McArthur River Operation

Northern Saskatchewan, Canada

National Instrument 43-101

Technical Report

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Prepared for:
Cameco Corporation

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UNITS OF MEASURE AND ABREVIATIONS

a .... Annum (year)
BTU .... British Thermal Unit
BTU/h .... British Thermal Units per hour
% .... Percent
° .... Degrees
°C .... Degrees Celsius
cm .... Centimetres
CNSC .... Canadian Nuclear safety Commission
cps .... Counts per Second
d .... Day
g .... Grams
g/cm^3 .... Grams per cubic centimetre
g/m^3 .... Grams per cubic metre
GHM .... Ground Hazards Model
h .... Hour(s)
ha .... Hectares (10,000 square metres)
HP .... Horsepower
Hwy .... Highway
IRR .... Internal rate of return
K .... Thousand
kg .... Kilograms
km .... Kilometres
km/h .... Kilometres per hour
km^2 .... Square kilometres
kV .... Kilovolts
kW .... Kilowatts
l .... Litre
Lbs .... Pounds
M .... Million
Mt .... Million tonnes
m .... Metres
m^2/t/d .... Square metres per tonne per day (thickening)
m^3 .... Cubic metres
m^3/h .... Cubic metres per hour
m%U .... metres times per cent uranium
m%U_3O_8 .... metres times per cent uranium oxide
masl .... Metres above sea level (elevation)
mm .... Millimetres
Mo .... Molybdenium
MPa .... Megapascal
Mt/a .... Million dry tonnes per year
MW .... Megawatts
N .... Newton
NPV .... Net present value
Pa .... Pascal (Newtons per square metre)
ppm .... Parts per million
P_{80} .... 80% passing (particle size nomenclature)
RMR .... Rock Mass Rating
Se .... Selenium
st .... Short tons
SX .... Solvent extraction
t .... Tonnes (metric)
t/h .... Tonnes per hour
t/d .... Tonnes per day
t/a .... Tonnes per year

U	Uranium
%U	Percent uranium (%U x 1.179 = % U_3O_8)
U_3O_8	Triuranium octoxide (yellowcake)
%U_3O_8	Percent triuranium octoxide (%U_3O_8 x 0.848 = %U)
Cdn$	Canadian Dollars
Cdn$ M	Million Canadian Dollars
US$	US dollars
US$ M	Million US dollars
$/t	Canadian dollars per tonne
US$/lb	US dollars per pound
US$/t	US dollars per tonne
W/W%	per cent solids by weight
>	Greater than
<	Less than

1 SUMMARY

McArthur River in northern Saskatchewan is an underground uranium mine, in which Cameco Corporation (Cameco) has a direct and indirect ownership interest of 69.805%. It contains the world's largest known high-grade uranium deposit and has produced 150 million pounds of U_3O_8 since the start of production in 1999. McArthur River is owned by joint venture partners Cameco (55.844%), AREVA Resources Canada Inc. (AREVA) (16.234%) and UEM Inc. (27.922%), a company equally owned by Cameco and AREVA. Cameco is the operator.

At December 31, 2008, the Company's share of estimated Proven and Probable Reserves was 509,000 tonnes of ore containing 232.2 million pounds U_3O_8 with an average grade of 20.7% U_3O_8, its share of estimated Measured and Indicated Resources was 173,700 tonnes containing 34.7 million pounds U_3O_8 with an average grade of 9.1% U_3O_8, and its share of estimated Inferred Resources was 448,600 tonnes containing 97.0 million pounds U_3O_8 at an average grade of 9.8% U_3O_8. A breakdown of the Mineral Reserve and Mineral Resource estimates is set out in Table 1-1 and Table 1-2.

Annual production rate from McArthur River is forecast at 18.7 million pounds until 2016, and declines thereafter until 2033. Cameco estimates that, based upon the current Mineral Reserves only, McArthur River will have a mine life of at least 25 years, with an expected payback of capital invested by 2010, on an undiscounted pre-tax basis. Mineral resources are not included in the Life of Mine plan, however, any Mineral Resources that are upgraded to Mineral Reserves in the future would be used to both extend the years the mine produces at 18.7 million pounds and potentially extend mine life.

This technical report has been prepared for Cameco by, or under the supervision of, internal qualified persons and an external qualified person in support of disclosure of scientific and technical information relating to the McArthur River operation.

1.1 Property Tenure

The mineral property consists of one mineral lease, totalling 1,380 hectares, and 21 mineral claims totalling 83,438 hectares. The mineral lease and mineral claims are contiguous. The McArthur River uranium deposit is located in the area subject to mineral lease ML-5516. The right to mine this uranium deposit was acquired by Cameco under this mineral lease. The current mineral lease expires in March 2014 with a right to renew for successive 10 year terms absent a default by Cameco. Title to the 21 mineral claims is secured until 2017 as a result of previous assessment work completed by Cameco.

The surface facilities and mine shafts for the McArthur River operation are located on lands owned by the province of Saskatchewan. Cameco acquired the right to use and occupy the lands under a surface lease agreement with the province. The most recent surface lease agreement was signed in April 1999 and has a term of 33 years. Upon termination or expiry of the surface lease, a new surface lease can be entered into until full property decommissioning and reclamation has been achieved. The McArthur River surface lease presently covers approximately 651 hectares.

1.2 Location and Site Description

The McArthur River minesite is located near Toby Lake in northern Saskatchewan, approximately 620 km north of Saskatoon. The McArthur River mine site is compact, occupying approximately an area of one kilometre in the north/south direction and half a kilometre in the east/west direction. The site consists of an underground mine, one full service shaft and two ventilation shafts along with numerous surface facilities, including inert waste rock stockpiles, a large capacity mine water treatment plant, a pump hose, ponds, standby diesel generators as well as maintenance and warehousing facilities.

The means of access to the McArthur River property is by an all-weather road and by air. All supplies to the site and shipment of product are transported by truck year round. An 80 km all weather gravel road runs between the mine site and the Key Lake milling operation.

The topography and the environment are typical of the taiga forested lands common to the Athabasca basin area of northern Saskatchewan. The surface facilities are at an elevation of approximately 550 masl.

The site is connected to the provincial electricity grid with standby generators installed in case of grid power interruption.

Personnel are flown to site from the northern area communities and major Saskatchewan population centres such as Saskatoon. Underground development and construction is performed by a number of contractors. Cameco personnel conduct all production functions.

McArthur River is a developed producing property, with surface right holdings that cover all of its mining operation needs as well as requirements for residences, access to water, airport, site roads and other necessary buildings and infrastructures. No tailings management facilities are required as McArthur River ore is sent to the Key Lake mill for processing.

1.3 Geology and Mineralization

The McArthur River deposit is located in the south-eastern portion of the Athabasca Basin, within the south-west part of the Churchill structural province of the Canadian Shield. The crystalline basement rocks underlying the deposit are members of the Aphebian Wollaston Domain, metasedimentary sequence. These rocks are overlain by flat lying sandstones and conglomerates of the Helikian Athabasca Group. These sediments are over 500 m thick in the deposit area.

High grade uranium mineralization has been delineated from surface drilling over a strike length of 1,700 m, occurring at depths ranging between 500 m to 640m below surface. Underground drilling programs have covered approximately 750 m of the 1,700 m strike length delineated from surface. Ore widths are variable along strike but the most consistent, high grade mineralization occurs proximal to the main graphitic thrust fault around the "nose" of the upthrust basement rock. Less consistent and generally lower grade mineralization occurs down dip along this fault contact between basement rock and sandstone.

Four distinct mineralized zones, identified as Zones 1, 2, 3 and 4, have been defined to date. Two additional Zones, A and B, are on the northern portion of the deposit and are indicated through surface drill holes only.

The P2 thrust fault is the most important mineralization control for the McArthur River deposit. Uranium occurs in both the Athabasca sandstone and the overlying basement rock near the main zone of thrust faulting. Mineralization is generally within 15 m of the basement/sandstone contact with the exception of Zone 2. Less significant zones of mineralization may occur further from the contact, usually in the sandstone, associated with subsidiary fracture/fault zones or along the margins of flat lying siltstone beds.

Zone 2 mineralization occurs deeper in the basement rocks in a unique area of the deposit. Here a footwall quartzite unit lies in close proximity to the main zone of thrust faulting. In this area of structural disruption, high-grade mineralization occurs not only in the hanging wall basement wedge but also overlies the footwall quartzite unit. The strike extent of this deeper basement mineralization is approximately 100 m.

In general, the high-grade mineralization, characterized by botryoidal uraninite masses and subhedral uraninite aggregates, constitutes the earliest phase of mineralization in the deposit. Pyrite, chalcopyrite, and galena were also deposited during this initial mineralizing event. Later stage, remobilized uraninite occurs as disseminations, veinlets, and fracture coatings within chlorite breccia zones and along the margins of silt beds in the Athabasca sandstone.

1.4 Mineral Resources and Mineral Reserves

The Mineral Resource and Mineral Reserve estimates are based on 36 drillholes from surface, of which 15 drillholes intersected mineralization, and 632 drillholes from underground, of which 334 holes intersected mineralization.

A summary of the estimated Mineral Resources for McArthur River with an effective date of December 31, 2008 is shown in Table 1-1. Alain G. Mainville, P.Geo., of Cameco, is the qualified person within the meaning of National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (NI 43-101) for the purpose of the Mineral Resource and Mineral Reserve estimates.

Table 1-1: Summary of Mineral Resources – December 31, 2008

Category	Tonnes (x 1000)	Grade % U_3O_8	Contained Lbs U_3O_8 (millions)	Cameco's Share Lbs U_3O_8 (millions)
Measured	209.0	9.20	42.4	29.6
Indicated	39.8	8.37	7.4	5.1
Total	**248.8**	**9.07**	**49.7**	**34.7**
Inferred	642.6	9.81	139.0	97.0

Notes: (1) Cameco reports Mineral Reserves and Mineral Resources separately. Reported Mineral Resources do not include amounts identified as Mineral Reserves.
(2) Cameco's share is 69.805 % of total Mineral Resources.
(3) Inferred Mineral Resources have a great amount of uncertainty as to their existence and as to whether they can be mined economically. It cannot be assumed that all or any part of the Inferred Mineral Resources will ever be upgraded to a higher category.
(4) Mineral Resources have been estimated at a minimum mineralized thickness of 1.0 m and at cut-off grade of 0.1% to 0.5 % U_3O_8.
(5) The geological model employed for McArthur River involves geological interpretations on section and plan derived from surface and underground drillhole information.
(6) The Mineral Resources have been estimated with no allowance for dilution material and mining recovery.
(7) Mineral Resources were estimated on the assumption of using the raisebore, boxhole and blasthole stoping mining methods combined with freeze curtains.
(8) Mineral Resources were estimated using cross-sectional method and 3-dimensional block models.
(9) Environmental, permitting, legal, title, taxation, socio-economic, political, marketing or other issues are not expected to materially affect the above estimate of Mineral Resources.
(10) Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
(11) Totals may not add up due to rounding.

A summary of the estimated Mineral Reserves with an effective date of December 31, 2008 is shown in Table 1-2.

Table 1-2: Summary of Mineral Reserves – December 31, 2008

Category	Tonnes (x 1000)	Grade % U_3O_8	Contained Lbs U_3O_8 (millions)	Cameco's Share Lbs U_3O_8 (millions)
Proven	449.2	17.18	170.1	118.8
Probable	280.0	26.33	162.5	113.4
Total	**729.2**	**20.69**	**332.6**	**232.2**

Notes: (1) Lbs U_3O_8 are those contained in Mineral Reserves and are not adjusted for the estimated metallurgical recovery of 98.4 % .
(2) Cameco's share is 69.805 % of total Mineral Reserves.
(3) McArthur River Mineral Reserves have been estimated at a cut-off grade of 0.8% U_3O_8.
(4) The geological model employed for McArthur River involves geological interpretations on section and plan derived from surface and underground drillhole information.
(5) Mineral Reserves have been estimated with an average allowance of 20% dilution from backfill mined.
(6) Mineral Reserves have been estimated based on 95% mining recovery.
(7) Mineral Reserves were estimated based on the use of the raisebore, boxhole and blasthole stoping mining methods combined with freeze curtains. All material extracted by mining is radiometrically scanned for grade and that which is greater than 0.8% U_3O_8 is treated as ore and is fed to an initial processing circuit located underground consisting of grinding to produce an ore slurry which is hoisted hydraulically by pumps to surface. On surface the ore slurry is transported to the Key Lake mill for final processing and production of uranium. The mining rate is planned to vary between 110 and 130 t/d at a full mill production rate of 18.7 million pounds U_3O_8 per year based on 98.4% mill recovery.
(8) Mineral Reserves were estimated using a 3-dimensional block model.
(9) For the purpose of estimating Mineral Reserves in accordance with NI 43-101, an average price of US$47/lb U_3O_8 was used. For the purpose of estimating Mineral Reserves in accordance with US Securities and Exchange Commission's Industry Guide 7, an average price of US$70/lb U_3O_8 was used. Estimated Mineral Reserves are similar at either price because of the insensitivity of the Mineral Reserves to the cut-off grade over the range of these two prices.
(10) The key economic parameters underlying the Mineral Reserves include a conversion from US$ dollars to Cdn$ dollars using a fixed exchange rate of US$1.00 = Cdn$1.22.
(11) Environmental, permitting, legal, title, taxation, socio-economic, political, marketing, or other issues are not expected to materially affect the above estimate of Mineral Reserves.
(12) Totals may not add up due to rounding.

The current mine plan has been designed to extract all of the current Mineral Reserves. Over the last five years, the reconciliation of the mine production has been within 5% of the Mineral Reserve estimates of contained pounds of uranium.

Mineral Resources in the Measured, Indicated and Inferred Mineral Resource categories have not been included in the current mine plans. Mineral Resources have no demonstrated economic viability.

1.5 Exploration of the McArthur River Deposit

Cameco, through its predecessor company, the Saskatchewan Mining Development Corporation (SMDC), became operator of the McArthur River project in 1980. Surface exploration programs, ranging from small line cutting crews to large helicopter supported drilling and prospecting camps, were active from 1980 through to 1992. The mineral property presently consists of 84,818 ha.

Surface exploration programs were active from 1980 through to 1992. Significant mineralization of potentially economic uranium grades were first discovered as a result of surface drilling in the 1988 and 1989 exploration seasons.

In the summer of 1988, drilling along the northern portion of an electromagnetic conductor encountered structural disruption and sandstone alteration in hole MAC-195. The last hole of the year, MAC-198, encountered the contact between the overlying sandstone and basement rock (“unconformity”) much higher than expected, but 65 m deeper it passed back into sandstone and intersected a 10 m thick zone of high grade mineralization along the faulted basement/sandstone contact. Subsequent surface drilling programs in 1989, 1990, 1991, and 1992 delineated the mineralization over a strike length of 1,700 m, occurring at depths ranging between 500 to 640m below surface.

In 1993, an underground exploration program, consisting of shaft sinking, lateral development, and diamond drilling was approved by government agencies. The shaft was completed in 1994. Following review of the environmental impact statement, public hearings, and receipt of approvals from the governments of Canada and Saskatchewan, the Atomic Energy Control Board (AECB) issued construction licences for McArthur River in August 1997 and May 1998. In October 1999, Cameco received an operating licence from federal authorities and operating approval from provincial authorities.

Construction and development of the McArthur River mine was completed on schedule and mining commenced in December 1999. Commercial production was achieved on November 1, 2000.

Since 1993 over 630 underground drill holes, totalling in excess of 56,000 m, have provided detailed information for delineation of 750 m of the strike length. Over 1,400 additional underground diamond drill holes, totalling 85,000 m, were drilled for geotechnical information; probe and grout covers; service and drain holes; and freeze holes.

Underground exploration drilling and development continued in 2008. Activity for 2009 focuses on evaluation of Mineral Resources, mainly to the south of the current McArthur River Mineral Reserves. In 2008, Cameco concluded that Mineral Resources to the south of the mine have greater near-term development potential for future mining due to established infrastructure and were made a higher priority exploration target. Mineral Resources to the north of the mine are planned for further evaluation in either late 2009 or 2010, depending on the progress made in the south of the mine.

1.6 Exploration of P2 Grid

The McArthur River deposit, originally called P2 North, is on the P2 grid situated on the north western boundary of the property. Other significant, but sub-economic discoveries, which are located on the property include the Harrigan Zone, the BJ Zone, and P2 Main.

Routine prospecting in 1980 and 1981 discovered radioactive boulders about 10 km southwest of the McArthur River deposit. Exploration on the P2 grid accelerated in 1984 and definition of the P2 electromagnetic conductor, identified by reconnaissance geophysical surveys, was completed in 1986. The open ended conductor extended for 12 km on the property and became a high priority exploration target.

In 1985, drilling on the P2 conductor resulted in the discovery of the P2 Main sandstone hosted mineralization, associated with a major fault zone. Continued drilling through to 1988 defined this 500 m long, sub-economic zone of mineralization.

Exploration focus shifted to the P2 North area in 1988, with the discovery of high grade mineralization (4.3% U_3O_8 / 10.0 m) in drill hole MC-198. Successive diamond drill programs from 1989 – 91, totalling 27,928 metres in 43 holes, delineated the P2 North uranium deposit from surface. Subsequent geotechnical and hydrological evaluation of the deposit area in 1992 preceded the approval for underground development in 1993.

Surface exploration drilling was conducted in 2004, 2005 and 2006 to the north to test the extension of mineralization previously identified from historical surface drill holes and to also test new targets along strike. In 2007, surface diamond drilling to evaluate the P2 trend north of the McArthur River mine was significantly accelerated in order to understand as quickly as possible the full potential of the prolific P2 structure. As at December 31, 2008, approximately 80 surface drill holes totalling in excess of 42,000 m, comprising a combination of conventional and directional drilling have tested the P2 structure at approximately 200 m intervals for a distance of 4.3 km north of the mine. Results continue to be encouraging and will require follow-up drilling. For 2009, $3.5 million has been budgeted towards diamond drilling on extension of the P2 fault both to the north and south of the mine.

1.7 Mining Methods

The mining of the McArthur River deposit faces a number of challenges including control of groundwater, weak rock formations, and radiation protection from very high grade uranium ores. Based on these challenges, it was identified during initial mining studies that non-entry mining methods would be required to mine the majority of the deposit.

The sandstones that overlay the ore zones and basement rocks contain significant amounts of high pressure water that will flow into the underground workings unless they are controlled. Ground freezing is used to form an impermeable freeze wall, to prevent water from the sandstones entering into the active ore zones, and to help stabilize highly fractured footwall rocks during mining operations.

The raisebore mining method was selected as an innovative approach to meet these challenges and was adapted to meet the conditions at the McArthur River mine. The raisebore method involves drilling a series of raisebore holes through the ore zone. The ore is collected by remote controlled scooptrams at the bottom of the raise. Once the raise is completed, the raise is concrete filled.

This method has been used to extract all the ore at McArthur River since mine production started in 1999. The method has proven to be very successful both in terms of achieving budgeted production and safety goals including low accident frequency and radiation exposure.

Alternate mining methods planned for other Zones of the ore body include boxhole boring and blasthole stoping.

In 2005, a mining method study determined that a modification to this method, the boxhole mining method, would be better suited for the Upper Zones 1, 3 and 4 because it would allow development from a preferred location within the basement rockmass since this zone is overlain by water bearing sandstones. Cameco plans to use this method for production from Upper Zone 4 beginning in 2013.

Boxhole boring is a vertical development technique used at a few mines in the world; however, this will represent its first application to uranium mining. Cameco has some experience with boxhole boring as it previously tested the method at Rabbit Lake and Cigar Lake. Additional testing at McArthur River will be required to evaluate the productivity of this method, and will likely require additional operational development during test work and initial mining phases.

The technical challenges associated with this mining method include reaming through frozen ground, raise stability (due to thawing from reaming and backfill), controlling raise deviation, reaming through backfilled raises, and control of radiation exposure. Accordingly, Cameco has scheduled a long lead-time for implementation to ensure the technical challenges are understood and risks mitigated. Until Cameco has fully developed and tested the boxhole boring method at McArthur River, there is uncertainty in the estimated productivity.

Cameco plans to develop and test the boxhole boring method over the next four years. In 2006, Cameco placed an order for a boxhole borer for delivery in the first half of 2008 and in 2007 completed the mine plan for the boxhole boring test area. The first test raise was setup at the end of 2008 and pilot hole drilling commenced in January 2009. Three raises in waste are planned for 2009 as is completion of freeze drilling for a boxhole boring ore extraction test area. The brine distribution system for this area is scheduled to be installed in 2009 as part of the plan to test this method in ore in 2010. Cameco has CNSC approval for the boxhole boring test program in waste and will provide a second submission for boxhole boring in ore planned for 2010.

A third mining method, blasthole stoping is being evaluated for small isolated ore zones where raisebore or boxhole boring is impractical. McArthur River plans to implement this method for ore remnant recovery in Zone 2, pending regulatory review and approval.

1.8 Mine Operations

Underground exploration drilling has identified four mineralized zones (Zones 1 to 4). Cameco is working on the transition to new mining zones at McArthur River, including mine planning and development. Since mining startup in 1999, only Zone 2 has been mined. Zone 2 is divided into four Panels (1, 2, 3, and 5).

As extraction of Zone 2 (Panels 1, 2, and 3) progresses, Cameco expects to place Lower Zone 1, Zone 2 (Panel 5) and the lower mining area of Zone 4 into production in stages between 2009 and late 2010, subject to regulatory approval. Cameco plans to continue to use the raisebore mining method to extract ore in these zones.

Freeze drilling and raisebore access for Lower Zone 1 has been developed on the 530L. Due to water risks, the 560 level extraction chamber development will not be driven until the production freeze wall has been established. Freeze drilling for Lower Zone 1 is scheduled to begin in the 2nd quarter of 2009.

At Zone 2 (Panel 5), the brine system to form the new freeze wall was activated in the fourth quarter of 2008 and formation of the new freeze wall is in progress. The new freeze wall is expected to be in place in the second quarter of 2009. Approximately six months of freeze time is required before the raisebore chamber can be developed. By mid-2009, the ground should be sufficiently frozen to begin developing the raisebore chamber. Production is scheduled for Zone 2 (panel 5) in the second half of 2009. Cameco intends to produce over 85 million pounds of U_3O_8 from this area.

Development work for Lower Zone 4 is progressing. This area is classified as higher risk development for the raisebore chamber on the upper level and Cameco has adjusted its development and production schedules to recognize and mitigate these risks. In 2009, development of this Zone will continue and freeze hole drilling is expected to take place. Production from this area is now scheduled for 2010.

During the fourth quarter of 2008, access was successfully re-established along the previously backfilled Zone 2 Panel 3 freeze wall on the 530 level. This mining area will be used to extend the life of Panel 3 and is part of the revised production plan for 2009 to address the rescheduling of production from Lower Zone 4.

In November of 2008, the lower extraction area for Lower Zone 4 development on the 590 m level encountered a small inflow of water that was quickly captured and controlled. This area was considered low risk development which is defined as having an inflow potential of less than 100 m^3/h or an order of magnitude below the available pump and treat capacity. The inflow has not caused Cameco to alter any planned mining in this area. However, full grouting of the inflow area is required before development resumes. As of January 2009, the critical path for production in this area is on the 530 m level where freeze drilling will be carried out and not the 580/590 m level extraction area where the inflow was encountered. Other development on the 580 level continues.

1.9 Processing

McArthur River ore is processed at two locations. Size reduction is conducted underground at McArthur River and the resulting finely ground ore is pumped to surface and transported in truck mounted containers to Key Lake as a 50% solids slurry at a typical grade range of 15% to 30% U_3O_8. Blending down with mineralized waste to a nominal 4% U_3O_8 mill feed grade and all remaining uranium processing, tailings disposal and effluent treatment steps occur at Key Lake. The final uranium product is a calcined yellowcake grading 98% U_3O_8 on average.

The current CNSC licensed production rate for the combined McArthur River/Key Lake operations is limited to a maximum of 7.2 million kilograms U (approximately 18.7 million pounds U_3O_8) per year. Cameco has applied for an increased licensed capacity of 22 million pounds U_3O_8 annually. Options to further increase the production rate to 24 million pounds U_3O_8 annually are currently being assessed as part of a program to revitalize and expand the Key Lake operation.

The Key Lake mill is owned by the Key Lake Joint Venture (KLJV) and operated by Cameco. The KLJV is comprised of Cameco (66 2/3%) and UEM (33 1/3%). UEM is a company owned equally by Cameco and AREVA.

The KLJV has entered into a toll milling agreement with AREVA for the processing of AREVA's share of McArthur River uranium at the Key Lake mill. Cameco and UEM, the other owners of the McArthur River Joint Venture (MRJV), have agreed that milling of each party's share of McArthur River ore will be accomplished through the KLJV and it is not necessary to enter into a formal toll milling agreement with the KLJV.

1.10 Environmental Assessment and Licensing

The McArthur River operation has regulatory obligations to both the federal and provincial governments. Being a nuclear facility, primary regulatory authority resides with the federal government and its agency, the CNSC. The main regulatory agencies that issue permits / approvals and inspect the McArthur River mine are: the CNSC (federal), Fisheries and Oceans Canada (federal), Environment Canada (federal), Transport Canada (federal), Ministry of Advanced Education, Employment and Labour (provincial), and Ministry of Environment (provincial) (SMOE).

Three permits must be maintained to operate the mine. Cameco holds a "Uranium Mine Facility Operating Licence" from the CNSC, and an "Approval to Operate Pollutant Control Facilities" and a "Permit to Operate Waterworks" both from the SMOE. These permits are current. The CNSC operating licence was renewed for 5 year term in 2008 and expires on October 31, 2013. The SMOE approvals will require renewal in 2009 as they expire on October 31, 2009. The renewal process for these approvals has been started.

The Key Lake operation is regulated in a similar manner as the McArthur River mine and as such has regulatory obligations to both the federal and provincial governments. Three permits must be maintained to operate the Key Lake uranium mill. Cameco holds a "Uranium Mill Operating Licence" from the CNSC and an "Approval to Operate Pollutant Control Facilities" and "Permit to Operate Waterworks" both from SMOE. These permits are current. The CNSC operating licence was renewed for a five year term in 2008 and expires on October 31, 2013. The SMOE approvals will require renewal in 2009 as they expire on November 30, 2009. The renewal process for these approvals has been started.

The CNSC operating licences for McArthur River and Key Lake limit production to approximately 18.7 million pounds of U_3O_8 per year, while the provincial approval to operate pollution control facilities sets restrictions on the rates and quality of treated effluent that can be released to the environment. This provincial approval also specifies restrictions associated with the management and transport of mineralized wastes generated from the mining activities.

In 2002, Cameco applied to increase the annual licence capacity at both the McArthur River mine and the Key Lake mill to 22 million pounds U_3O_8 per year (compared to the current 18.7 million pounds). This application has been undergoing a screening level environmental assessment (EA) under the *Canadian Environmental Assessment Act*

(CEAA) with the CNSC as the responsible authority. The EA has been delayed due to discussions with the CNSC regarding how to address the local accumulation of molybdenum and trace amounts of selenium in the Key Lake downstream environment.

Cameco has developed an action plan to modify the effluent treatment process to reduce concentrations of molybdenum and selenium discharged to the environment. The CNSC facility operating licence includes a condition for the Key Lake mill to implement this action plan.

Pursuant to this action plan Cameco has been proceeding to modify the mill effluent treatment process in order to reduce molybdenum and selenium levels to very low concentrations. The project, originally planned to be complete in the first part of 2008, experienced difficulties in commissioning that have subsequently required further project changes. Cameco now expects this project to be completed and the new process changes optimized in the first half of 2009. Cameco plans to update the CNSC in April 2009 with respect to the indicative performance of the molybdenum and selenium removal circuit. Depending on the relative success of this project in reducing molybdenum and selenium concentrations in the Key Lake mill effluent, further work identified in the action plan referred to in the licence condition may or may not be required.

The EA for the increased licence capacity is pending demonstration of the effectiveness of the process to reduce concentrations of molybdenum and selenium. Cameco expects that reducing the current level of these metals will help advance this EA.

In addition to obtaining approval for the EA (which has to be resubmitted at the appropriate time) and licence approval to operate at higher production levels, Cameco needs to transition to new mining zones at McArthur River and to implement various mill process modifications at Key Lake in order to sustain increased production levels. Mine planning, development and freeze hole drilling for the McArthur River zone transition is ongoing and only after this transition is complete, can Cameco fully assess the production rate capacity of the new mining zones.

A revitalization assessment of the Key Lake mill was completed in the first part of 2008. Subsequently, engineering commenced and further assessment of alternative options began. The Key Lake revitalization plan includes upgrading circuits with new technology for simplified operation, increased production capacity and improved environmental performance. The engineering and project planning for replacement of the acid and oxygen plants was further advanced in 2008. Construction of these replacement plants is planned to start in 2009, subject to regulatory approvals.

If Cameco receives approval for the increased production limit, Cameco expects that annual production will range between current levels and 20 million pounds until such time as revitalization is completed at Key Lake. Annual production levels after mill revitalization are expected to be largely dependent on mine production. As such, Cameco anticipates it will be a number of years before it can achieve the sustainable increased production rates at these operations.

The tailings management facility (TMF) is located within the Deilmann pit, which was mined out in the 1990s. Tailings from processing McArthur River ore is deposited in this TMF.

In February of 2009, Cameco received regulatory approval for the deposition of tailings to a moderately higher elevation in the Deilmann TMF. At current production rates, the approved capacity of the Deilmann TMF increases from five years to approximately eight years, assuming only minor storage capacity losses due to sloughing (or erosion) from the pit walls.

Cameco also initiated technical pre-feasibility work to secure long-term tailings capacity at Key Lake that will be sufficient to hold all tailings generated from processing of McArthur River Mineral Reserves as well as substantial additional capacity to allow for other potential sources of production. This tailings option study is considering the feasibility of further extending the capacity of the Deilmann TMF and options for new tailings management facilities. Cameco expects to submit a project description to regulatory agencies in 2009 that will initiate the environmental assessment process for securing long-term tailings capacity at Key Lake.

With respect to the ongoing operation of the Deilmann TMF, Cameco has performed several studies to better understand the pitwall sloughing mechanism and initiated engineering work to design and build mitigation measures for prevention of sloughing. Sloughing has occurred in the past at the Deilmann TMF resulting in the loss of approved capacity. Although the situation has recently stabilized as a result of stabilizing the water level in the pit, there is a risk of further sloughing at the Deilmann TMF.

At the Key Lake site there is another TMF. It is an above-ground impoundment with tailings stored within compacted till embankments. This facility, constructed in 1983, has not received tailings since 1996. Cameco is reviewing several decommissioning options regarding this facility.

There are five rock stockpiles at the Key Lake site. Three of the stockpiles contain non-mineralized waste rock and two contain low-grade mineralized material. The latter are currently used to lower the grade of McArthur River ore to approximately 4% U_3O_8 before entering the milling circuit. The dilution of the high-grade ore serves three purposes: recovery of uranium from the low-grade material, reduction of radiation exposures in the mill, and final disposal of the low- grade waste. The remaining non-mineralized waste rock stockpiles will require decommissioning upon site closure.

1.11 Production Plan

The mining plan has been designed to extract all of the current Mineral Reserves. McArthur River currently has sufficient Mineral Reserves to continue production to 2033. Yearly production is currently limited by McArthur's Uranium operating license at 18.7 million pounds of U_3O_8.

It is expected that Mineral Reserves may increase as further exploration continues from both surface and underground and mining plans are put in place for Zones 4 South, A and B Mineral Resources. Cameco believes there is good potential it will be able to convert portions of the McArthur River Measured and Indicated Mineral Resources to Mineral Reserves, in order to maintain annual production at 18.7 million pounds for longer than currently estimated and/or extend mine life. Mineral Resources that are not Mineral Reserves have no demonstrated economic viability.

1.12 Economic Analysis

The economic analysis for the McArthur River Mine, is based on the current mine plan and the estimated Mineral Reserves only. The analysis does not contain any estimating involving the potential mining and milling of the Mineral Resources from any mineralized zone. It cannot be assumed that all or any part of the Inferred Mineral Resources will ever be upgraded to a higher category. Accordingly, expenditures that may be required to bring any of the Mineral Resources into production or to identify additional Mineral Resources have not been included.

The analysis is from the point of view of Cameco, which owns, directly or indirectly, 69.805% of the MRJV, and incorporates Cameco's projected sale revenue from its proportionate share of the related production, less its share of the related operating and capital costs of the MRJV, as well as all royalties that will be payable on the sale of concentrates.

The analysis estimated a pre-tax NPV (10%) to Cameco, as at January 1, 2009, of Cdn$2.69 billion for its share of the McArthur River Mineral Reserves. The pre-tax IRR has been estimated to be 13%.

Operating costs for the MRJV were estimated to average Cdn$19.69/lb U_3O_8 over the life of the estimated Mineral Reserves only. For the period from 2009 to 2013, operating costs were estimated to average Cdn$15/lb U_3O_8. The operating projections are stated in constant 2009 dollars and assume an annual production rate of 18.7 million pounds until 2016, and gradually declining annual production until 2033. Operating costs include estimated underground mining operations and milling costs.

Mining of the McArthur deposit is capital intensive in comparison to other underground types of mining. The extraction method utilizing raisebores allows the operation to minimize the size of excavations in ore and therefore reduce the risk of ground movement that could potentially impact the freeze wall integrity. Given the importance of preserving freeze wall integrity, the mining methods in this report has taken this into account.

1.13 Project Risks

McArthur River is a challenging deposit to mine. These challenges include control of ground water, weak ground formations, radiation protection, water inflow, mining method uncertainty and changes to productivity, mine transitioning, regulatory approvals, tailings capacity, reliability of facilities at Key Lake, surface and underground fires.

Two of the primary geotechnical challenges in mining the deposit are control of groundwater and ground support in the immediate area of massive mineralization, in areas where the rock is fractured and faulted, and in the overlying sandstone. In general, the poorest ground conditions have been encountered in the hanging wall sandstone along the western edge of the deposit, up from the footwall unconformity to the tip of the basement wedge. Geotechnical investigation holes are drilled into any planned mining areas prior to mining and help determine the mining design and whether development in an area is low, medium or high risk.

Major water bearing formations at high hydrostatic pressure are present in the altered sandstone, P2 fault and unconformity overlying the basement rocks. A risk of mine flooding is present if either of these formations is intersected with mine openings or exploration drill holes. As a result, prior to mining an ore zone, the footwall areas must be frozen to isolate the ore zone from the water bearing sandstone and vertical faults that form the western part of the deposit. Ground freezing also helps stabilize the highly fractured footwall rocks during mining operations and reduces the potential for radiation exposure from radon dissolved in the ground water. Ground freezing, however, will only reduce, but not eliminate, these challenges. The different methods of ground freezing can result in freeze walls that are not 100% enclosed and therefore do not provide full protection from water inflows. There is a possibility of a water inflow event during the drilling of holes to freeze the ground as well as due to other causes. Therefore, the risk of water inflows at McArthur River remains.

All mine development to date has attempted to minimize the amount of water to be encountered. This was done through extensive grouting and careful placement of mine development away from known groundwater sources whenever possible, as well as ground freezing.

Production at the McArthur River mine was temporarily suspended on April 6, 2003, as increased water inflow from an area of collapsed rock in a new development area, located just above the 530 m level, began to flood portions of the mine. Remedial work to return the mine to safe operating condition was initiated during the second quarter of 2003 and was sufficiently advanced in July 2003 for mine production to resume. The excess water inflow was sealed off by July 2004. Permanent water treatment capacity was expanded to about 750 m^3/h.

During the water inflow incident, additional temporary capacity was put in place to treat the water flows. Construction was completed in 2005 to increase the permanent and contingency water treatment capacity to approximately 1,500 m^3/h. In 2008, Cameco increased pumping capacity at the McArthur River mine to 1,650 m^3/h from the previous 1,500 m^3/h, with a potential to add additional capacity. Cameco has the ability to treat between 750 and 800 m^3/h through its conventional water treatment plant. In addition, another 750 m^3/h contingency water treatment capacity is available which requires regulatory approval to use. Beyond that, Cameco has water storage capability of 50,000 m^3 in a surface pond which could provide several weeks storage for any inflows in excess of hourly treatment capacity.

Current discharge rates are limited by the Saskatchewan MOE with the approval to release up to 360 m^3/h during the period of April 15 to June 15 to allow passage of spawning fish through the downstream Read Creek culvert and up to 833 m^3/h for the remainder of the year. Cameco is working on obtaining regulatory clarity for contingency water treatment and release in the event of a large water inflow.

In 2009, McArthur River plans to upgrade the Read Creek culvert to allow fish passage during high flow conditions, apply to Saskatchewan MOE for removal of the 360 m^3/h flow restriction, and submit an application to CNSC and Saskatchewan MOE for formal approval of the McArthur Contingency Water Management Plan that would allow Cameco to operate the contingency water treatment plant and discharge at rates up to 1500 m^3/h during mine inflow conditions.toto

In November of 2008, the lower extraction area for Lower Zone 4 development on the 590 m level encountered a small inflow of water that was quickly captured and controlled. This area was considered low risk development which is defined as having an inflow potential of less than 100 m^3/h or an order of magnitude below our pump and treat capacity. The inflow has not caused Cameco to alter any planned mining in this area. However, full grouting of the inflow area is required before development resumes.

The 2008 water inflow is still under investigation, however the necessary measures to control the water have been implemented and progress is being made. The water is being managed through the conventional water handling systems, and contingency water treatment systems have not been required to mitigate this situation.

The consequence of another water inflow at McArthur River will depend upon the magnitude, location and timing of any such event, but could include a significant reduction in McArthur River production, a material increase in costs, a loss of Mineral Reserves, or require Cameco to give notice to many of its customers that it is declaring an interruption in planned uranium supply. Although Cameco takes steps to mitigate the risks of water inflow, there can be no guarantee that such steps will be successful and water inflow could have a material impact upon Cameco.

A significant amount of the estimated Mineral Reserves in Upper Zones 1, 3, and 4 have been planned for mining with the boxhole boring method, with production planned to commence in Upper Zone 4 in 2013. This method has had limited testing at Cigar Lake and Rabbit Lake. Boxhole boring is a mining technique used around the world, this will represent its first application in uranium mining. Additional testing at McArthur River will be required to evaluate the productivity of this method, and will likely require additional operational development during test work and initial mining phases.

In order to address the technical challenges with this mining method (described above), Cameco has scheduled a long lead-time for implementation to ensure the technical challenges are understood and risks mitigated. Until Cameco has fully developed and tested the boxhole boring method at McArthur River, there is uncertainty in the estimated productivity. Failure to resolve the technical challenges with this mining method could adversely impact planned production and timing, which could have a material impact upon Cameco.

Beginning in 2009, Cameco expects to transition to new mining areas at McArthur River, which involves significant technical challenges. Failure or delay in overcoming these challenges may have a material impact upon Cameco.

Underground mine fires pose a serious threat to mine workers and mine operations. Controls and procedures are in place to mitigate the risk of mine fires.

Failure to maintain existing tailings capacity at the Deilmann TMF due to sloughing or other causes or failure to obtain or delay in obtaining regulatory approval for a new tailings management facility or to expand existing tailings capacity at the Deilmann TMF could constrain uranium production, which could have a material adverse impact upon Cameco.

The original Key Lake milling facilities and related infrastructure have been in service for over twenty five years. In late 2006 to address the risks associated with an aging facility, Cameco initiated the development of a strategic plan to revitalize the Key Lake facilities for the next 25 years of operation to mill McArthur River ore. The key objectives of this plan are to refurbish or replace selected areas of the existing infrastructure, enhance environmental performance and increase nominal production capacity to approximately 24 million pounds U_3O_8 per year. As part of the revitalization of the Key Lake mill, Cameco is planning to commence the construction of replacement of acid and oxygen plants in 2009.

1.14 Conclusions and Recommendations

With more than a 150 M lbs of U_3O_8 mined from the McArthur River deposit, Cameco has demonstrated that the challenging conditions associated with mining in the Athabasca Basin can be overcome. The operational experience gained since the start of commercial production has resulted in significant risk reduction.

The McArthur River operation estimated Mineral Reserves have proven, thus far, to be conservative with more U_3O_8 extracted than predicted to date. As a result of the high grade of the deposit it has been shown that the Mineral Reserve based economics produce robust cash flow margins and are not significantly sensitive to the grade and price variations assumed in this report. Given that the Zone 4 area, planned for production in 2010, has no historic production base for comparison with the Mineral Reserve estimates, calibration may be required.

The single greatest risk to the operation is production interruption from water inflows. Although significant improvements have been made since 2003, mining has inherent risk as rockmass quality is variable in nature. The operation has developed maximum inflow volume scenarios that have been validated by independent consultants and pumping and treatment systems have been established accordingly. However, it is recommended that ongoing assessment and redundant capacity requirements continue to be reviewed.

Cameco has recognized the need to develop new mining methods such as boxhole boring for ore extraction in the upper portion of the mineralized zones of the McArthur River deposit where raisebore chambers are difficult to develop. This approach is fully endorsed, but productivity from the boxhole method is not yet firmly established. The test program for boxhole boring therefore needs to continue as planned.

The Mineral Resources at the operation are significant and it is recommended that Cameco assess the potential for converting Mineral Resources to Mineral Reserves in the south end of the mine initially. This is necessary for the mine to increase either the time frame for mining at 18.7 million lbs of U_3O_8 per year or extending the mine life. In light of the positive surface drilling results encountered over the last several years, it is recommended that surface exploration be continued along the north and south ends of the P2 structure.

In order to improve confidence on the calculation of uranium grade from radiometric probing results it is recommended that one in twenty underground holes should be assayed to confirm that the current calibration of the probe is reliable. Further density determination should be made on core samples prior to sampling the core. This is for confirmation of the formula currently used to calculate density.

With the recent and planned expenditures on infrastructure at Key Lake, mill capacity is expected to return to past performance levels, and in the future have capacity to produce beyond the current license limit. Longer term issues with tailings are well understood and studies for tailings capacity expansion take into account the Mineral Reserves and Resources at McArthur River as well as other potential tailings streams.

The high grade nature of the deposit has required a capital intensive approach to extraction. As such, the operating and capital budgets set out in Tables 18-7, 18-8 and 18-9 of Section 18.7 are necessary to ensure that the McArthur River operations continue to produce in the lowest risk environment possible and are endorsed by the authors of this technical report. Given the significant margin of cost to revenue, it is believed that all estimated Mineral Reserves can be extracted economically. It is recommended that any increased production be in the context of increased raisebore access along the strike length of the estimated Mineral Reserve and potential Mineral Resource additions.

The authors of this technical report concur with, and recommend that Cameco proceed with, the foregoing plans.

2 INTRODUCTION

2.1 Introduction and Purpose

This report prepared for Cameco, by or under the supervision of internal qualified persons and one external qualified person, is in support of disclosure of material scientific and technical information on the McArthur River operation. The report has an effective date of December 31, 2008 and has been prepared to comply with NI 43-101 under the supervision of the following individuals:

- David Bronkhorst, P. Eng., General Manager, McArthur River Operation, Cameco Corporation;
- Charles R. Edwards, P. Eng., Director Metallurgy, AMEC Americas Ltd.
- Alain G. Mainville, P. Geo, Director, Mineral Resources Management, Cameco Corporation;
- Gregory M. Murdock, P.Eng., Technical Superintendent, McArthur River Operation, Cameco Corporation
- Leslie D. Yesnik, P. Eng., General Manager, Key Lake Operation, Cameco Corporation

The individuals noted above are “qualified persons” within the meaning of NI 43-101 responsible for the content of this report. All five qualified persons have visited the McArthur River and Key Lake sites. The date and duration of each qualified person’s most recent inspection of the McArthur River and Key Lake sites are included in their respective Certificate of Qualified Person filed with this report and are listed below.

Charles R. Edwards visited the McArthur River Operation for a day in April 2008 to review the ore slurry handling processes, equipment and structures and tour the plant. Mr. Edwards went to the Key Lake Operation in May 2008 for a day to review the milling processes, equipment, technology development and revitalization plans and to tour the plant. Mr. Edwards previously made numerous visits to both sites while Director, Engineering & Projects with Cameco.

Alain G. Mainville toured the Key Lake mill and the McArthur River underground mine on February 22, 2008. Mr. Mainville was previously an employee at Key Lake for seven years. He has been involved with the McArthur River Operations since 1995 and has visited the site on numerous occasions.

Mr. Bronkhorst and Mr. Murdock’s work locations are at the McArthur River Operation and have therefore visited the site generally at least twice a month for periods extending up to seven days.

Mr. Yesnik is General Manager of Key Lake Operation and is present at the site generally at least twice a month for periods extending up to 7 days.

2.2 Report Basis

This report has been prepared with available internal Cameco data and information and data and information prepared for the MRJV.

The principal technical documents and files relating to the McArthur River operation that were used in preparation of this report are listed in Section 22.

3 RELIANCE ON OTHER EXPERTS

In the context of Form 43-101F1, item 5, the authors have relied, and believe they have a reasonable basis to rely, upon the following individuals who have contributed the environmental, legal, social, marketing and taxation information stated in this report, as noted below:

Jean Alonso, P. Eng, Director, Compliance & Licensing, Cameco Corporation, Sections 4.6 (a description of known environmental liabilities) and 18.5 (a description of environmental considerations)

Pat Landine, P. Eng, Chief Geo-Environmental Engineer, Technical Services, Cameco Corporation, Sections 4.6 (a description of known environmental liabilities) and 18.5.3 (a description of environmental considerations).

Larry Korchinski, LLB, Director, Legal Affairs, Securities Compliance, Cameco Corporation, Sections 4.2 (a description of mineral tenure), 4.3 (Surface tenure), 6.1 (a description of ownership), and 18.4.3 (a description of toll milling contracts), and 19.9 (aboriginal title and consultation issues).

Penny Buye, BA Econ, Manager, Market planning and Analysis, Marketing, Cameco Corporation, Section 18.3 (a description of uranium markets) and 18.4.4 (a description of uranium sales contracts).

Bev Godson, CMA, Director, Financial Services, Cameco Corporation, Section 18.6 (a description of taxes and royalties).

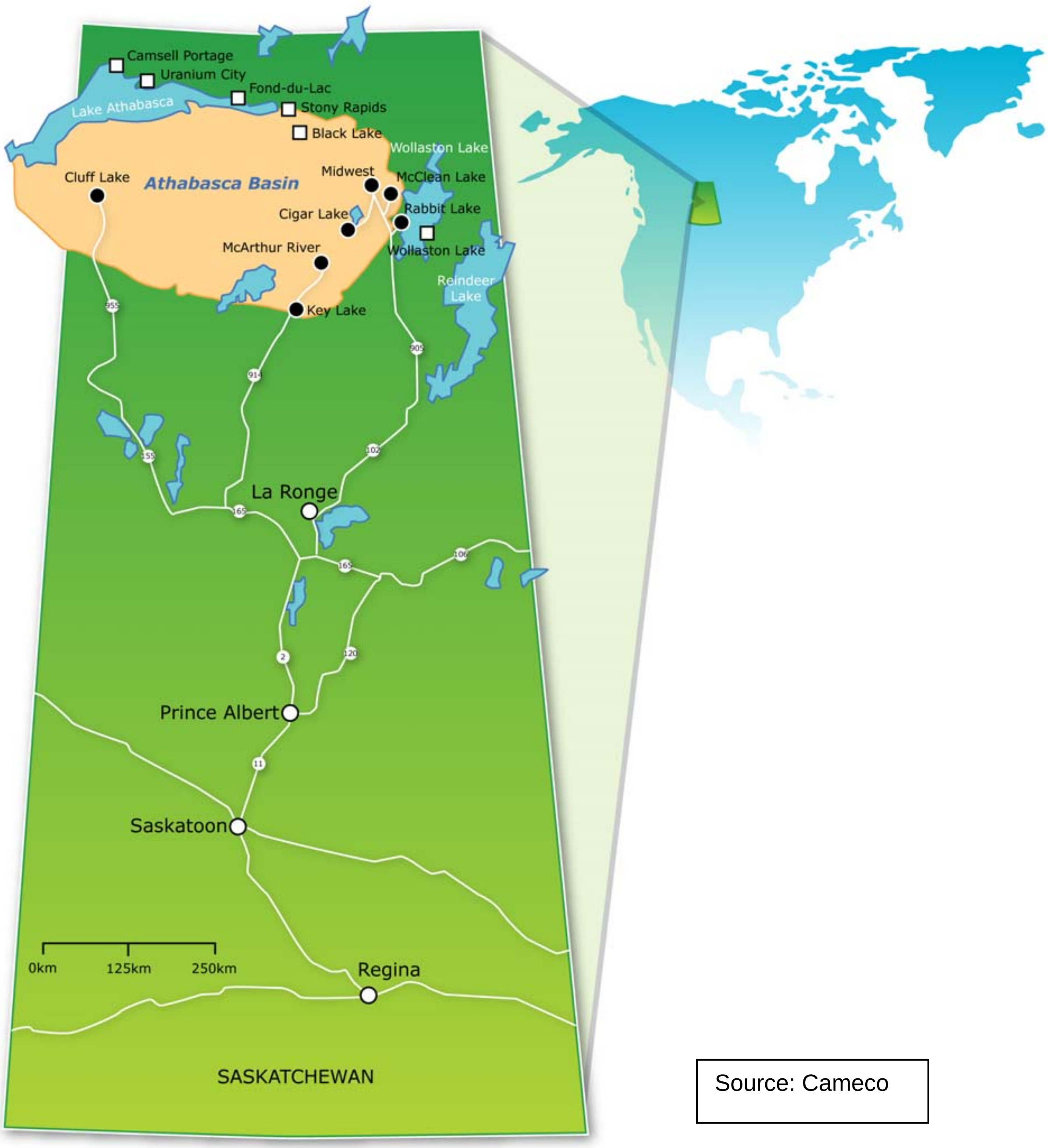
4 PROPERTY DESCRIPTION AND LOCATION

4.1 Location

The McArthur River minesite is located near Toby Lake in northern Saskatchewan, approximately 620 km north of Saskatoon, at approximate latitude 57^{o} 46' north and longitude 105^{o} 03' west, and about 40 km inside the eastern margin of the Athabasca Basin Region in northern Saskatchewan, Canada (see Figure 1).

The McArthur River minesite is 80 km northeast by road from the Key Lake milling operation. The Cigar Lake project is 46 km northeast and the Rabbit Lake operation is 95 km northeast from the McArthur River minesite. No direct roads connect McArthur River to the Cigar Lake or Rabbit Lake operations.

Figure 1 - McArthur River Operation Location



Source: Cameco

4.2 Mineral Tenure

The mineral property consists of 21 mineral claims and one mineral lease ("ML-5516") totalling 84,818 ha.

The McArthur River uranium deposit is located in the area subject to ML-5516, totalling 1,380 ha. The right to mine this uranium deposit was acquired by Cameco under this mineral lease, as renewed, effective March 8, 1994 from the province of Saskatchewan. This mineral lease is granted by the province of Saskatchewan under *The Crown Minerals Act* (Saskatchewan). Under the *Mineral Disposition Regulations, 1986* (Saskatchewan), issued under *The Crown Minerals Act* (Saskatchewan), the term of ML-5516 is for 10 years, with a right to renew for successive 10 year terms absent a default by Cameco. Lease ML-5516, like all Crown leases, cannot be terminated by the provincial government except in the event of default or default under any of the provisions of *The Crown Minerals Act* (Saskatchewan), or regulations there under, including for certain prescribed environmental concerns. The current mineral lease expires in March 2014.

