Home Office: Great Bend, Kansas
P. O. Box 793 (316) 793-7903

Company Abercrombie Drilling Inc. Lease & Well No. Lang A #1

Elevation 2210 Kelly Bushings Formation Kansas City Effective Pay 4 Ft. Ticket No. 15450

Date 1-31-71 Sec. 9 Twp. 14S Range 20W County Ellis State Kansas

Test Approved by Jack K. Wharton Western Representative Harold Schmidt

Formation Test No. 1 O.K. X Misrun Interval Tested From 3557' to 3574' Total Depth 3574'

Size Main Hole 7 7/8" Rat Hole Conv. B.T. X Damaged Yes X No Conv. B.T. X Damaged Yes X No

Top Packer Depth 3552 Ft. Size 6 3/4" Packer Depth 3557 Ft. Size 6 3/4"

Straddle Yes No X Conv. B.T. Damaged Yes No

Packer Depth Ft. Size

Tool Size 5 1/2" O.D. Tool Jt. Size 4 1/2" F.H. Anchor Length 17 Ft. Size 5 1/2" O.D.

RECORDERS Depth 3567 Ft. Clock No. 5665 Depth 3570 Ft. Clock No. 6893

Top Make Kuster Cap. 4200 No. 3354 Inside ~~Outside~~ Bottom Make Kuster Cap. 4150 No. 1558 ~~Inside~~ Outside

Below Straddle: Depth Clock No. Inside Outside Depth Ft. Clock No. Inside Outside

Top Make Cap. No. Inside Outside Bottom Make Cap. No. Inside Outside

Time Set Packer 8:08 A. M

Tool Open I.F.P. From 8:12 M. to 8:24A.M. Hr. 12 Min. From (B) 33 P.S.I. To (C) 42 P.S.I.

Tool Closed I.C.I.P. From 8:24 M. to 8:54A. M. Hr. 30 Min. (D) 881 P.S.I.

Tool Open F.F.P. From 8:54 M. to 10:38A.M. Hr. 104 Min. From (E) 59 P.S.I. To (F) 119 P.S.I.

Tool Closed F.C.I.P. From 10:38 M. to 11:18A.M. Hr. 45 Min. (G) 847 P.S.I.

Initial Hydrostatic Pressure (A) 1958 P.S.I. Final Hydrostatic Pressure (H) 1936 P.S.I.

SURFACE INFORMATION	Size Choke 3/8 In.	Max. Press. P.S.I.	Time	Description of Flow
			M.	
			M.	
			M.	

BLOW Good thru out Bottom Choke Size 3/4 In.

Did Well Flow Yes X No Recovery Total Ft. 520 feet gas in pipe - 30 feet mud and gas cut oil

60 feet mud and gas cut oil with trace of water

120 feet muddy water

Reversed Out Yes X No Mud Type Starch Viscosity 43 Weight 9.9 Water Loss 4.0 cc. Maximum Temp. 117 °F

Type Circ. Sub. Pin Did Tool Plug? No Jars: Size Make Ser. No.

EXTRA EQUIPMENT: Dual Packers Yes Safety Joint No Did Packer Hold? Yes Where?

Length Drill Pipe 2712 ft. I.D. Drill Pipe 2.5 in. Length Weight Pipe 825 ft. I.D. Weight Pipe 2.7 in. Length Drill Collars ft.

I. D. Drill Collars in. Length D.S.T. Tool 37 ft.

Remarks

WESTERN TESTING CO., INC.
Pressure Data

Date 1-31-71 Test Ticket No. 15450

Recorder No. 3354 Capacity 4200 Location 3567 Ft.

Clock No. 5665 Elevation 2210 Kelly Bushings Well Temperature 117 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	1958 P.S.I.	Open Tool	8:08 A. M	
B First Initial Flow Pressure	33 P.S.I.	First Flow Pressure	12 Mins.	12 Mins.
C First Final Flow Pressure	42 P.S.I.	Initial Closed-in Pressure	30 Mins.	30 Mins.
D Initial Closed-in Pressure	881 P.S.I.	Second Flow Pressure	104 Mins.	100 Mins.
E Second Initial Flow Pressure	59 P.S.I.	Final Closed-in Pressure	45 Mins.	39 Mins.
F Second Final Flow Pressure	119 P.S.I.			
G Final Closed-in Pressure	847 P.S.I.			
H Final Hydrostatic Mud	1936 P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 2 Inc.
of 5 mins. and a
final inc. of 2 Min.

