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# Canterra Energy Ltd.

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1982 ANNUAL REPORT

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## HIGHLIGHTS

- cash flow from operations before interest reached \$360.9 million, an increase of 20 percent over 1981
- cash flow after interest expenses was \$129.6 million
- loss was \$14.4 million
- exploration drilling 74 percent successful in western Canada
- gross gas reserves increased by 13 percent
- NORP oil production rate increased to 12 percent of oil production at year end and should reach 16 percent in 1983
- major farmins negotiated offshore Nova Scotia
- Athabasca oil sands pilot opened
- Hanlan/Blackstone pipeline construction started
- frontier operational capability demonstrated: Raleigh well drilled in record time
- 17 Canterra plants received safety awards for no lost-time accidents

## CORPORATE PROFILE

Canterra Energy Ltd. is the fourth largest Canadian-owned petroleum company and the 11th largest oil and gas company in Canada.

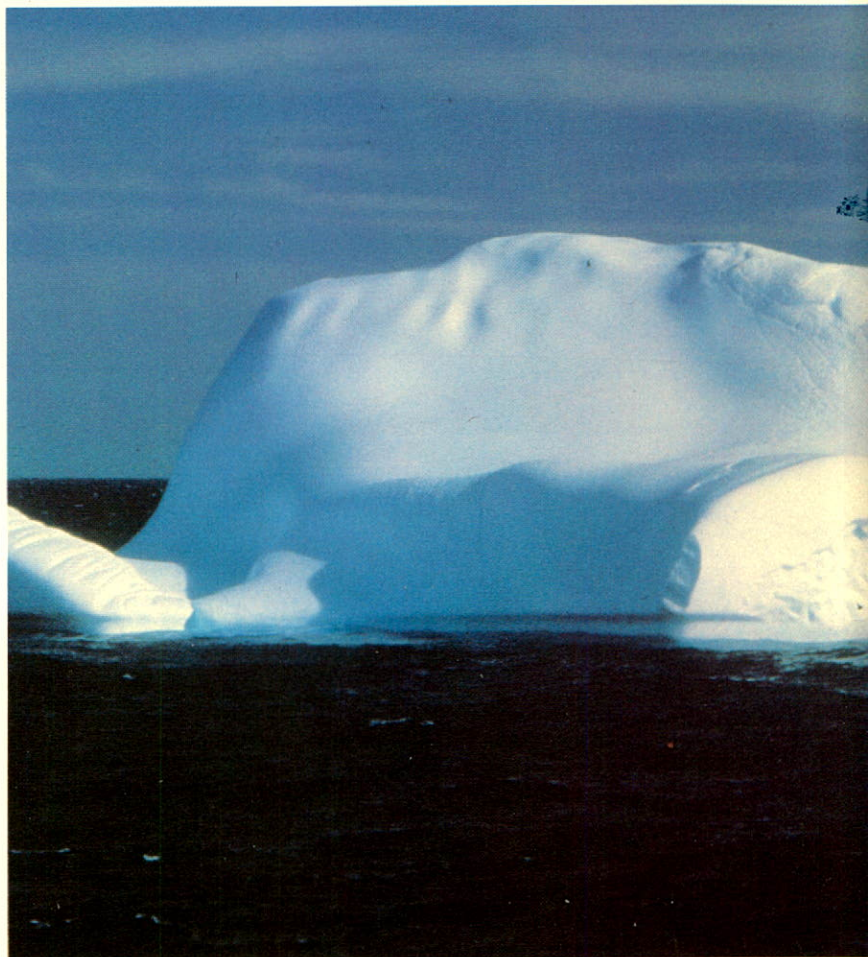
It is engaged in oil and gas exploration in Canada and the United States. It produces oil, gas and sulphur in Alberta, oil and gas in British Columbia, oil and gas in Saskatchewan and oil, gas and coal in the United States.

The Company is the largest supplier and marketer of sulphur in Canada.

Canterra is also active in frontier exploration in Canada's offshore areas—the Beaufort Sea, Arctic Islands, Davis Strait, Labrador Shelf, Grand Banks, and offshore Nova Scotia.

Canterra owns the assets of the former Aquitaine Company of Canada Ltd. and CDC Oil & Gas Limited and the Canadian oil, gas and sulphur assets formerly owned by Texasgulf Inc.

Canterra is a wholly-owned subsidiary of Canada Development Corporation (CDC).



Icebergs like this are common in 'iceberg alley', offshore Labrador and Newfoundland.



Canterra has just completed its first full year of operations.

It was a year in which the economy in general and the petroleum industry in particular faced unprecedented difficulties.

Canterra reacted quickly to the immediate adverse economic conditions but continued with determination to build for the future towards its strategic objectives decided one year ago.

## Review of 1982

The economic recession adversely affected markets for all Canterra's products: oil, gas, coal and sulphur. Sales volumes were reduced below capacity while selling prices eroded moderately.

Following a dramatic decline of activity in the petroleum industry early in 1982, both the Federal and Provincial Governments introduced adjustments to the fiscal and pricing regimes. The changes which had the most significant positive impact on Canterra were related to royalties on old oil and the pricing regime on enhanced recovery projects.

Canterra adopted several programs to reduce costs, improve productivity and optimize its revenues, resulting in cash flow from operations before interest of \$360.9 million, an increase of approximately 20 percent over the consolidated figure in 1981 for the three entities now part of Canterra. Interest charges absorbed a large share of income from operations due to high interest rates through most of the year and the debt incurred for the acquisition of Aquitaine. Cash flow after interest expense was \$129.6 million. The Company sustained a loss of \$14.4 million.

Exploration and development in western Canada resulted in an increase of conventional reserves on an energy equivalent basis. As a

result of new discoveries and enhanced oil recovery (EOR) schemes, 12 percent of Canterra's oil production received the world price at the end of 1982 and this proportion is expected to grow to 16 percent in 1983, considerably above the industry average. Canterra was involved in several gas field developments for delivery to Pan Alberta and started the construction of the Hanlan-Blackstone-Stolberg pipeline which will bring new gas reserves to the Ram River plant to replace declining production from older fields. In frontier exploration, significant progress was achieved towards our objective of increasing our exposure on the east coast in the warmer water areas. Two major farmins offshore Nova Scotia will expose Canterra to attractive gas plays, close to the northeastern United States markets, in a province which has signed a 42-year agreement with the Federal Government for the management of offshore resources.

## Business Outlook for 1983

The petroleum industry in Canada may continue to face severe difficulties in 1983.

Gas exports to the United States continue to deteriorate. As a result of the economic recession, increased conservation and higher prices for U.S. domestic gas, demand has been reduced and the deliverability surplus is growing in the United States. The Canadian industry is under pressure from the U.S. buyers to reduce prices even if they acknowledge that lower prices would not result in increased volumes in the short term and that current Canadian prices, which have been constant for more than a year, are still competitive with some categories of U.S. gas. A concerted effort between governments and industry could result in a long-term pricing policy which would be market-oriented and, together with longer-term export licenses, would establish Canada as a willing, reliable and predictable long-term supplier of gas to the United States.

The erosion of oil prices raises again the whole issue of revenue sharing between the two levels of government and the industry. The current fiscal and pricing regime includes taxes which were intended to capture a deemed rent from the production of oil and gas under a scenario of ever-increasing oil prices. Several major taxes are based on production volumes with no consideration for the profitability of the production and the investments required to replace the produced reserves. Both governments may be faced with decreased petroleum revenues and the additional obligation to reduce their share of these revenues to restore a reasonable level of activity in the petroleum industry. If world oil prices stabilize at current levels, Canada has a unique opportunity to move to world prices for energy. Such a move would leave room for reasonable tax revenues, accompanied by higher industry netbacks and activity, and would end the isolation of Canada from true energy costs and conservation imperatives.

## Outlook for Canterra

The governments' decisions in respect to pricing and taxation will continue to have a major impact on the Company's income from operations.

Canterra should benefit substantially from the considerable reduction of interest rates compared with the average 1982 level, and we anticipate overall a healthy increase in cash flow in 1983.

Capital expenditures are planned at levels similar to 1982 with a significant portion remaining discretionary. Some divestitures of non-strategic assets, such as real estate in Calgary and Denver, are also contemplated to improve the financial structure of the Company.

Emphasis on efficiency, costs savings and high profitability of capital projects will be maintained in 1983.

## Canterra's Employees

Through its first full year of operations, Canterra enjoyed the full co-operation from its staff in a period of economic and organizational challenge. Canterra's employees have demonstrated their loyalty to their new Company, their professional skills, their enthusiasm and their dedication.

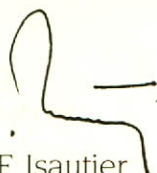
We want to express our pride in their success and our gratitude for their exceptional efforts.

## Canterra's Directors

Following a long-planned decision, John O'Brien retired from the chairmanship of the Board early in 1983.

We want to express our appreciation for his outstanding contribution to our Company and look forward to his continuing support and guidance as a Director.

We also welcome John Hague, Executive Vice President of CDC, in his position of Chairman of the Board of Canterra.



B. F. Isautier  
President and  
Chief Executive Officer



# WESTERN CANADA EXPLORATION AND PRODUCTION



Welders join sections of the 219.1 millimetre pipe for the Hanlan/Blackstone sour gas pipeline.

## BUSINESS ENVIRONMENT

The extent of the downturn in exploration and development activity in the western provinces became apparent at the beginning of 1982 when only 364 rigs were drilling at the peak of the winter season compared with 481 active rigs in the previous year.

The Alberta Government, recognizing the industry's difficulties, introduced the Alberta Oil and Gas Activity Program in April. This program included provision for lower provincial royalties and development drilling and well servicing incentives, all of which benefitted Canterra.

The Federal Government provided further tax relief and improved revenues for the industry with a modification to the National Energy Program.

Despite the improvements in the fiscal regimes introduced by the Federal and Provincial Governments in 1982, taxes and royalties continue to represent an excessive share of revenues, particularly from high productivity wells producing old oil, as shown in the following table:

### REVENUE SPLIT AFTER INCOME TAX (%)\*

High Productivity Old Oil		Old Royalty Gas	
January 1983			
Provincial* (Alberta)	50.3	Provincial* (Alberta)	41.3
Federal*	38.4	Federal*	36.1
Operating Cost	2.5	Operating Cost	8.6
Producer share after operating cost	8.8	Producer share after operating cost	14.0

\*assumes full income tax rate

During 1982 the industry faced gas marketing difficulties and shut-in oil production. Toward the end of the year, the Federal and Provincial Governments were studying various options in concert with the industry to reduce the amount of shut-in oil production and increase gas exports to the United States.

Canterra invested over \$107 million for oil and gas exploration activities and more than \$61 million for production, including tar sands and heavy oil \$8.9 million, in western Canada in 1982.

## Land

Acquisition of new acreage continued at similar levels to previous years, although the rapid fall in prices throughout western Canada resulted in a substantial decrease in unit acquisition costs. The expiry and relinquishment of several large lease blocks, particularly in Saskatchewan, has resulted in a lower inventory of land holdings at year end.

Land Holdings—at 1982 December 31, with comparative figures as at 1981 December 31, were as follows:

### WESTERN CANADA LAND HOLDINGS

	1982		1981	
	Gross	Net	Gross	Net
(thousands of hectares)				
Western Canada:				
Alberta	2 363	834	2 948	957
British Columbia	601	264	681	287
Saskatchewan	89	43	134	73
Manitoba	1	1	1	1
Total	<u>3 054</u>	<u>1 142</u>	<u>3 764</u>	<u>1 318</u>

## EXPLORATION

### Drilling Activity

Canterra maintained its drilling activity at levels close to the previous year's with completed exploratory and development wells declining slightly from 202 in 1981 to 193 in 1982. Canterra's western Canadian exploratory expenditures represent some four percent of the industry total.

