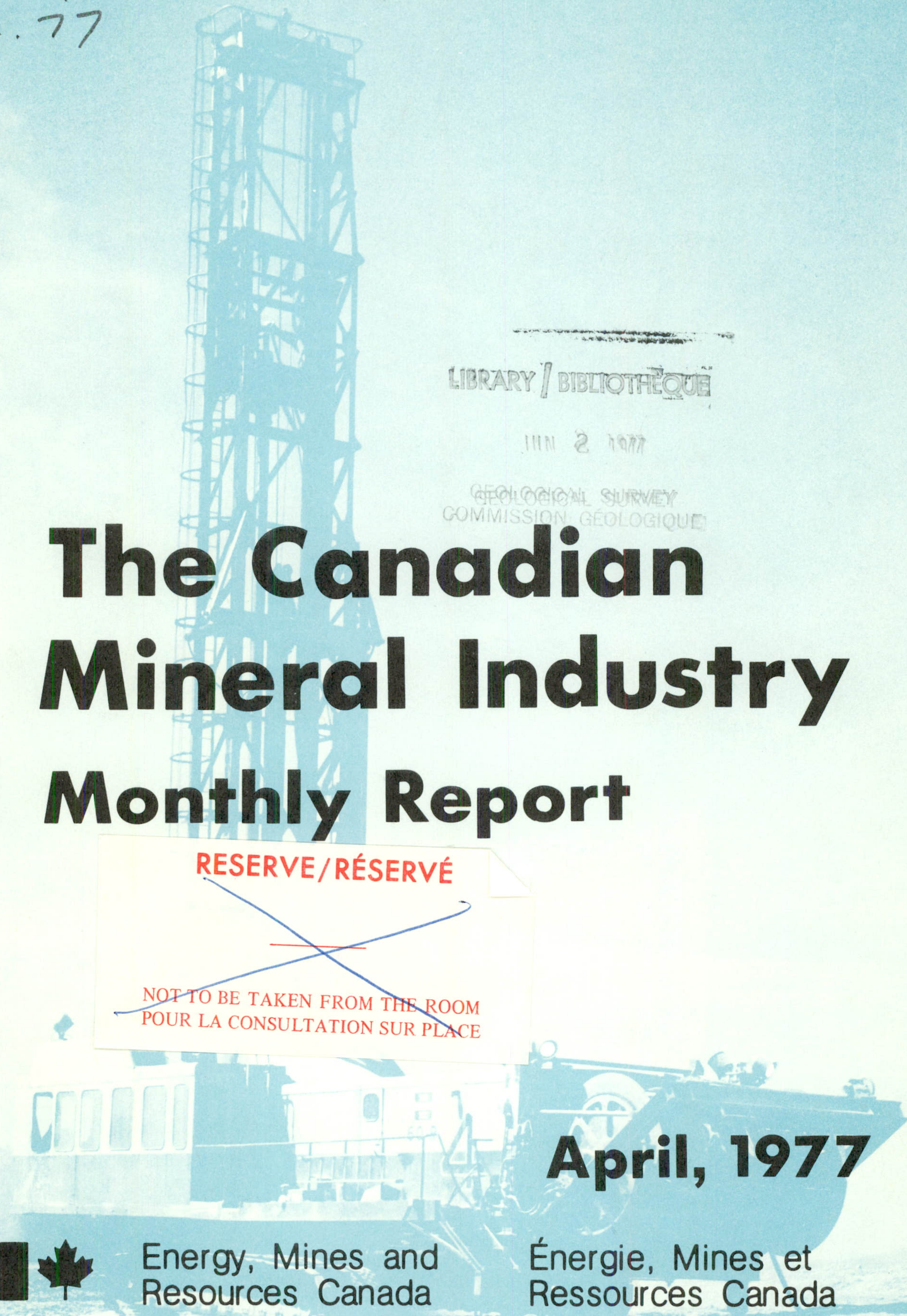

The Canadian Mineral Industry Monthly Report

April, 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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THE CANADIAN MINERAL INDUSTRY FOR APRIL

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

SUMMARY

1. Canada's unadjusted index of Real Domestic Product was 121.0 in February 1977, an increase of 2.9 per cent from January 1977.
2. The January index of Mines, Quarries and Oil Wells was 117.2 an increase of 2.7 per cent from the previous month.
3. The government of Ontario proposed the adoption of the federal 25 per cent resource allowance for oil and gas companies to replace the present automatic depletion system.
4. The Jamaican government and Reynolds Metals Company signed an agreement giving the government a controlling interest in Reynolds' mining assets in Jamaica.
5. Copper prices on the LME declined sharply in April.
6. Pickands Mather & Co. and the Federal Energy Research and Development Administration (ERDA) are negotiating for a demonstration plant for iron ore pellets.
7. Cominco Ltd. announced an expansion program for its Trail and Kimberley operations in British Columbia.
8. Gibraltar Mines Ltd. has resumed production of by-product molybdenum.
9. Inco Limited and the French government have concluded an agreement which gives Inco the right to explore the west half of the large Goro laterite deposits in New Caledonia.
10. The silver refinery of Canadian Copper Refiners Limited in Montreal was closed due to a strike.
11. Willroy Mines Limited closed their zinc-lead-copper mine at Manitouwadge, Ontario.
12. Fiberglas Canada Limited have announced intentions to construct a plant in Scarborough, Ontario.
13. On April 22, the Potash Corporation of Saskatchewan took possession of Hudson Bay Mining and Smelting Co. Limited's Sylvite Mine.

14. On April 7, President Carter unveiled a new nuclear direction for the United States.

ECONOMIC TRENDS

Table 1 shows Canada's unadjusted indexes of Real Domestic Product (RDP). The overall RDP index in February 1977 was 121.0,an increase of 2.9 per cent from January 1977.

The February RDP index for mines, quarries and oil wells was 117.2, up 2.7 per cent from 114.1 in January. The metal mines index decreased over the month by 2.1 per cent to 110.8. Of the metal mining group, iron mines registered a substantial 14.6 per cent decline in product, continuing a consistent downward trend since August of 1976. The February index for mineral fuels showed an increase of 5.0 per cent from January. A significant increase of 11.6 per cent was recorded in the nonmetal mines index, up from 128.9 to 143.8 over the month.

