



### Highlights

- A total of six discoveries were reported: *Offshore* at Wheatstone (gas) in the Carnarvon Basin, *Onshore* at Agonis (gas) and Centella (oil) both in the Perth Basin, Rookwood South (oil) in the Surat Basin and at Smegsy (gas) and Willowie (gas) both in the Cooper/Eromanga Basins of South Australia.
- Overall exploration drilling in the first nine months of 2004 (97 wells) is above the low levels of drilling in the same period over the last few years. *Offshore* drilling activity (11 Wells) in the September quarter is six wells less than in the preceding June quarter and the same as in the September quarter 2003. *Onshore* drilling activity for the September quarter (20 wells) is above the levels achieved in preceding September quarters in the last few years and in the first nine months of 2004 there were a total of 62 wells drilled, a significant increase over the historically low levels achieved in recent years.
- 2D *onshore* seismic survey activity improved over the previous quarter as did marginally 3D onshore activity. *Offshore* 2D seismic activity recommenced during the September quarter following no reported activity in the preceding June quarter. *Offshore* 3D seismic survey acquisition in the September quarter fell significantly from the preceding June quarter.
- *Offshore* development completions occurred at Bayu Udan in the Bonaparte Basin, Yolla in the Bass Basin, Mutineer, Bamba, Wanaea in the Carnarvon Basin and continued at Marlin in the Gippsland Basin. *Onshore* development activity occurred at Palm valley in the Amadeus Basin, Baryulah and Wellington in the Cooper/Eromanga Basins and at Hovea in the Perth Basin.

### Drilling activity

**Exploration drilling** (Tables 1–3 & Figure 1) for the September quarter 2004, 31 wells were drilled, 13 more than drilled during the same period in 2003 and is eight less than the 39 wells drilled in the previous quarter.

*Offshore* exploration wells drilled during the September quarter 2004 totalled 11 which is the same as the September quarter 2003 and six less than in the previous quarter. Nine of these wells were drilled in the Carnarvon Basin, and one each in the Bass and Bonaparte Basins.

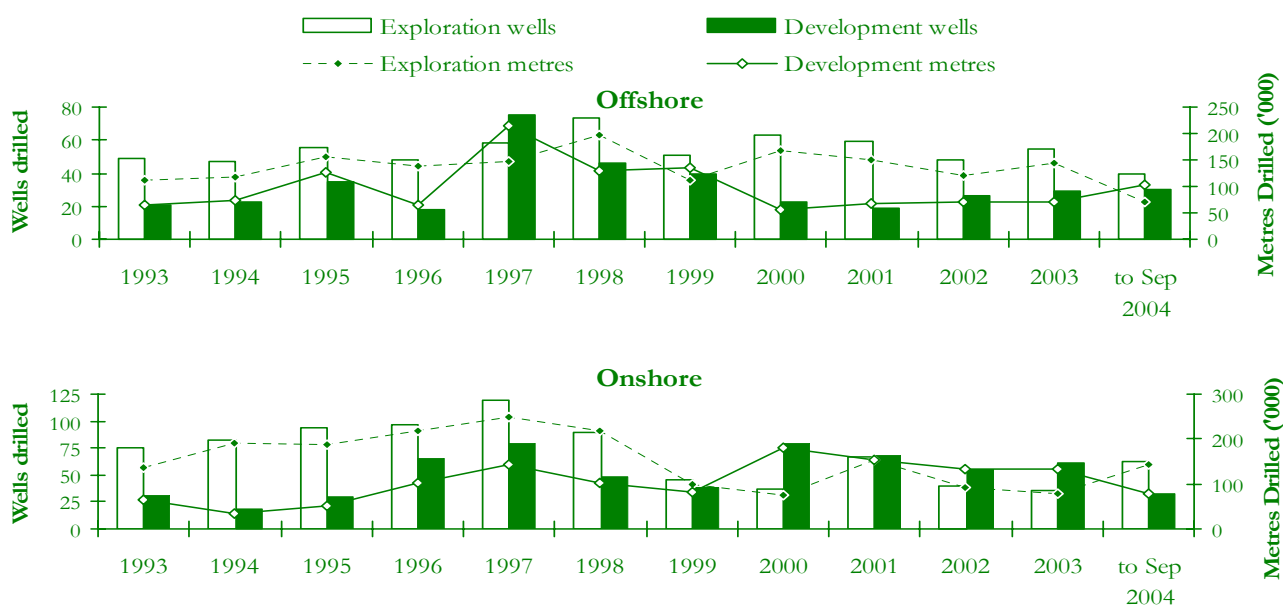
*Onshore* exploration wells drilled during the March quarter 2004 was 20 which is two less than the previous quarter but 13 more than the September quarter last year. Twelve of these wells were drilled in the Cooper/Eromanga Basin, four in the Surat Basin, two in the Perth Basin and one each in Gippsland Basin and Gunnedah Basin.

