





# **EAST LAKE TYERS-1 (W470)**

## **Well Summary Report**

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WELL SUMMARY

&

LITHOLOGY



Plug: Abd. 1350'-1450' 208x.  
265'310' 105x  
Mtd cap on 7" casing.





W 470

EAST LAKE TYERS No. 1

Location:  $37^{\circ}56'38''S$ ,  $148^{\circ}07'33''E$ .

El.: G.L., approx 10 ft.

T.D.: 1541 ft.

B. Hocking Picks (Nov '63)

<del>————</del> Haunted Hill Gp.	0-30
Jemmy's Pt.	30-170
Tambo River	170-180
Grippsland Lst.	180-970
* Lakes Entrance Fm. & Colquhoun Gravels	970-1460
Ord. basement.	1460-1541

\* Differentiation impossible due to contamination - B.H.

COPY.

ARCO LIMITED.  
792 Elizabeth Street,  
MELBOURNE C.1.

24th October, 1962.

The Secretary for Mines,  
Department of Mines,  
Treasury Place,  
MELBOURNE. C.2.

Dear Sir,

Pursuant to your letter of 18th October,  
we now enclose the final well log of the East Lake Tyers  
No. 1. Well.

Yours very truly,  
ARCO LIMITED.

by W. H. Butt, Manager.

WHB:mb.

Encl.

*Dr. Thomas.*  
*25.10.62.*

COPY.

ARCO LIMITED.  
792 Elizabeth Street,  
MELBOURNE. C.1.

16th October, 1962.

The Secretary for Mines,  
Department of Mines,  
Treasury Gardens,  
MELBOURNE. C.2.

Dear Sir,

re: Petroleum Prospecting Licence No. 160.  
and Petroleum Exploration Permit No. 43.

Thank you for your letter of 2nd October, advising that the Hon. the Minister had approved commencement of drilling operations on the areas comprised in the abovementioned licence and permit.

Attached hereto please find copy of the first weekly "record" of work" form appertaining to P.E.P. NO. 43.

*Done*  
Pursuant to your advice that further supplies of these forms will be made available on request, we estimate we will need about 16 more forms to cover the period of operations in the two areas, and would appreciate if you could forward them to us.

Yours very truly,

ARCO LIMITED.

By W. H. BUTT.

W. H. BUTT. Manager.

WHB:mb.

Encl.

LITHOLOGY AND STRATIGRAPHY

- B. HOCKING

ARCO-WOODSIDE'S EAST LAKE TYERS NO. 1 BORE

Location: 37° 50' 38" S, 148° 07' 33" E.

Elevation: G.L. is approx. 10 ft.

Samples: 10 ft. rotary cutting samples; cores taken at 1350-63 ft. and 1531-41 ft. Contamination is bad in lower samples.

Lithologic Log:

30-60: yellow brown shelly limestone } sandy  
60-170: grey shelly marl (or marly limestone), abundant shell fragments }  
170-180: greenish grey shelly marl, partly glauconitic }  
180-270: grey polyzoal marly limestone }  
270-390: white polyzoal limestone, richly fossiliferous, common brachiopod fragments }  
390-625: grey polyzoal marly limestone  
625-750: cream polyzoal limestone, with occasional interbedded marly limestone  
750-800: yellowish grey marly limestone  
800-820: grey foraminiferal marl  
820-840: yellowish grey marly limestone  
840-850: grey marl  
850-930: yellowish grey marly limestone  
930-970: greenish and grey marls  
970-1040: dark grey marl, becoming progressively darker in colour  
1140-1290: as above, but with a greenish tinge - glauconitic <sup>1040-1140: olive brown marl, slightly micaceous, small shells.</sup>  
1290-1310: khaki-green glauconitic clayey sand.  
1310-1460: fine-grained brownish grey <sup>micaceous</sup> sand, friable, becoming significantly pyritic at approx. 1370 ft. (accord. to Arco log).  
1460-1470: whitish grey clay  
1470-1490: quartzite, presumably well-fractured (occurs as angular chips of milky quartz).  
1490-1541: phyllite, lt. green, pink, green and brown, brittle, veinlets of chalcedony.

Cone Descriptions:

Core 1, 1350-63 ft. (sample 1360 ft.):-

Silt and fine sand, brownish grey, micaceous, fair to good porosity.

Core 2, 1531-41 ft. (sample 1533 ft.):-

Phyllite, slightly weathered, mottled orange green, dip (or cleavage at 45°, fractures usually filled with chalcedony (Arco).

Stratigraphic Interpretation:

30-170 ft. (Jemmy's Pt. Formation):

Abundance of shell material, together with such diagnostic foraminifera as Gibicides cygnorum, Flintina ultima, Massilina lapidigera, and common Nonion victoriense and miliolids spp., indicate the Jemmy's Pt. Formation.