Table 2 compares volume of production in major Canadian minerals. Notable changes (January 1977 to February 1977) were recorded in output for iron ore (down 63.2 per cent), molybdenum (up 17.9 per cent), gypsum (up 18.9 per cent), potash (down 18.7 per cent) and cement (up 14.2 per cent).

Table 3 shows current and capital research and development expenditures for 1973 to 1976 by industry type.

TABLE 1

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

Industry or Industry Group	1976 Jan	1976 Feb	1976 Average 1st 2 Months	1977 Jan	1977 Feb	1977 Average 1st 2 Months	Percentage Changes: Jan 1977 / Jan 1976	Percentage Changes: Feb 1977 / Feb 1976	Percentage Changes: Feb 1977 / Jan 1977	Percentage Changes: 1st 2 Months 1977 / 1976
Real Domestic Product	112.5	116.3	114.4	117.6	121.0	119.3	4.5	4.0	2.9	4.3
Primary Industries										
Agriculture	38.9	42.2	40.6	34.7	34.7	34.7	-10.8	-17.8	0.0	-14.4
Forestry	64.7	92.5	78.6	94.2	117.2	105.7	45.6	26.7	24.4	34.5
Fishing and Trapping	40.7	46.5	43.6	34.4	37.0	35.7	-15.5	-20.4	7.6	-18.1
Mines, Quarries and Oil Wells	106.3	110.0	108.2	114.1	117.2	115.7	7.3	6.5	2.7	6.9
Metal Mines	100.1	107.4	103.8	113.2	110.8	112.0	13.1	3.2	-2.1	8.0
Placer and Gold Quartz Mines	70.6	81.9	76.3	75.7	83.9	79.8	7.2	2.4	10.8	4.7
Iron Mines	109.1	111.2	110.2	110.2	94.1	102.2	1.0	-15.4	-14.6	-7.3
Other Metal Mines	99.3	107.7	103.5	115.8	116.2	116.0	16.6	7.9	0.3	12.1
Mineral Fuels	115.3	114.5	114.9	117.3	123.2	120.3	1.7	7.6	5.0	4.7
Coal Mines	197.4	231.0	214.2	222.9	232.9	227.9	12.9	0.8	4.5	6.4
Crude Petroleum and Natural Gas	108.6	105.0	106.8	108.6	114.2	111.4	0.0	8.8	5.2	4.3
Nonmetal Mines	111.6	117.3	114.5	128.9	143.8	136.4	15.5	22.6	11.6	19.1
Asbestos Mines	85.4	91.0	88.2	104.8	126.6	115.7	22.7	39.1	20.8	31.2
Secondary Industries										
Manufacturing	110.1	117.6	113.9	115.0	120.1	117.6	4.5	2.1	4.4	3.2
Nondurable Manufacturing	105.2	113.0	109.1	111.6	117.8	114.7	6.1	4.2	5.6	5.1
Petroleum and Coal Products Industries	130.9	124.8	127.9	135.8	137.2	136.5	3.7	9.9	1.0	6.8
Durable Manufacturing	115.1	122.2	118.7	118.4	122.5	120.5	2.9	0.2	3.5	1.5
Primary Metal Industries	102.3	111.6	107.0	107.5	110.6	109.1	5.1	-0.9	2.9	2.0
Iron and Steel Mills	102.4	120.3	111.4	115.2	114.8	115.0	12.5	-4.6	-0.3	3.3
Steel Pipe and Tube Mills	130.8	136.3	133.6	125.7	134.9	130.3	-3.9	-1.0	7.3	-2.4
Iron Foundries	110.3	105.4	107.9	106.7	119.6	113.2	-3.3	13.5	12.1	4.9
Smelting and Refining	95.6	97.6	96.6	95.1	101.2	98.2	-0.5	3.7	6.4	1.6
Nonmetallic Mineral Products Industries	91.0	99.7	95.4	87.6	95.6	91.6	-3.7	-4.1	9.1	-3.9
Cement Manufacturers	59.8	77.3	68.6	57.5	64.6	61.1	-3.8	-16.4	12.3	-10.9
Ready-mix Concrete Manufacturers	51.7	70.8	61.3	50.6	63.9	57.3	-2.1	-9.7	26.3	-6.5
Construction Industry	96.7	99.3	98.0	95.3	98.9	97.1	-1.4	-0.4	3.8	-0.9
Transportation, Storage, Communication	119.5	122.8	121.2	125.5	129.7	127.6	5.0	5.6	3.3	5.3
Electric Power, Gas and Water Utilities	159.5	154.4	157.0	173.1	173.6	173.4	8.5	12.4	0.3	10.4
Trade	106.8	114.6	110.7	111.5	120.5	116.0	4.4	5.1	8.1	4.8
Finance, Insurance, Real Estate	124.7	125.3	125.0	131.6	132.0	131.8	5.5	5.3	0.3	5.4
Community, Business and Personal Service	121.2	122.7	122.0	126.3	128.0	127.2	4.2	4.3	1.3	4.3
Public Administration and Defence	117.9	118.4	118.2	124.1	122.6	123.4	5.3	3.5	-1.2	4.4

