



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1213943
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

| | | |
|-----------------------------------|-----------------|---|
| Spud Date or Recompletion Date | Date Reached TD | Completion Date or Recompletion Date |
|-----------------------------------|-----------------|---|

API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite: _____

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____

1213943

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

| | |
|--|---|
| Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____ | <input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum |
|--|---|

| CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used | | | | | | | |
|---|-------------------|---------------------------|-------------------|---------------|----------------|--------------|----------------------------|
| Report all strings set-conductor, surface, intermediate, production, etc. | | | | | | | |
| Purpose of String | Size Hole Drilled | Size Casing Set (In O.D.) | Weight Lbs. / Ft. | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| ADDITIONAL CEMENTING / SQUEEZE RECORD | | | | |
|--|------------------|----------------|--------------|----------------------------|
| Purpose: | Depth Top Bottom | Type of Cement | # Sacks Used | Type and Percent Additives |
| <input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone | | | | |
| | | | | |

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

| Shots Per Foot | PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated | Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i> | Depth |
|----------------|---|--|-------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| | | | | |
|----------------|-------|---------|------------|---|
| TUBING RECORD: | Size: | Set At: | Packer At: | Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No |
|----------------|-------|---------|------------|---|

| | |
|---|--|
| Date of First, Resumed Production, SWD or ENHR. | Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____ |
|---|--|

| Estimated Production Per 24 Hours | Oil Bbls. | Gas Mcf | Water Bbls. | Gas-Oil Ratio | Gravity |
|-----------------------------------|-----------|---------|-------------|---------------|---------|
| | | | | | |

| | | |
|--|--|---|
| DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i> | METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ | PRODUCTION INTERVAL: _____ _____ |
|--|--|---|



DRILL STEM TEST REPORT

Prepared For: **Hertel Oil Co LLC**

704 E 12th St
Hays KS 67601-3440

ATTN: Randy Kilian

CWD #1

35 14s 19w Ellis,KS

Start Date: 2014.05.19 @ 09:37:00

End Date: 2014.05.19 @ 17:53:00

Job Ticket #: 58868 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.05.21 @ 10:49:37



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Hertel Oil Co LLC
704 E 12th St
Hays KS 67601-3440
ATTN: Randy Kilian

35 14s 19w Ellis,KS
CWD #1
Job Ticket: 58868 **DST#: 1**
Test Start: 2014.05.19 @ 09:37:00

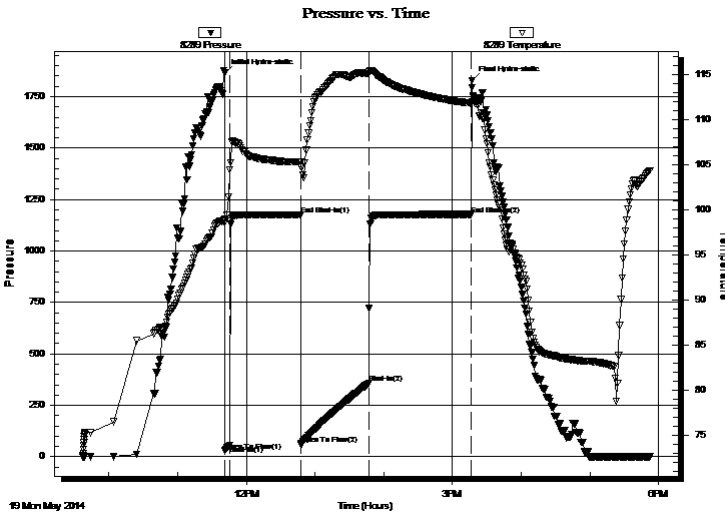
GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:41:15
Time Test Ended: 17:53:00
Interval: **3656.00 ft (KB) To 3720.00 ft (KB) (TVD)**
Total Depth: 3720.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Jim Svaty
Unit No: 76
Reference Elevations: 2110.00 ft (KB)
2102.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8289 Outside
Press@RunDepth: 357.39 psig @ 3660.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.05.19 End Date: 2014.05.19 Last Calib.: 2014.05.19
Start Time: 09:37:02 End Time: 17:53:00 Time On Btm: 2014.05.19 @ 11:41:00
Time Off Btm: 2014.05.19 @ 15:17:00

TEST COMMENT: 5-IFP- Surface Blow Building to 7"
60-ISIP- No Blow
60-FFP- BOB in 8 min.
90-FSIP- No Blow

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1864.08 | 98.95 | Initial Hydro-static |
| 1 | 27.82 | 98.54 | Open To Flow (1) |
| 5 | 56.63 | 104.41 | Shut-In(1) |
| 67 | 1176.55 | 105.33 | End Shut-In(1) |
| 67 | 61.08 | 104.80 | Open To Flow (2) |
| 126 | 357.39 | 115.12 | Shut-In(2) |
| 216 | 1177.61 | 111.82 | End Shut-In(2) |
| 216 | 1826.78 | 112.03 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|------------------------|--------------|
| 125.00 | MCW 20% m 80% w | 1.49 |
| 250.00 | OMCW 5% o 20% m 75% w | 3.51 |
| 375.00 | OMCW 20% o 40% m 40% w | 5.26 |
| 1.00 | CO 100% | 0.01 |
| | | |
| | | |

Gas Rates

| | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|--|----------------|-----------------|------------------|
| | | | |



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Hertel Oil Co LLC
704 E 12th St
Hays KS 67601-3440
ATTN: Randy Kilian

