



WESTERN TESTING CO., INC.

FORMATION TESTING

TICKET No 19927

P. O. BOX 1599 PHONE (316) 262-5861

WICHITA, KANSAS 67201

Elevation 2898

Formation

Eff. Pay Ft.

District

Husston

Date

10-5-93

Customer Order No.

COMPANY NAME

Hartman Oil Co. INC.

ADDRESS

P.O. Box 54 Wichita KS 67201

LEASE AND WELL NO

Ward #3

COUNTY

Finney

STATE

KS

Sec

16

Twp

22

Rge

33W

Mail Invoice To

Hartman Oil Co

Co. Name

"

Address

same #3 WARD

No. Copies Requested

10

Mail Charts To

"

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Address

No. Copies Requested

10

Formation Test No

1

Interval Tested From

4332

ft. to

4385

ft. Total Depth

4385

ft.

Packer Depth

4327

ft. Size

6 5/8

in.

Packer Depth

-

ft. Size

-

in.

Packer Depth

4332

ft. Size

6 5/8

in.

Packer Depth

-

ft. Size

-

in.

Depth of Selective Zone Set

Top Recorder Depth (Inside)

4339

ft.

Recorder Number

10242

Cap.

4100

Bottom Recorder Depth (Outside)

4342

ft.

Leach

Recorder Number

13266

Cap.

4000

Below Straddle Recorder Depth

-

ft.

Recorder Number

-

Cap.

-

Drilling Contractor

Blue Goose Drilling #1

Drill Collar Length

374

I. D.

2 1/4

in.

Mud Type

Chem.

Viscosity

48

Weight Pipe Length

-

I. D.

-

in.

Weight

9.2

Water Loss

8.3

cc.

Drill Pipe Length

3961

I. D.

3.8

in.

Chlorides

2200

P.P.M.

Test Tool Length

28

ft. Tool Size

5 1/2

in.

Jars: Make

WTC

Serial Number

415

Anchor Length

(31+22) 53

Size

4 1/2 + 5 1/2

in.

Did Well Flow?

NO

Reversed Out

NO

Surface Choke Size

3/4

in.

Bottom Choke Size

7/8

in.

Main Hole Size

2 1/8

in.

Tool Joint Size

1 1/2

in.

Blow:

Fair - B.O. B in 3 min F.F.

5 Strong

Recovered 15 ft. of 5 1/2" oil gas cut mud 4% gas 6% oil 90% mud
Recovered 186 ft. of 4 1/2" mud gas WTR cut oil 25% gas 10% mud 10% WTR 55% oil
Recovered 868 ft. of 5 1/2" mud gas WTR cut oil 4% gas 6% mud 25% WTR 65% oil
Recovered 248 ft. of 5 1/2" oil gas mud cut WTR 5% gas 4% oil 16% mud 75% WTR
Recovered 5500 P.P.M. Sample Jars used Remarks: Total F/Rec. 1317'

32 Gravity at 70°

Time On Location

11:00

A.M.

Time Pick Up Tool

12:30

P.M.

Time Off Location

A.M.

Time Set Packer(s)

2:27

P.M.

Time Started Off Bottom

A.M.

Maximum Temperature

112° F.

Initial Hydrostatic Pressure

(A) 2213

P.S.I.

Initial Flow Period

Minutes 15

(B) 154

P.S.I. to (C) 284

P.S.I.

Initial Closed In Period

Minutes 30

(D) 1097

P.S.I.

Final Flow Period

Minutes 30

(E) 376

P.S.I. to (F) 537

P.S.I.

Final Closed In Period

Minutes 60

(G) 1121

P.S.I.

Final Hydrostatic Pressure

(H) 2210

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

Gary F. Gursel

Signature of Customer or his authorized representative

Western Representative

John Gels

Read #1266

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 \$ ☐

Pressure Data

Test Ticket No. 11121

Clock No. _____ Elevation _____ Well Temperature _____ °F

Point	Pressure	Time Given	Time Computed
A Initial Hydrostatic Mud	2164 P.S.I.		
B First Initial Flow Pressure	121 P.S.I.	15 Mins.	15 Mins.
C First Final Flow Pressure	295 P.S.I.	30 Mins.	30 Mins.
D Initial Closed-in Pressure	1108 P.S.I.	30 Mins.	30 Mins.
E Second Initial Flow Pressure	380 P.S.I.	60 Mins.	63 Mins.
F Second Final Flow Pressure	540 P.S.I.		
G Final Closed-in Pressure	1136 P.S.I.		
H Final Hydrostatic Mud	2159 P.S.I.		

Open Tool

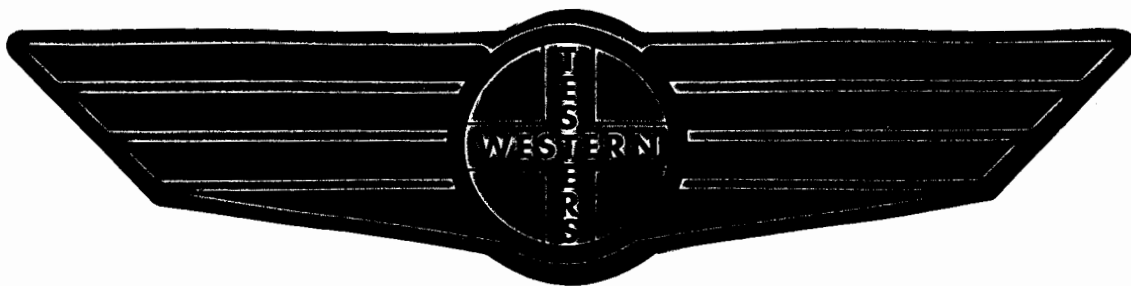
Lead outside order

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	168	0	295	0	380	0	520				
P 2 5	203	3	126	5	386	3	854				
P 3 10	250	6	916	10	407	6	914				
P 4 15	295	9	968	15	447	9	946				
P 5 20		12	998	20	482	12	970				
P 6 25		15	1022	25	514	15	989				
P 7 30		18	1040	30	540	18	1008				
P 8 35		21	1062	35		21	1024				
P 9 40		24	1080	40		24	1040				
P 10 45		27	1091	45		27	1054				
P 11 50		30	1108	50		30	1064				
P 12 55		33		55		33	1076				
P 13 60		36		60		36	1085				
P 14 65		39		65		39	1095				
P 15 70		42		70		42	1102				
P 16 75		45		75		45	1108				
P 17 80		48		80		48	1112				
P 18 85		51		85		51	1118				
P 19 90		54		90		54	1123				
P 20 95		57		95		57	1130				
100		60		100		60	1133				

