

APPENDIX 2

DRILL STEM TEST RESULTS

DRILL STEM TEST REPORT

OPERATOR: MOONIE OIL NL DATE: 23 JULY 1985
WELL NAME: EAST MEREENIE NO. 18 P BASIN: AMADEUS
FIELD: MEREENIE STRUCTURE:
TEST NO: 1 FORMATION: PACOOTA SAND NO: P3 120-130
ELEVATIONS GL: 2313 FT KB: 2325 FT PACKER AT: 4605.34 FT
INTERVAL: 4605.34 TO 4660 FT TEST TYPE: OPEN HOLE

TEST STATISTICS

COMPANY: HALLIBURTON OPERATOR: NORM COWLEY
TOOL: CONVENTIONAL CHOKE SIZE TOP: .5 INS BOTTOM: .75 INS
ANCHOR LENGTH: 45 FT OD: 5 INS
PERFORATED: 4611 TO 4660 FT LENGTH: 49 FT
PRESSURE RECORDER: TYPE POSITION DEPTH CLOCK
1. BORDON TUBE TOP 4583 FT 24 HR
2. BORDON TUBE BOTTOM 4685 FT 48 HR

CAPACITIES

HOLE SIZE: 7.625 INS INTERVAL: 4487 TO 4660 FT
RAT HOLE: 7.625 INS INTERVAL: 4605.34 TO 4660 FT
DRILL PIPE: BLS/FT COLLARS: BLS/FT

TIME RECORD

ACTUAL ELAPSED TIMES
START CLOCK: 0023 HRS START TO SEPERATOR: 0906 HRS
START IN HOLE: 0233 HRS STOP SEPERATOR: 1006 HRS
TOOL OPENED: 0752 HRS IF: 15 MINS
TOOL SHUT: 0807 HRS ISI: 30 MINS
TOOL OPENED: 0837 HRS FF: 92 MINS
TOOL SHUT: 1009 HRS FSI: 214 MINS
PACK PULLED: 1343 HRS TOTAL FLOW: 10 MINS
OUT OF HOLE: 2111 HRS SEPERATOR FLOW: 60 MINS

PRESSURE RECORD

CHART: BOTTOM CLOCK: 48 HR
IHP: 2103.4 PSI
IFP: 954 PSI
ISIP: 1715.5 PSI
FFP: 1201.4 PSI
FSIP: 1715.5 PSI
FHP: 2097.8 PSI
WHFP: 210 PSI

RECOVERY

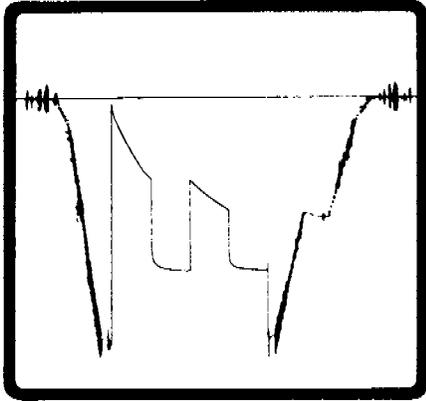
GTS: 5 MIN AT 775000 CU FT/D
OTS: 9 MIN AT 1325 BLS/D (US)
WTS: MIN AT BLS/D (US)
GOR: 584 CU FT/BL
ORIFICE SIZE: 1 INS
FLOW PROVER PRESSURE: 29 PSI
SG OF GAS: .964 GM/CC
SG OF OIL: 47.8 API AT 60°F
WATER SALINITY: PPM
MAXIMUM TEMP: 140°F

NATURE OF BLOW: IMMEDIATE STRONG BLOW: 7.54 AM - 3 PSI: 7.56-15 PSI 7.58-8 PSI
8.02-SLUGGING MUD AND OIL 8.04-130 PSI.

FF: 8.37-8.43AM GAS FLARE. OIL TO FLARE PIT 8.43 AM. 8.50AM 8-10 SEC SLUGS.

