



# 2012 Minerals Yearbook

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## CANADA

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# THE MINERAL INDUSTRY OF CANADA

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As one of the major mining countries in the world, Canada leads the world in the production of potash (by volume). In 2012, the country was estimated to rank among the top five countries in the production of aluminum, gem-quality diamond, refined indium, ore that contained cobalt, ore that contained nickel, ore that contained platinum-group metals (PGM), ore that contained tungsten, ore that contained uranium, and sulfur (Apodaca, 2013; Bray, 2013; Jasinski, 2013; Kuck, 2013; Loferski, 2013; Olson, 2013; Shedd, 2013a, b; Tolcin, 2013; World Nuclear Association, 2013).

## Minerals in the National Economy

Metals and industrial minerals were produced in all 10 Provinces and 3 Territories of Canada. Crude oil and natural gas were produced in the Provinces of Alberta, British Columbia, Manitoba, Newfoundland and Labrador, Nova Scotia, Ontario, and Saskatchewan, and in the Northwest Territories.

In 2012, the construction industry accounted for 7% of Canada's real gross domestic product (GDP); the extraction of natural gas and petroleum, about 5.7%; and mining and quarrying, about 1.3%. Other mineral-related sectors that contributed to real GDP included primary metal manufacturing, which accounted for 0.9% of real GDP; support activities for mining and the extraction of crude oil and natural gas, 0.7%; and petroleum and coal products manufacturing, 0.4% (Statistics Canada, 2013c).

## Government Policies and Programs

In general, Provincial governments are responsible for mining activity within their respective Province. Provincial legislatures make laws concerning matters for which they have jurisdiction, which include exploration, development, production, and conservation and management of most nonrenewable natural resources. Parliament makes laws for the entire country with respect to matters assigned to it by the Canadian Constitution, and it has responsibility for the Territories. The Federal Government is responsible for the mineral activities of Federal Crown corporations; mineral activities on Federal lands and offshore; and, through the Canadian Nuclear Safety Commission, for uranium exploration, development, production, and waste disposal. Local or municipal governments promulgate laws on local matters, such as zoning regulations and the issuance of construction permits. The outcome of 2004 SCC 73—also known as *Haida Nation v. British Columbia (Minister of Forests)*, [2004] 3 S.C.R. 511—held that the Federal and Provincial governments (the Crown) had a duty to consult with Aboriginal groups (First Nations, Inuit, and Métis) with claims to lands and Aboriginal rights, prior to taking action (such as awarding exploration and road-construction permits) that may adversely affect those interests.

The Canadian Securities Administrators' National Instrument 43-101 sets the standards for all technical public disclosure for mineral projects. National Instrument 51-101 sets the standards for disclosure for oil and gas activities.

## Production

Output of tantalum ore was estimated to have increased by about 100% in 2012 compared with that of 2011 owing to a full year of production from the reopened Tanco Mine. The volume of production increased notably for several other mineral commodities in Canada in 2012. Output of ore containing bismuth increased by about 32%; direct-reduced iron production, by about 22%; primary refined lead, by about 19%; iron ore production, by about 18%; crude oil, by 13%; and industrial sand, by 11% (table 1).

With the closure of the last asbestos mine in Canada, asbestos production ended. A significant decrease in the mineral production volume in 2012 compared with that of 2011 also was noted for tellurium, which decreased by 99.8%, and selenium, which decreased by 99.6%. Other notable production decreases included that of cadmium ore, which decreased by 86%; ore containing antimony, by an estimated 40%; gemstones, by 38%; potash, by about 19%; secondary refined lead, by about 15%; salt, by 14%; and peat, by 13% (table 1).

## Structure of the Mineral Industry

Canada was one of the world's most active mining countries, and it had numerous mineral exploration, mine development, and mining projects underway. Table 2 lists the structure of the Canadian mineral industry by principal mineral commodities and major operating companies.

## Mineral Trade

In 2012, Canada's total domestic exports amounted to about \$463 billion,<sup>1</sup> which was about the same as in 2011. Exports of crude petroleum were valued at \$73 billion in 2012 compared with a revised \$69 billion in 2011, exports of natural gas were valued at about \$11 billion compared with a revised \$16 billion in 2011, and exports of refined petroleum products were valued at \$14 billion compared with a revised value of about \$11 billion in 2011. In 2012, exports of intermediate metal products were valued at \$43 billion compared with a revised \$48 billion in 2011, exports of industrial minerals were valued at about \$9 billion compared with \$10 billion in 2011, and exports of metal ores and concentrates were valued at about \$9.6 billion compared with a revised \$10 billion in 2011 (Statistics Canada, 2013a).

<sup>1</sup>Where necessary, values have been converted from Canadian dollars (CAD) to U.S. dollars (US\$) at the average exchange rates of CAD1.004=US\$1.00 for 2012 and CAD1.0118=US\$1.00 for 2011.

Canada's total domestic imports amounted to about \$475 billion in 2012 compared with a revised \$461 billion in 2011. Imports of intermediate metal products were valued at \$27 billion compared with \$28 billion in 2011, and imports of metal ores and concentrates were valued at about \$9.4 billion in 2012 compared with a revised \$10 billion in 2011. Imports of crude petroleum were valued at about \$31 billion in 2012 compared with a revised \$28 billion in 2011, and imports of refined petroleum products were valued at about \$10 billion compared with \$12 billion in 2011 (Statistics Canada, 2013b).

## Commodity Review

Additional information on other Canadian mineral commodities is available on the Web site for Natural Resources Canada's Canadian Minerals Yearbook at <http://www.nrcan.gc.ca/mining-materials/markets/canadian-minerals-yearbook/8360/>.

## Metals

**Aluminum.**—Production of primary aluminum decreased by about 7% in 2012 to 2.78 million metric tons (Mt) compared with about 2.99 Mt in 2011. Construction of Rio Tinto Alcan Inc.'s 38-pot AP60 pilot plant at Saguenay-Lac-Saint-Jean, Quebec, was completed in December. Testing of the 60,000-metric-ton-per-year (t/yr)-capacity smelter, which was designed to operate at 600 kiloamperes (kA), was expected to start in 2013, and initial production was expected to begin by midyear 2013. The new smelter's design capability to operate at higher amperage was expected to improve the facility's energy efficiency and labor productivity and to reduce emissions and operating costs compared with pre-baked and Söderberg technology smelters that operated at lower kiloamperes. Other smelters in Canada that used pre-baked technology operated at 70 kiloamperes (kA), 155 kA, 180 kA, and 300 kA (Rio Tinto Alcan Inc., 2013a, p. 3; 2013b).

Progress on the construction of Rio Tinto Alcan's \$2.7 billion Kitimat smelter expansion and modernization project slowed slightly in 2012, owing to world aluminum market conditions. Initial production was rescheduled to late 2014 from early 2014. Kitimat's older potlines were to be replaced by a 405-kA pre-baked technology facility, which would allow the smelter's production capacity to increase to 420,000 t/yr from about 184,000 t/yr. By yearend 2012, construction of the buildings that would house 384 new pots was underway (table 2; Rio Tinto Alcan Inc., 2013a, p. 5; Rio Tinto plc, 2013, p. 16).

**Antimony.**—In November, operations were suspended at the Beaver Brook underground antimony mine owing to depleted reserves. The mine was expected to close by January 2013. In Canada, antimony was also recovered as a coproduct from the output of several base-metal mines and as an antimony-lead alloy that was produced from recycled lead-acid batteries (VOCM.COM, 2012).

Limited antimony exploration activity in Canada included that of Atlantic Canada Antimony Inc., which was a subsidiary of Great Atlantic Resources Corp., on the Lansdowne antimony-gold-tungsten property in Nova Scotia. Atlantic Canada acquired the property in September. Great Atlantic Resources Corp. initiated a review of historical

exploration activity on the West Gore project, which was located near Halifax, Nova Scotia. Great Atlantic Resources acquired the West Gore project in September from Elk Exploration Ltd. Tri-Star Antimony Canada Inc., which was a subsidiary of TriStar Resources plc of the United Kingdom, evaluated the results of geochemical exploration work completed in 2011 on the Stanley claims in New Brunswick. Other antimony projects included the Bald Hill antimony prospect, in which Global Antimony Corp. agreed to acquire an 80% interest in May from Portage Minerals Inc. In October, however, Portage ended the agreement with Global Antimony. In July, the Little River antimony-gold prospect in Newfoundland was spun off to newly formed Mount Lake Minerals Inc. when the former owner (Mountain Lake Resources Inc.) was acquired by Marathon Gold Corp.

**Bauxite and Alumina.**—Orbite Aluminae Inc., formerly Exploration Orbite VSPA Inc., successfully completed the pilot plant phase of its high-purity alumina (HPA) project at Cap-Chat, Quebec, and began planning for commercial production of HPA (alumina with a grade of greater than 99.99%  $\text{Al}_2\text{O}_3$ ). In December, Orbite started to commission the HPA facility, and in January 2013, announced that the plant had produced 1 metric ton (t) of HPA. Orbite's facility processed claystone and mudstone that were mined from the Grand-Vallee property, which was located about 100 kilometers (km) east of Cap-Chat. HPA was expected to be used to produce industrial sapphire (which is a component of some types of light-emitting diodes). Orbite also planned to build a 540,000-t/yr-capacity metallurgical-grade alumina plant at Cap-Chat. Metallurgical-grade alumina contained more than 99%  $\text{Al}_2\text{O}_3$  by weight. In 2012, a revised preliminary economic assessment of the facility was completed. The metallurgical-grade alumina facility also was expected to be designed to recover 1.2 million metric tons per year (Mt/yr) of silica, 189,000 t/yr of high-purity hematite, about 28,000 t/yr of magnesium oxide, and about 1,000 t/yr of other oxides, which included gallium oxide, rare-earth oxides, and scandium oxide (Doran, and others, 2012, p. 1–2; Orbite Aluminae Inc., 2013, p. 1–8).

**Lead and Zinc.**—In 2012, Agnico-Eagle Mines Ltd. completed the transition to the deeper section of the LaRonde Mine in Quebec. Agnico-Eagle milled 2.358 Mt of ore and produced 38,637 t of zinc from the mine, which also produced copper, gold, and silver (Agnico-Eagle Mines Ltd., 2013, p. 37).