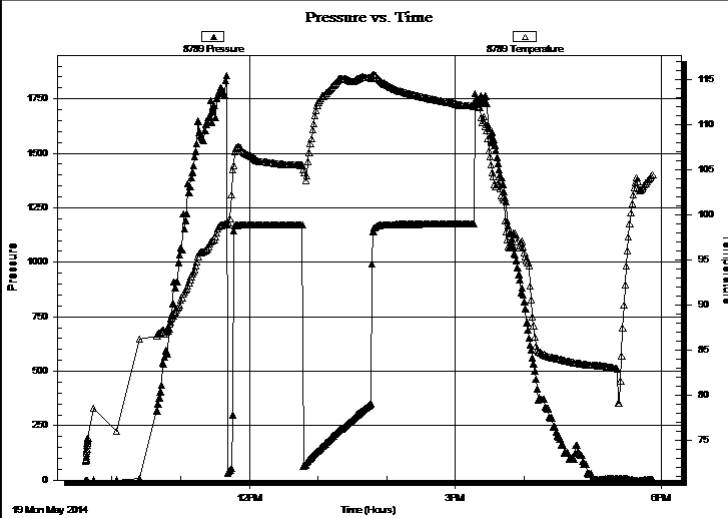
35 14s 19w Ellis, KS
CWD #1
Job Ticket: 58868 **DST#: 1**
Test Start: 2014.05.19 @ 09:37:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
Time Tool Opened: 11:41:15 Tester: Jim Svaty
Time Test Ended: 17:53:00 Unit No: 76
Interval: 3656.00 ft (KB) To 3720.00 ft (KB) (TVD) Reference Elevations: 2110.00 ft (KB)
Total Depth: 3720.00 ft (KB) (TVD) 2102.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 8789 Inside
Press@RunDepth: psig @ 3660.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.05.19 End Date: 2014.05.19 Last Calib.: 2014.05.19
Start Time: 09:37:02 End Time: 17:52:45 Time On Btm:
Time Off Btm:

TEST COMMENT: 5-IFP- Surface Blow Building to 7"
60-ISIP- No Blow
60-FFP- BOB in 8 min.
90-FSIP- No Blow



| PRESSURE SUMMARY | | | |
|------------------|-----------------|--------------|------------|
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
| | | | |
| | | | |
| | | | |
| | | | |

| Recovery | | |
|-------------|------------------------|--------------|
| Length (ft) | Description | Volume (bbl) |
| 125.00 | MCW 20% m 80% w | 1.49 |
| 250.00 | OMCW 5% o 20% m 75% w | 3.51 |
| 375.00 | OMCW 20% o 40% m 40% w | 5.26 |
| 1.00 | CO 100% | 0.01 |
| | | |
| | | |

| Gas Rates | | | |
|-----------|----------------|-----------------|------------------|
| | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
| | | | |
| | | | |
| | | | |



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hertel Oil Co LLC

35 14s 19w Ellis,KS

704 E 12th St
Hays KS 67601-3440

CWD #1

Job Ticket: 58868

DST#: 1

ATTN: Randy Kilian

Test Start: 2014.05.19 @ 09:37:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3631.00 ft | Diameter: 3.80 inches | Volume: 50.93 bbl | Tool Weight: 2500.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 2.75 inches | Volume: 0.00 bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 29.00 ft | Diameter: 2.25 inches | Volume: 0.14 bbl | Weight to Pull Loose: 58000.00 lb |
| | | | <u>Total Volume: 51.07 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 27.00 ft | | | String Weight: Initial 52000.00 lb |
| Depth to Top Packer: | 3656.00 ft | | | Final 55000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 64.00 ft | | | |
| Tool Length: | 87.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 3634.00 | |
| Shut In Tool | 5.00 | | | 3639.00 | |
| Hydraulic tool | 5.00 | | | 3644.00 | |
| Safety Joint | 2.00 | | | 3646.00 | |
| Packer | 5.00 | | | 3651.00 | 23.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 3656.00 | |
| Stubb | 1.00 | | | 3657.00 | |
| Perforations | 2.00 | | | 3659.00 | |
| Change Over Sub | 1.00 | | | 3660.00 | |
| Recorder | 0.00 | 8789 | Inside | 3660.00 | |
| Recorder | 0.00 | 8289 | Outside | 3660.00 | |
| Blank Spacing | 31.00 | | | 3691.00 | |
| Change Over Sub | 1.00 | | | 3692.00 | |
| Perforations | 25.00 | | | 3717.00 | |
| Bullnose | 3.00 | | | 3720.00 | 64.00 Bottom Packers & Anchor |

Total Tool Length: 87.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Hertel Oil Co LLC

35 14s 19w Ellis,KS

704 E 12th St
Hays KS 67601-3440

CWD #1

Job Ticket: 58868

DST#: 1

ATTN: Randy Kilian

Test Start: 2014.05.19 @ 09:37:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

18000 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.57 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|---------------------|---------------|
| 125.00 | MCW 20%m 80%w | 1.489 |
| 250.00 | OMCW 5%o 20%m 75%w | 3.507 |
| 375.00 | OMCW 20%o 40%m 40%w | 5.260 |
| 1.00 | CO 100% | 0.014 |