TABLE 2

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

		1976			1977			Percentage Changes		
		January	February	Total 1st 2 months	January	February	Total 1st 2 months	February 77 / February 76	February 77 / January 77	1st 2 months 1977 / 1976
Metals										
Copper		68.9	49.8^{r}	118.7	71.8	65.9	137.7	+32.3	- 8.2	+16.0
Gold	kg	4 632.8	4 151.1	8 783.9	4 283.3^{r}	4 249.5	8 532.8	+ 2.4	- 0.8	- 2.9
Iron ore		1 716.0	1 249.4	2 965.4	2 578.2	949.1	3 527.3	-24.0	-63.2	+18.9
Lead		18.6	24.8	43.4	19.5	19.5	39.0	-21.4	0.0	-10.1
Molybdenum	t	1 229.6	1 017.6	2 247.2	1 090.7^{r}	1 286.2	2 376.9	+26.4	+17.9	+ 5.8
Nickel		21.5	20.4	41.9	23.1	21.1	44.2	+ 3.4	- 8.7	+ 5.5
Silver	t	106.4	97.3^{r}	203.7	97.0^{r}	107.5	204.5	+10.5	+10.8	+ 0.4
Uranium(1)	t	327.0	296.6	623.6	301.2	270.9	572.1	- 8.7	-10.1	- 8.3
Zinc		100.0	77.1	177.1	73.0^{r}	77.2	150.2	+ 0.1	+ 5.8	-15.2
Nonmetals										
Asbestos		110.8	115.4	226.2	110.5	120.2	230.7	+ 4.2	+ 8.8	+ 2.0
Gypsum		325.7	272.6^{r}	598.3	320.9	381.4	702.3	+39.9	+18.9	+17.4
Potash K_2O		397.5	380.3	777.8	454.6	369.5	824.1	- 2.8	-18.7	+ 6.0
Salt		602.9	659.0	1 261.8	641.9	656.1	1 298.0	- 0.4	+ 2.2	+ 2.9
Cement		362.8	466.5	829.3	356.1	406.7	762.8	-12.8	+14.2	- 8.0
Clay products	$000	3,334.5	4,330.9	7,665.4	4,153.3	..	..	..	..	..
Lime		113.3	120.8	234.1	135.2	140.3	275.5	+16.1	+ 3.8	+17.7
Fuels										
Coal		2 284.8	2 258.7^{r}	4 543.5	2 404.4^{r}	2 642.8	5 047.2	+17.0	+ 9.9	+11.1
Natural Gas	000 m^3	8 151 543.3	7 547 063.5^{r}	15 698 606.8	8 477 696.8^{r}	7 863 985.7	16 341 682.5	+ 4.2	- 7.2	+ 4.1
Crude oil and equivalent	000 m^3	7 174.8	6 354.1^{r}	13 528.9	6 955.8^{r}	6 692.6	13 648.4	+ 5.3	- 3.8	+ 0.9

(1) Tonnes uranium (1 tonne U = 1.299 9 short tons U_3O_8).
r Revised; .. Not available.

TABLE 3

Canada, Current and Capital Research and Development Expenditures
(millions of dollars)

	1973^r	1974	1975^p	1976^p
Mines				
Current	14.6	13.9	14.5	15.5
Capital	0.5	0.8	2.4	1.5
Total	15.2	14.7	16.9	17.0
Primary Metals (ferrous)				
Current	8.4	10.4	10.5	11.1
Capital	0.3	1.0	1.2	0.5
Total	8.7	11.4	11.7	11.6
Primary Metals (nonferrous)				
Current	28.2	32.7	37.7	40.6
Capital	1.3	5.9	9.6	4.0
Total	29.5	38.6	47.3	44.6
All Industry				
Current	447.6	491.1	552.9	605.1
Capital	42.4	73.6	67.5	70.8
Total	490.1	564.7	620.4	675.7

^{p} Preliminary; ^{r} Revised.

Current expenditures include costs of wages, salaries and benefits of research and development personnel, materials, supplies, background literature and overhead. Capital expenditures include costs of new or extended facilities for use in research and development.

Because of rounding, some totals will not correspond exactly to the sum of the items added.

TAXATION AND LEGISLATION AFFECTING
MINING AND ALLIED INDUSTRIES IN CANADA

Federal

Federal Government Budget March 31, 1977

In the Federal Government's Budget on March 31, 1977 there were no major changes in taxation measures applicable specifically to the mining industry in Canada. There were,however,a number of items (listed below) which have general corporate application and will of course apply to the mining industry. Some technical changes which apply specifically to the mining industry are also listed.

General Corporate Provisions

(1) Investment Tax Credit

The 5 per cent investment tax credit on new buildings, machinery and equipment which was introduced in 1975 has been extended to include investments made before July 1, 1980. Without this extension, the provision would have ended on July 1, 1977. The normal rate of 5 per cent has been increased to 7½ per cent in certain designated areas in Saskatchewan, Manitoba, Northern Ontario and Quebec. The rate is increased to 10 per cent in the Atlantic provinces and the Gaspé region of Quebec as far as the western border of Kamouraska County and the Magdalen Islands. A taxpayer may reduce his income tax otherwise payable in a year by an amount not exceeding the lesser of the balance of his investment tax credit or the aggregate of $15,000 and one-half the amount of his taxes otherwise payable which exceeds $15,000.

(2) Railway Spur Lines to Mines

A spur line acquired after March 31, 1977 by a mining company to produce income from a new mine will qualify for inclusion in Class 28 and may be written off for income tax purposes at the greater of a rate of 30 per cent or the income from the mine. In other cases, the spur line would be included in class 10 and written off at 30 per cent. The Department of Finance has stated that there is no intention to include the costs of spur lines in the eligible expenditures which earn depletion.

(3) Distribution of Corporate Surplus

There are extensive changes to the rules in the tax system which apply to corporations in relation to their surpluses and undistributed income. The main purpose of these changes is to facilitate the payment or distribution of surpluses and corporate reorganizations. These changes would not have any direct effect on investment patterns in the mining industry.

(4) Inventory Reserve

There is a proposal to reduce the value of inventory of a taxpayer by 3 per cent which in turn reduces taxable income by the same amount. This adjustment has been put in place because of the pressures of inflation and liquidity problems facing business. Although specific details have not been made available, it would appear this measure will be of assistance to mining companies, especially those who are carrying large inventories. The provision will be applicable to 1977 and subsequent taxation years.

Provisions Applicable to Oil Industry

(1) Frontier Oil Exploration

The Government has provided a special additional deduction with respect to the drilling costs of exploratory oil or gas wells which cost more than $5 million dollars. There will be an additional deduction of 66-2/3 per cent of the costs in excess of $5 million. This special deduction can be made against any income of the taxpayer and is not restricted like the normal depletion allowance which may only be deducted against production income at a maximum rate of 25 per cent of such income. It is not clear whether this new deduction would be made before or after the normal earned depletion deduction. If the new deduction is made before the earned depletion calculation, the current deduction of earned depletion will be reduced. The end result of this provision means a taxpayer will eventually be able to deduct 200 per cent of the amount of the costs when calculating taxable income.

(2) Sulphur Production at a gas plant

The activities and profits from the production of sulphur at a gas plant will be considered to be a manufacturing and processing activity and will be entitled to the reduced tax rate available for such activities and the accelerated depreciation rates for machinery and equipment.