In 2012, Hudson Bay Mining and Smelting Co., Ltd., which was a subsidiary of HudBay Minerals Inc., produced 2.036 Mt of ore with an average grade of 4.64% zinc from its mines in Manitoba. The 777 Mine produced 1.5 Mt of ore, which averaged 4.16% zinc. The Trout Lake Mine, which was closed on June 29, produced 247,868 t of ore with an average grade of 3.65% zinc. The Chisel North Mine, which was closed on September 30, produced 135,808 t of zinc ore with an average grade of 8.78% zinc. The Lalor Mine, which was expected to reach commercial production levels in 2013, produced 72,293 t of ore in 2012 with an average grade of 11.83% zinc. The ore from all these mines also contained copper, gold, and silver (HudBay Minerals Inc., 2013, p. 16–17).

Ore from the 777 and the Trout Lake Mines was processed at the Flin Flon concentrator, which in 2012 produced 123,326 t of zinc concentrate that contained about 62,700 t of zinc. Ore from the Chisel North and Lalor Mines was processed at the Snow Lake concentrator, which in 2012 produced 33,275 t of zinc concentrate that contained about 17,200 t of zinc. The company's refinery at Flin Flon treated company-produced and purchased zinc concentrates to produce 100,697 t of refined zinc (HudBay Minerals Inc., 2013, p. 18–20).

Nyrstar N.V. of Belgium milled 517,000 t of ore at the Langlois Mine in Quebec, and produced 73,000 t of concentrate, which contained 39,000 t of zinc. At the Myra Falls Mine in British Columbia, Nyrstar milled 522,000 t of ore, and produced 59,000 t of zinc concentrate that contained 32,000 t of zinc, and 3,300 t of lead concentrate that contained 1,100 t of lead. Gold and silver also were contained in the concentrates from both mines (Nyrstar N.V., 2013, p. 26–30).

Teck Resources Ltd. milled 622,000 t of copper-zinc ore at the underground Duck Pond Mine in Newfoundland and Labrador in 2012, from which was recovered 19,500 t of zinc contained in concentrate. The mine was expected to produce about 15,000 t of zinc in concentrate in 2013. The development of the adjacent Boundary open pit was almost complete. The pit was scheduled to begin production in 2013 and to operate for about 2 years before the pit reserves were expected to be exhausted (Teck Resources Ltd., 2013, p. 16; undated).

Teck's Trail operations in British Columbia processed domestic and imported concentrate to produce 284,200 t of refined zinc and 88,900 t of refined lead in 2012, which was 2.4% less and about 2.7% more than that produced in 2011, respectively. The decrease in refined zinc was attributed to less-than-optimal operating performance of the zinc electrolytic cell house in the fourth quarter. The increase in refined lead was attributed to higher lead grade in processed concentrate and higher Kivcet furnace feed rates in 2012. In December, the U.S. District Court—Eastern District of Washington ruled on a lawsuit, originally filed in 2004, that Teck was subject to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as the Superfund law, and liable for action to recover past or future response costs for the remediation of metals in the Upper Columbia River Superfund site in Washington State that extended along the Columbia River from the United States-Canada border to the Grand Coulee Dam. The metals, which may have originally been contained in heavy-metal-containing slag that was discharged into the Columbia River from the Trail smelter and refinery facility in Canada (which was located about 17 km upstream from the United States-Canada border) between 1930 and 1955, were found downstream in the Upper Columbia River Superfund site. Teck had been working a remedial investigation/feasibility study with the U.S. Environmental Protection Agency since 2006 (U.S. District Court—Eastern District of Washington, 2012, p. 1, 5, 8, 44; Teck Resources Ltd., 2013, p. 7, 21).

Jacobs Engineering Group Inc. of the United States planned to complete the construction of the No. 1 acid plant for Teck's Trail operations in 2013. The new sulfuric acid plant, which was to replace two older acid plants at the Trail facility, was expected

to improve operational reliability and to reduce maintenance costs. Teck also continued work on the No. 4 furnace project, which was to add two new furnaces and a baghouse to the existing lead facilities. The furnaces were expected to start operation in 2014, and to increase the Trail facility's capacity to recycle consumer electronic scrap and waste (Teck Resources Ltd., 2012).

In January, Trevali Mining Corp. initiated trial mining at the Halfmile Mine in New Brunswick. In November, Trevali acquired Maple Minerals Corp. and Maple's 3,000-metric-ton-per-day (t/d)-capacity Caribou Mine and mill complex in New Brunswick. Trevali proposed to mill the ore from the Halfmile Mine at the Caribou mill to produce concentrates of zinc, lead-silver, and copper-gold (Canadian Mining Journal, 2012).

The Brunswick Mine, which was operated by Xstrata Zinc Canada (which was a division of Xstrata Canada Corp.), produced 2.8 Mt of copper-lead-silver-zinc sulfide ore in 2012, which was about a 7.1% decrease from that of 2011. The grade of silver in the ore produced in 2012 was 92 g/t, which was about a 5.2% decrease compared with the grade of silver in ore that was mined in 2011; the zinc grade of the ore decreased to 7.6% zinc from 7.9% zinc, and the lead content of the ore decreased to 3% lead from 3.1% lead. In 2012, Xstrata Zinc Canada announced that the Brunswick Mine would close by no later than March 2013 owing to depleted reserves. The Brunswick smelter at Belledune produced 74,486 t of refined lead, which was about a 2.7% decrease compared with that of 2011. The CEZ refinery produced 263,697 t of zinc metal in 2012, which was about the same as that produced in 2011, and also produced 408,849 t of sulfuric acid in 2012. The CEZ refinery processed a significant amount of concentrate from the Brunswick Mine. In 2013, the refinery planned to replace the Brunswick Mine ore with ore from other unspecified mines and anticipated an increased level of impurities in the refinery feed. In December, the CEZ refinery announced a project to increase the facility's capacity to remove silica from the refinery feed. A feasibility study was expected to be completed in 2013 (Xstrata Zinc Canada, 2012; Noranda Income Fund, 2013, p. 11–12; Xstrata plc, 2013, p. 12).

In early 2012, Overland Resources Ltd. of Australia completed an updated evaluation of its plans to develop the Yukon Base Metal Project, which was located north of Ross River, Yukon Territory. Overland proposed to develop the adjacent Andrew and Darcy deposits as separate open pit operations, which were to supply ore to a 1-Mt/yr-capacity mill at the mine site. The mill was projected to produce about 95,000 t/yr of zinc concentrate with an average grade of 58% zinc and about 28,000 t/yr of lead concentrate with an average grade of 62% lead. The concentrates were expected to be trucked to Skagway, Alaska. Mine permitting had been scheduled to begin in 2012 and initial production was to start by 2015. In June, however, the company announced that it was suspending mine permitting work owing to the results of the updated project development study and the uncertainty in global financial markets. The company anticipated that it could maintain the claims that contain the Andrew and the

Darcy deposits until 2026 in order to await improved economic conditions (Overland Resources Ltd., 2012).

The Sä Dena Hes Operating Corp. continued work on the permanent closure of the Sä Dena Hes Mine in Yukon Territory. The mine, which had begun production in August 1991, was placed on care-and-maintenance status owing to low metal prices in December 1992. In 1994, the Mount Hundere Joint Venture (Curragh Resources Ltd., 80% interest, and Hillsborough Resources Ltd., 20% interest) sold the facility to the Sä Dena Hes Operating Corp., which was a joint venture of Pan Pacific Metal Mining Corp., 50% interest; Teck Metals Ltd., 25%; and Teck Resources Ltd., 25%. The mine never reopened. A decommissioning and reclamation plan for the mine was submitted in 2000 and updated in 2006, 2010, and 2012 (Sä Dena Hes Operating Corp., 2012, p. 1-2, 2-1–2-2).

Selwyn Chihong Mining Ltd., which was a joint venture of Chihong Canada Mining Ltd. and Selwyn Resources Ltd. expected to receive a completed feasibility study of the Selwyn lead-zinc project in the Yukon Territory in March 2013. Selwyn Resources also updated the preliminary economic assessment report for the redevelopment of the ScoZinc Project in Nova Scotia, which included the Scotia Mine that had been operated by several companies from 1979 to 1981, from 1990 to 1991, and from 2007 to 2008. The mine was placed on care-and-maintenance status by Acadian Mining Corp in 2009 and sold to Selwyn in 2011.

Tamerlane Ventures Inc. of the United States continued the development of its Pine Point lead-zinc project. Cominco Ltd. previously had mined several lead-zinc deposits at Pine Point between 1965 and 1987. Subject to funding, Tamerlane proposed to begin production in 2015 from the underground R-190 deposit, which is located about 40 km east of the railhead at Hay River, Northwest Territories, and in 2017 from the N-204 open pit, which is located about 120 km east (by road) of Hay River. Mined ore would be processed in an 1,800-t/d-capacity dense-media-separation and flotation plant, and the concentrate would be trucked to Hay River. The R-190 deposit had reserves of 1.01 Mt at average grades of 10.98% zinc and 5.28% lead. The N-204 deposit had reserves of 12.8 Mt at average grades of 2.6% zinc and 0.7% lead (Tamerlane Ventures Inc., 2013, p. 4–5, 10, 13–14, 17–18).

The joint venture of Xstrata Zinc Canada (65% interest) and Donner Metals Ltd. (35% interest) continued the development of the Bracemac-McLeod Mine, which was located in central Quebec. In September, the joint venture began to stockpile ore that was recovered during mine development. The mine was expected to start commercial production in 2013. The Bracemac-McLeod ore would be processed at the Matagami mill; in 2012, the mill was using ore from Xstrata's Perseverance Mine, which was expected to close in mid-2013 (Donner Metals Ltd., 2012, p. 4, 7–8).

In November 2011, Horsehead Corp. of the United States acquired Zochem, Inc. from Hudson Bay Mining and Smelting Co. Zochem, which was located in Brampton, Ontario, produced zinc oxide from purchased special-high-grade zinc metal. In 2012, Horsehead announced a \$15 million expansion of Zochem's capacity to about 65,300 t. In 2012, Newalta Corp. reported that the volume of lead that the company sold

decreased to 64,700 t from 71,700 t in 2011. NovaPb Inc., which was a subsidiary of Newalta, recovered lead at the Ville Sainte Catherine lead-acid battery recycling facility (Horsehead Corp., 2012; Newalta Corp., 2013).

