

## **2.0 WELL HISTORY**

### **2.1 GENERAL DATA**

Well Name:	Bunga Creek-1
Map Reference:	Cunninghame Topographic 8522-3-4 Scale 1:25,000
Location:	AMG 66 Coordinates 589376.388 E 5809860.128 N Latitude: 37° 51' 14.2" South Longitude: 148° 0' 57.6" East
Elevations:	RL 60.600
Petroleum Tenement:	PEP 155
Operator:	Lakes Oil NL (for Petro Tech Pty Ltd) ACN 004 247 214 Level 11, 500 Collins Street Melbourne 3000
Other Participants:	None
Date Drilling Commenced:	7 <sup>th</sup> November, 2002
Date Drilling Completed:	23 <sup>rd</sup> November, 2002
Date Rig Released:	25 <sup>th</sup> November, 2002
Drilling Time to T.D.:	17 days (Rig operated daylight hours only)
Total Depth:	364.5 m
Status:	Plugged and Abandoned

**2.2 RIG DATA**

Drilling Contractor	Drilltech Pty Ltd Drilling Depot Rd Morwell Victoria 3168
Rig	Bouredrill THD25VP.
Rig Carrier	Truck Mounted.
Weight Indicator	Hydraulic Pressure.
Power	Truck Engine.
Rotary	Top Drive.
Pumps	Duplex 5"X 6" double action.
Tubulars	PQ pipe
Fishing Tools	None on Site.
Handling Tools	Hydraulic 48" Rigid wrench.
Stabilizer	Not applicable.
Spare Parts	As reasonably required for carrying out the well programme.
Personnel	Driller plus 2 crew.

Note: Rig Operated Daylight Hours Only.

## 2.3 DRILLING DATA

The following is the daily operations summary for Bunga Creek -1. It has been compiled from the daily drilling reports. Onsite drilling supervision and wellsite geology services for Lakes Oil N.L. was provided by J. Mulready. Gas detection equipment was supervised by Mr. D. Sisely.

DATE	DRILLING OPERATIONS
06.11.02	24 hrs to 6 p.m. 6.11.02 Casing, tanks, site office and generator delivered on site. Rig delayed 24 hrs, expected on site tomorrow morning.
07.11.02	24 hrs to 6 p.m. 7.11.02 Rig on site 9.30 a.m. Rigged up/mixed mud. Held pre-spud safety meeting. Spudded well 3.49 p.m. Drilled 9.7/8" (251 mm) hole to 30.5 metres.
08.11.02	24 hrs to 6.30 p.m. 8.11.02 Drilled 9.7/8" (251 mm) hole to 59.4 metres. Ran & cemented 7" casing @ 57 m BGL
09.11.02	24 hrs to 6.30 p.m. 9.11.02 Wait on cement.
10.11.02	24 hrs to 6.30 p.m. 10.11.02 Ran & cemented 114 mm liner @ 59.4 m BGL
11.11.02	24 hrs to 6.30 p.m. 11.11.02 Rigging up.
12.11.02	24 hrs to 6.30 p.m. 12.11.02 Conducted leak off test on surface casing – failed. Recemented between 114 mm and 178 mm casing. Wait on cement.
13.11.02	24 hrs to 6.30 p.m. 13.11.02 Conducted leak off test on surface casing OK. Rig up flowline. Install BOP. Commenced drilling 3 p.m. Drilled from 59.4 to 107 m. POH & clear blocked bit.
14.11.02	24 hrs to 6.30 p.m. 14.11.02 Drilled from 107 to 155 m. Leakage noted around 7 inch casing. POH. RIH with open ended drill pipe and spotted 2 cubic m. cement plug at casing shoe. Wait on cement.
15.11.02	RIH. Tagged top cement at 84 m RT. Filled hole with cement outside 7 inch casing with returns to surface. Wait on cement.
16.11.02	24 hrs to 6.30 p.m. 16.11.02 RIH. Tagged top cement at 34 m. Drilled out of shoe to 72 m. Closed BOP and pressured up – fluid flowing into formation. Drilled ahead – well sidetracked off plug at ~ 69 m. Re-drilled to 120 m. Suction pit clogged- POH.
17.11.02	24 hrs to 6.30 p.m. 17.11.02 Dumped pits. Redrilled to 155 m. Drilled 155 to 210 m (55 m)
18.11.02	24 hrs to 6.30 p.m. 18.11.02 Drilled 210 to 282 m (72 m)

19.11.02	24 hrs to 6.30 p.m. 19.11.02 Drilled 282 m to 342 m (60 m)
20.11.02	24 hrs to 6.30 p.m. 20.11.02 Dumped pits, cleaned out drill pipe. RIH to casing shoe with core barrel.
21.11.02	24 hrs to 6.30 p.m. Thursday 21.11.02 Rig up for coring.
22.11.02	24 hrs to 6.30 p.m. Friday 22.11.02 RIH. Cored. From 342 to 355.8 m. (13.8 m)
23.11.02	24 hrs to 6.30 p.m. Saturday 23.11.02 Replace wireline cable. Core from 355.8 m. to 364.5 m. (12.7 m) Top granite at 364.4 m
24.11.02	24 hrs to 6.30 p.m. Sunday 24.11.02 RIH with log. Hole bridged at 282 m. Ran gamma log from 282 m to surface.
25.11.02	24 hrs to 6.30 p.m. Monday 25.11.02 Abandoned well with 2.7 cubic metre cement plug. Bumped top of plug at 13 m, i.e. 46 m inside surface casing. Set surface plug. Released rig.

