



Uranium in Saskatchewan

Facts on the Industry for 2012

Attached are fact sheets containing information about the uranium industry in Saskatchewan, prepared by the Saskatchewan Mining Association.

These fact sheets identify the companies, operations and projects involved in the uranium industry, as well as the industry's historical economic impact within the province.

If you have any questions, please contact the appropriate person listed under Industry Contacts. If it is not clear whom you should contact, please call the media and public relations people listed.

All photos were supplied by AREVA Resources and Cameco Corporation



Uranium in Saskatchewan

Introduction

“Uranium in Saskatchewan” is a series of fact sheets produced annually by Saskatchewan’s uranium mining industry. The information contained has been gathered from corporations producing uranium in the province. The fact sheets represent the combined total of all efforts of the companies and their employees and contractors who produce this valuable source of energy used worldwide to generate electricity.

Saskatchewan is a world leader in uranium production. The uranium industry provides many jobs and promotes investment and economic development in the province. The industry provides all of these benefits in an environmentally and socially responsible manner and is held accountable for its performance. Regular internal and external audits on the environment and safety of operations are ongoing and thousands of air, water and vegetation samples are taken annually. These samples demonstrate, and the government regulatory agencies agree, that the industry is protecting the environment.

These fact sheets illustrate the magnitude of this industry and the benefits that accrue to the people of Saskatchewan.

Cameco Corporation and AREVA Resources Canada are the two uranium producers in Saskatchewan, producing all of Canada’s uranium. For additional information on the Saskatchewan uranium mining industry, please visit the following websites:

www.cameco.com

www.arevaresources.ca

www.saskmining.ca



Uranium in Saskatchewan

Uranium Reserves (as of December 31, 2012)

DEPOSIT	MINING METHOD	MILLIONS OF POUNDS U ₃ O ₈	AVERAGE GRADE (% U ₃ O ₈)
Cigar Lake	underground	216.7	18.30
Key Lake	open pit	0.7	0.52
McArthur River	underground	378.9	16.36
McClellan Lake	open pit, underground	16.2	2.20
Midwest	open pit	5.8	1.70
Millennium Project*	underground	nil*	nil*
Rabbit Lake	underground	22.8	0.70
Cluff Lake	decommissioned	nil	nil
TOTAL URANIUM RESERVES		641.1	

Numbers may not reflect total due to rounding.

*The Millennium Project contains only Resources of 68.2 million pounds of U₃O₈ and an average grade of 4.16. See definition below:

Reserves: the economically mineable part of a measured resource for which a preliminary feasibility study demonstrates that economic extraction is justified.

Resources: do not have demonstrated economic viability but have reasonable prospects for economic extraction.

- Clean electricity generated worldwide from uranium avoids 2.5 billion tonnes CO₂ emissions annually. *(source: Canadian Nuclear Association)*
- Currently 13.4% of the world's electricity mix is obtained from Nuclear Power. *(Source: World Nuclear Association)*
- Saskatchewan supplies about one third of all uranium used worldwide. *(source: World Nuclear Association)*
- Saskatchewan's known uranium reserves contain approximately four times the energy than in all known Canadian conventional oil reserves (not including the Athabasca oil sands). *(source: Canadian Nuclear Association)*



Uranium in Saskatchewan

Expenditures for Uranium Mining: 1980 – 2012

(includes capital, exploration, reclamation and pre-development expenditures;
does not include operating expenditures)

YEAR	MILLIONS OF DOLLARS
1980	186.8
1981	168.7
1982	301.6
1983	382.9
1984	181.2
1985	98.0
1986	90.3
1987	86.5
1988	102.6
1989	60.8
1990	75.1
1991	95.5
1992	52.7
1993	65.5
1994	66.2
1995	158.9

YEAR	MILLIONS OF DOLLARS
1996	234.2
1997	253.8
1998	210.2
1999	232.1
2000	74.7
2001	47.1
2002	54.4
2003	49.4
2004	101.5
2005	215.6
2006	343.2
2007	347.2
2008	403.6
2009	288.3
2010	383.5
2011	752.8
2012	615.0

1980-2012 TOTAL EXPENDITURES - \$6,779,980,394

Since 1980, the uranium mining industry has spent more than \$6.7 billion on uranium mining projects in Saskatchewan in addition to operating expenditures.



