

APPENDIX 2

DRILL STEM TEST RESULTS

DRILL STEM TEST REPORT

Report No. 1Well EAST MEREENIE NO. 15 Elevation K.B. 2350 Elevation G.L. 2330 Date 1/10/84Test No. 1 Interval 4689 TO 4735 Operator HALLIBURTONTester Size & Type 5" HYDROSPRING Packer Size & Type 6-3/4" OH ASSEMBLYAnchor Length & O.D. 37 FEET, 5 INCHES Drill collar footage above Packer 275'Capacity Bbls/ft. Drill Pipe 0.0142 Collars 0.00519Pressure Recorders Type BORDEN Position TOP Depth 4665'Type BORDEN Position BTM Depth 4732'Perforated Anchor from 4695' to 4732'Choke Size: Top 1/2" Bottom 3/4" Water Cushion NIL Mud Wt. 10.5 Vis. 56Hole Size 10-3/4" to 2228' Rat hole size 7-7/8" to 4735'Mud Level: Before valve opened FLOWLINE After valve opened FLOWLINETime Record: Started clocks at 2230 Hrs. Started in hole at 2330 Hrs.Opened Valve at 0257 Hrs. Shut in at 0312 Hrs. Opened at 0342 Hrs. Shut in at 0542 Hrs.Pulled Packer at 0953 Hrs. Out of hole at 1500 Hrs. Recovered chart at 1500 Hrs.Nature of Blow IMMEDIATE WEAK BUILDING TO STRONG AFTER 1 MINUTE. GAS TO SURFACE AT 0304. MAXIMUM BLOW AT 0312. BLOW STEADILY DECREASED TO ZERO AT 0406. OIL TO SURFACE AT 0408.Fluid flow (details) GAS TO SURFACE AFTER 7 MINUTES in 1ST FLOW PERIOD. OIL TO SURFACE AFTER 24 MINUTES IN 2ND FLOW PERIOD, SLUGGING FOR 20 MINUTES, THEN SETTLED TO REGULAR FLOW.Recovery RECOVERED 2210 LITRES OF 41 API OIL IN STOCKTANK IN 1 HR - 333 BOPD. GAS MEASURED THROUGH 2" FLOW PROVER WITH 1/2" ORIFICE AT 345 mcf/d. GOR = 1036 CU FT./BBL.Pressures I.H.P. 2618.4 psig IFP 245.4 psig ISIP 1821.5 psig FFP 789.4 psig FSIP 1818 psig
F.H.P. 2595.4 psigElapsed Times: Initial flow 15 mins. Initial Shut in 30 mins.
Final flow 120 mins. Final Shut in 251 mins.Maximum Temperature 138°F Samples Taken ONE OIL SAMPLE TAKEN.Remarks TEST WAS DELAYED 20 HRS DUE TO GAS INFLOW PRIOR TO START OF DST. MUD WEIGHT INCREASED FROM 9.9 TO 10.5 LB/GAL AND CONDITIONED. GAS INVASION NOT OBSERVED DURING RUNNING OF DST NO. 1.

DAVID CATHERALL



TICKET NO. 32905800

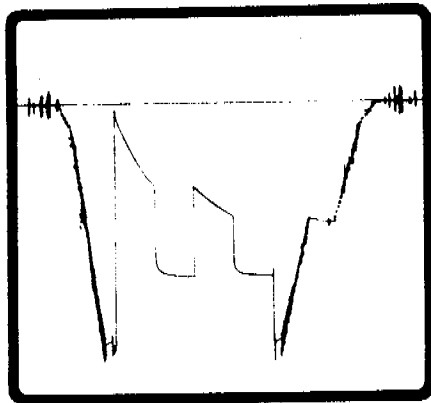
30-OCT-84

ALICE SPRINGS

FORMATION TESTING SERVICE REPORT

LEASE NAME		15		1		4689.1 - 4735.1		OILMIN N.L.	
LEGAL LOCATION		WELL NO.		TEST NO.		TESTED INTERVAL		LEASE OWNER/COMPANY NAME	
SEC. - TWP. - RNG.		SEE REMARKS		FIELD AREA		COUNTY		STATE	
						NORTH. TERRITORY		AUSTRALIA IC	

