



PLS-TRIPLER

**DEVELOPING THE ATHABASCA
BASIN'S NEXT ELITE SHALLOW HIGH-
GRADE URANIUM MINE**

TSX:FCU OTCQX:FCUUF





DISCLAIMER & TECHNICAL INFORMATION

DISCLAIMER

The following information may contain forward-looking statements. Forward-looking statements address future events and conditions and therefore involve inherent risks and uncertainties. Actual results may differ materially from those currently anticipated in such statements.

TECHNICAL INFORMATION

Certain of the technical information contained herein is derived from the January 17, 2023 news release entitled “Fission Announces Tier 1 Economics for PLS with Feasibility Study: Lower Initial CAPEX, Increased Mine Life, NPV and IRR” describing results of a FS completed on the project – a copy of which will be filed on the Company’s profile on SEDAR at www.sedar.com within 45 days. The FS considers the PLS project as a stand-alone mine and mill operation, which includes development and extraction of the R00E, R780E and R840W zones (Triple R deposit), based on a number of inputs, estimates, and results.

The technical information in this corporate presentation has been prepared in accordance with the Canadian regulatory requirements set out in National Instrument 43-101 and reviewed on behalf of the company by Ross McElroy, P.Geol. President and CEO for Fission Uranium Corp., a qualified person.

The Mineral Resources have an effective date of September 12, 2022, and are reported at a cut-off grade of 0.25% U₃O₈ based on a long-term price of US\$50 per lb U₃O₈ and PFS cost estimates. Mineral Reserves have an effective date of January 17, 2023, and are reported at a cut-off grade of 0.25% U₃O₈ based on a long-term price of US\$65 per lb U₃O₈ and FS cost estimates.



FISSION URANIUM SNAPSHOT

“Fission Uranium is on schedule to become one of the world’s lowest cost uranium producers by 2029”



ADVANCED ASSET WITH UNIQUE ADVANTAGES

- Elite economics in leading uranium jurisdiction
- Shallow, high-grade deposit with clear growth path
- Major regional exploration potential

INDUSTRY LEADING URANIUM DEVELOPMENT TEAM

- Deep expertise in uranium mine development, operations, community & environment
- Award-winning management and exploration team

ON TARGET FOR PRODUCTION BY 2029

- PLS project progressing rapidly through environmental and permitting stage
- Development milestones being met on time and on budget
- Fast, predictable, low risk construction



INVESTMENT HIGHLIGHTS

HUGE GLOBAL DEMAND GROWTH

- Climate change, EVs and energy transition
- Geopolitical conflict
- Energy security means Canadian uranium now critical to western utilities

TIMING ADVANTAGE

- Uranium sector in sustained deficit; approaching historical supply gap
- Fission owns one of the few advanced development projects able to enter production this cycle

SUSTAINABLE DEVELOPMENT

- Minimal environmental footprint
- Supportive rights holders & stakeholders
- Clear economic benefits for communities & Province

TIER ONE ECONOMICS

- Highly cash generative
- 2023 avg. cash costs \$9.77/lb U₃O₈ (C\$13.02)
- After-tax NPV8% of \$903M (C\$ 1,204M)



URANIUM'S UNSTOPPABLE DEMAND DRIVERS

*The **energy transition**, **geopolitics**, and **energy security** have fundamentally altered the trajectory of nuclear energy and the uranium market that fuels it.*

- **Reactor construction boom** with estimated 40% new reactors online by 20401
- **New nuclear programs** in major economies throughout EU, N. America, Asia, and Middle East
- **Geopolitical risk** has created an overwhelming demand for energy security, resulting in policy and financial support for reactor fleets
- **Commercial small modular reactors** now a reality with multiple units under construction globally





URANIUM'S GENERATIONAL SUPPLY CHALLENGE

The uranium market has been in a sustained state of supply deficit since 2018.

PRIMARY SUPPLY YET TO RECOVER FROM 10-YEAR BEAR MARKET

- Producing mines left with depleted reserves, grades
- Expansion projects require major capex
- Few advanced development-stage projects
- Greatly reduced secondary supply
- Incentive price for new production upwards of USD \$90/lb

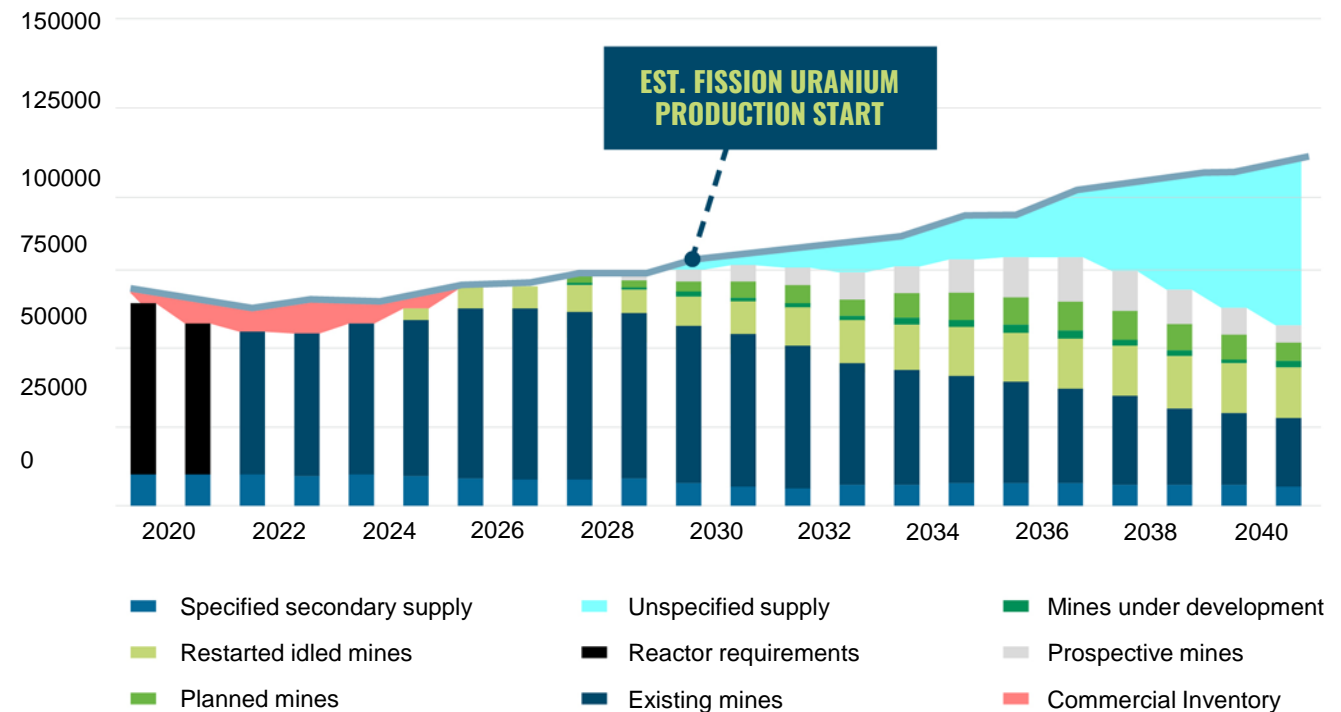
UNPRECEDENTED ONGOING GEOPOLITICAL RISK TO URANIUM SUPPLY

- ~40% global supply from Kazakhstan (borders Russia, Ukraine)
- ~8% global supply from Russia (war with Ukraine, economic war with the West)
- ~5% global supply from Niger (military coup in 2023, Orano has halted ore processing due to sanctions)