Surrounding the McArthur River uranium deposit are 21 mineral claims, totalling 83,438 hectares. The 21 mineral claims were also granted by the province of Saskatchewan under *The Crown Minerals Act* (Saskatchewan). These mineral claims grant the right to explore for minerals. A holder of a mineral claim in good standing has the right to convert the mineral claim into a mineral lease. Surface exploration work of a mineral claim requires additional government approval. The mineral lease and claims are delineated on the ground by staking posts. The *Mineral Disposition Regulations, 1986*, (Saskatchewan) recognize the staked boundaries as the legal boundaries. A legal survey of a portion of the western property line was done in 1984 and covers the boundary adjacent to the McArthur River mine site.

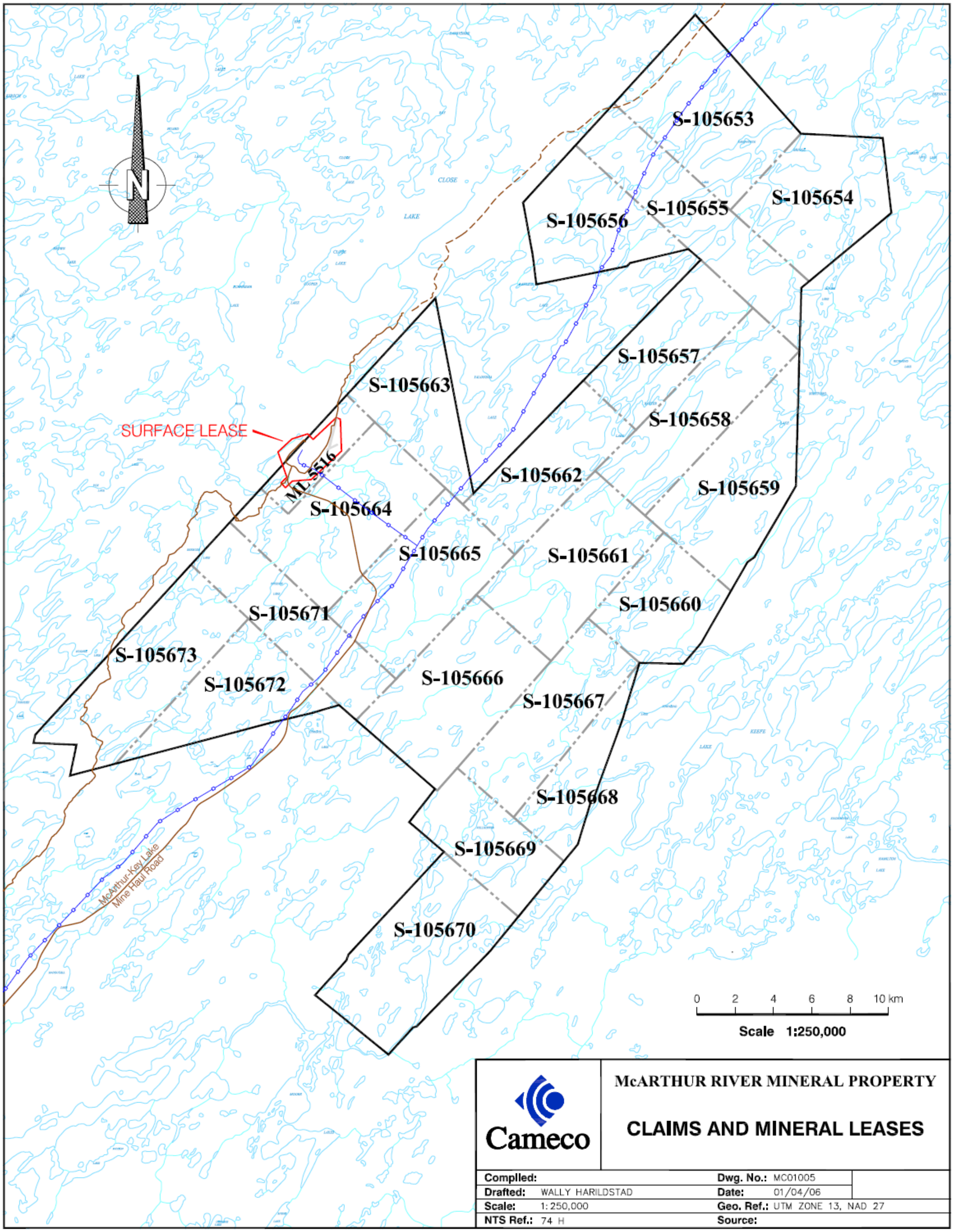
An annual cash payment of $13,800 is required to maintain ML-5516 in good standing. The 21 mineral claims require annual exploration expenditures of $2.1 million. However, title is secured until at least 2017, by virtue of previous assessment work submitted and approved by the province of Saskatchewan. Disposition status is included in **Table 4-1**.

Figure 2 shows the McArthur River mineral lease and mineral claims as currently registered with the province of Saskatchewan.

Table 4-1 – McArthur River Operation – Disposition Status

Disposition	Record Date	Area (ha)	Annual Assessment	Next Payment Due
ML 5516	8-Mar-84	1,380	$13,800	08-Mar-09
S 105653	8-Mar-77	4,880	$122,000	08-Mar-17
S 105654	8-Mar-77	4,076	$101,900	08-Mar-17
S 105655	8-Mar-77	4,380	$109,500	08-Mar-17
S 105656	8-Mar-77	3,434	$85,850	08-Mar-17
S 105657	8-Mar-77	3,290	$82,250	08-Mar-17
S 105658	8-Mar-77	4,060	$101,500	08-Mar-17
S 105659	8-Mar-77	4,752	$118,800	08-Mar-17
S 105660	8-Mar-77	2,945	$73,625	08-Mar-17
S 105661	8-Mar-77	4,505	$112,625	08-Mar-17
S 105662	8-Mar-77	3,470	$86,750	08-Mar-17
S 105663	8-Mar-77	3,248	$81,200	08-Mar-18
S 105664	8-Mar-77	5,055	$126,375	08-Mar-19
S 105665	8-Mar-77	4,519	$112,975	08-Mar-18
S 105666	8-Mar-77	4,930	$123,250	08-Mar-17
S 105667	8-Mar-77	3,926	$98,150	08-Mar-17
S 105668	8-Mar-77	2,075	$51,875	08-Mar-17
S 105669	8-Mar-77	2,838	$70,950	08-Mar-17
S 105670	8-Mar-77	5,207	$130,175	08-Mar-17
S 105671	8-Mar-77	3,586	$89,650	08-Mar-18
S 105672	8-Mar-77	3,390	$84,750	08-Mar-17
S 105673	8-Mar-77	4,872	$121,800	08-Mar-18
Total Claims (21)		**83,438**	**$2,085,950**	
Total Lease (1) and Claims (21)		**84,818**	**$2,099,750**	

Figure 2 – Mineral Lease and Claims Map



4.3 Surface Tenure

The surface facilities and mine shafts for the McArthur River operation are located on lands owned by the province of Saskatchewan. Cameco acquired the right to use and occupy the lands under a surface lease agreement with the province of Saskatchewan. The most recent surface lease agreement was signed in April 1999 and has a term of 33 years. The province of Saskatchewan uses surface leases as a mechanism to achieve certain environmental protection and socio-economic objectives. As a result, certain obligations are attached to the surface lease and relate primarily to annual reporting regarding the status of the environment, land development, and progress on northern employment and business development. On termination or expiry of the surface lease, a new surface lease can be entered into, if necessary, until full property decommissioning and reclamation has been achieved. The McArthur River surface lease presently covers approximately 651 ha.

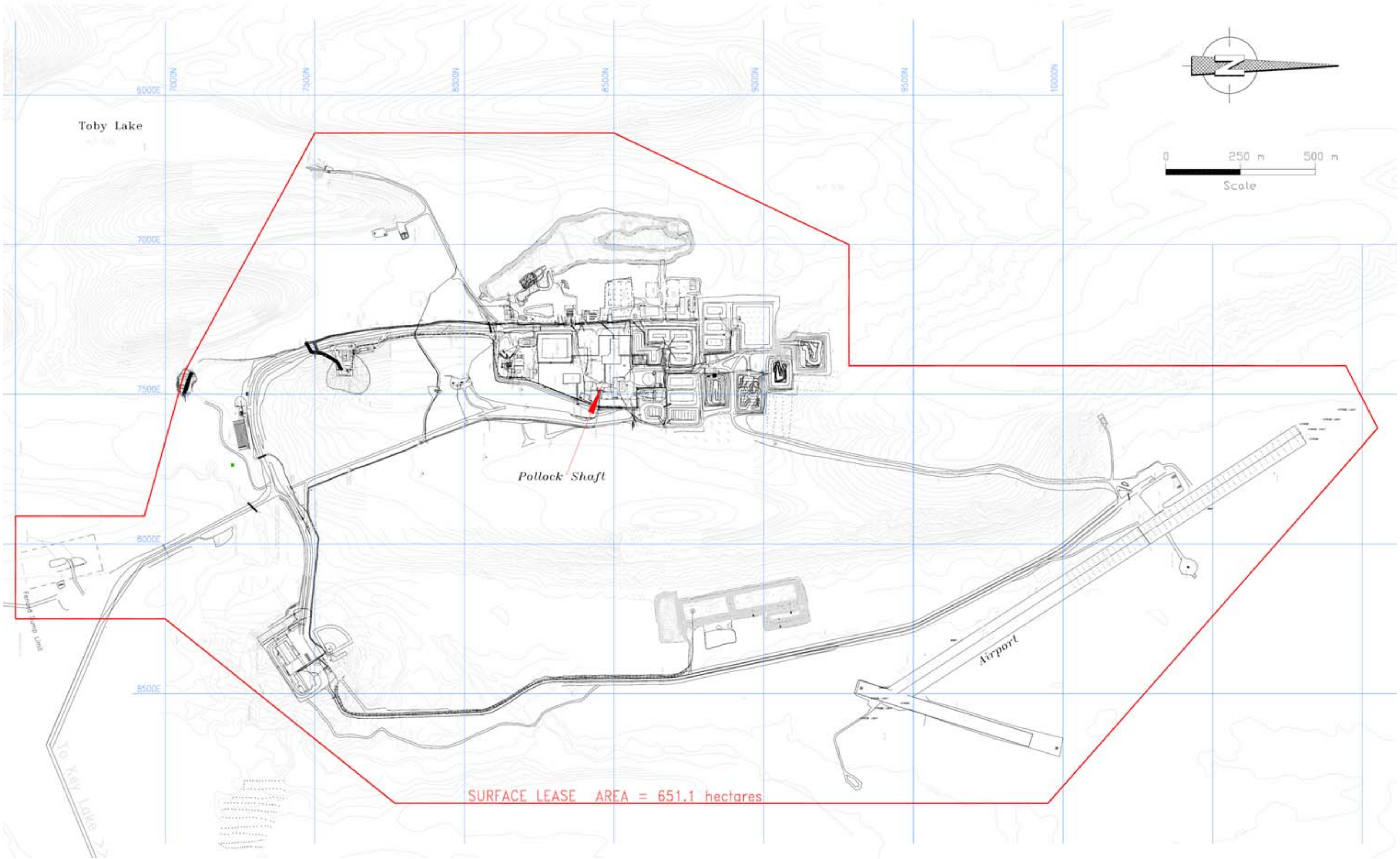
The McArthur River operation is located on historical traditional lands of First Nations. Pursuant to historical treaties, it is generally acknowledged that First Nation bands ceded Aboriginal Title to most traditional lands in northern Saskatchewan in exchange for treaty benefits and reserve lands but generally retained their right to hunt, fish, and trap on these traditional lands. Cameco understands that the federal and Saskatchewan governments have a duty to consult First Nations before taking actions that affect the ability of First Nations to exercise treaty rights. A more detailed discussion of the governments' duty to consult, its impact on project proponents generally, and Cameco's notice of claims potentially affecting the Key Lake and McArthur River sites is provided in section 19.9 below.

The McArthur River mine site is compact, occupying approximately an area of one kilometre in the north/south direction and half a kilometre in the east/west direction. Figure 3 shows the McArthur River general site arrangement with the outline of the surface leases.

In 2007, the annual rent and taxes for the McArthur River surface lease were $1 million and for quarries and miscellaneous, $19,000.

Tri-City Surveys of Saskatoon, Saskatchewan, carried out the McArthur River surface lease survey in March 2000.

Figure 3 - Map of Mine Facilities and Surface Lease



4.4 Mine and Infrastructure

All current Mineral Reserves and Mineral Resources are contained within mineral lease ML-5516. Underground workings are confined to a small area of the mineral lease where mining is concentrated.

Waste rock piles from the excavation of the three shafts and all underground development are confined to a small footprint within the surface lease. Waste rock management is further discussed in Section 5.5 and Section 18.5.3.

No tailings are stored at the McArthur River site since all ore mined is transported to the Key Lake mill for processing. Tailings management at the Key Lake site is discussed in Section 18.5.3.

A discussion of the mine shafts, buildings, and infrastructure at the McArthur River site is included in Section 5.5.

A site plan of the existing and planned surface facilities is shown in Figure 3. . The locations of the McArthur River deposit and other significant but sub-economic uranium discoveries are further discussed in section 6.2.1 and presented on Figure 6-1.

4.5 Royalties

For a discussion of royalties, see Section 18.6.2.

4.6 Known Environmental Liabilities

Material environmental liabilities are essentially future decommissioning liabilities. These are covered by regulatory-required financial assurances. In this process, Cameco develops a conceptual plan describing how a particular site could be decommissioned. Once the plan is accepted by the regulatory agencies, it is then cost estimated, typically resulting in the issuance of letters of credit. The design basis for this work is a “decommission tomorrow” scenario, as the regulatory foundation of this work is protection of the taxpayer in the event that a company is unable to meet its decommissioning obligations. It is important to note that regulators accept the decommissioning plans in concept – as an approach to address environmental liabilities which has reasonable prospects of meeting current regulatory requirements. As Cameco-operated properties approach or go into decommissioning, further regulatory review of the detailed decommissioning plans may result in additional requirements, associated costs and financial assurances. It is not possible to predict what level of decommissioning and reclamation (and financial assurances relating thereto) may be required in the future by regulators. If Cameco is required to comply with significant additional regulations or if the actual cost of future decommissioning and reclamation is significantly higher than current estimates, this could have a material adverse impact on the work needed to address these future environmental liabilities.

Beginning in 1996, Cameco has conducted regulatory-required reviews of its decommissioning plans for all Canadian sites. These periodic reviews are nominally done on a five-year basis, or at the time of an amendment to or renewal of an operating licence. These updates serve to reflect changes in operations, conditions, evolving technologies and changing regulatory requirements. In 2003, Preliminary Decommissioning Plans (PDPs) for both the Key Lake (Cameco, 2003a) and McArthur River operations (Cameco, 2003b) were prepared by Cameco and approved of by both the CNSC and SMOE. These conceptual PDPs discussed the environmental liabilities that were known at that time. The estimated cost of implementing these PDPs and addressing the known environmental liabilities resulted in production of two other associated documents called preliminary decommissioning cost estimates (PDCEs) for both Key Lake (Cameco 2003c) and McArthur River Operations (Cameco, 2003d). Financial assurances to cover the 2003 PDCEs for McArthur River and for Key Lake operations were posted with SMOE in the form of irrevocable standby letters of Credit (LOC).

These documents were revised in 2008 in support of the CNSC licence renewal process, and considered changes to conditions over the preceding 5 year period since the last revision. Based on the total estimated decommissioning costs presented and approved in these PDCEs, Cameco increased the financial assurance posted with the province of Saskatchewan to Cdn$120.7M and Cdn$36.1M for decommissioning the Key Lake and McArthur River operations, respectively. These estimates replace the 2003 estimates of Cdn$45.5M and Cdn$8.6M respectively. These financial assurances represent 100% of the total estimated costs and not Cameco’s share of such costs. Broadly speaking, the increases in the estimates have resulted from significant escalation of labour and equipment rates, increases in up-front project management efforts, interim care and maintenance costs while awaiting regulatory approvals, higher levels of contingency in engineering cost estimates, and general inflation provisions. A measure of stability in the estimates for the next few years is expected, given the granting of five-year licences to 2013.

The known environmental liabilities are discussed further in Section 18.5.

4.7 Permitting

For a discussion of permitting, see Section 18.5.1.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Access

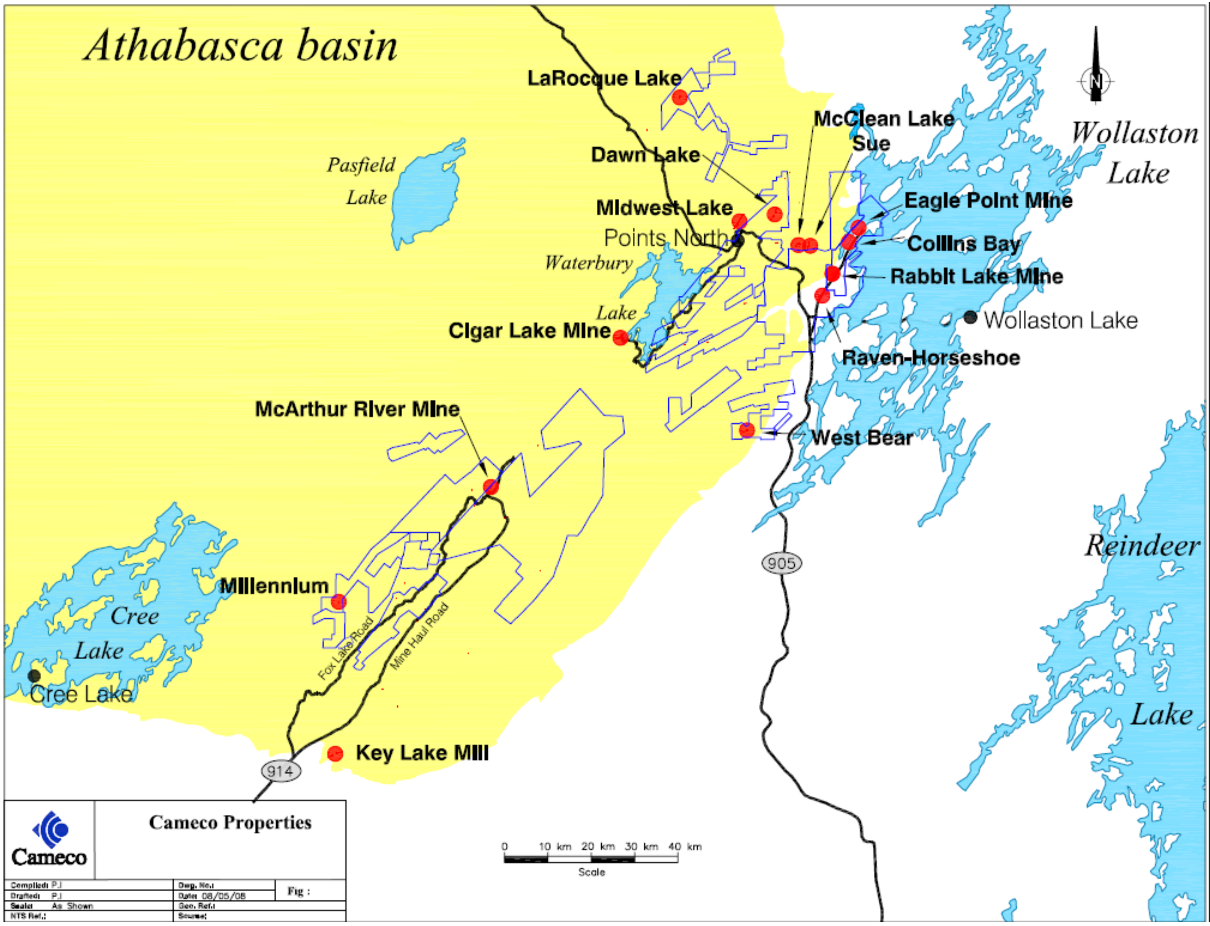
McArthur River ore is transported to the Key Lake mill for processing some 80 km to the southwest along a gravel road.

The property is accessible by road and air. Supplies are transported by truck and can be shipped from anywhere in North America through the company transit warehouse in Saskatoon. Trucks travel north from Saskatoon, on a paved provincial road through Prince Albert to just south of La Ronge, then west on gravel surfaced Provincial Road 165 and north on gravel Provincial Road 914 to the Key Lake mill. The 80 km road from Key Lake to McArthur River is gravel surfaced and maintained by Cameco. The Key Lake to McArthur River road is used to transport ore to Key Lake for processing and to ship supplies to McArthur River. Public access to this road is controlled and restricted.

Figure 4 shows the regional location of the McArthur River site and local roads.

An unpaved airstrip is located approximately one kilometre east of the minesite within the surface lease, allowing flights to and from the McArthur River property.

Figure 4 - McArthur River Site – Regional Location and Roads



5.2 Climate

The climate is typical of the continental sub-arctic region of northern Saskatchewan. Summers are short and rather cool, even though daily temperatures can reach above 30^0 C on occasion. Mean daily maximum temperatures of the warmest months are around 20^0 C and only three months on average have mean daily temperature of 10^0 C or more. The winters are cold and dry with mean daily temperature for the coldest month below minus 20^0 C. Winter daily temperatures can reach below minus 40^0 C on occasion.

Freezing of surrounding lakes, in most years, begins in November and breakup occurs around the middle of May. The average frost-free period is approximately 90 days.

Average annual total precipitation for the region is approximately 450 mm, of which 70% falls as rain, more than half occurring from June to September. Snow may occur in all months but rarely falls in July or August. The prevailing annual wind direction is from the west with a mean speed of 12 km/h.

Site operations are carried out throughout the year despite cold winter conditions. The fresh air necessary to ventilate the underground workings is heated during the winter months using propane-fired burners.

5.3 Physiography

The McArthur River project lies within the Athabasca South Eco-District of the Northern Boreal Eco-Region. The vegetation at the McArthur River property are typical of the taiga forested land common to the Athabasca basin area of northern Saskatchewan. The topography in the region is dominated by large scale drumlins, which locally can have relief of 100 m above the surrounding lakes. Overburden thickness over the deposit is approximately 10 m. The terrain consists primarily of sandy rolling hills which are separated by a number of low-lying areas filled with lakes, creeks, and muskegs.

The dominant upland forest type is a semi-open jack pine forest with an understory of lichens and blueberries. The moister lowlands are predominated by open black spruce and tamarack stands with an understory of mosses and Labrador tea. Major forest fires have covered most of the McArthur River area over the last 20 years and have modified the local vegetation.

The minesite elevation is approximately 550 masl.

5.4 Local Resources and Proximity to Population Centre

No communities are located in the immediate vicinity of either the McArthur River or Key Lake operations. The closest community to the two operations is the village of Pinehouse, 240 km south of the Key Lake site by gravel Provincial Road 214. The McArthur River minesite is a further 80 km north from the Key Lake site via a Cameco maintained gravel road.

Employees commute from a number of designated communities by air. Most company employees are on a week-in and week-off schedule. Contractor employees are generally on a longer work schedule.

Athabasca Basin community residents fly from various pick-up points in smaller airplanes to the minesite. Southern resident employees fly to the site from

Saskatoon with stop-over pick-up points in Prince Albert and La Ronge. The number of weekly flights varies with the size of the workforce.

Personnel are recruited on a preferential basis: initially from the communities of northern Saskatchewan, followed by the province of Saskatchewan generally, and then from outside the province. Personnel are flown to site from the northern area communities and major Saskatchewan population centres such as Saskatoon.

Site activities such as construction work and mine development work are performed by northern owned or joint venture contactors and major contractors that have the ability to hire qualified personnel from the major mining regions across Saskatchewan and Canada. Cameco personnel conduct all production functions.

The McArthur River site is linked by road and by air to the rest of the province of Saskatchewan facilitating easy access to any population centre for purchasing of goods at competitive prices. Saskatoon is a major population centre some 620 km south of the McArthur River mine with highway and air links to the rest of North America.

5.5 Infrastructure

McArthur River is a developed producing property, with sufficient surface rights to meet all of its mining operation needs as well as sufficient site facilities and infrastructure. Site facilities include a 1600 m long gravel airstrip and air terminal, permanent residence and recreation complex, administration and maintenance shops building, warehouse, water treatment plant and ponds, freeze plant, concrete batch plant, Pollock, No. 2, and No. 3 Shaft headframes and hoisthouses, site roads, powerhouse, electrical substations, ore loadout building, fresh water pumphouse and miscellaneous infrastructure.

Power to the McArthur River site is provided by a SaskPower 10 km long 138 kV feeder line from the main power transmission line. There are standby generators in case of grid power interruption.

The McArthur River mine site has access to sufficient water from nearby Toby Lake to satisfy all industrial and residential water requirements.

No tailings management facilities are required as McArthur River ore is sent to the Key Lake mill for processing. Processing facilities at Key Lake are discussed in Section 16.3. Tailings management facilities at Key Lake are discussed in Section 18.5.3.

Waste rock piles from the excavation of the three shafts and all underground development are confined to a small footprint within the surface lease. Waste piles have been segregated into three separate areas: clean waste, mineralized waste (>0.03% U_3O_8) and potentially acid generating waste (PAG). The latter two stockpiles are contained on engineered lined pads. The clean waste piles include piles for mine development waste, crushed waste, and various piles for concrete aggregate and backfill. Waste rock management is discussed in Section 18.5.3.

6 HISTORY

6.1 Ownership

There have been numerous changes in ownership of participating interests in the joint venture that governs the McArthur River property. The current owners, and their participating interests in the MRJV are as follows: Cameco has a direct and indirect participating interest of 69.805% and AREVA has a direct and indirect participating interest of 30.195%.

The original joint venture was established in 1976 between Canadian Kelvin Resources Ltd. and Asamera Oil Corporation Ltd. (Asamera) to explore the Keefe Lake area. Asamera was the operator of the joint venture. In 1977, SMDC, a predecessor company to Cameco, acquired a 50% interest in the joint venture.

Around 1979, the Keefe Lake Joint Venture proceeded to divide the Keefe Lake area into three separate project areas of Dawn Lake, McArthur River and Waterbury Lake (which includes a portion of the lands now known as Cigar Lake).

Effective January 1, 1980, a joint venture agreement was entered into to govern exploration of the McArthur River area and SMDC, holding a 50.75% participating interest in the joint venture at that time, was appointed the operator of the MRJV.

Between 1980 and 1988, SMDC was involved in a number of transactions of sales and purchases of participating interests in the MRJV.

In 1988, Eldorado Resources Limited merged with SMDC to form Cameco. In connection with that merger transaction, SMDC assigned to Cameco its 43.991% participating interest in the MRJV and Cameco became the operator of the MRJV.

In 1992, Cameco acquired an additional 10.0% participating interest in the MRJV and in 1995, Cameco entered into two transactions with Uranerz Exploration and Mining Limited (Uranerz) that resulted in Cameco holding, in total, a 55.844% participating interest in the MRJV.

Since 1995, there have been two significant changes in ownership in the MRJV:

- in 1998, Cameco bought all of the shares of Uranerz (and changed Uranerz's name to UEM Inc.), thereby increasing its direct and indirect participating interest in the MRJV to 83.766%; and

- in 1999, AREVA acquired one-half of the shares of UEM Inc., thereby reducing Cameco's direct and indirect participating interest in the MRJV to 69.805% and increasing AREVA's direct and indirect participating interest in the MRJV to 30.195%.

6.2 Exploration and Development History

6.2.1 General

Cameco, through its predecessor company, SMDC, became operator of the McArthur River project in 1980. Surface exploration programs, ranging from small line cutting crews to large helicopter supported drilling and prospecting camps, were active from 1980 through to 1992.

The McArthur River deposit was discovered by surface drilling in 1988. Additional surface diamond drilling from 1988 to 1992 further delineated the ore zone. Mineralization occurs at depths of 500 m to 640 m and is hosted in both the Athabasca sandstones and the underlying Aphebian metasedimentary gneisses. A graphitic, southeast dipping thrust fault is the source of a coincident electromagnetic conductor. The deposit does not have the extensive clay alteration halo or the cobalt-nickel-arsenide mineral association common to many other Saskatchewan uranium deposits.

In 1993, an underground exploration program, consisting of shaft sinking, lateral development, and diamond drilling was approved by government agencies. Approvals for mine construction and development were obtained in 1997. First production was achieved in December 1999.

Construction and development of the McArthur River mine was completed on schedule and mining commenced in December 1999. Commercial production was achieved on November 1, 2000.

The McArthur River deposit, originally called P2 North, is on the P2 grid situated on the north western boundary of the property (see Figure 5). Other significant, but sub-economic discoveries which are located on the property include the Harrigan Zone, the BJ Zone, and P2 Main. A brief history of exploration on the P2 grid is discussed below.

6.2.2 P2 Grid Exploration History

Routine prospecting in 1980 and 1981 discovered radioactive boulders about 10 km southwest of the McArthur River deposit. Although an on-property source for these boulders has never been proven, they did help to intensify exploration efforts in this portion of the property. Exploration on the P2 grid accelerated in 1984 following the detection of a basement conductor with reconnaissance geophysical surveying. Definition of the entire P2 conductor was completed in 1986. The open ended conductor extended for 12 km on the property and became a high priority exploration target.

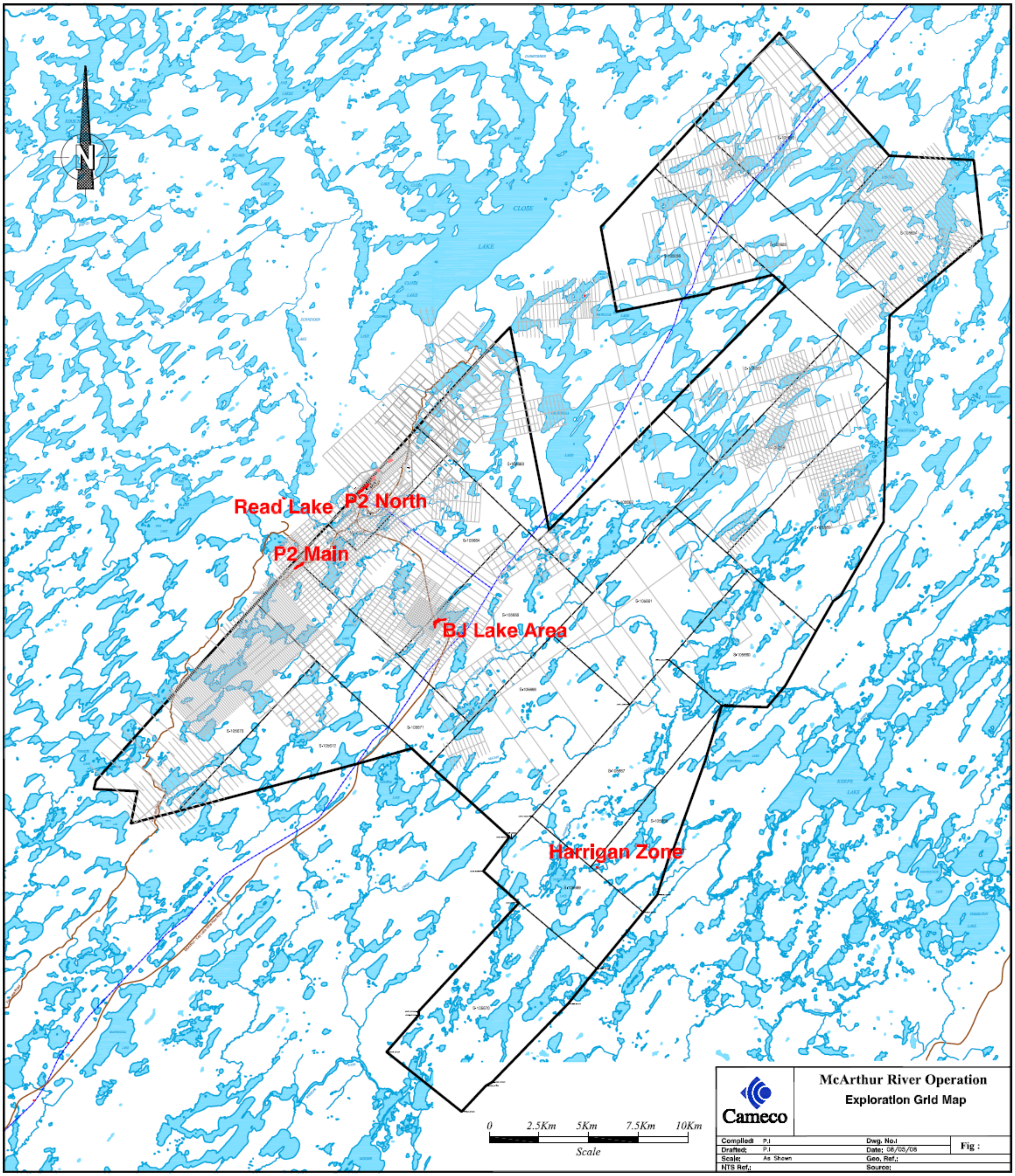
In 1985, drilling on the P2 conductor resulted in the discovery of the P2 Main sandstone hosted mineralization, associated with a major fault zone. Additional drilling to 1988 defined a 500 m long, sub-economic zone of mineralization with the best intersection being 1.38% U_3O_8 over 7.3 m.

In the summer of 1988, drilling along the northern portion of the conductor encountered structural disruption and sandstone alteration in hole MAC-195. MAC-196 was collared about 100 m to the west and intersected weak sandstone hosted mineralization, with characteristics similar to P2 Main. The next hole, 100 m north, intersected a similar but wider zone of mineralization. The last hole of the year, MAC-198, encountered the unconformity much higher than expected, but 65 m deeper it passed back into sandstone and intersected a 10 m thick zone of high-grade mineralization along the faulted basement/sandstone contact. Subsequent surface drilling programs in 1989, 1990, 1991, and 1992 delineated the mineralized zone over a strike length of 1,700 m and occurring at depths ranging between 500 m and 640 m. Since 1993 over 630 underground drill holes, totalling in excess of 56,000 m, have since provided detailed information for 750 m of the strike length. Over 1,400 additional underground diamond drill holes, totalling 85,000 m, were drilled for geotechnical information; probe and grout covers; service and drain holes; and freeze holes. Four distinct mineralized zones, identified as Zones 1, 2, 3, and 4, have been defined to date. Two additional Zones, A and B, are on the northern portion of the deposit and are indicated by surface drill holes only.

Diamond drilling to evaluate the P2 trend north of the McArthur River mine has been ongoing since 2004. As at December 31, 2008, approximately 80 surface drill holes totalling in excess of 42,000 m, comprising a combination of conventional and directional drilling, have tested the P2 structure at approximately 200 m intervals for a distance of 4.3 km north of the mine.

The exploration program for 2008 was a continuation of the “brownfield” drilling program which commenced in 2004. The area of focus was along the P2 trend to the north of Zone B. 2008 marked the second year of a three year accelerated "brownfield" exploration program with the goal to evaluate the full potential of the entire P2 trend.

Figure 5 – P2 Grid Map



6.3 Historical Mineral Resource and Mineral Reserve Estimates

The original McArthur River resource estimates were derived from surface diamond drilling. The drill hole data consists of assay results from 42 drill holes compiled with all relevant geological and technical data. The very high grade encountered in these drill holes justified the development of an underground exploration project. National Instrument 43-101 defines "historical estimate" as an estimate of mineral resources or mineral reserves prepared prior to February 1, 2001. Unless specified, reported estimates are for the McArthur River operation on a 100% basis and not solely for Cameco's share thereof.

6.3.1 Historical Estimates 1991 - 2000

McArthur River Mineral Resources and Mineral Reserves published in Cameco Annual Reports for year-ends 1991 to 2000 were estimated and disclosed prior to the adoption of NI 43-101 and should be considered as historical. Except for 2000 year-end, they were not classified in compliance with NI 43-101. Their classifications as "geological reserves" or "mineable reserves" do not conform to the current "CIM Definitions Standards for Mineral Resources and Reserves" since the categories used at the time are not acceptable today. In today's terminology, they would likely be equivalent to "Mineral Resources" or "Mineral Reserves" but still lacking proper resource and reserve sub-classification., These historical estimates are reported for historical purposes only. Except for the November 1995 historical resource model based on the pre-1992 surface drillholes, the historical estimates are not relevant or reliable as they have been superseded by a number of updated mineral resources and mineral reserves disclosures.

"Geological reserves" reported by Cameco for year-ends 1991 to 1994 are shown on **Table 6-1**. The estimates were based on 44 surface holes covering sections 7600N to 9300N. They were done using a cross-sectional method and a cut-off grade of 0.50%U_3O_8.

Table 6-1: Historical Resource Estimate – Cameco, October 1991

Year-ends	Type	Tonnes (x 1000)	Grade % U_3O_8	Lbs U_3O_8 (millions)
1991-1994	"Geological Reserves"	2,370	5.0	260

Notes: (1) See the cautionary statements for historical estimates in the first paragraph of Section 6.3.1.
(2) The necessary work to verify this historical estimate, its classifications and assumptions has not been completed. As such, this historical estimate should not be relied upon. It may not be equivalent to current classification definitions.

In November 1995, Cameco announced the results of an updated estimate of "geological reserves" and "mineable reserves". They are based on 37 surface holes and 50 underground diamond drill holes intersections above a cut-off of 0.5% U_3O_8 on sections 7600N to 9300N. The 1995 historical estimates are listed on **Table 6-2**. In Cameco Annual Report for year-end 1995 "geological reserves" and "mineable reserves" were reported respectively as resources and reserves. The 'geological reserves" were defined by a cross-sectional method on 21 vertical sections spaced at 50m and 100 m. The qualified person for this section, Alain G. Mainville, has verified the data, assumptions and methodology for the November 1995 estimate of "geological reserves", and found the estimate not relevant but reliable as a basis to report remaining mineral inferred resources defined by the pre-1993 surface drilling. As additional underground and surface drilling was added over the years, the mineral resources for the areas not drilled since 1992 were reported from the November 1995 resource model. The underground drilling, from which the "mineable reserves" were defined, was contained within the area between mine grid Northing 8125N and 8450N.

Table 6-2: Historical Resource & Reserve Estimates – Cameco, November 1995

Year-ends	Type	Tonnes (x 1000)	Grade % U_3O_8	Lbs U_3O_8 (millions)
1995-1997	"Mineable Reserves"	365.7	19.06	153.7
	"Geological Reserves"	859.0	12.02	227.8

Notes: (1) See the cautionary statements for historical estimates in the first paragraph of Section 6.3.1.
(2) The necessary work to verify the historical "mineable reserves" estimate, its classifications and assumptions has not been completed. As such, the historical "mineable reserves" estimate should not be relied upon. It may not be equivalent to current classification definitions.

The historical reserves and resources published by Cameco at the end of 1998 and 1999 are presented on **Table 6-3**. They are the result of a 3-year program of underground drilling in the area between 8187N and 8307N defined as Zone 2.

Table 6-3: Historical Resource & Reserve Estimates – Cameco, December 1998

Year-ends	Type	Tonnes (x 1000)	Grade % U_3O_8	Lbs U_3O_8 (millions)
1998-1999	Proven Reserves	505.0	22.15	246.5
	Probable Reserves	163.0	2.42	8.7
	Total Reserves	**668.0**	**17.33**	**255.2**
	Indicated Resources	859.0	12.02	227.8

Notes: (1) See the cautionary statements for historical estimates in the first paragraph of Section 6.3.1.
(2) The necessary work to verify this historical reserves estimate, its classifications and assumptions has not been completed. As such, this historical reserves estimate should not be relied upon. It may not be equivalent to current classification definitions.

McArthur River Mineral Resources and Reserves, published in Cameco Annual Report for year-end 2000 and listed on Table 6-4 are historical estimates. The classification of mineral resources and reserves and the subcategories of each, conformed to the definitions prescribed in the proposed NI 43-101 dated November 17, 2000 and defined by the Canadian Institute of Mining, Metallurgy and Petroleum as the CIM Definition Standards on Mineral Resources and Mineral Reserves and adopted by CIM Council on August 20, 2000. The year-end 2000 Mineral Reserves and Resources estimates reflected additional drilling in Zones 1, 2, 3 and 4, along with a density adjustment based on mining production during 2000. They are not relevant and reliable as they have been superseded with a number of updated mineral resources and reserves disclosures.

Table 6-4: Historical Resource & Reserve Estimates – Cameco, December 2000

Year-end	Type	Tonnes (x 1000)	Grade % U_3O_8	Lbs U_3O_8 (millions)
2000	Proven Reserves	768.0	21.00	355.5
	Probable Reserves	77.0	23.04	39.0
	Total Reserves	**845.0**	**21.18**	**394.5**
	Indicated Resources	614.0	10.74	145.4

Notes: (1) See the cautionary statements for historical estimates in the first paragraph of Section 6.3.1.
(2) The necessary work to verify this historical reserves estimate, its classifications and assumptions has not been completed. As such, this historical reserves estimate should not be relied upon. It may not be equivalent to current classification definitions.

6.4 Historical Production

The McArthur River operation received its first operating licence in October 1999 from the AECB who later became CNSC. The underground development completed in 1999 was sufficient to allow production mining to begin in the fourth quarter. Mine production was ramped up over the next two years to just under the operating license limit of 18.718 million pounds of U_3O_8 per year (see Table 6-5). During 2008 Cameco's share of the mine production was 12.2 million pounds U_3O_8 and portions of it remained stockpiled.

Table 6-5 - McArthur River Historical U3O8 Mine Production

Year	Tonnes (x 1000)	Grade % U_3O_8	Lbs U_3O_8 (millions)	Cameco's Share Lbs U_3O_8 (millions)	Comments
1999	-	-	-	-	One production raise mined ≈50,000lbs U_3O_8. Pounds carried over to 2000.
2000	43.7	11.6	11.174	7.800	
2001	48.0	16.2	17.166	11.983	
2002	52.5	16.0	18.524	12.931	
2003	45.4	15.2	15.243	10.641	Three-month shutdown due to water inflow event.
2004	55.9	15.2	18.699	13.053	
2005	60.4	13.9	18.512	12.922	
2006	57.6	14.7	18.698	13.052	
2007	59.6	14.2	18.718	13.066	
2008	53.2	14.9	17.502	12.218	
TOTAL	**476.3**	**14.7**	**154.236**	**107.666**	

Cameco's share of production of U_3O_8 at McArthur River/Key Lake was 11.6 million pounds for 2008, 0.4 million pounds less than the previous estimate of 12.0 million pounds. The production shortfall resulted from various process and equipment problems experienced at Key Lake. The problems encountered were corrected and Cameco's share of production for 2009 is expected to be 13.1 million pounds. Average metallurgical mill recovery for 2008 was 98.34%.

7 GEOLOGICAL SETTING

7.1 Regional Geology

The McArthur River deposit is located in the south-eastern portion of the Athabasca Basin, within the south-west part of the Churchill structural province of the Canadian Shield.

The Wollaston Domain, together with the Mudjatik Domain and the Virgin River Domain, form the Cree Lake Mobile Zone of the Churchill Structural Province (Lewry et al., 1978). The McArthur River area overlies the Wollaston Domain, near the contact with the Mudjatik Domain (see Figure 6). In general terms, the Wollaston Domain consists of Archean granitoid gneisses overlain by an assemblage of Aphebian pelitic, semipelitic, and arkosic gneisses, with minor interlayered calc-silicates and quartzites. These rocks are overlain by an upper assemblage of semipelitic and arkosic gneisses with magnetite bearing units. The major uranium deposits of the eastern Athabasca region, including McArthur River, are associated with graphitic members of the lower assemblage. The majority of the Wollaston Domain rocks have been influenced by mid to upper amphibolite facies metamorphism.

The Wollaston Domain basement rocks are unconformably overlain by flat lying, unmetamorphosed sandstones, and conglomerates of the Helikian Athabasca Group which is a major aquifer in the area.

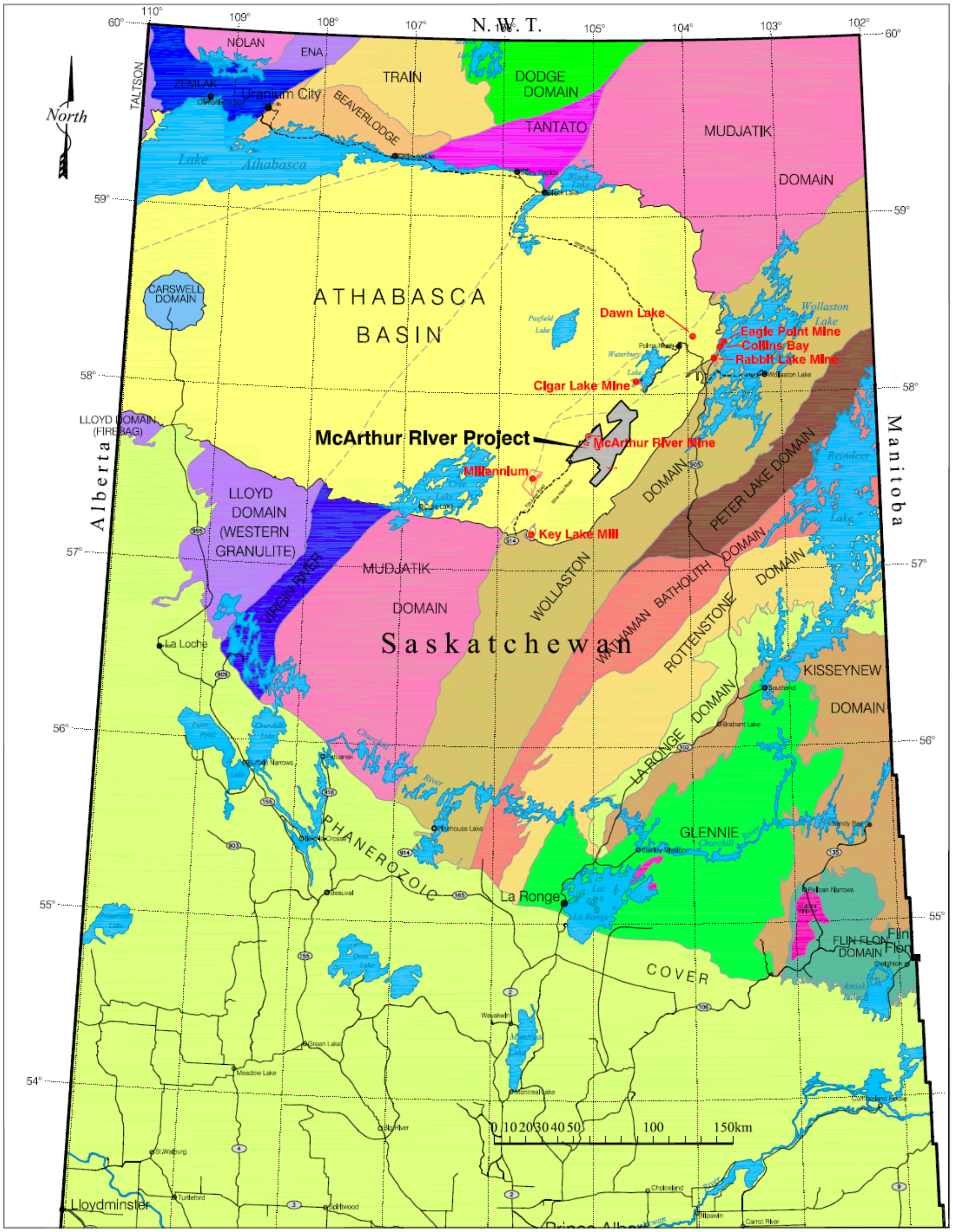


Figure 6 - McArthur River Property, Regional Geology

7.2 Local Geology

7.2.1 General

The McArthur River mineralization, generally occurring at depths ranging from 500 m to 640 m, is structurally controlled by the northeast-southwest trending (45° azimuth) P2 reverse fault which dips 40-65° to the southeast. In the deposit area, the fault has thrust a sequence of Paleoproterozoic graphitic metasedimentary rocks into the overlying late Paleoproterozic (Helikian) Athabasca Group sediments. The vertical displacement of the thrust fault exceeds 80 m at the northeast end of the deposit decreasing to 60 m at the southwest end.

The sub-Athabasca basement consists of two distinct metasedimentary sequences: a hanging-wall pelitic sequence of cordierite- and graphite-bearing pelitic and psammopelitic gneiss with minor meta-arkose and calc-silicate gneisses, and a sequence consisting of quartzite and silicified metaarkose and rare pelitic gneisses.

The Wollaston Domain stratigraphy in the deposit area has been divided by the mine geology staff into three blocks, based on their lithological and structural characteristics. Uppermost is the Hanging Wall Block, consisting of biotite and garnet gneiss, and calcsilicate. The Middle Block consists of cordierite gneiss, graphitic cordierite gneiss, biotite gneiss, and arkose. The main graphitic fault zone lies within the upper 20 m of the Middle Block. Underlying these units is the Quartzite Block, consisting of massive to faintly laminated quartzite. Quartzite was more resistive to erosion than the gneissic units and as a result the quartzite exists at the unconformity as a paleotopographic ridge. Pegmatite and granitic veins occur within all basement lithologies.

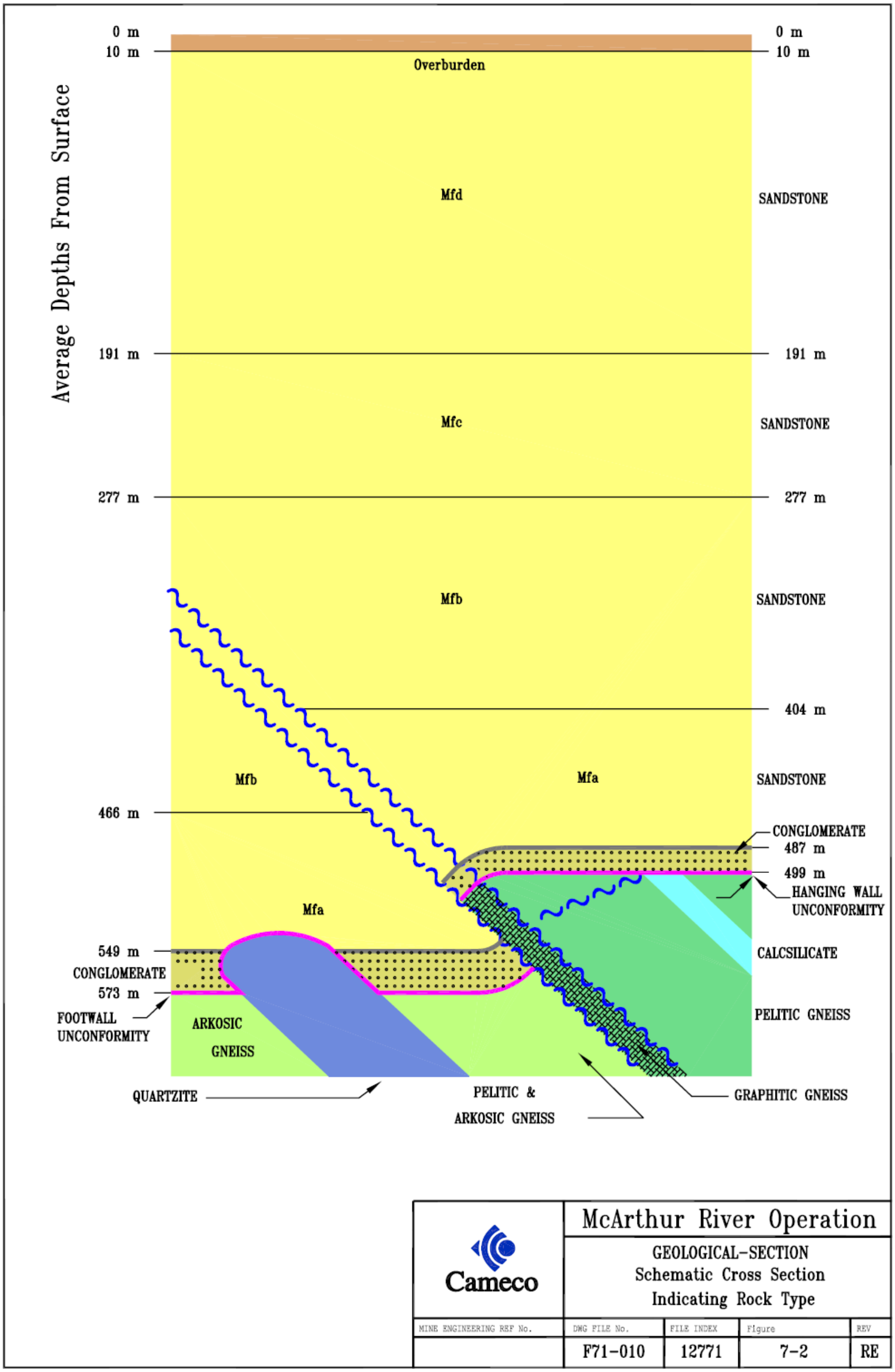
Athabasca Group rocks vary in thickness from 480 m over the hanging wall to 560 m over the footwall and consist of the units A, B, C, and D of the Manitou Falls Formation (see Figure 7. A basal conglomerate containing pebbles and cobbles of quartzite unconformably overlies the crystalline rocks of the Wollaston Group.