REMARKS: VALID TEST: RECOVERY 8710 LTS (54.7 BLS) FLOW RATE 1325 BLS/D. 46
API. OIL GRAVITY: 0.794 AT 22 DEGREES C. GREEN/BROWN (REFLECTED LIGHT) RED IN
TRANSMITTED LIGHT.

FORMATION TESTING SERVICE REPORT



Duncan, Oklahoma 73536

 A Halliburton Company

NOMENCLATURE

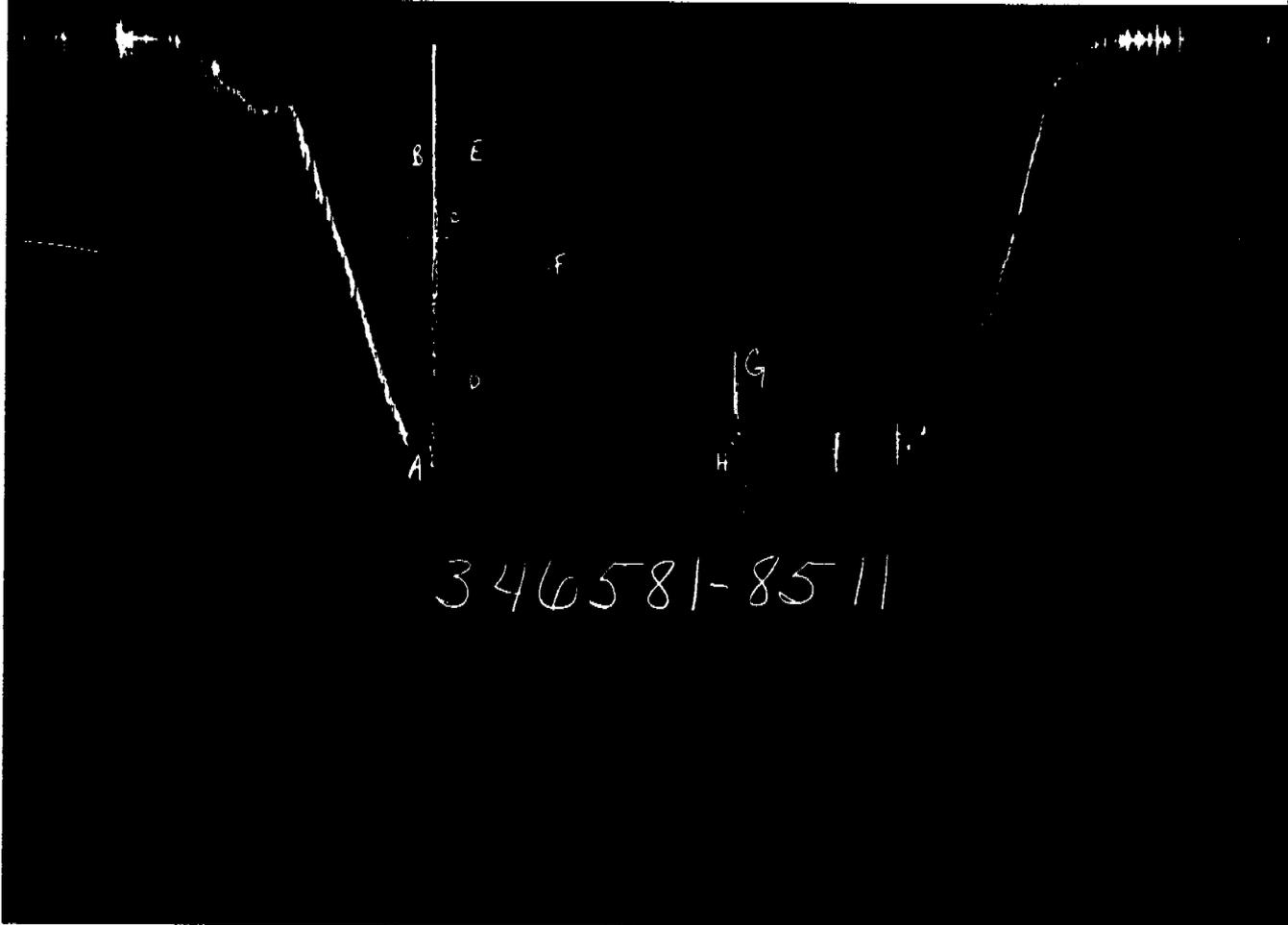
B	= Formation Volume Factor (Res Vol / Std Vol)	—
C_t	= System Total Compressibility	(Vol Vol) / psi
DR	= Damage Ratio	—
h	= Estimated Net Pay Thickness	Ft
k	= Permeability	md
m	$\left\{ \begin{array}{l} \text{(Liquid) Slope Extrapolated Pressure Plot} \\ \text{(Gas) Slope Extrapolated } m(P) \text{ Plot} \end{array} \right.$	<p>psi cycle</p> <p>MM psi² cp cycle</p>
$m(P^*)$	= Real Gas Potential at P^*	MM psi ² cp
$m(P_f)$	= Real Gas Potential at P_f	MM psi ² cp
AOF_1	= Maximum Indicated Absolute Open Flow at Test Conditions	MCFD
AOF_2	= Minimum Indicated Absolute Open Flow at Test Conditions ..	MCFD
P^*	= Extrapolated Static Pressure	Psig
P_f	= Final Flow Pressure	Psig
Q	= Liquid Production Rate During Test	BPD
Q_1	= Theoretical Liquid Production w Damage Removed	BPD
Q_g	= Measured Gas Production Rate	MCFD
r_i	= Approximate Radius of Investigation	Ft
r_w	= 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. 34658100
07-AUG-85
ALICE SPRINGS