**Niobium.**—In 2012, the niobium content of ferroniobium production from the Niobec facility in Quebec increased to 4,707 t compared with 4,632 t in 2011. Mine output, which increased by 3% to 2,155,000 t of ore compared with 2,087,000 t, was accompanied by a lower grade of niobium oxide (Nb<sub>2</sub>O<sub>5</sub>) contained in ore (0.55% in 2012 compared with 0.57% in 2011). A prefeasibility study of an expansion of the mine was completed in 2012. The study proposed that the underground mine be converted to a block caving operation from the current method of open stope mining. IAMGOLD subsequently initiated a feasibility study of the expansion, which was expected to be completed in 2013. An expansion of the capacity of the surface processing facility to 10 Mt/yr also was proposed. In addition to being subject to a positive feasibility study, the expansion program would require additional Government permits and a joint-venture partner to assist in funding the project (IAMGOLD Corp., 2013a, inside front cover, 9; 2013b, p. 1, 8–10; 2013c, p. 17).

In 2012, Niocan Inc. continued its efforts to secure a Certificate of Authorization from the Ministère du Développement durable, de l'Environnement, de la Faune et des Parcs of the Province of Quebec. The original application for the certificate, which was required to start development of an underground mine at Oka, Quebec, was submitted in 2000.

PhosCan Chemical Corp. continued metallurgical testing of samples from the Martison phosphate deposit. Encouraging results of the tests, which had begun in 2010, indicated that recovery of niobium from the Martison phosphate could be economically viable (PhosCan Chemical Corp., 2013a).

**Silicon Metal.**—In June, Globe Specialty Metals Inc. of the United States acquired Bécancour Silicon Inc.'s 51% equity interest in the Québec Silicon Ltd. joint venture. Dow Corning Corp. of the United States held the remaining 49% interest. Québec Silicon operated a 47,000-t/yr-capacity silicon metal plant in Bécancour, Quebec. Also in June, Grupo FerroAtlántica S.A. of Spain acquired the solar-grade silicon plant that was owned by Timminco Solar, which was a bankrupt subsidiary of Bécancour Silicon. The plant remained on care-and-maintenance status (Globe Specialty Metals Inc., 2012; Thomson Reuters, 2012; Timminco Ltd., 2012).

**Tungsten.**—North American Tungsten Corporation Ltd. milled about 340,900 t of ore at the CanTung Mine, and produced a concentrate that contained about 2,194 t of tungsten. The facility also recovered about 500 t of copper in 2012. North American Tungsten continued a surface and underground drilling program to increase the mine's reserves and continued the evaluation of a project to recover tungsten from the mine's tailings. The Yukon Environmental and Socio-economic Assessment Board produced a draft screening report on North American Tungsten's Mactung tungsten project. North American Tungsten expected to continue discussions on the project with the local community and governments. The company expected that joint-venture partners would be required to fund the

development of the Mactung project (North American Tungsten Corporation Ltd., 2012, p. 3, 5–7; 2013, p. 3–5).

In May, Northcliff Resources Ltd. released an updated mineral resource estimate for the Sisson tungsten-molybdenum project in New Brunswick, and in June, Northcliff acquired the remaining 30% equity interest in the Sisson project from Geodex Minerals Ltd. A feasibility study of the Sisson project was expected to be completed in 2013. Other exploration projects that had some tungsten mineralization included that of Adex Mining Inc. on the Mount Pleasant tin-indium and tungsten-molybdenum property in New Brunswick, Azimut Exploration Inc. on the Rex South prospect in Quebec, Playfair Mining Ltd. on the Grey River prospect on Newfoundland Island, and Sultan Minerals Inc. on the Jersey-Emerald molybdenum-tungsten property in British Columbia (Northcliff Resources Ltd., 2012a, b).

### **Industrial Minerals**

**Asbestos.**—For much of 2012, LAB Chrysotile, Inc., which suspended operations at the underground Lac Amiante Mine in October 2011 and declared bankruptcy in December 2011, sought funding to reopen the mine. In September 2012, the Government announced a change in Federal policy—Canada would cease to object to continued international attempts to place asbestos on a list of hazardous substances under the Rotterdam Convention, which would restrict the use of and the shipment of asbestos. In October, LAB Chrysotile announced that the mine would be closed (Canadian Broadcasting Corp., 2012; Radio Canada, 2012).

For most of 2012, an international investment group continued its efforts to secure a \$57 million (CAN\$58 million) loan guarantee from the Province of Quebec. The loan would have allowed the Jeffrey Mine to resume work on a proposed 180,000-t/yr-capacity underground extension. A change of Provincial government in September, however, resulted in the cancellation of the loan. The mine was expected to be closed permanently (Industrial Minerals, 2011; Rakobowchuk, 2012).

**Diamond.**—Canada's diamond production in 2012 was 10,451,000 carats, which was a decrease from the 10,795,000 carats produced in 2011. The value of produced diamond in 2011 was \$2 billion compared with about \$2.5 billion in 2011 (Natural Resources Canada, 2012, 2013).

The joint venture of Diavik Diamond Mines Inc., which was a subsidiary of Rio Tinto plc (60% interest) and Harry Winston Diamond Limited Partnership (40%), increased output to about 7.2 million carats, which was about an 8% increase compared with 2011 production. The Diavik mines accounted for about 69% of Canada's diamond production in 2012. The transition to underground mining from open pit operations was completed in 2012. In March, Rio Tinto announced a review of its options for its diamond business, including divestment of its interest. In April, Kohlberg Kravis Roberts & Co. of the United States proposed to acquire and combine BHP Billiton and Rio Tinto's diamond operations in Canada (table 1; Rapaport Information Services, 2012; Rio Tinto plc, 2013, p. 27, 49).

The Ekati Mine, which is located in the Northwest Territories, recovered diamond from several kimberlites. Production operations at each individual surface pit or underground mine were relatively short lived. In 2012, the majority owner BHP Billiton Canada, which was a subsidiary of BHP Billiton Ltd. of Australia, continued work on expanding and deepening the Misery open pit at Ekati, which had been mined until 2005. The reconfigured Misery pit was expected to resume ore production in 2015, and be mined out in 2017. In 2012, about 1,513,000 carats was recovered at Ekati compared with 1,679,000 carats in 2011. The mine accounted for about 14% of Canada's diamond production in 2012 (BHP Billiton Ltd., 2012, p. 3; 2013a, p. 49; 2013b, p. 3).

In 2011, BHP initiated a review of its options for its diamond business, including divestment of its interest. In 2012, BHP agreed to sell its 80% interest in the Core Zone joint venture, which included the Ekati Mine, and its 58.8% interest in the Buffer Zone exploration joint venture to Harry Winston Diamond Corp. The sale was expected to be completed in 2013 (BHP Billiton Ltd., 2012, p. 3; 2013b, p. 3).

De Beers Canada Inc. processed about 4 Mt of ore and recovered 1.56 million carats of diamond in 2012, which was a 6% decrease compared with that of 2011. Production of diamond at the Snap Lake underground mine was about 870,000 carats, and about 690,000 carats was produced from the Victor open pit mine (De Beers Group, 2013, p. 10, 22).

**Phosphate Rock.**—Agrium Inc. of Canada, expected that it would exhaust the economic reserves of phosphate rock at the Kapuskasing Mine in Ontario in early 2013. In September, LNS Services (a division of Lexspan L.L.P.) began construction of facilities in Vancouver for Agrium and Neptune Bulk Terminals (Canada) Inc. The terminal was expected to handle shipments of phosphate rock, which would be imported from Morocco (Agrium Inc., 2013, p. 25).

Ressources d'Arianne Inc. released an updated prefeasibility study of the production of 3 Mt/yr of apatite concentrate from the Lac à Paul prospect, which was located in Quebec, and initiated a feasibility study of the prospect that was expected to be completed in 2013. Ressources d'Arianne also initiated exploration of the Chute des Passes property and the Duhamel prospect (Ressources d'Arianne Inc., 2013, p. 13, 27).

Glen Eagle Resources Inc. initiated a drilling program on the Moose Lake property in Quebec in 2012 and planned additional drilling on the Lac Lisette prospect in 2013. In 2012, Nuinco Resources Ltd. reported the results of metallurgical testing of samples from the Prairie Lake phosphate project, which was located near Marathon, Ontario. Tests resulted in the production of commercial-grade phosphate concentrate [greater than 30% phosphorus (P<sub>2</sub>O<sub>5</sub>)] (Nuinco Resources Ltd., 2012).

In 2012, PhosCan Chemical Corp. of Canada's work on the development of the Martison phosphate project primarily was focused on the recovery of a niobium coproduct from the waste stream that was expected to be generated by the proposed phosphate mine and fertilizer facility. Substantial work (such as definition drilling of the deposit and road construction) on the development of the Martison phosphate deposit, which is located near Hearst, Ontario, had been deferred since December 2008 owing originally to the financial market and industry conditions. Prospecting activity for

phosphate rock in Quebec included that of Jourdan Resources Inc., which worked on the Dissimieux Lake claims, and Radisson Mining Resources Inc., which worked on the Lac Gouin SSO prospect (PhosCan Chemical Corp., 2013a, b).

Innophos Canada Inc. operated a food-grade, liquid and powdered phosphate-based chemical facility in Ontario. Bain Capital LLC had acquired the specialty phosphate plant from Rhodia S.A. of France in 2004 and subsequently spun off Innophos as a public company in 2006 (Innophos Canada Inc., undated).

**Wollastonite.**—The Ministry of Northern Development accepted Canadian Wollastonite's mine closure plan in December, and mining of wollastonite started at the St. Lawrence deposit, which was located in the city of Kingston and the municipality of Leeds and the Thousand Islands, Ontario. Work on the most recent development proposal for the project had started in 2001. Canadian Wollastonite, which was a division of 2005948 Ontario Ltd., expected to ramp up to full commercial production in 2013. In addition to wollastonite, the mine output was expected to eventually include a diopside coproduct (Patel, 2013; Sangster and others, 2013, p. 17–18).

