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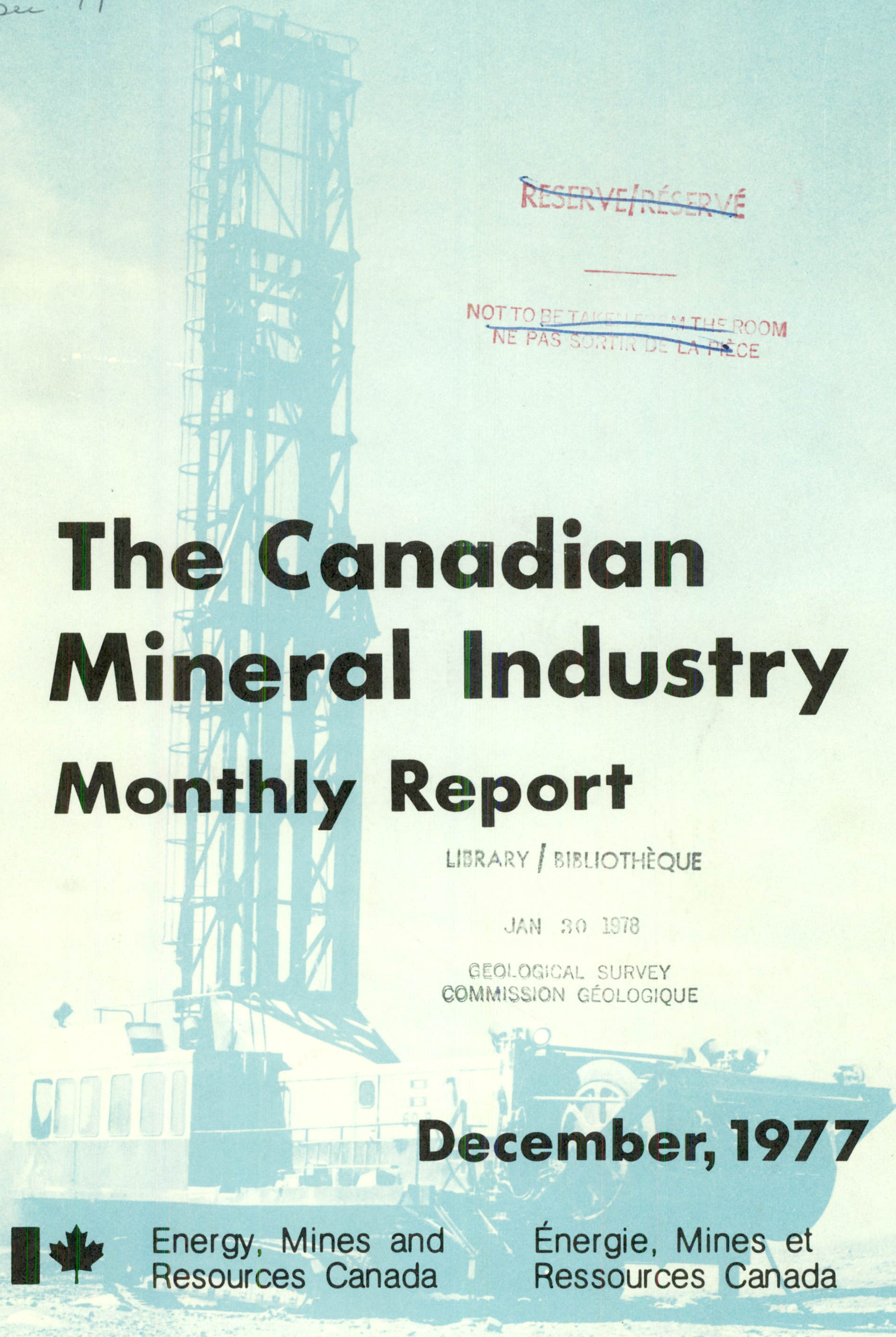

The Canadian Mineral Industry

Monthly Report

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Energy, Mines and Resources Canada
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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.

Mineral Development Sector
Department of Energy, Mines
and Resources
580 Booth Street
Ottawa, Canada K1A OE4

Secteur de l'Exploitation Minérale
Ministère de l'Energie, des Mines
et des Ressources
580, rue Booth
Ottawa, Canada K1A OE4

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THE CANADIAN MINERAL INDUSTRY FOR DECEMBER

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

SUMMARY

1. Canada's unadjusted index of Real Domestic Product was 129.7 in October 1977, a decrease of 12.5 per cent from September 1977.

2. The October index of Mines, Quarries and Oil Wells was 114.2, an increase of 3.1 per cent from the previous month.

3. The International Bauxite Association agreed on a minimum pricing policy for bauxite.

4. France and Quebec concluded a joint exploration agreement during December.

5. The Government of Canada and the Government of Nova Scotia have agreed to provide \$19.5 million in financial assistance to the Sydney Steel Corporation.

6. The Bethlehem Steel Corporation announced the permanent shutdown of its Marmoraton Mining Company's Marmora mine in Ontario, effective March 31.

7. Falconbridge Nickel Mines Limited and AMAX Nickel, Inc. have changed their published list prices for nickel products.

8. The Lead-Zinc Producers Committee in the United States filed a petition with the U.S. International Trade Commission which requests relief from injury caused by import competition in zinc.

9. Legislation to amend the Petroleum Administration Act was tabled in the House of Commons on December 20.

ECONOMIC TRENDS

Market conditions in 1977 were relatively buoyant for aluminum, flat-rolled steel products, molybdenum, lead, silver, potash and asbestos. Due to the sluggish worldwide recovery in the construction industry and the capital goods sector, competition among steel producers in world markets was intense for many carbon steel long products. Low prices and high inventories, the product of two and one-half years of over-production, plagued the nickel, copper and zinc industries throughout 1977. Confronted with these problems and the realization that no significant surge in world economic activity and hence demand for mineral products was likely in the immediate future, a number of producers found it necessary to curtail production, investment and employment during the year while others announced their intentions of doing so in 1978.

The volume of mineral products produced by the Canadian non-fuel mineral industry in 1977 was an estimated 8 to 9 per cent[1] above that of 1976, with most of the expansion in output occurring in the first quarter. This refers to the increase in overall output at all mines, concentrators, smelters, refineries and semifabrication facilities located in Canada processing domestic and foreign non-fuel minerals and not merely the change in domestic mine output. The overall level of output in 1977 was slightly higher than that achieved in the peak year of 1974.