FORMATION TESTING SERVICE REPORT



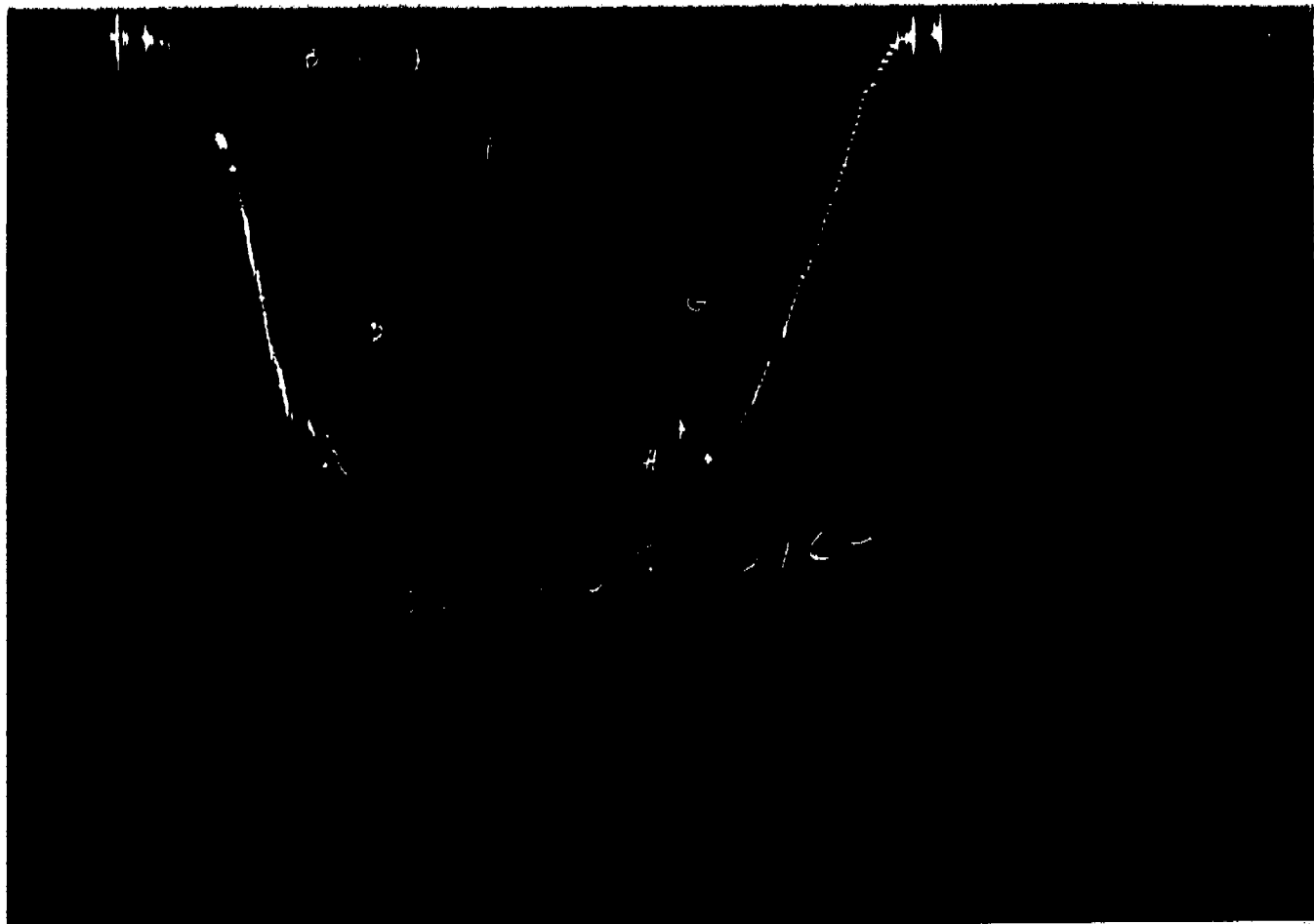
Duncan, Oklahoma 73536



A Halliburton Company

GAUGE NO: 8721 DEPTH: 4665.5 BLANKED OFF: NQ HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2591	2572.7			
B	INITIAL FIRST FLOW	142	127.6	15.0	15.3	F
C	FINAL FIRST FLOW	230	231.7			
C	INITIAL FIRST CLOSED-IN	230	231.7	30.0	29.9	C
D	FINAL FIRST CLOSED-IN	1802	1795.3			
E	INITIAL SECOND FLOW	271	266.6	120.0	120.2	F
F	FINAL SECOND FLOW	762	761.0			
F	INITIAL SECOND CLOSED-IN	762	761.0	251.0	250.6	C
G	FINAL SECOND CLOSED-IN	1792	1790.5			
H	FINAL HYDROSTATIC	2577	2570.5			



