Home Office: Wichita, Kansas 67201
P.O. Box 1599 (316) 262-5861

Company Rains & Williamson Oil Company, Inc. Lease & Well No. Steckel "D"#2

Elevation 1676 Derrick Floor Formation Lansing Effective Pay - Ft. Ticket No. 14619

Date 11/ 21/81 Sec. 7 Twp. 12S Range 14W County Russell State Kansas

Test Approved by Dave Calvert Western Representative Denis Wondra

Formation Test No. 1 Interval Tested from 2852 ft. to 2895 ft. Total Depth 2895 ft.

Packer Depth 2847 ft. Size 6 5/8 in. Packer Depth 2852 ft. Size 6 5/8 in.

Packer Depth - ft. Size - in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -

Top Recorder Depth (Inside) 2885 ft. Recorder Number 3474 Cap. 3000

Bottom Recorder Depth (Outside) 2888 ft. Recorder Number 1049 Cap. 4150

Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Rains &Williamson Drlg. Rig #4 Drill Collar Length - I. D. - in.

Mud Type starch Viscosity 36 Weight Pipe Length - I. D. - in.

Weight 10.0 Water Loss 12.0 cc. Drill Pipe Length 2830 I. D. 3.8 in.

Chlorides 75,000 P.P.M. Test Tool Length 22 ft. Tool Size 5½OD in.

Jars: Make - Serial Number - Anchor Length 43 ft. Size 5½OD in.

Did Well Flow? No Reversed Out No Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4½XH in.

Blow: Steady one inch throughout initial flow period. Weak throughout final flow period.

Recovered 60 ft. of gas in pipe

Recovered 120 ft. of gas cut mud with trace of oil

Recovered ft. of

Recovered ft. of

Recovered ft. of

Remarks:

Time Set Packer(s) 1:58 A.M. ~~P.M.~~ Time Started Off Bottom 4:30 A.M. ~~P.M.~~ Maximum Temperature 97°

Initial Hydrostatic Pressure		(A) 1592 P.S.I.		
Initial Flow Period	Minutes 30	(B) 47 P.S.I.	to (C) 57 P.S.I.	
Initial Closed In Period	Minutes 27	(D) 339 P.S.I.		
Final Flow Period	Minutes 60	(E) 70 P.S.I.	to (F) 89 P.S.I.	
Final Closed In Period	Minutes 30	(G) 327 P.S.I.		
Final Hydrostatic Pressure		(H) 1592 P.S.I.		

WTC-

WESTERN TESTING CO., INC.
Pressure Data

Date 11/21/81 Test Ticket No. 14619

Recorder No. 3474 Capacity 3000 Location 2885 Ft.

Clock No. - Elevation 1676 Derrick Floor Well Temperature 97 °F

Point		Pressure		Time Given	Time Computed
A	Initial Hydrostatic Mud	1592 P.S.I.	Open Tool	1:58A M	
B	First Initial Flow Pressure	47 P.S.I.	First Flow Pressure	30 Mins.	30 Mins.
C	First Final Flow Pressure	57 P.S.I.	Initial Closed-in Pressure	30 Mins.	27 Mins.
D	Initial Closed-in Pressure	339 P.S.I.	Second Flow Pressure	60 Mins.	60 Mins.
E	Second Initial Flow Pressure	70 P.S.I.	Final Closed-in Pressure	30 Mins.	30 Mins.
F	Second Final Flow Pressure	89 P.S.I.			
G	Final Closed-in Pressure	327 P.S.I.			
H	Final Hydrostatic Mud	1592 P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 6 Inc. of 5 mins. and a final inc. of 0 Min.

Point	Mins.	Press.
P 1	0	47
P 2	5	47
P 3	10	47
P 4	15	49
P 5	20	52
P 6	25	55
P 7	30	57
P 8		
P 9		
P10		
P11		
P12		
P13		
P14		
P15		
P16		
P17		
P18		
P19		
P20		

Initial Shut-In
Breakdown: 9 Inc. of 3 mins. and a final inc. of 0 Min.