While not all sectors of the industry shared equally in the 1977 expansion, almost all sectors recorded some increase in output over 1976. Some notable exceptions were: iron ore mines, steel pipe and tube mills, iron foundries and cement manufacturing, for which no increases were recorded. Likewise, not all sectors of the industry reached the peak levels of output that were obtained in 1974. Output in the iron and steel industry (excluding iron ore mines) and in the nonferrous metal smelting and refining industry in 1977 was lower for each industry than in 1974.

International prices for mineral products, on the whole, were relatively weak in 1977 and prices actually fell for some products. But as a result of the devaluation of the Canadian dollar and the fact that Canadian prices are set in relation to international prices, the prices received by Canadian producers, stated in Canadian dollars, rose significantly for a number of products.

Wholesale prices in 1977, on a year-to-year basis, are estimated to have increased 5.5 per cent for iron products, 13.0 per cent for nonferrous metals and 9.0 per cent for nonmetallic minerals, compared with an overall national inflation rate of 6.4 per cent.

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[1] The change in production volume was calculated using industry indexes of Real Domestic Product. This estimate is based on preliminary data for the first three quarters of 1977.

Mineral Industry Highlights

- Preliminary figures indicate that the total value of domestic mine output in 1977 reached $18.1 billion compared with $15.4 billion the previous year, an increase of 17.5 per cent (see Table A).

- The production value of metals, nonmetals, fuels and structural materials increased by 10.4 per cent, 17.6 per cent, 23.5 per cent and 5.5 per cent respectively.

- Significant increases in the volume of production were recorded for lead (10.9 per cent), molybdenum (12.3 per cent), gypsum (17.2 per cent), potash (13.3 per cent) and coal (11.4 per cent) (see Table B).

- Crude petroleum accounted for 27.1 per cent of Canada's total mineral production followed by natural gas accounting for 19.0 per cent (see Table C).

- Iron ore which surpassed both nickel and copper as the leading metal in 1976 remained ahead of these two metals in 1977, accounting for 7.5 per cent of Canada's total mineral production compared with 6.6 per cent for nickel and copper respectively.

- For the seventh year in succession, Alberta led the other provinces with mineral production valued at $8.5 billion or 47.0 per cent of Canada's total.

- Ontario was the leading producer of metals in 1977 and its total mineral production was second only to that of Alberta, being 14.9 per cent of Canada's total.

- Preliminary figures indicate that the total overall value of minerals exported by Canada for the first nine months of 1977 compared with the corresponding period for 1976 increased by 8.4 per cent. In particular, nonferrous and nonmetallic minerals posted significant gains of 16.7 per cent and 21.8 per cent respectively (see Table D).

TABLE A

Mineral Production of Canada, 1976-1977p

		New-foundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskat-chewan	Alberta	British Columbia	Yukon	N.W.T.	Canada
							($ millions)							
Metals	1976	688.7	-	-	195.3	742.8	2,036.6	409.1	25.1	...	698.4	88.5	188.3	5,072.8
	1977p	781.5	-	-	224.2	759.7	2,192.8	419.4	22.6	-	809.9	172.6	217.8	5,600.5
Nonmetals	1976	40.6	-	34.8	7.2	436.4	84.7	4.8	382.9	80.9	54.8	35.3	-	1,162.4
	1977p	48.7	-	38.9	8.2	529.4	90.7	5.2	450.3	83.6	75.0	37.2	-	1,367.2
Fuels	1976	-	-	57.8	6.0	...	10.1	33.6	478.6	6,739.0	746.7	1.0	36.3	8,109.1
	1977p	-	-	80.5	6.5	-	13.4	40.8	614.7	8,323.1	900.5	0.5	32.5	10,012.5
Structural materials	1976	15.7	1.7	32.5	27.5	313.9	395.1	64.4	32.3	115.0	105.3	-	-	1,103.4
	1977p	15.4	1.8	32.5	28.9	342.5	415.9	67.4	32.9	119.0	107.6	-	-	1,163.9
Grand Total	1976	745.0	1.7	125.1	236.0	1,493.1	2,526.5	511.9	918.9	6,934.9	1,605.2	124.8	224.6	15,447.7
	1977p	845.6	1.8	151.9	267.8	1,631.6	2,712.8	532.8	1,120.5	8,525.7	1,893.0	210.3	250.3	18,144.1

p Preliminary; ... Less than $100,000 - Nil.

TABLE B

Canada, Production of Leading Minerals

		1976	1977[p]	% change 1977/1976	1976 ($ millions)	1977[p] ($ millions)	% change 1977/1976
Metals							
Copper	000t	731	781	+ 6.8	1,101.1	1,195.6	+ 8.6
Gold	kg	52 621	53 405	+ 1.4	208.3	268.4	+28.9
Iron ore	000t	55 416	51 753	- 6.7	1,223.0	1,360.2	+11.2
Lead	000t	256	284	+10.9	128.0	195.1	+52.4
Molybdenum	t	14 619	16 430	+12.3	98.6	146.7	+48.4
Nickel	000t	241	235	- 2.5	1,146.5	1,196.8	+ 4.3
Silver	t	1 281	1 330	+ 3.8	177.1	210.2	+18.7
Uranium[1]	t	5 627	5 951	+ 5.7	..	..	
Zinc	000t	982	1 055	+ 7.4	814.6	814.4	- 0.01
Nonmetals							
Asbestos	000t	1 536	1 542	+ 0.3	452.2	564.1	+24.7
Gypsum	000t	6 002	7 039	+17.2	22.8	28.5	+25.0
Potash K_2O	000t	5 215	5 910	+13.3	353.5	421.3	+19.2
Salt	000t	5 994	5 933	- 1.1	84.1	88.4	+ 5.1
Cement	000t	9 624	10 099	+ 4.9	381.1	408.7	+ 7.2
Clay products	$000	..	..	-	97.5	104.2	+ 6.9
Lime	000t	1 850	1 879	+ 1.5	59.7	60.9	+ 2.0
Fuels							
Coal	000t	25 476	28 394	+11.4	607.1	670.5	+10.4
Natural Gas	$000m^3$	87 649 797	89 496 112	+ 2.1	2,649.2	3,443.1	+30.0
Crude oil and equivalent	$000m^3$	76 438	77 179	+ 0.9	4,053.9	4,917.3	+21.3

[1] Tonnes uranium (1 tonne U = 1.2999 short tons U_3O_8).

[p] Preliminary; .. Not available.