## Outlook

Canada's mineral industry is primarily export oriented, and the United States is the main destination for exported Canadian minerals. Canada's continuing challenges in the mineral sector include globalization of the industry, especially competition from developing countries with mineral resources that were less costly to develop. The Canadian mineral industry is well positioned to expand, based on its mineral resource base and its access to the markets of China, Europe, Japan, and North America.

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TABLE 1  
CANADA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2008	2009	2010	2011	2012 <sup>P</sup>	
METALS						
Aluminum:						
Alumina, aluminum oxide (Al <sub>2</sub> O <sub>3</sub> ), smelter grade	1,370,000	1,125,000	1,301,000	1,363,000	1,397,000	
Metal:						
Primary	3,120,148	3,030,269	2,963,210	2,987,964	2,780,556	
Secondary <sup>c</sup>	50,000	40,000	40,000	50,000	40,000	
Total <sup>c</sup>	3,170,000	3,070,000	3,000,000	3,040,000	2,820,000	
Antimony <sup>e,3</sup>	132 <sup>4</sup>	64 <sup>4</sup>	9,000	10,000	6,000	
Bismuth:						
Mine output, Bi content <sup>3,5</sup>	71	86	91	92	121	
Metal, refined <sup>c</sup>	150	150	150	150	145	
Cadmium:						
Mine output, Cd content <sup>3</sup>	365	376	2,796	1,766 <sup>r</sup>	239	
Metal, refined	1,409	1,299	1,357	1,240 <sup>r</sup>	1,286	
Cobalt:						
Mine output, Co content <sup>3,6</sup>	8,953	3,919	4,636 <sup>r</sup>	6,836 <sup>r</sup>	6,625	
Metal, refined	5,637	4,918	4,711	6,038	5,981	
Copper:						
Mine output, Cu content <sup>3</sup>	607,957	484,605	522,172	568,779 <sup>r</sup>	578,586	
Metal:						
Smelter:						
Primary, blister	443,710	316,510	318,006	304,724	287,051	
Secondary	41,777	29,733	31,815	25,214	23,362	
Total	485,487	346,243	349,821	329,938	310,413	
Refined:						
Primary <sup>c</sup>	412,000	311,000	290,000	244,000	246,000	
Secondary <sup>c</sup>	30,000	25,000	30,000	30,000	30,000	
Total	442,050	335,896	319,619	273,761	275,990	
Gold, mine output, Au content	kilograms	96,501	97,235	102,693	102,624 <sup>r</sup>	105,270
Indium, metal <sup>c</sup>	do.	57,000	50,000	67,000	64,000	65,000
Iron and steel:						
Iron ore and concentrate:						
Gross weight	thousand metric tons	32,102	31,704	37,001	33,573	39,457
Fe content <sup>c</sup>	do.	20,300	20,000	23,300	21,000	25,000
Metal:						
Pig iron <sup>7</sup>	do.	8,770	5,000	7,666	7,323	7,654
Direct-reduced iron <sup>7</sup>	do.	690	300	600	262 <sup>r</sup>	319
Ferroalloys, electric arc furnace: <sup>e</sup>						
Ferrosilicon	do.	60	26	37	31	32
Silicon metal	do.	50	30	30	30	30
Ferroniobium	do.	7	7	7	8	8
Ferrovandium	do.	1	1	1	1	1
Total	do.	110	90	90	70	71
Crude steel	do.	15,100 <sup>e</sup>	9,245	13,003	12,891	13,507
Lead:						
Mine output, Pb content		99,810	68,839	64,845	67,505 <sup>r</sup>	61,224
Metal, refined:						
Primary		105,526	101,484	105,836	112,531	133,495
Secondary		153,568	157,370	167,101	170,059 <sup>r</sup>	144,570
Total		259,094	258,854	272,937	282,589 <sup>r</sup>	278,065
Magnesium, metal, primary <sup>c</sup>		2,000	--	--	--	--
Molybdenum, mine output, Mo content		8,602	8,721	8,648	8,674 <sup>r</sup>	9,063
Nickel:						
Mine output, Ni content <sup>3</sup>		259,651	135,037	160,063	219,025 <sup>r</sup>	204,461
Refined <sup>8</sup>		167,732	116,909	105,413	142,445	139,800

See footnotes at end of table.

TABLE 1—Continued  
CANADA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2008	2009	2010	2011	2012 <sup>p</sup>
METALS—Continued					
Niobium (columbium) and tantalum:					
Pyrochlore concentrate:					
Gross weight <sup>e</sup>	13,200	12,900	13,200	13,800	14,000
Nb content of ferroniobium	4,383	4,330	4,419	4,632	4,707
Tantalite concentrate:					
Gross weight <sup>e</sup>	150	110	--	40 <sup>r</sup>	80
Ta content (Ta <sub>2</sub> O <sub>5</sub> )	49	30	--	10 <sup>r,c</sup>	20 <sup>c</sup>
Nb content	6 <sup>e</sup>	5	--	--	--
Platinum-group metals, mine output:					
Palladium <sup>e</sup>	14,700	7,000	6,200	14,300	13,100
Platinum <sup>e</sup>	8,500	4,000	3,500	8,000	7,500
Others (iridium/rhodium/ruthenium) <sup>e</sup>	1,000	400	400	800	750
Total	24,173	11,376	10,053	23,595 <sup>r</sup>	21,337
Selenium <sup>9</sup>	156,000	173,000	79,000	35,000	144,000 <sup>*a</sup>
Silver:					
Mine output, Ag content	755,103	617,777	591,482	661,089 <sup>r</sup>	705,392
Refined	1,324,499	1,287,659	1,640,612	1,555,855	1,675,998
Tellurium <sup>5,9</sup>	19,000	16,000	8,000	6,000	11
Titanium, Sorelslag <sup>e, 10</sup>	1,000,000	765,000	1,090,000	878,000	900,000
Tungsten, mine output, W content <sup>5</sup>	2,277	1,964	420	2,368	2,194
Zinc:					
Mine output, Zn content	750,502	699,145	649,065	622,600 <sup>r</sup>	641,260
Metal, refined, primary	764,310	685,504	690,152	662,151	648,614
INDUSTRIAL MINERALS					
Asbestos <sup>e</sup>	160,000	150,000	100,000	50,000	--
Barite <sup>5</sup>	12,000	15,000	22,000	22,000	22,000
Cement, hydraulic	13,672	10,985	12,431	12,001	12,465
Clay and clay products <sup>11</sup>	\$187,768	\$135,613	\$156,554	\$139,595	\$135,921
Diamond	14,803	10,946	11,773	10,795	10,451
Diatomite <sup>e</sup>	10,000	8,000	8,000	8,000	8,000
Gemstones, includes amethyst and jade	67	49	22	42	26 <sup>c</sup>
Graphite <sup>e</sup>	27,000	15,000	20,000	25,000	24,000
Gypsum and anhydrite <sup>12</sup>	5,740	3,540	2,717	2,555	2,550 <sup>c</sup>
Lime <sup>5</sup>	2,069	1,601	1,913	1,959	1,960 <sup>c</sup>
Lithium, spodumene <sup>e</sup>	22,000	10,000	--	--	--
Magnesite, dolomite, brucite <sup>e</sup>	140,000	140,000	150,000	150,000	150,000
Mica, scrap and flake <sup>e</sup>	17,000	18,000 <sup>r</sup>	19,000 <sup>r</sup>	21,000 <sup>r</sup>	22,000
Nepheline syenite	734	513	581	610	592 <sup>c</sup>
Nitrogen, N content of ammonia	3,920,000	3,611,000	3,620,000	3,946,000	3,942,000
Peat	1,151	1,131	1,262	1,122	973 <sup>c</sup>
Phosphate rock, P <sub>2</sub> O <sub>5</sub> content <sup>e</sup>	210	200	210	200	200
Potash, K <sub>2</sub> O equivalent	10,455	4,318	9,788	11,055	8,984
Salt	14,386	14,651	10,537	12,625	10,845
Sand and gravel:					
Construction	239,646	216,170	205,804	206,974	225,208
Industrial (silica, quartz) <sup>5, 12</sup>	1,979	1,296	1,171	1,431	1,593
Sodium compounds, including sodium sulfate, natural <sup>e, 13</sup>	200	210	210	200	200
Stone <sup>12, 14</sup>	145,825	135,895	147,643	167,716	151,838
Sulfur, byproduct:					
Metallurgy	1,148	890	900 <sup>c</sup>	609	638
Petroleum	7,008	6,577	6,355	5,914	5,545
Total	8,156	7,467	7,260	6,523	6,183
Talc, pyrophyllite, soapstone <sup>e</sup>	70	44	96	147	154

See footnotes at end of table.

