



MINERAL AND PETROLEUM EXPLORATION

AUSTRALIA

EMBARGO: 11:30AM (CANBERRA TIME) WED 22 MAR 2000

C O N T E N T S

	<i>page</i>
Notes	2
Summary of findings	3
 TABLE	
1 Private exploration, actual and expected expenditure	7
2 Mineral exploration (other than for petroleum), expenditure and metres drilled	8
3 Mineral exploration (other than for petroleum), expenditure by state and territory	9
4 Mineral exploration (other than for petroleum), expenditure by mineral sought	10
5 Petroleum exploration expenditure	11
6 Petroleum exploration by region	12
 ADDITIONAL INFORMATION	
Explanatory notes	13

- For further information about these and related statistics, contact Sandra Cook on Darwin 08 8943 2171, or Client Services in any ABS office as shown on the back cover of this publication.

NOTES

FORTHCOMING ISSUES

ISSUE (Quarter)

RELEASE DATE

March 2000

21 June 2000

June 2000

20 September 2000



CHANGES IN THIS ISSUE

There are no changes in this issue.



W. McLennan
Australian Statistician

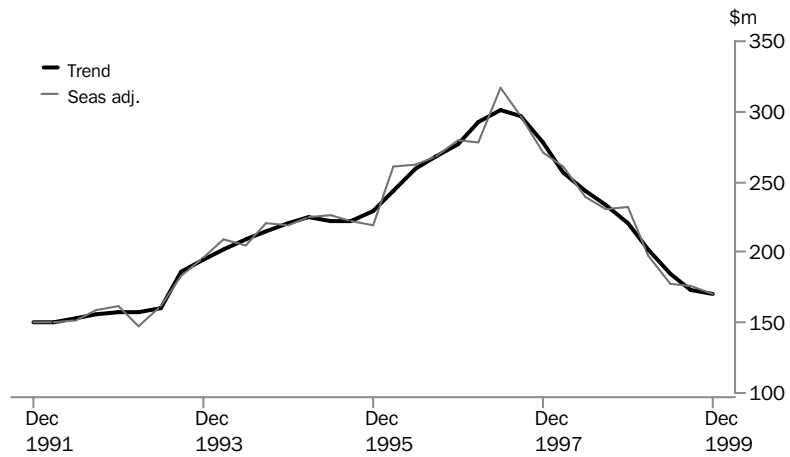
SUMMARY OF FINDINGS

MINERAL EXPLORATION EXPENDITURE (OTHER THAN FOR PETROLEUM)

TREND ESTIMATES

The trend estimate for mineral exploration expenditure has continued to fall, with December quarter 1999 being the tenth consecutive quarter of decline. The estimate is now at the lowest level since the June quarter 1993.

Between the September quarter and the December quarter 1999, the trend estimate fell \$4m to \$170m. This was 23% lower than the estimate of \$220m for the December quarter 1998.



STATES AND TERRITORIES

With the exception of Western Australia where it showed a small increase, the trend estimate for mineral exploration expenditure declined in all states and the Northern Territory in the December quarter. South Australia was down 16% and Queensland down 9% compared to the September quarter 1999.

METRES DRILLED

In line with the fall in expenditure, the trend estimate for total metres drilled for exploration fell by 6% in the December quarter. This was 31% lower than the December quarter 1998.

SUMMARY OF FINDINGS *continued*

DECEMBER QUARTER

In seasonally adjusted terms, exploration expenditure for the December quarter 1999 fell 4% (\$6m) to \$170m.

In original terms, mineral exploration expenditure reported for the December quarter 1999 fell slightly from the September quarter, down 2% to \$177m. The majority of the fall occurred in the Northern Territory (down 23% to \$15m) with Western Australia partially offsetting this fall with a 1% increase to \$109m.

