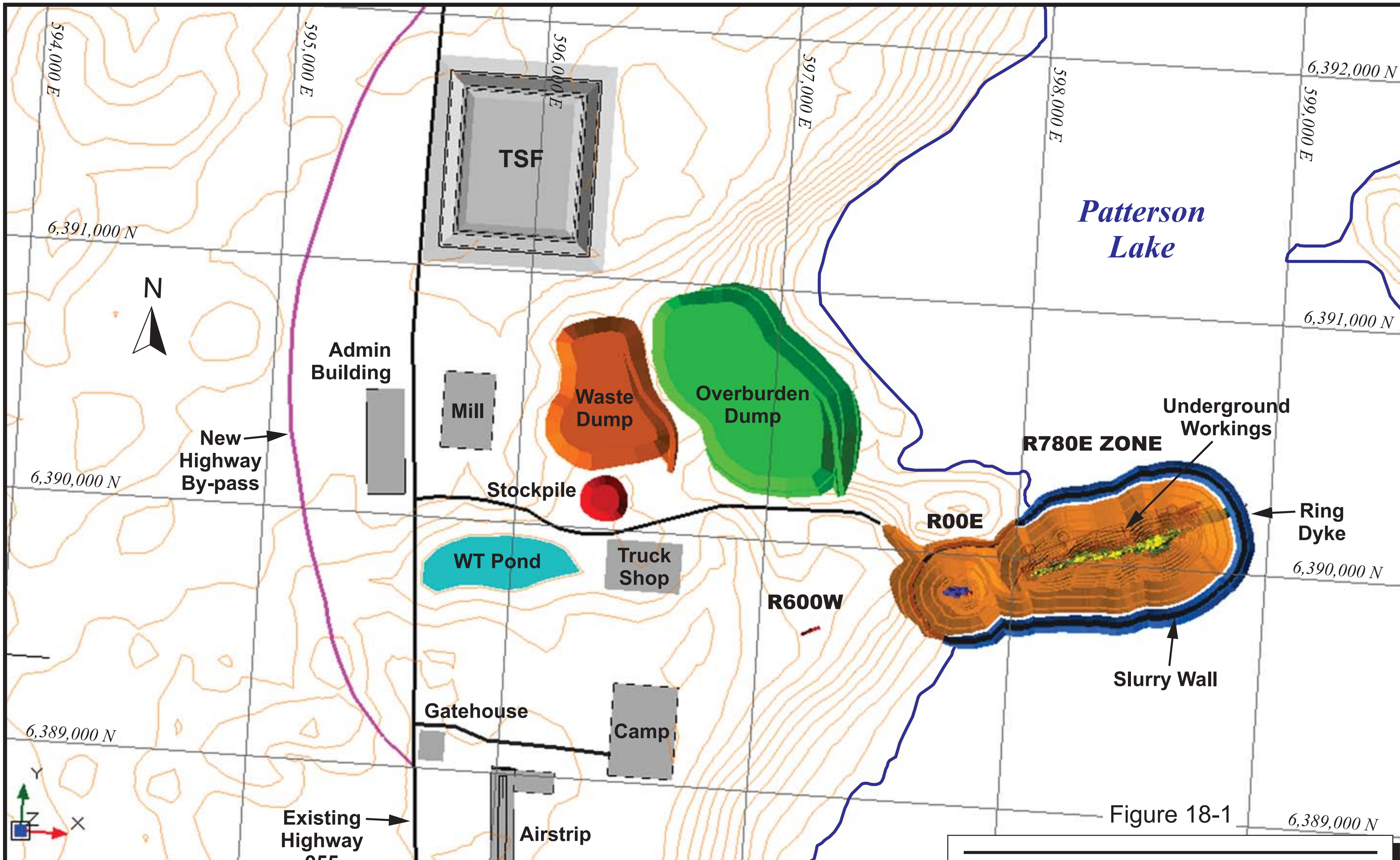
Highway 955 cuts through the PLS Property and will need to be rerouted to direct local traffic around the mine site. The highway diversion will consist of approximately 3.5 km of new highway construction and will direct traffic further west of the mine site. The existing section of Highway 955 will be equipped with a controlled gatehouse on the south end to allow access to the mine site and will be blocked off at the north end to restrict access. Mine site infrastructure has been strategically positioned along the existing highway within the mine site to be able to reduce the amount of new road construction requirements.

POWER SUPPLY

There are currently no power lines near the mine site. The closest power line is approximately 220 km away. A trade-off study was conducted to decide between grid power and a diesel generator plant. Despite the lower operating cost of grid electrical power, the capital cost of extending power to the site was greater than the cost of installing and running a diesel plant over the life of the mine. A 12 megawatt diesel power generating station is planned for the property, consisting of six two megawatt generators. The power plant is designed for an “n+2” configuration. A power grid will be established on site to distribute the power to the underground mine, open pit mine, tailings area, and camp.

PROPANE

Liquefied propane gas (LPG) will be used in several areas of the Project, including in the process plant, and for heating air as it enters the underground mine. Due to the distance between the process plant and underground ventilation system, multiple LPG storage facilities are envisaged. LPG will be delivered to the site via specialized trucks, which is consistent with existing uranium mines in northern Saskatchewan.



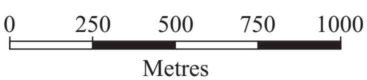


Figure 18-1

Fission Uranium Corp.

Patterson Lake South Property

Northern Saskatchewan, Canada

Site Layout

September 2015

www.rpacan.com

FUEL STORAGE

In addition to LPG, the site will require diesel for several applications, as well as small amounts of gasoline for light-duty vehicles on surface. Areas needing diesel include the central power plant, surface mobile mine equipment, and underground mine equipment.

EXPLOSIVES

An explosives storage area is planned for the Project, and will be located in an area that is a suitable distance away from other buildings and offices. The explosives storage facility will consist of two buildings – one for Ammonium Nitrate Fuel Oil (ANFO) and primers, and the other for blasting caps.

SURFACE BUILDINGS

Multiple surface buildings will be constructed for the Project, including a maintenance shop, permanent camp, process building, dry facility, warehousing, and administration building.

The maintenance shop will be sized to match with the largest of the owner-owned mining equipment. The maintenance shop will be outfitted with an overhead crane, as well as associated equipment needed to support maintenance activities. In addition, there will be a separate bay dedicated to light-duty vehicles, and a wash bay.

The permanent camp is sized to house a maximum of 250 people, and will include a dining hall, entertainment complex, and sports facility.

The process building will house the grinding, leaching, CCD, SX, and drying and packaging areas. The process building will have a control room, product load out facility, allowances for discharge water treatment, deionized water preparation, storage of reagents and consumables, and a warehouse for storage of all site consumables.

A dry facility and administration building will be built either as a stand-alone facility or as part of the processing complex. The facility will house an area for showering and locker rooms, as well as an office area for site administrative and technical personnel.

AIRSTRIP

An airstrip will be constructed at the Project, and will function as the primary mechanism for moving people to and from the work site. The airstrip will be sized to match regional commuter propeller planes, and will also include a small airport terminal, fuel station, light system, and navigation equipment.

MISCELLANEOUS SERVICES

Allowances were made for miscellaneous services such as a site-wide fire protection system, sanitary waste disposal system, potable water system, and water effluent treatment system.

TAILINGS STORAGE FACILITY

A tailings storage facility (TSF) will be constructed to accommodate the estimated two million m^3 of tailings generated over the life of the Project. Tailings will be pumped from the processing facility via pipeline to a discharge point within the TSF. The tailings storage facility will be constructed by first removing a volume of sandy overburden. Following this, an engineered fill material will be placed over the overburden for stability. Once this engineered material is compacted, the area will be covered with a double lined membrane. A leak detection will be installed in between the two layers. A layer of sand will then be placed over top of the membrane. Tailings will be pumped over the sand layer, with return water being pumped back to the process plant for treatment and discharge. More detail on permitting requirements for the TSF can be found in Section 20.

WASTE ROCK AND OVERBURDEN DUMPS AND STOCKPILES

Separate waste rock and overburden dumps will be built adjacent to the open pit. The waste dump and overburden dump will have estimated capacities of 15 Mt and 45 Mt, respectively.

A low grade (0.1% U_3O_8 to 1.5% U_3O_8) and high grade (>1.5% U_3O_8) stockpile will be positioned adjacent to the crusher with capacities of 130 kt and 30 kt respectively. Stockpile material will be rehandled using a loader that will directly feed the crusher using a blend of low and high grade mineralized material.

The stockpiles and waste dump will be positioned on an impermeable liner to collect any surface contact water. The stockpile and waste dump were strategically positioned to take advantage of the terrain and will require minimal earthworks to achieve a natural slope for drainage of contact water to the lined collection pond. No impermeable liner is envisaged for the overburden, as it is considered to be benign sand. Further radiological evaluation of the overburden should be considered for future studies.

19 MARKET STUDIES AND CONTRACTS

MARKET OVERVIEW

The principal commodity of the PLS Project is triuranium octoxide (U_3O_8), commonly known as yellowcake. The primary end-use for yellowcake is in the manufacturing of fuel bundles which are used in nuclear power plants that produce electricity. Yellowcake is sold between producers and end-users in a somewhat opaque market, and is typically sold under long-term contracts, although a spot market does exist. Due to the geo-politically sensitive nature of the commodity, the spot market is only available to recognized industry players.

MARKET DEMAND

The demand for yellowcake is directly correlated with the global demand for nuclear energy, which is in turn driven by the demand for electricity. According to the International Energy Agency, global electricity consumption has tripled since 1980, and is forecast to increase by 70% over the next two decades. Fueling this growth is emerging economies like China and India. It is estimated that 20% of the global population does not have access to electricity. To meet this market demand, over 82 net new nuclear reactors will be brought on-stream by the year 2024, including 64 that are currently under construction in 2015 (Cameco 2015 Q2 Investor Presentation). In 2014, global demand for yellowcake was 155 million pounds, and this is estimated to grow by 4% per year over the next ten years (Cameco 2015 Q2 Investor Presentation).

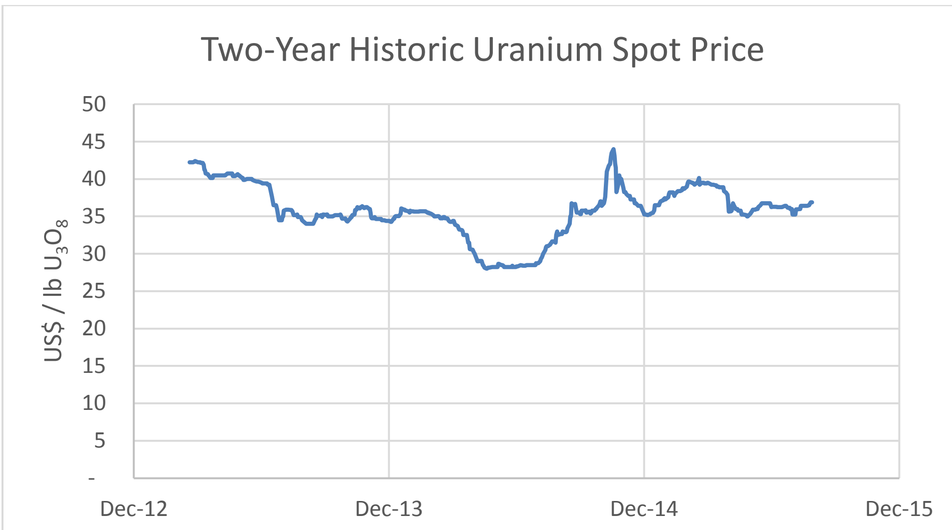
MARKET SUPPLY

The supply of yellowcake can come from two sources: primary (mines), and secondary sources. A significant source of secondary supply of yellowcake came from the Russian Highly Enriched Uranium (HEU) agreement. In this deal, Russian nuclear warheads were dismantled and the uranium was recovered into material suitable to be used as fuel in nuclear power plants. However, this agreement expired in 2013, effectively removing 24 million pounds of yellowcake from the market. In addition to the removal of the HEU agreement, new uranium mines can take upwards of a decade or longer to bring into production. The combination of growing market demand and uncertainty around primary and secondary supply sources leads to concerns of a shortfall.

MARKET PRICES

In the past two years, spot uranium prices have been trading at between US$28 to US$43 per pound of U_3O_8, as shown in Figure 19-1.

FIGURE 19-1 TWO-YEAR SPOT URANIUM PRICE



Source: NYMEX

Several events have impacted the current spot price, significantly the Fukushima-Daiichi nuclear accident in March, 2011. A large-scale earthquake and tsunami disabled the power supply and cooling of three reactors, causing radioactive material to be released into the environment. In September, 2013, Japan shut down their entire fleet of nuclear reactors pending a safety review. Only in August, 2015, was the first reactor restarted, with the remaining fleet expected to be brought back on-line over several years. The temporary closure of Japan's nuclear reactor fleet has caused a supply glut, as utility companies are no longer consuming uranium, and are actually selling what they had already purchased back into the spot market.

Nevertheless, with the restart of the Japanese nuclear fleet, coupled with new reactor construction in emerging economies, and uncertainty around some supply sources, consensus forecasts show a long-term uranium price of US$65 per pound of U_3O_8 (Consensus Economics Energy and Metals Forecast, August 2015). Based on this long-term forecast, RPA has used this price as the basis for the cash flow model.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

Environmental aspects of the PEA have been carried out by Arcadis.

SUMMARY

In support of the PEA, a review of the licensing, permitting and environmental aspects of the Project were examined through a literature search, examination of the appropriate Acts and regulations, a review of the conceptual project, discussions with Fission Uranium, examination of some documents and a site visit.

Overall, the Project appears to be in compliance with applicable regulations governing exploration, drilling and land use, and Fission Uranium staff and contractors are aware of their duties with respect to environmental and radiation protection. There have been some issues related to excess clearing of trails and near water bodies, but Fission Uranium has worked to repair those transgressions and reclaim them. The operations are neat and orderly and the level of clearing and disturbance is commensurate with similar projects in northern Saskatchewan. The Project is visited frequently by Saskatchewan Conservation officers to ensure compliance.

There were six key area of consideration arising from the review:

1. While Fission Uranium has done preliminary community outreach and consultation, the level of consultation is very local and it will not be sufficient to support government Duty to Consult requirements and move the Project into the environmental assessment process. Fission Uranium will need to address this soon to avoid project delays.

2. Given the location of the deposit, impacts to Patterson Lake are inevitable. Regardless of the design, minimizing impacts to the lake will be very important, and it will be very important to ensure that the lake remains navigable to fish and boats.

3. To avoid significant project delays related to Schedule 2 of the Metal Mining Effluent Regulations, any tailings management area must avoid using fish bearing waters.

4. Fission Uranium has been forward looking by starting environmental baseline and monitoring work. The work has been somewhat selective and should be sufficient to start the environmental assessment process, however, it is not currently sufficient to support an environmental assessment document.

5. The main physical danger to the operation is forest fire and Fission Uranium has maintained close relationships with the local Wildfire Management base in Buffalo Narrows.

6. Fission Uranium has developed a centrifuge system for effectively removing potentially radioactive cuttings and fines from drilling fluids. This material is effectively handled and disposed of at an operating uranium mine. Fission Uranium has a radiation protection program in place and appear to follow it.