**Development drilling** (Tables 1–3 & Figure 1) activity for the September quarter 2004 of 28 wells is seven more than the previous quarter (21) and is the same as the same period last year.

*Offshore*, the number of development wells drilled during the September quarter 2004 (14) is four more than the previous quarter and eight more than the same quarter last year. These wells were drilled in the Carnarvon (7), Bonaparte (4), Gippsland (2) and Bass (1).

*Onshore*, development wells drilled in the September quarter (14) is one less than the same quarter last year and three more than the previous quarter. Eleven wells were drilled in the Cooper/Eromanga Basin, two in the Amadeus Basin, and one in the Perth Basin.

**Figure 1. Wells and metres drilled, 1993-30 September 2004**



**Table 1. Quarterly wells\* and metres drilled 2001 to September 2004**

Quarter Ended	Exploration				Development				Exploration		Development		Total	
	Onshore		Offshore		Onshore		Offshore		Total		Total		Total	
	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres
Jun-01	15	36 212	12	31 218	17	40 893	8	36 100	27	67 430	25	76 993	52	144 423
Sep-01	15	34 358	10	25 184	16	36 543	8	21 175	25	59 542	24	57 718	49	117 260
Dec-01	21	49 280	18	44 465	12	20 291	4	9 932	39	93 745	16	30 283	55	124 028
<b>Total 2001</b>	<b>68</b>	<b>158 009</b>	<b>59</b>	<b>149 805</b>	<b>68</b>	<b>152 959</b>	<b>20</b>	<b>67 207</b>	<b>127</b>	<b>307 814</b>	<b>88</b>	<b>220 226</b>	<b>215</b>	<b>528 040</b>
Mar-02	11	23 164	16	38 668	18	45 639	5	15 771	27	61 832	23	61 410	50	123 242
Jun-02	7	17 099	8	17 921	21	47 860	10	27 989	15	35 020	31	75 849	46	110 869
Sep-02	10	22 673	9	25 023	6	15 539	7	19 198	19	47 696	13	34 737	32	82 433
Dec-02	12	29 102	15	38 655	11	23 448	5	13 188	27	67 757	16	36 636	43	104 393
<b>Total 2002</b>	<b>40</b>	<b>92 038</b>	<b>48</b>	<b>120 267</b>	<b>56</b>	<b>132 486</b>	<b>27</b>	<b>76 146</b>	<b>88</b>	<b>212 305</b>	<b>83</b>	<b>208 632</b>	<b>171</b>	<b>420 937</b>
Mar-03	9	18 600	21	46 773	9	23 160	8	20 462	30	65 373	17	43 622	47	108 995
Jun-03	3	8 475	14	39 797	15	37 653	6	18 916	17	48 272	21	56 569	38	104 841
Sep-03	7	13 552	11	31 885	22	44 381	6	12 953	18	45 437	28	57 334	46	102 771
Dec-03	17	36 970	9	26 249	15	27 221	9	19 978	26	63 219	24	47 199	50	110 418
<b>Total 2003</b>	<b>36</b>	<b>77 597</b>	<b>55</b>	<b>144 704</b>	<b>61</b>	<b>132 415</b>	<b>29</b>	<b>72 309</b>	<b>91</b>	<b>222 301</b>	<b>90</b>	<b>204 724</b>	<b>181</b>	<b>427 025</b>
Mar-04	20	49 106	7	14 483	8	22 276	7	21 985	27	63 589	15	44 261	42	107 850
Jun-04	22	47 951	17	36 541	11	24 579	10	27 278	39	84 492	21	51 857	60	136 349
Sep-04	20	46 391	11	21 227	14	29 549	14	52 696	31	67 618	28	82 245	59	149 863

\*Wells that reached total depth during the quarter. †Revised.