Six significant mineralized bodies (Zones 1, 2, 3, 4, A & B) are present, five of which are located in the sandstone wedge of the footwall (see Figure 8). The Zone 2 orebody is predominantly basement hosted and occurs largely in the footwall of the P2 reverse fault (see Figure 7 and Figure 10). Over 150 million pounds U_3O_8 were extracted from Zone 2. It contains one third of the current McArthur River uranium Mineral Reserves.

The major structural feature of the deposit is the P2 fault; however, a series of steeply dipping, east-southeast–west-northwest transcurrent faults (100°–110°) are also present. Those faults locally displace mineralization (see Figure 9).

lteration minerals in the sandstone are mostly quartz, kaolinite, chlorite, and dravite. Basement alteration includes illite, chlorite, and dravite, with local apatite and carbonate. The unusual characteristics of this mineralization include an abrupt transition from weakly altered basement host rock to intense chlorite alteration and monomineralic high-grade uranium mineralization over distances of less than a metre. Two uranium-rich whole-rock samples were dated by the U/Pb method and provided upper intercept discordia ages of 1348 ± 16 and 1521 ± 8 Ma, the older being interpreted as the age of the primary uranium mineralization and the younger as the age of a remobilization event.

Figure 7 – McArthur River Deposit – Schematic Cross-Section



7.3 Structure

The northeast trending P2 thrust fault is the dominant structural feature of the McArthur River deposit (see Figure 8 and Figure 10). As a general rule, thrust faulting occurs along several graphite-rich fault planes within the upper 20 m of the Middle Block basement rocks. These faults parallel the basement foliation and rarely exceed one metre in width. Structural disruption is more severe in the overlying brittle and flat lying sandstone, evidenced by broad zones of fracturing and brecciation. Zone 4 mineralization is typical for the majority of the deposit, occurring in the vicinity of the main graphitic fault zone, at or near the contact between the upthrust basement rocks and the Athabasca sandstone. The tectonic setting for Zone 2 differs from the remainder of the deposit. At Zone 2, the Quartzite Block occurs within 50 m of the main graphitic fault zone, closer than anywhere else on the deposit. While the movement along the thrust fault is limited to the main graphitic unit over the remainder of the deposit, at Zone 2 the entire middle block is also uplifted, appearing to ride along the eastern slope of the quartzite ridge. Zone 2 mineralization is almost entirely hosted within this structurally disrupted Middle Block.

Two sets of cross faults are present at McArthur River, they strike at 100-110^{o} and at 160-170^{o}, both steeply dipping and generally within 30^{o} of vertical. Although displacement across these faults appears to be relatively minor, they are interpreted to have had a significant impact on the orebody, often truncating zones of high-grade mineralization. Figure 9 is a plan view of the 950 m elevation illustrating the interpreted 100-110^{o} faults.

A significant vertical fault developed, at least locally, in the Zone 2 area. The faulted zone along the eastern edge of the Quartzite Block exists as a zone of very weak ground, consisting of sand, clay, and high pressure water that has proven very difficult to drill.

McArthur River Operation

Underground Development and Mineralized Zones from Drilling

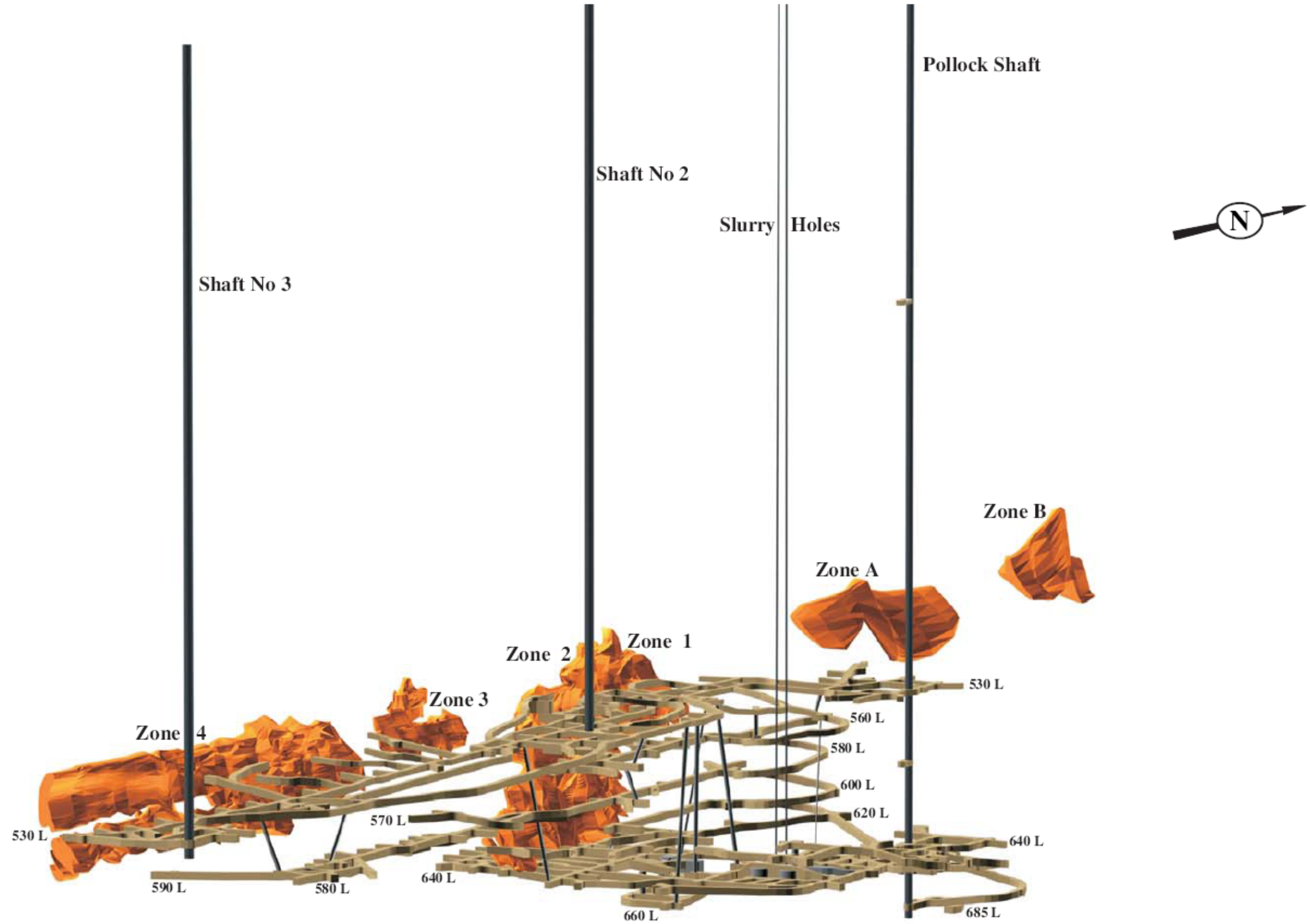
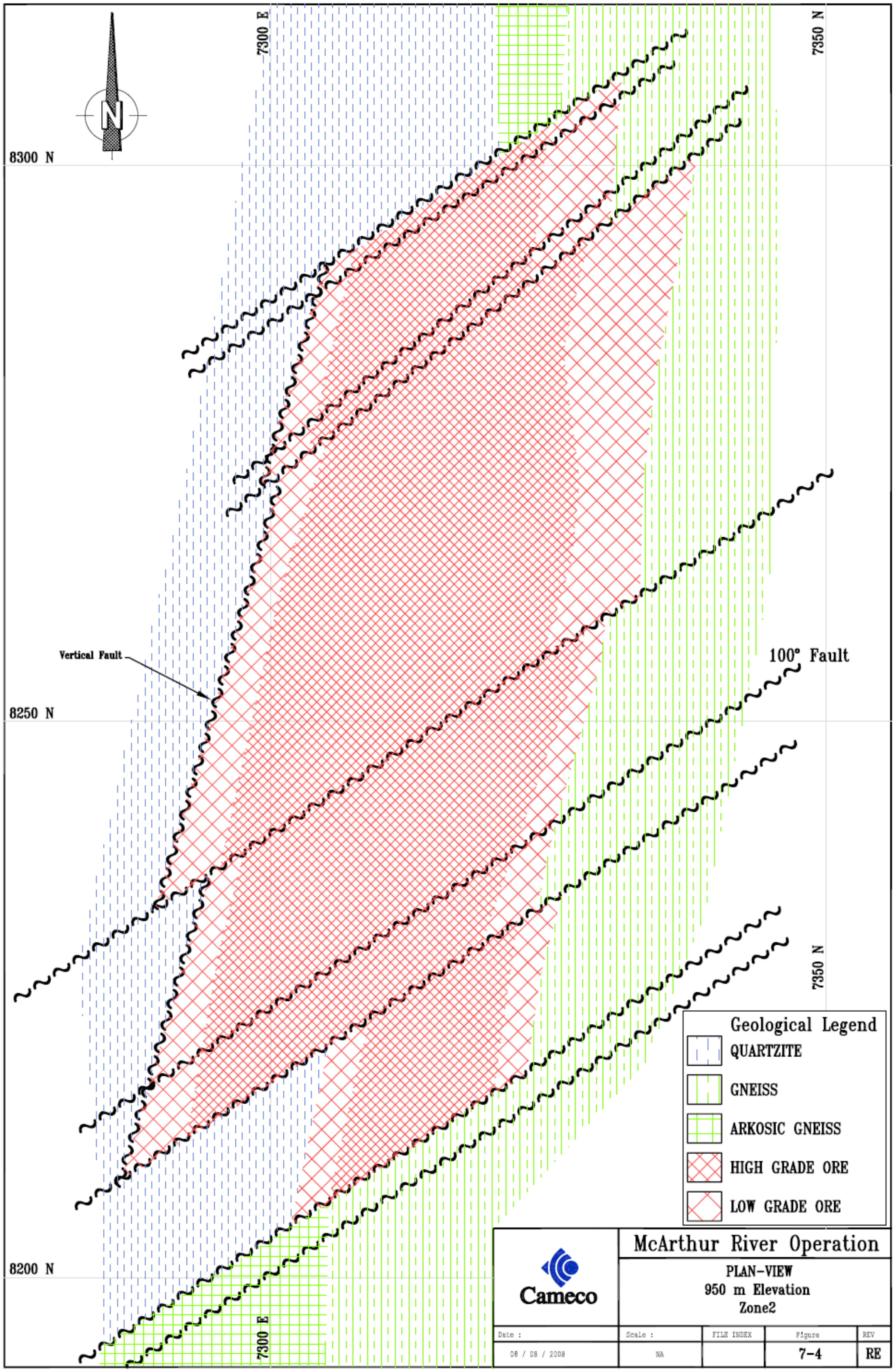


Figure 9 – Plan View of Zone 2



7.3.1 Alteration

As in most Athabasca basin deposits, host rock alteration has played a critical role in the development of rock strength and geochemistry.

The most relevant aspects of alteration in terms of mining and development of the deposit are:

- the effect of alteration on ground stability, particularly when associated with tectonism,
- the relationship between alteration and groundwater movement, and,
- the effect of alteration on rock chemistry particularly waste rock and its acid generating capability.

Although all rocks at McArthur River are altered to some degree, the alteration is strongest in or near faults, often associated with mineralization. The nature and effect of the alteration also varies depending on rock type or location. For example, strong clay alteration greatly decreases rock strength while at the same time impeding the flow of water in fault zones. From a mining perspective, this is both a positive and negative effect.

Pervasive silicification is the predominant “alteration” characteristic of the sandstone. Intensity of silicification increases 375 m below surface and continues to the unconformity. While this process reduced permeability of the sandstone in general, and prevented development of a clay alteration halo around the mineralization, this brittle sandstone is strongly fractured along the path of the main fault zone. Ground conditions in this area are poor, with high fracture density and permeability.

In the pelitic hanging wall basement rocks above the thrust fault, chloritization is common. Graphitic zones and clay filled faults require appropriate ground control. Pyrite-bearing rocks, often associated with graphitic units, require proper waste rock management to control potential acid mine drainage.

Similarly, in the basement hosted Zone 2, the overlying gneisses are strongly chloritized, intensely dravitized, and bleached in areas. The contact with the underlying quartzite is typically faulted and highly altered, resulting in poor ground conditions and high permeability. This area has been frozen prior to mining.

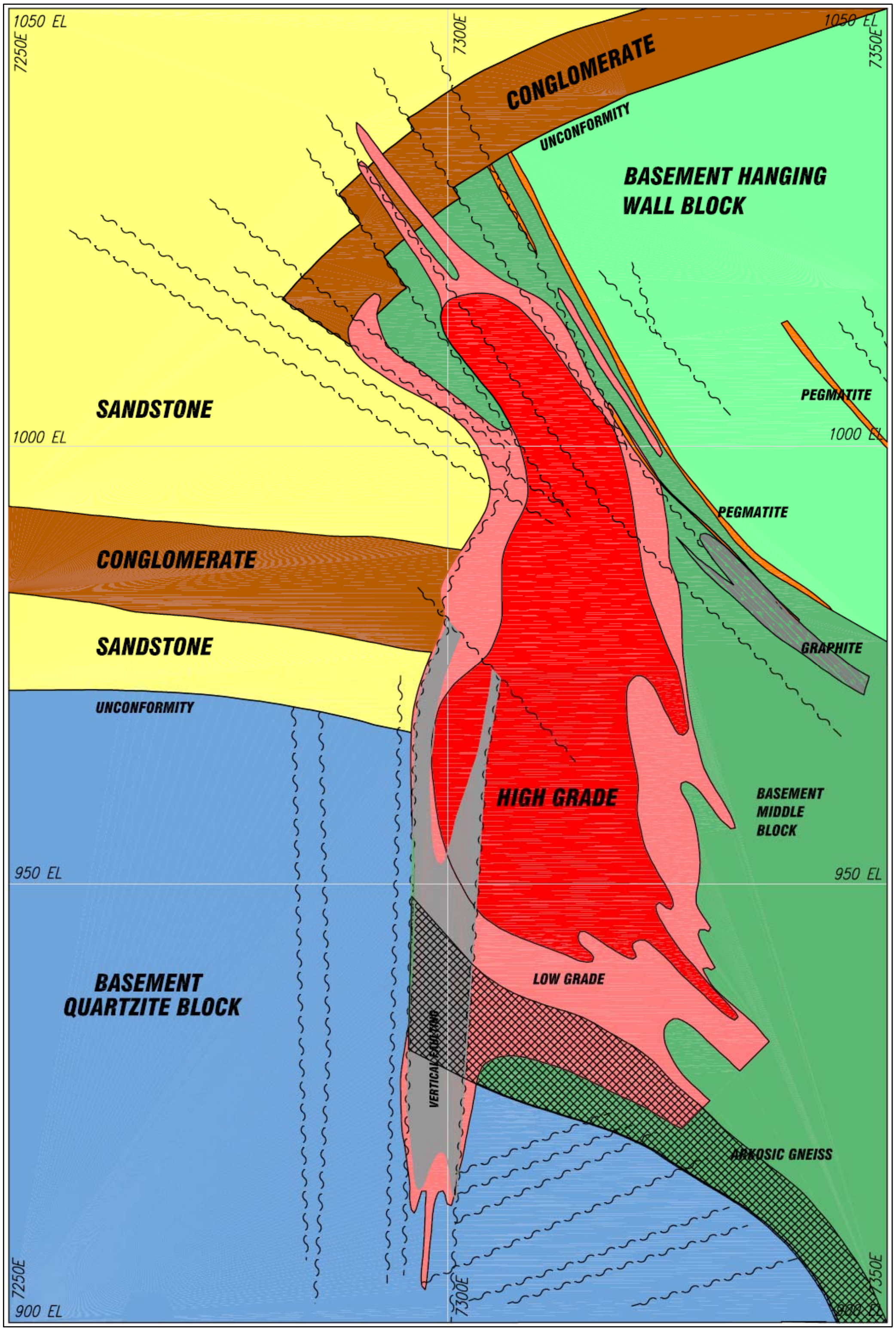
A final zone of alteration is the paleoweathered surface of the basement. This zone extends for varying depths from the unconformity downwards and is common throughout the basin. At McArthur River the paleoweathered zone is generally hard, competent, and hematized. The zone is thicker and more conspicuous in the footwall basement rocks, hydrothermal alteration having overprinted much of the paleoweathering profile in the hanging wall basement wedge.

7.4 Property Geology

All of the McArthur River ore zones are associated with the graphitic P2 thrust fault. With the exception of Zone 2, most of the mineralization in Zones 1, 3, 4, A and B occurs in both the Athabasca sandstone and adjacent basement rocks, near the main zone of thrust faulting. Mineralization is generally within 15 m of the basement/sandstone contact with the exception of Zone 2.

Zone 2 mineralization occurs deeper in the basement rock in a unique area of the deposit (see Figure 10). At Zone 2, a massive footwall quartzite unit lies in close proximity to the main zone of thrust faulting. The presence of this quartzite unit has resulted in a structurally disrupted zone that has affected a wide block of the footwall basement rocks. This 100 m long segment of the basement rock hosts the Zone 2 mineralization. To the north and to the south, the quartzite unit trends away to the west and the tectonics of the thrust fault returns to a more planer nature (Figure 10).

Figure 10 – Typical Zone 2 Geological Section Looking North



8 DEPOSIT TYPES

McArthur River is an unconformity-associated uranium deposit. The geological model was confirmed by underground drilling, development and production activities. Similar deposits include: Rabbit Lake, Key Lake, Cluff Lake, Midwest Lake, McClean Lake, Cigar Lake and Maurice Bay in the Athabasca uranium district (Saskatchewan, Canada), Kiggavik (Lone Gull) Thelon Basin district (Nunavut, Canada), Jabiluka, Ranger, Koongarra and Nabarlek, Alligator River district (Northern Territory, Australia). Although these deposits belong to the unconformity-associated model, all are different. Uranium mineralization in the Nunavut and Australian deposits is all hosted in the basement lithologies whereas in the Athabasca deposits, mineralization is present in both the basement and overlying sandstone. Another “key” difference is that the Athabasca deposits are of considerably higher grade.

Unconformity-associated uranium deposits comprise massive pods, veins, and/or disseminations of uraninite spatially associated with unconformities between Proterozoic siliciclastic basins and metamorphic basement. The siliciclastic basins are relatively flat-lying, un-metamorphosed, late Paleoproterozoic to Mesoproterozoic, fluvial red-bed strata. The underlying basement rocks comprise tectonically interleaved Paleoproterozoic metasedimentary and Archean to Proterozoic granitoid rocks. Uranium as uraninite (commonly in the form of pitchblende) is the sole commodity in the monometallic sub-type and principle commodity in the polymetallic sub-type that includes variable amounts of Ni, Co, As and traces of Au, Pt, Cu and other elements. Some deposits include both sub-types and transitional types, with the monometallic tending to be basement-hosted, and the polymetallic generally hosted by basal siliciclastic strata and paleo-weathered basement at the unconformity.

Uranium minerals, generally pitchblende and coffinite, occur as fracture and breccia fillings and disseminations in elongate, prismatic-shaped or tabular zones hosted by sedimentary/metasedimentary rocks located below, above or across a major continental unconformity. Orebodies may be tabular, pencil shaped or irregular in shape extending as much as a few kilometres in length. Most deposits are limited to less than a 100 m below the unconformity. The Jabiluka and Eagle Point deposits, however, are concordant within the Lower Proterozoic host rocks and extend for several hundred metres below the unconformity. Most deposits fill pore space or voids in breccias and vein stockworks. Some Saskatchewan deposits are exceptionally rich with areas of “massive” pitchblende/coffinite. Features such as drusy textures, crustification banding, colloform, botryoidal and dendritic textures are present in some deposits. The mineralogy of these deposits is typically pitchblende (Th-poor uraninite), coffinite, uranophane, thucolite, brannerite, iron sulphides, native gold, Co-Ni arsenides and sulpharsenides, selenides, tellurides, vanadinites, jordesite (amorphous molybdenite), vanadates, chalcopyrite, galena, sphalerite, native Ag and PGE. Some deposits are “simple” with only pitchblende and coffinite, while others are “complex” and contain Co-Ni arsenides and other metallic minerals. McArthur River fits into the “simple” category as it is essentially monomineralic uraninite.

Typical alteration consists of chloritization, hematization, kaolinization, illitization, and silicification. In most cases hematization is due to oxidation of ferrous iron bearing minerals in the wallrocks caused by oxidizing mineralizing fluids. The intense brick-red hematite adjacent to some high grade uranium ores is, however, probably due to loss of electrons during radioactive disintegration of U and its daughter products. An interesting feature of the clay alteration zone is the presence of pseudomorphs of high grade metamorphic minerals, such as cordierite and garnet, in the retrograded basement wallrock.

The location of mineralization is controlled by a mid-Proterozoic unconformity and favourable stratigraphic horizons within Lower Proterozoic host rocks. These strata are commonly graphitic. Local and regional fault zones that intersect the unconformity are also important features.

Deposits of this type are believed to have formed through an oxidation-reduction reaction at a contact where oxygenated fluids meet reducing fluids. The unconformity provides that contact. Graphitic faults like the P2 fault at McArthur River may have been the conduit for the reducing fluids.

The geological setting at McArthur River is similar to that of Cigar Lake in that the sandstone overlying the basement rocks of the deposit contains significant water at hydrostatic pressure.

9 MINERALIZATION

Uranium mineralization has been delineated from surface drilling over a strike length of 1700 m and occurring at depths ranging between 500 m to 640 m below surface. Ore widths are variable along strike but the most consistent, high grade mineralization occurs proximal to the main graphitic thrust fault around the "nose" of the upthrust basement block. Less consistent and generally lower grade mineralization occurs down dip along this fault contact between basement rock and sandstone.

The P2 thrust fault is the most important mineralization control for the McArthur River deposit. Uranium occurs in both the Athabasca sandstone and the overlying basement rock near the main zone of thrust faulting. Mineralization is generally within 15 m of the basement/sandstone contact with the exception of Zone 2. Less significant zones of mineralization may occur further from the contact, usually in the sandstone, associated with subsidiary fracture/fault zones or along the margins of flat lying siltstone beds.

Zone 2 mineralization occurs deeper in the basement rocks in a unique area of the deposit. Here a footwall quartzite unit lies in close proximity to the main zone of thrust faulting. In this area of structural disruption, high-grade mineralization occurs not only in the hanging wall basement wedge but also overlies the footwall quartzite unit. The pelitic host rock in this basement zone is relatively competent but strongly chloritized. The strike extent of this deeper basement mineralization is approximately 100 m.

In general, the high-grade mineralization, characterized by botryoidal uraninite masses and subhedral uraninite aggregates, constitutes the earliest phase of mineralization in the deposit. Pyrite, chalcopyrite, and galena were also deposited during this initial mineralizing event. Later stage, remobilized uraninite occurs as disseminations, veinlets, and fracture coatings within chlorite breccia zones and along the margins of silt beds in the Athabasca sandstone. Nickel, cobalt, and arsenic bearing minerals have only been detected in trace amounts with the aid of a microscope.

10 EXPLORATION

Mineral Lease ML-5516, which hosts the McArthur River deposit, sits on the western edge of a block of 21 claims which comprise the McArthur River project.

10.1 Asamera 1976 – 1979

In September 1976, the Keefe-Henday Joint Venture was formed between Canadian Kelvin Resources Ltd. and Asamera. This joint venture included all of what would later become the Dawn Lake, Waterbury Lake (portions of which are now known as Cigar Lake), and McArthur River projects. Asamera, as the operator, conducted various field investigations from 1976 to 1979, including airborne and ground geophysical surveys followed by lake sediment and water sampling programs. Seventeen diamond drill holes were completed during the 1978 and 1979 campaigns on what is now known as the McArthur River property.

10.2 SMDC / Cameco 1980 – 1993

In January of 1980, SMDC took over as operator of the McArthur River project. During the years 1980 to 1992, SMDC (which merged with Cameco in 1988) completed various airborne and ground geophysical programs, lake sediment and water sampling programs, boulder prospecting, and substantial diamond drilling.

Surface exploration on the McArthur River project was halted in 1993 with the shift in focus to the development of the McArthur River mine. Refer to Section 6.2.2 P2 Grid Exploration History, for a discussion of exploration drilling that resulted in the discovery of the McArthur River deposit.

10.3 Recent Exploration 2000 – Present

Surface exploration resumed on the McArthur River project in 2000 (see Table 10-1) after an eight year hiatus in drilling (see **Table 11-1**). In 2000 – 2001, historic geological and geophysical data was compiled and reassessed. Project-wide coverage by an airborne GEOTEM survey and geochemical surveys over select portions of the project area were also undertaken during this period.

During 2002 – 2004, airborne (magnetic gradiometer) and ground (resistivity, gravity, TDEM and AMT) geophysical surveys refined the basement geology along the P2 trend. Diamond drilling during this period predominantly focused on the P2 trend both to the north and south of the mine. A total of 7,400 m in 14 holes were drilled in this three year period. Positive drill results from 0.1% over 1.0 m to 12.1% U_3O_8 over 30 m north of the Pollock Shaft, culminated in the definition of Zone A.

Consecutive diamond drill programs (2005 – 2008) have continued to evaluate the P2 trend, north of the current underground workings. During this period almost 39,000 m was drilled in 70 drill holes comprising a combination of conventional and directional drilling. In 2005, systematic surface diamond drilling to evaluate the P2 trend north of the McArthur River mine commenced. The P2 structure has now been tested at approximately 200 m intervals for a distance of four kilometres north of the mine. Results continue to be encouraging. High-grade mineralization (including 36% U_3O_8 over 30 m) was encountered 500 m north of Zone A and low-grade mineralization, intersected by multiple holes, a further 600 m along strike of the P2 trend. Drill definition of this mineralization (Zone B), as well as continuation of the drill testing of the northern strike of the P2 trend, is on-going.

Exploration efforts over the past several years have demonstrated that the P2 trend is still a prime target for finding additional high-grade deposits. As currently defined, the P2 trend extends for 18 km but has only been adequately tested from surface for approximately 6.0 km leaving 65% of this highly prospective trend untested or significantly under-tested. The positive drill results encountered over the last several years confirm that the potential for significant uranium mineralization is still present along strike to the north and south.

The focus in 2009 is for underground drilling in the south of Zone 4, labelled Zone 4 South, and conversion of Mineral Resources to Mineral Reserves. Tunnelling of a north exploration drift was initiated in 2007 to follow-up on the surface exploration drilling results. The north exploration development will likely continue in 2010, followed by an underground diamond-drilling program to delineate Zones A and B, previously identified from surface, in order to develop mine plans (See

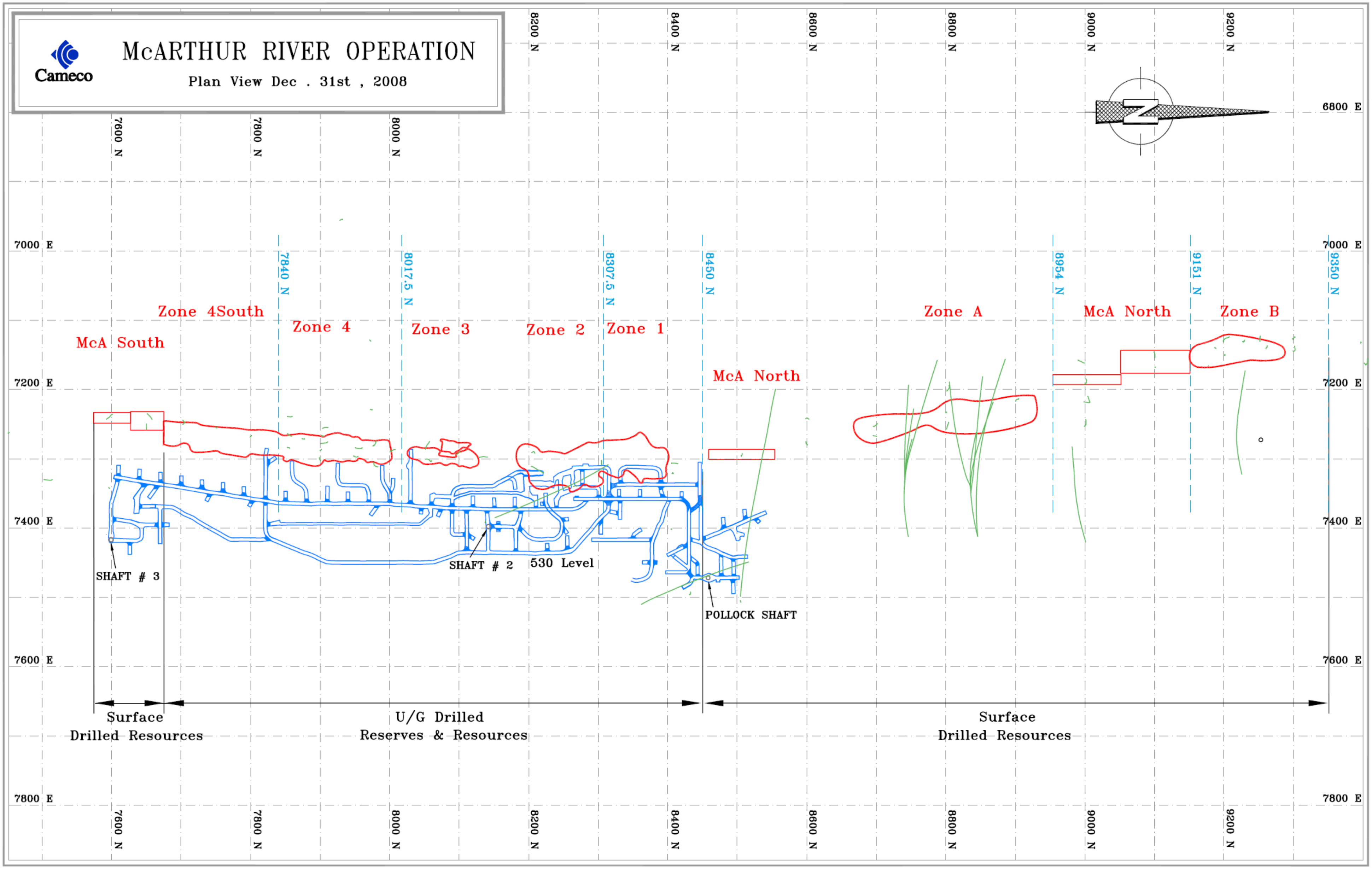
Surface drill testing of the regional P2 fault structure north of the mine will be completed by the first quarter of 2009. Systematic surface evaluation of the P2 fault structure south of the mine, by designed 200 m spaced drillhole coverage, is planned for consecutive diamond drill programs in 2009 – 2010.

The 2009 budget for underground delineation diamond drilling is for 6,500 m. This includes approximately 5,000 m (50 holes) for Zone 4 South and 1,500 m (15 holes) for Zone 1.

Table 10-1: Summary of Surface Exploration at McArthur River 2000 – 2008

Year	Drilling			Airborne Geophysics		Ground Geophysics		Other Exploration
	Type	**No. Holes**	**Metres Drilled**	**Type**	**Line (km)**	**Type**	**Length (km)**	**Type**
2000								Compilation, Historical drillcore logging and sampling, Soil gas
2001				GEOTEM	1,533			Compilation, Historical drillcore logging and sampling, Soil gas
2002	Core	4	2,618			Gravity	19.3	Compilation, Historical drillcore logging and sampling
						Pole-Dipole Resistivity	21.6	
						AMT -Audio magnetotellurics	68 Stations	
2003	Core	2	1,299	Triaxial Gradiometer	1,176	Fixed Loop TEM	38.2	Historical drillcore logging and sampling, SPOT5 Satellite Imagery
						Pole-pole resistivity	12.3	
2004	Core	8	3,481			Fixed Loop TEM	137	
						In-loop Soundings	23.1	
2005	Core	5	3,309					
2006	Core	10	5,361					LIDAR DEM survey, Historical drillcore logging and sampling
2007	Core	25	13,840	Triaxial Gradiometer	4,457	Fixed Loop TEM	332.6	Compilation, Historical drillcore logging and sampling
						In-loop Soundings	3.45	
2008	Core	30	16,479					
Total		**84**	**41,026**		**5,633**		**584.2**	

Figure 11 – Map of Surface Drilling



11 DRILLING

11.1 Surface Drilling

Surface drilling operations have been carried out by a variety of contractors since 2002. Major Midwest Drilling Inc. (Midwest) of Flin Flon, Manitoba carried out the 2002 drill program using a Boyles 38 drill mounted on skids and other ancillary equipment. Drill hole deviation surveys were completed by Midwest using a Reflex EZ-SHOT™ instrument.

Boart Longyear Inc. (Longyear) of Saskatoon, Saskatchewan completed all diamond drilling operations on the McArthur River operation between 2003 – 2006. One skid-mounted Longyear 50 drill and ancillary equipment was utilized for these drill programs. Longyear personnel completed drill hole deviation surveys using a Reflex EZ-SHOT™ instrument.

Hy-Tech Drilling Ltd. (Hy-Tech) of Smithers, British Columbia, has carried out drilling operations since 2007. Two skid mounted Tech-5000 drill rigs and ancillary equipment were utilized for these drill programs. Hy-Tech personnel completed drill hole deviation surveys using a Reflex EZ-SHOT™ instrument

A computer-coded core logging system was used for logging and storing drill core data. Drill core data was collected and entered directly into IPAQ® Pocket PC and Palm™ handheld organizers. Core radioactivity was measured and recorded using an SRAT-SPP2 scintillometer.

All holes were radiometrically probed with a combination of Mount Sopris logging equipment. Probe selection was based on anticipated grades expected from visual and radiometric examination of the core. All probing equipment is calibrated at the beginning of each field season using reference pits containing known grades of uranium ore, at the Saskatchewan Research Council (SRC) facilities in Saskatoon.

All drill hole locations are verified in the field by differential GPS or in the case of holes near the mine infrastructure by the mine site surveyors. The location of the surface drill holes is shown on Figure 12. A summary of surface drilling by year is shown in **Table 11-1**. Holes are generally drilled on sections spaced at between 50 and 200 m with 12 to 25 m between holes on a section where necessary. Drilled depths average 670 m. Vertical holes generally intersect the mineralization at angles of 25 to 45 degrees, resulting in true widths being about 40% to 70% of the drilled width. Angled holes usually intercept the mineralized material perpendicularly, giving true width.

Figure 12 - Surface Drill Collar Location Map

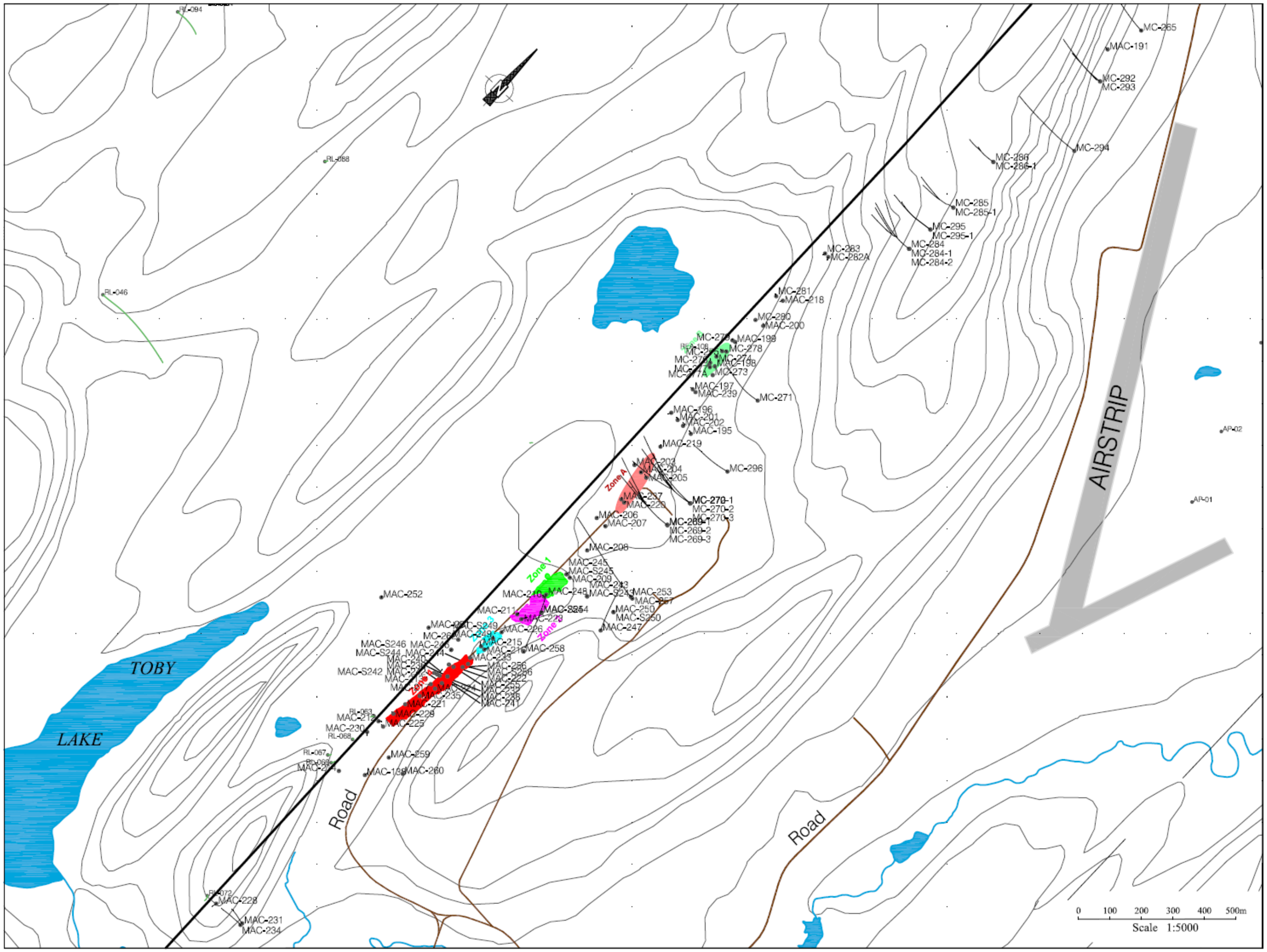


Table 11-1: Summary of Surface Drilling by Year

Year	Company	No. of Holes	Metres Drilled
1978	Asamera	4	1,187
1979	Asamera	13	2,764
1980	SMDC	22	6,412
1981	SMDC	42	10,731
1982	SMDC	35	9,877
1983	SMDC	19	7,445
1984	SMDC	19	9,092
1985	SMDC	17	8,766
1986	SMDC	9	5,302
1987	SMDC	29	16,123
1988	SMDC	15	8,473
1989	Cameco	14	9,118
1990	Cameco	15	9,585
1991	Cameco	15	9,330
1992	Cameco	25	8,933
1996	Cameco	3	1,662
2002	Cameco	4	2,618
2003	Cameco	2	1,299
2004	Cameco	8	3,481
2005	Cameco	5	3,309
2006	Cameco	10	5361
2007	Cameco	25	13,840
2008	Cameco	30	16,479
Totals		**380**	**161,857**

11.2 Underground Drilling

Underground delineation drilling began in 1994 using a 60 HP LM37 drill. It soon became apparent that drilling conditions were extremely challenging. High water pressures combined with zones of sand and clay were often impossible to drill through and occasionally threatened the security of the mine and the safety of the drillers.

As a result, the concept of drilling ‘under pressure’, to duplicate surface drilling conditions, was proposed. N. Morissette of Haileybury, Ontario designed the necessary equipment to drill under pressure and since then virtually all of the drilling at McArthur River has used this collar security as well as 120 HP, LM75 or 200 HP, LM150 drills.

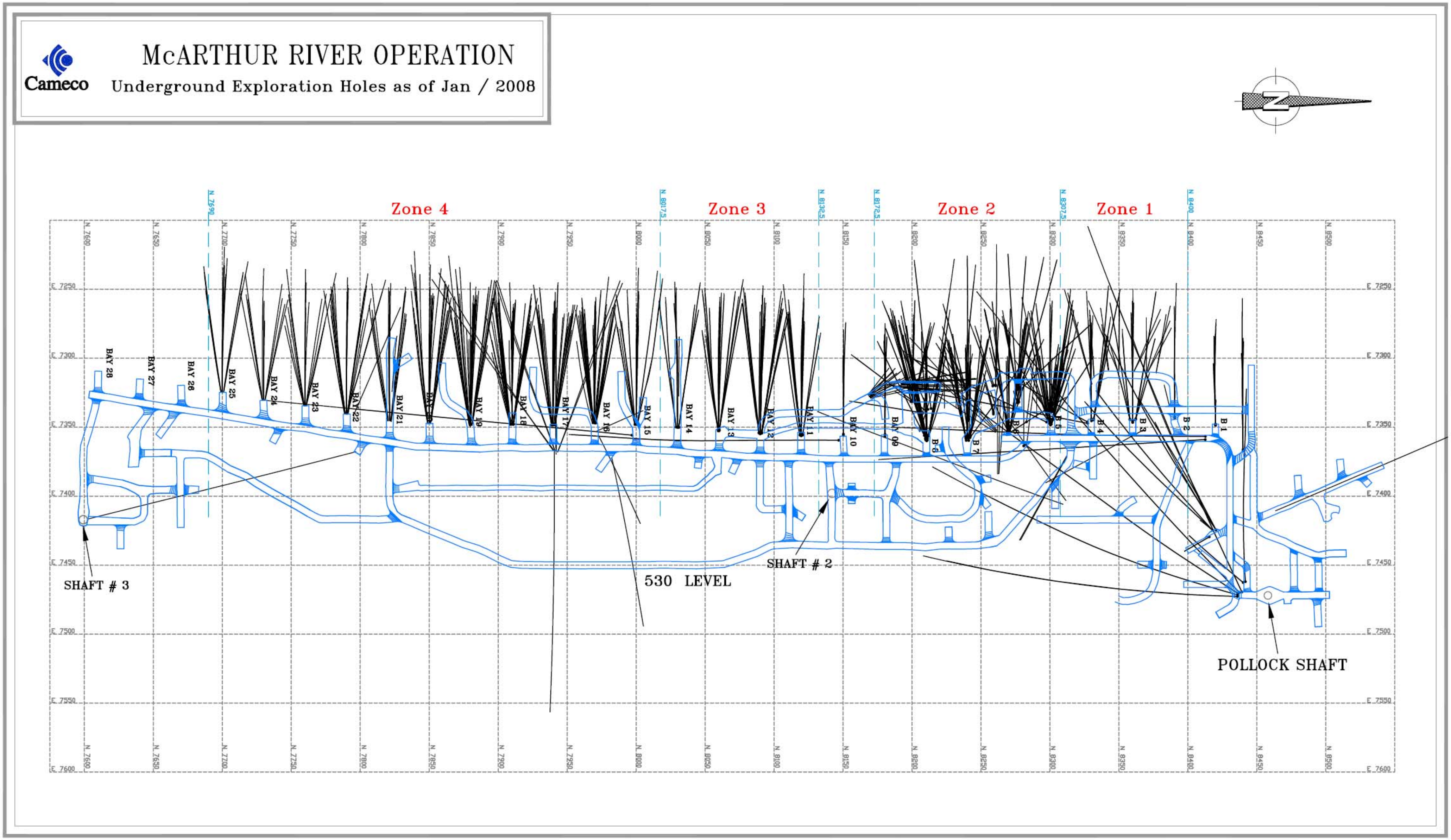
This system, which uses an auxiliary Bean Pump, allows the driller to pump water down the drill rods and down the annulus of the hole simultaneously. The hole can be kept under full or partial pressure by adjusting the discharge. Under full pressure, all cuttings must flow into the formation.

Detailed delineation diamond drilling has been completed from underground drill bays over a strike length of 750 metres, although a few sections still require some additional fill-in drilling. All of this detailed drilling has occurred over the southern portion of the deposit (see Figure 13). Underground development has begun on the northern portion of the deposit, which will allow for future delineation drilling.

The delineation drilling has been accomplished from 30 m spaced drill bays excavated on the western side of the main drift on the 530 level. Each drill bay would have one section of holes drilled directly west (on the mine grid), followed by sections that are angled just to the north and just to the south, ultimately resulting in three, 10 m spaced sections through the orebody. Hole spacing within each section is targeted to be 10 metres, at the expected mineralized intersection. Each hole was gamma logged with a downhole radiometric probe. Radiometric probing was at 0.1 m spacing in the radioactive zones and 0.5 m in unmineralized zones. Deviation measurements were taken with either a Sperry Sun instrument or a Reflex Maxibor® instrument. Collar locations were surveyed after the drill moved out of the bay.

Underground exploration drilling and development continued in 2008. Activity for 2009 focuses on evaluation of Mineral Resources, mainly to the south of the estimated McArthur River Mineral Reserves. In 2008, Cameco concluded that Mineral Resources to the south of the mine have greater near-term development potential for future mining due to established infrastructure and were made a higher priority exploration target. Mineral Resources to the north of the mine are planned for further evaluation in either late 2009 or 2010, depending on the progress made in the south of the mine.

Figure 13 - Map of Underground Drilling



11.3 Core Logging – Underground Diamond Drilling

The drill core was systematically logged, photographed, and racked outdoors. Drill hole data was entered into a geological database. Cross sections were generated and interpretations were made by the geologists. The procedures are as follows:

From the drill to the core yard:

Core is drilled and placed in boxes by the drillers. Run markers are placed at the end of each run. At the completion of each box, a lid is placed on the box and secured in place then stacked on a pallet. At the completion of the hole the boxes are secured to the pallet and the core is moved to the shaft station to be hauled to surface. Once on surface, the pallet is hauled to the core yard by site services.

Move the core into the core shack:

The first box is hauled into the core shack and placed on the rack. The lid is removed and the core is scanned with a SPP2 scintillometer. Any boxes with readings greater than 500 counts per second (cps), after correction for background radioactivity have their ends painted red. This process is continued, arranging the boxes in numerical order, until the end of the hole.

Labeling:

The beginning depth of each core box is measured from the closest run marker and written on the top left corner. Labels are generated using a metal punch tape and stapled to each box. Information on the label includes the hole number, box number and the depth interval.

Core Recovery:

This log records the percentage of core recovered from an individual drilling interval. The length of core recovered between run blocks is measured. The recovery percent is the ratio of the measured length to the drilled length.

Mineralization:

The boxes with red ends (>500 cps) are measured for mineralization. After determining the background reading near the scanning area, the first red painted core box is laid on the scanning area and marked up in 10 cm intervals. With a lead-shielded SPP2 the core is scanned in 10cm intervals until the end of the box and the readings are marked on the box as well as recorded on paper.

Geotechnical Log:

Geotechnical logging assigns a visual rock competency value to the drill core. Whenever the rock competency changes the interval and value are recorded.

Rock Mass Rating:

RMR logging considers five factors each of which is assigned a number from a discrete range. The five numbers are added together to calculate the overall rock mass rating for each interval and recorded.

Lithology Log:

The lithology log describes in sequence all major lithology units. Within each unit major structures, fracture intervals, alteration, mineralization, foliation, as well as overall rock competency are also described and recorded.

Photography:

Core boxes are laid out in order on the photo rack.. The core is sprayed with water and digital photos are taken. Digital photos are printed and filed with the rest of the core logs as well as stored electronically. At this point the core is hauled outside to the core racks.

Throughout these steps a Core Shack Information Sheet stays with the core and is used to indicate which logs have been completed, and which logs still need to be completed.

11.4 Core Logging - Exploration Surface Drilling

Core logging of surface drill holes on the McArthur River project begins with geotechnical work. A geotechnician enters data for box intervals, RQD (fractures or breaks as well as recovery in each row), RMR (Rock Mass Rating, a system that determines strength of intervals of core), Ballmark (core orientation continuity) and pebble counts for each row. This data is entered into a Palm Pilot which is then uploaded into an Access database on a project laptop. From that point the data is imported into DH Logger from the Access database.

A geologist examines the core and determines its overall characteristics. These include lithology, alteration, structure and mineralization. This information is uploaded into an Access database on a project laptop. Data is imported to DH Logger in the same manner as with the Palm Pilots.

Digital photographs are taken once all the information is gleaned from the core. The core is then stacked nearby until it can be moved to a permanent spot at the Bermuda Core Storage, located 7.5 km from the McArthur River operation.

11.5 Cementing of Surface Diamond Drill Holes

After a diamond drill hole is completed it is cemented from the bottom up to the first unconformity. A Van Ruth plug is set just below the unconformity to seal off basement-related fluids. From there, the cementing procedure depends on two factors: another unconformity and/or fault zone. If there is another unconformity the hole is cemented from the first Van Ruth plug, then another plug is set just below the second unconformity and cement is poured on top of this last plug. If there is an extensive fault zone (>10 m) in the lower sandstone above an unconformity, cementing continues from the first plug. This is done until a Van Ruth plug is set above the structure and 50 m of cement is poured on top of that plug. This cementing procedure has been incorporated as standard practise on the McArthur River project since 2004.

This procedure is followed for all mineralized holes as well as any holes nearby. There are rare holes that have gone without cement but they were not mineralized and located over four km from the current mine workings.

Supplemental to the above procedure, since 1996, 28 old surface drill holes that were anticipated to come within 50 m of projected future mine workings, had their collars located and cement poured into the hole until it reached the collar.

12 SAMPLING METHOD AND APPROACH

12.1 Sample Density and Sampling Methods

Surface holes are generally drilled on sections spaced at between 50 and 200 m with 12 to 25 m between holes on a section where necessary The surface drill hole spacing is illustrated on Figures 11-1, Underground delineation drilling is performed on a 10 m by 10m grid spacing in the plane of the mineralization. The underground drill hole spacing is represented on Figure 11-2, in the previous section, and on Figure 12-1.

Surface

Any stratigraphy exhibiting noteworthy alteration, structures and radiometric anomalies was sampled. Specific basement sampling procedures were based on the length of the interval to be sampled, and attempts were made to avoid having samples cross lithological boundaries.

All core with a radioactivity >1000 cps (SPP-2) is sampled for assay. Core is split with a Longyear splitter; one half of the core is placed in a sample bag while the other half is retained in the core box. A sample tag with a unique sample number is placed in the bag while a duplicate sample tag remains in the sample book. Each bag is also numbered with the sample number on the outside of the bag. An aluminium label having the same sample number is placed on the core box. Depending on the level of radioactivity, samples are either shipped in metal or plastic pails.

Underground

Core from underground drill holes may be sampled to ascertain the U_3O_8 content past the probing limit of a hole or to provide correlation samples to compare against a probed interval. Occasionally there would be portions of the mineralized zone that were not probed, usually because the hole was dipping upwards, and the probe could not be pushed far enough up the drill rods to reach the entire mineralized zone. In these circumstances, the core was logged and photographed as always, and then sampled for uranium analyses. If the sampling is past the probe limit, samples are taken 1.0 m before the end of the probe data to provide an overlap. Rather than splitting the core, the entire interval was sampled.