TABLE 1—Continued  
CANADA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2008	2009	2010	2011	2012 <sup>p</sup>	
MINERAL FUELS AND RELATED MATERIALS						
Carbon black <sup>e</sup>	180,000	120,000	130,000	130,000	130,000	
Coal, run of mine:						
Bituminous and subbituminous <sup>e</sup>	thousand metric tons	57,800 <sup>4</sup>	52,500	57,000	57,100	57,000
Lignite <sup>e</sup>	do.	9,900 <sup>4</sup>	10,400	11,000	10,000	10,000
Total	do.	67,749	62,935	67,876	67,114	66,563
Coke, high-temperature <sup>e</sup>	do.	3,040 <sup>4</sup>	2,800	3,000	3,050	3,100
Natural gas:						
Gross (excluding gas flared or recycled)	million cubic meters	208,653	196,168	189,589	188,849	185,000
Marketed	do.	157,949	145,133	144,378	145,285	141,274
Natural gas liquids: <sup>e</sup>						
Gas plant liquids	thousand 42-gallon barrels	182,000 <sup>4</sup>	174,000 <sup>4</sup>	168,000	172,000	170,000
Pentanes plus	do.	55,000 <sup>4</sup>	51,900 <sup>4</sup>	46,000	45,000	44,000
Condensate	do.	11,200 <sup>4</sup>	9,500 <sup>4</sup>	8,600	8,400	8,000
Total	do.	248,200 <sup>4</sup>	235,400 <sup>4</sup>	223,000	225,000	220,000
Petroleum: <sup>e</sup>						
Crude <sup>15</sup>	do.	934,000 <sup>4</sup>	933,000 <sup>4</sup>	990,000	1,050,000	1,190,000
Refinery products:						
Propane and butane	do.	21,339 <sup>4</sup>	20,400 <sup>4</sup>	21,600	20,300	18,000
Gasoline:						
Aviation	do.	700	550	500	400	300
Motor	do.	258,000	262,000	262,000	278,000	251,000
Petrochemical feedstocks	do.	30,000	20,000	34,000	28,000	30,000
Jet fuel	do.	32,000	30,000	30,000	37,000	28,000
Kerosene	do.	11,000	9,900	5,000	4,000	3,500
Diesel and light fuel oil	do.	226,000	220,000	225,000	210,000	230,000
Lubricants including grease	do.	8,000	7,000	7,200	6,900	8,100
Heavy fuel oil	do.	52,000	42,000	44,000	31,000	48,000
Asphalt	do.	26,000	25,000	27,000	26,000	27,000
Petroleum coke	do.	10,000	9,000	8,500	11,000	8,000
Other petroleum products	do.	30,000	35,000	34,000	19,000	26,000
Refinery fuel <sup>16</sup>	do.	36,000	36,000	35,000	31,000	27,000
Refinery gains and losses	do.	5,500	5,100	5,200	5,600	-24,000
Total	do.	750,000	720,000	740,000	710,000	681,000
Uranium oxide, U content		9,001	10,176	9,518	9,145 <sup>r</sup>	8,985

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. <sup>p</sup>Preliminary. <sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Table includes data available through January 31, 2014.

<sup>2</sup>In addition to the commodities listed, aluminum hydroxide Al(OH)<sub>3</sub> (hydrate), cesium, ilmenite, ore containing indium, pumice, silicon metal, and zeolites are produced, but available information is inadequate to estimate output.

<sup>3</sup>Metal content of concentrates produced.

<sup>4</sup>Reported.

<sup>5</sup>Producers' shipments and quantities used by producers.

<sup>6</sup>Cobalt content of all products derived from Canadian ores, which include cobalt oxide shipped to the United Kingdom for further processing and nickel-cobalt matte shipped to Norway for refining.

<sup>7</sup>Source of iron and steel data: World Steel Association (Worldsteel).

<sup>8</sup>Nickel contained in products of smelters and refineries in forms that are ready for use by consumers. Natural Resources Canada has revised all refined nickel figures to conform with International Nickel Study Group (INSG) guidelines.

<sup>9</sup>Includes metal refined from imports and secondary sources. Also includes metal content of exported concentrates.

<sup>10</sup>Refined Sorelslag® has been upgraded to 95% titanium oxide.

<sup>11</sup>Includes bentonite products from common clay, fire clay, stoneware clay, and other clays. Values are in current Canadian dollars. If necessary, values can be converted from Canadian dollars (CAN\$) to U.S. dollars (US\$) at an average rate of CAN\$1.074=US\$1.00.

<sup>12</sup>Shipments; excludes shipments to Canadian cement, clay, and lime plants.

<sup>13</sup>Excludes byproduct production from chemical plants.

<sup>14</sup>Crushed, building, ornamental, paving, and similar stone.

<sup>15</sup>Includes synthetic crude from oil shale and (or) tar sands.

<sup>16</sup>Represents total production of still gas, which includes a small amount sold.

\*Correction posted on May 21, 2015.

TABLE 2  
CANADA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
<b>Alumina:</b>			
Smelter grade	Rio Tinto Alcan Inc. (Rio Tinto Group, 100%)	Vaudreuil refinery, Jonquiere, Quebec	1,400.
Specialty grade	do.	do.	55.
Do.	Axens Canada Specialty Aluminas Inc. (Axens S.A., 100%)	Alumina plant, Brockville, Ontario	18.
<b>Aluminum</b>			
Do.	Alcoa Ltd. (Alcoa Inc., 100%)	Smelter in Baie-Comeau, Quebec	385.
Do.	Aluminerie Alouette Inc. (Rio Tinto Alcan Inc., 40%; Aluminium Austria Metall Québec, 20%; Hydro Aluminum, 20%; Marubeni Québec Inc., 13.33%; Société générale de financement du Québec, 6.67%)	Smelter in Sept-Iles, Quebec	590.
Do.	Aluminerie de Bécancour Inc. (Alcoa Inc., 75%, and Rio Tinto Alcan Inc., 25%)	Smelter in Beacancour, Quebec	433.
Do.	Aluminerie Lauralco Inc. (Alcoa Inc., 100%)	Smelter in Deschambault, Quebec	260.
Do.	Rio Tinto Alcan Inc. (Rio Tinto Group, 100%)	Smelter in Alma, Quebec	438.
Do.	do.	Smelter in Arvida, Jonquiere, Quebec	176.
Do.	do.	Smelter in Grande-Baie, Quebec	224.
Do.	do.	Smelter in Kitimat, British Columbia	184. <sup>2</sup>
Do.	do.	Smelter in Laterriere, Quebec	239.
Do.	do.	Smelter in Shawinigan, Quebec	102.
<b>Antimony:</b>			
Ore	Beaver Brook Antimony Mine Inc. (Hunan Nonferrous Metals Corp., 100%)	Beaver Brook Mine, 43 kilometers southwest of Glenwood, Newfoundland	180.
Do.	Xstrata Zinc	Brunswick Mine, about 25 kilometers southeast of Bathurst, New Brunswick	NA.
Metal	do.	Belledune lead smelter, Belledune, New Brunswick	NA.
<b>Asbestos, fiber</b>			
Do.	Jeffrey Mine Inc.	Jeffrey Mine, <sup>3</sup> Asbestos, Quebec	15.
Do.	LAB Chrysotile, Inc.	Lac d'Amiante Mine, <sup>3</sup> Thetford Mines, Quebec	160.
<b>Bismuth ore</b>			
Ore	Xstrata Zinc	Brunswick Mine, about 25 kilometers southeast of Bathurst, New Brunswick	NA.
Metal	do.	Belledune lead smelter, Belledune, New Brunswick	NA.
Do.	Teck Resources Ltd.	Trail smelter and refinery complex, Trail, British Columbia	300.
<b>Cement</b>			
Do.	Ciment Québec Inc.	Saint-Basile, Quebec	1,571.
Do.	Colacem Canada Inc. (Colacem S.p.A.)	Grenville-sur-la-Rouge, Quebec	300.
Do.	ESSROC Canada Inc. (Italcementi Group)	Picton, Ontario	792.
Do.	Federal White Cement Ltd.	Woodstock, Ontario	544.
Do.	Holcim (Canada) Inc. (Holcim AG)	Joliette, Quebec	1,475.
Do.	do.	Mississauga, Ontario	2,000.
Do.	Lafarge Canada Inc. (Lafarge North America)	Bath, Ontario	1,176.
Do.	do.	Grinding plant, Stoney Creek, Ontario	814.
Do.	do.	Exshaw, Alberta	1,422.
Do.	do.	Kamloops, British Columbia	324.
Do.	do.	Richmond, British Columbia	1,319.
Do.	do.	St. Constant, Quebec	1,157.
Do.	do.	Brookfield, Nova Scotia	621.
Do.	Lehigh Inland Cement Ltd. (HeidelbergCement Group)	Edmonton, Alberta	1,380.
Do.	do.	Delta, British Columbia	1,356.
Do.	St. Marys Cement (Canada) Inc. (Votorantim Cimentos S.A.)	Bowmanville, Ontario	1,800.
Do.	do.	St. Marys, Ontario	645.

See footnotes at end of table.

TABLE 2—Continued  
CANADA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
<b>Coal:</b>			
<b>Bituminous:</b>			
Coking	Grande Cache Coal Corp. (Marubeni Corp. and Winsway Coking Coal Holdings Ltd.)	Grande Cache Mine, near Grande Cache, Alberta	2,000.
Do.	Peace River Coal Limited Partnership (Anglo American plc, 100%)	Trend open pit mine, near Tumbler Ridge, British Columbia	2,000.
Do.	Teck Coal Partnership (Teck Resources Ltd., 100%)	Fording River open pit mine, near Elkford, British Columbia	8,900.
Do.	do.	The McLeod and the Prospect open pits, Cardinal River operations, near Hinton, Alberta	2,200.
Do.	do.	Coal Mountain open pit mine at Sparwood, British Columbia	2,700.
Do.	do.	Line Creek Mine, near Sparwood, British Columbia	3,200.
Do.	Teck Coal Partnership (Teck Resources Ltd., 95%; Nippon Steel Corp., 2.5%; POSCO Canada Ltd., 2.5%)	Elkview open pit mine, near Sparwood, British Columbia	6,000.
Do.	Teck Coal Partnership (Teck Resources Ltd., 80%, and POSCO Canada Ltd., 20%)	Greenhills open pit mine, near Elkford, British Columbia	5,100.
Do.	Western Canadian Coal Corp. (Walter Energy, Inc.)	Wolverine Creek open pit mine, near Tumbler Ridge, British Columbia	3,000.
Do.	do.	Brule Mine, near Chetwynd, British Columbia	2,000.
Do.	do.	Willow Creek Mine, <sup>3</sup> 45 kilometers from Chetwynd, British Columbia	1,700
Steam	Pioneer Coal Ltd.	Stellarton Mine, near Stellarton, Nova Scotia	NA.
Do.	Coal Valley Resources Inc. (Sherritt International Corp.)	Coal Valley Mine, near Edson, Alberta	3,600.
Do.	do.	Obed Mountain Mine, Alberta	1,000.
Do.	Quinsam Coal Corp. (Hillsborough Resources Ltd.)	Quinsam underground mine, near Campbell River, British Columbia	500.
Lignite	Prairie Mines & Royalty Ltd. (Sherritt International Corp.)	Boundary Dam open pit mine, near Estevan, Saskatchewan	6,500.
Do.	do.	Poplar River open pit mine, near Coronach, Saskatchewan	4,000.
Do.	do.	Bienfait open pit mine, near Bienfait, Saskatchewan	2,800.
Subbituminous	do.	Highvale open pit mine, near Seba Beach, Alberta	13,000.
Do.	do.	Genesee open pit mine, near Warburg, Alberta	5,600.
Do.	do.	Sheerness open pit mine, near Hanna, Alberta	4,000.
Do.	do.	Paintearth open pit mine, near Forestburg, Alberta	3,500.
<b>Copper:</b>			
Ore, Cu content	Agnico-Eagle Mines Ltd.	LaRonde Mine, about 650 kilometers northwest of Montreal, Quebec	4.
Do.	Copper Mountain Mining Corp., 75%, and Mitsubishi Materials Corp., 25%	Copper Mountain Mine, British Columbia	45.
Do.	Highland Valley Copper Partnership (Teck Resources Ltd., 97.5%, and Highmont Mining Co., 2.5%)	Highland Valley Copper Mine, Kamloops, British Columbia	190.
Do.	Huckleberry Mines Ltd. (Imperial Metals Corp., 50%, and consortium composed of Mitsubishi Materials Corp., Marubeni Corp., Dowa Metals & Mining Co., Ltd., and Furukawa Co., Ltd., 50%)	Huckleberry Mine, 123 kilometers southwest of Houston, British Columbia	39.

