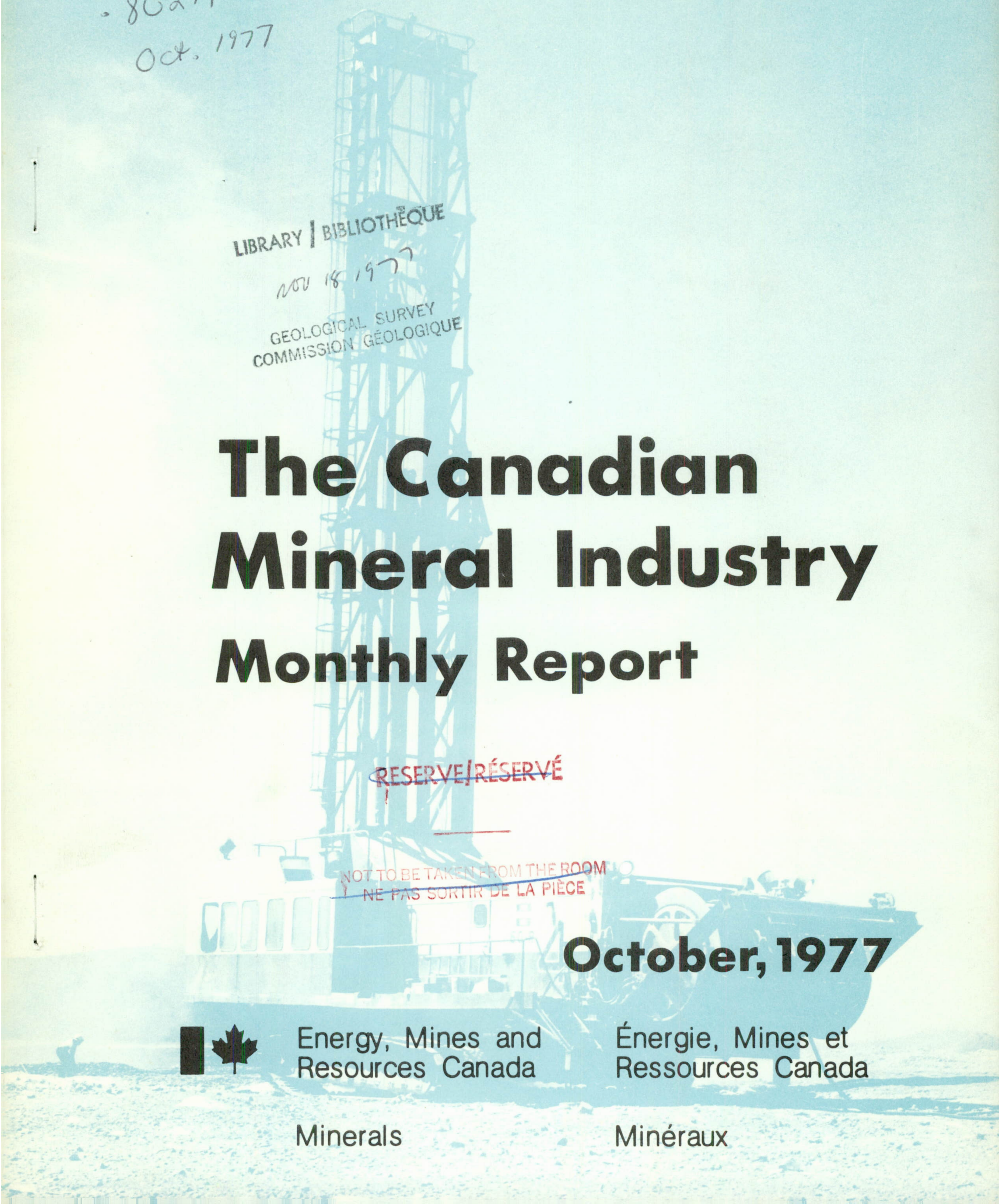

The Canadian Mineral Industry
Monthly Report

October, 1977

Energy, Mines and Resources Canada
Énergie, Mines et Ressources Canada

Minerals
Minéraux

PREFACE

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

Ce rapport a été rédigé par le Secteur de l'Exploitation Minérale du Ministère de l'Energie, des Mines et des Ressources. Bien que nous ayons eu recours à de nombreuses sources pour vous fournir les meilleurs renseignements possibles, cet exposé n'a pour objet que de passer en revue les développements actuels les plus importants de l'industrie minière canadienne, de même que les progrès accomplis ailleurs qui peuvent intéresser l'industrie canadienne. On ne doit pas considérer cet exposé comme une source de renseignements précis ou comme l'expression des vues du Gouvernement canadien.

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CONTENTS

THE CANADIAN MINERAL INDUSTRY FOR OCTOBER

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

SUMMARY

1. Canada's unadjusted index of Real Domestic Product was 124.7 in August 1977, an increase of 1.1 per cent from July 1977.

2. The August index of Mines, Quarries and Oil Wells was 112.5, an increase of 8.0 per cent from the previous month.

3. In the United States, copper producers actively sought government assistance for the industry during October.

4. The price of gold increased substantially during the month of October.

5. Brunswick Mining and Smelting Corporation Limited announced that 190 employees would be laid off as a result of weakness in demand for zinc.

6. The International Association of Mercury Producers have agreed to take necessary measures to curb speculation in mercury by traders and agents.

7. Inco Limited announced the reduction of some 3,450 jobs by mid-1978.

8. The Department of National Revenue has announced that three preliminary rulings have been made on dumping charges for certain types of carbon and stainless steel products.

9. In October, most primary zinc metal producers reduced their zinc prices.

10. The Canadian International Development Agency (CIDA) has agreed to lend India $32 million to finance the purchase of Canadian fertilizer material.

11. Canadian Johns-Manville Company, Limited opened a new $11 million fiberglass insulation plant in Alberta.

12. The Potash Company of America will go ahead with plans for a new mine and concentrator near Sussex, New Brunswick.

13. Romania and Canada have signed a nuclear co-operation agreement.

ECONOMIC TRENDS

Table 1 shows Canada's unadjusted indexes of Real Domestic Product in terms of 1971 = 100. The overall RDP index increased 1.1 per cent in August compared with July 1977.

The August RDP index for mines, quarries and oil wells was 112.5, up 8.0 per cent from 104.2 in July. The metal mines, mineral fuels and nonmetal mines indexes increased by 1.0 per cent, 12.6 per cent and 26.5 per cent respectively during the month of August.

The August indexes for primary metal industries and non-metallic mineral products industries were 7.3 per cent and 3.6 per cent above those of July.

Table 2 compares volume of production in major Canadian minerals. Output increased significantly in August compared with July for iron ore (19.2 per cent), zinc (39.3 per cent), asbestos (20.7 per cent), gypsum (16.4 per cent), potash (31.2 per cent), clay products (21.2 per cent) and lime (16.6 per cent). It decreased significantly for lead (44.6 per cent), molybdenum (21.4 per cent) and silver (17.5 per cent).