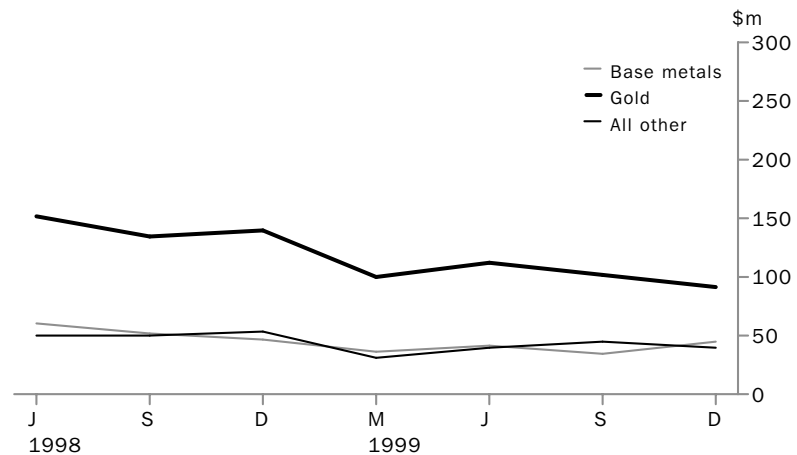
The December quarter 1999 total mineral exploration expenditure was 26% lower than the December quarter 1998.

In the December quarter 1999, the fall in exploration expenditure occurred on production leases (down 8% to \$40m) with an increase of less than one per cent reported for "all other areas".

The fall in expenditure on gold exploration continued in the December quarter 1999, down a further 10% to \$92m. This was 34% lower than the expenditure reported in the December quarter 1998 and the lowest reported expenditure on gold exploration since the June quarter 1993.

Between the September and December quarter 1999, exploration expenditure for base metals (copper, silver-lead-zinc, nickel and cobalt) increased 34% to \$45m.

MINERAL EXPLORATION EXPENDITURE, *Original Series*



SUMMARY OF FINDINGS *continued*

METRES DRILLED

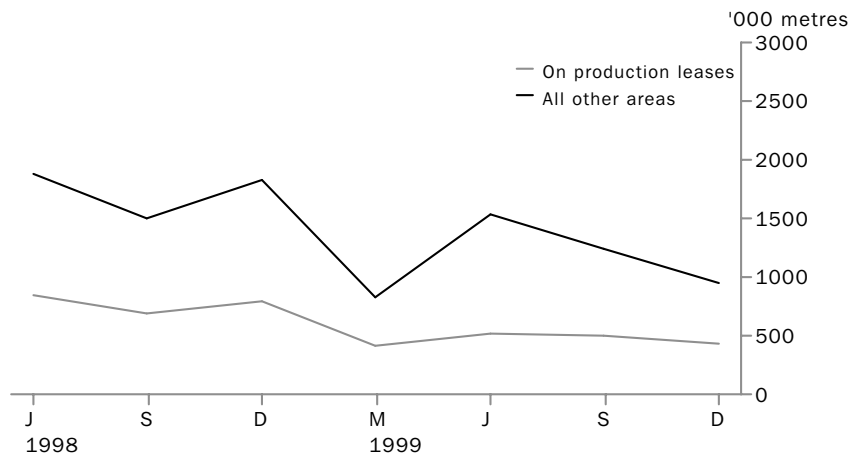
The seasonally adjusted estimate of 1.4 million metres for the December quarter 1999 was 14% lower than for the September quarter and 47% lower than the December quarter 1998 estimate of 2.6 million metres.

In original terms, the 1.4 million metres drilled reported for the December quarter 1999 was down 21% from the September quarter and 47% lower than the December quarter 1998.

Drilling on production leases fell 14% in the December quarter to 0.4 million metres. This was 45% lower than the December quarter 1998.

Drilling on "all other areas" was down 23% to 0.9 million metres from the September quarter and was 48% lower than that reported in the December quarter 1998.