GAUGE NO: 5169 DEPTH: 4732.3 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2618	2599.5			
B	INITIAL FIRST FLOW	175	177.0	15.0	15.3	F
C	FINAL FIRST FLOW	245	243.8			
C	INITIAL FIRST CLOSED-IN	245	243.8	30.0	29.9	C
D	FINAL FIRST CLOSED-IN	1821	1803.9			
E	INITIAL SECOND FLOW	288	281.5	120.0	120.2	F
F	FINAL SECOND FLOW	789	777.8			
F	INITIAL SECOND CLOSED-IN	789	777.8	251.0	250.6	C
G	FINAL SECOND CLOSED-IN	1818	1798.7			
H	FINAL HYDROSTATIC	2595	2596.7			

EQUIPMENT & HOLE DATA

FORMATION TESTED: PACQOTA P3
 NET PAY (ft): 35.0
 GROSS TESTED FOOTAGE: 46.4
 ALL DEPTHS MEASURED FROM: KELLY BUSHING
 CASING PERFS. (ft): _____
 HOLE OR CASING SIZE (in): 7.875
 ELEVATION (ft): 2350
 TOTAL DEPTH (ft): 4735.3
 PACKER DEPTH(S) (ft): 4681, 4689
 FINAL SURFACE CHOKE (in): 0.500
 BOTTOM HOLE CHOKE (in): 0.750
 MUD WEIGHT (lb/gal): 10.50
 MUD VISCOSITY (sec): 56
 ESTIMATED HOLE TEMP. (°F): _____
 ACTUAL HOLE TEMP. (°F): 138 @ 4731.3 ft

TICKET NUMBER: 32905800

DATE: 10-1-84 TEST NO: 1

TYPE DST: OPEN HOLE

HALLIBURTON CAMP:
ALICE SPRINGS

TESTER: RED SKINNER

WITNESS: D. CATHERALL

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): 41.0 @ 60°F
 GAS/OIL RATIO (cu.ft. per bbl): 1036
 GAS GRAVITY: _____

CUSHION DATA

TYPE	AMOUNT	WEIGHT
_____	_____	_____
_____	_____	_____

RECOVERED:

333 BARRELS OF OIL PER DAY

MEASURED FROM
 TESTER VALVE

REMARKS:

LEGAL LOCATION: LATITUDE-24 DEGREES, 02', 01"SOUTH;
 LONGITUDE-131 DEGREES, 37', 54"EAST.

TYPE & SIZE MEASURING DEVICE:

.5" SURFACE CHOKE

TICKET NO: 32905600

TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
9-30-84					
2230					LOADED CLOCKS
2330					RAN IN HOLE
10-1-84					
0252					SET PACKER
0257					OPENED TOOL WITH WEAK INCREASING BLOW
0258		5			STRONG BLOW
0300	.5	8			STRONG BLOW
0302	.5	13			
0304	.5	19			GAS TO SURFACE
0307	.5	17			
0312	.5	33			CLOSED TOOL
0342					OPENED TOOL
0347	.5	23			
0352	.5	20			
0357	.5	18			
0402	.5	4			
0406	.5				MUD TO SURFACE
0408	.5	50			OIL TO SURFACE
0417	.5	140			
0422	.5	145			
0427	.5	145			TO SEPARATOR
0432	.5	145			
0437	.5	140			
0442	.5	145			
0447	.5	150			
0452	.5	150			
0457	.5	150			
0502	.5	160			
0507	.5	160			
0512	.5	165			
0517	.5	165			
0522	.5	165			
0527	.5	165			
0532	.5	165			
0537	.5	170			

TICKET NO: 32905800

CLOCK NO: 7368 HOUR: 12

HALLIBURTON

SERVICES

GAUGE NO: 8721

DEPTH: 4665.4

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	127.6			
2	1.0	130.2	2.5		
3	2.0	136.3	6.1		
4	3.0	141.9	5.6		
5	4.0	149.0	7.1		
6	5.0	159.3	10.3		
7	6.0	171.7	12.4		
8	7.0	177.8	6.1		
9	8.0	185.3	7.5		
10	9.0	189.8	4.6		
11	10.0	190.5	0.7		
12	11.0	193.4	2.9		
13	12.0	200.5	7.1		
14	13.0	208.5	8.0		
15	14.0	217.8	9.3		
16	15.0	225.4	7.6		
C 17	15.3	231.7	6.3		