Tables 3 and 4 show exploration and capital expenditures in the mining industry for 1974, 1975 and 1976. Table 3 presents these expenditures by provinces and territories, whereas Table 4 compares the data by type of mining.

TABLE 1

Canada, Indexes of Real Domestic Product, by Industries Unadjusted (1971=100)

Industry or Industry Group	1976 July	1976 Aug	1976 Average 1st 8 Months	1977 July	1977 Aug	1977 Average 1st 8 Months	Percentage Changes July 1977 / July 1976	Percentage Changes Aug 1977 / Aug 1976	Percentage Changes Aug 1977 / July 1977	Percentage Changes 1st 8 Months 1977 / 1976
Real Domestic Product	119.6	121.4	121.0	123.4	124.7	125.0	3.2	2.7	1.1	3.3
Primary Industries										
Agriculture	28.0	24.2	57.8	43.4	32.5	56.3	55.0	34.3	-25.1	-2.6
Forestry	116.0	124.4	97.1	118.7	137.5	113.6	2.3	10.5	15.8	17.0
Fishing and Trapping	217.7	195.4	106.4	233.8	223.3	110.7	7.4	14.3	-4.5	4.1
Mines, Quarries and Oil Wells	100.5	105.4	107.7	104.2	112.5	114.6	3.7	6.7	8.0	6.4
Metal Mines	97.8	107.3	106.3	108.2	109.3	115.0	10.6	1.9	1.0	8.2
Placer and Gold Quartz Mines	67.6	71.1	73.3	70.6	66.7	74.6	4.4	-6.2	-5.5	1.7
Iron Mines	127.9	175.4	133.1	140.6	135.1	133.8	9.9	-23.0	-3.9	0.5
Other Metal Mines	91.9	92.2	101.3	102.0	105.0	112.3	11.0	13.9	2.9	10.9
Mineral Fuels	102.0	102.3	109.1	99.5	112.0	113.0	-2.5	9.5	12.6	3.7
Coal Mines	130.3	170.8	183.3	190.2	219.5	217.6	46.0	28.5	15.4	18.8
Crude Petroleum and Natural Gas	99.7	96.7	103.0	92.1	103.2	104.5	-7.6	6.7	12.1	1.5
Nonmetal Mines	96.9	100.4	110.9	98.5	124.6	128.0	1.7	24.1	26.5	15.4
Asbestos Mines	85.4	110.1	101.2	103.9	105.3	111.0	21.7	-4.4	1.3	9.7
Secondary Industries										
Manufacturing	111.7	118.6	119.1	115.8	119.3	122.2	3.7	0.6	3.0	2.6
Nondurable Manufacturing	113.3	118.7	116.1	114.8	122.0	119.8	1.3	2.8	6.3	3.2
Petroleum and Coal Products Industries	135.4	128.4	128.0	133.8	139.9	134.6	-1.2	9.0	4.6	5.1
Durable Manufacturing	110.1	118.6	122.1	116.8	116.6	124.5	6.1	-1.7	-0.2	2.0
Primary Metal Industries	90.8	98.7	106.8	102.8	110.3	113.1	13.2	11.8	7.3	5.9
Iron and Steel Mills	105.6	119.7	118.0	109.7	116.0	121.6	3.9	-3.1	5.7	3.1
Steel Pipe and Tube Mills	79.4	99.2	122.0	89.3	127.1	121.9	12.5	28.1	42.3	-0.1
Iron Foundries	89.7	94.5	121.4	75.1	97.2	114.9	-16.3	2.9	29.4	-5.4
Smelting and Refining	64.9	63.7	84.1	98.7	101.8	99.4	52.1	59.8	3.1	18.2
Nonmetallic Mineral Products Industries	129.7	139.0	117.5	139.9	144.9	124.0	7.9	4.2	3.6	5.5
Cement Manufacturers	146.7	149.4	116.0	153.9	145.0	115.1	4.9	-2.9	-5.8	-0.8
Ready-mix Concrete Manufacturers	135.7	152.9	112.1	144.9	156.4	116.3	6.8	2.3	7.9	3.7
Construction Industry	130.1	133.3	114.2	128.7	132.5	112.0	-1.1	-0.6	3.0	-1.9
Transportation, Storage, Communication	135.5	135.7	129.2	138.8	138.5	135.1	2.4	2.1	-0.2	4.6
Electric Power, Gas and Water Utilities	116.6	118.4	135.5	121.8	125.0	143.0	4.5	5.6	2.6	5.5
Trade	130.3	129.0	127.9	130.3	130.4	129.3	0.0	1.1	0.1	1.1
Finance, Insurance, Real Estate	128.5	128.8	126.8	135.4	135.9	133.8	5.4	5.5	0.4	5.5
Community, Business and Personal Service	121.8	121.4	125.9	125.9	126.4	131.7	3.4	4.1	0.4	4.6
Public Administration and Defence	128.9	128.3	122.9	130.5	129.8	125.7	1.2	1.2	-0.5	2.3

TABLE 2

Canada, Production of Leading Minerals
('000 tonnes except where noted)

		1976			1977			Percentage Changes		
		July	August	Total 1st 8 months	July	August	Total 1st 8 months	August 77 / August 76	August 77 / July 77	1st 8 months 1977 / 1976
Metals										
Copper		52.8	59.5	471.6	61.7	67.6	536.8	+13.6	+9.6	+13.8
Gold	kg	3 955.6	4 204.3	34 385.3	4 444.4	4 274.1	35 609.6	+1.7	-3.8	+3.6
Iron ore		6 593.9	7 324.3	36 040.4	5 328.9	6 354.0	31 842.8	-13.3	+19.2	-11.7
Lead		16.4	9.2	156.4	26.9	14.9	187.7	+62.0	-44.6	+20.0
Molybdenum	t	981.2	1 045.3	9 284.5	1 375.5	1 081.2	10 089.6	+3.4	-21.4	+8.7
Nickel		17.5	17.6	159.3	18.6	20.2	166.9	+14.8	+8.6	+4.8
Silver	t	82.8	94.5	852.4	130.2	107.4	937.5	+13.7	-17.5	+10.0
Uranium(1)	t	371.5	424.3	2 881.8	543.5	472.6	3 744.3	+11.4	-13.1	+29.9
Zinc		90.6	81.6	678.9	95.4	132.9	753.9	+62.9	+39.3	+11.1
Nonmetals										
Asbestos		105.3	126.3	982.9	116.7	140.8	988.8	+11.5	+20.7	+0.6
Gypsum		699.1	600.8	3 477.5	650.8	757.6	4 417.4	+26.1	+16.4	+27.0
Potash K_2O		393.0	449.5	3 378.3	464.2	608.8	3 999.5	+35.4	+31.2	+18.4
Salt		407.9	392.0	3 699.3	398.1	410.7	3 719.2	+4.8	+3.2	+0.5
Cement		1 031.2	1 123.6	6 426.6	1 053.1	1 183.8	6 545.5	+5.4	+12.4	+1.9
Clay products	$000	9,000.4	9,415.0	55,788.5	8,505.5	10,305.0	61,782.7	+9.5	+21.2	+10.7
Lime		154.2	149.1	1 173.9	137.6	160.4	1 208.9	+7.6	+16.6	+3.0
Fuels										
Coal		1 577.9	1 908.7	15 581.5	2 055.2	2 013.6	19 124.2	+5.5	-2.0	+22.7
Natural gas	000 m^3	6 534 934.3	6 485 040.0	58 749 648.3	6 561 269.0[r]	6 813 628.8	59 670 002.6	+5.1	+3.9	+1.6
Crude oil and equivalent	000 m^3	6 834.5	6 626.9	54 291.6	6 174.1[r]	7 118.0	54 566.5	+7.4	+15.3	+0.5