103-1136

FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 80 - 688 - 7021

COMPANY HARTMAN OIL COMPANY, INC. LEASE & WELL NO. #3 WARD SEC. 16 TWP. 22S RGE. 33W TEST NO. 1 DATE 10/5/93

DST REPORT

GENERAL INFORMATION

DATE : 10/5/93
CUSTOMER : HARTMAN OIL COMPANY, INC.
WELL : #3 TEST: 1
ELEVATION: 2898 KB
SECTION : 16
RANGE : 33W COUNTY: FINNEY
GAUGE SN#: 13266 RANGE : 4000

TICKET : 19927
LEASE : WARD
GEOLOGIST: GENSCH
FORMATION:
TOWNSHIP : 22S
STATE : KS
CLOCK : 12

WELL INFORMATION

PERFORATION INTERVAL FROM: 4332.00 ft TO: 4385.00 ft TVD: 4385.0 ft
DEPTH OF SELECTIVE ZONE: TEST TYPE: OIL
DEPTH OF RECORDERS: 4339.0 ft 4342.0 ft
TEMPERATURE: 112.0

DRILL COLLAR LENGTH:	374.0 ft	I.D.:	2.250 in
WEIGHT PIPE LENGTH :	0.0 ft	I.D.:	0.000 in
DRILL PIPE LENGTH :	3930.0 ft	I.D.:	3.800 in
TEST TOOL LENGTH :	28.0 ft	TOOL SIZE :	5.500 in
ANCHOR LENGTH :	53.0 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:	4327.0 ft	SIZE:	6.630 in
PACKER DEPTH:	4332.0 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. : BLUE GOOSE DRLG #1
MUD TYPE : CHEMICAL
WEIGHT : 9.200 ppg
CHLORIDES : 2200 ppm
JARS-MAKE : WTC
DID WELL FLOW?: NO

VISCOSITY : 48.00 cp
WATER LOSS: 8.300 cc

SERIAL NUMBER: 415
REVERSED OUT?: NO

COMMENTS

Comment

INITIAL FLOW PERIOD FAIR BLOW - BOTTOM OF BUCKET
IN 3 MINUTES. FINAL FLOW PERIOD STRONG BLOW -
BOTTOM OF BUCKET IN 3 MINUTES.

DST REPORT (CONTINUED)

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
15.0	6.0	4.0	0.0	90.0	SL OIL GAS CUT MUD
186.0	55.0	25.0	10.0	10.0	HEAVY MUD-GAS-WTR CUT OIL
868.0	65.0	4.0	25.0	6.0	SL MUD-GAS-WTR CUT OIL
248.0	4.0	5.0	75.0	16.0	SL OIL-GAS-MUD CUT WATER
0.0	0.0	0.0	0.0	0.0	32 GRAVITY @ 70 DEGREES
0.0	0.0	0.0	0.0	0.0	CHLORIDES 5500 PPM

RATE INFORMATION

OIL VOLUME:	8.6640	STB		
GAS VOLUME:	6.5286	SCF		
MUD VOLUME:	1.3070	STB		
WATER VOLUME:	3.9323	STB		
TOTAL FLUID :	13.9033	STB		
			TOTAL FLOW TIME:	45.0000 min.
			AVERAGE OIL RATE:	305.9772 STB/D
			AVERAGE WATER RATE:	138.9280 STB/D

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2213.00

Description	Duration	p1	p End
INITIAL FLOW	15.00	154.00	284.00
INITIAL SHUT-IN	30.00		1097.00
FINAL FLOW	30.00	376.00	537.00
FINAL SHUT-IN	60.00		1121.00

FINAL HYDROSTATIC PRESSURE: 2210.00

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2164.00

Description	Duration	p1	p End
INITIAL FLOW	15.00	168.00	295.00
INITIAL SHUT-IN	30.00		1108.00
FINAL FLOW	30.00	380.00	540.00
FINAL SHUT-IN	63.00		1136.00

FINAL HYDROSTATIC PRESSURE: 2159.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE	: 10/5/93	TICKET	: 19927
CUSTOMER	: HARTMAN OIL COMPANY, INC.	LEASE	: WARD
WELL	: #3	TEST:	1
ELEVATION:	2898 KB	GEOLOGIST:	GENSCH
SECTION	: 16	FORMATION:	
RANGE	: 33W	TOWNSHIP	: 22S
GAUGE SN#:	13266	STATE	: KS
		CLOCK	: 12
	COUNTY: FINNEY		
	RANGE : 4000		

INITIAL FLOW

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	168.00	168.00
5.00	203.00	35.00
10.00	250.00	47.00
15.00	295.00	45.00

INITIAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	726.00	726.00	0.00
6.00	916.00	190.00	0.00
9.00	968.00	52.00	0.00
12.00	998.00	30.00	0.00
15.00	1022.00	24.00	0.00
18.00	1040.00	18.00	0.00
21.00	1062.00	22.00	0.00
24.00	1080.00	18.00	0.00
27.00	1091.00	11.00	0.00
30.00	1108.00	17.00	0.00

FINAL FLOW

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	380.00	380.00
5.00	386.00	6.00
10.00	407.00	21.00
15.00	447.00	40.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL FLOW (CONTINUED)