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Economic Impact 2012

- The uranium mining industry spent over \$377 million on salaries, wages and benefits for its direct employees. Of this, \$82 million was paid to residents of Saskatchewan's north.
- The industry's contractors paid out an additional \$255 million to their employees.
- Income tax remitted on behalf of mining industry direct employees was \$91.2 million. Canada Pension Plan contributions were an additional \$12.7 million and Canada Employment Insurance payments were another \$5.1 million.
- The value of goods and services purchased by the industry was \$1.24 billion. Approximately 77% (\$955 million) of this amount went to businesses based in Saskatchewan and approximately 44% (\$553 million) went to businesses based in northern Saskatchewan.
- Capital expenditures were approximately \$564.6 million, while exploration expenditures were \$37.9 million. Reclamation expenditures were \$12.3 million. Total capital, exploration and reclamation expenditures, excluding salaries, were approximately \$615 million.
- Taxes and royalties of \$166.9 million were paid to the province of Saskatchewan and \$5.7 million to local governments. Total taxes and royalties paid amount to more than \$172 million.
- Approximately \$6.1 million was spent on licensing fees and \$2.6 million was paid in surface lease fees.
- \$4.4 million was donated to community and charitable organizations and another \$311,500 was given as scholarships and other forms of support to contribute to the education of Saskatchewan's youth.



Uranium in Saskatchewan

Production in 2012

OPERATING MINE	PRODUCTION	
	TONNES OF URANIUM	MILLION POUNDS OF U ₃ O ₈
Key Lake/McArthur River*	7,500	19.5
Rabbit Lake	1,461	3.8
TOTAL	8,962	23.3

Source: Saskatchewan uranium producers

To convert tonnes of uranium to pounds of U₃O₈, multiply tonnes by 2,599.8

Numbers may not reflect total due to rounding.

*Ore from McArthur River is trucked to Key Lake where it is then fed into the Key Lake mill and processed into yellowcake.

- Canada's uranium is used exclusively for the generation of electricity at nuclear power plants. The end use is strictly enforced by international non-proliferation agreements and Canadian export restrictions.
- Nuclear power's place in Canada's energy mix has grown in importance during the past four decades and now provides 14.8% of Canada's electricity. *(source: Canadian Nuclear Association)* This makes uranium one of Canada's largest, non-carbon emitting sources of energy in use today.
- Canada remains a leading world uranium producer, accounting for 22% of world primary production. All of the uranium production in Canada comes from Saskatchewan mines. *(source: World Nuclear Association)*
- Approximately 85% of the uranium shipped from Saskatchewan mines goes to non-Canadian markets for the generation of electricity. *(source: World Nuclear Association)*



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Industry Employment Statistics 2012

- Total employment by the uranium industry, including contractors, is approximately 5,000 people. The uranium industry directly employs approximately 2,700 people in Saskatchewan and industry contractors employ an additional 2,300 people.
- Employment at mine sites, including contractors, is approximately 3,500.
- Approximately 50% of mine site employees, including contractors, are residents of Saskatchewan's north.
- Approximately 46% of mine site employees, including contractors, are of aboriginal ancestry.
- Head office employment accounts for approximately 983 direct employees.
- The uranium industry is responsible for approximately 15,000 jobs in the province (approximately 5,000 direct jobs and an additional 10,000* spin-off jobs).

*Spin-off jobs calculation based on information from Saskatchewan Industry and Resources



Uranium in Saskatchewan

Environmental Protection 2012

The Saskatchewan uranium mining industry is committed to responsible environmental stewardship. The industry directly employs 102 people whose full-time responsibility is to ensure that all operations meet strict environmental standards set out by both the federal and provincial governments. Twenty-four hours a day, 365 days a year, comprehensive sampling, monitoring and assessment programs are in operation to ensure that the physical environment is protected. All sites are subject to compliance-based monitoring; water and air emissions from the mine and mills are tested on a regular basis to ensure that contaminants, if any, remain within regulatory limits. The industry also performs environmental monitoring to ensure that plants, animals and fish in the surrounding area are not adversely affected.