The 1982 exploration program resulted in 54 (net 24.8) gas wells, 22 (net 12.4) oil wells and 27 (net 12.5) abandonments for an overall success ratio of 74 percent.

### WESTERN CANADA DRILLING ACTIVITY—1982

	Exploratory Wells		Development Wells	
	Gross	Net	Gross	Net
Oil	22	(12.4)	Oil	62 (11.7)
Gas	54	(24.8)	Gas	17 (5.3)
Dry/Suspended	27	(12.5)	Dry/Suspended	11 (2.2)
Total	<u>103</u>	<u>(49.7)</u>	Total	<u>90 (19.2)</u>



## ALBERTA

Increasing emphasis was placed on the exploration for oil in Alberta during 1982, primarily in the Shekylie-Rainbow Basins and the Peace River Arch areas of northern Alberta. Gas exploration was primarily confined to high quality reservoirs in western Alberta.

### Rainbow, Shekylie Basins

Since 1964, Canterra's exploration in these basins has established crude oil reserves of 43.7 million cubic metres, primarily in the Rainbow field which represents 75 percent of the Company's reserves. Eight exploratory wells (two oil, six gas) were drilled in 1982 in these basins in the extreme northwest of Alberta, with the prime objective being oil in Devonian pinnacle reefs.

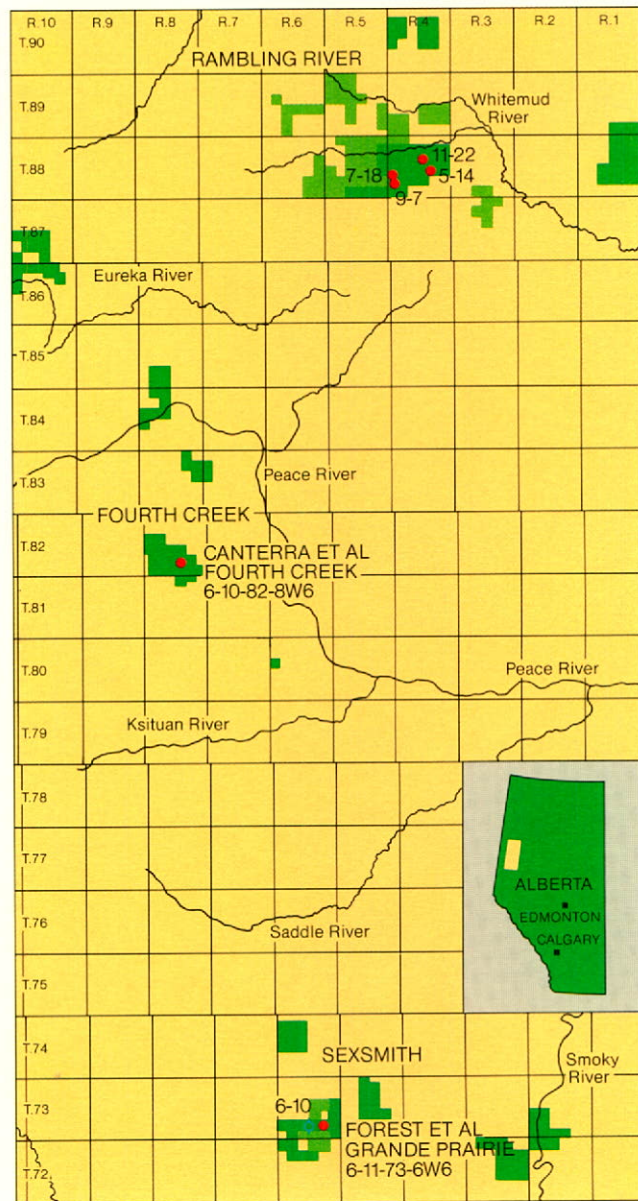
### Other Plays

Fourteen exploratory wells were drilled on or around the **Peace River Arch** resulting in six oil wells. The most significant of these oil wells were: Canterra Fourth 6-10-82-8 W6M (100 percent interest) which was completed as a potential Tangent oil well. Norcen Dawson 9-24-80-16 W5M (50 percent interest), encountered a thin oil zone in the Slave Point but nevertheless on an extended production test produced at a rate of 45 cubic metres per day. Three potential oil wells were completed at Worsley in the Rambling River area (30 percent interest) but will require extended production tests to determine their economic viability.

Forest et al Jones 6-11-73-6 W6M (25 percent interest) in the **Sexsmith** area was cased and placed on production in December at 15 cubic metres per day and a confirmation test was drilling at year end. Two indicated oil discoveries at **Pouce Coupe** will require additional work to determine production capabilities.

In western Alberta, a successful test was completed at **Edson** 6-13-52-16 W5M (16.6 percent interest) and represents a five kilometre extension to a previously discovered gas pool.

In the **Deep Basin** area of Alberta, the Company participated in 11 successful delineation and development wells with interests ranging from 1.67 percent to 32 percent. The program was designed to confirm and extend reserves or to increase deliverability capacity.



PEACE RIVER AREA 1982 DRILLING ACTIVITY

- CANTERRA INTEREST LANDS
- LANDS IN WHICH CANTERRA MAY EARN AN INTEREST
- 1982 WELLS—RED FUTURE DRILLING—BLUE
- OIL WELL \* OIL AND GAS WELL ☼ GAS WELL
- ⊙ DRY AND ABANDONED ⊕ DRILLING ⊗ SUSPENDED



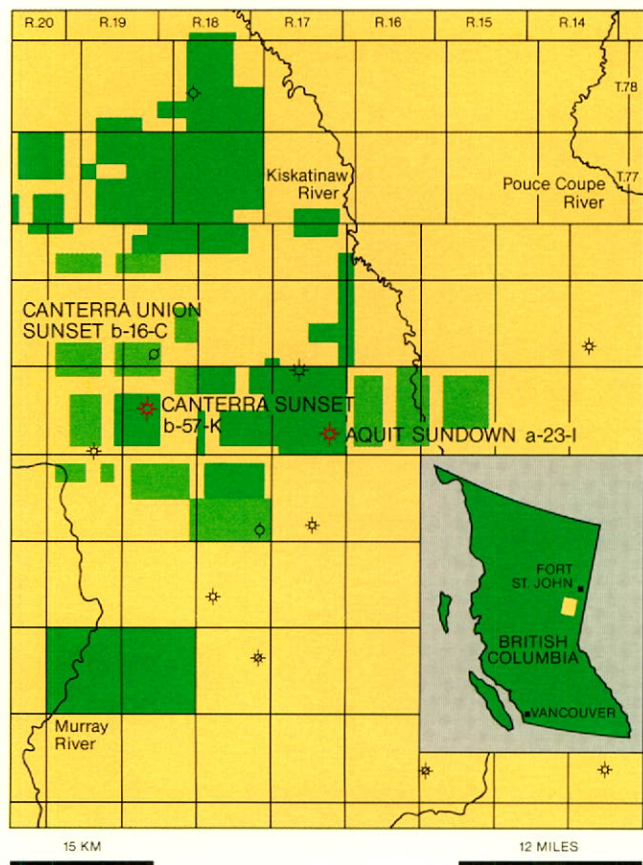
## BRITISH COLUMBIA

Canterra participated in seven exploratory tests in British Columbia in 1982, resulting in four (3.5 net) gas wells. Canterra Sundown a-23-1 (100 percent interest) was a significant gas discovery in the British Columbia portion of the "Deep Basin." Canterra Moberly 7-33-82-22 W6M (100 percent interest) was completed as a gas well and represents a two kilometre extension to the Boudreau gas field.

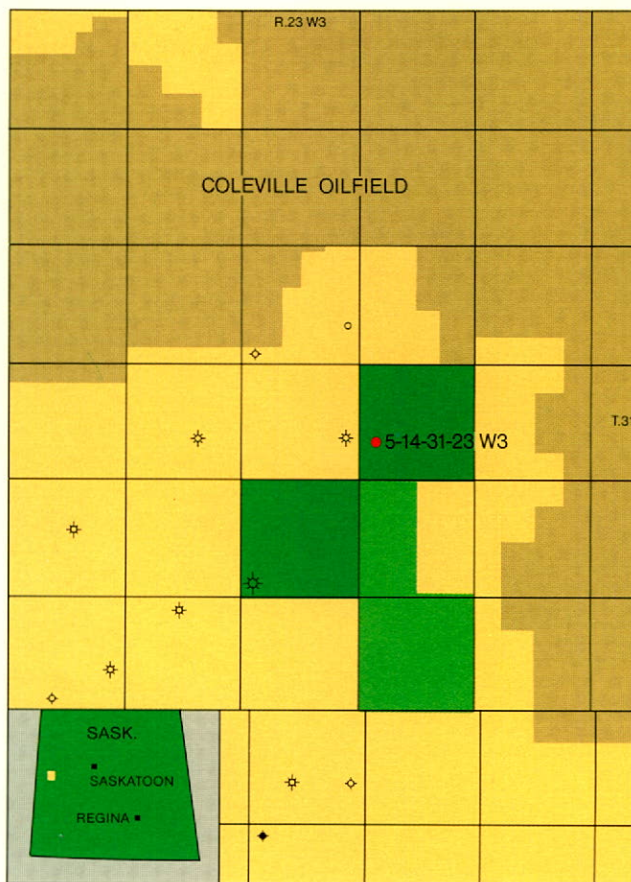
## SASKATCHEWAN

Three tests at North Battleford extended existing heavy oil reserves or revealed new heavy oil pools. However, as these heavy oil reserves are not producible by primary means, exploration will be discontinued until economic recovery techniques can be demonstrated.

Canterra participated with a 50 percent interest in Westburne Coleville 5-14-31-23 W3M which resulted in a dual zone oil discovery. Additional drilling will be required to determine the extent of the reserves discovered.



SUNSET AREA



COLEVILLE AREA

1982 DRILLING ACTIVITY

- CANTERRA INTEREST LANDS ■ LANDS IN WHICH CANTERRA MAY EARN AN INTEREST
- 1982 WELLS—RED ○ LOCATION ● OIL WELL ★ OIL AND GAS WELL ✧ GAS WELL
- ◇ DRY AND ABANDONED ◊ DRILLING ◐ SUSPENDED



## PRODUCTION

Canterra's daily average production of crude oil and equivalent was unchanged at 5 070 cubic metres per day although total Canadian crude oil production was down slightly for the year.