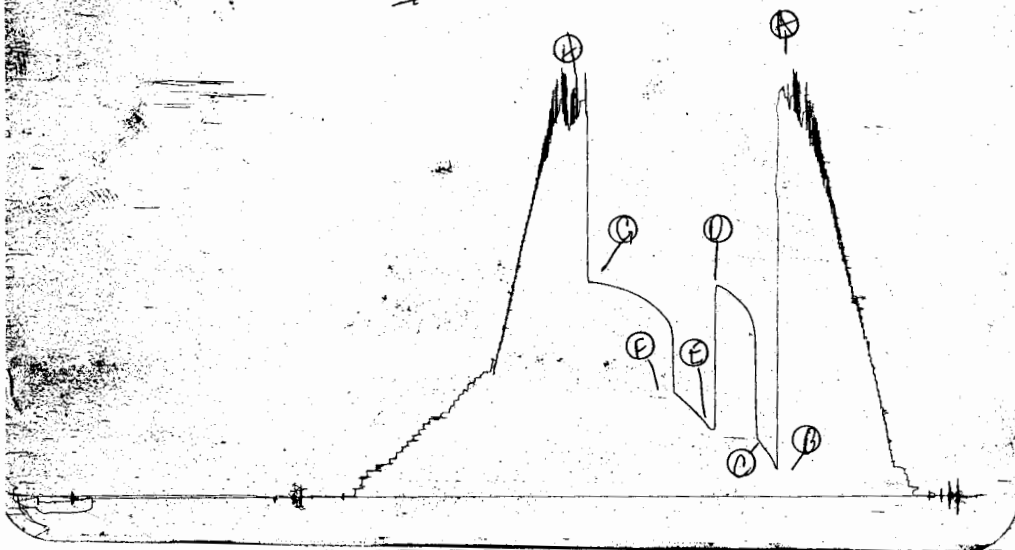
<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
20.00	482.00	35.00
25.00	514.00	32.00
30.00	540.00	26.00

FINAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	854.00	854.00	0.00
6.00	914.00	60.00	0.00
9.00	946.00	32.00	0.00
12.00	970.00	24.00	0.00
15.00	989.00	19.00	0.00
18.00	1008.00	19.00	0.00
21.00	1024.00	16.00	0.00
24.00	1040.00	16.00	0.00
27.00	1054.00	14.00	0.00
30.00	1064.00	10.00	0.00
33.00	1076.00	12.00	0.00
36.00	1085.00	9.00	0.00
39.00	1095.00	10.00	0.00
42.00	1102.00	7.00	0.00
45.00	1108.00	6.00	0.00
48.00	1112.00	4.00	0.00
51.00	1118.00	6.00	0.00
54.00	1123.00	5.00	0.00
57.00	1130.00	7.00	0.00
60.00	1133.00	3.00	0.00
63.00	1136.00	3.00	0.00

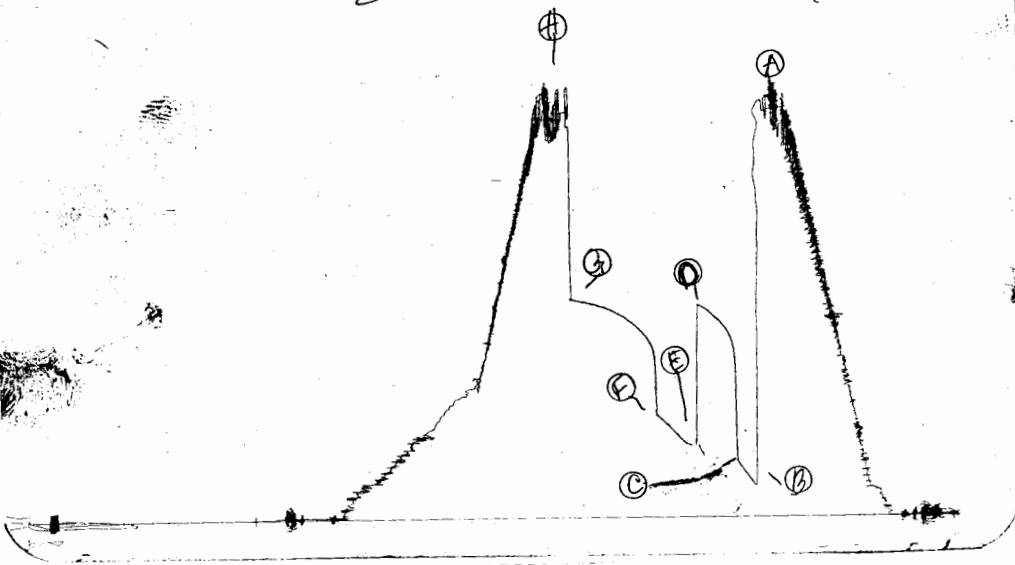
DST#1
10242

TK# 19927
I.



DST#1
13266
★

TK# 19927
D.





WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET N° 19928

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

Elevation 2898 Formation _____ Eff. Pay _____ Ft.

District Huson Date 10-6-93 Customer Order No. _____
COMPANY NAME Hartman Oil Co. INC.
ADDRESS P.O. Box 54 Wichita KS 67201
LEASE AND WELL NO WARD #3 COUNTY Finney STATE KS Sec. 16 Twp. 22 Rge. 33W
Mail Invoice To SAME Address SAME No. Copies Requested 205
Co. Name ' Address ' No. Copies Requested 205
Mail Charts To _____ Address _____ No. Copies Requested _____

Formation Test No. 2 Interval Tested From 4393 ft. to 4422 ft. Total Depth 4422 ft.
Packer Depth 4388 ft. Size 6 5/8 in. Packer Depth _____ ft. Size _____ in.
Packer Depth 4393 ft. Size 6 5/8 in. Packer Depth _____ ft. Size _____ in.
Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 4413 ft. Recorder Number 10242 Cap. 4100
Bottom Recorder Depth (Outside) 4416 ft. Recorder Number 13266 Cap. 4000
Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____

Drilling Contractor Blue Goose #1 Drill Collar Length 244 I. D. 2 1/4 in.
Mud Type Chem Viscosity 56 Weight Pipe Length _____ I. D. _____ in.
Weight 9.2 Water Loss 8.3 cc. Drill Pipe Length 4021 I. D. 3.8 in.
Chlorides \$600 P.P.M. Test Tool Length 28 ft. Tool Size 5 1/2 in.
Jars: Make WTC Serial Number 415 Anchor Length 29 ft. Size 5 1/2 in.
Did Well Flow? NO Reversed Out NO Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.
Main Hole Size 7 1/8 in. Tool Joint Size 4 1/2 x 1 1/2 in.