The industry's long-term goal is to return all operations, as closely as possible, to a natural state suitable for future uses. All uranium mine site operators must issue a letter of credit with the province of Saskatchewan to ensure adequate funds are available for proper decommissioning of each site after the reserves have been mined out.

The uranium mining companies are already working towards this long-term goal. In 2012, approximately \$12.3 million was spent on reclamation.

ISO 14001 Certification

ISO 14001 is a voluntary international set of standards that is recognized in more than 90 countries for maintaining an effective environmental management system where a company can demonstrate its commitment to environmental performance, pollution prevention and continual improvement. It establishes a permanent framework to assist companies in reaching their environmental protection goals. The ISO framework calls for regular independent audits and for re-certification every three years.

Five Saskatchewan uranium operations are currently ISO 14001 certified: McClean Lake (2001), Key Lake (2003), McArthur River (2003), Cluff Lake (2004) and Rabbit Lake (2010). In addition, AREVA Resources' Saskatchewan uranium exploration activities were certified for ISO 14001 in 2004. This certification further demonstrates the commitment of Saskatchewan uranium mining companies in protecting the environment.



Uranium in Saskatchewan

Radiation Protection and Worker Safety 2012

The safety of workers is a top priority. The uranium industry directly employs 169 people working full time to ensure safe working environments (including radiation protection) exist for employees. All mine sites are monitored regularly to spot any potential hazards that may develop.

Employees at uranium operations are monitored continuously for radiation exposure by the use of individual radiation dosimeters carried by each employee. These devices record the cumulative radiation dose received. The dosimeters are submitted regularly to independent radiation monitoring agencies. Health Canada maintains a central registry of the results, which are provided to the employer companies, the Canadian Nuclear Safety Commission (CNSC) and to all individual employees. In addition to cumulative exposure monitoring, special personal dosimeters are used that provide immediate feedback of radiation exposure levels. Certain areas in the workplace are also equipped with devices that record and display continuous ambient radiation levels.

The Saskatchewan uranium industry consistently demonstrates that it meets the standards set out by CNSC for radiation exposure. In 2012, the average total effective dose to workers in the industry, including contractors, was approximately 3% of the annual average allowable limit (20 millisieverts) set by regulators. All employees in the industry were below this limit. The highest exposure recorded to any single employee in 2012 was approximately 27.5% of the annual maximum limit (50 millisieverts).

Statistics collected by government agencies show that Saskatchewan's uranium mines are among the safest workplaces in the province, even at times surpassing office jobs.