FORMATION TESTING SERVICE REPORT

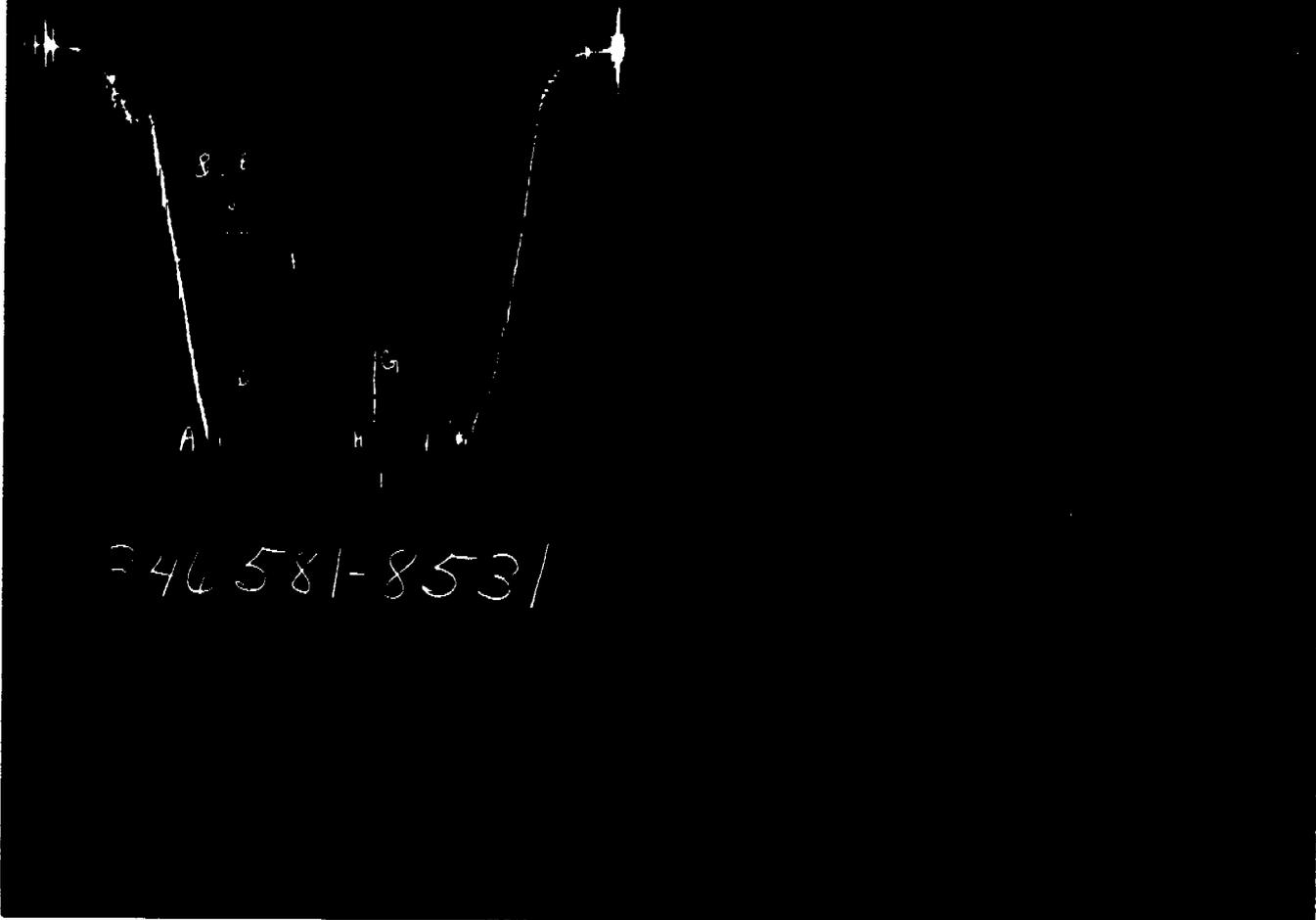
LEGAL LOCATION LEASE NAME	WELL NO.	TEST NO.	TESTED INTERVAL	LEASE OWNER/COMPANY NAME
NERENIE EAST	18	1	4605.3 - 4660.0	MOONIE OIL, N.L.
SEC. - TYP. - RMC.				
FIELD AREA				
ARMARDEES BASIN				
COUNTY				
N. TERRITORY				
STATE				
AUSTRALIA				
BG				



