

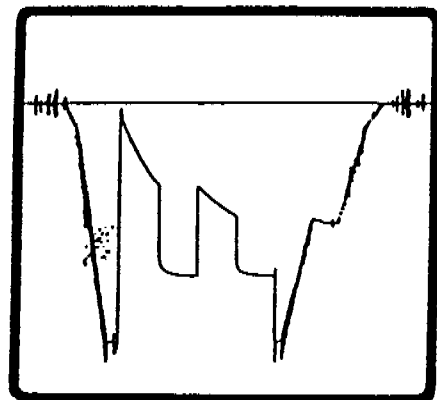
APPENDIX 2

DRILL STEM TEST RESULTS


## DRILL STEM TEST REPORT

Report No. 1Well East Mereenie 11 Elevation K.B. 2349 Elevation G.L. 2329 Date 17/11/83Test No. 1 Interval 4599.25-4655 Operator HalliburtonTester Size & Type 5" Hydrospring Packer Size & Type OH 6-1/2"Anchor Length & O.D. 24' at 5"; 31' at 6-1/2" Drill collar footage above Packer 346'Capacity Bbls/ft. Drill Pipe 0.0142 bbls/ft Collars 0.00519 bbl/ftPressure Recorders Type Borden Position Top Depth 4576.41'Type Borden Position Bottom Depth 4650.94'Perforated Anchor from 4650.94' to 4636.94'Choke Size: Top 1/2" Bottom 3/4" Water Cushion NIL Mud Wt. 9.5 Vis. 65Hole Size 10-3/4" to 2274' Rat hole size 7-7/8" to 4655'  
9-7/8" to 3957'Mud Level: Before valve opened at flow line After valve opened sameTime Record: Started clocks at 19.15 Hrs. Started in hole at 19.45 Hrs.Opened Valve at 00.13 Hrs. Shut in at 00.23 Hrs. Opened at 01.03 Hrs. Shut in at 02.47 Hrs.Pulled Packer at 05.55 Hrs. Out of hole at 17.30 Hrs. Recovered chart at 17.30 Hrs.Nature of Blow Initially moderate rapidly increasing to strong. Gas to surface at 00.20 hrs  
(7 mins).Fluid flow (details) Oil to surface at 01.27 hrs. Slugging oil, surface pressure increasing from  
0 to approximately 250 p.s.i. Steady slugging flow.Recovery Flow through separator into measuring tank at 01.55 hrs to 02.45 hrs (50 mins)Recover 4050 litres (25.47 bbls)Pressures I.H.P. 2339 psig IFP 107 psig ISIP 1806 psig FFP 1023 psig FSIP 1806 psigF.H.P. 2299 psigElapsed Times: Initial flow 10 mins. Initial Shut in 40 mins.Final flow 104 mins. Final Shut in 175 mins.Maximum Temperature 130° F Samples Taken 2 Oil Samples from Bubble HoseRemarks Gas rate = 580 Mcfd (76.2 psi at 64°F)Gas rate = 735 BOPD (4050 litres in 50 mins)Gas oil ratio = 790 cu ft/bblCrude is 46 API at 60°F. Both charts O.K. Show zone has good permeability.David Warner.

# FORMATION TESTING SERVICE REPORT



Duncan, Oklahoma 73536

 A Halliburton Company

# NOMENCLATURE

B	= Formation Volume Factor (Res Vol / Std Vol)	—
$C_1$	= System Total Compressibility	(Vol / Vol) / psi
DR	= Damage Ratio	—
h	= Estimated Net Pay Thickness	ft
k	= Permeability	md
m	{ = (Liquid) Slope Extrapolated Pressure Plot (Gas) Slope Extrapolated m(P) Plot	psi/cycle MM psi <sup>2</sup> /cp/cycle
m(P*)		MM psi <sup>2</sup> /cp
m(P <sub>f</sub> )	= Real Gas Potential at P <sub>f</sub>	MM psi <sup>2</sup> /cp
AOF <sub>1</sub>	= Maximum Indicated Absolute Open Flow at Test Conditions	MCFD
AOF <sub>2</sub>	= Minimum Indicated Absolute Open Flow at Test Conditions	MCFD
P*	= Extrapolated Static Pressure	Psig
P <sub>f</sub>	= Final Flow Pressure	Psig
Q	= Liquid Production Rate During Test	BPD
Q <sub>1</sub>	= Theoretical Liquid Production w/ Damage Removed	BPD
Q <sub>g</sub>	= Measured Gas Production Rate	MCFD
r <sub>i</sub>	= Approximate Radius of Investigation	ft
r <sub>w</sub>	= Radius of Well Bore	ft
S	= Skin Factor	
t	= Total Flow Time Previous to Closed-in	Minutes
Δt	= Closed-in Time at Data Point	Minutes
T	= Temperature Rankine	°R
φ	= Porosity	—
μ	= Viscosity of Gas or Liquid	cp
Log	= Common Log	



TICKET NO. 32381200

20-DEC-83

ALICE SPRINGS

# FORMATION TESTING SERVICE REPORT

LEASE NAME		WELL NO. 11		TEST NO. 1		4599.1 - 4855.1		ULUDAIR N.O.L.	
LEGAL LOCATION		SEE REMARKS		FIELD AREA		ARABDEUS BASIN		LEASE OWNER/COMPANY NAME	
SEC. - TWP. - RNC.						COUNTY NORTHERN TERR.		STATE: AUSTRALIA OR	

323812-8531

GAUGE NO: 8531 DEPTH: 4576.4 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2303	2288.8			
B	INITIAL FIRST FLOW	57	56.1			
C	FINAL FIRST FLOW	480	469.9	10.0	9.3	F
C	INITIAL FIRST CLOSED-IN	480	469.9			
D	FINAL FIRST CLOSED-IN	1798	1800.0	39.0	38.4	C
E	INITIAL SECOND FLOW	537	547.2			
F	FINAL SECOND FLOW	999	1006.7	105.0	105.3	F
F	INITIAL SECOND CLOSED-IN	999	1006.7			
G	FINAL SECOND CLOSED-IN	1798	1799.2	188.0	189.0	C
H	FINAL HYDROSTATIC	2247	2318.3			

323512-8530

GAUGE NO: 8530 DEPTH: 4651.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2339	2327.2			
B	INITIAL FIRST FLOW	107	108.4	10.0	9.3	F
C	FINAL FIRST FLOW	560	549.9			
C	INITIAL FIRST CLOSED-IN	560	549.9	39.0	38.4	C
D	FINAL FIRST CLOSED-IN	1806	1822.1			
E	INITIAL SECOND FLOW	573	580.2	105.0	105.3	F
F	FINAL SECOND FLOW	1023	1029.7			
F	INITIAL SECOND CLOSED-IN	1023	1029.7	188.0	189.0	C
G	FINAL SECOND CLOSED-IN	1806	1819.3			
H	FINAL HYDROSTATIC	2299	2352.5			

# EQUIPMENT & HOLE DATA

FORMATION TESTED: PACOOTO SANDSTONE  
 NET PAY (ft): \_\_\_\_\_  
 GROSS TESTED FOOTAGE: 56.0  
 ALL DEPTHS MEASURED FROM: KELLY BUSHING  
 CASING PERFS. (ft): \_\_\_\_\_  
 HOLE OR CASING SIZE (in): 7.875  
 ELEVATION (ft): 2349  
 TOTAL DEPTH (ft): 4655.0  
 PACKER DEPTH(S) (ft): 4591.4599  
 FINAL SURFACE CHOKE (in): 0.500  
 BOTTOM HOLE CHOKE (in): 0.750  
 MUD WEIGHT (lb/gal): 9.50  
 MUD VISCOSITY (sec): 60  
 ESTIMATED HOLE TEMP. (°F): \_\_\_\_\_  
 ACTUAL HOLE TEMP. (°F): 130 @ 4651.0 ft

TICKET NUMBER: 32381200

DATE: 11-17-83 TEST NO: 1

TYPE DST: OPEN HOLE

HALLIBURTON CAMP:  
ALICE SPRINGS

TESTER: SKINNER

WITNESS: WARNER

DRILLING CONTRACTOR:  
OILMIN N.L.

## FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm

## SAMPLER DATA

Pstg AT SURFACE: \_\_\_\_\_  
 cu.ft. OF GAS: \_\_\_\_\_  
 cc OF OIL: \_\_\_\_\_  
 cc OF WATER: \_\_\_\_\_  
 cc OF MUD: \_\_\_\_\_  
 TOTAL LIQUID cc: \_\_\_\_\_

## HYDROCARBON PROPERTIES

OIL GRAVITY (°API): 46.0 @ 60°F  
 GAS/OIL RATIO (cu.ft. per bbl): 789  
 GAS GRAVITY: \_\_\_\_\_

## CUSHION DATA

TYPE	AMOUNT	WEIGHT
_____	_____	_____
_____	_____	_____

## RECOVERED:

735 BARRELS PER DAY  
 580 MCFD  
 WELL FLOWED GAS • 580 MCF/D AND OIL • 735 BPD.

MEASURED FROM  
TESTER VALVE

## REMARKS:

LEGAL LOCATION: LAT-24 DEGREES 02' 10" SOUTH LONG. 131 DEGREES 38' 41" EAST



TYPE & SIZE MEASURING DEVICE: _____ SURFACE CHOKE _____					TICKET NO: 32381200
TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
11-16-83					
1900					LOADED CLOCKS
1945					MADE UP AND WENT IN HOLE
2355					MADE UP HEAD
11-17-83					
0007					SET PACKER
0013					OPENED TOOL WITH MODERATE BLOW
0016	.5				OPENED FLARE LINE
0018		20			
0020		20			GAS TO SURFACE
0023		10			CLOSED TOOL
0102		10			OPENED TOOL
0107		15			
0112		4			
0117		0			
0120		0			MUD TO SURFACE
0122		100			
0127		165			CRUDE TO SURFACE
0132		210			
0137		250			
0142		250			
0147		250	580	735	
0157		250			
0207		250			
0218					CLOSED FLARE LINE TO INSTALL VALVE
0219					OPENED FLARE LINE
0237		250			
0247		250	580	735	CLOSED TOOL
0555					PULLED PACKER AND DROPPED BAR TO REVERSE OUT
1330					LAI D OUT HEAD AND PULLED OUT OF HOLE
1730					TOOLS OUT AND LAID DOWN

TICKET NO: 32381200

CLOCK NO: 8083 HOUR: 24


  
**HALLIBURTON**
  
 SERVICES

GAUGE NO: 8531

DEPTH: 4576.4

REF	MINUTES	PRESSURE	AP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	56.1			
2	2.0	353.5	297.5		
3	4.0	389.1	35.6		
4	6.0	417.5	28.4		
5	8.0	452.7	35.2		
C 6	9.3	469.9	17.2		