TABLE C

Canada, Mineral Production 1977

Distribution of Mineral Value by Commodity		Distribution of Mineral Value by Province	
	%		%
Crude Petroleum	27.1	Alberta	47.0
Natural Gas	19.0	Ontario	14.9
Iron Ore	7.5	British Columbia	10.4
Nickel	6.6	Quebec	9.0
Copper	6.6	Saskatchewan	6.2
Zinc	4.5	Newfoundland	4.7
Coal	3.7	Manitoba	2.9
Asbestos	3.1	New Brunswick	1.5
Cement	2.3	N.W.T.	1.4
Others	19.6	Yukon	1.2
		Nova Scotia	0.8
		Prince Edward Island	0.01

TABLE D

Canada Exports of Minerals, Crude and Fabricated

($ millions)

	Year 1966	Year 1971	Year 1976	1st 9 months 1976	1st 9 months 1977	% change 1st 9 months of 1977 / 1st 9 months of 1976
Crude						
Ferrous	379.1	431.8	984.3	750.7	755.3	+ 1.0
Nonferrous	555.0	954.8	1,516.4	1,094.8	1,278.8	+16.8
Nonmetallic	259.4	456.9	1,094.6	795.3	962.7	+21.0
Fuels	444.2	1,124.6	4,464.0	3,373.7	3,267.8	- 3.1
Total	1,637.7	2,968.1	8,059.3	6,014.5	6,264.6	+ 4.2
Fabricated						
Ferrous	273.8	463.6	999.7	761.2	904.7	+18.9
Nonferrous	1,040.3	1,389.7	2,203.7	1,634.5	1,905.8	+16.6
Nonmetallic	142.4	100.6	193.5	145.2	183.2	+26.2
Fuels	28.7	117.0	558.8	428.4	483.6	+12.9
Total	1,485.2	2,070.9	3,955.7	2,969.3	3,477.3	+17.1
Total crude and fabricated minerals						
Ferrous	652.9	895.4	1,984.0	1,511.9	1,660.0	+ 9.8
Nonferrous	1,595.3	2,344.5	3,720.1	2,729.3	3,184.6	+16.7
Nonmetallic	401.8	557.5	1,288.1	940.5	1,145.9	+21.8
Fuels	472.9	1,241.6	5,022.8	3,802.1	3,751.4	- 1.3
Total	3,122.9	5,039.0	12,015.0	8,983.8	9,741.9	+ 8.4
Total domestic exports, all products	10,070.6	17,396.6	37,328.5	27,506.8	31,719.5	
Crude minerals as % of exports, all products	16.3	17.1	21.6	21.9	19.7	
Crude and fabricated minerals as % of exports, all products	31.0	29.0	32.2	32.7	30.7	
Crude mineral exports as % of mineral exports	52.4	58.9	67.1	66.9	64.3	

The Outlook for 1978 and Beyond

The growth of demand for Canada's non-fuel minerals has, historically, been closely tied to the growth in overall world economic activity, particularly in the major western industrialized countries. Accordingly, an assessment of the prospects for economic growth in the western world is required in arriving at a forecast for the Canadian non-fuel mineral industry. The volume and value of exports and production, especially in the next few years, will depend on what happens to the economies of our major trading partners as well as our own.

Despite the worldwide underutilization of plant capacity and high unemployment in many industrialized countries, the consensus among economists is that the world economy is unlikely to expand rapidly in the next few years for a number of reasons. The quadrupling of oil prices has created a current account drain in many industrial countries which will act as a damper on future growth. The rise in protectionist sentiment to safeguard domestic employment is likely to hamper world trade and economic growth by reducing the opportunities to achieve higher levels of productivity through reductions in trade barriers. The need to devote a portion of national resources to pollution control equipment to correct accumulated environmental problems will also impede overall growth in output since this equipment represents a diversion of capital from productive use. Most important, persistent inflationary pressures and the reluctance by world governments to adopt strong expansionary measures for fear of rekindling inflation will have the effect of restraining future economic expansion below historical rates. In sum, no real burst in economic activity lies around the corner.

To develop the outlook for the Canadian non-fuel mineral industry, the following assumptions were made about economic developments abroad. Industrial production[2] in the major western industrialized countries is expected to expand by about 5.5 per cent in 1978, compared with an estimated expansion of 5.6 per cent in 1977 and 8.9 per cent in 1976. For the medium term, industrial production is expected to expand by about 4.25 per cent per year, on average, between 1978 and 1982, compared with an average annual growth rate of 5.7 per cent for the period 1961 to 1974. On balance, the outlook for the world economy is for moderate growth in 1978. While economic activity is expected to continue to expand beyond 1978, the rate of increase will be below the level experienced in the 1960s.

In contrast to the stagnant performance experienced in 1977, the 1978 outlook for the Canadian economy is more encouraging. There is a good chance for more rapid growth in 1978, an expansion in the order of 4.5 per cent in the real Gross National Product is likely compared with 2.4 per cent in 1977. The rate of expansion beyond 1978 is expected to

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[2] The industries contained in the index of industrial production are mining, manufacturing and electric power, gas and water utilities.

be moderate by historical standards. The real Gross National Product is projected to expand by about 4.5 per cent a year, on average, for the 1978-82 period, compared with an average annual trend growth rate of 5.4 per cent for the 1963-74 period.

Against this postulated background, an increase in demand for mineral products produced by the Canadian non-fuel mineral industry in the neighbourhood of 5 per cent measured in constant dollars, is likely in 1978. The volume of output, however, is unlikely to expand by any more than 4 per cent in 1978, compared with an estimated increase of over 8 per cent in 1977, as producers sell from inventories in an attempt to adjust their stocks to more manageable levels. Over the next five years, demand for Canadian mineral products should expand at an average annual rate of 3.7 per cent, compared with an average annual trend growth rate of close to 5 per cent for the 1961-74 period. If there are no supply constraints output should expand by the same amount.

This forecast is valid only as long as industrial production in the Western World expands by 5.5 per cent in 1978 and by about 4.25 per cent, on average, until 1982. Naturally, a lower rate of expansion of industrial production would mean a lower expansion rate for the mineral industry and vice versa. It should, however, be emphasized that a significantly lower world economic expansion rate than that envisaged would probably culminate with a mini-recession in 1979. This, though possible, would appear to be improbable at the moment. On balance, the forecast is probably too pessimistic rather than too optimistic.

Assumptions about the external economic environment are more pessimistic than those recently made by the Economic Council of Canada in its review of the prospects for the Canadian economy into the 1980s.[3] As well, no major policy changes were assumed between now and 1982 in the major industrialized countries of the world. Because of the present high levels of unemployment in many industrialized countries, governments may find it necessary to adopt a more expansionary fiscal and monetary policy stance to stimulate their respective economies. Such action would have the effect of increasing the demand for Canadian mineral products.