Point Mins.	Press.
P 1 0	33
P 2 5	34
P 3 10	40
P 4 12	42
P 5	
P 6	
P 7	
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
P20	

Initial Shut-In
Breakdown: 10 Inc.
of 3 mins. and a
final inc. of Min.

Point Minutes	Press.
0	42
3	120
6	559
9	801
12	843
15	858
18	867
21	875
24	877
27	879
30	881

Second Flow Pressure
Breakdown: 20 Inc.
of 5 mins. and a
final inc. of Min.

Point Minutes	Press.
0	59
5	59
10	62
15	67
20	69
25	73
30	76
35	80
40	83
45	86
50	88
55	92
60	95
65	99
70	103
75	105
80	109
85	111
90	116
95	118
100	119

Final Shut-In
Breakdown: 13 Inc.
of 3 mins. and a
final inc. of Min.

Point Minutes	Press.
0	119
3	208
6	430
9	679
12	755
15	791
18	810
21	821
24	827
27	833
30	837
33	842
36	845
39	847

WESTERN TESTING CO., INC.
GREAT BEND, KANSAS 67530
(316) 793-7903

FIELD EVALUATIONS

Ticket No. 15450

Date 1-31-71

To Abercrombie Drlg Inc.

These calculations are based upon information furnished by you and taken from drill stem test pressure charts and are furnished for your information. In furnishing such calculations and evaluations, Western Testing Co., Inc. is merely expressing its opinion. You agree that The Testing Company makes no warranty as to the accuracy of such calculations or opinions and the Testing Company shall not be liable for any loss or damage, whether due to negligence or otherwise in connection with such calculations and opinions.

We Give Below Results of Drill Stem Evaluation

Lease Wang A #1 Sec. 9 Twp. 14S Rge. 20W

County Ellis Test Interval 3557 - 3574

FINAL

P.S.I. Slope Cycle	$M = \frac{Pisi - Pfsi}{\text{Log } \frac{T + t}{t}}$	50.0
Damage Ratio	$DR = .183 \frac{Ps - Pf}{M}$	3.5
Production	$Q = \frac{1440\ R}{t}$	0.677 Bbls./Hr. 16.25 Bbls./Day
Effective Pay	$K_1 = \frac{Kh}{hl}$	10.0 Md. Ft.
Theoretical Potential With Damage Removed	$Q_1 = Q\ DR$	56.88 Bbls./Day

NO. 341-L210 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
2 CYCLES X 10 DIVISIONS PER INCH

EUGENE DIETZGEN CO.
MADE IN U. S. A.

WESTERN TESTERS

Home Office: Great Bend, Kansas
P. O. Box 793 (316) 793-7903

Company Abercrombie Drilling Inc. Lease & Well No. Lang A-1

Elevation 2210 Kelly Bushings Formation Kansas City Effective Pay Ft. Ticket No. 15376

Date 2-1-71 Sec. 9 Twp. 14S Range 20W County Ellis State Kansas

Test Approved by Jack K. Wharton Western Representative Harold Schmidt

Formation Test No. 2 O.K. X Misrun Interval Tested From 3694' to 3709' Total Depth 3709'

Size Main Hole 7 7/8 Rat Hole Conv. B.T. X Damaged Yes X No Conv. B.T. X Damaged Yes X No

Top Packer Depth 3689 Ft. Size 6 3/4" Packer Depth 3694 Ft. Size 6 3/4"

Straddle Yes No X Conv. B.T. Damaged Yes No

Packer Depth Ft. Size

Tool Size 5 1/2" O.D. Tool Jt. Size 4 1/2" F.H. Anchor Length 15 Ft. Size 5 1/2" O.D.

RECORDERS Depth 3702 Ft. Clock No. 5665 Depth 3705 Ft. Clock No. 6894

Top Make Kuster Cap. 4200 No. 3354 Inside Outside Bottom Make Kuster Cap. 4150 No. 1558 Inside Outside

Below Straddle: Depth Clock No. Inside Outside Depth Ft. Clock No. Inside Outside

Top Make Cap. No. Inside Outside Bottom Make Cap. No. Inside Outside

Time Set Packer 8:56 A. M

Tool Open I.F.P. From 9:00 M. to 9:15A. M. Hr. 15 Min. From (B) 31 P.S.I. To (C) 33 P.S.I.