FIRST CLOSED-IN

C 1	0.0	231.7			
2	1.0	538.6	306.9	0.9	1.222
3	2.0	963.6	731.9	1.8	0.941
4	3.0	1599.3	1367.6	2.5	0.787
5	4.0	1743.9	1512.2	3.2	0.683
6	5.0	1770.3	1538.6	3.8	0.611
7	6.0	1780.0	1548.3	4.3	0.550
8	7.0	1784.4	1552.7	4.8	0.503
9	8.0	1786.9	1555.3	5.3	0.465
10	9.0	1788.1	1556.4	5.7	0.432
11	10.0	1789.2	1557.5	6.0	0.405
12	12.0	1791.9	1560.2	6.7	0.358
13	14.0	1792.7	1561.0	7.3	0.322
14	16.0	1793.6	1561.9	7.8	0.292
15	18.0	1793.9	1562.2	8.3	0.268
16	20.0	1794.6	1562.9	8.7	0.247
17	22.0	1794.9	1563.2	9.0	0.230
18	24.0	1795.8	1564.1	9.4	0.215
19	26.0	1796.1	1564.4	9.7	0.202
20	28.0	1796.1	1564.4	9.9	0.190
D 21	29.9	1795.3	1563.6	10.1	0.180

SECOND FLOW

E 1	0.0	266.6			
2	5.0	279.3	12.7		
3	10.0	332.4	53.1		
4	15.0	369.5	37.1		
5	20.0	411.4	41.9		
6	25.0	458.6	47.3		

REF	MINUTES	PRESSURE	AP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
7	30.0	522.5	63.9		
8	35.0	560.8	38.3		
9	40.0	611.9	51.0		
10	45.0	649.0	37.1		
11	50.0	656.9	8.0		
12	55.0	671.0	14.1		
13	60.0	683.4	12.4		
14	65.0	694.9	11.5		
15	70.0	707.1	12.2		
16	75.0	721.0	13.9		
17	80.0	728.1	7.1		
18	85.0	735.3	7.1		
19	90.0	741.4	6.1		
20	95.0	745.3	3.9		
21	100.0	749.8	4.6		
22	105.0	753.6	3.7		
23	110.1	757.6	4.1		
24	115.0	760.0	2.4		
F 25	120.2	761.0	1.0		

SECOND CLOSED-IN

F 1	0.0	761.0			
2	1.0	1373.6	612.5	1.0	2.125
3	2.0	1706.3	945.3	2.0	1.840
4	3.0	1749.0	988.0	2.9	1.665
5	4.0	1758.8	997.8	3.9	1.540
6	5.0	1764.1	1003.1	4.8	1.449
7	6.0	1767.3	1006.3	5.8	1.372
8	7.0	1770.0	1009.0	6.7	1.308
9	8.0	1771.2	1010.2	7.6	1.253
10	9.0	1772.5	1011.5	8.5	1.204
11	10.0	1773.6	1012.5	9.3	1.162
12	12.0	1775.1	1014.1	11.1	1.088
13	14.0	1776.4	1015.4	12.7	1.029
14	16.0	1777.5	1016.4	14.3	0.976
15	18.0	1778.6	1017.6	15.9	0.931
16	20.0	1779.3	1018.3	17.5	0.890
17	22.0	1780.3	1019.3	18.9	0.855
18	24.0	1780.8	1019.8	20.4	0.822
19	26.0	1780.8	1019.8	21.8	0.793
20	28.0	1781.2	1020.2	23.2	0.766
21	30.0	1782.0	1021.0	24.5	0.742
22	35.0	1783.2	1022.2	27.8	0.688
23	40.0	1783.9	1022.9	30.9	0.643
24	45.0	1783.9	1022.9	33.8	0.603
25	50.0	1783.9	1022.9	36.5	0.569
26	55.0	1784.9	1023.9	39.1	0.539
27	60.0	1785.3	1024.2	41.6	0.513
28	70.0	1786.3	1025.3	46.1	0.468
29	80.0	1787.5	1026.4	50.3	0.430
30	90.0	1787.8	1026.8	54.1	0.399
31	100.0	1786.4	1025.4	57.5	0.372

REMARKS:

TYPE & SIZE MEASURING DEVICE:

5" SURFACE CHOKE

TICKET NO: 32905800

[illegible]

TICKET NO: 32905800

CLOCK NO: 7368 HOUR: 12



GAUGE NO: 8721

DEPTH: 4665.4

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND CLOSED-IN - CONTINUED					
32	110.0	1788.1	1027.1	60.7	0.349
33	120.0	1788.6	1027.6	63.6	0.328
34	135.0	1789.7	1028.6	67.6	0.302
35	150.0	1789.7	1028.6	71.2	0.280
36	165.0	1790.2	1029.2	74.4	0.260
37	180.0	1790.8	1029.8	77.3	0.244
38	195.0	1790.8	1029.8	79.9	0.229
39	210.0	1791.4	1030.3	82.4	0.216
40	225.0	1791.4	1030.3	84.6	0.205
41	240.0	1791.5	1030.5	86.6	0.194
G 42	250.6	1790.5	1029.5	88.0	0.188

