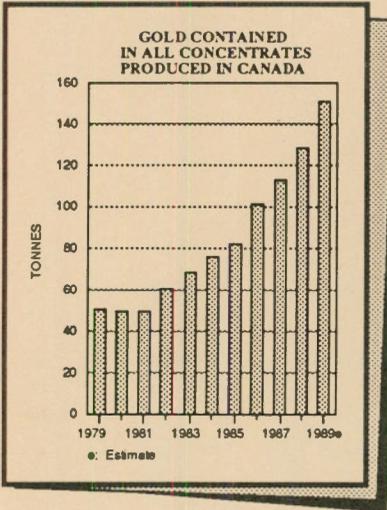


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# CANADIAN MINERAL INDUSTRY



Energy, Mines and  
Resources Canada

Energie, Mines et  
Ressources Canada

Hon. Jake Epp  
Minister

L'hon. Jake Epp,  
Ministre

Canada

THE ENERGY OF OUR RESOURCES

THE POWER OF OUR IDEAS

ISSN 0229-1908

**CANADIAN MINERAL INDUSTRY  
MONTHLY REPORT**



Energy, Mines and  
Resources Canada

Énergie, mines et  
Ressources Canada



## **PREFACE**

This publication is prepared in the Mineral Policy Sector of the Department of Energy, Mines and Resources. It is compiled from many sources using the best information available to us. This report is intended to be a general review of the more important current developments that affect, or may affect, the Canadian mineral industry. It should not be considered an authority for exact quotation or an expression of the official views of the Government of Canada.

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## THE CANADIAN MINERAL INDUSTRY FOR MAY

The following constitutes a brief summary of the Canadian mineral industry based on information that became available in May.

### ECONOMIC TRENDS

Table 1 provides a comparison of the volume of production of Canada's leading minerals for the months of February and March 1990, the corresponding months a year ago and the year-to-date totals.

Table 2 provides information on Canada's Gross Domestic Product at factor cost by industry at 1981 prices. The data are also annualized and seasonally adjusted.

The annual rate shown for any given month is calculated by multiplying the figure for that month by twelve. It is important to note, however, that if a particular month has been influenced by special factors such as a strike, the annualized data will reflect this bias.

Factor cost refers to output that is valued exclusive of excise taxes and duties, and provincial and municipal sales taxes. Factor cost does, however, include subsidies and other taxes that are not a function of the level of output or sale.

Seasonally adjusted data represent time-series data from which the effects of repetitive and clearly defined seasonal fluctuations have been removed. Such a practice permits the isolation of trends in the economy that might otherwise be obscured. Seasonal factors include such items as climate, trade practices and social institutions such as Christmas and Easter.

The GDP data are subject to ongoing revision.

Gross Domestic Product at factor cost, at 1981 prices, rose 0.1% in March following a similar gain in February and a decline of 0.1% in January. Output of goods advanced 0.2% in March, while production of services was unchanged. GDP edged ahead 0.2% in the first quarter of 1990, following gains of 0.8% and 0.4% in the third and fourth quarters of 1989, respectively.

Table 3 shows the prices of selected metals for January, February and March, 1990.

Table 4 shows the prices of selected metals for 1989 on an annual average basis.

Tables 5 and 6 show the average annual prices of selected minerals over the period 1983-89. Table 5 provides prices in U.S. dollars and imperial units, except where noted. Table 6 provides prices in Canadian currency and metric units.

Tables 7 and 8 provide data on the selling price indexes for the mineral products industries and for mineral raw materials for the period 1983-89.

Tables 9 and 10, provide the principal statistics of the mineral manufacturing industries for the year 1987, by industry group and by region. Principal statistics include such data as the number of establishments, number of employees, value of shipments and production costs. Costs shown include

salaries and wages, materials and supplies, and fuel and electricity. Table 9 incorporates data revisions to this table which first appeared (as Table 20) in the April 1990 issue of this report.

Table 11 shows the principal statistics of the mineral manufacturing industries for the period 1980-87.

Table 12 provides data on employment and wages in the mineral manufacturing industries for the period 1981-87.

Tables 13 through 18 provide data on capital and repair expenditures by region and by commodity group. Detail is provided for recent years, as well as the investment intentions for 1990.

**TABLE 1. CANADA, PRODUCTION OF LEADING MINERALS**

	1989			1990			Percentage Changes		
	February	March	Total 3 Months	February	March	Total 3 Months	March 1990 March 1989	March 1990 February 1990	3 months 1990 1989
(000 tonnes except where noted)									
<b>Metals</b>									
Copper	59.1 <sup>r</sup>	62.6 <sup>r</sup>	184.8 <sup>r</sup>	64.2	75.6	205.7	20.7	17.8	11.3
Gold	10 670.1 <sup>r</sup>	12 252.8 <sup>r</sup>	33 644.1 <sup>r</sup>	12 225.3	13 599.6	38 832.9	11.0	11.2	15.4
Iron ore	2 570.5	1 665.8	6 008.0	1 125.4	1 365.7	3 749.1	-18.0	21.3	-37.6
Lead	25.4 <sup>r</sup>	22.5 <sup>r</sup>	67.0 <sup>r</sup>	16.2	21.6	55.5	-4.1	32.9	-17.2
Molybdenum	950.0 <sup>r</sup>	1 297.3 <sup>r</sup>	3 454.0 <sup>r</sup>	1 232.5	1 115.9	3 687.4	-14.0	-9.5	6.8
Nickel	18.5	17.8	52.7	16.8	17.8	51.5	-0.3	6.0	-2.3
Silver	98.5 <sup>r</sup>	119.7 <sup>r</sup>	313.6 <sup>r</sup>	133.4	119.0	355.2	-0.5	-10.8	13.3
Uranium <sup>1</sup>	871.3	1 249.5	3 154.6	898.9	1 619.5	3 852.5	29.6	80.2	22.1
Zinc	80.2	91.4	240.1 <sup>r</sup>	79.4	128.9	330.3	41.1	62.2	37.6
<b>Nonmetals</b>									
Asbestos	56.7	58.5	161.7	47.6	49.0	152.4	-16.2	3.0	-5.7
Clay products	8 934.1	12 149.9	31 511.4	8 457.7	10 407.7	29 081.4	-14.3	23.1	-7.7
Gypsum	575.1	722.9 <sup>r</sup>	1 865.4 <sup>r</sup>	591.7	670.3	1 976.9	-7.3	13.3	6.0
Potash K <sub>2</sub> O	544.9	743.6	1 856.1	553.8	710.7	1 832.6	-4.4	28.3	-1.3
Cement	444.2	772.1 <sup>r</sup>	1 689.7	526.4	767.2	1 778.5	-0.6	45.8	5.3
Lime	202.7	226.6 <sup>r</sup>	642.1 <sup>r</sup>	194.6	210.5	614.3	-7.1	8.1	-4.3
Salt	947.0 <sup>r</sup>	798.2 <sup>r</sup>	2 843.0 <sup>r</sup>	807.6	581.9	2 450.6	-27.1	-27.9	-13.8
<b>Fuels</b>									
Coal	5 477.8 <sup>r</sup>	6 339.9	17 852.7	5 387.3	..	..	..	..	..
Natural gas	10 453.0 <sup>r</sup>	10 965.0 <sup>r</sup>	32 483.0	..	..	..	..	..	..
Crude oil and equivalent	7 576.0 <sup>r</sup>	8 195.0 <sup>r</sup>	24 154.0 <sup>r</sup>	..	..	..	..	..	..

<sup>1</sup> Tonnes uranium (1 tonne U = 1.2999 short tons U<sub>3</sub>O<sub>8</sub>).

<sup>r</sup> Revised; .. Not available.

Note: Percentage changes are calculated on the basis of actual production figures as opposed to the rounded figures as shown.

**TABLE 2. CANADA, REAL GROSS DOMESTIC PRODUCT AT FACTOR COST BY INDUSTRY, IN 1981 PRICES, MONTHLY (SEASONALLY ADJUSTED AT ANNUAL RATES)**

Industry Sector	1989	1990			Percentage Change March 1990 March 1989
	March	January	February	March	
		(\$ million)			
Total Economy	408 237.6	415 545.1	415 925.8	416 378.7	2.0
Primary Industries					
Agriculture	9 201.2	10 000.6	10 010.2	10 020.6	8.9
Forestry	2 738.3	2 792.4	2 780.4	2 787.6	1.8
Fishing and Trapping	724.8	620.0	630.6	642.0	-11.4
Mines, Quarries and Oil Wells	23 441.1	23 118.0	23 026.8	23 232.0	-0.9
Mining Industries	8 223.9	8 386.8	8 401.2	8 316.0	1.1
Gold Mines	1 808.3	1 930.8	1 926.0	1 857.6	2.7
Iron Mines	624.5	614.4	602.4	604.8	-3.2
Other Metal Mines	3 531.9	3 597.6	3 676.8	3 643.2	3.2
Nonmetal Mines	811.2	796.8	772.8	787.2	-3.0
Asbestos Mines	213.4	232.8	226.8	228.0	6.8
Mineral Fuels					
Coal Mines	1 108.0	1 075.2	1 042.8	1 053.6	-4.9
Crude Petroleum and Natural Gas	13 190.3	12 800.4	12 729.6	13 003.2	-1.4
Secondary Industries					
Manufacturing	78 144.4	77 633.4	77 803.1	77 755.4	-0.5
Non-durable Manufacturing	33 206.0	33 406.4	33 203.7	33 087.8	-0.4
Durable Manufacturing	44 938.8	44 227.0	44 599.4	44 667.6	-0.6
Primary Metal Industries	6 281.5	5 890.0	5 950.7	5 963.3	-5.1
Primary Steel Industries	2 393.4	2 224.8	2 190.0	2 175.6	-9.1
Steel, Pipe and Tube Industry	467.7	504.0	520.8	507.6	8.5
Iron Foundries	435.3	338.9	344.1	343.1	-21.2
Smelting and Refining	2 261.6	2 174.4	2 253.6	2 283.6	1.0
Nonmetallic Mineral Products	2 347.0	2 314.5	2 320.9	2 302.3	-1.9
Clay Products Industry	119.5	120.4	114.9	110.2	-7.8
Cement Industry	310.5	306.0	315.6	307.2	-1.1
Ready-mix Concrete Industry	444.4	408.3	400.2	420.1	-5.5
Construction Industry	31 806.8	32 870.4	33 532.8	33 860.4	6.5
Transportation and Storage	19 199.4	19 585.6	19 334.7	19 574.6	2.0
Communications	13 543.5	14 792.4	14 804.4	14 835.6	9.5
Other Utilities	11 580.1	11 293.2	11 064.0	10 863.6	-6.2
Wholesale Trade	25 374.5	25 456.4	25 769.4	25 616.5	1.0
Retail Trade	26 060.1	26 664.4	26 477.8	26 477.8	1.6
Finance, Insurance and Real Estate	59 413.1	61 501.2	61 341.6	61 125.6	2.9
Community, Business and Personal Service	41 895.0	43 184.7	43 180.0	43 279.8	3.3

Note: Items might not add to totals given since all components are not shown.