**Table 2. Onshore and offshore wells and metres drilled, September quarter 2004\***

State	Exploration				Development				Onshore		Offshore		Total	
	Onshore		Offshore		Onshore		Offshore		Total		Total		Total	
	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres
Qld	7	14 081	0	0	2	5 118	0	0	9	19 199	0	0	9	19 199
NSW	1	1 047	0	0	0	0	0	0	1	1 047	0	0	1	1 047
Vic	1	2 488	0	0	0	0	2	6 739	1	2 488	2	6 739	3	9 227
Tas	0	0	1	1 695	0	0	1	3 497	0	0	2	5 192	2	5 192
SA	9	22 806	0	0	9	19 288	0	0	18	42 094	0	0	18	42 094
WA	2	5 969	10	19 532	1	2 275	7	28 319	3	8 244	17	47 851	20	56 095
NT	0	0	0	0	2	2 868	0	0	2	2 868	0	0	2	2 868
JPDA**	0	0	0	0	0	0	4	14 141	0	0	4	14 141	4	14 141
<b>Total</b>	<b>20</b>	<b>46 391</b>	<b>11</b>	<b>21 227</b>	<b>14</b>	<b>29 549</b>	<b>14</b>	<b>52 696</b>	<b>34</b>	<b>75 940</b>	<b>25</b>	<b>73 923</b>	<b>59</b>	<b>149 863</b>

\*Wells that reached total depth during the quarter.

**Table 3. Onshore and offshore drilling status at 30 September 2004**

State	Exploration wells											Development wells												
	Completed or C&S						Abandoned or secured					Completed or C&S						Abandoned or secured						
	D <sup>1</sup>	DA	Sus <sup>2</sup>	Oil	Gas	O&G	Dry	Oil	Gas	O&G	Un	D <sup>1</sup>	DA	Sus	Oil	Gas	O&G	Ser <sup>3</sup>	Dry	Oil	Gas	O&G	Un	
Qld	7	1	2	-	-	-	6	-	-	-	-	2	1	2	-	-	-	-	-	-	-	-	-	-
NSW	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vic	1	1	-	-	1	-	-	-	-	-	-	2	-	-	-	-	-	-	2	-	-	-	-	-
Tas	1	-	-	-	-	1	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-
SA	9	1	1	3	1	-	3	-	1	-	-	9	-	1	4	2	1	-	1	-	-	-	-	-
WA	12	-	2	-	-	-	6	2	2	-	-	8	2	5	3	-	-	-	-	-	-	-	-	-
NT	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2	-	-	-	-	-
JPDA	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4	-	-	-	-	-
<b>Total Qtr</b>	<b>31</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>-</b>	<b>15</b>	<b>2</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>28</b>	<b>3</b>	<b>8</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>-</b>	<b>9</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>2003</b>	<b>94</b>	<b>4</b>	<b>11</b>	<b>6</b>	<b>9</b>	<b>-</b>	<b>62</b>	<b>6</b>	<b>10</b>	<b>-</b>	<b>-</b>	<b>90</b>	<b>4</b>	<b>48</b>	<b>16</b>	<b>4</b>	<b>1</b>	<b>-</b>	<b>19</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>2002</b>	<b>88</b>	<b>3</b>	<b>20</b>	<b>6</b>	<b>9</b>	<b>1</b>	<b>39</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>-</b>	<b>84</b>	<b>7</b>	<b>34</b>	<b>20</b>	<b>13</b>	<b>2</b>	<b>-</b>	<b>14</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Previous quarter	39	4	11	2	1	-	17	6	1	1	-	21	3	12	2	-	3	-	3	1	-	-	-	-

C&S, cased and suspended; D, drilled; DA, drilling ahead; Sus, suspended; O&G, oil and gas; Un, unspecified; Ser, service well; JPDA: Joint Petroleum Development Area.

<sup>1</sup> Excludes wells drilling ahead or suspended. <sup>2</sup> Indicates drilling has temporarily stopped before reaching final depth. <sup>3</sup> Classification applicable only to development wells.

<sup>4</sup> Includes Territory of Ashmore and Cartier Islands.

## Discoveries

Table 4 lists details of the reported discoveries of oil and gas during the Quarter ended 30 September 2004.

**Table 4. Discoveries\*, 1 July to 30 September 2004 (in order of discovery)**

Operator	Field	Nature of discovery	Basin	State	Permit	Operator	Field	Nature of discovery	Basin	State	Permit
<b>Offshore</b>						<b>Onshore</b>					
ChevronTex	Wheatstone	Gas	Carnarvon	WA	WA-17	Arc Energy	Agonis	Gas	Perth	WA	L 1
						Great Art	Smegsy	Gas	Cooper/Eromanga	SA	PEL106
						Arc Energy	Centella	Oil	Perth	WA	L1
						Oilex	Rookwood South	Oil	Surat	Qld	ATP608P
						Innamincka	Willowie	Gas	Cooper/Eromanga	SA	PEL 103

\*Subject to revision. † Inferred from logs only

## Seismic survey activity

**Offshore**, there was a total of 7012 km of 2D seismic acquired during the September quarter 2004 (Table 5 & Figure 2). For the June quarter 2004 and the also the September quarter 2003, no 2D seismic was acquired. The surveys were undertaken in the Bonaparte and Browse Basins. 3D seismic surveys recorded 1120 km<sup>2</sup> in the September quarter 2004 which is 1712 km<sup>2</sup> less than recorded in the previous quarter. No 3D seismic was acquired in the same period in 2003. The surveys were undertaken in the Carnarvon Basin.

