Canadian Mine Openings, Closings, Expansions, Extensions and New Mine Developments

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OVERVIEW

Introduction

With 14 mine openings and 12 mine closings in Canada, and the world economic outlook remaining strong for the medium term, the year 2004 firmly marked the end of a seven-year mining downturn that lasted from the beginning of 1997 to early 2003. The 14 mines opened during the year consisted of 7 new mines (1 gold, 2 base-metal and 4 coal) and 7 re-openings (2 gold, 1 base-metal, 1 coal and 3 industrial) (Tables 1 and 2). The 12 mine closings consisted of 11 permanent closures (6 gold, 3 base-metal, 1 coal and 1 gypsum) and 1 production suspension (chrysotile asbestos). All of the new mines and most of the mine re-openings in 2004 came on stream in the second half, whereas mine closings occurred more evenly throughout the year. While mine openings in 2004 were dominated by coal mines, mine closures were predominantly gold mines. All new mines are either wholly owned, or controlled and operated by domestic companies.

Summary on New Mines and Re-Openings

The seven new mines opened in 2004 were the 750-t/d White Rock silica mine in Nova Scotia; the 350-t/d Croinor open-pit gold mine in Quebec; the 2050-t/d Montcalm nickel-copper mine in Ontario and the 2750-t/d 777 copper-zinc mine in Manitoba, both underground mines; and the 3350-t/d Cheviot Creek mine in Alberta, and the 2000-t/d Dillon and 2500-t/d Willow Creek mines in British Columbia, all open-pit coal mines. In addition, seven mines at which operations were previously suspended re-opened for production. These were the 70-t/d Hurley slate mine in Newfoundland and Labrador; the 800-t/d Mouska underground gold mine, the 3900-t/d Bell underground and the 2000-t/d Jeffrey open-pit chrysotile asbestos mine, all in Quebec; the 3500-t/d Grande Cache (12S B2 surface and no. 7-4 underground) coal mine in Alberta; the 35 000-t/d open-pit Gibraltar copper-molybdenum mine in British Columbia; and the 2085-t/d Lupin underground gold mine in Nunavut.

Summary on Mine Closures and Production Suspensions

During 2004, 11 significant mines closed in Canada. In Newfoundland and Labrador, the Hammerdown gold mine near Baie Verte was depleted in July. In Quebec, the 10 800-t/d Les Mine Selbaie copper-gold open-pit mine in Brouillan Township and the 2143-t/d Bell-Allard copper-zinc mine near Matagami were mined out in January and December, respectively. Three gold mines, one base-metal mine and one gypsum mine in Ontario closed. The 200-t/d Mishi open-pit mine near Wawa, the 2500-t/d Dome underground mine at Porcupine, and the 2850-t/d Holt-McDermott underground mine near Kirkland Lake closed in March, May and October, respectively. The Dome underground mine was first brought on stream in 1910. With the Dome open-pit mine scheduled to close in May 2005, Ontario will lose a legendary mine. When producing at full capacity, the Dome mine sustained a work force of over 550 and was one of the most significant gold mines in Ontario. However, due to the opening of the redeveloped Pamour open-pit mine in June 2005 under the Porcupine Joint Venture, ore from Pamour will be treated at the Dome mill, resulting in employment at the Dome mill being maintained. In addition, the 1500-t/d Lockerby nickel-copper mine in Sudbury closed in August and the 500-t/d Georgia-Pacific No. 3 underground gypsum mine near Caledonia closed in November. The 2000-t/d New Britannia underground gold mine near Snow Lake, Manitoba, closed in September. In Alberta, the 8200-t/d Luscar open-pit coal mine near Hinton was depleted in April after two production extensions. The150-t/d Giant underground gold mine in Yellowknife, Northwest Territories, was finally mined out in July. All mine closures in 2004 were due to the depletion of ore reserves.

There was one production suspension in 2004 that negatively affected 485 mining jobs. In November, production

at the Black Lake chrysotile asbestos mine near Black Lake, Quebec, was suspended indefinitely due to poor market conditions for asbestos.

Significant Events Affecting Mining in Canada in 2004

Throughout 2004, production levels at all mines were high and cost-cutting measures were less stringent across Canada. However, new cost savings continued to come mostly from innovation, including mine expansions, modernization, investment in new equipment, changes in mining methods, operational improvements, and joint operations, rather than from mergers and takeovers. Although there were no major corporate mergers or takeovers that would have affected mining in Canada in 2004, four significant events continued to reshape gold mining in Ontario, base-metal mining in Newfoundland and Labrador and Manitoba, and coal mining in Alberta and British Columbia.

First is the Porcupine Joint Venture (PJV) of Placer Dome Inc. and Kinross Gold Corporation in the Timmins area of northern Ontario. The PJV was formed in July 2002 and went into high gear in 2004 with the redevelopment of the proposed Pamour open-pit mine at Porcupine. Assets of the joint venture include the Dome mill, the Hoyle Pond mine, the Bell Creek mill, and a large land package in the Timmins camp that has already produced over 60 million oz of gold. The package also includes the recently closed Pamour mine (December 31, 2002) and the formerly closed Nighthawk Lake, Bell Creek, Hollinger, McIntyre and Hallnor mines, as well as the closed Preston and Paymaster mines that are adjacent to Dome. The PJV is expected to produce 1.6 million oz of gold over the next 10 years; gold production from the Pamour open-pit mine began in June 2005. The successful redevelopment of Pamour signals the revival of the Timmins-Porcupine gold camp in northern Ontario.

On the base-metal front in Ontario, production began in July 2004 at the $640 million Kidd Creek Mine D. Although Mine D was developed as an expansion of the existing Kidd Division mining complex and full production is not expected until 2006, its successful development to a depth of 10 000 ft makes Ontario the world leader in deep base-metal mining.

Secondly, construction began at the world-class Voisey's Bay nickel-copper mine in Labrador in early 2004 and, by year-end, more than $550 million of the planned $780 million capital cost for the mine and mill project had been spent, ensuring an early start to mining in the summer of 2005. The expected opening of Voisey's Bay in the fall of 2005 will guarantee Inco Limited as the Western World's leading producer of nickel.

Thirdly, in December, HudBay Minerals Inc. completed the acquisition of Hudson Bay Mining and Smelting Co., Limited (HBMS) from Anglo American plc for $316 million, effectively ending some 75 years of dominance in copper and zinc mining and processing in the Canadian Prairies by the South African-controlled HBMS. HudBay Minerals, formerly OntZinc Corporation, was originally based in Toronto but is now based in Winnipeg.

Finally, the coming on stream of the Cheviot Creek and Grande Cache mines in Alberta and the Dillon and Willow Creek mines in British Columbia signified the revival of metallurgical coal mining in western Canada. As several coal projects, mostly metallurgical coal, are under development in the two provinces, more new coal mines can be expected in the next two years, feeding a rising export market in the Asia-Pacific region.

Summary on Mine Expansions and Mine Life Extensions

There were at least 12 significant mine expansion and extension projects across Canada during the year (Table 2), including 3 precious-metal, 6 base-metal, 1 potash and 2 diamond mines. Four of the projects were new while eight were existing projects that began in recent years. The new projects were a mine and mill expansion at the Raglan nickel-copper mine in Quebec, the Fraser and Craig nickel-copper mines in Ontario, and the Diavik diamond mine in the Northwest Territories. Existing expansion programs continued at the LaRonde gold mine in Quebec, the Campbell and Red Lake gold mines in Ontario, the Kidd Creek zinc-copper-silver mine and the Creighton and McCreedy East nickel-copper mines in Ontario, the PCS Rocanville potash mine in Saskatchewan, and the Ekati diamond mine in the Northwest Territories. The main capital expansion programs at Kidd Creek (Mine D) and at McCreedy East were essentially completed at year-end 2004.

Capital Investment in New Mines and Re-Openings in 2004

The total capital cost for new mines and mine re-openings in 2004 amounted to some $500 million. Of this amount, the seven new mines accounted for $400 million, largely attributable to the capital development costs of the Montcalm and 777 base-metal mines. Although the total capital cost for bringing new mines into production in 2004 was lower than in 2003 ($1.3 billion), the higher capital investment in 2003 was almost entirely due to one mine: the Diavik diamond mine in the Northwest Territories. The wider spread and larger number of new mines that were brought on stream in 2004 had a more positive impact on the regions. In addition, mining companies spent an estimated $575 million on major mine expansions

and mine-life extensions, significantly higher than in 2003 and one of the highest totals in over a decade. The higher levels of mine-site capital investment activity reflect the generally strong mineral commodity prices and market conditions since the second half of 2003. For 2005, capital investment is expected to be higher as more mines are expected to open, re-open, expand or extend their lives.

REGIONAL PERSPECTIVE

During 2004, seven provinces and two territories were affected by mine openings or closings. While British Columbia and Alberta incurred the largest net gains in employment and ore production capacity, Ontario suffered the largest losses, followed by Quebec and the Northwest Territories. With the closing of the Giant gold mine in the Northwest Territories and the impending closure of Lupin in Nunavut, there will be no precious-metal mines north of the 60th parallel by the summer of 2005.

Newfoundland and Labrador

In 2004, one mine opened and one closed in Newfoundland and Labrador. The 70-t/d Hurley slate mine in Trinity Bay, Newfoundland, re-opened in June, creating some 36 jobs. Operations were suspended at the mine in 2002 due to a permitting dispute with the Province. The mine has an estimated production capacity of 25 000 t/y and is a significant supplier of purple and green roofing slate to international markets. In May, the 350-t/d Hammerdown underground gold mine near King's Point on Baie Verte Peninsula closed due to ore depletion, losing some 60 mining jobs. As a result, the province incurred small net losses of some 20 mining jobs and 280 t of daily ore production capacity.

Nova Scotia

One new mine opened in Nova Scotia in 2004. The 750-t/d White Rock silica mine near Shelburne began production in July, creating 40 mining jobs. The capital costs of developing this mine are estimated at about $10 million. Owned and operated by Vancouver-based Black Bull Resources Inc., the mine was developed to produce some 270 000 t of high-grade silica annually. At the start of mining, mineable reserves were 4.9 Mt grading 97.3% SiO_2. The mine also hosts an indicated resource of 7.3 Mt grading 97.4% SiO_2.