TABLE 3. METAL PRICES 1990

	January	February	March
<b>Copper</b>			
Electrolytic, U.S. producer f.o.b. refinery, cents (U.S.)	107.244	109.816	127.014
Electrolytic, COMEX, 1st pos. plus 5¢, cents (C.)	109.364	112.347	129.236
Electrolytic, LME Grade A Settlement, cents (U.S.)	107.349	107.055	119.096
<b>Lead</b>			
New York, cents (U.S.)	39.600	42.250	55.250
Montreal, cents (C.)	45.400	49.875	61.750
LME cash, cents (U.S.)	32.077	35.314	48.047
<b>Silver</b>			
New York, cents (U.S.) per troy oz.	524.295	527.842	506.182
Toronto, cents (C.) per troy oz.	616.323	633.489	599.941
<b>Zinc</b>			
St. Louis, H.G., cents (U.S.)	67.631	64.748	73.781
Montreal, Electrolytic, cents (C.)	79.300	79.375	91.000
LME cash, cents (U.S.)	58.685	63.322	72.676
<b>Tin</b>			
New York, dealers, cents (U.S.)	306.889	287.125	297.222
Metals Week, composite, cents (U.S.)	402.865	380.403	387.713
<b>Gold</b>			
London, p.m., US\$ per troy oz.	410.109	416.810	393.059
<b>Mercury</b>			
New York, dealers, US\$ per flask	290.000	290.000	285.455
<b>Nickel</b>			
New York, dealers, cathode US\$	3.169	3.068	4.136
LME cash, US\$	3.201	3.165	4.203
<b>Antimony</b>			
New York, dealers, cents (U.S.)	83.667	85.474	84.000
<b>Platinum</b>			
New York, refined, US\$ per troy oz.	600.000	600.000	600.000
<b>Cadmium</b>			
New York, dealers, US\$	5.155	4.787	4.509
<b>Aluminum</b>			
LME cash, cents (C.)	81.201	78.927	83.878
LME cash, cents (U.S.)	69.320	65.965	71.095
<b>Cobalt</b>			
Shot/cathode/250 kg., US\$	8.400	8.400	8.400
U.S. spot cathode, US\$	7.500	7.625	7.938
<b>Tungsten</b>			
LMB ore, low, US\$/MTU	41.200	39.500	38.000
<b>Molybdenum</b>			
M.W. dealer oxide, US\$	2.573	2.625	3.098
<b>Uranium</b>			
Nuexco, US\$ U <sub>3</sub> O <sub>8</sub>	9.120	8.925	8.850

Average U.S. Exchange Rate for January = 1.1714; February = 1.1965; March = 1.1798.

Note: Prices are per pound unless otherwise stated.

TABLE 4. METAL PRICES - 1989

Commodity	Unit	U.S. Funds	Canadian Funds	Canadian Funds	Metric
Antimony	\$/lb.	0.943	1.117	2.462	\$/kg
Bismuth	\$/lb.	5.657	6.699	14.768	\$/kg
Cadmium	\$/lb.	6.277	7.433	16.387	\$/kg
Calcium	\$/lb.	3.850	4.559	10.051	\$/kg
Cobalt, shot/cathode	\$/lb.	8.400	9.947	21.930	\$/kg
Cobalt, U.S. spot cathode	\$/lb.	7.563	8.956	19.746	\$/kg
Columbium <sup>1</sup>	\$/lb.				\$/kg
Copper <sup>2</sup>	¢/lb.	129.454	153.299	337.967	¢/kg
Gold, London, p.m.	\$/tr.oz.	381.431	451.691	14.522	\$/gram
Indium	\$/tr.oz.	9.016	10.677	0.343	¢/gram
Iridium	\$/tr.oz.	302.854	358.640	11.531	\$/gram
Iron ore pellets <sup>3</sup>	¢/mtu	72.450	85.795	84.440	\$/mtu
Lead <sup>4</sup>	¢/lb.	39.834	47.171	1.040	\$/kg
Magnesium	\$/lb.	1.630	1.930	4.255	\$/kg
Mercury <sup>5</sup>	\$/flask	287.722	340.720	n.a.	
Molybdenum (oxide)	\$/lb.	3.341	3.956	8.722	\$/kg
Nickel, metal <sup>6</sup>	\$/lb.	6.036	7.148	15.758	\$/kg
Osmium	\$/tr.oz.	547.917	648.843	20.861	\$/gram
Palladium	\$/tr.oz.	150.000	177.630	5.711	\$/gram
Platinum	\$/tr.oz.	600.000	710.520	22.844	\$/gram
Rhodium	\$/tr.oz.	1275.000	1509.855	48.543	\$/gram
Ruthenium	\$/tr.oz.	62.258	73.726	2.370	\$/gram
Selenium	\$/lb.	7.451	8.823	19.452	\$/kg
Silver <sup>4</sup>	\$/tr.oz.	5.499	6.512	209.369	\$/kg
Tantalum	\$/lb.	35.302	41.805	92.164	\$/kg
Tellurium <sup>1</sup>	\$/lb.				\$/kg
Tin	\$/lb.	3.973	4.705	10.372	\$/kg
Titanium ore (ilmenite) <sup>1</sup>	\$/t.				\$/t
Titanium ore (slag)	\$/mtu	n.a.	n.a.	n.a.	\$/mtu
Tungsten LMB ore	\$/mtu	50.356	59.631	59.631	\$/mtu
Uranium (U <sub>3</sub> O <sub>8</sub> ) <sup>7</sup>	\$/lb.	10.258	12.148	26.782	\$/kg
Zinc <sup>4</sup>	¢/lb.	82.366	97.538	2.150	\$/kg

Sources: "Metals Week", "The Northern Miner", Energy, Mines and Resources Canada.

<sup>1</sup> List price suspended. <sup>2</sup> The copper price is an average of the COMEX 1st position and the LME grade A settlement.

<sup>3</sup> One iron unit equals 1% of a tonne. Hence iron ore pellets with a grade of 65% iron would contain 65 iron units/tonne.

<sup>4</sup> Handy & Harman, Metals Week. <sup>5</sup> One flask equals 76 pounds (34.473 kg). <sup>6</sup> Nickel price quoted for 1989 is the LME Cash. Nickel price for 1988 was based on the LME THR-MTH Futures. <sup>7</sup> Nuexco, US\$, Northern Miner.

n.a. Not available.

Note: The iridium price reported since January 1, 1989 is the N.Y. dealer price and not the Impala Producer price which is no longer reported by Metals Week. The indium price reported since January 1, 1989 is the U.S. Producer Cominco Ltd. price and not the U.S. ingots price which is no longer reported by Metals Week. Tungsten is now listed as LMB ore. This is a change to name only, and does not affect prices quoted.

1989 average U.S. exchange rate = \$1.1842.

**TABLE 5. AVERAGE ANNUAL PRICES<sup>1</sup> OF SELECTED MINERALS, 1983-89**

	Unit of Measure	1983	1984	1985	1986	1987	1988	1989
Aluminum, London Metal Exchange	¢/lb.	65.342	56.526	47.850	52.179	71.004	115.394	88.242
Antimony, New York dealer	\$/lb.	0.913	1.512	1.311	1.219	1.116	1.039	0.943
Asbestos, No. 4T cement fibre	C\$/t	1 083.000	1 083.000	1 083.000	1 083.000	1 083.000	1 080.000	..
Bismuth, New York dealer	\$/lb.	1.653	4.132	4.932	3.017	3.629	5.726	5.657
Cadmium, New York dealer <sup>2</sup>	\$/lb.	1.129	1.693	1.208	1.248	1.768	7.031	6.277
Calcium, metal crowns (Producer Price List)	\$/lb.	3.050	3.099	3.504	3.920	3.850	3.850	3.850
Chrome, U.S. metal, 9% carbon	\$/lb.	4.450	4.450	4.450	3.021	2.700	2.700	3.621
Cobalt, metal, shot/cathode/250 kg	\$/lb.	12.500	12.417	11.700	11.242	7.000	7.532	8.400
Columbium, pyrochlore	\$/lb.	3.250	3.250	3.209	2.600	3.250	2.600	..
Copper, electrolytic cathode, COMEX	¢/lb.	71.902	61.320	60.988	61.649	77.837	119.183	129.454
Gold, London <sup>3</sup>	C\$/troy oz.	520.792	466.781	433.227	510.628	592.011	538.024	451.691
Iridium, Impala producer	\$/troy oz.	600.000	600.000	600.000	600.000	513.750	420.000	..
Iron ore, taconite pellets	¢/ltu	80.500	80.500	80.500	80.500	77.548	72.441	72.450
Lead, producer	C¢/lb.	26.770	33.517	26.179	30.885	47.985	46.013	47.171
Magnesium, U.S. primary ingot (Producer Price List)	\$/lb.	1.365	1.455	1.480	1.530	1.530	1.563	1.630
Manganese, U.S. metal, regular	¢/lb.	67.583	73.542	80.000	79.450	80.687	86.417	91.000
Mercury, New York dealer	\$/flask (76 lb.)	322.443	314.381	310.957	232.785	295.503	335.517	287.722
Molybdenum, dealer, oxide	\$/lb.	3.635	3.557	3.247	2.871	2.899	3.449	3.341
Nickel, New York dealer, cathode	\$/lb.	2.810	2.221	2.260	1.855	2.278	6.122	5.982
Osmium, New York dealer	\$/troy oz.	133.113	466.479	913.125	698.854	632.458	588.750	547.917
Palladium, Impala producer	\$/troy oz.	130.000	14.667	126.905	130.595	150.000	150.000	150.000
Platinum, Impala producer	\$/troy oz.	475.000	475.000	475.000	519.147	600.000	600.000	600.000
Potash, coarse, major producer, 60% contained, K <sub>2</sub> O <sup>4</sup>	\$/st	71.500	65.000	55.729	46.750	68.000	86.000	..
Rhodium, Impala producer	\$/troy oz.	600.000	627.500	892.708	1 194.583	1 240.000	1 275.000	1 275.000
Ruthenium, New York dealer	\$/troy oz.	28.529	104.183	100.269	73.423	69.796	62.204	62.258
Selenium, New York dealer	\$/lb.	3.722	8.995	7.248	5.596	6.479	10.085	7.451
Silver, Handy & Harman, Toronto	C\$/troy oz.	11.421 <sup>r</sup>	8.141 <sup>r</sup>	6.142 <sup>r</sup>	5.470 <sup>r</sup>	7.009 <sup>r</sup>	6.535 <sup>r</sup>	5.499
Sulphur, elemental, North American deliveries	C\$/t	60.170	69.222	100.775	107.959	88.234	71.050	..
Tantalum, tantalite ore, spot	\$/lb.	23.146	29.438	26.292	18.008	20.542	37.700	35.302
Tellurium, major producer, slab	\$/lb.	9.000	11.000	11.000	10.000	10.006	14.250 <sup>•</sup>	..
Tin, New York dealer	\$/lb.	6.013	5.678	5.279	2.941	3.156	3.309	3.973
Titanium, slag	\$/lt	150.000	150.000	150.000	150.000	150.000	215.838	..
Tungsten, London Metal Bulletin - ore	\$/mtu	79.029	79.146	64.925	42.554	44.492	52.015	50.356
Uranium, U <sub>3</sub> O <sub>8</sub> <sup>5</sup>	C\$/lb.	31.212 <sup>r</sup>	27.000 <sup>r</sup>	26.000 <sup>r</sup>	25.000 <sup>r</sup>	23.000 <sup>r</sup>	25.000 <sup>r</sup>	24.000
Vanadium, pentoxide, metallurgical	\$/lb.	3.350	3.350	3.350	3.350	3.350	3.350	..
Zinc, special high grade	C¢/lb.	52.632	63.823	56.876	55.129	57.794	74.988	97.538

Sources: Alberta Energy Resource Industries Monthly Statistics (Sulphur); "Engineering and Mining Journal" (Asbestos); "Metals Week"; "Northern Miner"; Energy, Mines and Resources Canada.

<sup>1</sup> Prices, except where noted, are in United States currency. <sup>2</sup> U.S. producer price is used for 1983-86; New York dealer price is used for 1987-89. <sup>3</sup> Average afternoon fixings of London bullion dealers, converted to Canadian dollars. <sup>4</sup> Annual average not available, indicative price given. <sup>5</sup> From EMR publications on assessment of Canada's uranium supply and demand.

<sup>r</sup> Revised; .. Not available; <sup>•</sup> Estimate.