FIRST CLOSED-IN					
C 1	0.0	469.9			
2	1.0	1752.2	1282.3	0.9	1.021
3	2.0	1769.3	1299.4	1.6	0.760
4	3.0	1776.5	1306.6	2.3	0.613
5	4.0	1780.5	1310.6	2.8	0.524
6	5.0	1784.7	1314.8	3.3	0.458
7	6.0	1786.1	1316.2	3.7	0.408
8	7.0	1788.4	1318.5	4.0	0.368
9	8.0	1789.5	1319.6	4.3	0.337
10	9.0	1790.9	1321.0	4.6	0.309
11	10.0	1791.9	1322.0	4.8	0.288
12	12.0	1793.4	1323.5	5.2	0.251
13	14.0	1794.5	1324.6	5.6	0.222
14	16.0	1795.9	1326.0	5.9	0.200
15	18.0	1796.9	1327.0	6.2	0.182
16	20.0	1796.9	1327.0	6.4	0.166
17	22.0	1797.9	1328.0	6.6	0.154
18	24.0	1798.0	1328.1	6.7	0.143
19	26.0	1798.6	1328.7	6.9	0.133
20	28.0	1798.5	1328.5	7.0	0.125
21	30.0	1799.0	1329.1	7.1	0.118
22	35.0	1799.3	1329.4	7.4	0.103
D 23	38.4	1800.0	1330.1	7.5	0.095

SECOND FLOW					
E 1	0.0	547.2			
2	2.0	546.6	-0.6		
3	4.0	563.4	16.8		
4	6.0	586.8	23.4		
5	8.0	608.4	21.6		
6	10.0	634.5	26.1		
7	12.0	669.0	34.6		
8	14.0	703.8	34.7		
9	16.0	744.4	40.6		
10	18.0	794.0	49.6		
11	20.0	830.7	36.7		
12	22.0	865.8	35.2		
13	24.0	895.7	29.8		
14	26.0	922.0	26.3		

REF	MINUTES	PRESSURE	AP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
15	28.0	942.4	20.4		
16	30.0	960.2	17.8		
17	40.0	1011.8	51.6		
18	50.0	1013.6	1.8		
19	60.0	1011.1	-2.5		
20	70.0	1010.7	-0.4		
<input type="checkbox"/> 21	76.7	1008.4	-2.2		
<input checked="" type="checkbox"/> 22	78.0	1029.1	20.6		
23	80.0	1031.3	2.2		
24	90.0	1020.1	-11.2		
25	100.0	1010.3	-9.8		
F 26	105.3	1006.7	-3.5		

SECOND CLOSED-IN					
F 1	0.0	1006.7			
2	1.0	1417.1	410.4	1.0	2.071
3	2.0	1737.3	730.5	2.0	1.767
4	3.0	1757.6	750.8	2.9	1.597
5	4.0	1765.3	758.5	3.9	1.473
6	5.0	1770.2	763.4	4.8	1.377
7	6.0	1772.1	765.4	5.7	1.307
8	7.0	1775.5	768.7	6.6	1.240
9	8.0	1776.6	769.9	7.5	1.184
10	9.0	1778.2	771.4	8.4	1.137
11	10.0	1779.1	772.4	9.2	1.095
12	12.0	1781.1	774.4	10.8	1.025
13	14.0	1782.9	776.2	12.5	0.964
14	16.0	1784.5	777.7	14.1	0.911
15	18.0	1786.0	779.3	15.6	0.867
16	20.0	1786.6	779.8	17.0	0.829
17	22.0	1787.0	780.2	18.5	0.793
18	24.0	1787.8	781.1	19.8	0.762
19	26.0	1788.1	781.4	21.2	0.733
20	28.0	1788.5	781.8	22.5	0.707
21	30.0	1790.1	783.3	23.8	0.683
22	35.0	1790.8	784.0	26.8	0.631
23	40.0	1790.8	784.0	29.7	0.587
24	45.0	1792.2	785.4	32.3	0.550
25	50.0	1792.6	785.8	34.8	0.518
26	55.0	1793.4	786.7	37.2	0.489
27	60.0	1793.7	787.0	39.4	0.464
28	70.0	1794.4	787.7	43.4	0.421
29	80.0	1795.2	788.5	47.1	0.386
30	90.0	1795.8	789.1	50.4	0.357
31	100.0	1795.9	789.2	53.4	0.332
32	110.0	1796.6	789.9	56.1	0.310
33	120.0	1796.6	789.9	58.6	0.291
34	135.0	1797.3	790.6	62.0	0.267
35	145.0	1797.3	790.6	64.0	0.253
36	160.0	1798.7	792.0	66.8	0.235
37	175.0	1799.0	792.3	69.3	0.219

## LEGEND:

☐ OPEN AT SURFACE☒ CLOSED AT SURFACE

REMARKS:

TICKET NO: 32381200

CLOCK NO: 8083 HOUR: 24

  
**HALLIBURTON**  
SERVICES

GAUGE NO: 8531

DEPTH: 4576.4

REF	MINUTES	PRESSURE	$\Delta P$	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
SECOND CLOSED-IN - CONTINUED					
G 38	189.0	1799.2	792.4	71.4	0.206

REF	MINUTES	PRESSURE	$\Delta P$	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
-----	---------	----------	------------	--	--------------------------------------

## LEGEND:

☐ OPEN AT SURFACE☒ CLOSED AT SURFACE

REMARKS:

TICKET NO: 32381200

CLOCK NO: 7370 HOUR: 24

HALLIBURTON

SERVICES

GAUGE NO: 8530

DEPTH: 4651.0

REF	MINUTES	PRESSURE	AP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	108.4			
2	2.0	472.4	364.0		
3	4.0	514.7	42.3		
4	6.0	516.7	2.0		
5	8.0	536.5	19.8		
C 6	9.3	549.9	13.4		

FIRST CLOSED-IN					
C 1	0.0	549.9			
2	1.0	1783.9	1234.0	0.9	1.025
3	2.0	1792.8	1243.0	1.6	0.758
4	3.0	1799.6	1249.7	2.3	0.616
5	4.0	1803.2	1253.3	2.8	0.527
6	5.0	1806.6	1256.8	3.3	0.456
7	6.0	1808.5	1258.6	3.7	0.408
8	7.0	1810.9	1261.0	4.0	0.369
9	8.0	1812.1	1262.2	4.3	0.337
10	9.0	1813.3	1263.4	4.6	0.309
11	10.0	1814.1	1264.2	4.8	0.286
12	12.0	1815.7	1265.8	5.3	0.250
13	14.0	1817.0	1267.2	5.6	0.222
14	16.0	1817.7	1267.8	5.9	0.200
15	18.0	1818.5	1268.6	6.2	0.182
16	20.0	1819.4	1269.5	6.4	0.167
17	22.0	1819.9	1270.1	6.6	0.154
18	24.0	1820.3	1270.5	6.7	0.143
19	26.0	1820.3	1270.5	6.9	0.133
20	28.0	1820.9	1271.0	7.0	0.125
21	30.0	1821.4	1271.5	7.1	0.118
22	35.0	1822.2	1272.3	7.4	0.103
D 23	38.4	1822.1	1272.2	7.5	0.095

SECOND FLOW					
E 1	0.0	580.2			
2	2.0	580.4	0.3		
3	4.0	587.2	6.7		
4	6.0	611.2	24.1		
5	8.0	633.2	22.0		
6	10.0	658.3	25.1		
7	12.0	688.6	30.3		
8	14.0	725.8	37.2		
9	16.0	770.8	45.0		
10	18.0	819.3	48.5		
11	20.0	861.4	42.1		
12	22.0	892.6	31.2		
13	24.0	919.0	26.5		
14	26.0	946.3	27.2		
























REF	MINUTES	PRESSURE	AP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
15	28.0	967.2	20.9		
16	30.0	986.0	18.8		
17	40.0	1037.0	51.0		
18	50.0	1037.0	0.0		
19	60.0	1034.4	-2.7		
20	70.0	1032.8	-1.6		
<input type="checkbox"/> 21	76.7	1031.6	-1.2		
<input checked="" type="checkbox"/> 22	78.0	1053.7	22.1		
23	80.0	1054.9	1.2		
24	90.0	1042.8	-12.1		
25	100.0	1032.6	-10.2		
F 26	105.3	1029.7	-2.9		

SECOND CLOSED-IN					
F 1	0.0	1029.7			
2	1.0	1687.1	657.4	1.0	2.074
3	2.0	1763.7	734.0	1.9	1.770
4	3.0	1778.2	748.5	2.9	1.596
5	4.0	1786.6	756.9	3.9	1.470
6	5.0	1791.0	761.2	4.8	1.382
7	6.0	1793.9	764.2	5.7	1.301
8	7.0	1795.7	766.0	6.6	1.238
9	8.0	1798.0	768.3	7.5	1.185
10	9.0	1799.1	769.4	8.3	1.140
11	10.0	1800.4	770.7	9.2	1.094
12	12.0	1802.5	772.8	10.8	1.024
13	14.0	1804.8	775.1	12.5	0.963
14	16.0	1805.6	775.9	14.0	0.912
15	18.0	1806.6	776.9	15.8	0.867
16	20.0	1808.0	778.3	17.0	0.828
17	22.0	1809.0	779.3	18.4	0.793
18	24.0	1809.2	779.5	19.8	0.762
19	26.0	1809.6	779.9	21.2	0.733
20	28.0	1810.2	780.5	22.5	0.707
21	30.0	1811.0	781.3	23.8	0.683
22	35.0	1812.1	782.4	26.8	0.631
23	40.0	1812.9	783.2	29.6	0.587
24	45.0	1813.8	784.1	32.3	0.550
25	50.0	1813.8	784.1	34.8	0.518
26	55.0	1814.8	785.1	37.2	0.489
27	60.0	1814.8	785.1	39.4	0.464
28	70.0	1815.7	786.0	43.5	0.421
29	80.0	1815.7	786.0	47.1	0.386
30	90.0	1816.9	787.2	50.4	0.357
31	100.0	1817.6	787.8	53.4	0.332
32	110.0	1817.6	787.8	56.1	0.310
33	120.0	1817.8	788.1	58.6	0.291
34	135.0	1818.6	788.9	62.0	0.267
35	145.0	1818.6	788.9	64.0	0.253
36	160.0	1818.6	788.9	66.8	0.236
37	175.0	1819.5	789.8	69.3	0.218

## LEGEND:

☐ OPEN AT SURFACE☒ CLOSED AT SURFACE

REMARKS:

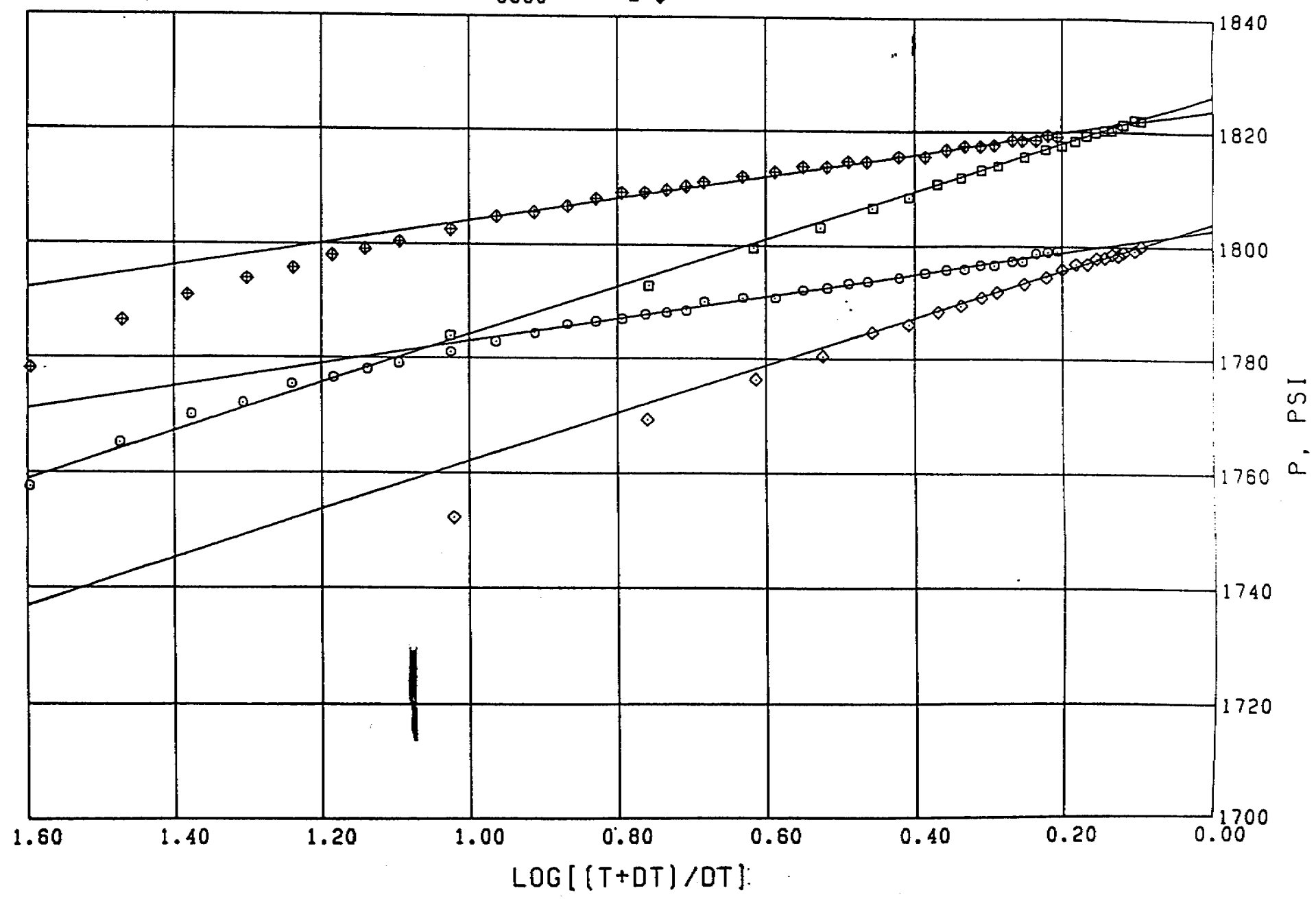
		O.O.	I.O.	LENGTH	DEPTH	
1		DRILL PIPE.....	4.500	3.826	4025.3	
4		FLEX WEIGHT.....	4.500	2.754	182.9	
3		DRILL COLLARS.....	6.500	2.312	278.3	
97		STABILIZER.....	6.500	2.250	7.6	
3		DRILL COLLARS.....	6.500	2.312	31.3	
50		IMPACT REVERSING SUB.....	6.500	3.000	1.0	4525.9
3		DRILL COLLARS.....	6.500	2.312	31.1	
97		STABILIZER.....	6.500	2.250	7.7	
5		CROSSOVER.....	6.500	2.000	1.0	
12		DUAL CIP VALVE.....	5.000	0.870	4.9	
60		HYDROSPRING TESTER.....	5.000	0.750	5.3	4575.4
80		AP RUNNING CASE.....	5.000	2.250	4.1	4576.4
15		JAR.....	5.000	1.000	3.3	
16		VR SAFETY JOINT.....	5.000	1.000	2.8	
70		OPEN HOLE PACKER.....	6.500	1.530	5.8	4591.0
18		DISTRIBUTOR VALVE.....	5.000	1.680	2.0	
70		OPEN HOLE PACKER.....	6.500	1.530	5.8	4599.0
19		ANCHOR PIPE SAFETY JOINT.....	5.000	1.500	4.3	
5		CROSSOVER.....	6.500	2.500	0.9	
3		DRILL COLLARS.....	6.500	2.312	31.5	
5		CROSSOVER.....	6.500	2.500	1.0	
20		FLUSH JOINT ANCHOR.....	5.000	2.370	13.0	
81		BLANKED-OFF RUNNING CASE.....	5.000		4.1	4651.0
TOTAL DEPTH					4655.0	

EQUIPMENT DATA

TICKET NO 32381200

GAUGE NO CIP 1 2  
8531     ◇ ○

GAUGE NO CIP 1 2  
8530     □ ◇



# SUMMARY OF RESERVOIR PARAMETERS USING HORNER METHOD

OIL GRAVITY 46.0 °60° WATER % SALT 0.0  
 GAS GRAVITY 0.700 FLUID GRADIENT 0.3454 psf/ft  
 GAS/OIL RATIO 789.0 cu.ft/bbl FORMATION VOL FACTOR 1.424 vol/vol  
 TEMPERATURE 130.0 °F FLUID PROPERTIES AT 1823.9 Pstg  
 VISCOSITY 0.442 cp NET PAY 0.0 ft  
 PIPE CAPACITY FACTOR(S) 0.00519 0.00742 0.01422 bbl/ft

GAUGE NUMBER	8531	8530					
GAUGE DEPTH	4576.4	4651.0					
FLOW AND CIP PERIOD	2	2					UNITS
FINAL FLOW PRESSURE $P_f$	1006.7	1029.7					Pstg
TOTAL FLOW TIME $t$	114.6	114.6					min
EXTRAPOLATED PRESSURE $P^*$	1802.9	1823.9					Pstg
ONE CYCLE PRESSURE	1783.0	1804.1					Pstg
PRODUCTION RATE $Q$	735.0	735.0					BPD
TRANSMISSIBILITY $kh/\mu$	8559.46	8580.16					md-ft cp
FLOW CAPACITY $kh$	3783.49	3792.64					md-ft
PERMEABILITY $k$	67.5623	67.7257					md
DAMAGE RATIO $DR$	7.33	7.33					
POTENTIAL RATE $Q_i$	5386.3	5386.0					BPD
RADIUS OF INVESTIGATION $r_i$	407.5	408.0					ft

## REMARKS:

THE ANALYSIS WAS BASED ON THE REPORTED PRODUCTION RATE OF 735 BBLs/DAY

## NOTICE:

THESE CALCULATIONS ARE BASED UPON INFORMATION FURNISHED BY YOU AND TAKEN FROM DRILL STEM PRESSURE CHARTS, AND ARE FURNISHED FOR YOUR INFORMATION. IN FURNISHING SUCH CALCULATIONS AND EVALUATIONS BASED THEREON, HALLIBURTON IS MERELY EXPRESSING ITS OPINION. YOU AGREE THAT HALLIBURTON MAKES NO WARRANTY EXPRESS OR IMPLIED AS TO THE ACCURACY OF SUCH CALCULATIONS OR OPINIONS, AND THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER DUE TO NEGLIGENCE OR OTHERWISE, IN CONNECTION WITH SUCH OPINIONS.

## EQUATIONS FOR DST LIQUID WELL ANALYSIS

Transmissibility	$\frac{kh}{\mu} = \frac{162.6 QB}{m}$	$\frac{\text{md-ft}}{\text{cp}}$
Indicated Flow Capacity	$kh = \frac{kh}{\mu} \mu$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Damage Ratio	$DR = .183 \frac{P^* - P_I}{m}$	—
Theoretical Potential w / Damage Removed	$Q_1 = Q DR$	BPD
Approx. Radius of Investigation	$r_i = 4.63 \sqrt{kt}$	ft

## EQUATIONS FOR DST GAS WELL ANALYSIS

Indicated Flow Capacity	$kh = \frac{1637 Q_g T}{m}$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Skin Factor	$S = 1.151 \left[ \frac{m(P^*) - m(P_I)}{m} - \text{LOG} \frac{kl}{\phi \mu c_f r_w^2} + 3.23 \right]$	—
Damage Ratio	$DR = \frac{m(P^*) - m(P_I)}{m(P^*) - m(P_I) - 0.87 mS}$	—
Indicated Flow Rate (Maximum)	$AOF_1 = \frac{Q_g m(P^*)}{m(P^*) - m(P_I)}$	MCFD
Indicated Flow Rate (Minimum)	$AOF_2 = Q_g \sqrt{\frac{m(P^*)}{m(P^*) - m(P_I)}}$	MCFD
Approx. Radius of Investigation	$r_i = 0.032 \sqrt{\frac{kl}{\phi \mu c_f}}$	ft



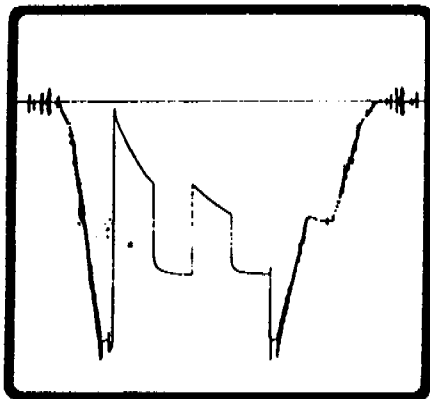
## OILMIN N.L.

## DRILL STEM TEST REPORT

Report No. 2Well East Mereenie No.11 Elevation K.B. 2349 Elevation G.L. 2329 Date 18 & 19 Nov., 1983Test No. 2 Interval 4665 to 4727 feet. Operator HalliburtonTester Size & Type 5" Hydrospring Packer Size & Type OH No.3 assemblyAnchor Length & O.D. 29' at 5"; 33.5' at 6 1/2" Drill collar footage above Packer 324.93'Capacity Bbls/ft. Drill Pipe 0.0142 bbl/ft. Collars 0.00491 bbl/ft.Pressure Recorders Type Borden Position Top Depth 4641.41'Type Borden Position Bottom Depth 4722.94'Perforated Anchor from 4722.94' to 4702.94'Choke Size: Top 1/2" Bottom 3/4" Water Cushion Nil. Mud Wt. 9 Vis. 60Hole Size 10-3/4" Csg to 9-7/8" Rat hole size 7-7/8" to 4727Mud Level: Before valve opened Flow After valve opened LineTime Record: Started clocks at 1910 Hrs. Started in hole at 2030 Hrs.Opened Valve at 2335 Hrs. Shut in at 2348 Hrs. Opened at 0016 Hrs. Shut in at 0215 Hrs.Pulled Packer at 0615 Hrs. Out of hole at        Hrs. Recovered chart at        Hrs.Nature of Blow Weak slowly increasing to strong. Gas to surface at 2355 hrs. in 1/2 hr.shut-in period. Blow decreasing to weak at 0130 hrs.Fluid flow (details) Nil flow to surface.Recovery Reverse circulation - 7 bbls mud 12 bbls oil.Pressures I.H.P. 2445 psig IFP 134 psig ISIP 1793 psig FFP 453 psig FSIP 1792 psigF.H.P. 2445 psigElapsed Times: Initial flow 10 mins. Initial Shut in 28 mins.Final flow 119 mins. Final Shut in 240 mins.Maximum Temperature        Samples Taken Two oil samplesRemarks Oil rate 252 BOPDGas rate TSTMCharts show reasonable permeability

DAVID WARNER.