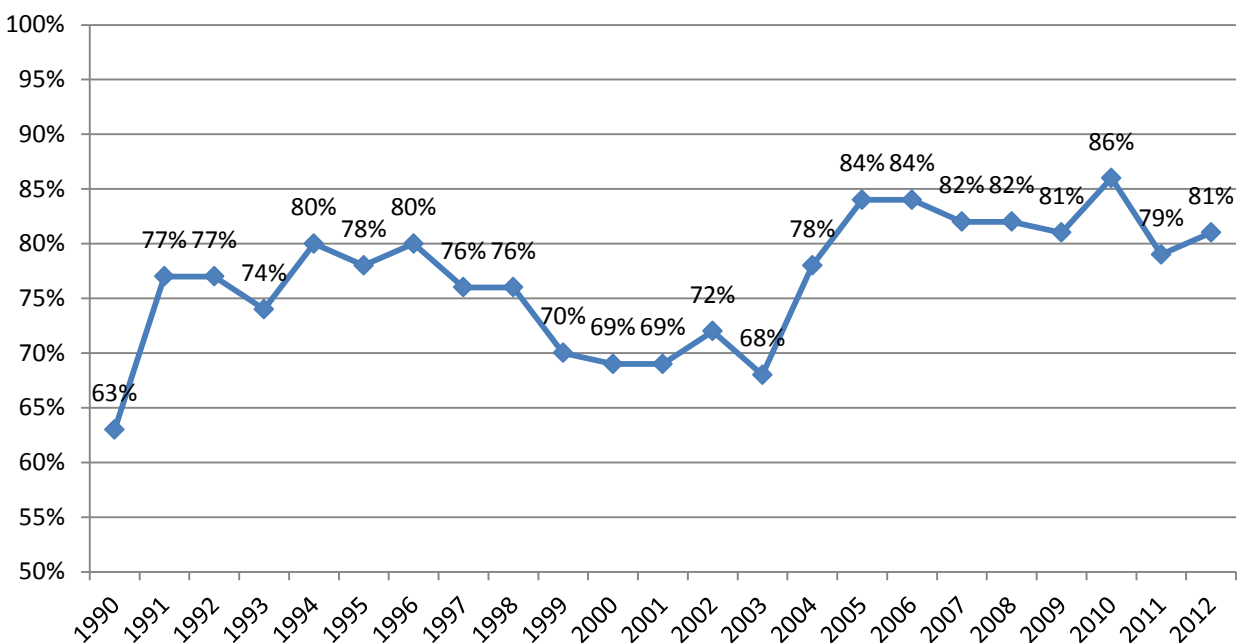


Uranium in Saskatchewan

Public Support for the Uranium Mining Industry 2012

Information on this page is taken from a public opinion poll conducted by Fast Consulting in 2012.

Public Support 1990 – 2012



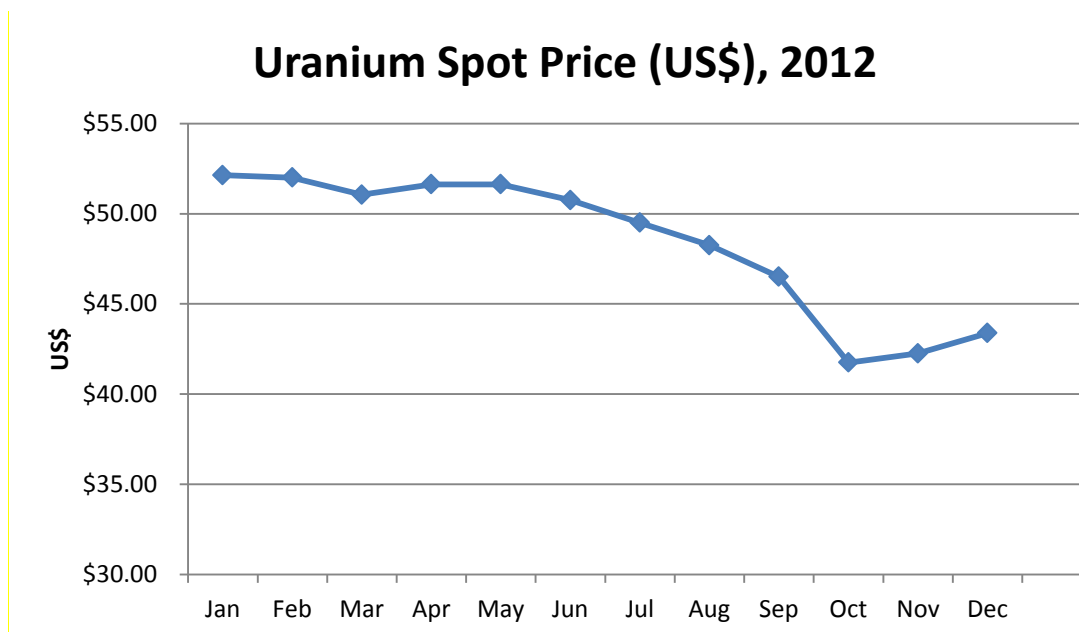
- Public support for the uranium mining industry is generally consistent across all age groups and all regions of the province (poll is taken in November or December of each year).
- The majority (70%) of Saskatchewan residents support a uranium processing facility being built in the province.



Uranium in Saskatchewan

Saskatchewan Uranium Exploration Activity 2012

According to the Saskatchewan Ministry of Energy and Resources, total 2012 uranium exploration expenditures in the Athabasca Basin are estimated to have reached \$117.7 million. This is greater than the 2011 actual expenditures of \$101.2 million.



The spot market price of uranium fluctuated between January 2012 and December 2012 (US\$52.13 per pound and US\$43.88 per pound). The 2012 average spot price (US\$48.40 per pound) is lower than the 2011 average spot price (US\$56.40 per pound).