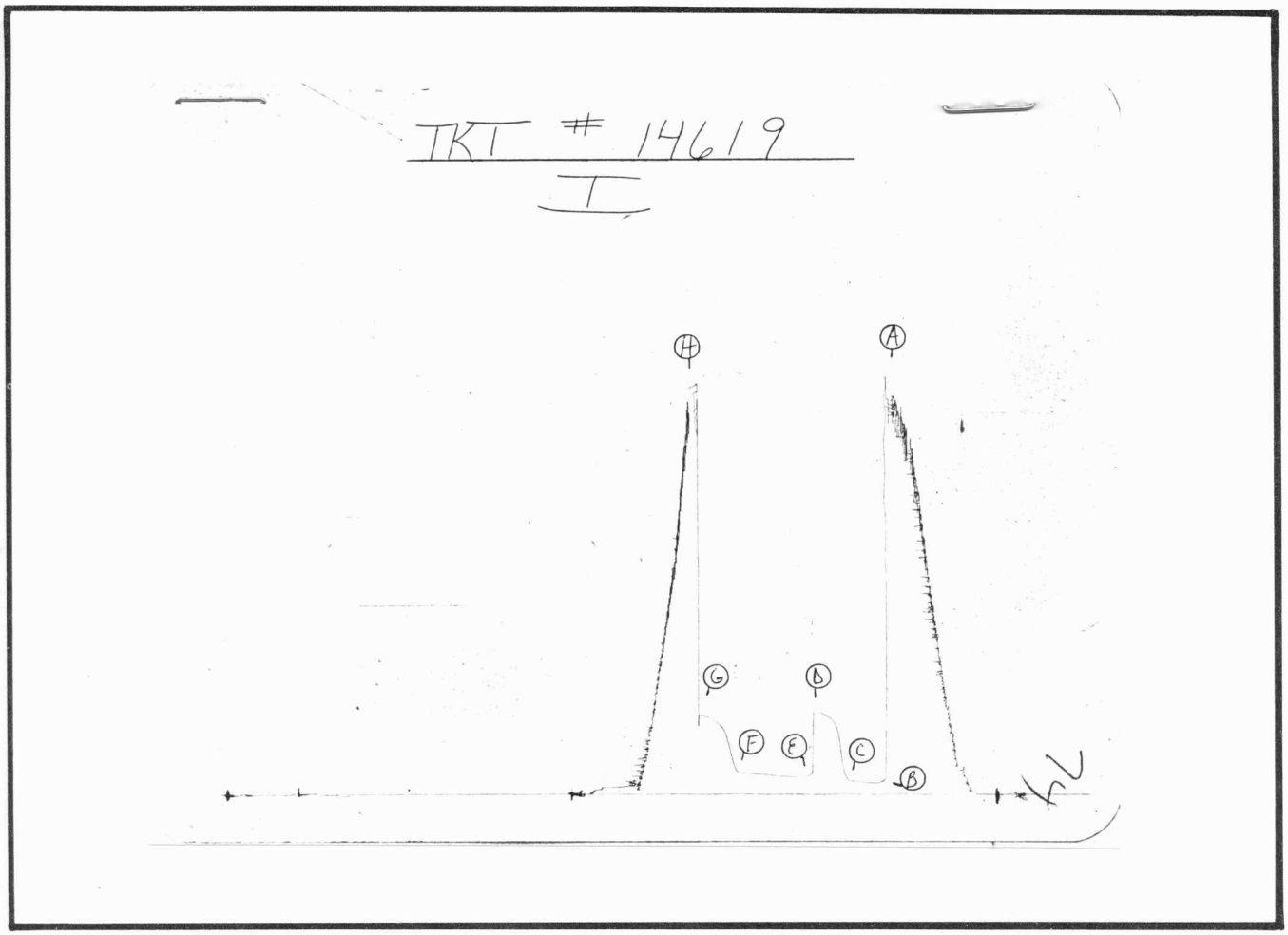
Point	Minutes	Press.
	0	57
	3	85
	6	183
	9	268
	12	300
	15	315
	18	324
	21	330
	24	336
	27	339

Second Flow Pressure
Breakdown: 12 Inc. of 5 mins. and a final inc. of 0 Min.

Point	Minutes	Press.
	0	70
	5	70
	10	70
	15	71
	20	73
	25	75
	30	77
	35	79
	40	82
	45	85
	50	87
	55	88
	60	89

Final Shut-In
Breakdown: 10 Inc. of 3 mins. and a final inc. of 0 Min.

