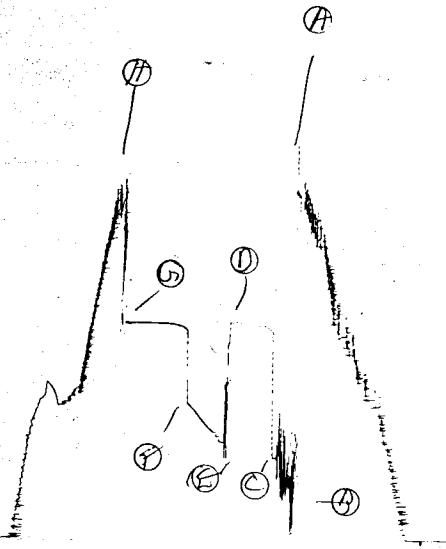


KT 18548

I

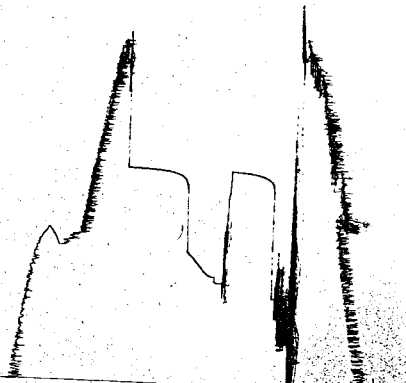
OST  
10250



KT 18548

0

OST  
13550





WESTERN TESTING CO., INC.

FORMATION TESTING

TICKET

No 18548

P. O. BOX 1599 PHONE (316) 262-5861 WICHITA, KANSAS 67201

Elevation 1942 KB Formation Aebuckle Eff. Pay Ft.

District GT. Bend Date 6-3-93 Customer Order No.

COMPANY NAME Allen Drilling Company

ADDRESS 6565 S. DAYTON - SUITE 3800 Englewood, Colorado 80111

LEASE AND WELL NO. Hendricks #1-23 COUNTY Barton STATE KS Sec. 23 Twp. 20' Rge. 15"

Mail Invoice To SAME Co. Name #1-23 Hendricks Address No. Copies Requested Reg

Mail Charts To SAME Address No. Copies Requested Reg

Formation Test No. 1 Interval Tested From 3631 ft. to 3636 ft. Total Depth 3636 ft.

Packer Depth 3626 ft. Size 6 7/8 in. Packer Depth - ft. Size - in.

Packer Depth 3631 ft. Size 6 7/8 in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -

Top Recorder Depth (Inside) 3616 ft. Recorder Number 10270 Cap. 4150

Bottom Recorder Depth (Outside) 3633 ft. Recorder Number 13550 Cap. 4175

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

Drilling Contractor ALLEN rig 3 Drill Collar Length - I. D. - in.

Mud Type Chemical Viscosity 49 Weight Pipe Length - I. D. - in.

Weight 9.5 Water Loss 9.2 cc. Drill Pipe Length 3606 I. D. 3.8 in.

Chlorides 5000 P.P.M. Test Tool Length 25 ft. Tool Size 5 1/2 in.

Jars: Make - Serial Number - Anchor Length 5 ft. Size 5 1/2 in.

Did Well Flow? - Reversed Out yes Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 XH in.

Blow: IF - STRONG BLOW IN 1 MIN

FF - STRONG BLOW IN 1 MIN

Recovered 1050 ft. of GAS IN PIPE

Recovered 90 ft. of Muddy WATER 20% mud 80% WATER

Recovered 1410 ft. of WATER

Recovered - ft. of

Recovered - ft. of

Chlorides 27000 P.P.M. Sample Jars used 2 Remarks: JUN 08 1993

Time On Location 8:00 AM Time Pick Up Tool 9:00 AM Time Off Location 2:10 PM

Time Set Packer(s) 10:10 AM Time Started Off Bottom 12:10 AM Maximum Temperature 118

Initial Hydrostatic Pressure (A) 1838 P.S.I.

Initial Flow Period Minutes 15 (B) 260 P.S.I. to (C) 437 P.S.I.

Initial Closed In Period Minutes 30 (D) 1174 P.S.I.

Final Flow Period Minutes 30 (E) 520 P.S.I. to (F) 728 P.S.I.

Final Closed In Period Minutes 45 (G) 1174 P.S.I.

Final Hydrostatic Pressure (H) 1838 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained directly or indirectly through the use of its equipment, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By Signature of Customer or his authorized representative

Western Representative Ray Schwager Thank you

FIELD INVOICE

- Open Hole Test \$
Misrun \$
Straddle Test \$
Jars \$
Selective Zone \$
Safety Joint \$
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. \$
Mileage \$
Fluid Sampler \$
Extra Charts \$
Insurance \$
Telecopier \$
TOTAL \$

**WESTERN TESTING CO., INC.**  
**Pressure Data**

Date 6-3-93

Test Ticket No. 18548

Recorder No. 10270 Capacity \_\_\_\_\_ Location \_\_\_\_\_ Ft. \_\_\_\_\_

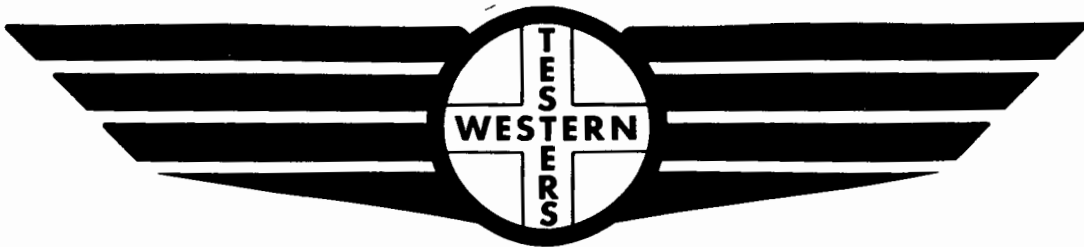
Clock No. \_\_\_\_\_ Elevation \_\_\_\_\_ Well Temperature 118 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud <u>1858</u>	P.S.I.	Open Tool		M
B First Initial Flow Pressure _____	P.S.I.	First Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure _____	P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins.	<u>30</u> Mins.
D Initial Closed-in Pressure _____	P.S.I.	Second Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
E Second Initial Flow Pressure _____	P.S.I.	Final Closed-in Pressure	<u>45</u> Mins.	<u>60</u> Mins.
F Second Final Flow Pressure _____	P.S.I.			
G Final Closed-in Pressure _____	P.S.I.			
H Final Hydrostatic Mud <u>1834</u>	P.S.I.			

**PRESSURE BREAKDOWN**

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>62</u>	<u>0</u>	<u>437</u>	<u>0</u>	<u>520</u>	<u>0</u>	<u>744</u>
P 2 <u>5</u>	<u>260</u>	<u>3</u>	<u>1143</u>	<u>5</u>	<u>533</u>	<u>3</u>	<u>1143</u>
P 3 <u>10</u>	<u>437</u>	<u>6</u>	<u>1153</u>	<u>10</u>	<u>582</u>	<u>6</u>	<u>1155</u>
P 4 <u>15</u>		<u>9</u>	<u>1160</u>	<u>15</u>	<u>614</u>	<u>9</u>	<u>1158</u>
P 5 <u>20</u>		<u>12</u>	<u>1164</u>	<u>20</u>	<u>670</u>	<u>12</u>	<u>1159</u>
P 6 <u>25</u>		<u>15</u>	<u>1164</u>	<u>25</u>	<u>715</u>	<u>15</u>	<u>1160</u>
P 7 <u>30</u>		<u>18</u>	<u>1165</u>	<u>30</u>	<u>744</u>	<u>18</u>	<u>1161</u>
P 8 <u>35</u>		<u>21</u>	<u>1166</u>	<u>35</u>		<u>21</u>	<u>1162</u>
P 9 <u>40</u>		<u>24</u>	<u>1168</u>	<u>40</u>		<u>24</u>	<u>1163</u>
P10 <u>45</u>		<u>27</u>	<u>1169</u>	<u>45</u>		<u>27</u>	<u>1164</u>
P11 <u>50</u>		<u>30</u>	<u>1170</u>	<u>50</u>		<u>30</u>	<u>1165</u>
P12 <u>55</u>		<u>33</u>		<u>55</u>		<u>33</u>	<u>1166</u>
P13 <u>60</u>		<u>36</u>		<u>60</u>		<u>36</u>	<u>1167</u>
P14 <u>65</u>		<u>39</u>		<u>65</u>		<u>39</u>	<u>1168</u>
P15 <u>70</u>		<u>42</u>		<u>70</u>		<u>42</u>	<u>1169</u>
P16 <u>75</u>		<u>45</u>		<u>75</u>		<u>45</u>	<u>1170</u>
P17 <u>80</u>		<u>48</u>		<u>80</u>		<u>48</u>	
P18 <u>85</u>		<u>51</u>		<u>85</u>		<u>51</u>	
P19 <u>90</u>		<u>54</u>		<u>90</u>		<u>54</u>	
P20 <u>95</u>		<u>57</u>		<u>95</u>		<u>57</u>	
<u>100</u>		<u>60</u>		<u>100</u>		<u>60</u>	

# FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 800-688-7021

COMPANY ALLEN DRILLING COMPANY LEASE & WELL NO. #1-23 HENDRICKS SEC. 23 TWP. 20S RGE. 15W TEST NO. 1 DATE 6/3/93

DST REPORT

GENERAL INFORMATION

DATE : 6/3/93  
CUSTOMER : ALLEN DRILLING COMPANY  
WELL : #1-23 TEST: 1  
ELEVATION: 1942 KB  
SECTION : 23  
RANGE : 15W COUNTY: BARTON  
GAUGE SN#: 10270 RANGE : 4150  
TICKET : 18548  
LEASE : HENDRICKS  
GEOLOGIST: ZOLLER  
FORMATION: ARBUCKLE  
TOWNSHIP : 20S  
STATE : KS  
CLOCK : 12

WELL INFORMATION

PERFORATION INTERVAL FROM: 3631.00 ft TO: 3636.00 ft TVD: 3636.0 ft  
DEPTH OF SELECTIVE ZONE: TEST TYPE: OIL  
DEPTH OF RECORDERS: 3616.0 ft 3633.0 ft  
TEMPERATURE: 118.0  
DRILL COLLAR LENGTH: 0.0 ft I.D.: 0.000 in  
WEIGHT PIPE LENGTH : 0.0 ft I.D.: 0.000 in  
DRILL PIPE LENGTH : 3606.0 ft I.D.: 3.800 in  
TEST TOOL LENGTH : 25.0 ft TOOL SIZE : 5.500 in  
ANCHOR LENGTH : 5.0 ft ANCHOR SIZE: 5.500 in  
SURFACE CHOKE SIZE : 0.750 in BOTTOM CHOKE SIZE: 0.750 in  
MAIN HOLE SIZE : 7.875 in TOOL JOINT SIZE : 4.5XH  
PACKER DEPTH: 3626.0 ft SIZE: 6.630 in  
PACKER DEPTH: 3631.0 ft SIZE: 6.630 in  
PACKER DEPTH: 0.0 ft SIZE: 0.000 in  
PACKER DEPTH: 0.0 ft SIZE: 0.000 in

MUD INFORMATION

DRILLING CON. : ALLEN RIG 3  
MUD TYPE : CHEMICAL  
WEIGHT : 9.500 ppg  
CHLORIDES : 5000 ppm  
JARS-MAKE :  
DID WELL FLOW?: NO  
VISCOSITY : 49.00 cp  
WATER LOSS: 9.200 cc  
SERIAL NUMBER:  
REVERSED OUT?: YES

COMMENTS

Comment

STRONG BLOW IN 1 MINUTE ON BOTH FLOW PERIODS.

DST REPORT (CONTINUED)

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
90.0	0.0	0.0	80.0	20.0	MUDDY WATER
1410.0	0.0	0.0	100.0	0.0	WATER
0.0	0.0	0.0	0.0	0.0	CHLORIDES 27000 PPM
0.0	0.0	0.0	0.0	0.0	1050 FT GAS ABOVE FLUID

RATE INFORMATION

OIL VOLUME:	0.0000 STB	TOTAL FLOW TIME:	40.0000 min.
GAS VOLUME:	0.0000 SCF	AVERAGE OIL RATE:	0.0000 STB/D
MUD VOLUME:	0.2525 STB	AVERAGE WATER RATE:	757.4232 STB/D
WATER VOLUME:	20.7871 STB		
TOTAL FLUID :	21.0395 STB		

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1838.00

Description	Duration	p1	p End
INITIAL FLOW	15.00	260.00	437.00
INITIAL SHUT-IN	30.00		1174.00
FINAL FLOW	30.00	520.00	728.00
FINAL SHUT-IN	45.00		1174.00

FINAL HYDROSTATIC PRESSURE: 1838.00

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1858.00

Description	Duration	p1	p End
INITIAL FLOW	10.00	62.00	437.00
INITIAL SHUT-IN	30.00		1170.00
FINAL FLOW	30.00	520.00	744.00
FINAL SHUT-IN	45.00		1170.00

FINAL HYDROSTATIC PRESSURE: 1834.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE : 6/3/93	TICKET : 18548
CUSTOMER : ALLEN DRILLING COMPANY	LEASE : HENDRICKS
WELL : #1-23      TEST: 1	GEOLOGIST: ZOLLER
ELEVATION: 1942 KB	FORMATION: ARBUCKLE
SECTION : 23	TOWNSHIP : 20S
RANGE : 15W      COUNTY: BARTON	STATE : KS
GAUGE SN#: 10270      RANGE : 4150	CLOCK : 12

INITIAL FLOW

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	62.00	62.00
5.00	260.00	198.00
10.00	437.00	177.00

INITIAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	1143.00	1143.00	0.00
6.00	1153.00	10.00	0.00
9.00	1160.00	7.00	0.00
12.00	1164.00	4.00	0.00
15.00	1164.00	0.00	0.00
18.00	1165.00	1.00	0.00
21.00	1166.00	1.00	0.00
24.00	1168.00	2.00	0.00
27.00	1169.00	1.00	0.00
30.00	1170.00	1.00	0.00

FINAL FLOW

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	520.00	520.00
5.00	533.00	13.00
10.00	582.00	49.00
15.00	614.00	32.00
20.00	670.00	56.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL FLOW (CONTINUED)

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
25.00	715.00	45.00
30.00	744.00	29.00

FINAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	1143.00	1143.00	0.00
6.00	1155.00	12.00	0.00
9.00	1158.00	3.00	0.00
12.00	1159.00	1.00	0.00
15.00	1160.00	1.00	0.00
18.00	1161.00	1.00	0.00
21.00	1162.00	1.00	0.00
24.00	1163.00	1.00	0.00
27.00	1164.00	1.00	0.00
30.00	1165.00	1.00	0.00
33.00	1166.00	1.00	0.00
36.00	1167.00	1.00	0.00
39.00	1168.00	1.00	0.00
42.00	1169.00	1.00	0.00
45.00	1170.00	1.00	0.00





WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET No 18550

P. O. BOX -1599 PHONE (316) 262-5861
WICHITA, KANSAS 67201

Elevation 1942 KB Formation Arbuckle Eff. Pay - Ft

District GT Bend Date 6-4-93 Customer Order No. -

COMPANY NAME Allen Drlg. Company

ADDRESS 6565 S. DAYTON - SUITE 3800 Englewood, Colorado 80111

LEASE AND WELL NO. Hendricks #1-23 COUNTY Barton STATE KS Sec. 23 Twp. 20 Rge. 15

Mail Invoice To Same Co. Name #1-23 Hendricks Address No. Copies Requested Reg

Mail Charts To SAME #1-23 Hendricks Address No. Copies Requested Reg

Formation Test No. 3 Interval Tested From 3646 ft. to 3651 ft. Total Depth 3651 ft.

Packer Depth 3641 ft. Size 6 5/8 in. Packer Depth - ft. Size - in.

Packer Depth 3646 ft. Size 6 5/8 in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -

Top Recorder Depth (Inside) 3631 ft. Recorder Number 10270 Cap. 4150

Bottom Recorder Depth (Outside) 3643 ft. Recorder Number 13550 Cap. 4175

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

Drilling Contractor Allen rig 3 Drill Collar Length - I. D. - in.

Mud Type Chemical Viscosity 49 Weight Pipe Length - I. D. - in.

Weight 9.3 Water Loss 9.6 cc. Drill Pipe Length 3621 I. D. 3.8 in.

Chlorides 7000 P.P.M. Test Tool Length 25 ft. Tool Size 5 1/2 in.

Jars: Make - Serial Number - Anchor Length 5 ft. Size 5 1/2 in.

Did Well Flow? - Reversed Out - Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.

Main Hole Size 7/8 in. Tool Joint Size 1 1/2 X 1 1/2 in.

Blow IF - Strong Blow Throughout FF - Strong Blow Throughout

Recovered 1140 ft. of GAS IN pipe

Recovered 55 ft. of Slightly oil cut muddy water 1% oil 15% mud 84% water

Recovered 60 ft. of WATER

Recovered - ft. of

Recovered - ft. of

Chlorides 28000 P.P.M. Sample Jars used 2 Remarks:

JUN 08 1993

Time On Location 9:10 A.M. Time Pick Up Tool 7:45 A.M. Time Off Location 12:15 P.M.

Time Set Packer(s) 9:10 P.M. Time Started Off Bottom 10:40 P.M. Maximum Temperature 119

Initial Hydrostatic Pressure (A) 1848 P.S.I.

Initial Flow Period Minutes 15 (B) 31 P.S.I. to (C) 41 P.S.I.

Initial Closed In Period Minutes 30 (D) 1070 P.S.I.

Final Flow Period Minutes 15 (E) 62 P.S.I. to (F) 62 P.S.I.