The level of review was commensurate with a PEA and was not an exhaustive examination of documentation or a compliance audit. The interpretation relies on the authors more than 35 years of experience with Saskatchewan uranium projects and the federal and provincial requirements that accrue to such projects. The Project is at a stage whereby with proper planning, all of the above items can be addressed in a timely fashion within an orderly project approvals process. Some of the items, particularly consultation, need to be started very soon in order not to materially affect Project timing. This will require consultation with the Canadian Nuclear Safety Commission and the Saskatchewan Government to ascertain the level of First Nations, Métis, and stakeholder consultation they expect.

INTRODUCTION

The Project represents a new mining camp in Saskatchewan in a new area, and as such will garner some additional scrutiny as the first new project on the west side of the province since Cluff Lake, which is now decommissioned. The potential impacts from a uranium project in northern Saskatchewan are reasonably well known and with regulatory oversight from both the federal and provincial governments, actual performance of modern uranium mines has been very good. With some exceptions, the regulatory processes will be the same for most of the potential project variations (e.g. the hybrid pit-underground variation used as the basis for the PEA) and those exceptions are discussed where applicable.

This section is based upon an examination of available literature and reports either available on-line or supplied by Fission Uranium, discussions with Fission Uranium management and personnel, discussions with contractors and regulators, and a site visit. While some documentation was reviewed, it was not an audit or an exhaustive assessment of compliance. The focus was on items that might be material to the PEA and, or with potential to impact the progress of the Project towards production.

LICENSING, PERMITTING AND ENVIRONMENTAL

PERMITS AND REGULATORY REQUIREMENTS FOR DISCHARGES

In discussion with site personnel during the site visit, they indicated that they have been diligent in applying for and receiving the appropriate permits for activities on the land, such as Land Use Permits and Clearing Permits. This includes obtaining a lease for the land on which the core logging and the core storage occurs to prevent conflicting land uses.

At the time of the site visit, it was indicated that there were no current unresolved issues with the regulators. The site is visited frequently by the Saskatchewan Ministry of Environment Conservation Officers and inspected per the Saskatchewan requirements for exploration activities, occupation of the land and land use. The Ministry of Health and the Water Security Agency have made frequent inspections of the main accommodations at the Big Bear Lodge. Currently the lodge is under a boil water advisory. Fission Uranium will need to remain vigilant with respect to activities and disturbances not currently permitted and make sure that appropriate permits are in place.

During the site visit the author had ample time to view most of the disturbed areas from a vehicle, on foot, or from a helicopter. For the most part the disturbance of the land for the exploration project was consistent with other projects in northern Saskatchewan and the company had processes in place to minimize the areas of disturbance. In some areas the company has been actively working to prevent erosion, and reclaim abandoned trails and drill sites. This is no mean feat given the sandy soils and thin, virtually non-existent soil profile common to the area. Fission Uranium commissioned a study by Canada North Environmental Services LP (CanNorth) in 2015 on how best to reclaim disturbed areas and manage environmental impacts.

There is no active discharge from the site, and any discharges of treated water from a production facility will have to be characterized and included in the EA documentation.

TAILINGS POND CAPACITY AND MANAGEMENT

Tailings management for a uranium mining operation will require a design that is robust and prevents migration of chemicals of concern (COCs) into the local groundwater. With a relative shallow and pervasive groundwater regime, protection of the ground water will be important. While traditional tailings management facilities have utilized existing lakes and pits this may not be an option early in the Project life until a pit is developed either purposely for waste management or through mining. The utilization of any lake for the disposal of tailings (waste) would trigger Schedule 2 requirements of the Metal Mining Effluent Regulations (Fisheries Act) and require a federal Order in Council. Such a process requires an EIS-like process to complete and a considerable amount of time above and beyond the normal EA process. A location at the headwaters of the Clearwater River system would make such a task more complicated, as Patterson Lake is upstream of both the Clearwater River Provincial Park and the Athabasca River, which drains the oil sands region.

Again, the design and justification for the final tailings management facility will be required in the EA. With proper design, the environment will be protected.

BASELINE INFORMATION AND MONITORING

Modern environmental assessments require significant environmental and social baseline data in order to predict potential impacts and design the appropriate mitigations. Fission Uranium has contracted CanNorth to undertake an initial baseline environmental program that includes field work in 2013 and 2014, and additional monitoring and hydrological work in 2015. While the overall work is not sufficient to support an EA, data gaps could be easily filled in one ice-free season (April to October). The work does provide sufficient information to support the submission of a project proposal/description document to initiate the federal and provincial EA processes.

Work to date has included hydrology, water quality, aquatic environment, terrestrial environment and heritage resources in addition to the previously mentioned site condition and reclamation report. Hydrologic monitoring stations were established at the inflow and outflow to Patterson Lake, and the 1:100 year high and low flows are predicted to be 2.93 m3/s to 0.09 m3/s. Lake water quality is excellent with COCs at or below detection levels, and subsequent monitoring has seen no change in water quality. The lake supports a healthy fish population and many of the areas that would potentially be disturbed have substrates suitable for fish breeding (e.g. rock and gravel).

Terrestrial work indicated that there was one Saskatchewan listed rare plant and some birds nesting areas that may need special consideration, such as limiting activity within one kilometre during nesting season. Evidence of woodland caribou (the only animal of potential concern) was noted in the area which straddles the SK1 and SK2 areas defined in the federal caribou protection plan. Caribou is one area that will require considerable additional work for the EA given its endangered status and the current scrutiny it is receiving in Saskatchewan. Despite the frequent fires in the area, it would appear that there is undisturbed caribou habitat locally. Several black bears were observed during the site visit.

Heritage Resource identified one site that should be avoided, or if avoidance is not possible, a formal archaeological excavation of a 10 m^2 area around the find will be required prior to any activity.

Overall, the preliminary baseline work has described typical northern Saskatchewan terrain and nothing that should significantly delay a project if proper planning and mitigations are incorporated into the Project design. Such mitigations would include, but not be limited to, habitat compensation for fish habitat disturbed by the Project and possibly terrestrial habitat compensation for woodland caribou habitat disturbed.

ENVIRONMENTAL ASSESSMENT, LICENSING AND PERMITTING

In Saskatchewan, uranium mines are regulated by both levels of government. The province, because mineral resources are a provincial responsibility, and the federal government because of the overarching regulation of all things nuclear. Despite some process improvements over the years, permission of both levels of government is still required in order to mine uranium.

PROVINCIAL ENVIRONMENTAL ASSESSMENT AND PERMITTING PROCESS

Mineral tenure is issued by Saskatchewan Ministry of the Economy (SKMOE), and grants mineral rights subject to certain conditions such as the completion of certain levels and types of assessment activities. As the Project occurs on Crown Land, surface access is controlled through permits from the SKMOE during mineral exploration. Should the Project meet all the requirements for permitting construction and operations, a surface lease would be granted to allow these activities to occur. Surface leases are coordinated through the Ministry of Government Relations, Northern Engagement Branch and the Lands Branch SKMOE, and includes input from other government agencies as appropriate. While negotiations can start early, a precondition of the issuance of a surface lease is the successful outcome of the provincial environmental assessment process.

In Saskatchewan, environmental assessment (EA) and the licensing process are separate, but dependant as the EA process must be completed to allow licensing. The first step in the approvals process is to submit a Technical Proposal (formerly the project proposal) to the Environmental Assessment Branch (EAB) for Environmental Assessment Screening to determine whether the project requires a full environmental assessment or can proceed to licensing. The document prepared per guidance from the EAB is largely derived from pre-feasibility level information combined with publicly available information on the mining area and any results from fieldwork. To the best of the proponent's ability, the document outlines the full scope of the project from construction through decommissioning along with a discussion of potential impacts and mitigations. The Saskatchewan EAB Technical Proposal Guidelines indicate that a Technical Proposal should include, at a minimum:

- Executive Summary;
- Project Description;
- Description of the Environment;
- Potential Impacts and Mitigations;
- Monitoring;
- Decommissioning and Reclamation;
- Stakeholder Engagement; and
- First Nations and Métis, Duty to Consult.

The EA process in Saskatchewan is an inter-ministry program assigned to the Minister of Environment and led by the EAB. The Environmental Assessment Act requires that environmental impact statements (EIS) are prepared and circulated for review by other branches within Ministry of Environment (MOE), other Saskatchewan ministries and agencies as necessary, and this is done through the Saskatchewan Environmental Assessment Review Panel (SEARP). This also includes, as a courtesy, forwarding the Technical Proposal to the Canadian Environmental Assessment Agency.

EAB then compiles comments received from the SEARP with its own review and renders a decision as to whether the project requires an EA or can proceed to licensing. In order to require an EA, a project must be deemed to be a development by the Commissioner EA utilizing the criteria in section 2(d) of the EA Act. All uranium mining projects meet the criteria and are therefore deemed developments. Once a project is deemed a development the proponent will receive a formal Ministerial Determination that the project is a development and an EA is required, with rationale. In addition to a letter to the proponent, there is also a public notice about the proposed project.

The proponent is then required to produce a draft Terms of Reference (ToR) for the project (formerly the project specific guidelines) that includes all of the items in the EAB Guidelines for the Preparation of the Terms of Reference and any project specific items. EAB, and sometimes the SEARP, provide input to the ToR in order to ensure their ministry's or agency's interests are being met, and that all the normal requirements of an EA are included. The ToR is then posted to the Ministry's website.

It is then the proponent's responsibility to prepare the EA and undertake all consultations and studies required to produce the document. In general, the EA is derived by comparing the consultation and environmental baseline information with a feasibility level description of the proposed project. Once the document is submitted, the EAB reviews the draft EA for completeness. If complete, the EA will be reviewed by the EAB and the SEARP. If during the review there are any significant information gaps, the document will be returned to the proponent to address. This will continue until such time as there are no significant data gaps. Once EAB and the SEARP are finished their reviews, EAB compiles the comments and produces the Technical Review Comments Document. This document and the final EA document are put to public review for a minimum of 30 days.

Once all of the comments are in, EAB will produce an EA decision document for the Minister. While there are three outcomes possible, the likely outcome for a project that gets to this stage is approval of the EA with conditions. With approval of the EA, the surface lease can be completed and signed.

Once the EA is approved and the surface lease is in place, subject to conditions, the proponent can proceed with licensing through the SKMOE Environmental Protection Branch, which largely provides one window approvals on behalf of other branches and Ministries. The work to provide the level of engineering required to support licensing, and to develop a surface lease, are usually done concurrent to the EA process to minimize any time lags.

It should be noted that the Minister has the right to initiate a public hearing into the project at any time should there be grounds for doing so. Such grounds could include significant public concern or the inability to fully mitigate the project, thereby putting human health or the environment at potential risk. The best method for avoiding a public hearing is conduct complete and fulsome public consultations with all stakeholders, First Nations and Métis, and to fully address all potential impacts with the appropriate mitigations in the EIS.

FEDERAL ENVIRONMENTAL ASSESSMENT PROCESS

Under the Canadian Environmental Assessment Act (CEAA, 2012), the Canadian Nuclear Safety Commission (CNSC) is the Responsible Authority and charged with leading the environmental assessment of a proposed uranium mine as it would entail (per S.31 of the CEAA Regulations Designating Physical Activities) '*the construction, operation and decommissioning of a new uranium mine or uranium mill on a site that is not within the licensed boundaries of an existing uranium mine or uranium mill*'. Under CEAA, there is no opportunity to delegate the EA for a CNSC regulated project to the provincial process (e.g. 'Substitution' or 'Delegation'), but there is the option of coordinating the EA process such that only one EA document is produced that meets the needs of both levels of government. In the past, the province has led the 'harmonized' EA process with significant liaison and input from their federal counterparts. Using the harmonized process allows for some efficiencies and the development of a single EA document. While there are some differences in requirements at both levels of government, these are easily handled by the harmonized process. While only one EA is produced, it is used separately by each level of government within their respective processes.

In order to initiate the EA and licensing processes, the CNSC recommends a pre-application consultation in order to understand the project and to provide guidance on their EA and licensing processes, and consultation. This early consultation with the CNSC allows them to initiate their planning for consultation with First Nation, Métis, and other stakeholders about the project and its licensing. The CNSC provides guidance on Aboriginal consultation (*Codification of Practice: CNSC Commitment to Aboriginal Consultation*) and the need for early engagement (*Early Aboriginal Engagement: A Guide for Proponents of Major Resource Projects*) as well as required public information programs (*G-217, Licensee Public Information Programs*).

While the option of sequentially doing the EA and the licensing is available to the proponent, the CNSC suggests doing these two distinct processes in parallel to save time. Effectively, the CNSC runs both the EA and the licensing in parallel, with the approval of the EA required before the Commission Tribunal can approve the licensing. As in Saskatchewan, a successful EA decision is required prior to making a decision on the licensing packages.

When making the initial application for a license, the proponent must provide the information required by the CNSC in the following regulations:

- Cost Recovery Fees Regulations (2003);
- General Nuclear Safety and Control Regulations;
- Radiation Protection regulations;
- Packaging and Transport of Nuclear Substances Regulations; and
- Nuclear Substances and Radiation Devices Regulations.

The application must be accompanied by the required initial fee per the cost recovery regulations ($25,000 for a facility) and a Project Description prepared according to the Major Projects Management Office (MPMO) guidance (*Guide to Preparing a Project Description for a Major Resource Project*).

The MPMO will provide federal oversight of the EA process to ensure that it remains on schedule, and a Project Agreement will be put in place with the CNSC and other federal regulatory authorities identified in order to define responsibilities, timelines and deliverables. For instance, a Project Agreement is in place for Cameco's Millennium uranium project (MPMO: *Project Agreement for the Millennium Uranium Project in Saskatchewan, 2010*).

In licensing a project, the CNSC generally grants licenses for the four distinct stages of a project in sequence. Those licensing stages are:

- Site preparation and construction;
- Operation;
- Decommissioning;
- Abandonment.

While these stages are usually separate and sequential, there is the potential for multiple licenses within a licensing stage if the work needs to be done in phases, or for overlapping portions of different stages to be including in a single licensing action. All depending upon the proponent's ability to provide the rationale and the detailed information required.

Proponents will be required to develop management systems complete with policies, systems/programs, procedures and monitoring (plan, do act, check type-system) to support the license applications. In order to protect human health and the environment the CNSC focusses on a number of safety control areas in their assessment of projects:

- Management
  - Management systems
  - Human performance management
  - Operational performance

- Facilities and Equipment

  - o Safety analysis
  - o Physical design
  - o Fitness for service

- Core Controls and Processes
  - o Radiation Protection
  - o Human health and safety
  - o Environmental Protection
  - o Emergency management and fire protection
  - o Waste management
  - o Security

- Safeguards and Non-proliferation

- Packaging and Transport

These need to be addressed as needed in the license application process. For instance, for radiation protection, a radiation protection program that includes all aspects of managing the radiation hazard on site including policies, responsibilities, training, equipment, monitoring, reporting, corrective action, etc., in a management system format. CNSC Safety and Control Management Areas are described with respect to a year of performance reporting at:
http://www.nuclearsafety.gc.ca/pubs_catalogue/uploads/CNSC-Report-Performance-Canadian-Uranium-Fuel-Cycle-Processing-Facilities-2012-eng.pdf

OTHER PERMITS AND PERMISSIONS

Other agencies that will require licences and permits, including, but not limited to:

- Saskatchewan Labour (occupational health and safety, mining safety/Mining Act);

- Saskatchewan Health (camp, hygiene, water and sewage treatment);

- Saskatchewan Water Security Agency (water supplies, treated water discharge, sewage);

- Government Relations (surface lease, monitoring, social impact requirements); and

- Ministry of Economy (mineral tenure, royalties).