Technical Changes applying to Mining Industry

(1) Expropriation of resource property

Where a resource property is expropriated a taxpayer may elect not to be taxed on the proceeds if he applies the proceeds against Canadian exploration or Canadian development expenses within 10 years.

(2) Successor Corporation Rules

The rules respecting the carry-forward of unclaimed exploration and development expenses from a predecessor corporation to a successor corporation are to be modified. Previously,the rules only applied to principal business corporations and only when the total business or property of the predessor was acquired. Now the rules apply to any corporation and when only the properties of the predecessor used in Canada in its resource business are acquired. The unclaimed expenses can also be applied against the subsequent sale of a resource property which was acquired from the predecessor as well as from the production income of properties acquired.

(3) Joint exploration corporation

The renouncing of exploration and development expenses of a joint exploration corporation to its shareholders is now permitted within six months after the end of its taxation year. Previously, the renouncement had to take place during the taxation year.

(4) Dispositions of resource properties by a partnership or non resident

There is a new technical rule requiring that the proceeds of the disposition of a resource property reduce the accumulated development expense account of the non-resident or the partner who had an interest in the property. The amount by which the proceeds exceed the balance of the account would be included in income.

The Territorial Land Use Regulations, SOR/71-580, have been revoked by SOR/77-210 of March 4, 1977. The new regulation revises and updates the regulations pertaining to land management zones in the Yukon and Northwest Territories.

Provincial

Newfoundland

Bill 36, an Act to Amend the Quarry Materials Act, 1976, has been introduced in the legislature. The purpose of the amendment is to empower the Lieutenant-Governor in Council to make such regulations as he deems necessary for the purpose of the Act. This power was inadvertently omitted in the original act.

Ontario

Although the Premier of Ontario announced on April 29 the dissolution of the legislature, it is of interest that in the 1977 Budget Speech, the government proposed the adoption of the federal 25 per cent resource allowance for oil and gas companies, and replacing the present automatic depletion system with earned depletion ($1 for every $3 of eligible expenditures up to a maximum of 25 per cent of resource profits). In addition, it was proposed to parallel the federal incentive for frontier oil and gas exploration announced in the latest federal budgets (i.e. an additional earned depletion entitlement of 66-2/3 per cent of qualifying drilling costs in excess of $5 million incurred between March 31, 1977 and April 1, 1980).

Quebec

The government has introduced Bill 27 - an act to Amend the Mining Act. The maximum area that may be granted by lease to any one person during a twelve month period will be increased to 225 acres from the present maximum of 200 acres. The Bill includes several other minor revisions which clarify the provisions of the existing Act.

Saskatchewan

The Budget speech proposes to increase the income tax on large businesses (i.e. other than small businesses as defined in the federal Income Tax Act) to 14 per cent from 12 per cent effective January 1, 1977.

The government has introduced Bill 72 - *The National Gas Development and Conservation Board Act, 1977*. The bill continues the Board of the same name as presently constituted under the provisions of the Mineral Resources Act, and empowers the Board to control all aspects of the natural gas industry in the province from exploration and development through production and marketing within or outside of the province.

METALLIC MINERALS AND PRODUCTS

Aluminum

The Jamaican government and Reynolds Metals Company signed a new agreement at the end of March giving Jamaica a controlling 51 per cent interest in Reynolds' mining assets in Jamaica and full ownership of Reynolds' 65,000 acres of land and all the company's agricultural operations here. The total price is $17.7 million spread out over 10 years. In turn, Reynolds each year must pay Jamaica a 12 per cent annual return on its investments in the mining assets used by the partnership. This completes the third step in Jamaica's program for securing control of bauxite and alumina operations on the island. In February of this year, Jamaica negotiated a similar agreement with Kaiser Aluminum & Chemical Corporation and in November 1976 concluded its agreement with the Aluminum Company of America. Jamaica hopes to have similar formal agreements signed by mid-year with the other producers; Alcan Aluminium Limited, Revere Copper and Brass, Incorporated, and Alumina Partners of Jamaica (an alumina refining operation owned by Reynolds, Kaiser and The Anaconda Company).

The Mexican government has given the go-ahead to Jalumex S.A. to build a $500 million, 150 000 tonne a year aluminum smelter in Veracruz State. Mexico holds a 51 per cent interest in Jalumex with Jamaica holding 29 per cent and the remaining 20 per cent still open to a foreign partner. Bid documents for a technology contract have been sent to major international aluminum producing companies.

Chromium

The enactment of legislation banning the import of Rhodesian chrome ore, ferrochrome, and any specialty steel containing Rhodesian chrome, into the United States has resulted in a complex testing procedure for chrome ore and ferrochrome from South Africa. Countries which import South African chrome ore, or ferrochrome to produce specialty steel for export to the U.S. must now perform laboratory tests and then certify on the basis of these tests that any steel containing more than 3 per cent chromium does not contain any chrome originating from Rhodesia. The countries which follow all the procedures would receive a certificate of origin and be allowed to ship specialty steels into the U.S. By requiring the testing of ferrochrome and chrome ore the U.S. has effectively circumvented the extremely difficult task of testing chrome in imported stainless steel. Countries exporting less than one million dollars to the United States of specialty steel per year will be exempt from the certification procedure.

Copper

Copper prices on the London Metal Exchange (LME) declined sharply during April. At month-end, the cash price for copper wirebars was 61.4 (U.S.) cents a pound compared with 68.7 (U.S.) cents a pound one month earlier. In response to the weakness in the LME price, two U.S. producers lowered their prices by 3 (U.S.) cents a pound during the final week of the month. At the end of the month, other U.S. producers had not yet come into line and were still quoting 74.625 (U.S.) cents a pound for wirebars and 74.00 (U.S.) cents a pound for cathode. Canadian producer prices throughout April were 78.25 cents a pound for wirebars and 77.625 cents a pound for cathode.

Stocks of copper in metal exchange warehouses rose during April confirming once again the close relationship between prices and stocks. LME warehouse stocks rose from 613 150 tonnes on April 1st to 617 325 tonnes on April 29. Comex warehouse stocks in the same period rose from 194 050 tonnes to 194 479 tonnes.