Point	Minutes	Press.
	0	89
	3	120
	6	180
	9	239
	12	271
	15	289
	18	302
	21	311
	24	320
	27	323
	30	327



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	1592	1592	PSI
(B)	First Initial Flow Pressure	53	47	PSI
(C)	First Final Flow Pressure	53	57	PSI
(D)	Initial Closed-in Pressure	338	339	PSI
(E)	Second Initial Flow Pressure	69	70	PSI
(F)	Second Final Flow Pressure	84	89	PSI
(G)	Final Closed-in Pressure	330	327	PSI
(H)	Final Hydrostatic Mud	1592	1592	PSI

COMPANY RAINS & WILLIAMSON OIL COMPANY, INC. LEASE AND WELL NO. STECKEL 'D' #2 SEC. 7 TWP. 12S RGE. 14W TEST NO. 1 DATE 11/21/81

Home Office: Wichita, Kansas 67201
P.O. Box 1599 (316) 262-5861

Company Rains & Williamson Oil Company, Inc. Lease & Well No. Steckel "D"#2

Elevation 1676 Derrick Floor Formation Kansas City Effective Pay - Ft. Ticket No. 14620

Date 11/21 /81 Sec. 7 Twp. 12S Range 14W County Russell State Kansas

Test Approved by Dave Calvert Western Representative Denis Wondra

Formation Test No. 2 Interval Tested from 2907 ft. to 2946 ft. Total Depth 2946 ft.

Packer Depth 2902 ft. Size 6 5/8 in. Packer Depth 2907 ft. Size 6 5/8 in.

Packer Depth - ft. Size - in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -

Top Recorder Depth (Inside) 2936 ft. Recorder Number 3474 Cap. 3000

Bottom Recorder Depth (Outside) 2939 ft. Recorder Number 1049 Cap. 4150

Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Rains &Williamson Drlg. Rig #4 Drill Collar Length - I. D. - in.

Mud Type starch Viscosity 36 Weight Pipe Length - I. D. - in.

Weight 10.0 Water Loss 12.0 cc. Drill Pipe Length 2885 I. D. 3.8 in.

Chlorides 75,000 P.P.M. Test Tool Length 22 ft. Tool Size 5½ OD

Jars: Make - Serial Number - Anchor Length 39 ft. Size 5½ OD in.

Did Well Flow? No Reversed Out No Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4½ XH in.

Blow: Very weak; died in fifteen minutes on initial flow period. No blow on final flow period.

Recovered 10 ft. of mud with few spots of oil

Recovered ft. of

Recovered ft. of

Recovered ft. of

Recovered ft. of

Recovered ft. of

Remarks:

Time Set Packer(s) 7:13 ~~A.M.~~ P.M. Time Started Off Bottom 9:15 ~~A.M.~~ P.M. Maximum Temperature 98°

Initial Hydrostatic Pressure		(A) 1631	P.S.I.	
Initial Flow Period	Minutes 30	(B) 37	P.S.I. to (C) 38	P.S.I.
Initial Closed In Period	Minutes 30	(D) 389	P.S.I.	
Final Flow Period	Minutes 30	(E) 44	P.S.I. to (F) 45	P.S.I.
Final Closed In Period	Minutes 30	(G) 385	P.S.I.	
Final Hydrostatic Pressure		(H) 1631	P.S.I.	

WTC-

WESTERN TESTING CO., INC.
Pressure Data

Date 11/21/81 Test Ticket No. 14620

Recorder No. 3474 Capacity 3000 Location 2936 Ft.

Clock No. - Elevation 1676 Derrick Floor Well Temperature 98 °F

Point		Pressure			Time Given	Time Computed
A	Initial Hydrostatic Mud	1631 P.S.I.		Open Tool	7:13P M	
B	First Initial Flow Pressure	37 P.S.I.		First Flow Pressure	30 Mins.	30 Mins.
C	First Final Flow Pressure	38 P.S.I.		Initial Closed-in Pressure	30 Mins.	30 Mins.
D	Initial Closed-in Pressure	389 P.S.I.		Second Flow Pressure	30 Mins.	30 Mins.
E	Second Initial Flow Pressure	44 P.S.I.		Final Closed-in Pressure	30 Mins.	30 Mins.
F	Second Final Flow Pressure	45 P.S.I.				
G	Final Closed-in Pressure	385 P.S.I.				
H	Final Hydrostatic Mud	1631 P.S.I.				

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 6 Inc. of 5 mins. and a final inc. of 0 Min.

Point Mins.	Press.
P 1 0	37
P 2 5	37
P 3 10	37
P 4 15	37
P 5 20	37
P 6 25	37
P 7 30	38
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 0 Min.