METRES DRILLED, Original Series



SUMMARY OF FINDINGS *continued*

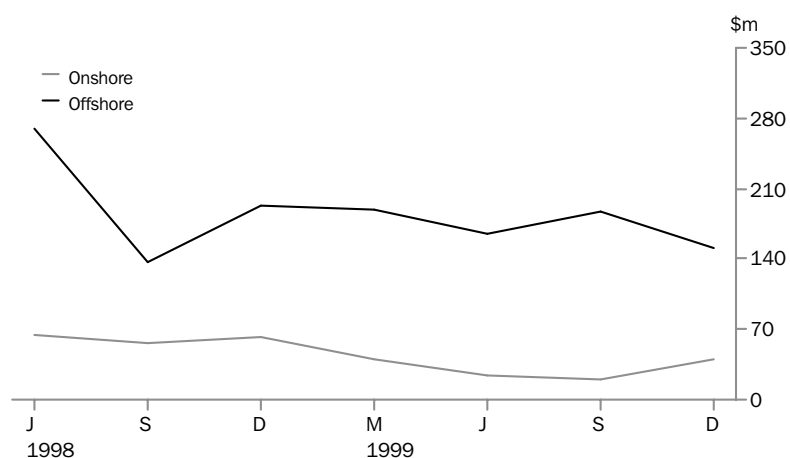
PETROLEUM EXPLORATION EXPENDITURE

OVERVIEW

Reported expenditure on petroleum exploration was \$191m in the December quarter 1999, 25% (\$64m) lower than the December quarter 1998.

Total petroleum expenditure fell from the September quarter 1999 as a result of a 19% (\$36m) fall in offshore expenditure, the majority of which was in drilling expenditure (down \$26m).

Expenditure for onshore exploration doubled in the December quarter to \$41m, with both drilling and other expenditure increasing from the September quarter.



REGIONAL DATA

Regional data for petroleum exploration was unavailable for South Australia and the Zone of Cooperation Area A, for the December quarter 1999.

Of the published regions, both the Northern Territory (down \$24m) and Western Australia (down \$15m) were the main contributors to the fall, while Queensland recorded an increase of \$12m from the September quarter 1999.

PRIVATE EXPLORATION, Actual and Expected Expenditure

Period	MINERAL EXPLORATION.....			PETROLEUM ONSHORE.....			PETROLEUM OFFSHORE.....		
	<i>Actual</i>	<i>Expected(a)</i>	<i>Actual as a proportion of expected</i>	<i>Actual</i>	<i>Expected(a)</i>	<i>Actual as a proportion of expected</i>	<i>Actual</i>	<i>Expected(a)</i>	<i>Actual as a proportion of expected</i>
	\$m	\$m	%	\$m	\$m	%	\$m	\$m	%
1996-1997	1 148.6	808.9	142.0	251.9	206.2	122.2	601.0	446.6	134.6
1997-1998	1 066.8	901.3	118.4	232.3	145.0	160.2	748.9	773.7	96.8
1998-1999	837.8	602.9	138.9	182.3	144.2	126.4	685.4	540.1	126.9
6 months ended December 1998	475.5	299.5	158.7	117.5	71.6	164.2	330.7	246.5	134.1
6 months ended June 1999	362.3	303.4	119.4	64.8	72.6	89.2	354.8	293.6	120.8
6 months ended December 1999	356.9	252.8	141.2	60.9	86.0	70.8	336.7	241.8	139.2
6 months ended June 2000	n.y.a.	284.8	n.y.a.	n.y.a.	69.3	n.y.a.	n.y.a.	395.2	n.y.a.

n.y.a. not yet available

(a) As reported in previous collections. Refer to Explanatory Notes paragraph 13.