Final Closed In Period Minutes 30 (G) 1080 P.S.I.

Final Hydrostatic Pressure (H) 1848 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained directly or indirectly through the use of its equipment, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By: Signature of Customer or his authorized representative

Western Representative: Ray Schwager Thank you

FIELD INVOICE

Table with 2 columns: Item Name and Amount. Items include Open Hole Test, Misrun, Straddle Test, Jars, Selective Zone, Safety Joint, Standby, Evaluation, Extra Packer, Circ. Sub., Mileage, Fluid Sampler, Extra Charts, Insurance, Telecopier, and TOTAL.

WESTERN TESTING CO., INC.

Pressure Data

Date 6-4-83

Test Ticket No. 18550

Recorder No. \_\_\_\_\_ Capacity \_\_\_\_\_ Location \_\_\_\_\_ Ft. \_\_\_\_\_

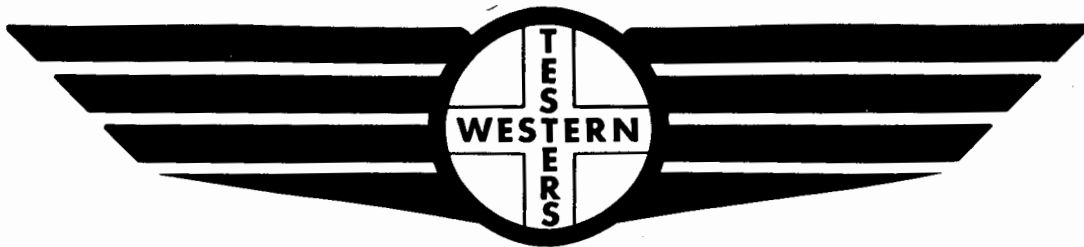
Clock No. \_\_\_\_\_ Elevation \_\_\_\_\_ Well Temperature \_\_\_\_\_ °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud <u>1852</u>	P.S.I.	Open Tool		M
B First Initial Flow Pressure	P.S.I.	First Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure	P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins.	<u>30</u> Mins.
D Initial Closed-in Pressure	P.S.I.	Second Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
E Second Initial Flow Pressure	P.S.I.	Final Closed-in Pressure	<u>30</u> Mins.	<u>33</u> Mins.
F Second Final Flow Pressure	P.S.I.			
G Final Closed-in Pressure	P.S.I.			
H Final Hydrostatic Mud <u>1817</u>	P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>42</u>	<u>0</u>	<u>43</u>	<u>0</u>	<u>63</u>	<u>0</u>	<u>69</u>
P 2 <u>5</u>	<u>42</u>	<u>3</u>	<u>402</u>	<u>5</u>	<u>63</u>	<u>3</u>	<u>545</u>
P 3 <u>10</u>	<u>42</u>	<u>6</u>	<u>668</u>	<u>10</u>	<u>67</u>	<u>6</u>	<u>707</u>
P 4 <u>15</u>	<u>43</u>	<u>9</u>	<u>788</u>	<u>15</u>	<u>69</u>	<u>9</u>	<u>817</u>
P 5 <u>20</u>		<u>12</u>	<u>830</u>	<u>20</u>		<u>12</u>	<u>890</u>
P 6 <u>25</u>		<u>15</u>	<u>863</u>	<u>25</u>		<u>15</u>	<u>937</u>
P 7 <u>30</u>		<u>18</u>	<u>941</u>	<u>30</u>		<u>18</u>	<u>975</u>
P 8 <u>35</u>		<u>21</u>	<u>975</u>	<u>35</u>		<u>21</u>	<u>1008</u>
P 9 <u>40</u>		<u>24</u>	<u>1010</u>	<u>40</u>		<u>24</u>	<u>1029</u>
P10 <u>45</u>		<u>27</u>	<u>1033</u>	<u>45</u>		<u>27</u>	<u>1043</u>
P11 <u>50</u>		<u>30</u>	<u>1060</u>	<u>50</u>		<u>30</u>	<u>1058</u>
P12 <u>55</u>		<u>33</u>		<u>55</u>		<u>33</u>	<u>1070</u>
P13 <u>60</u>		<u>36</u>		<u>60</u>		<u>36</u>	
P14 <u>65</u>		<u>39</u>		<u>65</u>		<u>39</u>	
P15 <u>70</u>		<u>42</u>		<u>70</u>		<u>42</u>	
P16 <u>75</u>		<u>45</u>		<u>75</u>		<u>45</u>	
P17 <u>80</u>		<u>48</u>		<u>80</u>		<u>48</u>	
P18 <u>85</u>		<u>51</u>		<u>85</u>		<u>51</u>	
P19 <u>90</u>		<u>54</u>		<u>90</u>		<u>54</u>	
P20 <u>95</u>		<u>57</u>		<u>95</u>		<u>57</u>	
<u>100</u>		<u>60</u>		<u>100</u>		<u>60</u>	

# FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone **1 - 800-688-7021**

DST REPORT

GENERAL INFORMATION

DATE : 6/4/93	TICKET : 18550
CUSTOMER : ALLEN DRILLING COMPANY	LEASE : HENDRICKS
WELL : #1-23                      TEST: 3	GEOLOGIST: ZOLLER
ELEVATION: 1942 KB	FORMATION: ARBUCKLE
SECTION : 23	TOWNSHIP : 20S
RANGE : 15W                      COUNTY: BARTON	STATE : KS
GAUGE SN#: 10270                  RANGE : 4150	CLOCK : 12

WELL INFORMATION

PERFORATION INTERVAL FROM: 3646.00 ft	TO: 3651.00 ft	TVD: 3651.0 ft
DEPTH OF SELECTIVE ZONE:		TEST TYPE: OIL
DEPTH OF RECORDERS: 3631.0 ft	3643.0 ft	
TEMPERATURE: 119.0		
DRILL COLLAR LENGTH: 0.0 ft	I.D.: 0.000 in	
WEIGHT PIPE LENGTH : 0.0 ft	I.D.: 0.000 in	
DRILL PIPE LENGTH : 3621.0 ft	I.D.: 3.800 in	
TEST TOOL LENGTH : 25.0 ft	TOOL SIZE : 5.500 in	
ANCHOR LENGTH : 5.0 ft	ANCHOR SIZE: 5.500 in	
SURFACE CHOKE SIZE : 0.750 in	BOTTOM CHOKE SIZE: 0.750 in	
MAIN HOLE SIZE : 7.875 in	TOOL JOINT SIZE : 4.5XH	
PACKER DEPTH: 3641.0 ft	SIZE: 6.630 in	
PACKER DEPTH: 3646.0 ft	SIZE: 6.630 in	
PACKER DEPTH: 0.0 ft	SIZE: 0.000 in	
PACKER DEPTH: 0.0 ft	SIZE: 0.000 in	

MUD INFORMATION

DRILLING CON. : ALLEN RIG 3	
MUD TYPE : CHEMICAL	VISCOSITY : 49.00 cp
WEIGHT : 9.300 ppg	WATER LOSS: 9.600 cc
CHLORIDES : 7000 ppm	
JARS-MAKE :	SERIAL NUMBER:
DID WELL FLOW?: NO	REVERSED OUT?: NO

COMMENTS

Comment

---

STRONG BLOW THROUGHOUT BOTH FLOW PERIODS.

DST REPORT (CONTINUED)

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
55.0	1.0	0.0	84.0	15.0	SL. OIL CUT MUDDY WATER
60.0	0.0	0.0	100.0	0.0	WATER
0.0	0.0	0.0	0.0	0.0	CHLORIDES 28000 PPM
0.0	0.0	0.0	0.0	0.0	1140 FT GAS ABOVE FLUID

RATE INFORMATION

OIL VOLUME:	0.0077 STB	TOTAL FLOW TIME:	30.0000 min.
GAS VOLUME:	0.0000 SCF	AVERAGE OIL RATE:	0.4356 STB/D
MUD VOLUME:	0.1157 STB	AVERAGE WATER RATE:	76.9898 STB/D
WATER VOLUME:	1.4896 STB		
TOTAL FLUID :	1.6130 STB		

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1848.00

Description	Duration	p1	p End
INITIAL FLOW	15.00	31.00	41.00
INITIAL SHUT-IN	30.00		1070.00
FINAL FLOW	15.00	62.00	62.00
FINAL SHUT-IN	30.00		1080.00

FINAL HYDROSTATIC PRESSURE: 1848.00

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1852.00

Description	Duration	p1	p End
INITIAL FLOW	15.00	42.00	43.00
INITIAL SHUT-IN	30.00		1066.00
FINAL FLOW	15.00	63.00	69.00
FINAL SHUT-IN	33.00		1070.00

FINAL HYDROSTATIC PRESSURE: 1817.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE : 6/4/93	TICKET : 18550
CUSTOMER : ALLEN DRILLING COMPANY	LEASE : HENDRICKS
WELL : #1-23	TEST: 3
ELEVATION: 1942 KB	GEOLOGIST: ZOLLER
SECTION : 23	FORMATION: ARBUCKLE
RANGE : 15W	COUNTY: BARTON
GAUGE SN#: 10270	RANGE : 4150
	STATE : KS
	CLOCK : 12

