# WESTERN TESTING CO., INC.
## FORMATION TESTING

OK

TICKET Nº 8075

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

Elevation 1137 KB Formation Miss Eff. Pay — Ft.

2040 District 13 Augusta Date 5-17-85 Customer Order No.

COMPANY NAME Range Oil Co Inc

ADDRESS 240 Page Court 220 W Douglas Wichita, Ks 67202

LEASE AND WELL NO. Patterson #1 COUNTY Sumner STATE Ks Sec. 7 Twp. 33 Rge. 2E

#1 PATTERSON

Mail Invoice To Same No. Copies Requested 1
Co. Name Address

Mail Charts To Same No. Copies Requested 5
Address

Formation Test No. 1 Interval Tested From 3325 ft. to 3360 ft. Total Depth 3360 ft.

Packer Depth 3325 ft. Size 6 3/4 in. Packer Depth — ft. Size — in.

Packer Depth 3320 ft. Size 6 3/4 in. Packer Depth — ft. Size — in.

Depth of Selective Zone Set —

Top Recorder Depth (Inside) 3352 ft. Recorder Number 13266 Cap. 4000

Bottom Recorder Depth (Outside) 3355 ft. Recorder Number 13268 Cap. 4200

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

Drilling Contractor Range Drlg Inc #2 Drill Collar Length 180 I. D. 2 1/4 in.

Mud Type Chem Viscosity 45 Weight Pipe Length — I. D. — in.

Weight 9.6 Water Loss 12.- cc. Drill Pipe Length 3125 I. D. 3.8 in.

Chlorides 2600 P.P.M. Test Tool Length 20 ft. Tool Size 5 1/2 OD in.

Jars: Make — Serial Number — Anchor Length 35 ft. Size 5 1/2 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 4 1/2 X H in.

Blow: Fair diminishing slightly @ end of test

Recovered 370 ft. of Gas in pipe

Recovered 50 ft. of Oil & gas cut mud 40% oil 60% mud

Recovered ft. of

Recovered ft. of

Recovered ft. of

Chlorides 2800 P.P.M. Sample Jars used 3 Remarks:

Time On Location 7:00 A.M. 5-17 P.M. Time Pick Up Tool 9:40 A.M. P.M. Time Off Location Standby A.M P.M

Time Set Packer(s) 11:00 A.M. P.M. Time Started Off Bottom 2:00 A.M. P.M. Maximum Temperature 110

| | | | | | |
|---|---|---|---|---|---|
| Initial Hydrostatic Pressure | | (A) | 1705 | P.S.I. | |
| Initial Flow Period | Minutes 30 | (B) | 75 | P.S.I. to (C) 75 | P.S.I. |
| Initial Closed In Period | Minutes 30 | (D) | 235 | P.S.I. | |
| Final Flow Period | Minutes 60 | (E) | 85 | P.S.I. to (F) 85 | P.S.I. |
| Final Closed In Period | Minutes 60 | (G) | 650 | P.S.I. | |
| Final Hydrostatic Pressure | | (H) | 1705 | P.S.I. | 13268 |

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MAY 20 1985

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 Joe Baker
Signature of Customer or his authorized representative

Western Representative Norman Allen

D150

### FIELD INVOICE

| | |
|---|---|
| Open Hole Test | $ 550.- |
| 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 5-17-85 Test Ticket No. 8075

Recorder No. 13268 Capacity 4200 Location Ft.

Clock No. Elevation Well Temperature °F

| Point | | Pressure | | | Time Given | Time Computed |
|---|---|---|---|---|---|---|
| A | Initial Hydrostatic Mud | 1804 | P.S.I. | Open Tool | M | |
| B | First Initial Flow Pressure | 63 | P.S.I. | First Flow Pressure | 30 Mins. | 30 Mins. |
| C | First Final Flow Pressure | 63 | P.S.I. | Initial Closed-in Pressure | 30 Mins. | 30 Mins. |
| D | Initial Closed-in Pressure | 239 | P.S.I. | Second Flow Pressure | 60 Mins. | 60 Mins. |
| E | Second Initial Flow Pressure | 68 | P.S.I. | Final Closed-in Pressure | 60 Mins. | 60 Mins. |
| F | Second Final Flow Pressure | 70 | P.S.I. | | | |
| G | Final Closed-in Pressure | 647 | P.S.I. | | | |
| H | Final Hydrostatic Mud | 1804 | P.S.I. | | | |

## PRESSURE BREAKDOWN

**First Flow Pressure**
Breakdown: 7 Inc. of 5 mins. and a final inc. of 0 Min.

| Point | Mins. | Press. |
|---|---|---|
| P 1 | 0 | 63 |
| P 2 | 5 | |
| P 3 | 10 | |
| P 4 | 15 | |
| P 5 | 20 | |
| P 6 | 25 | |
| P 7 | 30 | 63 |
| P 8 | 35 | |
| P 9 | 40 | |
| P10 | 45 | |
| P11 | 50 | |
| P12 | 55 | |
| P13 | 60 | |
| P14 | 65 | |
| P15 | 70 | |
| P16 | 75 | |
| P17 | 80 | |
| P18 | 85 | |
| P19 | 90 | |
| P20 | 95 | |
| | 100 | |