Total Length: 751.00 ft

Total Volume: 10.270 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

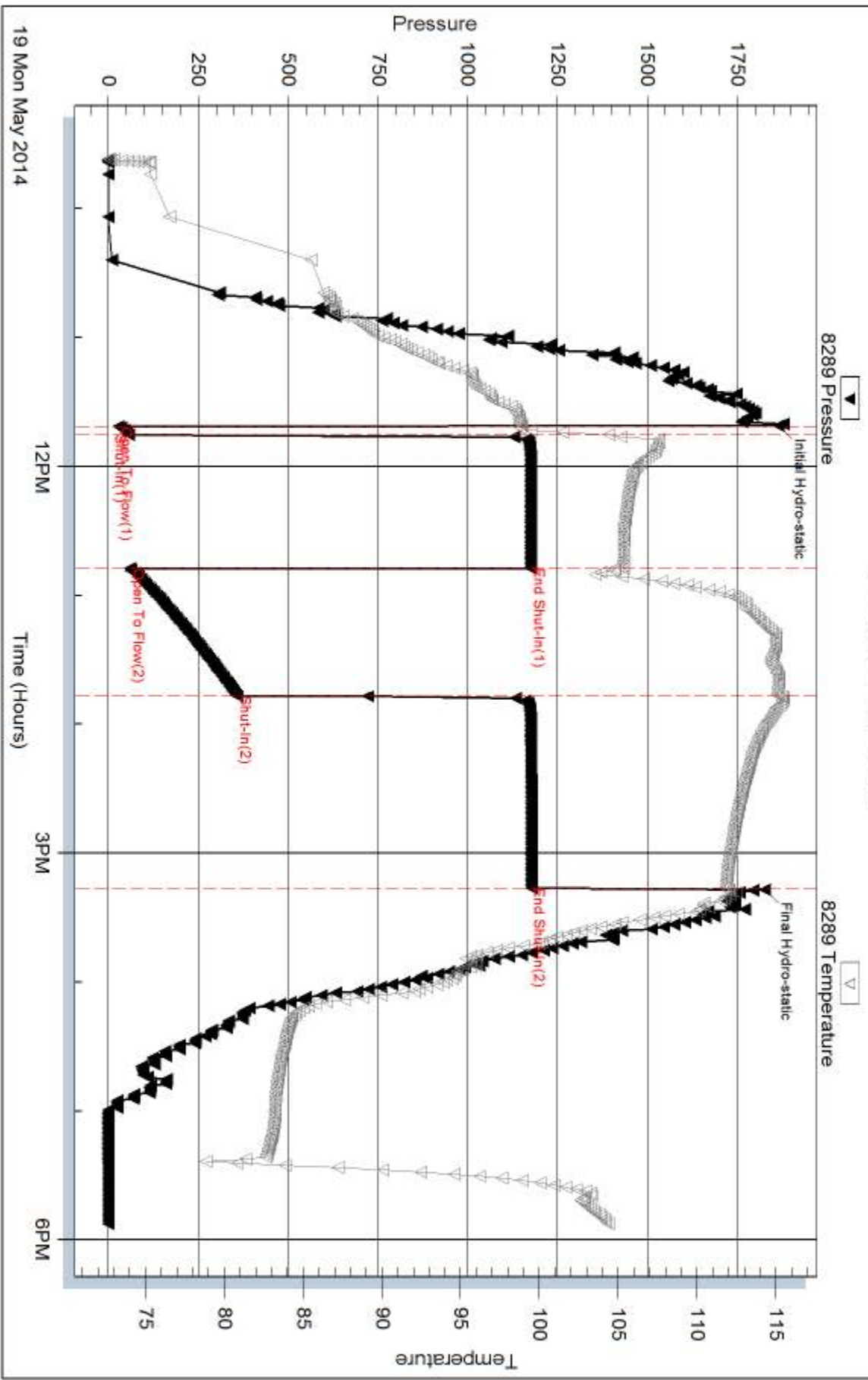
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .259 @ 98