Using the mineralization log, high-grade and low-grade intervals are sampled separately. Sample widths varied depending on rock type, grade consistency, or any other characteristic of the core that would indicate a logical sample break. When sampling past the probe limit of a hole the minimum sample interval used is 0.3 m and the maximum interval is 1.0 m

For correlation purposes, the mineralization log and probed data intervals are used to identify high-grade peaks to correlate an interval to sample. The high-grade and low-grade intervals are sampled separately. When sampling for correlation purposes the minimum sample interval is 0.1 m to isolate massive pitchblende stringers and the maximum sample interval is 1.0 m.

The following information is recorded:

- Hole number, date and name
- Sample number: numbers are in numerical order on stamped plastic tags
- From and To intervals, Length
- Recovered Length: actual measured core length (rubble estimated)
- SPP2 range of radioactivity: use the range previously written on the box
- Weight: weigh of the sample in the plastic sample bag.
- Core diameter: when sampling for correlation purposes, a calliper is used (averaging 4 measurements).
- Description: rock type, alteration, mineralization.

The sample number is written on a plastic bag and the samples are placed within. The numbered plastic tag is also inserted into the bag. The bags are tied securely and placed in a five gallon metal shipping drum. The drum is marked to indicate the samples contained within it. The samples are scanned by the radiation department then taken to the warehouse where they are shipped off site according to procedures for transporting radioactive material.

Due to the radioactive nature of the samples, they were shipped to the SRC laboratory in Saskatoon under the Transportation of Dangerous Goods regulations. The laboratory results were added to the database after they were received.

12.2 Core Recovery

For surface holes, all uranium grade data is obtained from assaying core. Core recovery is generally considered to be excellent with local exceptions. For underground drill holes, a small portion of the assay data used for resource estimation is generated by assaying core where the radiometric probe could not be pushed completely to the end of the hole. Core recovery in those areas can be excellent to poor. No problems relating grade to core recovery were noted.

12.3 Sample Quality and Representativeness

The quality and representativeness of the surface drill hole samples is adequate for resource estimation. This has been validated on numerous occasions with underground drilling results in the vicinity of mineralized intervals drilled from surface.

Few underground drill samples are analyzed because a gamma probe is used to determine grade in the holes. Drilling is done from 30 m spaced drill stations with three fans of holes from each station. This provides coverage of about 10 m across the deposit which is considered to be adequate for resource estimation. The drill hole fans provide representative access for the gamma probes across the entire deposit.

When physical samples are collected as a result of the inability to insert the gamma probe, whole core is used. This provides very high-quality samples in those areas.

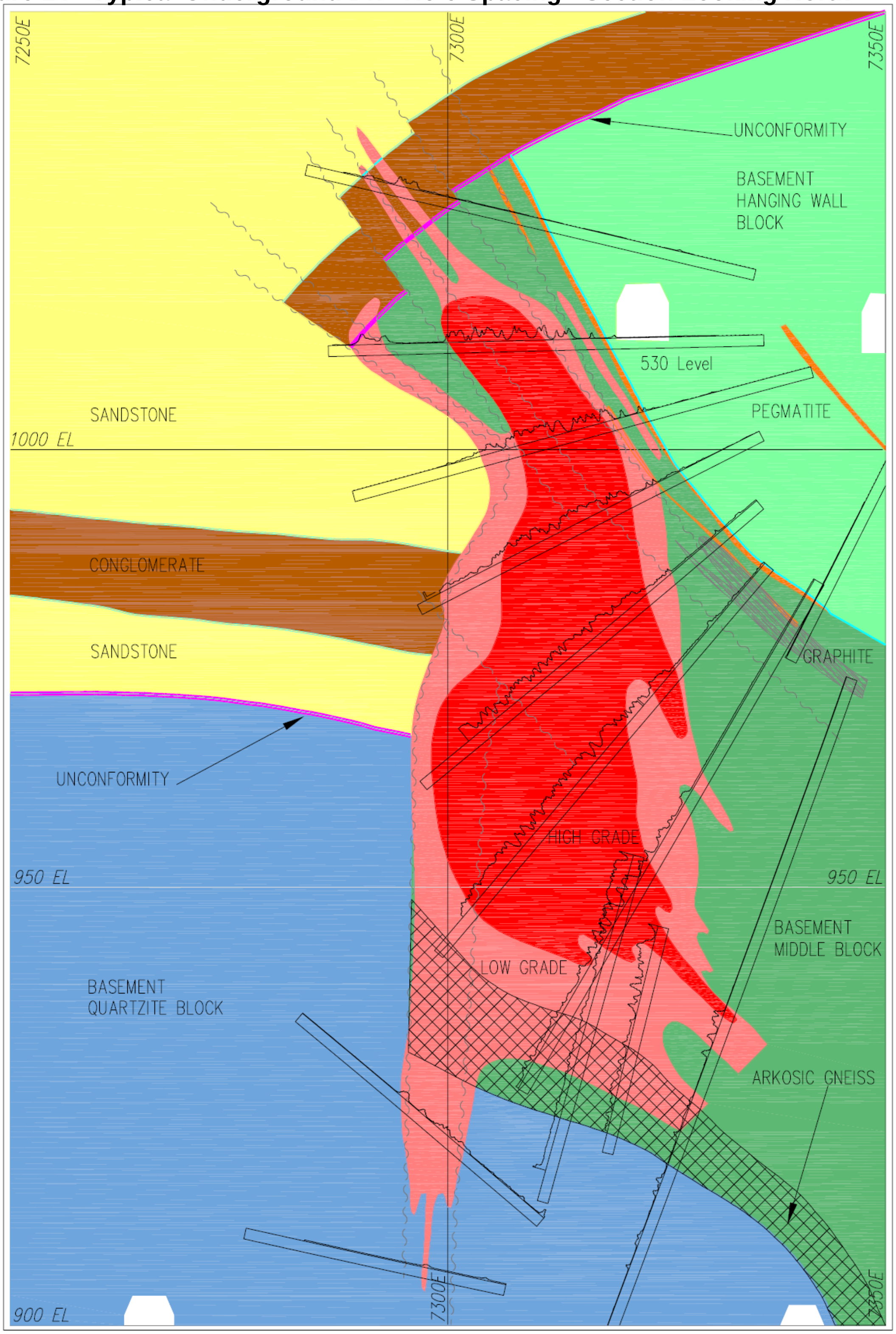
Sample quality and representativeness is adequate for resource estimation and mine planning.

12.4 Sample Composites with Values and Estimated True Widths

In general, the edges of the mineralized zones exhibit very sharp boundaries with non-mineralized host rock. A table that summarizes the mineralized intercepts at McArthur River is presented in Appendix 1 (see Appendix 1 – Summary of Mineralized Intercepts at McArthur River).

Underground drill holes are collared from drill bays spaced 30 m apart and located 35 to 60 m in the hanging wall from the mineralization. Three general sets of drill directions are collared: the middle fence is drilled perpendicular to the strike of the mineralization and a north and south fence are drilled approximately ± 6° - 12° off azimuth from the middle fence to maintain a 10 m section spacing. Each fence then delineates the mineralization with hole angles ranging from +45° to -70°. The resulting drill hole intersection with the mineralization generally varies from perpendicular to 25°. Depending on the angle, drilled length represents true width to 2.4 times the true width. Figure 14 illustrates the drillhole traces on a vertical section with their profiles of radioactivity and interpreted faults. Existing mine openings are shown in white.

Figure 14 - Typical Underground Drill Hole Spacing - Section Looking North



13 SAMPLE PREPARATION, ANALYSES AND SECURITY

13.1 Sample Preparation by Cameco Employees

Beyond marking and bagging samples by Cameco employees, Cameco employees, officers, directors and associates are not, and have not, been involved with preparation of samples.

13.2 Sample Preparation

13.2.1 Introduction

All samples collected from McArthur River for determining uranium content by chemical analysis and used in the Reserve and Resource estimates were sent to Saskatchewan Research Council (SRC) for analysis. It should be noted however that a few of the earlier surface drill holes had their samples sent to another lab for analysis because at that time, SRC was not able to analyse the very high grade samples. None of these samples were used in the estimate as they were replaced by underground diamond drill holes which use primarily probe data. All underground diamond drill sample sent out for chemical analysis were done by SRC.

Multi-element analysis was generally performed on the same samples that were analysed for uranium content. Some of the elements required special equipment in order to deal with the radioactive saturation from high grade samples. Prior to SRC purchasing this equipment, some samples were sent to another lab to complete the analysis. Only SRC and uranium analysis is material to this Technical Report.

This section reviews the procedures used at SRC Geoanalytical Laboratories located in Saskatoon for the safe receipt and handling of materials to be analysed for uranium. . There are three main sample processing areas for uranium analysis at SRC:

- sandstone samples (Main Laboratory);
- low radioactive basement samples: red line to 1 dot samples (Main Laboratory); and
- high radioactive basement samples: 2 dot and higher (Radioactive Facility).

13.2.2 Sample Receiving

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

All received sample information is verified by sample receiving personnel: sample numbers, number of pails, sample type/matrix, condition of samples, requests for analysis, etc. The sample is then sorted according to its radioactivity level.

13.2.3 Sample Sorting

To ensure that there is no cross contamination between sandstone and basement samples, non-mineralized, low-level and high-level mineralized samples, they are sorted according to their matrix and radioactivity levels (see Figure 15).

Samples are first sorted into groups according to matrix type (sandstone and basement/mineralized).

Then the samples are checked for their radioactivity levels. Using a Radioactivity Detector System, the samples are classified according to their radioactivity as follows:

- "Red line" (minimal radioactivity) < 500 counts/second
- "1 dot" 500 -1999 counts/second
- "2 dot" 2000 – 2999 counts/ second
- "3 dot" 3000 - 3999 counts/second
- "4 dot" 4000 – 4999 counts/second
- "UR" (unreadable) 5000 counts/second and greater

Samples are then sorted into ascending sample numerical order and transferred to their matrix-designated drying ovens.

13.2.4 Sample Preparation

All samples are dried. After the drying process is completed, "Red line" and "1 dot" samples are sent for further processing (crushing and grinding) in the main geoanalytical laboratory. This is done in the SRC basement preparation area. All radioactive samples at "2 dots" or higher (2000 counts/second or greater) are sent to the SRC secure radioactivity facility for the same sample preparation. All highly radioactive materials are kept in a radioactive bunker until they can be transported by TDG trained individuals to the SRC radioactivity facility for processing.

When sample pulps are generated they are then returned to the main laboratory to be chemically processed prior to analysis. All containers are identified with sample information and their radioactivity status at all times. When the preparation is completed the radioactive pulps are then returned to a secure radioactive bunker, until they can be transported back to the radioactive facility.

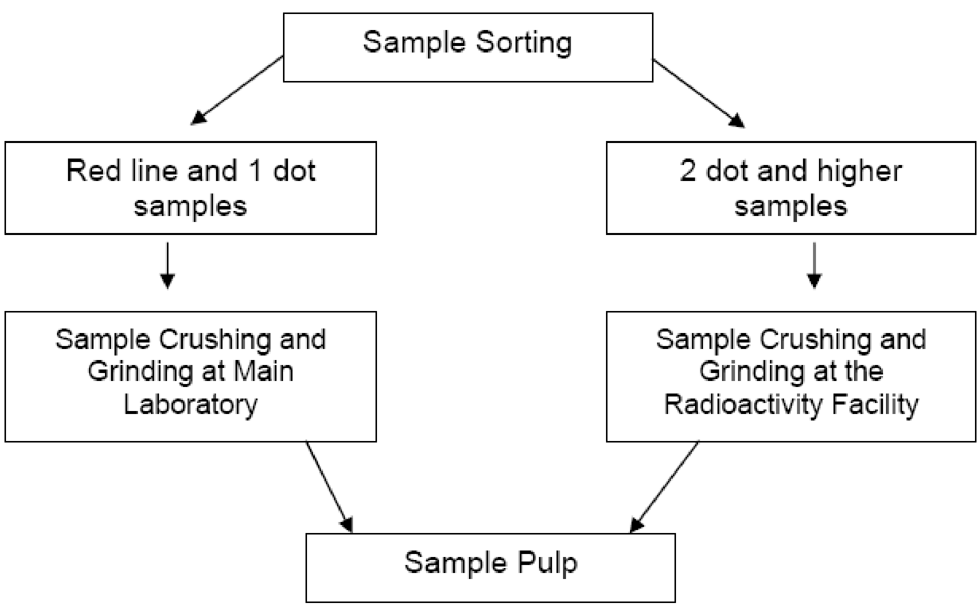
All rejected sample material not involved in the grinding process is returned to the original sample container. All highly radioactive materials are stored in secure radioactive designated areas until it is returned to the customer.

Rock samples are jaw crushed to 60% @ -2mm and 100-200g sub-sample split using a riffle splitter. The sub sample is pulverized to 90% @ -106 microns using a puck and ring grinding mill. The pulp is then transferred to a labeled plastic snap top vial.

Figure 15 - Schematic of Sample Preparation Procedures

13.2.5 Summary of Licenses, Certifications and Registrations

The SRC laboratory is licensed by CNSC for possession, transfer, import, export, use and store designated nuclear substances under CNSC License Number: 01784-1-09.3.



As such, the SRC laboratory is closely monitored and inspected by the CNSC for compliance. SRC is an accredited testing laboratory assessed by the Standards Council of Canada under the requirements of ISO/IEC 17025:2005 (accredited laboratory number 537).

Safety is a paramount concern at the SRC laboratory. Low radioactive level samples are only processed at the main laboratory due to the generation of hazardous radioactive dust. Due to the limits set for radiation exposure, personnel working at the high radioactive level facility must limit their exposure. This may delay the immediate processing of high level samples at the facility.

In addition, the radioactivity exposure limits of laboratory personnel are also closely monitored by SRC. All personnel working with radioactive material are required to be registered as Nuclear Energy Workers and must wear the appropriate Personnel Protective Equipment at all times. Exposure to radioactivity is measured through the wearing of Thermo Luminescence Dosimeters . These are checked every three months by the CNSC. All readings are reported to the SRC Radiation Safety Officer. Any significant readings are reported to this individual.

13.3 Assaying

An aliquot of pulp was digested in a 100ml volumetric flask in a mixture of HNO_3:HCl, on a hot plate for approximately one hour, then diluted to volume using deionized water. Samples are diluted prior to analysis by ICP-OES. Instruments used in the analysis are calibrated using certified commercial solutions. The instruments used were PerkinElmer Optima 300DV, Optima 4300DV or Optima 5300DV. This method is ISO/IEC 17025:2005 accredited by the Standards Council of Canada.

13.4 Radiometric Surveying and Assaying

The majority of the grade data for the deposit have been calculated from the gamma probe results collected from inside the drill rods. These probes use a shielded detector that allows use of the probe in high-grade portions of the deposit. Typical commercial probes will become saturated at substantially lower grades than those observed at McArthur River, rendering the probe essentially inefficient. Grade of the mineralization is directly correlated to the gamma values that were collected with the probe.

Gamma probes are tested in a controlled source on a weekly basis to ensure that the readings they were producing were consistent. Any probe that shows unusual readings are sent off-site for testing and repair. Every time a probe is ready to be sent into a drill hole, it is again tested against a controlled source to ensure that the instrument is reading correctly.

Depending on the instrument, probe data is collected at either 10 cm or 20 cm intervals in the orebody. The data were downloaded into the database and verified. Two data checks are made that frequently involve adjustments to the data. The data is first compared to the geological log of the drill core. If discrepancies with the location of mineralization are found, probe data is adjusted (shifted) to match the geological log. The second check involves radon. Probe data from portions of holes that are known to be in unmineralized rock (based on the geological logging and SPP2 scans) often have a gamma signature that can be attributed to radon decay products in the groundwater filling the drillhole. This signature is often a relatively low but consistent counts per second value. An estimate of this radon gamma value is made, and that value is then stripped from the gamma data for the entire drill hole, including the mineralized zone.

Gamma data is then processed with software that accounts for the calibration (K) factor for the instrument, drill hole diameter, whether the hole is water filled or not, and the thickness of the steel in the drill rods that are probed through. The result is a file of corrected counts data. The corrected counts data are then used to calculate the grade in the samples using a proprietary counts/grade algorithm. The calculated grade data can then be plotted for interpretation and planning, and are ultimately used as the basis for the resource and reserve estimation.

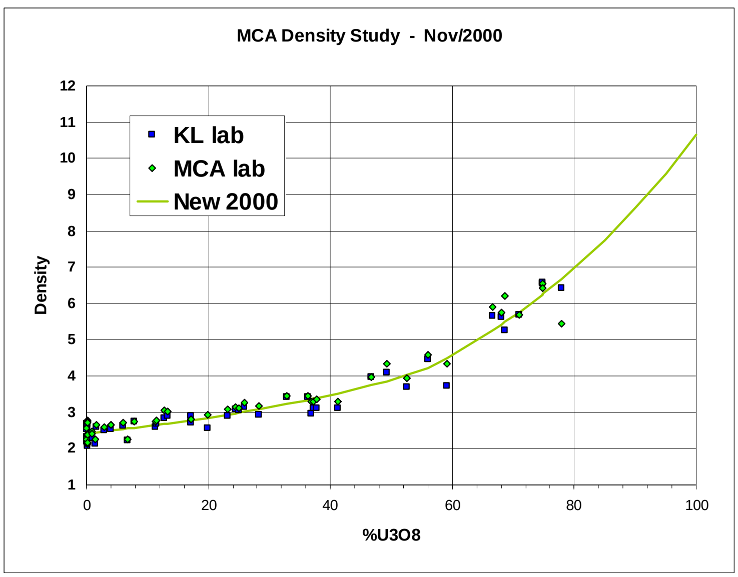
At the beginning of the underground exploration program, several holes were selected and sampled for uranium analyses, in order to verify the results from the gamma processing. The holes that were selected had to have excellent core recovery so that the entire interval could be sampled. The sampling was again done with varying widths depending on the core and grade characteristics. Due to the high grades involved, the laboratory always requested an estimate of grade for each sample. The higher grade samples required extra titrations to prevent the analytical equipment from saturating. The analytical results were correlated with the equivalent grade results from the probing. Adjustments to the grade calculations could then be performed as required.

13.5 Density Determinations

Density at McArthur River is calculated using an equation based on the correlation of U_3O_8 grade to measured density. A total of 51 density determinations were made covering a grade range from 0.01% U_3O_8 to 77.9% U_3O_8. Values for grades greater than 77.9% are extrapolated. The data are summarized in Figure 16. Density was measured at Cameco's Key Lake laboratory (KL lab in Figure 16) and at McArthur River (MCA Lab in Figure 16), by Cameco's employees, as well as off site at the SRC laboratory. The Key Lake laboratory exhibits a small (0.1 g/cm^3), constant low bias relative to the McArthur River laboratory. That bias is not considered to be significant. The basic equation was derived in 1995. In 2000, the equation was modified to better fit high-grade data. The line of regression, labelled “New 2000” in Figure 16 represents the equation used since that time.

Some samples have grades greater than 80% U_3O_8 and the densities for samples with those grades have not been verified. While there are no specific concerns about the validity of the equation, it is recommended that additional density data be collected to validate the high-grade portion of the equation and to generally validate the rest of the grade range.

Figure 16 - Density Summary



13.6 Quality Assurance/Quality Control (QA/QC)

13.6.1 Exploration Surface Drilling

QAQC Materials - Assay Analysis

SRC performs analyses in batches of 40, including 37 samples provided by the client, two internal standard materials, and a pulp duplicate of one of the client’s samples.

For uranium assays SRC personnel, using the standards appropriate for each group, add Cameco standards to the sample groups. As well, for each assay group, an aliquot of Cameco's blank material is also included in the sample batch. **Table 13-1** summarizes the identity and number of materials analyzed in a typical batch of 40 samples.

Table 13-1: Materials Analyzed Within a Typical Assay Group

Material	**Number**
SRC Internal standards	2
SRC Analytical Duplicate	1
Cameco Standard	1
Cameco Blank	1
Cameco Unknowns	35
SRC Preparation Duplicate " SR" (U3O8 only)	1

Cameco employs a Data and Quality Assurance Coordinator (DQAC) who is responsible for reviewing the quality of geochemical data received from laboratory contractors. Electronic copies of all data are delivered to the DQAC for review from the laboratory, and additional hard and electronic copies are delivered to project staff and exploration management. Official use of analytical data is restricted until approved by the DQAC.

The DQAC reviews the analyses provided by the lab using the results of standard reference materials as a benchmark. Any data that is beyond the min/max threshold (within three standard deviations of the mean) established through round-robin analysis statistics would be considered outliers and would require further review and/or re-analysis. Generally, if the outlier is uranium, a re-assay will be done, but if the outlier is related to one of the other elements, a re-assay will only be done if the project geologist views that element as critical.

The DQAC also reviews the lab replicate samples for greater than a 20% relative percent difference from the associated reference sample. Any significant deviations are followed up with the project geologists to determine if a re-assay is required. Finally, the DQAC reviews the report sent from the lab to ensure that the format is appropriate for importing into the Century database.

Historic Quality Control material performance is periodically reviewed by the DQAC to monitor the historic consistency and accuracy of data received from the laboratory. The Century Systems database has an integrated QA/QC charting operation that will automatically produce basic comparisons of standards and blanks for quality control. Where required, more detailed review of Quality Control measures is completed using Access to plot results with respect to project and year.

13.6.2 Underground Drilling

QA/QC for underground drillhole information is focused on quality probing results. This is ensured by Cameco employee by checking the calibration of the probes prior to each use, by visually monitoring the radiometric measurements as they are read by the instrument going in and out of the hole and by duplicating probe runs on occasions. Additional quality control is obtained through comparisons of the probing results with the core measurements and by visual inspection of the radiometric profile of each hole by experienced geologists, at the mine site and in Saskatoon.

13.7 Sample Security

All samples are prepared under close supervision of a qualified geoscientist in a restricted core processing facility. They are stored and shipped under Transport of Dangerous Goods regulations through the Cameco warehouse facilities at McArthur River and in Saskatoon.

13.8 Adequacy of Sample Preparation, Assaying, QA/QC, and Security

Sample preparation was done using industry accepted practices at the time the samples were prepared and is considered to be adequate.

Assaying was done with industry standard procedures.

Probe data was generated using industry standard procedures. Grades were calculated from corrected counts data using a proprietary algorithm. That algorithm was derived using assay data and is believed by Cameco to accurately reflect the U_3O_8 grade in the holes. While there are no specific concerns with the grade data, the confidence on the quality and representativeness of the probing results would be further supported by collecting duplicate data to determine the precision of the data. It is thus recommended that one in twenty holes be probed twice and the grades calculated. This will allow estimation of the precision of the method. It is also recommended that one in twenty holes be assayed and compared to the grade calculated from the probe data. This will further allow verification of the accuracy of the calibration of the probe.

Reconciliation of the model to production is indicates that grades estimated in the block model accurately reflect the mined grades. This further indicates that the grades calculated from probe data are adequate. The checks of the calibration of the probes prior to each use is also an important QA-QC check. This assures that the probes are operating properly. Duplicate probe runs and periodic assays will enhance confidence in data generated at McArthur River.

Sample security is largely defined by regulation and all samples were stored and shipped in compliance with regulations. Tampering with samples from McArthur River is extremely unlikely because of the high grades and the fact that core is scanned immediately after it is received at the sample preparation laboratory and a grade is estimated at that point.

14 DATA VERIFICATION

The drillhole database, containing information from surface and underground drill holes and used to produce the mineral resource and reserve estimates over the years, has been verified on multiple occasions by site geologists, external consultants and geologists within Cameco's Mineral Resources Management Department. The quality control measures and the data verification procedures included the following:

- Surveyed drillhole collar coordinates and hole deviations were entered in the database, displayed in plan views and sections and visually compared to the planned location of the holes,
- Core logging information was visually validated on plan views and sections and verified against photographs of the core or the core itself when questions were raised during the geological interpretation process,
- Downhole radiometric probing results were compared with radioactivity measurements made on the core and drilling depth measurements,
- The uranium grade based on radiometric probing was validated with sample assay results when available,
- The information in the database is compared against the original data, namely paper logs, deviation survey films, assay certificates and original probing data files,
- Since 2000, information collected from production activities, like freeze holes, raise bore pilot hole probing, radiometric scanning of scooptram buckets and mill feed sampling, are regularly compared to the drillhole data.

The qualified person for this section, Alain G. Mainville, has personally verified the data used for the estimates and supervised other geologists who have also verified the data. Mr. Mainville is satisfied with the quality of the data. Current and past mine production history has demonstrated that the drillhole data is valid.

15 ADJACENT PROPERTIES

Information on adjacent properties is not applicable to this technical report.

16 MINERAL PROCESSING AND METALLURGICAL TESTING

16.1 Overview

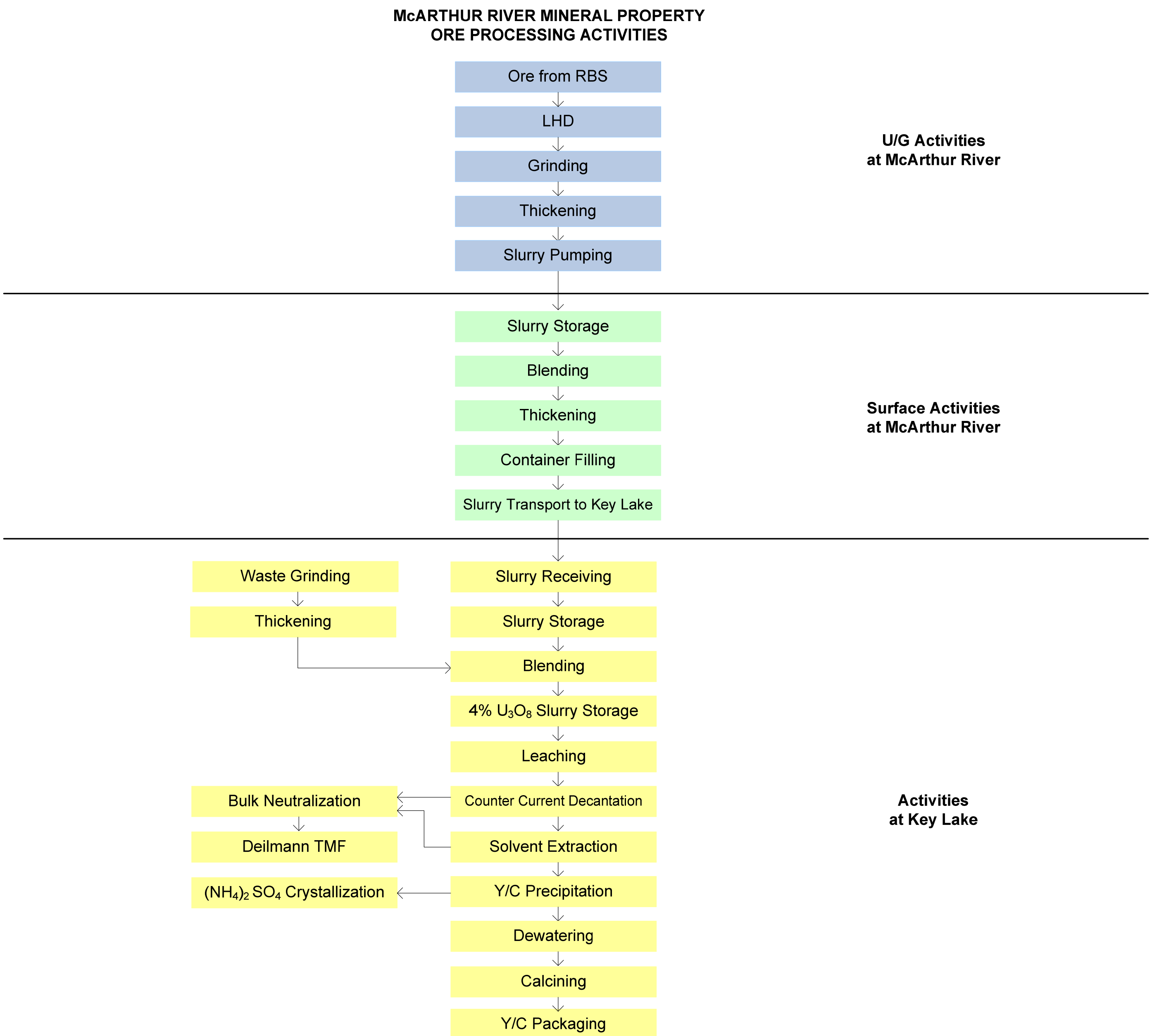
McArthur River ore is processed at two locations. Size reduction is conducted underground at McArthur River and the resulting finely ground ore is pumped to surface and transported to Key Lake operation as a 50% solids slurry at an average grade of 20% U_3O_8. The slurry is temporarily stored at McArthur River and trucked to Key Lake for processing. Blending to a nominal 4% U_3O_8 mill feed grade and all remaining uranium processing, tailings disposal, and effluent treatment steps occur at Key Lake.

The current CNSC licensed production rate for the combined McArthur River/Key Lake operations is limited to a maximum of 18.7 million pounds U_3O_8 annually. Cameco has applied for an increased licensed capacity of 22 million pounds U_3O_8 annually. Options to increase the production rate to at least 24 million pounds U_3O_8 annually are currently being assessed as part of a program to revitalize and expand the Key Lake operation.

The KLJV has entered into a toll milling agreement with AREVA for the processing of the portion of McArthur River ore that belongs to AREVA as the result of its participation in the MRJV. This toll milling agreement is described in Section 18.4.2 of this report. Since Cameco and UEM are the remaining participants in the MRJV and are owners of the Key Lake mill, no toll milling agreement is required for processing their share of McArthur River ore at the Key Lake mill.

A high level operation flow sheet of the project ore processing activities is shown in.

Figure 17 - McArthur River Ore Processing Activities – Block Flow Sheet



16.2 Processing at McArthur River

Initial processing of the ore produced by the raise boring mining system takes place underground including grinding, density control and water handling circuits. The finely ground, high density ore slurry is pumped to surface storage tanks, blended, thickened, and loaded into truck mounted containers for delivery to Key Lake at grades ranging from 15 to 30% U_3O_8. Contaminated water from underground, after recycling to the maximum extent possible, is treated on surface in a two stage treatment plant and the excess, above the demand for recycled treated water, is released to the environment.

16.2.1 Metallurgical Testwork

Ore processing at McArthur River was commissioned in 2000 following a lengthy period of testing, design, procurement, and construction. The flowsheet was largely based on the use of conventional mineral processing concepts and equipment. Where necessary, testwork was undertaken to prove design concepts or adapt conventional equipment for unique services. Simulated ore was utilised in much of the testwork because the off-site testing facilities were not licensed to receive radioactive materials. The major test programs undertaken included:

- Pipeline flow testing of simulated uranium ore slurries at SRC's Saskatoon pump test facility to establish minimum flow velocities and maximum particle sizes.

- Operational testing on a full scale slurry container prototype at Key Lake including gravity unloading, time for contents to freeze while outside during cold weather and drop testing to evaluate the potential for leakage during a simulated road accident.

- Operational testing using simulated uranium ore slurries with prototype container loading and vacuum unloading platforms at the Saskatoon shops of Prairie Machine and the Northstar Business Center.

- Full scale testing of truck/trailer combinations to assess B-train handling and weight bearing characteristics related to ore slurry transportation in containers.

- Radiation scanning equipment testing on a full scale slurry container prototype at Key Lake. Although this testwork was successful, automated scanning equipment was not installed at Key Lake or McArthur River. Instead the use of closed circuit television cameras and manual scanning was implemented.

- Marconajet testing on simulated crushed uranium ore at Pre-Con Limited's (Pre-Con) Saskatoon shop to investigate the reclaiming of settled crushed ore from the bottom of storage tanks.

- MMD Sizer testing on simulated uranium ore at Pre-Con's Saskatoon shop to investigate the use of low profile crushing equipment. This testwork was unsuccessful and an MMD Sizer was not included in the flowsheet.

- Testing of a Water Flush Cone Crusher at Pre-Con's Saskatoon shop on simulated uranium ore to investigate the use of crushing equipment as part of the grinding circuit. Although this testwork was successful, a cone crusher has not been found to be necessary in the semi-autogenous grinding circuit.

- Testing of a prototype Transportable Mining Unit on simulated uranium ore at Pre-Con's Saskatoon shop and later, underground at McArthur River to assess methods for recovering, screening, and pumping reamed ore. Although included in the original flowsheet, this equipment is no longer utilised at McArthur River. Instead reamed ore is hauled to the grinding circuit by underground load-haul-dump (LHD) vehicles.

- Testing at Key Lake of equipment to simultaneously measure slurry density and ore grade.

- Lab scale Bond Grinding Work Index tests on representative ore samples for SAG mill sizing purposes.

- Lab scale settling and thickening tests on representative ore samples at the target grind for thickener sizing purposes.

Since commissioning, numerous changes have been made to the McArthur River ore processing and water treatment circuits to improve their operational reliability and efficiency. From a uranium recovery perspective, the most important was to change the grinding circuit classification system from screens to cyclones. Classification based on specific gravity and particle size instead of particle size alone resulted in preferential grinding of the denser uranium minerals versus the gangue, providing a measurable recovery increase in the Key Lake leach circuit. In addition, this change reduced particle segregation issues during ore slurry transport and storage, significantly reducing plugging and sanding out problems in pipelines and tankage at both McArthur River and Key Lake.

16.2.2 Current McArthur River Flowsheet

Mined ore in the form of raise bore cuttings is either fed directly to the underground grinding circuit or stockpiled. The ore is transferred by LHD to a grizzly covered hopper. A rock breaker mounted over the hopper is used to reduce oversize until it passes through the grizzly screen. Grizzly undersize is fed by belt conveyor to a semi-autogenous grinding (SAG) mill located on the 640 m level. The grinding circuit operates at 15 t/h in closed circuit with cyclones and a scalping (safety) screen. Secondary feed sources such as settled solids from raises and sumps, and drill cuttings are pumped to two underground overflow type surge tanks and intermittently re-slurried for transfer to the grinding circuit by bottom mounted solids recovery Marconajet systems.

Cyclone overflow ground to a P_{80} of 100 microns is thickened to 50% solids in one of two 13 m diameter thickeners and pumped to an underground ore slurry storage tank. From there, the ore slurry is pumped via boreholes to four air agitated 650 m^3 pachuca storage tanks located on surface. Ore slurry discharged from the pachucas is blended to a maximum grade of 30% U_3O_8 in a mix tank. After excess water is removed from the ore slurry in a thickener, it is pumped into 5 m^3 truck mounted containers for shipment by road to Key Lake. Each truck train carries four containers. Typically 12 to 14 truck loads are required daily to meet current production rates.

As much untreated water as possible is recirculated underground in the process. Excess water is pumped to surface and treated in a conventional 750 m^3/h, two stage water treatment plant. Additional water treatment capacity is available as required in a 750 m^3/h contingency water treatment plant. Treated water is recycled as much as possible and only the excess is released to the environment via a monitoring pond system. Precipitated solids from the water treatment process are either added into the ore slurry or filtered and mixed with mineralized mine waste. Mine waste including filtered precipitates are hauled by truck to Key Lake where they are stockpiled and used as part of the blending strategy to achieve the target mill feed grade.

16.3 Processing at Key Lake

Processing at Key Lake was initiated in 1983 on ores averaging 2% to 3% U_3O_8 mined initially from the Gaertner open pit and later from the adjacent Deilmann open pit. Annual uranium production was initially 12 million pounds U_3O_8 with mill ore throughput constrained to approximately 1,000 dry metric tonnes per day. Throughput was later increased to 14 million pounds U_3O_8 annually by minor debottlenecking and reducing the length of planned maintenance shutdowns. Mill tailings were initially disposed of in a purpose built above ground tailings management facility. Mining was completed at Key Lake in 1997 and the mined out Deilmann pit was converted to an in-pit below ground tailings disposal facility.

In 2000, McArthur River ore slurry receiving and blending facilities were commissioned at Key Lake. McArthur River ore slurry is removed by vacuum from the truck mounted containers and the high grade slurry is blended to 4% U_3O_8 for radiation protection purposes, using mineralized waste processed through the original Key Lake grinding plant. The blended slurry is pumped to the original Key Lake mill where the uranium is recovered as a calcined yellowcake grading 98% U_3O_8 on average. The current licensed maximum annual production rate of 18.7 million pounds U_3O_8 was achieved largely by debottlenecking the product end of the existing plant with minimal additional capital investment required. Cameco has submitted an application to the CNSC to raise the licensed production capacity to 22 million pounds U_3O_8 annually by further debottlenecking. Cameco believes the successful commissioning of facilities currently under construction in the bulk neutralization plant to control selenium and molybdenum concentrations in the final treated effluent will be helpful in Cameco's efforts to receive regulatory approval.

Three stockpiles contain non-mineralized waste rock and two contain low-grade mineralized material. The latter are currently used to lower the grade of McArthur River ore to approximately 4% U_3O_8 before entering the milling circuit. The dilution of the high-grade ore serves three purposes: recovery of uranium from the low-grade material, reduction of radiation exposures in the mill, and final disposal of the low- grade waste. The remaining non-mineralized waste rock stockpiles will require decommissioning upon site closure.

16.3.1 Metallurgical Testwork

An extensive program of bench scale testwork was completed at the Key Lake metallurgical lab on representative samples of fresh McArthur River ore in the years prior to the introduction of this material into the Key Lake mill in early 2000. This testwork confirmed the suitability of the Key Lake mill circuits for processing McArthur River ore with high uranium recovery. In 2008, overall uranium recovery to the final calcined yellowcake product averaged 98.3%.

Concrete accompanying the ore and waste from McArthur River originates in raises mined adjacent to cemented back-filled raises. This material is referred to as McArthur mineralized waste and is one of the components used to blend down the feed grade of the slurry to 4% U_3O_8 before the mill leaching process. This has contributed to processing problems in the Key Lake solvent extraction circuit with excessive crud formation and resultant high organic losses, leading to difficulties producing releasable effluent at times from the Key Lake water treatment system. Testwork has confirmed that the fly ash component in the backfill has exacerbated these problems, resulting in a change back to 100% Portland cement usage for backfill preparation at McArthur River. Recent testwork at Key Lake has shown that gravity separation techniques can be used to remove concrete particles from the McArthur River mineralized waste before it is added to the mill feed blend. A capital project at Key Lake involving the installation of a centrifugal gravity concentrator is complete and optimization is in progress.

16.3.2 Current Key Lake Process

The Key Lake milling and water treatment facilities are located in eight separate plants. The McArthur River ore slurry receiving plant, the grinding/blending plant, and the reverse osmosis plant are located adjacent to each other, between the two open pits approximately two kilometres away from the mill site. The remaining facilities are located on the mill terrace and include the following:

- leaching/counter current decantation plant,
- solvent extraction plant,
- yellowcake precipitation/dewatering/calcining/packing/ammonium sulphate crystallization plant,
- bulk neutralization/lime handling/tailings pumping/oxygen plant,
- and the powerhouse/utilities/acid plant complex.

The plants located on the terrace are interconnected by covered walkways or galleries.

Each of the plants is operated from a control room typically staffed by an operator and one or two helpers. The mill terrace is paved to contain any spillage and shaped to direct any liquid to a reservoir for subsequent treatment. Process pipelines between the ore receiving/grinding/blending plants, the main mill site and the tailings disposal areas are contained in sealed concrete utilidors. In order to avoid spills to the environment, alarmed collection sumps have been provided every 100 m to warn of possible pipeline breaks.

High grade McArthur River ore slurry arriving at the Key Lake receiving plant is unloaded from the truck mounted containers by a vacuum system and pumped to one of four large air agitated slurry storage pachuca tanks. Periodically high grade slurry is pumped from a pachuca to the blending tank located in the grinding plant. There it is mixed with low grade slurry prepared by grinding mineralized waste hauled from McArthur River or left over from the original Key Lake mining operations. The resulting slurry, blended to a target of 4% U_3O_8, is pumped to one of three storage pachuca tanks located in the leach plant. Blending is necessary because the original Key Lake processing facilities were not designed, from a radiation protection perspective, to accommodate the high ore grades found at McArthur River.

Sulphuric acid produced on site by burning/converting sulphur is used to dissolve the uranium, along with various impurities, from the ore in a two stage leach circuit. The first stage occurs at atmospheric pressure in pachuca tanks while the second stage occurs in autoclaves under 540 kPa pressure at 60° C. Nearly pure oxygen, produced on-site in a cryogenic air separation plant, is injected into the leach vessels to oxidize the uranium minerals and thereby permit uranium dissolution. Approximately 99% of the uranium and varying percentages of the impurities enter solution during leaching.

Counter current decantation (CCD) consists of eight thickeners and a clarifier located outdoors on the mill terrace beside the leach plant. Acidic water is introduced at the tail end of the circuit and advanced from thickener to thickener in the opposite direction to the leached solids flow. The result is that the dissolved components are washed away from the leached solids. The washed leach residue is sent to the bulk neutralization plant for neutralization and disposal. Pregnant solution containing 10 to 15 g/L dissolved uranium and varying levels of impurities is clarified to remove residual solids and pumped through sand filters to the solvent extraction plant.

In the solvent extraction plant, filtered pregnant solution is mixed with an organic solvent consisting of isodecanol and amine dissolved in kerosene. The uranium transfers from the aqueous solution to the organic phase leaving behind most of the dissolved impurities. The waste solution (raffinate) containing the impurities is pumped to the bulk neutralization plant for treatment and disposal. The organic solvent, loaded with uranium, is contacted with ammonia in ammonium sulphate solution, causing the uranium to transfer back to a highly concentrated aqueous phase known as loaded strip solution. Special treatment circuits are available to deal with problem impurity elements such as arsenic and molybdenum that tend to follow the uranium through the solvent extraction process.

Using ammonia, uranium is precipitated from loaded strip solution in the yellowcake plant as ammonium diuranate. The precipitate is dewatered in a thickener followed by a centrifuge then calcined to U_3O_8 in a multi hearth furnace at 840° C. The final calcined product is packed in 200 litre drums for shipment to refineries around the world. Excess ammonium sulphate is recovered in a crystallization circuit by evaporating the water and drying the resulting by-product, which is sold locally for use as a high purity fertilizer.

Contaminated water from the dewatering system associated with the depleted Gaertner and Deilmann open pits at Key Lake is treated in a reverse osmosis plant with permeate released to the environment. Reject brine from the reverse osmosis plant is sent to the bulk neutralization plant where all other site aqueous waste streams are neutralised with lime to precipitate dissolved impurities. Waste solids, as a thick slurry, are pumped to the mined out Deilmann pit for final disposal. Treated water is sampled and released to one of four monitoring ponds. The sample is analysed for various regulated contaminants. If all federal and provincial regulations are met, the treated water is released to the environment. If not, the pond is recycled through the bulk neutralization plant as many times as is necessary until it becomes releasable.

16.4 Revitalization at Key Lake

The original Key Lake milling facilities and related infrastructure have been in service for over twenty five years. In late 2006, Cameco initiated the development of a strategic plan to revitalize the Key Lake facilities for the next 25 years of operation to mill McArthur River ore. The key objectives of this plan are to refurbish or replace selected areas of the existing infrastructure, enhance environmental performance and increase nominal production capacity to approximately 24 million pounds U_3O_8 per year.

The engineering and project planning for replacement of the acid plant and oxygen plant was further advanced in 2008. A screening level environmental assessment will be required for Cameco to proceed with the construction of the two plants. Cameco expects to submit to the CNSC a Mill Services screening level environmental assessment that demonstrates the environmental viability of these two projects in the first quarter of 2009, assuming capital approval is obtained. Construction of these replacement plants is planned to start in 2009 subject to obtaining regulatory approval. The estimated capital cost for 2009 of $ 35M has been included in the capital cost estimates set out in Section 18.7.2 of this technical report.

The mill Revitalization plan focuses on the product-end of the mill; that is, the solvent extraction (SX), uranium precipitation and product dewatering circuits. The current Key Lake mill uses ammonia for stripping in SX and for uranium precipitation. The Rabbit Lake mill uses acid for stripping and hydrogen peroxide for precipitation. The Rabbit Lake process is widely believed within Cameco to be better able to process the concrete-laden ore that Key Lake receives from the McArthur River mine. Therefore, the mill Revitalization plan will study the cost and benefits of converting the product-end to the acid stripping process.

In addition to the expected ore processing benefits, the acid stripping process also obviates the need to produce a calcined yellowcake product and an ammonium sulphate by-product. In that case, the yellow cake could be dried at lower temperatures than calcining and not create an insoluable radioactive dust. Furthermore, the current crystallization circuit would not be required.

A downside of the acid stripping process is that all the acid must be neutralized before the uranium is precipitated. At the Rabbit Lake mill, the acid is neutralized by lime and precipitated out as gypsum. Since some uranium is contained within the gypsum, it is returned to the counter-current decantation (CCD) circuit to recover the uranium, and the gypsum reports to tailings after processing through the CCD circuit. For a Revitalized Key Lake mill using the acid stripping process, improvements are being studied to recover some acid before the stream must be neutralized, and to be able to send the gypsum directly to tailings.

Options that involve both replacement and refurbishment of circuits at the product-end of the mill are being studied. In general, replacement options offer more design flexibility, and less risk to the operation during construction, but at a higher capital cost. Studies are expected to be complete by the end of 2009, at which time, a decision may be made to go forward into the feasibility stage with a selected option. An environmental assessment under CEAA is likely required for this project, as well as the normal regulatory approvals, before construction could begin. Cameco anticipates that construction work could start in 2011 at the earliest and take at least two years to finish.

16.4.1 Metallurgical Testwork

To date the following metallurgical testwork has been completed in conjunction with the Revitalization Program:

- Two separate pilot scale programs at Key Lake testing Bateman pulsed columns for the replacement of conventional mixer-settlers in the solvent extraction process.
- A bench scale program at Rabbit Lake testing Harwest membrane based acid recovery technology from loaded strip solution produced by the strong acid stripping process.
- Bench scale testing at Rabbit Lake of RPA Process Technologies vacuum belt filtration performance on gypsum from the impurity precipitation process.

In-house Cameco testwork was conducted on elevated product drying temperatures and ozone as a replacement oxidant for hydrogen peroxide in the bulk neutralization circuits.

Cameco expects the ongoing test program to find ways to improve operational performance, including:

- Pilot-scale program at Rabbit Lake testing VSEP membrane based acid recovery technology from loaded strip solution produced by the strong acid stripping process;
- Pilot-scale program at Rabbit Lake testing the properties of yellowcake produced by drying over a range of temperatures;
- Pilot-scale program at Cameco's Port Hope Research facility to quantify the processing benefit of the acid stripping process over the ammonia stripping process for concrete-laden ore;
- Bench-scale program at Cameco's Port Hope Research facility to determine the expected properties of Key Lake tailings produced by the strong acid stripping process; and
- Bench-scale testing to determine the expected effect of impurities (largely gypsum) precipitated out

16.4.2 Modifications at Key Lake for Revitalization

The following mill related changes are expected to be implemented at Key Lake based on the decisions made to date as part of the Revitalization Plan:

- The existing acid/utility plant complex will be replaced with a higher capacity acid plant and a steam plant to be located east of the existing acid plant on an extension to the mill terrace.
- Other changes may be implemented depending on the results of the current studies as follows:
    - The existing cryogenic oxygen plant will be replaced with a new vacuum pressure swing adsorption oxygen plant to be located adjacent to the new acid plant.
    - Ammonia usage and ammonium sulphate by-product production may be eliminated from Key Lake and replaced by the strong acid stripping process and a non ammonia based yellowcake precipitation process.
    - Direct fired calcining in a multi-hearth furnace may be replaced by indirectly fired technology to dry the yellowcake.

In addition to the mill facility changes described above, revitalization at Key Lake is expected to include the following projects:

- Tailings Options Study – a review of the current tailings management facility with a view to increase its capacity and/or to site another second tailings facility.
- Replace and upgrade electrical services (mainly transformers) as needed.
- Demolish and dispose of current facilities made obsolete by the new mill facilities.
- Study improvements to contaminated water management on site with a view to effluent quality improvements with reduced contaminants of the mill effluent discharged to the David Creek drainage system. The main focus on site currently is selenium reduction. If Phase 1 of the Mo/Se project does not achieve the target results then other options will be considered.
- Provide temporary infrastructure for construction workers (camp, change facility, offices) at site.

17 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

From 1994 to present, several drilling campaigns from underground levels at 530 m and 640 m depth were completed. Diamond drilling was followed by systematic radiometric probing of the holes using a gamma probe adapted to the very high radioactivity encountered. Drill holes intersected mineralized zones on a grid spacing of 10 m x 10 m. Radiometric probing in the hole was at 0.10 metre intervals in the radioactive zones. Where core recovery allows it, sampling and assaying of the cores as well as density measurements were performed to confirm correlations.

The data from underground delineation drill holes have been interpreted and estimates of mineral reserves and resources have been made in four mineralized zones (Zones 1 to 4). In addition to this drilling, hundreds of freeze holes and raise bore pilot holes have provided data supporting the interpretation. In areas with no underground drill holes, surface exploration drill holes are the basis for the mineral resource estimates for four additional areas labelled MCA South, MCA North, Zones A and B.

Underground drilling programs have further delineated approximately 750 m of the 2,500 m mineralized structure identified by surface drilling. Underground delineation drilling is ongoing in Zone 4 South.

17.1 Definitions

The McArthur River Mineral Reserves include allowances for dilution and mining recovery. No such allowances are applied to Mineral Resources. Stated Mineral Reserves and Mineral Resources are derived from estimated quantities of mineralized material recoverable by established or tested mining methods. Mineral Reserves include material in place and stored on surface and underground. Only Mineral Reserves have demonstrated economic viability.

The McArthur River Mineral Reserve and Mineral Resource estimates have been updated and reviewed under the supervision of Alain G. Mainville, Professional Geoscientist and qualified person, Director, Mineral Resources Management at Cameco. No independent verification of the current McArthur River Mineral Reserve and Mineral Resource estimates was performed.

There are numerous uncertainties inherent in estimating Mineral Reserves and Mineral Resources. The accuracy of any Mineral Reserve and Mineral Resource estimation is a function of the quality of available data and of engineering and geological interpretation and judgment. Results from drilling, testing and production, as well as material changes in uranium prices, subsequent to the date of the estimate may justify revision of such estimates.

Classification of Mineral Reserves and Resources, and the subcategories of each, conforms to the definitions adopted by CIM Council on December 11, 2005, which are incorporated by reference in NI 43-101. Cameco reports Mineral Reserves and Mineral Resources separately. The amount of reported Mineral Resources does not include those amounts identified as Mineral Reserves. Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability.

17.2 Mineral Resources and Mineral Reserves

17.2.1 Key Assumptions

The key assumptions used in the Mineral Resource and Mineral Reserve estimates for McArthur River are:

- continuity of quality and quantity of uranium mineralization exists between sampled areas.
- reported Mineral Reserves include provisions for dilution and mining recovery.
- reported Mineral Resources do not include allowances for dilution or mining recovery.
- mineral reserves are recoverable by the current raise bore mining method and the planned mining methods of boxhole boring, and blasthole stoping.
- diamond drilling, ground support systems, and mining plans mitigates the risks associated with potentially adverse ground conditions.
- water control measures are effective at preventing water inflow.
- radiation protection measures in place continue to be effective.
- for the purpose of estimating mineral reserves in accordance with NI 43-101, an average uranium price of $47 (US) per pound U_3O_8 was used. For the purpose of estimating mineral reserves in accordance with US Securities and Exchange Commission's Industry Guide 7 for US reporting purposes, an average uranium price of $70 (US) per pound U_3O_8 was used. Estimated mineral reserves at McArthur River are similar using either uranium price because of the insensitivity of the Mineral Reserves to the cut-off grade over the range of these two prices.
- environmental, permitting, legal, title, taxation, socio-economic, political, marketing, or other issues are not expected to materially affect the mineral resource and mineral reserve estimates.