Point Minutes	Press.
0	38
3	179
6	323
9	348
12	362
15	370
18	377
21	382
24	386
27	388
30	389

Second Flow Pressure
Breakdown: 6 Inc. of 5 mins. and a final inc. of 0 Min.

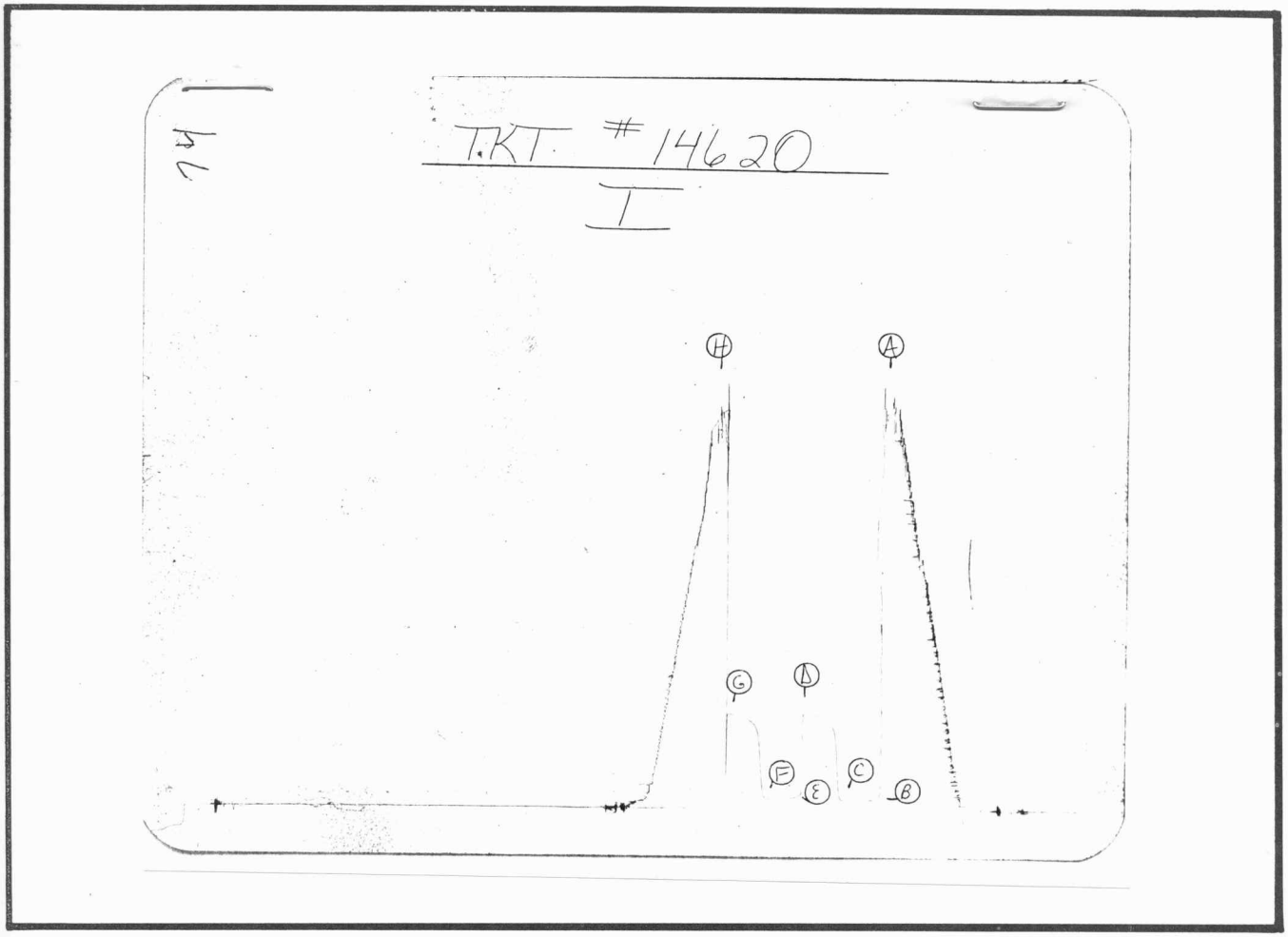
Point Minutes	Press.
0	44
5	44
10	44
15	44
20	44
25	44
30	45