INITIAL FLOW

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	42.00	42.00
5.00	42.00	0.00
10.00	42.00	0.00
15.00	43.00	1.00

INITIAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	402.00	402.00	0.00
6.00	668.00	266.00	0.00
9.00	788.00	120.00	0.00
12.00	830.00	42.00	0.00
15.00	863.00	33.00	0.00
18.00	941.00	78.00	0.00
21.00	975.00	34.00	0.00
24.00	1010.00	35.00	0.00
27.00	1033.00	23.00	0.00
30.00	1066.00	33.00	0.00

FINAL FLOW

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	63.00	63.00
5.00	63.00	0.00
10.00	67.00	4.00
15.00	69.00	2.00

PRESSURE TRANSIENT REPORT (CONTINUED)

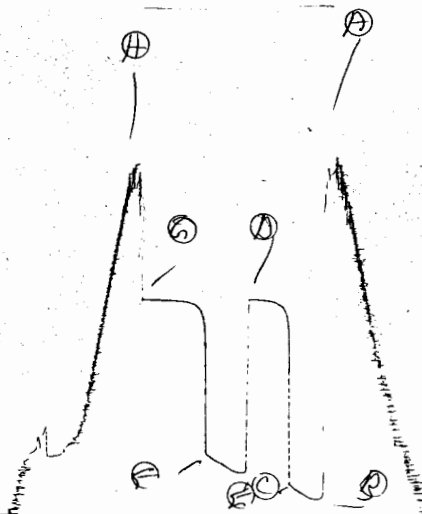
FINAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	545.00	545.00	0.00
6.00	707.00	162.00	0.00
9.00	817.00	110.00	0.00
12.00	890.00	73.00	0.00
15.00	937.00	47.00	0.00
18.00	975.00	38.00	0.00
21.00	1008.00	33.00	0.00
24.00	1029.00	21.00	0.00
27.00	1043.00	14.00	0.00
30.00	1058.00	15.00	0.00
33.00	1070.00	12.00	0.00

KT 18926

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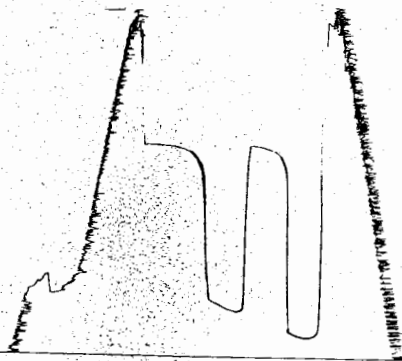
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OSTR 4  
13550





WESTERN TESTING CO., INC.

FORMATION TESTING

TICKET

No 18926

P. O. BOX 1599 PHONE (316) 262-5861 WICHITA, KANSAS 67201

Elevation 1942 KB Formation Arbuckle Eff. Pay - Ft.

District G.T. Bend Date 6-4-93 Customer Order No. -

COMPANY NAME Allen Orlg Company

ADDRESS 6565 S. DAYTON - SUITE 3800 Englewood, Colorado 80111

LEASE AND WELL NO Hendricks #1-23 COUNTY Barton STATE KS Sec. 23 Twp. 20 Rge. 15

Mail Invoice To Same Co. Name #1-23 Hendricks Address No. Copies Requested 209

Mail Charts To Same #1-23 Hendricks Address No. Copies Requested 209

Formation Test No. 4 Interval Tested From 3651 ft. to 3657 ft. Total Depth 3657 ft.

Packer Depth 3646 ft. Size 6 7/8 in. Packer Depth - ft. Size - in.

Packer Depth 3651 ft. Size 6 7/8 in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set

Top Recorder Depth (Inside) 3636 ft. Recorder Number 10270 Cap. 4150

Bottom Recorder Depth (Outside) 3654 ft. Recorder Number 13550 Cap. 4175

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

Drilling Contractor Allen Orlg #1-23 Drill Collar Length - I. D. - in.

Mud Type Chemical Viscosity 48 Weight Pipe Length - I. D. - in.

Weight 9.4 Water Loss 10 cc. Drill Pipe Length 3626 I. D. 3.8 in.

Chlorides 9000 P.P.M. Test Tool Length 25 ft. Tool Size 5/8 in.

Jars: Make - Serial Number - Anchor Length 6 ft. Size 5/8 in.

Did Well Flow? GAS Reversed Out yes Surface Choke Size 3/4 in. Bottom Choke Size 7/8 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 XH in.

Blow: IF - Strong Blow Throughout

FF - GAS TO SURFACE TO WEAK TO GAUGE

Recovered 35 ft. of Heavy oil cut mud 20% oil 15% WATER 65% mud

Recovered 60 ft. of Heavy oil gas cut watery mud 20% oil 10% GAS 30% WATER 40% mud

Recovered 60 ft. of Slightly oil cut muddy WATER 1% oil 20% mud 79% WATER

Recovered 600 ft. of WATER

Recovered - ft. of

Chlorides 28000 P.P.M. Sample Jars used 4 Remarks: JUN 08 1993

GAS TO SURFACE IN 35min into TEST

Time On Location 5:15 A.M. Time Pick Up Tool 5:50 A.M. Time Off Location 11:10 A.M.

Time Set Packer(s) 7:05 P.M. Time Started Off Bottom 9:15 A.M. Maximum Temperature 118 P.M.

Initial Hydrostatic Pressure (A) 1838 P.S.I.

Initial Flow Period Minutes 25 (B) 83 P.S.I. to (C) 156 P.S.I.

Initial Closed In Period Minutes 30 (D) 1174 P.S.I.

Final Flow Period Minutes 30 (E) 218 P.S.I. to (F) 322 P.S.I.

Final Closed In Period Minutes 45 (G) 1174 P.S.I.

Final Hydrostatic Pressure (H) 1838 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained directly or indirectly through the use of its equipment, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By [Signature] Signature of Customer or his authorized representative

Western Representative Ray Schwager THANK YOU

FIELD INVOICE

Table with 2 columns: Item Name and Amount. Items include Open Hole Test, Misrun, Straddle Test, Jars, Selective Zone, Safety Joint, Standby, Evaluation, Extra Packer, Circ. Sub., Mileage, Fluid Sampler, Extra Charts, Insurance, Telecopier, and TOTAL.

**WESTERN TESTING CO., INC.**  
**Pressure Data**

Date 10-4-93

Test Ticket No. 18926

Recorder No. \_\_\_\_\_ Capacity \_\_\_\_\_ Location \_\_\_\_\_ Ft.

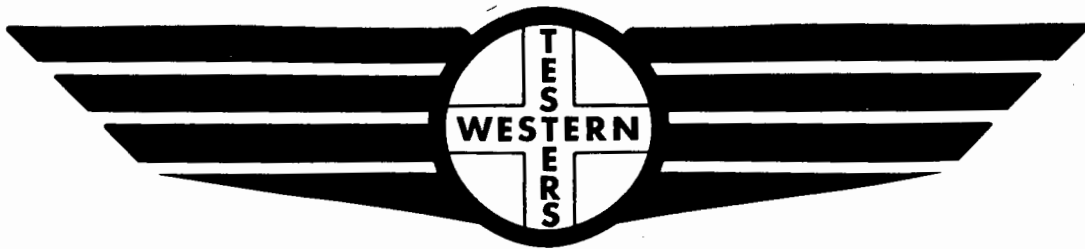
Clock No. \_\_\_\_\_ Elevation \_\_\_\_\_ Well Temperature \_\_\_\_\_ °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud <u>1875</u>	P.S.I.	Open Tool		M
B First Initial Flow Pressure _____	P.S.I.	First Flow Pressure	<u>25</u> Mins.	_____ Mins.
C First Final Flow Pressure _____	P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins.	_____ Mins.
D Initial Closed-in Pressure _____	P.S.I.	Second Flow Pressure	<u>30</u> Mins.	_____ Mins.
E Second Initial Flow Pressure _____	P.S.I.	Final Closed-in Pressure	<u>45</u> Mins.	_____ Mins.
F Second Final Flow Pressure _____	P.S.I.			
G Final Closed-in Pressure _____	P.S.I.			
H Final Hydrostatic Mud <u>1851</u>	P.S.I.			