Quebec

In 2004 in Quebec, four mines opened (one new mine and three re-openings) and three mines closed (two closures and one production suspension). The 350-t/d Croinor open-pit gold mine near Val-d'Or began production in July. The 2000-t/d Jeffrey and the 3900-t/d Bell chrysotile asbestos mines in the Eastern Townships resumed production in April and November, respectively, after temporary shut-downs a year earlier. The Jeffrey mine was successful in obtaining a special permit to produce intermittently for about six months each year. In addition, the 800-t/d Mouska underground gold mine, near Rouyn-Noranda, re-opened for production in November after 11 months of production suspension to deepen a shaft and to develop ore at depth. The Mouska mine was integrated in 1998 into the Doyon Division of mining operations owned and operated by Cambior Inc. Three important mines closed in 2004 in Quebec. As a result of ore exhaustion, production ceased at the 10 800-t/d Les Mines Selbaie open-pit copper-zinc-gold-silver mine north of Rouyn-Noranda in January and at the 2140-t/d Bell-Allard underground zinc-copper mine near Matagami in December. As well, production at the 19 500-t/d Black Lake chrysotile asbestos mine in the Eastern Townships was suspended in November for an indefinite period of time, largely because of poor market conditions. In all, Quebec incurred a net loss of 5700 t/d of ore capacity but a net gain of 390 mining jobs from mine openings and closings in 2004. The mine life at Les Mine Selbaie was prolonged for several years because of the successful implementation of a production and job reduction program that gradually reduced employment to 15 at the time of the mine closure. The mine employed over 300 before gradual reduction began in the early 2000s. Les Mine Selbaie first began production in 1981 and had been one of the most significant base-metal mines in the province. As well, with the closure of the Bell-Allard mine, which was brought on stream in 1999, there are no mines left in the historic Matagami zinc-copper mining camp in Quebec. In fact, were it not for the Raglan and Niobec mines, the closure of Les Mines Selbaie and Bell-Allard in 2004 and the scheduled closure of the Bouchard-Hebert zinc-copper mine and the Louvicourt copper-zinc mine in 2005 would have practically rendered Quebec a relatively insignificant base-metal-producing region in Canada from once being one of the most important.

Although three mines (two gold and one copper-gold) are scheduled to come on stream in Quebec in 2005, three (two copper-zinc and one gold) are scheduled to close. The declining base-metal mining situation in Quebec has now reached a critical point and requires serious attention.

Ontario

In Ontario, one new base-metal mine opened and five mines closed in 2004. The 2050-t/d Montcalm underground nickel-copper mine, north of Timmins, was brought on stream in mid-October, creating 145 new mining jobs. The mine, developed at a capital cost of $100 million, quickly reached full production in December. Based on ore reserves outlined at the start of mining and a planned annual output rate of 9000 t of nickel, the mine has an estimated mine life of about seven

years. During 2004, three gold mines closed in the province: the Mishi open-pit mine near Wawa in March, the Dome underground mine in Porcupine in May, and the Holt-McDermott mine near Kirkland Lake in October. In addition, the Lockerby nickel-copper mine in Sudbury closed in April and the Georgia-Pacific No. 3 underground gypsum mine near Caledonia closed in November, all due to the depletion of mineable reserves. Consequently, Ontario suffered the biggest net losses among the provinces, losing four mines, some 5500 t of daily ore production capacity and over 500 direct mining jobs as a result of mine openings and closings in 2004. Although the decline in the number of base-metal mines in Ontario appeared to be halted in 2004 as there was no net loss in base-metal mines during the year, the decline in the number of gold mines continued as three more closures occurred. This will continue to have a negative effect on gold mine reserves and production in Ontario.

Manitoba

In Manitoba, one base-metal mine came on stream and one gold mine closed in 2004. In July, production began at the 2750-t/d 777 copper-zinc underground mine near Flin Flon, creating some 200 mining jobs. Developed at a capital cost of $200 million, it was the largest new mine in Canada in 2004 and the largest new base-metal mine in Manitoba in more than two decades. With a proven and probable reserve of 11.2 Mt grading 2.5% copper and 4.7% zinc, with precious metals, and at an ore production rate of 1 Mt/y, the mine life is estimated at more than 11 years. Recently, the mining was combined with the adjacent Callinan mine, with remaining ore from Callinan mined through the 777 mine. On December 21, 2004, Winnipeg-based HudBay Minerals Inc. acquired the mines by completing the acquisition of Hudson Bay Mining and Smelting Co., Limited (HBMS) from Anglo American plc at a cost of $316 million. The acqusition effectively terminated the South African-controlled HBMS's dominance of the copper-zinc mining scene in Manitoba and Saskatchewan over the past 75 years. In September, the 2000-t/d New Britannia underground gold mine near Snow Lake was closed due to high costs and a shortage of economic ore. As 777 is a larger mine than New Britannia, Manitoba incurred net gains of some 750 t of daily ore capacity and some 70 mining jobs in 2004.

Alberta

During 2004, two mines opened and one closed in Alberta, all coal mines. Production commenced in the fourth quarter at the 3350-t/d Cheviot Creek open-pit mine near Hinton and in August at the 3500-t/d Grande Cache mine (locally called the No. 7-4 underground and No. 12S B2 open-pit mines). Cheviot Creek was developed to replace the nearby Luscar mine, which, after two production extensions, had earlier completed mining. The 8200-t/d Luscar mine, once the flagship mine of the Luscar coal mining empire, ceased production in April due to the depletion of coal reserves. However, coal mined at Cheviot Creek is trucked to Luscar for milling. While proven and probable reserves at the Cheviot Creek mine were 61 Mt of metallurgical coal, compared with the relatively small reserves of 3.4 Mt at the Grande Cache-12S B2, the two mines each created 200 direct mining jobs. In balance, Alberta incurred a net loss of 1350-t/d of coal production capacity, but had a net gain of some 280 mining jobs from mine openings and closings in 2004.

British Columbia

In 2004, three mines opened and no mines closed in British Columbia. The 2500-t/d Willow Creek mine near Chetwynd opened in August, followed by the 2000-t/d Dillon mine near Tumble Ridge in December. Both are open-pit coal mines. In addition, the 35 000-t/d Gibraltar open-pit copper-molybdenum mine near Williams Lake re-opened in October. Together the three mines brought on stream some 39 500 t of daily ore production capacity and 455 direct mining jobs, halting years of decline in coal and base-metal mining in the province.

Northwest Territories

In the Northwest Territories, the 150-t/d Giant gold mine closed in July after 30 years of production, shedding 40 jobs. The mine first began production in 1948. During full production, the mine sustained a work force of over 300. The closure of the historical Giant mine means there are no gold mines left in the Northwest Territories.

Nunavut

After a year of production suspension, the 2085-t/d Lupin mine at Contwyoto Lake re-opened in March, bringing back some 210 mining jobs. However, in view of the low remaining ore reserves and to take advantage of the strong gold prices, the plan was to accelerate mining until mine reserves were exhausted. As anticipated, the mine eventually closed in February 2005. With the closure of Lupin, hard-rock gold mining will likely cease in the territories, at least until Doris North and/or Meadowbank, the most promising gold projects in Nunavut, come on stream in 2006.

MINE EXPANSIONS AND EXTENSIONS

At least 12 significant mine expansion and extension projects, mostly at precious-metal and base-metal mines, were either started, continued or further expanded during 2004 (Table 2). Two of these projects were located in Quebec, seven in Ontario, one in Saskatchewan and two in the Northwest Territories. Four of these projects were new starts and the rest were continuations of existing

programs, including eleven world-class mines. Key expansion programs were substantially completed at two of the mines in 2004.

Quebec

At the world-class LaRonde gold mine near Val-d'Or, a major multi-phase US$218 million capital program since 1997 to expand production and to extend mine life has transformed the mine into the deepest gold mine (2300 m) outside South Africa and a low-cost underground gold producer in 2004. During 2004, ore capacity reached 7250 t/d, a further increase from the 6350 t/d in 2003, while deep ore development and mine-life extension work continued throughout the year and into 2005. The capital costs of development in 2004 were estimated at $20 million. In 2004, gold production was 271 567 oz, a 15% increase over 2003 (236 653 oz), at a lower cash cost of US$56/oz, down by 79% from 2003 as a result of higher production volumes, lower unit mine costs, improved metal prices, and the elimination of production royalties. Gold production for 2005 is expected to be 270 000 oz. Continued underground exploration success has outlined additional mineralization below the Penna shaft to depths of over 3000 m (10 000 ft). As of December 31, 2004, proven reserves at LaRonde stood at 5.89 Mt grading 3.086 g/t gold (590 000 oz), 90.857 g/t silver, 0.43% copper and 4.46% zinc. Probable reserves were 13.52 Mt grading 2.743 g/t gold (1.257 million oz), 80.23 g/t silver, 0.32% copper and 4.02% zinc. In addition, there were 1.807 Mt of indicated resources grading 2.40 g/t gold (139 000 oz), 33.6 g/t silver, 0.17% copper and 2.35% zinc. While a feasibility study at the LaRonde II deep development project is schedule to be completed in the third quarter of 2005, both the nearby Lapa and Goldex (56 km east of LaRonde) projects are expected to enter into the development stage in the second half of 2005. In 2004, capital spending at LaRonde, Lapa and Goldex amounted to US$53 million, US$22 million more than originally budgeted, due largely to the commencement of underground work at the Lapa and Goldex projects. Both Lapa and Goldex are part of Agnico-Eagle Mines Limited's corporate strategy to expand operations around the LaRonde mine. The LaRonde mine has a work force of 600.

In the fourth quarter of 2004, a two-phase capital project to expand production at the Raglan nickel-copper mine in Ungava was launched. Phase 1, an optimization program to increase the level of annual ore throughput to approximately 1 Mt to increase nickel production by 5000 t/y, will take two years to complete. The program will also increase the mill's ability to process harder ore. Capital costs for Phase 1 are estimated at $28 million, of which $21 million will be spent in 2005. Engineering work on Phase 2, expected to be completed in 2007, is currently under way to further increase annual production rates. When completed, the concentrator is expected to process 1.3 Mt of ore, resulting in the production of approximately 30 500 t of nickel-in-concentrate annually. In 2004, the Raglan mine produced 26 552 t of nickel (25 110 t in 2003), 6867 t (6628 t) of copper and 404 t (381 t) of cobalt in concentrates. As of December 31, 2004, proven and probable ore reserves at the Raglan mine were 15.562 Mt grading 2.82% nickel and 0.78% copper. The mine employs 500 workers.

Ontario

A deep development program launched in early 2003 to extend the mine life at the Campbell underground gold mine at Balmertown continued in 2004. Gold output from the mine was 209 045 oz, a 6% increase over 2003, as higher tonnage more than offset lower grades. However, cash costs, at US$276/oz, rose 37% from the year before due to increased amounts of lower-grade ore milled, increased development work, and a stronger Canadian dollar. Gold production in 2005 is expected to be 4% lower at a 3% higher cash cost due to continued increases in lower-grade ore. As of December 31, 2004, proven and probable reserves were 2.613 Mt grading 17.0 g/t gold (1.432 million oz). Total measured and indicated resources were 5.222 Mt grading 10.2 g/t gold (1.707 million oz). The mine also hosts an inferred resource of 4.876 Mt grading 17.9 g/t gold (2.807 million oz). A capital program to develop the Deep Campbell (DC) zone successfully outlined some 222 285 oz of probable reserves as well as additional resources in 2004. The capital costs of developing the DC zone were estimated at US$19 million, of which US$13 million has been spent to date. The project is expected to be completed in 2006.