346581-8511

GAUGE NO: 8511 DEPTH: 4583.2 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2066	2061.6			
B	INITIAL FIRST FLOW	655	650.3			
C	FINAL FIRST FLOW	921	918.6	15.0	15.2	F
C	INITIAL FIRST CLOSED-IN	921	918.6			
D	FINAL FIRST CLOSED-IN	1690	1686.6	30.0	30.3	C
E	INITIAL SECOND FLOW	700	686.6			
F	FINAL SECOND FLOW	1178	1173.1	92.0	91.2	F
F	INITIAL SECOND CLOSED-IN	1178	1173.1			
G	FINAL SECOND CLOSED-IN	1690	1686.6	214.0	214.3	C
H	FINAL HYDROSTATIC	2071	2060.9			



GAUGE NO: 8531 DEPTH: 4657.0 BLANKED OFF: YES HOUR OF CLOCK: 48

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2103	2099.6			
B	INITIAL FIRST FLOW	712	700.1			
C	FINAL FIRST FLOW	954	947.9	15.0	15.2	F
C	INITIAL FIRST CLOSED-IN	954	947.9			
D	FINAL FIRST CLOSED-IN	1716	1711.5	30.0	30.3	C
E	INITIAL SECOND FLOW	740	732.7			
F	FINAL SECOND FLOW	1201	1198.2	92.0	91.2	F
F	INITIAL SECOND CLOSED-IN	1201	1198.2			
G	FINAL SECOND CLOSED-IN	1716	1712.1	214.0	214.3	C
H	FINAL HYDROSTATIC	2098	2095.1			