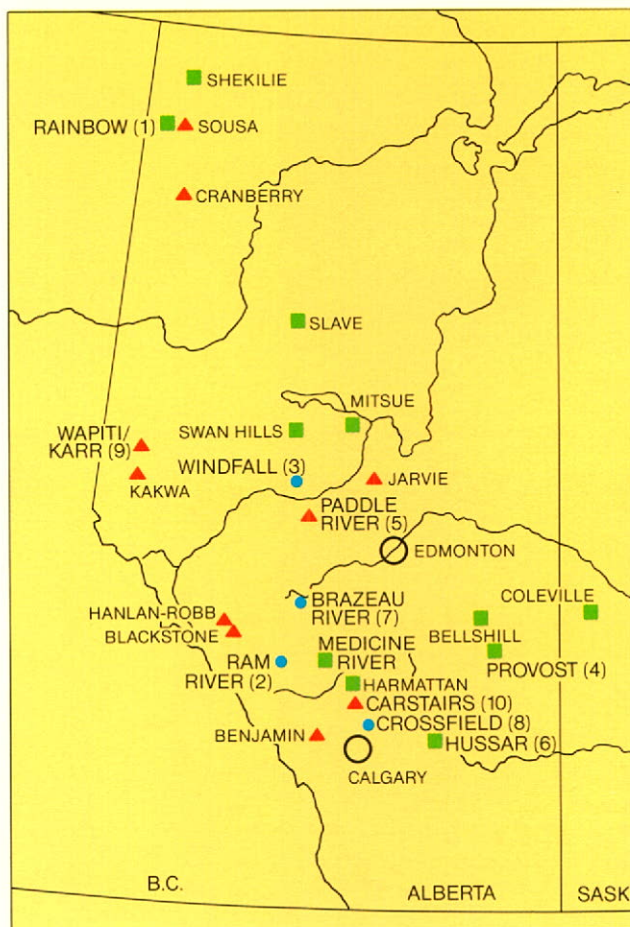
Canterra NORP oil production for 1982 amounted to 67 000 cubic metres accounting for 3.6 percent of total production, higher than the estimated industry average of 3.1 percent of production. The Company forecasts that over 16 percent of 1983 oil production will attract the NORP price.

### WESTERN CANADA OIL AND GAS LIQUIDS SALES VOLUMES AND PRICES

(Yearly)

	1982		1981	
	Thousands of Cubic Metres	Average Sales Price/Per Cubic Metre	Thousands of Cubic Metres	Average Sales Price/Per Cubic Metre
Rainbow				
Before Royalty	1 324	\$160	1 392	\$116
After Royalty	727		792	
Other Canada				
Before Royalty	528	\$152	478	\$114
After Royalty	380		N/A	
Total				
Before Royalty	1 852		1 870	
After Royalty	1 107		N/A	

Canterra's production of marketable natural gas decreased to 4.86 million cubic metres per day during 1982. While sales by western Canadian producers into both the domestic and export markets showed a modest overall increase from 1981 levels, export sales to the U.S. only represented about 47 percent of the National Energy Board's authorized volumes. The demand for Canadian natural gas in U.S. markets deteriorated throughout the year as a result of the weak U.S. economy, increased conservation, and competition from U.S. indigenous gas supplies and alternate fuels. During 1982 Canterra's natural gas production was reduced under various market allocation programs implemented by its principal gas purchasers in response to the decline in U.S. demand for Canadian gas.



CANTERRA'S PRINCIPAL PRODUCING PROPERTIES

- OIL
- ▲ GAS
- SULPHUR, SULPHUROUS GAS

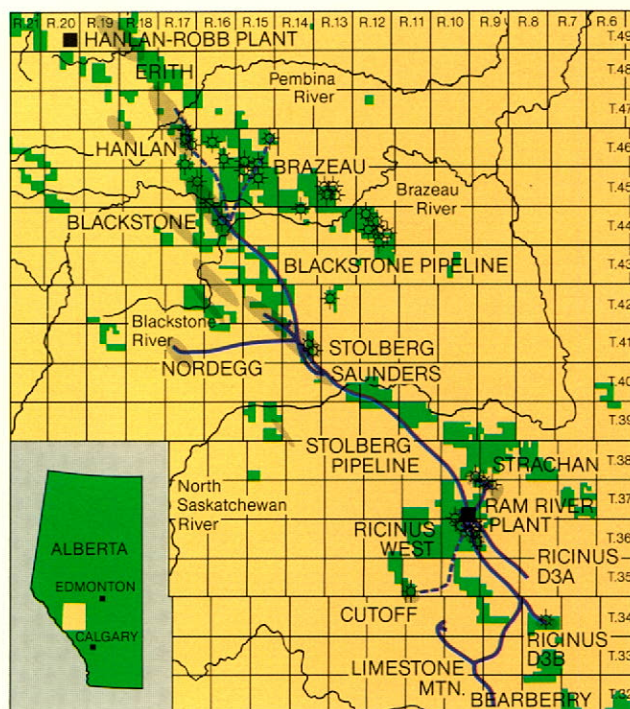
NUMBERS ON MAP INDICATE CANTERRA'S TOP 10 REVENUE PROPERTIES (RANKED)

In 1982 gas sales commenced from Sousa and South Wapiti; during the coming year, gas sales will start from Jarvie, Chinchaga and Benjamin Creek. This gas is under contract to Pan Alberta. Production from Kakwa also started in 1982.

Processing income from treating other companies' gas increased 14 percent to over \$20 million.

## Construction

In western Alberta, the Hanlan-Robb plant, one of the largest "grass roots" gas processing facilities constructed in Alberta since the Ram River plant in 1971 will be completed in 1983. It is operated by a partner, with Canterra's working interest being approximately nine percent in the Hanlan Swan Hills Pool and two percent in the plant. The Company will have invested approximately \$25 million over five years for wells, gathering system and plant facilities prior to start-up in March 1983. This facility, which has an inlet capacity of 8.4 million cubic metres per day, will serve as the base-load plant for Pan Alberta Gas Ltd.'s 30 million cubic metres per day export contract through the "pre-build" portion of the Alaska Natural Gas Transportation System to the U.S. Canterra's production share of sales gas from the Hanlan pool is estimated to be 0.27 million cubic metres per day in 1983.



RAM RIVER AREA DEVELOPMENTS

- CANTERRA INTEREST LANDS
- ★ CANTERRA INTEREST POTENTIAL GAS WELLS
- PIPELINES    - - - PROPOSED PIPELINES

The total cost of the extension is projected at \$56 million. The system is scheduled to come on stream during the second quarter of 1983. The first stage design capacity of the system is set at 3.9 million cubic metres per day.

### WESTERN CANADA GAS SALES VOLUMES AND PRICES

(Yearly)

	1982		1981	
	Millions of Cubic Metres	Average Sales Price/Thousand Cubic Metres	Millions of Cubic Metres	Average Sales Price/Thousand Cubic Metres
Ram River				
Before				
Royalty	980	\$ 103	1 040	\$ 92
After Royalty	624		604	
Other Canada				
Before				
Royalty	795	\$ 97	836	\$ 90
After Royalty	553		N/A	
Total				
Before				
Royalty	1 775		1 876	
After Royalty	1 177		N/A	

Canterra is presently building a major gathering system extension to tie additional gas reserves to its existing Ram River plant gathering systems. The extension serves the Blackstone, Hanlan, Peco and Brazeau fields and will consist of 125 kilometres of pipeline along with associated dehydration equipment.



## Enhanced Oil Recovery

The Rainbow Lake area, where the Company produces from over 20 pools, contributes over 70 percent of Canterra's oil production. One third of the production comes from eight enhanced oil recovery (EOR) hydrocarbon miscible floods that increased oil recovery by 20-25 percent above waterflood methods. The first in a sequence of these miscible floods was pioneered in 1968 and the latest was started in March 1982 with the north lobe of "B" Pool which will increase Canterra's proven reserves of conventional crude oil by 400 000 cubic metres.

Although the eight miscible flood projects contribute only one third of the Rainbow oil production, they provide over half the Rainbow oil income because of higher prices and incentives. Almost all of the oil currently being

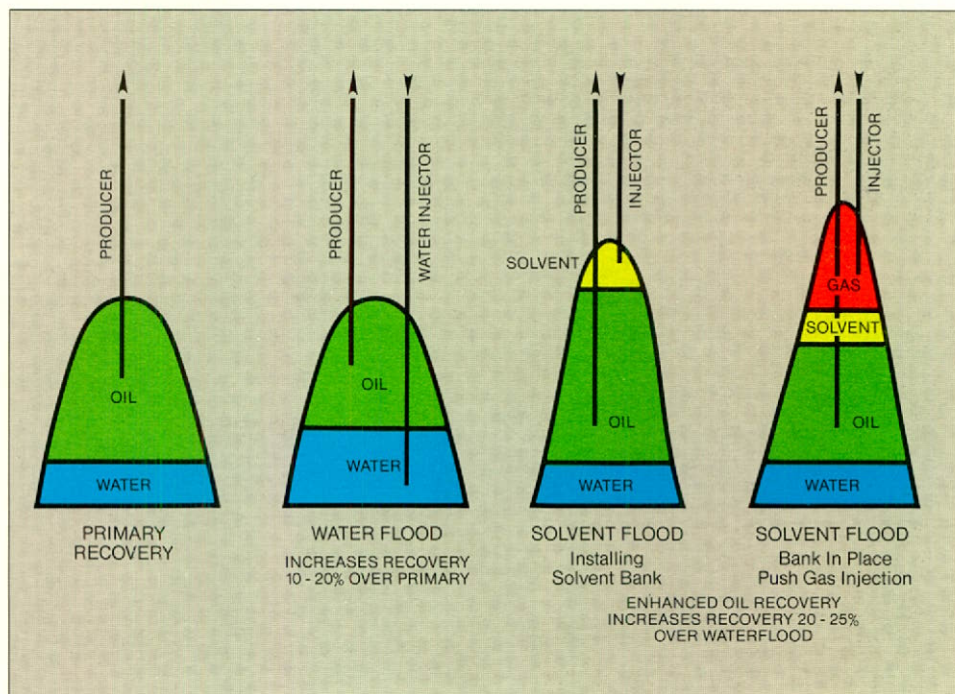
produced from the first seven schemes would have remained in the reservoir if the enhanced recovery schemes had not been implemented.

The solvent floods operating in the Rainbow oil reservoirs effectively "wash" more oil out of the pores in the rock resulting in the recovery of up to 60-70 percent of the original oil in place.

The Company is evaluating additional pools in Rainbow and other areas as EOR candidates. These projects attract the world price and new oil royalty for the incremental oil recovery fraction.

Compression facilities were completed in the Rainbow Bluesky gas field to increase gas delivery to the Rainbow EOR schemes.

As well as the miscible floods, the Company operates seven waterflood projects in the Rainbow area.



RAINBOW REEF ENHANCED RECOVERY SCHEMES

## Reserves

As in previous years, the volume of new oil reserves discovered was less than that produced, although considerable additional drilling will have to be undertaken with respect to a number of oil discoveries to determine the full extent of the reserves discovered.

New gas reserves exceeded the gas volumes produced during the year.

### WESTERN CANADA PROVEN RESERVES

	Oil and Gas Liquids		Natural Gas		Sulphur	
	Gross	Net	Gross	Net	Gross	Net
	millions of cubic metres		billions of cubic metres		millions of tonnes	
Proven Reserves <sup>1</sup> at 1982-01-01	16.6	11.3	37.0	26.6	17.4	16.3
Revisions	(0.3)	(0.2)	5.1	3.6	(0.2)	(0.2)
Production/Sales <sup>2</sup>	(1.7)	(1.1)	(1.9)	(1.3)	(1.2)	(1.1)
Discoveries	0.1	0.1	1.6	1.4	0.1	0.1
Proven Reserves at 1983-01-01	14.7	10.1	41.8	30.3	16.1	15.1

1. Opening reserve balances have been adjusted from last year's report to comply with the reserve definition guidelines published by Canadian securities administrators.
2. Annual production volumes are estimates made as of October 1. Variances between these estimates and actual production volumes are included in annual revisions.

## SULPHUR

Canterra is Canada's largest supplier and marketer of sulphur with an annual supply capability exceeding two million tonnes, accessible block inventories in excess of four million tonnes and controlled sulphur reserves of more than 16 million tonnes.

Canterra derives the bulk of its sulphur supply from its own production at Ram River and Okotoks and production purchase contracts at Windfall, North Coleman and Okotoks. Minor amounts of sulphur production and inventories are located at several non-operated gas plants located in Alberta.