A number of Annual Reports to shareholders were published by Canadian copper producers during April. Some of the highlights were as follows:

- Sherritt Gordon Mines Limited has experienced an improvement in equipment performance at the Ruttan Mine and expects further improvements as a result of a major equipment overhaul program. Pilot plant testing of the S-C process was successfully completed in 1976. This process is an environmentally clean hydro-metallurgical method to produce high purity copper from copper sulphide concentrates. Elemental sulphur and other metals present in the concentrate are also recovered.

- Great Lakes Nickel Limited, now controlled by Boliden AB of Sweden, continues to keep its mine project on a standby basis, but is more confident than ever about its future development.

- Mining of the Kidd Creek open pit in Timmins will be completed by Texasgulf Canada Ltd. in 1977. Production from the No. 1 underground mine will be increased. Backfilling began in the underground mine in 1976, and the No. 2 underground mine shaft and head frame were under construction. The new copper smelter and refinery are 10 per cent complete. Drilling was continued on the Izok Lake base metal deposit, and on the Red Group porphyry copper prospect in northern British Columbia. In Panama, bulk samples were taken from the Cerro Colorado deposit. A feasibility study of an integrated mine-smelter-refinery project is scheduled for completion in 1978.

- Granduc Mines Limited expects to continue to operate the Granduc mine at the reduced rate in 1977. The mine operated in 1976 at 53 per cent of capacity.

The labour contract at Canadian Copper Refiners (CCR) in Montreal, owned by Noranda Mines Limited, expired on March 22, 1977. On April 13, 1977 a strike began which was still in progress at month-end. CCR has a rated capacity of 435 000 tonnes of refined copper a year, and produced 351 000 tonnes in 1976.

In a massive effort to expand the province's mineral resources, Quebec is proposing a 5-year exploration pilot project in the Abitibi region of Northwestern Quebec at a cost of \$60-\$80 million. The program would involve the government-owned Soquem and a number of other Canadian mining companies. This program could have far-reaching effects upon Quebec's copper production, which has been declining in recent years:

1971	167 668 tonnes
1972	160 056 tonnes
1973	143 190 tonnes
1974	144 233 tonnes
1975	117 556 tonnes
1976	120 411 tonnes

The British Columbia government intends to provide subsidies for mining companies to produce refined copper inside the province. The legislation introduced in April allows the payment of up to 5 cents a kilogram for blister or refined copper produced in a B.C. smelter or refinery.

Cominco Ltd., has acquired a 12 per cent equity interest in Bethlehem Copper Corporation. Bethlehem and Valley Copper Mines Limited jointly own the Valley Copper orebody in the Highland Valley of B.C., possibly the site of the next major copper development in that province.

In the United States, representatives of domestic copper producers and labour were preparing in April to begin negotiations for new labour contracts. The present 3-year contracts between most U.S. copper producers and the United Steelworkers Union expire on June 30.

General Telephone and Electronics Corporation in California claims to have placed in operation the world's first optical communication system for public telephone service. This application of optical fibres will replace copper telephone cables. Optical fibre applications to communications are expected to occur rapidly.

Gold

The International Monetary Fund held its monthly gold auction, (eighth auction) on April 6, 1977, and awarded 524,000 ounces of gold to the successful bidders at prices ranging from $148.55 (US) to $151.00 (US) an ounce of gold compared with a price range of $145.55 (US) to $148.00 (US) an ounce at the seventh auction held on March 2, 1977. The average price of successful bids was $149.18 (US) an ounce compared with $146.51 (US) an ounce at the seventh auction. The afternoon fixing price on the London Gold Market on April 5 was $148.65 (US) an ounce and the prices following the auction remained near this level. Bids were received for a total of 1,278,000 ounces of gold compared with 1,632,800 at the seventh auction. The largest percentage of the ounces bid for was in the price range of $145.00 (US) to $149.99 (US) an ounce. The eleven successful bidders were European and New York banks and bullion dealers. The next gold auction will be held on May 4, 1977.

The price of gold during the month of April 1977 varied from a low of $145.60 (US) an ounce of gold on the London Gold Market to a high of $152.20 (US) an ounce. The opening and closing prices of gold on the London market were $148.25 (US) and $147.25 (US) an ounce, respectively. The monthly average of the afternoon fixing gold price on the London Gold Market for April 1977 was $149.17 (US) (156.80 Cdn) an ounce compared with $148.23 (US) (155.80 Cdn) an ounce in March.

Iron Ore

Steep Rock Iron Mines Limited of Atikokan estimates it would cost about $200 million to bring into production an iron ore deposit located at Bending Lake, 25 kilometres northwest of Atikokan. The ore at Bending Lake consists of magnetite and reserves are thought to be sufficient to sustain a mining operation for 20 years. The ore would be mined by open-pit methods, concentrated at Bending Lake and transported by rail or pipeline to Atikokan for pelletizing at the existing operations. The feasibility study is expected to be completed at the end of 1977. The Bending Lake deposit would be developed as a replacement for the Steep Rock mine, where reserves will be depleted at the end of 1979.

Because of rising construction costs, lower than expected growth in the steel industry in North America and recent investment in other iron ore properties, Steep Rock announced in its 1976 annual report that it has deferred indefinitely development of its Lake St-Joseph iron ore project, in Northwestern Ontario.

Pickands Mather & Co. and the Federal Energy Research and Development Administration (ERDA) are negotiating for a demonstration coal-gasification plant for iron ore pellets. The plant would be built at Pickands' Erie Mining Company, a 9 million tonne a year taconite plant. The plant would cost $39 million and would provide a low BTU fuel gas to replace natural gas used in pelletizing iron ore concentrates. To convert one tonne of concentrates into pellets requires 21.2 cubic metres of natural gas. Far more coal gas will be needed because natural gas contains five times more calories per unit than coal gas. It would be the first commercial application in the world of coal gasification to pelletizing iron ore. Arthur G. McKee & Co. would build the facility.

Lead

Cominco Ltd., announced a $425 million expansion program for its Trail and Kimberley operations in British Columbia. The lead plant at Trail will be expanded and modernized from its present capacity of 154 000 tonnes to 181 500 tonnes a year. In other developments at Cominco's operations, workers at the Trail plant voted to reject the latest company contract offer. The existing contract expires as of April 30 and there is a strong possibility of a strike. When the contract was last negotiated in 1974, there was a four month strike at both the Trail lead and zinc plant and at the Sullivan and H.B. Mines. According to a union member, the major points of difference between union and management are wages and a cost of living adjustment clause.