MINERAL EXPLORATION (Other than for Petroleum), Expenditure and Metres Drilled

Period	EXPENDITURE.....					METRES DRILLED.....				
	<i>On production leases</i>	<i>On all other areas</i>	<i>Total</i>	<i>Seasonally adjusted</i>	<i>Trend estimate</i>	<i>On production leases</i>	<i>On all other areas</i>	<i>Total</i>	<i>Seasonally adjusted</i>	<i>Trend estimate</i>
	\$m	\$m	\$m	\$m	\$m	'000 m	'000 m	'000 m	'000 m	'000 m
1996-1997	306.1	842.4	1 148.6	..	..	4 453	8 378	12 831	..	..
1997-1998	253.2	813.6	1 066.8	..	..	3 365	7 843	11 209	..	..
1998-1999	199.1	638.7	837.8	..	..	2 404	5 697	8 101	..	..
1998										
March	52.0	168.4	220.4	260.6	256.0	699	1 308	2 007	2 494	2 553
June	53.3	209.3	262.6	239.2	243.5	843	1 885	2 728	2 528	2 392
September	51.5	184.3	235.9	230.7	234.0	690	1 494	2 183	1 984	2 280
December	60.0	179.7	239.6	231.5	220.0	786	1 833	2 619	2 582	2 123
1999										
March	46.0	121.3	167.3	197.8	201.4	412	835	1 247	1 549	1 935
June	41.7	153.3	195.0	177.1	184.1	517	1 534	2 051	1 896	1 740
September	43.8	136.2	180.1	176.6	173.7	504	1 239	1 743	1 582	1 561
December	40.2	136.7	176.9	170.2	169.7	431	948	1 379	1 363	1 475

MINERAL EXPLORATION (other than for Petroleum), Expenditure by State and Territory

	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australia
Period	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
ORIGINAL								
1996-1997	94.1	51.8	160.7	35.1	691.7	26.0	88.9	1 148.6
1997-1998	88.2	43.1	133.2	45.0	660.4	20.7	75.9	1 066.8
1998-1999	65.6	37.0	93.8	41.9	523.1	11.9	64.5	837.8
1998								
March	20.8	10.6	21.5	9.2	142.0	3.7	12.6	220.4
June	18.0	9.6	28.2	12.0	173.4	3.5	17.8	262.6
September	14.2	9.0	22.2	12.6	154.1	2.4	21.2	235.9
December	18.4	11.0	25.0	8.9	157.3	3.0	16.0	239.6
1999								
March	15.6	10.3	20.2	7.6	102.3	3.8	7.6	167.3
June	17.4	6.7	26.4	12.8	109.4	2.6	19.6	195.0
September	14.6	8.2	21.0	6.5	107.9	2.7	19.2	180.1
December	14.8	8.1	21.3	6.7	108.8	2.3	14.8	176.9
SEASONALLY ADJUSTED								
1998								
March	21.9	11.2	27.7	11.3	166.2	3.8	18.5	260.6
June	16.3	9.8	25.4	10.2	157.9	3.1	16.5	239.2
September	15.3	9.6	22.2	13.2	149.1	2.7	18.6	230.7
December	18.2	9.7	22.5	8.5	155.1	3.0	14.5	231.5
1999								
March	16.5	10.9	25.9	9.4	119.9	4.0	11.2	197.8
June	15.7	6.8	23.7	10.8	99.5	2.4	18.2	177.1
September	15.7	8.7	21.1	6.8	104.5	3.0	16.8	176.6
December	14.5	7.1	19.2	6.4	107.3	2.3	13.4	170.2
TREND								
1998								
March	21.1	10.8	29.8	11.1	160.6	3.7	18.9	256.0
June	17.8	10.2	24.7	11.2	158.9	2.7	18.0	243.5
September	16.2	9.9	22.8	10.9	155.0	3.0	16.2	234.0
December	16.5	9.8	23.4	10.3	142.2	3.1	14.7	220.0
1999								
March	16.7	9.4	24.2	9.7	123.6	3.2	14.6	201.4
June	16.0	8.6	23.5	8.9	108.6	3.0	15.5	184.1
September	15.3	7.8	21.6	7.9	102.4	2.7	16.0	173.7
December	15.0	7.2	19.7	6.6	103.4	2.4	15.4	169.7