(1) Tonnes uranium (1 tonne U = 1.299 9 short tons U_3O_8).
r Revised.

Table 3

Canada, exploration and capital expenditures in the mining industry[1], by provinces and territories, 1974-76

		Capital						Repair						
		Construction												
		On property exploration	On property development	Structures	Total	Machinery and equipment	Total capital	Construction	Machinery and equipment	Total repair	Total capital and repair	Outside or general exploration	Land & mining rights	Total all expenditures
		($ millions)												
Atlantic Provinces	1974	1.7	19.7	26.8	48.2	29.9	78.1	16.7	96.9	113.6	191.7	10.1	..	..
	1975	1.9	25.7	38.0	65.6	35.0	100.6	16.2	106.2	122.4	223.0	13.4	0.5	236.9
	1976p	1.3	19.7	30.4	51.4	43.6	95.0	7.2	128.0	135.2	230.2	13.0	0.2	243.4
Quebec	1974	6.3	59.4	126.6	192.3	68.5	260.8	10.6	138.5	149.1	409.9	21.4	2.6	433.9
	1975	4.1	73.0	164.0	241.1	101.4	342.5	11.9	142.6	154.5	497.0	25.0	..	..
	1976p	7.5	111.2	192.2	310.9	163.0	473.9	14.7	179.5	194.2	668.1	20.3	5.7	694.1
Ontario	1974	7.1	73.2	44.6	124.9	70.9	195.8	17.3	122.7	140.0	335.8	19.6	3.1	358.5
	1975	8.3	98.4	52.6	159.3	84.6	243.9	25.3	141.0	166.3	410.2	23.3	..	..
	1976p	10.3	117.1	70.7	198.1	112.2	310.3	26.9	183.0	209.9	520.2	23.2	..	..
Manitoba	1974	..	..	..	15.7	7.8	23.5	2.7	26.7	29.4	52.9	6.9	0.1	59.9
	1975	..	..	..	20.7	13.9	34.6	1.8	37.8	39.6	74.2	6.0	–	80.2
	1976p	..	..	..	21.2	8.4	29.6	2.2	31.3	33.5	63.1	5.4	..	..
Saskatchewan	1974	..	..	..	30.3	23.4	53.7	7.0	33.5	40.5	94.2	6.3	0.1	100.6
	1975	..	..	..	22.7	71.6	94.3	11.3	38.4	49.7	144.0	9.7	0.3	154.0
	1976p	..	..	..	10.8	56.1	66.9	3.2	41.9	45.1	112.0	11.8	0.4	124.2
Alberta	1974	..	..	..	18.7	20.7	39.4	0.4	9.2	9.6	49.0	4.1	1.2	54.3
	1975	..	..	..	18.3	33.4	51.7	2.3	15.8	18.1	69.8	3.5	0.4	73.7
	1976p	1.7	6.5	19.0	27.2	65.4	92.6	5.3	23.8	29.1	121.7	4.3	1.4	127.4
British Columbia	1974	3.8	37.9	31.3	73.0	54.1	127.1	12.8	106.7	119.5	246.6	22.5	1.0	270.1
	1975	4.7	30.6	19.8	55.1	62.0	117.1	10.8	124.3	135.1	252.2	24.5	2.1	278.8
	1976p	7.9	59.1	44.1	111.1	55.4	166.5	10.9	132.9	143.8	310.3	23.6	4.5	338.4
Yukon and Northwest Territories	1974	2.2	13.0	7.3	22.5	8.3	30.8	4.3	16.2	20.5	51.3	19.9	..	..
	1975	2.8	11.3	15.5	29.6	23.0	52.6	7.9	24.9	32.8	85.4	23.7	0.4	109.5
	1976p	4.1	15.4	9.7	29.2	16.2	45.4	11.3	29.1	40.4	85.8	25.5	0.3	111.6
Canada	1974	25.2	228.6	271.8	525.6	283.6	809.2	71.8	550.4	622.2	1,431.4	110.8	20.2	1,562.4
	1975	25.7	274.3	312.4	612.4	424.9	1,037.3	87.5	631.0	718.5	1,755.8	129.1	12.5	1,897.4
	1976p	36.5	351.4	372.0	759.9	520.3	1,280.2	81.7	749.5	831.2	2,111.4	127.1	13.7	2,252.2

[1] Excludes the petroleum and natural gas industries and the smelting and refining industries.

..Not available; p Preliminary; – Nil.

Table 4

Canada, exploration and capital expenditures[1] in the mining industry by type of mining, 1974-76