**TABLE 6. CANADIAN AVERAGE ANNUAL PRICES OF SELECTED MINERALS, 1983-89**

	Unit of Measure	1983	1984	1985	1986	1987	1988	1989
Aluminum, London Metal Exchange	\$/kg	1.775	1.614	1.440	1.598	2.076	3.131	2.304
Antimony, New York dealer	\$/kg	2.481	4.316	3.947	3.734	3.262	2.819	2.462
Asbestos, No. 4T cement fibre	\$/t	1 083.000	1 083.000	1 083.000	1 083.000	1 083.000	1 080.000	..
Bismuth, New York dealer	\$/kg	4.491	11.795	14.847	9.241	10.609	15.538	14.768
Cadmium, New York dealer <sup>1</sup>	\$/kg	3.067	4.833	3.637	3.823	5.168	19.079	16.387
Calcium, metal crowns (Producer Price List)	\$/kg	8.286	8.846	10.549	12.007	11.255	10.447	10.051
Chrome, U.S. metal, 9% carbon	\$/kg	12.090	12.703	13.396	9.254	7.893	7.327	9.453
Cobalt, metal, shot/cathode/250 kg	\$/kg	33.961	35.446	35.222	34.436	20.463	20.439	21.930
Columbium, pyrochlore	\$/kg	8.830	9.278	9.660	7.964	9.501	7.055	..
Copper, electrolytic cathode, COMEX	\$/kg	1.953	1.750	1.836	1.888	2.275	3.234	3.380
Gold, London <sup>2</sup>	\$/g	16.744	15.007	13.929	16.417	19.034	17.298	14.522
Iridium, Impala producer	\$/g	23.773	24.978	26.341	26.802	21.902	16.621	..
Iron ore, taconite pellets	c/mtu	97.638	102.588	108.187	110.082	101.204	87.757	84.440
Lead, producer	c/kg	59.018	73.892	57.715	68.090	105.789	101.441	103.994
Magnesium, U.S. primary ingot (Producer Price List)	\$/kg	3.709	4.153	4.455	4.687	4.473	4.241	4.255
Manganese, U.S. metal, regular	\$/kg	1.836	2.099	2.408	2.434	2.359	2.345	2.376
Mercury, New York dealer	\$/kg	11.527	11.808	12.317	9.382	11.366	11.980	9.884
Molybdenum, dealer, oxide	\$/kg	9.876	10.154	9.775	8.794	8.475	9.359	8.722
Nickel, New York dealer, cathode	\$/kg	5.923	6.340	6.804	5.682	6.659	16.613	15.617
Osmium, New York dealer	\$/g	5.274	19.419	40.088	31.218	26.963	23.299	20.861
Palladium, Impala producer	\$/g	5.151	6.106	5.571	5.834	6.395	5.936	5.711
Platinum, Impala producer	\$/g	18.820	19.774	20.853	23.191	25.579	23.744	22.844
Potash, coarse, major producer, 60% contained, K <sub>2</sub> O <sup>3</sup>	\$/t	97.128	92.775	83.884	71.601	99.392	116.685	..
Rhodium, Impala producer	\$/g	23.773	26.123	39.192	53.363	52.863	50.456	48.543
Ruthenium, New York dealer	\$/g	1.130	4.337	4.402	3.280	2.976	2.462	2.370
Selenium, New York dealer	\$/kg	10.112	25.677	21.820	17.142	18.940	27.367	19.452
Silver, Handy & Harman, Toronto	\$/kg	452.512	338.909	269.646	244.349	298.804	258.611	209.369
Sulphur, elemental, North American deliveries	\$/t	60.170	69.222	100.775	107.959	88.234	71.050	..
Tantalum, tantalite ore, spot	\$/kg	62.885	84.034	79.150	55.161	60.050	102.302*	92.164
Tellurium, major producer, slab	\$/kg	24.452	31.401	33.115	30.631	29.250	38.669	..
Tin, New York dealer	\$/kg	16.337	16.209	15.892	9.009	9.226	8.979	10.372
Titanium, slag	\$/t	181.933	191.158	201.591	205.121	195.757	261.472	..
Tungsten, London Metal Bulletin - ore	\$/mtu	97.392	102.481	88.656	59.125	58.996	64.024	59.631
Uranium, U <sup>4</sup>	\$/kg	100.000 <sup>r</sup>	90.000 <sup>r</sup>	91.000 <sup>r</sup>	89.000 <sup>r</sup>	79.000 <sup>r</sup>	79.000 <sup>r</sup>	74.000
Vanadium, pentoxide, metallurgical	\$/kg	9.102	9.563	10.085	10.262	9.793	9.091	..
Zinc, special high grade	\$/kg	1.160	1.407	1.254	1.215	1.274	1.653	2.150

Sources: Alberta Energy Resource Industries Monthly Statistics (Sulphur); "Engineering and Mining Journal" (Asbestos); "Metals Week"; "Northern Miner"; Energy, Mines and Resources Canada.

<sup>1</sup> U.S. producer price for 1983-86; New York dealer price for 1987-89. <sup>2</sup> Average afternoon fixings of London bullion dealers, converted to Canadian dollars. <sup>3</sup> Annual average not available, indicative price given. <sup>4</sup> From EMR publications on assessment of Canada's uranium supply and demand.

<sup>r</sup> Revised; .. Not available; \* Estimate.

**TABLE 7. CANADA, MINERAL PRODUCTS INDUSTRIES, SELLING PRICE INDEXES, 1983-89**

Base (1981=100)	1983	1984	1985	1986	1987	1988	1989 <sup>P</sup>
<b>Iron and Steel Products Industries</b>							
Ferro-alloy and steel foundry industries	104.1	110.5	113.3	114.7	113.3	116.8	123.3
Iron foundries	109.0	112.2	116.6	119.8	121.9	125.6	129.8
Primary steel industries	109.9	113.5	115.7	116.9	118.4	125.2	127.9
Steel pipe and tube industry	108.9	111.0	112.1	112.4	113.0	119.2	121.7
<b>Nonferrous Primary Metal Products Industries</b>							
Aluminum rolling, casting and extruding industry	103.6	116.2	111.2	114.4	117.7	138.0	131.7
Copper rolling, casting and extruding industry	99.2	91.4	93.0	95.9	108.6	144.3	157.3
Jewellery and precious metals industries	99.9	90.6	87.7	94.9	99.9	94.6	86.3
Other rolling casting and extruding industry	99.7	106.6	100.9	102.3	108.6	125.7	128.7
Nonferrous metal smelting and refining industries	95.6	98.1	91.7	95.2	106.5	143.8	139.6
<b>Nonmetallic Mineral Products Industries</b>							
Agricultural chemicals industries	100.2	103.8	104.2	101.7	102.1	108.6	109.0
Hydraulic cement industry	123.7	128.0	133.9	137.3	138.4	139.9	143.7
Clay products industry (from domestic clay)	120.5	130.7	143.0	152.6	164.4	169.5	179.5
Clay products industry (from imported clay)	115.5	118.1	121.5	128.1	135.2	143.2	153.2
Concrete products industries	115.0	113.8	114.0	120.5	126.5	136.5	140.0
Glass and glass products industries	114.5	119.0	121.1	126.0	131.0	138.0	139.3
Nonmetallic mineral insulating materials industry	112.7	113.4	120.8	121.8	127.3	133.5	139.0
Refined petroleum and coal products industries	121.8	127.1	133.5	107.2	101.9	95.3	97.0
<b>Fabricated Metal Products Industries</b>							
Agricultural implement industry	119.7	125.3	130.3	133.3	135.7	137.7	140.6
Miscellaneous fabricated structural metal products	108.5	110.8	115.3	118.0	120.6	128.3	134.1
Hardware, tool and cutlery industries	115.7	121.6	128.0	132.5	137.5	144.9	151.3
Heating equipment industry	117.5	121.9	127.2	129.6	132.9	137.9	143.0
Other metal fabricating industries	109.5	114.6	119.1	123.5	126.5	133.2	139.9
Power boiler and heat exchanger industry	110.7	114.2	120.0	130.0	141.5	149.2	157.8
Stamped, pressed and coated metal products industries	112.5	115.8	118.4	123.2	127.1	131.5	133.8
Wire and wire products industries	107.2	113.0	115.5	116.4	118.1	124.4	129.6

Source: Statistics Canada, 62-011.

<sup>P</sup> Preliminary.

**TABLE 8. CANADA, SELLING PRICE INDEXES OF MINERAL RAW MATERIALS, 1983-89**

Base (1981=100)	1983	1984	1985	1986	1987	1988	1989P
<b>Metallic Minerals</b>							
Copper concentrates	92.4	80.8	86.6	89.5	106.3	142.1	148.0
Iron ore	105.2	109.5	114.0	115.5	111.4	105.2	98.7
Lead concentrates	57.5	73.1	56.7	67.7	106.2	102.8	104.3
Nickel concentrates	84.5	92.8	99.4	87.2	97.0	229.7	219.5
Other base metals	95.3	104.8	94.8	96.8	103.6	126.1	117.8
Precious metals	99.0	84.9	77.2	86.6	99.2	90.0	76.1
Gold and alloys in primary form	98.0	85.0	78.2	88.1	100.5	91.5	77.3
Platinum	99.6	87.5	74.1	119.3	139.0	121.4	113.9
Silver	111.2	82.1	65.8	59.8	72.9	63.5	51.7
Radio-active concentrates	98.5	95.1	91.9	91.1	89.2	79.1	54.7
Zinc concentrates	96.3	118.4	105.0	101.7	108.0	141.1	187.9
<b>Nonmetal Materials</b>							
Asbestos fibres	110.9	110.4	108.0	107.7	107.8	108.7	115.4
Other crude minerals	110.1	114.3	116.0	117.5	117.8	122.9	122.2
Potash (muriate)	91.8	99.5	93.5	92.0	99.0	133.7	129.6
Sand and gravel	108.8	108.2	109.4	112.1	117.3	128.0	140.4
Quartz and silica sand	117.2	114.6	118.4	122.1	122.6	131.4	130.4
Stone	123.6	127.5	133.8	138.9	143.4	149.8	153.0
Building	123.2	127.6	132.9	136.5	141.3	145.3	152.0
Crushed	127.6	134.6	143.3	151.0	157.3	164.7	166.8
Other	123.2	127.6	132.9	136.5	141.3	145.3	152.0
Sulphur	98.9	114.4	167.2	179.1	145.9	117.9	118.0
<b>Mineral Fuels</b>							
Coal (thermal)	111.0	118.6	119.5	119.3	120.2	107.0	107.3
Natural gas	134.3	131.4	131.6	129.2	124.9	115.1	109.9
Crude mineral oil	130.0	131.8	138.9	80.1	88.6	69.3	79.2

Source: Statistics Canada, 62-011.

P Preliminary.