While the overall demand for Canadian mineral-based products is expected to expand in the coming years, albeit at a more moderate rate than in the past, not all sectors of the industry will share equally in this expansion. Any industry whose prosperity is intrinsically linked to the level of activity in the capital goods sector, is likely to experience weaker demand, in the short run, than an industry dependent on demand for consumer goods. The demand for capital goods is likely to be modest, in the short-run, because of the present worldwide underutilization of plant capacity. As the level of economic activity expands and capacity constraints are encountered, only then will demand for structural steel products, nickel, etc. expand rapidly. In the longer term, major investments in energy-related projects like the Alaskan Highway gas pipeline should provide added stimulus to industries such as the iron and steel industry.

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[3]Economic Council of Canada Fourteenth Annual Review, "Into the 1980s", pp. 66 to 68.

An added consideration is that market conditions for some minerals will remain weak despite increases in world demand. For example, no significant price increases are anticipated for copper or nickel, over and above the general rise in the rate of inflation, because of the large stocks of metal overhanging the copper and nickel markets and the significant expansion in recent years of the world's productive capacity of these metals.

Indexes of Industrial Production

Table 1 shows Canada's unadjusted indexes of Real Domestic Product (RDP). The overall index in October was 129.7, a decrease of 12.5 per cent from September.

The RDP index for Mines, Quarries and Oil Wells increased by 3.1 per cent in October to 114.2. An increase of 1.6 per cent, 3.9 per cent and 6.5 per cent was recorded for metal mines, mineral fuels and nonmetal mines respectively.

The October index for primary metal industries was 3.0 per cent below that of September. An increase of 3.5 per cent was recorded for nonmetallic mineral products industries.

Table 2 compares volume of production in major Canadian minerals. Output increased significantly in October compared with September for silver (25.1 per cent) and zinc (48.0 per cent). Output decreased significantly for asbestos (14.6 per cent) and potash (20.2 per cent).

TABLE 1

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

Industry or Industry Group	1976 Sept	1976 Oct	1976 Average 1st 10 Months	1977 Sept	1977 Oct	1977 Average 1st 10 Months	Percentage Changes: Sept 1977 / Sept 1976	Oct 1977 / Oct 1976	Oct 1977 / Sept 1977	1st 10 Months 1977 / 1976
Real Domestic Product	146.5	125.4	124.0	148.3	129.7	127.9	1.2	3.4	-12.5	3.2
Primary Industries										
Agriculture	660.4	17.6	114.0	602.4	36.9	110.1	-8.8	109.7	-93.9	-3.4
Forestry	137.6	128.8	104.3	131.4	116.1	115.6	-4.5	-9.9	-11.6	10.8
Fishing and Trapping	140.2	118.0	110.9	156.8	136.4	119.0	11.8	15.6	-13.0	7.3
Mines, Quarries and Oil Wells	113.7	118.6	109.4	110.8	114.2	114.2	-2.6	-3.7	3.1	4.4
Metal Mines	118.8	117.5	108.7	109.1	110.8	114.3	-8.2	-5.7	1.6	5.2
Placer and Gold Quartz Mines	77.2	72.4	73.6	65.9	70.8	73.6	-14.6	-2.2	7.4	0.0
Iron Mines	164.2	159.9	138.9	137.5	141.9	135.1	-16.3	-11.3	3.2	-2.7
Other Metal Mines	109.6	109.2	102.9	104.1	105.1	111.2	-5.0	-3.8	1.0	8.0
Mineral Fuels	105.6	117.1	109.5	105.2	109.3	111.6	-0.4	-6.7	3.9	1.9
Coal Mines	195.4	225.9	188.7	210.6	219.3	212.1	7.8	-2.9	4.1	12.4
Crude Petroleum and Natural Gas	98.2	108.2	103.0	96.6	100.3	103.4	-1.6	-7.3	3.8	0.4
Nonmetal Mines	126.9	136.0	115.0	137.4	146.3	130.8	8.3	7.6	6.5	13.8
Asbestos Mines	113.5	114.6	103.8	103.7	117.2	110.9	-8.6	2.3	13.0	6.8
Secondary Industries										
Manufacturing	123.8	122.8	119.9	127.9	129.6	123.5	3.3	5.5	1.3	3.0
Nondurable Manufacturing	121.2	122.1	117.2	123.9	126.1	120.9	2.2	3.3	1.8	3.2
Petroleum and Coal Products Industries	113.2	117.0	125.4	112.9	118.3	130.9	-0.3	1.1	4.8	4.3
Durable Manufacturing	126.4	123.5	122.7	131.9	133.1	126.1	4.4	7.8	0.9	2.8
Primary Metal Industries	104.7	99.5	105.9	120.0	116.4	114.2	14.6	17.0	-3.0	7.9
Iron and Steel Mills	120.0	110.4	117.4	126.4	122.1	122.2	5.3	10.6	-3.4	4.1
Steel Pipe and Tube Mills	113.4	109.0	119.9	143.3	125.7	124.4	26.4	15.3	-12.3	3.8
Iron Foundries	126.1	126.3	122.4	127.0	141.9	118.8	0.7	12.4	11.7	-2.9
Smelting and Refining	73.3	72.6	81.9	107.0	101.3	100.3	46.0	39.5	-5.3	22.6
Nonmetallic Mineral Products Industries	136.3	141.4	121.8	146.6	151.8	128.7	7.6	7.4	3.5	5.7
Cement Manufacturers	135.9	146.7	121.1	147.3	147.7	121.6	8.4	0.7	0.3	0.4
Ready-mix Concrete Manufacturers	135.5	142.4	117.5	148.6	164.2	124.2	9.7	15.3	10.5	5.7
Construction Industry	127.2	132.1	117.3	132.7	131.5	116.1	4.3	-0.5	-0.9	-1.0
Transportation, Storage, Communication	135.6	133.4	130.3	139.5	139.2	136.0	2.9	4.3	-0.2	4.4
Electric Power, Gas and Water Utilities	120.3	136.3	134.1	128.5	139.9	141.5	6.8	2.6	8.9	5.6
Trade	137.1	137.4	129.7	137.8	137.0	131.0	0.5	-0.3	-0.6	0.9
Finance, Insurance, Real Estate	129.8	130.5	127.5	136.0	136.1	134.3	4.8	4.3	0.1	5.3
Community, Business and Personal Service	131.1	131.5	127.0	136.6	136.9	133.0	4.2	4.1	0.2	4.8
Public Administration and Defence	124.3	122.0	122.9	125.6	124.2	125.4	1.0	1.8	-1.1	2.0