# FORMATION TESTING SERVICE REPORT



Duncan, Oklahoma 73536



A Halliburton Company

# NOMENCLATURE

B	= Formation Volume Factor (Res Vol / Std Vol)	—
$c_t$	= System Total Compressibility	(Vol / Vol) / psi
DR	= Damage Ratio	—
h	= Estimated Net Pay Thickness	Ft
k	= Permeability	md
m	{ (Liquid) Slope Extrapolated Pressure Plot	psi/cycle
	(Gas) Slope Extrapolated m(P) Plot	MM psi <sup>2</sup> /cp/cycle
m(P*)	= Real Gas Potential at P*	MM psi <sup>2</sup> /cp
m(P <sub>f</sub> )	= Real Gas Potential at P <sub>f</sub>	MM psi <sup>2</sup> /cp
AOF <sub>1</sub>	= Maximum Indicated Absolute Open Flow at Test Conditions	MCFD
AOF <sub>2</sub>	= Minimum Indicated Absolute Open Flow at Test Conditions	MCFD
P*	= Extrapolated Static Pressure	Psig
P <sub>f</sub>	= Final Flow Pressure	Psig
Q	= Liquid Production Rate During Test	BPD
Q <sub>1</sub>	= Theoretical Liquid Production w/ Damage Removed	BPD
Q <sub>g</sub>	= Measured Gas Production Rate	MCFD
r <sub>i</sub>	= Approximate Radius of Investigation	Ft
r <sub>w</sub>	= Radius of Well Bore	Ft
S	= Skin Factor	
t	= Total Flow Time Previous to Closed-in	Minutes
Δt	= Closed-in Time at Data Point	Minutes
T	= Temperature Rankine	°R
φ	= Porosity	—
μ	= Viscosity of Gas or Liquid	cp
Log	= Common Log	



TICKET NO. 32381300  
22-DEC-83  
ALICE SPRINGS

# FORMATION TESTING SERVICE REPORT

EAST MERENITE		11		2		4664.0 - 4727.0		OILMIN N.L.	
LEASE NAME		WELL NO.		TEST NO.		TESTED INTERVAL		LEASE OWNER/COMPANY NAME	
LEGAL LOCATION SEC. - TWP. - RRG.		(SEE REMARKS)		FIELD AREA		RHODEUS BASIN		COUNTY N. TERRITORY	
								STATE: AUSTRALIA OR	

323813-8531

GAUGE NO: 8531 DEPTH: 4641.4 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2400	2406.9			
B	INITIAL FIRST FLOW		123.4			
C	FINAL FIRST FLOW	155	149.0	13.0	13.3	F
C	INITIAL FIRST CLOSED-IN	155	149.0			
D	FINAL FIRST CLOSED-IN	1770	1776.5	28.0	26.3	C
E	INITIAL SECOND FLOW	170	177.0			
F	FINAL SECOND FLOW	424	438.4	119.0	122.1	F
F	INITIAL SECOND CLOSED-IN	424	438.4			
G	FINAL SECOND CLOSED-IN	1770	1775.1	240.0	238.3	C
H	FINAL HYDROSTATIC	2387	2391.5			

323813-8530

GAUGE NO: 8530 DEPTH: 4723.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2445	2441.1			
B	INITIAL FIRST FLOW	13	11.2			
C	FINAL FIRST FLOW	160	159.1	13.0	13.3	F
C	INITIAL FIRST CLOSED-IN	160	159.1			
D	FINAL FIRST CLOSED-IN	1793	1794.1	28.0	26.3	C
E	INITIAL SECOND FLOW	187	187.1			
F	FINAL SECOND FLOW	453	452.5	119.0	122.1	F
F	INITIAL SECOND CLOSED-IN	453	452.5			
G	FINAL SECOND CLOSED-IN	1793	1794.4	240.0	238.3	C
H	FINAL HYDROSTATIC	2445	2431.7			

# EQUIPMENT & HOLE DATA

FORMATION TESTED: PACOOTIA SANDSTONE  
 NET PAY (ft): \_\_\_\_\_  
 GROSS TESTED FOOTAGE: 63.0  
 ALL DEPTHS MEASURED FROM: KELLY BUSHING  
 CASING PERFS. (ft): \_\_\_\_\_  
 HOLE OR CASING SIZE (in): 7.875  
 ELEVATION (ft): 2349  
 TOTAL DEPTH (ft): 4727.0  
 PACKER DEPTH(S) (ft): 4656, 4664  
 FINAL SURFACE CHOKE (in): 0.500  
 BOTTOM HOLE CHOKE (in): 0.750  
 MUD WEIGHT (lb/gal): 9.70  
 MUD VISCOSITY (sec): 62  
 ESTIMATED HOLE TEMP. (°F): 130  
 ACTUAL HOLE TEMP. (°F): 130 @ 4723.0 ft

TICKET NUMBER: 32381300

DATE: 11-19-83 TEST NO: 2

TYPE DST: OPEN HOLE

HALLIBURTON CAMP:  
ALICE SPRINGS

TESTER: RED SKINNER

WITNESS: \_\_\_\_\_

DRILLING CONTRACTOR:  
OILMAN N.L.

## FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm

## SAMPLER DATA

Pstg AT SURFACE: \_\_\_\_\_  
 cu.ft. OF GAS: \_\_\_\_\_  
 cc OF OIL: \_\_\_\_\_  
 cc OF WATER: \_\_\_\_\_  
 cc OF MUD: \_\_\_\_\_  
 TOTAL LIQUID cc: 287.0

## HYDROCARBON PROPERTIES

OIL GRAVITY (°API): 46.0 @ 60°F  
 GAS/OIL RATIO (cu.ft. per bbl): \_\_\_\_\_  
 GAS GRAVITY: \_\_\_\_\_

## CUSHION DATA

TYPE	AMOUNT	WEIGHT
_____	_____	_____
_____	_____	_____

## RECOVERED:

7 BARRELS OF MUD  
 12 BARRELS OF OIL  
 GAS PRODUCTION WAS TOO SMALL TO MEASURE

MEASURED FROM  
TESTER VALVE

## REMARKS:

LEGAL LOCATION: LAT: 24 DEGREES 02' 10"S LONG. 131 DEGREES 38' 41" E

TYPE &amp; SIZE MEASURING DEVICE:

SURFACE CHOKE

TICKET NO: 32381300

TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
11-18-83					
1910					LOADED CLOCKS
2030					MADE UP TOOLS AND WENT IN HOLE
2324					MADE UP HEAD
2329					SET PACKER
2335					OPENED TOOL WITH A WEAK BLOW
2337					MODERATE BLOW
2339	.5				STRONG OPEN FLARE
2340	:	6#			
2348		7			CLOSED TOOL
2355		0			GAS TO SURFACE
11-19-83					
0016					OPENED TOOL WITH A MODERATE BLOW
0021		5			
0026		10			
0031		7			
0036		4			
0041		3			
0046		3			
0051		2			
0056		2			
0101		1.5			
0106		1			
0111		1			
0121		0			
0131					WEAK TO MODERATE BLOW
0141					SAME
0151					SAME
0215					PULLED PACKER, DROPPED BAR
					REVERSE OUT AND PULLED OUT OF HOLE
1200					TOOL OUT



TICKET NO: 32381300

CLOCK NO: 8083 HOUR: 24


  
**HALLIBURTON**
  
 SERVICES

GAUGE NO: 8531

DEPTH: 4641.4

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	123.4			
2	2.0	125.4	2.0		
3	4.0	130.8	5.4		
4	6.0	130.9	0.1		
5	8.0	140.7	9.7		
6	10.0	143.1	2.4		
7	12.0	147.5	4.4		
C 8	13.3	149.0	1.6		
FIRST CLOSED-IN					
C 1	0.0	149.0			
2	1.0	255.6	106.6	0.9	1.149
3	2.0	352.7	203.7	1.7	0.883
4	3.0	465.3	316.2	2.5	0.733
5	4.0	557.6	408.6	3.1	0.638
6	5.0	680.4	531.4	3.6	0.562
7	6.0	775.8	626.8	4.1	0.508
8	7.0	944.1	795.1	4.6	0.462
9	8.0	1284.3	1135.3	5.0	0.424
10	9.0	1456.0	1307.0	5.3	0.395
11	10.0	1549.2	1400.1	5.7	0.367
12	12.0	1670.2	1521.2	6.3	0.324
13	14.0	1716.4	1567.4	6.8	0.289
14	16.0	1736.3	1587.3	7.2	0.263
15	18.0	1751.4	1602.4	7.6	0.240
16	20.0	1760.4	1611.4	8.0	0.221
17	22.0	1767.4	1618.4	8.3	0.205
18	24.0	1772.1	1623.1	8.6	0.191
D 19	26.3	1776.5	1627.5	8.8	0.177
SECOND FLOW					
E 1	0.0	177.0			
2	6.0	182.6	5.6		
3	12.0	202.3	19.6		
4	18.0	218.2	16.0		
5	24.0	231.5	13.3		
6	30.0	246.3	14.8		
7	36.0	260.3	14.0		
8	42.0	274.3	14.0		
9	48.0	288.7	14.4		
10	54.0	301.4	12.7		
11	60.0	314.4	13.0		
12	66.0	328.7	14.3		
13	72.0	342.2	13.6		
14	78.0	354.7	12.4		
15	84.0	366.2	11.6		
16	90.0	378.2	12.0		
17	96.0	390.7	12.4		

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
18	102.0	401.3	10.6		
19	108.0	413.0	11.7		
20	114.0	424.7	11.7		
21	120.0	433.6	8.9		
F 22	122.1	438.4	4.8		
SECOND CLOSED-IN					
F 1	0.0	438.4			
2	1.0	523.9	85.5	1.0	2.118
3	2.0	583.1	144.6	2.0	1.838
4	3.0	665.1	226.7	2.9	1.663
5	4.0	721.4	283.0	3.9	1.537
6	5.0	907.6	469.1	4.8	1.451
7	6.0	1143.7	705.3	5.7	1.373
8	7.0	1318.4	880.0	6.7	1.307
9	8.0	1439.9	1001.5	7.6	1.253
10	9.0	1507.4	1069.0	8.5	1.204
11	10.0	1542.3	1103.9	9.3	1.161
12	12.0	1593.7	1155.3	11.0	1.089
13	14.0	1625.6	1187.2	12.7	1.028
14	16.0	1646.6	1208.2	14.3	0.977
15	18.0	1662.9	1224.5	15.9	0.931
16	20.0	1674.6	1236.2	17.4	0.891
17	22.0	1683.8	1245.3	18.9	0.854
18	24.0	1692.4	1254.0	20.4	0.822
19	26.0	1698.6	1260.2	21.8	0.792
20	28.0	1702.7	1264.2	23.2	0.766
21	30.0	1707.1	1268.7	24.6	0.741
22	35.0	1716.7	1278.2	27.8	0.687
23	40.0	1724.4	1286.0	30.9	0.642
24	45.0	1729.3	1290.9	33.8	0.603
25	50.0	1732.9	1294.5	36.5	0.569
26	55.0	1736.7	1298.3	39.1	0.539
27	60.0	1739.9	1301.5	41.6	0.513
28	70.0	1744.8	1306.4	46.1	0.467
29	80.0	1748.6	1310.2	50.3	0.430
30	90.0	1753.2	1314.8	54.1	0.399
31	100.0	1755.9	1317.5	57.5	0.372
32	110.0	1758.0	1319.6	60.7	0.348
33	120.0	1759.8	1321.4	63.6	0.328
34	135.0	1762.9	1324.5	67.6	0.302
35	150.0	1765.4	1327.0	71.2	0.279
36	165.0	1767.2	1328.8	74.4	0.260
37	180.0	1769.0	1330.6	77.3	0.244
38	195.0	1771.3	1332.9	79.9	0.229
39	210.0	1772.0	1333.6	82.3	0.216
40	225.0	1774.1	1335.7	84.5	0.205
G 41	238.3	1775.1	1336.7	86.3	0.195