**Initial Shut-In**
Breakdown: 11 Inc. of 3 mins. and a final inc. of 0 Min.

| Point Minutes | Press. |
|---|---|
| 0 | 63 |
| 3 | 65 |
| 6 | 74 |
| 9 | 90 |
| 12 | 109 |
| 15 | 124 |
| 18 | 145 |
| 21 | 169 |
| 24 | 196 |
| 27 | 224 |
| 30 | 239 |
| 33 | |
| 36 | |
| 39 | |
| 42 | |
| 45 | |
| 48 | |
| 51 | |
| 54 | |
| 57 | |
| 60 | |

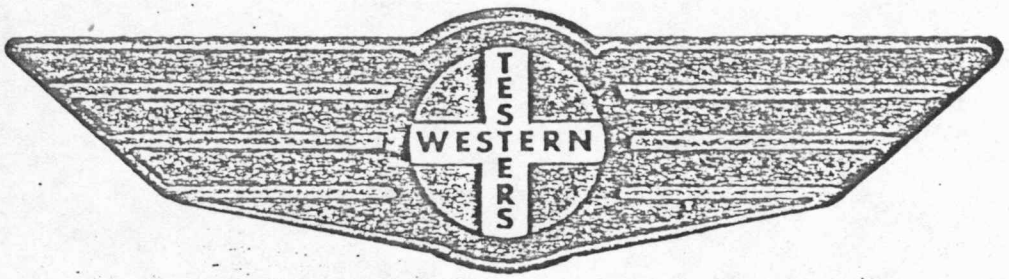
**Second Flow Pressure**
Breakdown: 13 Inc. of 5 mins. and a final inc. of 0 Min.

| Point Minutes | Press. |
|---|---|
| 0 | 68 |
| 5 | |
| 10 | |
| 15 | |
| 20 | 68 |
| 25 | |
| 30 | 68 |
| 35 | |
| 40 | |
| 45 | 68 |
| 50 | 68 |
| 55 | 69 |
| 60 | 70 |
| 65 | |
| 70 | |
| 75 | |
| 80 | |
| 85 | |
| 90 | |
| 95 | |
| 100 | |

**Final Shut-In**
Breakdown: 21 Inc. of 3 mins. and a final inc. of 0 Min.

| Point Minutes | Press. |
|---|---|
| 0 | 70 |
| 3 | 77 |
| 6 | 87 |
| 9 | 102 |
| 12 | 115 |
| 15 | 130 |
| 18 | 147 |
| 21 | 165 |
| 24 | 182 |
| 27 | 199 |
| 30 | 221 |
| 33 | 244 |
| 36 | 268 |
| 39 | 295 |
| 42 | 327 |
| 45 | 365 |
| 48 | 408 |
| 51 | 453 |
| 54 | 511 |
| 57 | 562 |
| 60 | 647 |

# FORMATION TEST REPORT




Home Office: Wichita, Kansas 67201

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

Company RANGE OIL COMPANY, INC. Lease & Well No. #1 PATTERSON Sec. 7 Twp. 33S Rge. 2E Test No. 1 Date 5/11/85

# WESTERN TESTING CO. INC.
## SUBSURFACE PRESSURE SURVEY

DATE: 5/17/85 TICKET #8075
CUSTOMER: RANGE OIL COMPANY INC. LEASE: PATTERSON
WELL: 1 TEST: 1 GEOLOGIST: BAKER
ELEVATION (KB): 1137 FORMATION: MISSISSIPPI
SECTION: 7 TOWNSHIP: 33S
RANGE: 2E COUNTY: SUMNER STATE: KANSAS
GAUGE SN #13268 RANGE: 4200 CLOCK: 12

INTERVAL TEST FROM: 3325 FT TO: 3360 FT TOTAL DEPTH: 3360 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 3325 FT SIZE: 6 3/4 IN PACKER DEPTH: 3320 FT SIZE: 6 3/4 IN
PACKER DEPTH: FT SIZE: IN PACKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: RANGE DRLG
MUD TYPE: CHEMICAL VISCOSITY: 45
WEIGHT: 9.6 WATER LOSS (CC): 12.0
CHLORIDES (P.P.M.): 2600
JARS - MAKE: SERIAL NUMBER:
DID WELL FLOW? NO REVERSED OUT? NO

| | | | | | |
|---|---|---|---|---|---|
| DRILL COLLAR LENGTH: | 180 | FT | I.D.: 2.25 | IN | |
| WEIGHT PIPE LENGTH: | | FT | I.D.: | IN | |
| DRILL PIPE LENGTH: | 3125 | FT | I.D.: 3.8 | IN | |
| TEST TOOL LENGTH: | 20 | FT | TOOL SIZE: 5 1/2 OD | IN | |
| ANCHOR LENGTH: | 35 | FT | SIZE: 5 1/2 OD | IN | |
| 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: FAIR BLOW DIMINISHING SLIGHTLY
AT THE END OF THE TEST.

| | | | |
|---|---|---|---|
| RECOVERED: | 370 | FT | OF: GAS ABOVE FLUID. |
| RECOVERED: | 50 | FT | OF: OIL & GAS CUT MUD (40% OIL; 60% MUD). |
| RECOVERED: | | FT | OF: CHLORIDES 2800 PPM. |
| RECOVERED: | | FT | OF: |
| RECOVERED: | | FT | OF: |
| RECOVERED: | | FT | OF: |
| RECOVERED: | | FT | OF: |
| RECOVERED: | | FT | OF: |
| RECOVERED: | | FT | OF: |

REMARKS: READ OUTSIDE CHART.