Blow: WEAK - slowly built to 1/4" in bucket F.F. - Dried AFTER 10 min IF
NO Blow - Flush tool - NO Blow F.F.

Recovered 10 ft. of mud
Recovered _____ ft. of _____
Recovered _____ ft. of _____
Recovered _____ ft. of _____
Recovered _____ ft. of _____
Chlorides _____ P.P.M. Sample Jars used _____ Remarks: Total SL Rec 10'

Time On Location 7:00 A.M. Time Pick Up Tool 7:30 A.M. Time Off Location _____ A.M.
Time Set Packer(s) 9:40 A.M. Time Started Off Bottom 11:30 A.M. Maximum Temperature 114°F
Initial Hydrostatic Pressure _____ (A) 2159 P.S.I.
Initial Flow Period _____ Minutes 15 (B) 44 P.S.I. to (C) 48 P.S.I.
Initial Closed In Period _____ Minutes 30 (D) 343 P.S.I.
Final Flow Period _____ Minutes 20 (E) 50 P.S.I. to (F) 60 P.S.I.
Final Closed In Period _____ Minutes 45 (G) 497 P.S.I.
Final Hydrostatic Pressure _____ (H) 2157 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 Gary F. Kensch
Signature of Customer or his authorized representative

Western Representative Vicki Bels

FIELD INVOICE

Open Hole Test ☒ \$ ☒
Mistrun \$ _____
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 _____ Test Ticket No. 19928
Recorder No. 13266 Capacity _____ Location _____ Ft.
Clock No. _____ Elevation _____ Well Temperature _____ °F

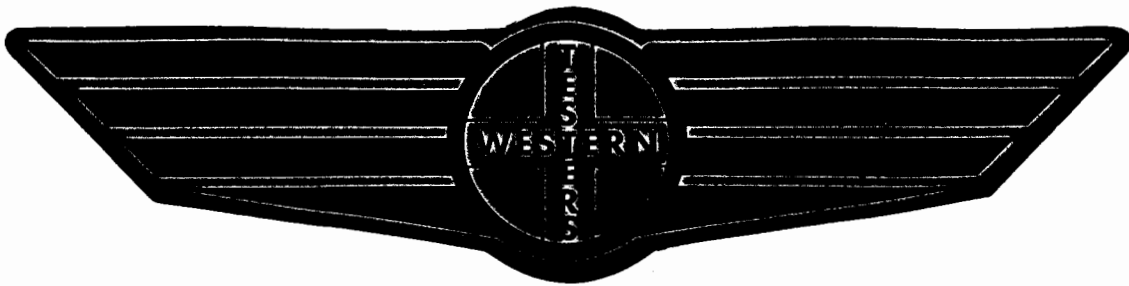
Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2165</u>	P.S.I.	Open Tool	M
B First Initial Flow Pressure	<u>71</u>	P.S.I.	First Flow Pressure	<u>15</u> Mins. <u>15</u> Mins.
C First Final Flow Pressure	<u>49</u>	P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins. <u>30</u> Mins.
D Initial Closed-in Pressure	<u>356</u>	P.S.I.	Second Flow Pressure	<u>20</u> Mins. <u>20</u> Mins.
E Second Initial Flow Pressure	<u>75</u>	P.S.I.	Final Closed-in Pressure	<u>45</u> Mins. <u>45</u> Mins.
F Second Final Flow Pressure	<u>41</u>	P.S.I.		
G Final Closed-in Pressure	<u>508</u>	P.S.I.		
H Final Hydrostatic Mud	<u>2114</u>	P.S.I.		

*Lead outside
recorder
#13266*

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>71</u>	<u>0</u>	<u>49</u>	<u>0</u>	<u>75</u>	<u>0</u>	<u>71</u>
P 2 <u>5</u>	<u>57</u>	<u>3</u>	<u>50</u>	<u>5</u>	<u>51</u>	<u>3</u>	<u>63</u>
P 3 <u>10</u>	<u>49</u>	<u>6</u>	<u>52</u>	<u>10</u>	<u>43</u>	<u>6</u>	<u>69</u>
P 4 <u>15</u>	<u>49</u>	<u>9</u>	<u>59</u>	<u>15</u>	<u>41</u>	<u>9</u>	<u>85</u>
P 5 <u>20</u>		<u>12</u>	<u>79</u>	<u>20</u>	<u>71</u>	<u>12</u>	<u>130</u>
P 6 <u>25</u>		<u>15</u>	<u>126</u>	<u>25</u>		<u>15</u>	<u>187</u>
P 7 <u>30</u>		<u>18</u>	<u>193</u>	<u>30</u>		<u>18</u>	<u>234</u>
P 8 <u>35</u>		<u>21</u>	<u>258</u>	<u>35</u>		<u>21</u>	<u>287</u>
P 9 <u>40</u>		<u>24</u>	<u>315</u>	<u>40</u>		<u>24</u>	<u>331</u>
P10 <u>45</u>		<u>27</u>	<u>350</u>	<u>45</u>		<u>27</u>	<u>368</u>
P11 <u>50</u>		<u>30</u>	<u>356</u>	<u>50</u>		<u>30</u>	<u>400</u>
P12 <u>55</u>		<u>33</u>		<u>55</u>		<u>33</u>	<u>419</u>
P13 <u>60</u>		<u>36</u>		<u>60</u>		<u>36</u>	<u>445</u>
P14 <u>65</u>		<u>39</u>		<u>65</u>		<u>39</u>	<u>474</u>
P15 <u>70</u>		<u>42</u>		<u>70</u>		<u>42</u>	<u>494</u>
P16 <u>75</u>		<u>45</u>		<u>75</u>		<u>45</u>	<u>508</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>	
100		60		100		60	

FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 80 - 688 - 7021

COMPANY HARTMAN OIL COMPANY, INC. LEASE & WELL NO. #3 WARD SEC. 16 TWP. 22S RGE. 33W TEST NO. 2 DATE 10/6/93

DST REPORT

GENERAL INFORMATION

DATE	: 10/6/93	TICKET	: 19928
CUSTOMER	: HARTMAN OIL COMPANY, INC.	LEASE	: WARD
WELL	: #3	TEST:	: 2
ELEVATION:	2898 KB	GEOLOGIST:	GENSCH
SECTION	: 16	FORMATION:	
RANGE	: 33W	TOWNSHIP	: 22S
GAUGE SN#:	13266	STATE	: KS
	COUNTY: FINNEY	CLOCK	: 12
	RANGE : 4000		

WELL INFORMATION

PERFORATION INTERVAL FROM:	4393.00 ft	TO:	4422.00 ft	TVD:	4422.0 ft
DEPTH OF SELECTIVE ZONE:				TEST TYPE:	OIL
DEPTH OF RECORDERS:	4413.0 ft		4416.0 ft		
TEMPERATURE:	114.0				
DRILL COLLAR LENGTH:	344.0 ft	I.D.:		2.250 in	
WEIGHT PIPE LENGTH :	0.0 ft	I.D.:		0.000 in	
DRILL PIPE LENGTH :	4021.0 ft	I.D.:		3.800 in	
TEST TOOL LENGTH :	28.0 ft	TOOL SIZE :		5.500 in	
ANCHOR LENGTH :	29.0 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:	4388.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	4393.0 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. :	BLUE GOOSE DRLG #1	VISCOSITY :	56.00 cp
MUD TYPE :	CHEMICAL	WATER LOSS:	8.300 cc
WEIGHT :	9.200 ppg		
CHLORIDES :	5600 ppm	SERIAL NUMBER:	415
JARS-MAKE :	WTC	REVERSED OUT?:	NO
DID WELL FLOW?:	NO		

COMMENTS

Comment

INITIAL FLOW PERIOD WEAK BLOW SLOWLY BUILT TO 1/4
INCH IN BUCKET - DIED AFTER 10 MINUES. FINAL FLOW
PERIOD NO BLOW - FLUSHED TOOL - NO BLOW.

DST REPORT (CONTINUED)

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
10.0	0.0	0.0	0.0	100.0	MUD

RATE INFORMATION

OIL VOLUME:	0.0000	STB	TOTAL FLOW TIME:	35.0000	min.
GAS VOLUME:	0.0000	SCF	AVERAGE OIL RATE:	0.0000	STB/D
MUD VOLUME:	0.0492	STB	AVERAGE WATER RATE:	0.0000	STB/D
WATER VOLUME:	0.0000	STB			
TOTAL FLUID :	0.0492	STB			

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2159.00

Description	Duration	p1	p End
INITIAL FLOW	15.00	44.00	48.00
INITIAL SHUT-IN	30.00		343.00
FINAL FLOW	20.00	50.00	60.00
FINAL SHUT-IN	45.00		497.00

FINAL HYDROSTATIC PRESSURE: 2157.00

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2165.00

Description	Duration	p1	p End
INITIAL FLOW	15.00	71.00	49.00
INITIAL SHUT-IN	30.00		356.00
FINAL FLOW	20.00	75.00	71.00
FINAL SHUT-IN	45.00		508.00

FINAL HYDROSTATIC PRESSURE: 2114.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE : 10/6/93	TICKET : 19928
CUSTOMER : HARTMAN OIL COMPANY, INC.	LEASE : WARD
WELL : #3	GEOLOGIST: GENSCH
ELEVATION: 2898 KB	FORMATION:
SECTION : 16	TOWNSHIP : 22S
RANGE : 33W	STATE : KS
GAUGE SN#: 13266	CLOCK : 12
COUNTY: FINNEY	
RANGE : 4000	

INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	71.00	71.00
5.00	57.00	-14.00
10.00	49.00	-8.00
15.00	49.00	0.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	50.00	50.00	0.00
6.00	52.00	2.00	0.00
9.00	59.00	7.00	0.00
12.00	79.00	20.00	0.00
15.00	126.00	47.00	0.00
18.00	193.00	67.00	0.00
21.00	258.00	65.00	0.00
24.00	315.00	57.00	0.00
27.00	350.00	35.00	0.00
30.00	356.00	6.00	0.00

FINAL FLOW

Time (min)	Pressure	Delta P
0.00	75.00	75.00
5.00	51.00	-24.00
10.00	43.00	-8.00
15.00	41.00	-2.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL FLOW (CONTINUED)

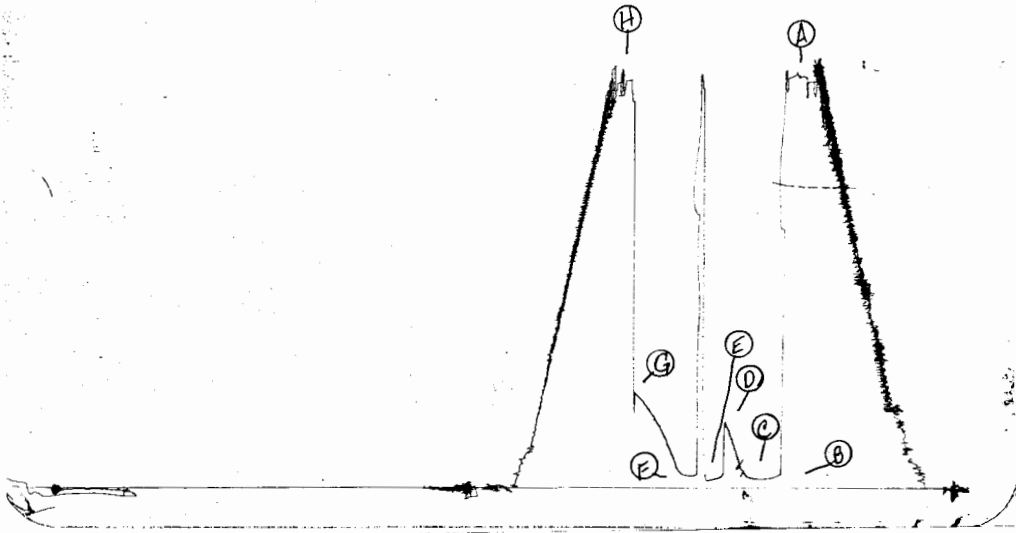
<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
20.00	71.00	30.00

FINAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	63.00	63.00	0.00
6.00	69.00	6.00	0.00
9.00	85.00	16.00	0.00
12.00	130.00	45.00	0.00
15.00	187.00	57.00	0.00
18.00	234.00	47.00	0.00
21.00	287.00	53.00	0.00
24.00	331.00	44.00	0.00
27.00	368.00	37.00	0.00
30.00	400.00	32.00	0.00
33.00	417.00	17.00	0.00
36.00	445.00	28.00	0.00
39.00	474.00	29.00	0.00
42.00	494.00	20.00	0.00
45.00	508.00	14.00	0.00

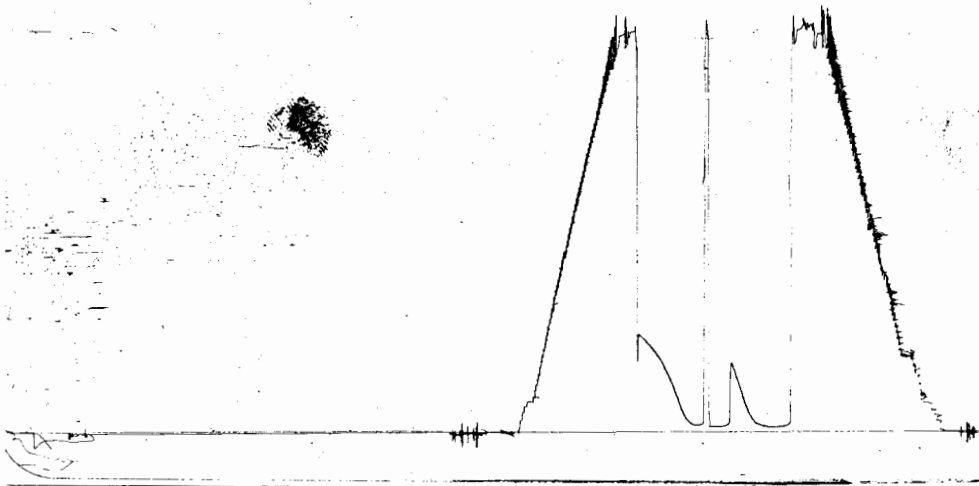
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DST.#2
13266
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TK# 19928
I.

DST.#2
10242





WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET N^o 19929

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

Elevation 2898 Formation _____ Eff. Pay _____ Ft.

District Hugoton Date 10-7-93 Customer Order No. _____

COMPANY NAME Hartman O. I. Co. Inc.
ADDRESS P.O. BOX 54 Wichita KS 67201

LEASE AND WELL NO. Ward #3 COUNTY Finney STATE KS Sec 16 Twp 22 Rge 33w

Mail Invoice To Sam E Co. Name " Address " No. Copies Requested Reg

Mail Charts To _____ Address _____ No. Copies Requested Reg

Formation Test No. 3 Interval Tested From 4683 ft. to 4702 ft. Total Depth 4702 ft.

Packer Depth 4678 ft. Size 6 3/8 in. Packer Depth _____ ft. Size _____ in.

Packer Depth 4683 ft. Size 6 3/8 in. Packer Depth _____ ft. Size _____ in.

Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 4693 ft.

Recorder Number 10242 Cap. 4100

Bottom Recorder Depth (Outside) 4696 ft.

Recorder Number 13266 Cap. 4000

Below Straddle Recorder Depth _____ ft.

Recorder Number _____ Cap. _____

Drilling Contractor Blue Goose #1

Drill Collar Length 344 I. D. 2 1/4 in.

Mud Type Chem. Viscosity 47

Weight Pipe Length _____ I. D. _____ in.

Weight 9.1 Water Loss 7.5 cc.

Drill Pipe Length 4311 I. D. 3.8 in.

Chlorides 2800 P.P.M.

Test Tool Length 28 ft. Tool Size 5 1/2 in.

Jars: Make WTC Serial Number 415

Anchor Length 19 ft. Size 5 1/2 in.

Did Well Flow? NO Reversed Out NO

Surface Choke Size 7/8 in. Bottom Choke Size 7/8 in.

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

Blow: WEAK - slowly built to 5" in bucket IF.

FAIR - slowly built to bottom of bucket in 10 min F.F.

Recovered 2 ft. of Hvy mud cut lassy oil - 30% mud 5% gas 65% oil

Recovered 186' ft. of Slr mud cut lassy oil - 10% mud 25% gas 65% oil

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Chlorides _____ P.P.M. Sample Jars used _____ Remarks: Total F.P. Rec 188'

434' of Gas in Pipe

Gravity 29 at 65°

Time On Location 8:30 AM Time Pick Up Tool 9:15 AM Time Off Location _____ AM

Time Set Packer(s) 11:00 AM Time Started Off Bottom 1:30 AM Maximum Temperature 118° F

Initial Hydrostatic Pressure _____ (A) 2368 P.S.I.

Initial Flow Period _____ Minutes 15 (B) 50 P.S.I. to (C) 52 P.S.I.

Initial Closed In Period _____ Minutes 30 (D) 776 P.S.I.

Final Flow Period _____ Minutes 45 (E) 79 P.S.I. to (F) 83 P.S.I.

Final Closed In Period _____ Minutes 60 (G) 787 P.S.I.

Final Hydrostatic Pressure _____ (H) 2368 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 Gary F. Lunsch
Signature of Customer or his authorized representative

Western Representative [Signature]

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 _____

Test Ticket No. 19929

Recorder No. _____ Capacity _____ Location _____ Ft.