Many companies are currently exploring for uranium in the Basin. The majority of these companies are publicly traded and are operating in joint ventures with one or more other companies. Most of the activity is in the eastern part of the Basin where the major known deposits are located. However, following new exploration successes, activity is increasing in the western portion of the Basin.



Uranium in Saskatchewan

Cigar Lake Project 2012

OWNERSHIP: Cameco Corporation (50%)
AREVA Resources (37%)
Idemitsu Uranium Exploration Canada Limited (8%)
TEPCO Resources Inc. (5%)

OPERATOR: Cameco Corporation

DISCOVERED: 1981 by AREVA Resources

OPERATION: Cigar Lake is the world's second-largest known high-grade uranium orebody.

When in production, the uranium ore slurry will be trucked about 80 kilometres to AREVA's McClean Lake mill for processing.

PRODUCTION: Ore production will begin in 2013 as part of the commissioning process

Full production is expected by 2017 based on current information

Planned annual production of 18 million lbs U_3O_8 after ramp-up

RESERVES: Proven and probable reserves of 216.7 million lbs U_3O_8 with an average grade of 18.3% U_3O_8

PLANS FOR 2013:

- ❖ Participate in a Canadian Nuclear Safety Commission public hearing process to receive a new licence
- ❖ Begin commissioning the mine production systems
- ❖ Complete the installation of all infrastructure required to begin production
- ❖ Bring the mine into production in mid-2013
- ❖ Produce the first packaged pounds from AREVA's McClean Lake mill



Uranium in Saskatchewan

Cluff Lake Mine 2012

- OWNERSHIP:** AREVA Resources (100%)
- OPERATOR:** AREVA Resources
- DISCOVERED:** 1971
- OPERATION:** 1980 – 2002; 22 years of successful operation; Cluff Lake received ISO 14001 environmental management certification in 2004.
- CAPACITY:** The mill had a rated capacity of 5.2 million lbs. U_3O_8 (2,000 tonnes uranium). The mill has been demolished and the site is being returned to a natural state.
- PRODUCTION:** Total production since the beginning of operation in 1980 to the end of 2002 was 62.5 million lbs. U_3O_8 . The reserves are now depleted and the major decommissioning work is complete.

NOTES:

- ❖ Cluff Lake ceased uranium production at the end of 2002 after 22 years of operation
- ❖ Active decommissioning work began in 2004 and is now completed. Decommissioning included backfilling the Claude pit, dismantling the mill and covering the area with soil, covering the tailings management area, and re-sloping and covering the waste rock piles
- ❖ AREVA plans to remove the remaining buildings by the end of 2013 and no longer maintain a full-time employee presence. AREVA will continue its environmental monitoring program through four visits per year, called campaign monitoring
- ❖ Approximately 800,000 trees and shrubs have been planted on the mine site since Cluff Lake was decommissioned. These trees and shrubs will ensure that the site will gradually return to the natural landscape from which it came



Uranium in Saskatchewan

Key Lake Operation 2012

OWNERSHIP: Cameco Corporation (83%)
AREVA Resources (17%)

OPERATOR: Cameco Corporation

DISCOVERED: 1975 by Uranerz Exploration and Mining Limited

OPERATION: In operation since 1983, Key Lake is the largest uranium milling operation in the world.

Key Lake currently processes uranium ore mined at McArthur River.

PRODUCTION: Key Lake and McArthur River are currently licensed to produce up to 18.7 million lbs of uranium concentrate (U_3O_8) annually on average, not to exceed 21 million lbs U_3O_8 in any given year.

Key Lake and McArthur River jointly produced 19.5 million lbs U_3O_8 in 2012

RESERVES: 0.7 million lbs. U_3O_8 with an average grade of 0.52% U_3O_8

Mining no longer occurs at Key Lake

PLANS FOR 2013:

- ❖ Continue work to renew mill facilities, secure tailings management capacity and increase production capacity
- ❖ Advance the environmental assessment process for the Key Lake Extension Project by submitting the project's Environmental Impact Statement to regulators
- ❖ An application has been made to renew the Canadian Nuclear Safety Commission facility licence for Key Lake in 2013



Uranium in Saskatchewan

McArthur River Operation 2012

OWNERSHIP: Cameco Corporation (70%)
AREVA Resources (30%)

OPERATOR: Cameco Corporation

DISCOVERED: 1988 by Cameco Corporation

OPERATION: The McArthur River operation is the world's largest, high-grade uranium mine.