TIME SET PACKER(S): 11:00 PM TIME STARTED OFF BOTTOM: 2:00 AM
WELL TEMPERATURE: 110 °F

| | | | | |
|---|---|---|---|---|
| INITIAL HYDROSTATIC PRESSURE: | | (A) 1804 | PSI | |
| INITIAL FLOW PERIOD | MIN: 30 | (B) 63 | PSI TO (C) 63 | PSI |
| INITIAL CLOSED IN PERIOD | MIN: 30 | (D) 239 | PSI | |
| FINAL FLOW PERIOD | MIN: 60 | (E) 68 | PSI TO (F) 70 | PSI |
| FINAL CLOSED IN PERIOD | MIN: 60 | (G) 647 | PSI | |
| FINAL HYDROSTATIC PRESSURE | | (H) 1804 | PSI | |

# WESTERN TESTING CO. INC.
## PRESSURE DATA

DATE: 5/17/85 TICKET #8075
CUSTOMER: RANGE OIL COMPANY INC. LEASE: PATTERSON
WELL: 1 TEST: 1 GEOLOGIST: BAKER
ELEVATION (KB): 1137 FORMATION: MISSISSIPPI
SECTION: 7 TOWNSHIP: 33S
RANGE: 2E COUNTY: SUMNER STATE: KANSAS
GAUGE SN #13268 RANGE: 4200 CLOCK: 12

| | | | |
|---|---|---|---|
| (A) | INITIAL HYDROSTATIC PRESSURE: | 1804 | PSI |
| (B) | FIRST INITIAL FLOW PRESSURE: | 63 | PSI |
| (C) | FIRST FINAL FLOW PRESSURE: | 63 | PSI |
| (D) | INITIAL CLOSED-IN PRESSURE: | 239 | PSI |
| (E) | SECOND INITIAL FLOW PRESSURE: | 68 | PSI |
| (F) | SECOND FINAL FLOW PRESSURE: | 70 | PSI |
| (G) | FINAL CLOSED-IN PRESSURE: | 647 | PSI |
| (H) | FINAL HYDROSTATIC PRESSURE: | 1804 | PSI |
| WELL TEMPERATURE: | | 110 | 'F |

OPEN TOOL: 11:00 PM

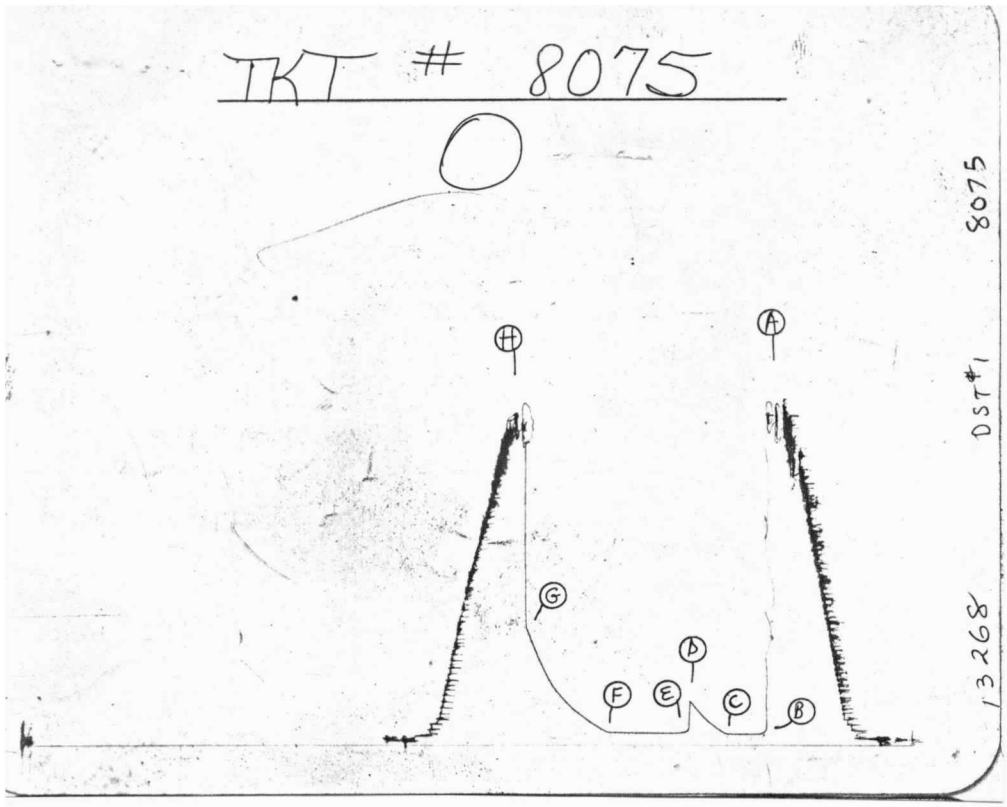
| | TIME - GIVEN | | TIME - ACTUAL | |
|---|---|---|---|---|
| FIRST FLOW PRESSURE: | 30 | MIN | 30 | MIN |
| INITIAL CLOSED-IN PRESSURE: | 30 | MIN | 30 | MIN |
| SECOND FLOW PRESSURE: | 60 | MIN | 60 | MIN |
| FINAL CLOSED-IN PRESSURE: | 60 | MIN | 60 | MIN |