A GENERATIONAL MOMENT FOR INVESTMENT IN URANIUM

- Buy-and-hold uranium funds removing multi-million lbs from spot market
- Bifurcating markets have increased potential for price spikes
- Fission Uranium on target for production when deficit begins its biggest increase.



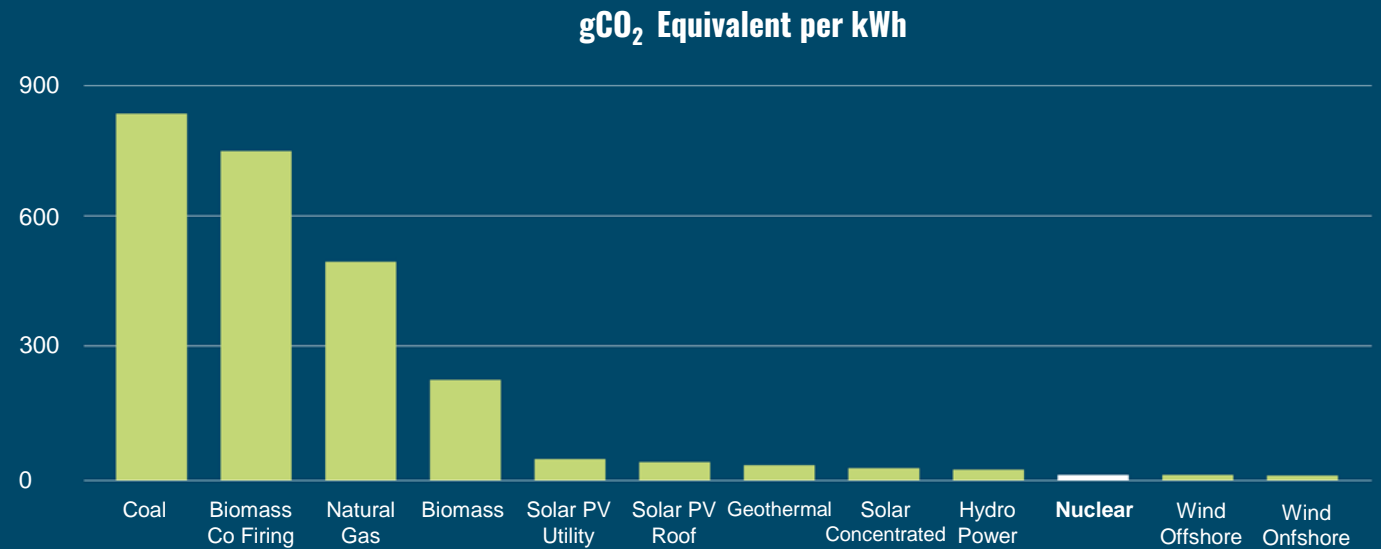
Reference Scenario for Uranium Supply/Demand, tU



NUCLEAR'S ROLE IN THE ENERGY TRANSITION

"There is no path to net zero carbon without nuclear"

- Nuclear energy saves our atmosphere from over 470 million metric tons of carbon emissions each year.¹
- Power grids are designed for constant power supply and need massive upgrades to use a large percentage of solar and wind. These upgrades will take decades and require vast CAPEX.
- Nuclear is a vital transitional energy source because no alternative for clean, low cost, constant power.
- According to the IEA, nuclear energy capacity must double for the world to reach net zero.



Average life-cycle CO₂ equivalent emissions.



THE PREMIER HIGH-GRADE URANIUM DISTRICT

*Athabasca Basin, Saskatchewan
Canada*

JURISDICTION

Stable, supportive government and communities, skilled workforce and established infrastructure. Straightforward permitting

TOP-RATED

Saskatchewan is the 2nd most attractive jurisdiction in the world for mining investment - 2021, the Fraser Institute

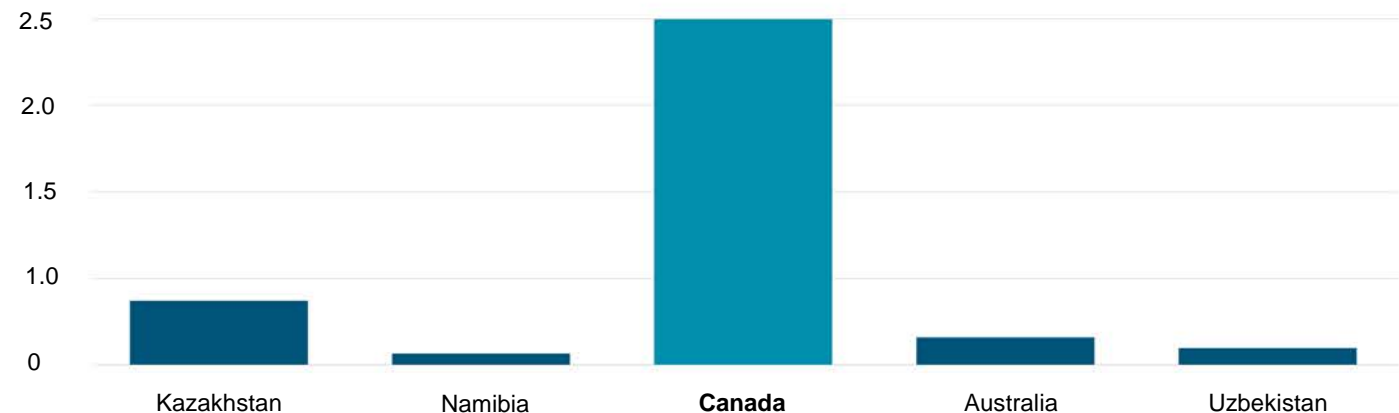
GLOBAL SUPPLIER

Canada (Saskatchewan) is the world's second largest producer of uranium, accounting for roughly 13% of total global output.