		Capital						Repair						
		Construction				Machinery and equipment	Total capital	Con-struction	Machinery and equipment	Total repair	Total capital and repair	Outside or general exploration	Land & mining rights	Total all expenses
		On property exploration	On property development	Struc-tures	Total									
		($millions)												
Metal Mining														
Gold	1974	1.9	19.4	3.2	24.5	5.9	30.4	1.2	8.5	9.7	40.1	1.9	0.3	42.3
	1975	1.7	17.3	1.7	20.7	5.3	26.0	0.8	10.9	11.7	37.7	1.6	-	39.3
	1976p	1.7	9.4	6.2	17.3	4.5	21.8	0.7	11.4	12.1	33.9	..	-	..
Copper-gold -silver	1974	5.0	51.0	41.7	97.7	66.7	164.4	14.7	108.7	123.4	287.8	3.3	-	291.1
	1975	6.4	54.1	48.7	109.2	51.8	161.0	10.3	125.1	135.4	296.4	5.3	0.7	302.4
	1976p	6.6	73.3	49.4	129.3	69.6	198.9	12.6	134.0	146.6	345.5	4.4	0.2	350.1
Silver-lead -zinc	1974	3.2	17.8	17.9	38.9	13.8	52.7	5.6	19.3	24.9	77.6	3.8	-	81.4
	1975	4.0	24.9	26.4	55.3	29.3	84.6	7.2	23.7	30.9	115.5	3.5	-	119.0
	1976p	4.4	34.1	16.7	55.2	22.7	77.9	10.9	36.4	47.3	125.2	2.9	..	..
Iron[2]	1974	..	..	..	159.0	40.7	199.7	21.5	171.9	193.4	393.1	1.8	0.1	395.0
	1975	..	...	...	225.8	83.8	309.6	20.5	191.3	211.8	521.4	1.5	-	522.9
	1976p	..	..	..	277.4	149.1	426.5	14.2	226.0	240.2	666.7	1.0	-	667.7
Other metal mining	1974	..	..	..	85.6	29.5	115.1	15.7	74.9	90.6	205.7	8.0	-	213.7
	1975	..	..	..	86.1	43.0	129.1	24.7	95.4	120.1	249.2	9.9	..	..
	1976p	..	...	..	111.0	58.5	169.5	23.3	114.5	137.8	307.3	14.2	..	..
Total metal mining[3]	1974	20.0	172.2	213.4	405.7	156.6	562.3	58.7	383.3	442.0	1,004.3	18.8	..	..
	1975	21.3	217.2	258.6	497.1	213.2	710.3	63.5	446.4	509.9	1,220.2	21.8	..	..
	1976p	24.2	273.8	292.2	590.2	304.4	894.6	61.7	522.3	584.0	1,478.6	22.5	1.5	1,502.6
Nonmetal mining														
Asbestos	1974	0.4	27.4	17.6	45.4	28.9	74.3	2.4	50.7	53.1	127.4	0.2	..	..
	1975	0.5	28.8	13.2	42.5	19.3	61.8	4.1	46.0	50.1	111.9	0.1	..	..
	1976p	43.1		22.8	65.9	29.0	94.9	5.9	69.8	75.7	170.6	0.2	..	..
Other non-metal mining	1974	2.1	28.2	40.3	70.6	96.8	167.4	10.7	116.3	127.0	294.4	2.7	5.1	302.2
	1975	2.6	27.6	40.1	70.3	190.3	260.6	19.7	138.3	158.0	418.6	7.8	1.3	427.7
	1976p	39.4		55.9	95.3	186.0	281.3	14.1	157.3	171.4	452.7	8.8	..	..
Total non-mining	1974	2.5	55.6	57.9	116.0	125.7	241.7	13.1	167.0	180.1	421.8	2.9	..	..
	1975	3.1	56.4	53.3	112.8	209.6	322.4	23.8	184.3	208.1	530.5	7.9	..	..
	1976p	9.1	73.4	78.7	161.2	215.0	376.2	20.0	227.1	247.1	623.3	9.0	6.8	639.1
Metal and non-metal mining exploration	1974	2.7	0.8	0.4	3.9	1.3	5.2	-	0.1	0.1	5.3	89.1	4.9	99.3
	1975	1.3	0.7	0.5	2.5	2.1	4.6	0.2	0.3	0.5	5.1	99.4	3.3	107.8
	1976p	3.2	4.2	1.1	8.5	0.9	9.4	-	0.1	0.1	9.5	95.6	5.4	110.5
Total mining	1974	25.2	228.6	271.8	525.6	283.6	809.2	71.8	550.4	622.2	1,431.4	110.8	20.2	1,562.4
	1975	25.7	274.3	312.4	612.4	424.9	1,037.3	87.5	631.0	718.5	1,755.8	129.1	12.5	1,897.4
	1976p	36.5	351.4	372.0	759.9	520.3	1,280.2	81.7	749.5	831.2	2,111.4	127.1	13.7	2,252.2

[1] Excludes expenditures in the petroleum and natural gas industries. [2] Not completely available for iron mining in 1974, 1975, 1976 [3] Confidential Figures are included under total metal mining

.. Not available; - Nil; p Preliminary.

METALLIC MINERALS AND PRODUCTS

Aluminum

Alumax Inc., a 50 per cent owned subsidiary of AMAX Inc. has announced the site of its 179 000 tonne-a-year primary aluminum smelter in South Carolina. It will be located in Berkeley County about 20 miles north of Charleston, S.C. Alumax plans to start construction next year with production scheduled for 1981.

Alcoa of Australia Ltd. will supply 180 000 tonnes of alumina annually over a 10-year period to Dubai's smelter under a recently signed agreement. The $600 million Dubai plant is scheduled to come on stream in 1979 with an annual capacity of 122 000 tonnes a year. Consideration is being given to the addition of a fourth potline which would increase the smelter's capacity to 163 000 tonnes.

New Zealand Aluminium Smelters Ltd. (NZAS) is being threatened with substantially increased power costs by the New Zealand Government (possibly up to a 600 per cent increase). The company claims this would cause the smelter to suffer continuing losses and would mean the operation of the smelter could not be sustained. NZAS, which has a 150 000 tonne a year smelter at Bluff, New Zealand is owned 50 per cent by Comalco Limited and 25 per cent each by Sumitomo Chemical Co. Ltd. and Showa Denko Kahan Kaisha.

Copper

Copper prices remained at depressed levels during October 1977. London Metal Exchange (LME) cash prices for electrolytic wirebars moved in the range 54.5-55.5 (U.S.) cents a pound. Producer prices for electrolytic wirebars and for cathode copper remained unchanged at 65.125 and 64.5 cents a pound in Canada and 60.625 and 60.00(U.S.)cents a pound in the United States.

LME and Comex stocks recorded a further net advance during October. At month end, LME stocks had risen to 630 075 tonnes and Comex stocks had fallen to 177 723 tonnes, from 619 925 and 181 522 tonnes respectively one month earlier.

In Canada, the most important development of the month in the copper industry was the announcement of intended production and employment cutbacks at the Sudbury, Ontario operations of Inco Limited, as reported in detail in the section of this report dealing with nickel.

At Falconbridge Nickel Mines Limited operations, a company-imposed four-week production curtailment at Sudbury ended on October 11, when 4,000 workers returned to their jobs. Falconbridge plans a four-day closure in mid-November, production cuts over the Christmas and New Year weekends and a further one-month stoppage in July 1978.

Because of the co-production of both nickel and copper at the Sudbury mines, both Inco and Falconbridge will lose a substantial amount of copper production as a result of the cutbacks.

The new Kamloops mine of Afton Mines Ltd. has been in operation since mid-May 1977. Tune-up operations at the concentrator began late in October and the smelter is expected to begin its start-up period in mid-December 1977. Blister copper produced at the smelter will be exported to two United Kingdom copper consumers under long-term contract. Capacity of the operation is rated at 22 000 to 25 000 tonnes of blister copper a year.

In the United States copper producers actively sought government assistance for the industry during October. A number of Bills proposing increased copper tariffs were introduced during the month into the House of Representatives. In addition, one bill proposed authorization for the purchase of 227 000 tonnes of copper for the U.S. Strategic Stockpile financed by the sale of 27 000 tonnes of tin from the stockpile. The Carter administration lifted the moratorium on stockpile purchases and reaffirmed the stockpile policy of the Ford administration. The U.S. Federal Preparedness Agency was reported to be drafting a budget request to permit buying and selling for the stockpile. It is expected that this request could not be acted upon before January 1978.