Tool Closed I.C.I.P. From 9:15 M. to 9:45A. M. Hr. 30 Min. (D) 1200 P.S.I.

Tool Open F.F.P. From 9:45 M. to 10:15A M. Hr. 30 Min. From (E) 35 P.S.I. To (F) 30 P.S.I.

Tool Closed F.C.I.P. From 10:15 M. to 11:00A M. Hr. 45 Min. (G) 1198 P.S.I.

Initial Hydrostatic Pressure (A) 2031 P.S.I. Final Hydrostatic Pressure (H) 2026 P.S.I.

SURFACE INFORMATION	Size Choke 3/8 In.	Max. Press. P.S.I.	Time	Description of Flow
			M.	
			M.	
			M.	

BLOW Weak for 15 min. Bottom Choke Size 3/4 In.

Did Well Flow Yes X No Recovery Total Ft. 15 feet drilling mud

Reversed Out Yes X No Mud Type Starch Viscosity 40 Weight 10.0 Water Loss 8.8 cc. Maximum Temp. 118 °F

Type Circ. Sub. Pin Did Tool Plug? No Jars: Size Make Ser. No.

EXTRA EQUIPMENT: Dual Packers Yes Safety Joint No Did Packer Hold? Yes Where?

Length Drill Pipe 2849 ft. I.D. Drill Pipe 2.5 in. Length Weight Pipe 825 ft. I.D. Weight Pipe 2.7 in. Length Drill Collars ft.

I. D. Drill Collars in. Length D.S.T. Tool 35 ft.

Remarks

FORM WTC 3

WESTERN TESTING CO., INC.
Pressure Data

Date 2-1-71 Test Ticket No. 15376

Recorder No. 3354 Capacity 4200 Location 3702 Ft.

Clock No. 5665 Elevation 2210 Kelly Bushings Well Temperature 118 °F

Point		Pressure			Time Given	Time Computed
A	Initial Hydrostatic Mud	2031 P.S.I.		Open Tool	8:56 A. M	
B	First Initial Flow Pressure	31 P.S.I.		First Flow Pressure	15 Mins.	15 Mins.
C	First Final Flow Pressure	33 P.S.I.		Initial Closed-in Pressure	30 Mins.	27 Mins.
D	Initial Closed-in Pressure	1200 P.S.I.		Second Flow Pressure	30 Mins.	30 Mins.
E	Second Initial Flow Pressure	35 P.S.I.		Final Closed-in Pressure	45 Mins.	42 Mins.
F	Second Final Flow Pressure	30 P.S.I.				
G	Final Closed-in Pressure	1198 P.S.I.				
H	Final Hydrostatic Mud	2026 P.S.I.				

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 3 Inc. of 5 mins. and a final inc. of ____ Min.

Initial Shut-In
Breakdown: 9 Inc. of 3 mins. and a final inc. of ____ Min.

Second Flow Pressure
Breakdown: 6 Inc. of 5 mins. and a final inc. of ____ Min.

Final Shut-In
Breakdown: 14 Inc. of 3 mins. and a final inc. of ____ Min.

Point	First Flow Pressure Mins.	First Flow Pressure Press.	Initial Shut-In Point Minutes	Initial Shut-In Press.	Second Flow Pressure Point Minutes	Second Flow Pressure Press.	Final Shut-In Point Minutes	Final Shut-In Press.
P 1	0	31	0	33	0	35	0	30
P 2	5	31	3	50	5	35	3	40
P 3	10	32	6	158	10	35	6	90
P 4	15	33	9	529	15	29	9	196
P 5			12	824	20	29	12	489
P 6			15	970	25	30	15	736
P 7			18	1084	30	30	18	921
P 8			21	1141			21	1018
P 9			24	1175			24	1075
P10			27	1200			27	1116
P11							30	1145
P12							33	1169
P13							36	1183
P14							39	1183
P15							42	1198
P16								
P17								
P18								
P19								
P20								