MINERAL EXPLORATION (other than for Petroleum), Expenditure by Mineral Sought

	<i>Copper, silver-lead- zinc, nickel and cobalt</i>	<i>Gold</i>	<i>Iron ore</i>	<i>Mineral sands</i>	<i>Tin, tungsten, scheelite and wolfram</i>	<i>Uranium</i>	<i>Coal</i>	<i>Construction materials</i>	<i>Diamonds</i>	<i>Other</i>	<i>Total</i>
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
DECEMBER QUARTER 1999											
New South Wales	5.2	3.5	—	1.3	n.p.	—	4.3	n.p.	n.p.	0.4	14.8
Victoria	n.p.	5.8	—	0.7	n.p.	—	—	—	—	—	8.1
Queensland	7.2	7.1	—	n.p.	—	n.p.	4.8	n.p.	n.p.	0.3	21.3
South Australia	2.4	3.4	n.p.	n.p.	—	0.1	—	—	—	0.1	6.7
Western Australia	26.5	61.3	n.p.	1.9	—	n.p.	n.p.	—	7.4	n.p.	108.8
Tasmania	1.2	0.5	—	—	—	—	n.p.	—	—	n.p.	2.3
Northern Territory	n.p.	10.0	—	—	—	2.1	—	—	1.6	n.p.	14.8
Australia	45.0	91.6	n.p.	4.8	n.p.	3.7	9.2	0.1	9.2	4.0	176.9
AUSTRALIA											
1996–1997	206.8	728.3	25.8	13.9	0.6	13.0	70.5	0.9	59.3	29.4	1 148.6
1997–1998	227.1	648.4	30.0	14.0	0.1	22.2	64.8	1.1	42.8	16.3	1 066.8
1998–1999	176.9	486.1	41.5	19.0	0.2	15.4	39.9	0.7	40.9	17.2	837.8
March 1998	45.9	136.1	7.1	3.5	n.p.	5.1	12.5	n.p.	7.4	n.p.	220.4
June 1998	60.9	151.7	12.6	4.5	n.p.	6.0	11.9	n.p.	9.9	5.1	262.6
September 1998	52.0	134.3	12.6	3.6	n.p.	7.4	9.6	n.p.	13.1	3.0	235.9
December 1998	46.4	139.8	13.7	5.8	—	3.6	9.4	0.2	15.3	5.5	239.6
March 1999	36.5	99.4	7.2	4.6	n.p.	1.4	9.8	n.p.	3.6	4.7	167.3
June 1999	42.0	112.7	8.1	5.0	n.p.	3.1	11.1	n.p.	9.0	3.9	195.0
September 1999	33.7	101.5	8.8	4.5	—	4.8	9.5	0.1	12.2	5.0	180.1
December 1999	45.0	91.6	n.p.	4.8	n.p.	3.7	9.2	0.1	9.2	4.0	176.9

n.p. not available for publication

— nil or rounded to zero

PETROLEUM EXPLORATION EXPENDITURE

Period	ONSHORE.....			OFFSHORE.....			TOTAL EXPENDITURE.....		
	<i>Drilling</i>	<i>Other</i>	<i>Total</i>	<i>Drilling</i>	<i>Other</i>	<i>Total</i>	<i>On production leases</i>	<i>On all other leases</i>	<i>Total</i>
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
1996-1997	179.6	72.3	251.9	412.0	189.1	601.0	137.7	715.3	853.0
1997-1998	174.1	58.2	232.3	501.2	247.6	748.9	68.8	912.4	981.2
1998-1999	111.7	70.5	182.3	428.5	257.0	685.4	105.6	762.1	867.7
1998									
March	38.4	11.9	50.3	139.4	74.6	214.0	22.5	241.8	264.3
June	49.2	15.5	64.8	207.5	62.0	269.5	27.3	306.9	334.2
September	34.3	21.7	56.0	81.6	55.7	137.3	24.3	169.0	193.3
December	44.7	16.9	61.6	123.0	70.4	193.3	35.1	219.8	254.9
1999									
March	20.8	18.9	39.7	127.0	61.8	188.9	24.6	203.9	228.5
June	12.0	13.1	25.1	96.9	69.0	165.9	21.6	169.4	191.0
September	10.9	9.5	20.3	113.2	72.9	186.1	23.8	182.6	206.5
December	23.7	16.9	40.6	86.8	63.7	150.5	51.2	139.9	191.1