Clock No. _____ Elevation _____ Well Temperature _____ °F

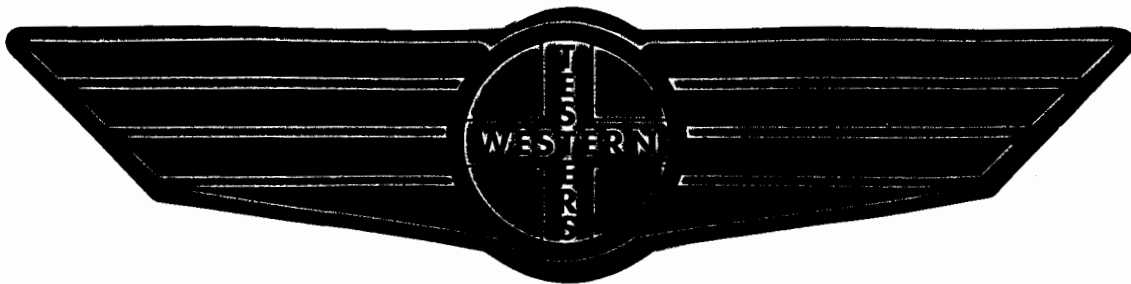
Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2373</u>	P.S.I.	<u>45</u> M	
B First Initial Flow Pressure	<u>64</u>	P.S.I.	<u>15</u> Mins	<u>15</u> Mins.
C First Final Flow Pressure	<u>59</u>	P.S.I.	<u>30</u> Mins	<u>30</u> Mins.
D Initial Closed-in Pressure	<u>79</u>	P.S.I.	<u>45</u> Mins	<u>45</u> Mins.
E Second Initial Flow Pressure	<u>54</u>	P.S.I.	<u>60</u> Mins	<u>63</u> Mins.
F Second Final Flow Pressure	<u>91</u>	P.S.I.		
G Final Closed-in Pressure	<u>799</u>	P.S.I.		
H Final Hydrostatic Mud	<u>2325</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>64</u>	<u>0</u>	<u>59</u>	<u>0</u>	<u>84</u>	<u>0</u>	<u>91</u>
P 2 <u>5</u>	<u>59</u>	<u>3</u>	<u>85</u>	<u>5</u>	<u>79</u>	<u>3</u>	<u>126</u>
P 3 <u>10</u>	<u>59</u>	<u>6</u>	<u>152</u>	<u>10</u>	<u>81</u>	<u>6</u>	<u>285</u>
P 4 <u>15</u>	<u>59</u>	<u>9</u>	<u>268</u>	<u>15</u>	<u>83</u>	<u>9</u>	<u>526</u>
P 5 <u>20</u>		<u>12</u>	<u>457</u>	<u>20</u>	<u>85</u>	<u>12</u>	<u>656</u>
P 6 <u>25</u>		<u>15</u>	<u>654</u>	<u>25</u>	<u>87</u>	<u>15</u>	<u>718</u>
P 7 <u>30</u>		<u>18</u>	<u>728</u>	<u>30</u>	<u>88</u>	<u>18</u>	<u>744</u>
P 8 <u>35</u>		<u>21</u>	<u>758</u>	<u>35</u>	<u>89</u>	<u>21</u>	<u>758</u>
P 9 <u>40</u>		<u>24</u>	<u>774</u>	<u>40</u>	<u>90</u>	<u>24</u>	<u>770</u>
P10 <u>45</u>		<u>27</u>	<u>786</u>	<u>45</u>	<u>91</u>	<u>27</u>	<u>778</u>
P11 <u>50</u>		<u>30</u>	<u>791</u>	<u>50</u>		<u>30</u>	<u>782</u>
P12 <u>55</u>		<u>33</u>		<u>55</u>		<u>33</u>	<u>788</u>
P13 <u>60</u>		<u>36</u>		<u>60</u>		<u>36</u>	<u>790</u>
P14 <u>65</u>		<u>39</u>		<u>65</u>		<u>39</u>	<u>791</u>
P15 <u>70</u>		<u>42</u>		<u>70</u>		<u>42</u>	<u>792</u>
P16 <u>75</u>		<u>45</u>		<u>75</u>		<u>45</u>	<u>793</u>
P17 <u>80</u>		<u>48</u>		<u>80</u>		<u>48</u>	<u>794</u>
P18 <u>85</u>		<u>51</u>		<u>85</u>		<u>51</u>	<u>795</u>
P19 <u>90</u>		<u>54</u>		<u>90</u>		<u>54</u>	<u>796</u>
P20 <u>95</u>		<u>57</u>		<u>95</u>		<u>57</u>	<u>797</u>
<u>100</u>		<u>60</u>		<u>100</u>		<u>60</u>	<u>798</u>

67 - 799

FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 80 - 688 - 7021

COMPANY HARTMAN OIL COMPANY, INC. LEASE & WELL NO. #3 WARD SEC. 16 TWP. 22S RGE. 33W TEST NO. 3 DATE 10/7/93

DST REPORT

GENERAL INFORMATION

DATE : 10/7/93
CUSTOMER : HARTMAN OIL COMPANY, INC.
WELL : #3 TEST: 3
ELEVATION: 2898 KB
SECTION : 16
RANGE : 33W COUNTY: FINNEY
GAUGE SN#: 13266 RANGE : 4000

TICKET : 19929
LEASE : WARD
GEOLOGIST: GENSCH
FORMATION:
TOWNSHIP : 22S
STATE : KS
CLOCK : 12

WELL INFORMATION

PERFORATION INTERVAL FROM: 4683.00 ft TO: 4702.00 ft TVD: 4702.0 ft
DEPTH OF SELECTIVE ZONE: TEST TYPE: OIL
DEPTH OF RECORDERS: 4693.0 ft 4696.0 ft
TEMPERATURE: 118.0

DRILL COLLAR LENGTH:	344.0 ft	I.D.:	2.250 in
WEIGHT PIPE LENGTH :	0.0 ft	I.D.:	0.000 in
DRILL PIPE LENGTH :	4311.0 ft	I.D.:	3.800 in
TEST TOOL LENGTH :	28.0 ft	TOOL SIZE :	5.500 in
ANCHOR LENGTH :	19.0 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:	4678.0 ft	SIZE:	6.630 in
PACKER DEPTH:	4683.0 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. : BLUE GOOSE DRLG #1
MUD TYPE : CHEMICAL
WEIGHT : 9.100 ppg
CHLORIDES : 2800 ppm
JARS-MAKE : WTC
DID WELL FLOW?: NO

VISCOSITY : 47.00 cp
WATER LOSS: 7.500 cc
SERIAL NUMBER: 415
REVERSED OUT?: NO

COMMENTS

Comment

INITIAL FLOW PERIOD WEAK BLOW SLOWLY BUILT TO 5
INCHES IN BUCKET. FINAL FLOW PERIOD FAIR BLOW
SLOWLY BUILT TO BOTTOM OF BUCKET IN 10 MINUTES.