Pressure vs. Time



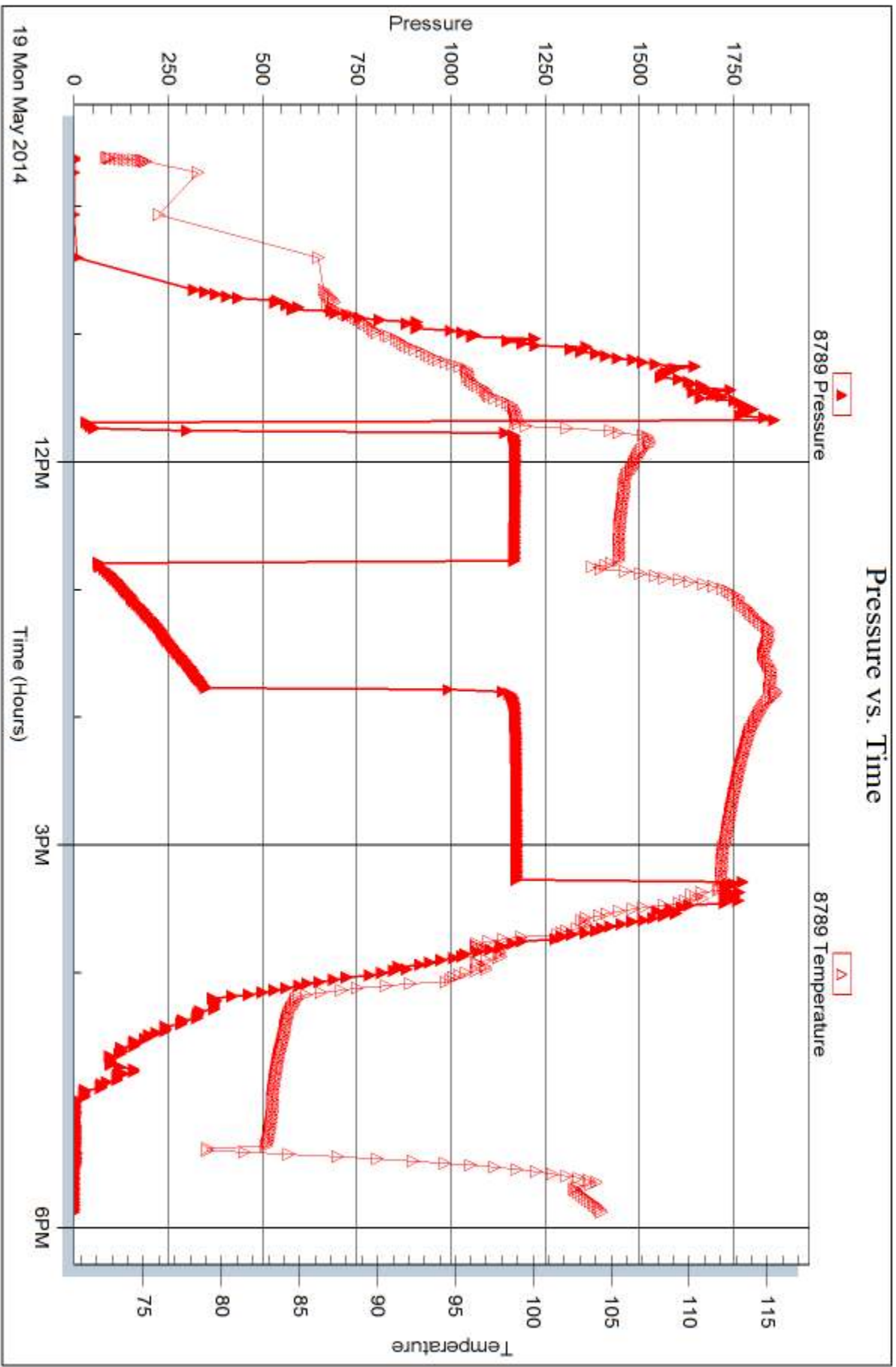
Serial #: 8789

Inside

Hertel Oil Co LLC

CWD #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 58868

Printed: 2014.05.21 @ 10:49:38



DRILL STEM TEST REPORT

Prepared For: **Hertel Oil Co LLC**

704 E 12th St
Hays KS 67601-3440

ATTN: Randy Kilian

CWD #1

35 14s 19w Ellis,KS

Start Date: 2014.05.20 @ 04:40:00

End Date: 2014.05.20 @ 12:22:00

Job Ticket #: 58869 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.05.21 @ 10:49:11



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Hertel Oil Co LLC
704 E 12th St
Hays KS 67601-3440
ATTN: Randy Kilian

35 14s 19w Ellis,KS
CWD #1
Job Ticket: 58869 **DST#: 2**
Test Start: 2014.05.20 @ 04:40:00

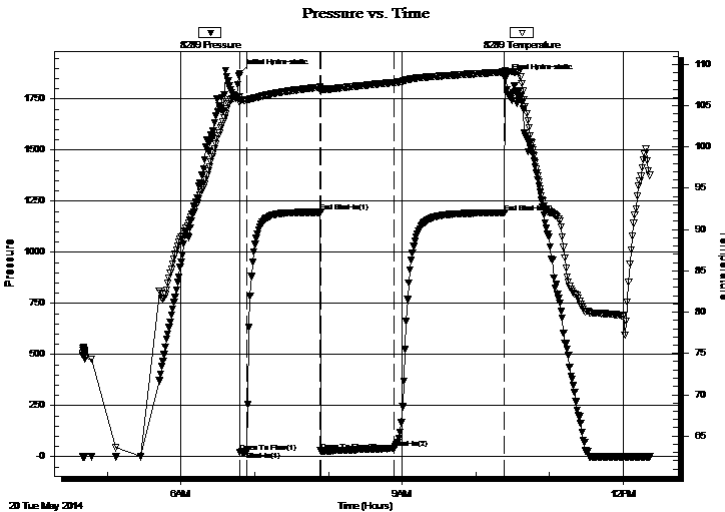
GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 06:48:00
Time Test Ended: 12:22:00
Interval: **3688.00 ft (KB) To 3715.00 ft (KB) (TVD)**
Total Depth: 3770.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 2110.00 ft (KB)
2102.00 ft (CF)
KB to GR/CF: 8.00 ft
Test Type: Conventional Straddle (Reset)
Tester: Jim Svaty
Unit No: 76

Serial #: 8289 Outside
Press@RunDepth: 40.90 psig @ 3701.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.05.20 End Date: 2014.05.20 Last Calib.: 2014.05.20
Start Time: 04:40:02 End Time: 12:22:00 Time On Btm: 2014.05.20 @ 06:47:45
Time Off Btm: 2014.05.20 @ 10:23:45

TEST COMMENT: 5-IFP- Surface Blow Building to 1 1/4"
60-ISIP- No Blow
60-FFP- Surface Blow Building to 2 1/2"
90-FSIP- No Blow

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1876.48 | 106.08 | Initial Hydro-static |
| 1 | 23.11 | 105.41 | Open To Flow (1) |
| 6 | 24.28 | 105.61 | Shut-In(1) |
| 66 | 1196.57 | 107.23 | End Shut-In(1) |
| 66 | 27.81 | 106.78 | Open To Flow (2) |
| 126 | 40.90 | 107.79 | Shut-In(2) |
| 216 | 1194.17 | 109.07 | End Shut-In(2) |
| 216 | 1851.60 | 109.27 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|--------------|--------------|
| 15.00 | OCM 5%o 95%m | 0.21 |
| 15.00 | MCO 5%m 95%o | 0.21 |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

| | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|--|----------------|-----------------|------------------|
| | | | |