Most Ministries will indicate their interest and the need for any permits in the EA review stage through the SEARP and those comments will come forward in the technical review comments produced by the EAB. Overall, several hundred permissions of one form or another are required to complete a project.

Similarly, the federal permits will tend to follow the completion of the CNSC/CEAA EA process, although for most of them the details will be in the EA. Examples include the need for permissions under the Navigable Waters Act, the Fisheries Act, as well as compliance with the Species at Risk Act, Migratory Birds Act, Metal Mining Effluent Regulations, among others.

For the majority of the federal and provincial permits, aside from the major operating licenses, they are not generally material to the overall project schedule and costs when properly planned.

HYDROLOGY

Patterson Lake is immediately downstream of Broach Lake, which is the headwater lake for the Clearwater River drainage sub-basin. Water flows south from Broach Lake into Patterson Lake to Forrest Lake to Naomi Lake and eventually into the Clearwater River. The Clearwater River, a protected waterway in Saskatchewan (Clearwater River Provincial Park), flows westward into Alberta where it joins the north flowing Athabasca River and hence to the Arctic Ocean via the Mackenzie River.

Patterson Lake is composed of three sub-basins. The northern half of Patterson Lake has a smaller eastern basin that accepts the flow from Broach Lake and has a maximum depth of about 24 m, separated from the western half by a shallow reef. The larger western half has a maximum depth of about 44 m, and it is separated from the southern basin by a shallower area (1.2 to 10 m) with the maximum depth in the southern basin of about 50 m. Flow out of Patterson Lake into Forrest Lake is from the southeastern corner of the southern basin. The ability to receive treated minewater discharge, both in volume and water quality, will have to be assessed as part of the EA process.

Fission Uranium (through CanNorth) has installed flow monitoring stations at the inflow and outflow of Patterson Lake, and they plan to do further hydrological monitoring in 2015. The monitoring data will provide valuable information on the drainage that can be used for project design work.

The main areas of hydrologic risk relate to production discharges that greatly exceed the current flows out of Patterson Lake into the Clearwater River drainage, and the complete closing off of the channel between Patterson Lake North and South. While a complete closure of the lake in the shallows between the two arms of the lake has not been considered, a partial closure has been, and this will require careful planning to minimize impacts.

RADIATION

CURRENT PRACTICES

During the site visit on June 17 and 18, 2015, the radiation protection program for the Project was discussed with site personnel and the facilities inspected. Fission Uranium has a radiation protection program in place that includes prevention of dose to workers and environmental issues. The main items include:

- All workers are provided with TLD badges, the results monitored and data to the National Dose Registry;
- Procedures were in place to clear any radon build-up in enclosed logging tents;
- Workers are trained on the environmental and radiation requirements;
- Cores were in a secure compound;
- Utilize a Radiation Inspector monitor to monitor work areas. An examination of the results showed ranges in the core logging are of 0.2 to 0.4 µSv/h, and 0.3 to 0.4 µSv/h at the drills;
- Drill holes are cemented and the logs were viewed to confirm cement quantities (approx. 1 bag of cement per 12 m NQ core);
- After some initial trial and error with techniques, now use a centrifuge system to remove solids (e.g. cuttings) and particulates and recirculate water at drill sites;
- Centrifuged solids material is collected as a low moisture cake and bagged in 1 ton waterproof bags;
- Bags are periodically put into containers designed to transport Low Specific Activity material and this material is hauled to Key Lake for processing as it contains approximately one percent uranium oxide;
- Surveys are done of camp areas to ensure that there is no cross contamination, although it was suggested that they consider purchasing an alpha detector to look for trace quantities of contamination.

Overall, radiation protection procedures appear protective of personnel and the environment. Radiation is tightly regulated in modern uranium mines and it would be no different for one developed at Patterson Lake. An ISO-style plan-do-check-act radiation protection program based upon the As Low as Reasonably Achievable (ALARA) principle will be required for all aspects of the operation where there is a potential for radiation exposure or discharge. Workers and work places will be monitored as will all discharges to the environment. During the design process, there will need to be a level of review to ensure both radiation and environmental protection features have been properly incorporated. Some preliminary observations on radiation issues follows.

LOOKING AHEAD

Occupational radiation exposure is the exposure of workers incurred in the course of their work whether full time or part-time, company employee or contract worker. For uranium mines, these include occupational exposures associated with exploration, the development and operation of an open pit or underground mine or in the case of Patterson Lake, both, the operation of the processing facility (mill) and waste management activities. The main radioactivity issues in uranium mining include:

- Exposure to external gamma radiation arising from radionuclides in the uranium-238 decay chain which are present at varying concentrations in both ore and waste rock. The intensity of the gamma radiation exposure depends on the radioactive content of the ore or waste, the size of the source, the distance from the source, and the amount of shielding between the source and receptor location.

- Inhalation of radon gas – Radon-222 (radon) which is a radionuclide in the uranium-238 decay chain is an inert gas that is released in the mine by three methods, including, dry emanation from undisturbed surfaces, releases from mine water, and releases from broken rock and cuttings. The amount of radon emitted can vary greatly by mine location, ore grade the type of source (e.g. minewater, breaking or broken ore) and the type of mining activity taking place.

- Inhalation of Radon Progeny (RnP) concentrations – Radon which has a half-life of 3.8 days decays into a series of short-lived progeny. RnP concentration depends on the amount of radon entering in the air, the relative ratio of radon to RnP (equilibrium factor), the age of the air (as the air ages the equilibrium factor increases, and the particles size of RnP. This source of exposure is especially important underground.

- Inhalation of long-lived radioactive dust associated with dust generating activities in mining and processing. Potential exposure to uranium concentrate is especially important in the drying and packaging areas of the processing plant.

The monitoring of workplace environments and of individual miners exposures is needed to support the assessment of doses to workers. This is important not only to support demonstration that workers doses are not only well within regulatory limits but also ALARA, and evaluate the effectiveness of engineering and administrative approaches to controlling dose. In addition, the individual dose data is important to support any future epidemiological studies.

Monitoring practice and the dose calculation procedures and assumptions used to estimate worker doses vary; however, in broad terms:

- gamma radiation monitoring is typically performed with the use of TLDs as the primary monitoring approach although this is often supplemented by area measurements in selected workplaces combined with estimates of time spent in the same workplaces;

- LLRD exposures are determined through combinations of personal dust sampling and area dust sampling. In both cases the collected filters are generally analysed using gross alpha counting. (Dust samplers are size selective and the dust measurements assumed to reflect inhalable dust);

- The preferred approach, especially for underground mining, is to measure individual miners exposures sources to RnP. This is often supplemented by area measurements of RnG and RnP (WL);

- In northern Saskatchewan, the use of personal alpha dosimeters to measure LLRD and RnP is common practice.

An appropriately trained radiation safety officer and supporting radiation technicians will be available to ensure that the appropriate radiation protection practices are developed, implemented, and maintained. The Radiation Safety Officer will also be responsible for maintaining exposure records and reporting exposures to the appropriate regulators and employees.

As previously indicated, a detailed evaluation of potential radiation exposures and mitigation opportunities will be required for all phases of the Project. Moreover, all facilities will be designed with radiation protection as a core element and supported by careful development of operating practices designed to protect against inadvertent radiation exposure.

CONSULTATION AND COMMUNITY RELATIONS

From the Fission Uranium website, it is clear that Fission Uranium is working to utilize as many local personnel as possible, and as of the writing of this report indicate they are employing 59 local persons. Further they are utilizing the locally owned and operated Big Bear Lodge complex for food, lodging, and services. In addition, they are utilizing a building supply store and the Northern Store in LaLoche. On the website Fission Uranium indicates the following: "*As the most active exploration company in the Athabasca Basin, community support and development are important aspects of how Fission operates. Our management and technical team have ties with the local community that stretch back as much as 30 years and Chief*

Teddy Clark of the Clearwater River Dene Nation is a member of the Fission Uranium Advisory Board."

They are also supporting The Mining Rocks Earth Sciences Program, and through advertising and articles, First Nation's magazines and publications. To date, two meetings have been held in LaLoche: one meeting with First Nations, Métis and Town Council representative preceded the start of the major drilling, and the second was a public meeting involving the community and other uranium exploration companies using a conventional presentations followed by questions and answers format. For an exploration program, the community outreach appears to be adequate, but the level of effort to date may not suffice for the EA phases of the Project where a more comprehensive consultation process will be required. Discussions will be required with the CNSC and the provincial government to define the First Nations and Métis communities that will require formal consultation in order to satisfy the Duty to Consult requirements as well as other stakeholder considerations. Some additional consultation and an ongoing consultation plan will be required prior to the submission of the Project proposal/description required to initiate the EA process.

There is some local tension over perceived impacts to traditional hunting and trapping activities by the community of Descharme Lake and this led to the establishment of a blockade in November 2014 of the main highway in the area (Highway 955). The grievances include the increase in activity related to exploration, work along the road right-of-way and the Ministry of Environment's fire policies. While the blockade ended due to an injunction obtained by Cenovus, the news reports from that period indicate that most of the local concern is with the oil companies, not the uranium exploration companies per se. Regardless, this is an issue that Fission Uranium will have to be sensitive to and work closely with the local trapper(s) to prevent any ongoing tensions.

The project resides in Fur Zone N-19, the LaLoche Fur Conservation Block. While fur is not a major activity locally, it is not insignificant, with $63,800 worth of fur harvested in 2013/2014 according the government's Fur Value Report, making it very important to some local trappers. Of the 534 animals trapped during that period, marten was the most valuable catch at $35,500, with lynx, fisher, and muskrat taking the next four value positions. Most projects in northern Saskatchewan enter into a compensation agreement with the trapper(s) of record for the area they are disturbing and compensate for future lost production based upon historic records.

Big Bear Lodge/Contracting approximately 15 km north of the site on Highway 955 on Grygar Lake is the largest land user currently, and does a considerable amount of business with Fission Uranium (and other exploration companies) including accommodation, security services, equipment rentals, and freight forwarding. Forest Lake Lodge has a main camp on Beet Lake (east of Patterson Lake) and an outpost camp on Forrest Lake (immediately downstream of Patterson Lake). This is a non-guided drive-in seasonal fishing camp. The presence of a mine nearby will likely impact the lodge's ability to attract customers, despite little impact on the quality of fishing.

FOREST FIRES

Forest fire is the single largest physical threat to the Project. When viewing the Ministry of Environment's wildfire history maps the area around PLS shows fires in virtually every decade. Since 2000, there was a major fire northwest of the site in 2006, and minor fires in 2009 north of the site and 2012 at the northeast corner of Patterson Lake. Dry, sandy pine dominated terrains associates with the Athabasca basin and surrounding areas can expect to have a forest fire once every 40 years or so.

An example of the potential severity of fires can be seen in the 2015 fire season where there have been over 550 fires this season with more than 50 communities threatened, 13,000 plus people evacuated and the army called in to help. The area around the Fission Uranium properties has had fires in the area. The response hierarchy in Saskatchewan is protecting people, communities, infrastructure and businesses requiring companies to have an effective fire prevention program based on the Fire Smart principles.

In discussions with the site personnel, they have taken precautions against fire by having a fire assessment done by the ministry and following the recommendations to create fire breaks and implement other aspects of the Fire Smart program. There is a cache of firefighting equipment as well as pumps and sprinkler systems. The site maintains close contact with the ministry firebase at Buffalo Narrows and reports any local fire activity to the hotline.

DISCUSSION

Regardless of the final operational plan, a uranium project will go through both the federal and provincial EA and licensing processes. If the proponent has done their work properly, this can take as little as two years from the initiation of the EA licensing processes to final approvals to construct. The main areas of risk to this timeline are incomplete information, significant public concern, unique or difficult technical challenges, failure to properly mitigate all potential impacts, failure to complete consultations, and conflicts with rare and endangered species. All of these issues can delay the Project while the proponent addresses them to the satisfaction of the regulators. Further, any of these issues not effectively dealt with early in the Project EA cycle has the potential to throw the Project into a public hearing, a federal review panel under CEAA or a joint federal-provincial review panel, which would, at a minimum, add another year to the overall timelines.

In the two year time estimate, it assumes that the rate-limiting EA process will be the federal one and that the proponent has chosen to address the licensing and EA requirements for the federal process in parallel rather than sequentially. While the provincial process requires a sequential approach to the EA and permitting, the work required to support the permitting can be done in parallel ready for submission as soon as the EA is approved. In fact, if pursing the parallel processing with the CNSC, this information will be largely ready when the provincial EA process is complete.

MINE CLOSURE REQUIREMENTS

RPA has estimated a closure and reclamation cost of $50 million, based on comparable projects. Closure activities will include demolition and clean-up of site facilities, breaching of the ring dyke, and flooding of the open pit and underground workings.

21 CAPITAL AND OPERATING COSTS

CAPITAL COSTS

Capital costs have been estimated for the Project based on comparable projects, first-principles, subscription-based cost services, budgetary quotes from vendors and contractors, and information within RPA's project database. RPA is responsible for capital costs related to mining and certain infrastructure, while DRA is responsible for capital costs related to the process plant and other infrastructure. Arcadis and BGC have provided input, where appropriate, to develop the capital cost estimate. Broadly, pre-production capital costs are divided among four areas: open-pit mining, processing, general infrastructure, and project indirect expenses. Sustaining capital costs are related to the entire underground mine, some remaining capital costs from the open pit, and miscellaneous infrastructure that is built after commercial production has been declared.

TABLE 21-1 SUMMARY OF CAPITAL COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Cost
Open-Pit Mining	C$ millions	363.1
Processing	C$ millions	198.2
Infrastructure	C$ millions	116.7
Subtotal Pre-Production Direct Costs	**C$ millions**	**678.0**
Pre-Production Indirect Costs	C$ millions	208.6
Subtotal Direct and Indirect	**C$ millions**	**886.6**
Contingency	C$ millions	208.5
Initial Capital Cost	**C$ millions**	**1,095.1**
Sustaining, Closure, and Misc.	C$ millions	239.3
Total	**C$ millions**	**1,334.5**

OPEN-PIT MINING

Within open-pit mining, the significant areas of spending include construction of the dyke and slurry wall in Patterson Lake, dewatering of the enclosed pit, removal of sand overburden, and equipment fleet spending.

TABLE 21-2 OPEN-PIT MINING CAPITAL COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Total
Dyke Construction	C$ millions	30.4
Slurry Wall Construction	C$ millions	217.5
Initial Pit Dewatering	C$ millions	5.6
Contractor Stripping Overburden*	C$ millions	83.5
Capitalized Pre-Production Operating Cost	C$ millions	3.0
Open-Pit Mining Equipment	C$ millions	23.1
Total Open-Pit Mining Capital Costs	**C$ millions**	**363.1**

Note:

1. *An additional C$ 68.7 million of overburden stripping by contractor is included in sustaining capital costs

Dyke and slurry wall construction for mining purposes has been used previously in several instances across Canada, including recent examples at Rio Tinto's Diavik diamond mine, and Agnico-Eagle's Meadowbank gold mine. Once the dyke and slurry wall system are in place, dewatering of the pit and removal of sand overburden will commence. It is envisaged that overburden removal will be completed by a contractor, who will also assist with peak waste mining requirements. Overburden will be removed during Year -1 and Year 1 of the Project, while contracted waste removal (which is costed under operating costs) would continue until Year 4. Any waste or ore mining done by the owner during Years -3 to -1 was counted as Capitalized Pre-Production Operating Costs.