Final Shut-In
Breakdown: 10 Inc. of 3 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	45
3	130
6	309
9	344
12	358
15	367
18	374
21	379
24	382
27	384
30	385

WTC - 4

COMPANY RAINS & WILLIAMSON OIL COMPANY, INC. LEASE AND WELL NO. STECKEL "D" #2 SEC. 7 TWP. 12S RGE. 14W TEST NO. 2 DATE 11/21 /81



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	1631	1631	PSI
(B)	First Initial Flow Pressure	30	37	PSI
(C)	First Final Flow Pressure	38	38	PSI
(D)	Initial Closed-in Pressure	392	389	PSI
(E)	Second Initial Flow Pressure	38	44	PSI
(F)	Second Final Flow Pressure	38	45	PSI
(G)	Final Closed-in Pressure	384	385	PSI
(H)	Final Hydrostatic Mud	1631	1631	PSI

Home Office: Wichita, Kansas 67201
P.O. Box 1599 (316) 262-5861

Company Rains & Williamson Oil Company, Inc. Lease & Well No. Steckel "D"#2

Elevation 1676 Derrick Floor Formation Kansas City Effective Pay - Ft. Ticket No. 14621

Date 11/22 /81 Sec. 7 Twp. 12S Range 14W County Russell State Kansas

Test Approved by Dave Calvert Western Representative Denis Wondra

Formation Test No. 3 Interval Tested from 2973 ft. to 3017 ft. Total Depth 3017 ft.

Packer Depth 2968 ft. Size 6 5/8 in. Packer Depth 2973 ft. Size 6 5/8 in.

Packer Depth - ft. Size - in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -

Top Recorder Depth (Inside) 3007 ft. Recorder Number 3474 Cap. 3000

Bottom Recorder Depth (Outside) 3010 ft. Recorder Number 1049 Cap. 4150

Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Rains &Williamson Drlg. Rig #4 Drill Collar Length - I. D. - in.

Mud Type starch Viscosity 45 Weight Pipe Length - I. D. - in.

Weight 9.8 Water Loss 12.0 cc. Drill Pipe Length 2951 I. D. 3.8 in.

Chlorides 61,000 P.P.M. Test Tool Length 22 ft. Tool Size 5½OD in.

Jars: Make - Serial Number - Anchor Length 44 ft. Size 5½OD in.

Did Well Flow? No Reversed Out No Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4½XH in.

Blow: Fair; increased to good in fifteen minutes on initial flow period. Good throughout final flow period.

Recovered 180 ft. of gas in pipe

Recovered 60 ft. of heavily oil and gas cut mud (35% mud;10% water;55% oil)

Recovered 30 ft. of oil and gas cut mud

Recovered 120 ft. of slightly oil and gas cut watery mud (75% mud;20% water;5% oil)

Recovered ft. of Chlorides 60,000 ppm

Remarks:

Time Set Packer(s) 11:28 ~~A.M.~~ ~~P.M.~~ Time Started Off Bottom 2:00 ~~A.M.~~ P.M. Maximum Temperature 98°

Initial Hydrostatic Pressure			(A)	1694	P.S.I.	
Initial Flow Period	Minutes	30	(B)	53	P.S.I. to (C)	70 P.S.I.
Initial Closed In Period	Minutes	27	(D)	358	P.S.I.	
Final Flow Period	Minutes	60	(E)	91	P.S.I. to (F)	123 P.S.I.
Final Closed In Period	Minutes	27	(G)	350	P.S.I.	
Final Hydrostatic Pressure			(H)	1683	P.S.I.	

WTC-

WESTERN TESTING CO., INC.
Pressure Data

Date 11/22/81 Test Ticket No. 14621

Recorder No. 3474 Capacity 3000 Location 3007 Ft.

Clock No. - Elevation 1676 Derrick Floor Well Temperature 98 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	1694 P.S.I.	Open Tool	11:28A M	
B First Initial Flow Pressure	53 P.S.I.	First Flow Pressure	30 Mins.	30 Mins.
C First Final Flow Pressure	70 P.S.I.	Initial Closed-in Pressure	30 Mins.	27 Mins.
D Initial Closed-in Pressure	358 P.S.I.	Second Flow Pressure	60 Mins.	60 Mins.
E Second Initial Flow Pressure	91 P.S.I.	Final Closed-in Pressure	30 Mins.	27 Mins.
F Second Final Flow Pressure	123 P.S.I.			
G Final Closed-in Pressure	350 P.S.I.			
H Final Hydrostatic Mud	1683 P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 6 Inc. of 5 mins. and a final inc. of 0 Min.

