



562

OIL and GAS DIVISION

PURSUIT OIL N.L.

HINDHAUGH CREEK NO. 1

P.E.P.68 - VICTORIA

FINAL WELL REPORT

Copy 7

Well Completion Report
Hindhaugh Creek-1
(W562)

PURSUIT OIL N.L.

HINDHAUGH CREEK NO. 1

OTWAY BASIN, VICTORIA

WELL COMPLETION REPORT

by

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and

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Melbourne
February, 1970

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A P P E N D I X I V

C O R E D E S C R I P T I O N S A N D A N A L Y S E S

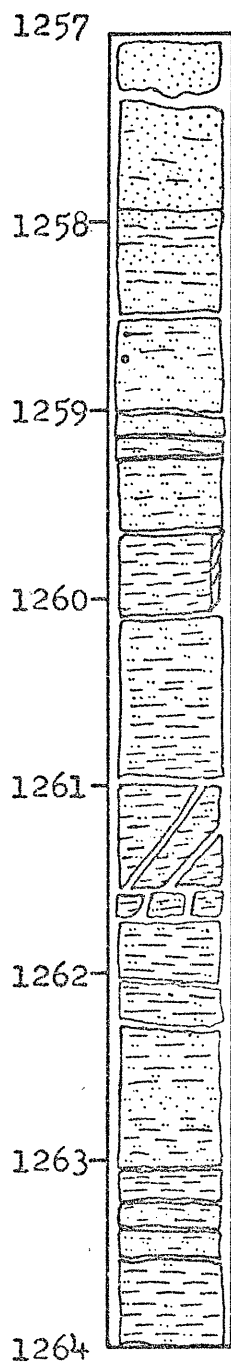
PURSUIT OIL N.L.

HINDHAUGH CREEK NUMBER 1

CORE DESCRIPTION

Core Number 1 — 1257 feet to 1264 feet. Recovered 7 feet.

The core consists of finely interbedded and inter-laminated sandstone, siltstone and mudstone, with coally and carbonaceous bedding interfaces.



The top 12" of the core is dominantly sandstone with interlaminations of silt; at 12" from the top is a parting showing a carbonized tree trunk. The sandstone is light grey, salt and pepper speckled very fine and fine grained, moderately hard and friable. It consists of dull and waxy subangular to subrounded quartz, grey and rare green lithic grains, white feldspars (now kaolinized) and traces of white mica and carbonaceous specks. The matrix is white calcareous clays, and the detritals/matrix ratio is 6:4 to 7:3. The ratio of quartz to lithics plus feldspars is about 2:1. The rock is tight with no shows.

From 1'4" to 2'6" from the top the core is mostly siltstone with minor mudstone. Both are medium grey, moderately hard and blocky, and slightly calcareous, carbonaceous, sandy and feldspathic. It grades from siltstone to silty mudstone, and some of the mudstone laminae range to dark grey.

From 2'6" to 5' from the top is interlaminated mudstone and siltstone, both as described above.

This passes down into dominantly siltstone with some sandstone and mudstone from 5' to 6'6" from the top, and the basal portion is a fine and uniform massive mudstone and siltstone.

Sedimentary structures include scour and fill, small scale slumps, very fine cross bedding and slight bedding gradations, plus two worm burrows at about five feet from the top of the core.

Local bedding dips reach about 10° but structural dip is about 3°.

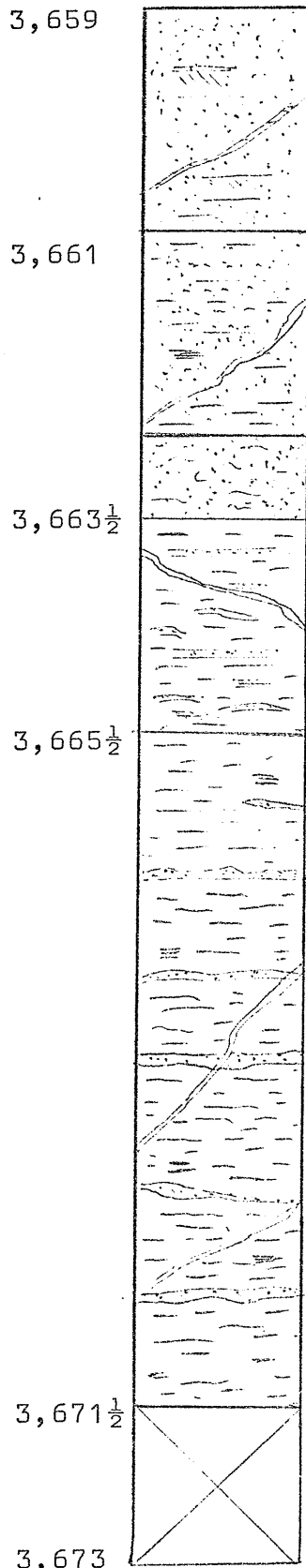
Some subvertical fractures are present, and these are partially to fully healed with white calcite.