A unit cost of C$3.60/t-moved was used to estimate contractor costs for removal of overburden. This rate is based on industry benchmarks for mining at a rate of 60,000 tonnes-moved per day, less drilling and blasting costs, plus a mark-up for contract mining.

The mining equipment fleet purchase schedule is summarized in Table 21-3. Due to the short life of the open-pit, no allowance was made for replacement of open-pit mobile equipment.

TABLE 21-3 OPEN-PIT MINING EQUIPMENT PURCHASES
Fission Uranium Corp. – Patterson Lake South Property

Description	Quantity	Unit Price (C$ '000)	Pre-Production Capital (C$ millions)
Major Equipment			
Front Hydraulic Excavator	2	2,135.8	4.3
Underground Haul Truck	3	1,121.2	3.4
Percussion Drill	2	1,251.8	2.5
Bulldozer	3	1,942.4	5.8
Grader	1	926.2	0.9
Water/Sand Truck	1	778.8	0.8
Service & Misc. Truck	3	200.0	0.6
Bulk Truck/Blaster	1	103.4	0.1
Total Major Equipment			**18.4**
Support Equipment			
Electric Cable Reeler	1	785.0	0.8
Fuel and Lube Truck	1	100.9	0.1
Utility Backhoe	2	663.5	1.3
Mobile Crane	1	200.0	0.2
Shop Forklift	2	136.0	0.3
Flat Bed Truck	2	107.0	0.2
Pick Up Truck	5	65.0	0.3
Mechanic's Service Truck	1	217.0	0.2
Electrical Bucket Truck	1	220.0	0.2
Light Stands	4	30.0	0.1
Mine Comm./Dispatch System	1	930.1	0.9
Total Support Equipment			**4.7**
Total Open-Pit Mine Equipment			**23.1**

PROCESS

Capital costs developed for the process plant are consistent with the process methodology described in Sections 13 and 17. Process plant costs were divided between direct process plant, and infrastructure related to the process plant.

TABLE 21-4 PROCESS CAPITAL COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Total
Direct Process Plant	C$ millions	166.1
General Process Infrastructure	C$ millions	32.1
Total Process Capital Costs	**C$ millions**	**198.2**

A detailed look at direct process costs and general process capital costs are provided in Tables 21-5 and 21-6.

TABLE 21-5 DIRECT PROCESS CAPITAL COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Total
Ore Stockpile & Feeding	C$ millions	2.6
SAG / Primary Milling	C$ millions	18.9
Pre-Leach Thickening & Storage	C$ millions	6.3
Leach	C$ millions	4.0
CCD 1-2	C$ millions	7.3
CCD 3-4	C$ millions	7.3
CCD 5-6	C$ millions	7.3
PLS Clarification	C$ millions	4.7
Solvent Extraction Extract	C$ millions	3.6
Solvent Extraction Scrub	C$ millions	1.3
Solvent Extraction Strip	C$ millions	1.8
Solvent Extraction Regen	C$ millions	1.9
Solvent Extraction LO Aftersettler	C$ millions	0.5
Solvent Extraction Raffinate Aftersettler	C$ millions	0.5
Solvent Extraction Storage	C$ millions	7.8
Solvent Extraction Storage 2	C$ millions	0.4
Mo Removal	C$ millions	2.8
Gypsum Precipitation	C$ millions	2.7
Gypsum Precipitate Thickening	C$ millions	2.5
U Precipitation	C$ millions	3.3
U Precipitate Thickening	C$ millions	2.1
Slurry Neutralization	C$ millions	2.3
Uranium Peroxide Product Handling	C$ millions	74.1
Total Direct Process Capital Costs	**C$ millions**	**166.1**

In addition to direct process plant costs, general process infrastructure is shown in Table 21-6.

TABLE 21-6 GENERAL PROCESS CAPITAL COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Total
Site Development	C$ millions	0.5
Main Substation	C$ millions	3.5
Yard Distribution	C$ millions	1.5
Emergency Power	C$ millions	1.1
LPG Supply and Distribution	C$ millions	1.5
Assay Lab & Facility	C$ millions	2.2
Fire Water System	C$ millions	1.0
Water Supply & Distribution	C$ millions	3.4
Freshwater Plant Site Distribution	C$ millions	1.2
Potable Water Treatment Plant	C$ millions	0.8
Sewage Treatment Plant	C$ millions	1.2
Tailings Dam Piping	C$ millions	5.1
Plant Mobile Equipment	C$ millions	5.3
Communication Systems	C$ millions	3.9
Total General Process Capital Costs	**C$ millions**	**32.1**

INFRASTRUCTURE

The project is located in a region of Saskatchewan with road access, but devoid of other infrastructure requirements, notably an electrical transmission line. A high-level trade-off study was undertaken looking at options for supplying power to the Project. Options studied included:

- Construction of a 220 km high-voltage transmission line connecting to SaskPower's provincial grid in the vicinity of the Key Lake mill site (East-West transmission line)
- Construction and upgrading of a 420 km high-voltage transmission line connecting to SaskPower's provincial grid in the vicinity of Meadow Lake, Saskatchewan (North-South transmission line)
- Construction of an on-site, diesel fired power plant

Despite higher operating costs, diesel power generation was the selected choice, as the capital costs of the two other options were substantial. Power supply options should be investigated further in the next level of study.

In addition to the power plant, other major infrastructure spending includes a tailings storage facility, fuel storage, site preparation, maintenance shop, administration and dry facility, water treatment facility, airstrip, site roads, highway by-pass, and camp facility. Infrastructure capital spending is shown in Table 21-7.

TABLE 21-7 INFRASTRUCTURE CAPITAL COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Total
Propane Storage Facility	C$ millions	2.0
Diesel Fuel Storage Facility	C$ millions	1.0
Gasoline Fuel Storage Facility	C$ millions	0.5
Site Preparation - Stripping and Grubbing	C$ millions	1.8
Site Preparation - HDPE Liners for Pads	C$ millions	8.4
Site Roads	C$ millions	2.5
Highway 955 By-Pass	C$ millions	1.4
Tailings Facility*	C$ millions	23.9
Permanent Camp	C$ millions	15.0
Maintenance Shop	C$ millions	8.6
Administration and Dry Facility	C$ millions	8.3
Warehouse	C$ millions	1.0
Water Treatment Facility	C$ millions	10.3
Site Power Grid	C$ millions	4.0
Power Plant	C$ millions	19.8
Airstrip	C$ millions	8.3
Total Infrastructure Capital Costs	**C$ millions**	**116.7**

*Additional costs for the tailings facility is included in sustaining capital

INDIRECT CAPITAL COSTS

Indirect capital costs were applied to each of the respective areas of capital spending based on factors such as engineering, procurement, and construction management requirements (EPCM), the component of capital spending that is materials and consumables, and the amount of people required to complete each component of the overall project. Significant components of indirect expenditure include EPCM, temporary facilities, construction power, temporary camp and buildings, owner's costs, study costs, freight, spare parts and first fills, and commissioning. Indirect costs are shown in Table 21-8.

TABLE 21-8 INDIRECT CAPITAL COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	Direct Cost (C$ millions)	Indirects (%)	Indirects (C$ millions)
Infrastructure	116.7	36	41.6
Contractor Stripping Overburden*	83.5	18	15.0
Dyke, Slurry Wall, Dewatering	253.5	26	65.9
Open-Pit Mine Equipment	23.1	10	2.4
Processing	198.2	42	83.7
Capitalized Pre-Production Operating Cost	3.0	NA	NA
Total	**678.0**	**31**	**208.6**

Similar to indirect costs, contingencies were applied to each of the respective areas of the cost estimate. Contingency costs are summarized in Table 21-9.

TABLE 21-9 CONTINGENCY CAPITAL COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	Direct and Indirect Cost (C$ millions)	Contingency (%)	Contingency (C$ millions)
Infrastructure	158.3	25	39.6
Contractor Stripping Overburden*	98.5	15	14.8
Dyke, Slurry Wall, Dewatering	319.4	25	79.9
Open-Pit Mine Equipment	25.5	15	3.8
Processing	281.9	25	70.5
Capitalized Pre-Production Operating Cost	3.0	NA	NA
Total	**886.6**	**24**	**208.5**

SUSTAINING CAPITAL COSTS

Capital costs that were incurred after Year -3 to Year -1 were considered as sustaining capital. Notably, this includes all capital spending related to underground mine construction and development. Other primary areas of spending include one year of contracted overburden removal, an allowance for tailings storage facility expansion, and an allowance for reclamation and closure. Sustaining capital costs are summarized in Table 21-10.

TABLE 21-10 SUSTAINING CAPITAL COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Total
Open Pit Mining	C$ millions	76.4
UG Mining Equipment	C$ millions	62.9
UG Mine Development	C$ millions	26.2
Infrastructure	C$ millions	23.9
Total Sustaining Capital	**C$ millions**	**189.3**
Reclamation and Closure	C$ millions	50.0
Total Sustaining and Reclamation	**C$ millions**	**239.3**

Sustaining costs counted to open pit mining are comprised entirely of removing the remainder of overburden that was not already moved in pre-production years.

UNDERGROUND MINING

Underground mining equipment consists of both mobile and fixed equipment, as shown in Table 21-11.

TABLE 21-11 UNDERGROUND MINE EQUIPMENT
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Total
Underground Mobile Equipment	C$ millions	27.8
Underground Stationary Equipment	C$ millions	29.1
Indirects	C$ millions	6.0
Total Underground Mine Capital	**C$ millions**	**62.9**

Table 21-12 summarizes the underground mobile fleet and stationary equipment that is envisaged for the Project.

TABLE 21-12 UNDERGROUND MINE EQUIPMENT
Fission Uranium Corp. – Patterson Lake South Property

Description	Quantity	Unit Price (C$ '000)	Total (C$ millions)
Mobile Fleet			
2 Boom Jumbo	2	1,098.7	2.2
3 yd^3 LHD	2	740.0	1.5
6 yd^3 LHD	4	910.0	7.3
40 t Haul Truck - TH 540	5	1,121.2	5.6
Rock Bolter	2	828.6	1.7
Production Drill	2	1,196.7	2.4
Cable Bolt Drill	1	1,196.7	1.2
Lube Truck	1	339.9	0.3
ANFO Loader Truck	1	442.9	0.4
Flat Deck Truck w. Crane	1	334.8	0.3
Transmixer	2	380.1	0.8
Shotcrete Sprayer	2	551.1	1.1
Personnel Carrier	2	298.7	0.6
Scissor Lift	3	350.2	1.1
Small Vehicles	6	70.0	0.4
Grader	1	926.2	0.9
Total Mobile Equipment			**27.8**
Stationary Mine Equipment			
FAR #1 Fans and Ducting	1	2,000.0	2.0
FAR #1 Main Air Heater	1	4,400.0	4.4
FAR #2 Fans and Ducting	1	2,000.0	2.0
FAR #2 Main Air Heater	1	4,400.0	4.4
Exhaust Air Raise #1 Fans and Ducting	1	1,500.0	1.5
Exhaust Air Raise #2 Fans and Ducting	1	1,500.0	1.5
Exhaust Air Raise #3 Fans and Ducting	1	1,500.0	1.5
Backfill Plant	1	2,794.1	2.8
Wet Shotcrete Plant	1	3,000.0	3.0
Air Compressors	2	200.0	0.4
Radiation Monitoring (Lump Sum)	1	500.0	0.5
Main dewatering pumps	8	104.2	0.8
75 hp Development Fans	10	10.0	0.1
50 hp Stope Fans	10	5.0	0.1
15hp Miscellaneous Fans	20	2.0	0.0
Underground Service Bay	1	200.0	0.2
Mine Surface Stores/Facilities	1	525.0	0.5
Mine Control Center	1	155.0	0.2
Mine Office	1	498.0	0.5
Explosives Storage	1	590.0	0.6
Fuel & Lube Storage & Dispensing	1	1,248.3	1.2
Refuge Stations	4	100.0	0.4
Mine Rescue Supplies (Lump Sum)	1	500.0	0.5
Total Stationary Equipment			**29.1**

Underground mine development costs were calculated by estimating the direct consumables, equipment, and personnel that would be required for drift development. It is envisaged that a contractor would supply underground mine personnel, which is consistent with existing mine operations in the Athabasca Basin. The unit rate that was used for capital underground development generally excludes items such as the cost of ventilation, dewatering, compressed air, contractor supervision, owner's technical services and mine management, and camp and flight costs. All of the aforementioned costs are included in mine operating costs. Additionally, the underground mine will be collared from the exposed bedrock in the open pit, thus minimizing vertical and horizontal development. Collaring the underground mine from the open pit has the added benefit of removing the need to move additional overburden, and eliminate the need for expensive ground freezing or jet grouting. Table 21-13 summarizes the costs attributable to underground mine development.

TABLE 21-13 UNDERGROUND MINE DEVELOPMENT
Fission Uranium Corp. – Patterson Lake South Property

Description	Unit Rate (C$/m)	Distance (m)	Total (C$ millions)
4m x 4m Capital Development	2,340	866	2.0
5m x 5m Capital Development	2,660	7,236	19.2
Vertical Development	5,000	983	4.9
Total			**26.2**

EXCLUSIONS TO CAPITAL COSTS

The capital cost estimate excludes several factors, including:

- Ongoing exploration drilling and all associated services
- Environmental and social impact studies
- Geotechnical and hydrological studies
- Permitting and fees
- Detailed metallurgical test work and marketing studies
- Cost to conduct future pre-feasibility and feasibility studies
- Project financing and interest charges
- Fluctuations in foreign exchange rates
- Working capital requirements

OPERATING COSTS

Operating costs were estimated for the Project and allocated to one of mining, processing, or general and administration (G&A). A diesel cost of C$0.95 per litre delivered to site was used across all aspects of the cost estimate. Life of Mine operating costs are summarized in Table 21-14.

TABLE 21-14 LIFE OF MINE OPERATING COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	LOM Cost (C$ millions)	Unit Cost (C$/t processed)	Unit Cost (C$/lb U_3O_8)
Mining			
Open Pit Mining	140.3	90	1.94
Underground Mining	598.2	184	21.07
Combined Mining	738.5	154	7.33
Processing	548.8	114	5.44
General and Administration	375.6	78	3.73
Total	**1,662.9**	**346**	**16.50**

OPEN PIT MINING

Open pit mining takes place during Years -1 to Year 6 (note that Year -1 open pit mining costs are capitalized). Underground mining begins with capital development in Year 3, and runs until Year 14. The grade distribution between open pit and underground mining is such that substantially more pounds, but less tonnes, are sourced from the open pit. Open pit mine operating costs are summarized in Table 21-15.

TABLE 21-15 OPEN PIT MINE OPERATING COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	LOM Cost (C$ millions)	Unit Cost (C$/t processed)	Unit Cost (C$/lb U_3O_8)
Labour	82.6	53	1.14
Equipment Maintenance & Fuel	22.4	14	0.31
Power	7.6	5	0.11
Consumables	27.8	18	0.38
Total Open Pit Mining	**140.3**	**90**	**1.94**

UNDERGROUND MINING

Underground mine operating costs are summarized in Table 21-16.