Sales into the North American market are handled directly with sales personnel located in Calgary and Pittsburgh, Pennsylvania. Sales into the offshore market are made exclusively through Cansulex Limited, a Vancouver-based sulphur marketing organization, representing 18 Alberta sulphur producers, to which Canterra provides almost 50 percent of the supply.



Liquid sulphur is shipped to domestic markets in tank cars like these ones which have been newly painted with the Canterra logo.

## 1982 Operations

Sulphur sales volumes were significantly lower in 1982 due to the combined effects of new supplies from Saudi Arabia and the U.S. Western Overthrust area and lower demand in the consuming industries. On average, prices remained comparable to the levels achieved in 1981.



Because of the lower level of sales in 1982, less sulphur was needed from the block inventories resulting in a considerable cutback in remelting operations from the 1981 level.

#### SALES VOLUMES

(tonnes)

	1982
Canada	139 000
U.S.	153 000
Sub-total North America	292 000
Offshore	1 249 000
Total	1 541 000

#### NET SALES REVENUE

(C\$/tonne, FOB Alberta plant)

	1982	1981
Average Sales Price	\$100.04	\$ 94.14

The deterioration in sales volumes experienced in 1982 resulted from the combination of lower demand and new supplies entering the market. The weakening in the international sulphur market that has occurred since spot prices peaked in mid-1981 is expected to continue until demand, particularly in the phosphate fertilizer industry, improves. The recovery of this key industry remains contingent upon an improvement in the international agricultural economy. Acreage reduction programs initiated in the U.S. and renewed buying by major importing countries are both expected to reduce grain inventories considerably thereby providing the needed incentive and strengthening in crop prices required to stimulate increased fertilizer consumption.



The sour gas processing plant and sulphur block at Ram River with the prilling tower and sulphur handling facilities in the foreground.

## HEAVY OIL AND TAR SANDS

Canterra operates two large scale pilot projects—one located in the Athabasca tar sands of northeastern Alberta and the other northwest of North Battleford, Saskatchewan. Both projects are long-term ventures and are designed to develop recovery processes that are technically and economically viable for Canterra's reserves in the two areas. Ongoing cost efficiency studies at both pilots have resulted in significant savings during 1982. Also, submissions have been made to both the Provincial and Federal Governments recommending a fiscal regime to encourage exploitation of Canada's heavy oil and tar sands potential. The results of these efforts should be known in 1983.

The Athabasca pilot project is located on a 19 770 hectare lease (Canterra—51 percent) located about 48 kilometres northeast of Fort McMurray. The lease contains approximately 1 700 million cubic metres of bitumen in place. Of this total, about 900 million cubic metres lie in an area which is surface mineable and about 800 million cubic metres lie in an area which is recoverable using steam in-situ recovery processes such as that being tested by the pilot project. The pilot, which is testing a proprietary modified steam drive recovery process (developed by Canterra and its partner), was started-up in December 1981. The results to date are very promising and the pilot's bitumen production is expected to reach 120 cubic metres per day by the end of 1983. An application for funding assistance is pending with the Alberta Oil Sands Technology and Research Authority (AOSTRA) which if approved could result in AOSTRA acquiring a working interest in the pilot and funding its respective share of expenditures.

The North Battleford pilot (Canterra—33½ percent) is located on joint interest lands in which several pools with significant reserves have been identified on a preliminary basis. An evaluation of the total reserves delineated in recent exploration drilling is currently underway. The pilot is testing a cyclic steam stimulation to be followed by a steam drive recovery process. The facility produced about 14 000 cubic metres of oil during 1982.

compared with 7 900 cubic metres produced in 1981, resulting in the pilot's recovery of all of its operating costs for 1982. A new steam generator is being installed which is expected to boost oil production rates to about 120 cubic metres per day by the end of 1983.



Heavy oil "Black Gold" from the Athabasca tar sands





Canterra frontier exploration management team. Left to right: Wally Adolphe, manager, geophysical operations; Hardy Isaak, general manager, land; Bill Kaufmann, vice president, frontier exploration; Emmanuel Malterre, manager, Atlantic district; Albert Jacobs, manager, exploration planning; Mike Haug, division landman, Brian Wagner, manager, Arctic district.



## BUSINESS ENVIRONMENT

Bill C-48, passed by Parliament on March 5, introduced a new system of land tenure to the oil and gas industry for exploring on Canada Lands. The legislation provides for the abolition of existing permits, leases and licenses and for the negotiation of replacement exploration agreements, provisional leases and production licenses.

Also, the Petroleum Incentives Program Act now provides for encouragement of exploration in Canada's frontier areas by a system of incentive payments, with the largest incentives going to Canadian-owned and controlled companies. Canterra qualifies for the maximum level of such incentives and therefore receives an 80 percent reimbursement of its eligible frontier exploration expenditures.

The Company invested more than \$119 million (\$37.8 million net) on the frontier exploration program in 1982.

## Land

In response to the legislative changes and to meet the Company's objectives, Canterra surrendered all of the Company's interest in 4.3 million gross hectares of Canada Lands during 1982. The areas were surrendered due either to technical unattractiveness or to their location in an environment which, given current technology, would not allow drilling. More attractive holdings on Canada Lands were negotiated into new Exploration Agreements so that Canterra now holds interests in 11.6 million gross hectares of Canada Lands in "frontier" areas (2.5 million net hectares). The Company will now be a participant in some 37 Exploration Agreements, through farmin or working interest ownership.

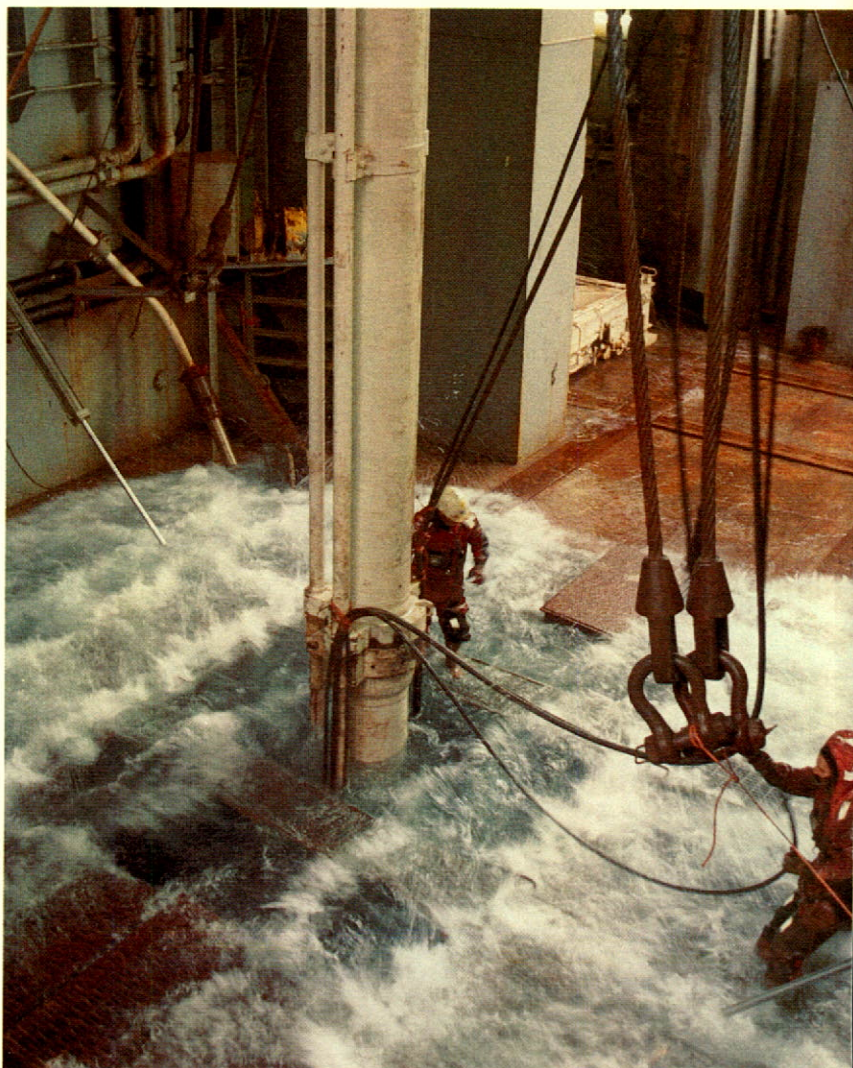
In addition, the Company concluded eight farmin agreements on frontier lands during 1982 which will enable Canterra to acquire an interest in some 2.5 million gross hectares mostly in the southern portion of Canada's east coast. The Company will earn interests in these lands through participation in 21

### CANTERRA LAND HOLDINGS - FRONTIER AT YEAR END 1982 AND 1981

(Thousands of Hectares)

Area Name	1982		1981	
	Gross	Net	Gross	Net
Arctic	353*	82*	2 516	421
Beaufort	605	187	2 559	1 590
NWT/Yukon	424	292	445	291
Labrador Sea	10 148	1 942	11 334	2 626
Grand Banks	26	3	—	—
Nova Scotia	59	4	—	—
Total	<u>11 615</u>	<u>2 510</u>	<u>16 854</u>	<u>4 928</u>

\* Excludes Magnorth Petroleum lands (703 575 gross hectares in 1981). Canterra has a 14.615 percent interest in Magnorth Petroleum, but not in that company's land holdings



Action takes place in the moonpool as the riser is run for the Raleigh well.



earning wells, with options to participate in a further eight wells over a period of several years. Another farmin agreement, concluded in 1981, will see the Company participate in four wells in the Nova Scotia offshore area to earn an interest in a 3.8 million hectare block.

This aggressive exploration initiative in prospective frontier basins was supported by a technical data gathering project which was of a scope and magnitude unprecedented in the history of Canterra or its predecessor companies.

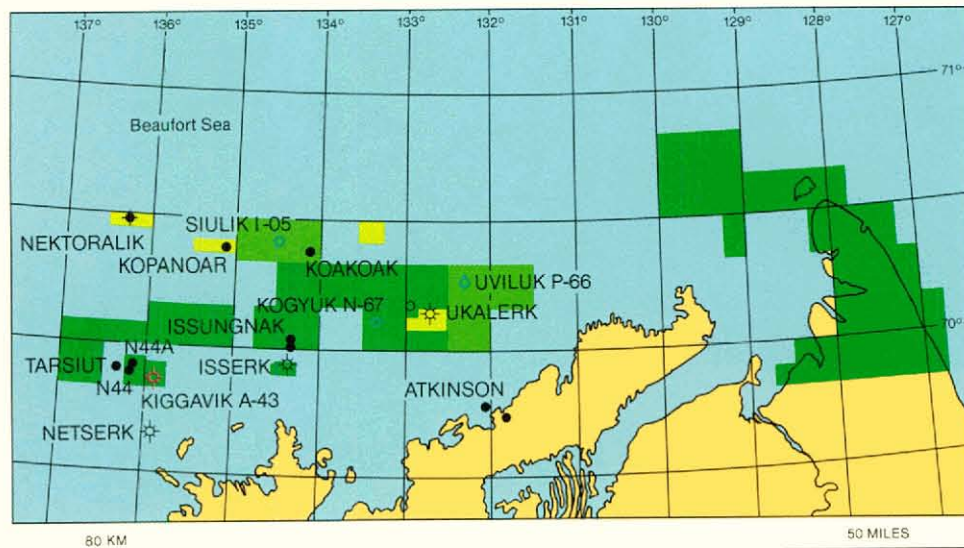
### EXPLORATION

The Company conducted four crew-months of marine seismic operations this past summer off Canada's east coast which resulted in the acquisition of more than 10 000 kilometres of marine seismic data. Another 115 000 kilometres of seismic was

acquired through third-party operations, through farmins, from government open files or by purchase. This effort substantially increased Canterra's data base in selected prospective areas, particularly in the southern portion of the east coast region.