PURSUIT OIL N.L.

HINDHAUGH CREEK NO. 1

Core No. 2 3,659 - 73 Cut 14' Rec. 12½'

Recovery 90%



Sandstone, lt. gy, fine gr. med. sorted, subang grains of qtz. & lithics in calc. cement. Minor mica and feldspar. Calcite filling fractures. Minor carb., laminae defining cross bedding.

3,661

Interlaminated fine gr. lt. gy. sandstone aa. and mudstone dk. gy, blk, mica., carb. w/parallel laminated bedding. Calcite filling fractures.

3,663½

Sandstone, lt. gy, fine gr. aa w/wavy contorted bedding defined by carb. mudstone laminae.

3,665½

Interlaminated fine gr. lt. gy. sandstone aa and dk. gy. - blk, mica. carb., mudstone. Bedding wavy to parallel laminated. Calcite filling fractures. Flat dip.

Mudstone, dk. gy.-blk., mica., silty, carb., with minor interbeds of lt. gy. fine gr. sandstone aa. Bedding is wavy to parallel laminated w/ flat dip. Calcite filling fractures.

3,671½

3,673

All sandstones are hard, in part friable, but tight with no fluorescence.

PURSUIT OIL N.L.

HINDHAUGH CREEK No.1

CORE No.3 7776 - 7781 FEET. RECOVERED 6". RECOVERY 10%.

7776' 0" -- 7776' 6".

6"....., Mudstone, dark grey, rare, very fine lithic, feldspathic and quartz grains. Rare streaks and stringers of medium and light grey siltstone and sandstone. These are quartzose, slightly lithic and feldspathic, rarely carbonaceous and variably calcareous. White calcite infills and fine vertical fractures present in the lower part of the core.

No estimate of dip can be made as the core is badly broken up.

CORE ANALYSIS RESULTS

Company PURSUIT OIL N. L. Formation _____ File AP-1-190
 Well HINDHAUGH NO. 1 Core Type _____ Date Report 21 OCT '69
 Field WILDCAT Drilling Fluid _____ Analysts AD
 County VICTORIA State AUST. Elev. _____ Location _____

Lithological Abbreviations

SAND - SD	DOLOMITE - DOL	ANHYDRITE - ANHY	SANDY SDY	FINE FN	CRYSTALLINE - XLN	BROWN - BRN	FRACTURED - FRAC	SLIGHTLY - SL/
SHALE - SH	CHERT - CH	CONGLOMERATE - CONG	SHALY - SHY	MEDIUM MED	GRAIN - GRN	GRAY - GR	LAMINATION - LAM	VERY - V/
LIME - LR	GYPSEUM - GYP	FOSSILIFEROUS - FOSS	LIMY - LMY	COARSE - CSE	GRANULAR - GRNL	VUGGY - VGY	STYLOLITIC - STY	WITH - W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	

1257	0.1	6.7				
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PURSUIT OIL N.L. HINDHAUGH CREEK NO. 1SIDEWALL CORE DESCRIPTIONSRUN NO. 1