GRADE

10 to 20 times Global Average

AVERAGE GRADE % U_3O_8 (approximate average grade)

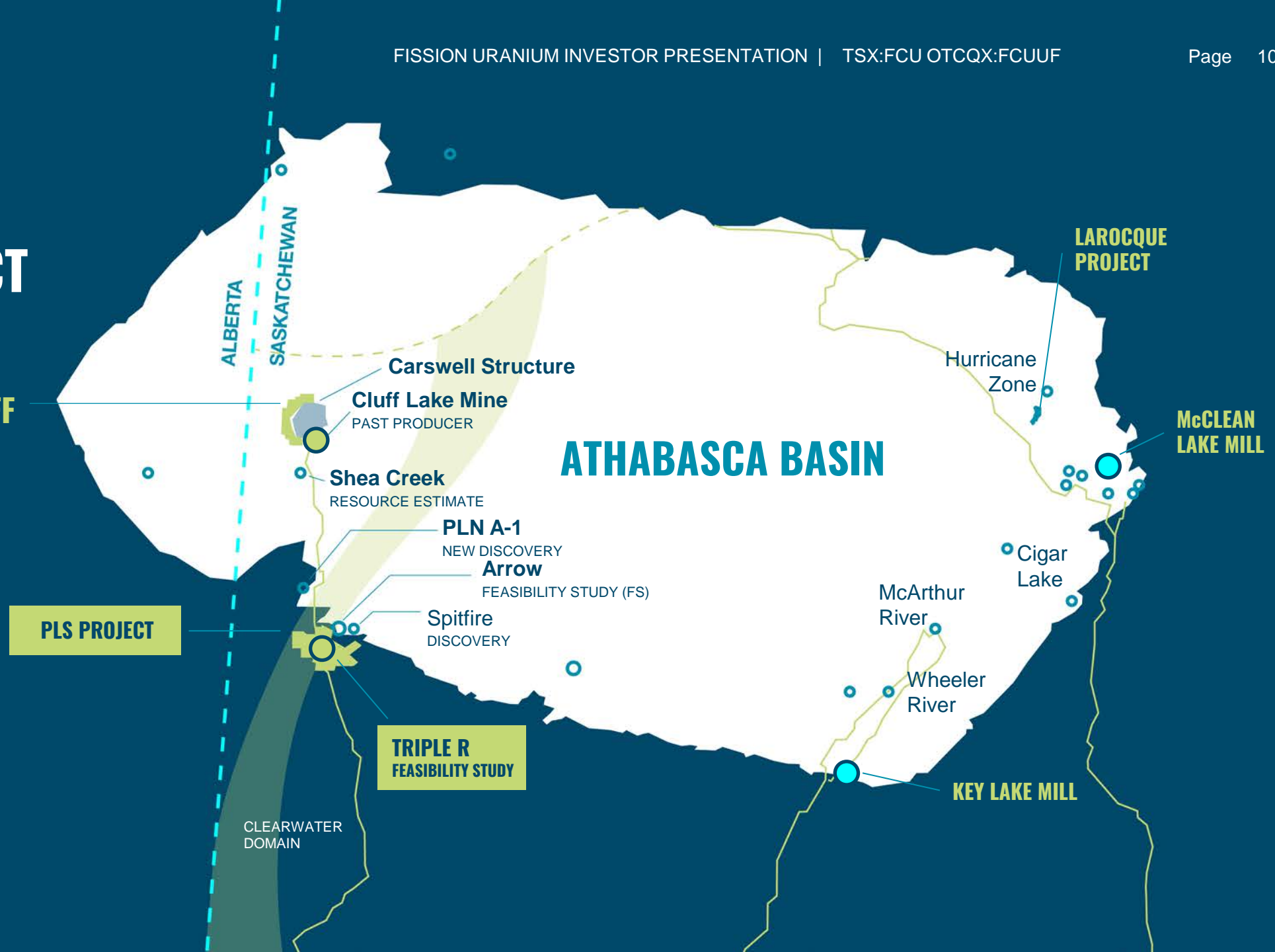




CANADA'S ATHABASCA BASIN DISTRICT



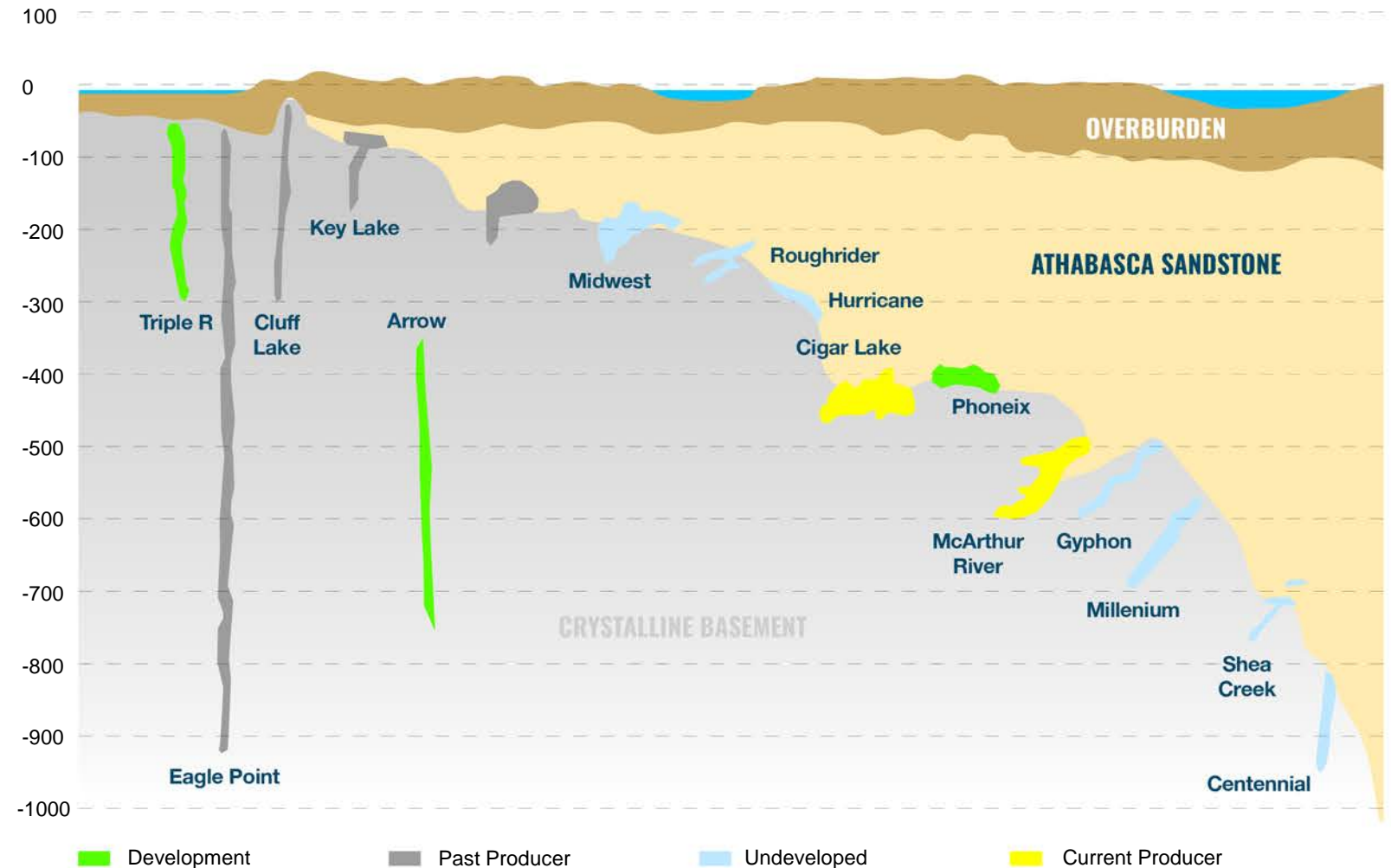
- FCU PROPERTY HOLDINGS
- MILL LOCATION





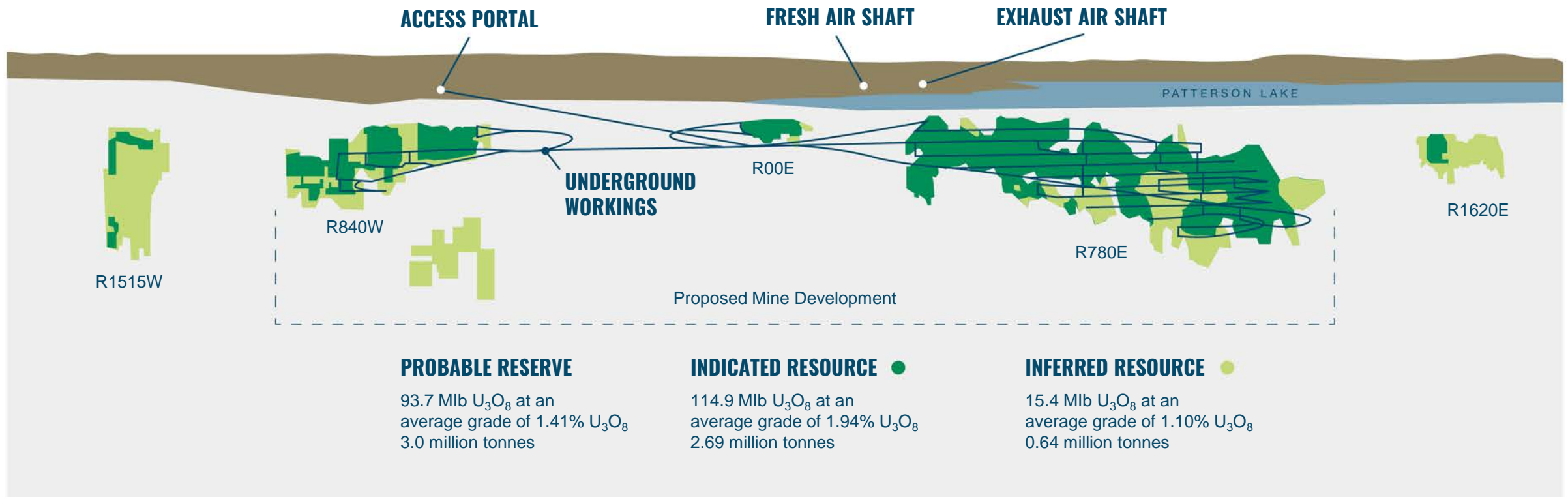
THE BASIN'S ONLY SHALLOW, HIGH-GRADE, UNDEVELOPED PROJECT

Fission's Triple R deposit starts 50 metres from surface and sits entirely within basement rock.





TRIPLE R DEPOSIT SHALLOW, CONCENTRATED ORE BODY WITH CLEAR GROWTH PATH





ELITE ECONOMICS

“Fission Uranium’s PLS project demonstrates the potential to be one of the lowest operational cost uranium mines in the world”.



JANUARY 2023 FS MINE SCENARIO

| | | |
|-----------------------------|--------------------------------------|---------|
| Mine Life | Years | 10 |
| Construction Period | Years | 3 |
| LOM Avg. Head Grade | % U ₃ O ₈ | 1.41 |
| LOM Production | M lbs U ₃ O ₈ | 90.9 |
| Avg. LOM Annual Production | M lbs U ₃ O ₈ | 9.1 |
| Operating Costs | C\$/lb U ₃ O ₈ | \$13.02 |
| All-in Sustaining Cost | C\$/lb U ₃ O ₈ | \$18.06 |
| Initial Capital Cost | C\$M | \$1,155 |
| LOM Sustaining Capital Cost | C\$M | \$384 |
| After-Tax Payback Period | Years | 2.6 |

Project Economics at US\$65/lb U3O8 and C\$1.00:US\$0.75

| | | |
|-----------------------------|------|---------|
| Pre-Tax Cash Flow | C\$M | \$4,508 |
| After-Tax Cash Flow | C\$M | \$2,787 |
| After-Tax NPV _{8%} | C\$M | \$1,204 |
| After-Tax IRR | - | 27.2% |