### BEAUFORT SEA

Canterra joined in the drilling of three delineation wells on the Tarsiut structure in 1982. Participation in Tarsiut N-44 fulfilled the terms of a farmin commitment which earned the Company three percent in the well and surrounding acreage. The N-44 well may have the capability of sustained production rates of up to 560 cubic metres of oil per day. The Tarsiut N-44A well was drilled directionally to a true vertical depth of 2 352 metres. Oil was tested in two sands. A third delineation well, Kiggavik A-43, 11 kilometres east of N-44,



#### BEAUFORT SEA

- CANTERRA INTEREST LANDS    ■ LANDS IN WHICH CANTERRA MAY EARN AN INTEREST
- CDCOG NET PROFITS INTEREST    ● 1982 WELLS—RED    ○ FUTURE DRILLING—BLUE
- ★ SIGNIFICANT DISCOVERIES—BLACK    ○ LOCATION    ● OIL WELL    ★ OIL AND GAS WELL
- ⊙ GAS WELL    ⊙ DRY AND ABANDONED    ⊙ DRILLING    ⊙ SUSPENDED

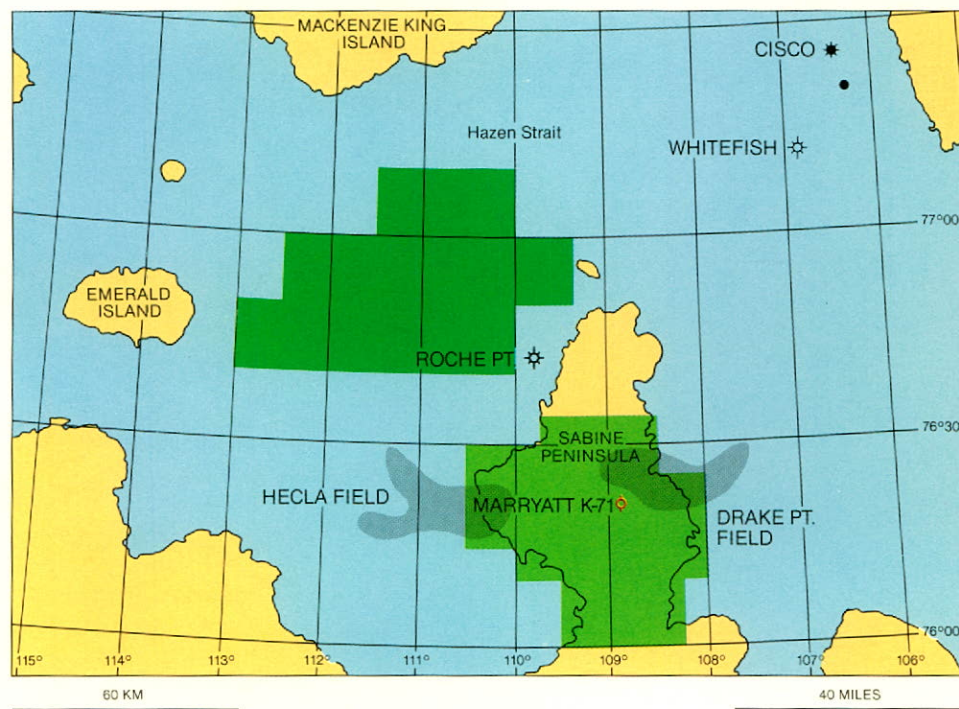
was drilled to a total depth of 3 511 metres and tested gas at rates up to 439 000 cubic metres per day.

The Uviluk P-66 wildcat well was drilling at year end. This 5 000 metre test is situated 20 kilometres northeast of the Ukalerk discovery well and will earn Canterra a 4.04 percent interest under a farmin agreement involving 105 000 hectares.

An agreement has been reached on farmin terms involving lands on the Siulik structure located between the Kopanoar and Koakoak discoveries. Pending finalization of 1983 drilling plans, a wildcat is planned for the Siulik structure.

## ARCTIC ISLANDS

In 1982, farmin negotiations were completed for a land block in the central Sabine Peninsula of Melville Island. By funding 20.7 percent of the cost of a four-well exploration program, Canterra will earn a 10.3 percent interest in a 313 000 hectare area. The first of four earning wells was spudded at Marryatt K-71. Current plans for 1983 call for completion of this wildcat, projected to be drilled to 5 100 metres, and for at least one further deep test.



### ARCTIC EXPLORATION AGREEMENTS

- CANTERRA INTEREST LANDS    ■ LANDS IN WHICH CANTERRA MAY EARN AN INTEREST
- 1982 WELLS—RED    FUTURE DRILLING—BLUE    SIGNIFICANT DISCOVERIES—BLACK
- LOCATION    ● OIL WELL    ★ OIL AND GAS WELL    ☆ GAS WELL    ☆ DRY AND ABANDONED
- ◇ DRILLING    ⦿ SUSPENDED



## LABRADOR SEA

In the southern Davis Strait, offshore Baffin Island, Canterra et al Raleigh N-18 was spudded August 1 in 339 metres of water by the dynamically-positioned drillship Petrel in an area of extremely strong ocean bottom currents and within "iceberg alley". The Company, operating for the Baffin-Labrador Group, drilled the well in only 64 days, establishing itself as an offshore operator with a credible, experienced team.

The Raleigh structure was drilled to a total depth of 3 858 metres to test the Paleocene sands which were found to contain gas and condensate at the Hekja 0-71 well. The sands were encountered at Raleigh at a depth of 3 475 metres, but were found to contain water.

On the Labrador Shelf, three drillships under contract to the Labrador Group experienced a disappointing 1982 operating season: Pothurst P-19 was spudded July 13 and suspended operations on October 22 at a depth of 3 843 metres, above the objective formation; Rut H-11 drilled down to 3 527 metres in 1981 and suspended operations that year with over 1 400 metres of open hole, was subsequently re-entered on 1982 July 24, and drilled down to 4 093 metres where it was suspended short of the target depth. The hole had to be side-tracked and redrilled from a depth of 2 300 metres. Finally, Corte Real P-85, spudded in October 1981, was drilled to 3 948 metres and suspended for the season, several hundred metres above its first objective. Current plans call for the re-entry of all three wells in 1983. Canterra has an average of eight percent interest in the structures.

## GRAND BANKS

In 1982 Canterra and partners reached a farmin agreement in the Avalon basin area of the Grand Banks.

The first well, Mobil et al Linnet E-63, was abandoned at a depth of 4 520 metres without encountering hydrocarbons. The drilling rig, SEDCO 706, then proceeded to spud North Dana I-43 in December and is currently drilling. The third well, Bonanza M-71, was abandoned early in 1983.



400 KM 300 MILES

### SOUTHERN DAVIS STRAIT, LABRADOR SHELF AND GRAND BANKS

- CANTERRA INTEREST LANDS
- LANDS IN WHICH CANTERRA MAY EARN AN INTEREST
- 1982 WELLS—RED FUTURE DRILLING—BLUE
- SIGNIFICANT DISCOVERIES—BLACK ○ LOCATION
- OIL WELL ★ OIL AND GAS WELL ☼ GAS WELL
- ⊖ DRY AND ABANDONED ⊕ DRILLING ⊗ SUSPENDED

## NOVA SCOTIA OFFSHORE

Canterra participated in the drilling of PEX et al Banquereau C-21 and North Banquereau I-13 under a farmin agreement whereby the Company will earn a six percent interest. The results of tests at Banquereau C-21 were encouraging with gas and condensate, but tests in North Banquereau I-13 failed to recover any hydrocarbons. In 1983 Canterra plans to participate in the drilling of a deep test, S.W. Banquereau F-34.

Canterra has concluded a substantial farmin agreement involving seven Exploration Agreements that Shell Canada Resources Ltd. operate on the Scotian Shelf. Under previous agreements with other companies on essentially the same acreage, Canterra is

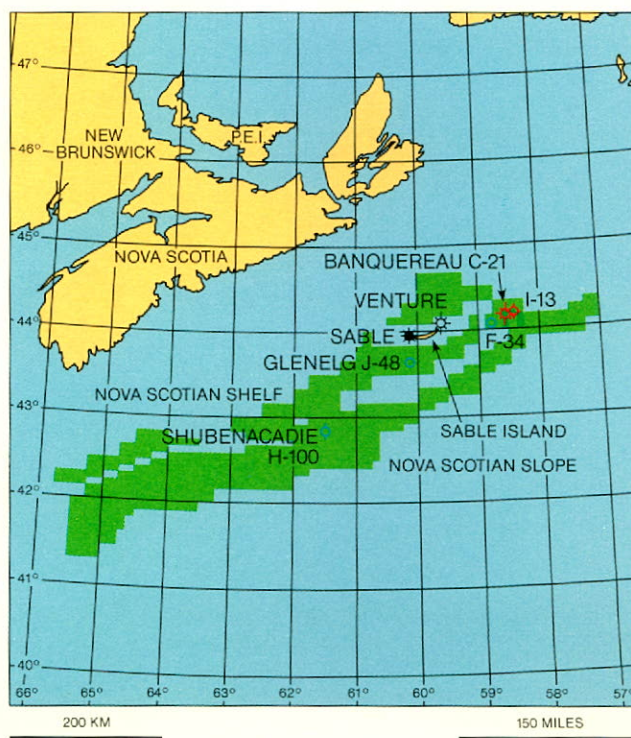
committed to fund 30 percent of nine wells in order to earn a 15 percent interest in 1.9 million hectares in the general Sable Island area.

On the Scotian Slope, Canterra is currently participating in Shubenacadie H-100 drilling in 1467 metres of water with the dynamically-positioned SEDCO 709 semi-submersible drilling platform.

### EXPLORATORY WELLS

(At year end 1982)

Well Name	Cost Interest %	Working Interest %	Net Well	Result/Status
<b>Arctic District</b>				
Gulf et al E. Tarsiut N-44	5.95	2.97	.03	Oil
Gulf et al E. Tarsiut N-44A	2.97	2.97	.03	Oil
Gulf et al Kiggavik A-43	2.97	2.97	.03	Gas
Dome et al Uviluk P-66	5.24	4.04	.04	Drilling
Pan Arctic et al Marrayatt	20.67	10.33	.10	Drilling
<b>Atlantic District</b>				
Canterra Raleigh N-18	51.70	62.10	.62	D & A
Pothurst	8.20	12.65	.13	Dr/Sus
Rut	8.20	12.65	.13	Dr/Sus
Corte Real	6.15	9.48	.09	Dr/Sus
Linnnet	20.00	20.00	.10	D & A
Bonanza	20.00	20.00	.10	Drilling
N. Dana	20.00	10.00	.10	Drilling
Banquereau C-21	12.00	6.00	.06	Gas
N. Banquereau	6.00	6.00	.06	D & A
Schubenacadie	25.00	12.50	.12	Drilling
<b>Total:</b> 15 wells (175 net)				
			2 Oil (.06 net)	
			2 Gas (.09 net)	
			3 Dry (.78 net)	
			8 Drilling or suspended at year end (.82 net)	



### NOVA SCOTIA SLOPE AND SHELF

- CANTERRA INTEREST LANDS
- LANDS IN WHICH CANTERRA MAY EARN AN INTEREST
- 1982 WELLS—RED      FUTURE DRILLING—BLUE
- SIGNIFICANT DISCOVERIES—BLACK      ○ LOCATION
- OIL WELL      ★ OIL AND GAS WELL      ☼ GAS WELL
- ◇ DRY AND ABANDONED      ◊ DRILLING      ◐ SUSPENDED



## BUSINESS ENVIRONMENT

During 1982 a downturn in exploration activity occurred in the United States. Rig utilization, which had reached an all-time high of 4 530 during December of 1981, dropped to a low of 2 379 during the month of October. A seasonal recovery to 2 768 active rigs occurred during the fall/winter of 1982. The rig activity has since declined drastically to the point where only 2,000 were active at the end of March 1983. The decrease in activity was a direct result of the reduction in the current price of oil, the development of surplus gas in almost every active basin, and the continuing increase in exploration finding costs.