TABLE 2

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

		1976			1977			Percentage Changes		
		September	October	Total 1st 10 months	September	October	Total 1st 10 months	October 77 / October 76	October 77 / September 77	1st 10 months 1977 / 1976
Metals										
Copper		70.0	68.9	610.5	59.8	66.0	662.7	-4.2	+10.4	+8.6
Gold	kg	4 771.6	4 234.3	43 391.2	4 083.8	4 146.2	43 839.5	-2.1	+1.5	+1.0
Iron Ore		5 892.0	4 996.2	46 928.7	5 843.2	5 825.9	43 511.9	+16.6	-0.3	-7.3
Lead		20.6	21.5	198.4	22.1	24.2	233.9	+12.6	+9.5	+17.9
Molybdenum	t	1 060.5	1 088.7	11 433.7	1 392.3	1 284.0	12 765.9	+17.9	-7.8	+11.7
Nickel		19.0	21.6	199.9	18.7	18.4	204.1	-14.8	-1.6	+2.1
Silver	t	127.1	114.5	1 094.0	97.9	122.5	1 158.0	+7.0	+25.1	+5.9
Uranium(1)	t	808.8	396.1	4 086.7	620.7	593.4	4 958.4	+49.8	-4.4	+21.3
Zinc		91.7	97.4	868.1r	71.9	106.4	932.2	+9.2	+48.0	+7.4
Nonmetals										
Asbestos		144.1	134.3	1 261.3	143.2	122.3	1 254.3	-8.9	-14.6	-0.6
Gypsum		654.2	714.4	4 846.1	754.9	851.3	6 023.7	-19.2	+12.8	+24.3
Potash K_2O		483.5	465.6	4 327.4r	522.1	416.6	4 938.2	-10.5	-20.2	+14.1
Salt		422.8	493.5	4 615.6	544.6	497.8	4 761.6	+0.9	-8.6	+3.2
Cement		999.1	989.0	8 414.7	1 090.0	1 070.9	8 706.3	+8.3	-1.8	+3.5
Clay products	$000	9,172.2	9,577.5	74,538.2	10,554.5	..	..	..	..	..
Lime		151.3	149.6	1 474.8r	158.3	160.3	1 527.5	+7.2	+1.3	+3.6
Fuels										
Coal		2 053.5	2 498.3	20 133.3	2 396.5	2 241.4	23 760.1	-10.3	-6.5	+18.0
Natural gas	000 m^3	6 247 659.8	7 443 848.6r	72 441 156.8r	6 581 374.0r	7 202 135.9	73 383 966.3	-3.3	+9.4	+1.3
Crude oil and equivalent	000 m^3	6 485.3	7 333.8r	68 110.6r	6 310.0r	6 697.0	67 700.1	-8.7	+6.1	-0.6

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

r Revised. .. not available.

TAXATION AND LEGISLATION AFFECTING
MINING AND ALLIED INDUSTRIES IN CANADA

Provincial

Alberta

The Experimental Oil Sands Royalty Regulations, AR 287/77 have been made under the *Mines and Minerals Act*. This regulation imposes a royalty of 5 per cent on products derived or oil sands sold as a result of an experimental project, as defined, during September, 1977 and subsequent months.

Manitoba

The Mineral Acreage Tax Act. Legislation to amend this act has been introduced. The amendment provides that the former owner of minerals who transferred his interest to the Crown may now redeem his interest by paying any tax cancelled at the time of transfer, with interest, plus any other tax that would have been payable, with interest, within 365 days after he receives notice of this right.

The Minister is required to notify all former owners of this right.

METALLIC MINERALS AND PRODUCTS

Aluminum

The International Bauxite Association agreed on a minimum pricing policy for bauxite. The ten-country association recommended that, for 1978, the minimum landed price in the North American market should be, for reference purposes, $24.39 (U.S.) a long ton. The price would vary for countries outside North America. While this pricing policy may be considered a psychological milestone, it has no economic impact. In the first seven months of 1977, according to the United States Commerce Department statistics, the average landed price for bauxite imported into the United States was about 25 per cent greater than the recommended minimum.

Alcan Aluminum Corporation's proposed $140 million purchase of Revere Copper and Brass Incorporated's aluminum smelting and rolling mill facilities in Scottsboro, Alabama, has been blocked by a United States federal judge. The anti-trust division of the U.S. Justice Department has obtained a delay of the planned December 12 purchase by means of a suit challenging the proposed purchase because of its anti-competitive effect. Alcan later notified the court that it does not intend to proceed with the purchase. The court did not dismiss the case, but urged all parties to consider whether a settlement could be achieved.

Copper

During December 1977, London Metal Exchange (LME) stocks and Comex Stocks of refined copper together showed a small net decrease. At month-end stocks amounted to 641 175 tonnes on the LME and 167 276 tonnes on the Comex.

Prices moved up during December. The LME price for copper wirebars was equivalent to 58 (U.S.) cents a pound at month-end, up from 55 (U.S.) cents a pound one month earlier. United States producer prices were raised by three cents a pound to 63.625 (U.S.) cents a pound for wirebars and 63.00 (U.S.) cents a pound for cathode. ASARCO Incorporated led the way on December 12, followed by most other producers one week later. Canadian producers followed suit later in the month following the mandatory pre-notification of the Anti-Inflation Board. INCO Metals Company raised its wirebar prices by 4.625 cents to 69.75 cents a pound on December 22 followed by other producers in the closing days of the month.

Craigmont Mines Limited announced during December that the end of production is in sight at its mine near Merritt, British Columbia. The mine has enough ore reserves remaining to continue operation for a further twelve to fifteen months. The mine has produced 340 000 tonnes of copper so far during its operating life.

Another British Columbia copper producer, the Granduc mine, also appears to be approaching the end of its life. Newmont Mining Corporation and ASARCO Incorporated, both of which have interests in the mine, have written off their investment in Granduc. Although underground exploration is continuing, mine development has ceased and mining operations will continue only until the presently developed ore is mined out.

Heath Steele Mines Limited located about 32 miles northwest of Newcastle, New Brunswick has completed an expansion of its mining-milling operation. Daily mill capacity has been raised to 3 600 tonnes a day from 2 700 tonnes a day. Production at Heath Steele began in 1957. Ore reserves remaining are sufficient for an additional twenty years of production. The mine co-produces lead, zinc and copper. Copper concentrates are shipped to Noranda Mines Limited's Gaspé smelter.

Falconbridge Nickel Mines Limited announced plans early in December for further output cutbacks at its Sudbury operations and the elimination of 750 jobs. The company also plans to extend the 1978 vacation shutdown to seven weeks.

France and Quebec concluded a joint exploration agreement during December. The agreement will involve expenditures of $10 million over a five year period on exploration in northwestern Quebec. The agreement reportedly makes provision for a number of sub-agreements involving specific programs by exploration companies funded by the two governments. There has been no tangible progress so far in implementing a program announced in April 1977 for a $65 million pilot exploration project in northwestern Quebec.