Following the announcement in February 2003 of a new US$85 million ($119 million) capital program to further expand gold production at the Red Lake gold mine at Balmertown, work has been progressing on shaft sinking and expansion of the mine and mill capacities. In 2004, while shaft sinking reached a depth of 2290 ft, mill capacity was expanded to 610 t/d from 585 t/d in 2003. A further increase of mill capacity to the 660-t/d level is planned for 2005. The target shaft depth is 7150 ft and the target mill capacity is 900 t/d. As well, the target hoisting capacity is 3600 t/d. In 2004, gold production was 551 886 oz, a 3.7% increase from 2003, maintaining Red Lake as the largest gold-producing mine in Canada for the fourth consecutive year. Cash costs, however, also rose to US$92/oz, a 15% increase over 2003, resulting in higher total costs of US$128/oz. Nevertheless, the mine remained one of the lowest-cost gold mines in Canada and the world. When the expansion is completed in 2007, the Red Lake mine is expected to produce 700 000 oz of gold annually. During 2004, capital expenditures amounted to US$24 million, compared with US$20 million in 2003. Planned capital spending will be US$32 million in 2005, US$25.2 million in 2006, and US$8.5 million in 2007. Gold reserves also increased in the year. As of

December 31, 2004, proven and probable reserves were 3.1 Mt grading 50.1 g/t (1.46 oz/st) gold, for a total of 5 million oz. The mine also hosts a combined measured and indicated resource of 2.31 Mt grading 21.26 g/t (0.62 oz/st) gold, or 1.58 million oz, and an inferred resource of 0.94 Mt grading 31.8 g/t (0.93 oz/st) gold, or 0.96 million oz.

At the Kidd Creek copper-zinc-silver mine in Timmins, the development of Mine D, a $640 million deep development program to extend the mine life, continued in 2004. The ore handling system, a key component of the capital program, was completed during the year. While the project is expected to be completed by 2006, initial production began in July, ahead of the feasibility study. The shaft is now below the 8800-ft level. The Mine D project, which began in late 2000, aims to extend the mine life at the Kidd Creek mine beyond 10 years by deepening the mine from a depth of 6800 ft to 10 000 ft, giving access to an additional 10.3 Mt of reserves and 14.1 Mt of resources. Ore mined at the Kidd Mining Division mines amounted to 2.094 Mt with Mine D contributing some 210 000 t. Production from Mine D is expected to ramp up to 750 000 t in 2005. Total capital spending on the development of the project to the end of 2004 amounted to $404 million, including $127 million spent in 2004, compared with $85 million in 2003 and $75 million in 2002.

Mine D development is being carried out in two stages. The Stage 1 portion of the mine, from 2100 m to about 2700 m, contains about 15.7 Mt of ore grading 2.82% copper, 5.74% zinc and 58 g/t silver, and is estimated to cost $500 million. The Stage 2 portion, further down to 3100 m deep, contains 10.5 Mt grading 2.20% copper, 5.27% zinc and 97 g/t silver, and is expected to cost the remainder of the $640 million. As of December 31, 2004, total proven and probable reserves at the Kidd Creek mine stood at 18.1 Mt grading 1.80% copper and 6.03% zinc. Mineral reserves decreased by 2.8 Mt resulting from production of 2.1 Mt and a downward revision of 678 000 t of copper stringer ore to inferred resources. The mine life, based on current reserves and an anticipated annual rate of ore production of 2.4 Mt, is about seven years. In addition, there were 15.3 Mt of inferred resources grading 3.0% copper and 4.6% zinc. The inferred resource largely represents the resource at Mine D. The inferred resources, if converted to reserves, could support another six years of production. In 2004, the overall cash operating costs at the Kidd Creek mine increased to US$0.93/lb of copper from US$0.83/lb in 2003 (from US$0.62/lb in 2002), net of by-product credits.

In the Sudbury Basin, production expansion and mine-life extension programs at the Creighton and McCreedy East nickel-copper mines continued throughout 2004. The Creighton Deep project is a program to develop a 6-Mt high-grade, low-cost nickel-copper deposit at the Creighton mine over two decades. Phase 1 of the US$125 million project, which began in 2001, involves the development of proven reserves of 2.8 Mt grading 3.45% nickel and 2.97% copper between the 7400-ft and 7660-ft levels from 2001 to 2013. Production from ore developed in Phase 1 already began in 2001. Capital costs related to the Phase 1 development in 2004 were estimated at US$10 million. In Phase 2, development will extend down to the 8180-ft level to mine some 3.1 Mt of probable reserves grading 3.62% nickel and 3.25% copper between 2005 and 2019. When fully on stream, annual production of the mine is expected to be 10 900 t of nickel, 9500 t of copper and 28 000 oz of platinum group metals. The deep development project at Creighton is one of Inco Limited's most significant mine-life extension and expansion projects in Ontario in recent years. The Creighton mine, discovered in 1856 and brought on stream in 1901, is the oldest operating mine in Canada and the deepest nickel mine in the world.

At the McCreedy East mine, the $48 million (US$33 million) capital program launched in June 2000 to develop the Main and adjacent West orebodies was substantially completed in 2004. Together these orebodies contain 8 Mt grading 1.88% nickel, 0.84% copper and 0.91 g/t platinum group metals. Mine production is expected to increase to 4350 t/d from the current 2700 t/d when full production is reached in late 2004. At this rate, metal production will be 22 million kg (48 million lb) of nickel and 42 million kg (92 million lb) of copper annually, up from the current 13 million kg (29 million lb) of nickel and 37 million kg (82 million lb) of copper. Capital costs for the expansion project in 2004 were estimated at about US$8 million. The expansion of the McCreedy East mine will provide Inco's Ontario Division with another source of low-cost production for at least another 15 years. Further mine-life extensions are likely as the mine hosts other mineral zones with excellent potential. The McCreedy East mine is one of Inco's most productive mines with ore handling and materials transportation accessible by existing infrastructure at the company's nearby Coleman mine. It has been designated by Inco as one of four key mines in its Ontario Division. The other three (Creighton, Copper Cliff North and Copper Cliff South) are all in the Sudbury area. All four are the company's lowest-cost mines in Ontario.

At the Fraser mine, the discovery of the Fraser Morgan deposit in 2001 and drilling success in 2004 effectively increased the mine's measured resource to 3.3 Mt grading 1.85% nickel and 0.61% copper, its indicated resource to 1.6 Mt grading 1.69% nickel and 0.46% copper, and its inferred resource to 2.1 Mt grading 1.8% nickel and 0.5% copper. The Fraser Morgan deposit, consisting of a series of zones in an area east of the Fraser mine, is accessible from existing Fraser mine infrastructure. A scoping study is under way. If successfully developed, the deposit could produce 7000-9000 t of nickel annually.

At the Craig mine near Onaping, work in 2004 was concentrated on the conversion of resources to reserves on the Onaping Depth orebody, which is accessible from the existing Craig mine infrastructure. The orebody is a high-grade deposit with 14.6 Mt of indicated resource grading 2.52% nickel and 1.15% copper. In addition, there is an inferred resource of 1.2 Mt grading 3.6% nickel and 1.2% copper. In 2004, research continued to focus on enabling technologies to mine the deposit safely, with considerable progress. The successful conversion of resources to reserves and the development of Onaping Depth will undoubtedly extend the mine life at the world-class Craig mine.

Saskatchewan

At the Potash Corporation of Saskatchewan's (PCS Inc. or PotashCorp) Rocanville potash mine near Rocanville, an $80 million capital program that was launched in August 2003 to expand the mine and mill production capacities progressed in 2004. The expansion effectively increased the mine's potash production by 400 000 t/y and its compaction capacity to 1.5 Mt/y. As the bulk of the construction activity was conducted in 2004, capital expenditures in 2004 were estimated at some $60 million. The project provided over 320 person-years of employment through the construction phase. The company attributed the expansion decision to a recent change in Saskatchewan's resource tax to eliminate the profits tax on incremental tonnes and allow a quicker write-down on capital investment, retroactive to January 1, 2003. Rocanville is the world's lowest-cost potash production facility. This investment will allow it to operate at full expanded capacity, lowering PCS Inc.'s average operating costs. In April 2005, PotashCorp announced four major capital projects, in two groups, at its Lanigan, Allan, Cory and Patience Lake potash operations to bring back 1.9 Mt of its idle production capacity in Saskatchewan following a Government of Saskatchewan announcement of new provincial mining tax incentives for potash capital projects. Total investment at Lanigan and Allan, including mill restoration and compaction capacity increase, amounted to US$380 million (or C$456 million). The projects will increase annual potash production capability by 1.5 Mt at Lanigan and 400 000 t at Allan for US$275 million, as well as 1.25 Mt of annual compaction capacity at the two mines for US$105 million. While production capacity at Allan is expected to come on stream in April 2006, capacity at Lanigan is scheduled to come on in the fourth quarter of 2007. In addition, to reach the company's full capacity of 12.5 Mt/y of potash, PotashCorp is also evaluating two smaller projects at its Cory and Patience Lake mines to more fully utilize their production capacity. Current cost estimates for these two projects are in the range of US$120 million to US$140 million.

Northwest Territories

The mining complex at the Ekati diamond mine in the Lac de Gras area initially consisted of five diamond-bearing kimberlite pipes (Panda, Koala, Misery, Sable and Fox). The five pipes were approved by the federal government to be developed as five mines for production between 1998 and 2008, sharing one common mill at the Panda site. Mine reserves and resources initially totalled some 133 Mt with 78 Mt scheduled to be mined over a 17-year initial mine life. Given the discovery of additional pipes, several of them higher-grade, the mine plan was revised to take into consideration the new pipes, which are closer to the central mill site, such as the Koala North, Lynx, Jay, Beartooth and Pigeon pipes that were discovered between 1993 and 1999. The Panda open pit, which was the first to produce at Ekati, was mined out in June 2003. Currently, there are two open pits (Koala and Misery) in production and two in development (Beartooth and Fox). Koala North was a test underground mine that had ceased producing in 2004. In May 2004, a US$182 million program was approved for the development of the Panda underground mine. An estimated US$120 million was spent in 2004. The project will deliver some 4.7 million ct of diamonds over a six-year mine life. Production commenced in June 2005 and full production is expected in early 2006. Consequently, ore production capacity at Ekati is now running at 12 000 t/d, inching towards the planned 18 000 t/d from the 9000 t/d rate it started at in 1998.

At the Diavik mine, located southeast of Ekati in Lac de Gras, diamond production increased to 7.6 million ct in 2004 from 3.8 million ct in 2003, its first year of production. Phase 2 development is planned to increase production to 8 million ct of diamonds annually. In December 2004, a $363 million capital investment program was approved for the A418 dike construction, underground mining feasibility studies, and process plant optimization. Construction began in early 2005. Capital spending related to the project was estimated to be less than $10 million in 2004. As of December 31, 2004, proven and probable ore reserves at Diavik were 29.8 Mt grading 3.2 ct/t, containing 95.6 million ct. As world diamond ore grades average less than 1 ct/t, this makes Diavik's kimberlite orebodies some of the highest-grade pipes in the world. The current reserves comprise the A154 South, A154 North and A418 pipes. Delineation drilling completed during 2004 on the three pipes, and a new valuation of the A154 North diamonds, resulted in the addition of new mineral reserves, mainly from the deeper part of A154 North. This addition more than offset the reclassification of mineralization in the A21 pipe from the reserve to the resource category.