See footnotes at end of table.

TABLE 2—Continued  
CANADA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
<b>Copper—Continued:</b>				
Ore, Cu content—Continued		HudBay Minerals Inc.	Trout Lake <sup>3</sup> and 777 Mines, Manitoba	57.
Do.		Mount Polley Mining Corp. (Imperial Metals Corp., 100%)	Mount Polley Mine at Williams Lake, British Columbia	18.
Do.		North American Palladium Ltd.	Lac des Iles Mine, about 85 kilometers northwest of Thunder Bay, Ontario	1.
Do.		Nyrstar NV	Langlois Mine, 313 kilometers northeast of Val-d'Or, Quebec	2.
Do.		do.	Myra Falls (Battle-Gap and H-W Mines), British Columbia	5.
Do.		Quadra FNX Mining Ltd.	Podolsky Mine, Ontario	13.
Do.		Capstone Mining Corp.	Minto Mine, Yukon	23.
Do.		Taseko Mines Ltd.	Gibraltar Mine, British Columbia	38.
Do.		Teck Resources Ltd.	Duck Pond Mine, about 100 kilometers southwest of Grand Falls-Windsor, Newfoundland and Labrador	15.
Do.		Vale Canada Ltd. (Vale S.A.)	Sudbury mines (includes the Coleman, Copper Cliff North, Copper Cliff South, <sup>3</sup> Creighton, Ellen, Garson, Gertrude, <sup>3</sup> Stobie and Totten Mines), Ontario	112.
Do.		Vale Newfoundland & Labrador Ltd. (Vale S.A.)	Voisey's Bay Mines (includes the Ovoid Mine), Newfoundland and Labrador	55.
Do.		Xstrata Nickel (Xstrata plc, 100%)	Kidd Creek Mine, about 20 kilometers north of Timmins, Ontario	53.
Do.		do.	Nickel Rim South Mine, Sudbury division, Sudbury, Ontario	39.
Do.		do.	Raglan Mine, Quebec	7.
Do.		Xstrata Zinc (Xstrata plc, 100%)	Brunswick Mine, 20 kilometers southwest of Bathurst, New Brunswick	7.
Do.		do.	Perseverance Mine, near Matagami, Quebec	10
<b>Smelter:</b>				
Anode		Xstrata Copper (Xstrata plc, 100%)	Horne smelter in Noranda, Quebec	194.
Nickel-copper matte		Vale Canada Ltd. (Vale S.A.)	Copper Cliff smelter in Sudbury, Ontario	500.
Do.		Xstrata Nickel (Xstrata plc, 100%)	Sudbury smelter, Ontario	131.
Refinery (Cu cathode)		Xstrata Copper (Xstrata plc, 100%)	CCR Refinery in Montreal-Est, Quebec	276.
Do.		Taseko Mines Ltd.	Gibraltar solvent extraction-electrowinning (SX-EW) facility, British Columbia	1.
Diamond	carats	Diavik Diamond Mines Inc. (Rio Tinto plc, 60%, and Harry Winston Diamond Mines Ltd., 40%)	Diavik open pit mine (includes the A154 North and the A154 South kimberlite pipes), northeast of Yellowknife region, Northwest Territories	11,900,000.
Do.	do.	Core Zone Joint Venture [BHP Billiton Canada Inc., 80%; C. Fipke Holdings Ltd., 10%; other (individual), 10%]	Ekati Mine (includes the Koala and the Panda underground mines and the Beartooth, Fox, Koala, and Misery open pit mines) in the Lac de Gras region, Northwest Territories	4,600,000.
Do.	do.	De Beers Canada Inc. (De Beers Group)	Snap Lake underground mine, 220 kilometers northeast of Yellowknife, Northwest Territories	1,400,000.
Do.	do.	do.	Victor open pit mine, 90 kilometers west of Attawapiskat, Ontario	600,000.
Do.	do.	Shear Diamonds Ltd.	Jericho Mine, <sup>3</sup> 430 kilometers northeast of Yellowknife, Nunavut Territory	500,000.

See footnotes at end of table.

TABLE 2—Continued  
CANADA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Gold, Au content of ore	kilograms	Agnico-Eagle Mines Ltd.	Goldex Mine, <sup>3</sup> Val-d'Or, Quebec	5,000.
Do.	do.	do.	Lapa Mine, about 60 kilometers west of Val-d'Or, Quebec	4,000.
Do.	do.	do.	LaRonde Mine, about 60 kilometers west of Val-d'Or, Quebec	5,600.
Do.	do.	do.	Meadowbank Mine, about 70 kilometers north of Baker Lake, Nunavut Territory	10,000.
Do.	do.	Alexis Minerals Corp.	Lac Herbin Mine, about 10 kilometers northeast of Val-d'Or, Quebec	1,000.
Do.	do.	Anaconda Mining Inc.	Pine Cove Mine, near Baie Verte, Newfoundland and Labrador	500.
Do.	do.	Aurizon Mines Ltd.	Casa Berardi Mine, about 95 kilometers north of La Sarre, Quebec	5,000.
Do.	do.	Barkerville Gold Mines Ltd.	QR Mine, British Columbia	400.
Do.	do.	Barrick Gold Inc.	Hemlo operation, includes David Bell underground mine and Williams open pit and underground mine, about 350 kilometers east of Thunder Bay, Ontario	7,100.
Do.	do.	Brigus Gold Corp.	Black Fox Mine, about 75 kilometers east of Timmins, Ontario	2,800.
Do.	do.	Capstone Mining Corp.	Minto Mine, about 240 kilometers northwest of Whitehorse, Yukon Territory	650.
Do.	do.	7918534 Canada Inc. (Sigma-Lamaque complex in receivership)	Sigma-Lamaque complex <sup>3</sup> (includes the Sigma Mine and the Lamaque Mine), Val-d'Or, Quebec	1,000.
Do.	do.	Claude Resources Inc.	Seabee operations (includes the Seabee Deep and the Santoy 8 Mines), Laonil Lake, Saskatchewan	1,500.
Do.	do.	Goldcorp Inc.	Musselwhite Mine, 480 kilometers north of Thunder Bay, Ontario	8,100.
Do.	do.	do.	Porcupine Mine, Timmins, Ontario	10,000.
Do.	do.	do.	Red Lake Mine (includes Red Lake and the Campbell complexes), 180 kilometers north of Dryden, Ontario	26,000.
Do.	do.	Golden Band Resources Inc.	EP Mine and Roy Lloyd Mine, Saskatchewan	1,500.
Do.	do.	Huckleberry Mines Ltd. (Imperial Metals Corp., 50%, and a consortium consisting of Mitsubishi Materials Corp., Marubeni Corp., Dowa Metals & Mining Co., Ltd., and Furukawa Co., Ltd., 50%)	Huckleberry Mine, 123 kilometers southwest of Houston, British Columbia	110.
Do.	do.	Hudson Bay Mining and Smelting Company Ltd. (HudBay Minerals Inc., 100%)	777 and the Trout Lake <sup>3</sup> Mines, Flin Flon, Manitoba	1,400.
Do.	do.	do.	Chisel North <sup>3</sup> and the Lalor Mine, Snow Lake, Manitoba	170.
Do.	do.	IAMGOLD Corp.	Doyon division (includes the Doyon and the Mouska Mines), about 40 kilometers east of Rouyn-Noranda, Quebec	800.
Do.	do.	Kirkland Lake Gold Inc.	South Mine complex (Macassa Mine, Ontario)	2,400.
Do.	do.	Lake Shore Gold Corp.	Bell Creek Mine, northeast of Timmins, Ontario, and Timmins West Mine, 18 kilometers west of Timmins, Ontario	3,300.
Do.	do.	Metanor Resources Inc.	Bachelor Lake mine and mill (located about 225 kilometers northeast of Val-d'Or, Quebec)	1,000.
Do.	do.	Mount Polley Mining Corp. (Imperial Metals Corp.)	Mt. Polley Mine, 8 kilometers southwest of Likely, British Columbia	1,700.

See footnotes at end of table.