EQUIPMENT & HOLE DATA

FORMATION TESTED: PACQOOTA P-3
 NET PAY (ft): _____
 GROSS TESTED FOOTAGE: 54.7
 ALL DEPTHS MEASURED FROM: KB
 CASING PERFS. (ft): _____
 HOLE OR CASING SIZE (in): 7.625
 ELEVATION (ft): _____
 TOTAL DEPTH (ft): 4660.0
 PACKER DEPTH(S) (ft): 4598, 4605
 FINAL SURFACE CHOKE (in): 0.50000
 BOTTOM HOLE CHOKE (in): 0.750
 MUD WEIGHT (lb/gal): 8.60
 MUD VISCOSITY (sec): 50
 ESTIMATED HOLE TEMP. (°F): _____
 ACTUAL HOLE TEMP. (°F): 140 @ 4656.0 ft

TICKET NUMBER: 34658100
 DATE: 7-23-85 TEST NO: 1
 TYPE DST: OPEN HOLE
 HALLIBURTON CAMP:
ALICE SPRINGS
 TESTER: N. COWLEY
 WITNESS: R. YOUNG
 DRILLING CONTRACTOR:
OCEAN DRILLING & EXPLORATION #19

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): 47.8 @ 60°F
 GAS/OIL RATIO (cu.ft. per bbl): _____
 GAS GRAVITY: _____

CUSHION DATA

TYPE	AMOUNT	WEIGHT
_____	_____	_____
_____	_____	_____

RECOVERED:

6 BARRELS OF GAS CUT OIL
 GAS AND OIL TO SURFACE

MEASURED FROM
 TESTER VALVE

REMARKS:

TEST WAS CONDUCTED ON 23RD OF JULY, 1985.

DIMENSIONS OF THE TUBULAR GOODS ABOVE THE DRILL COLLARS WERE NOT REPORTED.

TYPE & SIZE MEASURING DEVICE:

6" CERAMIC SURFACE CHOKE

TICKET NO: 34658100

TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
7-23-85					
0100					PICKED UP TOOL
0233					TOOL MADE UP, RAN IN HOLE.
0741					HEAD UP TO FLOOR MANIFOLD
0751					SEATED PACKERS WITH 30,000#
0752	.50				OPENED TOOL WITH A MODERATE TO STRONG BLOW
0754	"	3			
0755	"	10			
0756	"	15			GAS TO SURFACE
0757	"	10			
0801	"	30			OIL TO SURFACE
0804	"	130			
0806	"	150			
0807		160			CLOSED TOOL
0837	"	60			OPENED TOOL
0843	"	50			OIL TO SURFACE
0845	"	80			
0846	"	100			
0847	"	120			
0848	"	140			
0850	"	160			
0853	"	180			
0900	"	190			
0905	"	195			
0910	"	200			
0915	"	205			
0920	"	210			
0930	"	210			
0940	"	210			
0950	"	210			
1000	"	210			
1009	"	210			CLOSED TOOL
1343					PULLED FREE AND OPENED BY-PASS
1345					DROPPED BAR TO REVERSE CIRCULATE
1346					PIN BROKE, STARTED REVERSING.
1635					BROKE DOWN HEAD, FINISHED