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$

REMARKS:

TICKET NO: 32905800

CLOCK NO: 30361 HOUR: 24



GAUGE NO: 5169

DEPTH: 4732.3

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	177.0			
2	1.0	177.0	0.0		
3	2.0	172.4	-4.6		
4	3.0	171.9	-0.5		
5	4.0	174.2	2.3		
6	5.0	179.6	5.4		
7	6.0	187.4	7.8		
8	7.0	191.8	4.4		
9	8.0	201.6	9.8		
10	9.0	205.9	4.2		
11	10.0	208.0	2.1		
12	11.0	210.3	2.3		
13	12.0	219.3	9.0		
14	13.0	226.5	7.2		
15	14.0	234.3	7.8		
16	15.0	241.7	7.4		
C 17	15.3	243.8	2.1		

FIRST CLOSED-IN					
C 1	0.0	243.8			
2	1.0	773.7	529.9	1.0	1.201
3	2.0	1598.8	1355.1	1.8	0.933
4	3.0	1758.4	1514.6	2.5	0.783
5	4.0	1779.6	1535.8	3.1	0.688
6	5.0	1788.8	1545.0	3.7	0.612
7	6.0	1793.3	1549.5	4.3	0.550
8	7.0	1795.7	1551.9	4.8	0.503
9	8.0	1797.5	1553.7	5.3	0.464
10	9.0	1798.7	1554.9	5.7	0.433
11	10.0	1799.3	1555.6	6.0	0.405
12	12.0	1800.5	1556.7	6.7	0.358
13	14.0	1801.6	1557.9	7.3	0.322
14	16.0	1803.0	1559.2	7.8	0.292
15	18.0	1803.3	1559.5	8.3	0.268
16	20.0	1803.6	1559.8	8.7	0.247
17	22.0	1803.9	1560.2	9.0	0.230
18	24.0	1804.1	1560.3	9.4	0.215
19	26.0	1804.4	1560.6	9.7	0.201
20	28.0	1804.4	1560.6	9.9	0.190
D 21	29.9	1803.9	1560.2	10.1	0.180

SECOND FLOW					
E 1	0.0	281.5			
2	5.0	283.7	2.1		
3	10.0	336.3	52.6		
4	15.0	374.0	37.7		
5	20.0	416.3	42.3		
6	25.0	452.5	36.1		

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
7	30.0	527.6	75.2		
8	35.0	565.2	37.6		
9	40.0	618.0	52.8		
10	45.0	658.2	40.2		
11	50.0	668.1	10.0		
12	55.0	680.2	12.1		
13	60.0	694.9	14.7		
14	65.0	708.2	13.2		
15	70.0	721.6	13.4		
16	75.0	730.7	9.2		
17	80.0	739.5	8.8		
18	85.0	746.6	7.0		
19	90.0	751.6	5.1		
20	95.0	758.8	7.2		
21	100.0	763.1	4.2		
22	105.0	768.0	4.9		
23	110.0	771.9	3.9		
24	115.0	774.8	2.9		
F 25	120.2	777.8	2.9		

SECOND CLOSED-IN					
F 1	0.0	777.8			
2	1.0	1614.3	836.5	1.0	2.137
3	2.0	1744.7	967.0	1.9	1.846
4	3.0	1762.2	984.4	2.9	1.670
5	4.0	1769.1	991.3	3.9	1.544
6	5.0	1773.5	995.7	4.8	1.451
7	6.0	1778.2	998.4	5.8	1.370
8	7.0	1778.5	1000.7	6.7	1.307
9	8.0	1780.1	1002.3	7.6	1.254
10	9.0	1781.3	1003.5	8.4	1.206
11	10.0	1782.2	1004.5	9.3	1.163
12	12.0	1783.6	1005.8	11.0	1.090
13	14.0	1784.4	1006.6	12.7	1.029
14	16.0	1786.0	1008.2	14.3	0.976
15	18.0	1786.8	1009.1	15.9	0.931
16	20.0	1787.2	1009.4	17.5	0.890
17	22.0	1788.0	1010.2	18.9	0.854
18	24.0	1788.5	1010.7	20.4	0.823
19	26.0	1789.0	1011.2	21.8	0.793
20	28.0	1789.5	1011.7	23.2	0.766
21	30.0	1790.1	1012.4	24.6	0.741
22	35.0	1790.6	1012.8	27.8	0.687
23	40.0	1791.0	1013.2	30.9	0.642
24	45.0	1792.1	1014.3	33.8	0.603
25	50.0	1792.6	1014.8	36.5	0.569
26	55.0	1792.4	1014.7	39.1	0.539
27	60.0	1794.2	1016.5	41.6	0.513
28	70.0	1797.2	1019.4	46.1	0.468
29	80.0	1797.4	1019.6	50.3	0.430
30	90.0	1797.7	1019.9	54.1	0.399
31	100.0	1797.7	1019.9	57.5	0.372