Others

In addition to the above major projects, modest expansion or mine-life extension activities were undertaken at several existing mines in 2004. In Quebec, the reorganization at the Doyon gold mine near Rouyn-Noranda in 2004 continued with a capital program to increase production and lower costs. During 2004, capital expenditures were estimated at $10.4 million; the forecast for 2005 is $3 million. At the Sleeping Giant gold mine north of Amos, underground work continued to extend the newly discovered zones 8, 18 and 30 and the upper extension of Zone 3. Total capital expenditures related to the completion of a mine deepening program in 2004 to extend reserve and resource development at depth amounted to $6 million. On April 15, 2005, Cambior Inc. entered into an agreement with mine partner Aurizon Mines Ltd. to purchase the remaining 50% interest in the mine from Aurizon for $5 million in cash. At the Niobec niobium mine near Chicoutimi, significant underground drilling work continued throughout 2004 to expand reserves and resources. On July 2, 2004, Cambior Inc. acquired the remaining 50% interest of the Niobec niobium mine near Chicoutimi by completing the acquisition of Sequoia Minerals Inc. for $48.6 million.

In Ontario, a master plan put in place in February 2004 to expand the Porcupine open-pit gold mine and Dome mill at the Porcupine Joint Venture in Timmins went into high gear throughout the year. At the Pamour open-pit mine, gold production commenced in June 2005. Total capital costs of redeveloping Pamour were estimated at nearly $60 million, including deferred stripping costs.

In Alberta, at the Grande Cache coal mine, the No. 12S B2 surface mine opened in August and the No. 7-4 underground mine opened in November. Development work at Grande Cache continued in 2004 at the No. 8 and No. 16 East mine projects with a view to expanding the overall mine life.

Overall in 2004, there were many mine expansion and mine-life extension activities; a conservative estimate would put total capital expenditures at over $600 million. However, the employment increase from these activities is estimated at less than 150 jobs, likely the result of continued pressure to keep mine production costs down in order to maximize profit for shareholders and for further capital investment to compensate for the financial difficulties or even losses that most mines had to endure during the recent lengthy down cycle. New developments and new mines are still the largest sources for new mining jobs in Canada.

Although production and employment cutbacks occurred at some mines in 2004, they were due to aging mines and ore depletion rather than to corporate or mine financial difficulties. Most mines in Canada operated at full or near full capacity in 2004 and the outlook for mining in Canada in 2005 is good as demand for metals is rising, and mining and development activities are expected to increase.

IMPACT

In 2004, the opening of the seven new mines (White Rock, Croinor, Montcalm, 777, Cheviot Creek, Dillon and Willow Creek) and the re-opening of the Hurley, Bell, Jeffrey, Mouska, Grande Cache, Gibraltar and Lupin mines brought on stream over 62 700 t of daily ore production capacity and created 2120 mining jobs. As some 50 700 t/d of ore capacity and nearly 1750 direct jobs were lost from 11 mine closures and 1 production suspension, there were net gains of over 12 000 t of daily ore capacity and some 370 direct mining jobs. This was the first net gain in employment and ore capacity in Canada due to mine openings and closings since 1991. As well, these gains contributed positively towards slowing the declining production and reserves in the gold and base-metal sectors in Canada for the first time in more than a decade. For 2004, the largest contributors to the overall job gain were the Bell, Jeffrey, 777, Cheviot Creek, Grande Cache (No. 7-4 and No. 12S B2 mines), Gibraltar, and Lupin mines, which together constituted 75% of the total job gain. The Bell, 777, Cheviot Creek, Grande Cache, and Gibraltar mines accounted for 79% of the total capacity gain.

As mine openings continue to ensure immediate access to new or redeveloped sources of economic mineral supply, resulting in new production capacity and capability, and to create new mining jobs, they will continue to reflect Canada's mine-building ability and its attractiveness for mineral investment capital in the face of global competition and globalization. In the meantime, as the number of mine openings finally outnumbered mine closings in 2004 and base-metal mines began to be developed or re-developed for production, the outlook for a reversal of the trend of declining base-metal mining appears to be improving.

Table 3 shows that new mines and mine re-openings in 2004 have added some 1.95 t or 70 500 oz of gold, 56 000 t of copper, 9000 t of nickel and 38 000 t of zinc to Canada's annual production of these metals. In addition, 5.22 Mt of metallurgical coal, over 90 000 t of chrysotile asbestos, 270 000 t of silica, 25 000 t of roofing slate, and 444 t of molybdenum in concentrate have been added to the annual production of these commodities, the majority of which are exported.

Table 4 shows that new mines and mine re-openings in 2004 have added 16 t (0.52 million oz) of gold, 543 000 t of copper, 74 600 t of nickel, 16 300 t of molybdenum, 4.76 Mt of silica, and 83 Mt of metallurgical coal to Canada's total reserves of these metals and minerals.

Except for coal and silica, reserves from mine openings in 2004 would be insufficient to replenish depleted mine reserves at producing mines and to stem the recent decline in Canada's zinc and copper production capability.

NEW DEVELOPMENTS EXPECTED TO BECOME MINES IN 2004

As metal prices continued to improve in 2004, especially for gold, base metals, uranium, iron ore and coal in the fourth quarter, many new mine development plans that were previously shelved were revived, and mines that were previously closed were being re-examined and redeveloped for re-opening in 2005 and subsequent years. Consequently, a large number of mine re-openings can be expected in 2005. At the same time, more mines launched aggressive programs to extend mine life and to expand production. As the outlook brightens, such phenomena are expected to continue in 2005 and beyond.

Preliminary estimates, based on mine development activities in 2004 and the first half of 2005, indicate that sixteen mines, four of which will be new mines, could come on stream in 2005. Among the most promising new mines are Voisey's Bay (nickel-copper) in Newfoundland and Labrador, Clavos (gold) in Ontario, Muskey Valley (limestone) in Alberta, and Trend (coal) in British Columbia. In addition, twelve previously closed mines are expected to be redeveloped for production in 2005. These include Newfoundland Pyrophyllite (pyrophyllite) in Newfoundland and Labrador; Copper Rand 5000 (copper-gold), East Amphi (gold), and Sigma-Lamaque (gold) in Quebec; Pamour (gold), and Lockerby and Redstone (both nickel) in Ontario; McClean Lake (uranium) in Saskatchewan; Mount Polley (copper-gold), Bralorne and QR (both gold), and Quintette (coal) in British Columbia; and CanTung (tungsten) in the Northwest Territories.

In addition, several existing mine expansion and extension projects, as well as new ones that were initiated in 2004, are expected to continue in 2005 with others likely to be announced during the year. These mine expansions and mine-life extensions, together with new mine developments, are central to sustaining mine production in Canada.

OUTLOOK

After two decades of decline in the number of mines in Canada, due largely to three succeeding metal price downturns in 1981-85, 1990-94 and 1997-2003, mine openings finally outnumbered mine closings in 2004. As the down cycles were long and deep and actual recovery periods were short and weak, the number of principal producing mines in Canada dropped from an estimated 340 in 1980 to 186 in 2004. This decline was due largely to mine closings outnumbering mine openings, resulting in a continuous decline in mine production and reserves and the loss of more than half of the direct mining jobs to the 47 000 level by the end of 2003.

Therefore, the mineral price recovery and rising demand for minerals and metals since the second half of 2003 brought tremendous relief and were a boost to the Canadian (and global) mining industry. However, the current mining upturn has yet to translate into a reversal in the decline of mine reserves and production, as well as mine employment in Canada, as mine development in most regions across Canada has not taken off as expected. The still-depressed regions include Quebec, northern Ontario, Manitoba, British Columbia and the three territories. Part of the reason is that the large number of mines that were lost due to closure during down cycles was so large, numbering over 150 since the early 1980s, they have not been adequately offset by the net number of mine openings, partly because the declining trends occurred mostly in gold and base-metal mining and there had not only been more mine closures than openings, but also more significant closures than openings. Although most juniors have been successful in exploring and expanding projects after discovery, they are far less successful in developing the projects as significantly large investment capital is required. At the same time, major companies are increasingly interested only in large and mega-projects and are overwhelmed by the number of projects available on the market. Consequently, a reversal in these trends in Canada will take time and will not likely take place within a short period of time of, say, a couple of years, even if consecutive discoveries of world-class deposits like Voisey's Bay were to occur on an annual basis over the next five years.

On a positive note, along with the new mines and re-openings that came on stream and several major new mine and re-development projects entering the development stage in 2004, overall mine development expenditures in Canada were strong in the year. Estimated capital expenditures in 2004 totalled some $1.3 billion. The forecast for 2005 is expected to be equally strong. The most significant new mine developments include the world-class Voisey's Bay nickel-copper mine, which is gearing up for production in the summer of 2005, six months earlier than originally planned, and the Cigar Lake uranium deposit, the world's second largest high-grade uranium deposit, where production is expected to begin in early 2007. Also, the development of the Nickel Rim South nickel-copper mine, the Red Chris copper-gold mine, and the Snap Lake, Jericho and Victor diamond mines, as well as a number of smaller but significant mine redevelopments that are forging ahead in 2005, will sustain the current strength in mine development expenditures in 2005 through to 2008.

As the outlook for the global economy is good and demand for key minerals and metals from China continues to be strong, the prices of key industrial minerals and metals will continue to play an important and positive role in mine developments and mine openings in Canada. Consequently, mine openings are expected to outnumber mine closings in 2005. Also expected is a continuation of the predominance of mine re-openings over new mines, as is often the case during a recovery from previous down cycles. Given the overall improved demand and price outlook for key industrial minerals and metals, the improved prospects for mining, mine re-openings and new mine developments that have been committed for production and those that are moving toward the development stage are expected to continue in the foreseeable future in Canada.

Notes: (1) Information in this review, based mostly on company reports and communications with companies, was current as of June 30, 2005. (2) This and other reviews, including previous editions, are available on the Internet at www.nrcan.gc.ca/mms/cmy/2004cmy_e.htm.

NOTE TO READERS

TABLE 1. MINE OPENINGS AND CLOSINGS IN CANADA, 2004

Province/ Territory	New Mines			Mines Re-Opened			Mines Suspended			Mines Closed		
	Precious Metals	Base Metals	Other Minerals/ Metals	Precious Metals	Base Metals	Other Minerals/ Metals	Precious Metals	Base Metals	Other Minerals/ Metals	Precious Metals	Base Metals	Other Minerals/ Metals
Newfoundland and Labrador	–	–	–	–	–	1	–	–	–	1	–	–
Nova Scotia	–	–	1	–	–	–	–	–	–	–	–	–
Quebec	1	–	–	1	–	2	–	–	1	_	2	–
Ontario	–	1	–	_	–	–	–	–	–	3	1	1
Manitoba	–	1	–	–	–	–	–	–	–	1	–	–
Alberta	–	–	1	–	–	1	–	–	–	–	–	1
British Columbia	–	–	2	–	1	–	–	–	–	–	–	–
Northwest Territories	–	–	–	–	–	–	–	–	–	1	–	–
Nunavut	–	–	–	1	–	–	–	–	–	–	–	–
Canada, total by commodity group	1	2	4	2	1	4	–	–	1	6	3	2
Total Canada		7			7			1			11	

Source: Natural Resources Canada, based on company reports.
– Nil.