Point Mins.	Press.
P 1 0	53
P 2 5	53
P 3 10	54
P 4 15	57
P 5 20	62
P 6 25	67
P 7 30	70
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
P20	

Initial Shut-In
Breakdown: 9 Inc. of 3 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	70
3	174
6	280
9	314
12	327
15	336
18	344
21	348
24	355
27	358

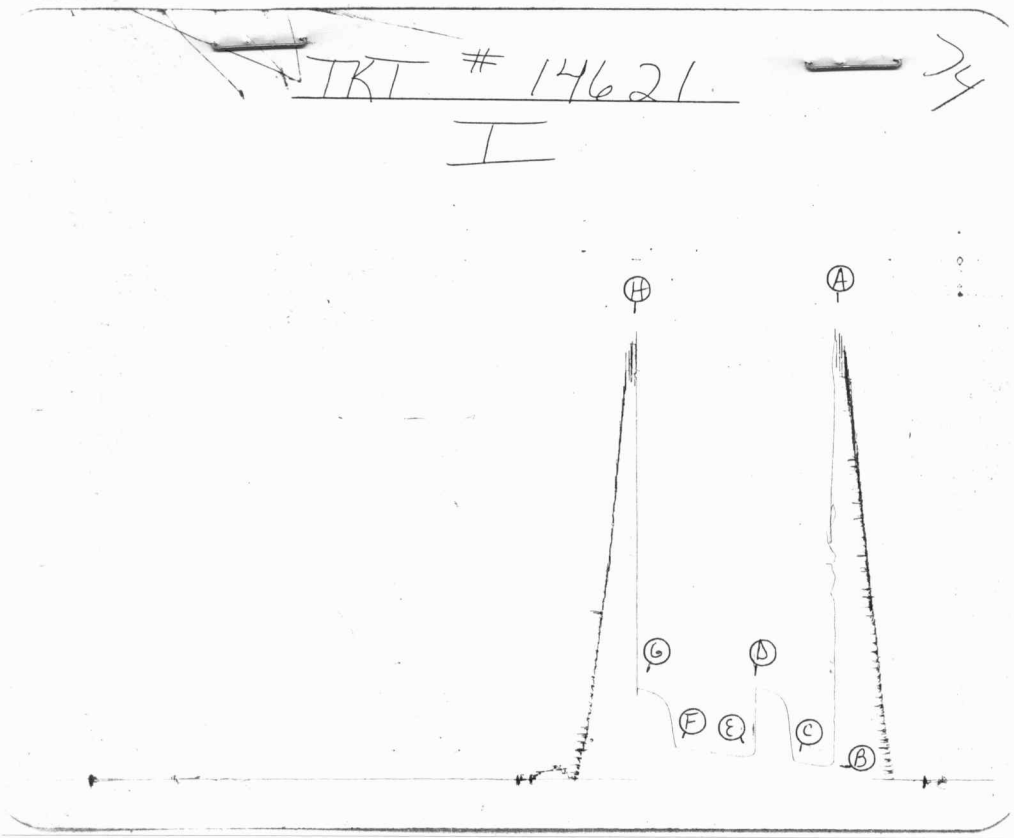
Second Flow Pressure
Breakdown: 12 Inc. of 5 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	91
5	91
10	91
15	92
20	96
25	100
30	105
35	108
40	111
45	114
50	118
55	121
60	123

Final Shut-In
Breakdown: 9 Inc. of 3 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	123
3	218
6	282
9	308
12	321
15	332
18	338
21	342
24	347
27	350

WTC - 4



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	1707	1694	PSI
(B)	First Initial Flow Pressure	53	53	PSI
(C)	First Final Flow Pressure	69	70	PSI
(D)	Initial Closed-in Pressure	361	358	PSI
(E)	Second Initial Flow Pressure	92	91	PSI
(F)	Second Final Flow Pressure	123	123	PSI
(G)	Final Closed-in Pressure	353	350	PSI
(H)	Final Hydrostatic Mud	1699	1683	PSI

COMPANY RAINS & WILLIAMSON OIL COMPANY, INC. LEASE AND WELL NO. STECKEL 'D' #2 SEC. 7 TWP. 12S RGE. 14W TEST NO. 3 DATE 11/22 /81

WESTERN TESTERS

Home Office: Wichita, Kansas 67201

P.O. Box 1599 (316) 262-5861

Company Rains & Williamson Oil Company, Inc. Lease & Well No. Steckel "D" #2

Elevation 1676 Derrick Floor Formation Kansas City Effective Pay - Ft. Ticket No. 14622

Date 11/23/81 Sec. 7 Twp. 12S Range 14W County Russell State Kansas

Test Approved by Dave Calvert Western Representative Denis Wondra

Formation Test No. 4 Interval Tested from 3029 ft. to 3070 ft. Total Depth 3070 ft.