REMARKS:

TICKET NO: 32905800
CLOCK NO: 30361 HOUR: 24




















GAUGE NO: 5169
DEPTH: 4732.3

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND CLOSED-IN - CONTINUED					
32	110.0	1798.2	1020.4	60.7	0.349
33	120.0	1798.2	1020.4	63.6	0.328
34	135.0	1798.2	1020.4	67.6	0.302
35	150.0	1798.2	1020.4	71.2	0.279
36	165.0	1798.2	1020.4	74.4	0.260
37	180.0	1798.4	1020.6	77.3	0.244
38	195.0	1799.0	1021.2	79.9	0.229
39	210.0	1799.0	1021.2	82.4	0.216
40	225.0	1799.0	1021.2	84.6	0.205
41	240.0	1799.0	1021.2	86.6	0.194
G 42	250.6	1798.7	1020.9	88.0	0.188

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$

REMARKS:

		O.O.	I.D.	LENGTH	DEPTH
1		DRILL PIPE.....	4.500	3.826	4194.7
4		FLEX WEIGHT.....	4.500	2.813	182.7
3		DRILL COLLARS.....	6.500	2.250	244.5
50		IMPACT REVERSING SUB.....	6.500	3.000	1.0 4622.5
3		DRILL COLLARS.....	6.500	2.250	30.3
5		CROSSOVER.....	6.500	2.250	1.0
12		DUAL CIP VALVE.....	5.000	0.870	4.9
60		HYDROSPRING TESTER.....	5.000	0.750	5.3 4663.5
80		AP RUNNING CASE.....	5.000	2.250	4.1 4665.4
15		JAR.....	5.000	1.750	5.0
16		VR SAFETY JOINT.....	5.000	1.000	2.8
70		OPEN HOLE PACKER.....	6.750	1.530	5.8 4681.2
18		DISTRIBUTOR VALVE.....	5.000	1.680	2.0
70		OPEN HOLE PACKER.....	6.750	1.530	5.8 4689.0
19		ANCHOR PIPE SAFETY JOINT.....	5.000	1.500	4.3
20		FLUSH JOINT ANCHOR.....	5.000	2.370	37.0
81		BLANKED-OFF RUNNING CASE.....	5.000		4.1 4732.3