**PRESSURE BREAKDOWN**

First Flow Pressure Breakdown: _____ Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.		Initial Shut-In Breakdown: _____ Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.		Second Flow Pressure Breakdown: _____ Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.		Final Shut-In Breakdown: _____ Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>83</u>	<u>0</u>	<u>170</u>	<u>0</u>	<u>225</u>	<u>0</u>	<u>337</u>
P 2 <u>5</u>	<u>89</u>	<u>3</u>	<u>1070</u>	<u>5</u>	<u>235</u>	<u>3</u>	<u>1061</u>
P 3 <u>10</u>	<u>97</u>	<u>6</u>	<u>1124</u>	<u>10</u>	<u>243</u>	<u>6</u>	<u>1122</u>
P 4 <u>15</u>	<u>116</u>	<u>9</u>	<u>1143</u>	<u>15</u>	<u>268</u>	<u>9</u>	<u>1143</u>
P 5 <u>20</u>	<u>139</u>	<u>12</u>	<u>1153</u>	<u>20</u>	<u>289</u>	<u>12</u>	<u>1151</u>
P 6 <u>25</u>	<u>170</u>	<u>15</u>	<u>1159</u>	<u>25</u>	<u>312</u>	<u>15</u>	<u>1157</u>
P 7 <u>30</u>		<u>18</u>	<u>1163</u>	<u>30</u>	<u>337</u>	<u>18</u>	<u>1161</u>
P 8 <u>35</u>		<u>21</u>	<u>1166</u>	<u>35</u>		<u>21</u>	<u>1163</u>
P 9 <u>40</u>		<u>24</u>	<u>1168</u>	<u>40</u>		<u>24</u>	<u>1165</u>
P10 <u>45</u>		<u>27</u>	<u>1169</u>	<u>45</u>		<u>27</u>	<u>1167</u>
P11 <u>50</u>		<u>30</u>	<u>1170</u>	<u>50</u>		<u>30</u>	<u>1168</u>
P12 <u>55</u>		<u>33</u>		<u>55</u>		<u>33</u>	<u>1169</u>
P13 <u>60</u>		<u>36</u>		<u>60</u>		<u>36</u>	<u>1170</u>
P14 <u>65</u>		<u>39</u>		<u>65</u>		<u>39</u>	<u>1171</u>
P15 <u>70</u>		<u>42</u>		<u>70</u>		<u>42</u>	<u>1172</u>
P16 <u>75</u>		<u>45</u>		<u>75</u>		<u>45</u>	
P17 <u>80</u>		<u>48</u>		<u>80</u>		<u>48</u>	
P18 <u>85</u>		<u>51</u>		<u>85</u>		<u>51</u>	
P19 <u>90</u>		<u>54</u>		<u>90</u>		<u>54</u>	
P20 <u>95</u>		<u>57</u>		<u>95</u>		<u>57</u>	
<u>100</u>		<u>60</u>		<u>100</u>		<u>60</u>	

# FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 800-688-7021

DST REPORT

GENERAL INFORMATION

DATE	: 6/4/93	TICKET	: 18926
CUSTOMER	: ALLEN DRILLING COMPANY	LEASE	: HENDRICKS
WELL	: #1-23	TEST: 4	GEOLOGIST: ZOLLER
ELEVATION	: 1942 KB	FORMATION	: ARBUCKLE
SECTION	: 23	TOWNSHIP	: 20S
RANGE	: 15W	COUNTY: BARTON	STATE : KS
GAUGE SN#	: 10270	RANGE : 4150	CLOCK : 12

WELL INFORMATION

PERFORATION INTERVAL FROM:	3651.00 ft	TO:	3657.00 ft	TVD:	3657.0 ft
DEPTH OF SELECTIVE ZONE:				TEST TYPE:	OIL
DEPTH OF RECORDERS:	3636.0 ft		3654.0 ft		
TEMPERATURE:	118.0				
DRILL COLLAR LENGTH:	0.0 ft	I.D.:	0.000 in		
WEIGHT PIPE LENGTH :	0.0 ft	I.D.:	0.000 in		
DRILL PIPE LENGTH :	3626.0 ft	I.D.:	3.800 in		
TEST TOOL LENGTH :	25.0 ft	TOOL SIZE :	5.500 in		
ANCHOR LENGTH :	6.0 ft	ANCHOR SIZE:	5.500 in		
SURFACE CHOKE SIZE :	0.750 in	BOTTOM CHOKE SIZE:	0.750 in		
MAIN HOLE SIZE :	7.875 in	TOOL JOINT SIZE :	4.5XH		
PACKER DEPTH:	3646.0 ft	SIZE:	6.630 in		
PACKER DEPTH:	3651.0 ft	SIZE:	6.630 in		
PACKER DEPTH:	0.0 ft	SIZE:	0.000 in		
PACKER DEPTH:	0.0 ft	SIZE:	0.000 in		

MUD INFORMATION

DRILLING CON. :	ALLEN RIG 3	VISCOSITY :	48.00 cp
MUD TYPE :	CHEMICAL	WATER LOSS:	10.000 cc
WEIGHT :	9.400 ppg	SERIAL NUMBER:	
CHLORIDES :	9000 ppm	REVERSED OUT?:	YES
JARS-MAKE :			
DID WELL FLOW?:	YES		

COMMENTS

Comment

INITIAL FLOW PERIOD STRONG BLOW THROUGHOUT.  
FINAL FLOW PERIOD GAS TO SURFACE - TOO WEAK TO  
GUAGE.

DST REPORT (CONTINUED)

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
35.0	20.0	0.0	15.0	65.0	HEAVY OIL CUT MUD
60.0	20.0	10.0	30.0	40.0	HVY OIL & GAS CUT WTRYMUD
60.0	1.0	0.0	79.0	20.0	SL OIL CUT MUDDY WATER
600.0	0.0	0.0	0.0	100.0	WATER
0.0	0.0	0.0	0.0	0.0	CHLORIDES 28000 PPM

RATE INFORMATION

OIL VOLUME:	0.2749 STB	TOTAL FLOW TIME:	55.0000 min.
GAS VOLUME:	0.4725 SCF	AVERAGE OIL RATE:	15.5524 STB/D
MUD VOLUME:	9.2399 STB	AVERAGE WATER RATE:	39.1657 STB/D
WATER VOLUME:	0.9910 STB		
TOTAL FLUID :	10.5057 STB		

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1838.00

Description	Duration	p1	p End
INITIAL FLOW	25.00	83.00	156.00
INITIAL SHUT-IN	30.00		1174.00
FINAL FLOW	30.00	218.00	322.00
FINAL SHUT-IN	45.00		1174.00

FINAL HYDROSTATIC PRESSURE: 1838.00

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1875.00

Description	Duration	p1	p End
INITIAL FLOW	25.00	83.00	170.00
INITIAL SHUT-IN	30.00		1170.00
FINAL FLOW	30.00	225.00	337.00
FINAL SHUT-IN	45.00		1172.00

FINAL HYDROSTATIC PRESSURE: 1851.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE : 6/4/93	TICKET : 18926
CUSTOMER : ALLEN DRILLING COMPANY	LEASE : HENDRICKS
WELL : #1-23      TEST: 4	GEOLOGIST: ZOLLER
ELEVATION: 1942 KB	FORMATION: ARBUCKLE
SECTION : 23	TOWNSHIP : 20S
RANGE : 15W      COUNTY: BARTON	STATE : KS
GAUGE SN#: 10270      RANGE : 4150	CLOCK : 12

INITIAL FLOW

<u>Time</u> <u>(min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	83.00	83.00
5.00	89.00	6.00
10.00	97.00	8.00
15.00	116.00	19.00
20.00	139.00	23.00
25.00	170.00	31.00

INITIAL SHUT IN

<u>Time</u> <u>(min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	1070.00	1070.00	0.00
6.00	1124.00	54.00	0.00
9.00	1143.00	19.00	0.00
12.00	1153.00	10.00	0.00
15.00	1159.00	6.00	0.00
18.00	1163.00	4.00	0.00
21.00	1166.00	3.00	0.00
24.00	1168.00	2.00	0.00
27.00	1169.00	1.00	0.00
30.00	1170.00	1.00	0.00

FINAL FLOW

<u>Time</u> <u>(min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	225.00	225.00
5.00	235.00	10.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL FLOW (CONTINUED)

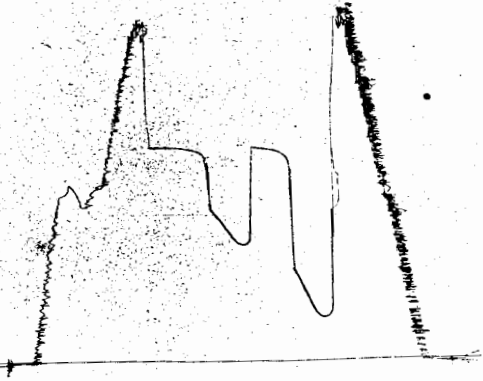
<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
10.00	243.00	8.00
15.00	268.00	25.00
20.00	289.00	21.00
25.00	312.00	23.00
30.00	337.00	25.00

FINAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	1061.00	1061.00	0.00
6.00	1122.00	61.00	0.00
9.00	1143.00	21.00	0.00
12.00	1151.00	8.00	0.00
15.00	1157.00	6.00	0.00
18.00	1161.00	4.00	0.00
21.00	1163.00	2.00	0.00
24.00	1165.00	2.00	0.00
27.00	1166.00	1.00	0.00
30.00	1167.00	1.00	0.00
33.00	1168.00	1.00	0.00
36.00	1169.00	1.00	0.00
39.00	1170.00	1.00	0.00
42.00	1171.00	1.00	0.00
45.00	1172.00	1.00	0.00

JK+ 18927

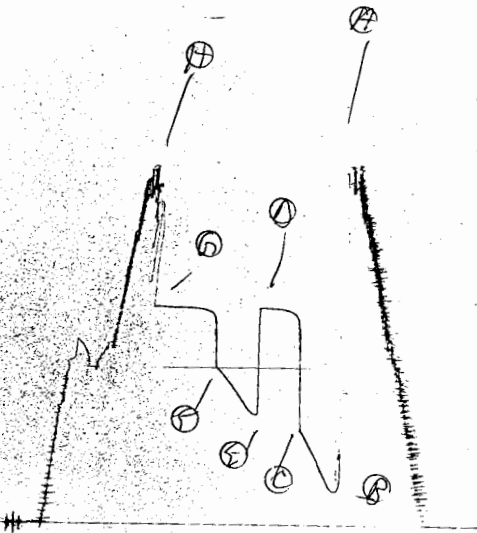
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OST#5  
13550

JK+ 18927

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OST#5  
10270



WESTERN TESTING CO., INC.