Canterra concentrated its exploration expenditures on the most attractive prospects which met its economic criteria under a reduced oil price scenario. This resulted in an overall decrease in capital spending. During the year the Company spent \$43.4 million on oil and gas exploration and production in the United States.

Canterra also optimized the production of its current reserves, particularly in the Williston Basin.

### DRILLING STATISTICS

#### Working Interest

	Exploratory Wells		Development Wells		Total	
	Gross	Net	Gross	Net	Gross	Net
Oil	10	(3.7)	6	(0.6)	16	(4.3)
Gas	2	(0.5)	6	(.09)	8	(1.4)
Abandoned	16	(4.2)	5	(2.0)	21	(6.2)
Drilling/ Suspended (at year end)	<u>1</u>	<u>(0.3)</u>	<u>1</u>	<u>(0.2)</u>	<u>2</u>	<u>(.5)</u>
Total	<u>29</u>	<u>(8.7)</u>	<u>18</u>	<u>(3.7)</u>	<u>47</u>	<u>(12.4)</u>

#### Royalty Interest

##### Exploratory Wells

Oil	14
Gas	1
Abandoned	23
Drilling/Suspended (at year end)	<u>4</u>
Total	<u>42</u>



MAJOR PRODUCING AREAS, U.S.A.

☼ GAS PRODUCTION ● OIL PRODUCTION

## Land

Canterra acquired approximately 5 000 net hectares of new lands in the United States during 1982. The most significant acquisition was 2 105 net hectares in the **Ellwood Ranch** prospect in West Texas. The Company's present land holdings, by state, are shown in the following table:

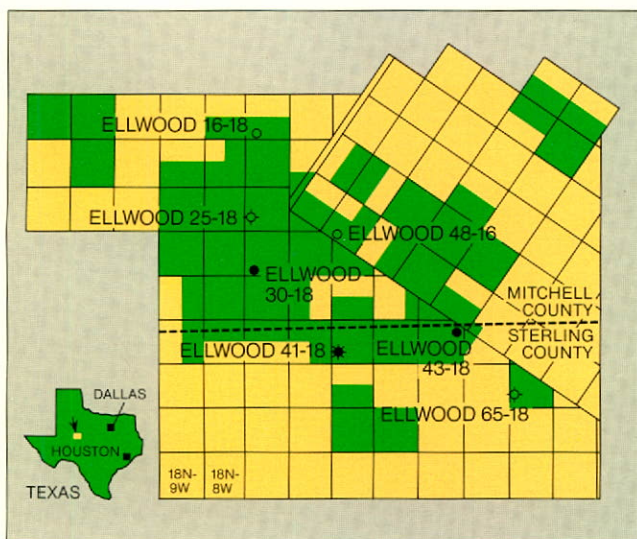
State	1982		1981	
	Gross	Net	Gross	Net
Kansas	1	1	1	1
Louisiana	14	3	10	2
Montana	782	223	821	236
North Dakota	194	112	327	149
Nebraska	35	17	33	16
South Dakota	5	2	5	2
Texas	27	7	19	5
Wyoming	20	5	20	5
<b>Total</b>	<b>1 078</b>	<b>370</b>	<b>1 236</b>	<b>416</b>

## EXPLORATION

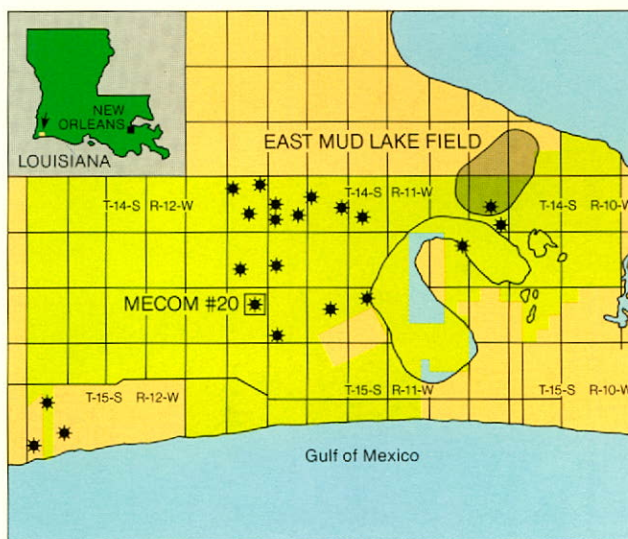
In Louisiana, Canterra participated in two gas discoveries, one each in the **Mecom Ranch** and **Comite**. The Comite well, Eisworth #1, in which the Company has a 20.5 percent interest, will go on production in mid-1983.

In the **Ellwood Ranch** in West Texas, in which Canterra has a 33 percent interest in the exploratory tests and a 25 percent working interest in future development, three exploratory tests were successful. Two, Ellwood 30-18 and Ellwood 43-18, were completed as oil wells, the other, Ellwood 41-18, as a gas producer. Additional exploratory tests will be drilled on this acreage with development of the discoveries to be undertaken as soon as adequate production information is available.

In the Montana part of the **Williston Basin**, the Bahls test, in which the Company has a 50 percent interest, was completed as an oil discovery.



ELLWOOD RANCH, TEXAS



JOYCE TRACT-MECOM AREA, LOUISIANA

- CANTERRA INTEREST LANDS      ✪ SIGNIFICANT DISCOVERIES—BLACK
- LOCATION      ● OIL WELL      ✪ OIL AND GAS WELL      ✪ GAS WELL      ✪ DRY AND ABANDONED
- ◊ DRILLING      ♂ SUSPENDED      ◻ LEASES 56092 AND 56093      ✪ 1982 SIGNIFICANT DISCOVERY



Canterra extended its Lonesome Field discovery in the North Dakota part of the basin with an Ordovician Red River oil well, Gajewski 5-18 in which it has a 37.5 percent interest. Other successful Ordovician Red River tests in the field included an oil well, Hovde 1-6 (17.1 percent), and a gas and condensate well, Stenehjem (5.2 percent).

Development continued in the TR/Whiskey Joe fields of North Dakota with two oil wells being completed in 1982. Additional production from the Midale formation was found in this area during the year.

One successful development gas well, Henry Unit #4A (8.4 percent) was drilled in the Henry Unit in Wyoming with an initial production rate of 83 300 cubic metres of gas and 100 cubic metres of condensate a day. Additional development drilling will be carried out in 1983.

## PRODUCTION

Canterra's U.S. oil production increased in 1982 by approximately 35 percent to an average daily rate of 463 cubic metres before royalty, up from 346 cubic metres per day in 1981. Gas production of 0.312 million cubic metres per day was up nearly five percent. The average sales price of oil and gas liquids was lower by about 10 percent because of the worldwide oversupply situation. The average price of gas in 1982 was higher by about 20 percent than that in 1981. The production costs for both products were about one-third higher than in 1981 due to increased maintenance activity on older producing properties.

### U.S. AVERAGE DAILY PRODUCTION

(Before Royalty)

Year	Oil & Gas Liquids	Gas
	Cubic Metres per Day	Thousand Cubic Metres per Day
1982	463	312
1981	346	298

The following table summarizes the production of oil and gas liquids, and gas for 1982, and the average sales prices in effect:

### U.S. OIL AND GAS LIQUIDS SALES VOLUMES AND PRICES

(Yearly)

	1982		1981	
	Thousands of Cubic Metres	Average Sales Price/Per Cubic Metre	Thousands of Cubic Metres	Average Sales Price/Per Cubic Metre
Before Royalty	168	\$250	125	\$275
After Royalty	138		103	

### U.S. GAS SALES VOLUMES AND PRICES

(Yearly)

	1982		1981	
	Millions of Cubic Metres	Average Sales Price/Thousand Cubic Metres	Millions of Cubic Metres	Average Sales Price/Thousand Cubic Metres
Before Royalty	114	\$165	109	\$133
After Royalty	85		79	

## Reserves

Estimated remaining gross proven reserves for the Company's U.S. operations at year end 1982 are summarized in the following table:

### UNITED STATES PROVEN RESERVES

	Oil and Gas Liquids		Gas	
	Million of Cubic Metres		Billions of Cubic Metres	
	Gross	Net	Gross	Net
Proven Reserves at 1982-01-01 <sup>1</sup>	.59	.48	.95	.71
Revisions	0	0	(.21)	(.17)
Discoveries/Extensions	.11	.09	.12	.09
Production <sup>2</sup>	(.17)	(.14)	(.11)	(.08)
Proven Reserves at 1983-01-01	.53	.43	.75	.55

- Opening reserve balances have been adjusted from last year's report to comply with the reserve definition guidelines published by Canadian securities administrators.
- Annual production volumes are estimates made as of October 1. Variances between these estimates and actual production volumes are included in annual revisions.



## BUSINESS ENVIRONMENT

The steel, auto and petro-chemicals industries were especially affected by the economic recession resulting in a seven percent reduction from 1981 figures in coal consumed by eastern U.S. utilities. At the same time, while coal export volumes did not diminish significantly from 1981 levels, the spot market disappeared and contract renewals for the following years were renegotiated at lower volumes and lower prices. But, while markets were deteriorating, productivity improved and unit costs of production were held constant or in some cases reduced. By the end of the year, close to 100 million tonnes of excess, and probably marginal, capacity was shut down in the eastern United States.

## OPERATIONS

The Company continuously adjusted production to sales and maintained a low inventory at about a third of the normal level. Capital spending was restricted to the minimum replacement of production equipment and staff was reduced by 200. Shipments for the year were 924 000 tonnes compared with 1 248 000 tonnes in 1981, down 35 percent.

Despite the adverse economic conditions, the coal operations generated a cash flow of \$3.6 million.

As a result of negotiations carried out in 1982, shipments from Canterra should improve slightly in 1983.

If the signs of a market improvement, apparent at the beginning of 1983, gather strength during the second half of this year, the outlook for Canterra's coal operations should be considerably brighter in 1984.

### COAL SHIPMENTS, SALES PRICES & OPERATING EXPENSES

(Yearly)

	1982	1981	% change
Shipments (tonnes)	<b>924 000</b>	1 248 000	-35
Sales prices	<b>\$46.86</b>	\$45.48	+ 3
Operating expenses	<b>\$43.72</b>	\$40.10	+ 9

### COAL RESERVES

(Metric Tonnes)

Proven Clean Recoverable Reserves:	1982	1981
Reserves at 1982-01-01	<b>60 351 000</b>	61 786 000
Purchases	<b>965 900</b>	1 414 000
Revisions at prev. est.	<b>(5 079 000)</b>	(1 700 000)
Sales	<b>(883 100)</b>	(1 149 000)
Reserves at 1983-01-01	<b>55 354 800</b>	60 351 000

### LAND HOLDINGS

	1982	1981
Gross Surface Hectares	<b>14 742</b>	15 870



Underground operations at Canterra's David and DiAnne mine in Pennsylvania, U.S.A.