PETROLEUM EXPLORATION, By Region

<i>Period</i>	<i>New South Wales</i>	<i>Victoria</i>	<i>Queensland</i>	<i>South Australia</i>	<i>Western Australia(a)</i>	<i>Tasmania</i>	<i>Northern Territory/ Ashmore and Cartier Islands</i>	<i>Zone of Cooperation Area A(b)</i>	<i>Total</i>
<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>
1996-1997	n.p.	45.8	134.5	n.p.	444.1	n.p.	41.5	72.5	853.0
1997-1998	0.2	34.5	107.1	n.p.	464.0	n.p.	n.p.	61.9	981.2
1998-1999	0.1	32.6	65.9	n.p.	530.8	n.p.	132.0	32.3	867.7
1998									
March	0.1	10.4	11.9	n.p.	165.0	n.p.	n.p.	n.p.	264.3
June	n.p.	9.9	19.8	n.p.	145.2	n.p.	n.p.	n.p.	334.2
September	n.p.	4.0	17.2	n.p.	90.9	n.p.	n.p.	n.p.	193.3
December	n.p.	n.p.	19.1	n.p.	148.5	n.p.	36.7	n.p.	254.9
1999									
March	n.p.	15.6	15.3	11.1	164.1	n.p.	17.9	4.3	228.5
June	n.p.	7.2	14.3	n.p.	127.2	n.p.	35.2	0.8	191.0
September	n.p.	n.p.	11.0	n.p.	112.0	0.2	42.4	18.5	206.5
December	—	20.9	23.2	n.p.	96.9	0.4	18.8	n.p.	191.1

n.p. not available for publication

— nil or rounded to zero

(a) Includes expenditure on Western Australian leases in the Zone of Cooperation Area B.

(b) Refer to Explanatory Notes paragraph 14.

EXPLANATORY NOTES

INTRODUCTION	<p>1 This publication contains annual and quarterly statistics of private sector exploration for minerals (other than oil shale) and petroleum in Australia.</p>
SOURCE	<p>2 Data are collected and compiled from exploration censuses conducted by the Australian Bureau of Statistics (ABS).</p>
SCOPE AND COVERAGE	<p>3 All exploration activity is included, regardless of the main activity of the explorer. Details of exploration are collected from all private enterprises known to be engaged in exploration, in Australia (including Australian waters) and incurring expenditure of more than \$20,000 per year.</p>
SEASONAL ADJUSTMENT	<p>4 Seasonal adjustment is a means of removing the estimated effects of normal seasonal variation from the series so that the effects of other influences can be more clearly recognised.</p> <p>5 Seasonal adjustment does not remove from the series the effect of irregular or non-seasonal influences. Particular care should be taken in interpreting quarterly movements in the adjusted figures in this publication.</p> <p>6 Irregular influences that are highly volatile can make it difficult to interpret the series even after adjustment for seasonal variation.</p> <p>7 Seasonal factors are reviewed and revised annually to take account of each additional year's original data. The nature of the seasonal adjustment process is such that the magnitude of some revisions resulting from the re-analysis may be quite significant, especially for data for more recent quarters. For this reason, additional care should be exercised when interpreting movements in seasonally adjusted data for recent quarters.</p>
TREND ESTIMATES	<p>8 The trend estimates are derived by applying a 7-term Henderson moving average to the seasonally adjusted series. The 7-term Henderson average (like all Henderson averages) is symmetric but, as the end of a time series is approached, asymmetric forms of the average are applied. Unlike the weights of the standard 7-term Henderson moving average, the weights employed here have been tailored to suit particular characteristics of the individual series. While the asymmetric weights enable trend estimates for recent quarters to be produced, it does result in revisions to the estimates for the most recent three quarters as additional observations become available. There may also be revisions because of changes in the original data and as a result of the re-estimation of the seasonal factors. For further information, see <i>Information Paper: A Guide to Interpreting Time Series—Monitoring Trends, an Overview</i> (Cat. no. 1348.0) or contact the Assistant Director, Time Series Analysis on Canberra (02) 6252 6345.</p>
CLASSIFICATIONS	<p>9 The following categories are used:</p> <ul style="list-style-type: none">▪ Production lease/Other, where a production lease is an area on which production or development is actually taking place.▪ Onshore/Offshore, where offshore includes all operations in a marine area under the <i>Petroleum (Submerged Lands) Act 1967</i> or under any Acts administered by State and Territory Governments.▪ Drilling/Other, where <i>drilling expenditure</i> includes cost of access (roads, vessel hire, etc.) to the drilling site and site preparation etc., and <i>other expenditure</i> includes costs of surveys, report writing, map preparation and all other activities attributable to exploration.