Cyprus Anvil Mining Corporation announced that it has reached agreement in principle to extend long-term sales contracts with Mitsui Mining & Smelting Co., Ltd. and Toho Zinc Co. Ltd. of Japan and Metallgesellschaft A.G. of West Germany. The present contracts are due to expire in late 1977. There had been some fear expressed that Cyprus Anvil's customers would not want to renew the contracts because of the poor work record at the company's Faro mine in the Yukon Territory.

The strike at ASARCO Incorporated's Glover, Missouri lead plant may be over. The company announced that workers had reached an agreement to end the strike which began September 1, 1976. The agreement is still subject to worker ratification and assuming that it is forthcoming, the plant could be back in production by mid-May at the earliest. Details of the agreement have not yet been made public. During the strike period supervisory personnel maintained production at a reduced level in the smelter.

Broken Hill Associated Smelters Pty, Ltd. (BHAS) shut down its Port Pirie, Australia lead and zinc plant April 21, because of a withdrawal of services by the Federated Engine Drivers and Firemens Association. The plant capacity is 220 000 tonnes of lead (making it the largest plant in the world) and 45 000 tonnes of zinc. It is not known how long the shutdown will last and although company stocks at Port Pirie are limited, BHAS has not yet had to declare a *force majeure*.

Prices were jittery on the London Metal Exchange (LME) during the month as an air of uncertainty overhung the market. The possibility of more strikes disrupting supply in an already tight market was the major unsettling factor. The spot price increased £11 to £389 a tonne (31.8 cents a lb/Cdn- 70.1 cents a kg) at month-end after touching a low of £351 a tonne on April 6 (28.9 cents a pound Cdn). The price of three months lead opened the month with a £10 a tonne contango over the spot price but by the end of the month had turned into a £1 backwardation. Stocks of refined lead held in LME warehouses declined from 68 900 tonnes on April 1 to 64 400 tonnes on April 29. The producer price in the United States and Canada remained unchanged at 31 cents a pound.

Molybdenum

Gibraltar Mines Ltd. has resumed production of by-product molybdenum at its mill in British Columbia. At present, plant scale tests are being conducted to determine if the apparent economics are valid and if the mine can sustain production of molybdenum. Gibraltar stopped producing molybdenum in early 1975 when increases in reagent cost made recovery uneconomic. In 1974, Gibraltar's peak year of molybdenum production, the company recovered some 335 000 kilograms of molybdenum. Gibraltar is over 70 per cent owned by a subsidiary of Placer Development Limited.

Nickel

The continuing oversupply of nickel products is intensifying the price competitiveness of the nickel producing companies. Unless there is a marked increase in capital spending in the industrial sector this year above that predicted by economists, world nickel production this year is expected to exceed consumption and producers inventories will continue to climb.

Price discounting has been frequently reported over the past year but it broke into the open last September when AMAX Inc., offered its briquettes at 15 cents a pound below the list price of $2.41 a pound for the first six months of 1977 and 10 cents a pound below the producer cathode price for the second half of the year. Falconbridge Nickel Mines Limited, Inco and other producers reduced the quoted prices of the Class II products for the first quarter of 1977 to remain competitive with AMAX. Falconbridge offered an 8 cent discount on its ferronickel (list price, $2.36 a pound) for the first quarter of 1977 and Inco a 7 cent discount on its nickel oxide sinter 75 (list price $2.27). Other nickel producers discounted accordingly. Effective April 1st, Inco announced a further reduction of its oxide sinter to $2.07 a pound. On April 6, Inco reduced the quoted price of its electrolytic nickel from $2.41 a pound to $2.35 and Incomet from $2.23 to $2.11. These prices were effective for second quarter delivery for confirmed orders received in April. The company later announced that it was eliminating on May 1 the price cuts it implemented for April orders. Other nickel producers matched Inco's prices during the month. Reports from some buyers that nickel is being offered below the published prices for orders received in April is an indication of the continuing competitiveness in the nickel market.

Inco Limited and the French government have concluded an agreement under which Inco has the right to exploit the west half of the large Goro laterite deposits in New Caledonia. The eastern half is being reserved for French mining firms. Inco is committed to an exploration and development program and must inform France before June 30, 1982 whether it plans to build a processing plant. Preliminary plans indicate a plant will be built with a capacity of 90,000,000 pounds of nickel a year at a cost of from $600 million to $800 million.

Silver

Workers at the plant of Canadian Copper Refiners Limited (CCR) in Montreal East, Quebec went on strike April 13 after a breakdown in labour negotiations over wage and pension matters. Negotiations had continued after the current two-year contract expired March 22, 1977. CCR, which is a wholly-owned subsidiary of Noranda Mines Limited, operates Canada's largest silver refinery with an annual capacity of 777.5 tonnes (25,000,000 troy ounces) of refined silver. In 1976, CCR produced 700 tonnes (22,501,000 ounces) of refined silver.

India reported plans to reduce its silver exports by 650 tonnes (20.9 million ounces) to 1,000 tonnes (32.1 million ounces) in the next twelve months, and 150 tonnes (4.8 million ounces) of the 1,000 tonne amount have already been booked for shipment. The main reason for the reduction in exports is supposedly to enable the suppliers to obtain a better silver price. In the past year, from April 1, 1976 to March 31, 1977, India exported some 1 650 tonnes (53 million ounces) of silver.

According to The Silver Institute, headquartered in Washington, D.C., free world stocks of refined silver rose 40.43 tonnes (1.3 million ounces) during March, following a decline of 49.76 tonnes (1.6 million ounces) in February 1977. The Institute also said that at the end of March 1977, silver stocks held by all known U.S. refiners amounted to 177.27 tonnes (5.7 million ounces) while stocks of all known foreign refiners totalled 223.92 tonnes (7.2 million ounces).