TICKET NO: 34658100
 CLOCK NO: 30361 HOUR: 24



GAUGE NO: 8511
 DEPTH: 4583.2

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	650.3			
2	1.0	652.2	2.0		
3	2.0	662.6	10.4		
4	3.0	650.7	-12.0		
5	4.0	652.9	2.2		
6	5.0	664.3	11.4		
7	6.0	677.5	13.2		
8	7.0	690.5	13.0		
9	8.0	712.1	21.6		
10	9.0	745.0	32.9		
11	10.0	780.8	35.8		
12	11.0	812.0	31.2		
13	12.0	843.6	31.6		
14	13.0	875.9	32.4		
15	14.0	901.8	25.9		
C 16	15.2	918.6	16.7		
FIRST CLOSED-IN					
C 1	0.0	918.6			
2	1.0	1643.2	724.6	0.9	1.223
3	2.0	1659.2	740.6	1.8	0.935
4	3.0	1666.3	747.7	2.5	0.780
5	4.0	1670.1	751.5	3.2	0.682
6	5.0	1672.7	754.2	3.8	0.605
7	6.0	1674.7	756.1	4.3	0.549
8	7.0	1676.0	757.4	4.8	0.500
9	8.0	1677.4	758.9	5.2	0.462
10	9.0	1678.7	760.2	5.7	0.429
11	10.0	1679.5	761.0	6.0	0.400
12	12.0	1681.1	762.5	6.7	0.355
13	14.0	1682.0	763.5	7.3	0.319
14	16.0	1683.1	764.5	7.8	0.290
15	18.0	1683.5	764.9	8.2	0.266
16	20.0	1684.5	766.0	8.6	0.246
17	22.0	1684.5	766.0	9.0	0.228
18	24.0	1685.6	767.0	9.3	0.213
19	26.0	1685.6	767.0	9.6	0.200
20	28.0	1686.1	767.5	9.8	0.188
D 21	30.3	1686.6	768.1	10.1	0.176
SECOND FLOW					
E 1	0.0	686.6			
2	6.0	787.6	101.1		
3	12.0	955.3	167.6		
4	18.0	1063.6	108.3		
5	24.0	1111.1	47.5		
6	30.0	1139.9	28.9		
7	36.0	1161.1	21.1		

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
8	42.0	1172.7	11.6		
9	48.0	1177.8	5.1		
10	54.0	1179.6	1.8		
11	60.0	1179.6	0.0		
12	66.0	1179.6	0.0		
13	72.0	1178.5	-1.2		
14	78.0	1176.5	-2.0		
15	84.0	1175.6	-0.9		
16	90.0	1174.5	-1.0		
F 17	91.2	1173.1	-1.4		
SECOND CLOSED-IN					
F 1	0.0	1173.1			
2	1.0	1656.2	483.1	1.0	2.034
3	2.0	1660.9	487.8	2.0	1.724
4	3.0	1663.8	490.7	2.9	1.565
5	4.0	1665.4	492.2	3.9	1.441
6	5.0	1666.8	493.7	4.8	1.349
7	6.0	1668.0	494.9	5.6	1.276
8	7.0	1669.4	496.3	6.6	1.209
9	8.0	1670.1	497.0	7.4	1.155
10	9.0	1670.7	497.6	8.3	1.110
11	10.0	1671.5	498.4	9.1	1.068
12	12.0	1672.2	499.1	10.8	0.994
13	14.0	1673.4	500.3	12.4	0.933
14	16.0	1674.3	501.2	13.9	0.883
15	18.0	1674.8	501.7	15.4	0.840
16	20.0	1675.6	502.5	16.8	0.801
17	22.0	1676.1	503.0	18.3	0.765
18	24.0	1676.6	503.5	19.6	0.735
19	26.0	1676.6	503.5	20.9	0.707
20	28.0	1677.4	504.3	22.2	0.681
21	30.0	1677.7	504.6	23.4	0.658
22	35.0	1678.6	505.5	26.3	0.606
23	40.0	1678.9	505.8	29.1	0.563
24	45.0	1679.5	506.4	31.6	0.527
25	50.0	1680.1	506.9	34.0	0.495
26	55.0	1681.2	508.1	36.3	0.467
27	60.0	1681.2	508.1	38.4	0.443
28	70.0	1682.0	508.9	42.2	0.401
29	80.0	1683.1	510.0	45.6	0.367
30	90.0	1683.1	510.0	48.8	0.339
31	100.0	1683.1	510.0	51.5	0.315
32	110.0	1684.1	511.0	54.1	0.294
33	120.0	1684.9	511.8	56.4	0.276
34	135.0	1684.9	511.8	59.5	0.252
35	150.0	1684.9	511.8	62.2	0.233
36	165.0	1684.9	511.8	64.7	0.216
37	180.0	1685.7	512.6	66.9	0.202
38	195.0	1685.7	512.6	68.8	0.189
39	210.0	1685.6	512.5	70.6	0.178
G 40	214.3	1686.6	513.5	71.1	0.175

REMARKS:

TICKET NO: 34658100

CLOCK NO: 25702 HOUR: 48



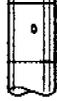
GAUGE NO: 8531

DEPTH: 4657.0

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	700.1			
2	1.0	712.4	12.3		
3	2.0	703.5	-8.9		
4	3.0	700.4	-3.1		
5	4.0	702.1	1.7		
6	5.0	712.7	10.6		
7	6.0	724.7	12.0		
8	7.0	739.4	14.8		
9	8.0	755.2	15.7		
10	9.0	787.7	32.6		
11	10.0	824.8	37.0		
12	11.0	849.4	24.7		
13	12.0	874.8	25.3		
14	13.0	899.7	24.9		
15	14.0	927.6	27.9		
C 16	15.2	947.9	20.3		
FIRST CLOSED-IN					
C 1	0.0	947.9			
2	1.0	1655.6	707.7	0.9	1.229
3	2.0	1681.4	733.5	1.8	0.929
4	3.0	1688.0	740.1	2.5	0.778
5	4.0	1693.1	745.2	3.2	0.682
6	5.0	1695.9	748.0	3.8	0.606
7	6.0	1698.0	750.1	4.3	0.550
8	7.0	1700.3	752.4	4.8	0.500
9	8.0	1702.1	754.2	5.2	0.463
10	9.0	1702.8	754.9	5.7	0.430
11	10.0	1703.8	755.9	6.0	0.403
12	12.0	1705.1	757.2	6.7	0.356
13	14.0	1706.9	759.0	7.3	0.319
14	16.0	1707.6	759.7	7.8	0.290
15	18.0	1708.6	760.7	8.2	0.266
16	20.0	1709.3	761.4	8.6	0.245
17	22.0	1710.0	762.1	9.0	0.228
18	24.0	1710.7	762.8	9.3	0.213
19	26.0	1711.0	763.1	9.6	0.200
20	28.0	1711.0	763.1	9.8	0.188
D 21	30.3	1711.5	763.6	10.1	0.176
SECOND FLOW					
E 1	0.0	732.7			
2	6.0	831.6	98.9		
3	12.0	991.1	159.5		
4	18.0	1096.1	105.0		
5	24.0	1139.9	43.7		
6	30.0	1166.1	26.3		
7	36.0	1185.0	18.9		

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
8	42.0	1196.8	11.8		
9	48.0	1202.8	6.0		
10	54.0	1205.1	2.4		
11	60.0	1205.1	0.0		
12	66.0	1205.1	0.0		
13	72.0	1204.9	-0.3		
14	78.0	1203.2	-1.7		
15	84.0	1201.5	-1.7		
16	90.0	1200.0	-1.5		
F 17	91.2	1198.2	-1.8		
SECOND CLOSED-IN					
F 1	0.0	1198.2			
2	1.0	1664.9	466.7	1.0	2.025
3	2.0	1675.8	477.6	2.0	1.728
4	3.0	1681.1	482.9	2.9	1.565
5	4.0	1684.8	486.6	3.8	1.442
6	5.0	1687.5	489.3	4.8	1.347
7	6.0	1688.9	490.7	5.7	1.271
8	7.0	1690.7	492.5	6.5	1.211
9	8.0	1692.0	493.8	7.5	1.153
10	9.0	1693.1	494.9	8.3	1.108
11	10.0	1694.5	496.3	9.1	1.065
12	12.0	1696.3	498.1	10.8	0.995
13	14.0	1697.5	499.3	12.4	0.934
14	16.0	1698.6	500.4	13.9	0.883
15	18.0	1699.4	501.2	15.4	0.840
16	20.0	1700.1	501.9	16.8	0.800
17	22.0	1700.8	502.7	18.3	0.765
18	24.0	1701.7	503.5	19.5	0.736
19	26.0	1701.7	503.5	20.9	0.706
20	28.0	1702.1	503.9	22.2	0.681
21	30.0	1703.1	504.9	23.4	0.658
22	35.0	1703.7	505.5	26.3	0.606
23	40.0	1704.5	506.3	29.1	0.564
24	45.0	1705.1	506.9	31.6	0.526
25	50.0	1705.8	507.6	34.0	0.495
26	55.0	1706.5	508.3	36.3	0.467
27	60.0	1706.9	508.7	38.4	0.443
28	70.0	1707.9	509.7	42.2	0.401
29	80.0	1707.9	509.7	45.6	0.367
30	90.0	1708.9	510.7	48.7	0.339
31	100.0	1708.9	510.7	51.5	0.315
32	110.0	1709.4	511.2	54.1	0.294
33	120.0	1709.4	511.2	56.4	0.276
34	135.0	1710.6	512.4	59.5	0.252
35	150.0	1710.6	512.4	62.2	0.233
36	165.0	1711.0	512.8	64.7	0.216
37	180.0	1711.0	512.8	66.9	0.202
38	195.0	1711.5	513.4	68.8	0.189
39	210.0	1711.5	513.4	70.6	0.178
G 40	214.3	1712.1	513.9	71.1	0.175