CIPEC held a Ministerial meeting in Jakarta, Indonesia, December 5-7, 1977. Canada was represented at the meeting by observers. CIPEC failed to agree on any concerted course of action to alleviate the present world oversupply of copper. Due to opposition from Chile a proposal for an across-the-board cutback in production was not accepted. However, Zambia, Zaire and Peru announced their intention to proceed with unspecified cutbacks of their own.

The Canadian Ambassador to Indonesia made a statement to the CIPEC meeting indicating that Canadian mine production of copper in 1978 would probably be down by about six per cent compared with 1977.

CIPEC agreed that the newly-elected Chairman, Mohammed Sadli, Minister of Mines of Indonesia, should contact government leaders of the European Common Market, Japan and the United States to work out possible areas of agreement ahead of the UNCTAD Third Preparatory Meeting on Copper to be held in Geneva at the end of January, 1978.

Chile, whose copper exports in the first ten months of 1977 fell by three per cent to 805 800 tonnes, increased production in the same period by 6 per cent to 874 400 tonnes. The Chilean Mines Minister stated late in December that Chile intends to maintain its copper output at the highest possible level in order to generate the necessary foreign earnings to meet its foreign debts.

Masao Kamei, President of Sumitomo Electric Industries Ltd. put forward a plan during December for Japan to purchase and "freeze" about 300 000 tonnes of copper from LME stocks, about half of the present total, in the interests of price stabilization. The plan met with a cautious response from Japan's departments of Finance and Industry-Trade. Later in the month, Finance department officials announced plans for emergency imports of up to $110 million of nonferrous ores and concentrates, containing 60 000 tonnes of contained copper and zinc and around 30 000 tonnes of aluminum and bauxite. Financing will be provided by the Export-Import bank following a loan of foreign exchange to the bank by the Finance department.

Production of primary copper in Canada in the first nine months of 1977 is reported by Statistics Canada to have been 596 658 tonnes compared with 541 539 tonnes in the same period of 1976. Consumption in Canada in the first nine months was 148 089 tonnes compared with 162 540 in the same period of 1977.

Gold

The average gold price of the afternoon fixings on the London Gold Market for the year 1977 was $147.705 (U.S.) (157.070 Cdn.) compared with $124.84 (U.S.) (123.16 Cdn.) in 1976. Opening and closing gold prices for the year were $136.10 (U.S.) and $164.95 (U.S.) an ounce. The low gold price of $129.40 (U.S.) an ounce for 1977 was recorded on January 11 and the high of $168.15 (U.S.) an ounce on November 11.

The International Monetary Fund (IMF) held its sixteenth gold auction on December 7, 1977 under the common price method and awarded 524,800 troy ounces of gold to successful bidders at a common price of $160.03 (U.S.) an ounce. The price at which bids were submitted by successful bidders ranged from the common price to $165.00 (U.S.) an ounce and averaged $160.73 (U.S.) an ounce. At the fifteenth gold auction 524,800 ounces of gold were awarded to successful bidders at a price range from $161.76 (U.S.) to $163.27 (U.S.) an ounce and averaged $161.86 (U.S.) an ounce. The morning fix on the London Gold Market on December 7 was $160.60, slightly below the average of the successful bids. The gold price for December was near the auction price but towards the end of the month the price began to move upwards. In all, 108 final bids were submitted at the sixteenth gold auction for a total of 1,133,600 ounces of gold compared with 90 final bids for a total of 1,356,400 ounces of gold at the fifteenth auction. The nineteen successful bidders at the sixteenth auction were mostly European and North American banks and bullion dealers. All bidders were awarded gold. About 90 per cent of the bids submitted were in the price range of $159.00 (U.S.) to $161.99 (U.S.) an ounce of gold. The seventeenth IMF auction will be held on January 4, 1978 in which 525,000 ounces of gold will be offered for sale under the common price method.

The gold price was comparatively stable during the month of December but the price began to advance towards the end of the year and closed at $164.95 (U.S.) an ounce on the London Gold Market. The opening price for the month was $160.80 (U.S.) an ounce. The low and high for the month of $157.35 (U.S.) and $165.60 (U.S.) an ounce respectively, were recorded at the morning fixings on December 13 and 30. The monthly average for December of the afternoon fixing gold price on the London Gold Market was $160.45 (U.S.) ($176.05 Cdn.) an ounce compared with $162.10 (U.S.) ($179.82 Cdn.) an ounce for November.

Iron and Steel

The Anti-Dumping Tribunal has announced its decisions regarding two dumping cases that were formally heard in November. The first ruled that certain wide flange shapes were being dumped in Canada by producers from the United Kingdom, France, Japan, South Africa, and Luxembourg and that material injury was being caused to the only Canadian producer of these products (The Algoma Steel Corporation, Limited). The second decision, involving certain sized hot-rolled bar angles, ruled that material injury had been caused to five Canadian producers (Lake Ontario Steel Company Limited, Questeel Ltd., Burlington Steel Division of Slater Steel Industries Limited, Sidbec-Dosco Limited, and The Steel Company of Canada, Limited) by bar angle products being dumped in Canada by Japanese producers. As a result of these decisions provisional levies imposed on imports of these products in the early fall will be maintained.

The Government of Canada through the Department of Regional Economic Expansion and the Government of Nova Scotia have agreed to provide $19.5 million in financial assistance to the Sydney Steel Corporation of Sydney, Nova Scotia. The bulk of these funds will be used for capital expenditures in order to improve production capability.

Sydney Steel Corporation (Sysco) is part of a consortium of Canadian firms that will participate in a 420 mile railway in Venezuela. Sysco will supply steel rails for the project over a five year period beginning in May 1978. The total value of the contract to Sysco is estimated at $40 million.

The United States Governmental Interagency Task Force Report on the United States Steel Corporation industry headed by Mr. A.M. Solomon was made public in early December. The principal recommendation refers to a system of reference pricing. Under this scheme, prices for all products imported into the United States would be based on the lowest cost producer (currently Japan) with adjustments for such factors as overhead, profit and transportation to the United States. If an import from any country is priced lower by more than 5 per cent from this reference price, a dumping complaint would automatically be triggered with a finding to be made within 60-90 days. If this plan is implemented it is expected to lower the percentage of the domestic market now being held by imported steel products. A similar type of plan is being devised by the European Economic Community (EEC).

Iron Ore

Bethlehem Steel Corporation announced the permanent shutdown of its Marmoraton Mining Company's Marmora mine, near Marmora, Ontario, effective March 31. About 275 employees will be affected. Reasons for the shutdown include overall business conditions and a reduction of Bethlehem's requirements for iron ore.