### PRESSURE BREAKDOWN

| | FIRST FLOW | | INITIAL SHUT-IN | | SECOND FLOW | | FINAL SHUT-IN | |
|---|---|---|---|---|---|---|---|---|
| PT | MIN | PRESSURE | MIN | PRESSURE | MIN | PRESSURE | MIN | PRESSURE |
| 1 | 0 | 63 | 0 | 63 | 0 | 68 | 0 | 70 |
| 2 | 5 | 63 | 3 | 65 | 5 | 68 | 3 | 77 |
| 3 | 10 | 63 | 6 | 74 | 10 | 68 | 6 | 87 |
| 4 | 15 | 63 | 9 | 90 | 15 | 68 | 9 | 102 |
| 5 | 20 | 63 | 12 | 109 | 20 | 68 | 12 | 115 |
| 6 | 25 | 63 | 15 | 124 | 25 | 68 | 15 | 130 |
| 7 | 30 | 63 | 18 | 145 | 30 | 68 | 18 | 147 |
| 8 | | | 21 | 169 | 35 | 68 | 21 | 165 |
| 9 | | | 24 | 196 | 40 | 68 | 24 | 182 |
| 10 | | | 27 | 224 | 45 | 68 | 27 | 199 |
| 11 | | | 30 | 239 | 50 | 68 | 30 | 221 |
| 12 | | | | | 55 | 69 | 33 | 244 |
| 13 | | | | | 60 | 70 | 36 | 268 |
| 14 | | | | | | | 39 | 295 |
| 15 | | | | | | | 42 | 327 |
| 16 | | | | | | | 45 | 365 |
| 17 | | | | | | | 48 | 408 |
| 18 | | | | | | | 51 | 453 |
| 19 | | | | | | | 54 | 511 |
| 20 | | | | | | | 57 | 562 |
| 21 | | | | | | | 60 | 647 |
| 22 | | | | | | | | |
| 23 | | | | | | | | |
| 24 | | | | | | | | |
| 25 | | | | | | | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | | | |

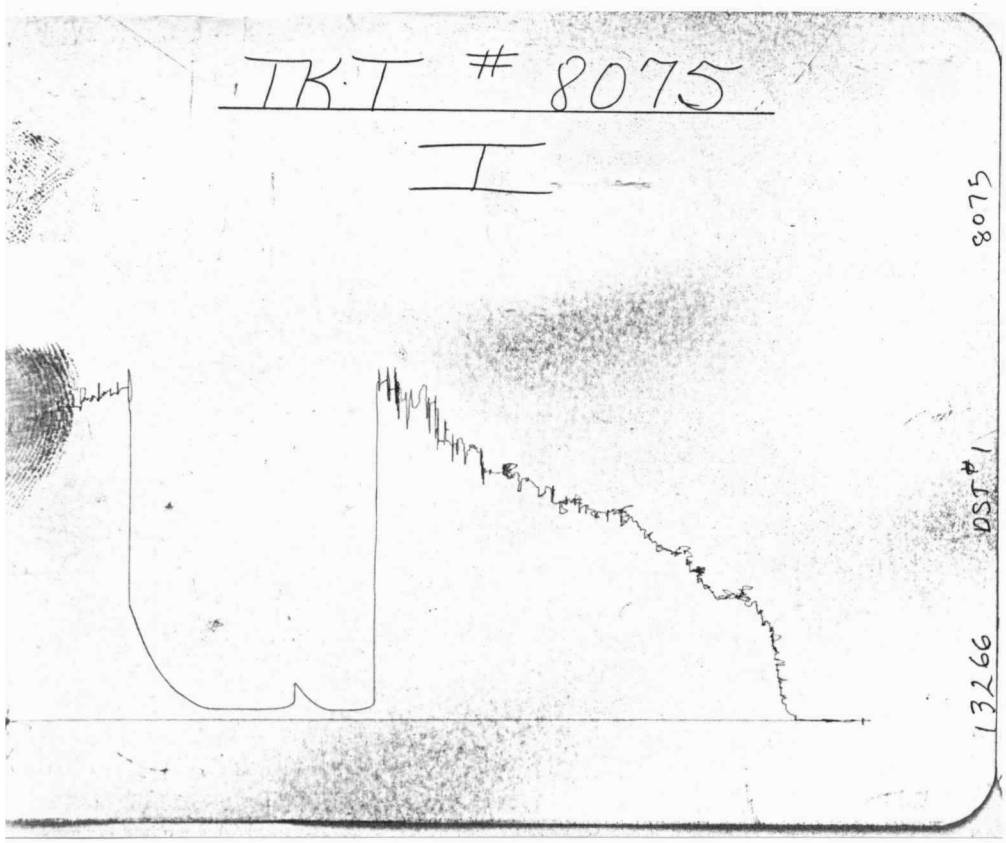
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IKT # 8075

I



# WESTERN TESTING CO., INC.
## FORMATION TESTING

OK

TICKET No. 8176

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

Elevation 1137 KB Formation Miss Eff. Pay — Ft.