TABLE 2. MINE OPENINGS, RE-OPENINGS, EXPANSIONS, EXTENSIONS, SUSPENSIONS AND CLOSURES IN CANADA IN 2004

Mining Project/ Remarks	Location	Province/ Territory	Capacity	Employment During Mine Life	Date of Opening, Re-Opening, Expansion, Extension, Suspension or Closure	Mine or Plant Type	Main Commodities	Company
			(t/d)	(no.)				
NEW MINES								
Precious Metals								
Croinor	Val-d'Or	Que.	(e) 350	(e) 40	July	O/P	Gold	South-Malartic Exploration Inc.

Remarks: Production at the Croinor gold mine near Val-d'Or, Quebec, began on July 5, 2004. Phase 1 mining in the central pit from July to October 2004 that produced 30 780 t of ore grading 2.15 g/t, yielding some 1100 oz of gold, was below expectations. Phase 2 mining, in a joint venture with Construction Norascon Inc., began in December 2004; expected to mine 36 000 t of ore grading 5.74 g/t gold. Ore is custom-milled at Richmont Mines Inc.'s Camflo mill. As of July 2004, total measured and indicated open-pit resources as outlined at the Croinor deposit stood at 2.5 Mt grading 3.46 g/t gold. In addition, the deposit hosts an underground measured and indicated resource of 415 000 t grading 9.03 g/t gold. Total exploration expenditures on the Croinor property to date amounted to some $2 million. Capital costs of developing the mine were estimated at less than $0.5 million. Based on company information, the mining operation would best be considered to be in pre-production.

Base Metals								
Montcalm	Timmins	Ont.	2 050	145	Mid-October	U/G	Nickel, copper	Falconbridge Limited

Remarks: Ore production began at the Montcalm nickel mine some 70 km north of Timmins, Ontario, in mid-October 2004 and, by the end of December, the operation was running at full capacity. Ore is milled and concentrated at the company's Kidd Metallurgical Division in Timmins and concentrates are processed at the Falconbridge smelter in Sudbury. Annual production is expected to be 9000 t of nickel. Proven and probable reserves at the start of production were estimated at 5.113 Mt grading 1.46% nickel and 0.71% copper. The mine, developed at a capital cost of about $100 million, employs some 145 workers.

777	Flin Flon	Man.	2 750	(e) 200	July	U/G	Copper, zinc	HudBay Minerals Inc.

Remarks: Production from the 777 copper-zinc mine near Flin Flon, Manitoba, began in July 2004. Ore produced at an annual rate of 1 Mt is being treated at the Flin Flon concentrator. The 777 mine, developed at a capital cost of $200 million between 1999 and 2004, is the largest new mine in the Flin Flon area in more than two decades. It is part of a broader $400 million 777 project mine development and smelter and refinery modernization plan that was carried out by former owner Hudson Bay Mining and Smelting Co., Limited. As of January 1, 2004, proven and probable ore reserves at the 777 mine stood at 11.2 Mt grading 2.5% copper and 4.7% zinc, with precious metals. The mine was recently combined with the adjacent Callinan mine with remaining ore from Callinan mined through the 777 mine. HudBay Minerals Inc. completed the acquisition of Hudson Bay Mining and Smelting Co., Limited from Anglo American plc on December 21, 2004. The cost of the acquisition was $316 million.

TABLE 2 (cont'd)

Mining Project/ Remarks	Location	Province/ Territory	Capacity	Employment During Mine Life	Date of Opening, Re-Opening, Expansion, Extension, Suspension or Closure	Mine or Plant Type	Main Commodities	Company
			(t/d)	(no.)				
Other Minerals/Metals								
White Rock	Shelburne	N.S.	(e) 750	40	July	O/P	Silica	Black Bull Resources Inc.
Remarks: The White Rock silica mine near Shelburne, Nova Scotia, began production in July 2004. The mine was brought on stream at an estimated cost of about $10 million. At an estimated ore production rate of 750 t/d, the mine is expected to produce some 270 000 t of high-grade silica annually. At the start of mining, silica reserves were estimated to be 4.9 Mt grading 97.3% SiO_2. The mine also hosts an indicated resource of 7.3 Mt grading 97.4% SiO_2. The operation created some 40 jobs.								
Cheviot Creek	Hinton	Alta.	(e) 3 350	200	4th quarter	O/P	Metallurgical coal	Elk Valley Coal Partnership
Remarks: Coal production at the Cheviot Creek mine near Hinton, Alberta, began in the fourth quarter of 2004. As of September 1, 2004, proven and probable ore reserves at the mine stood at 61 Mt of metallurgical coal. A total of 102 000 t of coal was mined and shipped in December 2004. Coal is processed at the company's nearby Luscar mill. The mine was brought on stream as a replacement for the Luscar coal mine, which closed in April 2004 due to the depletion of mine reserves. The capital cost to production was estimated at $50 million. The initial production rate was about 1.4 Mt of clean coal per year. A $120 million capital program is under way to expand mine and plant production capacity to the 2.8-Mt/y (8000-t/d) level by the third quarter of 2005. Mine employment in 2004 was 200, increasing to 300 by the spring of 2005 to meet the new production target.								
Dillon	Tumbler Ridge	B.C.	(e) 2 000	(e) 75	December	O/P	Metallurgical coal	Western Canadian Coal Corp.
Remarks: Coal production at the Dillon mine near Tumbler Ridge, British Columbia, began in December 2004. The mine was developed at an estimated capital cost of about $10 million. The mined coal is being trucked to Tumbler Ridge and shipped by rail to Ridley Terminals in North Vancouver. At the start of mining, coal reserves stood at 1.6 Mt. The mine life is estimated at about six years. Owner Western Canadian Coal Corp. plans to expand production to 80 000 t/month from 60 000 t/month. This will shorten the mine life to two years but will likely meet the higher Asian demand. By that time, the company hopes to have permits in place to mine the nearly Brule deposit, a key part of the company plan to produce 5 Mt of coal by 2009.								
Willow Creek	Chetwynd	B.C.	(e) 2 500	(e) 90	August	O/P	Metallurgical coal	Pine Valley Mining Corporation
Remarks: Situated 45 km west of Chetwynd, the Willow Creek coal mine began production in August 2004. As of August 2004, coal reserves were estimated at 15 Mt. The current plan is to produce 900 000 t/y. The company is seeking a permit to produce 2.2 Mt/y. Coal from the mine is trucked to a rail siding on the mine site and is then shipped by rail to Neptune Bulk Terminal in north Vancouver. From there it is shipped to steel mills in Asia and Europe. Marubeni of Japan provided the debt financing for the project and agreed to buy at least 600 000 t of coal over two years. The Willow Creek mine is the first new coal mine in western Canada in more than two decades. The capital costs of developing the Willow Creek mine were estimated at $23 million. The company name changed from Globaltex Industries Inc. on May 14, 2003.								

RE-OPENINGS

Precious Metals

Mouska	Rouyn-Noranda	Que.	(e) 800	(e) 110	November	U/G	Gold	Cambior Inc.

Remarks: Production at the Mouska gold mine near Rouyn-Noranda, Quebec, resumed in November 2004 after nearly one year of suspension. The suspension was necessary to enable deep development of higher-grade ore and mine-life extension work. Capital costs associated with the development in 2004 amounted to $6.8 million, compared to $10.4 million for Doyon, the larger gold mine in the Doyon Division. The resumption of mining at Mouska has effectively been adding high-grade ore to the Doyon mill. As of December 31, 2004, proven and probable ore reserves at the Doyon Division mines stood at 4.5 Mt grading 6.0 g/t gold (888 000 oz). Gold production in 2004 totaled 146 500 oz at a cash cost of US$375/oz. The forecast for 2005 is 166 000 oz of gold at US$323/oz.

Lupin	Contwoyto Lake	Nun.	2 085	(e) 210	March	U/G	Gold	Kinross Gold Corporation

Remarks: After an eight-month shut-down due to high costs, gold production resumed in March 2004 at the Lupin mine near Contwoyto Lake, Nunavut. Capital costs for the production resumption were estimated at less than $5 million. Gold production was 24 897 oz in 2004. In view of the low remaining mine reserves and current strong gold prices, the plan was to accelerate production until the exhaustion of all economic ore. As of December 31, 2004, proven reserves at the Lupin mine were 33 000 t grading 8.47 g/t gold, or 9000 oz.

Base Metals

Gibraltar	Williams Lake	B.C.	35 000	290	October	O/P	Copper	Taseko Mines Limited and Ledcor Mining Ltd.

Remarks: After nearly five years of production suspension, the Gibraltar open-pit copper mine re-opened in October 2004. Redeveloped at an estimated capital cost of about $70 million ($90 million including the cost of a small refinery), annual production of the mine is planned at 70 million lb of copper and 980 000 lb of molybdenum in concentrates. The mine was put on standby by Boliden Limited in 1998 due to low copper prices. In July 1999, Taseko Mines Limited acquired the mine from Boliden Limited and subsequently redeveloped the mine in a joint venture with Ledcor Mining Ltd. While Taseko is responsible for concentrate sales, Ledcor is responsible for site operation. Initial employment at the mine was 220, increasing to 290 at commercial production.

Other Minerals/Metals

Hurley	Trinity Bay	N.L.	(e) 70	36	June	O/P	Slate	Hurley Slate Works Company Inc.

Remarks: The Hurley slate mine at Trinity Bay in Newfoundland and Labrador re-opened in June 2004 after two years of shut-down due to a permitting dispute with the Province in 2002. Capital costs of re-opening the mine were estimated at less than $1 million. Production and shipments of purple and green roofing slate to international markets in 2004 are estimated to be 1800 t. The mine employs 36 workers.

Bell	Black Lake	Que.	3 900	275	November	U/G	Chrysotile asbestos	Asbestos Corporation Limited, Mazarin Inc. and Lac d'Amiante du Québec, Ltée

Remarks: Production at the Bell chrysotile mine in Eastern Townships, Quebec, resumed in November 2004. Operation was suspended between May and November 2004 due to a labour dispute. Costs of production resumption were estimated at about $1 million. Annual production is estimated at 900 000 t of chrysotile asbestos. The mine first began production as an open-pit mine in 1878 and then as an underground mine in 1951. The last suspension occurred in April 2003 due to poor market conditions. The mine, operated by LAB Chrysotile Inc., sustains a work force of 350.