After nearly five months, the strike involving some 15,000 mine workers at twelve iron mines in Minnesota and Michigan has been settled at most mines with the exception of some of the mines owned by U.S. Steel. The main issue of the strike related to differences in incentive payments between iron ore miners and steel mill employees. Other issues included seniority, health and safety.

Lead

Negotiations between Cyprus Anvil Mining Corporation and Toho Zinc Co. Ltd. of Japan concerning 1978 shipments of lead and zinc concentrates failed to achieve agreement in early December. The existing contract calls for the import from Anvil of 180 000 tonnes of zinc concentrates and 58 000 tonnes of lead concentrates. Toho has offered to increase these totals for 1978 by 15 000 and 8 000 tonnes respectively. However, Toho wants the treatment charge in the new contract increased from $110 per tonne to about $140 per tonne.

Labour contracts between ASARCO Incorporated and workers at several of its U.S. facilities expired December 31. The contracts, by mutual consent, have been extended until January 13, 1978 and negotiations are to resume January 6. The contracts cover workers at the following lead producing facilities: East Helena, Montana lead smelter; Omaha, Nebraska lead refinery; and lead producing mines at Globe, Colorado and near Groundhog, Missouri.

In quiet end-of-year trading on the London Metal Exchange, the spot price of lead reacted to the increasing value of sterling by dropping from £362 a tonne on December 1 to £356 on December 30. The U.S. equivalent price actually increased during the month from 29.8 cents a pound to 30.7 cents at year-end. Metal stocks also increased 2 300 tonnes to 66 925 tonnes on December 30. This leaves LME stocks little changed from the year-ago level of 66 525 tonnes.

Nickel

Some stability appears to be returning to the nickel market. Falconbridge Nickel Mines Limited and AMAX Nickel, Inc. have changed their published list prices for nickel products. The new prices are lower than the old list tags and are merely reflecting the realities of the marketplace. Falconbridge's price for electrolytic nickel is now $2.06 and $2.08 a pound and its ferronickel is $2.00 a pound plus 2.5 cents a pound of iron content. The AMAX price for its briquettes and powders is now $2.06 a pound. All prices are on a delivered basis and are firm for the first quarter of 1978. Western Mining Corporation Limited of Australia initiated the move by advising its customers at the end of November that it was posting firm, non-negotiable prices through the first quarter of 1978. Other major producers quickly followed Western Mining's lead with similar moves and their customers have been advised of the new price levels. Only Falconbridge and AMAX actually changed their list prices.

Zinc

The Lead-Zinc Producers Committee in the United States filed a petition with the U.S. International Trade Commission on December 20, 1977 which requests five years relief from injury caused by import competition in zinc metal, through the establishment of an annual import quota for zinc of 350,000 tons with a special tariff of seven cents a pound levied against imports above this level. The action was taken under Section 201 of the Trade Act of 1974 and by law the Commission now has six months to recommend a course of action to President Carter, after which he has two months to reach a decision on the petition.

The United States is a net importer of both zinc concentrate and zinc metal and at present, both commodities are in surplus supply. Our interdependence on zinc concentrate is modest in comparison to zinc metal, since traditionally, about 75 per cent of Canada's zinc metal exports have gone to the United States representing about 50 per cent of that country's imports.

Accordingly, Canada would be most severely affected by enactment of the petition as it now stands, since the quota and the special levy are designed to create a flourishing domestic market for U.S. zinc metal producers by the end of next year to the detriment of both U.S. consumers and foreign suppliers. The petition proposes quota allocation by country based upon prior periods of high import demand and suggests that they be applied on a quarterly basis to avoid surges of metal entering the country. This treatment is similar to the imposition of quotas during the 1958-1965 period when under earlier legislation, quotas were established at 80 per cent of prior import levels on a country-by-country basis. In the event that the Commission confirms the case for injury as set out in the petition, the President still has wide ranging options available to him, which extend from rejection of the petition if it conflicts with the national economic interest, to the negotiation of orderly marketing agreements with foreign countries.

The injury claim cites increased zinc metal imports as the cause behind the decline in the domestic zinc price from 37¢ to 30.5¢ a pound during 1977, a decline in domestic metal production which has left 30 per cent of domestic refining capacity idle, reduced shipments, low profitability, and increased metal stocks. Today, most of the world zinc industry, including Canada, is in the midst of a serious recession and faces serious economic problems similar to those in the U.S. Zinc plant closures were also cited as evidence of injury; however, the U.S. Bureau of Mines has acknowledged that these closed due to other factors, principally obsolescence and occurred in prior times of strong demand and rising metal prices.

Canada's zinc metal producers have traditionally been the leading and most reliable suppliers of zinc to the United States. During the most recent period of shortage (1973) Canada's increased exports to the United States accounted for the entire increase in U.S. import demand even though higher prices prevailed elsewhere. Furthermore, in the current period of recession (1975-present) Canada's exports have been reduced in line with the decline in U.S. metal consumption since 1973 and producers have continued to follow pricing patterns established by the U.S. primary zinc refineries. On this basis, Canada's producers have caused no injury to any sector of the U.S. zinc industry. Apart from possible compensation under GATT, the petition if enacted would certainly injure Canada, since it would automatically involve a restriction of our zinc metal export volume no matter what base period for quota allocation is used, and shipments above quota would be uneconomic given the tenfold tariff increase.

Producer prices for zinc at year-end were $716.50 a tonne in Canada, $672.40 a tonne in the United States and $600.00 (U.S.) a tonne outside North America. The London Metal Exchange recorded a closing value for zinc of $543.15 (U.S.) a tonne in December compared to $526.30 (U.S.) at the end of November.

INDUSTRIAL MINERALS AND PRODUCTS

Asbestos

The inactive asbestos mine of United Asbestos Inc., located near Matachewan, Ontario, is being jointly studied by Woodsreef Mines Limited and Labrador Mining and Exploration Company Limited an associate of Hollinger Mines Limited. Laboratory and other tests on material from the property are currently being conducted at the Woodsreef asbestos operation in Barraba, Australia. Dr. R.J. Merrill, formerly the president of United Asbestos Inc., is now Managing Director of the Woodsreef, Australia, operation.

Negotiations between Quebec and General Dynamics Corp., the principal shareholder of Asbestos Corporation Limited have started although Bill 70, which creates the Société Nationale de l'amiante, has not yet been passed. Bill 70 will be re-introduced in the next session, starting February 21.

Several asbestos producers have reduced their milling operations from a 6-day to a 5-day week because inventories are large.