17.2.2 Key Parameters

The key parameters used in the Mineral Resource and Mineral Reserve estimates for McArthur River are:

- for Mineral Resources defined only by surface drill holes, uranium grades are from assayed samples.
- for Mineral Resources and Mineral Reserves estimated from underground drill holes, grades were obtained from radiometric probing values converted to percentage U_3O_8 on the basis of a correlation between radiometric counts and uranium assay values.
- densities were determined from regression formulas based on density measurements of drill core and uranium assay grades.
- limits and continuity of the mineralization are structurally controlled.
- the cut-off grade used for defining the limits of the mineralization of the various zones are 0.1% to 0.2% U_3O_8 over a minimum width of 1 metre, except for the a small portion of the Inferred Mineral Resources based on the 1995 estimates which used 0.5 %U_3O_8.
- the key economic parameters underlying the Mineral Reserves include a conversion from US$ dollars to Cdn$ dollars using a fixed exchange rate of US $1.00 = Cdn $1.22 (reflecting the exchange rate at December 31, 2008)

17.2.3 Key Methods

Mineral Resources, based solely on the pre-1993 surface drilling, were estimated with the two-dimensional cross-sectional method on vertical sections at 50 m or 100 m spacing using Autodesk Generic CADD software. These resource estimates were produced in 1995 and are still considered reliable for areas that have not been drilled from surface since then; namely zones McA South and McA North (See Figure 11 – Map of Surface Drilling).

Mineral Resources estimates for zones A and B, where additional holes were drilled from surface since 2004, were estimated using three-dimensional models. Wire frame models were created from the geological interpretation of mineralization outlines using lithology, structure and uranium grade information. The interpretation was done on 25- or 50-metre spacing vertical cross-sections and validated on plan views. Using the Gemcom GEMS software, estimates of the variables DG (density x grade) and D (density) were obtained with the inverse squared distance method for blocks of 5 m E-W x 10 m N-S x 2 m vertical. Estimates were based on 1 m composites selected within an search ellipsoid with radii of 30 m in the plane of the mineralization and 10 m perpendicular to it. Given the spacing between holes, a few composites with high grade values (above 20%) had their area of influence reduced to 10 m. The Mineral Resources for zones A and B are classified as Inferred.

Mineral Resources and Mineral Reserves delineated by underground drill holes were estimated using three-dimensional models. Wire frame models were created from the geological interpretation of mineralization outlines using lithology, structure and uranium grade information. The interpretation was done on 10-metre spacing vertical cross-sections and plan views. Estimates of the grade and density of blocks of 1 metre x 5 metre x 1 metre were obtained from ordinary kriging or inverse squared distance methods using the Gemcom GEMS software. The small block size was selected to better conform to the mineralization limits and the relatively small size of the excavations. Search distances were 30 m in the plane of the mineralization and 10 m perpendicular to it. No cutting of high uranium values was necessary given their continuity identified at a drill density of 10 m by 10 m.

Block models were validated using various estimation methods and parameters. The most important validation comes from the reconciliation of the mine production with the reserves model over the years (See Table 17-1).

Table 17-1: Production Reconciliation with Reserves

	Mine Production			Reserves Model			Percent Difference Production vs Reserves		
Year	**Tonnes (x1000)**	**Grade $\%U_3O_8$**	**Lbs U_3O_8 (millions)**	**Tonnes (x1000)**	**Grade $\%U_3O_8$**	**Lbs U_3O_8 (millions)**	**Tonnes**	**Grade**	**Lbs U_3O_8**
2000	43.7	11.6	11.174	34.2	9.8	7.354	28%	18%	52%
2001	48.0	16.2	17.166	48.3	14.2	15.117	-1%	14%	14%
2002	52.5	16.0	18.524	47.6	16.5	17.281	10%	-3%	7%
2003	45.4	15.2	15.243	40.9	12.4	11.227	11%	23%	36%
2004	55.9	15.2	18.699	60.4	13.1	17.345	-7%	16%	8%
2005	60.4	13.9	18.512	63.9	14.8	17.950	-6%	-6%	3%
2006	57.6	14.7	18.698	61.5	13.0	17.660	-6%	13%	6%
2007	59.6	14.2	18.718	67.0	12.1	17.851	-11%	17%	5%
2008	53.2	14.9	17.502	58.5	13.4	17.277	-9%	11%	1%
Total	**476.3**	**14.7**	**154.236**	**482.2**	**13.1**	**139.062**	**-1%**	**12%**	**11%**
2004 to 2008	286.7	14.6	92.129	311.2	12.8	88.083	-8%	14%	5%

Since the start of ore mining, production tonnes are within 1% of the model, uranium grade higher by 12% and pounds U_3O_8 higher by 11%. At the end of 2003, based on the production results from previous years, the uranium grade of the zone 2 model was increased by 6%. Since then, for the years 2004 to 2008, the reconciliation of mine production with the model is within 5% on the estimated pounds U_3O_8, which is considered excellent. Comparing the tonnage mined with the model, production is lower by 8% on tonnage and production grade higher by 14%. The reason for the differences in tonnage and grade is due to the fact that with the underground bucket scanner, the mine is able to sort some of the non-mineralized and non-contaminated dilution material extracted from the raises.

17.2.4 Cut-off Grade

For Mineral Reserves to be mined with the raisebore method, the cut-off is estimated at 20,000 lbs U_3O_8 per production raise borehole at a minimum grade of 0.8% U_3O_8. The same cut-off grade is applied for boxhole boring and blasthole stoping.

17.2.5 Mineral Resource and Mineral Reserve Classifications

The criteria for the classification of the mineral resources are the levels of confidence on the geological interpretation and on the continuity of the uranium grade between sample locations. On the basis of the drillhole spacing and information obtained through the mining process, like probing of the pilot hole for the raises, the freeze holes and temperature monitoring holes, the following criteria are generally used:

Measured Resources: Drillhole spacing approaches 10 m by 10 m in the plan of the mineralization and the level of confidence on the interpretation and the grade continuity is high.

Indicated Mineral Resources: Drillhole spacing approaches 30 m by 10 m and additional information may affect the interpretation and the assumed continuity of the grade.

Inferred Mineral Resources: Drillhole spacing is greater than 30 m by 10 m and the level of confidence on the interpretation and the continuity of the grade is low.

The mineral reserves classification follows the CIM definitions where once economic extraction can be justified, Measured Resources become Proven Reserves and Indicated Resources become Probable Reserves. An additional criterion is applied to reflect a degree of uncertainty on the modifying factor related to mining. All other modifying factors (metallurgical, economic, marketing, legal, environmental, social and governmental) are not expected to have an effect on the McArthur River mineral reserves. Until Cameco has fully developed and tested the boxhole boring method, mineral reserves to be excavated with this method are classified as Probable. This is the result of the current uncertainty associated with the estimated productivity of this mining method.

The Mineral Resource and Mineral Reserve estimates are based on 36 drillholes from surface, of which 15 holes intersected mineralization, and 632 drillholes from underground, of which 334 holes intersected mineralization.

17.2.6 Mineral Resource and Mineral Reserve Estimates

A summary of the estimated Mineral Resources with an effective date of December 31, 2008 is shown in Table 17-2.

Table 17-2: Summary of Mineral Resources – December 31, 2008

Category	Tonnes (x 1000)	Grade $\%U_3O_8$	Contained Lbs U_3O_8 (millions)	Cameco's Share Lbs U_3O_8 (millions)
Measured	209.0	9.20	42.4	29.6
Indicated	39.8	8.37	7.4	5.1
Total	**248.8**	**9.07**	**49.7**	**34.7**
Inferred	642.6	9.81	139.0	97.0

Notes: (1) Cameco reports Mineral Reserves and Mineral Resources separately. Reported Mineral Resources do not include amounts identified as Mineral Reserves.
(2) Cameco's share is 69.805 % of total Mineral Resources.
(3) Inferred Mineral Resources have a great amount of uncertainty as to their existence and as to whether they can be mined legally or economically. It cannot be assumed that all or any part of the Inferred Mineral Resources will ever be upgraded to a higher category.
(4) Mineral Resources have been estimated at a minimum mineralized thickness of 1.0 m and at cut-off grade of 0.1% to 0.5% U_3O_8.
(5) The geological model employed for McArthur River involves geological interpretations on section and plan derived from surface and underground drillhole information.
(6) The Mineral Resources have been estimated with no allowance for dilution or mining recovery.
(7) Mineral Resources were estimated on the assumption of using the raisebore, boxhole and blasthole stoping mining methods combined with freeze curtains.
(8) Mineral Resources were estimated using cross-sectional method and 3-dimensional block models.
(9) Environmental, permitting, legal, title, taxation, socio-economic, political, marketing or other issues are not expected to materially affect the above estimate of Mineral Resources.
(10) Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
(11) Totals may not add up due to rounding.

A summary of the estimated Mineral Reserves with an effective date of December 31, 2008 is shown in **Table 17-3**.

Table 17-3: Summary of Mineral Reserves – December 31, 2008

Category	Tonnes (x 1000)	Grade %U_3O_8	Contained Lbs U_3O_8 (millions)	Cameco's Share Lbs U_3O_8 (millions)
Proven	449.2	17.18	170.1	118.8
Probable	280.0	26.33	162.5	113.4
Total	**729.2**	**20.69**	**332.6**	**232.2**

Notes: (1) Lbs U_3O_8 are those contained in Mineral Reserves and are not adjusted for the estimated metallurgical recovery of 98.4 %.
(2) Cameco's share is 69.805 % of total Mineral Reserves.
(3) McArthur River Mineral Reserves have been estimated at a cut-off grade of 0.8% U_3O_8.
(4) The geological model employed for McArthur River involves geological interpretations on section and plan derived from surface and underground drillhole information.
(5) Mineral Reserves have been estimated with an average allowance of 20% dilution from backfill mined.
(6) Mineral Reserves have been estimated based on 95% mining recovery.
(7) Mineral Reserves were estimated based on the use of the raisebore, boxhole and blasthole stoping mining methods combined with freeze curtains. All material extracted by mining is radiometrically scanned for grade and that which is greater than 0.8% U_3O_8 is treated as ore and is fed to an initial processing circuit located underground consisting of grinding to produce an ore slurry which is hoisted hydraulically by pumps to surface. On surface the ore slurry is transported to the Key Lake mill for final processing and production of uranium. The mining rate is planned to vary between 110 and 130 t/d at a full mill production rate of 18.7 million pounds U_3O_8 per year based on 98.4% mill recovery.
(8) Mineral Reserves were estimated using a 3-dimensional block model.
(9) For the purpose of estimating Mineral Reserves in accordance with NI 43-101, an average price of US$47/lb U_3O_8 was used. For the purpose of estimating Mineral Reserves in accordance with US Securities and Exchange Commission's Industry Guide 7, an average price of US$70/lb U_3O_8 was used. Estimated Mineral Reserves are similar at either price because of the insensitivity of the Mineral Reserves to the cut-off grade over the range of these two prices.
(10) The key economic parameters underlying the Mineral Reserves include a conversion from US$ dollars to Cdn$ dollars using a fixed exchange rate of US$1.00 = Cdn$1.22.
(11) Environmental, permitting, legal, title, taxation, socio-economic, political, marketing, or other issues are not expected to materially affect the above estimate of Mineral Reserves.
(12) Totals may not add up due to rounding.

The current mine plan has been designed to extract all the current Mineral Reserves. Mineral Resources in the Measured, Indicated and Inferred Mineral Resource categories have not been included in the current mine plans. Mineral Resources have no demonstrated economic viability. A breakdown of Mineral Resources and Mineral Reserve estimates by zones, as of December 31, 2008 are shown in Table 17-4.

Table 17-4: Mineral Reserves and Resources by Zones – December 31, 2008

Category	Area	Tonnes (x1000)	Grade % U_3O_8	Contained Lbs U_3O_8 (millions)	Cameco's Share Lbs U_3O_8 (millions)
Reserves					
Proven	MCA Stockpile	3.5	23.39	1.8	1.3
	KEY Stockpile	0.6	16.71	0.2	0.2
	Total Stockpile	4.1	22.23	2.0	1.4
	Zone 2	368.6	14.22	115.6	80.7
	Zone 4	7.7	31.15	52.5	36.7
	Total In-Situ	445.1	17.13	168.1	117.3
	Total Proven	449.2	17.18	170.1	118.8
Probable	Zone 1	60.0	26.62	35.2	24.6
	Zone 3	59.9	14.46	19.1	13.3
	Zone 4	160.0	30.66	108.2	75.5
	Total Probable	280.0	26.33	162.5	113.4
Total Reserves		**729.2**	**20.69**	**332.6**	**232.2**
Resources					
Measured	Zone 1	22.0	10.22	5.0	3.5
	Zone 2	34.1	6.48	4.9	3.4
	Zone 4	18.9	10.20	4.2	3.0
	Zone 4South	134.0	9.58	28.3	19.8
	Total Measured	209.0	9.20	42.4	29.6
Indicated	Zone 1	21.2	9.82	4.6	3.2
	Zone 2	16.8	6.13	2.3	1.6
	Zone 3	1.8	12.52	0.5	0.3
	Total Indicated	39.8	8.37	7.4	5.1
Total Measured & Indicated		**248.8**	**9.07**	**49.7**	**34.7**
Inferred	Zone 4South	98.1	4.26	9.2	6.4
	McA South	82.3	16.66	30.2	21.1
	Zone A	255.6	8.19	46.2	32.2
	Zone B	151.3	14.90	49.7	34.7
	McA North	55.3	3.06	3.7	2.6
Total Inferred		**642.6**	**9.81**	**139.0**	**97.0**

The footnotes under Tables 17-2 and 17-3 apply equally to Table 17-4.

17.3 Discussion on Factors Potentially Affecting Materiality of Mineral Resources and Mineral Reserves

The qualified person that estimated the mineral resources and mineral reserves is satisfied with the quality of data obtained from the surface exploration and underground drilling at McArthur River and considers it valid for use in the estimate of Mineral Resources and Mineral Reserves at McArthur River. This is supported by the annual reconciliation of the mine production to within 5% of the estimate of pounds of uranium for the last five years.

As in the case for most mining projects the extent to which the estimate of Mineral Resources and Mineral Reserves may be affected by environmental, permitting, legal, title, taxation, socio-economics, political, marketing or other issues could vary from major gains to total losses of Mineral Resources and Mineral Reserves. The qualified person is not aware of any pending issues that could materially affect the McArthur River Mineral Resource and Mineral Reserve estimates.

The extent to which the estimate of Mineral Resources and Mineral Reserves may be materially affected by mining, metallurgical, infrastructure and other relevant factors could vary from major gains to total losses of resources and reserves. The qualified person is not aware of any scientific or technical issues that, at this time, could materially affect the McArthur River Mineral Resource and Reserve estimates. The raise bore and boxhole mining methods and the overall mining and freezing plans for McArthur River have been developed specifically to mitigate the mining challenges such as the low strength of the rock formation, the groundwater and the high radiation levels, and to mine the deposit in a safe and economic fashion. Unexpected geological or hydrogeological conditions or adverse mining conditions could negatively affect the Mineral Resource and Mineral Reserve estimates.

The project risks are discussed further in Section 19.10.

18 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES

18.1 Mining

This section describes the technical aspects of underground mine operations, including the mine stability and ground support, hydrogeology, test mining activities, selection of mining methods, mine development, mining system, and services.

18.1.1 Geotechnical Characteristics of the Deposit

Two of the primary geotechnical challenges in mining the McArthur River deposit are control of groundwater and ground support in areas of weak rock. These challenges occur concurrently in the immediate area of massive mineralization, in areas where the rock is fractured and faulted, and in the overlying sandstone.

In general, the poorest ground conditions have been encountered in the hanging wall sandstone along the western edge of the mineralization, following the trend of the P2 fault, up from the footwall unconformity to the tip of the basement wedge.

Mining activities have encountered a number of different geotechnical classified zones. These have been classified as follows:

- Very good ground with minimal ground support required. Generally occurs within the underlying quartzite block
- Good ground with local tectonics and/or alteration. Generally occurs within the underlying quartzite block, and upper unaltered sandstone
- Generally altered and/or tectonized. Local failure. Generally occurs within the overlying altered sandstone, the hanging wall block, and the underlying quartzite block
- Altered and tectonized. Ongoing failure without support. Generally occurs within the hanging wall block area near the ore zone in areas of high alteration, fracturing and faulting
- Very poor ground. Cohesive clay, breccias, etc. Generally occurs in the ore zone, and in areas of the hanging wall and footwall very near to the ore zone with high alteration, severe fracturing, and faulting

- Extremely poor ground. Fragmented clay breccias etc. Generally occurs within the ore zone and footwall altered sandstone

Geotechnical investigation holes are drilled into any planned mining areas prior to mining. An analysis of core recovered from these holes helps determine the geotechnical conditions that may be encountered during mining and help determine the mining design. The conditions expected to be encountered when mining are geometrically modeled. A sample modeled cross section of the ore zone and surrounding rocks is shown in Figure 18.

Ground control requirements are dictated by the geological conditions expected to be encountered. Methods used for ground control include grouted Dywidag rockbolts, grouted cable bolts, screening with split set bolts, spiling, and shotcrete. Drift sizing is also dependent on geological conditions encountered.

Development at McArthur can be classified into three categories, low, medium, and high-risk development based on consideration of water, ground control, and radiation. The classification system and the action required for development in those areas is detailed in **Table 18-1** and **Table 18-2**.

Figure 18 - Typical Geotechnical Model Section – Looking North

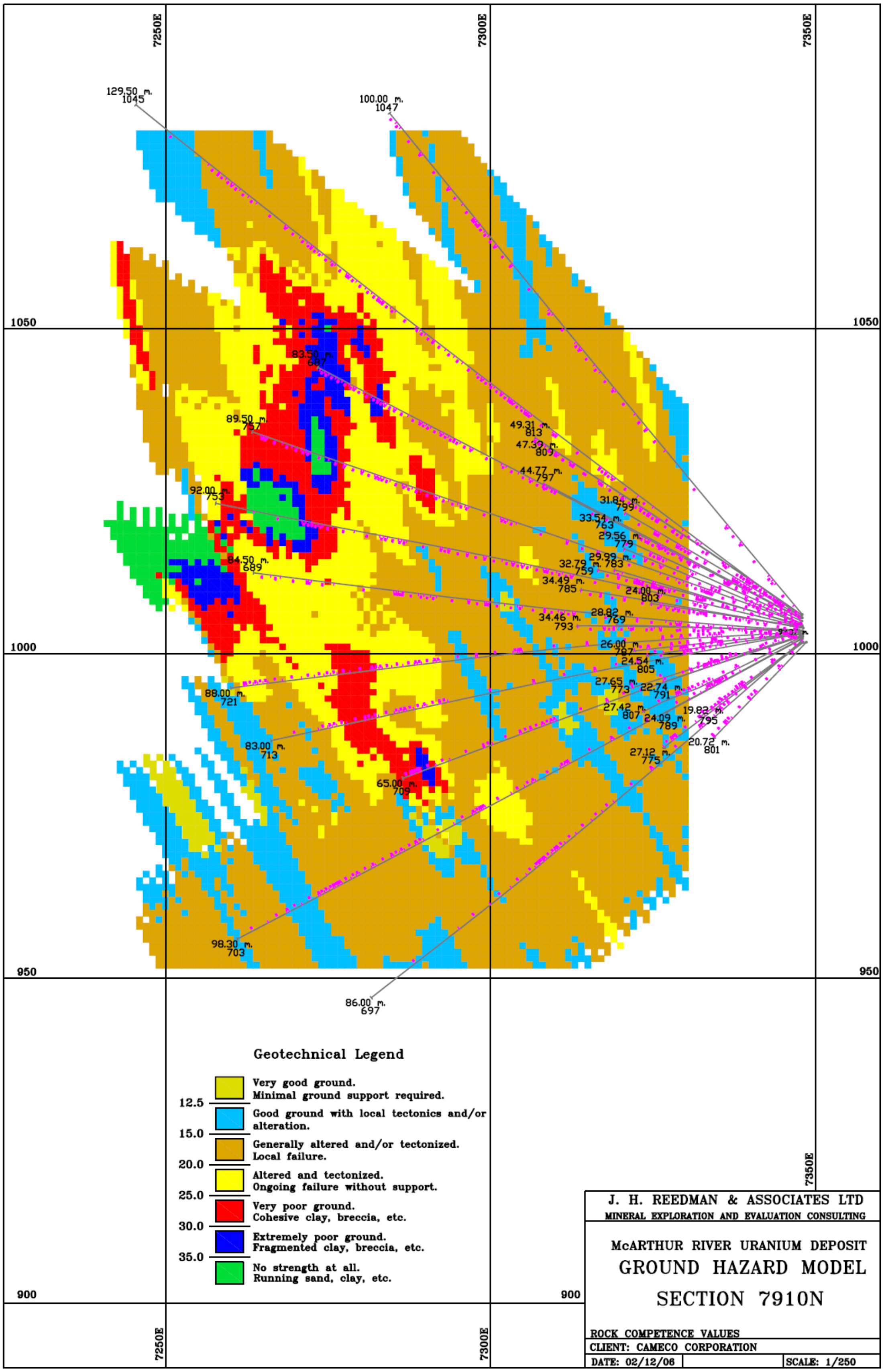


Table 18-1: Underground Development Risk Classification

	Water	**Ground Control**	**Radiation**
Low Risk	Minimal water inflow risk, inflow rate expected to be less than 100m^3/hr. Development in basement rock at least 15m away from unconformity contact. Examples: Water source from fracture/joint system in basement rock only.	Very Good to Fair Rock RMR 50% or higher GHM 10 to 15 Medium to long unsupported stand-up time (weeks to years) Examples: Surface loose only, small shallow blocks or wedges (manageable by bolts & screen).	No known or significant radiation sources (radiation work permits generally not required). Manageable within the Code of Practice without controls. Examples: Development in waste or low-grade ore stringers. Radon and radon progeny levels remain below action levels.
Medium Risk	Moderate water inflow risk, inflow rate expected to be less than 500m^3/hr Development in basement rock at least 15m away from unconformity contact. Examples: Inflow risk from an open drill hole or geological structure connected to the sandstone.	Poor Rock RMR less than 50% for length of development advance GHM 20 Short unsupported stand-up time (days to weeks) Examples: Ground may unravel or fail into a stable shape or profile requiring additional support. May require spiling to maintain stability and profile until support is installed.	Moderate radiation sources (radiation work permits generally required). Manageable within the Code of Practice with minimum controls and standard development practices. Examples: Development in high-grade stringers or short lengths massive ore less than 20%. Radon or radon progeny levels may become elevated above action levels.
High Risk	Substantial inflow risk, inflow rates potentially greater than 500m^3/hr. Development without full freeze protection within 15m of the unconformity contact. Examples: Inflow risk from multiple open bore holes or persistent water conductive geological structure. Development near the unconformity that could result in an uncontrolled cave or back failure triggering an inflow event.	Very Poor Rock RMR < 30% for length of development GHM 25 or higher Very short or no unsupported stand-up (could fail anytime after excavation). Potential for uncontrolled "run away" caving. Example: Development through unconsolidated ground.	Significant radiation sources (radiation work permits always required, restricted access). Manageable within the Code of Practice with significant controls. Non-standard development practices may be required. Examples: Development in massive high-grade ore greater than 20%. Respiratory equipment may be required for radon or radon progeny.

Table 18-2: Action Required for Risk Classification

	Action Required
Low Risk	Standard internal review and approval as per Eng-04 Checking, reviewing and Approving Process.
Medium Risk	Standard internal review and approval as per Eng-04 Checking, reviewing and Approving Process.
High Risk	All high-risk development is to be formally documented and approved by the **Mine General Manager** after internal review and endorsement by the site's technical experts. In addition, notification of high-risk development activities is to be made to the Vice President of Mining prior to commencing with high-risk development.

18.1.2 Hydrogeology and Mine Dewatering

The deposit and surrounding rocks are highly fractured. The altered sandstone, P2 fault and unconformity are known areas where water is present with pressures up to 700 psi dependent on depth and can produce significant flows if intersected. One such intersection occurred in 2003 resulting in a substantial water inflow estimated at 1,100 m^3/hr that resulted in a mine production shutdown of three months. A second inflow occurred in November 2008 when a small water inflow of 100 m^3/hr occurred. This inflow was quickly managed through the site contingency plans and did not impact on mine production plans and activities. These inflows are discussed in Section 19.1.

Permeability in the vicinity of the orebody is controlled largely by the presence of open fractures. In general, the area of highest water flow is delineated by a zone that starts in the footwall sandstone of the orebody, crosses the nose of the basement wedge, then rises to the east of the upper unconformity. Other areas of high measured inflows include the upper unconformity, the footwall sandstone to the west of the orebody, and the P2 fault, particularly when it deflects vertically into the sandstone.

All mine development to date has attempted to minimize the amount of water encountered. This was done through extensive grouting and careful placement of mine development away from known groundwater sources whenever possible as well as ground freezing.

From the geotechnical holes drilled prior to developing a mining area, the hydrogeological conditions and dissolved radon levels are determined.

Radon is a natural by-product of the uranium decay series. Under the hydrostatic pressure present at the depth of the orebody, this gas is highly soluble in groundwater. When groundwater escapes into the mine workings, it depressurizes, releasing radon gas into the mine air. The highest radon values encountered are related to the P2 fault near the mineralized zones.

The 2008 daily average volume of mine water pumped from underground was approximately 280 m^3/hr, not including the 590 Level inflow.

During the water inflow incident, additional temporary capacity was put in place to treat the water flows. Construction was completed in 2005 to increase the permanent and contingency water treatment capacity to approximately 1,500 m^3/h. In 2008, Cameco increased pumping capacity at the McArthur River operation to 1,650 m^3/hr from the previous level of 1,500 m^3/hr. The operation has the ability to treat between 750 and 800 m^3/hr through the conventional water treatment plant. In addition, there is another 750 m^3/hr contingency water treatment capacity available which requires regulatory approval to use. Beyond that, there is water storage capability of 50,000 m^3 in a surface pond, which could provide several weeks storage for any inflows in excess of hourly treatment capacity.

Current discharge rates are limited by the SMOE with the approval to release up to 360 m^3/hr during the period of April 15 to June 15 to allow passage of spawning fish through the downstream Read Creek culvert and up to 833 m^3/hr for the remainder of the year.

Cameco is working on obtaining regulatory clarity for contingency water treatment and release in the event of a large water inflow.

Plans at McArthur River in 2009 are to:

- upgrade the Read Creek culvert to allow fish passage during high flow conditions;
- apply to SMOE for removal of the 360 m^3/hr flow restriction; and,
- submit an application to CNSC and SMOE for formal approval of the McArthur Contingency Water Management Plan that would allow Cameco to operate the contingency water treatment plant and discharge at rates up to 1,500 m^3/hr during mine inflow conditions.

18.1.3 Mining Methods

Mine designs and methods are generally selected according to their ability to mitigate risks associated with high-pressure water, radiation hazards, and poor ground conditions. The mining method in use is raisebore mining and is described below. Other planned methods such as boxhole boring and blasthole stoping are being evaluated for use and are described under the sub-heading, “Mining Methods under Development”.

Ground Freezing

Prior to mining the ore zone, the footwall areas must be frozen to isolate the ore zone from the water-bearing sandstones and vertical faults that form the western boundary of the deposit. Ground freezing also helps stabilize the highly fractured footwall rocks during mining operations. Ground freezing is accomplished by drilling a series of holes from the hanging wall through or around the ore zone into the footwall sandstone and circulating -35^{o}C calcium chloride brine through the rock until frozen.

Freeze methods used consist of the following:

Freeze Wall Isolation: Freeze wall isolation consists of creating one or more freeze walls to isolate an area from water-bearing ground. In order to be effective, the freeze walls must be tied together and 100% enclosed or anchored into non-water bearing ground. Zone 2 panels 1-3 were isolated from the ground water by creating three freeze walls (north, west and south) and using the geometry of the thrust fault to take advantage of the non water-bearing basement rock to seal the top, east and bottom of the zone.

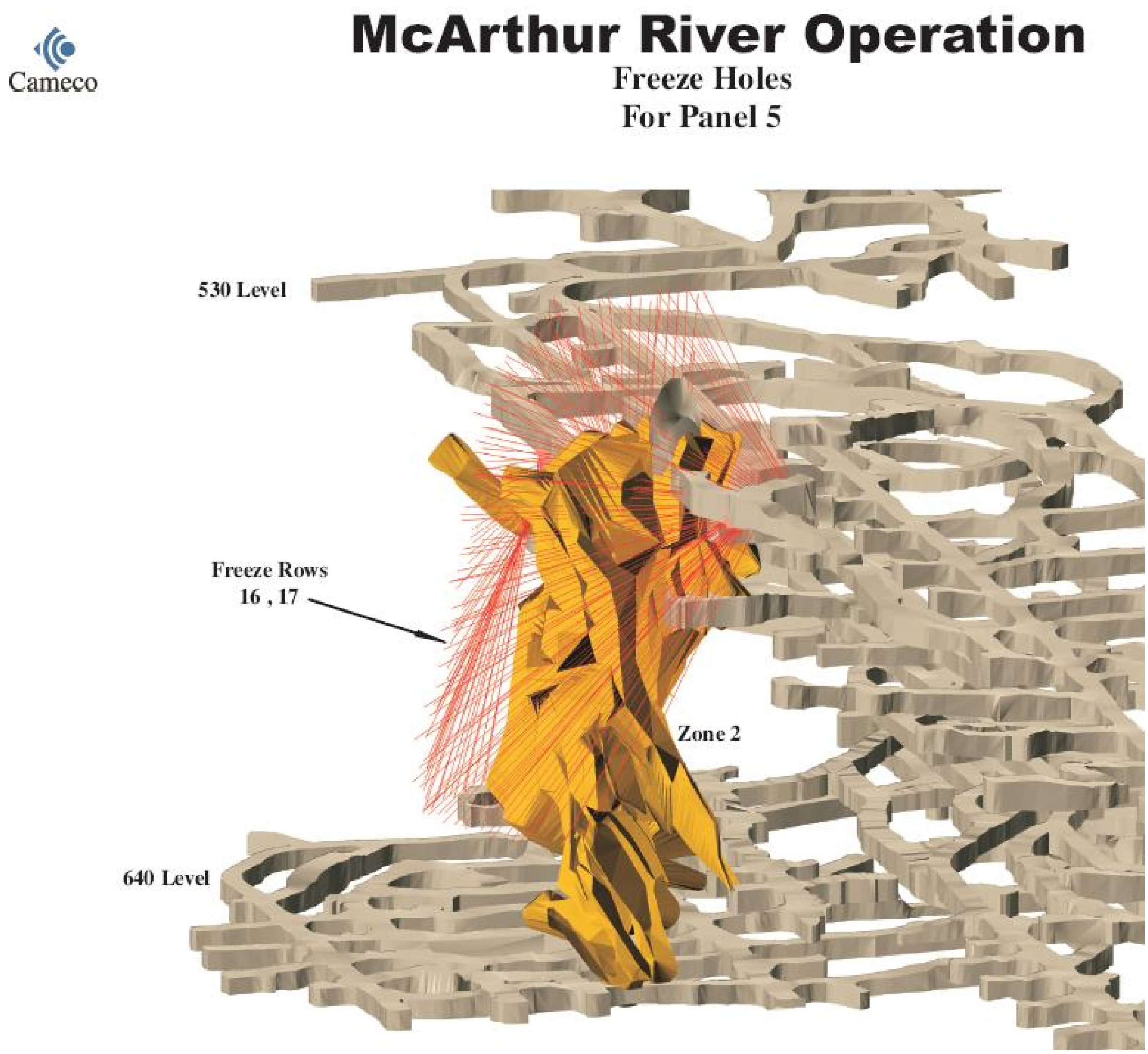
Mass Freezing: Mass freezing consists of freezing an entire area to isolate it from water-bearing ground. To date, mass freezing has not been used at McArthur River but is being considered for the Zone 4 Upper area due to the unfavourable location of the ore zone in relationship to the basement rock and the potential for improved ground conditions.

Freeze Shield Protection: Freeze shield protection consists of creating freeze walls that are not 100% enclosed. They do no not provide full protection from water, but do help mitigate the risks associated with developing near water-bearing ground by creating longer pathways for water to enter a drift or opening. Freeze shields are currently being used for the Zone 4 530-level development.

Diamond drills and down-the-hole drills configured for high pressure groundwater drilling are utilized for freeze hole drilling. All holes are drilled through pressure tested double lined packers and valves, tested to approximately 8 MPa, and blow-out preventers to prevent large inflows of water into the mine. Freeze drilling and brine distribution may take up to two years to install for a new zone.

Calcium chloride brine at a temperature of -35^{o} C is circulated through the freeze holes until the ground reaches a temperature of -3^{o} C over a thickness of 4 to 6 m..It takes typically 6 months to form a freeze wall surrounding a planned mining area before production drilling can commence. An illustration of the freeze hole drilling for Zone 2 – Panel 5 is provided in Figure 18-2.

Figure 19 - Freeze Hole Drilling



Raisebore Mining

The mining of the McArthur River deposit faces a number of challenges including control of groundwater, weak rock formations, and radiation protection from very high grade uranium. Based on these challenges, it was identified during initial mining studies that non-entry mining methods would be required to mine the deposit.

The raisebore mining method was selected as an innovative approach to meet these challenges and was adapted to meet the McArthur River conditions. This method has been used to extract the ore at McArthur River since mine production started in 1999. The method has proven to be very successful in terms of achieving both budgeted production and safety goals including low accident frequency and radiation exposure.

The raisebore method involves drilling a series of raisebore holes through the ore zone. The ore is collected by remote-controlled scooptrams at the bottom of the raise. Once the raise is completed, the raise is concrete filled.

The process involves the development of a raisebore chamber on 530 m level above the ore zone in the hanging wall. An extraction drift on the 640 m level is excavated below the ore zone in the basement rocks. The raisebore, located in the upper raisebore chamber, drills a 30.4 cm diameter pilot hole from the raisebore chamber to the extraction chamber below. The raisebore head is then installed onto the drill shaft in the extraction chamber. A 3.05 m diameter raise is then bored upward from the extraction drift. There is a certain amount of waste and low grade ore that is mined with the raisebore below the ore zone. Once the ore zone is encountered, the material that falls to the bottom of the raise is removed with a line-of-sight remote-controlled load-haul-dump (LHD) loader and hauled to an ore scanner to determine the grade of the ore material.

Material grading above 0.8 % U_3O_8, is hauled to the underground grinding circuit and then pumped to surface in a slurry. Material below 0.8% U_3O_8, is hauled to the Pollock Shaft and hoisted to surface.

The raise is mined to the top of the ore zone. The drill head is then lowered to the bottom of the raise and removed. The raise is then backfilled to limit caving from the walls and permit the mining of the next raise in sequence. The raises are initially sealed with a backfill gantry and a 23 m^3 concrete plug is pumped from the bottom of the raise. After a 48-hour curing period, a 100 m^3 second pour is pumped from the top of the raise onto the 23 m^3 plug pour. After a 24-hour curing period the gantry is removed and the plug is bolted for reinforcement. The remainder of the raise is then filled with concrete from the top of the raise by pouring the concrete down the pilot hole from the upper raisebore chamber. Spacing on the raises is such that adjacent raises will intersect the previous raises by a small amount to maximize ore recovery.Once the ore has been mined below the raisebore chamber, the chamber is concrete filled. Pressure grouting is performed to ensure the opening is completely filled. A new raisebore chamber is mined directly beside the previous chamber, day lighting the poured concrete in the previous chamber. The process is duplicated for the bottom extraction chamber. raisebore mining will then continue from the new extraction chamber.

This raisebore mining method is shown in Figure 20, Figure 21, Figure 22, and Figure 23,

Figure 20 - Raisebore Mining Schematic

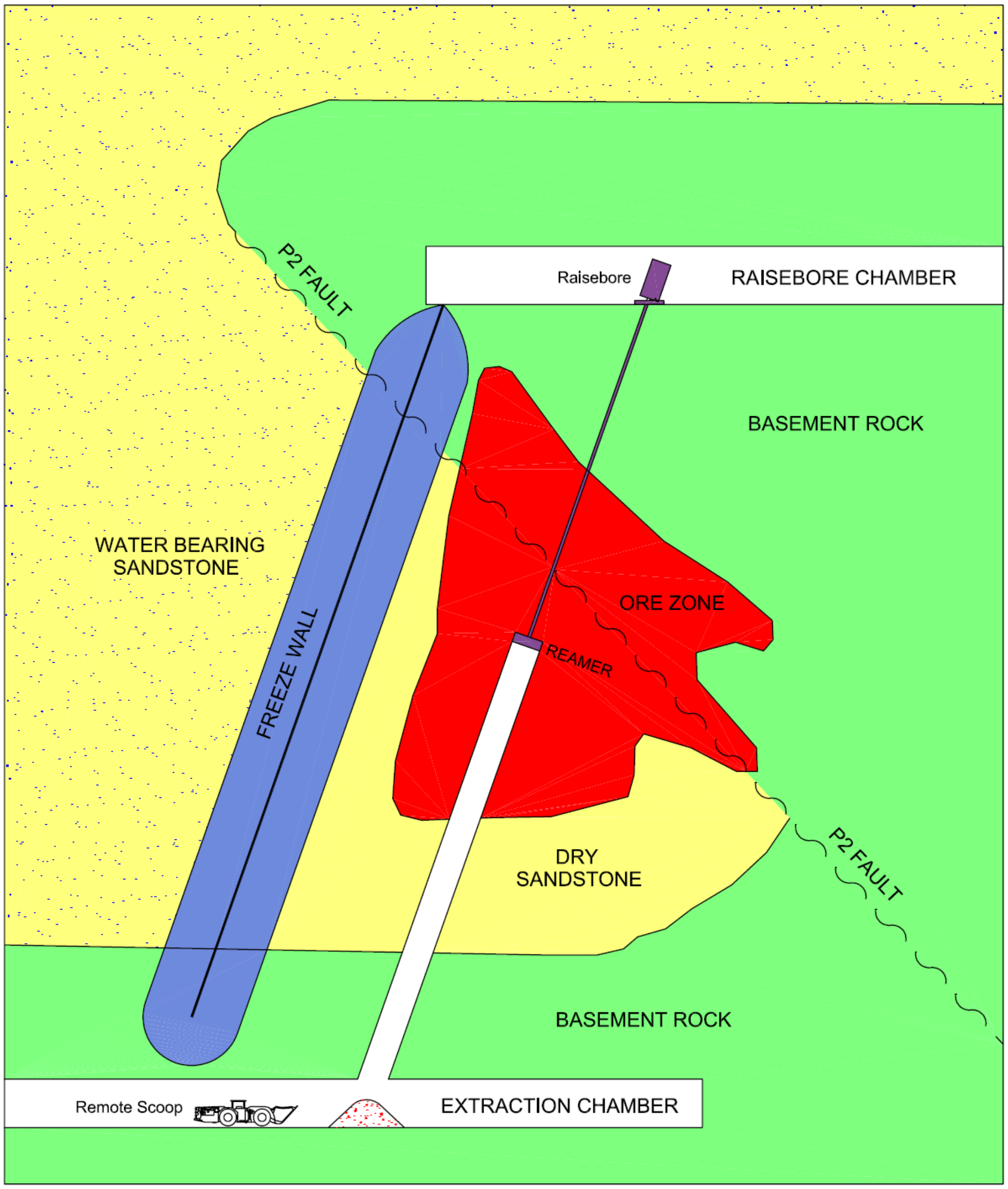


Figure 21 - Plan of Raisebore Chamber

Figure 22 - Plan of Extraction Drift

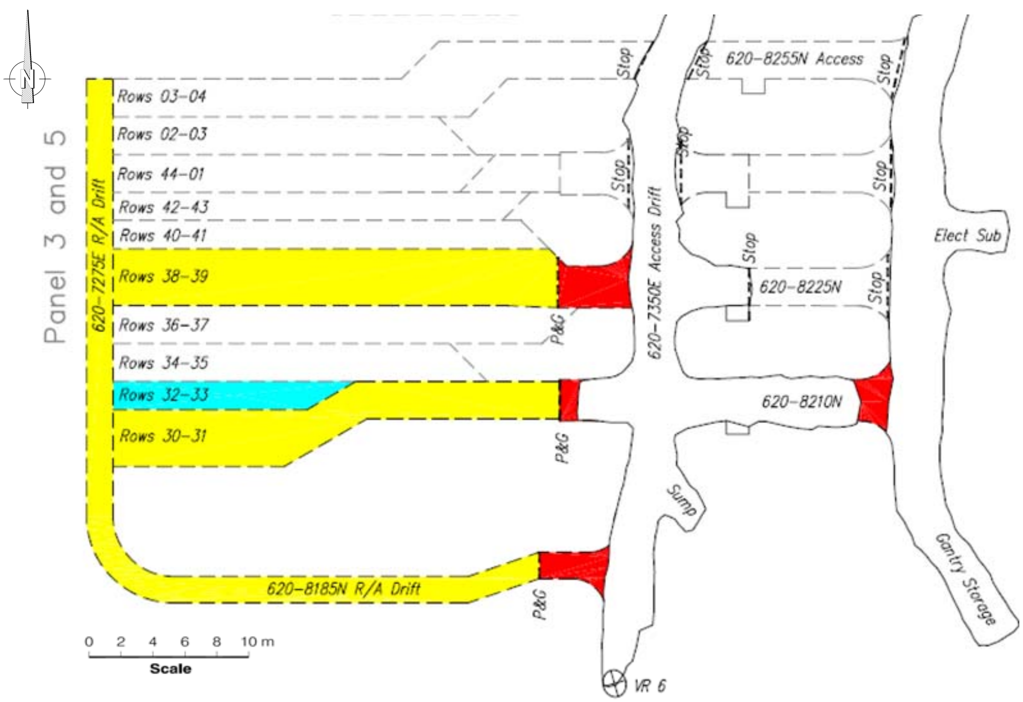
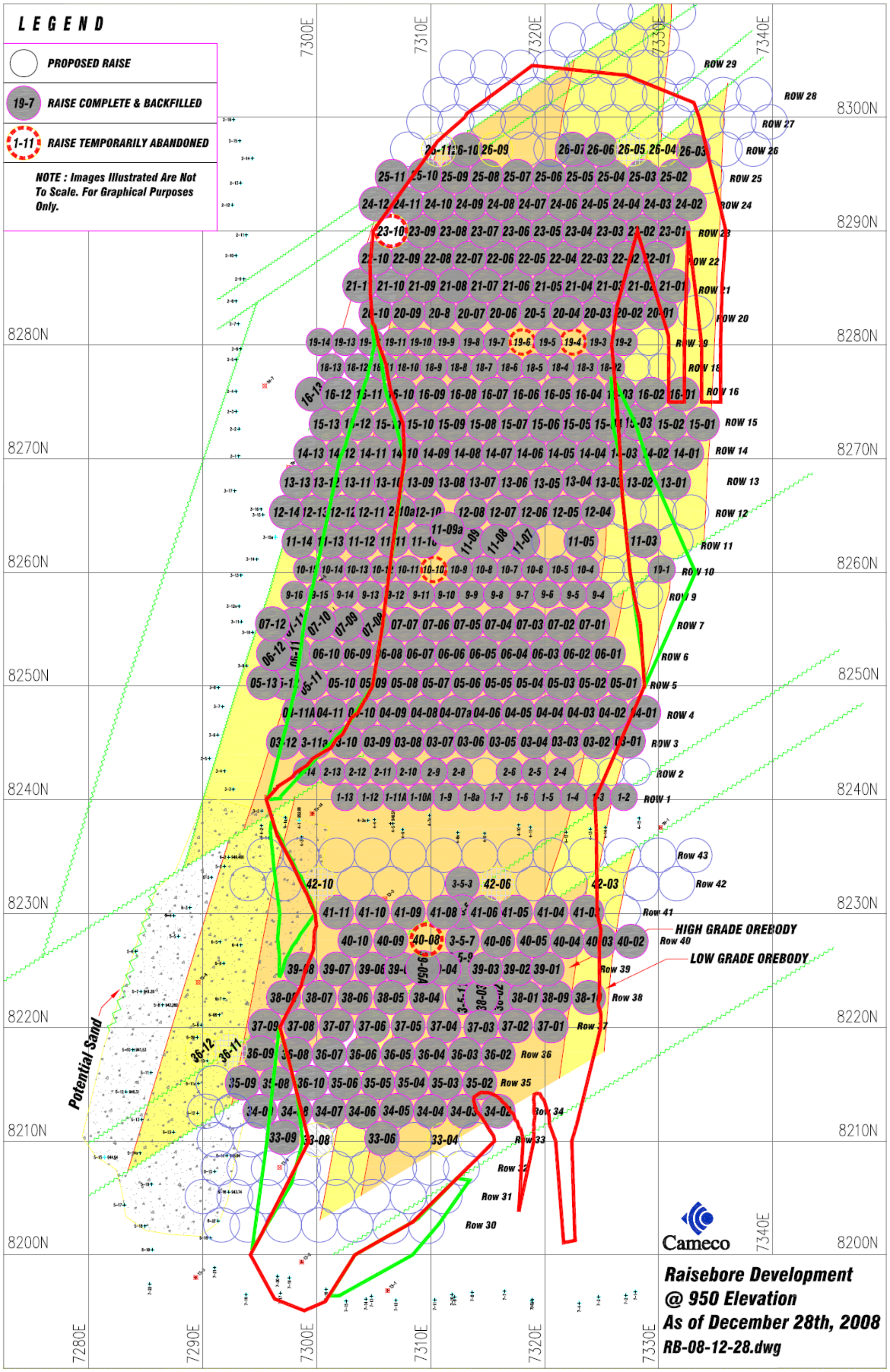


Figure 23 - Plan View, Zone 2 Raisebore Locations



Mining Methods under Development

The raisebore method will continue to be used to extract ore wherever feasible. However, this mining method will not suit all the geological situations that exist at McArthur River, and consequently other methods are being developed. These methods are boxhole boring and blasthole stoping and are discussed in the following sections. The following mining methods are not in use at McArthur River, but are being considered for future mining zones.

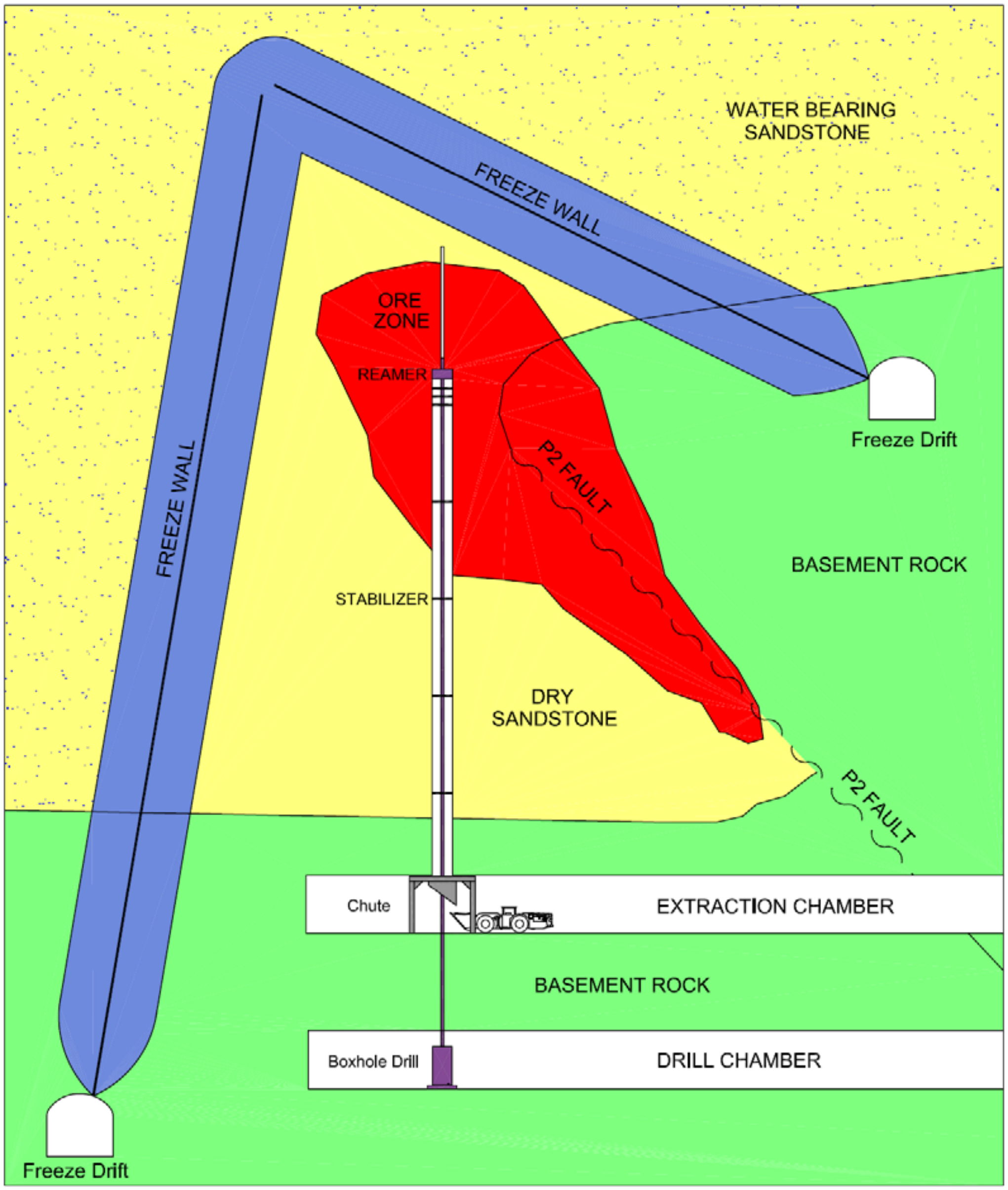
Boxhole Boring

In 2005, a mining method study determined that a modification to the raisebore method, the boxhole mining method, would be better suited for the Upper Zones 1, 3 and 4 because it would allow development from a preferred location due to the presence of the overlying water bearing sandstones. Boxhole boring is similar to the raisebore method with the main difference being that the drilling machine is located below the orebody for the box hole method. Cameco plans to start using this method for production from Upper Zone 4 beginning in 2013. In addition, this method is planned for the extraction of Upper Zones 1 and 3.

For this method, an extraction chamber is excavated below the ore zone. A drill chamber is excavated at some distance below the extraction chamber. The boxhole raise drill then drills a 0.45 m diameter pilot hole upward through the extraction chamber at which point the reamer is installed on the drill string. The raise is then reamed upward through the waste and low grade ore until the bottom of the orebody is intersected. The raise is then continued through the ore zone to top of the orebody. Material falling to the bottom of the boxhole raise is directed via a chute in the extraction chamber. A line-of-sight remote control LHD then removes the ore from the extraction chamber and hauls the ore to the underground grinding circuit. Upon completion of the boxhole raise, the drilling equipment is removed from the raise and the raise collar is capped. Concrete is then pumped into the boxhole raise to completely fill the raise. As with the raisebore method, individual boxholes will intersect slightly with the adjacent boxholes to maximize ore recovery.

A schematic drawing illustrating the boxhole boring mining method is shown in Figure 18-7.

Figure 24 - Boxhole Boring Mining Schematic



Boxhole boring is a vertical development technique used at a few mines around the world; however, this would be a first in uranium mining as a production method. As part of the mining method evaluation and selection process, Cameco personnel visited the El Tiente mine in Chile, where boxhole boring is used extensively.

Cameco has some experience with boxhole boring as it was tested previously at Rabbit Lake in 1996 and Cigar Lake in 1991. Both tests showed promising results, but additional testing at McArthur River will be required to evaluate the productivity of the method, and will likely require additional operational development during testwork and initial mining phases.