**TABLE 9. CANADA, PRINCIPAL STATISTICS OF THE MINERAL MANUFACTURING INDUSTRIES, 1987**

	Mineral Manufacturing Activity										
	Production and Related Workers				Costs				Total Activity <sup>1</sup>		
	Establishments	Employees	Person-hours Paid	Wages	Fuel and Electricity	Materials and Supplies	Value of Shipments	Value Added	Employees	Salaries and Wages	Value Added
(number)	(number)	(000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(number)	(\$000)	(\$000)	
<b>Primary Metal Industries</b>											
Primary steel	60	..	..	..	485 392	4 456 810	8 415 637	..	46 493	1 793 886	3 424 603
Smelting and refining	34	20 654	..	756 156	446 242	2 220 129 <sup>r</sup>	5 763 398 <sup>r</sup>	3 028 517	29 397	1 149 582	3 050 899
Wire and wire products industries <sup>2</sup>	302	..	..	..	39 415	1 150 215	2 001 941	..	15 284	406 338	821 019
Aluminum rolling, casting and extruding	71	..	..	..	33 449	1 169 431	1 701 916	..	6 143	215 473	503 334
Iron foundries	91	..	..	..	44 175	347 018	871 450	..	7 860	242 477	479 674
Metal rolling, casting and extruding n.e.s.	96	..	..	..	28 304	547 807	1 005 297	..	6 403 <sup>r</sup>	183 586	424 892 <sup>r</sup>
Steel pipe and tube	36	..	..	..	22 260	806 033	1 233 548	..	4 964 <sup>r</sup>	170 371	385 442
Copper and alloy rolling, casting and extruding	39	..	..	..	15 298	466 060	607 483	..	2 828	83 237	129 629
<b>Total</b>	<b>729</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>1 114 535</b>	<b>11 163 503<sup>r</sup></b>	<b>21 600 670<sup>r</sup></b>	<b>..</b>	<b>119 372<sup>r</sup></b>	<b>4 244 950</b>	<b>9 219 492<sup>r</sup></b>
<b>Nonmetallic Mineral Products Industries</b>											
Ready-mix concrete	587	10 124	..	284 846	59 474	1 035 871 <sup>r</sup>	1 843 392 <sup>r</sup>	730 174	11 910	343 436	748 359
Cement	24	2 294	..	87 173	162 830	246 252 <sup>r</sup>	980 231 <sup>r</sup>	546 169	3 646	143 154	558 446
Primary glass and glass containers	23	5 751	..	171 795	60 477	280 503 <sup>r</sup>	875 827 <sup>r</sup>	531 144	7 584	244 603	532 673
Glass products	153	5 162	..	131 212	14 876	339 711 <sup>r</sup>	688 081 <sup>r</sup>	327 418	6 021	161 356	336 724
Gypsum products	30	1 667	..	49 873	33 881	287 614 <sup>r</sup>	642 618 <sup>r</sup>	309 680	2 375	74 702	322 746
Mineral insulating products	43	2 228	..	67 089	35 562	465 546 <sup>r</sup>	816 488 <sup>r</sup>	188 780	3 444	117 067	316 997
Other concrete products	248	4 880	..	107 529	15 918	235 739 <sup>r</sup>	537 354 <sup>r</sup>	282 644	5 403	129 528	292 084
Structural concrete products	64	2 496	..	70 160	5 155	133 247 <sup>r</sup>	305 321 <sup>r</sup>	1 365 819	3 006	87 788	164 719
Clay products (domestic)	34	1 250	..	35 020	26 293	49 305 <sup>r</sup>	223 455 <sup>r</sup>	143 341	1 738	54 457	148 230
Other nonmetallic mineral products	153	2 384	..	53 719	10 638	129 148 <sup>r</sup>	281 914 <sup>r</sup>	136 147	2 707	64 298	144 926
Concrete pipe	50	1 581	..	42 939	5 970	105 054 <sup>r</sup>	242 111 <sup>r</sup>	133 127	1 900	56 655	133 996
Clay products (imported)	56	1 700	..	38 691	7 558	52 630 <sup>r</sup>	189 821 <sup>r</sup>	128 400	2 192	52 927	130 436
Refractory products	29	1 291	..	31 462	7 019	131 546 <sup>r</sup>	256 599 <sup>r</sup>	109 285	1 772	47 056 <sup>r</sup>	116 742 <sup>r</sup>
Abrasives	29	1 265	..	32 494	34 589	132 456 <sup>r</sup>	276 700 <sup>r</sup>	102 183	1 693	48 326	105 199
Lime	14	595	..	20 803	38 470	31 410 <sup>r</sup>	156 129 <sup>r</sup>	86 904	784	28 587	87 421
Asbestos products industry	10	490	..	10 137	2 037	32 927 <sup>r</sup>	59 355 <sup>r</sup>	23 151	647	14 929	23 326
<b>Total</b>	<b>1 547</b>	<b>45 158</b>	<b>..</b>	<b>1 234 942</b>	<b>520 747</b>	<b>3 688 959<sup>r</sup></b>	<b>8 375 396<sup>r</sup></b>	<b>5 144 366</b>	<b>56 822</b>	<b>1 668 869<sup>r</sup></b>	<b>4 163 024<sup>r</sup></b>

**TABLE 9. (cont'd)**

	Mineral Manufacturing Activity										
	Production and Related Workers				Costs				Total Activity <sup>1</sup>		
	Establish- ments	Employees	Person- hours Paid	Wages	Fuel and Electricity	Materials and Supplies	Value of Shipments	Value Added	Employees	Salaries and Wages	Value Added
	(number)	(number)	(000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(number)	(\$000)	(\$000)
<b>Fabricated Metal Products Industries</b>											
Stamped and pressed metal products industries	971	..	..	..	75 267	3 740 056	5 610 044	..	35 329 <sup>r</sup>	887 398	2 069 735
Fabricated structural metal products industries	396	..	..	..	28 878	1 263 621	2 477 554	..	18 615	501 785	1 177 608
Hardware, tool and cutlery industry	855	..	..	..	24 738	747 123	1 794 817	..	22 129	573 057	1 025 466
Other metal fabricating industries	538	..	..	..	31 554	913 311	1 786 377	..	16 358	418 340	856 434
Ornamental and architectural metal products industries	766	..	..	..	22 700	1 008 568	1 836 938	..	19 770	446 010	813 080
Machine shop industry	1 464	..	..	..	19 254	483 560	1 194 506	..	18 398	436 311	692 422
Power boiler and heat exchanger industry	43	..	..	..	4 715	240 407	652 833 <sup>r</sup>	..	4 816	148 645	407 658
Heating equipment industry	163	..	..	..	5 636	317 251	595 940	..	6 252	136 408	269 497
<b>Total</b>	<b>5 196</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>212 742</b>	<b>8 443 897</b>	<b>15 949 009<sup>r</sup></b>	<b>..</b>	<b>141 667<sup>r</sup></b>	<b>3 547 954</b>	<b>7 311 900</b>
<b>Petroleum and Coal Products Industries</b>											
Petroleum refining products	30	..	..	..	290 139	15 018 518	16 958 489	..	13 252	647 779	1 860 061
Other petroleum and coal products	62	..	..	..	12 290	260 099	376 200	..	894	28 053	107 478
Lubricating oils and greases	34	..	..	..	5 052	245 136	347 590	..	1 002	32 476	98 976
<b>Total</b>	<b>126</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>307 481</b>	<b>15 523 753</b>	<b>17 682 279</b>	<b>..</b>	<b>15 148</b>	<b>708 308</b>	<b>2 066 515</b>
<b>Total mineral manufacturing industries</b>	<b>7 598</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>2 155 505</b>	<b>38 820 112<sup>r</sup></b>	<b>63 607 354<sup>r</sup></b>	<b>..</b>	<b>333 009<sup>r</sup></b>	<b>10 170 081<sup>r</sup></b>	<b>22 760 931<sup>r</sup></b>

Source: Statistics Canada.

<sup>1</sup> Total activity includes sales and head offices. <sup>2</sup> Wire and wire products have been included in the primary metal industries group.

n.e.s. Not elsewhere specified; .. Not available; <sup>r</sup> Revised.

Note: Totals may not add due to rounding.

**TABLE 10. CANADA, PRINCIPAL STATISTICS OF THE MINERAL MANUFACTURING INDUSTRY BY REGION, 1987**

	Mineral Manufacturing Activity										
	Production and Related Workers				Costs				Total Activity <sup>1</sup>		
	Establish- ments	Employees	Person- hours Paid	Wages	Fuel and Electricity	Materials and Supplies	Value of Shipments	Value Added	Employees	Salaries and Wages	Value Added
	(number)	(number)	(000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(number)	(\$000)	(\$000)
<b>Primary Metals Industry</b>											
Atlantic Provinces	6	..	..	..	x	x	x	..	x	x	x
Quebec	117	..	..	..	421 808	2 984 396	6 223 122	..	27 020	1 020 157	2 766 763
Ontario	216	..	..	..	508 951	5 731 198	10 707 854	..	62 230	2 325 932	4 407 881
Prairie Provinces	49	..	..	..	x	x	x	..	x	x	x
British Columbia	39	..	..	..	12 398	375 003	950 198	..	6 446	218 621	563 172
Yukon and Northwest Territories	-	..	..	..	-	-	-	..	-	-	-
Canada	427	..	..	..	1 075 121	10 013 289 <sup>r</sup>	19 598 730 <sup>r</sup>	..	104 088 <sup>r</sup>	3 838 613	8 398 472 <sup>r</sup>
<b>Nonmetallic Mineral Products Industry</b>											
Atlantic Provinces	115	..	..	..	x	x	x	..	x	x	x
Quebec	398	..	..	..	134 159	809 324	1 865 522	..	14 409	389 809	916 590
Ontario	548	..	..	..	267 012	2 003 071	4 605 150	..	28 555	869 953	2 346 337
Prairie Provinces	311	..	..	..	61 399	495 105	1 052 365	..	7 305	209 696	495 771
British Columbia	175	..	..	..	36 433	270 410	588 116	..	3 991	136 216	277 304
Yukon and Northwest Territories	-	..	..	..	-	-	-	..	-	-	-
Canada	1 547	..	..	..	520 748	3 688 957 <sup>r</sup>	8 375 397 <sup>r</sup>	..	56 822	1 668 869 <sup>r</sup>	4 163 025 <sup>r</sup>
<b>Fabricated Metal Products Industry<sup>2</sup></b>											
Atlantic Provinces	167	..	..	..	4 550	189 749	331 893	..	3 183	72 793	137 410
Quebec	1 282	..	..	..	59 927	1 975 807	3 810 157	..	35 943	877 107	1 791 293
Ontario	2 850	..	..	..	153 990	6 084 492	11 235 012	..	94 119	2 392 174	5 006 824
Prairie Provinces	655	..	..	..	18 160	725 060	1 409 958	..	14 018	331 644	666 326
British Columbia	544	..	..	..	15 529	619 003	1 163 933	..	9 688	280 572	531 066
Yukon and Northwest Territories	-	..	..	..	-	-	-	..	-	-	-
Canada	5 498	..	..	..	252 156	9 594 112	17 950 952 <sup>r</sup>	..	156 951 <sup>r</sup>	3 954 291	8 132 919

TABLE 10. (cont'd)

	Mineral Manufacturing Activity										
	Production and Related Workers				Costs				Total Activity <sup>1</sup>		
	Establish-ments	Employees	Person-hours Paid	Wages	Fuel and Electricity	Materials and Supplies	Value of Shipments	Value Added	Employees	Salaries and Wages	Value Added
	(number)	(number)	(000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(number)	(\$000)	(\$000)
<b>Petroleum and Coal Products Industry</b>											
Atlantic Provinces	8	..	..	..	x	x	x	..	x	x	x
Quebec	25	..	..	..	92 738	3 316 671	3 547 825	..	1 437	63 561	120 863
Ontario	48	..	..	..	113 978	5 441 724	6 372 264	..	7 654	354 255	919 861
Prairie Provinces	31	..	..	..	x	x	x	..	x	x	x
British Columbia	13	..	..	..	20 575	1 439 438	1 640 981	..	957	49 026	192 975
Yukon and Northwest Territories	1	..	..	..	x	x	x	..	x	x	x
Canada	126	..	..	..	307 481	15 523 753	17 682 278	..	15 148	708 309	2 066 515
<b>Total Mineral Manufacturing Industry</b>											
Atlantic Provinces	296	..	..	..	x	x	x	..	x	x	x
Quebec	1 822	..	..	..	708 632	9 086 198	15 446 626	..	78 809	2 350 634	5 595 509
Ontario	3 662	..	..	..	1 043 931	19 260 485	32 920 280	..	192 558	5 942 314	12 680 903
Prairie Provinces	1 046	..	..	..	x	x	x	..	x	x	x
British Columbia	771	..	..	..	84 935	2 703 854	4 343 228	..	21 082	684 435	1 564 517
Yukon and Northwest Territories	1	..	..	..	x	x	x	..	x	x	x
Canada	7 598	..	..	..	2 155 505	38 820 112 <sup>r</sup>	63 607 354 <sup>r</sup>	..	333 009 <sup>r</sup>	10 170 081 <sup>r</sup>	22 760 931 <sup>r</sup>

Source: Statistics Canada, 31-203.