170-180 ft. (Tambo River Formation):

Glauconite is present, and the fauna is much richer in pelagic species - Globigerina ouachitaensis-bulloides gp. and Orbulina universa. Benthonics include Cancris auriculus, Cancris philippinensis, Nonion victoriense, Valvulineria kalimnensis, and limited miliolids. The fauna indicates the Tambo River Formation (Mitchellian).

180-970ft.: Gippsland Limestone):

Polyzoal limestones (or marly limestones) make their first appearance - in drilled order - at 180 ft., marking the top of the Gippsland Limestone.

Faunas ~~(examined at 400 ft. and 500 ft.)~~ contain Orbulina universa, indicating Bairnsdalian age. <sup>down to 570 ft.</sup>

Orbulina universa is not recorded in the yellowish grey polyzoal limestones and marly limestones between 625 and 800 ft.; these are presumably of Balcombian and Batesfordian age. The Balcombian stage certainly exists, as Globigerinoides transitoria - a diagnostic Balcombian species - occurs as contamination in a deeper sample. Amphistegina lessonii and Operculina victoriensis occur typically.

Lepidodonta is found between 760 and 780 ft.

Lepidocyclina sp. is found between 760 and 780 ft., indicating a Batesfordian age.

Below 800 ft., grey foraminiferal marls contain Astrononion centroplax, Globigerina apertura and Elphidium spp., suggesting a Longfordian age.

970-1310 feet (Lakes Entrance Formation equivalent):

The dark-colored marls, which appear below 970 ft., are presumably of uppermost Janjukian age, and foraminifera include Globigerina ampliapertura; Victoriella plecte was noted at 1040 ft.

1310-1460 feet ('Colquhoun Gravels'):

The core sample at 1360 ft. contained a fauna which is quite possibly of Faunal Unit 4. Fish remains, typical in the 'Colquhoun Gravels' of the Lakes Entrance area, were recorded. Below this contamination was too severe to record any faunas.

1460-1470 feet (?):

This small thickness of grey clay is stratigraphically indeterminate.

Below 1470 feet :

Quartzite overlying phyllite, representing the metamorphic basement rock, presumably of Ordovician age. This association of quartzite and phyllite was observed in East End No.1 bore.

REFERENCE.

Ingram, Frank :1962: Lithologic log of Arco-Woodside's East Lake Tyers No.1 Bore.

B.N.

B. HOCKING,  
Geologist.  
1.8.63.

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FRANK : 34 4339  
INGRAM

Also E. L. Tyers : 1533 ft.

WV99070

Megascopic : Multicolored mudstone, rel. hard, showing ~~little~~ <sup>little</sup> fissility; weak cleavage; ~~very weak shaly parting~~ <sup>very weak shaly parting</sup> dips v. steeply.  
Core is transected by very thin veins of a glassy substance material, bounded by a wall of iron-stained sedimentary material. (Very faint traces of fine white mica).

Microscopic:

~~Mudstone: alignment of flakes of (? talc?)~~

Claystone : typically weathered : close to "palaeosurface".  
Basically aligned sericite qns., few quartz of silt size.  
Typical of outcropping Ordovician (Dr. J.A. Talent; pers. comm.)

PALAEONTOLOGY

COMMENTS ON FAUNA FROM EAST LAKE  
TYERS NO.1 AND EAST NOWA NO.1 WELLS

Examination was made on rotary cutting samples from these two shallow stratigraphic wells drilled by ARCO-Woodside in the eastern portion of the Gippsland Basin. Severe contamination in the cutting samples, especially from East Lake Tyers No.1, make stratigraphic correlations impossible. Only one core was taken in the Tertiary section; that being in East Lake Tyers No.1 Any stratigraphic conclusions drawn are based on the work of Carter (1962).

East Lake Tyers No.1 Well:

Marine sediments were entered at 30 feet. They contain an abundant fauna of miliolids and Robulus spp. Although no diagnostic species are present, large hard limestones with interbedded marls indicate that these sediments represent the Bairnsdale Limestone. The first definite Bairnsdalian faunas were noted at 150 feet. Orbulina universa was frequent and Heronallenia howitti was present. The former species does not occur lower than Bairnsdalian whilst Carter (loc.cit.) states that the latter species is restricted to the Bairnsdalian.

The first appearance of Operculina victoriensis (the large flat ornamented Foraminifera) is noted at 700 feet. Carter (loc.cit.) states that this species does not range above the Wuk Wuk Marls in the Gippsland Basin. This is not conclusive evidence that the top of the Wuk Wuk Marls is at 700 feet, as it would mean that the Bairnsdale Limestone was 670 feet thick which would be exceptional. No fauna break is noted above 700 feet and in fact the Bairnsdalian faunas continue below this depth to the bottom of the well.