A recent examination of 485 workers at Advocate Mines Limited's Baie Verte operation, found that 10 per cent of the work force had "lung abnormalities". A correlation between length of employment and "abnormalities" was found, however no detailed discussion was given to the type of abnormalities or whether or not cigarette smoking was responsible as a possible catalyst or even as a possible primary cause.

MINERAL FUELS AND PRODUCTS

Coal

During December, a prospectus was submitted to the British Columbia Government outlining a proposal for a new coal mine on Vancouver Island. This mine, located near Campbell River on the northeastern side of the island, would produce thermal coal. The operation would be a joint venture between Weldwood of Canada Sales Limited, Vancouver and Luscar Ltd. of Edmonton. Exploration studies have been underway for two years and a final feasibility study is scheduled for completion in 1978. If the project receives approval and contracts are secured construction of the mine, port and other facilities could begin in 1979 with shipments beginning in 1981. Output from the operation would be about one million short tons.

In Nova Scotia negotiations on the price of coal from a proposed new strip mine have been delayed because of problems with technical information on washability tests. George Wimpey Canada Ltd. was still working on a report that will form the basis for negotiations between the Nova Scotia Government and George Wimpey for the thermal coal located near Stellarton. The coal will be used in Nova Scotia for the generation of electricity.

Coal was one of several energy topics that received the attention of both federal and provincial officials at an Energy Ministers Conference in Ottawa during December. This conference discussed a wide range of issues related to future energy supply and demand requirements in Canada and introduced the topic of a federal coal policy. Further discussions on coal are planned for 1978.

Petroleum and Natural Gas

Legislation to amend the Petroleum Administration Act was tabled in the House of Commons for first reading on December 20, 1977. The principal purpose of this Bill is to enable effect to be given to the federal government's price for the output of the Syncrude Canada Ltd. plant, due to come on stream in the second quarter of 1978 at an initial rate of some 50,000 b/d, increasing to 125,000 b/d by 1981. The Bill provides for the equivalent of crude oil import compensation to be paid to Canadian refiners of Syncrude products or other high-cost domestic petroleum sources. The Bill also authorizes the revenue needed to finance this program will be generated by a levy on all imported oil products. The amount of the levy at any one time will depend on the difference between Canadian and international oil prices. It is expected the levy will not exceed 15-20 cents per barrel.

On December 27, 1977 legislation was also introduced to the House of Commons to implement a new regime for the disposition and development of oil and gas rights in Canada's frontier regions in the offshore and Territories. The legislation, entitled the Canada Oil and Gas Act, reflects new policy elements which are a result of changes in the oil and gas exploration industry and the public domain which have taken place since 1961 when the existing Canada Oil and Gas Land regulations were promulgated. When enacted, the Bill will replace the Territorial Lands Act and the Public Lands Grants Act as the enabling legislation for disposal of oil and gas rights.

Energy, Mines and Resources administers oil and gas rights off the east and west coasts in Hudson Bay and Hudson Strait while Indian Affairs and Northern Development administers such rights in the Yukon and Northwest Territories and offshore areas of the high Arctic.

Polar Gas Project, a consortium of six companies, has applied to the National Energy Board (NEB) for permission to construct a pipeline to bring natural gas from the Arctic Islands to markets in southern Canada. The proposed pipeline would consist of 42-inch diameter pipe across land and 36-inch pipe underwater. It will start on Melville Island and from there it will cross water and other Arctic Islands to the Northwest Territories, down the west side of Hudson Bay, through northern Manitoba and northwestern Ontario to join the TransCanada pipeline system at Longlac, 150 miles north of Thunder Bay. Target date for completion of the line is 1985 and cost of the line has been estimated at $8.5 billion.

The NEB has approved the Tenneco Inc. project to import about 1.2 bcf/d of Algerian liquified natural gas into Lorneville, New Brunswick and export the regasified product to the United States. It has granted a license for the import and export of 376 bcf per year of Algerian gas for a 20 year period expected to commence in 1983. The NEB has also granted a certificate to TransCanada Pipe Lines (New Brunswick) Limited to build a 66-mile 36-inch diameter pipeline from the plant to the United States border at a cost of $68 million.

Uranium

Denison Mines Limited and Ontario Hydro have jointly announced that, subject to the approval of the Ontario government, they have reached an agreement whereby Denison will provide Ontario Hydro with some 48 465 tonnes U over the period 1980 to 2011. Prices will be determined from time to time according to a formula which takes into account the cost of production, an agreed margin and world price. As well, the contract provides for adjustments in the amount of uranium to be delivered if requirements should diminish. Prepayments will be made by Ontario Hydro to assist Denison with the required expansion of its operation and the development of certain specified mining areas which have been reserved for the fulfillment of the contract.

In January 1977 the Canadian government embargoed the export of Canadian nuclear materials and technology to all countries which had not completed renegotiations of revised nuclear safeguard agreements with Canada. The revised agreements were necessary as a result of Canada's two-stage effort to strengthen its export requirements with respect to safeguards. The first of these steps, announced in December 1974, requires that the then existing contracts be covered by binding assurances that Canadian exports not be used to produce a nuclear explosives device; the second step, announced in December 1976, requires that shipments to non-nuclear weapon states under future contracts be restricted to countries which ratify the Non-Proliferation Treaty (NPT) or otherwise accept international safeguards over their entire nuclear program.

Shipments of Canadian uranium to a number of countries were affected, principally Japan, countries of the European Economic Community, and the United States. An interim agreement with the United States was reached in November, and negotiations were successfully completed with the EEC during December. Agreements were reached earlier with Argentina, Finland, Romania, South Korea, Spain and Sweden, although in the case of Argentina and Spain only the 1974 requirements have been met; since neither country is a signatory to the NPT, an additional agreement would be required to cover any new export contracts. At year-end agreements were outstanding with Japan and Switzerland, although negotiations with Japan were expected to be concluded early in 1978.

RECENT AMALGAMATIONS AND MERGERS PUBLISHED IN THE GAZETTES

Mayfair Resources & Developments Limited was formed by the amalgamation of Mayfair Mines Limited and Ibsen Cobalt Silver Mines Limited on October 4,1977. Source Ontario gazette November 26, 1977.

B.A.C.M. Industries Limited amalgamated with McAllister Towing & Salvage Ltd. - Remorquage & Sauvetage McAllister Ltée on October 7, 1977. Source British Columbia gazette December 1, 1977.

NEW PUBLICATIONS

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

Preprints, *Canadian Minerals Yearbook, 1976*.
Bismuth; Indium; Platinum Metals; Salt; Titanium
and Titanium Dioxide.

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

MH/GK/pfn