The Japanese government was also reported to be considering further increases in its metals stockpiles as a means to reduce the Japanese trade surplus. An emergency import program with a value of $700 million was under preparation at month end. This would cover the cost of imports of uranium and nonferrous metals. The nonferrous metal purchases would be tied to the new stockpiling program which started operation in October. This program has obtained $111 million in financing for the purchase of 90 000 tonnes of zinc and 18 000 tonnes of copper.

The Mines Minister of Zambia stated that his country's copper production will have to be reduced until copper prices rise. At the forthcoming CIPEC Ministerial Conference in December he intends to urge other CIPEC producers to do the same.

The UNCTAD Intergovernmental Expert Group on Copper (IEGC) will meet again in November. The report of outside consultants will be received evaluating the costs, benefits and financial implications of a number of schemes to stabilize copper prices by means of buffer stocks and production controls. The IEGC also planned to receive further papers on some non-econometric aspects of the above studies and a further study of a Copper Consultative Organization (CCO).

Gold

The International Monetary Fund (IMF) held its fourteenth gold auction on October 5 under the open price method and awarded 524,800 troy ounces of gold to successful bidders at prices ranging from $154.99 (U.S.) an ounce to $157.05 (U.S.) an ounce and averaging $155.14 (U.S.). At the thirteenth gold auction 524,800 ounces of gold were awarded to successful bidders at a price range of $147.61 (U.S.) an ounce to $149.65 (U.S.) an ounce and averaged $147.78 (U.S.). The afternoon fixing price on the London Gold Market on October 4 was $154.85 (U.S.) an ounce of gold, slightly below the low bid submitted. The gold price was generally slightly below the auction price for a short period then moved upwards. In all, 103 final bids were submitted for a total of 971,200 ounces of gold compared with 112 final bids for a total of 1,084,400 ounces at the thirteenth auction. Over 84 per cent of the bids submitted were in the price range of $153.00 (U.S.) to $155.99 (U.S.) an ounce of gold. A total of 32 bids submitted by 12 successful bidders, mainly international bullion dealers and European Banks, were accepted. Final bids were submitted by 17 bidders. The fifteenth IMF gold auction will be held on November 2 in which 525,000 ounces of gold will be offered for sale under the open bid price method.

On October 18 the Commodity Futures Trading Commission (CFTC) of the United States approved a new contract for 400 troy ounces to be traded on the New York Mercantile Exchange (Merc). The Mercantile Exchange announced that trading on the 400-ounce futures contract will start on November 14 and the four contract months will be March, June, September and December which were selected to ensure liquidity and to avoid overlapping with the Winnipeg exchange, the only other exchange dealing in 400-ounce contracts. It was also announced that deliveries will be 400-ounce bars, 12-13 kilogram bars or four 100-ounce bars. The Merc now trades in one kilogram contracts.

The gold price increased substantially during the month because of a continuing strong demand for the metal. Reports indicate that the general poor performance of the world economies lead to increased speculative buying. The monthly low gold price of $153.60 (U.S.) an ounce was recorded on October 7 at the morning fixing on the London Gold Market and the high of $163.65 (U.S.) an ounce at the morning fixing on October 26. The opening and closing prices for October were $155.10 (U.S.) an ounce and $161.50 (U.S.) respectively. The monthly average for October of the afternoon fixing gold price on the London Gold Market was $158.76 (U.S.) ($174.45 Cdn.) an ounce compared with $149.52 (U.S.) ($160.48 Cdn.) an ounce for September.

Lead

The supply of refined lead has eased slightly since last month with announcements of resumption of normal production at lead plants in Zambia and the United States. The Metal Marketing Corporation of Zambia Ltd. (Memaco) announced that the partial *force majeure* on refined lead shipments imposed on July 1 would end on October 19. Memaco was forced to declare the *force majeure* following mechanical production problems at the Broken Hill Division of Nchanga Consolidated Copper Mines Ltd., the only lead producer in Zambia. In the United States, the strike at ASARCO Incorporated's East Helena lead smelter ended October 4 when Local 72 of the United Steelworkers of America obeyed a court order to return to work. The East Helena plant supplies lead bullion to the company's Omaha, Newbraska plant for refining. The company lifted a *force majeure* on concentrate shipments to the East Helena plant which had been imposed on September 27.

As a result of the continued weakness in world zinc markets and its attendant effect on profits, the Brunswick Mining and Smelting Corporation Limited announced that 125 employees would be laid off in the Mining Division and 65 employees would be laid off in the Smelting Division. The mining lay-offs result from a slow down in the expansion plans for the No. 12 mine while, according to the company, the lead plant lay-offs result from the need to achieve cost economies in the production of lead and silver.

The spot price of lead on the London Metal Exchange (LME) gained strength during the month but advances were partially restrained by appreciation in the value of sterling with respect to the United States dollar. The sterling price increased from £338 to £348.5 a tonne. This was equivalent to a per pound increase in U.S. funds of from 26.9 cents to 29.0 cents by month-end (28.9 cents to 31.0 cents in Cdn. funds). Inventories of refined lead in LME warehouses increased 1 425 tonnes during the month to 62 825 tonnes. The producer price in Canada remained unchanged at 32.25 cents a pound but in the U.S., St. Joe Lead Co. a division of St. Joe Minerals Corporation, and N L Industries, Inc. raised the lead price one cent to 32.0 cents a pound on October 31. Although this leaves a split price of 31.0-32.0 cents a pound in the U.S. market, it is not likely to last long since all other lead producers are expected to move quickly to the higher price. Both St. Joe and N L Industries mentioned increased costs associated with meeting environmental regulations and strong demand as reasons for increasing the price.

Mercury

At a meeting of the International Association of Mercury Producers (ASSIMER) at Geneva in early October four leading state-controlled mercury producers, Spain, Italy, Yugoslavia and Algeria agreed to take necessary measures to curb speculation in the metal by traders and agents. The producers consider some action is necessary because of the deterioration in the mercury market in recent years and plans to restrict sales to the needs of the traditional consumers.

The General Service Administration (GSA) of the United States announced that no acceptable bids were received at its October monthly offering of 500 flasks of quicksilver. The GSA stated it would re-offer 500 flasks of quicksilver and called for purchase bids by November 8, 1977.