<sup>1</sup> Total activity includes sales and head offices. <sup>2</sup> For reasons of confidentiality, SIC 305 (Wire and wire products), normally included in Primary Metals is included in Fabricated Metal Products.

x Confidential; .. Not available; <sup>r</sup> Revised; - Nil.

**TABLE 11. CANADA, PRINCIPAL STATISTICS OF THE MINERAL MANUFACTURING INDUSTRIES<sup>1</sup>, 1980-87**

	Mineral Manufacturing Activity										
	Production and Related Workers				Costs				Total Activity <sup>2</sup>		
	Establish- ments	Employees	Person-hours Paid	Wages	Fuel and Electricity	Materials and Supplies	Value of Shipments	Value Added	Employees	Salaries and Wages	Value Added
	(number)	(number)	(000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(number)	(\$000)	(\$000)
1980	7 229	270 529	565 988	4 991 451	1 411 101	28 394 177	43 895 507	14 758 224	366 120	7 262 688	15 160 467
1981	7 196	261 364	546 732	5 393 636	1 720 151	34 570 420	51 870 979	16 791 049	361 883	8 076 300	17 200 686
1982	5 687	229 518	475 378	5 333 201	1 728 740	34 241 605	50 045 037	14 497 245	321 785	8 126 238	14 823 990
1983	7 370	216 944	447 947	5 420 307	1 905 777	34 720 416	52 773 875	15 861 491	301 112	8 143 674	16 196 749
1984	7 511	223 816	470 367	5 948 626	2 125 032	37 738 117	57 207 764	17 980 271	304 309	8 719 151	18 265 131
1985	7 625	238 544	506 377	6 507 081	2 229 270	39 497 925	61 241 939	19 305 730	313 850	9 271 447	19 646 938
1986	7 841	248 039	524 184	6 829 899	2 096 145	31 806 478	54 521 641	19 788 464	319 950	9 563 918	20 124 687
1987	7 598	..	..	..	2 155 505	38 820 112 <sup>r</sup>	63 607 354 <sup>r</sup>	..	333 009 <sup>r</sup>	10 170 081 <sup>r</sup>	22 760 931 <sup>r</sup>

Source: Statistics Canada.

<sup>1</sup> Includes the following industries: Primary Metals; Nonmetallic Mineral Products; Fabricated Metal Products; and Refined Petroleum and Coal Products. <sup>2</sup> Total Activity includes sales and head offices.

.. Not available; <sup>r</sup> Revised.

**TABLE 12. CANADA, EMPLOYMENT, SALARIES AND WAGES IN THE MINERAL MANUFACTURING INDUSTRIES, 1981-87**

	Unit	1981	1982	1983	1984	1985	1986	1987
<b>Primary Metal Industries</b>								
Production and related workers	Number	105 518	92 621	87 769	92 336	92 695	90 035	..
Salaries and wages	\$000	2 355 537	2 368 939	2 445 267	2 818 413	2 940 777	2 924 986	..
Annual average salary and wage	\$	22 324	25 577	27 860	30 523	31 725	32 487	..
Administrative and office workers	Number	36 959	34 563	31 076	30 826	29 467	28 738	..
Salaries and wages	\$000	1 039 467	1 104 327	1 055 120	1 131 842	1 159 060	1 182 287	..
Annual average salary and wage	\$	28 125	31 951	33 953	36 717	39 334	41 140	..
<b>Total primary metal industries<sup>1</sup></b>								
Employees	Number	142 477	127 184	118 845	123 162	122 162	118 773	119 372 <sup>r</sup>
Salaries and wages	\$000	3 395 004	3 473 266	3 500 387	3 950 387	4 099 837	4 107 273	4 244 950
Annual average salary and wage	\$	23 828	27 309	29 453	32 074	33 561	34 581	35 561 <sup>r</sup>
<b>Nonmetallic Mineral Products Industries</b>								
Production and related workers	Number	40 145	33 997	34 097	36 155	38 763	42 011	45 158
Salaries and wages	\$000	818 566	751 915	800 755	883 604	1 001 780	1 121 460	1 234 942
Annual average salary and wage	\$	20 390	22 117	23 485	24 439	25 844	26 694	27 347
Administrative and office workers	Number	15 124	13 952	13 353	12 738	11 842	11 479	11 664
Salaries and wages	\$000	369 889	383 405	391 901	394 620	397 131	406 427	433 927
Annual average salary and wage	\$	24 457	27 480	29 349	30 980	33 536	35 406	37 202
<b>Total nonmetallic mineral products</b>								
Employees	Number	55 269	47 949	47 450	48 893	50 605	53 490	56 822
Salaries and wages	\$000	1 188 455	1 135 320	1 192 656	1 278 224	1 398 911	1 527 887	1 668 869 <sup>r</sup>
Annual average salary and wage	\$	21 503	23 678	25 135	26 143	27 644	28 564	29 370 <sup>r</sup>
<b>Fabricated Metal Products Industries</b>								
Production and related workers	Number	107 269	94 779	87 661	88 787	100 650	109 634	..
Salaries and wages	\$000	1 970 334	1 946 325	1 910 181	1 983 782	2 298 665	2 518 297	..
Annual average salary and wage	\$	18 368	20 535	21 791	22 343	22 838	22 970	..
Administrative and officer workers	Number	34 254	30 372	28 239	26 203	23 694	22 987	..
Salaries and wages	\$000	836 878	803 920	785 881	778 057	751 973	746 041	..
Annual average salary and wage	\$	24 432	26 469	27 830	29 693	31 737	32 455	..
<b>Total fabricated metal products industries</b>								
Employees	Number	141 523	125 151	115 900	114 990	124 344	132 621	141 667 <sup>r</sup>
Salaries and wages	\$000	2 807 212	2 750 245	2 696 062	2 761 839	3 050 638	3 264 338	3 547 954
Annual average salary and wage	\$	19 836	21 975	23 262	24 018	24 534	24 614	25 044 <sup>r</sup>

**Petroleum and Coal Products Industries**

Production and related workers	Number	8 432	8 121	7 417	6 538	6 436	6 359	..
Salaries and wages	\$000	249 199	266 022	264 104	262 827	265 859	265 156	..
Annual average salary and wage	\$	29 554	32 757	35 608	40 200	41 308	41 698	..
Administrative and office workers	Number	14 182	13 380	11 500	10 726	10 303	8 707	..
Salaries and wages	\$000	436 430	501 385	490 465	466 006	456 202	399 264	..
Annual average salary and wage	\$	30 774	37 473	42 649	43 446	44 279	45 856	..
<hr/>								
Total petroleum and coal products Employees	Number	22 614	21 501	18 917	17 264	16 739	15 066	15 148
Salaries and wages	\$000	685 629	767 407	754 569	728 833	722 061	664 420	708 308
Annual average salary and wage	\$	30 319	35 692	39 888	42 217	43 136	44 101	46 759
<hr/>								
<b>Total Mineral Manufacturing</b>								
Production and related workers	Number	261 364	229 518	216 944	223 816	238 544	248 039	..
Salaries and wages	\$000	5 393 636	5 333 201	5 420 307	5 948 626	6 507 081	6 829 899	..
Annual average salary and wage	\$	20 636	23 237	24 985	26 578	27 278	27 536	..
Administrative and office workers	Number	100 519	92 267	84 168	80 493	75 306	71 911	..
Salaries and wages	\$000	2 682 664	2 793 037	2 723 367	2 770 525	2 764 366	2 734 019	..
Annual average salary and wage	\$	26 688	30 271	32 356	34 419	36 708	38 019	..
<hr/>								
Total mineral manufacturing industries Employees	Number	361 883	321 785	301 112	304 309	313 850	319 950	333 009r
Salaries and wages	\$000	8 076 300	8 126 238	8 143 674	8 719 151	9 271 447	9 563 918	10 170 081r
Annual average salary and wage	\$	22 317	25 254	27 045	28 652	29 541	29 892	30 540r

Source: Statistics Canada.

<sup>1</sup> Wire and Wire Products have been included in the primary metal industries group.

.. Not available; r Revised.

**TABLE 13. CANADA, EXPLORATION AND CAPITAL EXPENDITURES IN THE MINING INDUSTRY<sup>1</sup> BY PROVINCES AND TERRITORIES, 1988-90**

		Capital											
		Construction					Repair				Total Capital and Repair	Outside or General Exploration	Total, all Expenditures
		On-property Exploration	On-property Development	Structures	Sub-total	Machinery and Equipment	Total Capital	Construction	Machinery and Equipment	Total Repair			
(\$ million)													
Newfoundland	1988	x	35.8	x	102.4	18.4	120.8	x	x	153.0	273.8	..	273.8
	1989 <sup>p</sup>	-	43.0	10.2	53.2	38.2	91.4	x	x	155.6	247.0	..	247.0
	1990 <sup>f</sup>	-	37.2	7.4	44.6	31.0	75.6	x	x	151.3	226.9	..	226.9
Prince Edward Island	1988	-	-	-	-	-	-	-	-	-	-	..	-
	1989 <sup>p</sup>	-	-	-	-	-	-	-	-	-	-	..	-
	1990 <sup>f</sup>	-	-	-	-	-	-	-	-	-	-	..	-
Nova Scotia	1988	1.2	16.7	8.3	26.2	46.6	72.8	2.5	37.2	39.7	112.5	..	112.5
	1989 <sup>p</sup>	x	21.8	x	26.0	33.8	59.8	1.2	37.1	38.3	98.1	..	98.1
	1990 <sup>f</sup>	x	50.9	x	60.3	86.2	146.5	2.0	38.1	40.1	186.6	..	186.6
New Brunswick	1988	0.8	32.7	14.3	47.8	41.6	89.4	8.0	76.7	84.7	174.1	..	174.1
	1989 <sup>p</sup>	x	26.9	x	41.0	72.9	113.9	9.4	88.6	98.0	211.9	..	211.9
	1990 <sup>f</sup>	2.6	30.3	12.1	45.0	67.7	112.7	10.3	87.0	97.3	210.0	..	210.0
Quebec	1988	33.6	207.8	110.3	351.7	109.1	460.8	17.7	219.7	237.4	698.2	..	698.2
	1989 <sup>p</sup>	49.9	251.9	53.0	354.8	140.4	495.2	25.8	259.6	285.4	780.6	..	780.6
	1990 <sup>f</sup>	24.5	183.0	24.1	231.6	114.1	345.7	27.0	265.2	292.2	637.9	..	637.9
Ontario	1988	67.0	361.2	192.2	620.4	339.1	959.5	75.4	433.4	508.8	1 468.3	..	1 468.3
	1989 <sup>p</sup>	37.8	281.8	80.5	400.1	280.0	680.1	54.4	447.6	502.0	1 182.1	..	1 182.1
	1990 <sup>f</sup>	45.4	282.7	70.6	398.7	253.0	651.7	56.2	453.9	510.1	1 161.8	..	1 161.8
Manitoba	1988	9.4	33.6	69.2	112.2	45.1	157.3	8.1	56.1	64.2	221.5	..	221.5
	1989 <sup>p</sup>	x	49.4	x	88.6	37.9	126.5	1.8	57.1	58.9	185.4	..	185.4
	1990 <sup>f</sup>	x	x	x	61.5	34.3	95.8	1.9	50.8	52.7	148.5	..	148.5
Saskatchewan	1988	13.5	114.4	26.0	153.9	65.9	219.8	8.4	138.2	146.6	366.4	..	366.4
	1989 <sup>p</sup>	13.8	58.1	32.5	104.4	70.8	175.2	14.1	136.9	151.0	326.2	..	326.2
	1990 <sup>f</sup>	56.0	55.2	21.8	133.0	64.3	197.3	14.0	139.9	153.9	351.2	..	351.2
Alberta	1988	1.0	14.2	10.1	25.3	33.9	59.2	1.1	104.0	105.1	164.3	..	164.3
	1989 <sup>p</sup>	x	15.8	x	17.9	26.1	44.0	0.5	115.8	116.3	160.3	..	160.3
	1990 <sup>f</sup>	x	19.1	x	23.8	63.1	86.9	1.1	120.7	121.8	208.7	..	208.7
British Columbia	1988	12.0	330.9	147.6	490.5	101.8	592.3	29.7	406.8	436.5	1 028.8	..	1 028.8
	1989 <sup>p</sup>	30.1	287.2	114.5	431.8	139.3	571.1	22.5	428.8	451.3	1 022.4	..	1 022.4
	1990 <sup>f</sup>	15.8	277.5	42.9	336.2	111.0	447.2	22.5	449.1	471.6	918.8	..	918.8