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hertel Oil Co LLC

35 14s 19w Ellis,KS

704 E 12th St
Hays KS 67601-3440

CWD #1

Job Ticket: 58869

DST#: 2

ATTN: Randy Kilian

Test Start: 2014.05.20 @ 04:40:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3692.00 ft | Diameter: 3.80 inches | Volume: 51.79 bbl | Tool Weight: 2500.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 2.75 inches | Volume: 0.00 bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 0.00 ft | Diameter: 2.25 inches | Volume: 0.00 bbl | Weight to Pull Loose: 58000.00 lb |
| | | | <u>Total Volume: 51.79 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 27.00 ft | | | String Weight: Initial 54000.00 lb |
| Depth to Top Packer: | 3688.00 ft | | | Final 54000.00 lb |
| Depth to Bottom Packer: | 3715.00 ft | | | |
| Interval between Packers: | 27.00 ft | | | |
| Tool Length: | 104.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 3666.00 | |
| Shut In Tool | 5.00 | | | 3671.00 | |
| Hydraulic tool | 5.00 | | | 3676.00 | |
| Safety Joint | 2.00 | | | 3678.00 | |
| Packer | 5.00 | | | 3683.00 | 23.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 3688.00 | |
| Stubb | 1.00 | | | 3689.00 | |
| Perforations | 12.00 | | | 3701.00 | |
| Recorder | 0.00 | 8789 | Inside | 3701.00 | |
| Recorder | 0.00 | 8289 | Outside | 3701.00 | |
| Perforations | 10.00 | | | 3711.00 | |
| Blank Off Sub | 1.00 | | | 3712.00 | |
| Blank Spacing | 3.00 | | | 3715.00 | 27.00 Tool Interval |
| Packer | 1.00 | | | 3716.00 | |
| Perforations | 17.00 | | | 3733.00 | |
| Change Over Sub | 1.00 | | | 3734.00 | |
| Recorder | 0.00 | 6668 | Below | 3734.00 | |
| Blank Spacing | 31.00 | | | 3765.00 | |
| Change Over Sub | 1.00 | | | 3766.00 | |
| Bullnose | 3.00 | | | 3769.00 | 54.00 Bottom Packers & Anchor |

Total Tool Length: 104.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Hertel Oil Co LLC

35 14s 19w Ellis,KS

704 E 12th St
Hays KS 67601-3440

CWD #1

Job Ticket: 58869

DST#: 2

ATTN: Randy Kilian

Test Start: 2014.05.20 @ 04:40:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

24 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|--------------|---------------|
| 15.00 | OCM 5%o 95%m | 0.210 |
| 15.00 | MCO 5%m 95%o | 0.210 |

Total Length: 30.00 ft Total Volume: 0.420 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

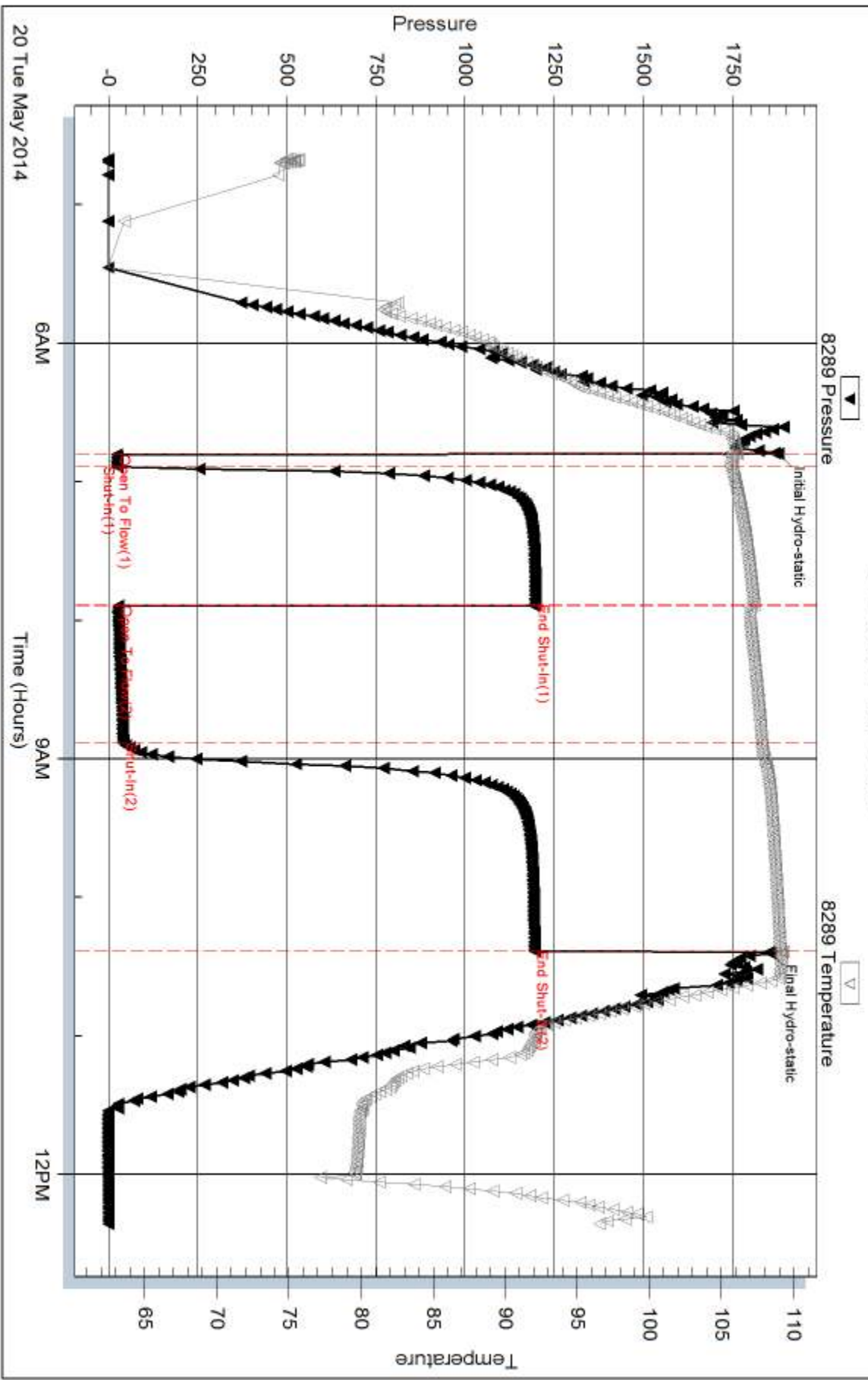
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