Nickel

On October 20, 1977, Inco Limited announced a major curtailment of its nickel production for 1978. In Canada, selected mines will be closed and placed on a stand-by basis and employment at the Ontario and Manitoba Divisions will be reduced by some 3,450 jobs by mid-1978 through a combination of lay-offs and attrition. The Manitoba Division will reduce their staff by approximately 650 and this reduction is expected to be accomplished by attrition. About 2,800 of the lay-offs will be in the Sudbury area and an estimated 2,200 will become effective at the end of January. This reduction in employment is in addition to that at the Port Colborne refinery which was announced in September and will involve an additional 375 employees. Early in 1978, operations will be suspended at the Copper Cliff North mine in Sudbury and the Birchtree, near Thompson, Manitoba. Production will cease from the Creighton No. 3 mine and production from the Crean Hill mine will be gradually reduced and suspended in mid-1978. All of the above mentioned mines will be maintained on a standby basis. In addition, the small, depleted Victoria mine in Sudbury will be closed permanently. The curtailment in production will also involve a 4 week shutdown of the Ontario Division starting July 17, 1978. The company expects nickel production in 1977 to be 10 per cent below that of the previous year and that production in 1978 will be about 15 per cent below the 1977 level.

This is the result of lagging general economic recovery, a substantial over-supply in the nickel market and mounting producer inventories. The company also reduced the fourth quarter dividend and eliminated the extra year end dividend.

The Inco action follows that of Falconbridge Nickel Mines Limited which stopped all production from September 11 to October 9 inclusive and announced additional shutdowns of 4 days for the Remembrance Day weekend and a suspension of operations between the Christmas and New Year's Day holidays. Western Mining Corporation Limited of Australia decided to cut nickel output by 10 per cent (4 500 to 5 000 tonnes) starting September 2 and dismissed about 600 of its workforce.

Noranda Mines Limited has announced that it will be closing its Langmuir mine, near Timmins, Ontario at the end of March 1978, at which about 115 persons are currently employed.

During October, Johannesburg Consolidated Investment Company announced that it was cutting back nickel production by about 50 per cent at its Shangani mine in Rhodesia. The Shangani mine which came into production in 1976 has a capacity of about 5 500 tonnes of nickel contained in concentrates a year. Also in October Société Métallurgique Le Nickel (SLN) announced that it had already cut production this year by closing down two of its eleven electric furnaces in New Caledonia. On October 28, AMAX Inc. said that to avoid excessive inventories at its Port Nickel, Louisiana refinery it will not increase production there to capacity as quickly as had been originally anticipated. It will produce about 50 million pounds of nickel this year and during the first half of 1978 production will be at a rate no greater than production in second half of 1977. It will review markets and operating levels at mid-1978. AMAX has an annual capacity of 80,000,000 pounds and earlier in the year it was expected that its production in 1977 would be 60,000,000 pounds.

Steel

The Department of National Revenue has announced that three preliminary rulings have been made indicating that certain types of carbon and stainless steel products are being dumped in Canada. The three findings are for wide flange shapes less than 25 inches in cross section, involving France, Japan, Belgium, Britain, Luxembourg and South Africa; hot-rolled bar angles with legs less than 3 inches involving Japan; and several types of stainless steel products involving Japan, West Germany and South Africa. Provisional anti-dumping duties have been levied on all products involved and the cases will go to the Anti-Dumping Tribunal which will determine whether there has been injury to domestic producers of these products.

The United States steel industry continues to encounter difficulties during 1977. Weak demand for most steel products coupled with increased levels of steel imports have led the industry to reduce their level of operations. This has resulted in lay-offs of some 18,000 employees by the end of October. Several steel companies have filed formal complaints of dumping to the Treasury Department.

Zinc

Effective October 1, 1977 all primary zinc metal producers in the United States except Bunker Hill reduced zinc prices from $749.50 a tonne to $705.47 a tonne. Canadian and other foreign producers selling zinc in the United States immediately adopted the new price level. Bunker Hill reduced its price to $683.43 a tonne for all grades of zinc including those for which other producers charge a premium of $5.51 and $11.02 a tonne.

In Canada, domestic producers followed suit by reducing prices from $782.63 a tonne to $761.50 a tonne effective October 1, 1977.

The overseas producers' price remained unchanged at $700.00 (U.S.) a tonne, however, three custom smelters reduced prices which reflects the levels of discounting in offshore markets. On October 20, Electrolytic Zinc Company of Australasia Ltd. dropped its offshore price to $630.00 (U.S.) a tonne and on October 21 and 31, Metallgesellschaft AG and Preussag AG in Germany reduced their prices to $600.00 (U.S.) a tonne.

In response to these reduced prices Orchan Mines Limited in Canada announced a suspension of mining from December 2, 1977 to January 8, 1978 and indicated that a continuation was possible if markets did not improve.

On the subject of national stockpiles, President Carter has reaffirmed the major elements of the United States' strategic and materials stockpile policy developed under the Ford Administration last year, which in part called for a 1 191 134 tonne zinc metal stockpile of which 851 703 tonnes would have to be purchased. In Japan, Prime Minister Takeo Fukuda has requested his ministers to work out a $700 million emergency import program involving non-ferrous concentrates as well as other commodities as one means to reduce the country's huge trade surplus. The program, if approved, appears directed towards import materials that would be processed by domestic smelters rather than the import of ingots that would not require upgrading.

INDUSTRIAL MINERALS AND PRODUCTS

Asbestos

The Quebec government announced in Thetford Mines, on October 21, that it will become directly involved in the asbestos industry by purchasing control of Asbestos Corporation Limited (ACL), (the second largest producer of asbestos in Canada).

The major government goals are:

- to purchase control by acquiring the 54.6 per cent holding of ACL by General Dynamics Corporation, of St. Louis, Missouri.

- to transform into finished products from 10 per cent to 12 per cent of the fibre produced in Quebec. Currently about 3 per cent of the production is transformed.

- to create a National Asbestos Company (Société Nationale de l'Amiante) with an initial allocation of $50 million to start new product research and development; undertake joint ventures with other asbestos mining and manufacturing companies; and evaluate new mining projects.

- to create an Asbestos Office to oversee the industry.

General Dynamics owns 1,550,010 shares of the total 2,837,002 common shares issued. Share prices increased $2.50 each to $26.00 before trading was halted on Friday, October 21. Trading was allowed to continue on October 24 and prices have since risen to $35.25 as of October 31.

Asbestos Corporation Limited subsidiaries include Hudson Strait Asbestos Limited (Ungava), Asbestos Corporation GmbH in West Germany (a finishing mill for Asbestos Hill, Ungava concentrates), and Minorex Limited (an exploration arm of the company). The company employs over 2,000 people in Quebec and about 150 in West Germany.

The Quebec government's stated reasons for the proposed takeover were: ACL has a relatively large proportion of the world export market, good quality fibre, adequate reserves, and the company is not vertically integrated. As well, it has a satisfactory profit record, and its shares trade freely on the stock market.

Insulation Materials

Canadian Johns-Manville Company Limited (J-M) officially opened a new $11-million fiberglass insulation plant at Innisfail, Alberta on October 3, 1977. The operation uses sand, lime, soda ash, borax and nepheline syenite in what is advertised as a more energy efficient process of mechanically fiberizing the fiberglass. Plant capacity is estimated at 6,000 tons a month of four-foot batt material. The company received no special concessions from the province but with market growth estimated at 15 per cent a year, J-M hopes to capture enough to give them 35 per cent of the total western market. Fiberglas Canada Limited currently holds 65 per cent of the total Canadian market and 75 per cent of the market in western Canada.