TOTAL DEPTH

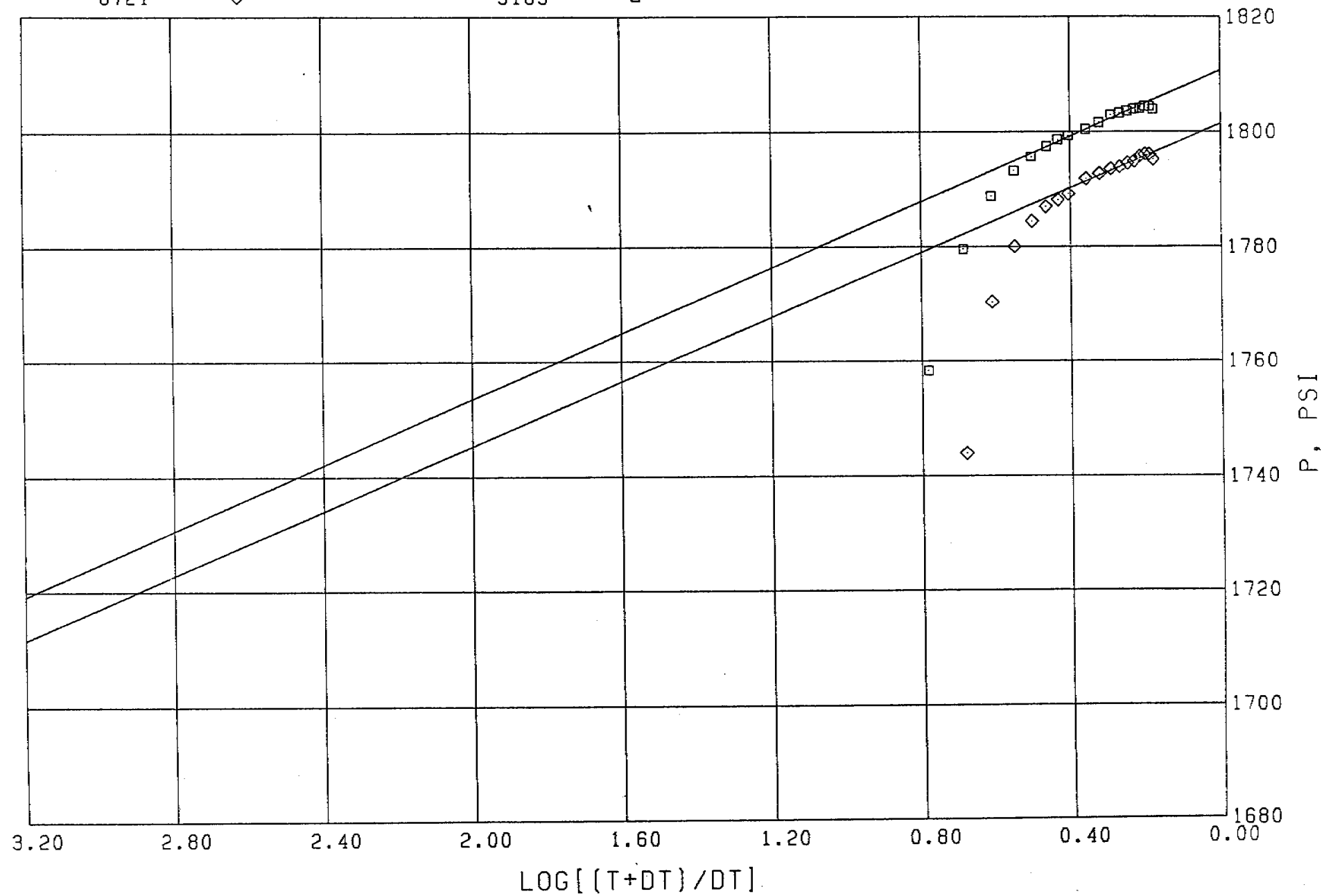
4735.3

EQUIPMENT DATA

TICKET NO 32905800

GAUGE NO CIP 1 2
8721 ◇

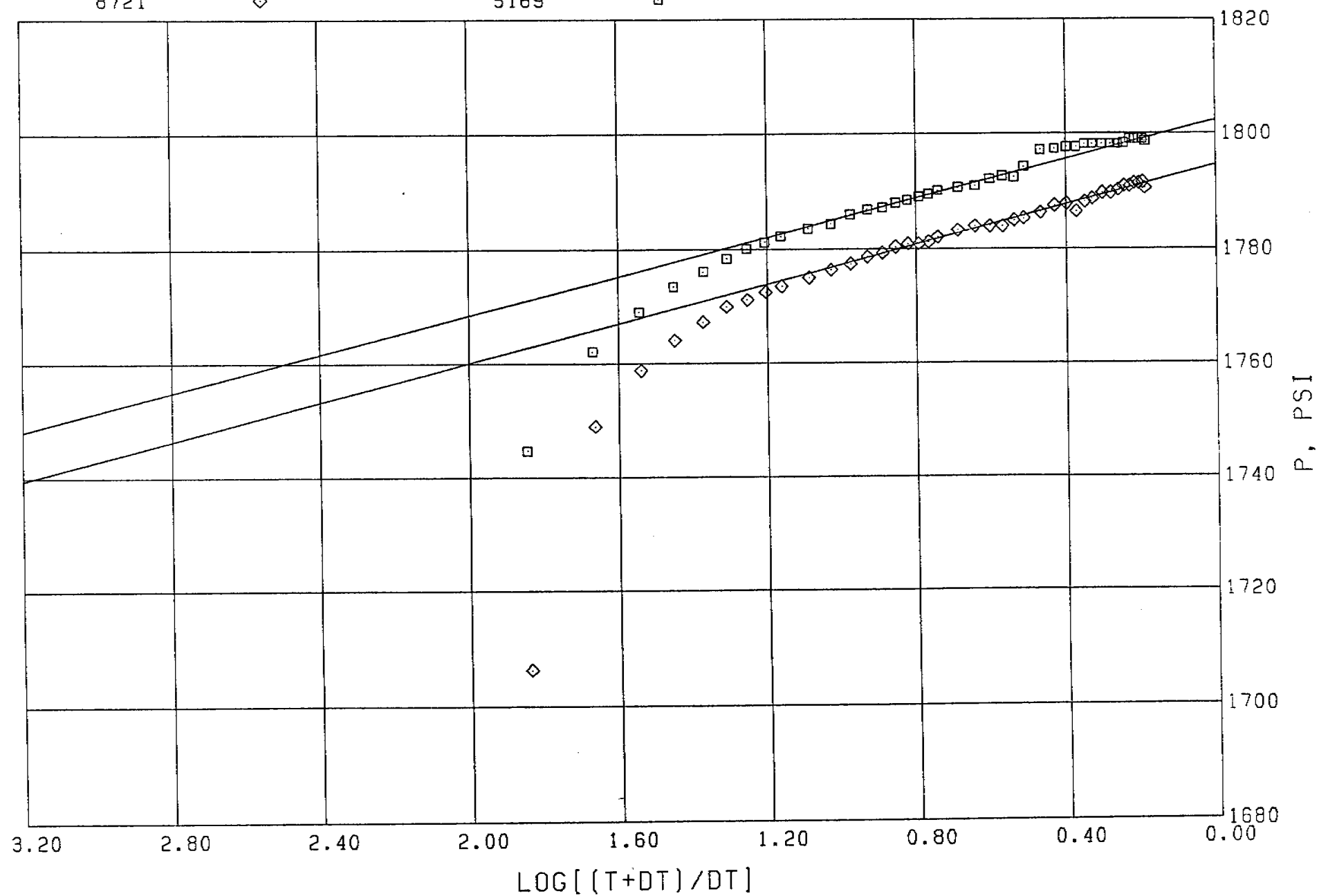
GAUGE NO CIP 1 2
5169 □



TICKET NO 32905800

GAUGE NO CIP 1 2
8721 ◇

GAUGE NO CIP 1 2
5169 □



SUMMARY OF RESERVOIR PARAMETERS USING HORNER METHOD

OIL GRAVITY 41.0 @60° WATER % SALT 0.0
 GAS GRAVITY 0.700 FLUID GRADIENT 0.3554 pst/ft
 GAS/OIL RATIO 1036.0 cu.ft/bbl FORMATION VOL FACTOR 1.275 vol/vol
 TEMPERATURE 138.0 °F FLUID PROPERTIES AT 1810.7 Psig
 VISCOSITY 0.679 cp NET PAY 35.0 ft
 PIPE CAPACITY FACTOR(S) 0.00492 0.00768 0.01422 bbl/ft

GAUGE NUMBER		8721	8721	5169	5169			
GAUGE DEPTH		4665.5	4665.5	4732.3	4732.3			
FLOW AND CIP PERIOD		1	2	1	2			UNITS
FINAL FLOW PRESSURE	P_f	231.7	761.0	243.8	777.8			Psig
TOTAL FLOW TIME	t	15.3	135.5	15.3	135.5			min
EXTRAPOLATED PRESSURE	P^*	1801.4	1794.6	1810.7	1802.4			Psig
ONE CYCLE PRESSURE		1773.4	1777.4	1782.1	1785.5			Psig
PRODUCTION RATE	Q		333.0		333.0			BPD
TRANSMISSIBILITY	kh/μ		4010.72		4071.08			$\frac{md-ft}{cp}$
FLOW CAPACITY	kh		2723.82		2764.81			md-ft
PERMEABILITY	k		77.8234		78.9946			md
DAMAGE RATIO	DR		11.65		11.71			