TABLE 2—Continued  
CANADA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Gold, Au content of ore—Continued	kilograms	North American Palladium Ltd.	Lac des Iles Mine, about 85 kilometers northwest of Thunder Bay, Ontario	700.
Do.	do.	do.	Sleeping Giant Mine, <sup>3</sup> about 80 kilometers north of Amos, Quebec	NA.
Do.	do.	NVI Mining Ltd. (Breakwater Resources Ltd.)	Myra Falls complex (Battle-Gap and H-W Mines), British Columbia	400.
Do.	do.	Osisko Mining Corp.	Canadian Malartic Mine, about 20 kilometers west of Val d'Or, Quebec	13,000.
Do.	do.	Quadra FNX Mining Ltd.	Levack complex (includes the McCreedy West Mine and Morrison deposit), near Levack, Ontario	100.
Do.	do.	do.	Podolsky Mine, Ontario	130.
Do.	do.	Richmont Mines Inc.	Beaufor Mine, about 21 kilometers northeast of Val-d'Or, Quebec	800.
Do.	do.	do.	Francoeur Mine, <sup>3</sup> Quebec	NA.
Do.	do.	do.	Island Gold Mine, near Dubreuilville, Ontario	1,600.
Do.	do.	San Gold Corp.	Hinge Mine and Rice Lake Mine, Manitoba	2,400.
Do.	do.	St. Andrew Goldfields Ltd.	Hislop Mine, Holloway Mine, and Holt Mine east of Timmins, Ontario	3,500.
Do.	do.	Vale Canada Ltd. (Vale S.A.)	Manitoba division (includes the Birchtree Mine and the Thompson Mine), Thompson, Manitoba	NA.
Do.	do.	do.	Ontario division, includes Garson Mine, Garson, Ontario; Coleman/McCreedy East Mine, near Levack, Ontario; and Stobie Mine, north of Sudbury, Ontario	NA.
Do.	do.	Wesdome Gold Mines Ltd.	Eagle River Mine, about 50 kilometers west of Wawa, Ontario	1,900.
Do.	do.	do.	Kiena Mine, about 10 kilometers west of Val-d'Or, Quebec	1,300.
Do.	do.	Xstrata Zinc (Xstrata plc, 100%)	Brunswick Mine, 20 kilometers southwest of Bathurst, New Brunswick	NA.
Indium	metric tons	Teck Resources Ltd.	Trail smelter and refinery complex, British Columbia	70.
Iron and steel:				
Iron ore:				
Ore		ArcelorMittal Mines Canada Inc. (ArcelorMittal)	Fire Lake and Mont-Wright open pit mines, Quebec	19,300.
Do.		Iron Ore Company of Canada (Rio Tinto Ltd., 58.72%; Mitsubishi Corp., 26.18%; Labrador Iron Ore Royalty Income Fund, 15.1%)	Carol Lake open pit mine, Labrador City, Newfoundland and Labrador	17,000.
Do.		Cliffs Natural Resources Inc., 75%, and Wugang Canada Resources Investments Ltd., 25%	Bloom Lake Mine, near Fermont, Quebec	8,000.
Do.		Tata Steel Minerals Canada Ltd. (Tata Steel Ltd., 80%, and New Millenium Iron Corp., 20%)	Direct Shipping Ore Project, near Schefferville, Quebec	2,000.
Do.		Wabush Mines Ltd. (Cliffs Natural Resources Inc.)	Scully (Wabash) Mine, near Wabush, Newfoundland and Labrador	5,600.
Magnetite for coal washing		Craigmont Mines Joint Venture	Reprocessed tailings near Merritt, British Columbia	NA.
Pellets		ArcelorMittal Mines Canada Inc. (ArcelorMittal)	Pelleting plant, Port Cartier, Quebec	9,000.
Do.		Cliffs Natural Resources Inc.	Pelleting plant, Pointe Noire, Quebec	5,200.
Do.		Iron Ore Company of Canada (Rio Tinto Ltd., 58.72%; Mitsubishi Corp., 26.18%; Labrador Iron Ore Royalty Income Fund, 15.1%)	Pelleting plant, Labrador City, Newfoundland and Labrador	13,000.

See footnotes at end of table.



TABLE 2—Continued  
CANADA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity	
<b>Iron and steel—Continued:</b>				
Steel, crude	AltaSteel Ltd. (OneSteel Ltd.)	Edmonton, Alberta	320.	
Do.	ArcelorMittal Dofasco Inc. (ArcelorMittal)	Hamilton, Ontario	4,100.	
Do.	ArcelorMittal Montreal Inc. (ArcelorMittal)	Contrecoeur East and Contrecoeur West plants, Quebec	2,500.	
Do.	Essar Steel Algoma Inc. (Essar Global Ltd.)	Sault Ste. Marie, Ontario	2,800.	
Do.	Gerdau Steel North America Inc. (Gerdau S.A.)	Whitby, Ontario	790.	
Do.	do.	Selkirk, Manitoba	430.	
Do.	do.	Cambridge, Ontario	380.	
Do.	Hamilton Speciality Bar (2007) Inc.	Hamilton, Ontario	360.	
Do.	Ivaco Rolling Mills Inc.	L'Orignal, Ontario	450.	
Do.	MMFX Steel of Canada Inc. (MMFX Technologies Corp.)	Welland, Ontario	120.	
Do.	QIT-Fer et Titane Inc. (Rio Tinto Iron and Titanium Inc.)	Sorel, Quebec	500.	
Do.	SSAB Svenskt Stål AB—IPSCO Division	Regina, Saskatchewan	1,500.	
Do.	U.S. Steel Canada (United States Steel Corp.)	Lake Erie Works, Naticoke, Ontario	2,400.	
Do.	do.	Hamilton Works, <sup>3</sup> Hamilton, Ontario	2,300.	
<b>Lead:</b>				
Lead-zinc ore	Alexco Resources Corp.	Bellkeno Mine, Yukon	20.	
Do.	Maple Minerals Corp.	Caribou underground mine, <sup>3</sup> 45 kilometers west of Bathurst, New Brunswick	700.	
Do.	ScoZinc Ltd. (Selwyn Resources Ltd.)	Scotia open pit mine, <sup>3</sup> Gays River, Nova Scotia	600.	
Do.	Xstrata Zinc Canada (Xstrata plc, 100%)	Brunswick Mine in Bathurst, New Brunswick	3,550.	
<b>Refined:</b>				
Primary	Teck Resources Ltd.	Trail Operations (smelter and refinery complex), Trail, British Columbia	100.	
Do.	Xstrata Zinc (Xstrata plc, 100%)	Belledune smelter and refinery, 35 kilometers north of Bathurst, New Brunswick	85.	
Secondary, includes lead alloys	NovaPb Inc. (Newalta Corp.)	Ville Sainte Catherine, Quebec	100.	
Do.	Tonolli Canada Ltd.	Mississauga, Ontario	35.	
Do.	Metalex Products Ltd.	Richmond, British Columbia	8.	
Molybdenum, ore, Mo content	metric tons	Highland Valley Copper Partnership (Teck Resources Ltd., 97.5%, and Highmont Mining Co., 2.5%)	Highland Valley Copper Mine, Kamloops, British Columbia	3,600.
Do.	do.	Huckleberry Mines Ltd. (Imperial Metals Corp., 50%, and a consortium composed of Mitsubishi Materials Corp., Marubeni Corp., Dowa Metals & Mining Co., Ltd., and Furukawa Co., Ltd., 50%)	Huckleberry Mine, 123 kilometers southwest of Houston, British Columbia	40.
Do.	do.	FortyTwo Metals Inc. (Roca Mines Inc., 100%)	Max Mine, <sup>3</sup> about 60 kilometers southeast of Revelstoke, British Columbia	1,800.
Do.	do.	Taseko Mines Ltd.	Gibraltar Mine, British Columbia	600.
Do.	do.	Joint venture of Thompson Creek Metals Company Inc., 75%, and Sojitz Moly Resources, Inc., 25%	Endako Mine, near Fraser Lake, about 160 kilometers northwest of Prince George, British Columbia	5,200.
<b>Nickel:</b>				
Ore, Ni content	Crowflight Minerals Inc.	Bucko Lake Mine, <sup>3</sup> near Wabowden, Manitoba	2.	
Do.	First Nickel Inc.	Lockerby Mine, Sudbury district, Ontario	2.	
Do.	Liberty Mines Inc.	McWatters Mine, <sup>3</sup> about 30 kilometers southeast of Timmins, Ontario, and the Redstone Mine, <sup>3</sup> about 25 kilometers southeast of Timmins, Ontario	3.	
Do.	Quadra FNX Mining Ltd.	Levack complex (includes the McCreedy West Mine and Morrison deposit), near Levack, Ontario	5.	
Do.	do.	Podolsky Mine, Ontario	1.	

See footnotes at end of table.

TABLE 2—Continued  
CANADA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Nickel—Continued:				
Ore, Ni content—Continued		Vale Canada Ltd. (Vale S.A.)	Sudbury mines (includes the Coleman, Copper Cliff North, Copper Cliff South, <sup>3</sup> Creighton, Ellen, Garson, Gertrude, <sup>3</sup> Stobie and Totten Mines), Ontario	106.
Do.		do.	Manitoba division (includes the Birchtree Mine and the Thompson Mine), Thompson, Manitoba	45.
Do.		Vale Newfoundland & Labrador Ltd. (Vale S.A.)	Voisey's Bay Mines (includes the Ovoid Mine), Newfoundland and Labrador	80.
Do.		Xstrata Nickel (Xstrata plc, 100%)	Raglan Mine in Ungave, Quebec	28.
Do.		do.	Fraser Mine and Nickel Rim South Mine in the Sudbury district, Ontario	20.
Smelter		Vale Canada Ltd. (Vale S.A.)	Smelter in Sudbury, Ontario	110 (Ni oxide).
Do.		do.	Smelter in Thompson, Manitoba	82 (Ni anode).
Do.		Xstrata Nickel (Xstrata plc, 100%)	Sudbury smelter in Sudbury, Ontario	131 (Cu-Ni matte).
Refinery		The Cobalt Refinery Company Inc. (Moa joint venture of General Nickel S.A., 50%, and Sherritt International Corp., 50%)	Refinery in Fort Saskatchewan, Alberta	35 (Ni briquets and powder); 4 (Co briquets and powder).
Do.		Vale Canada Ltd. (Vale S.A.)	Refinery in Sudbury, Ontario	57 (Ni pellets and powder).
Do.		do.	Refinery in Thompson, Manitoba	NA.
Niobium (columbium)	metric tons	IAMGOLD Corp.	Niobec Mine, Chicoutimi, Quebec	4,600 (Nb content).
Petroleum, refinery products <sup>4</sup>	barrels per day	Chevron Canada Ltd. (Chevron Corp., 100%)	Burnaby refinery, Burnaby, British Columbia	55,000.
Do.	do.	Consumers' Co-operative Refineries Ltd. (Federated Co-operatives Ltd., 100%)	Regina, Saskatchewan	100,000.
Do.	do.	Husky Energy Inc.	Prince George refinery, Prince George, British Columbia	10,000.
Do.	do.	do.	Lloydminster asphalt refinery, Lloydminster, Alberta	25,000.
Do.	do.	Imperial Oil Ltd. (Exxon Mobil Corp., 69.6%)	Dartmouth refinery, Halifax Nova Scotia	82,000.
Do.	do.	do.	Nanticoke refinery, 40 kilometers southwest of Hamilton, Ontario	112,000.
Do.	do.	do.	Sarnia refinery, Sarnia, Ontario	121,000.
Do.	do.	do.	Strathcona refinery, Edmonton, Alberta	187,000.
Do.	do.	Irving Oil Ltd.	Irving refinery, Saint John, New Brunswick	250,000.
Do.	do.	Moose Jaw Refinery (Gibson Energy ULC)	Moose Jaw asphalt refinery, Moose Jaw, Saskatchewan	4,100.
Do.	do.	North Atlantic Refining Ltd. (Harvest Operations Corp.)	North Atlantic refinery, Come by Chance, Newfoundland and Labrador	115,000.
Do.	do.	Nova Chemicals Corp.	Corunna petrochemical and refinery complex, Corunna, Ontario	80,000.
Do.	do.	Shell Canada Ltd. (Royal Dutch Shell plc, 100%)	Scotford refinery, 40 kilometers northeast of Edmonton, Alberta	100,000.
Do.	do.	do.	Sarnia manufacturing center (Corunna refinery), Sarnia, Ontario	72,000.
Do.	do.	Suncor Energy Inc.	Edmonton refinery, Edmonton, Alberta	135,000.
Do.	do.	do.	Montreal refinery, Montreal East, Quebec	129,800.
Do.	do.	do.	Sarnia refinery, Sarnia, Ontario	85,000.
Do.	do.	Ultramar Ltd. (Valero Energy Corp., 100%)	Jean Gaulin refinery, Levis, Quebec	265,000.