No.	Depth	Rec.	Lithology	Fluorescence
1	4,510 1374.64 _m	$\frac{1}{4}$ "	<u>Siltstone</u> - fine grained. <u>Sandstone</u> , light to dark grey, very hard, very calcareous, quartzose with minor lithics and feldspas, carbonaceous streaks forming well defined bedding. Tight.	None
2	4,502 1372.21	$\frac{1}{2}$ "	<u>Sandstone</u> - fine grained, light grey, very friable, quartz rich with calcareous cement. Carbonaceous streaks define irregular bedding. Slight porosity with perhaps good permeability along bedding planes.	None
3	4,440 1353.31	$\frac{1}{2}$ "	<u>Siltstone</u> - medium grey, hard but fractured, calcareous and carbonaceous with poorly defined bedding. Some feldspathic and micaceous material. Tight.	None
4	4,172 1271.62	$1\frac{1}{4}$ "	<u>Siltstone</u> - medium grey, hard but fractured, only slightly calcareous and carbonaceous, massive, tight.	None
5	4,159 1267.66	$\frac{3}{4}$ "	<u>Siltstone</u> - medium grey, hard but fractured, calcareous and micaceous, massive and non-carbonaceous, tight. Calcite filling fractures.	None
6	4,147 1264.00	$1\frac{3}{4}$ "	<u>Siltstone</u> - fine grained <u>Sandstone</u> , light grey, very friable, very calcareous, quartzose, massive. Almost unconsolidated, porous and permeable.	None
7	3,821 1164.64	1"	<u>Sandstone</u> - fine to medium grained, white, massive, quartz rich with calcareous cement. Very friable, almost unconsolidated, porous and permeable.	Very faint pin-point fluorescence

No.	Depth	Rec.	Lithology	Fluorescence
8	3.809 1160.98	1 $\frac{1}{4}$ "	<u>Sandstone</u> - fine to medium grained, light grey, massive, quartz rich with calcareous cement. Friable with hard streaks. Good porosity.	None
9	3,795 1156.71	1"	<u>Sandstone</u> - fine to medium grained, white, massive, quartz rich with calcareous cement. Very friable, almost unconsolidated, porous and permeable.	None
10	3,793 1156.10	$\frac{3}{4}$ "	<u>Sandstone</u> - fine to medium grained, white, massive, quartz rich with calcareous cement. Very friable, almost unconsolidated. Porous and permeable.	None
11	3,790 1155.18	$\frac{1}{2}$ "	Interbedded <u>Sandstones</u> as above with black carbonaceous almost coaly mudstones. Slightly calcareous, friable, particularly along bedding planes. Porous and permeable.	Mineral fluorescence
12	3,782 1152.75	1 $\frac{1}{2}$ "	<u>Sandstone</u> , fine - medium grained, white to medium grey, massive, quartz rich, in part with a calcareous cement. In part friable with very hard pyritic nodules. Probably porous and permeable.	None
13	3,781		No recovery.	-
14	3,607 1098.41	$\frac{3}{4}$ "	<u>Siltstone</u> - dark grey, carbonaceous, slightly calcareous. Faint bedding defined by lighter grey silty bands. Fractured and friable. Tight.	None
15	3,571 1088.44	1 $\frac{1}{4}$ "	<u>Sandstone</u> , medium grained, white, massive, deeply invaded with mud, quartz rich with very calcareous cement. Very friable, porous and permeable.	None
16	3,569 1087.83	1 $\frac{1}{4}$ "	<u>Siltstone</u> - medium grey, slightly calcareous, massive, Moderately hard, fractured, Tight.	Mineral fluorescence

No.	Depth	Rec.	Lithology	Fluorescence
17	3,565 1086.61	$\frac{3}{4}$ "	<u>Siltstone</u> , medium grey, very calcareous, laminated bedding defined by lighter grey bands. Hard but fractured with calcite veins filling fractures. Tight.	Mineral fluorescence
18	3,000 814.4	$\frac{3}{4}$ "	<u>Sandstone</u> , fine to medium grained, white, massive, deeply invaded with mud. Quartz rich with very calcareous cement. Very friable, almost unconsolidated, porous and permeable.	None
19	2,700 822.86	$\frac{3}{4}$ "	<u>Sandstone</u> , fine grained, light grey, massive, quartz rich with minor lithics and feldspars. Very calcareous cement. Soft and friable, almost unconsolidated, porous and permeable.	None
20	2,350 716.28	$\frac{1}{2}$ "	<u>Siltstone</u> , medium grey, massive, non-calcareous, hard but fractured. Tight.	None
21	2,346 715.06	$1\frac{1}{2}$ "	<u>Siltstone</u> , light grey silty silty bands and dark grey carbonaceous bands define a finely laminated bedding. Only slightly calcareous. Hard but friable along bedding. Tight.	None
22	2,329 708.87	$\frac{3}{4}$ "	<u>Sandstone</u> , fine to medium grained, light grey, massive, quartz rich with very calcareous cement. In part hard, in part friable, porous and permeable.	None
23	2,234 680.82	$\frac{3}{4}$ "	<u>Sandstone</u> , fine to medium grained, light grey, massive, quartz rich with very calcareous cement. In part hard, in part friable, porous and permeable.	None
24	1,759 536.14	$\frac{3}{4}$ "	<u>Siltstone</u> , medium grey, massive, calcareous. Hard but fractured. Tight.	None