TABLE 21-16 UNDERGROUND MINE OPERATING COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	LOM Cost (C$ millions)	Unit Cost (C$/t processed)	Unit Cost (C$/lb U_3O_8)
Labour	331.1	102	11.66
Equipment Maintenance & Fuel	49.7	15	1.75
Power	86.8	27	3.06
Consumables	115.6	36	4.07
Miscellaneous	15.0	5	0.53
Total Underground Mining	**598.2**	**184**	**21.07**

PROCESSING

Process labour costs are primarily composed of labour, power consumption, and consumables. Consumables consist of reagents, grinding media, mill liners, and liquefied propane gas. An allowance was made for annual maintenance. Process costs are summarized in Table 21-17.

TABLE 21-17 PROCESS OPERATING COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	LOM Cost (C$ millions)	Unit Cost (C$/t processed)	Unit Cost (C$/lb U_3O_8)
Labour	141.5	29	1.40
Equipment Maintenance & Fuel	30.8	6	0.31
Power	92.1	19	0.91
Consumables	283.0	59	2.81
Miscellaneous	1.4	0	0.01
Total Underground Mining	**548.8**	**114**	**5.44**

GENERAL AND ADMINISTRATION

G&A costs include allowances for flights to and from the work site, camp and catering costs, insurance premiums, marketing and accounting functions, and general maintenance of camp and other surface buildings. Additionally, allowances were made for departments of personnel that are atypical of a mine setting, but are necessary for uranium mining in Canada. Allowances were made for reimbursable fees paid to the CNSC. G&A costs are summarized in Table 21-18.

TABLE 21-18 GENERAL AND ADMINISTRATIVE OPERATING COSTS
Fission Uranium Corp. – Patterson Lake South Property

Description	LOM Cost (C$ millions)	Unit Cost (C$/t processed)	Unit Cost (C$/lb U_3O_8)
Labour	151.8	32	1.51
Equipment Maintenance & Fuel	8.3	2	0.08
Power	13.2	3	0.13
Camp Costs	102.2	21	1.01
Flights and Logistics	41.9	9	0.42
Miscellaneous	58.3	12	0.58
Total Underground Mining	**375.6**	**78**	**3.73**

POWER COSTS

The price to supply power to the Project was calculated as C$0.27 per kWh. This was calculated by summing the power demand across the entire site, adding in an allowance for maintenance of the diesel generators, and including a portion of labour to operate and maintain the plant.

22 ECONOMIC ANALYSIS

The economic analysis contained in this report is based, in part, on Inferred Resources, and is preliminary in nature. Inferred Resources are considered too geologically speculative to have mining and economic considerations applied to them and to be categorized as Mineral Reserves. There is no certainty that economic forecasts on which this PEA is based will be realized.

OVERVIEW OF CASH FLOW MODEL PARAMETERS

The economic analysis was prepared using the following assumptions:

- No allowance has been made for cost inflation or escalation.
- No allowance has been made for corporate costs.
- Capital and operating costs are consistent with those described in Section 21.
- The capital structure is assumed to be 100% equity, with no debt or interest payments.
- The model is assessed in constant Canadian Dollars.
- No allowance for working capital has been made in the financial analysis.
- The Project has no terminal value.

ECONOMIC CRITERIA

Economic criteria that were used in the cash flow model include:

- Long-term price of uranium of US$65 per pound U_3O_8, based on long-term forecasts.
- 100% of uranium sold at long-term price.
- The recovery and sale of gold was excluded from the cash flow model.
- Exchange rate of C$1.00 = US$0.85.
- Life of mine processing of 4,807 kt grading 1.00% U_3O_8.
- Nominal 350 kt of processed material per year during steady state operations.
- Mine life of 14 years.

- Leach recovery of 98.4%, SX recovery of 96.8%, and CCD recovery of 99.97%, for overall recovery of 95.3%, based on test work.

- Total recovered yellowcake of 100.8 million pounds.

- Transportation costs of C$740.00 per tonne yellowcake, with presumed destination of Port Hope, Ontario.

- Royalties calculated in accordance with *"Guideline: Uranium Royalty System, Government of Saskatchewan, June 2014".*

- Unit operating costs of C$346 per tonne of processed material, or C$16.50 per pound of yellowcake.

- Pre-production capital costs of C$1,095 million, spread over three years.

- Sustaining capital costs (including reclamation) of C$239 million, spread over the mine life.

Table 22-1 CASH FLOW SUMMARY
Fission Uranium Corp. - Patterson Lake South Project

	UNITS	TOTAL	Yr -3	Yr -2	Yr -1	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15
MINING																				
Open Pit																				
Ore Tonnes mined per year	kt	1,561	-	-	116	198	401	387	252	137	68	-	-	-	-	-	-	-	-	-
U3O8 Grade	%	2.21%	0.00%	0.00%	1.03%	3.11%	1.52%	1.49%	2.66%	4.42%	3.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Contained U3O8	'000 lbs U3O8	76,022	-	-	2,637	13,572	13,428	12,722	14,792	13,395	5,476	-	-	-	-	-	-	-	-	-
Overburden	kt	42,251	-	-	23,161	19,090	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waste Rock	kt	13,356	-	-	400	4,026	5,244	2,883	666	104	32	-	-	-	-	-	-	-	-	-
Total Moved	**kt**	**57,168**	**-**	**-**	**23,677**	**23,314**	**5,646**	**3,271**	**918**	**242**	**101**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total Moved by Owner	kt	3,664	-	-	516	701	700	702	702	242	101	-	-	-	-	-	-	-	-	-
Stripping Ratio (incl. OVB)	W:O	35.6	-	-	203.2	116.7	13.1	7.4	2.6	0.8	0.5	-	-	-	-	-	-	-	-	-
Stripping Ratio (w/o OVB)	W:O	8.6	-	-	3.5	20.3	13.1	7.4	2.6	0.8	0.5	-	-	-	-	-	-	-	-	-
Underground																				
Ore Tonnes mined per year	ktpa	3,246	-	-	-	-	-	4	97	215	287	349	352	355	356	354	351	351	175	-
U3O8 Grade	%	0.42%	0.00%	0.00%	0.00%	0.00%	0.00%	0.64%	0.56%	0.40%	0.61%	0.37%	0.40%	0.35%	0.37%	0.49%	0.37%	0.40%	0.38%	0.00%
Contained U3O8	'000 lbs U3O8	29,806	-	-	-	-	-	50	1,197	1,876	3,872	2,880	3,067	2,711	2,908	3,829	2,895	3,064	1,457	-
Total Mine Production																				
Ore Tonnes mined per year	kt	4,807	-	-	116	198	401	391	350	352	356	349	352	355	356	354	351	351	175	-
U3O8 Grade	%	1.00%	0.00%	0.00%	1.03%	3.11%	1.52%	1.48%	2.07%	1.97%	1.19%	0.37%	0.40%	0.35%	0.37%	0.49%	0.37%	0.40%	0.38%	0.00%
Contained Pounds	'000 lbs U3O8	105,828	-	-	2,637	13,572	13,428	12,772	15,989	15,271	9,348	2,880	3,067	2,711	2,908	3,829	2,895	3,064	1,457	-
PROCESSING																				
Mill Feed																				
Tonnes Processed	kt	4,807	-	-	-	279	350	350	349	349	349	350	351	354	350	348	351	351	326	-
Head Grade	%	1.00%	0.00%	0.00%	0.00%	2.26%	1.91%	1.61%	1.95%	1.95%	1.33%	0.42%	0.40%	0.36%	0.37%	0.46%	0.40%	0.40%	0.39%	0.00%
Contained U3O8	'000 lbs U3O8	105,828	-	-	-	13,915	14,713	12,430	15,019	15,044	10,223	3,278	3,126	2,827	2,845	3,494	3,075	3,067	2,772	-
Process Recovery																				
Recovery	%	95%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%
Recovered U_3O_8	'000 lbs U3O8	100,801	-	-	-	13,253.6	14,014.1	11,839.7	14,305.9	14,329.3	9,737.5	3,122.5	2,977.5	2,692.8	2,710.0	3,328.0	2,928.6	2,921.5	2,639.9	-
Recovered U3O8 - OP Portion	'000 lbs U3O8	72,411				13,254	14,014	11,840	14,250	13,256	8,541	1,829	-	-	-	-	-	-	-	-
Recovered U3O8 - UG Portion	'000 lbs U3O8	28,390				-	-	-	56	1,073	1,196	1,293	2,977	2,693	2,710	3,328	2,929	2,922	2,640	-
REVENUE																				
Metal Prices	**Input Units**																			
Long-Term U3O8 Price	US$ / lb U3O8	$ 65				$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65	$ 65
Exchange Rate	US$ / C$	$ 0.85				$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85
Realized Price	C$ / lb U3O8	$ 76				$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76	$ 76
Total Gross Revenue	**C$ '000**	**$ 7,708,309**				**1,013,513**	**1,071,666**	**905,391**	**1,093,981**	**1,095,773**	**744,632**	**238,779**	**227,689**	**205,919**	**207,235**	**254,497**	**223,950**	**223,411**	**201,875**	**-**
Transportation	C$ '000	$ 33,835				4,449	4,704	3,974	4,802	4,810	3,269	1,048	999	904	910	1,117	983	981	886	-
Net Smelter Return	**C$ '000**	**$ 7,674,474**				**$ 1,009,064**	**$ 1,066,962**	**$ 901,417**	**$ 1,089,179**	**$ 1,090,963**	**$ 741,363**	**$ 237,731**	**$ 226,689**	**$ 205,015**	**$ 206,325**	**$ 253,379**	**$ 222,967**	**$ 222,430**	**$ 200,989**	**$ -**
Royalties																				
Gov't SK Gross Revenue Royalty	C$ '000	$ 556,399	-	-	-	73,157	77,355	65,353	78,965	79,095	53,749	17,235	16,435	14,864	14,959	18,370	16,165	16,126	14,572	-
Total Royalties	**C$ '000**	**$ 556,399**				**$ 73,157**	**$ 77,355**	**$ 65,353**	**$ 78,965**	**$ 79,095**	**$ 53,749**	**$ 17,235**	**$ 16,435**	**$ 14,864**	**$ 14,959**	**$ 18,370**	**$ 16,165**	**$ 16,126**	**$ 14,572**	**$ -**
Net Revenue	**C$ '000**	**$ 7,118,075**				**$ 935,907**	**$ 989,607**	**$ 836,064**	**$ 1,010,213**	**$ 1,011,869**	**$ 687,614**	**$ 220,495**	**$ 210,254**	**$ 190,152**	**$ 191,367**	**$ 235,009**	**$ 206,802**	**$ 206,304**	**$ 186,417**	**$ -**
Unit NSR - Tonnes Processed	C$ / t proc	$ 1,481				$ 3,355	$ 2,829	$ 2,389	$ 2,894	$ 2,896	$ 1,971	$ 630	$ 598	$ 538	$ 546	$ 675	$ 590	$ 588	$ 572	$ -
Unit NSR - Pounds Produced	C$ / lb U3O8	$ 71				$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ 71	$ -
OPERATING COSTS																				
Open Pit Mining	C$ '000	140,340	-	-	-	30,594	38,541	38,117	17,171	9,346	6,572	-	-	-	-	-	-	-	-	-
Underground Mining	C$ '000	598,192	-	-	-	-	-	28,619	39,577	53,475	54,622	54,480	55,312	54,097	53,800	53,944	52,112	50,590	47,563	-
Processing	C$ '000	548,763	-	-	-	36,599	40,145	41,261	42,556	43,029	43,152	40,815	39,326	39,371	37,083	36,659	36,609	36,637	35,522	-
Surface & GA	C$ '000	375,646	-	-	-	25,135	25,124	27,586	27,575	27,575	27,575	27,166	27,165	27,165	27,166	27,166	26,415	26,415	26,416	-
Total Operating Cost	**C$ '000**	**1,662,941**	**-**	**-**	**-**	**92,327**	**103,810**	**135,584**	**126,879**	**133,425**	**131,920**	**122,461**	**121,804**	**120,633**	**118,048**	**117,769**	**115,137**	**113,642**	**109,502**	**-**
UNIT OPERATING COSTS																				
Open Pit Mining	C$ / t ore	90				154	96	98	68	68	96	-	-	-	-	-	-	-	-	-
Underground Mining	C$ / t ore	184				-	-	8,052	407	249	190	156	157	153	151	152	148	144	271	-
Combined Mining	C$ / t proc	154				110	110	191	163	180	175	156	157	153	154	155	149	144	146	-
Processing	C$ / t proc	114				131	115	118	122	123	124	117	112	111	106	105	104	104	109	-
Surface & GA	C$ / t proc	78				90	72	79	79	79	79	78	77	77	78	78	75	75	81	-
Total Operating Cost	**C$ / t proc**	**346**				**331**	**297**	**387**	**364**	**382**	**378**	**350**	**347**	**341**	**337**	**338**	**328**	**324**	**336**	**-**
Open Pit Mining	C$ / lb U3O8	1.94				2.31	2.75	3.22	1.20	0.71	0.77	-	-	-	-	-	-	-	-	-
Underground Mining	C$ / lb U3O8	21.07				-	-	-	705.71	49.83	45.66	42.12	18.58	20.09	19.85	16.21	17.79	17.32	18.02	-
Combined Mining	C$ / lb U3O8	7.33				2.31	2.75	5.64	3.97	4.38	6.28	17.45	18.58	20.09	19.85	16.21	17.79	17.32	18.02	-
Processing	C$ / lb U3O8	5.44				2.76	2.86	3.48	2.97	3.00	4.43	13.07	13.21	14.62	13.68	11.02	12.50	12.54	13.46	-
Surface & GA	C$ / lb U3O8	3.73				1.90	1.79	2.33	1.93	1.92	2.83	8.70	9.12	10.09	10.02	8.16	9.02	9.04	10.01	-
Unit Operating Cost	**C$ / lb U3O8**	**16.50**				**6.97**	**7.41**	**11.45**	**8.87**	**9.31**	**13.55**	**39.22**	**40.91**	**44.80**	**43.56**	**35.39**	**39.31**	**38.90**	**41.48**	**-**
Operating Cash Flow	C$ '000	**$ 5,455,134**	**-**	**-**	**-**	**843,580**	**885,797**	**700,480**	**883,334**	**878,443**	**555,694**	**98,034**	**88,451**	**69,519**	**73,319**	**117,241**	**91,666**	**92,661**	**76,915**	**-**
	C$ / t proc	$ 1,135																		
CAPITAL COST																				
Pre-Production Direct Cost																				
Open Pit Mining	C$ '000	$ 363,063	$ 139,112	$ 109,691	$ 114,260	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Processing	C$ '000	$ 198,234	$ -	$ 79,294	$ 118,941	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Infrastructure	C$ '000	$ 116,714	$ 9,512	$ 12,532	$ 94,670	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Direct Cost	**C$ '000**	**$ 678,011**	**$ 148,624**	**$ 201,517**	**$ 327,870**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Indirect Costs																				
EPCM / Owners / Indirect Cost	C$ '000	$ 208,623	$ 39,555	$ 66,467	$ 102,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Costs	**C$ '000**	**$ 886,634**	**$ 188,179**	**$ 267,985**	**$ 430,470**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Contingency	C$ '000	$ 208,506	$ 47,045	$ 66,996	$ 94,465	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Initial Capital Cost	**C$ '000**	**$ 1,095,139**	**$ 235,224**	**$ 334,981**	**$ 524,935**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Sustaining Capital																				
OP Mining	C$ '000	$ 76,356	$ -	$ -	$ -	$ 76,356	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
UG Mining Equipment	C$ '000	$ 62,895	$ -	$ -	$ -	$ -	$ 14,383	$ 19,040	$ 14,842	$ 8,951	$ 3,669	$ -	$ 2,011	$ -	$ -	$ -	$ -	$ -	$ -	$ -
UG Mine Development	C$ '000	$ 26,174	$ -	$ -	$ -	$ -	$ -	$ 6,128	$ 12,265	$ 5,390	$ 2,366	$ -	$ -	$ -	$ -	$ 24	$ -	$ -	$ -	$ -
Infrastructure	C$ '000	$ 23,894	$ -	$ -	$ -	$ -	$ -	$ 11,947	$ -	$ -	$ 11,947	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Sustaining Capital	**C$ '000**	**$ 189,320**	**$ -**	**$ -**	**$ -**	**$ 76,356**	**$ 14,383**	**$ 37,115**	**$ 27,108**	**$ 14,340**	**$ 17,982**	**$ -**	**$ 2,011**	**$ -**	**$ -**	**$ 24**	**$ -**	**$ -**	**$ -**	**$ -**
Reclamation and Closure	C$ '000	$ 50,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 50,000	$ -
Total Capital Cost	**C$ '000**	**$ 1,334,459**	**$ 235,224**	**$ 334,981**	**$ 524,935**	**$ 76,356**	**$ 14,383**	**$ 37,115**	**$ 27,108**	**$ 14,340**	**$ 17,982**	**$ -**	**$ 2,011**	**$ -**	**$ -**	**$ 24**	**$ -**	**$ -**	**$ 50,000**	**$ -**
CASH FLOW																				
Operating Cash Flow	C$ '000	$ 5,455,134	$ -	$ -	$ -	$ 843,580	$ 885,797	$ 700,480	$ 883,334	$ 878,443	$ 555,694	$ 98,034	$ 88,451	$ 69,519	$ 73,319	$ 117,241	$ 91,666	$ 92,661	$ 76,915	$ -
Operating Cash Flow less Capital Costs	C$ '000	$ 4,120,675	$ (235,224)	$ (334,981)	$ (524,935)	$ 767,224	$ 871,414	$ 663,365	$ 856,226	$ 864,103	$ 537,712	$ 98,034	$ 86,440	$ 69,519	$ 73,319	$ 117,216	$ 91,666	$ 92,661	$ 26,915	$ -
Pre-Tax Cashflow	C$ '000	$ 4,120,675	$ (235,224)	$ (334,981)	$ (524,935)	$ 767,224	$ 871,414	$ 663,365	$ 856,226	$ 864,103	$ 537,712	$ 98,034	$ 86,440	$ 69,519	$ 73,319	$ 117,216	$ 91,666	$ 92,661	$ 26,915	$ -
Cumulative Pre-Tax Cashflow	C$ '000		$ (235,224)	$ (570,204)	$ (1,095,139)	$ (327,916)	$ 543,498	$ 1,206,863	$ 2,063,089	$ 2,927,192	$ 3,464,905	$ 3,562,939	$ 3,649,378	$ 3,718,897	$ 3,792,216	$ 3,909,432	$ 4,001,098	$ 4,093,759	$ 4,120,675	$ 4,120,675
Taxes																				
Less SK Profit Royalties	C$ '000	$ 657,879	$ -	$ -	$ -	$ -	$ 97,109	$ 103,400	$ 133,141	$ 134,330	$ 83,861	$ 15,732	$ 13,946	$ 11,314	$ 11,890	$ 18,677	$ 14,713	$ 14,860	$ 4,906	$ -
EBITDA	C$ '000	$ 4,797,254	$ -	$ -	$ -	$ 843,580	$ 788,688	$ 597,080	$ 750,193	$ 744,113	$ 471,834	$ 82,302	$ 74,505	$ 58,205	$ 61,430	$ 98,563	$ 76,952	$ 77,801	$ 72,009	$ -
Less Deductions	C$ '000	$ 1,443,737	$ 928	$ 652	$ 94,145	$ 391,541	$ 220,434	$ 171,168	$ 136,526	$ 105,920	$ 82,394	$ 63,134	$ 47,172	$ 35,329	$ 26,287	$ 19,575	$ 14,578	$ 10,861	$ 23,095	$ -
Taxable Earnings	C$ '000	$ 3,353,517	$ (928)	$ (652)	$ (94,145)	$ 452,039	$ 568,254	$ 425,912	$ 613,667	$ 638,193	$ 389,439	$ 19,168	$ 27,333	$ 22,875	$ 35,143	$ 78,988	$ 62,375	$ 66,940	$ 48,915	$ -
Corporate Taxes @ 27%	C$ '000	$ 931,295	$ -	$ -	$ -	$ 122,051	$ 153,429	$ 114,996	$ 165,690	$ 172,312	$ 105,149	$ 5,175	$ 7,380	$ 6,176	$ 9,489	$ 21,327	$ 16,841	$ 18,074	$ 13,207	$ -
Net Profit	C$ '000	$ 2,422,222	$ (928)	$ (652)	$ (94,145)	$ 329,989	$ 414,825	$ 310,916	$ 447,977	$ 465,881	$ 284,291	$ 13,992	$ 19,953	$ 16,699	$ 25,654	$ 57,662	$ 45,533	$ 48,866	$ 35,708	$ -
After-Tax Cash Flow	C$ '000	$ 2,531,500	$ (235,224)	$ (334,981)	$ (524,935)	$ 645,173	$ 620,876	$ 444,969	$ 557,395	$ 557,461	$ 348,703	$ 77,126	$ 65,114	$ 52,028	$ 51,941	$ 77,212	$ 60,111	$ 59,727	$ 8,803	$ -
Cumulative	C$ '000		$ (235,224)	$ (570,204)	$ (1,095,139)	$ (449,966)	$ 170,910	$ 615,879	$ 1,173,274	$ 1,730,734	$ 2,079,438	$ 2,156,564	$ 2,221,678	$ 2,273,706	$ 2,325,647	$ 2,402,859	$ 2,462,970	$ 2,522,698	$ 2,531,500	$ 2,531,500
PROJECT ECONOMICS																				
Pre-Tax Payback Period	yrs	1.4	0	0	0	1.00	0.38	-	-	-	-	-	-							
Pre-Tax IRR	%	46.7%																		
Pre-tax NPV @ 8%	C$ '000	$2,128,943																		
Pre-tax NPV @ 10%	C$ '000	$1,814,797																		
Pre-tax NPV @ 12%	C$ '000	$1,548,467																		
Post-Tax Payback Period	yrs	1.7	0	0	0	1.00	0.72	-	-	-	-	-	-							
Post-Tax IRR	%	34.2%																		
Post-Tax NPV @ 8%	C$ '000	$1,224,795																		
Post-Tax NPV @ 10%	C$ '000	$1,019,895																		
Post-Tax NPV @ 12%	C$ '000	$846,699																		