See footnotes at end of table.

TABLE 2—Continued  
CANADA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Potash (K <sub>2</sub> O equivalent)	Agrium Products Inc.	Vanscoy, Saskatchewan	1,800.
Do.	Mosaic Potash Colonsay ULC (The Mosaic Co., 100%)	Colonsay, Saskatchewan	1,800.
Do.	Mosaic Potash Esterhazy Limited Partnership Ltd. [The Mosaic Co., 75%, and Potash Corp. of Saskatchewan Inc. (PotashCorp.), 25%]	Esterhazy, southeast Saskatchewan	5,300.
Do.	The Mosaic Co.	Belle Plaine, Saskatchewan	2,800.
Do.	Potash Corp. of Saskatchewan Inc. (PotashCorp)	Lanigan, near Lanigan, Saskatchewan	3,900.
Do.	do.	Rocanville, southeast Saskatchewan	3,100.
Do.	do.	Allan division, Allan, Saskatchewan	1,900.
Do.	do.	Cory, near Saskatoon, Saskatchewan	1,400.
Do.	do.	Patience Lake, near Saskatoon, Saskatchewan	1,100.
Do.	do.	Sussex, New Brunswick	800.
Salt:			
Rock salt and brine operations	The Canadian Salt Co. Ltd.	Rock salt mine at Ojibway, Ontario, and brine wells near Windsor, Ontario	2,600.
Do.	do.	Pugwash, Nova Scotia	1,400.
Do.	Potash Corp. of Saskatchewan Inc. (PotashCorp)	Sussex, New Brunswick	700.
Rock salt	Sifco Canada Inc. (Compass Minerals Group Inc.)	Goderich Harbour, Ontario	6,500.
Do.	Seleine Mines Division of The Canadian Salt Co. Ltd.	Iles-de-la-Magdalen, Quebec	1,625.
Do.	Mosaic Potash Esterhazy Limited Partnership Ltd. [The Mosaic Co., 75%, and Potash Corp. of Saskatchewan Inc. (PotashCorp.), 25%]	Esterhazy, southeast Saskatchewan	NA.
Do.	NSC Minerals Inc.	Salt recovery from potash tailings at Rocanville and Vanscoy, Saskatchewan	NA.
Brine	Nexen Inc. and Alchem Industries Ltd.	Plant near Bruderheim, Alberta	NA.
Do.	Dow Chemical Canada Inc.	Fort Saskatchewan, Alberta	NA.
Do.	Junex Solnat (Junex Inc.)	Becancour, Quebec	NA.
Do.	Saskatoon Chemicals Holdings, Inc.	Plant near Saskatoon, Saskatchewan	NA.
Do.	Sifco Canada Inc. (Compass Minerals Group Inc.)	Amherst, Nova Scotia	NA.
Do.	do.	Plant near Unity, Saskatchewan	NA.
Do.	The Canadian Salt Co. Ltd.	Belle Plaine, Saskatchewan	NA.
Do.	do.	Lindberg, Alberta	NA.
Silicon, metal	Québec Silicon Ltd. (Globe Speciality Metals Inc., 51%, and Dow Corning Corp., 49%)	Plant at Becancour, Quebec	47.
Do.	Grupo FerroAtlántica S.A.	Plant <sup>3</sup> at Becancour, Quebec	4.
Tantalum, Ta <sub>2</sub> O <sub>5</sub> content	metric tons Cabot Corp.	Tanco Mine, Bernic Lake, Manitoba	80.
Titanium, TiO <sub>2</sub> slag	Rio Tinto, QIT-Fer et Titane, Inc. (Rio Tinto Group, 100%)	Sorel-Tracy, Quebec	1,100 (Sorelslag <sup>®</sup> ); 250 (UGST <sup>™</sup> slag); NA (RTCS <sup>™</sup> slag).
Tungsten, WO <sub>3</sub> content	North American Tungsten Corporation Ltd.	Cantung Mine, Northwest Territories	3,500.
Uranium, oxide	metric tons Joint venture of Cameco Corp., 69.805%, and AREVA Resources Canada Inc., 30.195%	McArthur River Mine, Saskatchewan	8,500.
Do.	do. Joint venture of Cameco Corp., 83.33%, and AREVA Resources Canada Inc., 16.67%	Key Lake mill, Saskatchewan	6,300. <sup>3</sup>
Do.	do. Cameco Corp.	Rabbit Lake operations, includes Eagle Point underground mine and Rabbit Lake mill, Saskatchewan	5,500.
Do.	do. Joint venture of AREVA Resources Canada Inc., 70%; Denison Mines Inc., 22.5%; OURD Canada Company Ltd., 7.5%	McClellan Lake Mine and mill, <sup>3,5</sup> Saskatchewan	5,400.
Wollastonite	Canadian Wollastonite (2005948 Ontario Ltd.)	St. Lawrence Mine, City of Kingston and the municipality of Leeds and the Thousand Islands, Ontario	NA.

See footnotes at end of table.

TABLE 2—Continued  
CANADA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Zeolites	HCA Mountain Minerals (Lethbridge) Ltd. (Heemskirk Canada Ltd.)	Processing plant at Lethbridge, Alberta	NA.
Do.	Heemskirk Canada Ltd. (Heemskirk Consolidated Ltd.)	Bromley Creek (Princeton) Mine, near Copper Mountain, British Columbia	NA.
Do.	do.	Z1 (Ranchlands) quarry, near Cache Creek, British Columbia	NA.
Do.	Industrial Mineral Processors Ltd.	Z2 quarry, near Cache Creek, British Columbia	NA.
Do.	do.	Processing plant at Ashcroft, British Columbia	NA.
<b>Zinc:</b>			
Lead-zinc ore	Agnico-Eagle Mines Ltd.	LaRonde Mine, 60 kilometers west of Val-d'Or, Quebec	55.
Do.	Maple Minerals Corp.	Caribou underground mine, <sup>3</sup> 45 kilometers west of Bathurst, New Brunswick	700.
Do.	ScoZinc Ltd. (Selwyn Resources Ltd.)	Scotia open pit mine, <sup>3</sup> Gays River, Nova Scotia	600.
Do.	Trevali Mining Corp.	Halfmile Mine, New Brunswick	NA.
Do.	Xstrata Zinc Canada (Xstrata plc, 100%)	Brunswick Mine in Bathurst, New Brunswick	3,550.
Do.	Yukon Zinc Corp. (Jinduicheng Molybdenum Group Company Ltd.)	Wolverine Mine, Yukon	80.
Zinc ore	Hudson Bay Mining and Smelting Co., Ltd. (HudBay Minerals Inc., 100%)	777 and Trout Lake <sup>3</sup> Mines, Flin Flon, Manitoba	2,300.
Do.	do.	Chisel North <sup>3</sup> and the Lalor Mines, Snow Lake, Manitoba	330.
Do.	Nyrstar NV	Langlois Mine, 313 kilometers northeast of Val-d'Or, Quebec	39.
Do.	do.	Myra Falls Mine, British Columbia	32.
Do.	Teck Resources Ltd.	Duck Pond Mine, 90 kilometers south of Buchans, Newfoundland and Labrador	640.
Do.	Xstrata Copper (Xstrata plc, 100%)	Kidd Creek underground mine, 25 kilometers north of Timmins, Ontario	2,350.
Do.	Xstrata Zinc (Xstrata plc, 100%)	Perseverance Mine, near Matagami, Quebec	1,100.
Refined	Canadian Electrolytic Zinc Ltd. (CEZinc) (Noranda Income Fund)	Hydrometallurgical plant at Salaberry-de-Valleyfield, Quebec	290.
Do.	Hudson Bay Mining and Smelting Co., Ltd. (HudBay Minerals Inc., 100%)	Zinc plant (pressure leach and electrowinning) at Flin Flon, Manitoba	115.
Do.	Teck Resources Ltd.	Trail Operations (smelter and refinery complex), Trail, British Columbia	295.

Do., do. Ditto. NA Not available.

<sup>1</sup>Abbreviations used in this table for commodities include the following: Au—gold; Co—cobalt; Cu—copper; K<sub>2</sub>O—potassium oxide; Mo—molybdenum; Nb—niobium; Ni—nickel, and TiO<sub>2</sub>—titanium dioxide.

<sup>2</sup>Nameplate production capacity is 282,000 metric tons per year, but two potlines were closed in 2010 as part of the Kitmat modernization project.

<sup>3</sup>Mine or facility closed or operations were suspended and placed on care-and-maintenance status.

<sup>4</sup>Does not include bitumen upgraders, which processed hydrocarbons from oil sands operations.

<sup>5</sup>Processes ore from the McArthur River Mine.