Yukon	1988	x	24.2	x	35.4	3.9	39.2	x	x	3.2	42.4	..	42.4
	1989 <sup>P</sup>	x	13.6	x	18.7	4.9	23.6	x	x	21.6	45.2	..	45.2
	1990 <sup>I</sup>	x	x	x	28.5	5.6	34.1	x	x	31.2	65.3	..	65.3
Northwest Territories	1988	1.4	38.3	36.1	75.8	20.6	96.4	3.9	42.1	46.0	142.4	..	142.4
	1989 <sup>P</sup>	1.8	40.3	86.5	128.6	83.8	212.4	1.7	32.0	33.7	246.1	..	246.1
	1990 <sup>I</sup>	2.4	39.4	26.1	67.9	14.4	82.3	1.2	31.8	33.0	115.3	..	115.3
Canada	1988	143.4	1 229.7	668.3	2 041.4	825.8	2 867.2	161.6	1 663.3	1 824.9	4 692.1	..	4 692.1
	1989 <sup>P</sup>	146.3	1 089.7	429.1	1 665.1	928.1	2 593.2	140.6	1 771.4	1 912.0	4 505.2	..	4 505.2
	1990 <sup>I</sup>	153.8	1 046.1	231.3	1 431.2	844.6	2 775.8	145.1	1 810.0	1 955.1	4 230.9	..	4 230.9

Sources: Statistics Canada; Energy, Mines and Resources Canada.

<sup>1</sup> Excludes crude oil and natural gas industries.

<sup>P</sup> Preliminary; <sup>I</sup> Intentions; .. Not available; - Nil; x Confidential, included in total.

Note: Totals may not add due to rounding.

**TABLE 14. CANADA, EXPLORATION AND CAPITAL EXPENDITURES<sup>1</sup> IN THE MINING INDUSTRY BY TYPE OF MINING, 1988-90**

		Capital												
		Construction				Machinery and Equipment			Repair			Total Capital and Repair	Outside or General Exploration	Total, all Expenditures
		On-property Exploration	On-property Development	Structures	Sub-total	Machinery and Equipment	Total Capital	Construction	Machinery and Equipment	Total Repair				
(\$ million)														
<b>Metal Mines</b>														
Copper-gold-silver	1988	27.4	130.3	129.0	286.7	84.9	371.6	18.1	260.8	278.9	650.5	..	650.6	
	1989 <sup>P</sup>	22.6	91.1	85.4	199.1	109.4	308.5	19.9	279.3	299.2	607.7	..	607.7	
	1990 <sup>I</sup>	18.9	85.9	47.5	152.3	62.4	214.7	22.3	283.4	305.7	520.4	..	520.4	
Gold	1988	86.0	416.8	362.5	865.3	291.7	1 157.0	48.0	177.2	225.2	1 382.2	..	1 382.2	
	1989 <sup>P</sup>	78.0	328.9	226.7	633.6	218.3	851.9	28.4	208.2	236.6	1 088.5	..	1 088.5	
	1990 <sup>I</sup>	47.7	232.8	89.1	369.6	95.0	464.6	29.5	214.1	243.6	708.2	..	708.2	
Iron	1988	x	66.0	x	70.2	13.2	83.4	8.8	234.6	243.4	326.8	..	326.8	
	1989 <sup>P</sup>	x	x	x	74.6	48.7	123.3	12.8	232.0	244.8	368.1	..	368.1	
	1990 <sup>I</sup>	x	76.9	x	81.8	79.2	161.0	12.8	213.7	226.5	387.5	..	387.5	
Silver-lead-zinc	1988	7.7	80.8	25.9	114.4	40.4	154.8	11.2	80.9	92.1	246.9	..	246.9	
	1989 <sup>P</sup>	7.9	89.2	17.9	115.0	70.8	185.8	10.9	107.8	118.7	304.5	..	304.5	
	1990 <sup>I</sup>	7.3	73.4	15.0	95.7	51.1	146.8	11.1	115.7	126.8	273.6	..	273.6	
Uranium	1988	x	93.1	x	112.7	26.7	139.4	8.1	129.5	137.6	277.0	..	277.0	
	1989 <sup>P</sup>	x	x	x	72.6	28.9	101.5	9.5	119.5	129.0	230.5	..	230.5	
	1990 <sup>I</sup>	x	58.3	x	114.1	24.6	138.7	8.9	125.7	134.6	273.3	..	273.3	
Other metal mining <sup>2</sup>	1988	12.5	104.2	42.6	159.3	105.3	264.6	28.9	145.6	174.5	439.1	..	439.1	
	1989 <sup>P</sup>	19.4	143.2	40.1	202.7	143.1	345.8	30.3	153.7	184.0	529.8	..	529.8	
	1990 <sup>I</sup>	x	151.1	x	207.9	172.5	380.4	32.5	164.7	197.2	577.6	..	577.6	
Total metal mining	1988	139.3	891.2	578.1	1 608.6	562.3	2 170.9	123.2	1 028.6	1 151.8	3 322.7	..	3 322.7	
	1989 <sup>P</sup>	132.3	780.6	384.5	1 297.4	619.2	1 916.6	111.9	1 100.6	1 212.5	3 129.1	..	3 129.1	
	1990 <sup>I</sup>	135.2	678.5	207.9	1 021.6	484.8	1 506.4	117.1	1 117.5	1 234.6	2 741.0	..	2 741.0	
<b>Nonmetal Mines</b>														
Asbestos	1988	x	55.2	x	56.0	3.1	59.1	2.1	40.6	42.7	101.8	..	101.8	
	1989 <sup>P</sup>	x	51.4	x	52.6	1.3	53.9	5.5	53.1	58.6	112.5	..	112.5	
	1990 <sup>I</sup>	x	46.0	x	47.2	2.3	49.5	4.6	46.2	50.8	100.3	..	100.3	
Coal	1988	x	189.1	x	214.9	115.6	330.5	21.1	353.1	374.2	704.7	..	704.7	
	1989 <sup>P</sup>	x	183.7	x	200.0	115.6	315.6	8.3	368.3	376.6	692.2	..	692.2	
	1990 <sup>I</sup>	3.2	247.9	12.5	263.6	182.7	446.3	7.7	396.6	404.3	850.6	..	850.6	

Other nonmetal mining <sup>3</sup>	1988	2.4	94.1	65.3	161.8	144.9	306.7	15.3	241.0	256.3	563.0	..	563.0
	1989 <sup>p</sup>	11.0	74.0	30.2	115.2	192.0	307.2	15.0	249.4	264.4	571.6	..	571.6
	1990 <sup>l</sup>	x	73.7	x	98.8	174.8	273.6	15.6	249.7	265.3	538.9	..	538.9
Total nonmetal mining	1988	4.1	338.5	90.3	432.9	263.5	696.4	38.5	634.7	673.2	1 369.6	..	1 369.6
	1989 <sup>p</sup>	14.1	309.1	44.6	367.8	308.9	676.7	28.7	670.9	699.6	1 376.3	..	1 376.3
	1990 <sup>l</sup>	18.7	367.6	23.4	409.7	359.8	769.5	28.0	692.5	720.5	1 490.0	..	1 490.0
Metal and Nonmetal Exploration Companies	1988	..	..	..	..	..	..	..	..	..	..	..	..
	1989 <sup>p</sup>	..	..	..	..	..	..	..	..	..	..	..	..
	1990 <sup>l</sup>	..	..	..	..	..	..	..	..	..	..	..	..
Total mining	1988	143.4	1 229.7	668.3	2 041.4	825.8	2 867.2	161.6	1 663.3	1 824.9	4 692.1	..	4 692.1
	1989 <sup>p</sup>	146.3	1 089.7	429.1	1 665.1	928.1	2 593.2	140.6	1 771.4	1 912.0	4 505.2	..	4 505.2
	1990 <sup>l</sup>	153.8	1 046.1	231.3	1 431.2	844.6	2 275.8	145.1	1 810.0	1 955.1	4 230.9	..	4 230.9

Sources: Statistics Canada; Energy, Mines and Resources Canada.

<sup>1</sup> Excludes expenditures in the petroleum and natural gas industries. <sup>2</sup> Includes nickel-copper mines, silver-cobalt mines and other metal mines. <sup>3</sup> Includes gypsum mines, salt mines, potash mines, quarries, sand and gravel pits and other nonmetal mines.

<sup>p</sup> Preliminary; <sup>l</sup> Intentions; .. Not available; x Confidential, included in total.

Note: Totals may not add due to rounding.

**TABLE 15. CANADA, CAPITAL AND REPAIR EXPENDITURES BY SELECTED INDUSTRIAL SECTOR, 1988-90**

		Capital Expenditures			Repair Expenditures			Capital and Repair Expenditures		
		Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
		(\$ million)								
Agriculture	1988	1 128.5	2 032.5	3 161.0	448.3	1 329.3	1 777.6	1 576.8	3 361.8	4 938.6
	1989 <sup>P</sup>	1 163.2	2 120.9	3 284.1	498.7	1 444.9	1 943.6	1 661.9	3 565.8	5 227.7
	1990 <sup>I</sup>	1 151.6	2 101.2	3 252.8	519.6	1 507.0	2 026.6	1 671.2	3 608.2	5 279.4
Construction	1988	354.6	1 505.3	1 859.9	65.0	1 803.6	1 148.6	419.6	2 588.9	3 008.5
	1989 <sup>P</sup>	400.5	1 699.7	2 100.2	69.5	1 157.8	1 227.3	470.0	2 857.5	3 327.5
	1990 <sup>I</sup>	426.5	1 811.6	2 238.1	74.1	1 234.1	1 308.2	500.6	3 045.7	3 546.3
Forestry	1988	137.6	133.3	270.9	64.5	266.6	331.1	202.1	399.9	602.0
	1989 <sup>P</sup>	122.6	150.3	272.9	92.3	247.0	339.3	214.9	397.3	612.2
	1990 <sup>I</sup>	152.8	170.0	322.8	96.9	250.7	347.6	249.7	420.7	670.4
Housing	1988	34 916.9	—	34 916.9	4 019.0	—	4 019.0	38 935.9	—	38 935.9
	1989 <sup>P</sup>	38 681.8	—	38 681.8	4 440.0	—	4 440.0	43 121.8	—	43 121.8
	1990 <sup>I</sup>	40 057.5	—	40 057.5	4 905.5	—	4 905.5	44 963.0	—	44 963.0
Manufacturing	1988	3 233.9	14 427.9	17 661.8	1 024.7	6 973.6	7 998.3	4 258.6	21 401.5	25 660.1
	1989 <sup>P</sup>	3 754.5	16 547.3	20 301.8	1 054.8	7 107.1	8 161.9	4 809.3	23 654.4	28 463.7
	1990 <sup>I</sup>	4 054.4	18 475.3	22 529.7	1 101.4	7 299.7	8 401.1	5 155.8	25 775.0	30 930.8
Mining <sup>1</sup>	1988	7 176.3	1 574.1	8 750.4	403.3	2 429.7	2 833.0	7 579.6	4 003.8	11 583.4
	1989 <sup>P</sup>	6 071.1	1 235.8	7 306.9	376.5	2 562.6	2 939.1	6 447.6	3 798.4	10 246.0
	1990 <sup>I</sup>	6 473.0	1 278.3	7 751.3	466.3	2 592.8	3 059.1	6 939.3	3 871.1	10 810.4
Trade	1988	940.1	2 205.1	3 145.2	330.8	520.4	851.2	1 270.9	2 725.5	3 996.4
	1989 <sup>P</sup>	1 144.4	2 185.4	3 329.8	379.4	478.1	857.5	1 523.8	2 663.5	4 187.3
	1990 <sup>I</sup>	1 287.0	2 458.8	3 745.8	396.7	500.6	897.3	1 683.7	2 959.4	4 643.1
Utilities	1988	7 757.0	9 793.3	17 550.3	2 149.0	5 945.6	8 094.6	9 906.0	15 738.9	25 644.9
	1989 <sup>P</sup>	9 650.8	10 595.4	20 246.2	2 300.0	5 825.8	8 125.8	11 950.8	16 421.2	28 372.0
	1990 <sup>I</sup>	11 595.5	12 273.7	23 869.2	2 419.6	6 025.1	8 444.7	14 015.1	18 298.8	32 313.9
Other <sup>2</sup>	1988	21 706.7	13 911.4	35 618.1	5 013.5	2 066.4	7 079.9	26 720.2	15 977.8	42 698.0
	1989 <sup>P</sup>	24 538.5	14 285.0	38 823.5	5 325.2	2 213.5	7 538.7	29 863.7	16 498.5	46 362.2
	1990 <sup>I</sup>	25 356.0	15 162.0	40 518.0	5 451.7	2 311.3	7 763.0	30 807.7	17 473.3	48 281.0
Total	1988	77 351.6	45 582.9	122 934.5	13 518.1	20 615.2	34 133.3	90 869.7	66 198.1	157 067.8
	1989 <sup>P</sup>	85 527.4	48 819.8	134 347.2	14 536.4	21 036.8	35 573.2	100 063.8	69 856.6	169 920.4
	1990 <sup>I</sup>	90 554.3	53 730.9	144 285.2	15 431.8	21 721.3	37 153.1	105 986.1	75 452.2	181 438.3
Mining as a percentage of total	1988	9.3	3.5	7.1	3.0	11.8	8.3	8.3	6.0	7.4
	1989 <sup>P</sup>	7.1	2.5	5.4	2.6	12.2	8.3	6.4	5.4	6.0
	1990 <sup>I</sup>	7.1	2.4	5.4	3.0	11.9	8.2	6.5	5.1	6.0