The technical challenges associated with this mining method include reaming through frozen ground, raise stability, controlling raise deviation,material handling, and control of radiation exposure. Accordingly, Cameco has scheduled a long lead-time for implementation to ensure the technical challenges are understood and risks mitigated. Until Cameco has fully developed and tested the boxhole boring method at McArthur River, there is uncertainty in the estimated productivity. A team has been assembled at McArthur River to develop the boxhole boring method.

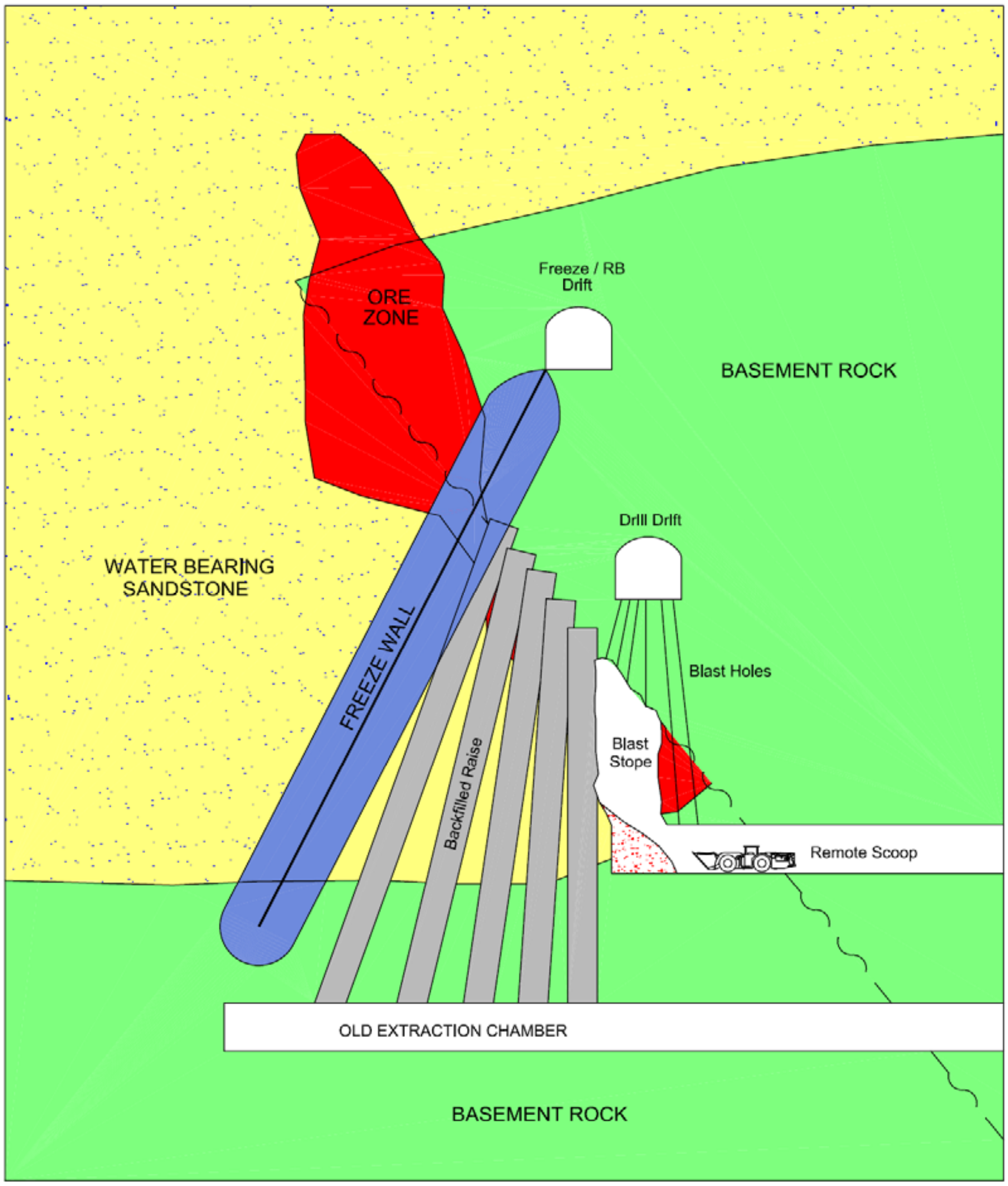
Cameco plans to develop and test the boxhole boring method over the next four years. In 2006, Cameco placed an order for a boxhole borer for delivery in 2008 and in 2007 completed the mine plan for the boxhole boring test area. The first test raise was setup at the end of 2008 and pilot hole drilling commenced in January 2009. Three raises in waste are planned for 2009 as is completion of freeze drilling for a boxhole boring ore extraction test area. The brine distribution system for this area is scheduled to be installed in 2009 as part of the plan for test raise excavation in 2010**.**

Blasthole Stoping

Blasthole stoping involves establishing drill access above the ore and extraction access below the ore. The stope is then drilled off and blasted using a raise as a slot. Muck is removed by line-of-sight scoop. Once a stope is mined out, it will be backfilled to maintain ground stability and allow the next stope in sequence to be mined. This mining method has been used extensively in the mining industry, including uranium .

This mining method is being evaluated for small isolated ore zones away from the freeze walls and where raisebore or boxhole boring is uneconomic or impractical. Figure 25 illustrates an area where longhole stoping may be applied. McArthur River plans to implement this method for ore remnant recovery in Zone 2, pending regulatory review and approval.

Figure 25 - Blasthole Stoping Mining Schematic



18.1.4 Mine Operations

Mine Access and Development

The access to the mine is via the Pollock Shaft, which is a 5.5 m diameter concrete lined shaft. All workers, equipment, waste rock and low grade material are hoisted, through this shaft. There are two other shafts, Shaft No.2 and Shaft No.3, which are used primarily as mine ventilation airways. A second egress emergency hoist and manway is installed in Shaft No.3. A fourth shaft to access the area north of the Pollock Shaft is currently being evaluated and implementation will be dependent upon exploratory drilling results.

There are two main levels in the mine, the 530 m level and the 640 m level. The 530 m level is utilized for production raise bore chambers and freeze drifts, as well as for exploration drifting. Development is performed by conventional drill and blast methods using drill jumbos and roadheader mechanical rock cutting techniques where applicable. Most drifts have poured concrete floors for easy cleanup of spills of ore from haulage equipment and to reduce levels of gamma radiation in the mine. There is an access ramp connecting mine levels that provides vehicle and equipment access to the levels.

Underground exploration drilling has identified four mineralized zones (Zones 1 to 4). Cameco is working on the transition to new mining zones at McArthur River, including mine planning and development. Since mining startup in 1999, only Zone 2 has been mined. Zone 2 is divided into four panels (1, 2, 3, and 5). To date all production at McArthur has come from Zone 2, Panels 1, 2, & 3 with approximately 150 million pounds extracted.

As extraction of Zone 2 (panels 1, 2, and 3) progresses, Cameco expects to place Lower Zone 1, Zone 2 (panel 5) and the lower mining area of Zone 4 into production in stages between 2009 and late 2010, subject to regulatory approval. Cameco plans to continue to use the current raisebore method to extract ore in these zones.

Freeze drilling and raisebore access for Lower Zone 1 has been developed on the 530L. Due to water risks, the 560 level extraction chamber development will not be driven until the production freeze wall has been established. Freeze drilling for Lower Zone 1 is scheduled to begin in the 2nd quarter of 2009.

At Zone 2 (panel 5), the brine system to form the new freeze wall was activated in the fourth quarter of 2008 and formation of the new freeze wall is in progress. The new freeze wall is expected to be in place in the second quarter of 2009. Approximately six months of freeze time are required before the raisebore chamber can be developed. Production is scheduled for Zone 2 (panel 5) in the second half of 2009. Cameco intends to produce over 85 million pounds of U_3O_8 from this area.

Development work for lower Zone 4 is progressing. This area is classified as higher risk development for the raisebore chamber on the upper level and

Cameco has adjusted its development and production schedules to recognize and mitigate these risks. In 2009, development of this Zone will continue and freeze hole drilling is expected to take place. Production from this area is now scheduled for 2010.

During the fourth quarter of 2008, access was successfully re-established along the previously backfilled Zone 2 Panel 3 freeze wall on the 530 level. This mining area will be used to extend the life of Panel 3 and is part of the revised production plan for 2009 to address the rescheduling of production from Lower Zone 4.

In November of 2008, the lower extraction area for Lower Zone 4 development on the 590 m level encountered a small inflow of water that was quickly captured and controlled. This area was considered low risk development which is defined as having an inflow potential of less than 100 m^3/h or an order of magnitude below our pump and treat capacity. The inflow has not caused Cameco to alter any planned mining in this area. However, full grouting of the inflow area is required before development resumes. As of January 2009, the critical path for production in this area is on the 530 level where freeze drilling will be carried out and not the 580/590 level extraction area where the inflow was encountered. Other development on the 580 level continues.

Through much of 2006, freeze-hole drilling advanced at a slower than expected rate due to technical challenges with drilling through frozen ground. Consequently, Cameco made improvements to the drill setups, and addressed earlier staffing challenges associated with getting experienced drillers due to high levels of activity in the exploration diamond drilling industry. Further, the freeze-hole drilling technique and equipment was modified. In 2007, Cameco increased the number of drills and crews available for freeze hole drilling. With these changes the scheduled target drilling rates were achieved throughout 2008 and continue to be achieved.

The yearly forecast drift development totals are shown in Table 18-3.

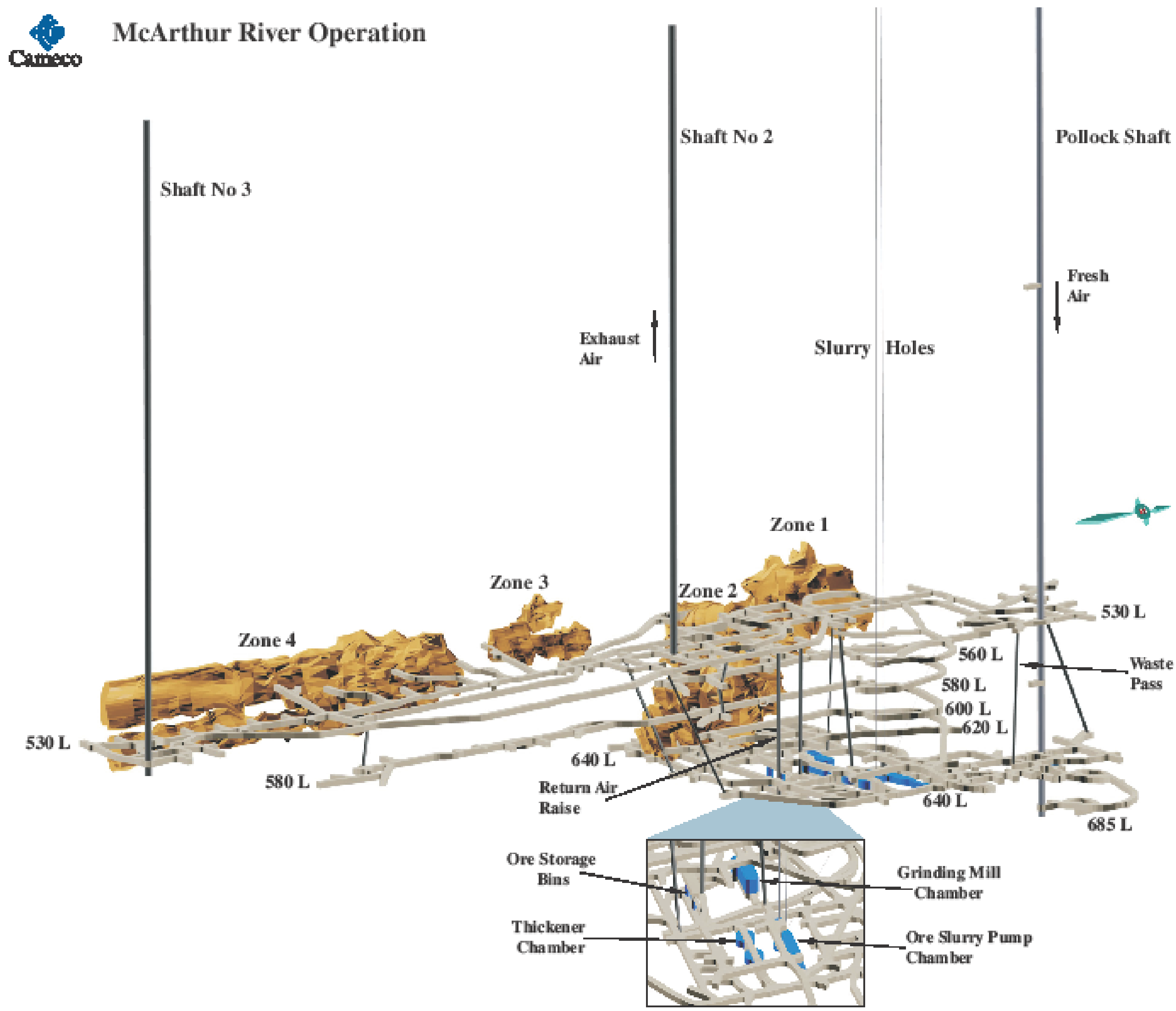
The overall mine layout is shown on Figure 26.

Table 18-3 – Planned Yearly Mine Development Summary

Year	Total Dev(1) (m)	Average (m/month)	Capital Dev(1) (m)	Operating Dev(1) (m)
2009	2363	197	1457	906
2010	2270	189	1849	421
2011	2142	179	1615	527
2012	1143	95	709	434
2013	544	45	303	241
2014	731	61	454	277
2015	855	71	710	145
2016	1183	99	1033	150
2017	2098	175	1836	262
2018	1412	118	1262	150
2019	740	62	490	250
2020	400	33	250	150
2021	382	32	150	232
2022	300	25	150	150
2023	300	25	150	150
2024	300	25	150	150
2025	300	25	150	150
2026	300	25	150	150
2027	300	25	150	150
2028	275	23	125	150
2029	275	23	125	150
2030-2033	0	0	0	0
Total	**18,613**	**-**	**13,268**	**5,345**

Note: (1) Dev is abbreviation for mine development

Figure 26 - Mine Layout



Underground Grinding Circuit

The underground grinding and hydraulic pumping system is discussed in Section 16.2.2.

Mine Ventilation

Throughout the underground workings, diesel emissions, blasting gases, radon, and long-lived radioactive (LLRD) dust are controlled by supplying work areas with sufficient ventilation airflows.

Two ventilation systems are used to ventilate the underground environment. The primary ventilation system is driven by surface exhaust fans situated at Shaft No.2 that draw fresh air down the Pollock Shaft and Shaft No.3, through the main workings underground, and then up Shaft No.2 to be exhausted to the surface environment. This primary system is complemented by local secondary negative and positive ducting systems. These systems are driven by in-line fans that either capture potentially contaminated air for delivery to the main exhaust system (negative), or supply the appropriate amount of air for working in a specific area (positive). The primary ventilation system is driven by two of three 700 HP fans and one 500 HP fan located on surface at Shaft No.2. This system draws air through the main work areas at specified volumetric flow rates. Fresh air is provided via the Pollock Shaft and Shaft No.3. The current exhaust rate from the mine is 300 m^3/s. It is anticipated that additional air flows will be required when the production mining of Lower Zone 4 is brought on line. Existing plans are to increase total underground ventilation to 370 m^3/s to meet this increased ventilation requirement.

During the winter months the air is heated to a minimum of +5.0 °C by four 25 million BTU/hr heaters at the Pollock Shaft and No.3 Shaft.

General ventilation principles followed at McArthur River consist of the following:

- Single pass ventilation used in areas with a significant radon or LLRD potential.
- Capture and containment of radon at the source location (drill collars, radon bearing sumps, backfill holes, etc) through the use of secondary negative ventilation ducting.
- Equipment operator stations will be located in fresh air and upstream of potential radiation sources whenever possible.
- Short-circuiting of air will be from fresh air to exhaust air.

Materials Handling

Waste and ore material at McArthur River operation are classified as follows in our licensing documentation :

- Clean Waste: Non-acid generating waste, less than 0.03% U_3O_8.
- Potentially Acid Generating (PAG) Waste: Potentially acid generating waste, less than 0.03% U_3O_8.
- Mineralized Waste: Greater than 0.03% U_3O_8, less than 0.15% U_3O_8.
- Low-Grade Ore: Greater than 0.15% U_3O_8, less than 2.0% U_3O_8.
- High-Grade Ore: Greater than 2.0% U_3O_8.

Clean waste rock, characterized by its low uranium mineralization and low acid generating potential, is used on site for either surface work or backfill aggregate. PAG and mineralized waste rock is stored on lined waste pads. The coarse fraction of crushed acid waste rock is also used in backfill aggregate. Crushed PAG waste, mineralized waste, and low-grade ore is shipped dry to Key Lake as blend material to reduce mill feed to 4% U_3O_8. High-grade ore is sent to the underground grinding circuit, pumped to surface, and trucked to Key Lake in slurry filled containers. Twelve to fourteen truckloads of slurried ore are hauled to the Key Lake processing plant daily.

Mine Production Schedules

The current mining plan has been designed to extract all of the estimated Mineral Reserves.

McArthur River currently has sufficient estimated Mineral Reserves to continue production to 2033. Yearly production is currently limited by McArthur River's CNSC operating license at 18.7 million pounds of U_3O_8. In 2002, Cameco submitted an application to increase the annual licence capacity at McArthur River and Key Lake to 22 million pounds per year. This application has been undergoing a screening level environmental assessment under the *Canadian Environmental Assessment Act*. (see Section 18.5.2).

It is expected that Mineral Reserves may increase as further exploration continues from both surface and underground and mining plans are put in place for Zones 4 South, A and B. Cameco believes there is good potential it will be able to convert portions of the McArthur River Measured and Indicated Mineral Resources to Mineral Reserves. In order to maintain annual production at 18.7 million pounds for longer than currently estimated and/or extend mine life.

Mineral Resources that are not Mineral Reserves have no demonstrated economic viability.

The overall annual mine and mill production forecasts are shown in **Table 18-4**.

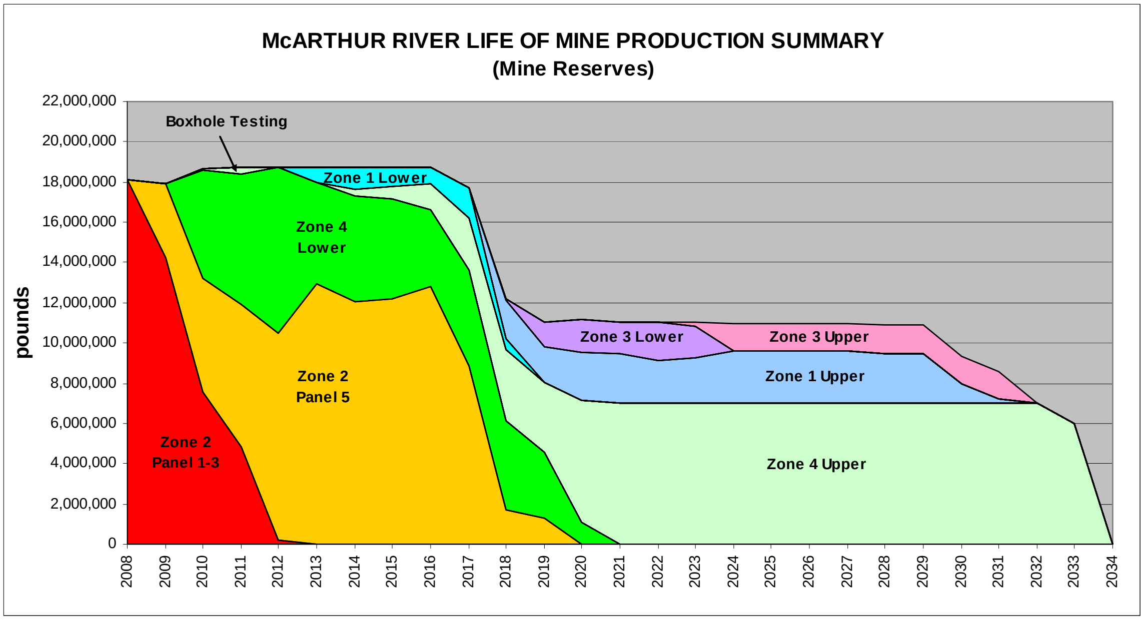
Table 18-4 –Production Forecast Summary based on Estimated Mineral Reserves

Year	Mine Production			Mill Production
	Tonnes (t x 1000)	Grade (%U_3O_8)	Lbs U_3O_8 (millions)	Lbs U_3O_8 (millions)(1)
2009	41.7	19.48	17.9	18.7
2010	43.2	19.64	18.7	18.7
2011	43.9	19.34	18.7	18.7
2012	45.6	18.61	18.7	18.7
2013	42.3	18.61	18.7	18.7
2014	49.5	17.12	18.7	18.7
2015	43.7	19.42	18.7	18.5
2016	51.9	16.36	18.7	18.5
2017	36.1	22.26	17.7	18.5
2018	44.3	12.47	12.2	13.0
2019	46.0	10.91	11.1	11.5
2020	21.8	23.17	11.1	11.0
2021	21.3	23.40	11.0	11.0
2022	22.7	22.04	11.0	11.0
2023	21.8	23.00	11.0	11.0
2024	17.1	29.18	11.0	11.0
2025	17.1	29.18	11.0	11.0
2026	17.1	29.18	11.0	11.0
2027	17.1	29.18	11.0	11.0
2028	16.9	29.18	10.9	11.0
2029	16.9	29.18	10.9	11.0
2030	14.5	29.10	9.3	9.3
2031	13.4	29.05	8.6	8.5
2032	10.4	30.67	7.0	7.5
2033	8.8	30.67	6.0	6.3
Total	**725.1**	**20.68**	**330.6**	**333.8**

Note: (1) Mill production lbs U_3O_8 based on overall milling recovery of 98.4% and stockpiled material.
(2) Cameco's share of mine and mill production is 69.805%.

The annual production from McArthur River is forecast at a rate of 18.7 million pounds U_3O_8 per year until 2016 and gradually declines thereafter until 2033. Cameco estimates that McArthur River will have a mine life of at least 25 years.

Figure 27 – Life of Mine Production Summary - Mineral Reserves only



18.2 Recoverability

For production scheduling purposes an overall uranium process recovery of 98.4% has been used. The processing of the McArthur River ore is described in Section 1 and the overall uranium process recovery is discussed in Section 16.3.1.

This recovery is similar to that achieved at Cameco's other Saskatchewan operations. For comparison, the Rabbit Lake mill treating Eagle Point mine ore achieves a recovery of 97.0%. The lower recovery at the Rabbit Lake mill is due to the lower feed grade from the mine to the mill as compared to the McArthur River ore feeding the Key Lake mill.

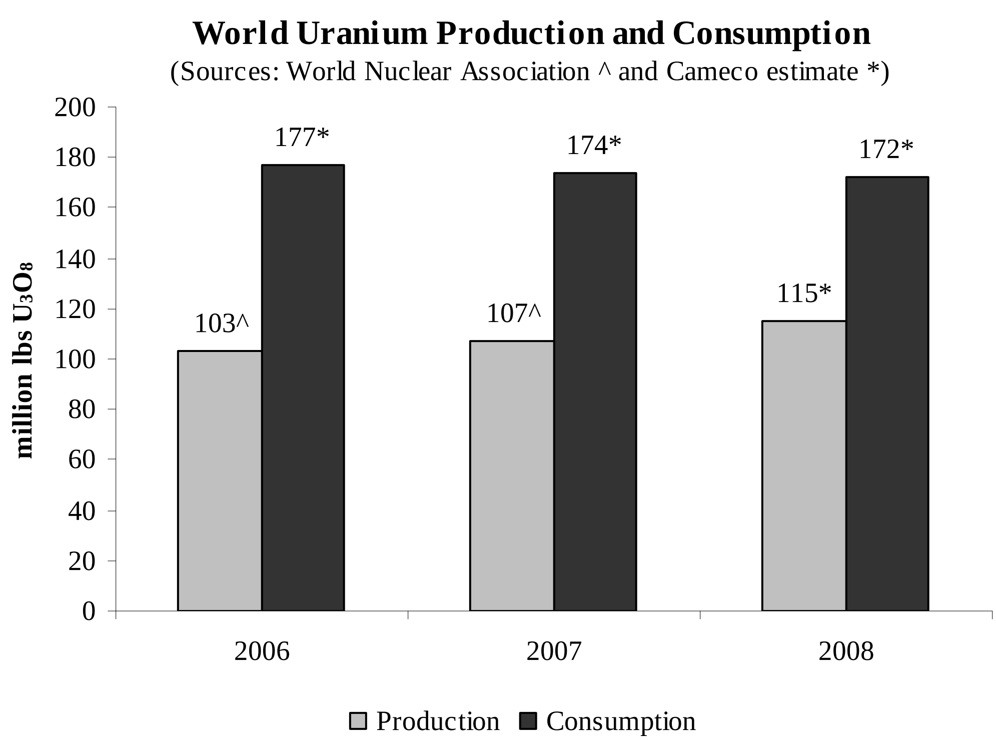
For a discussion of mining recovery used in the Mineral Reserve estimate see Section 17.2.6.

18.3 Markets

18.3.1 Worldwide Uranium Supply and Demand

The uranium market supply and demand fundamentals remain strong and point to a need for more primary mine production over the coming decade. During the past 23 years, uranium consumption has exceeded mine production by a wide margin, with the difference being made up from various types of inventory and recycled products, often collectively referred to as secondary sources. World uranium production and consumption is summarized in Figure 18-11.

Figure 28 - World Uranium Production and Consumption 2006-2008



Statements contained in this technical report which are not current statements or historical facts such as forecasts of uranium demand and uranium supply are "forward-looking information" (as defined under Canadian securities laws) and "forward-looking statements" (as defined in the U.S. Securities Exchange Act of 1934, as amended) which may be material and that involve risks, uncertainties and other factors that may cause actual results to differ materially from those expressed or implied by them. Forward-looking information and statements are based on a number of assumptions which may prove to be incorrect. There can be no assurances that forward-looking information and statements will prove to be accurate, as actual results and future events could vary, or differ materially, from those anticipated in them. Accordingly, readers of this technical report should not place undue reliance on forward-looking information and statements.

Uranium Demand

Overall, nuclear power trends support moderately growing demand for uranium and conversion services in the next 10 years, with the potential for more rapid growth thereafter.

Cameco estimates the world uranium consumption totalled about 172 million pounds in 2008, similar to 2007. In 2009, Cameco estimates world uranium demand to increase to about 181 million pounds. Annual world uranium consumption could reach 226 million pounds in 2018, reflecting an annual growth rate of almost 3%.

Growth in demand could be tempered as uranium price increases encourage utilities to utilize more enrichment services and less uranium. Uranium demand is affected by the enrichment process, which is one of the steps in making most nuclear fuel. Utilities choose the amount of uranium and enrichment services they will use depending on the price of each. Utilities may substitute enrichment for uranium, thereby decreasing the demand for uranium and increasing the demand for enrichment. For example, when uranium prices rise, utilities tend to use more enrichment, assuming enrichment prices remain constant. If enrichment prices increase, utilities would likely use less enrichment and more uranium. The tails assay (percentage of uranium left after processing) is an indication of the mix of uranium and enrichment used. At different prices for uranium, conversion, and enrichment services there is a combination that minimizes the fuel cost which is called the optimal tails assay. The lower the tails assay, the less uranium is being used.

As of December 31, 2008 the uranium price had increased in excess of 250% since December 31, 2003. Over the same period, enrichment prices have increased by only 47%. Thus, utilities are choosing lower tails assay under their enrichment contracts, using less uranium and more enrichment services.

Based on current demand, a 0.01% decrease in tails assay would decrease uranium requirements by 2%, or about 3 million pounds of uranium per year, and increase the demand for enrichment services by 2%. It is important to note that there is a limit to the enrichment capacity that is currently available. In addition, enrichment contracts generally limit the ability to substitute enrichment for uranium. In the past, enrichers offered a wide range of tails assay, much like volume flexibilities on uranium contracts. Currently, enrichers are offering tails assay ranging from 0.25% to 0.30%, thus, over time, as old enrichment contracts expire, we expect that the average tails assay will move to this range.

Uranium Supply

World uranium supply comes from primary mine production and a number of secondary sources.

Mine Production

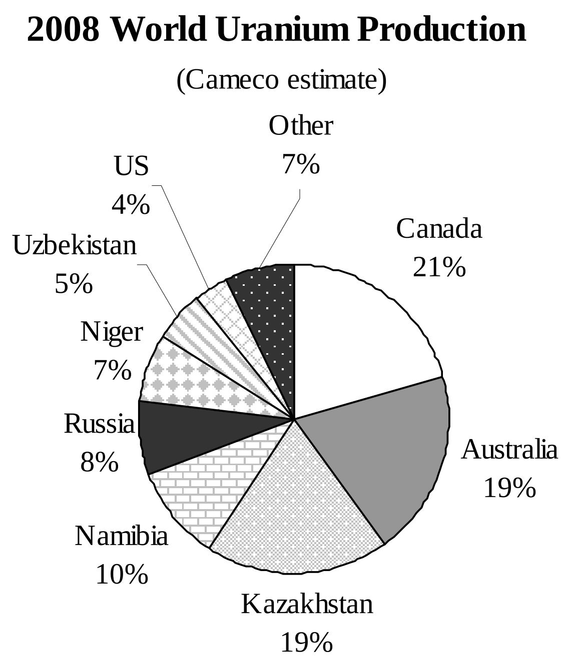
Cameco estimates world mine production in 2008 was about 115 million pounds U_3O_8, up 7% from 107 million pounds in 2007. Cameco expects world production to total in the range of 125 to 130 million pounds in 2009. However, production targets are not always easily achievable.

Cameco expects that, with higher uranium prices, new mines will continue to start up, but the lead time before they enter commercial production may be lengthy depending on the region. As a result, primary supply will be less than world consumption in the near-term. The level of increase in primary mine production is dependent on a number of factors, including:

- strength of uranium prices,
- efficiency of regulatory regimes in various regions,
- quality and size of the mineral reserves,
- currency exchange rates in producer countries compared to the US dollar,
- prices for other mineral commodities produced in association with uranium (i.e. by-product or co-product producers),
- availability and sufficiency of required infrastructure and skilled workforce, and
- availability of financing for exploration projects and mine development.

The 2008 world uranium production broken down by country is shown in Figure .

Figure 29 – 2008 World Uranium Production by Country



Secondary Sources

Secondary sources of supply consist of surplus US, Russian and other military materials, excess commercial inventory and recycled products. Recycled products include reprocessed uranium, mixed oxide fuel, and re-enriched tails material. Some utilities use reprocessed uranium and mixed oxide fuel recovered from used reactor fuel. In recent years, another source of supply has been re-enriched depleted uranium tails generated using excess enrichment capacity. Cameco estimates these recycled products will account for about 5% of world requirements over the next 10 years. With the exception of recycled products, secondary supplies are finite. Currently, most recycled products are a high-cost fuel alternative and are used by utilities in only a few countries.

One of the largest sources of secondary supply is the uranium derived from Russian highly enriched uranium (HEU). As a result of the 1993 HEU agreement between the US and Russia to reduce the number of nuclear weapons, additional supplies of uranium have been available to the market. Under the 20-year agreement, weapons-grade HEU is blended down in Russia to low enriched uranium capable of being used in western world nuclear power plants. Cameco estimates that uranium derived from Russian HEU could meet about 6% of world consumption over the next 10 years based upon deliveries under the current Russian HEU commercial agreement. All deliveries will be made by 2013, when the 1993 HEU agreement expires. In parallel, the US has made some of its military inventories available to the market, although in quantities much smaller than those derived from the 1993 Russian HEU agreement. Cameco expects about 3% of world demand through 2018 will be met from this source.

With respect to non-military excess inventories, Cameco believes most of these excess inventories have been consumed. In recent years, there has been evidence of this trend reversing, with some utilities purchasing uranium to build strategic inventories.

Over the next 10 years, with new mines under development, such as Cigar Lake and Inkai, this shortfall between consumption and production is expected to narrow slowly. The production response is expected to remain challenged, while demand is expected to continue growing due to better reactor operations, reactor upgrades, life extensions, and the construction of new units. However, there are a number of potential new mines and planned mine expansions that are expected to help meet this shortfall, but the timing and production rates are uncertain.

Uranium production in 2008 met about 67% of global uranium requirements. Secondary supplies (such as recycling and blended down HEU) continue to bridge the gap and this is expected to continue in the near future.

18.3.2 Uranium Markets and Prices

Utilities secure a substantial percentage of their uranium requirements by entering into long-term contracts with uranium suppliers. These contracts usually provide for deliveries to begin two to four years after contracts are finalized. In awarding contracts, utilities consider the commercial terms offered, including price, and the producer’s record of performance and uranium mineral reserves.

There are a number of pricing formulas, including fixed prices adjusted by inflation indices, market referenced prices (spot and/or long-term indicators). Many contracts also contain floor prices, ceiling prices and other negotiated provisions that affect the amount ultimately paid.

Utilities acquire the remainder of their uranium requirements through spot purchases from producers and traders. Spot market purchases are those that call for delivery within one year. Traders and investors or investment funds are active in the market and generally source their uranium from organizations holding excess inventory, including utilities, producers, and governments.

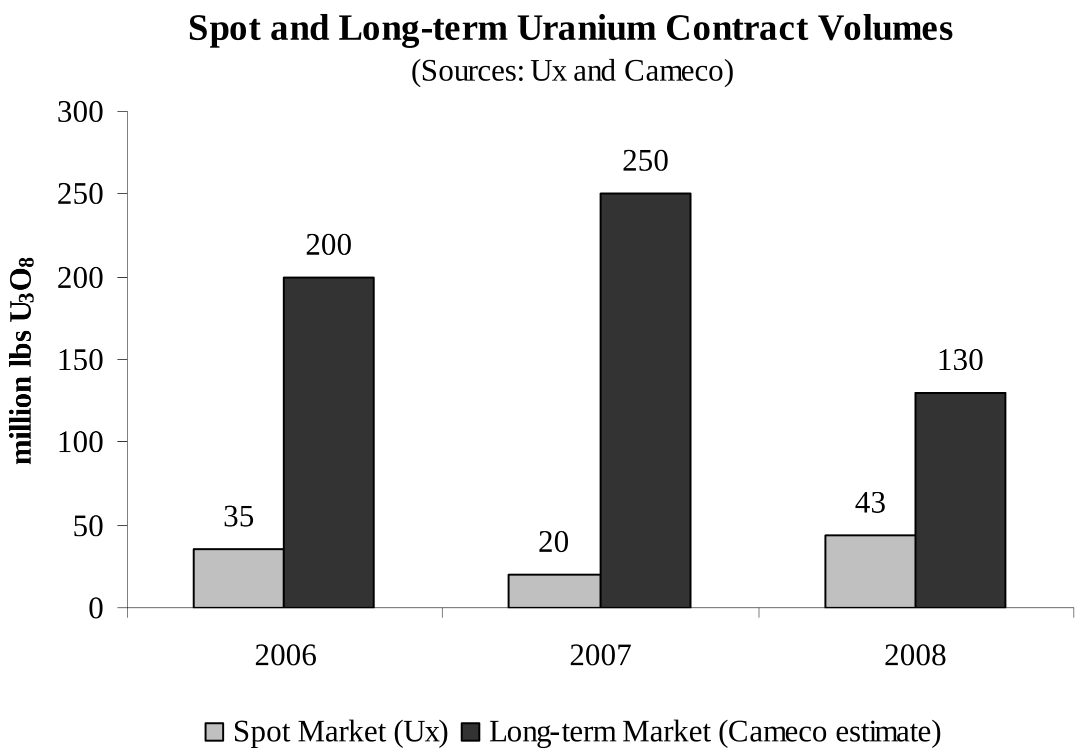
Uranium Spot Market

The industry average spot price (TradeTech and Ux Consulting (UxC)) on December 31, 2008, was $52.50 (US) per pound U_3O_8, a 41% decrease from the December 31, 2007, price of $89.50 (US). Spot market volume more than doubled in 2008 to about 43 million pounds U_3O_8 from 20 million pounds U_3O_8 in 2007. The 2008 volume exceeded the previous high of 42 million pounds recorded in 1995. Historically, the volume traded in the spot market ranged from 10% to 15% of annual consumption.

The main spot sellers in 2008 were the traders and financial players. The latter liquidated volumes late in the year as a result of the world financial turmoil. As a result of the lower spot price in 2008 relative to 2007, utilities returned to the spot market and represented slightly less than half of all spot purchases. Since the utilities average inventory levels have increased over the last several years, and financial restraint is likely, we expect more price volatility in 2009.

The spot and long term uranium contract volumes for the period 2006 to 2008 are shown in Figure 18-13.

Figure 30 – Spot and Long Term Uranium Contract Volumes 2006-2008



Long-Term Uranium Market

The industry average long-term price (TradeTech and UxC) on December 31, 2008 was US$70.00 per pound U_3O_8, down 26% from US$95.00 at December 31, 2007.

Cameco estimates long-term contracting in 2008 to have been about 130 million pounds U_3O_8, approximately half the volumes contracted in 2007, but still above the annual average levels prior to 2005.

The increased volatility in the spot market, the large differential between spot and term market prices, as well as the fact that most utilities are well covered for the next several years contributed to the lower contracting level when compared to 2007. Cameco estimates the 2009 long-term contracting volume will be comparable or lower than the 2008 level, but this is highly dependent upon supply developments, market expectations and market prices.

18.4 Contracts

18.4.1 Labour Relations

Cameco has unionized employees at its McArthur River mine and Key Lake mill. The collective agreement covering these unionized employees will expire December 31, 2009.

18.4.2 Operational Support

There are a number of important contracts that support uranium mining at McArthur River and uranium milling at Key Lake.

For McArthur River, these contracts include an underground mining contract, a freeze hole drilling contract, various reagent supply contracts, such as propane for winter operation, and an electrical supply contract. There are also construction contracts entered into from time to time to support site operations, including for capital improvements.

For Key Lake, these contracts include various reagent supply contracts, such as propane and electrical supply. As part of the planned revitalization of the Key Lake mill, a number of engineering and construction contracts have, or will be, entered into. These include construction contracts which have been entered into for the replacement of the acid plant and oxygen plant with construction planned to commence in 2009, subject to regulatory approval. The construction of the replacement acid and oxygen plants is planned for completion in 2011, at the earliest.

Cameco believes the contracts entered into, or to be entered into, in support of the McArthur River and Key Lake operations generally will reflect industry standards and rates for Saskatchewan uranium mining and milling operations in the operation phase.

18.4.3 Toll Milling Contracts

The KLJV has entered into a toll milling agreement with AREVA for the processing of all of AREVA's share of McArthur River ore at the Key Lake mill. The terms of the agreement include a provision for processing at cost plus a toll milling fee. The KLJV is responsible for decommissioning the Key Lake mill, including the costs of any tailing management associated with milling AREVA's McArthur River ore. After June 1, 2009, the agreement shall automatically be extended for one year periods unless six months notice is given by AREVA stating its desire to terminate the agreement effective at the end of any operating year. The KLJV is operated by Cameco and is owned by Cameco (66 2/3%) and UEM (33 1/3%). UEM is owned equally by Cameco and AREVA.

Cameco and UEM, the remaining owners of the MRJV, have agreed that milling of each party's share of McArthur River ore will be accomplished through the KLJV and it is not necessary for Cameco and UEM to enter into formal toll milling agreements with the KLJV.

18.4.4 Uranium Sales Contracts

Uranium Sales Contracts Portfolio

Cameco has a long-term uranium sales contract portfolio to supply uranium to its customers. This uranium is projected to come from Cameco's operating mines, including McArthur River, and mines under development, including Cigar Lake, and from Cameco's spot and long term uranium purchase contracts. The commercial terms of these contracts are confidential.

A majority of Cameco's long term uranium sales contracts contain supply interruption provisions which allow Cameco to reduce, defer or terminate deliveries in the event of any shortfall in planned production or deliveries under the HEU Agreement.

Impact of Uranium Sales Contracts on McArthur River Economic Analysis

Uranium contract terms generally reflect market conditions when the contracts are negotiated. After a contract negotiation is completed, deliveries under a long-term contract generally do not begin for several years. Cameco believes the terms of its long-term uranium sales contracts generally reflect industry norms.

As a result of Cameco's contracting strategy and the increase in the uranium price over the past few years, Cameco's average realized price for uranium sales in 2008 was $39.52 (US) per pound U_3O_8. The 2008 industry average spot price (Trade Tech and UxC) was $61.58 (US) per pound U_3O_8. The 2008 industry average long-term uranium price (Trade Tech and UxC) was $82.50 (US) per pound U_3O_8.

Uranium Price Assumptions

A spot price projection, as of December 31, 2008, has been incorporated into the realized price projection for the purpose of the economic analysis. The spot price projection is consistent with various independent forecasts of supply and demand fundamentals and price projections at that time. To the extent the independent forecasts did not extend their projections to cover the entire expected mine life of McArthur River, the projections have been extrapolated forward to the end of the anticipated mine life.

Cameco has historically sold U_3O_8 under long-term contracts, at prices that reflect the market conditions at the time of negotiation. Cameco has committed a significant quantity of its future production and purchased material to be delivered through its existing portfolio of long-term sales contracts. The remaining future production will be sold under yet to be negotiated arrangements. For purposes of the economic analysis, Cameco's portion of McArthur River production is assumed to be sold into a mix of committed volumes and uncommitted volumes in the same proportion that Cameco expects to sell based on its current level of committed sales relative to its total sales targets.

Table 18-5 outlines the projected average uranium sales prices, taking into account Cameco's current level of sales commitments and the independent spot price projections. The price projections are stated in constant 2009 dollars.

Table 18-5 – Projected Average U3O8 Sales Prices

Price Assumptions	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
McArthur River Average Price $USD/lb	39	47	49	51	57	56	54	55	55	56	57	58	59
McArthur River Average Price $Cdn/lb	**47**	**57**	**60**	**62**	**69**	**68**	**66**	**67**	**68**	**69**	**70**	**70**	**72**

Price Assumptions	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
McArthur River Average Price $USD/lb	60	60	60	61	61	62	62	62	62	62	62	62
McArthur River Average Price $Cdn/lb	**73**	**73**	**74**	**74**	**75**	**76**	**75**	**75**	**75**	**75**	**75**	**75**

Notes: (1) Projected average price is partly based on committed volumes, which are derived from Cameco's current contract portfolio commitments, which extend out to 2028.
(2) The projected average price is weighted to the proportion of committed and uncommitted sales volume at the respective committed price and spot price for each year.
(3) The average price for purposes of the economic analysis has been converted from US$ dollars to Cdn$ dollars using a fixed exchange rate of US$0.82 = Cdn$ 1.00.
(4) Cameco's sales volume targets assume no interruption in the company's supply from its production or third party sources.
(5) The projections are stated in constant 2009 dollars.

In preparing the cash flow analysis included in Section 18.7.3 of this report, the impact of Cameco's forward uranium sales strategy has been taken into account.

18.5 Environmental Considerations

18.5.1 Regulatory Framework

The McArthur River and Key Lake Operations are both considered to be nuclear facilities and as such, primary regulatory authority resides with the federal government and its agency, the CNSC. The nuclear industry is a closely regulated industry whereby any significant change/modification to the process or facility requires prior regulatory approval. The level of assessment of each potential change or modification depends on the magnitude of the proposed change. Changes can often require full environment assessments prior to receiving regulatory approval as per Canadian Environmental Assessment regulations.

Provincial regulatory authority is stipulated in the Surface Lease Agreement between the province of Saskatchewan and each operation. In numerous situations there is coordination amongst the federal and provincial regulatory agencies (e.g. Human Resources Development Canada and Saskatchewan Labour, Environment Canada and Saskatchewan Ministry of Environment), but each agency retains responsibility for administering it's own approvals, licences and permits where required. The main regulatory agencies that issue permits / approvals and inspect these operations are: the CNSC, the Mine Safety Unit of Saskatchewan Ministry of Advanced Education, Employment and Labour and Saskatchewan Ministry of Environment. Other agencies that have an interest with respect to environmental monitoring programs and activities that may impact water ways are Environment Canada and Department of Fisheries and Oceans Canada. Environment Canada, specifically is responsible for administering the federal Metal Mines Effluent Regulations (MMER) and approves environmental effects monitoring (EEM) programs required under MMER.

McArthur River Operation

For the McArthur River operation, Cameco holds a “Uranium Mine Facility Operating License” from the CNSC and an “Approval to Operate Pollutant Control Facilities” and a “Permit to Operate Waterworks” from Saskatchewan Ministry of Environment (SMOE). These permits are current. The CNSC licence was renewed for a five year term in 2008 and expires on October 31, 2013. The SMOE approvals will require renewal in 2009 as they expire on October 31, 2009.

Key Lake Operation

The Key Lake operation is regulated in a similar manner as the McArthur River operations and as such has regulatory obligations to both the federal and provincial governments. Three permits must be maintained to operate the Key Lake uranium mill. Cameco holds a "Uranium Mill Operating Licence" from the CNSC and an "Approval to Operate Pollutant Control Facilities" and "Permit to Operate Waterworks" from the SMOE. These permits are current. The CNSC operating licence was renewed for a five year term in 2008 and expires on October 31, 2013. The SMOE approvals will require renewal in 2009 as they expire on November 30, 2009.

Three license conditions were included in the operating license that are associated with the completion of the molybdenum and selenium in effluent reduction or control process: an implementation plan for Deilmann TMF slope stabilization; the development of a wasterock management plan and a schedule for the Deilmann north wasterock pile. The provincial license expires in November 2009 and the renewal process for that license has been started.

18.5.2 Environmental Assessment History

The Key Lake and McArthur River operations and all associated infrastructure has been the subject of several environmental assessments and detailed environmental monitoring programs.

In regards to the Key Lake operation, the environmental assessment process began in 1979, when the Key Lake Mining Corporation, a Cameco predecessor, filed an EIS with Federal and Provincial regulatory agencies. The Environmental Impact Statement (EIS) review was completed by the Key Lake Board of Inquiry in 1981.

In 1994, a new EIS was filed for the Key Lake Operation that detailed a plan to create a new tailings storage facility in the existing Deilmann open pit and using a sub-aqueous tailings deposition and storage program to fill this new facility (Cameco 1994). Approval for this new approach was obtained in 1995.

In April 1991, the Governments of Saskatchewan and Canada established a Joint Panel to assess the environmental and public concerns arising out of three non-Cameco related projects which had filed EISs, and two related Cameco projects, McArthur River and Cigar Lake, which had filed preliminary project proposals. The members of the Joint Panel were appointed in August 1991.

In 1992, as the next step in the environmental assessment process, Cameco filed an EIS for the McArthur River operation with the regulatory agencies to cover off proposed underground exploration activities. The Joint Panel reviewed the EIS and in 1993 recommended that the project be allowed to proceed subject to a series of conditions. All conditions were met and all underground exploration activities were completed.

In 1995, after undertaking the underground exploration work, Cameco submitted an EIS that covered the proposed mining activities at McArthur River while also covering the proposed milling of all McArthur River ore at Key Lake and all associated surface infrastructure. In 1996 an addendum was provided to address a series of questions from the reviewers. Federal and Provincial approval of the EIS was obtained 1997. With the approval of the project by the federal and provincial government, Cameco requested and received approval for construction in 1997.

In 1999, with the completion of construction, the McArthur River operation received both federal and provincial approvals to operate. Key Lake was also granted approval to receive and process McArthur River ore and waste rock.

As both McArthur River and Key Lake are nuclear facilities operating under CNSC licenses, any significant facility changes or amendments to the facility licenses are subject to the requirements of the Canadian Environmental Assessment Act (CEAA) and all of its regulations. In Saskatchewan, CEAA activity takes place under the terms of the Saskatchewan Canada Harmonization Agreement. Under the agreement, projects that require an environmental assessment by both the Government of Canada and the Government of Saskatchewan undergo a single assessment, administered cooperatively by both governments.

In 2002, Cameco applied to increase the annual licensed production capacity at both the McArthur River mine and the Key Lake mill to 22 million pounds U_30_8 per year compared to the current annual licensed production capacity of 18.7 million pounds U_30_8. This application has been undergoing a screening level environmental assessment (EA) under the *Canadian Environmental Assessment Act* (CEAA), with the CNSC as the responsible authority. The EA was delayed due to discussions with the CNSC regarding how to address local accumulation of molybdenum and trace amounts of selenium in the Key Lake mill downstream environment.

If Cameco receives approval for the increased production limit, Cameco expects that annual production will range between current levels and 20 million pounds until such time as revitalization is completed at Key Lake. Annual production levels after mill revitalization are expected to be largely dependent on mine production. As such, Cameco anticipates it will be a number of years before it can achieve the sustainable rate at these operations.

Cameco has developed an action plan to modify the effluent treatment process to reduce concentrations of molybdenum and selenium discharged to the environment. The CNSC facility operating licence includes a condition for the Key Lake mill to implement this action plan.

Pursuant to this action plan Cameco has been proceeding to modify the mill effluent treatment process in order to reduce molybdenum and selenium levels to very low concentrations. The project, originally planned to be complete in the first part of 2008, experienced difficulties in commissioning that have subsequently required further project changes. Cameco now expects this project to be completed and the new process changes optimized in the first half of 2009. Plans for the first quarter of 2009 include completing mechanical modifications and equipment commissioning necessary to increase circuit availability to greater than 80%. Cameco plans to update the CNSC in April 2009 with respect to the indicative performance of the molybdenum and selenium removal circuit. Depending on the relative success of this project in reducing molybdenum and selenium concentrations in the Key Lake mill effluent, further work identified in the action plan referred to in the licence condition may or may not be required.

The EA for the increased licence capacity is pending demonstration of the effectiveness of the process to reduce concentrations of molybdenum and selenium. Cameco expects that reducing the current level of these metals will help advance this EA.

18.5.3 Significant Environmental Issues

Tailings Management

There are two tailings management facilities at the Key Lake site. One is an above-ground impoundment with tailings stored within compacted till embankments. This facility, constructed in 1983, has not received tailings since 1996. Cameco is reviewing several decommissioning options regarding this facility.

The other tailings management facility (TMF) is located within the Deilmann pit, which was mined out in the 1990s. Tailings deposition in the Deilmann TMF began in early 1996, using a staged subaerial/subaqueous deposition mode with an initial pervious sand envelope constructed around the perimeter of the pit.

The sand envelope was designed to allow excess water to drain to a drainage blanket underlying the tailings at the bottom of the pit and then to dewatering pumps in a raise well connected by a drift to the drainage blanket. At the end of 1998, approval was received from the CNSC and Saskatchewan Environment Resource Management to cease construction of the sand envelope and convert the mode of tailings deposition from subaerial to subaqueous. This is in accordance with the environmental impact statement prepared and approved for this TMF. Conversion started immediately. Flooding of this TMF commenced in June 1999.

Tailings from processing McArthur River ore are deposited in the Deilmann TMF.

In February of 2009, Cameco received regulatory approval for the deposition of tailings to a moderately higher elevation in the Deilmann TMF. At current production rates, the approved capacity of the Deilmann TMF increases from five years to approximately eight years, assuming only minor storage capacity losses due to sloughing (or erosion) from the pit walls.

Cameco also initiated technical pre-feasibility work to secure long-term tailings capacity at Key Lake that will be sufficient to hold all tailings generated from processing of McArthur River Mineral Reserves as well as substantial additional capacity to allow for other potential sources of production. This tailings option study is considering the feasibility of further extending the capacity of the Deilmann TMF and options for new tailings management facilities. Cameco expects to submit a project description to regulatory agencies in 2009 that will initiate the environmental assessment process for securing long-term tailings capacity at Key Lake.

With respect to the ongoing operation of the Deilmann TMF, Cameco has performed several studies to better understand the pitwall sloughing mechanism and initiated engineering work to design and build mitigation measures for prevention of sloughing. Sloughing has occurred in the past at the Deilmann TMF resulting in the loss of approved capacity. Although the situation has recently stabilized as a result of stabilizing the water level in the pit, there is a risk of further sloughing at the Deilmann TMF.