DST REPORT (CONTINUED)

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
2.0	65.0	5.0	0.0	30.0	HVY MUD CUT GASSY OIL
186.0	65.0	25.0	0.0	10.0	SL MUD CUT GASSY OIL
0.0	0.0	0.0	0.0	0.0	434 FT GAS ABOVE FLUID
0.0	0.0	0.0	0.0	0.0	GRAVITY 29 @ 65 DEGREES F

RATE INFORMATION

OIL VOLUME:	0.6009 STB	TOTAL FLOW TIME:	60.0000 min.
GAS VOLUME:	1.2867 SCF	AVERAGE OIL RATE:	16.6880 STB/D
MUD VOLUME:	0.0944 STB	AVERAGE WATER RATE:	0.0000 STB/D
WATER VOLUME:	0.0000 STB		
TOTAL FLUID :	0.6953 STB		

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2368.00

Description	Duration	p1	p End
INITIAL FLOW	15.00	50.00	52.00
INITIAL SHUT-IN	30.00		776.00
FINAL FLOW	45.00	79.00	83.00
FINAL SHUT-IN	60.00		787.00

FINAL HYDROSTATIC PRESSURE: 2368.00

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2373.00

Description	Duration	p1	p End
INITIAL FLOW	15.00	64.00	59.00
INITIAL SHUT-IN	30.00		791.00
FINAL FLOW	45.00	94.00	91.00
FINAL SHUT-IN	63.00		799.00

FINAL HYDROSTATIC PRESSURE: 2325.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE : 10/7/93	TICKET : 19929
CUSTOMER : HARTMAN OIL COMPANY, INC.	LEASE : WARD
WELL : #3	GEOLOGIST: GENSCH
ELEVATION: 2898 KB	FORMATION:
SECTION : 16	TOWNSHIP : 22S
RANGE : 33W	STATE : KS
GAUGE SN#: 13266	CLOCK : 12
COUNTY: FINNEY	
RANGE : 4000	

INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	64.00	64.00
5.00	59.00	-5.00
10.00	59.00	0.00
15.00	59.00	0.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	85.00	85.00	0.00
6.00	152.00	67.00	0.00
9.00	268.00	116.00	0.00
12.00	457.00	189.00	0.00
15.00	654.00	197.00	0.00
18.00	728.00	74.00	0.00
21.00	758.00	30.00	0.00
24.00	774.00	16.00	0.00
27.00	786.00	12.00	0.00
30.00	791.00	5.00	0.00

FINAL FLOW

Time (min)	Pressure	Delta P
0.00	94.00	94.00
5.00	79.00	-15.00
10.00	81.00	2.00
15.00	83.00	2.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL FLOW (CONTINUED)

Time (min)	Pressure	Delta P
20.00	85.00	2.00
25.00	87.00	2.00
30.00	88.00	1.00
35.00	89.00	1.00
40.00	90.00	1.00
45.00	91.00	1.00

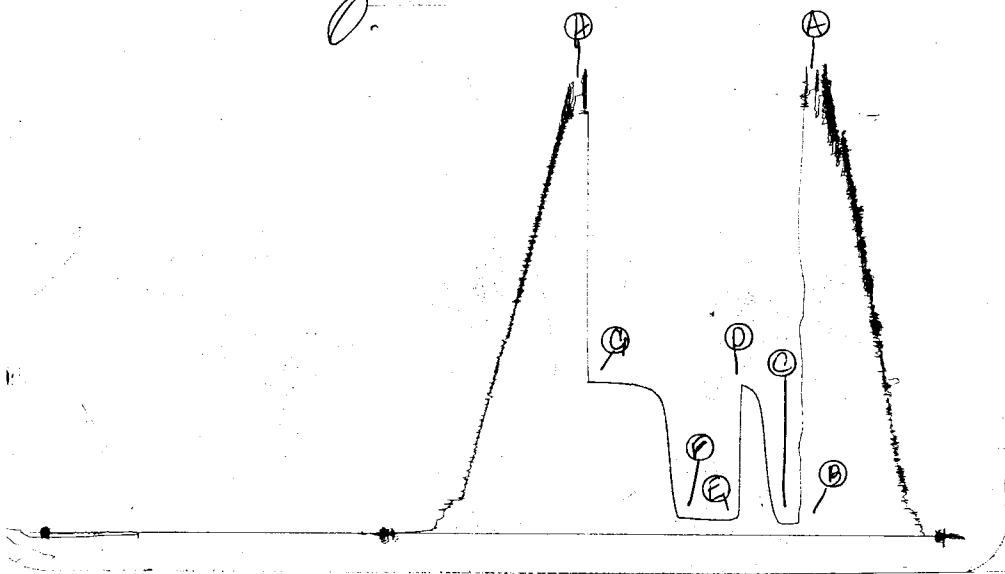
FINAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	136.00	136.00	0.00
6.00	285.00	149.00	0.00
9.00	526.00	241.00	0.00
12.00	656.00	130.00	0.00
15.00	718.00	62.00	0.00
18.00	744.00	26.00	0.00
21.00	758.00	14.00	0.00
24.00	770.00	12.00	0.00
27.00	778.00	8.00	0.00
30.00	782.00	4.00	0.00
33.00	788.00	6.00	0.00
36.00	790.00	2.00	0.00
39.00	791.00	1.00	0.00
42.00	792.00	1.00	0.00
45.00	793.00	1.00	0.00
48.00	794.00	1.00	0.00
51.00	795.00	1.00	0.00
54.00	796.00	1.00	0.00
57.00	797.00	1.00	0.00
60.00	798.00	1.00	0.00
63.00	799.00	1.00	0.00

TL# 19929

0.

DST#3
13266 *A*



DST#3
10242

TL# 19929

~~0.~~