Survival courses which were initiated by Canterra prior to the 1982 offshore drilling season, included water and life raft activities in survival suits.

## ENVIRONMENTAL AFFAIRS

Canterra's responsibility for environmental protection is being addressed in our conventional and frontier operations through numerous monitoring, conservation and reclamation programs. Air, water, soil and vegetation quality are monitored regularly at all of the Company's production facilities to ensure appropriate protection. Canterra is also an active participant in long-term, multi-disciplinary studies on the effects of depositions in the vicinity of the Ram River sour gas plant and the Windfall sulphur handling operation. The Company strives to achieve the minimum practical level of sulphur emissions in its sour gas operations and, to this end, has recently employed a new and more efficient catalyst to increase sulphur recovery at Ram River.

Canterra's western Canadian activities include seismic, drilling and pipeline construction in the Rocky Mountain foothills, the boreal forest and agricultural areas. Particular emphasis is placed on site selection and timing of development to minimize impact on the diverse ecosystems in these areas.

Canterra's involvement in the offshore frontier has resulted in its participation in numerous environmental and socio-economic programs for Nova Scotia, Newfoundland, Labrador, Baffin Island and the Beaufort Sea.

## COMMUNITY RELATIONS

Two areas of the Company's operations received special attention in 1982—Ram River/Rocky Mountain House and the southern Baffin Island communities.

Because of the change of name and ownership and a corporate desire for a higher profile in an area where Canterra is the major employer, the Company held an open house in Rocky Mountain House and a media tour of the Ram River plant.

As operator for the Baffin Labrador Group, Canterra was directly responsible for the successful completion of the Raleigh project. The Company provided local employment, training and business opportunities to the South Baffin communities while, at the same time, ensuring social concerns and community



Inuit youngsters show curiosity and interest at a Canterra open house in a South Baffin community.



needs were met through effective community consultation and environmental protection.

Community visits and dialogue continued with the main southern Baffin Island communities during the year. Drilling operations in the southern Davis Strait were discussed. A tour of the drillship and base camp facilities was organized for the community mayors and members of the Natsiq Committee, a locally appointed advisory group representing four communities.

These activities are in keeping with the Company's policy of open two-way communications between Canterra and its publics and support for the communities where it operates.

Once again Canterra gave financial support to a wide spectrum of organizations with particular emphasis on the performing arts and education. Donations for major capital developments went to Calgary's Performing Arts Centre, now under construction and the Energy Industry Prehistoric Park, which is nearing completion. Other major donations included the sponsorship of ten Canadian 4-H delegates to the International 4-H Conference in Washington, D.C., the Southern Alberta Opera Association's matinee for school children, the Western Canada Games, and a chair of Petroleum Engineering at the University of Calgary in addition to the United Way.

## **CANADA BENEFITS**

As a 100 percent Canadian company, Canterra has excellent opportunities for exploration on Canada Lands. With these opportunities comes the responsibility to ensure that other parts of the Canadian

economy participate as fully as possible. The commitment by Canterra to Canada Benefits contemplates the employment of Canadians and use of Canadian contractors and suppliers as well as the purchase of Canadian-made goods, supplies and equipment where possible and competitive.

In 1982, the Canada Benefits objectives were best reflected by the Raleigh drilling campaign in the Davis Strait. Substantial efforts were made to provide employment for Canadians on the drillship and supply boats and to place as many as possible of the orders for goods and services with Canadian firms.

## **SAFETY**

Canterra continued to have an excellent safety record in 1982 with 17 of the Company's 18 plants receiving awards from the Canadian Gas Processors' Association and the Petrochemical Safety Council for no lost time accidents. This includes Canterra's major operations at Ram River, Rainbow Lake, Okotoks, Hussar and Nordegg River. Nor were there any lost time accidents aboard the drillship Petrel. Prior to drilling, Canterra instigated training and safety programs for all offshore workers which exceeded government requirements.

## **HUMAN RESOURCES**

1982 was an exciting and productive year for Canterra's Human Resources.

Following the merger, the initial effort was in developing a new and innovative benefits and compensation package for the Company's employees. The new program, which included pensions and savings plans offering alternative options, was extremely

well received by Canterra's staff, and the film and brochure material used to introduce the complete plan to employees won a top award for creative excellence in a competition in New York. This was a first for a Canadian company.

Throughout the year, the emphasis was placed on standardizing human resources approaches. The development of a new Human Resources Management Policy manual and the establishment of internal equity in compensation were important in bringing

together the three companies. Canterra also emphasized the development of employee training plans, objective setting guidelines and employee evaluation programs.

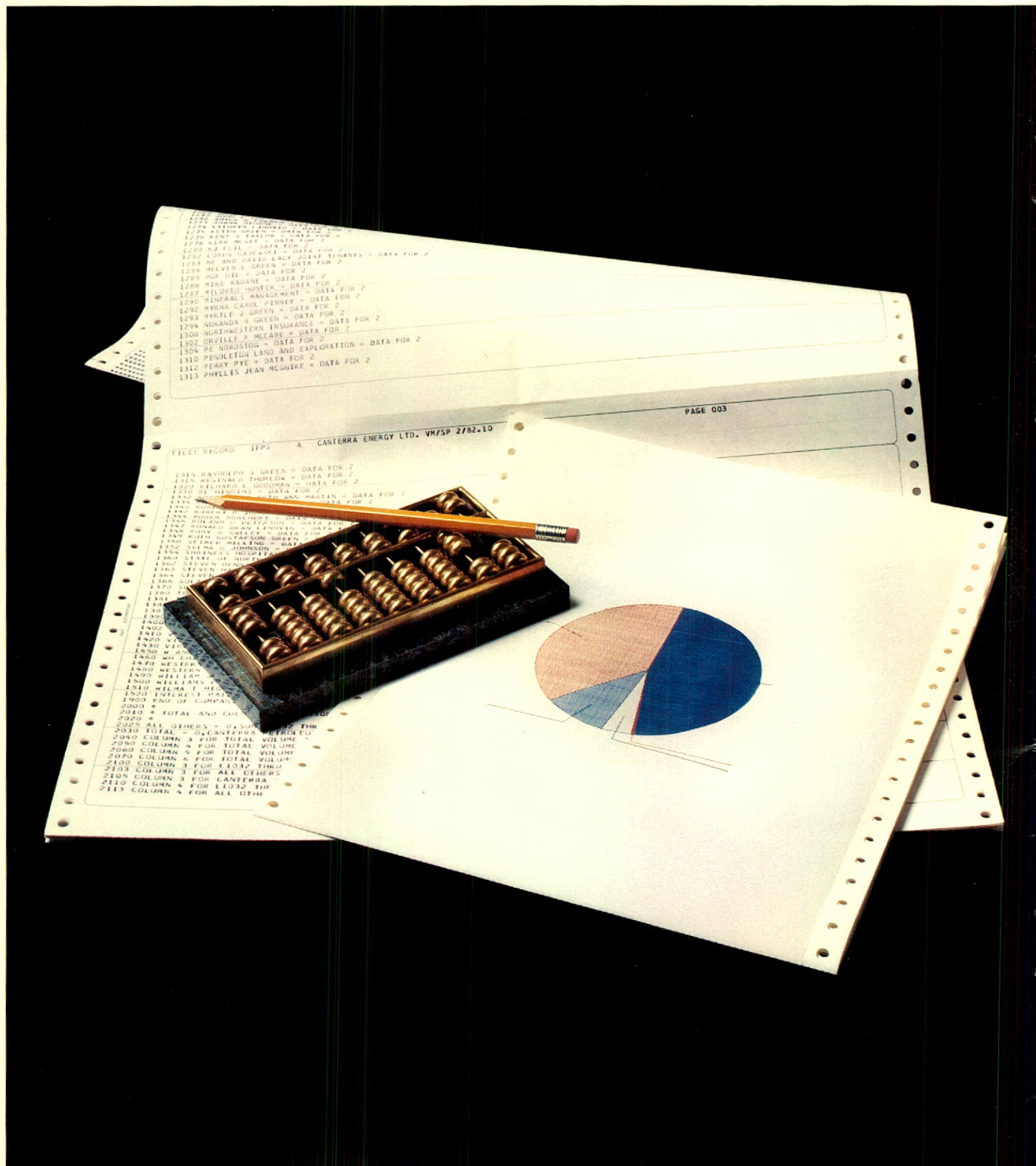
At the end of the year, Canterra had 1,460 employees of whom 740 were at head office in Calgary, 385 in the United States and 335 in the field locations in western Canada.

Canterra recognizes the contribution of its employees and is strongly committed to developing this resource for the future.



Canterra believes in protecting the environment in which it operates.





Today's business graphics generated by computer are a far cry from calculations done on an abacus.

## FINANCIAL

The attached summarized financial information is presented on the same basis that Canada Development Corporation presents the financial results of the oil, gas and sulphur sector of its operations in its 1982 annual report. Accordingly, applicable intercompany transactions have been eliminated.

Presented on the above basis Canterra reported a loss of \$14.4 million in spite of high interest rates in 1982 and revenues below budget. The cash flow in 1982 was \$129.6 million as calculated below:

	<u>Millions</u>
Loss after tax and intercompany eliminations .....	\$(14.4)
Deduct:	
Accrued earnings of unconsolidated company .....	(6.6)
Add:	
Deferred income taxes .....	31.1
Depletion and depreciation .....	119.5
Cash flow .....	<u>\$129.6</u>

Operating cash flow before interest was \$360.9 million.

During 1982 a number of material factors affected financial performance.

Both the Federal and Alberta Governments improved the fiscal regime for the oil and gas industry. The main changes assisting Canterra relate to royalties on high productivity wells and on improvement in the inequitable treatment of old tertiary recovery schemes.

In 1982, Canterra undertook a systematic optimization of its royalty and tax positions. One result of these actions was the recovery of the \$16.1 million of income taxes paid in 1981.

Gross revenues for the year were \$776.2 million. Total cash payments to governments amounted to \$238.9 million during 1982. This amount is represented by \$179.5 million of royalties, \$58.2 million of petroleum gas revenue and windfall profit taxes and \$1.2 million of current income taxes. These government levies

exceeded the \$127.9 million received as petroleum incentive payments and other government funding during the year by \$111.0 million. Deferred income taxes of \$31.1 million were also provided for 1982.

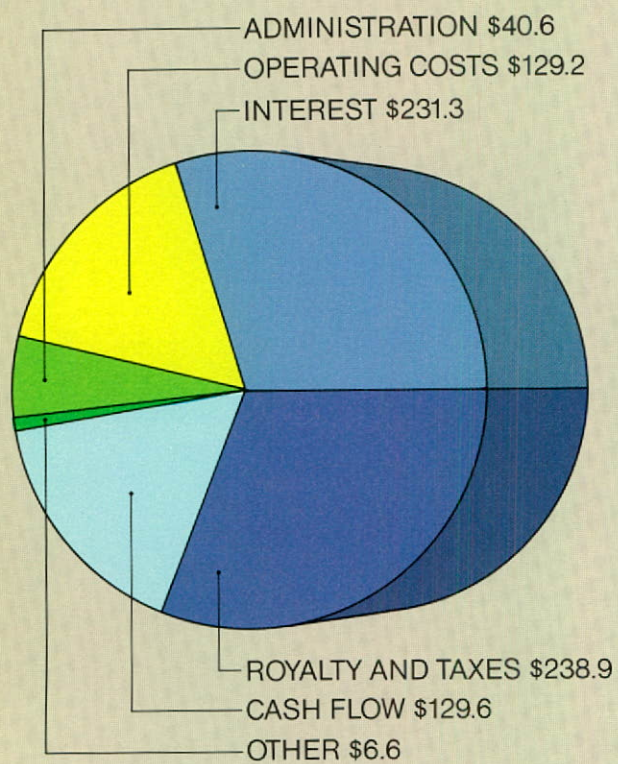
Interest was the largest component of Canterra's expenses in 1982 reflecting the high interest rates experienced during the year and were \$231.3 million. Operating costs in 1982 were \$129.2 million or 17 percent of gross revenues and administrative costs amounted to \$40.6 million. Depletion and depreciation, which are non-cash expenses, amounted to \$119.5 million.