FORMATION TESTING

TICKET

No 18927

P. O. BOX 1599 PHONE (316) 262-5861 WICHITA, KANSAS 67201

Elevation 1942 KB Formation Arbuckle Eff. Pay - Ft.

District GT. Bend Date 6-5-93 Customer Order No. -

COMPANY NAME Allen Drlg Company

ADDRESS 6565 S. DAYTON-Suite 3800 Englewood, Colorado 80111

LEASE AND WELL NO. Hendricks #1-23 COUNTY Barton STATE KS Sec 23 Twp 20 Rge 15

Mail Invoice To Same Co. Name Hendricks Address No. Copies Requested Reg

Mail Charts To SAME #1-23 Hendricks Address No. Copies Requested Reg

Formation Test No. 5 Interval Tested From 3659 ft. to 3665 ft. Total Depth 3665 ft.

Packer Depth 3654 ft. Size 6 3/8 in. Packer Depth - ft. Size - in.

Packer Depth 3659 ft. Size 6 3/8 in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -

Top Recorder Depth (Inside) 3644 ft. Recorder Number 10270 Cap. 4150

Bottom Recorder Depth (Outside) 3662 ft. Recorder Number 13550 Cap. 4175

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

Drilling Contractor ALLEN #193 Drill Collar Length - I. D. - in.

Mud Type Chemical Viscosity 48 Weight Pipe Length - I. D. - in.

Weight 9.4 Water Loss 10 cc. Drill Pipe Length 3634 I. D. 3.8 in.

Chlorides 9000 P.P.M. Test Tool Length 25 ft. Tool Size 5 1/2 in.

Jars: Make - Serial Number - Anchor Length 6 ft. Size 5 1/2 in.

Did Well Flow? GAS Reversed Out YES Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 X 11 in.

Blow: TF - STRONG BLOW GAS TO SURFACE IN 28 MIN, TO WEAK TO GAUGE

FF - GAS TO SURFACE TO WEAK TO GAUGE

Recovered 155 ft. of OIL + GAS CW muddy WATER 4% OIL 8% GAS 25% mud 63% WATER

Recovered 1830 ft. of WATER

Recovered - ft. of -

Recovered - ft. of -

Recovered - ft. of -

Chlorides 26000 P.P.M. Sample Jars used 4 Remarks: -

JUN 08 1993

Time On Location 3:45 A.M. Time Pick Up Tool 4:15 A.M. Time Off Location - A.M.

Time Set Packer(s) 5:35 A.M. Time Started Off Bottom 7:50 A.M. Maximum Temperature 120 P.M.

Initial Hydrostatic Pressure (A) 1848 P.S.I.

Initial Flow Period Minutes 30 (B) 187 P.S.I. to (C) 499 P.S.I.

Initial Closed In Period Minutes 30 (D) 1174 P.S.I.

Final Flow Period Minutes 30 (E) 593 P.S.I. to (F) 842 P.S.I.

Final Closed In Period Minutes 45 (G) 1174 P.S.I.

Final Hydrostatic Pressure (H) 1848 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained directly or indirectly through the use of its equipment, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By: Signature of Customer or his authorized representative

Western Representative: Ray Schwager Thank you

FIELD INVOICE

- Open Hole Test \$
Misrun \$
Straddle Test \$
Jars \$
Selective Zone \$
Safety Joint \$
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. \$
Mileage \$
Fluid Sampler \$
Extra Charts \$
Insurance \$
Telecopier \$
TOTAL \$

**WESTERN TESTING CO., INC.**  
**Pressure Data**

Date 6-5-93

Test Ticket No. 18927

Recorder No. \_\_\_\_\_ Capacity \_\_\_\_\_ Location \_\_\_\_\_ Ft.

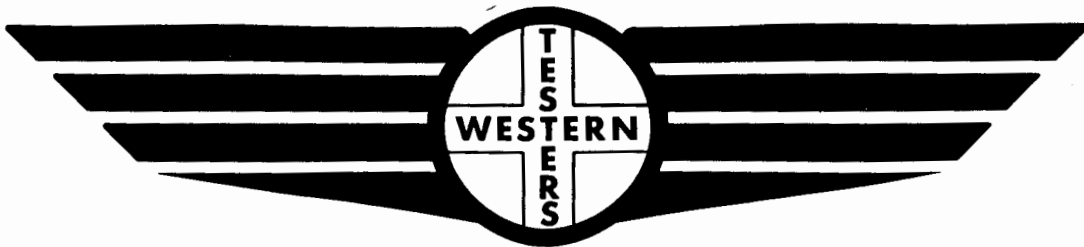
Clock No. \_\_\_\_\_ Elevation \_\_\_\_\_ Well Temperature \_\_\_\_\_ °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud <u>1859</u>	P.S.I.	Open Tool		M
B First Initial Flow Pressure _____	P.S.I.	First Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure _____	P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins.	<u>30</u> Mins.
D Initial Closed-in Pressure _____	P.S.I.	Second Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
E Second Initial Flow Pressure _____	P.S.I.	Final Closed-in Pressure	<u>45</u> Mins.	<u>45</u> Mins.
F Second Final Flow Pressure _____	P.S.I.			
G Final Closed-in Pressure _____	P.S.I.			
H Final Hydrostatic Mud <u>1831</u>	P.S.I.			

**PRESSURE BREAKDOWN**

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	172	0	510	0	582	0	846
P 2 5	183	3	1124	5	585	3	1145
P 3 10	223	6	1145	10	651	6	1155
P 4 15	300	9	1153	15	682	9	1161
P 5 20	375	12	1157	20	775	12	1163
P 6 25	439	15	1163	25	807	15	1166
P 7 30	510	18	1166	30	846	18	1167
P 8 35		21	1167	35		21	1168
P 9 40		24	1168	40		24	1169
P10 45		27	1169	45		27	1170
P11 50		30	1170	50		30	1171
P12 55		33		55		33	1172
P13 60		36		60		36	1173
P14 65		39		65		39	1174
P15 70		42		70		42	1175
P16 75		45		75		45	1176
P17 80		48		80		48	
P18 85		51		85		51	
P19 90		54		90		54	
P20 95		57		95		57	
100		60		100		60	

# FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone **1 - 800-688-7021**

COMPANY ALLEN DRILLING COMPANY LEASE & WELL NO. #1-23 HENDRICKS SEC. 23 TWP. 20S RGE. 15 WEST NO. 5 DATE 6/5/93

DST REPORT

GENERAL INFORMATION

DATE : 6/5/93  
CUSTOMER : ALLEN DRILLING COMPANY  
WELL : #1-23 TEST: 5  
ELEVATION: 1942 KB  
SECTION : 23  
RANGE : 15W COUNTY: BARTON  
GAUGE SN#: 10270 RANGE : 4150  
TICKET : 18927  
LEASE : HENDRICKS  
GEOLOGIST: ZOLLER  
FORMATION: ARBUCKLE  
TOWNSHIP : 20S  
STATE : KS  
CLOCK : 12

WELL INFORMATION

PERFORATION INTERVAL FROM: 3659.00 ft TO: 3665.00 ft TVD: 3665.0 ft  
DEPTH OF SELECTIVE ZONE: TEST TYPE: OIL  
DEPTH OF RECORDERS: 3644.0 ft 3662.0 ft  
TEMPERATURE: 120.0  
DRILL COLLAR LENGTH: 0.0 ft I.D.: 0.000 in  
WEIGHT PIPE LENGTH : 0.0 ft I.D.: 0.000 in  
DRILL PIPE LENGTH : 3634.0 ft I.D.: 3.800 in  
TEST TOOL LENGTH : 25.0 ft TOOL SIZE : 5.500 in  
ANCHOR LENGTH : 6.0 ft ANCHOR SIZE: 5.500 in  
SURFACE CHOKE SIZE : 0.750 in BOTTOM CHOKE SIZE: 0.750 in  
MAIN HOLE SIZE : 7.875 in TOOL JOINT SIZE : 4.5XH  
PACKER DEPTH: 3654.0 ft SIZE: 6.630 in  
PACKER DEPTH: 3659.0 ft SIZE: 6.630 in  
PACKER DEPTH: 0.0 ft SIZE: 0.000 in  
PACKER DEPTH: 0.0 ft SIZE: 0.000 in

MUD INFORMATION

DRILLING CON. : ALLEN RIG 3  
MUD TYPE : CHEMICAL VISCOSITY : 48.00 cp  
WEIGHT : 9.400 ppg WATER LOSS: 10.000 cc  
CHLORIDES : 9000 ppm  
JARS-MAKE :  
DID WELL FLOW?: YES SERIAL NUMBER:  
REVERSED OUT?: YES

COMMENTS

Comment

INITIAL FLOW PERIOD STRONG BLOW - GAS TO SURFACE  
IN 28 MINUTES - TOO WEAK TO GAUGE. FINAL FLOW  
PERIOD GAS TO SURFACE - TOO WEAK TO GAUGE.