WESTERN TESTERS

Home Office: Great Bend, Kansas
P. O. Box 793 (316) 793-7903

Company Abercrombie Drilling Inc. Lease & Well No. Lang A-1

Elevation 2210 Kelly Bushings Formation Effective Pay Ft. Ticket No. 15377

Date 2-2-71 Sec. 9 Twp. 14S Range 20W County Ellis State Kansas

Test Approved by Jack K. Wharton Western Representative Harold J. Schmidt

Formation Test No. # 3 O.K. X Misrun Interval Tested From 3820' to 3838' Total Depth 3838'

Size Main Hole 7 7/8" Rat Hole Conv. B.T. X Damaged Yes X No Conv. B.T. X Damaged Yes X No

Top Packer Depth 3815 Ft. Size 6 3/4" Packer Depth 3820 Ft. Size 6 3/4"

Straddle Yes No X Conv. B.T. Damaged Yes No

Packer Depth Ft. Size

Tool Size 5 1/2" O.D. Tool Jt. Size 4 1/2" F.H. Anchor Length 18 Ft. Size 5 1/2" O.D.

RECORDERS Depth 3831 Ft. Clock No. 5665 Depth 3834 Ft. Clock No. 6893

Top Make Kuster Cap. 4200 No. 3354 Inside ~~Outside~~ Bottom Make Kuster Cap. 4150 No. 1558 ~~Inside~~ Outside

Below Straddle: Depth Clock No. Inside Outside Depth Ft. Clock No. Inside Outside

Top Make Cap. No. Inside Outside Bottom Make Cap. No. Inside Outside

Time Set Packer 12:16 A. M

Tool Open I.F.P. From 12:20 M. to 12:35A M. Hr. 15 Min. From (B) 32 P.S.I. To (C) 35 P.S.I.

Tool Closed I.C.I.P. From 12:35 M. to 1:05A. M. Hr. 30 Min. (D) 818 P.S.I.

Tool Open F.F.P. From 1:05 M. to 2:05A. M. Hr. 60 Min. From (E) 42 P.S.I. To (F) 44 P.S.I.

Tool Closed F.C.I.P. From 2:05 M. to 2:50A. M. Hr. 45 Min. (G) 99 P.S.I.

Initial Hydrostatic Pressure (A) 2115 P.S.I. Final Hydrostatic Pressure (H) 2112 P.S.I.

SURFACE INFORMATION	Size Choke	Max. Press. P.S.I.	Time	Description of Flow
	3/8 In.		M.	
			M.	
			M.	

BLOW Weak intermittent blow thru out final pressure Bottom Choke Size 3/4 In.

Did Well Flow Yes X No Recovery Total Ft. 40 feet drilling mud

5 feet clean oil

Reversed Out Yes X No Mud Type Starch Viscosity 41 Weight 10.3 Water Loss 13.2 cc. Maximum Temp. 118 °F

Type Circ. Sub. Pin Did Tool Plug? No Jars: Size Make Ser. No.

EXTRA EQUIPMENT: Dual Packers Yes Safety Joint No Did Packer Hold? Yes Where?

Length Drill Pipe 2975 ft. I.D. Drill Pipe 2.5 in. Length Weight Pipe 82.5 ft. I.D. Weight Pipe 2.7 in. Length Drill Collars ft.

I. D. Drill Collars in. Length D.S.T. Tool 38 ft.

Remarks

FORM WTC 3

WESTERN TESTING CO., INC.
Pressure Data

Date 2-2-71 Test Ticket No. 15377

Recorder No. 3354 Capacity 4200 Location 3831 Ft.

Clock No. 5665 Elevation 2210 Kelly Bushings Well Temperature 118 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2115 P.S.I.	Open Tool	12:16 AM	
B First Initial Flow Pressure	32 P.S.I.	First Flow Pressure	15 Mins.	15 Mins.
C First Final Flow Pressure	35 P.S.I.	Initial Closed-in Pressure	30 Mins.	30 Mins.
D Initial Closed-in Pressure	818 P.S.I.	Second Flow Pressure	60 Mins.	60 Mins.
E Second Initial Flow Pressure	42 P.S.I.	Final Closed-in Pressure	45 Mins.	45 Mins.
F Second Final Flow Pressure	44 P.S.I.			
G Final Closed-in Pressure	99 P.S.I.			
H Final Hydrostatic Mud	2112 P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 3 Inc.
of 5 mins. and a
final inc. of ____ Min.