Potash

On October 17, 1977 the Minister of Natural Resources, New Brunswick announced that the Potash Company of America would go ahead with plans for a new mine and concentrator on its property near Sussex to produce up to 1-million tons of potash a year. The project will employ about 500 persons during construction and when operative, by the end of 1981, will employ over 250. Total cost of the development is estimated at $106 million. A 20-year agreement between the government and the company was signed at Sussex on October 26, with Peter Jack, Vice-President of Canadian operations representing the company and Premier Hatfield representing the province.

The Canadian International Development Agency has agreed to lend India $32 million to finance the purchase of Canadian fertilizer material. India has already contracted with Canpotex for 280 000 tonnes of potash valued at $16.7 million and for 20 000 tonnes of potash from Potash Company of America, valued at $1.2 million.

MINERAL FUELS AND PRODUCTS

Coal

The 29th Canadian Conference on Coal was held in Edmonton on October 2-4. The conference themes centered on the interests and objectives of the federal and provincial governments in coal and related developments; on coal as an important trading commodity and on the role of coal in satisfying an increasing share of Canada's energy needs. Over 700 delegates heard optimistic long-run predictions about growth prospects for Canada's coal industry. In the near term increased production was predicted for the thermal sector while the coking coal export sector presented an unclear picture. Substitution of domestically produced fuels in markets that might otherwise look to foreign oil or scarce gas was seen to augur well for coal gasification-liquefaction in the 1990s. Provincial government officials reviewed events in their provinces and talked of upcoming policy and royalty systems, while federal government officials commented on their involvement in Canada's coal industry.

On the world scale, production was predicted to double by 1990. It was forecast that Canada could become a net exporter of coal in the 1980s, as both coking and thermal exports were seen to have potential in new and expanded markets. However representatives from Japan, the major importer of Canadian coking coal, predicted that additional contract commitments for new mine capacity in this decade were unlikely given existing and forecast levels of steel demand. Increasing steel production in developing countries such as Brazil, Mexico, Taiwan, Pakistan and South Korea may provide new opportunities for Canada's coking coals, replacing potential exports that will not likely now materialize because of projected reduced growth rates in Japan's steel industry.

Expansion in both domestic and export markets was also predicted for Canada's thermal coals. Consumption in Alberta is expected to reach 20 million tons by 1985, compared to about 6.5 million tons in 1976. Nova Scotia and Saskatchewan are also planning increased consumption of indigenous thermal coal while Ontario, which has already contracted for nearly 4 million tons from western Canada, may take more in the 1980s. Exports of thermal coal also remains a possibility for Canada as Japanese and European demands will exceed domestic supplies. Japanese imports of thermal coal from North America were forecast to be 6 or more million tons per year by 1980.

Saskatchewan reported it was putting the finishing touches to its new coal policy which is now expected to be released in 1978. British Columbia and Saskatchewan officials reported that statements on new coal royalties would be out shortly, while Alberta officials noted a high level of activity in private applications for new or expanded mines. Federal government officials commented on transportation and other infrastructure requirements for new coal related developments in western Canada and on transportation developments and policy related to Canada's international coal trade. Involvement in a drilling program with Nova Scotia and studies with British Columbia on its northeastern coal deposits, were noted as just two examples of the the support given the coal industry by the federal government.

In other coal related developments Shell Canada Limited, began negotiations to purchase all outstanding shares of Crows Nest Industries Limited of Fernie, British Columbia. Crows Nest Industries owns oil, gas and coal-producing properties in the East Kootenay region of southeastern British Columbia. Both thermal and coking coal is presently produced in this region. In Alberta pre-development studies for the proposed half-billion dollar Alberta Power Limited Sheerness project are continuing. The project, which would provide 750 megawatts of power, is nearing the public hearing stage at which its application will be reviewed. The two 375 megawatt generating units of the Sheerness project would come into production in 1985 and 1986, one or two years after the completion of the second 375-megawatt unit of the proposed Keephills Thermal Generating Station (see September 1977 monthly report). The cost of the Sheerness project is estimated at $350 million in 1976 dollars.

In Saskatchewan a multi-million dollar contract was awarded for the erection and commissioning of a Bucyrus-Erie Model 2570-W walking dragline. The dragline with a 90 cu. yd. bucket will operate at a new surface mine near Moose Jaw, and supply coal for the new Poplar River generating station of Saskatchewan Power Corporation. The dragline is only the fifteenth of its size to be built and when completed will weigh 6,500 tons and have a 360 foot boom capable of excavating to a depth of 160 feet. Cost of the completed unit is estimated at about $30 million.

Employees at Coleman Collieries Limited of Coleman, Alberta have returned to work ending a strike that began September 28 and affected about 600 workers. Acceptance of a tentative two-year contract which provided for changes to existing pension plans settled the month long strike. The new plan, which must be approved by the Anti-Inflation Board before it can be ratified, would provide for a pension of $300 per month for an employee with 20 years of accredited experience.

Petroleum and Natural Gas

Dome Petroleum Limited completed drilling the last well of a three well drilling program in the Beaufort Sea. All three wells were suspended before reaching total depth and will be completed during the 1978 summer drilling season. Preliminary evaluation indicates that two of the three wells will likely prove to be commercial discoveries. The Nektoralik K-59 well, yielded oil and gas from several formations when tested. One formation tested 1,150 b/d of light gravity crude oil from the 8,900 foot level on restricted choke. The other discovery, Ukalerk C-50 tested 16.9 million cubic feet a day of natural gas, also on restricted choke. Coupled with these two discoveries and last year's gas find at Tingmiark K-91, Dome has identified 40 additional structures within the 1,000 feet water depth line that are considered to have excellent potential for oil and gas accumulations. Dome is currently completing this year's testing program at the Nektoralik well. The two other drillships have moved to two new locations where they have commenced drilling the initial 1,600 feet of two deep wells that will be drilled next year.

Kitimat Pipe Line Ltd.'s plans for a major oil receiving port at the British Columbia coastal town of Kitimat and an oil pipeline from that terminal to Edmonton has been revived following the United States government's decision to curtail expansion of facilities in the Cherry Point, Washington region. Kitimat Pipe Line will now seek approval of its project by the National Energy Board (NEB). It will be recalled that the company had previously requested that its former application be held in abeyance when it made the decision to support expansion of facilities at Cherry Point and the linking of that United States point with Trans Mountain Pipe Line Company Ltd.'s pipe line system. The Cherry Point expansion would have involved scheduled reversals of the Trans Mountain oil line between Vancouver and Edmonton. The immediate thrust of the Kitimat pipeline project would be to deliver North Slope Alaska oil to United States markets. In the longer term, these facilities would eventually be involved in the receipt and delivery of offshore crude oil to Canadian refining areas.