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE	: 6/5/93	TICKET	: 18927
CUSTOMER	: ALLEN DRILLING COMPANY	LEASE	: HENDRICKS
WELL	: #1-23	TEST:	5
ELEVATION:	1942 KB	GEOLOGIST:	ZOLLER
SECTION	: 23	FORMATION:	ARBUCKLE
RANGE	: 15W	COUNTY:	BARTON
Gauge SN#:	10270	RANGE	: 4150
		STATE	: KS
		CLOCK	: 12

INITIAL FLOW

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	172.00	172.00
5.00	183.00	11.00
10.00	223.00	40.00
15.00	300.00	77.00
20.00	375.00	75.00
25.00	439.00	64.00
30.00	510.00	71.00

INITIAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	1124.00	1124.00	0.00
6.00	1145.00	21.00	0.00
9.00	1153.00	8.00	0.00
12.00	1157.00	4.00	0.00
15.00	1163.00	6.00	0.00
18.00	1166.00	3.00	0.00
21.00	1167.00	1.00	0.00
24.00	1168.00	1.00	0.00
27.00	1169.00	1.00	0.00
30.00	1170.00	1.00	0.00

FINAL FLOW

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	582.00	582.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL FLOW (CONTINUED)

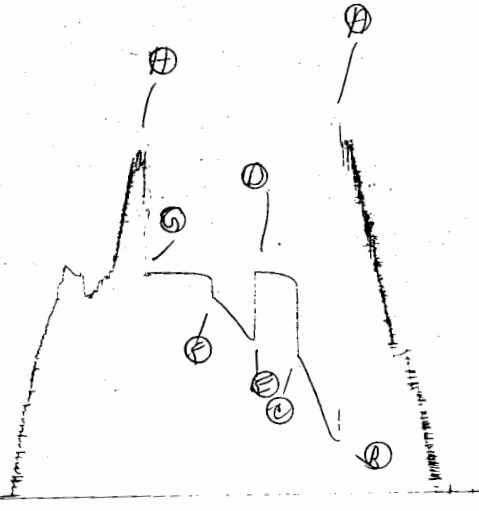
<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
5.00	585.00	3.00
10.00	651.00	66.00
15.00	682.00	31.00
20.00	775.00	93.00
25.00	807.00	32.00
30.00	846.00	39.00

FINAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	1145.00	1145.00	0.00
6.00	1155.00	10.00	0.00
9.00	1161.00	6.00	0.00
12.00	1163.00	2.00	0.00
15.00	1166.00	3.00	0.00
18.00	1167.00	1.00	0.00
21.00	1168.00	1.00	0.00
24.00	1169.00	1.00	0.00
27.00	1170.00	1.00	0.00
30.00	1171.00	1.00	0.00
33.00	1172.00	1.00	0.00
36.00	1173.00	1.00	0.00
39.00	1174.00	1.00	0.00
42.00	1175.00	1.00	0.00
45.00	1176.00	1.00	0.00

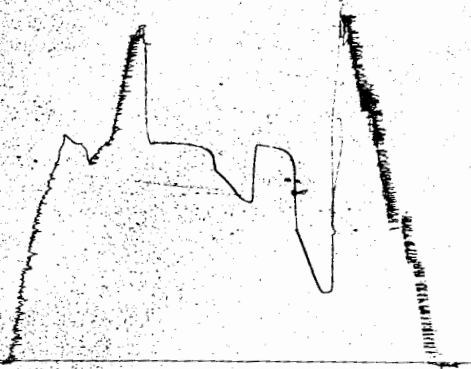
KT 18918  
I

OSTFL 6  
10270



KT 18918  
O

OSTFL 6  
13550





WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET No LAST 18928

P. O. BOX 1599 WICHITA, KANSAS 67201
PHONE (316) 262-5861

Elevation 1942 FB Formation Arbuckle Eff. Pay - Ft.

District GT Bend Date 6-5-93 Customer Order No.

COMPANY NAME Allen Orlg Company
ADDRESS 6565 S. DAYTON - SUITE 3800 Englewood Colorado 80111
LEASE AND WELL NO. Hendricks #1-23 COUNTY Barton STATE KS Sec. 23 Twp. 20 Rge. 15W
Mail Invoice To Same Co. Name No. Copies Requested Reg
Mail Charts To Same #1-23 Hendricks Address No. Copies Requested Reg

Formation Test No. 6 Interval Tested From 3666 ft. to 3672 ft. Total Depth 3672 ft.
Packer Depth 3661 ft. Size 6 3/8 in. Packer Depth - ft. Size - in.
Packer Depth 3666 ft. Size 6 3/8 in. Packer Depth - ft. Size - in.
Depth of Selective Zone Set -

Top Recorder Depth (Inside) 3651 ft. Recorder Number 10270 Cap. 4150
Bottom Recorder Depth (Outside) 3669 ft. Recorder Number 13550 Cap. 4175
Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Allen rig 3 Drill Collar Length - I. D. - in.
Mud Type Chemical Viscosity 43 Weight Pipe Length - I. D. - in.
Weight 9.1 Water Loss 11.8 cc. Drill Pipe Length 3641 I. D. 3.8 in.
Chlorides 9500 P.P.M. Test Tool Length 25 ft. Tool Size 5 1/2 in.
Jars: Make - Serial Number - Anchor Length 6 ft. Size 5 1/2 in.
Did Well Flow? gas Reversed Out yes Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 XH in.

Blow: IF - STRONG BLOW TO WEAK TO GAUGE GAS SURFACED IN 30 MIN
FF - GAS TO SURFACE TO WEAK TO GAUGE
Recovered 60 ft. of HEAVY OIL & GAS cut mud 35% oil 15% GAS 2% WATER 48% mud
Recovered 120 ft. of Muddy GASSY WATER cut oil 31% oil 35% GAS 22% WATER 12% mud
Recovered 120 ft. of Oil & GAS cut muddy WATER 12% oil 20% GAS 7% mud 61% WATER
Recovered 2040 ft. of WATER
Recovered - ft. of
Chlorides 26000 P.P.M. Sample Jars used 6 Remarks:

JUN 08 1993

Time On Location 1:45 A.M. Time Pick Up Tool 2:15 A.M. Time Off Location 8:40 A.M.
Time Set Packer(s) 3:40 A.M. Time Started Off Bottom 5:55 A.M. Maximum Temperature 119
Initial Hydrostatic Pressure (A) 1848 P.S.I.
Initial Flow Period Minutes 30 (B) 281 P.S.I. to (C) 738 P.S.I.
Initial Closed In Period Minutes 30 (D) 1205 P.S.I.
Final Flow Period Minutes 30 (E) 831 P.S.I. to (F) 1070 P.S.I.
Final Closed In Period Minutes 45 (G) 1205 P.S.I.
Final Hydrostatic Pressure (H) 1807 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained directly or indirectly through the use of its equipment, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made. All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By [Signature]
Signature of customer or his authorized representative
Western Representative Ray Schwager Thank you

FIELD INVOICE

Open Hole Test [checked]
Misrun \$
Straddle Test \$
Jars \$
Selective Zone \$
Safety Joint \$
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. [checked]
Mileage \$
Fluid Sampler \$
Extra Charts \$
Insurance \$
Telecopier \$
TOTAL [checked]

**WESTERN TESTING CO., INC.**  
**Pressure Data**

Date 6-5-93

Test Ticket No. 18928

Recorder No. \_\_\_\_\_ Capacity \_\_\_\_\_ Location \_\_\_\_\_ Ft. \_\_\_\_\_

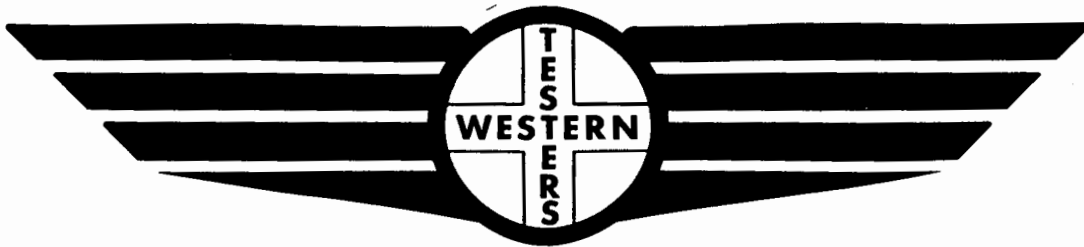
Clock No. \_\_\_\_\_ Elevation \_\_\_\_\_ Well Temperature \_\_\_\_\_ °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1848</u> P.S.I.	Open Tool		M
B First Initial Flow Pressure	P.S.I.	First Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins.	<u>30</u> Mins.
D Initial Closed-in Pressure	P.S.I.	Second Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
E Second Initial Flow Pressure	P.S.I.	Final Closed-in Pressure	<u>45</u> Mins.	<u>45</u> Mins.
F Second Final Flow Pressure	P.S.I.			
G Final Closed-in Pressure	P.S.I.			
H Final Hydrostatic Mud	<u>1823</u> P.S.I.			