Capital expenditures in 1982 were \$337.9 million before capitalized interest and administration of \$132.3 million. Net capital expenditures were \$210.0 million after petroleum incentive payments and other government payments in 1982. This amount of capital expenditures is substantially lower than our initial budget for the year and reflects both Canterra's overall financial constraints and general industry trends.

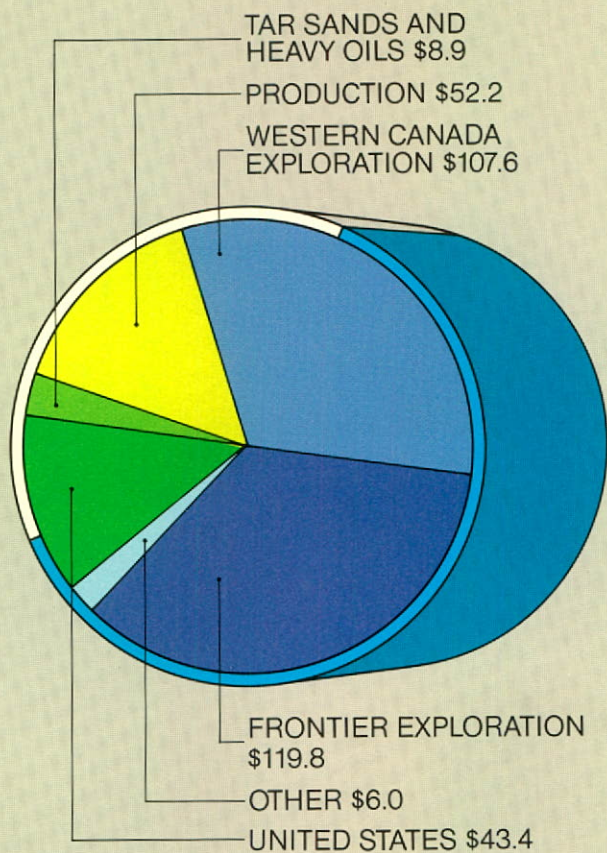


Canterra's finances depend on its oil and gas production





1982 CASH FLOW ALLOCATION  
(millions of dollars)



1982 CAPITAL EXPENDITURES  
(millions of dollars)

- FUNDED BY THE CANTERRA GROUP \$210.0
- FUNDED BY P.I.P. AND OTHER INCENTIVES \$127.9

ABOVE CHART REFLECTS CAPITAL EXPENDITURES BEFORE CAPITALIZED INTEREST AND ADMINISTRATION OF \$132.3 MILLION.



**CANTERRA ENERGY LTD.****Income Summary**

Year Ended 1982 December 31

	(thousands)
Gross Revenues .....	\$ 776,200
Royalties .....	<u>179,500</u>
Net Revenues .....	<u>596,700</u>
Expenses	
Operating .....	129,200
Interest .....	231,300
Administrative .....	40,600
Depletion and Depreciation .....	<u>119,500</u>
	<u>520,600</u>
Income Before Income and Other Taxes .....	76,100
Income and Other Taxes .....	<u>90,500</u>
Loss .....	<u><u>\$ 14,400</u></u>

**Balance Sheet Summary**

1982 December 31

	(thousands)
Current Assets .....	\$ 257,000
Fixed and Other Assets .....	<u>2,691,300</u>
	<u>\$2,948,300</u>
Current Liabilities .....	\$ 148,800
Long Term Debt .....	2,205,500
Deferred Income Taxes .....	110,700
Shareholders' Equity .....	<u>483,300</u>
	<u><u>\$2,948,300</u></u>

(Unaudited)



## Directors

William D. Clark  
President  
Clark, Young & Associates  
Calgary, Alberta

John B. Hague  
Chairman of the Board  
Canterra Energy Ltd.  
Executive Vice President  
Canada Development Corporation  
Toronto, Ontario

H. Anthony Hampson  
President and  
Chief Executive Officer  
Canada Development Corporation  
Toronto, Ontario

Bernard F. Isautier  
Vice Chairman of the Board  
President and  
Chief Executive Officer  
Canterra Energy Ltd.  
Calgary, Alberta

D. Carlton Jones  
President  
Carlton Resource Management Ltd.  
Calgary, Alberta

John R. McCaig  
Chairman of the Board and  
Chief Executive Officer  
Trimac Limited  
Calgary, Alberta

John O. O'Brien\*  
President  
J. O'Brien Petroleum Inc.  
Calgary, Alberta

H. Gordon Pearce  
Partner in the economic  
consulting firm of  
Foster Research  
Calgary, Alberta

Stanley G. B. Pearson  
President  
S. G. B. Pearson Holdings Ltd.  
Calgary, Alberta

Neil F. Phillips, Q.C.  
Partner in the law firm of  
Phillips & Vineberg  
Montreal, Quebec

John D. Redfern  
President and  
Chief Executive Officer  
Canada Cement Lafarge Ltd.  
Montreal, Quebec

Allan F. Waters  
President  
CHUM Limited  
Toronto, Ontario

Gordon D. deS. Wotherspoon  
Chairman  
Eaton/Bay Trust Company  
Toronto, Ontario

## Audit Committee

William D. Clark (Chairman)  
H. Gordon Pearce  
Neil F. Phillips, Q.C.  
Allan Waters

## Executive Committee

John B. Hague (Chairman)  
Bernard F. Isautier  
D. Carlton Jones  
Stanley G. B. Pearson  
John O. O'Brien

## Compensation Committee

D. Carlton Jones (Chairman)  
John R. McCaig  
John B. Hague  
John D. Redfern  
Gordon D. deS. Wotherspoon

\*Following his retirement from the Company, John O'Brien ceased to be Chairman of the Board of Directors, but continues as a director of Canterra. As of 1983 March 25, John Hague is Chairman of the Board with Bernard Isautier, Vice Chairman.

## Officers

John B. Hague  
Chairman of the Board

Bernard F. Isautier  
Vice Chairman of the Board  
President and  
Chief Executive Officer

John H. Currie  
Senior Vice President  
Administration, Oil Sands  
and Heavy Oils

Michael E. Hriskevich  
Senior Vice President  
Corporate Affairs and  
Special Projects  
President  
U.S. Oil and Gas Subsidiary

T. Sean Ahern  
Vice President  
Finance

Jean M. Faber  
Vice President  
Western Canada Exploration

William F. Kaufmann  
Vice President  
Frontier Exploration

Kenneth J. MacRae  
Vice President  
Oil Sands and Heavy Oils

Henri Martial  
Vice President  
Production

Frank Ricciuti  
Vice President  
Corporate Development

D. Michael Stewart  
Vice President  
Marketing

W. Stewart Wright  
Corporate Secretary and  
General Counsel

Lawrence M. MacLeod  
Assistant Secretary

Clarence E. Glessing  
Controller

Terence A. Heneaghan  
Treasurer

Colin R. Moyes  
Assistant Treasurer

Donald C. Lillie  
Assistant Treasurer

## Auditor

Thorne Riddell  
Chartered Accountants  
205 5th Avenue S.W.  
Calgary, Alberta

## GLOSSARY

**dehydration**—removal of water from fluid produced from oil and gas wells

**development well**—well drilled for oil and gas within a proven field or area for the purpose of completing the desired pattern of production

**directional drilling**—controlled drilling at a specific angle from the vertical

**discovery well**—an exploratory well that encounters a new and previously untapped deposit; may open new field, locate new and previously unknown producing horizon in an old field

**dry hole**—a well drilled but not cased because it did not encounter any hydrocarbon bearing zone or capable of producing uneconomic quantity of oil or gas

**enhanced recovery (EOR)**—an oil recovery technique which is capable of moving oil trapped in the rock pores. The fluid injected to recover this trapped oil can be one of the following: hydrocarbon solvent, CO<sub>2</sub>, surfactant or polymer solutions, caustic agents

**extension**—the reserves credited to a reservoir because of enlargement of its proven area demonstrated by studies and/or exploration drilling

**extension well**—a well which validates a new portion of the productive area of a proven reservoir

**farmee**—operator who is farming in

**farmin**—an agreement whereby an operator earns an interest in another operator's land by carrying out certain work

**farmor**—company that is farming out

**farmout**—an agreement whereby the owner of a lease allows another operator to earn an interest in the lease by doing certain work

**formation**—sedimentary bed or deposit composed of substantially the same minerals throughout and distinctive enough to be considered a unit

**horizon**—distinct layer or group of layers of rock

**infill drilling**—drilling of wells according to a planned pattern and spacing to achieve full production from a new field

**netback**—the amount of revenue left to the producers after the deduction of royalties, taxes, and other operating costs

**NORP**—New Oil Reference Price—the average of international prices for oil landed at Montreal. This price is paid for oil discovered after 1980 December 31, incremental portion of EOR schemes, all experimental schemes and any well not produced for three years or more

**observation well**—well used for observation of reservoir pressure, fluid movement or other phenomena

**option**—the right to acquire a property or another right

**PGRT**—Petroleum and Gas Revenue Tax—imposed by the Federal Government on oil and gas production at the wellhead—currently at approximately 11 percent (12 percent in 1983)

**pilot project**—an oil recovery scheme having a very small areal extent and implemented for the purpose of demonstrating the technical feasibility of a process

**pool**—an underground reservoir containing a common accumulation of oil or natural gas

**proven reserves**—amount of hydrocarbon which is economically recoverable, using all technically feasible and economically practical recovery methods.

**reserves**—that amount of a substance which is economically recoverable through drilled wells using known and tested recovery techniques

**reservoir**—a body of porous rock containing an accumulation of water, crude oil or natural gas

**resources**—that amount of a substance which is technically recoverable from a reservoir using known and tested recovery techniques and can be converted into a saleable commodity without any consideration for marketing or economic constraints

**shut-in**—to close down a producing well temporarily for lack of market, repair, cleaning out, or building up reservoir pressure

**sour gas**—natural gas containing hydrogen sulphide or other sulphur compounds which must be removed before gas can be used for commercial or domestic purposes

**steam injection**—method of enhanced recovery where steam is injected into a reservoir to displace the remaining oil into producing well

**step-out well**—well drilled adjacent or near a proven well to ascertain the boundaries of the reservoir

**structure**—subsurface displacement of rock layers caused by folding or faulting which might be capable of acting as a reservoir for oil and/or gas

**testing**—the process of flowing a well and taking measurements of flow rates and pressures

**solvent injection**—method of enhanced recovery where hydrocarbon fluids or chemicals are injected into a reservoir to mobilize and produce the oil

## CONVERSION TABLE

To Convert From	To	Multiply by
metres (m)	feet (well depths)	3.2808
kilometres (km)	miles (distance)	0.6214
hectares (ha)	acres (land)	2.47
cubic metres (m <sup>3</sup> )	thousand cubic feet (mcf) (gas)	0.0353
cubic metres (m <sup>3</sup> )	barrels (oil)	6.29
tonnes (t)	long tons (sulphur)	0.9842
tonnes (t)	short tons (coal)	1.10231





**Canterra Energy Ltd.**

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