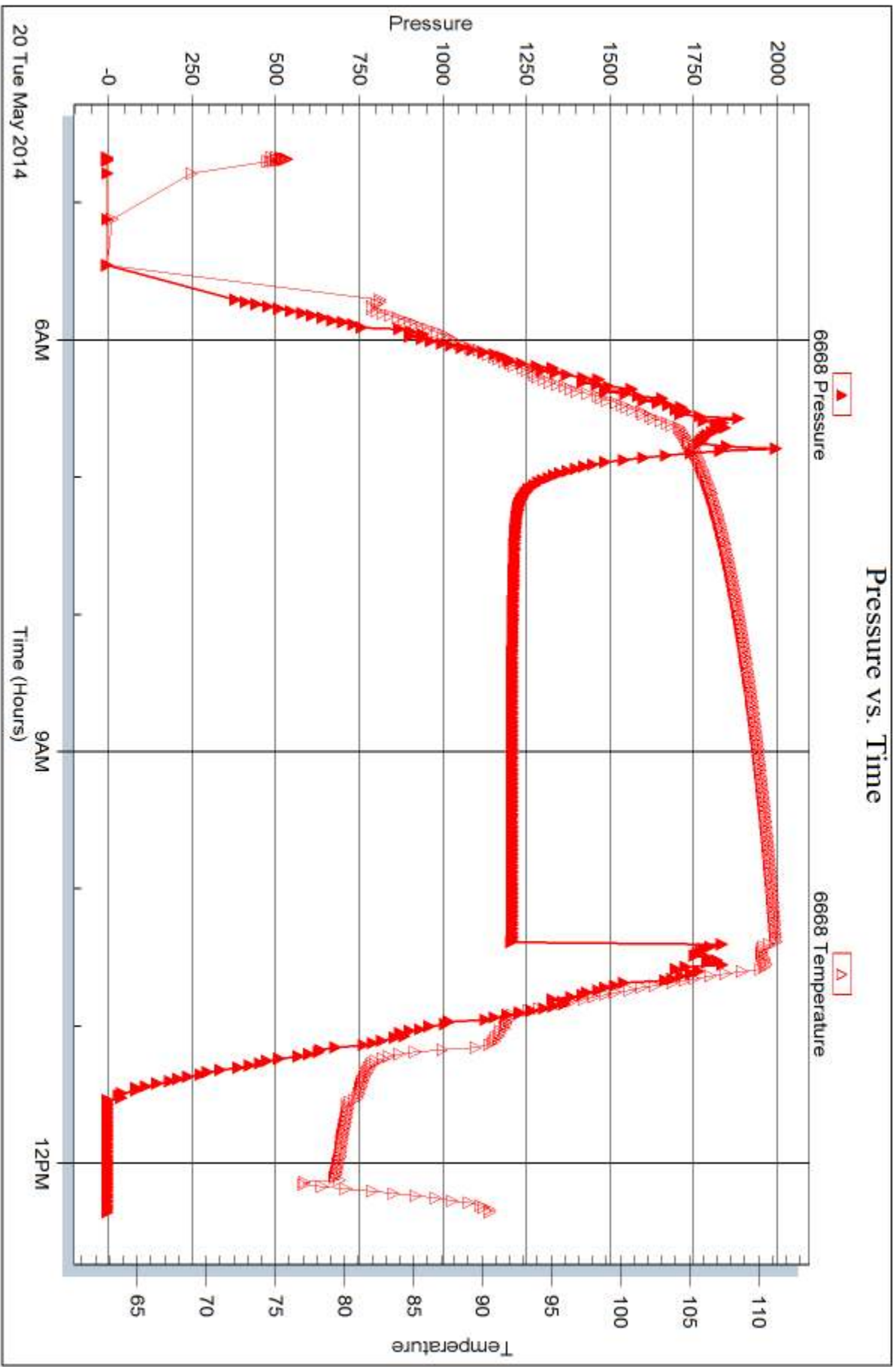


Serial #: 6668

Below (Stratfield) Oil Co LLC

CWD #1

DST Test Number: 2



Tribble Testing, Inc

Ref. No: 58869

Printed: 2014.05.21 @ 10:49:12

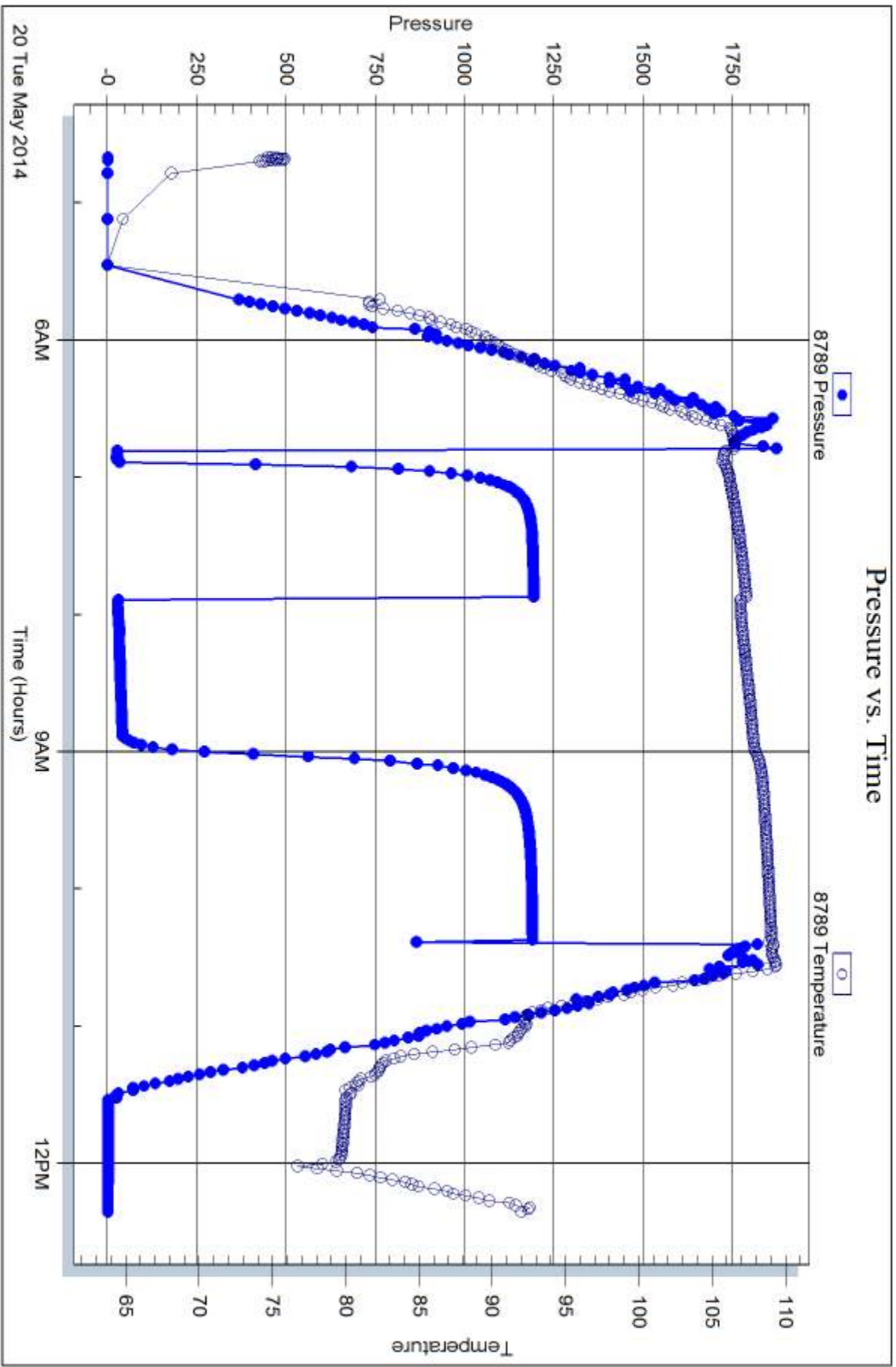
Serial #: 8789

Inside

Hertel Oil Co LLC

CWD #1

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 58869

Printed: 2014.05.21 @ 10:49:12



DRILL STEM TEST REPORT

Prepared For: **Hertel Oil Co LLC**

704 E 12th St
Hays KS 67601-3440

ATTN: Randy Kilian

CWD #1

35 14s 19w Ellis,KS