Packer Depth 3024 ft. Size 6 5/8 in. Packer Depth 3029 ft. Size 6 5/8 in.

Packer Depth - ft. Size - in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -

Top Recorder Depth (Inside) 3060 ft. Recorder Number 3474 Cap. 3000

Bottom Recorder Depth (Outside) 3063 ft. Recorder Number 1049 Cap. 4150

Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Rains &Williamson Drlg. Rig #4 Drill Collar Length - I. D. - in.

Mud Type starch Viscosity 45 Weight Pipe Length - I. D. - in.

Weight 9.8 Water Loss 12.0 cc. Drill Pipe Length 3007 I. D. 3.8 in.

Chlorides 61,000 P.P.M. Test Tool Length 22 ft. Tool Size 5½OD

Jars: Make - Serial Number - Anchor Length 41 ft. Size 5½OD in.

Did Well Flow? No Reversed Out No Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4½XH in.

Blow: Very weak; died in ten minutes on initial flow period. No blow on final flow period.

Recovered 25 ft. of drilling mud

Recovered ft. of

Recovered ft. of

Recovered ft. of

Recovered ft. of

Remarks:

Time Set Packer(s) 3:28 A.M. P.M. Time Started Off Bottom 5:30 A.M. P.M. Maximum Temperature 99°

Initial Hydrostatic Pressure (A) 1707 P.S.I.

Initial Flow Period Minutes 30 (B) 38 P.S.I. to (C) 38 P.S.I.

Initial Closed In Period Minutes 27 (D) 44 P.S.I.

Final Flow Period Minutes 30 (E) 41 P.S.I. to (F) 41 P.S.I.

Final Closed In Period Minutes 27 (G) 47 P.S.I.

Final Hydrostatic Pressure (H) 1700 P.S.I.

WTC-

WESTERN TESTING CO., INC.
Pressure Data

Date 11/23/81 Test Ticket No. 14622

Recorder No. 3474 Capacity 3000 Location 3060 Ft.

Clock No. - Elevation 1676 Derrick Floor Well Temperature 99 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	1707 P.S.I.	Open Tool	3:28A M	
B First Initial Flow Pressure	38 P.S.I.	First Flow Pressure	30 Mins.	30 Mins.
C First Final Flow Pressure	38 P.S.I.	Initial Closed-in Pressure	30 Mins.	27 Mins.
D Initial Closed-in Pressure	44 P.S.I.	Second Flow Pressure	30 Mins.	30 Mins.
E Second Initial Flow Pressure	41 P.S.I.	Final Closed-in Pressure	30 Mins.	27 Mins.
F Second Final Flow Pressure	41 P.S.I.			
G Final Closed-in Pressure	47 P.S.I.			
H Final Hydrostatic Mud	1700 P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 6 Inc. of 5 mins. and a final inc. of 0 Min.

Point Mins.	Press.
P 1 0	38
P 2 5	38
P 3 10	38
P 4 15	38
P 5 20	38
P 6 25	38
P 7 30	38
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
P20	

Initial Shut-In
Breakdown: 9 Inc. of 3 mins. and a final inc. of 0 Min.