Point Mins.	Press.
P 1 0	32
P 2 5	33
P 3 10	34
P 4 15	35
P 5	
P 6	
P 7	
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
P20	

Initial Shut-In
Breakdown: 10 Inc.
of 3 mins. and a
final inc. of ____ Min.

Point Minutes	Press.
0	35
3	48
6	103
9	217
12	485
15	603
18	681
21	729
24	767
27	797
30	818

Second Flow Pressure
Breakdown: 12 Inc.
of 5 mins. and a
final inc. of ____ Min.

Point Minutes	Press.
0	42
5	42
10	42
15	42
20	42
25	42
30	42
35	43
40	43
45	43
50	43
55	44
60	44

Final Shut-In
Breakdown: 15 Inc.
of 3 mins. and a
final inc. of ____ Min.

Point Minutes	Press.
0	44
3	45
6	46
9	47
12	48
15	50
18	54
21	57
24	59
27	63
30	67
33	73
36	79
39	84
42	92
45	99

WESTERN TESTERS

Home Office: Great Bend, Kansas
P. O. Box 793 (316) 793-7903

Company Abercrombie Drilling Inc. Lease & Well No. Lang A-1

Elevation 2210 Kelly Bushings Formation R.S. Effective Pay Ft. Ticket No. 15378

Date 2-3-71 Sec. 9 Twp. 14S Range 20W County Ellis State Kansas

Test Approved by Jack K. Wharton Western Representative Harold Schmidt

Formation Test No. 4 O.K. X Misrun Interval Tested From 3820' to 3843' Total Depth 3843'

Size Main Hole 7 7/8" Rat Hole Conv. B.T. X Damaged Yes X No Conv. B.T. X Damaged Yes X No

Top Packer Depth 3815 Ft. Size 6 3/4" Packer Depth 3820 Ft. Size 6 3/4"

Straddle Yes No X Conv. B.T. Damaged Yes No

Packer Depth Ft. Size

Tool Size 5 1/2" O.D. Tool Jt. Size 4 1/2" F.H. Anchor Length 23 Ft. Size 5 1/2" O.D.

RECORDERS Depth 3836 Ft. Clock No. 5665 Depth 3839 Ft. Clock No. 6893

Top Make Kuster Cap. 4200 No. 3354 Inside ~~Outside~~ Bottom Make Kuster Cap. 4150 No. 1558 ~~Inside~~ Outside

Below Straddle: Depth Clock No. Inside Outside Depth Ft. Clock No. Inside Outside

Top Make Cap. No. Inside Outside Bottom Make Cap. No. Inside Outside

Time Set Packer 12:51 A.M

Tool Open I.F.P. From 12:55 M. to 1:05A.M. Hr. 10 Min. From (B) 40 P.S.I. To (C) 40 P.S.I.

Tool Closed I.C.I.P. From 1:05 M. to 1:35A.M. Hr. 30 Min. (D) 883 P.S.I.

Tool Open F.F.P. From 1:35 M. to 2:35A.M. Hr. 60 Min. From (E) 46 P.S.I. To (F) 50 P.S.I.

Tool Closed F.C.I.P. From 2:35 M. to 3:20A.M. Hr. 45 Min. (G) 217 P.S.I.

Initial Hydrostatic Pressure (A) 2020 P.S.I. Final Hydrostatic Pressure (H) 2006 P.S.I.

SURFACE INFORMATION	Size Choke	Max. Press. P.S.I.	Time	Description of Flow
	3/8 In.		M.	
			M.	
			M.	

BLOW Weak intermittent blow Bottom Choke Size 3/4 In.

Did Well Flow Yes X No Recovery Total Ft. 30 feet drilling mud - 2 feet clean oil

Reversed Out Yes X No Mud Type Starch Viscosity 41 Weight 10.3 Water Loss 13.2 cc. Maximum Temp. 118 °F

Type Circ. Sub Pin Did Tool Plug? No Jars: Size Make Ser. No.

EXTRA EQUIPMENT: Dual Packers Yes Safety Joint No Did Packer Hold? Yes Where?

Length Drill Pipe 2975 ft. I.D. Drill Pipe 2.5 in. Length Weight Pipe 825 ft. I.D. Weight Pipe 2.7 in. Length Drill Collars

I. D. Drill Collars in. Length D.S.T. Tool 43 ft.

Remarks

FORM WTC 3

WESTERN TESTING CO., INC.
Pressure Data

Date 2-3-71 Test Ticket No. 15378

Recorder No. 3354 Capacity 4200 Location 3836 Ft.