No.	Depth	Rec.	Lithology	Fluorescence
25	1,500 457.2	1"	<u>Mudstone</u> , dark grey to black, massive, very carbonaceous, almost lignitic, slightly calcareous. Hard but fractured. Tight.	None
26	1,461 445.31	$\frac{3}{4}$ "	<u>Siltstone</u> to fine grained <u>Sandstone</u> , light to medium grey bands defining faint laminated bedding. Quartz rich with minor lithics and feldspars in a calcareous cement. Hard and tight.	None
27	1,305 387.76	$1\frac{3}{4}$ "	<u>Siltstone</u> , light to medium grained, calcareous, massive, carbonaceous. Hard but fractured, tight.	None
28	1,191 363.01	$1\frac{3}{4}$ "	<u>Mudstone</u> , medium grey, slightly carbonaceous and micaceous, non-calcareous, massive. Hard and tight.	None
29	1,098 334.67	$1\frac{3}{4}$ "	<u>Sandstone</u> , fine grained, light grey, massive. Quartz rich with minor feldspars in a very calcareous matrix. Hard and tight.	None
30	917 279.5	2"	<u>Mudstone</u> , medium grey, carbonaceous, calcareous, massive, soft and tight.	None

CORE ANALYSIS RESULTS

Company PURSUIT OIL N. I. Formation _____ File AP3-154
 Well HINDHAUGH CREEK No. 1 Core Type SIDE WALL Date Report 1 OCT 69
 Field _____ Drilling Fluid _____ Analysts GAK, BIL
 County _____ State _____ Elev. _____ Location _____

Lithological Abbreviations

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY (MILLIDARCY)	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	
1	1098	0.2	13.6	0.0	86.8	SIDE WALL CORE No. 29
2	2235	2.2	16.9	0.0	81.7	No. 23
3	2329	19	26.9	0.7	78.8	No. 22
4	2700	0.3	-	-	-	No. 19
5	3000	7.5	-	-	-	No. 18
6	3571	36	-	-	-	No. 15
7	3782	0.6	23.4	0.4	87.6	No. 12
8	3790	71	-	-	-	No. 11
9	3793	36	-	-	-	No. 10
10	3795	351	-	-	-	No. 9
11	3809	0.2	27.8	0.0	85.0	No. 8
12	3821	0.7	24.6	0.0	72.4	No. 7
13	4147	0.1	23.0	0.0	82.7	No. 6
14	4502	33	-	-	-	No. 2

SAMPLE No. 4 - 6, 8 - 10, AND 14 INSUFFICIENT FOR FULL ANALYSIS

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PURSUIT OIL N.L. HINDHAUGH CREEK NO. 1

SIDEWALL CORE DESCRIPTIONS

RUN NO. 2

No.	Depth	Rec.	Lithology	Fluorescence
11	7,097 (2163.16m)	1"	<u>Sandstone</u> - light grey, very fine grained, quartzose slightly lithic and feldspathic, calcareous matrix. Could have some porosity?	Very dull fluorescence
14	6,091 (1856.5m)	$\frac{3}{4}$ "	<u>Mudstone</u> - dark grey, with thin laminae of calcareous siltstone.	None
15	5,833 (1844m)	$1\frac{1}{4}$ "	<u>Mudstone</u> - dark grey, rarely silty, with several fractures along which white calcite is deposited.	None
16	5,829 (1776.67m)	1"	<u>Coal</u> - dark brown, fairly soft, earthy with several thin veins of white amorphous calcite.	None
18	5,547 (1690.7m)	$1\frac{1}{2}$ "	<u>Coal</u> - black, slightly lustrous, flakey.	None
19	5,539 (1688m)	$1\frac{1}{4}$ "	<u>Sandstone</u> - grey, very fine grained, quartzose, slightly lithic and feldspathic, calcareous matrix. Coaly and carbonaceous laminae.	None
20	5,270 (1606m)	$\frac{3}{4}$ "	<u>Siltstone</u> - grey, quartzose, lithic, calcareous with minor coaly streaks.	None
21	5,237 (1596.24m)	$1\frac{1}{2}$ "	<u>Mudstone</u> - dark grey, with minor silty streaks. The siltstone is calcareous.	None
23	5,175 (1577.3m)	$\frac{1}{4}$ "	<u>Mudstone</u> - dark grey, slightly silty.	None
24	5,155 (1571.24m)	$\frac{1}{2}$ "	<u>Mudstone</u> - dark grey, shattered into small angular fragments.	None
27	5,086 (1550.21m)	$\frac{3}{4}$ "	<u>Mudstone</u> - dark grey, hard, broken by shattering and fractures into angular fragments.	None