Astrononion centroplax was noted at 900 feet. As this species does not range above the Longfordian the Longfordian Limestone (which includes marls) is at and below this level.

The Lakes Entrance Formation cannot be identified. The core at 1360 feet contains no diagnostic fauna. The marl reported by Ingram and Rutledge (1962) from 1412 to 1460 feet contained a post-Longfordian fauna. This marl is in fact total contamination from above 900 feet.

It is noted that the electric logs do not indicate a marl for this interval.

Core No.2 at 1531 feet does not contain any fauna.

East Nowa No.1 Well:

The sands and clays down to 170 feet do not contain any faunas.

Bairnsdalian faunas (including Orbulina universa and Heronella howitti) occur below 170 feet.

The first appearance of Elpidium crespinae at 300 feet probably indicates the top of the Wuk Wuk Marls.

The top of the Glencoe Limestone cannot be designated.

The first appearance of Astrononion centroplax at 650 feet indicates the top of the Longford Limestone equivalent. Contamination below this level is severe and the Lakes Entrance Formation cannot be identified.

No fauna was found in Core No.1 at 1188 feet.

D.J.Taylor  
Geologist.

6th December, 1962.

References:

Carter, A.N., 1962

Tertiary Foraminifera from the Gippsland, Victoria, and their stratigraphic significance. Geol.Surv.Vict. Memoir (in press)

Ingram, F., and Rutledge, D., 1962

Graphic lithological log - East Lake Tyers. ARCO Ltd. (unpublished).

SLAKE THERS 1 - Core 1

Forams

Pyritic mold, multicolored  
one or 2 indistinguishable calc<sup>2</sup> forams

Glaucifilid Cibicides

one v. small planktonic  
phosphatic fish frags. (uncommon)

bryoz. frags (rare)  
another plank. Glob. ampl. (5 spp)  
one Elph. crispata is attached pyrite.

few other scrubby calc<sup>2</sup> forams.

→ very fine →

Residues quartz sd, siliceous, subangular-angular,  
micaceous (wh. low ign), occ. glauc (foss mold)

v. minor bryozoa

other fossil frags, largely forams etc., but < 10%

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PE904009

This is an enclosure indicator page.  
The enclosure PE904009 is enclosed within the  
container PE904832 at this location in this  
document.

The enclosure PE904009 has the following characteristics:

ITEM\_BARCODE = PE904009  
CONTAINER\_BARCODE = PE904832  
NAME = Final Well Report  
BASIN = GIPPSLAND  
PERMIT =  
TYPE = WELL  
SUBTYPE = FWR\_RPT  
DESCRIPTION = Final well Report East Lake Tyers no 1  
REMARKS =  
DATE\_CREATED =  
DATE\_RECEIVED =  
W\_NO = W470  
WELL\_NAME = East Lake tyers-1  
CONTRACTOR = Arco Ltd/Woodside Oil Co  
CLIENT\_OP\_CO = Arco Ltd/Woodside Oil Co

(Inserted by DNRE - Vic Govt Mines Dept)

PE602062

This is an enclosure indicator page.  
The enclosure PE602062 is enclosed within the  
container PE904832 at this location in this  
document.

The enclosure PE602062 has the following characteristics:

ITEM\_BARCODE = PE602062  
CONTAINER\_BARCODE = PE904832  
NAME = Well Log  
BASIN = GIPPSLAND  
PERMIT =  
TYPE = WELL  
SUBTYPE = WELL\_LOG  
DESCRIPTION = Well Log East Lake Tyers No 1  
REMARKS =  
DATE\_CREATED = 17/10/1962  
DATE\_RECEIVED =  
W\_NO = W470  
WELL\_NAME = East Lake tyers-1  
CONTRACTOR = Widco  
CLIENT\_OP\_CO = Arco Ltd/Woodside Oil Co

(Inserted by DNRE - Vic Govt Mines Dept)

PE603477

This is an enclosure indicator page.  
The enclosure PE603477 is enclosed within the  
container PE904832 at this location in this  
document.

The enclosure PE603477 has the following characteristics:

ITEM\_BARCODE = PE603477  
CONTAINER\_BARCODE = PE904832  
NAME = Mud Log  
BASIN = GIPPSLAND  
PERMIT = PEP43  
TYPE = WELL  
SUBTYPE = MUD\_LOG  
DESCRIPTION = Mud Log (containing lithologies) for  
East Lake Tyers-1.  
REMARKS =  
DATE\_CREATED = 18/10/1962  
DATE\_RECEIVED =  
W\_NO = W470  
WELL\_NAME = EAST LAKE TYERS-1  
CONTRACTOR =  
CLIENT\_OP\_CO = ARCO LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)