Clock No. 5665 Elevation 2210 Kelly Bushings Well Temperature 118 °F

Point		Pressure		Time Given	Time Computed
A	Initial Hydrostatic Mud	2020 P.S.I.	Open Tool	12:51 A.M	
B	First Initial Flow Pressure	40 P.S.I.	First Flow Pressure	10 Mins.	12 Mins.
C	First Final Flow Pressure	40 P.S.I.	Initial Closed-in Pressure	30 Mins.	30 Mins.
D	Initial Closed-in Pressure	883 P.S.I.	Second Flow Pressure	60 Mins.	60 Mins.
E	Second Initial Flow Pressure	46 P.S.I.	Final Closed-in Pressure	45 Mins.	45 Mins.
F	Second Final Flow Pressure	50 P.S.I.			
G	Final Closed-in Pressure	217 P.S.I.			
H	Final Hydrostatic Mud	2006 P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 2 Inc.
of 5 mins. and a
final inc. of 2 Min.

Point Mins.	Press.
P 1 0	40
P 2 5	40
P 3 10	40
P 4 12	40
P 5	
P 6	
P 7	
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
P20	

Initial Shut-In
Breakdown: 10 Inc.
of 3 mins. and a
final inc. of Min.

Point Minutes	Press.
0	40
3	206
6	411
9	611
12	685
15	748
18	793
21	824
24	850
27	869
30	883

Second Flow Pressure
Breakdown: 12 Inc.
of 5 mins. and a
final inc. of Min.

Point Minutes	Press.
0	46
5	46
10	46
15	46
20	47
25	48
30	48
35	48
40	48
45	49
50	49
55	50
60	50

Final Shut-In
Breakdown: 15 Inc.
of 3 mins. and a
final inc. of Min.

Point Minutes	Press.
0	50
3	51
6	52
9	55
12	59
15	63
18	71
21	76
24	84
27	88
30	107
33	123
36	143
39	170
42	200
45	217

WESTERN TESTERS

Home Office: Great Bend, Kansas
P. O. Box 793 (316) 793-7903

Company Abercrombie Drilling Inc. Lease & Well No. Lang A-1

Elevation 2210 Kelly Bushings Formation Effective Pay Ft. Ticket No. 15379

Date 2-3-71 Sec. 9 Twp. 14S Range 20W County Ellis State Kansas

Test Approved by Jack K. Wharton Western Representative Harold Schmidt

Formation Test No. 5 O.K. X Misrun Interval Tested From 3820' to 3847' Total Depth 3847'

Size Main Hole 7 7/8" Rat Hole Conv. B.T. X Damaged Yes X No Conv. B.T. X Damaged Yes X No

Top Packer Depth 3815 Ft. Size 6 3/4" Packer Depth 3820 Ft. Size 6 3/4"

Straddle Yes No X Conv. B.T. Damaged Yes No

Packer Depth Ft. Size

Tool Size 5 1/2" O.D. Tool Jt. Size 4 1/2" F.H. Anchor Length 27 Ft. Size 5 1/2" O.D.

RECORDERS Depth 3840 Ft. Clock No. 5665 Depth 3843 Ft. Clock No. 6893

Top Make Kuster Cap. 4200 No. 3354 Inside Outside Bottom Make Kuster Cap. 4150 No. 1558 Inside Outside

Below Straddle: Depth Clock No. Inside Outside Depth Ft. Clock No. Inside Outside

Top Make Cap. No. Inside Outside Bottom Make Cap. No. Inside Outside

Time Set Packer 1:18 P. M

Tool Open I.F.P. From 1:22 M. to 1:37P.M. Hr. 15 Min. From (B) 31 P.S.I. To (C) 37 P.S.I.

Tool Closed I.C.I.P. From 1:37 M. to 2:07P.M. Hr. 30 Min. (D) 854 P.S.I.

Tool Open F.F.P. From 2:07 M. to 3:07P.M. Hr. 60 Min. From (E) 44# P.S.I. To (F) 51 P.S.I.

Tool Closed F.C.I.P. From 3:07 M. to 3:52PM. Hr. 45 Min. (G) 297 P.S.I.