District Augusta Date 5-18-85 Customer Order No. —

COMPANY NAME Range Oil Co Inc

ADDRESS 240 Page Court 220 W Douglas Wichita, Ks 67202

LEASE AND WELL NO. Patterson #1 COUNTY Sumner STATE Ks Sec. 7 Twp. 33 Rge. 2E

Mail Invoice To Same #1 PATTERSON No. Copies Requested
Co. Name Address

Mail Charts To Same No. Copies Requested
Address

Formation Test No. 2 Interval Tested From 3263 ft. to 3337 ft. Total Depth 3420 ft.

Packer Depth 3263 ft. Size 6 3/4 in. Packer Depth 3337 ft. Size 6 3/4 in.

Packer Depth 3258 ft. Size 6 3/4 in. Packer Depth — ft. Size — in.

Depth of Selective Zone Set

Top Recorder Depth (Inside) 3324 ft. Recorder Number 13266 Cap. 4000

Bottom Recorder Depth (Outside) 3327 ft. Recorder Number 2608 Cap. 4175

Below Straddle Recorder Depth 3350 ft. Recorder Number 13268 Cap. 4225

Drilling Contractor Range Dlg Co Inc #2

Mud Type Chem Viscosity 44

Weight 9.7 Water Loss 12.8 cc.

Chlorides 2600 P.P.M. 177

Jars: Make — Serial Number —

Did Well Flow? No Reversed Out No

Drill Collar Length 180 I. D. 2 1/4 in.

Weight Pipe Length — I. D. — in.

Drill Pipe Length 3063 I. D. — in.

Test Tool Length ~~77 Not Used~~ 20 Tool Size 5 1/2 DD&DP in.

Anchor Length 74 ft. Size 5 1/2 DD&DP in.

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 H in.

Blow: Weak 30 minutes on IFP - Very weak intermittent 20 minutes on FFP

Recovered 30 ft. of Drilling mud

Recovered ft. of

Recovered ft. of

Recovered ft. of

Recovered ft. of

Chlorides 2400 P.P.M. Sample Jars used 2 Remarks: ~~157 feet of Drill Pipe~~.

Time On Location 5:30 5-18 A.M. P.M. Time Pick Up Tool 6:15 A.M. P.M. Time Off Location Standby A.M. P.M.

Time Set Packer(s) 7:30 A.M. P.M. Time Started Off Bottom 10:00 A.M. P.M. Maximum Temperature 109

| | | | | | | |
|---|---|---|---|---|---|---|
| Initial Hydrostatic Pressure | | | (A) | 1715 | P.S.I. | |
| Initial Flow Period | Minutes | 30 | (B) | 100 | P.S.I. to (C) | 80 P.S.I. |
| Initial Closed In Period | Minutes | 30 | (D) | 90 | P.S.I. | |
| Final Flow Period | Minutes | 45 | (E) | 80 | P.S.I. to (F) | 80 P.S.I. |
| Final Closed In Period | Minutes | 45 | (G) | 100 | P.S.I. | |
| Final Hydrostatic Pressure | | | (H) | 1690 | P.S.I. | |

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COMPANY TERMS

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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 Norman Allen

0150

## FIELD INVOICE

| | | |
|---|---|---|
| Open Hole Test | $ | ~~550~~ — |
| Misrun | $ | |
| Straddle Test | $ | 300 — |
| Jars | $ | |
| Selective Zone | $ | |
| Safety Joint | $ | |
| Standby | $ | n/c |
| Evaluation | $ | |
| Extra Packer n/c | $ | ~~225~~ — |
| Circ. Sub. | $ | |
| Mileage | $ | |
| Fluid Sampler | $ | |
| Extra Charts | $ | |
| Insurance | $ | |
| Telecopier | $ | |
| TOTAL | $ | |

# WESTERN TESTING CO., INC.
## FORMATION TESTING

TICKET No. 8176

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

Elevation 1137 KB Formation Miss Eff. Pay Ft.

District Augusta Date 5-18-85 Customer Order No.

COMPANY NAME Page Oil Corp

ADDRESS 240 Page Court 220 W Douglas Wichita Ks 67202

LEASE AND WELL NO. Patterson "A" 1 COUNTY Sumner STATE Ks Sec. 7 Twp. 31 Rge. 2E

Mail Invoice To Same AT PATTERSON No. Copies Requested
Co. Name Address

Mail Charts To Same No. Copies Requested
Address

Formation Test No. 2 Interval Tested From 3263 ft. to 3337 ft. Total Depth 3420 ft.

Packer Depth 3263 ft. Size 6 3/4 in. Packer Depth 3337 ft. Size 6 3/4 in.

Packer Depth 3258 ft. Size 6 3/4 in. Packer Depth ft. Size in.

Depth of Selective Zone Set

Top Recorder Depth (Inside) 3324 ft. Recorder Number 13266 Cap. 4600

Bottom Recorder Depth (Outside) 3327 ft. Recorder Number 2605 Cap. 4175

Below Straddle Recorder Depth 3350 ft. Recorder Number 13265 Cap. 4225

Drilling Contractor Page Drlg Co Inc #2

Mud Type Chem Viscosity 44

Weight 9.7 Water Loss 12.8 cc.

Chlorides 2600 P.P.M.

Jars: Make Serial Number

Did Well Flow? No Reversed Out No

Drill Collar Length 180 I. D. 2 1/4 in.

Weight Pipe Length I. D. in.

Drill Pipe Length 3063 I. D. in.