REMARKS:

TICKET NO: 32381300

CLOCK NO: 7370 HOUR: 24


  
**HALLIBURTON**
  
 SERVICES

GAUGE NO: 8530

DEPTH: 4723.0

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	11.2			
2	2.0	142.1	130.9		
3	4.0	173.1	30.9		
4	6.0	149.6	-23.5		
5	8.0	152.4	2.8		
6	10.0	154.9	2.5		
7	12.0	157.1	2.1		
C 8	13.3	159.1	2.0		
FIRST CLOSED-IN					
C 1	0.0	159.1			
2	1.0	292.5	133.5	0.9	1.153
3	2.0	384.3	225.2	1.7	0.881
4	3.0	474.5	315.5	2.5	0.733
5	4.0	598.1	439.1	3.1	0.634
6	5.0	715.9	556.8	3.6	0.563
7	6.0	839.8	680.7	4.1	0.507
8	7.0	1052.1	893.1	4.6	0.462
9	8.0	1458.9	1299.8	5.0	0.423
10	9.0	1556.5	1397.4	5.4	0.394
11	10.0	1635.8	1476.7	5.7	0.366
12	12.0	1703.2	1544.1	6.3	0.324
13	14.0	1737.6	1578.6	6.8	0.290
14	16.0	1758.2	1599.2	7.3	0.263
15	18.0	1768.4	1609.3	7.6	0.240
16	20.0	1778.7	1619.7	8.0	0.221
17	22.0	1784.8	1625.8	8.3	0.205
18	24.0	1789.9	1630.8	8.5	0.191
D 19	26.3	1794.1	1635.1	8.8	0.177
SECOND FLOW					
E 1	0.0	187.1			
2	6.0	187.6	0.5		
3	12.0	205.1	17.5		
4	18.0	223.5	18.4		
5	24.0	237.7	14.3		
6	30.0	252.8	15.1		
7	36.0	267.2	14.4		
8	42.0	281.9	14.7		
9	48.0	295.7	13.9		
10	54.0	310.0	14.3		
11	60.0	323.5	13.5		
12	66.0	337.7	14.3		
13	72.0	351.7	14.0		
14	78.0	364.0	12.3		
15	84.0	377.7	13.7		
16	90.0	390.3	12.5		
17	96.0	401.7	11.5		

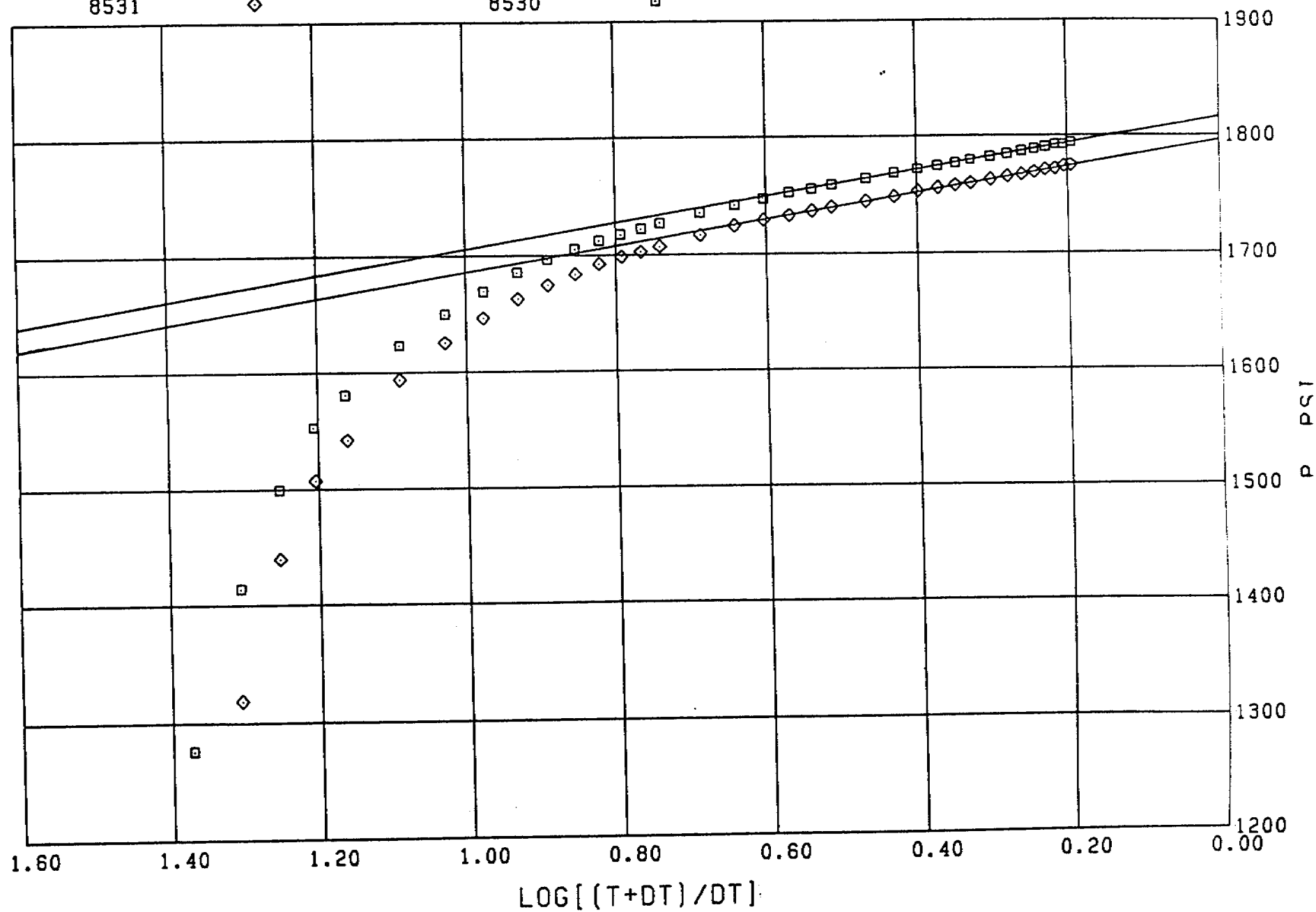
REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
18	102.0	413.7	12.0		
19	108.0	426.0	12.3		
20	114.0	437.7	11.7		
21	120.0	446.4	8.7		
F 22	122.1	452.5	6.1		
SECOND CLOSED-IN					
F 1	0.0	452.5			
2	1.0	554.9	102.4	1.0	2.120
3	2.0	598.9	146.4	2.0	1.841
4	3.0	670.6	218.1	2.9	1.666
5	4.0	764.3	311.8	3.8	1.547
6	5.0	997.2	544.7	4.8	1.446
7	6.0	1276.0	823.5	5.7	1.372
8	7.0	1414.3	961.8	6.7	1.306
9	8.0	1499.5	1046.9	7.6	1.253
10	9.0	1552.9	1100.4	8.4	1.206
11	10.0	1580.7	1128.2	9.3	1.163
12	12.0	1623.5	1171.0	11.0	1.089
13	14.0	1650.0	1197.5	12.7	1.028
14	16.0	1669.4	1216.9	14.3	0.976
15	18.0	1685.5	1233.0	15.9	0.931
16	20.0	1696.4	1243.9	17.4	0.891
17	22.0	1705.5	1252.9	18.9	0.854
18	24.0	1712.2	1259.7	20.4	0.822
19	26.0	1717.6	1265.0	21.8	0.793
20	28.0	1722.2	1269.7	23.2	0.766
21	30.0	1727.1	1274.6	24.6	0.741
22	35.0	1735.6	1283.1	27.8	0.687
23	40.0	1742.0	1289.5	30.9	0.642
24	45.0	1747.6	1295.1	33.8	0.603
25	50.0	1752.9	1300.4	36.5	0.569
26	55.0	1755.9	1303.3	39.1	0.539
27	60.0	1759.0	1306.5	41.6	0.513
28	70.0	1764.5	1312.0	46.1	0.467
29	80.0	1768.9	1316.3	50.3	0.430
30	90.0	1772.2	1319.7	54.0	0.399
31	100.0	1775.0	1322.5	57.5	0.372
32	110.0	1777.4	1324.9	60.7	0.348
33	120.0	1779.8	1327.3	63.6	0.328
34	135.0	1782.4	1329.9	67.6	0.302
35	150.0	1784.8	1332.3	71.1	0.279
36	165.0	1787.0	1334.4	74.4	0.260
37	180.0	1788.7	1336.2	77.3	0.244
38	195.0	1790.4	1337.9	79.9	0.229
39	210.0	1792.7	1340.2	82.3	0.216
40	225.0	1792.7	1340.2	84.5	0.205
G 41	238.3	1794.4	1341.9	86.3	0.195

REMARKS:

TICKET NO 32381300

GAUGE NO CIP 1 2  
8531      ◇

GAUGE NO CIP 1 2  
8530      □



# SUMMARY OF RESERVOIR PARAMETERS USING HORNER METHOD

OIL GRAVITY 46.0 °60° WATER % SALT 0.0  
 GAS GRAVITY 0.700 FLUID GRADIENT 0.3454 psi/ft  
 GAS/OIL RATIO 0.0 cu.ft/bbl FORMATION VOL FACTOR 1.000 vol/vol  
 TEMPERATURE 130.0 °F FLUID PROPERTIES AT 1815.9 Pstg  
 VISCOSITY 1.293 cp NET PAY 0.0 ft  
 PIPE CAPACITY FACTOR(S) 0.00519 0.00742 0.01422 bbl/ft

GAUGE NUMBER	8531	8530					
GAUGE DEPTH	4641.4	4723.0					
FLOW AND CIP PERIOD	2	2					UNITS
FINAL FLOW PRESSURE $P_f$	438.4	452.5					Pstg
TOTAL FLOW TIME $t$	135.4	135.4					min
EXTRAPOLATED PRESSURE $P^*$	1796.1	1815.9					Pstg
ONE CYCLE PRESSURE	1685.6	1705.4					Pstg
PRODUCTION RATE $Q$	127.2	131.2					BPD
TRANSMISSIBILITY $kh/\mu$	187.093	193.216					md-ft cp
FLOW CAPACITY $kh$	241.966	249.886					md-ft
PERMEABILITY $k$	3.84073	3.96644					md
DAMAGE RATIO $DR$	2.25	2.26					
POTENTIAL RATE $Q_1$	285.9	296.5					BPD
RADIUS OF INVESTIGATION $r_i$	105.6	107.3					ft

REMARKS:

## NOTICE:

THESE CALCULATIONS ARE BASED UPON INFORMATION FURNISHED BY YOU AND TAKEN FROM DRILL STEM PRESSURE CHARTS, AND ARE FURNISHED TO YOU FOR YOUR INFORMATION. IN FURNISHING SUCH CALCULATIONS AND EVALUATIONS BASED THEREON, HALLIBURTON IS MERELY EXPRESSING ITS OPINION. YOU AGREE THAT HALLIBURTON MAKES NO WARRANTY EXPRESS OR IMPLIED AS TO THE ACCURACY OF SUCH CALCULATIONS OR OPINIONS, AND THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER DUE TO NEGLIGENCE OR OTHERWISE, IN CONNECTION WITH SUCH OPINIONS.