Initial Hydrostatic Pressure (A) 2153 P.S.I. Final Hydrostatic Pressure (H) 2122 P.S.I.

SURFACE INFORMATION	Size Choke	Max. Press. P.S.I.	Time	Description of Flow
	3/8 In.		M.	
			M.	
			M.	

BLOW Weak for 30 min. Bottom Choke Size 3/4 In.

Did Well Flow Yes X No Recovery Total Ft. 30 feet drilling mud - 2 feet clean oil

Reversed Out Yes X No Mud Type Starch Viscosity 39 Weight 10.2 Water Loss 13.8 cc. Maximum Temp. 118 °F

Type Circ. Sub. Pin Did Tool Plug? No Jars: Size Make Ser. No.

EXTRA EQUIPMENT: Dual Packers Yes Safety Joint No Did Packer Hold? Yes Where?

Length Drill Pipe 2975 ft. I.D. Drill Pipe 2.5 in. Length Weight Pipe 825 ft. I.D. Weight Pipe 2.7 in. Length Drill Collars ft.

I. D. Drill Collars in. Length D.S.T. Tool 47 ft.

Remarks

FORM WTC 3

WESTERN TESTING CO., INC.
Pressure Data

Date 2-3-71 Test Ticket No. 15379

Recorder No. 3354 Capacity 4200 Location 3840 Ft.

Clock No. 5665 Elevation 2210 Kelly Bushings Well Temperature 118 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2153 P.S.I.	Open Tool	1:18 P.M	
B First Initial Flow Pressure	31 P.S.I.	First Flow Pressure	15 Mins.	15 Mins.
C First Final Flow Pressure	37 P.S.I.	Initial Closed-in Pressure	30 Mins.	30 Mins.
D Initial Closed-in Pressure	854 P.S.I.	Second Flow Pressure	60 Mins.	60 Mins.
E Second Initial Flow Pressure	44 P.S.I.	Final Closed-in Pressure	45 Mins.	45 Mins.
F Second Final Flow Pressure	51 P.S.I.			
G Final Closed-in Pressure	297 P.S.I.			
H Final Hydrostatic Mud	2122 P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 3 Inc. of 5 mins. and a final inc. of ____ Min.

Initial Shut-In
Breakdown: 10 Inc. of 3 mins. and a final inc. of ____ Min.

Second Flow Pressure
Breakdown: 12 Inc. of 5 mins. and a final inc. of ____ Min.

Final Shut-In
Breakdown: 15 Inc. of 3 mins. and a final inc. of ____ Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	31	0	37	0	44	0	51
P 2 5	35	3	147	5	44	3	52
P 3 10	37	6	440	10	45	6	56
P 4 15	37	9	597	15	46	9	61
P 5		12	668	20	46	12	66
P 6		15	719	25	47	15	73
P 7		18	753	30	48	18	82
P 8		21	748	35	49	21	97
P 9		24	818	40	50	24	112
P10		27	839	45	50	27	135
P11		30	854	50	50	30	160
P12				55	51	33	194
P13				60	51	36	223
P14						39	257
P15						42	218
P16						45	297
P17							
P18							
P19							
P20							

Home Office: Great Bend, Kansas
P. O. Box 793 (316) 793-7903

Company Abercrombie Drilling Inc. Lease & Well No. Lang A-1

Elevation 2210 Kelly Bushings Formation Effective Pay Ft. Ticket No. 15380

Date 2-4-71 Sec. 9 Twp. 14S Range 20W County Ellis State Kansas

Test Approved by Jack K. Wharton Western Representative Harold Schmidt

Formation Test No. 6 O.K. X Misrun Interval Tested From 3819' to 3859' Total Depth 3859'

Size Main Hole 7 7/8" Rat Hole Conv. B.T. X Damaged Yes X No Conv. B.T. X Damaged Yes X No

Top Packer Depth 3814 Ft. Size 6 3/4" Packer Depth 3819 Ft. Size 6 3/4"

Straddle Yes No X Conv. B.T. Damaged Yes No

Packer Depth Ft. Size

Tool Size 5 1/2" O.D. Tool Jt. Size 4 1/2" F.H. Anchor Length 40 Ft. Size 5 1/2" O.D.