POTENTIAL RATE	Q_1		3880.3		3900.7			BPD
RADIUS OF INVESTIGATION	r_i		204.4		205.9			ft

REMARKS:

RESERVOIR PARAMETERS ARE BASED ON FINAL CLOSED IN PRESSURE PERIOD AND REPORTED FLOW RATE OF 333 BARRELS/DAY.

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.

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 (Gas) Slope Extrapolated m(P) Plot	psi/cycle
		MM psi ² cp/cycle
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	

EQUATIONS FOR DST LIQUID WELL ANALYSIS

Transmissibility	$\frac{kh}{\mu} = \frac{162.6 Q_B}{m}$	$\frac{\text{md-ft}}{\text{cp}}$
Indicated Flow Capacity	$kh = \frac{kh}{\mu} \mu$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Damage Ratio	$DR = .183 \frac{P^* - P_f}{m}$	—
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	$S = 1.151 \left[\frac{m(P^*) - m(P_f)}{m} - \text{LOG} \frac{k(t/60)}{\phi \mu c_f r_w^2} + 3.23 \right]$	—
Damage Ratio	$DR = \frac{m(P^*) - m(P_f)}{m(P^*) - m(P_f) - 0.87 mS}$	—
Indicated Flow Rate (Maximum)	$AOF_1 = \frac{Q_g m(P^*)}{m(P^*) - m(P_f)}$	MCFD
Indicated Flow Rate (Minimum)	$AOF_2 = Q_g \sqrt{\frac{m(P^*)}{m(P^*) - m(P_f)}}$	MCFD
Approx. Radius of Investigation	$r_i = 0.032 \sqrt{\frac{k(t/60)}{\phi \mu c_f}}$	ft