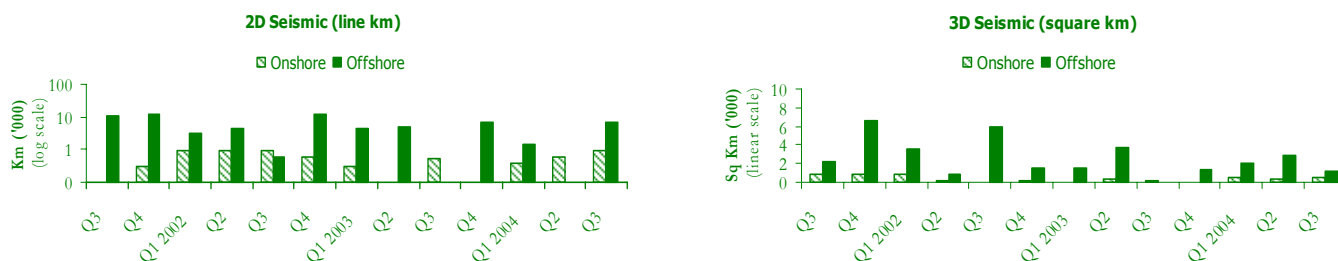
**Onshore**, a total of 909 km of 2D seismic were acquired during the September quarter 2004. This is 343 km more than in the previous quarter. These surveys were undertaken in the Cooper Basin of South Australia, the Gunnedah Basin of New South Wales and the Surat Basin of Qld. 3D seismic surveys were undertaken over 428 km<sup>2</sup> which is slightly more than the 393 km<sup>2</sup> in the previous quarter. These surveys were carried out in the Surat and Darling Basins.

**Table 5. Seismic survey activity**

State	2003				June Quarter 2004				September Quarter 2004			
	Onshore		Offshore		Onshore		Offshore		Onshore		Offshore	
	2D	3D km <sup>2</sup>	2D	3D km <sup>2</sup>	2D	3D km <sup>2</sup>	2D	3D km <sup>2</sup>	2D	3D km <sup>2</sup>	2D	3D km <sup>2</sup>
Qld	210	509	23	-	-	393	-	-	129	318	-	-
NSW	175	-	-	-	432	-	-	111	110	-	-	
Vic	284	-	954	1709	-	-	-	-	-	-	-	
Tas	-	-	1 336	-	-	-	-	-	-	-	-	
SA	702	-	507	-	134	-	-	669	-	-	-	
WA	-	-	18594	6204	-	-	2832	-	-	3931	1120	
NT	-	-	-	-	-	-	-	-	-	3081	-	
JPDA*	-	-	678	-	-	-	-	-	-	-	-	
<b>Sub-total</b>	<b>1 371</b>	<b>509</b>	<b>22092</b>	<b>7913</b>	<b>566</b>	<b>393</b>	<b>-</b>	<b>2832</b>	<b>909</b>	<b>428</b>	<b>7012</b>	<b>1120</b>
<b>Grand</b>	<i>Line km</i>		23463		566		7921					
<b>Total</b>	<i>Square km</i>		8422		3225		1548					

\*JPDA: Joint Petroleum Development Area. Line: approx. Line km for 3D surveys † Revised.

**Figure 2. Seismic survey activity Quarter 3, 2001 to Quarter 3, 2004**



**Rig activity**

The number of active rigs during September 2004 was fourteen, one less than at the end of June 2004 (15) and two less than at the end of September 2003 (16). Rig activity during the quarter ranged from thirteen to sixteen, with fourteen rigs active at the end of the quarter.

Offshore, the number of available rigs during the September quarter 2004 was slightly down on the previous quarter, with seven for July and August and six in September. The June quarter 2004 had eight for each month. Active rigs were drilling in the Bonaparte, Carnarvon, Bass and Gippsland Basins.

Onshore, the number of active rigs during the quarter ended September 2004 varied between seven and ten, which is greater than the same period last year of six to ten. The total number of inactive rigs for the September quarter remained steady at nine.