REMARKS:

		O.D.	I.D.	LENGTH	DEPTH	
1		DRILL PIPE.....	4.500		4075.7	
		DRILL PIPE.....	4.500		182.7	
		DRILL COLLARS.....	6.500	2.750	280.0	
50		IMPACT REVERSING SUB.....	6.000	3.000	1.0	4538.3
		DRILL COLLARS.....	6.500	2.750	30.6	
5		CROSSOVER.....	5.750		1.0	
2		DUAL CIP VALVE.....	5.000	0.870	4.9	
60		HYDROSPRING TESTER.....	5.000	0.750	5.3	4581.0
0		AP RUNNING CASE.....	5.000	2.250	4.1	4583.2
15		JAR.....	5.000	1.750	5.0	
5		VR SAFETY JOINT.....	5.000	1.000	2.8	
0		OPEN HOLE PACKER.....	6.750	1.530	5.8	4597.5
18		DISTRIBUTOR VALVE.....	5.000	1.680	2.0	
0		OPEN HOLE PACKER.....	6.750	1.530	5.8	4605.3
19		ANCHOR PIPE SAFETY JOINT.....	5.000	1.500	4.3	
20		FLUSH JOINT ANCHOR.....	5.000	2.370	45.0	
1		BLANKED-OFF RUNNING CASE.....	5.000		4.1	4657.0
		TOTAL DEPTH			4660.0	

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
Skin Factor	S	$1.151 \left[\frac{P^* - P_f}{m} \text{LOG} \left(\frac{k(t \cdot 60)}{\phi \mu c_f r_w^2} \right) - 3.23 \right]$	—
Damage Ratio	DR	$\frac{P^* - P_f}{P^* - P_i} \frac{1}{0.87 mS}$	—
Theoretical Potential w Damage Removed	Q_1	$Q DR$	BPD
Approx. Radius of Investigation	r_i	$0.032 \sqrt{\frac{k(t \cdot 60)}{\phi \mu c_i}}$	ft

EQUATIONS FOR DST GAS WELL ANALYSIS

Indicated Flow Capacity	kh	$\frac{1637 Q_1 T}{m}$	md-ft
Average Effective Permeability	k	$\frac{kh}{h}$	md
Skin Factor	S	$1.151 \left[\frac{m(P^*) - m(P_f)}{m} \text{LOG} \left(\frac{k(t \cdot 60)}{\phi \mu c_f r_w^2} \right) - 3.23 \right]$	—
Damage Ratio	DR	$\frac{m(P^*) - m(P_f)}{m(P^*) - m(P_i)} \frac{1}{0.87 mS}$	—
Indicated Flow Rate (Maximum)	AOF_1	$Q_1 \frac{m(P^*)}{m(P^*) - m(P_f)}$	MCFD
Indicated Flow Rate (Minimum)	AOF_2	$Q_1 \sqrt{\frac{m(P^*)}{m(P^*) - m(P_f)}}$	MCFD
Approx. Radius of Investigation	r_i	$0.032 \sqrt{\frac{k(t \cdot 60)}{\phi \mu c_i}}$	ft