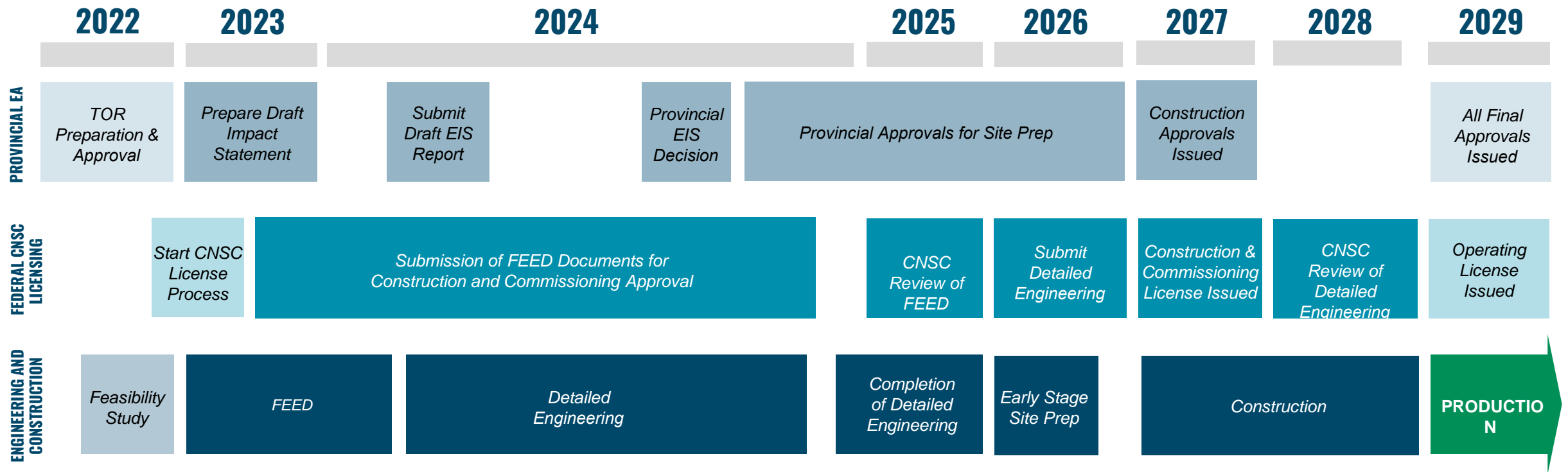
HIGHLY CASH GENERATIVE IN WIDE RANGE OF PRICE ENVIRONMENTS

Sensitivity Analysis and Average Annual EBITA

| | URANIUM PRICE (USD) | AFTER-TAX NPV (8%) (BILLIONS) | AFTER-TAX IRR | AVG. ANNUAL EBITA (OVER LIFE OF MINE) |
|-----------------|---------------------|-------------------------------|---------------|---------------------------------------|
| | \$150/lb | \$4.27 | 55.3% | \$1.34 Billion |
| | \$100/lb | \$2.47 | 40.7% | \$0.87 Billion |
| | \$75/lb | \$1.57 | 31.6% | \$0.63 Billion |
| FS Base Case | \$65/lb | \$1.20 | 27.2% | \$0.54 Billion |
| | \$60/lb | \$1.02 | 24.8% | \$0.49 Billion |
| | \$55/lb | \$0.83 | 22.2% | \$0.45 Billion |
| | \$50/lb | \$0.64 | 19.4% | \$0.40 Billion |

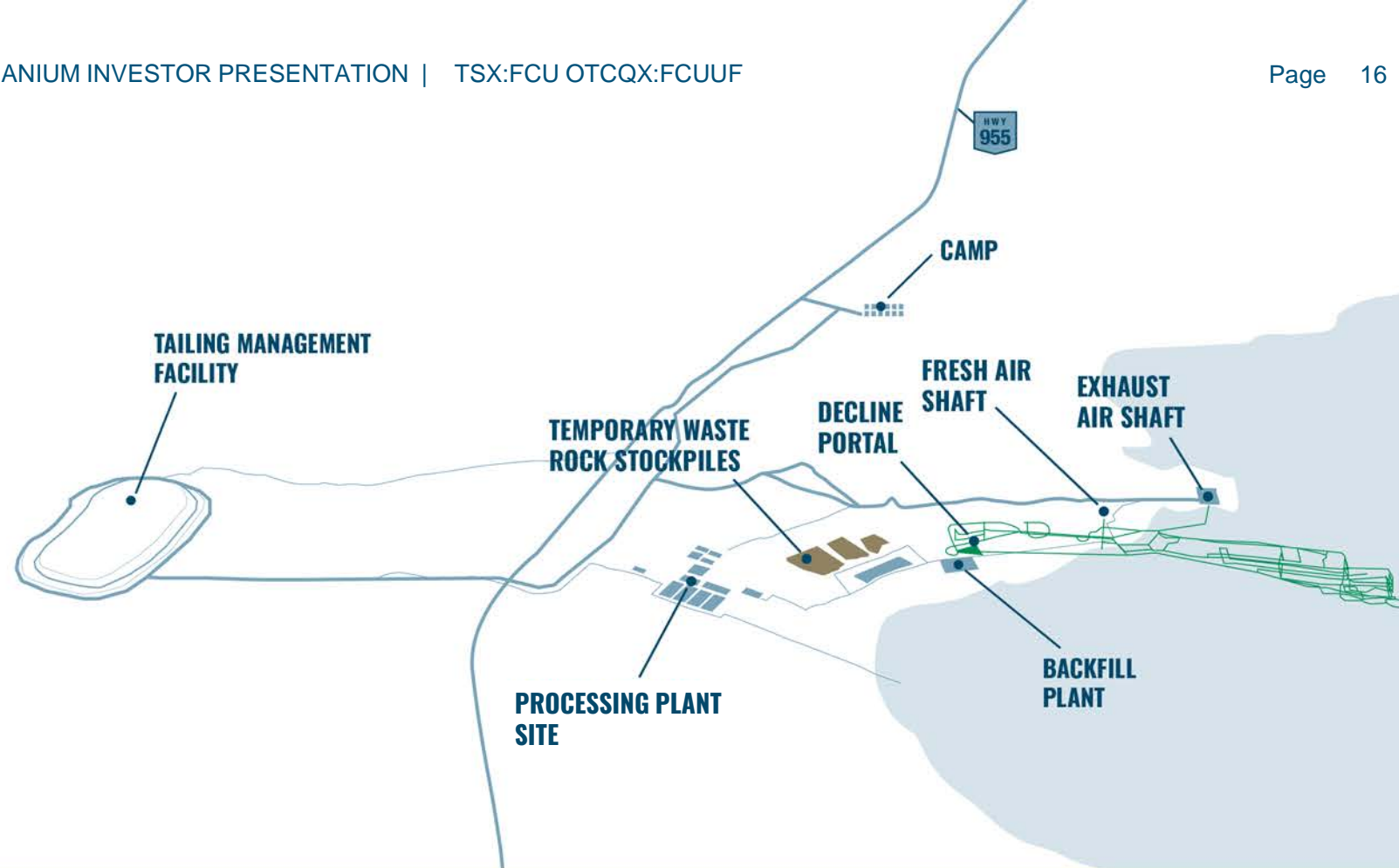


TIMELINE TO PRODUCTION





UNIQUE DEVELOPMENT & PRODUCTION ADVANTAGES



LOW RISK

Hosted in basement rock; avoids the costly water issues faced by Cigar Lake and other eastern Athabasca unconformity mines

HIGH EFFICIENCY

Shallow, plunging ore body allows decline ramp access – less costly, more efficient than production shafts used by deep mines

SUPERB METALLURGY

High ore purity supports fast, efficient processing, and high-quality end product