No.	Depth	Rec.	Lithology	Fluorescence
28	4,941 1506.0 ft	$\frac{3}{4}$ "	<u>Sandstone</u> - light grey, fine grained, quartzose, slightly lithic and feldspathic, abundant calcareous matrix. Some silty and muddy streaks.	Very dull fluorescence
SWC 1 - 10, 12, 13, 17, 25, 26 - No recovery.				

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Petroleum Reservoir Engineering
DALLAS, TEXAS

APPENDIX IV

page 12

Company PURSUIT OIL N.L. Formation _____ Page 3 of 1
 Well HINDHAUGH CREEK No. 1 Cores SIDEWALL File AP-1-194
 Field WILDCAT Drilling Fluid _____ Date Report 13 NOV 1969
 State AUST. State VICTORIA Elevation _____ Analysts AD
 Location _____ Remarks _____

CORE ANALYSIS RESULTS

(Figures in parentheses refer to footnote remarks)

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS		POROSITY PERCENT	RESIDUAL SATURATION		PROBABLE PRODUCTION	REMARKS
		HORIZONTAL	VERTICAL		OIL % VOLUME % PORE	TOTAL WATER % PORE		
11	7097 2163 ^m	5.7		21.95	0.0	0.0	79.00	ss, grey, f/gn, very Argill.
19	5539 1688	1160.0		26.56	0.0	0.0	79.00	ss, dk grey, f/gn, v/Argill w/corp ptgs.
28	4941 1506	63.0		26.10	0.0	0.0	70.00	ss, lt grey, f/gn, very Argill.

NOTE:

- (*) REFER TO ATTACHED LETTER.
 (1) INCOMPLETE CORE RECOVERY—INTERPRETATION RESERVED.

(2) OFF LOCATION ANALYSES—NO INTERPRETATION OF RESULTS.

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Appendix VII
Geochemistry and Well
Data

(Added by DNRE 26/07/00)

CORE ANALYSIS RESULTS

NOTE: (i) Unless otherwise stated, porosities and permeabilities were determined on two plugs (V&H) cut vertically and horizontally to the axis of the core. Ruska porosimeter and permeameter were used with air and dry nitrogen as the saturating and flowing media respectively. (ii) Oil and water saturations were determined using Soxhlet type apparatus. (iii) Acetone test precipitates are recorded as Neg., Trace, Fair, Strong or Very Strong.

WELL NAME AND NO. Hindhaugh Creek No. 1

DATE ANALYSIS COMPLETED October 22, 1970

Core No.	Sample Depth		Lithology	Average Effective Porosity two plugs (% Bulk Vol.)	Absolute Permeability (Millidarcy)		Average Density (gm/cc.)		Fluid Saturation (% pore space)		Core Water Salinity (p.p.m. NaCl)	Acetone Test	Fluorescence of freshly broken core
	From	To			V	H	Dry Bulk	Apparent Grain	Water	Oil			
1	1263'0"	1263'5"	Slst; cald. carb arg.	8.1	nil	nil	2.50	2.72	62	nil	n.d.	neg.	dull even yell. spotted
2	3670'0"	3670'5"	Sst; v.f. gr slty. carb	1.7	nil	nil	2.58	2.62	100	nil	n.d.	neg.	nil
3	7780'0"	7780'7"	Sh; slty	1.1	nil	nil	2.67	2.70	100	nil	n.d.	neg.	nil

Remarks: -

General File No. 69/1414
Well File No. 69/2026