Test Tool Length ft. Tool Size in.

Anchor Length 74 ft. Size in.

Surface Choke Size in. Bottom Choke Size in.

Main Hole Size in. Tool Joint Size in.

Blow: 34 inch 30 minutes on IFP Very weak intermittent 20 minutes on FFP

Recovered 30 ft. of Drilling mud

Recovered ft. of

Recovered ft. of

Recovered ft. of

Recovered ft. of

Chlorides 2400 P.P.M. Sample Jars used 2 Remarks: ~~457 feet of drill pipe~~

Time On Location 5:30 A.M. P.M. Time Pick Up Tool 6:15 A.M. P.M. Time Off Location Standby A.M. P.M.

Time Set Packer(s) 7:30 A.M. P.M. Time Started Off Bottom 10:00 A.M. P.M. Maximum Temperature 109

| | | | | | |
|---|---|---|---|---|---|
| Initial Hydrostatic Pressure | | (A) 1715 | P.S.I. | | |
| Initial Flow Period | Minutes 30 | (B) 100 | P.S.I. to (C) 80 | P.S.I. | |
| Initial Closed In Period | Minutes 30 | (D) 90 | P.S.I. | | |
| Final Flow Period | Minutes 45 | (E) 80 | P.S.I. to (F) 80 | P.S.I. | |
| Final Closed In Period | Minutes 45 | (G) 100 | P.S.I. | | |
| Final Hydrostatic Pressure | | (H) 1690 | P.S.I. | | |

COMPANY TERMS

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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 Norman Allen

## 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 5-18-85 Test Ticket No. 8176

Recorder No. 13266 Capacity Location Ft

Clock No. Elevation Well Temperature °F

| Point | Pressure | | Time Given | Time Computed |
|---|---|---|---|---|
| A Initial Hydrostatic Mud | 1728 P.S.I. | Open Tool | M | |
| B First Initial Flow Pressure | 71 P.S.I. | First Flow Pressure | 30 Mins. | 30 Mins |
| C First Final Flow Pressure | 71 P.S.I. | Initial Closed-in Pressure | 30 Mins. | 30 Mins |
| D Initial Closed-in Pressure | 78 P.S.I. | Second Flow Pressure | 45 Mins. | 45 Mins |
| E Second Initial Flow Pressure | 79 P.S.I. | Final Closed-in Pressure | 45 Mins. | 42 Mins |
| F Second Final Flow Pressure | 79 P.S.I. | | | |
| G Final Closed-in Pressure | 85 P.S.I. | | | |
| H Final Hydrostatic Mud | 1694 P.S.I. | | | |

## PRESSURE BREAKDOWN

**First Flow Pressure**
Breakdown: 7 Inc. of 5 mins. and a final inc. of 0 Min.

| Point | Mins. | Press. |
|---|---|---|
| P 1 | 0 | 71 |
| P 2 | 5 | |
| P 3 | 10 | |
| P 4 | 15 | |
| P 5 | 20 | |
| P 6 | 25 | |
| P 7 | 30 | 71 |
| P 8 | 35 | |
| P 9 | 40 | |
| P10 | 45 | |
| P11 | 50 | |
| P12 | 55 | |
| P13 | 60 | |
| P14 | 65 | |
| P15 | 70 | |
| P16 | 75 | |
| P17 | 80 | |
| P18 | 85 | |
| P19 | 90 | |
| P20 | 95 | |
| | 100 | |

**Initial Shut-In**
Breakdown: 11 Inc. of 3 mins. and a final inc. of 0 Min.

| Point Minutes | Press. |
|---|---|
| 0 | 71 |
| 3 | |
| 6 | |
| 9 | 71 |
| 12 | 72 |
| 15 | 73 |
| 18 | 74 |
| 21 | 75 |
| 24 | 76 |
| 27 | 77 |
| 30 | 78 |
| 33 | |
| 36 | |
| 39 | |
| 42 | |
| 45 | |
| 48 | |
| 51 | |
| 54 | |
| 57 | |
| 60 | |

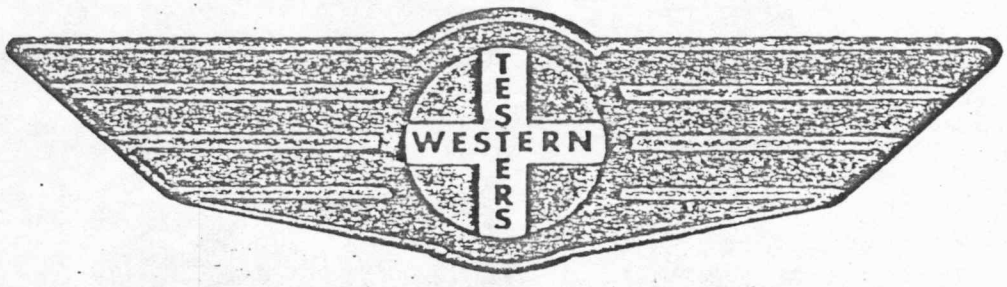
**Second Flow Pressure**
Breakdown: 10 Inc. of 5 mins. and a final inc. of 0 Min.