McArthur River Waste Rock Disposal

At the McArthur River Operation, ore and waste rock are managed in contained facilities. Waste rock generated from underground activities is classified as clean, mineralized, or potentially acid generating, and transported on-site to its appropriate storage location. The mineralized waste rock is transferred to a lined storage pad where it is later placed in covered haul trucks for shipment to Key Lake. At the Key Lake operation the mineralized waste rock is placed on a lined pad where it is later used for blending with the McArthur River ore slurry prior to processing in the mill.

Key Lake Special Waste Disposal

Mineralized waste rock generated from the historical mining activities of Key Lake is referred to as special waste. There are two stockpiles of this special waste material: the Deilmann special waste and the Gaertner special waste stockpiles. Material generated from the mining of the Deilmann pit is called Deilmann special waste and the material generated from the mining of the Gaertner pit is called Gaertner special waste. Both stockpiles are stored on above ground lined pads. Deilmann and Gaertner special wastes are presently being used for blending with McArthur River ore. Performance of the Deilmann special waste pad liner has been of regulatory concern, and commitments have been made to have the special waste removed by 2013. The majority of this material will have been used as blend material to manage the mill head grade or otherwise relocated to alternate storage areas.

Environmental Effects Monitoring

Although there are some general temporary disturbances to wildlife, the primary influences on the environment from both the McArthur River and Key Lake operations are associated with the releases of treated effluent generated from their operation. To a lesser extent, air emissions and airborne particulate material are also capable of potentially influencing the environment.

Comprehensive environmental monitoring programs are in place at the McArthur River and Key Lake operations to determine the full extent and nature of any environmental effects taking place within the sphere of influence of these facilities. The most significant component of this monitoring is the Environmental Effects Monitoring (EEM) program that Cameco performs and is required under its operating licenses. The EEM includes the monitoring of water, fish health, benthic invertebrate monitoring, sediment, fish tissue, plants and animals. It is designed to incorporate the requirements of Environment Canada's Metal Mines Effluent Regulations, CNSC requirements and SMOE requirements. In general terms, the environmental monitoring programs have shown that the environmental effects are generally in line with the predictions contained within the previously completed environmental assessments. The only significant variances, between what is taking place with what was previously predicted, involves the effects that certain dissolved metals (primarily molybdenum and selenium) appear to be having on the aquatic receiving environment at both the Key Lake and McArthur River operations. It appears that molybdenum and selenium present in the effluent streams are creating a small incremental increase in risk to select valued ecosystem components. It should be noted, however that this incremental change is not expected to cause additional environmental affects beyond those incurred at current operating conditions.

Effluent Quality

Treated effluent from the Key Lake operation is discharged to Wolf Lake and flows through the David Creek system. The David Creek system from the effluent discharge location, in order, consists of: Wolf Lake, Fox Lake, Yak Creek, David Creek, Unknown Lake, Pyrite Creek and Delta Lake. Delta Lake discharges into the Wheeler River, which flows to Russell Lake. Russell Lake receives flow from both the mine dewatering discharge and the ongoing mill effluent discharge.

At the Key Lake operation, molybdenum and selenium originate from ore processing. Environmental monitoring has shown that concentrations of molybdenum and selenium in Wolf Lake, Yak Creek, David Creek (downstream of Yak Creek) and Pyrite Creek have begun to exceed their water quality guideline values for these two metals. Molybdenum and selenium concentrations exceeded the guideline values in Delta Lake and Delta Lake outflow. In the Wheeler River, downstream of David Creek, molybdenum and selenium concentrations were comparable to background concentrations.

On 15 December 2006, Cameco submitted the *Key Lake Operation – Action Plan for Selenium and Molybdenum*, which detailed the efforts to be made to limit the potential risk to the environment from releases of selenium and molybdenum from the Key Lake mill effluent treatment system. Phase I of this plan included adding a low pH iron precipitation and solid removal stage to the effluent treatment circuit. Phase II of the plan included increasing the amount of contaminated water treated by the RO plant in order to decrease the volume of water sent to the mill effluent treatment. Phase II would not see any direct reduction in effluent concentration, but would show reduced loading due to reduced flows. Phase III of the plan included re-evaluating the current split mine/mill effluent strategy. In 2007, CNSC granted authorization for Cameco to proceed with Phase I and Phase II of the Action Plan.

At Key Lake, commissioning of equipment installed to reduce concentrations of selenium and molybdenum discharged to the environment was underway in the second quarter of 2008. Initial results show significant reductions in the concentration of molybdenum and some reduction in selenium. Further design work and modifications are required to optimize the system. This work is scheduled to continue into early 2009.

Regarding the McArthur River operation, recently performed environmental monitoring and risk assessment work indicates that current effluent concentrations of molybdenum, selenium, uranium, and cadmium entering the downstream aquatic receiving environment may potentially adversely affect muskrat populations in approximately 30 to 50 years time. At their 25 January 2007 meeting with the CNSC (CNSC, 2007), Cameco committed to investigate the use of membrane filtration technologies to lower the concentrations of all of the potentially effecting substances.

Not withstanding the review of membrane technology, optimization of existing treatments systems has been ongoing, resulting in increased Mo and U removal efficiencies.

18.5.4 Corporate Environmental Commitment

Cameco has made a corporate commitment to a clean environment and achieving environmental leadership. In 2007, Cameco set the objectives of developing and began implementing strategies and action plans at all of Cameco's business operations to significantly reduce impacts to air, water and land, and to reduce energy consumption and waste. To accomplish these objectives, Cameco has made a significant investment of resources and has established an environmental leadership department, with a mandate to drive environmental performance improvements in all operating locations. Environmental leadership specialists have been assigned to both Key Lake and McArthur River to drive their improvement plans. Work has also begun on environmental leadership scorecards for all business locations to improve and enable consistent monitoring, tracking and reporting on progress.

18.5.5 Decommissioning and Reclamation

In 2003, Preliminary Decommissioning Plans (PDPs) for both the Key Lake (Cameco, 2003a) and McArthur River operations (Cameco, 2003b) were prepared by Cameco and approved of by both the CNSC and SMOE. The estimated cost of implementing these PDPs resulted in production of two other associated documents called preliminary decommissioning cost estimates (PDCEs) for both Key Lake (Cameco, 2003c) and McArthur River operations (Cameco, 2003d). Financial assurances to cover the 2003 PDCEs for McArthur River and for Key Lake operations were posted with SMOE in the form of irrevocable standby letters of credit (LOC). In 2008, as part of the CNSC license renewal process, these documents underwent extensive review and revision to capture any changes in decommissioning liabilities over the review period. Based on the total estimated decommissioning costs presented and approved in these PDCEs by both the CNSC and SMOE, Cameco has increased the LOC's posted with the Province of Saskatchewan to $120.7M and $36.1M for decommissioning the Key Lake and McArthur River operations, respectively.These financial assurances represent 100% of the total estimated costs and not Cameco's share of such costs.

The preliminary decommissioning plans and cost estimates were developed as per the CNSC guide documents (G-219, Decommissioning Planning for Licensed Activities, 2000 and G-206, Financial Guarantees for the Decommissioning of Licensed Activities, 2000). The increases reflect changes to the facilities, the significant increase in costs associated with current market conditions in western Canada and the allowance for an escalation factor over the next 5-year review period.

The reviews are triggered when the licenses are renewed at the federal level, or at least every five years as per provincial requirements. This systematic update and review of previous decommissioning plans is designed to capture all changes to known liabilities and improvements in decommissioning as an operation matures.

18.5.6 Known Environmental Liabilities

The core generic estimates and assumptions made in mine and mill site decommissioning plans which are considered to have the greatest impact on cost to complete the work are as follows:

- Correct understanding of the geochemical and geotechnical properties of waste materials – these properties are used to provide long-term performance modelling estimates of the wastes, and are key to regulatory acceptance of detailed decommissioning plans.

- Degree of required isolation of waste rock piles from leaching by precipitation and groundwater transport.

- Degree of required isolation of tailings from leaching by precipitation and groundwater transport.

- Correct length of any forecasted "pump and treat" period needed to generate acceptable contaminant flux rates from tailings and waste rock.

- Negotiated contaminant loading and concentration limits, along with locations where these criteria apply.

- Cost of "deconstruction" of surface facilities.

- Magnitude of groundwater contamination generated underneath surface facilities during the operating phase that require remediation prior to site release.

- Decommissioning phase environmental assessment costs along with post-release performance verification monitoring costs.

- Correct assumptions regarding the degree of institutional control required for the post-decommissioned site – ranging from ongoing perpetual care and maintenance to totally passive controls

Listed below is a description of site-specific assumptions built into the PDPs and PDCEs which are the subject of this technical report.

All known environmental liabilities associated with the McArthur River Operation are discussed in the McArthur River Operation Preliminary Decommissioning Plan (Cameco, 2008a). The PDPs are conceptual in design and detail. They are developed to address known environmental liabilities of the facility at that time in a 'decommission tomorrow' scenario, such that reasonable financial assurance requirements for the benefit of the Crown can be defined. This does not preclude formal regulatory processes which are followed prior to implementing actual decommissioning. Therefore it is possible that following such final approval processes, the liabilities understood in the PDPs, may vary significantly from the final approved decommissioning. This uncertainty is addressed through the conservatism built into the PDCEs and the regulatory acceptance process. In general, the significant liabilities associated with the McArthur River operation are accounted for in the PDCE (Cameco 2008a) are as follows:

- Underground facilities and surface shaft installation. The main long term liabilities are primarily from a safety perspective are the capping of the shaft collars. Environmentally there are limited liabilities associated with potential soil contamination, addressed with removal and disposal underground.

- Ancillary facilities such as the shop/office complex, slurry loadout, water treatment plant and residence. Environmental liabilities are associated with potential soil and ground water contamination. These are addressed by removal of contaminated materials and disposal underground, or if appropriate at the Key Lake operations tailings facility (Deilmann TMF).

- Mineralized waste and special waste rock piles. The long term environmental liability associated with these piles is ground water contamination. This would be mitigated in the 'decommission tomorrow' scenario through underground disposal.

- Clean waste rock piles and drumlin material from past shaft collaring excavations. The long term environmental liability associated with these piles is erosion impacting surface waters (muskeg) in their immediate area. This is addressed by contouring and stabilizing these piles natural vegetation.

- Haul road to Key Lake. As this is a good all weather road, it is not expected that should the McArthur River mine cease to operate that the Province would expect the road to be decommissioned. However, for completeness this liability is carried in the PDP and PDCE. The primary environmental liability would be associated with erosion of the road way, resulting in impacts being realized at various stream crossings along its corridor. Mitigation involved re-vegetation to stabilize these areas and removal of stream crossings.

As for McArthur River, all known environmental liabilities associated with the Key Lake Operation are discussed in the Key Lake Operation Preliminary Decommissioning Plan (Cameco, 2008b).. In general; the significant liabilities associated with the Key Lake Operation and accounted for in the PDCE (Cameco 2008b) are as follows:

- Above ground tailings management facility (AGTMF). The main long term environmental liability is from contaminant transport via groundwater from the facility, impacting downstream David Creek receiving environment. The PDP addresses this through enhancement of tails properties via a multi-year thawing program and with subsequent installation of engineered covers to limit precipitation infiltration.

- Deilmann tailings management facility. The main long term environmental liability is from contaminant transport via groundwater from the facility, impacting downstream Outlet Creek receiving environment. The PDP addresses this with sub-aqueous sand cover of the tailings mass and other disposed wastes (e.g. from the decommissioning of the mill or problematic waste rock piles), and long term (multi-year) post closure pump and treatment of groundwater in the area.

- Waste rock stockpiles. The main environmental liability is groundwater contamination, and associated contaminant transport impacting the Outlet Creek system. The Key Lake site has three waste rock stockpiles and two stockpiles of special waste containing >0.05 and < 0.19% U_3O_8. Essentially all Key Lake special waste will be deposited directly or milled and co-disposed with tailings into the Deilmann TMF. The conceptual decommissioning plans for the 3 waste rock piles include to varying degrees pile contouring to ensure effective runoff management and infiltration management coupled with focused measures as required to address sources of problematic materials associated with the piles (e.g. use of soil covers and/or removal to the problematic material to the Deilmann TMF for final disposal).

- Mill and ancillary facilities. The main environmental liabilities associated with these facilities are soil contamination. Mitigation includes demolition of the mill and other associated infrastructure used to support the operation. Contaminated materials will be disposed of in the Deilmann TMF.

See Section 4.6 for a discussion of the known environmental liabilities.

18.6 Taxes and Royalties

18.6.1 Taxes

Cameco is no longer subject to capital taxes on paid-up capital (as defined for capital tax purposes in the relevant provincial legislation) in respect of its operations in Saskatchewan. This Saskatchewan tax on paid up capital was eliminated July 1, 2008.

Cameco, as a resource corporation in Saskatchewan, pays a corporate resource surcharge of 3.0% of the value of resource sales.

For federal income tax purposes, 100% of corporate resource surcharge is deductible.

18.6.2 Royalties

Cameco pays royalties to the province of Saskatchewan on the sale of uranium extracted from ore bodies within the province under the terms of Part III of the *Crown Mineral Royalty Schedule, 1986* (Saskatchewan) (the Schedule), as amended. The Schedule provides for the calculation and payment of both a basic royalty and a tiered royalty. The basic royalty is equal to 5% of gross sales of uranium and is reduced by the Saskatchewan resource credit, which is equal to 1% of the gross sales of uranium.

The tiered royalty is a levy on the gross sales of uranium, which applies only when the sales price of uranium exceeds levels prescribed by the Schedule. Uranium sales subject to the tiered royalty are first reduced by capital allowances, as permitted by the Schedule, for new mine or mill construction and certain mill expansion. Capital allowances additions for new mines and mills are determined using amounts prescribed by the Schedule based on the design capacity of the new facility, and not on the actual construction costs. Tiered royalties become payable when these capital allowances are reduced to zero. Both the prices and the capital allowances, as defined in the Schedule, are adjusted annually to reflect changes in the Canadian gross domestic product.

The tiered royalty is calculated on the positive difference between the sales price per pound of U_3O_8 and the prescribed prices according to the following:

	Royalty rate	Canadian dollar (\$/lb U_3O_8) Sales price in excess of:
	6%	\$17.16
Plus	4%	\$25.74
Plus	5%	\$34.33

For example, if the sales price realized by Cameco was \$35 per pound in Canadian dollars, the tiered royalty payable (Cdn dollars) would be calculated as follows (assuming all capital allowances have been reduced to zero):

[6% x (\$35.00 – \$17.16) x pounds sold] + [4% x (\$35.00 – \$25.74) x pounds sold] + [5% x (\$35.00 - \$34.33) x pounds sold]

Table 18-6 below sets out the expected royalties that will be incurred by Cameco on its share of production from McArthur River. The projected royalties are based on the realized prices set out in **Table 18-5** and are quoted in constant 2009 dollars.

Table 18-6 – Expected Royalties to be Incurred by Cameco for McArthur River

Royalties (\$Cdn M)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Basic Royalty	\$ 24.7	\$ 29.9	\$ 31.2	\$ 32.4	\$ 36.0	\$ 35.4	\$ 33.8	\$ 34.7	\$ 34.9	\$ 24.9	\$ 22.4	\$ 21.6	\$ 22.2
Tiered Royalty	63.5	91.4	98.3	105.0	124.2	121.0	113.3	118.1	118.9	85.6	77.9	75.2	78.5
Resource Surcharge	18.5	22.4	23.4	24.3	27.0	26.6	25.4	26.0	26.2	18.7	16.8	16.2	16.6
Total Royalties	**\$106.7**	**\$143.7**	**\$152.9**	**\$161.7**	**\$187.2**	**\$183.0**	**\$172.5**	**\$178.8**	**\$180.0**	**\$129.2**	**\$117.1**	**\$ 113.0**	**\$ 117.3**

Royalties (\$Cdn M)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
Basic Royalty	\$ 22.5	\$ 22.5	\$ 22.7	\$ 22.8	\$ 23.0	\$ 23.3	\$ 23.0	\$ 23.0	\$ 19.5	\$ 17.8	\$ 15.7	\$ 13.2	\$ 633.1
Tiered Royalty	80.2	80.0	81.0	81.8	82.9	84.3	83.1	83.1	70.2	64.2	56.7	47.6	2,166.0
Resource Surcharge	16.9	16.9	17.0	17.1	17.3	17.5	17.3	17.3	14.6	13.4	11.8	9.9	475.1
Total Royalties	**\$119.6**	**\$119.4**	**\$120.7**	**\$121.7**	**\$123.2**	**\$125.1**	**\$123.4**	**\$123.4**	**\$104.3**	**\$ 95.4**	**\$ 84.2**	**\$ 70.7**	**\$ 3,274.2**

18.7 Capital and Operating Cost Estimates

18.7.1 Operating Cost Estimates

Estimated operating expenditures to be incurred by the MRJV for the underground mining operations and for milling costs are presented in Table 18-9.

Operating costs consist of annual expenditure at McArthur River to mine the ore, process it underground, including grinding, density control and pumping the resulting slurry to surface for transportation to Key Lake.

Operating costs at Key Lake consist of costs for receipt of the slurry, up to and including precipitation of the uranium into yellowcake, including costs of disposal of impurities to the Deilmann Tailings Management Facility. Toll milling revenue has not been included as an offset to operating costs, as it is insignificant over the life of the mine.

Operating costs were estimated to average Cdn$19.69/lb U_3O_8 over the remaining life of the estimated Mineral Reserves only. For the period from 2009 to 2013, operating costs were estimated to average Cdn$15/lb U_3O_8. The operating projections are stated in constant 2009 dollars and assume the throughput outlined in the production schedule outlined in Section 18.1.4.

18.7.2 Capital Cost Estimates

Estimated capital costs to the MRJV include sustaining capital for both McArthur River and Key Lake Operations, as well as underground development at McArthur River, to bring reserves into production.

At McArthur River, sustaining capital includes freeze installation and distribution costs, and dewatering equipment and infrastructure of approximately $6 million annually. In addition ongoing costs for ventilation equipment and infrastructure are included at approximately $5 million per year for the first four years.

For McArthur River, the largest component of sustaining capital in 2009 is mine development work at about $59 million. Other projects include installation of freezing and distribution systems, and work on dewatering equipment and mine ventilation. The program continues to test the boxhole boring method and Cameco expects to take delivery of two new raisebore drills early in the year.

For Key Lake, capital costs in the near term include costs for revitalization of approximately $350 million. Work is also currently underway to investigate options for placement of tailings. Construction of a new tailings facility is included in total capital costs in years 2014-2016.

At Key Lake, mill revitalization is the largest sustaining capital project for 2009 at approximately $35 million. The purpose of this multi-year project is to enhance the mill's capability to produce over the long term.

For 2009, the estimated capital costs to the MRJV for McArthur River and Key Lake amount to $151 million (see Table 18-7). The estimated total capital costs to the MRJV for McArthur River and Key Lake are shown in **Table** .

Table 18-7 – Estimated Capital Costs for 2009 – MRJV basis

Capital Costs ($Cdn M)		2009
McArthur River Mine Development		58.8
McArthur River Mine:		
Freezing distribution systems		5.9
Dewatering equipment		2.8
Mine Ventilation		5.3
Boxhole Boring Method		4.7
Raisebore drills		3.7
Other Mine Capital		13.8
Total McArthur River Mine Capital		36.2
Key Lake Mill:		
Revitalization		35.0
Molybdenum/Selenium Control		5.2
Tailings Facilities		4.1
Other Mill Capital		11.7
Total Key Lake Mill Capital		56.0
Net pre-tax cash flow	$	151.0

Table 18-8 – Total Estimated Capital Costs by Year to the MRJV – Based on estimated Mineral Reserves only

Capital Costs ($Cdn M)	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
McArthur River Mine Development	$ 58.8	$ 56.0	$ 43.0	$ 21.6	$ 17.2	$ 24.8	$ 34.0	$ 32.3	$ 33.0	$ 24.6	$ 15.9	$ 13.1	$ 12.5
McArthur River Mine Capital													
Underground	24.4	16.5	12.0	14.5	12.7	13.5	12.6	12.6	12.6	12.6	12.6	12.6	15.6
Surface	11.8	9.0	23.7	19.2	10.4	11.0	8.4	8.4	8.4	8.4	8.4	8.4	10.4
Total Mine Capital	36.2	25.5	35.7	33.7	23.1	24.5	21.0	21.0	21.0	21.0	21.0	21.0	26.0
Key Lake Mill Sustaining													
Revitalization	35.1	124.9	124.9	52.8	14.0	-	-	-	-	-	-	-	-
Mill Capital	16.8	9.2	20.5	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Tailings	4.1	4.5	2.5	0.5	0.5	50.0	50.0	20.0	-	-	-	-	-
Total Mill Capital	56.0	138.6	147.9	73.3	34.5	70.0	70.0	40.0	20.0	20.0	20.0	20.0	20.0
Total Capital Costs	**$151.0**	**$220.1**	**$226.6**	**$128.6**	**$ 74.8**	**$119.3**	**$125.0**	**$ 93.3**	**$ 74.0**	**$ 65.6**	**$ 56.9**	**$ 54.1**	**$ 58.5**

Capital Costs ($Cdn M)	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**Total**
McArthur River Mine Development	$ 12.5	$ 12.4	$ 12.4	$ 12.1	$ 10.7	$ 10.7	$ 6.8	$ 6.8	$ 6.4	$ 6.3	$ 5.2	$ 4.1	$ 493.2
McArthur River Mine Capital													
Underground	15.6	15.6	15.6	15.6	15.6	13.8	13.8	12.0	12.0	12.0	9.0	9.0	344.4
Surface	10.4	10.4	10.4	10.4	10.4	9.2	9.2	8.0	8.0	8.0	6.0	6.0	252.3
Total Mine Capital	26.0	26.0	26.0	26.0	26.0	23.0	23.0	20.0	20.0	20.0	15.0	15.0	596.7
Key Lake Mill Sustaining													
Revitalization	-	-	-	-	-	-	-	-	-	-	-	-	351.7
Mill Capital	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	486.5
Tailings	-	-	-	-	-	-	-	-	-	-	-	-	132.1
Total Mill Capital	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	970.3
	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital Costs	**$ 58.5**	**$ 58.4**	**$ 58.4**	**$ 58.1**	**$ 56.7**	**$ 53.7**	**$ 49.8**	**$ 46.8**	**$ 46.4**	**$ 46.3**	**$ 40.2**	**$ 39.1**	**$ 2,060.2**

**** presented as total cost to the McArthur River Joint Venture**

Table 18-9 –Operating Cost Forecast by Year to the MRJV – Based on estimated Mineral Reserves only

Operating Costs ($Cdn M)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
McArthur River Mining													
Site Administration	$ 40.3	$ 40.6	$ 41.1	$ 41.9	$ 41.9	$ 41.9	$ 42.0	$ 42.0	$ 42.0	$ 42.1	$ 42.1	$ 42.1	$ 42.2
Mining Costs	65.3	71.3	72.5	73.4	70.3	73.2	71.0	74.0	69.5	71.4	71.6	64.8	63.7
Process	13.0	13.4	13.4	13.8	13.7	14.0	13.9	14.1	13.7	14.0	14.1	13.5	13.6
Corporate Overhead	9.0	9.3	9.0	8.3	7.7	8.2	8.3	8.2	7.7	7.8	7.7	7.5	7.6
Total Mining Costs	127.6	134.6	136.0	137.4	133.6	137.3	135.2	138.3	132.9	135.3	135.5	127.9	127.1
Key Lake Milling													
Administration	56.0	53.9	55.2	55.7	64.7	65.9	54.7	54.7	54.7	54.7	54.7	54.7	54.7
Milling Costs	76.8	78.2	79.1	79.0	79.0	79.0	78.8	77.8	78.1	72.7	71.3	70.3	70.3
Corporate Overhead	8.3	11.2	13.3	11.9	12.0	8.3	7.9	7.8	7.9	7.8	7.1	7.1	7.1
Total Milling Costs	141.1	143.3	147.6	146.6	155.7	153.2	141.4	140.3	140.7	135.2	133.1	132.1	132.1
Total Operating Costs	**$268.7**	**$277.9**	**$283.6**	**$284.0**	**$289.3**	**$290.5**	**$276.6**	**$278.6**	**$273.6**	**$270.5**	**$268.6**	**$260.0**	**$ 259.2**
Total Operating Cost per lb U3O8	**$14.35**	**$14.86**	**$15.17**	**$15.19**	**$15.47**	**$15.53**	**$14.95**	**$15.06**	**$14.79**	**$20.81**	**$23.36**	**$23.64**	**$ 23.56**

Operating Costs ($Cdn M)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
McArthur River Mining													
Site Administration	$ 42.2	$ 42.2	$ 42.3	$ 42.3	$ 42.3	$ 42.4	$ 42.4	$ 42.4	$ 41.0	$ 41.0	$ 41.0	$ 40.2	$ 1,043.9
Mining Costs	64.3	64.2	62.9	63.1	63.4	63.6	63.8	64.1	47.4	47.2	48.8	34.7	1,599.5
Process	13.6	13.7	13.6	13.7	13.7	13.8	13.8	13.9	11.7	11.7	11.7	11.1	334.2
Corporate Overhead	7.6	7.6	7.5	7.6	7.5	7.4	7.3	7.2	6.6	6.6	6.5	6.0	191.7
Total Mining Costs	127.7	127.7	126.3	126.7	126.9	127.2	127.3	127.6	106.7	106.5	108.0	92.0	3,169.3
Key Lake Milling													
Administration	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	1,390.7
Milling Costs	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3	65.4	65.7	63.8	61.6	1,809.3
Corporate Overhead	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.0	7.0	6.9	6.8	202.2
Total Milling Costs	132.1	132.1	132.1	132.1	132.1	132.1	132.1	132.1	127.1	127.4	125.4	123.1	3,402.2
Total Operating Costs	**$259.8**	**$259.8**	**$258.4**	**$258.8**	**$259.0**	**$259.3**	**$259.4**	**$259.7**	**$233.8**	**$233.9**	**$233.4**	**$215.1**	**$ 6,571.5**
Total Operating Cost per lb U3O8	**$23.62**	**$23.62**	**$23.49**	**$23.53**	**$23.55**	**$23.57**	**$23.58**	**$23.61**	**$25.14**	**$27.52**	**$31.12**	**$34.14**	**$ 19.69**

**** presented as total cost to the McArthur River Joint Venture**

18.7.3 Economic Analysis

The following economic analysis, as shown in **Table** for the McArthur River Operation, is based on the current mine plan and the estimated Mineral Reserves only. The analysis does not contain any estimate involving the potential mine and milling of the Mineral Resources from any Zone. Mineral Resources require further drilling and mining studies before they can be fully evaluated. It cannot be assumed that all or any part of the Inferred Mineral Resources will ever be upgraded to a higher category. Accordingly, expenditures required to bring any of these resources into production or to identify additional resources have not been included.

The analysis provided is from the point of view of Cameco, which owns effectively 69.805% of the MRJV, and incorporates Cameco's projected sale revenue from its proportionate share of the related production, less its share of the related operating and capital costs of the MRJV, as well as all royalties that will be payable on the sale of concentrates.

The analysis estimates a pre-tax NPV (10%) to Cameco, as at January 1, 2009, of Cdn$2.69 billion for its share of the McArthur River estimated Mineral Reserves. The pre-tax IRR, has been estimated to be 13%.

Table 18-10 – Economic Analysis – Cameco's Share – Based on estimated Mineral Reserves only

Economic Analysis ($Cdn M)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Production volume (000's lbs U3O8)	13,066	13,054	13,054	13,054	13,054	13,054	12,914	12,914	12,914	9,075	8,028	7,679	7,679
Sales revenue	$ 617.9	$ 747.2	$ 779.7	$ 810.9	$ 900.3	$ 885.2	$ 845.9	$ 868.2	$ 872.0	$ 622.5	$ 560.4	$ 539.6	$ 554.7
Operating costs	187.6	194.0	197.9	198.2	201.9	202.8	193.0	194.5	191.0	188.8	187.5	181.5	180.9
Capital costs	105.4	153.6	158.1	89.7	52.2	83.3	87.2	65.2	51.6	45.8	39.7	37.8	40.8
Basic royalty	24.7	29.9	31.2	32.4	36.0	35.4	33.8	34.7	34.9	24.9	22.4	21.6	22.2
Resource Capital tax	18.5	22.4	23.4	24.3	27.0	26.6	25.4	26.0	26.2	18.7	16.8	16.2	16.6
Tiered royalties	63.5	91.4	98.3	105.0	124.2	121.0	113.3	118.1	118.9	85.6	77.9	75.2	78.5
Net pre-tax cash flow	$ 218.2	$ 255.9	$ 270.8	$ 361.3	$ 459.0	$ 416.1	$ 393.2	$ 429.7	$ 449.4	$ 258.7	$ 216.1	$ 207.3	$ 215.7

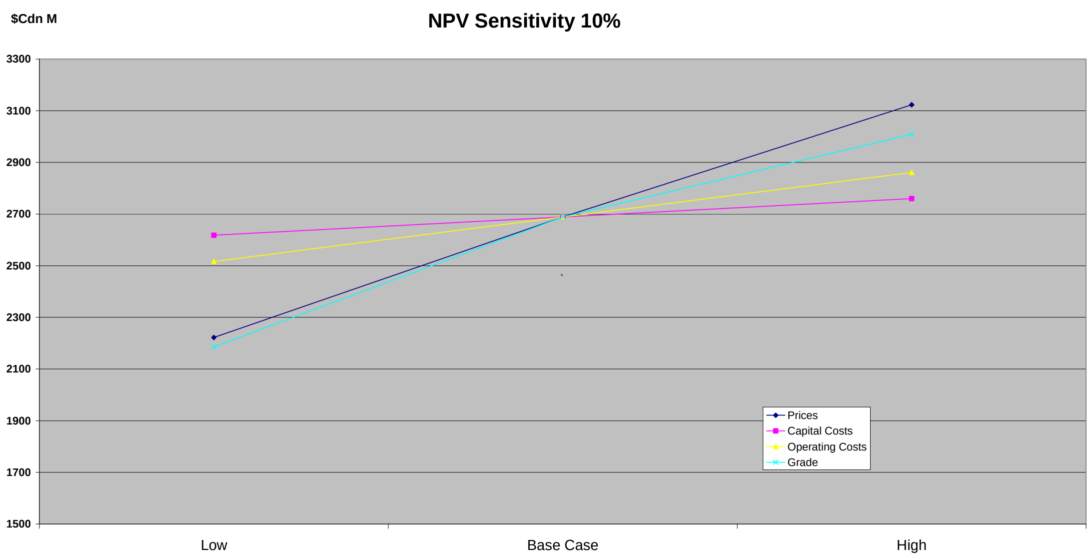
Economic Analysis ($Cdn M)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
Production volume (000's lbs U3O8)	7,679	7,679	7,679	7,679	7,679	7,679	7,679	7,679	6,492	5,933	5,235	4,398	233,022
Sales revenue	$ 562.5	$ 561.8	$ 566.3	$ 570.3	$ 575.1	$ 581.7	$ 576.1	$ 576.1	$ 487.1	$ 445.2	$ 392.8	$ 330.0	$ 15,829.5
Operating costs	181.4	181.4	180.4	180.6	180.8	181.0	181.1	181.3	163.2	163.3	163.0	150.2	4,587.3
Capital costs	40.8	40.7	40.7	40.6	39.6	37.5	34.8	32.7	32.4	32.3	28.1	27.3	1,437.9
													-
Basic royalty	22.5	22.5	22.7	22.8	23.0	23.3	23.0	23.0	19.5	17.8	15.7	13.2	633.1
Resource Capital tax	16.9	16.9	17.0	17.1	17.3	17.5	17.3	17.3	14.6	13.4	11.8	9.9	475.1
Tiered royalties	80.2	80.0	81.0	81.8	82.9	84.3	83.1	83.1	70.2	64.2	56.7	47.6	2,166.0
Net pre-tax cash flow	$ 220.7	$ 220.3	$ 224.5	$ 227.4	$ 231.5	$ 238.1	$ 236.8	$ 238.7	$ 187.2	$ 154.2	$ 117.5	$ 81.8	$ 6,530.1

Pre-tax NPV (10%)	$ 2,689.22
Pre-tax IRR (%)	13.0%

Sensitivities

The graph in Figure illustrates the project's sensitivity to changes in uranium grade, capital cost, operating cost, and uranium prices (including the mitigating effects of Cameco's level of committed sales through its sales contract portfolio). The graph illustrates the variability around the base case pre-tax net present value of Cdn$2.69 billion, using sensitivities of plus and minus 10% on all variables, except uranium price. For uranium price, the high and low cases represent a US$10/lb U_3O_8 deviation from the average spot price projections incorporated in the base case realized prices, as shown in **Table 18-5**.

Figure 31 – McArthur River Mine Sensitivity Analysis



The McArthur River Mine shows relatively low sensitivity to changes in operating or capital costs projections. The relative sensitivity to changes in price and ore grade realized is significantly higher due in part to the relatively high-grade nature of the deposit, and the price estimates being used, which are a reflection of the current U_3O_8 market.

The difference in the sensitivity between price and operating cost is made clear by the fact that the economic analysis assumes an average realized price of Cdn$70/lb U_3O_8, while the average operating cost is nearly Cdn$20/lb U_3O_8.

18.7.4 Payback

Payback for the McArthur River Mine can be considered on many factors. Payback for Cameco, including all actual costs up to and including 2008, will be achieved in 2010, on an undiscounted, pre-tax basis.

18.7.5 Mine Life

The McArthur River mine has current Mineral Reserves that forecast production of 334 million mill recovered pounds of U_3O_8. Annual production from McArthur River is forecast at a rate of 18.7 million pounds of U_3O_8 per year until 2016, and gradually declines therafter until 2033, Cameco estimates that McArthur River will have a mine life of at least 25 years (See Table 18-4).

Measured and Indicated Mineral Resources are estimated to be 49.7 million pounds of U_3O_8. It is expected that Mineral Reserves may increase as mine plan studies are completed for the current Measured and Indicated Mineral Resources. Increases in Mineral Reserves will help maintain annual production at 18.7 million pounds for longer than currently estimated. Mineral Resources that are not Mineral Reserves have no demonstrated economic viability.

If the Inferred Mineral Resources are upgraded in the future to Indicated Mineral Resources through further drilling and mining studies, and then converted to Mineral Reserves, that could also extend the period of full production and/or the mine life significantly. Inferred Mineral Resources have a great amount of uncertainty as to their existence and as to whether they can be mined legally or economically. It cannot be assumed that all or any part of the Inferred Mineral Resources at McArthur River will ever be upgraded to a higher category.

19 OTHER RELEVANT DATA AND INFORMATION

19.1 McArthur River Water Inflow Incidents Investigations

19.1.1 2003 Water Inflow

Description of Event

On April 6, 2003, a fall of ground occurred in the 7320 East Freeze Drift on the 530 m sublevel that resulted in a large inflow of water, estimated at approximately 1,100 m^3/hr. This inflow exceeded the underground pumping capabilities. Mining operations ceased immediately and all efforts were directed towards dealing with the event. Water was stored underground at various locations while additional pumping capacity was installed. The lower levels of the mine, including the SAG mill chamber, were flooded during this event.

Preceding Events.

The 7320 East Freeze drift on the 510 m sublevel was being excavated in proximity to the unconformity and P2 fault in preparation for freeze drilling of Zone 2. The size of the excavation had an original design dimension of 6.5 m X 6.5 m. However, due to deteriorating ground conditions, and to reduce the amount of radon laden water entering the drift, it was decided to install an Armtec arch in the opening. This resulted in a change to the size of the opening to 7.5 m X 7.5 m to accommodate the installation of the Armtec arch. Normal ground control measures continued involving 2.4 m dywidag rockbolts, split set bolts and screening, 75 mm primary and 50 mm secondary shotcrete, and three layers of IBO Ankor Bolts spiling. Utilizing this support system had resulted in no significant issues elsewhere in the mine, including drifts that were in proximity to the unconformity and P2 fault. Cable bolting was not utilized due to the nearness of the unconformity which was estimated to be 8-9 m above the excavation. The Armtec arch installation lagged behind the drift excavation due to fears of blast damage if the culvert was installed to close to the working face.

Prior to the commencement of development of 7320 freeze drift, probe hole drilling and grouting was performed in the area for a period of three months. From 28 holes drilled, the highest flow rate encountered was 10 m^3/hr.

Prior estimates by qualified individuals indicated a maximum expected inflow for the area at approximately 130 m^3/hr. Underground pumping capacity at the time of the event was estimated at 575 m^3/hr.

The largest inflow encountered prior to the event occurred during the sinking of Shaft No.2 which incurred an inflow measured at 140 m^3/hr.

Remedial Actions

Remedial work to return the McArthur Rive mine to safe operating condition was carried out during the second quarter of 2003 and was sufficiently advanced in July 2003 for mine production to resume. The excess water inflow was sealed off in July 2004. Permanent water treatment capacity was expanded to about 750 m^3/hr. During the water inflow incident, additional temporary capacity was put in place to treat the water flows. Construction was completed in 2005 to increase the permanent and contingency water treatment capacity to about 1,500 m^3/hr. In 2008, Cameco increased pumping capacity to 1,650 m^3/hr.

19.1.2 2008 Water Inflow

In November 2008 Cameco experienced a small water inflow at McArthur River. The water inflow was in the range of 100 m^3/hr, an order of magnitude less than the 2003 McArthur River and 2006 Cigar Lake mine inflows. This inflow was quickly managed through the site contingency plans and has not impacted on mine production plans and activities. The inflow area was secured by means of pouring a concrete bulkhead, containing the water in pipe and pumping it to the mine water handling system. As of the end of January, 2009 work continues to grout the interface of the concrete bulkhead and surrounding rock mass to withstand full hydrostatic pressure. Following bulkhead grouting, plans are to fill the remaining excavated tunnel area behind the bulkhead and seal the source of the inflow prior to resuming development in this area.

19.1.3 Mine Flooding Mitigation

As a result of the two water inflows at McArthur River, Cameco has implemented a number of additional procedures to mitigate the risk. This is an ongoing process of studying the deposit characteristics and learning more about it which leads to further improvements to the operating procedures and systems.

The ground control standards when mining in the proximity to the unconformity and P2 fault have been reviewed and new standards implemented. Proximity to the unconformity, mineralization, and geological conditions will determine maximum drift sizing and ground control measures used.

Assessments for all new development now include:

- Evaluation of the risk

- Modeling of the area for ground support requirements
- Third party review of ground control methods and design parameters.

Some of the more notable improvements and procedures are:

- The mine has increased the underground emergency pumping capacity to 1,500 m^3/hr. The surface water treatment plant has been expanded to handle emergency flows of 1,500 m^3/hr.

- Continue to use ground freezing to create barriers to water inflow around production areas with the resulting freeze walls tied into dry basement rock

- Further define the geology of higher-risk development areas by additional diamond drilling

- Continue to use probe and grout covers coupled with the drilling of geotechnical holes along the strike of the planned development

- Studied the hydrology of the areas of inflow and back calculated inflow volumes to calibrate future models and requirements

- Modeled water pressure required to cause a tunnel collapse and added depressurization holes to determine if the potential risk of an inflow changes during the development of the tunnel

- Use of freeze shields in higher-risk development in order to create a barrier to likely potential flow paths into the tunnel under development

- Pumping, treatment & storage volume increased to provide the time for a bulkhead or other type of barrier to be installed before mine systems are impacted.

- Confident that 1,500 m^3/hr is sufficient to manage any future inflow, however, to increase reliability added redundancy and redundant systems has been provided. In 2008 the total installed pumping capacity was increased to 1,650 m^3/hr

- The capability is available to add additional pumping at both Shaft 1 and Shaft 3

- Installed new surface lines from Shaft 3 to transfer water from the Shaft 3 contingency pump station to the surface water treatment facilities and designed these pipe lines to enable future increased capacity

- An available contingency is that Shaft 1 slick pipelines for concrete can be converted to dewatering pipelines (as was done in the 2003 inflow)

- In January 2009, a more robust concrete delivery means at Shaft 2 was added utilizing a dedicated newly drilled borehole

- Sufficient pipe and pump size to move effluent from one contingency treatment pond to the next was built into the design of the contingency water treatment system to add flexibility to treatment system

- A new Water Inflow Awareness training program was developed which consists of a series of five modules that imparts skills and knowledge required to understand: the unique characteristics associated with the uranium deposits of the Athabasca Basin; the events leading up to the McArthur River and Cigar Lake inflows and lessons learned; basic geology and the affects of water pressure; hazards and risks related to inflows; and, ground control, support and warning signs. Training commenced early in 2008 and by year-end a total of 680 employees and contractors at McArthur River, Cigar Lake and Rabbit Lake had been through the program and received the necessary qualifications

- Water inflow drills and exercises have been carried out to prepare management and the workforce in deploying water inflow contingency plans

In November 2008 a water inflow occurred at McArthur River which was quickly managed through site contingency plans. This inflow was in the range of 100 m^3/hr, an order of magnitude less than the McArthur River 2003 mine inflows. The inflow area was quickly secured and work is ongoing in the early part of 2009 to fully grout the inflow area.

Cameco has put operational controls in place that are intended to reduce risk of water inflow, including detailed procedural training for employees, equipment inspections and testing, ground control inspections by our site engineers, and a program of rock mechanics reviews. In addition, there is a renewed focus on safety culture, with systems that imbed risk assessments and job hazard analysis into daily activities, and increased accountability at all levels of Cameco's organization.

An example of these operational controls is a new Water Inflow Awareness training program that Cameco has developed. The program comprises a series of five modules that imparts skills and knowledge required to understand: the unique characteristics associated with the uranium deposits of the Athabasca Basin; the events leading up to the McArthur River and Cigar Lake inflows and lessons learned; basic geology and the affects of water pressure; hazards and risks related to inflows; and, ground control, support and warning signs. Training commenced early in 2008 and by year-end a total of 680 employees and contractors at McArthur River, Cigar Lake and Rabbit Lake had been through the program and received the necessary qualifications in these areas. Notwithstanding these operational controls, inflows do occur. The controls aim to reduce the likelihood of a large uncontrolled inflow and to improve the contingency preparation to deal with an inflow if it occurs. Examples of smaller inflows that were successfully managed include a November 2007 inflow at Rabbit Lake and a November 2008 inflow at McArthur River. Both of these were quickly managed through site contingency plans. Both of these inflows were in the range of 100 m^3/hr, an order of magnitude less than the McArthur River 2003 and Cigar Lake 2006 mine inflows. The source of the Rabbit Lake inflow was fully plugged early in 2008. At McArthur River, the inflow area was quickly secured and work is ongoing in the early part of 2009 to fully grout the inflow area.

19.2 Rock Falls

The McArthur River ground conditions pose a challenge for mine development as the rock in proximity to the ore zone is highly fractured and faulted.

Mitigative Measures.

The following measures are in place at McArthur River to mitigate the risk of rock falls:

- a comprehensive drilling program to determine geotechnical characteristics of planned mining areas
- adequately designed roof support measures for geological settings encountered
- engineered mine plans to minimize ground stresses and rock movement
- minimizing water inflow into development headings

- controlled blasting techniques where deemed appropriate
- Use of Roadheader miner where deemed appropriate
- appropriate training of underground workers on dangers of rock falls and procedures in place to minimize risk of rock falls.

19.3 Worker Exposure to Radiation

The McArthur River ore deposit is high grade uranium and worker exposure to radiation must be strictly controlled.

Mitigative Measures

The following measures are in place at McArthur River to mitigate the risk of worker exposure to radiation:

- use of a remote mining method, such as raise bore mining, that does not put workers in direct exposure to high grade uranium ore
- high grade ore is remotely ground, put into slurry, and pumped to surface enclosed tanks
- detailed designed ventilation system is in place that will route air containing radioactive dusts and radon daughters to dedicated exhaust pathways to minimize worker exposure
- monitoring program for ventilation systems is in place to ensure design criteria are being achieved
- monitoring program for radiation levels at strategic areas in the mine is in place to ensure levels are at acceptable levels.
- monitoring program for worker exposure through personnel dose metres is in place to ensure personnel exposure are at acceptable levels
- application of shotcrete on development drift roof and walls to reduce gamma radiation and inflows of radon-laden water
- appropriate training of workers on dangers of radiation exposure
- wetting of work areas to reduce radioactive dust levels

19.4 Mine Fires

Mine fires pose a serious threat to mine workers and mine operations and controls must be in place to minimize the risk of mine fires.

Mitigative Measures

The following measures are in place at McArthur River to mitigate the risk of mine fires:

- appropriate Emergency Response Plan including high level training of Mine Rescue Personnel and Surface Fire Fighting crews
- appropriate training program for mine workers of Emergency Procedures and dangers of underground fires
- properly designed storage locations for explosives, timber, fuel and lubricants, and other flammable material, equipped with proper fire fighting equipment
- appropriate Flammable Refuse removal procedure
- installation of appropriately designed and equipped underground refuge stations
- stench gas warning system to warn workers of underground emergencies.
- proper safeguards and procedures are in place for working on high voltage electrical equipment
- appropriate fire fighting training for mine workers
- effective and properly maintained phone/communication system for communication during emergencies

19.5 Worker Exposure to Mine Gases and Diesel Particulates

Underground diesel equipment and blasting activities will produce toxic gases. Diesel equipment will produce diesel particulates. Worker exposure to these gases and diesel particulates must be controlled.

Mitigative Measures.

The following measures are in place at McArthur River to mitigate the risk of worker exposure to mine gases and diesel particulates:

- detailed designed ventilation systems are present that will route air containing diesel emissions and blasting gases to dedicated exhaust pathways
- ensure minimum airflows as stipulated in the Mines Regulations for the Province of Saskatchewan are supplied to active working areas.
- monitoring program of ventilation systems is in place to ensure design criteria are being achieved
- monitoring program is in place for mine gas and diesel particulate levels to ensure gas and particulate levels are at acceptable levels

- underground diesel equipment is equipped with appropriately designed exhaust scrubbers
- monitoring programs are in place for diesel exhaust emissions to ensure emissions are below the limits as stipulated in the Mines Regulations for the Province of Saskatchewan
- proper diesel equipment maintenance programs are in place to ensure motors are operating at best achievable efficiencies
- appropriate training program for dangers of mine gases and diesel particulates and procedures to reduce exposure to gases and diesel particulates.

19.6 Mine Productivity of Boxhole Boring Mining Method

A significant amount of the estimated Mineral Reserves in Upper Zones 1, 3 and 4 have been planned for extraction with the boxhole boring method scheduled to start producing in the year 2013. Although this method has undergone successful test work at the Cigar Lake and Rabbit Lake Mines, there is still some risk concerning the production performance of this method and it has not been demonstrated in a production situation.

Mitigative Measures

The following measures are in place at McArthur River to mitigate the risk of lower than expected production rates from the boxhole boring method:

- a boxhole borer was delivered in 2008 and testwork is underway in wasterock
- testwork in ore is scheduled for 2010, three year ahead of when it is required for production.

19.7 Deilmann Tailings Management Facility

Following completion of mining in the eastern portion of the Deilmann pit in 1995, the pit was converted to a tailings management facility. The Deilmann TMF was commissioned in January 1996 and has been used continuously since. The system was initially operated in a subaerial tailings deposition mode. It was converted to a subaqueous tailings disposal system in 1998, meaning that the water level in the pit was allowed to rise above the tailings surface. The remaining Key Lake tailings were deposited subaqueously followed by the deposition of tailings from McArthur River ore in 2000 to present. Subsequently, all tailings have been deposited beneath the water cover. Flooding of the pit was accomplished by reducing the pumping rate from peripheral dewatering wells that had been used to dewater the pit during mining and construction. During this planned flooding of the Deilmann TMF, Cameco followed a "hydraulic balancing approach" of controlling the water table elevations behind the slopes below the pit water elevation via pumping from the dewatering system around the Deilmann TMF to prevent or minimize pit wall failures. Minor amounts of sloughing were expected from the outwash sand slopes in the west cell and northwest portion of the east cell due to re-saturation of sand during the flooding of the Deilmann TMF and ensuing wave erosion of the slopes.

The design water elevation of the Deilmann TMF for the subaqueous deposition was initially set at 510 masl. Beginning in July 2001, when the rising water contacted the lowermost sections of the outwash sand in the Key Lake trough, periodic sloughing of the pit walls in the western portion of the Deilmann TMF was experienced. Subsequent significant sloughing events occurred in the period from July 2001 to May 2005. As a result of these events, Cameco undertook a number of actions to minimize potential damage from future events, including infrastructure relocation along vulnerable sections of the pit crest, installation of slope monitoring stations, and creation of a 30 metre wide “restricted” zone along the perimeter of the pit crest at the west end of the Deilmann TMF.

As of May 2005, about 2.3 x 10^6 m^3 of sand was estimated to have sloughed in the Deilmann TMF.

Cameco established an advisory committee to address a wide range of technical issues related to the long term operation and performance of the Deilmann TMF. The committee is comprised of third party experts familiar with the Deilmann TMF, Cameco’s technical personnel and site operations personnel. The committee’s mandate is to consider all aspects related to the ongoing operation of the Deilmann TMF, including water management and water balance, dewatering, slope monitoring, water treatment and the sloughing issue so as to ensure the risks to its operation are understood and mitigation recommendations are made on that basis.

One of the first actions of the Advisory Committee was to halt further intentional flooding of the Deilmann TMF, based on the observation that during periods of fast-flooding the failure rate increased, as well as experience from elsewhere (former East Germany). Since 2005, Cameco has endeavored to maintain a near constant water level in the Deilmann TMF. Cameco has doubled the capacity of the groundwater treatment system and taken measures to ensure the long term reliability of the dewatering system (wells, pipelines, and associated infrastructure). There has been no sloughing events since water level control was implemented.

The sloughing of outwash sand into the Deilmann TMF has resulted in lost storage capacity and some concerns regarding the long-term environmental performance of the facility following closure.

At present, impacts due to sloughing of overburden sand in the west cell of the Deilmann TMF (over the past five years) appear to require only a minor change in the proposed decommissioning scenario. These sloughing events are currently being evaluated by Cameco via ongoing drilling and investigation work, and by means of related geotechnical and hydrogeological modeling assessment work.

In summary, Cameco has performed several studies to better understand the pitwall sloughing mechanism and initiated engineering work to design and build mitigation measures for prevention of sloughing. Sloughing has occurred in the past at the Deilmann TMF resulting in the loss of approved capacity. Although the situation has recently stabilized as a result of stabilizing the water level in the pit, there is a risk of further sloughing at the Deilmann TMF.

19.8 Tailings Capacity

Tailings from processing McArthur River ore are deposited in the Deilmann TMF. At current production rates, the approved capacity of the Deilmann TMF is approximately eight years, assuming only minor storage capacity losses due to sloughing (or erosion) from the pit walls.

Cameco also initiated technical pre-feasibility work to secure long-term tailings capacity at Key Lake that will be sufficient to hold all tailings generated from processing of McArthur River Mineral Reserves as well as substantial additional capacity to allow for other potential sources of production. This tailings option study is considering the feasibility of further extending the capacity of the Deilmann TMF and options for new tailings management facilities. Cameco expects to submit a project description to regulatory agencies in 2009 that will initiate the environmental assessment process for securing long-term tailings capacity at Key Lake.

Mitigative Measures

The following measures are in place at the Key Lake Operation to mitigate the risk of reduced capacity in the tailings management facility:

- work has been initiated to gain regulatory approval for a higher final tailings elevation such that the Deilmann TMF will have sufficient capacity to hold all tailings generated from processing of the current McArthur River Mineral Reserves.
- a tailings option study has been initiated to determine the best possible long-term storage facility for the tailings.
- as a temporary measure Cameco could apply to utilize the remaining capacity in the above ground tailings management facility which was formerly used at this facility. This would provide three years of additional storage capacity.