The mine began operations in December 1999.

McArthur River uranium ore is processed at the Key Lake operation.

PRODUCTION: McArthur River and Key Lake are currently licensed to produce up to 18.7 million lbs of uranium concentrate (U_3O_8) annually on average, not to exceed 21 million lbs U_3O_8 in any given year.

McArthur River and Key Lake jointly produced 19.5 million lbs U_3O_8 in 2012

RESERVES: Proven and probable reserves of 378.9 million lbs U_3O_8 with an average grade of 16.36% U_3O_8

PLANS FOR 2013:

- ❖ Continue developing the Zone 4 north mining area, from which production is expected to begin in 2014
- ❖ Complete expansion of the existing freeze plant to support production plans
- ❖ Continue advancing exploration drift tunnels
- ❖ Continue underground exploration drilling activities
- ❖ An application has been made to renew the Canadian Nuclear Safety Commission facility licence for McArthur River in 2013



Uranium in Saskatchewan

McClean Lake Operation 2012

- OWNERSHIP:** AREVA Resources (70%)
Denison Mines Inc. (22.5%)
OURD Canada Co. Limited (7.5%)
- OPERATOR:** AREVA Resources
- DISCOVERED:** 1979 by the Canadian Oxy – INCO Joint Venture
- OPERATION:** McClean Lake has the newest and most technologically advanced uranium mill in the world. The operation began producing yellowcake in 1999 using ore from the now completed JEB, Sue C, Sue A, Sue E and Sue B open pit mines. The JEB pit has now been converted into a tailings management facility. In 2001, McClean Lake received ISO 14001 environmental management certification. In 2008, McClean Lake became the first uranium mine in North America to obtain OHSAS 18001 international health and safety management certification.
- CAPACITY:** Initially 6 million lbs. U_3O_8 ; annual licensed capacity increased to 8 million lbs. U_3O_8 (3,077 tonnes uranium) in 2001.
- PRODUCTION:** Mill has been put into a care and maintenance mode as of June 2010.
- RESERVES:** 16.2 million lbs. U_3O_8 (6,231 tonnes uranium) stockpiled with an average grade of 2.2% U_3O_8 .
- PLANS FOR 2013:**
- ❖ Upgrade McClean Lake mill to process 100% of uranium ore from Cigar Lake
 - ❖ Continue with the regulatory process to bring a portion of the ore slurry from McArthur River to McClean Lake
 - ❖ Continue with expansion to increase capacity up to 24 million pounds of uranium annually



Uranium in Saskatchewan

Midwest Project 2012

OWNERSHIP: AREVA Resources (69.16%)
Denison Mines (25.17%)
OURD Canada Co. Limited (5.67%)

OPERATOR: AREVA Resources

DISCOVERED: 1978 by Esso Minerals Limited

OPERATION: The federal and provincial governments granted environmental assessment approvals for the project in 1998 based on underground jet boring techniques. The new project description, to develop the orebody as an open pit mine, requires an additional environmental assessment, which is under way. Mining would last about five years. The ore will be trucked on a dedicated haul road about 16 km to the McClean Lake mill for processing. An expansion of the mill will be required to process the additional ore. Treated mine water will be pumped to McClean Lake for discharge into the Sink/Vulture Treated Effluent Management System.

RESERVES: 5.8 million lbs. U_3O_8 (2,230 tonnes uranium) with an average grade of 1.7% U_3O_8 .