Source: Statistics Canada.

<sup>1</sup> Includes mines, quarries and oil wells. <sup>2</sup> Includes finance, real estate, insurance, commercial services, institutions and government departments.

<sup>P</sup> Preliminary; <sup>I</sup> Intentions; — Nil.

Note: Totals may not add due to rounding.

**TABLE 16. CANADA, CAPITAL AND REPAIR EXPENDITURES IN MINING<sup>1</sup> BY GEOGRAPHICAL REGION, 1988-90**

		Capital Expenditures			Repair Expenditures			Capital and Repair Expenditures		
		Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
(\$ million)										
Atlantic Region	1988	392.7	113.9	506.6	17.0	260.6	277.6	409.7	374.5	784.2
	1989 <sup>P</sup>	226.5	144.8	371.3	19.5	272.1	291.6	246.0	416.9	662.9
	1990 <sup>I</sup>	366.7	184.7	551.4	21.0	267.8	288.8	387.7	425.5	840.2
Quebec	1988	351.8	108.9	460.7	17.6	219.7	237.3	369.4	328.6	698.0
	1989 <sup>P</sup>	355.0	140.3	495.3	25.7	259.6	285.3	380.7	399.9	780.6
	1990 <sup>I</sup>	232.0	114.2	346.2	27.1	265.3	292.4	259.1	379.5	638.6
Ontario	1988	653.2	341.6	994.8	77.4	435.7	513.1	730.6	777.3	1 507.9
	1989 <sup>P</sup>	412.9	287.3	700.2	55.1	448.3	503.4	468.0	735.6	1 203.6
	1990 <sup>I</sup>	423.4	273.0	696.4	56.9	454.6	511.5	480.3	727.6	1 207.9
Prairie Region	1988	4 661.4	877.6	5 539.0	240.4	1 028.8	1 269.2	4 901.8	1 906.4	6 808.2
	1989 <sup>P</sup>	3 887.6	420.9	4 308.5	217.7	1 077.3	1 295.0	4 105.3	1 498.2	5 603.5
	1990 <sup>I</sup>	4 446.5	558.6	5 005.1	297.2	1 070.7	1 367.9	4 743.7	1 629.3	6 373.0
British Columbia	1988	772.0	105.2	877.2	46.5	439.1	485.6	818.5	544.3	1 362.8
	1989 <sup>P</sup>	802.3	151.8	954.1	56.7	451.6	508.3	859.0	603.4	1 462.4
	1990 <sup>I</sup>	792.0	124.6	916.6	62.8	471.2	534.0	854.8	595.8	1 450.6
Yukon and Northwest Territories	1988	345.2	26.9	372.1	4.4	45.8	50.2	349.6	72.7	422.3
	1989 <sup>P</sup>	386.8	90.7	477.5	1.8	53.7	55.5	388.6	144.4	533.0
	1990 <sup>I</sup>	212.4	23.2	235.6	1.3	63.2	64.5	213.7	86.4	300.1
Total	1988	7 176.3	1 574.1	8 750.4	403.3	2 429.7	2 833.0	7 579.6	4 003.8	11 583.4
	1989 <sup>P</sup>	6 071.1	1 235.8	7 306.9	376.5	2 562.6	2 939.1	6 447.6	3 798.4	10 246.0
	1990 <sup>I</sup>	6 473.0	1 278.3	7 751.3	466.3	2 592.8	3 059.1	6 939.3	3 871.1	10 810.4

Source: Statistics Canada.

<sup>1</sup> Includes mines, quarries and oil wells.

<sup>P</sup> Preliminary; <sup>I</sup> Intentions.

Note: Totals may not add due to rounding.

TABLE 17. CANADA, CAPITAL AND REPAIR EXPENDITURES IN THE MINING INDUSTRY<sup>1</sup>, 1984-90

	1984	1985	1986	1987	1988	1989 <sup>p</sup>	1990 <sup>i</sup>
	(\$ million)						
<b>Metal Mines</b>							
Capital							
Construction	942.2	1 053.5	979.7	1 328.2	1 609.0	1 297.3	1 021.4
Machinery	372.7	322.4	319.4	372.9	566.5	619.2	484.7
Total	1 314.9	1 375.9	1 299.1	1 701.1	2 175.5	1 916.5	1 506.1
Repair							
Construction	99.6	104.5	99.6	109.8	123.2	111.7	117.2
Machinery	861.1	846.4	811.3	880.8	1 033.6	1 100.2	1 117.5
Total	960.7	950.9	910.9	990.6	1 156.8	1 211.9	1 234.7
Total capital and repair	2 275.6	2 326.8	2 210.0	2 691.7	3 332.3	3 128.4	2 740.8
<b>Nonmetal Mines<sup>2</sup></b>							
Capital							
Construction	658.6	573.6	502.4	421.7	432.9	367.6	409.8
Machinery	571.7	350.1	256.6	251.6	263.4	308.9	359.7
Total	1 230.3	923.7	759.0	673.3	696.3	676.5	769.5
Repair							
Construction	47.2	39.3	31.2	23.2	38.3	28.5	27.9
Machinery	454.8	529.5	565.4	608.8	634.6	670.7	692.5
Total	502.0	568.8	596.6	632.0	672.9	699.2	720.4
Total capital and repair	1 732.3	1 492.5	1 355.6	1 305.3	1 369.2	1 375.7	1 489.9
<b>Mineral Fuels</b>							
Capital							
Construction	6 643.5	7 645.9	5 142.4	4 096.0	5 134.4	4 406.2	5 041.8
Machinery	686.7	959.7	496.4	505.8	744.2	307.7	433.9
Total	7 330.2	8 605.6	5 638.8	4 601.8	5 878.6	4 713.9	5 475.7
Repair							
Construction	283.4	374.3	316.5	307.0	241.8	236.3	321.2
Machinery	709.5	761.3	705.5	673.9	761.5	791.7	782.8
Total	992.9	1 135.6	1 022.0	980.9	1 003.3	1 028.0	1 104.0
Total capital and repair	8 323.1	9 741.2	6 660.8	5 582.7	6 881.9	5 741.9	6 579.7
<b>Total Mining</b>							
Capital							
Construction	8 244.3	9 273.0	6 624.5	5 845.9	7 176.3	6 071.1	6 473.0
Machinery	1 631.1	1 632.2	1 072.4	1 130.3	1 574.1	1 235.8	1 278.3
Total	9 875.4	10 905.2	7 696.9	6 976.2	8 750.4	7 306.9	7 751.3
Repair							
Construction	430.2	518.1	447.3	440.0	403.3	376.5	466.3
Machinery	2 025.4	2 137.2	2 082.2	2 163.5	2 429.7	2 562.6	2 592.8
Total	2 455.6	2 655.3	2 529.5	2 603.5	2 833.0	2 939.1	3 059.1
Total capital and repair	12 331.0	13 560.5	10 226.4	9 579.7	11 583.4	10 246.0	10 810.4

Source: Statistics Canada.

<sup>1</sup> Does not include cement, lime and clay products (domestic clays) manufacturing, smelting and refining. <sup>2</sup> Includes coal mines, asbestos, gypsum, salt, potash, miscellaneous nonmetals, quarrying and sand pits.<sup>p</sup> Preliminary; <sup>i</sup> Intentions.

Note: Totals may not add due to rounding.

**TABLE 18. CANADA, CAPITAL EXPENDITURES IN THE PETROLEUM, NATURAL GAS AND ALLIED INDUSTRIES<sup>1</sup>, 1981-90**

	Petroleum and Natural Gas Extraction	Transportation (Pipelines)	Marketing (Chiefly Outlets of Oil Companies)	Natural Gas Distribution	Petroleum and Coal Products Industries	Natural Gas Processing Plants	Oil and Gas Drilling Contractors	Total Capital Expenditures
1981	6 444.9	1 745.7	264.1	408.7	844.9	311.6	274.9	10 294.8
1982	6 743.4	1 994.3	320.5	517.6	1 224.5	522.8	173.5	11 496.6
1983	6 563.5	660.5	374.5	516.8	840.8	195.8	155.4	9 307.3
1984	6 946.4	795.4	422.9	604.1	432.4	340.0	43.8	9 585.0
1985	8 187.6	664.2	356.8	603.5	335.7	337.7	80.1	10 565.6
1986	5 401.1	586.9	344.9	573.9	398.2	207.8	29.9	7 542.7
1987	4 414.6	503.0	412.4	571.8	669.9	174.1	13.1	6 758.9
1988	5 589.9	828.9	478.4	602.8	698.9	271.8	16.9	8 487.6
1989 <sup>P</sup>	4 349.1	1 539.7	489.3	587.8	869.9	351.2	13.8	8 200.8
1990 <sup>I</sup>	4 998.1	1 850.8	560.0	680.1	1 318.5	466.2	11.4	9 885.1

Source: Statistics Canada.

<sup>1</sup> The petroleum and natural gas industries in this table include all companies engaged in whole or part in oil and gas activities.

<sup>P</sup> Preliminary; <sup>I</sup> Intentions.

Note: Totals may not add due to rounding.

**METALLIC MINERALS AND PRODUCTS**

**Nonferrous and Precious Metals Prices**

**NONFERROUS AND PRECIOUS METALS PRICES<sup>1</sup>**

	1980s Extremes				May 1990		
	Low		High		Low	High	Average
	(US\$/lb.)		(US\$/lb.)		(US\$/lb.)		
Aluminum	0.41	03/06/82	1.95	13/06/88	0.68	0.71	0.69
Copper	0.56	18/10/84	1.68	08/12/88	1.19	1.33	1.24
Lead	0.15	18/03/86	0.35	20/05/87	0.36	0.39	0.38
Nickel	1.42	26/11/82	10.84	28/03/88	3.77	4.31	3.95
Zinc	0.25	31/10/85	0.97	02/03/89	0.78	0.85	0.81
	(US\$/troy oz.)		(US\$/troy oz.)		(US\$/troy oz.)		
Gold	285.00	26/02/85	502.75	14/12/87	363.70	373.40	368.85
Silver	4.86	20/05/86	10.92	27/04/87	4.95	5.24	5.07

Source: Nonferrous Division, Mineral Policy Sector.