CASH FLOW ANALYSIS

Based on the economic criteria discussed previously, a summary of the cash flow is shown in Table 22-2.

TABLE 22-2 SUMMARY OF CASH FLOW
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Value
Gross Revenue	C$ millions	7,708.3
Less: Transportation	C$ millions	(33.8)
Net Smelter Return	C$ millions	7,674.5
Less: Provincial Revenue Royalties	C$ millions	(556.4)
Net Revenue	C$ millions	7,118.1
Less: Total Operating Costs	C$ millions	(1,662.9)
Operating Cash Flow	C$ millions	5,455.2
Less: Capital Costs	C$ millions	(1,334.5)
Pre-Tax Cash Flow	C$ millions	4,120.7
Less: Provincial Profit Royalties	C$ millions	(657.9)
Less: Taxes	C$ millions	(931.3)
Post-Tax Cash Flow	C$ millions	2,531.5

ECONOMIC ANALYSIS

Based on the input parameters, a summary of the Project economics is shown in Table 22-3.

TABLE 22-3 SUMMARY OF ECONOMIC RESULTS
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Value
Pre-Tax		
Net Present Value at 8%	C$ millions	2,128.9
Net Present Value at 10%	C$ millions	1,814.8
Net Present Value at 12%	C$ millions	1,548.5
Internal Rate of Return	%	46.7
Payback Period	years	1.4
After-Tax		
Net Present Value at 8%	C$ millions	1,224.8
Net Present Value at 10%	C$ millions	1,019.9
Net Present Value at 12%	C$ millions	846.7
Internal Rate of Return	%	34.2
Payback Period	years	1.7

SENSITIVITY ANALYSIS

The cash flow model was tested for sensitivity to variances in head grade, process recovery, input price of yellowcake, Canadian to United States dollar exchange rate, overall operating costs, and overall capital costs. The resulting post-tax $NPV_{10\%}$ sensitivity is shown in Figure 22-1, and Table 22-4.

FIGURE 22-1 SENSITIVITY ANALYSIS

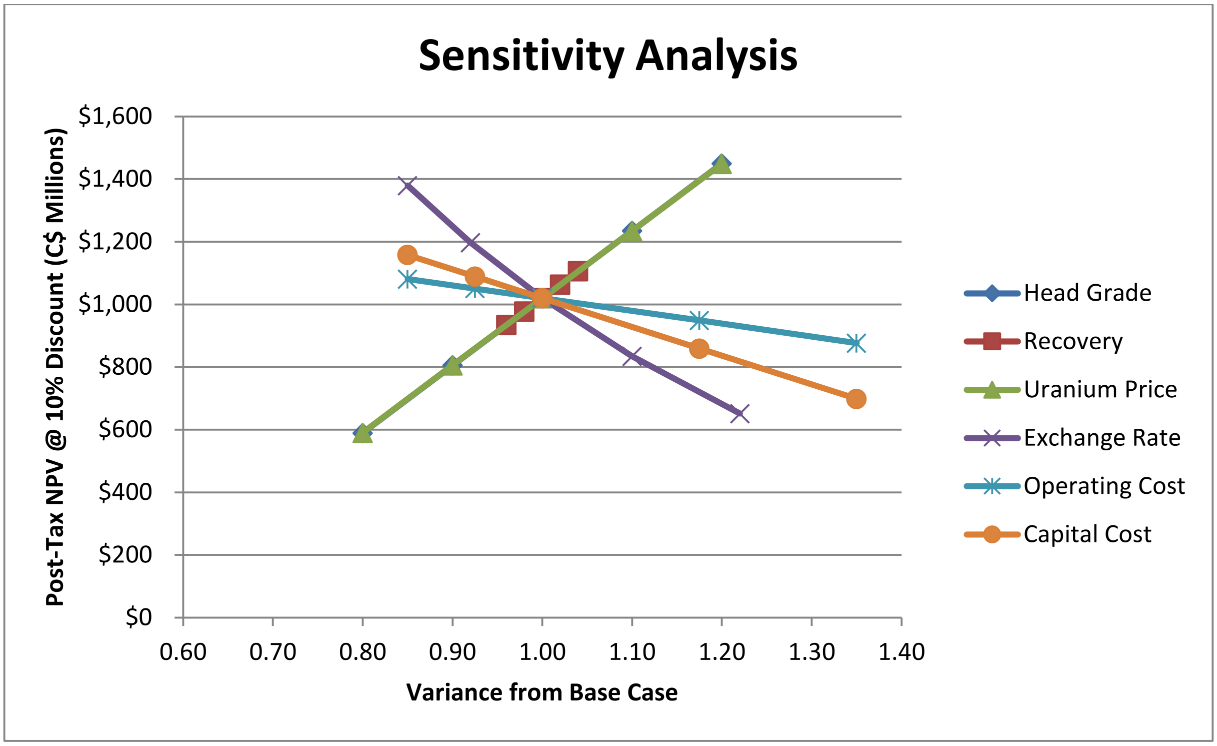


TABLE 22-4 SUMMARY OF SENSITIVITY ANALYSIS
Fission Uranium Corp. – Patterson Lake South Property

Description	Units	Low Case	Mid-Low Case	Base Case	Mid-High Case	High Case
Head Grade	%	0.80%	0.90%	1.00%	1.10%	1.20%
Overall Recovery	%	91.4%	93.3%	95.3%	97.2%	99.1%
Uranium Price	C$ / lb U_3O_8	$61	$69	$76	$84	$92
Exchange Rate	US$/C$	0.72	0.78	0.85	0.94	1.04
Operating Costs	C$/lb	14.1	15.3	16.6	19.5	22.4
Total Capital Cost	C$ millions	1,134	1,234	1,334	1,568	1,802
Adjustment Factor						
Head Grade	%	-20%	-10%	NA	10%	20%
Overall Recovery	%	-4%	-2%	NA	2%	4%
Uranium Price	%	-20%	-10%	NA	10%	20%
Exchange Rate	%	-15%	-8%	NA	10%	22%
Operating Costs	%	-15%	-8%	NA	18%	35%
Capital Cost	%	-15%	-8%	NA	18%	35%
Post-Tax NPV @ 10%						
Head Grade	C$ millions	589.2	805.0	1,019.9	1,234.7	1,449.6
Overall Recovery	C$ millions	934.0	976.9	1,019.9	1,062.9	1,105.8
Uranium Price	C$ millions	590.2	805.5	1,019.9	1,234.2	1,448.5
Exchange Rate	C$ millions	1,379.3	1,197.1	1,019.9	834.4	651.1
Operating Costs	C$ millions	1,080.9	1,050.4	1,019.9	948.6	876.3
Capital Cost	C$ millions	1,157.7	1,088.8	1,019.9	859.1	698.3

As shown in Figure 22-1, Project cash flow is most sensitive to the price of uranium, head grade, and process recovery. Yellowcake is primarily traded in United States dollars, whereas capital and operating costs for Patterson Lake South are generally priced in Canadian dollars. Therefore, the Canadian and United States exchange rate also exerts significant influence over project economics. In addition to the sensitivity analysis shown in Figure 22-1, an extended sensitivity analysis was undertaken solely on uranium price. This extended sensitivity is displayed in Figure 22-2, and Table 22-5.