| Point Minutes | Press. |
|---|---|
| 0 | 79 |
| 5 | |
| 10 | |
| 15 | |
| 20 | |
| 25 | |
| 30 | |
| 35 | |
| 40 | |
| 45 | 79 |
| 50 | |
| 55 | |
| 60 | |
| 65 | |
| 70 | |
| 75 | |
| 80 | |
| 85 | |
| 90 | |
| 95 | |
| 100 | |

**Final Shut-In**
Breakdown: 15 Inc. of 3 mins. and a final inc. of 0 Min.

| Point Minutes | Press. |
|---|---|
| 0 | 79 |
| 3 | |
| 6 | |
| 9 | |
| 12 | 79 |
| 15 | 80 |
| 18 | 81 |
| 21 | 82 |
| 24 | 83 |
| 27 | 83 |
| 30 | 83 |
| 33 | 84 |
| 36 | 84 |
| 39 | 85 |
| 42 | 85 |
| 45 | |
| 48 | |
| 51 | |
| 54 | |
| 57 | |
| 60 | |

# FORMATION TEST REPORT




Home Office: Wichita, Kansas 67201

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

Company RANGE OIL COMPANY, INC. Lease & Well No. #1 PATTERSON Sec. 1 Twp. 33S Rge. 2E Test No. 2 Date 5/10/83

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE: 5/18/85 TICKET #8176
CUSTOMER: RANGE OIL COMPANY INC. LEASE: PATTERSON
WELL: 1 TEST: 2 GEOLOGIST: BAKER
ELEVATION (KB): 1137 FORMATION: MISSISSIPPI
SECTION: 7 TOWNSHIP: 33S
RANGE: 2E COUNTY: SUMNER STATE: KANSAS
GAUGE SN #13266 RANGE: 4000 CLOCK: 12

INTERVAL TEST FROM: 3263 FT TO: 3337 FT TOTAL DEPTH: 3420 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 3263 FT SIZE: 6 3/4 IN PACKER DEPTH: 3258 FT SIZE: 6 3/4 IN
PACKER DEPTH: 3337 FT SIZE: 6 3/4 IN PACKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: RANGE DRLG
MUD TYPE: CHEMICAL VISCOSITY: 44
WEIGHT: 9.7 WATER LOSS (CC): 12.8
CHLORIDES (P.P.M.): 2600
JARS - MAKE: SERIAL NUMBER:
DID WELL FLOW? NO REVERSED OUT? NO
DRILL COLLAR LENGTH: 180 FT I.D.: 2.25 IN
WEIGHT PIPE LENGTH: FT I.D.: IN
DRILL PIPE LENGTH: 3063 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 177 FT TOOL SIZE: 5 1/2 OD IN
ANCHOR LENGTH: 74 FT SIZE: 5 1/2 OD IN
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: INITIAL FLOW PERIOD WEAK BLOW FOR
30 MINUTES. FINAL FLOW PERIOD VERY
WEAK INTERMITTENT BLOW FOR 20 MINUTES.

RECOVERED: 30 FT OF: DRILLING MUD.
RECOVERED: FT OF: CHLORIDES 2400 PPM.
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:

REMARKS:

TIME SET PACKER(S): 7:30 PM TIME STARTED OFF BOTTOM: 10:00 PM
WELL TEMPERATURE: 109 'F
INITIAL HYDROSTATIC PRESSURE: (A) 1728 PSI
INITIAL FLOW PERIOD MIN: 30 (B) 71 PSI TO (C) 71 PSI
INITIAL CLOSED IN PERIOD MIN: 30 (D) 78 PSI
FINAL FLOW PERIOD MIN: 45 (E) 79 PSI TO (F) 79 PSI
FINAL CLOSED IN PERIOD MIN: 42 (G) 85 PSI
FINAL HYDROSTATIC PRESSURE (H) 1694 PSI

# WESTERN TESTING CO. INC.
## PRESSURE DATA

DATE: 5/18/85 TICKET #8176
CUSTOMER: RANGE OIL COMPANY INC. LEASE: PATTERSON
WELL: 1 TEST: 2 GEOLOGIST: BAKER
ELEVATION (KB): 1137 FORMATION: MISSISSIPPI
SECTION: 7 TOWNSHIP: 33S
RANGE: 2E COUNTY: SUMNER STATE: KANSAS
GAUGE SN #13266 RANGE: 4000 CLOCK: 12

| | | | |
|---|---|---|---|
| (A) | INITIAL HYDROSTATIC PRESSURE: | 1728 | PSI |
| (B) | FIRST INITIAL FLOW PRESSURE: | 71 | PSI |
| (C) | FIRST FINAL FLOW PRESSURE: | 71 | PSI |
| (D) | INITIAL CLOSED-IN PRESSURE: | 78 | PSI |
| (E) | SECOND INITIAL FLOW PRESSURE: | 79 | PSI |
| (F) | SECOND FINAL FLOW PRESSURE: | 79 | PSI |
| (G) | FINAL CLOSED-IN PRESSURE: | 85 | PSI |
| (H) | FINAL HYDROSTATIC PRESSURE: | 1694 | PSI |
| WELL TEMPERATURE: | | 109 | 'F |