<sup>1</sup> Prices used are the London Metal Exchange (LME) settlement prices for the nonferrous metals and the London Bullion Market Association (LBMA) morning fix for the precious metals.

## SPECIAL ITEM

### Canadian Gold and Base-Metal Mines: Openings, Closures and Suspensions in 1989

by  
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During 1989, 23 gold and base metal mining operations came into production; 11 of them gold mines and 12 of them base-metal mines, reversing the trend dominated by gold mines in recent years. Of the 23 operations, 18 were new mines. The other 5 were reopenings, all base metal mines. Of the 21 mines closed, 13 were gold mines, 7 were silver mines and one was a base-metal mine. Ore depletion and declines in gold and silver prices triggered the precious metal mine closures, while the base-metal mine closed because of ore depletion. Almost all Canadian production of silver is now a by-product of base-metal or gold mining operations.

Quebec and Ontario, each with 6 new or reopened mines, had the largest share of the 23 mine openings in 1989, followed by New Brunswick and British Columbia with 4 mine openings each. Manitoba added 2 operations and Saskatchewan added one mine.

In 1988, 23 new mines commenced production; 18 were gold mines and 5 were base-metal mines. In addition, 2 gold mines and one base-metal mine reopened, giving a total of 26 Canadian mine openings for the year. Of the 17 mines closed, 14 were precious metal mines and 3 were base-metal mines.

#### New Production Capacities

Planned production capacities for new mining operations that came on-stream in 1989 ranged from 270 t/d at the Redstone nickel mine to 40 000 t/d at the Timmins gold tailings operation, both located in the Timmins district of Ontario. In 1989, new and reopened operations contributed some 75 000 t/d to total Canadian ore and tailings retreatment production capacity. Nearly 50 000 t/d of this was at gold-producing operations and more than 25 000 t/d at base-metal-producing operations.

For the year 1989 as a whole, the net change in ore-production capacity from mine openings and closures was an increase of 65 000 t/d (40 000 t/d at precious metal operations and 25 000 t/d at base-metal operations). This figure includes an important new addition of capacity at the Timmins tailings plant. In contrast, the total net capacity increase in 1988 was 17 000 t/d (despite a 36 000 t/d addition from new mines). This was because some of the mines that closed in 1988 were of above-average size.

#### Impact on Employment

The following table shows that in 1989, nearly 3300 jobs were created at the 23 new or reopened mines, some 1830 at new mines and some 1460 at reopened mines. Prior to their closure, some 1400 people were employed at the 21 mines that closed or suspended operations in the year. Only a relatively small number of these were likely to have been retained to carry out standby operations. Losses in employment in one location may, however, be offset if a company reallocates employees to its other operations, as had been the case with Falconbridge Limited's Falconbridge crown pillar operations in 1989. There was thus a net overall employment gain of approximately 1950 jobs. Total employment in Canadian base-metal, gold and silver mines in 1989 was estimated to have been about 36 000.

CANADIAN GOLD AND BASE-METAL MINING OPERATIONS THAT WERE OPENED, CLOSED OR SUSPENDED DURING 1989

Operation	Province	Capacity (t/d)	Employment	Company	Main Metals	Date	Remarks
<b>NEW OPERATIONS</b>							
<b>Precious Metals</b>							
Pierre Beauchemin	Que.	1 020	30	Cambior inc.	Au,Ag	January 1	Started commercial production January 1, 1989. Will use 60% of Vezina mill capacity.
Jolu	Sask.	400	100	International Mahogany Corp. and Corona Corporation	Au,Ag	January 1	Produced considerably more than the scheduled 60 000 oz. of gold in 1989.
Timmins tailings	Ont.	40 000	54	ERG Resources Inc.	Au,Ag	January	Preproduction in 1988. Commercial production in 1989 but has not reached planned production level because of lower than expected head grade and mill recovery.
Lawyers	B.C.	500	155	Cheni Gold Mines Inc.	Au,Ag	March 1	Production exceeded 48 500 oz. of gold and 918 000 oz. of silver in 1989.
Premier Gold	B.C.	2 000	120	Westmin Resources Limited, Pioneer Metals Corporation and Canacord Resources Inc.	Au,Ag	May	Open pit mine. The new mining operation includes the former Silbak and Big Missouri mines. Ore is treated at a single mill.
Dona Lake	Ont.	500	120	Placer Dome Inc.	Au,Ag	June 16	Mill throughput has exceeded design capacity by 10% since August 1, 1989.
Magnacon	Ont.	550	150	Flanagan McAdam Resources Inc., Muscocho Explorations Ltd. and Windarra Minerals Ltd.	Au,Ag	June 23	Ore reserve grade has proved to be lower and mining cost higher than originally predicted.
Montauban tailings	Que.	550	10	Aurtec Mining Development Inc.	Au,Ag	June	Seasonal heap leach operation.
Stock Township	Ont.	450	95	St. Andrew Goldfields Ltd.	Au,Ag	June	Plans to expand mill capacity to 900 t/d in 1990.
Murray Brook	N.B.	900	25	NovaGold Resources Incorporated	Au,Ag,Cu	September	Processing of the precious metal-bearing gossan is accomplished by indoor vat leaching on a year-round basis.
Lucien C. Beliveau	Que.	1 100	60	Cambior inc.	Au,Ag	September	Gold-pyrite concentrate shipped to Vezina mill for further recovery; mine name changed from Pascalis in September 1989.

**Base Metals**

Caribou	N.B.	2 000	170	Bathurst Base Metals (Ontario) Corporation	Zn,Pb,Ag,Au	January	Designed to produce 125 000 t/y of bulk Pb/Zn concentrate. Mine temporarily closed in July 1989 due to a shortage of funds but reopened early 1990. Mine capacity is scheduled to increase to 2700 t/d by the end of 1990.
Chisel Lake open pit	Man.	900	89	Hudson Bay Mining and Smelting Co., Limited (HBMS)	Zn,Cu,Au,Ag,Pb	January	Mining the crown pillar of Chisel Lake mine.
Redstone	Ont.	270	70	Timmins Nickel Inc. and BHP-Utah Mines Ltd.	Ni,Cu	May	Ore milled at Giant Yellowknife Mines Limited's GoMill at Timmins, Ont. Production cut back planned for 1990 because of lower than anticipated nickel price. The mine is operating with 45 employees in May 1990.
Ajax	B.C.	9 000	200	Teck Corporation	Cu,Au	Mid-1989	Mill capacity to be increased to 11 000 t/d in the 1990/91 period.
Stratmat	N.B.	800	75	Noranda Inc.	Zn,Pb,Cu	July	Open pit and underground mining. Ore processed at the Heath Steele concentrator. Mine capacity to increase to 1000 t/d in 1990. Open pit will be exhausted in early 1991.
Ansil	Que.	1 540	200	Minnova Inc.	Cu,Zn,Au,Ag	July	Full ore throughput rate 450 000 t/y; milling at Norbec mill.
Samatosum	B.C.	450	105	Minnova Inc. and Rea Gold Corporation	Ag,Zn,Cu,Pb,Au	July	Commercial and full production began July 1989. Mill throughput exceeded design capacity in early 1990.

**REOPENINGS**

**Base Metals**

Gaspé "E" Zone (Murdochville)	Que.	3 000	850	Noranda Inc.	Cu,Mo,Au,Ag	April	Closed in 1987 due to a fire.
Shebandowan	Ont.	2 270	200	Inco Limited	Ni,Cu,Au,Ag	April	Was on standby since early 1986.
Birchtree	Man.	3 000	85	Inco Limited	Ni,Cu,Au,Ag	May 16	Was on standby since 1977. Resumed production with new equipment and technology to increase productivity by 100%.
Heath Steele	N.B.	2 150	172	Noranda Inc.	Zn,Pb,Cu	June	Mine production resumed at the reconditioned B mine. Increasing mine capacity to 2400 t/d by mid-1990.
Mobrun	Que.	1 000	155	Audrey Resources Inc.	Cu,Zn,Au,Ag	July	Closed from July 1988 to August 1989 for underground development and construction of a new mill.

**CANADIAN GOLD AND BASE-METAL MINING OPERATIONS THAT WERE OPENED, CLOSED OR SUSPENDED DURING 1989 (cont'd)**

Operation	Province	Capacity	Employment	Company	Main Metals	Date	Remarks
(t/d)							
<b>SUSPENSIONS AND CLOSURES</b>							
<b>Precious Metals</b>							
Elsa operations (6 mines)	Y.T.	450	170	United Keno Hill Mines Limited	Ag	January 6	All mining operations suspended pending higher silver price. At the time of the temporary shut down, Husky Southwest, Bellekeno, Silver King and the Onok, Calumet 1-15 and the Calumet 3-4 mines were in operation.
Beaver Dam	N.S.	100	15	Westminer Canada Limited	Au,Ag	February	Insufficient ore left to justify mining. Company considers it closed permanently. Ore was milled at Gays River mill.
Puffy Lake	Man.	1 000	125	Pioneer Metals Corporation	Au,Ag	March 21	Closed pending development of a mining plan to overcome ore dilution and operating losses. Mine plant damaged by a forest fire in July 1989.
Star Lake	Sask.	200	35	Comeco - A Canadian Mining & Energy Corporation	Au,Ag	March	Ore reserves depleted. Mill continued to treat stockpiled ore in 1989 and will start to process ore from the Jasper mine in 1990.
Union tailings	B.C.	270	n.a.	Sumac Ventures Inc.	Au,Ag	April 14	Operation suspended due to pollution problem from tailing discharge.
O.B.	B.C.	408	29	Skylark Resources Ltd.	Ag	April 30	Mining of H zone suspended pending higher silver price.
Kerr Addison	Ont.	1 225	320	Golden Shield Resources Ltd.	Au,Ag	June 29	Operation suspended. Company became insolvent in 1989. Deak Resources Corporation and GSR Mining Corporation took over the mine and mill in March 1990 and operations will soon resume.
Cape Spencer	N.B.	650	20	Gordex Minerals Limited	Au,Ag	June	Closed because of low gold price.
Bachelor Lake	Que.	450	115	Bachelor Lake Gold Mines Inc.	Au,Ag	August	Closed because of low gold price and high ore dilution.
Remnor	Que.	100	125	Noranda Inc.	Au,Ag	August	Ore exhausted. Continued to process stockpiled ore at the Horne mill, October 1989.
Forest Hill	N.S.	150	70	Westminer Canada Limited	Au,Ag	October	Insufficient ore left to justify mining. Company considers it closed permanently. Ore was milled at Gays River mill.

Cooke	Que.	250	30	Minnova Inc.	Au,Cu,Ag	October	Ore exhausted.
Tartan Lake	Man.	400	87	Granges Inc. and Abermin Corporation	Au,Ag	November 4	Closed because of ore depletion.
MacLellan	Man.	1 100	225	LynnGold Resources Inc.	Au,Ag	November	Company insolvent.
Owl Creek open pit	Ont.	,760	15	Falconbridge Gold Corporation	Au,Ag	December	Open pit mining ceased, but ore stockpile will sustain current level of gold production for several years. An underground mine is under development.
<b>Base Metals</b>							
Falconbridge crown pillar	Ont.	1 200	8	Falconbridge Limited	Ni,Cu,Au,Ag	1st Quarter	Open pit closed due to ore depletion. Employees previously reallocated to other operations.

Source: Energy, Mines and Resources Canada.

n.a. Not available.

Note: Although its underground operations began in 1989, the Hope Brook mine in Newfoundland is not considered to be a new mine but rather a continuation of a former open pit operation which was mined out in 1989.

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