HIGH PRODUCTIVITY

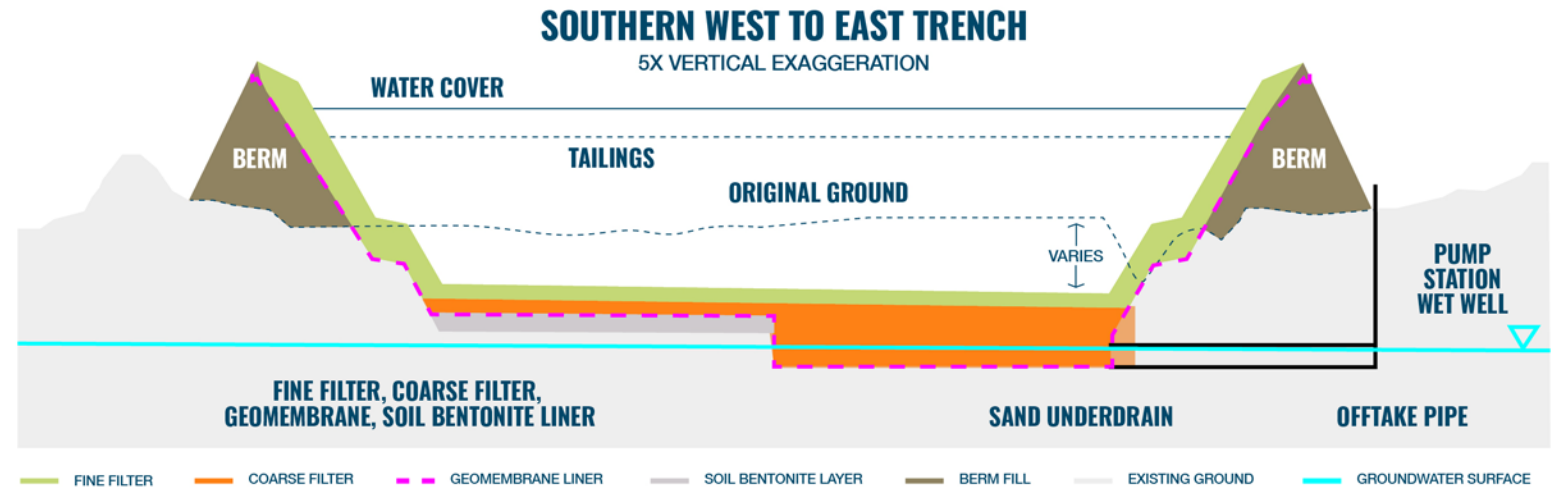
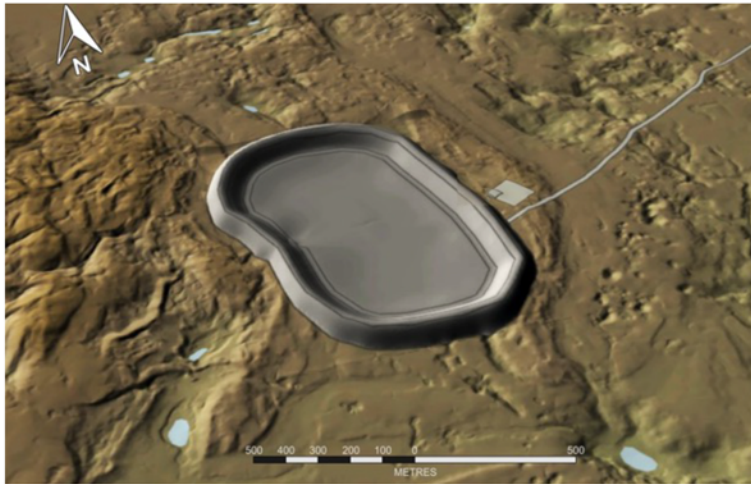
Mine design and shallow depth = very high tonnes-per-vertical-metre

EXCELLENT ACCESS

Mine site is just 2 km from all-season Highway 955



DESIGNED FOR SUSTAINABLE MINING



LOW RISK

1,000 TPD processing facility & surface Tailings Management Facility (TMF) designed to be high efficiency, small footprint

LOW IMPACT

Close proximity to highway means little on site road construction; low impact on fauna and flora

CLEAN ORE

In contrast to most Athabasca Basin deposits, mineralization at PLS has extremely low levels of contaminants

WASTE ROCK RETURN

Ramp access & long-haul open stoping means waste rock can be returned underground



COLLABORATIVE, SUPPORTIVE DEVELOPMENT

Fission Uranium continues to strengthen its social license with all rights holders and stakeholders by collaborating on the shared goals of environmental and cultural protection, and economic prosperity.

Holistic Environmental & Social Approach: Development strategy integrates local, traditional, generational knowledge with western techniques.

Collaborative Site Work: Fission has prioritized local contractors and workers from the start of work at PLS in 2011.

Community investment strategy: As part of Fission's goal of being a supportive member of the community, the company invests in a range of locally-run educational, community development, cultural initiatives.





LOCAL & PROVINCIAL ECONOMIC IMPACT

ECONOMIC BENEFITS TO DATE

Local communities provide a range of services to Fission, including camp management, catering, logistics, security, vehicle and equipment rental, technicians, and others.

FUTURE NEW EMPLOYMENT

The completed Triple R mine will employ an estimated 325¹ staff during production and require a wide range of services from local contractors.

TRAINING AND CAREERS

Local staff will be prioritized and provided with training programs and career development.

PROVINCIAL AND FEDERAL ECONOMIC BENEFITS

Will generate an estimated ~\$1.3B² in Provincial royalties and \$992M² in Federal taxes during the current 10-year mine life.



1. As per Jan, 2023 Feasibility Study
2. As per Jan, 2023 Feasibility Study based on \$65/lb U3O8



THE MOST EXPERIENCED URANIUM TEAM IN THE BASIN

Development

**Gary Haywood, P.Eng***VP Project Development*

35 years of mine engineering, operations, and team leadership. Formerly with Cameco as senior mine engineer (Eagle Point), mine superintendent and general manager (McArthur River mine)

**Jeff Pryznyk,
Engineering Licensee, A.Sc.T***Environmental Manager*

15+ years of environmental and regulatory affairs management for mining, most of which for uranium companies, including Cameco, during construction and production.

**Thomas Bayer, CRSP***Safety, Health and Training Manager*

30+ years of radiation, health, safety and training in the uranium sector. Direct operations incl. safety management, radiation protection, regulatory and quality management, risk assessment, mine rescue and emergency response. Senior roles incl. Cameco, Orano.

**Neil Chambers, P.Eng.***Mine Engineering Manager*

10+ years in mine design, planning and scheduling. Long hole open stoping, mechanised cut and fill specialist. Extensive operations experience in mine engineering, department lead, ventilation, ground control, drilling, blasting and remediation.

**Ryan Frey***Mineral Processing Manager*

20 years in mining sector incl. hydrometallurgy, environmental, process development, commissioning, waste processing & wastewater management. Management roles with Orano.