Earth Resources Company of Dallas, Texas announced that the DeLamar silver-gold property near DeLamar, Idaho began operations. The property is a joint venture in which Earth Resources has a 52½ per cent interest, with the remaining interest held by Superior Oil Company and Canadian Superior Mining Company Limited. The property is managed by Earth Resources under an operating agreement between that company and Superior Oil and Canadian Superior Mining. The mine is an open pit operation and has required an investment of almost $20 million to bring it into production. When operating at full capacity the mine is expected to be the third largest silver mine in the United States.

Estimated silver content of the DeLamar mine's ore reserves was recently doubled from about 775 tonnes (25 million ounces) to 1 550 tonnes (50 million ounces). Average grade of two of the property's mining areas is 144.3 grams of silver a tonne (4.2 ounces per short ton) and 1.58 grams of gold a tonne (0.046 ounce per short ton). Based on these grades, total reserves are estimated at some 11 000 000 tonnes. Concentrator capacity is 2 180 tonnes of ore a day, but initially the mill will operate at only 1 550 tonnes of ore a day on a 7-day week basis. Initial output of silver and gold is expected to be equivalent to about 78 tonnes (2.5 million ounces) of silver and 0.7 tonnes (22,000 ounces) of gold a year. At the initial rate of production the mine has a life expectancy of about 10 years.

Steel

The Department of National Revenue, Customs and Excise has begun two more preliminary investigations into the alleged dumping of off-shore steel in Canada. The first investigation relating to imports of stainless plate and sheet from Japan and West Germany was lodged in December by the Atlas Steels Division of Rio Algom Limited, Canada's only manufacturer of the products in question. The second inquiry concerns the dumping of wide-large beams originating in Britain, Japan, France, Luxembourg and South Africa. The third inquiry concerns hot-rolled carbon steel bar-size (only those with each leg less than three inches in length) exported or originating from Japan.

At least five Canadian steel companies have lodged dumping complaints with the department in connection with Japanese bar angles which are thought to be sold in Canada at a price below the Japanese warehouse prices. The companies involved are: The Steel Company of Canada, Limited; Sidbec-Dosco Limited; The Burlington Steel Division of Slater Steel Industries Limited; Lake Ontario Steel Company Limited, and QSP Ltd. The name of the companies that have filed complaints on wide flange beams have not been released. The three enquiries should be completed by September, at which time the imports of those products may be subject to provisional dumping duties.

Deficits continue to pile up at QSP Limited at Lachine as the steel producer tries to get both the Provincial and Federal Governments involved in the refinancing of its operations. QSP's debt is about $60 million and its assets are about $63 million. Its principal secured creditor is the Royal Bank of Canada which owns about $45 million.

The Royal Bank has recently offered to lend $12.5 million to QSP with a lightening of its repayment schedule of $30 million debt. The new loan will be provided under the condition that $7.5 million be guaranteed by the Government of Quebec. The Province refused originally but showed some interest thereafter following a proposal by the company's president to issue options to his 1,200 employees that would enable them to buy up to 30 per cent interest in the firm if the loan was guaranteed by the Quebec Government.

About half of QSP's 30C 000 tonnes a year of steel bars, angles and shapes for the construction industry is sold to Thyssen Steel of Canada Limited which reports that its warehouses are full because of soft markets. Recent dumping of steel products in Canada mainly from Japan and Western Europe is also hurting small producers, such as QSP, that rely mainly on one industry.

Zinc

In Canada, Cominco Ltd., has announced that it will spend $425 million over eight years to modernize and expand the lead and zinc refinery at Trail, British Columbia and the Sullivan lead-zinc mine at Kimberley, B.C. Work on the zinc refinery will commence in 1978 and expand capacity to 272,000 tonnes refined zinc a year.

Willroy Mines Limited, closed its zinc-lead-copper mine at Manitouwadge, Ontario on March 17, 1977 after 20 years of continuous production. The mine employed 172 persons.

In the United States, St. Joe Minerals Corporation has concluded a 3-year labour agreement with workers at its Monaca, Pennsylvania zinc refinery which provides for an overall wage increase of 18.4 per cent plus cost of living and other non-wage benefits. Other U.S. zinc producers facing labour negotiation this year include the Bunker Hill Company and ASARCO Incorporated.

On April 7, 1977 the United States Treasury Department issued its final determination on a zinc countervailing duty case ruling that the Government of Spain had granted excessive indirect tax rebates to its domestic producers for zinc metal exports and effective on this date, an ad valorem countervailing duty of 4 per cent will be applied to imports from that country. The ruling is open to review subject to Spain providing complete information as requested by the Treasury Department.

World prices for prime western zinc in April remained unchanged from March at $799.17 a tonne in Canada, $795.00 a tonne in Europe and $815.70 a tonne in the United States. Cash zinc on the London Metal Exchange at month end had declined £14.0 from £391.5 a tonne at March 31st, and at an equivalent U.S. price of $649 a tonne, it remained at a substantial discount to producer prices.

INDUSTRIAL MINERALS AND PRODUCTS

Asbestos

A report, commissioned by the Quebec Asbestos Mining Association, will examine opportunities for the further processing of asbestos fibre in Quebec.

Fact-finding missions by Sores, an economic and scientific research division of the SNC Group, Montreal, have started to obtain detailed data on the asbestos-products industry. The goal is to make a complete market and feasibility study of the industry on a world-wide scale. The study is in collaboration with Arthur D. Little Inc., Cambridge, Massachusetts, and is expected to make specific recommendations regarding industrial development and marketing strategies. In addition, international trade policies will be suggested.

The report is expected to be finalized in October 1977 and will be available to the public.

Construction Materials

Fiberglas Canada Limited, manufacturers of mineral wool insulation material, announced intentions to construct a $25 million plant on a 50-acre site in Scarborough, Ontario. The company's multi-million-dollar expansion program has included a recently-opened operation in Moncton,New Brunswick ($9 million), an expansion of its Sarnia, Ontario plant ($6 million), an expansion of its Montreal, Quebec plant ($6 million and an expansion of its Edmonton, Alberta plant ($5 million). The Scarborough plant will be operative early in 1979.

The Royal Bank of Canada is participating in the financing of a new portland cement plant in Equador, South America. A $10 million loan agreement with Cementos Selvalegre of Quito, Equador has been signed. The rest of the financing for the $62 million plant will be provided by Canada's Export Development Corporation, the Inter-American Development Bank of Washington, and the Government of Equador. Construction and design are by Surveyer, Nenniger and Chenevert, Inc. of Montreal.