FIGURE 22-2 EXTENDED SENSITIVITY ANALYSIS

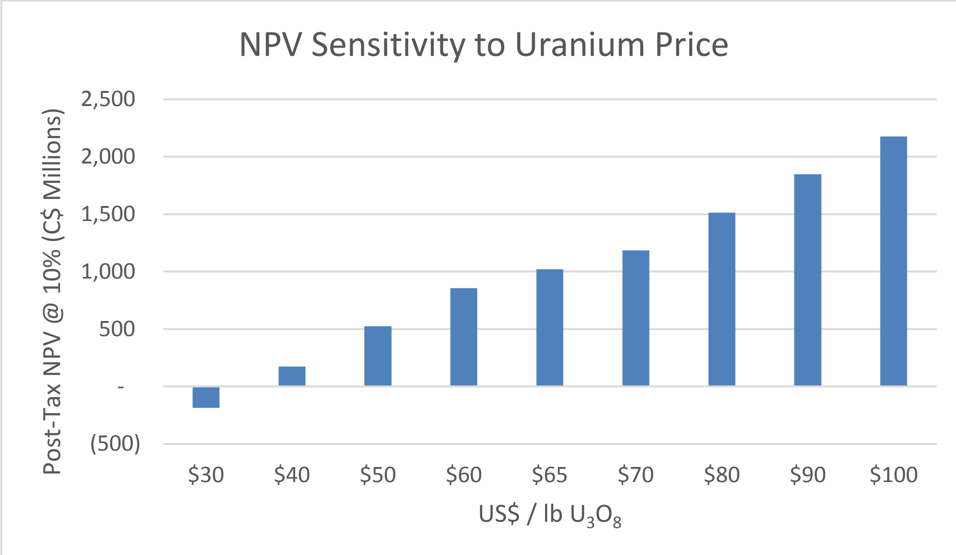


TABLE 22-5 EXTENDED SENSITIVITY ANALYSIS
Fission Uranium Corp. – Patterson Lake South Property

Uranium Price (US$ / lb U_3O_8)	**Uranium Price** (C$ / lb U_3O_8)	**Post-Tax NPV @ 10%** (C$ Millions)
30	35	(186)
40	47	174
50	59	524
60	71	855
65 (Base Case)	76	1,020
70	82	1,185
80	94	1,514
90	106	1,847
100	118	2,175

TAXES, PROVINCIAL ROYALTIES, AND DEPRECIATION

Taxes and depreciation for the Project were modeled based on input from Fission Uranium's tax advisors and auditors, as well as review of documents including:

- *"Guideline: Uranium Royalty System, Government of Saskatchewan, June 2014"*
- *"A Guide to Canadian Mining Taxation, KPMG Canada, September 2011"*

To develop the tax and depreciation model, all capital costs were assigned to either of:

- Canadian Development Expense (CDE); or
- Capital Cost Allowance (CCA).

In addition, the company has opening balances of Canadian Exploration Expense (CEE) and operating losses that were applied in the tax model. Under current Canadian tax codes, pre-production mine development costs are counted towards CEE, however, this is being phased out. Consequently, all pre-production capital was allocated to either CDE or CCA. Up to 30% of the CDE balance can be applied in any given year. All mining equipment and structures that are considered depreciable fall under Class 41 of Canadian tax codes, which can be depreciated at 25% annually.

In Saskatchewan, multiple royalties are applied to uranium projects. Royalties generally fall into two categories: revenue royalties, and profit royalties. An explanation of the various royalties is provided below:

- Resource Surcharge of 3% of net revenue (where net revenue is defined as gross revenue less transportation costs directly related to the transporting of uranium to the first point of sale).
- Basic Royalty of 5% of net revenue (as defined above), less a Saskatchewan Resource Credit of 0.75% of net revenue, for an effective royalty rate of 4.25%.
- Tiered profit royalty, with a 10% royalty rate on the first C$22.00 profit per kilogram of yellowcake, followed by 15% royalty on profits exceeding C$22.00 per kilogram.

In the tiered profit royalty, the basic royalty and resource surcharge are not deductible for calculating profit royalties. Profits for the purposes of royalties are calculated by taking the net revenue, subtracting the full value of operating costs, capital costs, and exploration expenditures. Revenue royalties were included in the "pre-tax" cash flow results, while profit royalties are considered a tax, and are included in "post-tax" results.

Federal and provincial taxes were applied at a rate of 15% and 12%, respectively. Table 22-6 provides a summary of the taxes and royalties paid to the provincial and federal government.

TABLE 22-6 SUMMARY OF TAXES AND ROYALTIES
Fission Uranium Corp. – Patterson Lake South Property

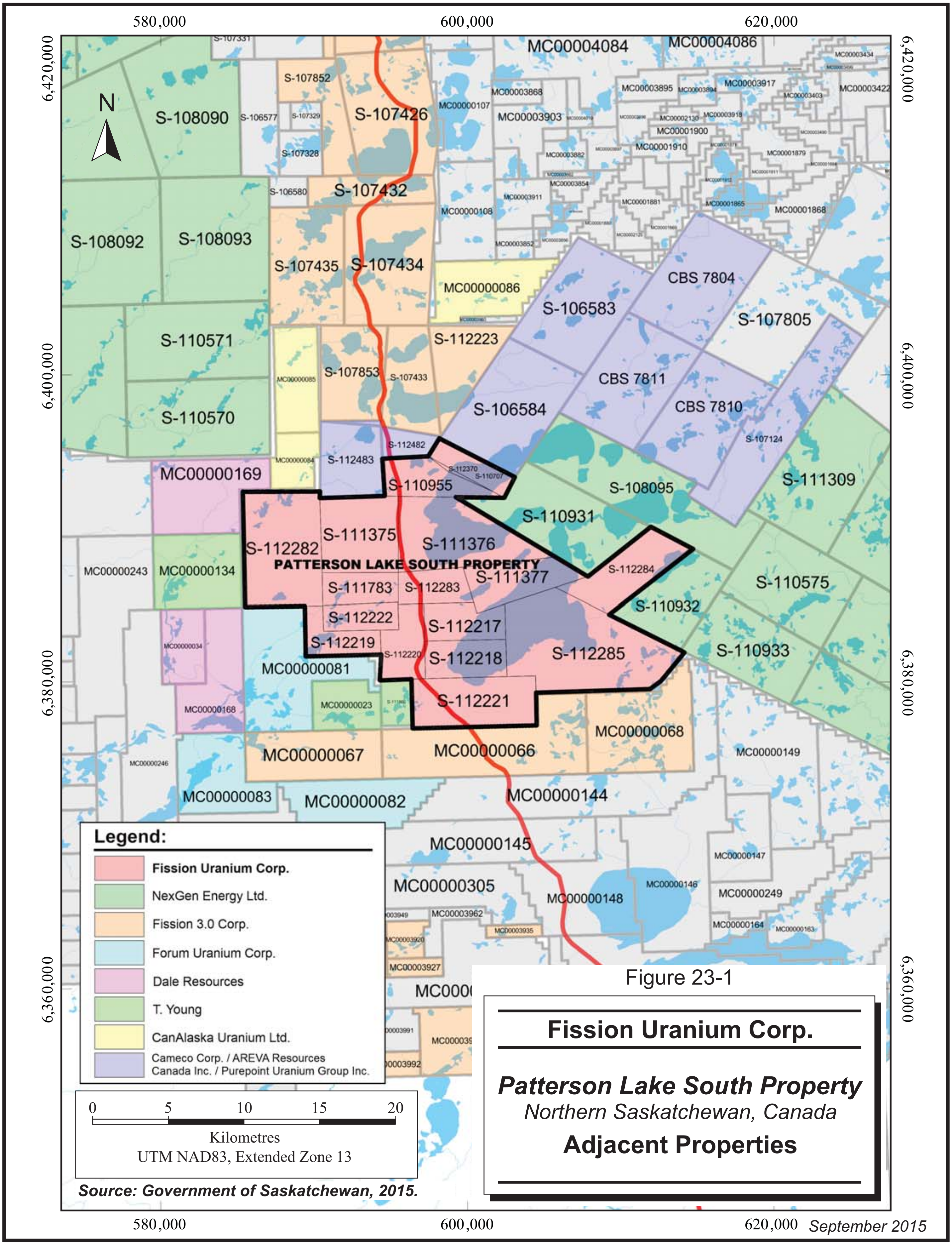
Description	Units	Value
Provincial Payments		
Saskatchewan Resource Surcharge	C$ millions	230.2
Basic Revenue Royalty	C$ millions	326.2
Profit Royalty < 22.00 C$ / kg	C$ millions	87.4
Profit Royalty > 22.00 C$ / kg	C$ millions	570.5
Provincial Taxes	C$ millions	413.9
Total Provincial Payments	**C$ millions**	**1,628.2**
Federal Taxes	**C$ millions**	**517.4**
Total Government Royalties and Taxes	**C$ millions**	**2,145.6**

23 ADJACENT PROPERTIES

The PLS Property is contiguous with claims held by various companies and individuals. As of the effective date of this report, the PLS Property is contiguous with claims registered in the names of NexGen Energy Ltd. (NexGen) to the east, Fission 3.0 Corp. to the south, Forum Uranium Corp. to the southwest, Dale Resources to the west, T. Young to the west and southwest, Canalaska Uranium Ltd. to the north, and a consortium consisting of Areva Resources Canada (39.5%), Cameco Corp. (39.5%), and Purepoint Uranium Group Inc. (21%) to the north and northeast (Figure 23-1).

NexGen has had success with their exploration program, however, none of the contiguous claims are known to host a deposit as significant as the Triple R deposit.

RPA has not relied upon information from the adjacent properties in the writing of this report.


580,000
600,000
620,000
6,420,000
6,400,000
6,380,000
6,360,000
N
PATTERSON LAKE SOUTH PROPERTY
S-108090
S-108092
S-108093
S-110571
S-110570
S-107852
S-107426
S-107432
S-107435
S-107434
S-107853
S-107433
S-112223
S-112482
S-112483
S-110955
S-111375
S-111376
S-112282
S-111377
S-111783
S-112283
S-112222
S-112217
S-112219
S-112220
S-112218
S-112285
S-112221
S-112284
S-106583
S-106584
S-107805
S-107124
S-108095
S-110931
S-110932
S-110933
S-110575
S-111309
CBS 7804
CBS 7811
CBS 7810
MC00004084
MC00004086
MC00003868
MC00003903
MC00000107
MC00000108
MC00000086
MC00000169
MC00000243
MC00000134
MC00000081
MC00000023
MC00000168
MC00000067
MC00000066
MC00000068
MC00000149
MC00000083
MC00000082
MC00000144
MC00000145
MC00000305
MC00000148
MC00000147
MC00000146
MC00000249
MC00000164
MC00003962
MC00003927
Legend:
Fission Uranium Corp.
NexGen Energy Ltd.
Fission 3.0 Corp.
Forum Uranium Corp.
Dale Resources
T. Young
CanAlaska Uranium Ltd.
Cameco Corp. / AREVA Resources Canada Inc. / Purepoint Uranium Group Inc.
0 5 10 15 20
Kilometres
UTM NAD83, Extended Zone 13
Source: Government of Saskatchewan, 2015.
Figure 23-1
Fission Uranium Corp.
Patterson Lake South Property
Northern Saskatchewan, Canada
Adjacent Properties
September 2015

24 OTHER RELEVANT DATA AND INFORMATION

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

25 INTERPRETATION AND CONCLUSIONS

In RPA's opinion, the PEA indicates that positive economic results can be obtained for the Project. The economic analysis shows a post-tax IRR of 34.2%, and a post-tax NPV (at a discount rate of 10%) of C$1,019 million at a long term price of US$65 per lb U_3O_8.

RPA offers the following conclusions by area:

GEOLOGY AND MINERAL RESOURCES

The Triple R deposit is a large, basement hosted, structurally controlled, high grade uranium deposit. Drilling has outlined mineralization with three-dimensional continuity, and size and grades that can potentially be extracted economically. Fission Uranium's protocols for drilling, sampling, analysis, security, and database management meet industry standard practices. The drill hole database was verified by RPA and is suitable for Mineral Resource estimation work.

RPA estimated Mineral Resources for the Triple R deposit using drill hole data available as of July 28, 2015. At cut-off grades of 0.20% U_3O_8 for open pit and 0.25% U_3O_8 for underground, Indicated Mineral Resources are estimated to total 2,011,000 tonnes at an average grade of 1.83% U_3O_8 containing 81 million pounds of U_3O_8. Inferred Mineral Resources are estimated to total 785,000 tonnes at an average grade of 1.57% U_3O_8 containing 27 million pounds of U_3O_8. Gold grades were also estimated and average 0.59 g/t for the Indicated Resources and 0.66 g/t for the Inferred Resources. Mineral Reserves have not yet been estimated for the Triple R deposit.

The R600W zone, not currently included in Mineral Resources, is defined by 13 drill holes from the 2015 winter drill program. The R600W zone has a total grid east-west strike length of 60 m. Additional drilling is recommended.

The deposit is open in several directions. There is excellent potential to expand the resource with step-out drilling. There are, in addition to the Triple R deposit, other targets on the property to be drill tested.

MINING AND GEOTECHNICAL CONSIDERATIONS

The Triple R deposit is a structurally controlled east-west trending sub-vertical high-grade uranium deposit. The deposit is overlain by 50 m to 100 m of sandy overburden, with the high grade mineralization located near the bedrock-overburden contact. Although the bedrock is generally competent, rock strengths in the mineralization have been degraded by radiological alteration. The deposit extends under Patterson Lake, and a key technical challenge to developing the operation will be water control related to Patterson Lake and saturated sandy overburden.

The PEA proposes a perimeter dyke and slurry cut-off wall – proven techniques successfully implemented at a number of Canadian mining operations, including the Diavik diamond mine and the Meadowbank gold mine. The development scenario does not require any new, untested, conceptual mining or construction methods. A number of issues impact estimates of construction time and cost for the dyke and slurry wall:

- Thickness and nature of lakebed sediments, affecting the stability of the perimeter dyke.
- Number and size of boulders within the sandy overburden, affecting the excavation of the slurry wall.
- Assessment of the extent of a Cretaceous mudstone unit that may affect the stability of the sandy overburden.

As part of the PEA, an Open Pit vs. Underground trade-off study was conducted to determine the optimum mining method for developing the deposit. A hybrid option was selected, consisting of open pit mining of the smallest possible footprint that covers the high-grade resources (>4% U_3O_8), in parallel with underground mining of the remainder of the deposit. Advantages include:

- Extraction of high-grade uranium without the use of specialized, high-cost, remote underground mining methods, such as those used at Cameco's Cigar Lake Mine.
- Maximizing resource extraction – no crown pillar at the overburden/bedrock contact, no losses at depth (beyond the extents of a pit-only scenario).
- Minimizing the length of the dyke and slurry wall.
- Minimizing the footprint of disturbance within Patterson Lake.

Open pit mining of mineralized material and uranium bearing waste is proposed to be carried out by the owner. Overburden stripping and barren waste mining will be done by a contractor with a dedicated mining fleet (larger equipment) given the total volume to be excavated and the higher production rate required.

Underground mining will be carried out by contractor, using conventional longhole retreat methods in both transverse and longitudinal orientations.

MINERAL PROCESSING AND METALLURGICAL TESTING

Metallurgical test work completed to date indicates that a recovery of 95% is a reasonable assumption for the PEA.

The process route developed by DRA for the Project is based on unit processes commonly used effectively in uranium process plants across the world, including northern Saskatchewan uranium mines, while utilizing some new innovations in some of these unit process designs to optimise plant performance.

While the Triple R deposit contains gold values that may be recoverable, a high-level economic analysis by RPA has shown this to have limited impact on overall project profitability at current market conditions and gold recovery was thus excluded from this design. Should market forces change in the future, gold recovery could be reasonably easily engineered into the existing design and constructed without impacting throughput of the uranium process plant.

ENVIRONMENTAL AND SOCIOLOGICAL CONSIDERATIONS

Key areas of consideration arising from the review of environmental and sociological aspects include:

- Consultation: While Fission Uranium has done preliminary community outreach and consultation, the level of consultation is very local and it will not be sufficient to support government Duty to Consult requirements and move the Project into the environmental assessment process. Fission Uranium will need to address this soon to avoid project delays.

- Lake Impact: Given the location of the deposit, impacts to Patterson Lake are inevitable. Regardless of the design, minimizing impacts to the lake will be very important, and it will be very important to ensure that the lake remains navigable to fish and boats.