TABLE 2 (cont'd)

Mining Project/ Remarks	Location	Province/ Territory	Capacity	Employment During Mine Life	Date of Opening, Re-Opening, Expansion, Extension, Suspension or Closure	Mine or Plant Type	Main Commodities	Company
			(t/d)	(no.)				
Jeffrey	Asbestos	Que.	2 000	(e) 230	April	O/P	Chrysotile asbestos	Jeffrey Mine Inc.

Remarks: Production from the Jeffrey chrysotile mine in Eastern Townships, Quebec, resumed in April 2004, after being suspended in 2003 due to weak market conditions. Costs of re-opening the mine were estimated at less than $2 million. The mine received government permission to operate intermittently in 2004. Plans are to operate up to six months a year to produce a chrysotile-based finished product for the market.

Grande Cache (No. 7-4 underground and No. 12S B2 mines)	Grande Cache	Alta.	(e) 3 500	200	August and November	O/P and U/G	Metallurgical coal	Grande Cache Coal Corp.

Remarks: Coal production from the Grande Cache mine near Grande Cache, Alberta, resumed in August 2004. Capital costs of redeveloping the mine for production were estimated at about $10 million. The mined coal is shipped by rail to the Neptune Bulk Terminals in north Vancouver. The company has agreed to ship about 1.3 Mt of hard coking coal to South Korean steelmaker Posco and a group of Japanese steelmakers. As of August 2004, mineable coal reserves were 3.4 Mt at the No. 12S B2 surface mine and at least 1.6 Mt at the No. 7-4 underground mine. Grande Cache Coal Corp. has at least two other nearby local or satellite mines that are at the advanced exploration stage and have the potential to be developed for production in the foreseeable future.

EXPANSIONS AND EXTENSIONS

Precious Metals

LaRonde	Val-d'Or	Que.	7 250	610	1997-2005	U/G	Gold, zinc, copper	Agnico-Eagle Mines Limited

Remarks: A major multi-phase capital program that began in 1997 to expand ore reserves and production capacity at the LaRonde gold mine near Val-d'Or, Quebec, has transformed the mine into the deepest gold mine (at nearly 2300 m deep) outside of South Africa and a low-cost underground gold producer when by-product credits from silver, copper and zinc are taken into consideration. In 2004, ore production capacity reached 7250 t/d. Mine-life extension work continued in 2004. The capital cost of development in 2004 is estimated at more than $20 million. As of December 31, 2004, proven reserves at LaRonde stood at 5.890 Mt grading 3.086 g/t (0.09 oz/st) gold (590 000 oz), 90.857 g/t (2.65 oz/st) silver, 0.43% copper and 4.46% zinc. Probable reserves stood at 13.52 Mt grading 2.743 g/t (0.08 oz/st) gold (1.257 million oz), 80.23 g/t (2.34 oz/st) silver, 0.32% copper and 4.02% zinc. In addition, there were 1.807 Mt of indicated resources grading 2.40 g/t (0.07 oz/st) gold (139 000 oz), 33.60 g/t (0.98 oz/st) silver, 0.17% copper and 2.35% zinc. Gold production in 2004 was 271 567 oz, a 15% increase over 2003. Total cash costs per oz of gold were reduced to US$56, down by 79% from 2003, as a result of higher production, lower unit mine costs, improved prices for all metals, and the elimination of production royalties. In the first quarter of 2005, total cash costs were US$67/oz, compared favourably with US$78/oz in the first quarter of 2004. Gold output for 2005 is expected to be approximately 270 000 oz. Successful underground exploration has outlined additional mineralization below the Penna shaft to depths of over 10 000 ft. This lower ore, dubbed LaRonde II, will likely be mined as the original LaRonde mine ore begins to deplete, thereby extending the overall mine life. At the end of 2004, probable ore reserves at LaRonde II stood at 17.519 Mt grading 5.828 g/t (0.17 oz/st) gold (3.258 million oz), 19.886 g/t (0.58 oz/st) silver, 0.33% copper and 0.83% zinc. The deposit also hosts an indicated resource of 1.796 Mt grading 2.743 g/t (0.08 oz/st) gold (158 000 oz), 21.943 g/t (0.64 oz/st) silver, 0.30% copper and 1.0% zinc. In addition, there were also 9.826 Mt of inferred resources grading 6.514 g/t (0.19 oz/st) gold (2.058 million oz), 27.43 g/t (0.8 oz/st) silver, 0.32% copper and

2.11% zinc. In 2004, some 1.168 million oz of probable gold reserves and 547 000 oz of indicated and inferred gold resources were outlined at the nearly Lapa property (10 miles east of LaRonde). As well, 1.627 million oz of probable gold reserves and 242 000 oz of indicated and inferred gold resources were outlined at the Goldex property some 35 miles east of the LaRonde mine. While a prefeasibility study at the LaRonde II deep development project is scheduled to be completed in the third quarter of 2005, both Lapa and Goldex are expected to enter into the development stage in the second half of 2005. In 2004, total capital expenditures amounted to US$53 million, US$22 million more than originally budgeted, due to the commencement of underground programs at the Lapa and Goldex projects. Exploration and capital expenditures in 2005 are expected to be US$42 million, including US$14.1 million sustaining capital expenditures at the LaRonde mine, US$12.7 million at LaRonde II, US$12.1 million at Lapa and US$1.5 million at Goldex, as well as US$4.8 million on grass-roots exploration projects. At the end of 2004, the mine employed 610 workers. However, the work force was reduced to 585 in the first quarter of 2005.

Campbell	Balmertown	Ont.	1 600	385	2003-06	U/G	Gold	Placer Dome Inc.

Remarks: Gold production at the Campbell gold mine at Balmertown, Ontario, was 209 045 oz, a 6% increase over 2003, as higher tonnage more than offset lower grades. However, cash costs, at US$276/oz, increased 37% from the year before due to an increase in the amounts of lower-grade ore processed, increased development work, and a stronger Canadian dollar. Gold production in 2005 is expected to be 4% lower due to a continued increase in lower-grade ore. Cash costs will also be 3% higher. As of December 31, 2004, proven and probable mineral reserves at the Campbell mine stood at 2.613 Mt grading 17.0 g/t gold, containing 1.432 million oz. The mine also hosts a combined measured and indicated resource of 5.222 Mt grading 10.2 g/t gold, or 1.707 million contained oz. In addition, there are 4.876 Mt of inferred resources grading 17.9 g/t gold, or 2.807 million oz. In 2003, a deep ore development program to extend the mine life at Campbell was launched to develop the DC zone, also called Deep Campbell zone, to access probable reserves currently estimated at 222 285 oz of gold, as well as additional mineral resources. The program will also provide a platform for additional exploration work in the immediate area. The focus of the development program in 2004 was on expediting production from the DC zone and advancing exploration headings. In 2005, development will be advanced towards accessing the DC zone at depth. The capital costs of developing the project are estimated at US$19 million, of which US$13 million has been expended to date. The project is on schedule, on budget, and is expected to be completed in 2006.

Red Lake	Balmertown	Ont.	610	(e) 175	2003-07	U/G	Gold	Goldcorp Inc.

Remarks: In 2004, gold production at the Red Lake gold mine at Balmertown, Ontario, rose a further 3.7% from 2003 to 551 886 oz, maintaining Red Lake as the largest gold-producing mine in Canada for the fourth consecutive year. The cash cost also rose to US$92/oz, a 15% increase over 2003, resulting in a higher total cost of US$128/oz. However, the mine remained one of the lowest-cost gold mines in Canada and the world. Total production for 2005 is forecast at approximately 550 000 oz at a slightly higher cash cost anticipated to be primarily the result of a stronger Canadian dollar. Following the announcement in February 2003 of a new US$85 million (or $119 million at a US$-C$ exchange rate of 1.4 at the time of the announcement) capital expansion program to sink a new shaft at the Red Lake mine, work has been progressing on the sinking of the shaft to a depth of 7150 ft with a hoist capacity of 3600 t/d and expanding the mill capacity to 900 t/d by 2007. It is the largest expansion program ever undertaken at the mine. At year-end 2004, the shaft depth was 2290 ft. A further increase to the 660-t/d level is planned for 2005. As a result of continuous production expansion, ore capacity increased to 610 t/d in 2004 from 585 t/d in 2003. Plans for 2005 include further expansion-related development work; shaft sinking will also continue. The remaining cost of the project until completion in 2007 is estimated at US$50 million with US$25 million for 2005. When the expansion is completed in 2007, the Red Lake mine is expected to produce 700 000 oz of gold annually. Total capital expenditures for the US$85 million shaft and mill expansion program and related mine development over the period 2003-07 were estimated to be US$20 million in 2003, US$24 million in 2004, US$32 million in 2005, US$25.2 million in 2006, and US$8.5 million in 2007. Gold reserves also increased in the year. As of December 31, 2004, proven and probable reserves were 3.1 Mt grading 50.1 g/t (1.46 oz/st) gold, for a total of 5 million oz. The mine also hosts a combined measured and indicated resource of 2.31 Mt grading 21.26 g/t (0.62 oz/st) gold, or 1.58 million oz, and an inferred resource of 0.94 Mt grading 31.8 g/t (0.93 oz/st) gold, or 0.96 million oz.

Base Metals

Raglan	Ungava	Que.	3 000	450	2004-07	U/G	Nickel, copper, cobalt, precious metals	Falconbridge Limited

Remarks: In the fourth quarter of 2004, Falconbridge Limited approved Phase I of an optimization program to expand production at the Raglan nickel-copper mine in Ungava, Quebec. The program will aim at increasing the level of annual ore throughput to approximately 1 Mt to increase nickel production by 5000 t/y. It will also increase the mill's ability to process harder ore. The capital cost for Phase I is estimated at $28 million. Engineering work on Phase II is currently under way to further increase annual production rates.
In 2004, mineral reserves at Raglan decreased by 2 Mt as a result of annual production, write-downs and reclassification of resources. However, 1.9 Mt of mineral resources have been discovered as a result of the 2004 exploration program. As of December 31, 2004, proven and probable reserves stood at 15.56 Mt grading 2.82% nickel and 0.78% copper, sufficient to sustain a 17-year mine life at the current rate of production. Drilling in the first half of 2005 indicates significant new mineralization at various ore zones.