Start Date: 2014.05.20 @ 13:23:00

End Date: 2014.05.20 @ 20:58:00

Job Ticket #: 58870 DST #: 3

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.05.21 @ 10:48:41

Hertel Oil Co LLC 35 14s 19w Ellis,KS CWD #1 DST #3 LKC "I-J" 2014.05.20



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Hertel Oil Co LLC
704 E 12th St
Hays KS 67601-3440
ATTN: Randy Kilian

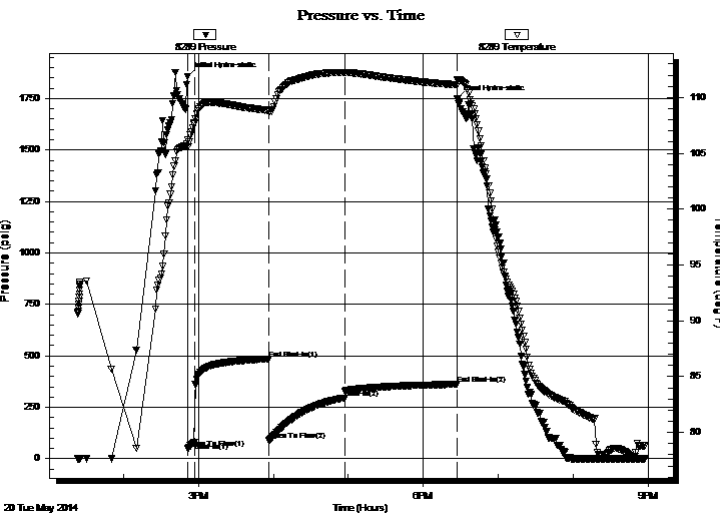
35 14s 19w Ellis,KS
CWD #1
Job Ticket: 58870 **DST#: 3**
Test Start: 2014.05.20 @ 13:23:00