**Richard Elkington***Operations Manager*

30+ years in security, logistics and supply chain management incl. work in the Middle East, Africa, UK and Canada. Remote logistics and operations expert with a focus on critical infrastructure, crisis management, and business continuity.

**Amit Majumder, P.Eng., PMP***Engineering Project Manager*

20+ years in mineral processing, metallurgical plant, and underground mine design, construction supervision and commissioning. Former project engineering and mechanical engineering lead with Orano at McClean Lake mill.

**Eric Sylvestre***Community Liaison Coordinator*

20 years of First Nation political experience in Saskatchewan, incl. economic development, band management and leadership. Industry experience with land and resource management, environmental stewardship and traditional territory agreements.

**Mark Wittrup, MSc., P.Eng., P.Geo., CMC***Regulatory and Environmental Permitting Senior Advisor*

40+ years in uranium. Environmental and regulatory expert incl. project lead and lead author for McArthur River EIS and licensing, and Assistant Deputy Minister, Environmental Protection and Audit, with Saskatchewan Ministry of Environment.

Exploration

**Kanan Sarioglu, P. Geo***VP Project Exploration*

One of the uranium sector's leading exploration specialists with 15+ years of experience and multiple uranium discoveries under his belt.

**James Haley, P. Geo***Senior Geologist*

Highly experienced exploration geologist with a particular focus on interpreting and understanding mineralization controls to facilitate discoveries.



FISSION EXPLORATION STRATEGY

“FISSION’S EXPLORATION TEAM HAS DELIVERED MULTIPLE, MAJOR URANIUM DISCOVERIES IN THE BASIN.

IN 2024, OUR EXPLORATION DIVISION WILL BEGIN THE HUNT FOR THE NEXT BIG DISCOVERY AT PLS.”

ROSS McELROY, PRESIDENT & CEO OF FISSION URANIUM



Exploration & Mine Geology Team led by:

Kanan Sarioglu, VP Exploration
James Haley, Senior Geologist



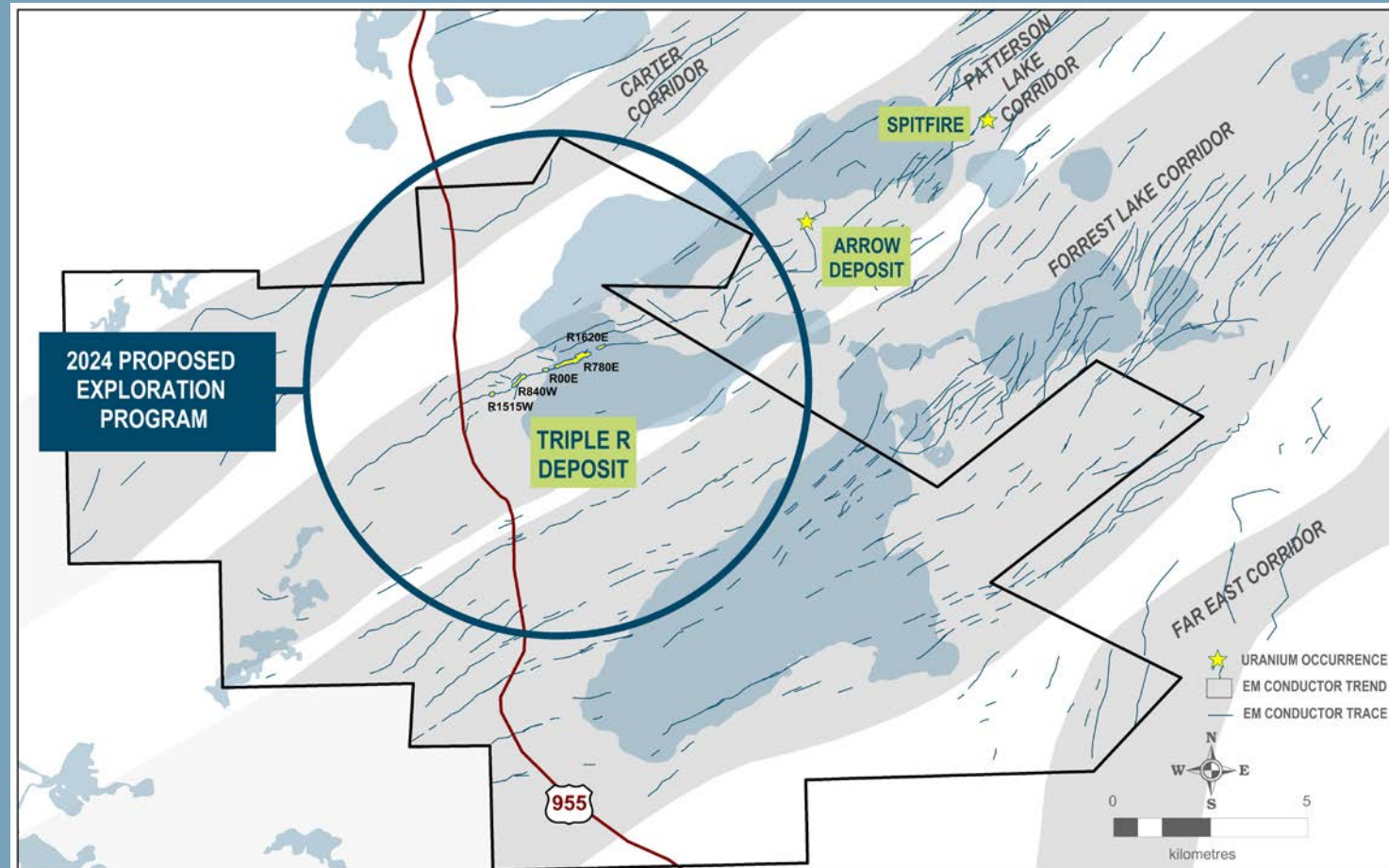
2024 EXPLORATION DRILLING: UNLOCKING FURTHER SHAREHOLDER VALUE

NEAR MINE EXPLORATION

- Step out drilling from the high-grade R1515W zone
- Conversion of Inferred resource to Indicated for inclusion in mine plan

REGIONAL TARGET EXPLORATION:

- Drill priority targets on parallel conductor to the Triple R deposit
- Drill priority targets on conductors on trend with NexGen's Arrow deposit