19.9 Aboriginal Title and Consultation Issues

Potential First Nations and Métis title claims, as well as related consultation issues, may affect the ability of Cameco to pursue exploration, development and mining at McArthur River and milling ore at Key Lake. Aboriginal rights and title claims remain unsettled in some parts of Canada, either because no treaties have been signed between First Nations and government (as is the case in many areas of British Columbia) or because First Nations and government disagree on the ramifications of treaties entered into in the past. Canadian governments have a duty to consult and, in certain circumstances, to accommodate aboriginal interests in land, whether or not those interests have been recognized in a treaty or by a court. The sufficiency of the government's consultation may be subject to judicial review, which may in turn affect timelines for obtaining required permits or government approvals.

In 2004, in a case involving forest tenures on lands claimed by the Haida Nation, the Supreme Court of Canada held that the government had a legal duty to consult and, where necessary, to accommodate First Nations whose aboriginal interests could be affected by government sanctioned activities on Crown land. The Court found that the duty to consult and accommodate is owed by both the federal and provincial governments, and can arise prior to the final resolution of aboriginal claims in court or by treaty. In determining the scope of the consultation required, governments must assess the strength of the First Nation's claim, as well as the potential impact of the proposed action on the First Nation's interests. The Court confirmed that the duty to consult and accommodate is specific to government, and does not extend to private industry; however, governments may delegate procedural aspects of consultation to project proponents. In *Haida*, as well as in a related case involving consultation with the Taku River Tlingit First Nation over a proposed mining road, the Court made it clear that a First Nation does not need to agree to any proposed accommodation in order for the government's duty to be satisfied.

In a 2005 decision involving the Government of Canada and the Mikisew Cree First Nation, the Supreme Court of Canada further examined consultation and accommodation duties, this time in the context of historical treaty rights. The Court confirmed that a First Nation, having surrendered its interests in land by means of a treaty, may nevertheless have the right to be consulted where proposed government sanctioned action might directly and adversely affect treaty rights. The Treaty First Nation's right to consultation does not, however, include the power to veto the proposed project. The Court emphasised that it did not follow from its decision that governments, when proposing or approving action on treaty surrendered land, were required to consult with all signatory First Nations no matter now remote or unsubstantial the impact on their interests.

Cameco has received formal demands from the English River First Nation and the Métis Nation of Saskatchewan to be consulted and accommodated with respect to development on aboriginal traditional lands.

In February 2004, Cameco received correspondence from the English River First Nation (the “ERFN”) asserting a right to be consulted with respect to the use of its traditional lands, which includes the McArthur River operations. In December 2006, Cameco received a copy of correspondence sent by the ERFN's legal counsel to various provincial government Ministers. In the correspondence, the ERFN indicated that if the government issued any further permits without appropriate consultation and notification, the ERFN would “take appropriate actions to prevent the permit holders from intruding on their property.”

In January 2005, the Métis Nation of Saskatchewan made an assertion similar to that made by the ERFN. The Métis Nation also threatened non-violent civil disobedience that could have had a negative impact on Cameco’s operations. In February 2005, the Métis Nation of Saskatchewan stated that, in order to pressure the Province of Saskatchewan to meet its demands, it would establish road blockades at junctions of certain provincial highways near Key Lake. As the threatened road blockades could have resulted in Cameco ceasing milling and mining operations at Key Lake and McArthur River, Cameco obtained an injunction from the Saskatchewan Court of Queen’s Bench, prohibiting the Métis Nation of Saskatchewan from proceeding with the road blockade.

Pursuant to historical treaties, it is generally acknowledged that First Nation bands in northern Saskatchewan ceded title to most traditional lands in northern Saskatchewan in exchange for treaty rights that included certain reserved lands. However, First Nations in Saskatchewan continue to assert that their treaties are not an accurate record of their agreement with the Canadian government and that they did not cede title to the minerals when they ceded title to their traditional lands. Some First Nations dispute the fact that their ancestors ceded any title to the land at all. First Nations have launched a lawsuit in Alberta making a similar claim that they did not cede title to the oil and natural gas rights when they ceded title to their traditional lands. A similar lawsuit could be brought by First Nations in Saskatchewan.

Awareness of aboriginal claims and the legal issues associated with them is an integral part of exploration, development and mining in Canada and Cameco is committed to managing these issues effectively. Cameco has developed a practice of engaging in dialogue with First Nations and other stakeholders in northern Saskatchewan and believes it has good relations with them. Cameco employs a significant number of First Nations and Métis people at its operations. It has substantial business relationships with First Nations and Métis residents in northern Saskatchewan, and provides other social and educational support for them in northern Saskatchewan.

While Cameco cannot by itself wholly fulfil the governments' duty to consult, Cameco expects that at least some of its initiatives vis-à-vis First Nations will be regarded as delegated 'procedural aspects' of the Province's duty to consult. However, in view of the legal and factual uncertainties, no assurance can be given that material adverse consequences will not arise in connection with First Nation and Métis title claims and related consultation issues.

19.10 Project Risks

19.10.1 Technical Risks

McArthur River is a challenging deposit to mine. These challenges include control of ground water, weak ground formations, and radiation protection (see Sections 19.1, 19.2, and 19.3). The sandstone overlying the basement rocks contains significant amount of water at hydrostatic pressure. Major water-bearing formations are present in the altered sandstone,P2 fault and unconformity. A risk of flooding is present if either of the water-bearing formations is intersected with mine openings or exploration drill holes. As a result, prior to mining an ore zone, the footwall areas must be frozen to isolate the ore zone from the water-bearing sandstone and vertical faults that form the western part of the deposit. Ground freezing also helps stabilize the highly fractured footwall rocks during mining operations and reduces the potential for radiation exposure from radon dissolved in the ground water. Ground freezing, however, will only reduce, but not eliminate, these challenges. There is a possibility of a water inflow event during the drilling of holes to freeze the ground as well as other causes. Therefore, the risk of water inflows at McArthur River remains.

Water Inflow

The consequence of another water inflow at McArthur River will depend upon the magnitude, location and timing of any such event, but could include a significant reduction in McArthur River production, a material increase in costs, a loss of Mineral Reserves, or require Cameco to give notice to many of its customers that it is declaring an interruption in planned uranium supply. Such consequences could have a material impact upon Cameco.

In April 2003, a rockfall that resulted in a water inflow into the McArthur River mine suspended mining for nearly three months and was a major setback to development of new mining zones as revised mining plans were subsequently prepared and improved controls were put in place to access the zone where the inflow occurred. Similar difficulties could result in lower uranium production levels.

Cameco has operational controls in place that are intended to reduce risk of water inflow, including detailed procedural training for employees, equipment inspections and testing, ground control inspections by our site engineers, and a program of rock mechanics reviews. In addition, there is a renewed focus on safety culture.

Notwithstanding these operational controls, inflows do occur. The controls aim to reduce the likelihood of a large uncontrolled inflow and to improve the contingency preparation to deal with an inflow if it occurs. A smaller inflow that was successfully managed was a November 2008 inflow in the range of 100 m^3/h, an order of magnitude less than the McArthur River 2003 and was quickly managed through site contingency plans. The 2008 inflow area was quickly secured and work is ongoing in the early part of 2009 to fully grout the inflow area.

Transition to New Mining Areas

Currently mining is taking place in Zone 2 (Panels 1, 2, and 3) mining has been exclusively in these areas since production commenced at McArthur River in 1999. In 2009, Cameco expects to transition production to Panel 5 of Zone 2 and plan to bring Lower Zone 4 into operation in 2010. All production from these zones will continue to come from the raisebore mining method.

Failure to successfully transition to new zones could delay production and could result in a loss of sales.

Boxhole Boring Mining Method at McArthur River

Work also progressed on the planning of a boxhole boring mining method, which is anticipated to provide production from Upper Zone 4 beginning in 2013. Boxhole boring is used to excavate an orebody where there is limited or no access from above. The machine is set up on the lower level, and a raise is bored upward into the orebody. The ore and rock are carried by gravity down the hole and are deflected away from the machine. Boxhole boring is a mining development technique used around the world; however, it would be a first in uranium mining and as a production method. Cameco have some experience with boxhole boring as trials were previously conducted and the boxhole method tested at Rabbit Lake and Cigar Lake.

Technical challenges associated with this mining method include reaming through frozen ground, raise stability (thawing from reaming and backfill), controlling raise deviation, reaming through backfilled raises and control of radiation exposure. Accordingly, we have scheduled a long lead time for implementation to ensure the technical challenges are understood and risks mitigated. Until Cameco has fully developed and tested the boxhole boring method at McArthur River, there is uncertainty in the estimated productivity. A dedicated “Mining Methods Development” team has been assembled at McArthur River to develop the boxhole method and capital equipment, including a boxhole raise drill that was ordered late in 2006. Design of specialized components was completed in 2007, along with mine planning of the test area.

Presently the pilot hole for the first test hole in waste is being drilled and completion of the freeze drilling is nearing for the test raises in ore planned for 2010. Cameco has confidence that this mining method will be successfully implemented McArthur River. Failure to do so would delay production from this zone and could result in a loss of sales.

Failure to maintain existing tailings capacity at the Deilmann TMF due to sloughing or other causes or failure to obtain or delay in obtaining regulatory approval for a new tailings management facility or to expand existing tailings capacity at the Deilmann TMF could constrain uranium production, which could have a material adverse impact upon Cameco. (see Sections 19.7 and 19.8)

Mine fires pose a serious threat to mine workers and mine operations and controls and procedures must be put in place to mitigate the risk of fires.

19.10.2 Regulatory Approval and Expediency

Regulators must approve the construction, startup, continued operation, including any significant changes, and decommissioning of most of Cameco's facilities. These facilities are subject to numerous laws and regulations regarding safety and environmental matters, including the management of hazardous wastes and materials.

Significant economic value is dependent on our ability to obtain and renew the licences and other approvals necessary to operate. Failure to obtain regulatory approvals or failure to obtain them in a timely manner would result in project delays or modifications, leading to higher costs. In the extreme, a project may be suspended or terminated, which would negatively impact future earnings and cash flow. For example, periodically we are required to apply for licence renewals or seek amendments to existing licences for many of our uranium and fuel services operations, and a failure to obtain these would have a significant adverse impact on our operations.

McArthur River/Key Lake

Cameco plans to increase the annual production licence capacity at the McArthur River/Key Lake operation to 22 million pounds from 18.7 million pounds. As the first step, Cameco submitted an environmental assessment for an increase in the annual licensed capacity in November 2004. The environmental assessment was delayed due to the discussions with the regulator regarding how to deal with the local accumulation of molybdenum and trace amounts of selenium in the downstream discharge environment.

Cameco expects that reducing the current level of these metals will help advance the environmental assessment.

Further delay in achieving this increase in production negatively affects the company's potential revenue due to a delay in the sale of these additional pounds.

Key Lake Tailings Management Facilities

At the Key Lake mill, tailings are deposited in the Deilmann tailings management facility (TMF). Currently, approved capacity of the Deilmann TMF is sufficient to operate at current production rates for approximately five years, assuming only minor storage capacity losses due to sand erosion from the pitwalls.

In February of 2009, Cameco received regulatory approval for the deposition of tailings to a moderately higher elevation in the Deilmann TMF. At current production rates, the approved capacity of the Deilmann TMF increases from five years to approximately eight years, assuming only minor storage capacity losses due to sloughing (or erosion) from the pit walls.

Cameco also initiated technical pre-feasibility work to secure long-term tailings capacity at Key Lake that will be sufficient to hold all tailings generated from processing of McArthur River mineral reserves as well as substantial additional capacity to allow for other potential sources of production. This tailings option study is considering the feasibility of further extending the capacity of the Deilmann TMF and options for new tailings management facilities. Cameco expects to submit a project description to regulatory agencies in 2009 that will initiate the environmental assessment process for securing long-term tailings capacity at Key Lake.

Failure to receive regulatory approval for TMF expansion at Key Lake and Rabbit Lake could constrain uranium production. The financial impact is the loss of uranium sales revenue and earnings.

19.10.3 Environmental Regulations

Environmental regulation affects nearly all aspects of Cameco's operations, imposing very strict standards and controls. Regulation is becoming more stringent in Canada and the US. For example, changes to our operational processes are increasingly subject to regulatory approval, which may in turn result in delays due to the longer and more complex regulatory review and approval processes. These increasing requirements are expected to result in higher administration costs and capital expenditures for compliance.

Changes to environmental regulation could impose further requirements on companies involved in the nuclear fuel cycle. Such changes could include more stringent regulation on emissions and water quality standards, and on property decommissioning and reclamation. These changes could affect Cameco's operational costs, or future decommissioning costs, or lower production levels, negatively impacting future earnings and cash flow.

One example of a regulatory change that has significantly impacted our costs is the requirement to reduce the concentrations of molybdenum and selenium in the effluent released from the Key Lake mill. In recent years the CNSC and other regulators have increasingly focused on indicators of potential longer-term environmental impact in the downstream receiving environments from our facilities. For example, the CNSC raised concerns regarding the local accumulation of molybdenum and selenium in the Key Lake mill downstream environment. To address these concerns of potential impact, Cameco proposed an action plan to further reduce molybdenum and selenium discharges in the mill effluent. The action plan was agreed to by the CNSC and subsequently included as a condition in the Key Lake facility operating licence since January 2007.

The costs to Cameco of this regulatory requirement are substantial in many aspects. Total capital expenditures to add the molybdenum and selenium removal circuit are forecast at $30 million. Of this total, $5.2 million remains to be spent in 2009. The environmental assessment to increase the annual production licence capacity at McArthur River and Key Lake has been on hold since 2006, pending the demonstration of the effectiveness of the molybdenum and selenium removal circuit. The addition of the molybdenum and selenium removal circuit adds further process complexity to the effluent treatment process and increases the potential for effluent treatment upsets that can interfere with safe production. Finally, annual operating costs are anticipated to increase by as much as $2 million for additional reagents to ensure removal of selenium to extremely low concentrations in the effluent.

Cameco seeks to reduce its environmental impacts as one way to mitigate risks from changes in environmental regulations.

For example, McArthur River is taking proactive steps to reduce molybdenum that is discharged to the environment ahead of regulatory limits that may be imposed.

Early in the start up of the McArthur River operation, we recognized that the three shafts at the site produced quantities of water that would exceed the needs of the underground operations. Capture of the shaft seepage eliminated the need to pipe surface water down for underground mining activities. The shafts produce water of good quality, and at shaft three, the water quality has been assessed and approved for discharge to the environment, without treatment.

By mid-2009, Cameco expects direct discharge to the environment will be achieved at shaft three, thereby preventing that source of water from contacting our underground processes. Accordingly, molybdenum loadings should be reduced. In addition, we are targeting to have excess water from the other shafts sent in a more direct manner to the surface effluent treatment plant. These two actions are expected to reduce effluent treatment volume by approximately 5% to 10% and reduce the molybdenum concentration in our effluent by an additional 5% to 10%. Combined, reduced loadings to the environment in the second half of 2009 could see a 10% to 20% overall reduction.

Going forward, since regulatory requirements change frequently, are subject to changing interpretations and may be enforced in varying degrees, we are unable to predict the ultimate cost of compliance with these requirements or their effect on operations.

20 INTERPRETATION AND CONCLUSIONS

McArthur River is a maturing operation that has successfully extracted 150 M lbs of U_3O_8 during it's 9 years of commercial production. Over this period of time, a much greater understanding of the challenges of mining in the Athabasca Basin has resulted in a number of operational improvements to mitigate risks. These improvements which include among others reduced risk of water inflow, have been acknowledged, in part, by regulatory agencies granting Cameco longer term licenses. Given the difficult geological environment that the McArthur River deposit is situated, the mining method is complex and capital intensive and will remain so for the Mineral Reserves identified in this report.

The transition to new mining areas and methods poses some new challenges for the site. The new freeze wall for mining of the Zone 2 Panel 5 area of the mine is a good example of how the operation has utilized adaptive management. The design implemented ensures that the next 100 M lbs of U_3O_8 extracted from Zone 2 is executed in a lower risk environment by encasing the planned raisebore chamber development within the freeze wall. Similarly, new production mining methods are being tested years in advance of the requirement for production. Boxhole boring, the proposed method for the extraction of ore in the upper portion of most of the mineralized zones, is well advanced. Further, this method utilizes many common components from the raisebore extraction method. As such, it is expected that the transition to boxhole boring will not be physically difficult, however, cycle times and efficiencies are still to be determined to validate the long term rate of extraction.

The McArthur River Mineral Reserve model has thus far been shown to be conservative with more U_3O_8 extracted than has been predicted to date. Adjustments have been made to more closely predict actual to modelled results. Over the past five years, reconciliation of mine production with the model is within 5% of the estimated pounds U_3O_8 which is considered excellent. Estimated Mineral Reserves at the end of 2008 of approximately 332.6 M lbs with an average grade of 20.69% U_3O_8 are forecast to produce positive revenue to cost margins through the mine life. Sensitivity of the Mineral Reserve to grade fluctuations is therefore small due to these relatively large margins, resulting in little or no impact to Mineral Reserves. Currently the mine uses a cut-off grade of 0.8% U_3O_8 in determining if material from the raisebore mining method is processed in the high grade slurry circuit or is trucked to Key Lake as mineralized material. This cut-off grade is based on the cost for managing waste containing radioactive mineralization which has high potential for contamination of other waste streams.

The amount of estimated Mineral Resource for the McArthur River Operation is relatively large compared to the Mineral Reserves. With an average grade of the Measured and Indicated Mineral Resources of 9% U_3O_8 and containing nearly 50 million lbs U_3O_8 and Inferred Mineral Resources with an average grade of 9.8%U_3O_8 and containing 139 million lbs U_3O_8, there is good potential to upgrade Mineral Resources which could possibly either increase production in later years and/or lengthen mine life. Mineral Resources have no demonstrated economic viability. Inferred Mineral Resources have a great amount of uncertainty as to their existence and as to whether they can be mined legally or economically. It cannot be assumed that all or any part of the Inferred Mineral Resources will ever be upgraded to a higher category.

Brownfield exploration of the site continues with good targets both to the north and south to be drilled in the coming years. Given the size of the estimated Mineral Reserve and the mining rate, exploration does not need to be accelerated to meet near and mid term production goals.

Key Lake has provided milling services for all ore mined to date from the McArthur River Operation. Processing at Key Lake has consistently provided near licensed capacity output in all but two years; 2003 when McArthur experienced an inflow and 2008 when the mill at Key Lake experienced operational problems. With the recent and planned expenditures on infrastructure at Key Lake, mill capacity is expected to return to past performance levels, and in the future have capacity to produce beyond the current license limit. Longer term issues with tailings are well understood and studies for tailings capacity expansion take into account the Mineral Reserves and Resources at McArthur River as well as other potential tailings streams.

Operating costs for the MRJV have been estimated to average Cdn$19.69/lb U_3O_8 over the mine life. For the period from 2009 to 2013, operating costs were estimated to average Cdn$15/lb U_3O_8. Some cost increases are expected with the requirement to increase the number of raises due to falling grade and pounds of U_3O_8 per raise. Mining method is another driver of cost and opportunities to improve upon the methods currently planned are ongoing. Given the significant margin of cost to revenue, it is believed that all estimated Mineral Reserves can be extracted economically.

21 RECOMMENDATIONS

The risks to the McArthur River Operation have largely been mitigated. However, all underground mines carry inherent risk due to unknowns within the rockmass of ore deposits as well as other risks outlined in this report. The McArthur River operation carries risks beyond the typical Canadian mining operation due to the potential for a water inflow within the Athabasca Basin. Therefore, regular review of the maximum inflow potential relative to the pump and treat capacity of the operation is one of the most important exercises the site can perform. Currently the site has pump and treat capacity for the maximum inflow expected (as verified by both internal and external experts). The McArthur River Operation should continue to examine the redundancy requirements of its pump and treat systems and keep an updated business case. As a general comment, larger inflows take longer to remediate and the maximum inflow expected would result in a significant production interruption. Cameco is currently preparing to upgrade a stream crossing as a first step in improving the response to a large inflow.

The Mineral Reserve model for the site has demonstrated to be well calibrated over the past several years. With the start of production mining from Zone 4 in 2010, additional calibration of the Mineral Reserve model may again be required.

As the mine transitions to new mining areas, increased personnel have been required to develop mine infrastructure. This activity has limited McArthur's ability to add crews for exploration work in the underground, despite significant resources to both the North and South of the mine. It is recommended that one area be focused on. The infrastructure to the south of the Mineral Reserves is the most advance, and therefore it is recommended that the Mineral Resources in this area be targeted for upgrading and then, move north to the next area of high potential mineral resource targets.

The positive drill results encountered over the last several years confirm that the potential for significant uranium mineralization is still present along strike to the north and south. In light of this, it is recommended that surface exploration be continued along the north and south ends of the P2 structure.

Increases to the mining rate have been proposed for the past several years. Given that mining rate is controlled by the number of raises mined in a year, additional raisebores and operators are required. Further, the relatively small physical size of the deposit limits the number of raisebores that can be operated without becoming congested and posing a safety and productivity risk. Therefore it is recommended that any increased production be in the context of increased raisebore access along the strike length of the estimated Mineral Reserve and potential Mineral Resource additions.

In order to improve confidence on the calculation of uranium grade from radiometric probing results it is recommended that one in twenty underground holes should be assayed to confirm that the current calibration of the probe is reliable. Further density determination should be made on core samples prior to sampling the core. This is for confirmation of the formula currently used to calculate density.

Mining methods employed and planned for McArthur River are costly from both an operating and capital perspective but still provide significant margins. In order to execute the mine plan while mitigating risks, the proposed expenditures set out in Tables 18-7, 18-8 and 18-9 of Section 18.7 of this report are necessary and endorsed by the authors of this technical report.

The authors of this technical report concur with, and recommend that Cameco proceed with, the foregoing plans.

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23 DATE AND SIGNATURE PAGE

This NI 43-101 technical report titled "McArthur River Operation, Northern Saskatchewan, Canada", with an effective date of December 31, 2008 has been prepared under the supervision of the undersigned. The format and content of the report conform to Form 43-101F1 of NI 43-101.

Signed,

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APPENDIX 1

DRILL HOLES – SUMMARY OF MINERALIZED INTERCEPTS

Summary of Mineralized Intercepts at McArthur River

Hole-ID	From	To	Length	%U3O8
5-2	140.19	147.89	7.70	6.55
61	54.30	58.10	3.80	28.74
	58.10	68.50	10.40	33.27
	74.50	79.00	4.50	13.25
	79.70	88.30	8.60	10.14
73	27.00	30.00	3.00	1.59
75	51.50	54.40	2.90	4.79
	55.50	57.00	1.50	9.63
	65.50	76.90	11.40	10.58
77	90.15	93.07	2.92	0.12
	98.70	112.54	13.84	8.71
	113.91	121.69	7.78	6.69
79	68.46	81.50	13.04	1.67
89	54.20	57.00	2.80	9.89
	61.00	67.40	6.40	4.74
	67.40	74.80	7.40	26.11
107	60.41	68.71	8.30	24.29
	70.82	98.82	28.00	10.64
129	42.84	49.55	6.71	4.80
131	38.11	43.19	5.08	19.15
133	75.24	84.41	9.17	0.67
135	49.10	54.00	4.90	5.39
	54.00	61.50	7.50	18.81
143	60.10	69.22	9.12	6.15
145	49.84	54.89	5.05	18.40
147	44.27	46.44	2.17	3.05
149	61.42	63.18	1.76	0.29
	63.19	79.09	15.90	46.11
	79.11	101.94	22.83	1.84
163	54.60	56.75	2.15	2.55
	60.32	70.13	9.81	4.11
	76.36	82.49	6.13	0.91
165	55.27	57.41	2.14	6.25

Hole-ID	From	To	Length	%U3O8
	57.44	76.25	18.81	37.05
169	52.54	55.71	3.17	12.84
	56.93	74.86	17.93	35.02
	76.70	85.92	9.22	2.65
171	47.76	50.76	3.00	1.21
173	38.75	42.78	4.03	7.81
181	54.28	58.72	4.44	0.19
189	45.84	46.54	0.70	0.04
	47.04	85.72	38.68	25.38
	85.87	91.87	6.00	1.46
191	25.99	26.94	0.95	0.05
	30.71	33.47	2.76	1.85
	34.73	62.44	27.71	30.09
	62.73	72.94	10.21	0.70
193	26.88	28.13	1.25	0.05
	30.38	33.27	2.89	0.33
	33.78	58.06	24.28	15.65
195	28.28	30.46	2.18	0.25
	30.70	32.11	1.41	0.82
	33.62	47.07	13.45	11.79
	49.88	55.68	5.80	15.15
	56.43	65.26	8.83	1.61
197	29.64	31.69	2.05	0.35
	33.37	38.73	5.36	2.84
	41.10	44.03	2.93	2.54
	49.97	52.37	2.40	3.22
199	30.04	31.06	1.02	0.04
	31.96	36.83	4.87	2.64
201	49.87	52.60	2.73	5.47
	52.60	65.38	12.78	44.40
203	74.92	81.22	6.30	4.38
	94.35	95.57	1.22	0.48
205	24.14	24.99	0.85	0.45
	26.79	29.14	2.35	2.21
207	22.80	24.37	1.57	4.97

Hole-ID	From	To	Length	%U3O8
	27.32	32.01	4.69	0.42
	33.34	40.53	7.19	6.66
	42.25	49.71	7.46	6.32
209	19.56	24.48	4.92	1.71
	26.61	31.66	5.05	6.21
	32.80	40.06	7.26	14.50
	41.36	48.94	7.58	6.06
	50.21	51.76	1.55	2.73
	54.52	60.83	6.31	2.60
211	16.33	18.48	2.15	0.16
	24.18	27.35	3.17	0.78
	30.26	31.27	1.01	0.65
	48.78	56.57	7.79	22.55
213	24.49	25.46	0.97	0.65
	58.43	83.95	25.52	38.58
215	67.68	69.71	2.03	0.77
	71.94	73.14	1.20	0.02
	77.31	80.77	3.46	1.45
	83.25	91.28	8.03	0.66
	97.50	103.85	6.35	1.33
	111.60	112.72	1.12	2.14
217	88.50	90.45	1.95	1.34
219	73.99	77.16	3.17	17.40
221	58.09	59.22	1.13	0.39
	65.22	71.22	6.00	1.12
	71.22	86.79	15.57	16.79
	86.79	110.28	23.49	1.37
235	41.38	58.16	16.78	9.86
	65.13	65.28	0.15	6.09
237	38.27	58.10	19.83	20.97
	58.22	65.18	6.96	1.30
239	41.85	72.20	30.35	31.28
241	58.14	82.76	24.62	12.56
	83.74	97.50	13.76	1.19
257	23.69	30.05	6.36	0.79

Hole-ID	From	To	Length	%U3O8
	33.98	40.81	6.83	2.97
259	22.45	24.94	2.49	2.68
	25.67	31.24	5.57	2.57
	32.91	40.73	7.82	1.81
	47.19	60.84	13.65	13.91
261	19.91	23.78	3.87	0.59
	27.03	31.48	4.45	5.35
	31.86	40.02	8.16	14.47
	42.36	58.48	16.12	20.63
	62.05	64.73	2.68	2.72
263	19.38	22.44	3.06	0.30
	26.73	30.95	4.22	4.35
	32.17	33.23	1.06	7.50
	34.65	37.26	2.61	27.29
	37.74	58.89	21.15	43.30
	59.21	62.69	3.48	1.76
267	18.45	20.10	1.65	0.62
	26.17	30.87	4.70	0.84
	33.84	35.05	1.21	0.24
	38.04	39.35	1.31	0.32
	49.42	76.25	26.83	48.36
271	69.39	84.05	14.66	5.61
	86.17	87.54	1.37	1.06
	90.68	92.48	1.80	1.48
	92.48	108.41	15.93	0.93
273	87.66	92.08	4.42	3.04
277	37.14	37.79	0.65	0.01
	38.93	56.74	17.81	15.88
279	48.86	81.44	32.58	35.03
	81.50	91.10	9.60	5.33
281	79.87	85.94	6.07	2.84
	94.18	95.77	1.59	0.82
	99.93	102.77	2.84	0.92
	106.95	108.35	1.40	0.62
283	31.74	35.44	3.70	2.40

Hole-ID	From	To	Length	%U3O8
	35.44	58.96	23.52	16.52
285	28.58	29.37	0.79	0.73
	33.01	36.08	3.07	0.45
	39.29	85.05	45.76	38.79
287	30.04	31.65	1.61	2.84
	33.33	37.26	3.93	1.08
289	28.03	31.29	3.26	0.41
	33.87	38.38	4.51	0.57
	41.14	53.20	12.06	2.58
291	26.36	28.89	2.53	0.39
	31.19	33.26	2.07	1.30
	33.61	38.93	5.32	3.50
	40.48	58.58	18.10	12.57
	60.02	64.64	4.62	4.26
293	24.63	26.68	2.05	0.78
	29.51	33.63	4.12	2.20
	33.63	41.52	7.89	8.96
	42.56	61.17	18.61	16.83
	61.47	65.39	3.92	1.72
295	24.10	25.84	1.74	0.09
	29.00	33.69	4.69	1.69
	33.77	61.25	27.48	19.31
297	24.61	25.70	1.09	0.02
	29.15	34.48	5.33	2.04
	35.29	71.64	36.35	26.07
	71.64	79.45	7.81	0.40
299	31.29	40.74	9.45	3.01
	42.36	84.14	41.78	48.27
301	48.22	64.61	16.39	2.02
	64.61	88.86	24.25	43.13
	88.86	101.82	12.96	3.17
303	75.43	83.69	8.26	2.61
	95.74	101.86	6.12	0.58
307	57.15	68.21	11.06	2.28
309	51.76	53.80	2.04	0.16

Hole-ID	From	To	Length	%U3O8
311	41.53	45.69	4.16	6.32
313	56.34	57.47	1.13	3.18
	59.11	76.70	17.59	46.08
	76.93	78.17	1.24	0.59
315	64.51	81.34	16.83	26.23
	81.44	102.09	20.65	1.47
317	63.51	65.04	1.53	1.84
	66.44	67.69	1.25	0.77
	71.19	80.21	9.02	18.78
321	37.33	41.92	4.59	8.46
323	50.43	55.45	5.02	0.63
	55.94	59.84	3.90	2.41
325	60.04	78.70	18.66	12.81
	81.26	88.11	6.85	1.54
327	65.01	67.06	2.05	0.31
	77.41	78.44	1.03	4.33
329	41.92	48.97	7.05	7.90
331	43.86	51.80	7.94	4.93
333	46.25	48.98	2.73	6.24
	48.98	74.54	25.56	43.89
335	52.45	54.81	2.36	3.27
	54.81	76.58	21.77	31.63
	76.59	96.92	20.33	1.95
337	75.31	78.86	3.55	5.08
	79.03	79.17	0.14	10.61
	79.18	86.42	7.24	6.98
	86.56	93.09	6.53	1.17
	97.21	103.61	6.40	1.30
347	73.11	76.07	2.96	0.60
	76.08	77.94	1.86	5.41
	79.81	81.62	1.81	3.97
	83.61	86.36	2.75	3.14
359	18.13	21.17	3.04	0.09
	26.04	27.54	1.50	2.77
	30.43	31.87	1.44	4.09

Hole-ID	From	To	Length	%U3O8
	40.85	56.41	15.56	10.21
361	18.06	19.39	1.33	1.12
	24.23	27.19	2.96	0.67
	56.20	65.07	8.87	25.15
	65.07	71.18	6.11	0.17
363	63.50	68.88	5.38	9.59
	73.46	94.07	20.61	19.44
	95.96	96.65	0.69	11.23
	97.65	100.68	3.03	2.74
	101.71	108.65	6.94	9.93
	110.88	116.68	5.80	1.40
365	27.76	29.65	1.89	0.11
	36.13	43.45	7.32	4.83
367	28.90	33.26	4.36	2.01
	33.86	39.65	5.79	6.94
369	31.67	32.66	0.99	0.35
	32.72	37.81	5.09	4.80
371	19.87	20.34	0.47	0.02
375	77.57	80.10	2.53	2.05
377	76.15	82.58	6.43	2.49
	82.59	84.68	2.09	7.08
	86.20	93.94	7.74	9.47
379	75.72	76.02	0.30	1.55
	106.62	115.50	8.88	1.45
	119.38	119.87	0.49	0.47
387	28.84	32.23	3.39	0.09
	58.44	87.51	29.07	47.35
	88.13	90.14	2.01	22.33
389	23.76	24.75	0.99	0.12
	26.68	31.04	4.36	2.06
	34.51	40.01	5.50	1.06
	44.82	46.18	1.36	0.80
391	80.83	81.93	1.10	0.07
	84.14	85.29	1.15	0.05
	89.18	97.70	8.52	6.96

Hole-ID	From	To	Length	%U3O8
	99.82	101.80	1.98	2.34
	105.43	110.32	4.89	13.09
393	70.72	71.78	1.06	2.37
	94.93	105.36	10.43	6.64
	108.44	110.05	1.61	3.16
	111.07	117.13	6.06	2.08
395	86.86	88.53	1.67	0.41
	90.84	99.24	8.40	5.58
	100.58	105.12	4.54	1.07
	116.80	119.20	2.40	1.07
397	97.06	105.57	8.51	4.00
	110.16	113.51	3.35	4.79
	120.22	122.59	2.37	0.89
417	12.82	19.85	7.03	0.06
	20.21	35.62	15.41	1.41
465	23.92	35.18	11.26	0.86
	35.31	35.97	0.66	0.42
	41.92	47.14	5.22	3.10
471	29.95	50.73	20.78	2.15
473	18.39	22.78	4.39	0.40
	31.32	40.91	9.59	0.43
	46.00	52.27	6.27	2.08
477	23.64	30.67	7.03	2.43
	37.11	37.27	0.16	0.30
	38.62	45.75	7.13	0.78
479	33.67	38.95	5.28	0.62
483	44.44	44.63	0.19	3.15
	47.90	49.23	1.33	11.76
	49.85	76.82	26.97	23.98
	77.99	95.12	17.13	1.06
485	44.09	44.57	0.48	4.02
	48.71	52.82	4.11	17.20
	52.96	75.08	22.12	21.80
	75.08	96.00	20.92	1.05
487	52.74	57.86	5.12	0.48

Hole-ID	From	To	Length	%U3O8
	57.86	78.89	21.03	7.66
	80.79	86.52	5.73	1.03
	89.73	92.69	2.96	0.70
489	55.29	74.09	18.80	21.88
	74.20	94.50	20.30	0.55
491	55.41	74.24	18.83	25.49
	75.80	87.15	11.35	0.50
493	61.58	62.86	1.28	24.46
	62.86	77.96	15.10	15.79
	79.26	84.32	5.06	0.38
495	47.55	49.00	1.45	0.07
	50.67	71.18	20.51	33.39
	71.46	94.50	23.04	1.06
497	32.33	36.52	4.19	6.50
503	57.08	59.13	2.05	12.35
	60.17	77.91	17.74	25.04
	81.21	87.54	6.33	1.28
507	53.30	67.50	14.20	17.68
509	77.10	78.88	1.78	0.35
511	44.40	45.10	0.70	2.77
	51.32	52.52	1.20	4.55
	56.90	58.50	1.60	2.65
513	54.68	59.06	4.38	7.14
521	42.90	54.20	11.30	0.97
525	66.00	80.80	14.80	30.08
527	50.50	55.00	4.50	52.66
533	53.42	63.67	10.25	24.62
535	47.21	58.81	11.60	25.98
537	54.00	55.00	1.00	1.21
539	65.58	68.39	2.81	2.58
543	70.00	82.12	12.12	7.22
543	82.52	84.60	2.08	2.62
545	52.49	55.12	2.63	15.30
547	46.64	47.05	0.41	0.20
549	45.27	56.84	11.57	27.50

Hole-ID	From	To	Length	%U3O8
	58.19	61.44	3.25	14.06
551	35.46	74.27	38.81	23.09
	75.68	75.77	0.09	11.03
	75.82	79.82	4.00	4.67
	80.86	86.77	5.91	0.58
553	43.83	74.58	30.75	29.64
	84.17	87.91	3.74	1.16
555	65.52	75.50	9.98	36.65
	89.12	90.78	1.66	0.01
557	58.10	61.60	3.50	11.49
559	49.50	54.40	4.90	3.51
565	54.66	56.67	2.01	7.23
573	55.81	58.47	2.66	12.39
575	46.42	47.33	0.91	0.30
581	66.17	67.47	1.30	8.27
	69.35	73.61	4.26	5.11
	74.63	84.32	9.69	31.16
583	47.25	49.20	1.95	2.31
587	68.22	69.31	1.09	0.12
591	68.04	68.63	0.59	0.60
593	72.51	78.24	5.73	16.74
603	56.08	56.32	0.24	0.58
613	51.11	52.56	1.45	1.52
615	64.60	75.70	11.10	30.77
617	53.63	60.10	6.47	16.93
619	75.30	78.40	3.10	0.51
621	59.30	63.70	4.40	0.24
623	49.10	56.00	6.90	13.71
625	46.20	47.10	0.90	1.79
	49.20	51.60	2.40	0.63
	54.00	55.50	1.50	6.34
629	48.60	55.09	6.49	0.33
635	68.90	76.50	7.60	1.10
637	47.00	47.40	0.40	1.46
	49.80	51.60	1.80	21.34

Hole-ID	From	To	Length	%U3O8
	53.11	54.40	1.29	1.19
639	68.30	76.10	7.80	11.37
641	53.10	57.70	4.60	7.90
643	45.40	48.70	3.30	21.97
653	54.80	65.90	11.10	56.92
655	53.70	54.40	0.70	0.97
	62.20	62.70	0.50	0.01
657	48.80	57.70	8.90	57.66
	58.40	63.70	5.30	3.28
659	50.10	54.80	4.70	26.37
	58.90	62.60	3.70	1.10
661	63.60	67.80	4.20	11.61
663	68.30	72.50	4.20	0.66
665	62.00	71.20	9.20	8.24
	71.20	84.50	13.30	44.71
667	62.60	68.50	5.90	2.19
	68.50	77.20	8.70	42.71
669	57.80	62.70	4.90	7.94
	62.70	72.90	10.20	37.93
671	53.20	57.30	4.10	0.07
	57.30	63.20	5.90	21.72
673	52.00	53.40	1.40	0.09
	55.40	60.70	5.30	43.46
675	51.30	52.70	1.40	0.61
	55.00	55.70	0.70	2.45
677	57.80	71.80	14.00	67.87
679	52.90	55.70	2.80	8.90
	57.80	60.40	2.60	14.37
681	64.20	76.70	12.50	53.18
683	57.50	68.30	10.80	25.40
685	67.00	68.70	1.70	3.23
	68.70	85.83	17.13	4.29
689	57.10	68.40	11.30	5.32
	68.40	72.10	3.70	24.57
693	64.30	66.70	2.40	0.20

Hole-ID	From	To	Length	%U3O8
	66.70	72.80	6.10	34.53
699	54.20	58.30	4.10	45.66
	58.90	60.60	1.70	1.17
701	66.60	75.49	8.89	3.22
	75.50	89.60	14.10	61.38
703	51.30	56.70	5.40	0.73
709	52.20	57.50	5.30	72.24
711	60.60	65.40	4.80	17.76
	65.40	72.80	7.40	33.50
713	56.30	60.70	4.40	4.73
715	63.60	72.60	9.00	13.87
	72.60	79.60	7.00	32.13
721	56.20	64.70	8.50	22.00
723	55.90	63.80	7.90	58.90
727	52.20	58.00	5.80	10.60
731	55.10	61.20	6.10	41.26
733	51.80	52.50	0.70	2.55
	55.00	55.30	0.30	0.93
735	65.70	73.20	7.50	5.33
	73.20	88.30	15.10	63.65
743	76.00	81.76	5.76	18.82
745	46.04	50.66	4.62	0.48
	53.83	57.64	3.81	2.00
747	61.50	74.20	12.70	5.80
	74.20	83.30	9.10	64.38
751	66.80	81.09	14.29	50.96
	82.40	84.30	1.90	8.46
753	60.40	72.00	11.60	11.57
	72.00	80.80	8.80	43.23
757	66.50	74.10	7.60	3.27
	74.10	86.90	12.80	47.36
759	65.65	70.90	5.25	6.82
	70.90	85.39	14.49	29.49
761	59.20	71.20	12.00	4.57
	73.90	79.80	5.90	16.32

Hole-ID	From	To	Length	%U3O8
763	64.00	72.80	8.80	4.44
	72.80	87.08	14.28	53.58
765	59.20	71.21	12.01	5.27
	72.10	81.30	9.20	23.09
767	64.00	72.80	8.80	1.05
	74.40	86.00	11.60	48.65
769	61.30	65.40	4.10	8.15
	65.40	71.00	5.60	25.67
771	57.80	71.20	13.40	2.07
773	53.00	60.70	7.70	59.10
777	59.10	71.50	12.40	1.71
779	73.80	87.70	13.90	11.80
783	61.50	72.80	11.30	4.41
	72.80	79.09	6.29	39.53
785	60.70	72.50	11.80	6.19
	72.50	81.00	8.50	37.56
787	57.90	61.70	3.80	34.15
789	51.70	58.23	6.53	18.14
	59.40	62.80	3.40	5.80
791	52.70	61.30	8.60	40.84
	63.10	66.40	3.30	7.35
793	60.70	66.80	6.10	3.49
	66.80	77.40	10.60	7.20
795	52.20	59.50	7.30	10.83
803	61.00	66.10	5.10	8.58
	66.10	75.00	8.90	41.02
805	55.40	60.40	5.00	44.65
807	52.18	52.88	0.70	0.29
	56.38	57.88	1.50	5.50
815	65.10	67.40	2.30	9.35
	67.40	80.70	13.30	51.38
817	54.30	67.40	13.10	26.87
819	52.20	52.80	0.60	0.02
	57.10	58.60	1.50	1.10
821	51.10	60.90	9.80	37.41

Hole-ID	From	To	Length	%U3O8
829	51.90	59.50	7.60	1.21
831	57.50	71.00	13.50	1.96
	72.00	75.10	3.10	2.63
833	63.70	69.20	5.50	9.81
	69.90	82.00	12.10	27.52
835	71.60	84.80	13.20	34.03
837	59.30	60.60	1.30	23.48
841	65.20	67.10	1.90	2.79
845	61.00	68.70	7.70	2.62
	69.90	81.30	11.40	28.60
847	57.90	62.40	4.50	16.28
851	52.50	61.20	8.70	60.59
853	57.27	63.46	6.19	12.19
855	52.20	59.30	7.10	12.26
857	70.10	74.80	4.70	4.01
	78.80	85.60	6.80	4.61
859	62.00	65.70	3.70	6.80
861	51.50	54.90	3.40	1.01
863	68.40	73.00	4.60	0.54
865	1.34	5.22	3.88	0.42
	10.66	19.18	8.52	1.88
	20.31	22.44	2.13	0.22
	23.64	26.94	3.30	0.58
	40.38	78.49	38.11	44.28
	78.49	91.77	13.28	2.74
867	52.90	60.30	7.40	73.85
	64.30	65.76	1.46	0.16
869	59.50	66.00	6.50	1.39
	70.20	71.80	1.60	5.08
871	4.92	8.18	3.26	0.17
	12.46	21.80	9.34	1.33
	22.57	74.00	51.43	32.10
875	53.70	61.40	7.70	15.62
	63.50	67.30	3.80	9.10
877	65.00	65.10	0.10	0.12

Hole-ID	From	To	Length	%U3O8
879	59.70	67.20	7.50	2.09
	67.20	78.50	11.30	9.42
881	64.10	66.40	2.30	4.88
	71.10	76.00	4.90	2.47
883	71.20	74.70	3.50	7.81
	79.24	86.00	6.76	22.24
885	52.00	59.30	7.30	0.10
887	65.40	70.70	5.30	2.73
	70.70	79.30	8.60	31.91
893	50.40	50.90	0.50	0.57
	54.90	60.90	6.00	0.15
895	60.90	68.40	7.50	6.35
	68.40	76.50	8.10	16.57
897	58.60	59.40	0.80	0.01
	65.40	68.70	3.30	0.08
899	72.50	74.20	1.70	3.74
	74.20	88.50	14.30	50.38
901	64.10	68.20	4.10	2.98
	73.90	80.90	7.00	1.14
903	67.00	71.20	4.20	1.17
	78.40	84.10	5.70	2.98
911	59.80	63.00	3.20	0.25
	67.50	75.20	7.70	0.75
915	60.70	64.40	3.70	0.63
	68.50	69.90	1.40	1.04
921	55.50	61.10	5.60	1.09
	62.40	64.90	2.50	0.83
923	64.90	71.00	6.10	2.78
	71.00	77.10	6.10	11.47
927	60.45	71.10	10.65	2.82
	71.10	72.80	1.70	6.68
929	67.30	69.50	2.20	8.33
	78.80	86.40	7.60	7.67
939	51.80	52.20	0.40	0.46
	54.90	61.90	7.00	16.25

Hole-ID	From	To	Length	%U3O8
	64.60	65.80	1.20	1.65
943	59.40	63.40	4.00	0.13
	66.10	67.80	1.70	2.93
947	54.60	60.20	5.60	0.05
	60.60	62.80	2.20	2.27
955	53.90	54.90	1.00	0.08
	54.90	59.10	4.20	1.50
	64.70	66.50	1.80	4.48
959	56.50	64.40	7.90	3.08
965	46.20	52.40	6.20	38.88
971	48.10	59.70	11.60	29.62
977	52.80	56.72	3.92	37.19
1309	69.80	73.80	4.00	2.59
1311	76.60	78.60	2.00	0.13
	80.90	81.90	1.00	0.25
	83.60	85.60	2.00	0.43
1313	55.90	58.10	2.20	8.79
	61.90	64.90	3.00	1.68
1315	71.90	88.90	17.00	5.90
1317	68.10	75.20	7.10	1.42
1319	57.60	61.60	4.00	6.26
	64.70	68.70	4.00	0.47
1321	57.40	61.80	4.40	0.73
1323	64.30	66.50	2.20	2.25
1329	56.50	60.80	4.30	0.20
1331	75.50	81.50	6.00	1.84
1333	58.00	59.00	1.00	3.26
	61.50	62.70	1.20	5.17
1335	57.80	61.80	4.00	13.45
	66.60	67.60	1.00	0.77
1337	68.00	86.00	18.00	3.92
1341	73.00	80.50	7.50	6.62
1343	69.60	73.90	4.30	10.49
1345	51.90	56.20	4.30	5.63
1347	82.00	87.00	5.00	0.33

Hole-ID	From	To	Length	%U3O8
1349	68.45	71.85	3.40	1.43
1353	54.20	55.20	1.00	0.15
	59.80	63.20	3.40	1.29
1355	69.80	82.80	13.00	18.44
1357	68.80	75.80	7.00	5.09
1359	72.00	86.00	14.00	9.41
1363	65.80	73.30	7.50	0.90
1365	49.80	51.80	2.00	0.87
	55.60	61.60	6.00	27.59
	66.10	67.10	1.00	0.38
1381	74.50	80.50	6.00	1.48
1427	56.50	69.90	13.40	8.17
1435	68.50	77.50	9.00	1.85
1437	68.70	87.70	19.00	12.39
1439	79.60	89.60	10.00	1.03
1441	68.60	70.00	1.40	0.75
1451	74.40	87.40	13.00	6.40
1455	69.70	82.70	13.00	10.41
1475	62.00	74.00	12.00	13.56
1481	52.80	66.80	14.00	30.50
	70.90	71.30	0.40	0.08
1509	54.90	56.90	2.00	3.95
	69.00	70.00	1.00	0.55
1547	54.40	58.80	4.40	5.65
1551	47.40	57.40	10.00	10.85
	62.10	63.10	1.00	1.27
1557	50.10	51.10	1.00	1.26
1563	63.60	65.60	2.00	0.40
1569	60.10	63.30	3.20	2.65
	70.80	72.80	2.00	0.33
1575	51.50	52.50	1.00	0.45
	56.20	65.20	9.00	11.36
	66.70	73.20	6.50	7.42
1581	49.00	57.00	8.00	33.34
	63.80	66.80	3.00	0.84

Hole-ID	From	To	Length	%U3O8
1605	65.70	78.70	13.00	4.05
1615	64.50	65.50	1.00	0.89
1625	50.80	53.90	3.10	1.48
	61.90	63.90	2.00	0.74
1631	53.50	54.50	1.00	0.14
	65.50	67.50	2.00	1.57
1639	55.40	57.40	2.00	3.93
	58.70	61.70	3.00	2.07
1643	66.40	81.40	15.00	1.50
1647	48.80	50.80	2.00	1.29
	51.00	52.20	1.20	0.90
	62.40	66.40	4.00	0.53
1653	63.60	64.60	1.00	0.24
	67.80	74.10	6.30	1.61
1655	63.50	75.70	12.20	0.81
1667	51.00	60.30	9.30	5.60
	63.50	67.50	4.00	13.76
	69.30	70.30	1.00	1.66
	76.10	76.70	0.60	2.24
1673	55.40	59.40	4.00	1.52
	72.50	77.70	5.20	1.46
1685	64.50	68.50	4.00	2.37
1695	57.60	69.70	12.10	9.00
	71.70	72.70	1.00	14.15
1703	53.40	69.30	15.90	23.63
	70.80	71.10	0.30	6.80
1711	51.80	52.60	0.80	0.42
	57.90	62.90	5.00	1.87
	66.00	75.80	9.80	2.59
1769	62.50	67.50	5.00	0.46
1777	53.20	55.20	2.00	0.30
1789	48.50	49.50	1.00	0.36
	50.70	52.70	2.00	2.69
	60.10	63.10	3.00	1.58
	69.10	72.10	3.00	3.19

Hole-ID	From	To	Length	%U3O8
	73.30	74.30	1.00	0.56
1797	48.90	49.90	1.00	0.25
1803	67.40	75.70	8.30	4.01
1807	48.40	53.50	5.10	2.66
	53.80	55.80	2.00	0.24
1811	52.00	55.00	3.00	4.75
	55.90	57.50	1.60	1.98
1815	70.30	76.70	6.40	10.56
1819	64.50	65.10	0.60	0.06
	67.30	74.60	7.30	1.18
1823	68.80	76.90	8.10	8.09
1827	67.80	68.80	1.00	1.58
	70.40	83.40	13.00	3.59
1835	58.10	61.60	3.50	2.20
	64.10	68.10	4.00	3.21
1837	51.70	54.70	3.00	1.87
	58.30	58.80	0.50	0.15
	64.40	71.40	7.00	1.42
1841	47.80	48.30	0.50	0.53
	57.70	65.70	8.00	2.03
265-2	18.00	20.13	2.13	2.39
	25.99	31.18	5.19	1.64
	32.77	33.86	1.09	1.84
	36.35	38.36	2.01	0.93
	44.34	62.50	18.16	42.10
	63.62	71.69	8.07	0.47
MC-198	547.49	558.49	11.00	4.14
MC-204	496.00	514.00	18.00	20.70
MC-205	527.51	551.51	24.00	3.11
MC-219	515.50	523.50	8.00	0.93
MC-220	526.00	530.00	4.00	7.76
MC-221	504.50	536.50	32.00	2.54
MC-237	506.50	517.50	11.00	6.23
MC-269-3	548.14	553.14	5.00	26.45
MC-270-2	581.22	588.22	7.00	1.55

Hole-ID	From	To	Length	%U3O8
MC-270-3	567.16	584.16	17.00	9.37
MC-274	516.99	547.99	31.00	48.50
MC-275	498.00	532.00	34.00	7.21
	539.50	548.50	9.00	0.97
MC-276	529.37	537.37	8.00	2.05
MC-277A	516.00	544.00	28.00	1.36
MC-278	535.81	558.81	23.00	7.77
	562.50	565.50	3.00	6.89