## EQUATIONS FOR DST LIQUID WELL ANALYSIS

Transmissibility	$\frac{kh}{\mu} = \frac{162.6 QB}{m}$	$\frac{\text{md-ft}}{\text{cp}}$
Indicated Flow Capacity	$kh = \frac{kh}{\mu} \mu$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Damage Ratio	$DR = .183 \frac{P^* - P_I}{m}$	—
Theoretical Potential w / Damage Removed	$Q_1 = Q DR$	BPD
Approx. Radius of Investigation	$r_i = 4.63 \sqrt{kt}$	ft

## EQUATIONS FOR DST GAS WELL ANALYSIS

Indicated Flow Capacity	$kh = \frac{1637 Q_g T}{m}$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Skin Factor	$S = 1.151 \left[ \frac{m(P^*) - m(P_I)}{m} - \text{LOG} \frac{kt}{\phi \mu c_f r_w^2} + 3.23 \right]$	—
Damage Ratio	$DR = \frac{m(P^*) - m(P_I)}{m(P^*) - m(P_I) - 0.87 mS}$	—
Indicated Flow Rate (Maximum)	$AOF_1 = \frac{Q_g m(P^*)}{m(P^*) - m(P_I)}$	MCFD
Indicated Flow Rate (Minimum)	$AOF_2 = Q_g \sqrt{\frac{m(P^*)}{m(P^*) - m(P_I)}}$	MCFD
Approx. Radius of Investigation	$r_i = 0.032 \sqrt{\frac{kt}{\phi \mu c_f}}$	ft

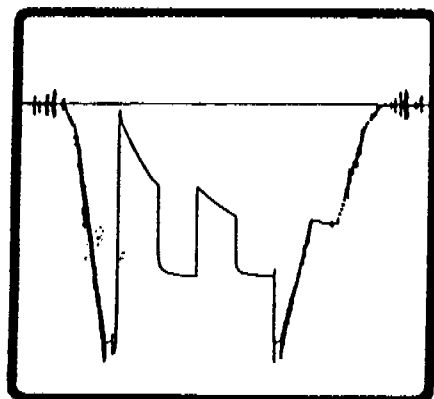
## OILMIN N.L.

## DRILL STEM TEST REPORT


Report No. 3Well East Mereenie No. 11 Elevation K.B. 2349 Elevation G.L. 2329 Date 20/11/83Test No. 3 Interval 4735.24 - 4786 ft. Operator HalliburtonTester Size & Type 5" Hydrospring Packer Size & Type OH No. 3 Assembly 8 1/2"Anchor Length & O.D. 5° - 12'; 6.5° - 33' Drill collar footage above Packer 341 feetCapacity Bbls/ft. Drill Pipe 0.0142 bbls/ft. Collars 0.00519 bbl/ft.Pressure Recorders Type Borden Position Top Depth 4712.41Type Borden Position Bottom Depth 4781.944736.24 to 4740.54 (4.3) feetPerforated Anchor from 4773.94 to 4781.94 (8.0) feetChoke Size: Top 1/2" Bottom 3/4" Water Cushion Nil Mud Wt. 9.7 Vis. 60  
9-7/8"Hole Size 10-3/4" to 7-7/8" Rat hole size 7-7/8" to 4786 feetMud Level: Before valve opened Flowline After valve opened FlowlineTime Record: Started clocks at 0930 Hrs. Started in hole at 1030 Hrs.Opened Valve at 1325 Hrs. Shut in at 1336 Hrs. Opened at 1406 Hrs. Shut in at 1606 Hrs.Pulled Packer at 2006 Hrs. Out of hole at 0400 Hrs. Recovered chart at 0430 Hrs.Nature of Blow Weak increasing to moderate. Sudden increase to strong at 0129 hrs. Gas to  
surface 9 mins. Max. psi 3 psi at 0210 hrs. gradually died to zero.Fluid flow (details) Nil.Recovery Fluid - 4 bbls gas cut mud on reverse circulation. 200 ml of mud cut oil between  
DCIP and Hydrospring.Pressures I.H.P. 2457 psig IFP 85 psig ISIP 1378 psig FFP 212 psig FSIP 1602 psigF.H.P. 2442 psigElapsed Times: Initial flow 11 mins. Initial Shut in 30 mins.Final flow 120 mins. Final Shut in 240 mins.Maximum Temperature 130°F Samples Taken Nil.Remarks Sudden increase in blow in pre-flow period may indicate plugging. Nil oil recovery.Gas TSTM. Charts show poor permeability - minor plugging in second flow period.

DAVID WARNER.

# FORMATION TESTING SERVICE REPORT



Duncan, Oklahoma 73536

 A Halliburton Company

# NOMENCLATURE

B	= Formation Volume Factor (Res Vol / Std Vol) .....	—
$c_t$	= System Total Compressibility .....	(Vol / Vol) / psi
DR	= Damage Ratio .....	—
h	= Estimated Net Pay Thickness .....	Ft
k	= Permeability .....	md
m	{ = (Liquid) Slope Extrapolated Pressure Plot .....	psi/cycle
	(Gas) Slope Extrapolated m(P) Plot .....	MM psi <sup>2</sup> /cp/cycle
m(P*)	= Real Gas Potential at P* .....	MM psi <sup>2</sup> /cp
m(P <sub>f</sub> )	= Real Gas Potential at P <sub>f</sub> .....	MM psi <sup>2</sup> /cp
AOF <sub>1</sub>	= Maximum Indicated Absolute Open Flow at Test Conditions .....	MCFD
AOF <sub>2</sub>	= Minimum Indicated Absolute Open Flow at Test Conditions ..	MCFD
P*	= Extrapolated Static Pressure .....	Psig
P <sub>f</sub>	= Final Flow Pressure .....	Psig
Q	= Liquid Production Rate During Test .....	BPD
Q <sub>1</sub>	= Theoretical Liquid Production w/ Damage Removed .....	BPD
Q <sub>g</sub>	= Measured Gas Production Rate .....	MCFD
r <sub>i</sub>	= Approximate Radius of Investigation .....	Ft
r <sub>w</sub>	= Radius of Well Bore .....	Ft
S	= Skin Factor	
t	= Total Flow Time Previous to Closed-in .....	Minutes
Δt	= Closed-in Time at Data Point .....	Minutes
T	= Temperature Rankine .....	°R
φ	= Porosity .....	—
μ	= Viscosity of Gas or Liquid .....	cp
Log	= Common Log	





TICKET NO. 32381400  
20-DEC-83  
ALICE SPRINGS

FORMATION TESTING SERVICE REPORT

LEASE NAME		WELL NO.		TEST NO.		4795.1 - 4786.1		OILWIN N.L.	
LEASE LOCATION		FIELD		RHODEUS BASIN		COUNTY		STATE	
SEE REMARKS		RHODEUS BASIN		NORTHERN TERRIT.		AUSTRALIA		IC	

323514.5531

GAUGE NO: 8531 DEPTH: 4712.4 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2456	2458.4			
B	INITIAL FIRST FLOW	84	50.3	11.0	10.1	F
C	FINAL FIRST FLOW	113	103.0			
C	INITIAL FIRST CLOSED-IN	113	103.0	30.0	28.5	C
D	FINAL FIRST CLOSED-IN	1377	1383.8			
E	INITIAL SECOND FLOW	135	133.6	120.0	121.5	F
F	FINAL SECOND FLOW	211	206.4			
F	INITIAL SECOND CLOSED-IN	211	206.4	240.0	232.7	C
G	FINAL SECOND CLOSED-IN	1602	1605.3			
H	FINAL HYDROSTATIC	2442	2440.9			

323514-5530

GAUGE NO: 8530 DEPTH: 4782.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2498	2500.5			
B	INITIAL FIRST FLOW	93	89.7	11.0	10.1	F
C	FINAL FIRST FLOW	133	131.6			
C	INITIAL FIRST CLOSED-IN	133	131.6	30.0	28.5	C
D	FINAL FIRST CLOSED-IN	1407	1408.1			
E	INITIAL SECOND FLOW	146	152.0	120.0	121.5	F
F	FINAL SECOND FLOW	240	233.5			
F	INITIAL SECOND CLOSED-IN	240	233.5	240.0	232.7	C
G	FINAL SECOND CLOSED-IN	1619	1629.4			
H	FINAL HYDROSTATIC	2485	2488.7			

# EQUIPMENT & HOLE DATA

FORMATION TESTED: PACOOTIA SANDSTONE  
 NET PAY (ft): \_\_\_\_\_  
 GROSS TESTED FOOTAGE: 51.0  
 ALL DEPTHS MEASURED FROM: KELLY BUSHING  
 CASING PERFS. (ft): \_\_\_\_\_  
 HOLE OR CASING SIZE (in): 7.875  
 ELEVATION (ft): 2349  
 TOTAL DEPTH (ft): 4786.0  
 PACKER DEPTH(S) (ft): 4727. 4735  
 FINAL SURFACE CHOKE (in): 0.500  
 BOTTOM HOLE CHOKE (in): 0.750  
 MUD WEIGHT (lb/gal): 9.70  
 MUD VISCOSITY (sec): 60  
 ESTIMATED HOLE TEMP. (°F): 130  
 ACTUAL HOLE TEMP. (°F): 130 ° 4782.0 ft

TICKET NUMBER: 32381400

DATE: 11-20-83 TEST NO: 3

TYPE DST: OPEN HOLE

HALLIBURTON CAMP:  
ALICE SPRINGS

TESTER: RED SKINNER

WITNESS: \_\_\_\_\_

DRILLING CONTRACTOR:  
GILMAN

## FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
_____	_____ ° _____ °F	_____ ppm
_____	_____ ° _____ °F	_____ ppm
_____	_____ ° _____ °F	_____ ppm
_____	_____ ° _____ °F	_____ ppm
_____	_____ ° _____ °F	_____ ppm
_____	_____ ° _____ °F	_____ ppm

## SAMPLER DATA

Pstg AT SURFACE: \_\_\_\_\_  
 cu.ft. OF GAS: \_\_\_\_\_  
 cc OF OIL: \_\_\_\_\_  
 cc OF WATER: \_\_\_\_\_  
 cc OF MUD: \_\_\_\_\_  
 TOTAL LIQUID cc: \_\_\_\_\_

## HYDROCARBON PROPERTIES

OIL GRAVITY (°API): \_\_\_\_\_ ° \_\_\_\_\_ °F  
 GAS/OIL RATIO (cu.ft. per bbl): \_\_\_\_\_  
 GAS GRAVITY: \_\_\_\_\_

## CUSHION DATA

TYPE	AMOUNT	WEIGHT
_____	_____	_____
_____	_____	_____

## RECOVERED:

4 BARRELS OF GAS CUT MUD  
 200 ML. OF MUD CUT OIL BETWEEN OCIP AND HYDROSPRING

MEASURED FROM  
 TESTER VALVE

## REMARKS:

INSUFFICIENT HYDROCARBON PRODUCTION FOR COMPLETE ANALYSIS - A HORNER  
 EXTRAPOLATION IS INCLUDED IN THE REPORT.