TABLE 2 (cont'd)

Mining Project/ Remarks	Location	Province/ Territory	Capacity	Employment During Mine Life	Date of Opening, Re-Opening, Expansion, Extension, Suspension or Closure	Mine or Plant Type	Main Commodities	Company
			(t/d)	(no.)				
Kidd Creek	Timmins	Ont.	12 500	603	2000-2004	U/G	Copper, zinc, silver	Falconbridge Limited

Remarks: While development of the $640 million Mine D deep mine project at the Kidd Mining Division in Timmins, Ontario, is not expected to be completed until 2006, commissioning of the ore handling system was completed in 2004 with the first ore hoisted up the shaft in July, ahead of the feasibility study. The shaft is now below the 8800 level. The Mine D project, which began in late 2000, aims to extend the mine life at the Kidd Creek mine beyond 10 years by deepening the mine from a depth of 6800 ft to 10 000 ft, giving access to an additional 10.3 Mt of reserves and 14.1 Mt of resources. Ore mined at the Kidd Mining Division mines amounted to 2.094 Mt, with Mine D contributing some 210 000 t. Production from Mine D is expected to ramp up to 750 000 t in 2005. Total capital spending on the development of the project to the end of 2004 amounted to $404 million, including $127 million spent in 2004, compared with $85 million in 2003 and $75 million in 2002. Mine D development is being carried out in two stages. The Stage 1 portion of the mine, from 2100 m to about 2700 m, contains about 15.7 Mt of ore grading 2.82% copper, 5.74% zinc and 58 g/t silver; it is estimated to cost $500 million. The Stage 2 portion, further down to 3100 m deep, contains 10.5 Mt grading 2.20% copper, 5.27% zinc and 97 g/t silver and is expected to cost the remainder of the $$640 million. As of December 31, 2004, total proven and probable reserves at the Kidd Creek mine stood at 18.1 Mt grading 1.80% copper and 6.03% zinc. Mineral reserves decreased by 2.8 Mt resulting from production of 2.1 Mt and a downward revision of 678 000 t of copper stringer ore to inferred resources. The mine life, based on current reserves and an anticipated annual ore production rate of 2.4 Mt, is about seven years. In addition, there were 15.3 Mt of inferred resources grading 3.0% copper and 4.6% zinc. The inferred resource largely represents the resource at Mine D. The inferred resources, if converted to reserves, could support another six years of production. In 2004, the overall cash operating costs of the Kidd Creek mine increased to US$0.93/lb of copper from US$0.83/lb in 2003 (from US$0.62/lb in 2002), net of by-product credits.

Creighton	Sudbury	Ont.	(e) 3 500	457	2001-13 (Phase 1), 2005-19 (Phase 2)	U/G	Nickel, copper, cobalt, precious metals	Inco Limited

Remarks: At the Creighton nickel-copper mine in Sudbury, Ontario, the US$125 million, two-phase capital program announced by Inco Limited in April 1998 to extend the mine life and to expand mine production continued in 2004. Capital expenditures in 2003 were estimated at about US$10 milllion. The Creighton Deep project is an ambitious program to develop a 6-Mt high-grade, low-cost nickel-copper deposit at depth at the Creighton mine over two decades. Phase 1 of the project, from 2001 to 2013, which involves mine development between the 7400-ft and 7660-ft levels, will develop proven reserves of 2.8 Mt grading 3.45% nickel and 2.97% copper located between the two levels. Production from this ore has already begun. Annual production is forecast to be 10 900 t of nickel, 9500 t of copper and 28 000 oz of platinum group metals. In Phase 2, development will extend to the 8180-ft level between 2005 and 2019, during which some 3.1 Mt of probable reserves grading 3.62% nickel and 3.25% copper will be developed and mined. The Creighton orebody was discovered in 1856. The mine, which began production in 1901, celebrated a century of continuous production in 2001. Creighton is Inco's oldest operating mine.

Fraser	Onaping	Ont.	2 000	100	2004-05	U/G	Nickel, copper, cobalt, precious metals	Falconbridge Limited

Remarks: The discovery of the Fraser Morgan deposit at the Fraser mine in Sudbury, Ontario, in 2001 and drilling success in 2004 effectively increased the mine's mineral resources to 3.3 Mt grading 1.85% nickel and 0.61% copper, indicated resources of 1.6 Mt grading 1.69% nickel and 0.46% copper, and inferred resources of 2.1 Mt averaging 1.8% nickel and 0.5% copper. Diamond drilling continues in 2005. The Fraser Morgan deposit, consisting of a series of zones located in an area east of the Fraser mine, is accessible from existing Fraser mine infrastructure. A scoping study is under way. If successfully developed, the deposit could add 7000 to 9000 t/y of nickel to the total production at Fraser.

McCreedy East	Sudbury	Ont.	2 700	180	2000-2004	U/G	Nickel, copper, cobalt, precious metals	Inco Limited

Remarks: The discovery of a high-grade nickel deposit near the McCreedy East mine in Sudbury, Ontario, prompted Inco Limited to announce a $48 million (US$33 million) capital program to develop the Main and adjacent West orebodies in June 2000 and to expand production. Development of these orebodies, which contain 8 Mt grading 1.88% nickel, 0.84% copper and 0.91 g/t platinum group metals, was completed in 2004. Mine production was expected to increase to 4350 t/d from the current 2700 t/d when full production is reached in late 2004. At this rate, metal production will be 22 million kg (48 million lb) of nickel and 42 million kg (92 million lb) of copper annually, up from the current 13 million kg (29 million lb) of nickel and 37 million kg (82 million lb) of copper. Capital costs for the expansion project in 2004 were estimated at about US$8 million. The expansion of the McCreedy East mine will provide Inco's Ontario Division with another source of low-cost production for at least another 15 years. Further mine-life extensions are likely as the mine hosts other mineral zones with excellent potential. The McCreedy East mine is one of Inco's most productive mines with ore handling and materials transportation accessible by existing infrastructure at the company's nearby Coleman mine. It has been designated by Inco as one of four key mines in its Ontario Division. The other three (Creighton, Copper Cliff North and Copper Cliff South) are all in the Sudbury area. All four are the company's lowest-cost mines in Ontario.

Craig	Onaping	Ont.	2 450	318	2004-05	U/G	Nickel, copper, cobalt, precious metals	Falconbridge Limited

Remarks: The Onaping Depth orebody is located below the Craig nickel-copper mine at Onaping, Ontario, and is accessible from the existing Craig mine infrastructure. It is a high-grade resource with 14.6 Mt of indicated resource grading 2.52% nickel and 1.15% copper. In addition, there is an inferred resource of 1.2 Mt grading 3.6% nickel and 1.2% copper. In 2004, research continued on enabling technologies to mine the deposit safely, with substantial progress. The successful conversion of resources to reserves at Onaping Depth will significantly extend the mine life of the Craig mine.

Other Commodities

PCS Rocanville Operation	Rocanville	Sask.	6 290	330	2003-05	U/G	Potash	Potash Corporation of Saskatchewan Inc.

Remarks: The $80 million expansion program at the Potash Corporation of Saskatchewan Inc.'s (PCS) Rocanville potash mine and mill that began in August 2003 continued through 2004 and was completed in the first quarter of 2005 as planned. The expansion effectively increased the mine's potash production by 400 000 t/y and its compaction capacity to 1.5 Mt/y. As the bulk of the construction activity was conducted in 2004, capital expenditures in 2004 were estimated at some $60 million. The project provided over 320 person-years of employment through the construction phase. The company attributed the expansion decision to a recent change in Saskatchewan's resource tax to eliminate the profits tax on incremental tonnes and allow a quicker write-down on capital investment, retroactive to January 1, 2003. Rocanville is the world's lowest-cost potash production facility. This investment will allow it to operate at full expanded capacity, lowering PCS Inc.'s average operating costs. In April 2005, PotashCorp announced four major capital projects, in two groups, at its Lanigan, Allan, Cory and Patience Lake potash operations to bring back 1.9 Mt of its idle production capacity in Saskatchewan following a Government of Saskatchewan announcement of new provincial mining tax incentives for potash capital projects. Total investment at Lanigan and Allan, including mill restoration and a compaction capacity increase, amounted to US$380 million (or $456 million). The projects will add 1.5 Mt of annual potash production capability at Lanigan and 400 000 t at Allan for US$275 million, as well as 1.25 Mt of annual compaction capacity at the two mines for US$105 million. Production capacity at Allan is expected to come on stream in April 2006 and capacity at Lanigan is scheduled to come on in the fourth quarter of 2007. In addition, to reach the company's full capacity of 12.5 Mt potash annually, PotashCorp is also evaluating two smaller projects at its Cory and Patience Lake mines to more fully utilize their production capacity. Current cost estimates for these two projects are in the range of US$120 million to US$140 million.

TABLE 2 (cont'd)

Mining Project/ Remarks	Location	Province/ Territory	Capacity	Employment During Mine Life	Date of Opening, Re-Opening, Expansion, Extension, Suspension or Closure	Mine or Plant Type	Main Commodities	Company
			(t/d)	(no.)				
Diavik	Lac de Gras	N.W.T.	5 500	700	2004-05	O/P	Diamonds	Diavik Diamond Mines Inc. and Aber Diamond Limited Partnership

Remarks: Diamond production began in January 2003 at the Diavik diamond mine in Lac de Gras, N.W.T. In 2004, diamond production increased to 7.6 million carats (Mct) from 3.8 Mct in 2003, and the mine is on the way to begin the Phase 2 development to increase production to 8 Mct of diamonds annually. In December 2004, a $363 million capital investment program was approved for the A418 dike construction, underground mining feasibility studies, and process plant optimization. Construction began in early 2005. As of December 31, 2004, proven and probable ore reserves at Diavik were 29.8 Mt grading 3.2 ct/t diamonds, containing 95.6 Mct. As world diamond ore grades average less than 1 ct/t, this makes Diavik's kimberlite orebodies some of the highest-grade pipes in the world. The current reserves comprise the A154 South, A154 North, and A418 pipes. Delineation drilling completed during 2004 on the three pipes, and a new valuation of the A154 North diamonds, resulted in the addition of new mineral reserves, mainly from the deeper part of A154 North. This addition more than offset the reclassification of mineralization in the A21 pipe from the reserve to the resource category.

Ekati	Lac de Gras	N.W.T.	12 000	800	2001-08	O/P and U/G	Diamonds	BHP Billiton Diamonds Inc., Charles E. Fipke and Stewart L. Blusson

Remarks: The Ekati diamond mine is a mining complex that initially consisted of five diamond-bearing kimberlite pipes, namely, Panda, Koala, Misery, Sable and Fox. The five pipes were approved by the federal government to be developed as five mines for production between 1998 and 2008, sharing one common mill at the Panda site. Mine reserves and resources initially totalled some 133 Mt, with 78 Mt scheduled to be mined over a 17-year initial mine life. Given the discovery of additional pipes, several of them higher-grade, the mine plan was revised to take into consideration the new pipes, which are closer to the central mill site, such as the Koala North, Lynx, Jay, Beartooth and Pigeon pipes that were discovered between 1993 and 1999. The Panda open pit, which was the first to produce at Ekati, was mined out in June 2003. Currently, there are two open pits (Koala and Misery) in production and two in development (Beartooth and Fox). Koala North was a test underground mine that ceased production in 2004. In May 2004, a US$182 million program was approved for the development of the Panda underground mine. An estimated US$120 million was spent in 2004. The project will deliver some 4.7 Mct of diamonds over a six-year mine life. Production commenced in June 2005 and full production is expected in early 2006. Consequently, ore production capacity at Ekati is now running at 12 000 t/d, inching towards the planned 18 000 t/d from the 9000 t/d rate that it started at in 1998.