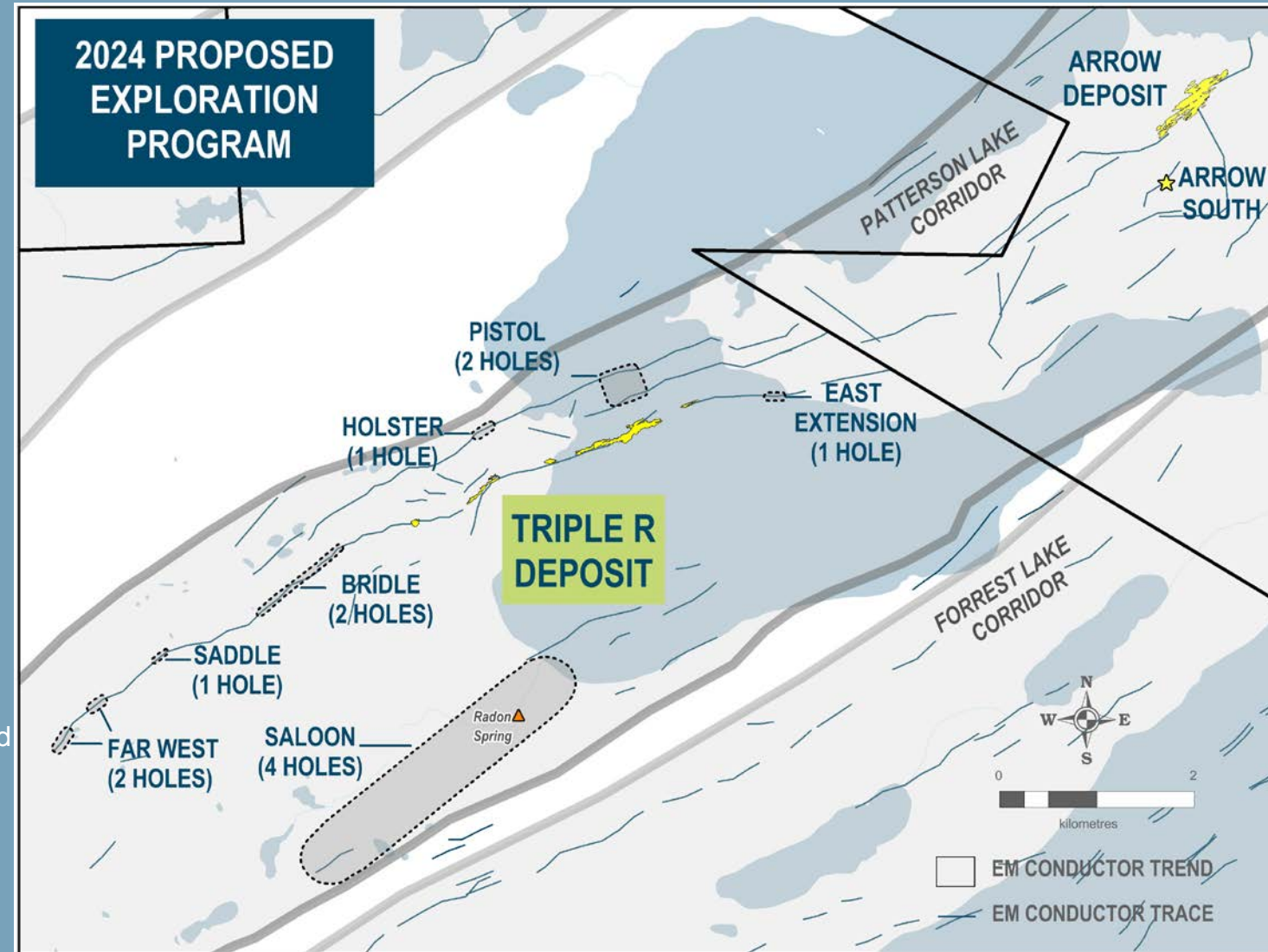




UPCOMING 2024 EXPLORATION DRILL PROGRAM

REGIONAL TARGETS

- Step out drilling from the high-grade R1515W zone
- Saloon: Further testing of area previously drilled in 2017
- Pistol: 450m northwest of R780E, Triple R's largest mineralized zone.
- East Extension: 900m east of R1620E
- Bridle: 1.7km west of R1515W testing cross structure
- Saddle: 2.5km west of R1515W testing cross structure
- Far West: 3.8km & 4.4km west of R1515W testing cross structure
- Holster: 600m north of R840W, Triple R's 2nd largest mineralized zone.





CORPORATE INFORMATION

CAPITAL STRUCTURE

| | |
|---|-------------------|
| Share Price (as of Jan. 15, 2024) | C\$1.25 |
| 52 Week Low / High | C\$0.54 / C\$1.28 |
| Basic Shares Outstanding | 766.5M |
| Options | 52.3M |
| Warrants | 25.3M |
| Fully Diluted Shares Outstanding | 844.1M |
| Market Capitalization (Basic as of Jan. 15, 2024) | Approx. C\$958.2M |
| Cash & ST Investments (as of Dec. 31, 2023) | Approx. C\$74.0M |

SHAREHOLDERS

~42.1%
Institutions

~45.3%
Retail

12.6%
China General
Nuclear Power

RESEARCH COVERAGE

| FIRM | ANALYST | COUNTRY |
|-----------------------------------|------------------|---------|
| SCP | Justin Chan | England |
| H.C. Wainwright | Heiko Ihle | USA |
| Canaccord Genuity Capital Markets | Katie Lachapelle | Canada |
| Eight Capital | Puneet Singh | Canada |
| BMO Capital Markets | Alex Pearce | England |
| Ocean Wall | Ben Finegold | England |
| Red Cloud | David Talbot | Canada |
| Haywood Securities | Colin Healy | Canada |
| Cantor Fitzgerald | Mike Kozak | Canada |



AWARD WINNING COMPANY LEADERSHIP

MANAGEMENT



ROSS MCELROY, P GEOL.

President and Chief Executive Officer, Director

- Professional geologist of 35 years' exploration, development and mining experience
- Formerly with Cameco, Areva, BHP Billiton
- Significant role in 4 major uranium discoveries in Athabasca Basin, incl. PLS
- PDAC 'Bill Dennis Award for Exploration Success', Northern Miner 'Person of the Year'



CHRIS SAMMARTINO, CPA

Chief Financial Officer

- Chartered Professional Accountant
- Over 20 years of experience in the mining and junior mining industries.

DIRECTORS

DARIAN YIP

(Non-Executive Chairman)

FRANK ESTERGAARD

(Independent)

WILLIAM MARSH

(Independent)

FELIX WANG

(Independent)

ROB CHANG

(Independent)

BEATRIZ ORRANTIA

(Independent)

ROSS MCELROY



ROSS MCELROY
BILL DENNIS 2014 AWARD

PROSPECTORS &
DEVELOPERS
ASSOCIATION
OF CANADA



2013 PERSON OF THE YEAR AWARD



2014 ENTREPRENEUR OF THE YEAR



PLS - WINNER
EXPLORATION OF THE YEAR



THANK YOU

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