- Baseline Studies: Fission Uranium has been forward-looking by starting environmental baseline and monitoring work. The work has been somewhat selective and should be sufficient to start the environmental assessment process, however, it is not currently sufficient to support an environmental assessment document.

- Risk: The main physical danger to the operation is forest fire and Fission Uranium has maintained close relationships with the local Wildfire Management base in Buffalo Narrows.

- Radiation Management during Exploration: Fission Uranium has developed a centrifuge system for effectively removing potentially radioactive cuttings and fines from drilling fluids. This material is effectively handled and disposed of at an operating uranium mine. Fission Uranium has a radiation protection program in place and appears to be following it.

RISKS AND UNCERTAINTIES

RPA, BGC, DRA, and Arcadis have assessed critical areas of the Project and identified key risks associated with the technical and cost assumptions used. In all cases, the level of risk refers to a subjective assessment as to how the identified risk could affect the achievement of the Project objectives. The risks identified are in addition to general risks associated with mining projects, including, but not limited to:

- general business, social, economic, political, regulatory and competitive uncertainties;
- changes in project parameters as development plans are refined;
- changes in labour costs or other costs of production;
- adverse fluctuations in commodity prices;
- failure to comply with laws and regulations or other regulatory requirements;
- the inability to retain key management employees and shortages of skilled personnel and contractors.

A summary of key Project related risks is shown in Table 25-1. The following definitions have been employed by RPA in assigning risk factors to the various aspects and components of the Project:

- **Low Risk** - Risks that could or may have a relatively insignificant impact on the character or nature of the deposit and/or its economics. Generally can be mitigated by normal management processes combined with minor cost adjustments or schedule allowances.
- **Moderate Risk** - Risks that are considered to be average or typical for a deposit of this nature. These risks are generally recognizable and, through good planning and technical practices, can be minimized so that the impact on the deposit or its economics is manageable.
- **High Risks** - Risks that are largely uncontrollable, unpredictable, unusual, or are considered not to be typical for a deposit of a particular type. Good technical practices and quality planning are no guarantee of successful exploitation. These risks can have a major impact on the economics of the deposit including significant disruption of schedule, significant cost increases, and degradation of physical performance.

TABLE 25-1 RISKS AND UNCERTAINTIES
Fission Uranium Corp. – Patterson Lake South Project

Project Element	Issue	Risk Level	Mitigation
Geology	Resource tonnes and grade estimates	Low	Infill drilling is required in areas classified as Inferred. There is upside potential to increase resources along strike and at depth.
Mining	Thickness and nature of lakebed sediments	Low	Conduct geotechnical assessment.
	Boulders in sandy overburden	Moderate	Conduct geotechnical assessment.
	Potential for low-stability Cretaceous mudstone unit in pit area	Low	Conduct geotechnical assessment.
	Ground conditions within the radiologically-altered rock	Low	Geotechnical drilling and analysis will further refine ground support requirements.
Process	Uranium recovery	Low	Test work supports recovery assumption. Additional test work will allow optimization of flowsheet.
Environment and Permitting	Permitting	Moderate	Begin EA process and wider consultation
	Management of exposure to radiation	Low	Issues are well-understood for North Saskatchewan operations.
Construction Schedule	Seasonal impact on dyke-building and slurry wall construction	Moderate	Requires detailed planning and control. Further information on geotechnical conditions will refine schedule estimates.
Pre-production Capital Cost Estimate	Dyke-building and slurry wall construction	Moderate	Geotechnical data collection and analysis will result in refined cost estimates.
Operating Cost Estimate	Cost of key materials and supplies	Low	Close management of purchasing and logistics.

26 RECOMMENDATIONS

RPA recommends that Fission Uranium advance the Project to the pre-feasibility stage, and offers the following recommendations by area:

GEOLOGY AND MINERAL RESOURCES

- The PLS Property hosts a significant uranium deposit and merits considerable exploration and development work. The primary objectives are to advance engineering work, expand the Triple R resource, and explore elsewhere on the property. Work will include:
  - 18,000 m for Triple R step-out and infill drilling; and
  - 6,000 m of drilling for a property-wide exploration.

MINING AND GEOTECHNICAL CONSIDERATIONS

- A geotechnical investigation of soil mechanics should be undertaken to support the open pit development and the dyke and cut-off wall design, with a primary focus on addressing the risks identified above. The program will require approximately ten geotechnical boreholes drilled around the perimeter of the pit and dyke to depths of 50 m to 90 m, combined with a geophysics program.

- A geotechnical investigation of rock mechanics should be undertaken to support the open pit and underground design. The program will require drilling of approximately ten oriented core geotechnical holes in rock: four for the main pit, four for the underground (two for the crown and two for the rock mass), and two short holes for a small separate zone (the R00E pit). The total length is estimated at 2,000 m for the program.

- Mining of a greater proportion of the deposit by open pit methods appears to be economically feasible, however the trade-off is complex, involving both qualitative and quantitative factors. As resource drilling continues and the Project advances to further studies, this trade-off should be revisited and optimized.

MINERAL PROCESSING AND METALLURGICAL TESTING

- To prove the performance and efficiency of the processing steps post leach, it is recommended that further test work be conducted in the next study phase. This test work should include:
  - Solid/liquid separation test work to size the CCD circuit as efficiently as possible;
  - Uranium solvent extraction test work;
  - Impurity removal test work;
  - Yellowcake precipitation test work.

ENVIRONMENTAL AND SOCIOLOGICAL CONSIDERATIONS

- Conduct a community outreach and consultation program addressing a wider body of Project stakeholders.

- Continue baseline study field work.
- Begin the EA process, in parallel with engineering work.

BUDGET

RPA, BGC, DRA, and Arcadis propose the following budget for work carrying through to the end of a Pre-Feasibility Study:

TABLE 26-1 PROPOSED BUDGET

Fission Uranium Corp. – Patterson Lake South Property

Item	$ M
Drilling (~24,000 m)	10.0
Geotechnical Program – Soils	2.0
Geotechnical Program – Rock	2.0
Metallurgical Test Work	0.5
Social, Permitting and Environmental Work	3.5
Pre-Feasibility Study	2.0
Total	**20.0**

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28 DATE AND SIGNATURE PAGE

This report titled "Technical Report on the Preliminary Economic Assessment of the Patterson Lake South Property, Northern Saskatchewan, Canada" and dated September 14, 2015, was prepared and signed by the following authors:

(Signed and Sealed) "*Jason J. Cox*"

Dated at Toronto, ON
September 14, 2015

Jason Cox, P.Eng.
Principal Mining Engineer

(Signed and Sealed) "*David A. Ross*"

Dated at Toronto, ON
September 14, 2015

David A. Ross, M.Sc., P.Geo.
Principal Geologist

(Signed and Sealed) "*David M. Robson*"

Dated at Toronto, ON
September 14, 2015

David M. Robson, P.Eng., MBA
Mining Engineer

(Signed and Sealed) "*Volodymyr Liskovych*"

Dated at Toronto, ON
September 14, 2015

Volodymyr Liskovych, P.Eng., Ph.D.
Senior Process Engineer
DRA Taggart

(Signed and Sealed) "*Mark Wittrup*"

Dated at Toronto, ON
September 14, 2015

Mark Wittrup, P.Eng., P.Geo.
Vice President Western Operations
formerly of Arcadis Canada Inc.

29 CERTIFICATE OF QUALIFIED PERSONS

JASON J. COX

I, Jason J. Cox, P.Eng., as an author of this report entitled "Technical Report on the Preliminary Economic Assessment of the Patterson Lake South Project, Northern Saskatchewan, Canada", prepared for Fission Uranium Corp., and dated September 14, 2015, do hereby certify that:

1. I am a Principal Mining Engineer and Executive Vice President, Mine Engineering, with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.

2. I am a graduate of the Queen's University, Kingston, Ontario, Canada, in 1996 with a Bachelor of Science degree in Mining Engineering.

3. I am registered as a Professional Engineer in the Province of Ontario (Reg. #90487158). I have worked as a Mining Engineer for a total of 19 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Review and report as a consultant on many mining operations and projects around the world for due diligence and regulatory requirements
   - Engineering study (PEA, PFS, and FS) project work on many mining projects around the world, including North America
   - Operational experience as Planning Engineer and Senior Mine Engineer at three North American mines
   - Contract Co-ordinator for underground construction at an American mine

4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

5. I visited the Patterson Lake South Property on June 16 and 17, 2015.

6. I am responsible for the overall preparation of the report. I am responsible for Sections 2, 15, and 24, and share responsibility with my co-authors for Sections 1, 3, 22, 25, 26, and 27 of this report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of this Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated this 14th day of September, 2015.

(Signed and Sealed) "*Jason J. Cox*"

Jason Cox, P.Eng.

DAVID A. ROSS

I, David A. Ross, M.Sc., P.Geo., as the author of this report entitled “Technical Report on the Patterson Lake South Property, Northern Saskatchewan, Canada” prepared for Fission Uranium Corp. and dated September 14, 2015, do hereby certify that:

1. I am Principal Geologist with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON M5J 2H7.

2. I am a graduate of Carleton University, Ottawa, Canada in 1993 with a Bachelor of Science degree in Geology and Queen’s University, Kingston, Canada in 1999 with a Master of Science degree in Mineral Exploration.

3. I am registered as a Professional Geoscientist in the Province of Ontario (Reg.#1192) and the Province of Saskatchewan (Reg.#31868). I have worked as a geologist for more than 20 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Mineral Resource estimation work and reporting on numerous mining and exploration projects around the world.
   - Exploration geologist on a variety of gold, base metal, and uranium projects in Canada, Indonesia, Chile, and Mongolia.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

5. I visited the Patterson Lake South Project from March 17 to 19 and from September 7 to 9, 2014.

6. I am responsible for sections 4 through 12, 14, and 23, and share responsibility with my co-authors for Sections 1, 3, 25, 26, and 27 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. In early 2015, I made the initial Mineral Resource estimate for the Triple R deposit and filed a supporting NI 43-101 report dated February 19, 2015.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 14th day of September, 2015.

(Signed and Sealed) "*David A. Ross*"

David A. Ross, M.Sc., P.Geo.

DAVID M. ROBSON

I, David M. Robson, P.Eng., MBA, as an author of this report entitled "Technical Report on the Preliminary Economic Assessment of the Patterson Lake South Project, Northern Saskatchewan, Canada", prepared for Fission Uranium Corp., and dated September 14, 2015, do hereby certify that:

1. I am a Mining Engineer with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.

2. I am a graduate of Queen's University, Kingston, Ontario, Canada, in 2005 with a Bachelor of Science degree in Mining Engineering.

3. I am registered as a Professional Engineer in the Province of Saskatchewan (Reg. #13601). I have worked as a Mining Engineer for a total of 10 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Review and report as a consultant on mining operations and projects for due diligence and regulatory requirements.
   - Engineering study (scoping study, PEA, PFS) project work on mining projects around the world, including North America.
   - Operational experience as Mine Engineer at Canadian uranium mine.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

5. I have not visited the Patterson Lake South Property.

6. I am responsible for preparation of Sections 16, 18, and 19 of the Technical Report and share responsibility with my co-authors for Sections 1, 3, 21, 22, 25, 26, and 27 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, Sections 16, 18, 19, 21, and 22 for which I am responsible in the Technical Report contains/contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 14th day of September, 2015.

(Signed and Sealed) "*David M. Robson*"

David M. Robson, P.Eng., MBA

VOLODYMYR LISKOVYCH

I, Volodymyr Liskovych, Ph.D., P.Eng, as an author of this report entitled "Technical Report on the Preliminary Economic Assessment of the Patterson Lake South Project, Northern Saskatchewan, Canada" prepared for Fission Uranium Corp. and dated September 14, 2015, do hereby certify that:

1. I am Senior Process Engineer with DRA-Taggart at Suite 300 / 44 Victoria Street / Toronto / Ontario / M5C1Y2 / Canada.

2. I graduated from Zaporozhye State Engineering Academy, Zaporozhye, Ukraine in 1996 with a Metallurgical Engineer Degree, and graduated from National Metallurgical Academy of Ukraine, Dnepropetrovsk, Ukraine with the PhD degree (Candidate of Technical Science) in Metallurgical Engineering (Hydrometallurgy) in 2001.

3. I am registered as a Professional Engineer in the Province of Ontario (Reg. #100157409). I have worked as a metallurgical engineer for a total of 19 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Review and report as a consultant on mineral processing and metallurgical operations and projects around the world for due diligence and regulatory requirements
   - Engineering study (PEA, PFS, FS, Detailed Engineering) project work on many minerals processing and metallurgical and hydrometallurgical projects around the world, and in North America
   - Operational experience in operations management and operational support positions in metallurgical and hydrometallurgical operations in Ukraine, Canada, and Brazil

4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

5. I have not visited the Patterson Lake South Property.

6. I am responsible for preparation of Sections 13 and 17 of the Technical Report and share responsibility with my co-authors for Sections 1, 3, 21, 25, 26, and 27 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Uranium Facility Design section for which I am responsible in the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated 14th day of September, 2015

(Signed and Sealed) "*Volodymyr Liskovych*"

Volodymyr Liskovych, Ph.D., P.Eng

MARK WITTRUP

I, Mark Wittrup, P.Eng., P.Geo., as an author of this report entitled “Technical Report on the Preliminary Economic Assessment of the Patterson Lake South Project, Northern Saskatchewan, Canada”, prepared for Fission Uranium Corp., and dated September 14, 2015, do hereby certify that:

1. I am Vice-President Environmental and Regulatory Affairs with Clifton Associates Limited at 2222 – 30th Avenue NE, Calgary, Alberta, T2E 7K9 (formerly, Vice-President Western Operations, SENES/ARCADIS Canada Inc.).

2. I am a graduate of the University of Saskatchewan in 1988 with a Master of Science, Geology, and Lakehead University in 1979 with an Honours Bachelor of Science, Geology.

3. I am registered as a Professional Engineer and Geologist in the Province of Saskatchewan (#05325), and a Professional Engineer in the Provinces of Alberta (#182977) and British Columbia (#183022). I have worked as an environmental engineer and geologist for a total of 36 years since obtaining my undergraduate degree. My relevant experience for the purpose of the Technical Report is:
   - 31 years with a major uranium mining company with 5 years uranium exploration, and >25 years environmental and regulatory experience specifically related to uranium mines and nuclear facilities globally, but primarily in Northern Saskatchewan;
   - Project manager for a high-grade uranium mine EIS Federal and Provincial approvals and permitting processes, and main author of the EIS;
   - Four years Assistant Deputy Minister, Environmental Protection and Audit, Saskatchewan Ministry of Environment;
   - Participated in the implementation of the IAEA Additional Protocols with a major uranium mining company and have participated in work on the IAEA NORM Guidelines; and
   - Have worked on environmental/regulatory projects directly related to ten uranium mines and properties.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

5. I visited the Fission Uranium, Patterson Lake South (Triple R) property on June 16 to 17, 2015.

6. I am responsible for the preparation of Section 20, and share responsibility with my co-authors for Sections 1, 3, 25, 26, and 27 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report sections for which I am responsible in the Technical Report

contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated 14th day of September, 2015

(Signed and Sealed) "*Mark Wittrup*"

Mark Wittrup, MSc., P.Eng., P.Geo., CMC