MINE CLOSINGS

Production Suspensions

Other Minerals/Metals

Black Lake	Black Lake	Que.	19 500	485	November 21	O/P	Chrysotile asbestos	Asbestos Corporation Limited, Mazarin Inc. and Lac d'Amiante du Québec, Ltée

Remarks: Production at the Black Lake chrysotile mine in Eastern Townships, Quebec, was suspended indefinitely as of November 21, 2004, as a result of poor market conditions. The mine, which employed some 485 people, was operated by LAB Chrysotile Inc. Production first began in 1958.

Closures

Precious Metals

Hammerdown	King's Point	N.L.	350	(e) 60	May	U/G	Gold	Richmont Mines Inc.

Remarks: The Hammerdown gold mine near King's Point on Baie Verte Peninsula in Newfoundland and Labrador closed in May 2004 due to the depletion of ore reserves. Commercial production first began on July 1, 2001. Ore is processed off site at the company's Nugget Pond mill.

Dome U/G	Timmins	Ont.	12 000	(1) 663 incl. O/P	May	U/G	Gold	Porcupine Joint Venture

Remarks: The Dome underground gold mine at Timmins, Ontario, closed in May 2004 due to the depletion of underground ore reserves. Production from Dome first began in 1910. Production at the Dome open-pit mine, which was brought on stream in May 1995, is expected to be completed in 2005. Total mine employment at the Dome underground and open-pit mines in 2004 was 663. The Dome mine complex was incorporated into the Porcupine Joint Venture (PJV) in July 2002, formed by Placer Dome Inc. (51%) and Kinross Gold Corporation (49%) by combining the mining assets of the two companies in the Porcupine district in the Timmins area. The first major project under the PJV is the redevelopment of the Pamour open-pit mine into a new open-pit operation in 2005. All ore from the PJV operations will be processed at the Dome mill.

Holt-McDermott	Kirkland Lake	Ont.	2 850	195	October	U/G	Gold	Barrick Gold Corporation

Remarks: The Holt-McDermott mine at Kirkland Lake, Ontario, closed in October 2004 due to ore depletion. Production first began in July 1988. In 2000, mill capacity was expanded from 2200 t/d to 2850 t/d to treat ore on a custom basis from the adjacent Hollloway mine.

Mishi	Wawa	Ont.	200	(e) 10	March	O/P	Gold	River Gold Mines Ltd.

Remarks: Production at the small Mishi gold mine near Wawa, Ontario, ceased in March 2004 due to the depletion of open-pit reserves. The company is exploring for underground resources at the mine site and in the adjacent Magnacon property where it holds a 75% joint-venture interest. As of December 31, 2004, the Mishi mine hosts an indicated resource of 1.043 Mt grading 5.1 g/t gold, which remains open to the east and at depth. Drilling will continue in 2005.

New Britannia	Snow Lake	Man.	2 000	127	September	U/G	Gold	Kinross Gold Corporation and High River Gold Mines Ltd.

Remarks: The New Britannia gold mine near Snow Lake, Manitoba, closed at the end of September 2004 due to the remaining mine reserves becoming uneconomic as a result of high costs. Production from the mine first began on November 14, 1995. Annual production averaged 100 000 oz of gold. The companies quickly proceeded with mine-site reclamation.

Giant	Yellowknife	N.W.T.	(e) 150	(e) 40	July	U/G	Gold	Miramar Mining Corporation

Remarks: The Giant mine at Yellowknife, Northwest Territories, closed in July 2004 due to the depletion of economic ore. Production from the mine first began in 1948. During full production, the Giant mine sustained a work force of over 300.

Base Metals

Bell-Allard	Matagami	Que.	2 143	250	December	U/G	Zinc, copper	Noranda Inc.

Remarks: The Bell-Allard zinc-copper mine near Matagami, Quebec, closed in December 2004 due to the depletion of ore reserves. The mine first began production in the third quarter of 1999. It was Noranda's last zinc-copper mine in the Matagami mining camp and in Quebec.

TABLE 2 (cont'd)

Mining Project/ Remarks	Location	Province/ Territory	Capacity	Employment During Mine Life	Date of Opening, Re-Opening, Expansion, Extension, Suspension or Closure	Mine or Plant Type	Main Commodities	Company
			(t/d)	(no.)				
Les Mine Selbaie	180 km N of Rouyn-Noranda	Que.	10 800	15, >500 at full prod.	January	O/P	Copper, zinc, gold, silver	BHP Billiton PLC
Remarks: Les Mine Selbaie's copper-zinc-gold-silver mine north of Rouyn-Noranda, Quebec, closed in January 2004 due to ore depletion. The mine has been in the reclamation phase since August 2004. Production from the mine first began in September 1981. Mine employment was over 500 during full production, dropping to about 15 at closure.								
Lockerby	Sudbury	Ont.	1 500	100	August 31	U/G	Nickel, copper	Falconbridge Limited
Remarks: The Lockerby mine at Onaping in Sudbury, Ontario, closed at the end of August 2004 due to the depletion of economic ore reserves. Nickel production at the mine first began in 1974. Mine production was suspended in June 1994 and resumed in September 1995. Ore was milled at the nearby Strathcona mill. In June 2005, First Nickel Mines Limited acquired the mine from Falconbridge Limited with an intention to develop the remaining resources and to re-open the mine for production.								
Other Minerals/Metals								
Georgia-Pacific No. 3 (Caledonia mine)	Caledonia	Ont.	(e) 500	100	November	O/P	Gypsum	Georgia-Pacific Canada, Inc.
Remarks: The Georgia-Pacific No. 3 gypsum mine at Caledonia, Ontario, closed in November 2004 due to the depletion of ore reserves. During operation, the mine sustained a work force averaging about 100.								
Luscar	Hinton	Alta.	8 200	120, >430 at full prod.	April	O/P	Metallurgical coal	Elk Valley Coal Corporation
Remarks: The Luscar coal mine near Hinton, Alberta, once Luscar Ltd.'s flagship coal mine in the province prior to the formation of the Elk Valley Coal Partnership, closed in April 2004 due to ore depletion. Production from the mine first began in 1969. Employment at the mine was over 430 during full production, dropping to below 120 at the time of closure.								

Source: Natural Resources Canada, based on published reports and communications with companies and provinces/territories.
(e) Estimated; O/P Open pit; U/G Underground.
(1) Dome mill capacity.

TABLE 3. NEW PRODUCTION FROM MINE OPENINGS IN CANADA IN 2004

Mining Project	Main Commodities	Estimated Annual Production							
		Gold		Silver		Copper	Nickel	Zinc	Other Minerals/Metals
		(g)	(oz)	(g)	(oz)	(t)	(t)	(t)	
NEW OPERATIONS									
Precious Metals									
Croinor	Gold	373 000	12 000	–	–	–	–	–	–
Base Metals									
Montcalm	Nickel, copper	–	–	–	–	4 300	9 000	–	_
777	Copper, zinc	–	–	–	–	20 000	_	38 000	_
Other Minerals									
White Rock	Silica	–	–	–	–	–	–	–	270 000 t silica
Cheviot Creek	Metallurgical coal	–	–	–	–	–	–	–	2.8 Mt metallurgical coal
Dillon	Metallurgical coal	–	–	–	–	–	–	–	720 000 t metallurgical coal
Willow Creek	Metallurgical coal	–	–	–	–	–	–	–	900 000 t metallurgical coal
RE-OPENINGS									
Precious Metals									
Mouska	Gold	1 555 000	50 000	–	–	–	–	–	–
Lupin	Gold	26 500	8 500	–	–	–	–	–	–
Base Metals									
Gibraltar	Copper, molybdenum	–	–	–	–	31 746	–	–	444 t (980 000 lb) molybdenum in concentrates
Other Minerals									
Hurley	Slate	–	–	–	–	–	–	–	25 000 t roofing slate
Bell	Chrysotile asbestos	–	–	–	–	–	–	–	90 000 t chrysotile
Jeffrey	Chrysotile asbestos	–	–	–	–	–	–	–	670 t finished chrysotile product
Grande Cache-Nos. 7-4 & 12S B2	Metallurgical coal	–	–	–	–	–	–	–	1 Mt metallurgical coal
Planned total		1 954 500	70 500	–	–	56 046	9 000	38 000	270 000 t silica 5.42 Mt metallurgical coal 25 000 t roofing slate 90 670 t chrysotile asbestos 444 t (980 000 lb) molybdenum in concentrates

Source: Natural Resources Canada, based on company reports and communications with provinical/territorial governments.
– Nil.

TABLE 4. NEW ORE RESERVES FROM MINE OPENINGS IN CANADA IN 2004

Mining Project	Main Commodities	Proven-Probable Ore Reserves (As of December 31, 2004) Tonnage	Grade	In-Situ Metal Reserves Gold	Gold	Silver	Silver	Copper	Nickel	Zinc	Lead	Other Minerals
		(tonnes)		(g)	(oz)	(g)	(oz)	(t)	(t)	(t)	(t)	(t)
NEW OPERATIONS												
Precious Metals												
Croinor	Gold	(e) 2 000 000	(e) 3.46 g/t gold	6 920 000	222 500	–	–	–	–	–	–	–
Base Metals												
Montcalm	Nickel, copper	5 113 000	1.46% nickel, 0.71% copper	–	–	–	–	36 300	74 650	–	–	–
777	Copper, zinc	11 200 000	2.5% copper, 4.7% zinc	–	–	–	–	–	–	–	–	–
Other Minerals												
White Rock	Silica	4 900 000	97.3% SiO_2	–	–	–	–	–	–	–	–	4 767 700 t SiO_2
Cheviot Creek	Metallurgical coal	61 000 000		–	–	–	–	–	–	–	–	61 Mt metallurgical coal
Dillon	Metallurgical coal	1 600 000		–	–	–	–	–	–	–	–	1.6 Mt metallurgical coal
Willow Creek	Metallurgical coal	15 000 000		–	–	–	–	–	–	–	–	15 Mt metallurgical coal
RE-OPENINGS												
Precious Metals												
Mouska	Gold	(e) 1 500 000	(e) 6.0 g/t gold	9 000 000	289 390	–	–	–	–	–	–	–
Lupin	Gold	33 000	8.47 g/t gold	279 500	8 980	–	–	–	–	–	–	–
Base Metals												
Gibraltar	Copper, molybdenum	163 500 000	0.31% copper, 0.01% molybdenum	–	–	–	–	506 800	–	–	–	16 350 t molybdenum
Other Minerals												
Hurley	Slate	..	–	–	–	–	–	–	–	–	–	..
Bell	Chrysotile asbestos	(e) 1 400 000	..	–	–	–	–	–	–	–	–	..
Jeffrey	Chrysotile asbestos	..	–	–	–	–	–	–	–	–	–	..
Grande Cache Nos. 7-4 and 12S B2	Metallurgical coal	(e) 5 000 000	–	–	–	–	–	–	–	–	–	5 Mt metallurgical coal
Total				16 199 500	520 870	–	–	543 100	74 650	–	–	4 767 700 t SiO_2 82.6 Mt metallurgical coal 16 350 t molybdenum

Source: Natural Resources Canada, based on company reports and communications with companies.
– Nil; .. Not available; (e) Estimated.