LEGAL LOCATION: LATITUDE-24 DEGREES, 02', 10"SOUTH;  
 LONGITUDE-131 DEGREES, 38', 41"EAST.

[illegible]

TICKET NO: 32381400

CLOCK NO: 8083 HOUR: 24


 HALLIBURTON  
SERVICES

GAUGE NO: 8531

DEPTH: 4712.4

REF	MINUTES	PRESSURE	AP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
-----	---------	----------	----	--	--------------------------------------

## FIRST FLOW

B	1	0.0	50.3		
	2	2.0	78.8	28.5	
	3	4.0	111.0	32.2	
	4	6.0	114.4	3.4	
	5	8.0	113.1	-1.3	
C	6	10.1	103.0	-10.2	

## FIRST CLOSED-IN

C	1	0.0	103.0		
	2	1.0	184.7	81.8	0.9 1.040
	3	2.0	249.6	146.6	1.6 0.787
	4	3.0	306.2	203.2	2.3 0.645
	5	4.0	394.5	291.5	2.9 0.545
	6	5.0	476.8	373.9	3.4 0.478
	7	6.0	582.4	479.4	3.8 0.429
	8	7.0	694.5	591.6	4.1 0.390
	9	8.0	815.4	712.4	4.5 0.354
	10	9.0	894.5	791.6	4.8 0.327
	11	10.0	969.0	866.1	5.0 0.303
	12	12.0	1069.9	967.0	5.5 0.265
	13	14.0	1140.3	1037.3	5.9 0.236
	14	16.0	1194.0	1091.0	6.2 0.212
	15	18.0	1238.1	1135.1	6.5 0.193
	16	20.0	1273.9	1170.9	6.7 0.177
	17	22.0	1303.8	1200.8	6.9 0.164
	18	24.0	1331.2	1228.2	7.1 0.153
	19	26.0	1357.0	1254.1	7.3 0.143
D	20	28.5	1383.8	1280.9	7.5 0.132

## SECOND FLOW

E	1	0.0	133.6		
	2	2.0	137.6	4.0	
	3	4.0	134.0	-3.5	
	4	6.0	143.9	9.9	
	5	8.0	147.0	3.1	
	6	10.0	149.2	2.1	
	7	12.0	153.8	4.7	
	8	14.0	156.8	3.0	
	9	16.0	158.2	1.4	
	10	18.0	160.2	2.0	
	11	20.0	163.7	3.5	
	12	30.0	169.9	6.2	
	13	40.0	181.9	12.0	
	14	50.0	194.2	12.3	
	15	60.0	191.2	-3.0	
	16	70.0	193.2	2.0	
	17	80.0	193.6	0.4	
	18	90.0	196.9	3.2	

REF	MINUTES	PRESSURE	AP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
-----	---------	----------	----	--	--------------------------------------

## SECOND FLOW - CONTINUED

	19	100.0	200.1	3.2	
	20	110.0	203.4	3.2	
F	21	121.5	206.4	3.0	

## SECOND CLOSED-IN

F	1	0.0	206.4		
	2	1.0	241.2	34.9	1.0 2.131
	3	2.0	262.9	56.5	1.9 1.833
	4	3.0	287.1	80.8	2.9 1.658
	5	4.0	312.0	105.6	3.9 1.533
	6	5.0	346.6	140.3	4.9 1.433
	7	6.0	375.3	168.9	5.8 1.359
	8	7.0	410.5	204.1	6.6 1.298
	9	8.0	446.3	240.0	7.6 1.240
	10	9.0	482.3	276.0	8.4 1.194
	11	10.0	520.2	313.8	9.3 1.151
	12	12.0	604.1	397.7	11.0 1.078
	13	14.0	685.0	478.7	12.6 1.018
	14	16.0	759.0	552.6	14.3 0.965
	15	18.0	829.0	622.6	15.8 0.920
	16	20.0	883.6	677.3	17.3 0.880
	17	22.0	938.2	731.9	18.8 0.844
	18	24.0	984.5	778.1	20.3 0.811
	19	26.0	1025.3	818.9	21.7 0.782
	20	28.0	1061.2	854.9	23.1 0.755
	21	30.0	1092.4	886.1	24.4 0.731
	22	35.0	1149.7	943.4	27.6 0.678
	23	40.0	1197.9	991.5	30.7 0.632
	24	45.0	1234.0	1027.8	33.6 0.593
	25	50.0	1263.5	1057.1	36.2 0.560
	26	55.0	1288.8	1082.4	38.8 0.531
	27	60.0	1311.7	1105.3	41.2 0.504
	28	70.0	1351.5	1145.2	45.7 0.459
	29	80.0	1385.3	1178.9	49.7 0.422
	30	90.0	1414.3	1208.0	53.4 0.391
	31	100.0	1438.8	1232.4	56.8 0.365
	32	110.0	1461.1	1254.7	59.9 0.342
	33	120.0	1480.5	1274.1	62.7 0.321
	34	135.0	1507.6	1301.2	66.6 0.295
	35	150.0	1529.6	1323.2	70.1 0.274
	36	165.0	1547.5	1341.1	73.2 0.255
	37	180.0	1564.0	1357.6	76.0 0.238
	38	195.0	1576.6	1370.3	78.6 0.224
	39	210.0	1588.9	1382.6	80.9 0.211
	40	225.0	1600.3	1393.9	83.0 0.200
G	41	232.7	1605.3	1399.0	84.0 0.195

REMARKS:

TICKET NO: 32381400

CLOCK NO: 7370 HOUR: 24

HALLIBURTON
























SERVICES

GAUGE NO: 8530

DEPTH: 4782.0

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta I}{1 + \Delta I}$	$\log \frac{1 + \Delta I}{\Delta I}$	REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta I}{1 + \Delta I}$	$\log \frac{1 + \Delta I}{\Delta I}$
FIRST FLOW						SECOND FLOW - CONTINUED					
B	1	0.0	89.7			18	100.0	226.3	2.4		
	2	2.0	111.3	21.6		20	110.0	228.8	2.5		
	3	4.0	137.2	25.9		F	21	121.5	233.5	4.7	
	4	6.0	140.9	3.7		SECOND CLOSED-IN					
	5	8.0	140.5	-0.4		F	1	0.0	233.5		
C	6	10.1	131.6	-8.9			2	1.0	261.2	27.7	1.0 2.113
FIRST CLOSED-IN							3	2.0	284.4	50.9	2.0 1.622
C	1	0.0	131.6				4	3.0	310.1	76.7	2.9 1.655
	2	1.0	211.9	80.3	0.9 1.049		5	4.0	338.0	104.5	3.9 1.531
	3	2.0	276.5	144.9	1.7 0.785		6	5.0	365.9	132.4	4.6 1.440
	4	3.0	358.3	226.7	2.3 0.636		7	6.0	399.3	165.9	5.7 1.360
	5	4.0	426.4	294.8	2.8 0.550		8	7.0	430.4	196.9	6.6 1.297
	6	5.0	513.9	382.3	3.3 0.481		9	8.0	468.1	234.7	7.5 1.242
	7	6.0	634.8	503.2	3.8 0.428		10	9.0	509.5	276.1	8.4 1.193
	8	7.0	765.2	633.6	4.1 0.388		11	10.0	545.9	312.4	9.3 1.152
	9	8.0	864.8	733.2	4.5 0.356		12	12.0	631.3	397.9	11.0 1.078
	10	9.0	953.6	822.0	4.8 0.327		13	14.0	712.8	479.4	12.7 1.017
	11	10.0	1017.5	885.9	5.0 0.302		14	16.0	790.5	557.0	14.3 0.965
	12	12.0	1106.9	975.3	5.5 0.266		15	18.0	857.4	623.9	15.9 0.919
	13	14.0	1177.1	1045.5	5.9 0.236		16	20.0	918.4	684.9	17.3 0.860
	14	16.0	1224.5	1092.9	6.2 0.212		17	22.0	970.8	737.3	18.8 0.814
	15	18.0	1269.8	1138.2	6.5 0.193		18	24.0	1014.1	780.6	20.3 0.812
	16	20.0	1304.1	1172.5	6.7 0.177		19	26.0	1051.6	818.1	21.7 0.783
	17	22.0	1332.8	1201.2	6.9 0.164		20	28.0	1088.1	854.6	23.1 0.756
	18	24.0	1356.6	1225.0	7.1 0.153		21	30.0	1118.4	885.0	24.4 0.731
D	19	26.0	1381.4	1249.8	7.3 0.143		22	35.0	1180.9	947.4	27.6 0.678
	20	28.5	1408.1	1276.5	7.5 0.132		23	40.0	1225.2	991.7	30.7 0.632
SECOND FLOW							24	45.0	1261.0	1027.5	33.5 0.594
E	1	0.0	152.0				25	50.0	1289.5	1056.1	36.2 0.560
	2	2.0	168.8	16.8			26	55.0	1315.8	1082.3	38.8 0.530
	3	4.0	152.7	-16.1			27	60.0	1338.2	1104.7	41.2 0.504
	4	6.0	155.3	2.7			28	70.0	1377.1	1143.6	45.7 0.459
	5	8.0	159.7	4.4			29	80.0	1410.2	1176.7	49.7 0.422
	6	10.0	161.9	2.1			30	90.0	1438.3	1204.9	53.4 0.391
	7	12.0	165.2	3.3			31	100.0	1463.7	1230.2	56.8 0.365
	8	14.0	170.5	5.3			32	110.0	1485.9	1252.5	59.9 0.342
	9	16.0	173.1	2.5			33	120.0	1505.5	1272.0	62.8 0.321
	10	18.0	174.3	1.2			34	135.0	1532.8	1299.4	66.6 0.295
	11	20.0	177.2	2.9			35	150.0	1554.4	1320.9	70.1 0.273
	12	30.0	190.1	12.9			36	165.0	1573.0	1339.5	73.2 0.255
	13	40.0	204.5	14.4			37	180.0	1588.0	1354.6	76.0 0.238
	14	50.0	218.0	13.5			38	195.0	1602.4	1368.9	78.6 0.224
	15	60.0	216.3	-1.7			39	210.0	1613.7	1380.2	80.9 0.211
	16	70.0	217.7	1.5			40	225.0	1624.9	1391.4	83.0 0.200
	17	80.0	218.4	0.7		G	41	232.7	1629.4	1395.9	84.0 0.195
	18	90.0	223.9	5.5							