Westcoast Transmission Company Limited will apply to the NEB on November 5, 1977 for a certificate to build major gas transmission line networks in northeastern British Columbia for completion by November 1, 1978. A 93-mile pipeline, designated as the Grizzly-Bullmoose-Sukunka line will run from the Ojay-Grizzly fields to the Westcoast main line about 25 miles southwest of Chetwynd at the point where the main lines from Taylor and Fort Nelson join. The Sukunka-Grizzly gas field development project will cost $122.4 million, including $75 million for a gas processing plant and $47.4 million for related pipeline facilities. Initial deliverability of the line will be 210.0 MMcf/d in 1979-1980 rising to 277.4 MMcf/d in 1981.

The $2 billion Syncrude Canada Ltd. oil sands project located at Mildred Lake, 40 miles north of Fort McMurray, is now close to 90 per cent complete. When completed, the 125,000 b/d facility will employ two production trains. The first will go on stream in May 1977 with output expected to reach 80,000 b/d by September of the same year. The second train is expected to be operational between 12 and 18 months later, increasing production to about 108,000 b/d. Full production of 125,000 b/d is expected to be attained between 1980 and 1982.

Uranium

The Minister of Energy, Mines and Resources announced that, effective October 14, 1977, the Uranium Information Security Regulations under the Atomic Energy Control Act were amended to substantially narrow their scope. The regulations had been passed in September 1976 to prevent the removal from Canada of information with respect to Canadian uranium marketing activities during the period 1972-1975. "Their application will (now) be limited to information relating to the export from Canada or marketing for use outside Canada of uranium or its derivatives and to persons associated with uranium producers and the federal government."

The Minister also noted that his colleague, the Minister of Consumer and Corporate Affairs, has directed his Director of Investigation and Research to conduct a formal inquiry to determine if the 1972-1975 international uranium marketing arrangement violated Canada's Combines Investigation Act.

On the occasion of a special convention on the nuclear issue, the Saskatchewan Federation of Labour supported resolutions that uranium development proceed in the province, but under stringent controls.

The federal government and Newfoundland will share the costs of a two and one-half year $1,061,000 project under the federal-provincial Uranium Reconnaissance Program. The project will involve geochemical sampling and analysis of lake sediments and waters over some 166 000 square kilometres off Newfoundland and Labrador.

Romania and Canada have signed a nuclear co-operation agreement which meets Canadian nuclear safeguard requirements. The agreement clears the way for the potential sale by Atomic Energy of Canada Limited (AECL) of CANDU reactors which would be built under license in Romania. The sale, if it materializes, will involve engineering services and the construction of four reactors.

The United States Energy Research and Development Administration (ERDA) has announced that it will increase charges for its uranium enrichment services. Under ERDA's fixed-commitment-type contracts, charges will be increased from the present $61.30 per separative work unit (SWU) to $74.85 per SWU on November 29, 1977. Under ERDA's requirement-type contracts, charges will be increased from the present $69.80 per SWU to $83.15 per SWU on March 29, 1978. Under a special provision of requirement-type contracts however, the present effective charge is $67.55 per SWU; this will rise to an estimated $76.82 per SWU on January 1, 1978.

Also under ERDA's new schedule of charges, for customers unable to meet feed schedules for reasons beyond their control, ERDA will consider leasing emergency feed at $40.30 per lb U_3O_8, rather than the present $11.00 per lb U_3O_8. For certain old contracts and for "split tails" feed sales, uranium feed will be valued at $16.10 per lb U_3O_8, rather than the present $11.00 per lb U_3O_8.

The organizing conference of the International Nuclear Fuel Cycle Evaluation (INFCE) met in Washington, October 19 to 21, 1977. Some 215 delegates from 40 countries attended with the objective of organizing the study which is expected to be carried out by up to eight working groups over a two year period. Conceived at the London summit of principal western world leaders last summer, INFCE will examine the pros, cons and alternatives to a world "plutonium economy," in an attempt to arrive at an acceptable international system to combat nuclear weapons proliferation.

SPECIAL ITEM

Seaway Tolls

Mr. Paul Normandeau, President of the St. Lawrence Seaway Authority, plans to meet with U.S. officials in November to discuss conclusions from recent U.S. hearings on a tentative agreement on higher Seaway tolls reached by U.S. and Canadian negotiators this summer. The meeting should lead to firm recommendations to the two governments and a decision on Seaway toll increases should be announced by early December. There is little doubt that there will be increases, but groups representing Seaway users are hoping the higher rates will be introduced gradually. Transport Minister Otto Lang announced in March that the federal government was relieving the St. Lawrence Seaway Authority of its $842 million debt and was planning to double tolls in 1978 to cover operating expenses. The Seaway Authority denies that there will be a substantial diversion of iron ore marine traffic from the Gulf of St. Lawrence via the Seaway to Lower Lake ports in favour of U.S. Atlantic coast ports.

Tolls on the Montreal-Lake Ontario section of the Seaway currently are 4 cents a gross registered ton of the vessel plus 40 cents a net ton on bulk cargo and 90 cents a net ton on general cargo. Lockage fees on the Welland Canal are $800 per vessel passage.

The Seaway Authority seeks to raise tolls to 45 cents a ton on bulk cargo and $1.05 a ton on general cargo on the Montreal-St. Lawrence section and to establish tolls on the Welland Canal equivalent to the current tolls on the Montreal-Lake Ontario section, that is 4 cents a gross registered ton plus 40 cents on bulk and 90 cents on general cargo. The lockage fees would be cancelled.

RECENT AMALGAMATIONS AND MERGERS PUBLISHED IN THE GAZETTES

Consolidated West Petroleum Limited amalgamated with C.W.P. Exploration Company Limited on 22 August 1977 under the name Consolidated West Petroleum Limited. Source Ontario Gazette Sept. 17, 1977.

NEW PUBLICATIONS

The following publications were prepared in the Mineral Development Sector, Department of Energy, Mines and Resources and released for distribution in October.

Canadian Minerals Yearbook 1974 - Mineral Report 24

The Mineral Policy Series:

MR 164(F) La cosommation énergérique de l'industrie minérale du Canada: aujourd'hui et demain

The above publications are available from the Publishing Centre, Department of Supply and Services, Ottawa at $10.00 a copy and $2.00 respectively.

Preprints, *Canadian Minerals Yearbook 1976*, Aggregates Lightweight; Asbestos; Gypsum and Anhydrite; Iron Ore; Mercury; Sand and Gravel.

The above preprints are available from the Publishing Centre, Department of Supply and Services, Ottawa for 50¢ a copy.

Mineral Production of Canada by Province 1931-1976 by A.E. Spoerri, G. Kneen and G. Yee, available free of charge from the Mineral Development Sector Publication Office, Department of Energy, Mines and Resources.

MH/GK/pfn/so'm