**Success rates**

The success rates shown in Table 7 are based on the number of petroleum discoveries and new-field wildcat wells drilled in Australia onshore and offshore from 1990 to 2003. No assumptions have been made about whether a 'discovery' has proved or will prove to be commercial. Geoscience Australia defines a discovery as a well from which a measurable amount of oil or gas has been recovered and also includes those discoveries inferred from well logs.

**Table 7. Success rates, 1990-2003**

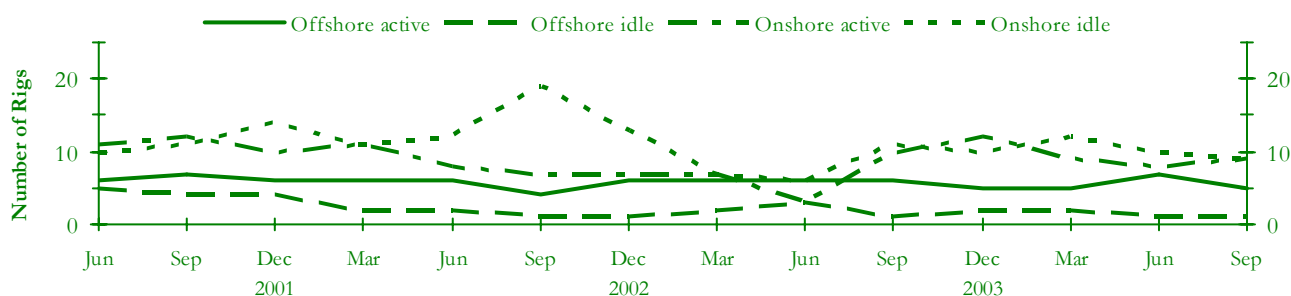
Year	Success Rate		
	Onshore	Offshore	Combined
1990	1:2.7	1:5.2	1:3.5
1991	1:2.7	1:5.1	1:3.2
1992	1:3.4	1:4.3	1:3.7
1993	1:3.4	1:3.5	1:3.4
1994	1:1.9	1:4.0	1:2.3
1995	1:2.8	1:4.7	1:3.4
1996	1:2.8	1:3.5	1:3.1
1997	1:2.1	1:4.6	1:2.6
1998	1:2.2	1:4.9	1:3.0
1999	1:4.0	1:4.0	1:4.0
2000	1:3.3	1:2.9	1:3.0
2001	1:1.9	1:4.0	1:2.6
2002	1:1.5	1:2.8	1:2.2
2003	1:3.5	1:7.1	1:5.2

**Table 6. Drilling rig activity, July 2003 to September 2004**

	Active					Idle					Availability			
	Onshore		D	Offshore (all deep)	Total	Onshore		D	Offshore (all deep)	Total	Onshore		Offshore	
	S	M				S	M				Total	%Active	Total	%Active
Jul-03	0	1	5	5	11	4	2	7	4	17	19	32	9	56
Aug	0	1	6	5	12	5	3	7	3	18	22	32	8	63
Sep	0	2	8	6	16	3	3	5	1	12	21	48	7	86
Oct	0	2	7	5	14	3	2	6	3	14	20	45	8	63
Nov	0	2	9	5	16	3	2	4	2	11	20	55	7	71
Dec	0	2	10	5	17	3	4	3	2	12	22	55	7	71
Jan-04	0	1	10	5	16	3	5	2	3	13	21	52	8	63
Feb	0	1	7	5	13	3	5	5	3	16	21	38	8	63
Mar	0	1	8	5	14	3	5	5	1	14	22	41	6	83
Apr	0	1	8	6	15	3	3	4	2	12	19	47	8	75
May	0	1	9	7	17	3	3	3	1	10	19	53	8	88
Jun	0	1	7	7	15	3	3	4	1	11	18	44	8	88
Jul	0	1	6	6	13	2	3	4	1	10	16	44	7	86
Aug	0	3	7	6	16	3	3	3	1	10	19	53	7	86
Sep	0	2	7	5	14	2	4	3	1	10	18	50	6	83

S, shallow (<1525 m); M, medium (1525–2750 m); D, deep (>2750 m).

**Figure 3. Drilling rig activity, June 2001 to September 2004**



This publication includes preliminary statistics for wells and metres drilled, seismic survey line & square kilometres recorded and rig activity, to the end of September 2004. The data from which these statistics are derived have been compiled by Geoscience Australia from various sources, including the petroleum exploration industry and State and Northern Territory departments of mines.

Queries concerning these statistics should be directed to Eugene Petric: Eugene.Petric@ga.gov.au; Ph. (02) 6249 9270 or Fax (02) 6249 9962.

This document is available on the Internet at <http://www.ga.gov.au/oceans/> and look under 'Petroleum Industry Statistics'.