**PRESSURE BREAKDOWN**

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	<u>264</u>	0	<u>738</u>	0	<u>834</u>	0	<u>1066</u>
P 2 5	<u>295</u>	3	<u>1157</u>	5	<u>857</u>	3	<u>1180</u>
P 3 10	<u>370</u>	6	<u>1170</u>	10	<u>910</u>	6	<u>1188</u>
P 4 15	<u>483</u>	9	<u>1180</u>	15	<u>956</u>	9	<u>1195</u>
P 5 20	<u>572</u>	12	<u>1185</u>	20	<u>998</u>	12	<u>1198</u>
P 6 25	<u>665</u>	15	<u>1188</u>	25	<u>1037</u>	15	<u>1199</u>
P 7 30	<u>738</u>	18	<u>1190</u>	30	<u>1066</u>	18	<u>1200</u>
P 8 35		21	<u>1193</u>	35		21	<u>1200</u>
P 9 40		24	<u>1196</u>	40		24	<u>1200</u>
P10 45		27	<u>1199</u>	45		27	<u>1201</u>
P11 50		30	<u>1201</u>	50		30	<u>1202</u>
P12 55		33		55		33	<u>1202</u>
P13 60		36		60		36	<u>1203</u>
P14 65		39		65		39	<u>1204</u>
P15 70		42		70		42	<u>1204</u>
P16 75		45		75		45	<u>1205</u>
P17 80		48		80		48	
P18 85		51		85		51	
P19 90		54		90		54	
P20 95		57		95		57	
100		60		100		60	

# FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone **1 - 800-688-7021**

COMPANY ALLEN DRILLING COMPANY

LEASE & WELL NO. #1-23 HENDRICKS

SEC. 23 TWP. 20S RGE. 15W TEST NO. 6

DATE 6/5/93

DST REPORT

GENERAL INFORMATION

DATE : 6/5/93	TICKET : 18928
CUSTOMER : ALLEN DRILLING COMPANY	LEASE : HENDRICKS
WELL : #1-23                      TEST: 6	GEOLOGIST: ZOLLER
ELEVATION: 1942 KB	FORMATION: ARBUCKLE
SECTION : 23	TOWNSHIP : 20S
RANGE : 15W                      COUNTY: BARTON	STATE : KS
GAUGE SN#: 10270                      RANGE : 4150	CLOCK : 12

WELL INFORMATION

PERFORATION INTERVAL FROM: 3666.00 ft	TO: 3672.00 ft	TVD: 3672.0 ft
DEPTH OF SELECTIVE ZONE:		TEST TYPE: OIL
DEPTH OF RECORDERS: 3651.0 ft	3669.0 ft	
TEMPERATURE: 119.0		

DRILL COLLAR LENGTH: 0.0 ft	I.D.:	0.000 in
WEIGHT PIPE LENGTH : 0.0 ft	I.D.:	0.000 in
DRILL PIPE LENGTH : 3641.0 ft	I.D.:	3.800 in
TEST TOOL LENGTH : 25.0 ft	TOOL SIZE :	5.500 in
ANCHOR LENGTH : 6.0 ft	ANCHOR SIZE:	5.500 in
SURFACE CHOKE SIZE : 0.750 in	BOTTOM CHOKE SIZE:	0.750 in
MAIN HOLE SIZE : 7.875 in	TOOL JOINT SIZE :	4.5XH
PACKER DEPTH: 3661.0 ft	SIZE:	6.630 in
PACKER DEPTH: 3666.0 ft	SIZE:	6.630 in
PACKER DEPTH: 0.0 ft	SIZE:	0.000 in
PACKER DEPTH: 0.0 ft	SIZE:	0.000 in

MUD INFORMATION

DRILLING CON. : ALLEN RIG 3	
MUD TYPE : CHEMICAL	VISCOSITY : 43.00 cp
WEIGHT : 9.100 ppg	WATER LOSS: 11.800 cc
CHLORIDES : 9500 ppm	
JARS-MAKE :	SERIAL NUMBER:
DID WELL FLOW?: YES	REVERSED OUT?: YES

COMMENTS

Comment

INITIAL FLOW PERIOD STRONG BLOW - GAS TO SURFACE  
 IN 30 MINUTES - TOO WEAK TO GAUGE. FINAL FLOW  
 PERIOD GAS TO SURFACE - TOO WEAK TO GAUGE.

DST REPORT (CONTINUED)

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
60.0	35.0	15.0	2.0	48.0	HVY OIL & GAS CUT MUD
120.0	31.0	35.0	22.0	12.0	MUDDY GASSY WATER CUT OIL
120.0	12.0	20.0	61.0	7.0	OIL & GAS CUT MUDDY WATER
2040.0	0.0	0.0	100.0	0.0	WATER
0.0	0.0	0.0	0.0	0.0	CHLORIDES 26000 PPM

RATE INFORMATION

OIL VOLUME:	1.0183 STB	TOTAL FLOW TIME:	60.0000 min.
GAS VOLUME:	5.9068 SCF	AVERAGE OIL RATE:	36.9106 STB/D
MUD VOLUME:	0.7238 STB	AVERAGE WATER RATE:	725.5620 STB/D
WATER VOLUME:	30.0276 STB		
TOTAL FLUID :	31.7697 STB		

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1848.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	281.00	738.00
INITIAL SHUT-IN	30.00		1205.00
FINAL FLOW	30.00	831.00	1070.00
FINAL SHUT-IN	45.00		1205.00

FINAL HYDROSTATIC PRESSURE: 1807.00

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1848.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	264.00	738.00
INITIAL SHUT-IN	30.00		1201.00
FINAL FLOW	30.00	834.00	1066.00
FINAL SHUT-IN	45.00		1205.00

FINAL HYDROSTATIC PRESSURE: 1823.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE : 6/5/93	TICKET : 18928
CUSTOMER : ALLEN DRILLING COMPANY	LEASE : HENDRICKS
WELL : #1-23 TEST: 6	GEOLOGIST: ZOLLER
ELEVATION: 1942 KB	FORMATION: ARBUCKLE
SECTION : 23	TOWNSHIP : 20S
RANGE : 15W COUNTY: BARTON	STATE : KS
GAUGE SN#: 10270 RANGE : 4150	CLOCK : 12

INITIAL FLOW

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	264.00	264.00
5.00	295.00	31.00
10.00	370.00	75.00
15.00	483.00	113.00
20.00	572.00	89.00
25.00	665.00	93.00
30.00	738.00	73.00

INITIAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	1157.00	1157.00	0.00
6.00	1170.00	13.00	0.00
9.00	1180.00	10.00	0.00
12.00	1185.00	5.00	0.00
15.00	1188.00	3.00	0.00
18.00	1190.00	2.00	0.00
21.00	1193.00	3.00	0.00
24.00	1196.00	3.00	0.00
27.00	1199.00	3.00	0.00
30.00	1201.00	2.00	0.00

FINAL FLOW

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	834.00	834.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL FLOW (CONTINUED)

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
5.00	857.00	23.00
10.00	910.00	53.00
15.00	956.00	46.00
20.00	998.00	42.00
25.00	1037.00	39.00
30.00	1066.00	29.00

FINAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	1180.00	1180.00	0.00
6.00	1188.00	8.00	0.00
9.00	1195.00	7.00	0.00
12.00	1198.00	3.00	0.00
15.00	1199.00	1.00	0.00
18.00	1200.00	1.00	0.00
21.00	1200.00	0.00	0.00
24.00	1201.00	1.00	0.00
27.00	1201.00	0.00	0.00
30.00	1202.00	1.00	0.00
33.00	1202.00	0.00	0.00
36.00	1203.00	1.00	0.00
39.00	1204.00	1.00	0.00
42.00	1204.00	0.00	0.00
45.00	1205.00	1.00	0.00