RECORDERS Depth 3852 Ft. Clock No. 5665 Depth 3855 Ft. Clock No. 6893

Top Make Kuster Cap. 4200 No. 3354 Inside ~~Outside~~ Bottom Make Kuster Cap. 4150 No. 1558 ~~Inside~~ Outside

Below Straddle: Depth Clock No. Inside Outside Depth Ft. Clock No. Inside Outside

Top Make Cap. No. Inside Outside Bottom Make Cap. No. Inside Outside

Time Set Packer 4:56 A.M

Tool Open I.F.P. From 5:00 M. to 5:05 A.M. Hr. 5 Min. From (B) 274 P.S.I. To (C) 632 P.S.I.

Tool Closed I.C.I.P. From 5:05 M. to 5:35A. M. Hr. 30 Min. (D) 1186 P.S.I.

Tool Open F.F.P. From 5:35 M. to 6:35A. M. Hr. 60 Min. From (E) 664 P.S.I. To (F) 1181 P.S.I.

Tool Closed F.C.I.P. From 6:35 M. to 7:05A. M. Hr. 30 Min. (G) 1185 P.S.I.

Initial Hydrostatic Pressure (A) 2091 P.S.I. Final Hydrostatic Pressure (H) 2081 P.S.I.

SURFACE INFORMATION	Size Choke 3/8 In.	Max. Press. P.S.I.	Time	Description of Flow
			M.	
			M.	
			M.	

BLOW Good thru out Bottom Choke Size 3/4 In.

Did Well Flow Yes X No Recovery Total Ft. 2362 feet water

Reversed Out X Yes No Mud Type Starch Viscosity 39 Weight 10.2 Water Loss 13.8 cc. Maximum Temp. 126 °F

Type Circ. Sub. Pin Did Tool Plug? No Jars: Size Make Ser. No.

EXTRA EQUIPMENT: Dual Packers Yes Safety Joint No Did Packer Hold? Yes Where?

Length Drill Pipe 2974 ft. I.D. Drill Pipe 2.5 in. Length Weight Pipe 825 ft. I.D. Weight Pipe 2.7 in. Length Drill Collars -- ft.

I. D. Drill Collars in. Length D.S.T. Tool 60 ft.

Remarks

WESTERN TESTING CO., INC.
Pressure Data

Date 2-4-71 Test Ticket No. 15380

Recorder No. 3354 Capacity 4200 Location 3852 Ft.

Clock No. 5665 Elevation 2210 Kelly Bushings Well Temperature 126 °F

Point		Pressure	
A	Initial Hydrostatic Mud	2091	P.S.I.
B	First Initial Flow Pressure	274	P.S.I.
C	First Final Flow Pressure	632	P.S.I.
D	Initial Closed-in Pressure	1186	P.S.I.
E	Second Initial Flow Pressure	664	P.S.I.
F	Second Final Flow Pressure	1181	P.S.I.
G	Final Closed-in Pressure	1185	P.S.I.
H	Final Hydrostatic Mud	2081	P.S.I.

	Time Given	Time Computed
Open Tool	4:56 A.M	
First Flow Pressure	5 Mins.	5 Mins.
Initial Closed-in Pressure	30 Mins.	30 Mins.
Second Flow Pressure	60 Mins.	60 Mins.
Final Closed-in Pressure	30 Mins.	30 Mins.

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 1 Inc. of 5 mins. and a final inc. of ____ Min.

Point Mins.	Press.
P 1 0	274
P 2 5	632
P 3	
P 4	
P 5	
P 6	
P 7	
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
20	

Initial Shut-In
Breakdown: 10 Inc. of 3 mins. and a final inc. of ____ Min.

Point Minutes	Press.
0	632
3	1173
6	1177
9	1179
12	1180
15	1181
18	1182
21	1183
24	1184
27	1185
30	1186

Second Flow Pressure
Breakdown: 12 Inc. of 5 mins. and a final inc. of ____ Min.

Point Minutes	Press.
0	664
5	816
10	932
15	1021
20	1084
25	1122
30	1147
35	1162
40	1170
45	1175
50	1179
55	1180
60	1181

Final Shut-In
Breakdown: 10 Inc. of 3 mins. and a final inc. of ____ Min.

Point Minutes	Press.
0	1181
3	1183
6	1185
9	1185
12	1185
15	1185
18	1185
21	1185
24	1185
27	1185
30	1185