PLANS FOR 2013:

- ❖ In 2012 the Canadian Government and Province of Saskatchewan approved the Midwest mine's environmental assessment. AREVA and its partners must approve a development decision before mining can begin



Uranium in Saskatchewan

Millennium Project 2012

- OWNERSHIP:** Cameco Corporation (70%)
JCU Exploration (Canada) Co. Ltd. (30%)
- OPERATOR:** Cameco Corporation
- DISCOVERED:** In 2000 by Cameco and joint-venture partners of the Cree Extension Project
- OPERATION:** A proposed underground uranium mine development project
Located 36 kilometres north of the Key Lake operation
- Once in operation, uranium ore mined at Millennium would be processed offsite at a licensed milling facility
- RESOURCES:** 68.2 million lbs U_3O_8 of indicated uranium resources with an average grade of 4.16% U_3O_8
- PLANS FOR 2013:**
- ❖ Continue to advance project toward a development decision
 - ❖ Submit the Final Environmental Impact Statement for the Millennium Project to regulators
 - ❖ Complete exploration drilling program near the deposit



Uranium in Saskatchewan

Rabbit Lake Operation 2012

OWNERSHIP: Cameco Corporation (100%)

OPERATOR: Cameco Corporation

DISCOVERED: 1968 by Gulf Mineral Resources

OPERATION: Rabbit Lake began operations in 1975 and is the longest-operating uranium production facility in North America.

The operation consists of the Rabbit Lake mill and the Eagle Point underground mine, located 16 kilometres north of the mill.

More than 190 million pounds of uranium concentrate (U_3O_8) have been produced from five different orebodies at the site.

CAPACITY: The mill has an annual licensed capacity of 16.9 million lbs U_3O_8

PRODUCTION: 3.8 million lbs U_3O_8 was produced in 2012.

RESERVES: Provable and probable reserves of 22.8 million lbs U_3O_8 with an average grade of 0.70% U_3O_8

PLANS FOR 2013:

- ❖ Work continues to assess the expansion of the existing tailings management facility, which includes an environmental assessment on the project
- ❖ Underground drilling will continue as part of the reserve replacement program
- ❖ Surface drilling will continue in local areas of interest
- ❖ Rabbit Lake expects to spend \$2.7 million toward reclaiming inactive facilities on site
- ❖ An application has been made to renew the Canadian Nuclear Safety Commission facility licence for Rabbit Lake in 2013



Uranium in Saskatchewan

Cameco Corporation

Cameco Corporation, with its head office in Saskatoon, Saskatchewan, is one of the world's largest uranium producers as well as a significant supplier of conversion services. The company's competitive position is based on controlling ownership of the world's largest high-grade reserves and low-cost operations. Cameco's uranium products are used to generate clean electricity in nuclear power plants around the world, including Ontario where the company is a partner in North America's largest nuclear electricity generating facility. The company also explores for uranium around the world. Cameco's shares trade on the Toronto and New York stock exchanges.

Cameco Corporation owns and operates the Rabbit Lake mill and is operator and majority owner of the Key Lake mill and McArthur River mine. The company is also majority owner and operator of the Cigar Lake uranium project and is currently evaluating the Millennium uranium project.

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Website: www.cameco.com



Uranium in Saskatchewan

AREVA Resources

AREVA Resources Canada Inc. has its headquarters in Saskatoon. AREVA is one of the world's largest producers of uranium and has been active in Canada for nearly 50 years.

AREVA Resources is the operator and majority owner of the McClean Lake and Midwest uranium projects and owns and operates the decommissioned Cluff Lake mine. The company is also part owner of the Cigar Lake, McArthur River and Key Lake uranium projects. It conducts uranium exploration in Saskatchewan and Nunavut. AREVA Resources' uranium production is sold to electric utilities worldwide.

AREVA Resources Canada is a subsidiary of the AREVA group. AREVA supplies solutions for power generation with less carbon. Its expertise and unwavering insistence on safety, security, transparency and ethics are setting the standard, and its responsible development is anchored in a process of continuous improvement.

Ranked first in the global nuclear power industry, AREVA's unique integrated offering to utilities covers every stage of the fuel cycle, nuclear reactor design and construction, and related services. The group is also expanding its operations to renewable energies – wind, solar, bioenergy, energy storage – to be one of the leaders in this sector worldwide.

With these two major offers, AREVA's 47,000 employees are helping to supply ever safer, cleaner and more economical energy to the greatest number of people.

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Uranium in Saskatchewan

Industry Contacts

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