REMARKS:

		O. D.	I. D.	LENGTH	DEPTH	
1		DRILL PIPE.....	4.500	3.826	4161.3	
4		FLEX VEIGHT.....	4.500	2.764	183.0	
3		DRILL COLLARS.....	6.500	2.312	278.0	
97		STABILIZERS.....	6.500	2.250	7.6	
3		DRILL COLLARS.....	6.500	2.312	31.3	
50		IMPACT REVERSING SUB.....	6.500	3.000	1.0	4661.9
3		DRILL COLLARS.....	6.500	2.312	31.1	
97		STABILIZERS.....	6.500	2.250	7.7	
5		CROSSOVER.....	6.500	2.000	1.0	
12		DUAL CIP VALVE.....	5.000	0.870	4.9	
60		HYDROSPRING TESTER.....	5.000	0.750	5.3	4711.4
80		AP RUNNING CASE.....	5.000	2.250	4.1	4712.4
15		JAR.....	5.000	1.000	3.3	
16		VR SAFETY JOINT.....	5.000	1.000	2.8	
70		OPEN HOLE PACKER.....	6.500	1.530	5.8	4727.4
18		DISTRIBUTOR VALVE.....	5.000	1.680	2.0	
70		OPEN HOLE PACKER.....	6.500	1.530	5.8	4735.2
19		ANCHOR PIPE SAFETY JOINT.....	5.000	1.500	4.3	
5		CROSSOVER.....	6.500	2.500	0.9	
3		DRILL COLLARS.....	6.500	2.312	31.5	
5		CROSSOVER.....	6.500	2.500	1.0	
20		FLUSH JOINT ANCHOR.....	5.000	2.370	8.0	
81		BLANKED-OFF RUNNING CASE.....	5.000		4.1	4782.0
TOTAL DEPTH					4786.0	

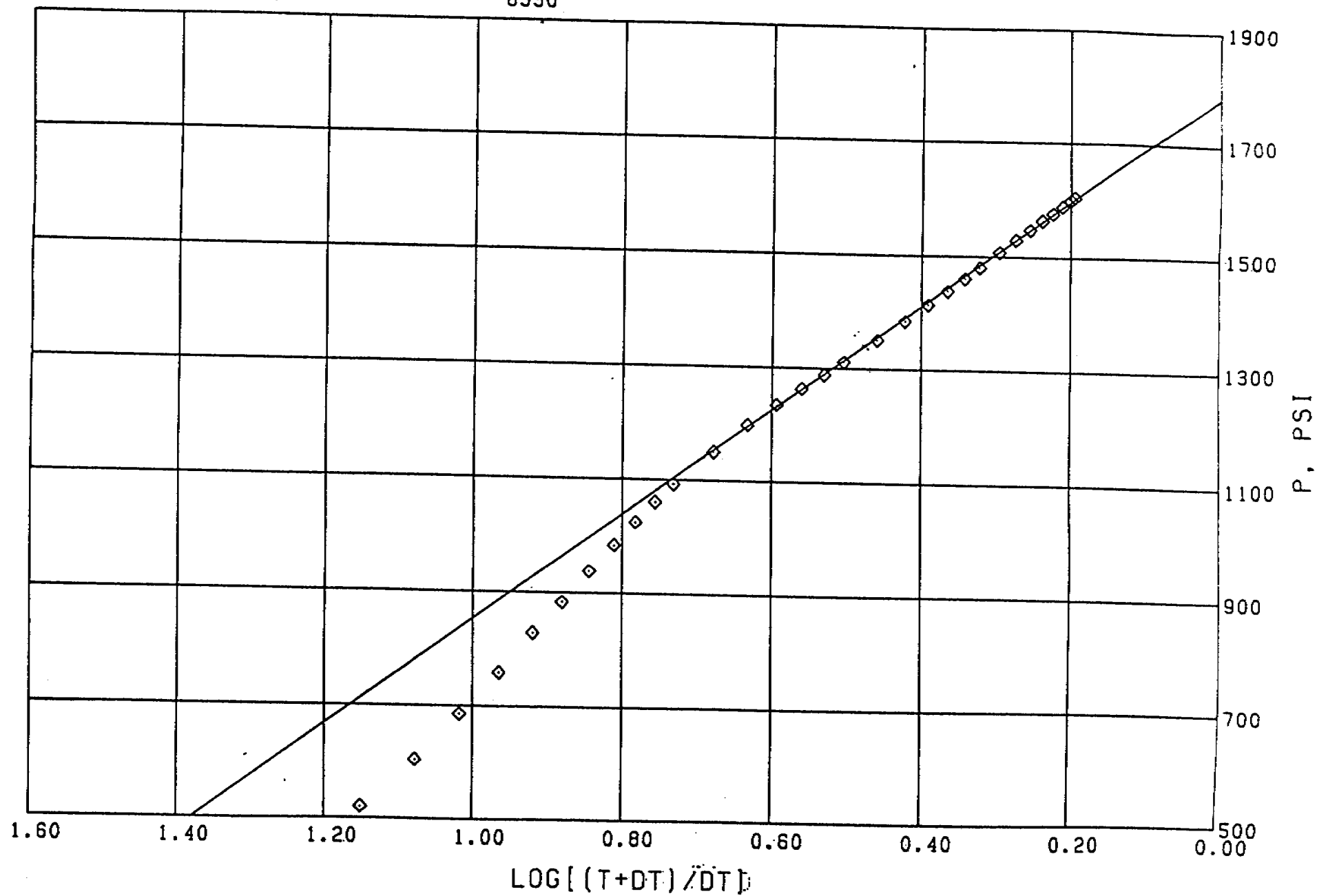
EQUIPMENT DATA



GAUGE NO CIP 1 2  
8531      ◇

GAUGE NO CIP 1 2  
8530

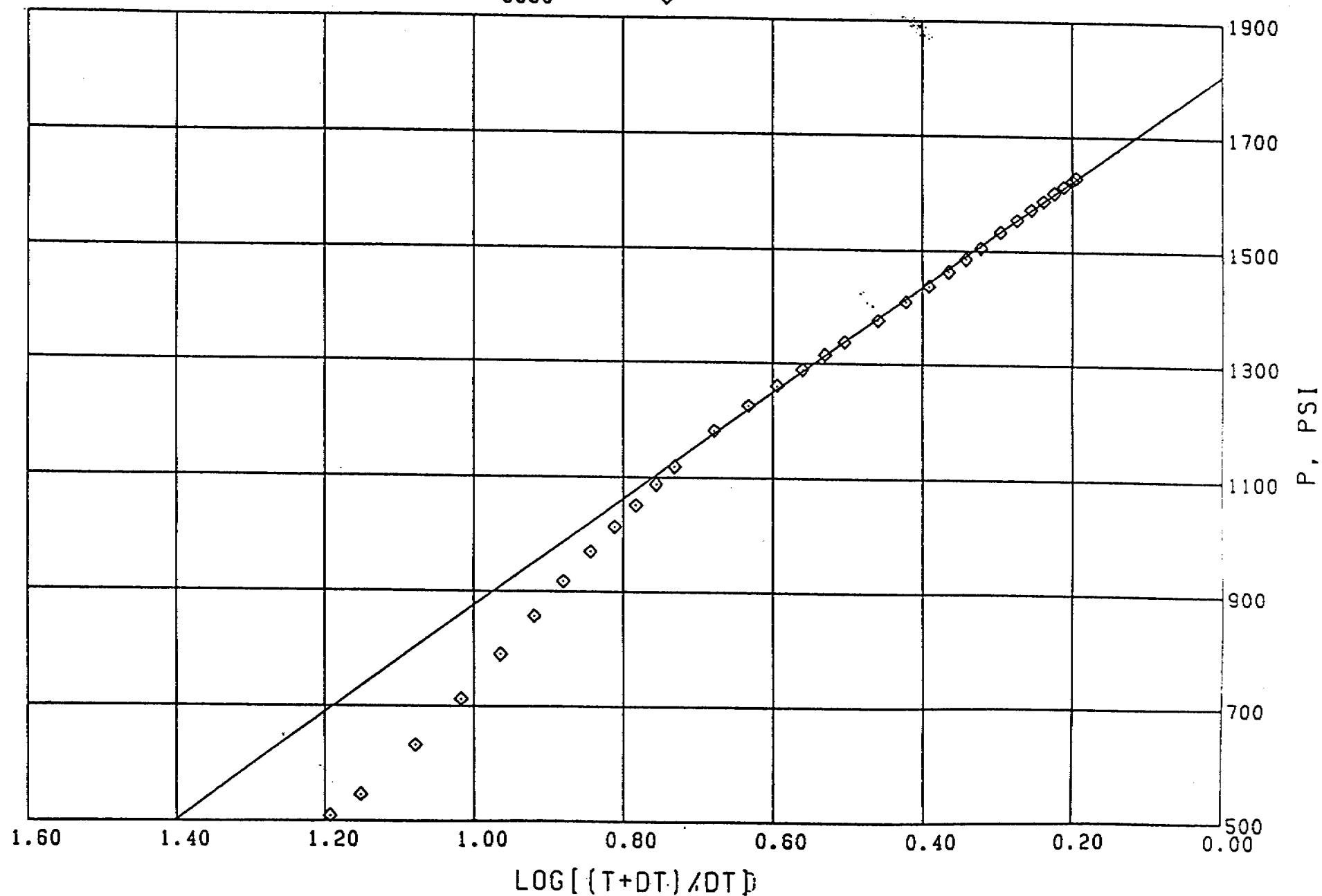
TICKET NO 32381400



GAUGE NO CIP 1 2  
8531

GAUGE NO CIP 1 2  
8530

TICKET NO 32381400



## EQUATIONS FOR DST LIQUID WELL ANALYSIS

Transmissibility	$\frac{kh}{\mu} = \frac{162.6 QB}{m}$	$\frac{\text{md-ft}}{\text{cp}}$
Indicated Flow Capacity	$kh = \frac{kh}{\mu} \mu$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Damage Ratio	$DR = .183 \frac{P^* - P_I}{m}$	—
Theoretical Potential w / Damage Removed	$Q_1 = Q DR$	BPD
Approx. Radius of Investigation	$r_i = 4.63 \sqrt{kt}$	ft

## EQUATIONS FOR DST GAS WELL ANALYSIS

Indicated Flow Capacity	$kh = \frac{1637 Q_g T}{m}$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Skin Factor	$S = 1.151 \left[ \frac{m(P^*) - m(P_I)}{m} - \text{LOG} \frac{kt}{\phi \mu c_f r_w^2} + 3.23 \right]$	—
Damage Ratio	$DR = \frac{m(P^*) - m(P_I)}{m(P^*) - m(P_I) - 0.87 mS}$	—
Indicated Flow Rate (Maximum)	$AOF_1 = \frac{Q_g m(P^*)}{m(P^*) - m(P_I)}$	MCFD
Indicated Flow Rate (Minimum)	$AOF_2 = Q_g \sqrt{\frac{m(P^*)}{m(P^*) - m(P_I)}}$	MCFD
Approx. Radius of Investigation	$r_i = 0.032 \sqrt{\frac{kt}{\phi \mu c_f}}$	ft