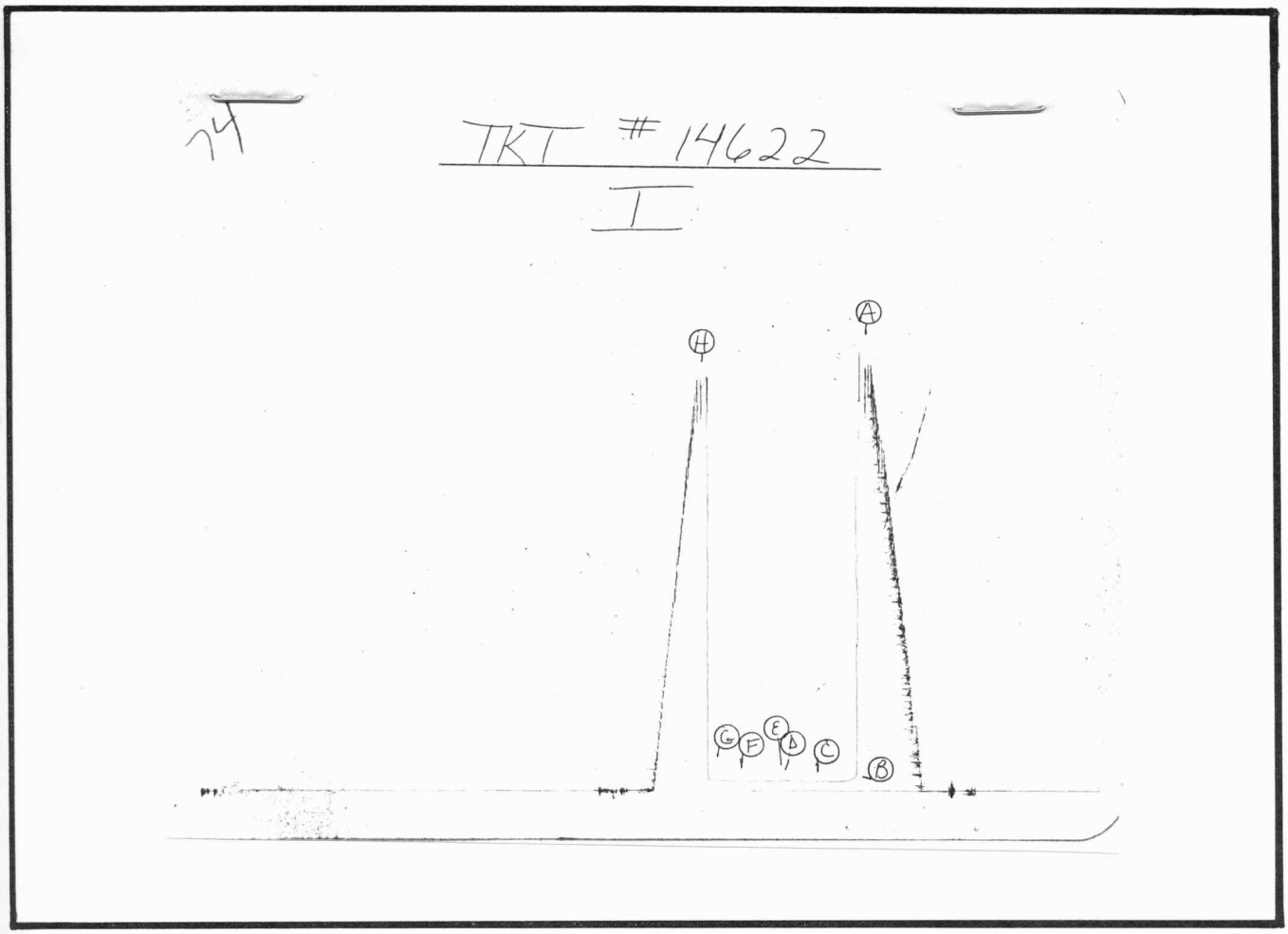
Point Minutes	Press.
0	38
3	38
6	38
9	39
12	40
15	41
18	42
21	43
24	44
27	44

Second Flow Pressure
Breakdown: 6 Inc. of 5 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	41
5	41
10	41
15	41
20	41
25	41
30	41

Final Shut-In
Breakdown: 9 Inc. of 3 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	41
3	41
6	41
9	41
12	42
15	43
18	44
21	45
24	46
27	47



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	1714	1707	PSI
(B)	First Initial Flow Pressure	38	38	PSI
(C)	First Final Flow Pressure	38	38	PSI
(D)	Initial Closed-in Pressure	46	44	PSI
(E)	Second Initial Flow Pressure	38	41	PSI
(F)	Second Final Flow Pressure	38	41	PSI
(G)	Final Closed-in Pressure	46	47	PSI
(H)	Final Hydrostatic Mud	1707	1700	PSI

COMPANY RAINS & WILLIAMSON OIL COMPANY, INC. LEASE AND WELL NO. STECKEL "D" #2 SEC. 7 TWP. 12S RGE. 14W TEST NO. 4 DATE 11/23/81