EXPLANATORY NOTES

DEFINITIONS

- MINERALS 10** In the broad sense these comprise metallic minerals, construction materials, gemstones, other non-metallic minerals and petroleum (oil or gas).
- EXPLORATION 11** This includes the search for new ore occurrences or undiscovered oil or gas, and/or appraisal intended to delineate or greatly extend the limits of known deposits of minerals or oil or gas reservoirs by geological, geophysical, geochemical, drilling or other methods. This includes construction of shafts and adits primarily for exploration purposes but excludes activity of a developmental or production nature. Exploration for water is excluded.
- EXPLORATION EXPENDITURE 12** This covers all expenditure on exploration activity in Australia. It includes expenditure on aerial surveys (including Landsat photographs), general surveys, report writing, map preparation and other activities indirectly attributable to exploration. Cash bids for offshore petroleum exploration permits are also included.
- EXPECTED EXPENDITURE 13** This refers to expected expenditure on exploration as reported by private enterprise explorers who were included in the previous census. Events such as new discoveries, unexpected weather conditions, government policy changes and unforeseen changes in economic conditions may cause actual expenditures to differ from those previously expected. The differences between actual and expected expenditure can be seen in table 1.
- ZONE OF COOPERATION (ZOC) 14** Was an agreement between Australia and the Republic of Indonesia on an area between the former Indonesian Province of East Timor and Northern Australia (the "Timor Gap"). The ZOC is divided into three areas: A, B and C. Area A is controlled by a joint authority and all petroleum operations in this area are carried out through production sharing contracts. The United Nations has recently replaced Indonesia as Australia's partner in the agreement. Once sovereignty is achieved the proposed State of East Timor is expected to assume this role.
- ASHMORE AND CARTIER ISLANDS 15** Tenements in the Ashmore and Cartier Islands are administered by the Northern Territory Department of Mines and Energy. Therefore all petroleum exploration expenditure in this area has been included with Northern Territory data.
- RELATED PUBLICATIONS 16** Users may also wish to refer to the following priced publications which are available on request:
- *Australian Business Expectations* (Cat. no. 5250.0)
 - *Australian Mining Industry* (Cat. no. 8414.0)
 - *Mining, Electricity and Gas Operations, Australia, Preliminary* (Cat. no. 8401.0)
 - *Mining Operations, Australia 1997-98* (Cat. no. 8415.0)
 - *Private New Capital Expenditure and Expected Expenditure, Australia* (Cat. no. 5625.0)
- 17** Current publications produced by the ABS are listed in the *Catalogue of Publications and Products* (Cat. no. 1101.0). The ABS also issues, on Tuesdays and Fridays, a *Release Advice* (Cat. no. 1105.0) which lists publications to be released in the next few days. The Catalogue and Release Advice are available from any ABS office.

EXPLANATORY NOTES

RELATED PUBLICATIONS <i>continued</i>	18 Publications showing the details of wells and metres drilled in petroleum exploration are available from the Petroleum Resources Program of the Australian Geological Survey Organisation.
EFFECTS OF ROUNDING	19 Where figures have been rounded, discrepancies may occur between the sums of the component items and their totals.
SYMBOLS AND OTHER USAGES	n.a. not available n.p. not available for publication but included in totals where applicable n.y.a. not yet available r figure or series revised since previous issue . . not applicable — nil or rounded to zero