Ciment Independent Inc. of Montreal, a subsidiary of St. Lawrence Cement Company, was denied a requested price increase of 8.5 per cent by the Anti Inflation Board because of its failure to justify the requested increase and because the company did not give the necessary 30 day notice to the board before implementing the increase. The company will have to refund any extra revenues it received as a result of the price increase.

Potash

On April 22nd, the Potash Corporation of Saskatchewan (PCS) took possession of its second mine, the former Sylvite mine of Hudson Bay Mining and Smelting Co. Limited. PCS's two mines are now the Cory Division and the Rocanville Division (formerly the Duval and Sylvite mines respectively) of the Potash Corporation of Saskatchewan Mining Ltd. The government now has 17 per cent of the potash production capacity in the province.

MINERAL FUELS AND PRODUCTS

Petroleum and Natural Gas

Total Eastcan Exploration Ltd., as operator for the Labrador Group of Companies consisting of Amerada Minerals Corporation of Canada Ltd., Aquitaine Company of Canada Ltd., Agip Canada Ltd., Gulf Oil Canada Limited, Sun Oil Company Limited and Total Petroleum (North America) Ltd. announced late in March, 1977 that the group will not undertake any drilling operations offshore from Labrador in 1977. Since 1968, the Labrador Group has expended approximately $100,000,000 for oil and gas exploration offshore Labrador on permits granted by the federal government. Currently, ownership of the mineral resources of the area is the subject of a dispute between the federal government and the government of Newfoundland. The dispute will likely be referred to the Supreme Court of Canada for resolution. The Labrador Group which had been formulating plans to carry on exploration at an accelerated pace during 1977, plans to carry on exploration at an accelerated pace during 1977, had requested the assurance of both levels of government that its rights would be guaranteed, no matter how the issue would be resolved. Such a guarantee was forthcoming from the federal government but the Group was not given comparable assurance by the Newfoundland government.

It has been announced that the refinery and petrochemical complex of Petrosar Limited of Sarnia will begin producing fuel products in April 1977 and petro-chemical products in October 1977. The complex was 72 per cent complete by the end of 1976. Polysar Limited of Sarnia has a 40 per cent interest in Petrosar. The remaining 60 per cent is equally divided between DuPont of Canada, Limited, Montreal, Union Carbide Canada Limited of Toronto and the Canada Development Corporation.

Westcoast Petroleum Ltd. which obtained deep rights in the Suffield Block from the Alberta Energy Company Ltd. has completed three more successful oil wells in the Upper Manville B Pool. A total of 12 wells have found oil in the pool and a recent consultants report estimates that there are approximately 280 million barrels of oil in-place. The report also estimates that there are at least 40 billion cubic feet of gas in the same pool.

Uranium

On April 7, President Carter unveiled a new nuclear policy direction for the United States, based on seven decisions:

- to defer indefinitely the commercial reprocessing and recycling of the plutonium produced in U.S. power programs... .

- to restructure the U.S. breeder reactor program in order to give greater priority to alternative designs of the breeder, and to defer the date when breeder reactors would be put into commerical use.

- to redirect funding of U.S. nuclear research and development programs to accelerate their research into alternative nuclear fuel cycles which do not involve direct access to materials useable in nuclear weapons.

- to increase U.S. production capacity for enriched uranium to provide adequate and timely supply of nuclear fuels for domestic and foreign needs.

- to propose the necessary legislative steps which will permit the U.S. to offer nuclear supply contracts and guarantee delivery of such nuclear fuel to other countries.

- to continue to embargo the export of equipment or technology that would permit uranium enrichment and reprocessing.

- to continue discussions with supplying and recipient countries alike, of a wide range of international approaches and frameworks that will permit all nations to achieve their energy objectives while reducing the spread of nuclear explosive capability... .

The United States President's decision to forego reprocessing has caused concern in some quarters and particularly among foreign countries that are committed to light water reactors (LWR's). Recycling LWR fuel had always been desirable in order to achieve better fuel utilization and, recycling implies reprocessing. France, the Federal Republic of Germany, Britain and Japan notably are embarked on such a course. There is a feeling that the U.S. may try to spread their moratorium on reprocessing to these countries which would make them even more dependent upon foreign resources for a greater amount of uranium and result in the wasting of development work and capital which they have invested. The U.S. is prepared to supply all the enrichment services required by such countries.

The United States Energy Research and Development Administration (ERDA) reported that uranium concentrate production in 1976 was over 12,700 tons U_3O_8 an increase of 1,200 tons over the 1975 output.

ERDA also reported that uranium reserves recoverable at a cost of up to \$30 per lb U_3O_8 at January 1, 1977 was 680,000 tons, 40,000 more than the January 1, 1976 estimate. This is made up of 250,000 tons U_3O_8 in the \$10 per lb U_3O_8 <u>cost</u> category, 160,000 tons in the \$10 to \$30 <u>cost</u> category. These costs do not take into consideration costs already incurred such as expenditures for property acquisition, exploration and mine development or taxes, interest charges and profit.

The Minister of Indian and Northern Affairs late in March, 1977 deferred new prospecting permits and applications for land use near the community of Baker Lake in the Northwest Territories. The deferral was to meet the concerns expressed by the people of Baker Lake that increased mineral exploration activity including low flying aircraft and helicopters has had an adverse effect on game. A study by the department to determine if the activity is indeed having an adverse effect is to begin immediately and is expected to be completed within one year. The study applies to an area of 30,000 square miles which the 950 Baker Lake residents have indicated is of greatest concern to them. In addition, the Minister indicated he would seek authority to withdraw unalienated land within this area for a period of one year.

NEW PUBLICATIONS

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

The Mineral Policy Series:
(F - also available in French)

MR 158 Mineral Industry Trends and Economic Opportunities
MR 165 (F) A Quick-Look Method for Monitoring the Adequacy of Metal Supplies from Canadian Mining for Domestic Needs.

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

Preprints, *Canadian Minerals Yearbook 1975*
Cadmium, Manganese, Salt, Sand and Gravel, Selenium and Tellurium, Uranium.

MH/GK/pfn/mek