OPEN TOOL: 7:30 PM

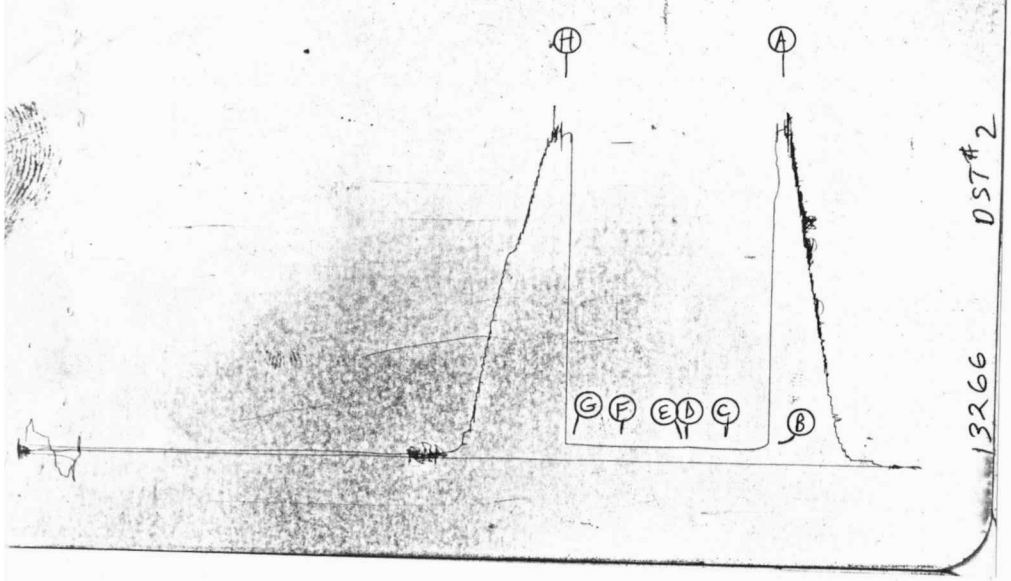
| | TIME - GIVEN | TIME - ACTUAL |
|---|---|---|
| FIRST FLOW PRESSURE: | 30 MIN | 30 MIN |
| INITIAL CLOSED-IN PRESSURE: | 30 MIN | 30 MIN |
| SECOND FLOW PRESSURE: | 45 MIN | 45 MIN |
| FINAL CLOSED-IN PRESSURE: | 45 MIN | 42 MIN |

PRESSURE BREAKDOWN

| | FIRST FLOW | | INITIAL SHUT-IN | | SECOND FLOW | | FINAL SHUT-IN | |
|---|---|---|---|---|---|---|---|---|
| PT | MIN | PRESSURE | MIN | PRESSURE | MIN | PRESSURE | MIN | PRESSURE |
| 1 | 0 | 71 | 0 | 71 | 0 | 79 | 0 | 79 |
| 2 | 5 | 71 | 3 | 71 | 5 | 79 | 3 | 79 |
| 3 | 10 | 71 | 6 | 71 | 10 | 79 | 6 | 79 |
| 4 | 15 | 71 | 9 | 71 | 15 | 79 | 9 | 79 |
| 5 | 20 | 71 | 12 | 72 | 20 | 79 | 12 | 79 |
| 6 | 25 | 71 | 15 | 73 | 25 | 79 | 15 | 80 |
| 7 | 30 | 71 | 18 | 74 | 30 | 79 | 18 | 81 |
| 8 | | | 21 | 75 | 35 | 79 | 21 | 82 |
| 9 | | | 24 | 76 | 40 | 79 | 24 | 83 |
| 10 | | | 27 | 77 | 45 | 79 | 27 | 83 |
| 11 | | | 30 | 78 | | | 30 | 83 |
| 12 | | | | | | | 33 | 84 |
| 13 | | | | | | | 36 | 84 |
| 14 | | | | | | | 39 | 85 |
| 15 | | | | | | | 42 | 85 |
| 16 | | | | | | | | |
| 17 | | | | | | | | |
| 18 | | | | | | | | |
| 19 | | | | | | | | |
| 20 | | | | | | | | |
| 21 | | | | | | | | |
| 22 | | | | | | | | |
| 23 | | | | | | | | |
| 24 | | | | | | | | |
| 25 | | | | | | | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | | | |

IKT # 8176

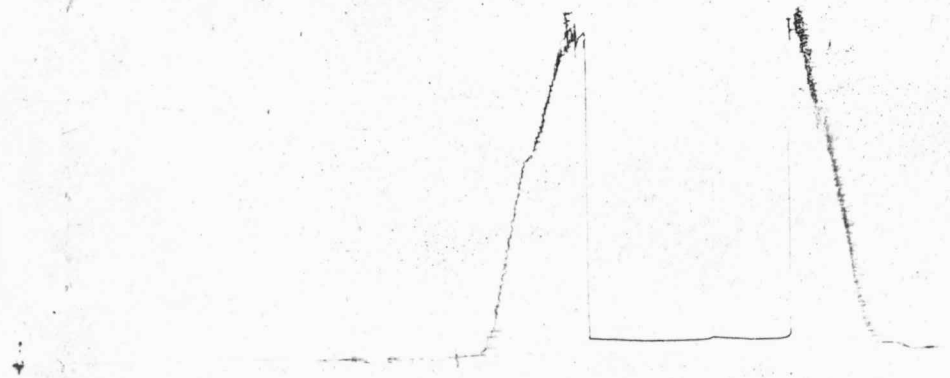
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8176 DST #2 13266

IKT # 8176

O



8176 DST #2 2688

IKT # 8176

Below Straddle