### Hole Sizes & Depths:

9-7/8" (251 mm)	Surface to 59.4 m RT
98 mm	59.4 m RT to TD (365.5 m RT)
Core size HQ	342 m to TD

### Casing & Cementing:

#### Surface

Size	7 " (178 mm)
Weight	23 lb/ft 33.7 kg/m
Grade	K55
Shoe setting depth	57 m

#### Liner

Size	114 mm
Weight	16 kg/m
Shoe setting depth	59.4 m

### Deviation Surveys:

None taken

#### Drilling Fluid:

Spud-59.4 m	Freshwater gel
59.4 – TD	KCl/Polymer/PHPA

**Water Supply:**

Water was trucked from Lakes Entrance

**Plugging & Cementing:**

Plug 1	13 to 364.5 m	2.7 c.m.
Plug 2	Surface	

**2.4 LOGGING AND TESTING**

Wellsite Geologist: J.Mulready

Mudlogging: Hot wire hydrocarbon detection, depth & drill rate monitoring were provided by D.Sisely, using Lakes' own hot wire gas detector.

Ditch Cutting Samples: Ditch cutting samples were collected at 10 m intervals from surface to 60 m, and thereafter at 3 m intervals to 342 m. at which stage coring commenced.

One set consisting of approx. 500 gm of unwashed dried cuttings in a calico bag was submitted to the DNRE.

One set of washed cuttings was collected in Samplex trays for retention by the Operator.

Coring: Continuous core was taken between 342 m RT and 364.5m RT (TD).

Sidewall cores: None taken.

Testing: No testing was undertaken.

Wireline Logs: A Gamma-ray log was run from 282 m to 59.4 m in open hole, and from the casing shoe to surface.

Unfortunately it was not possible to log below 282 m as the well had bridged off at this depth.

Velocity Survey: No velocity survey was undertaken.

## **3.0 GEOLOGY**

### **3.1 REGIONAL GEOLOGY**

The Gippsland Basin is an early Cretaceous to Cainozoic basin occupying approximately 46,000 square kilometers of the southeastern margin of the Australian continent. The basin is flanked on the north, west and south-west by Palaeozoic rocks and confined between the structural uplifts of the Victorian Highlands in the north and the Bassian Rise in the south. The eastern margin of the basin is open to the Tasman sea. The Gippsland Basin is an east-west trending half graben feature with 70% of its area beneath Bass Strait and 30% onshore.

With the exception of occasional wildcat drilling in the boom of the 1980's, exploration of the onshore Gippsland Basin has been largely ignored since the 1970's.

The early exploration activities in the onshore part were aimed primarily at the Early Cretaceous Strzelecki Group and, later on after successful drilling offshore, at the top of the LaTrobe Group "coarse clastics", but a lack of understanding of the stratigraphy and the mechanism of hydrocarbon generation, migration and timing of structures, along with the poor quality of the seismic and well log data, resulted in a downgrading of the hydrocarbon potential of the onshore area.

### **3.2 PERMIT PEP 155 (formerly PEP 135)**

Lakes Oil N.L. acquired the PEP 135 permit in August 1997. The permit overlies the onshore portion of the Lakes Entrance (Northern) Platform of the Gippsland Basin (see below). It includes the Lakes Entrance oil field, discovered in 1924, which produced approximately 10,000 bbls of biodegraded oil (Approx 14<sup>0</sup> API) before production ceased in 1956. The reservoir was the Greensand Member of the Oligocene age Lakes Entrance Fm. The Lakes Entrance field has remained the focus of Lakes' exploration effort since taking out the permit.

In 1997 Lakes drilled two wells within the field area :-

Petro Tech-1, located in the central portion of the field near the Lakes Entrance oil shaft, and

Hunters Lane-1 located in the western portion of the field. Bailing operations at Hunters Lane-1 produced approximately 1700 litres of oil/oil emulsion before the well was plugged and abandoned.

In July 2002 a Falcon airborne survey was acquired over the Lakes Entrance field area, measuring gravity gradient, magnetics, radiometrics and topography. Interpretation of this survey data was used to locate the Bunga-1 well.

Bunga Creek-1 and Bunga Creek-2 marked a return to the task of evaluating the economic potential of the field, this time concentrating at its eastern end.