GENERAL INFORMATION:

Formation: **LKC "I-J"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 14:51:30
Time Test Ended: 20:58:00
Interval: **3545.00 ft (KB) To 3595.00 ft (KB) (TVD)**
Total Depth: 3770.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 2110.00 ft (KB)
2102.00 ft (CF)
KB to GR/CF: 8.00 ft
Test Type: Conventional Straddle (Reset)
Tester: Jim Svaty
Unit No: 76

Serial #: 8289 Outside
Press@RunDepth: 295.65 psig @ 3549.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.05.20 End Date: 2014.05.20 Last Calib.: 2014.05.20
Start Time: 13:23:02 End Time: 20:58:00 Time On Btm: 2014.05.20 @ 14:51:15
Time Off Btm: 2014.05.20 @ 18:27:15

TEST COMMENT: 5-IFP- BOB in 3 min.
60-ISIP- Surface Blow in 2min. Died in 40 min.
60-FFP- BOB in 5 min.
90-FSIP- BOB in 12 min. Died Back in 68 min.



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1858.07 | 106.16 | Initial Hydro-static |
| 1 | 48.93 | 105.60 | Open To Flow (1) |
| 6 | 80.42 | 107.72 | Shut-In(1) |
| 65 | 484.29 | 108.84 | End Shut-In(1) |
| 66 | 87.30 | 108.69 | Open To Flow (2) |
| 126 | 295.65 | 112.23 | Shut-In(2) |
| 216 | 361.54 | 111.12 | End Shut-In(2) |
| 216 | 1747.37 | 111.58 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|--------------------|--------------|
| 437.00 | OMCW 3%o 22%m 75%w | 6.13 |
| 115.00 | GOCM 5%o 10%g 85%m | 1.61 |
| 40.00 | OCM 50%o 50%m | 0.56 |
| 10.00 | CO 100% | 0.14 |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

| | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|--|----------------|-----------------|------------------|
| | | | |



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hertel Oil Co LLC

35 14s 19w Ellis,KS

704 E 12th St
Hays KS 67601-3440

CWD #1

Job Ticket: 58870

DST#: 3

ATTN: Randy Kilian

Test Start: 2014.05.20 @ 13:23:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3536.00 ft | Diameter: 3.80 inches | Volume: 49.60 bbl | Tool Weight: 2500.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 2.75 inches | Volume: 0.00 bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 0.00 ft | Diameter: 2.25 inches | Volume: 0.00 bbl | Weight to Pull Loose: 60000.00 lb |
| | | | <u>Total Volume: 49.60 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 14.00 ft | | | String Weight: Initial 54000.00 lb |
| Depth to Top Packer: | 3545.00 ft | | | Final 56000.00 lb |
| Depth to Bottom Packer: | 3595.00 ft | | | |
| Interval between Packers: | 50.00 ft | | | |
| Tool Length: | 248.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |
| Tool Comments: | | | | |

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|---------------------------|---------------|------------|----------|------------|--------------------------------|
| Change Over Sub | 1.00 | | | 3523.00 | |
| Shut In Tool | 5.00 | | | 3528.00 | |
| Hydraulic tool | 5.00 | | | 3533.00 | |
| Safety Joint | 2.00 | | | 3535.00 | |
| Packer | 5.00 | | | 3540.00 | 23.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 3545.00 | |
| Stubb | 1.00 | | | 3546.00 | |
| Perforations | 2.00 | | | 3548.00 | |
| Change Over Sub | 1.00 | | | 3549.00 | |
| Recorder | 0.00 | 8789 | Inside | 3549.00 | |
| Recorder | 0.00 | 8289 | Outside | 3549.00 | |
| Blank Spacing | 31.00 | | | 3580.00 | |
| Change Over Sub | 1.00 | | | 3581.00 | |
| Perforations | 10.00 | | | 3591.00 | |
| Blank Off Sub | 1.00 | | | 3592.00 | |
| Blank Spacing | 3.00 | | | 3595.00 | 50.00 Tool Interval |
| Packer | 1.00 | | | 3596.00 | |
| Perforations | 12.00 | | | 3608.00 | |
| Change Over Sub | 1.00 | | | 3609.00 | |
| Recorder | 0.00 | 6668 | Below | 3609.00 | |
| Blank Spacing | 157.00 | | | 3766.00 | |
| Change Over Sub | 1.00 | | | 3767.00 | |
| Bullnose | 3.00 | | | 3770.00 | 175.00 Bottom Packers & Anchor |
| Total Tool Length: | 248.00 | | | | |



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Hertel Oil Co LLC

35 14s 19w Ellis,KS

704 E 12th St
Hays KS 67601-3440

CWD #1

Job Ticket: 58870

DST#: 3

ATTN: Randy Kilian

Test Start: 2014.05.20 @ 13:23:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

34 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

40000 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbbl |
|--------------|--------------------|----------------|
| 437.00 | OMCW 3%o 22%m 75%w | 6.130 |
| 115.00 | GOCM 5%o 10%g 85%m | 1.613 |
| 40.00 | OCM 50%o 50%m | 0.561 |
| 10.00 | CO 100% | 0.140 |

Total Length: 602.00 ft

Total Volume: 8.444 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

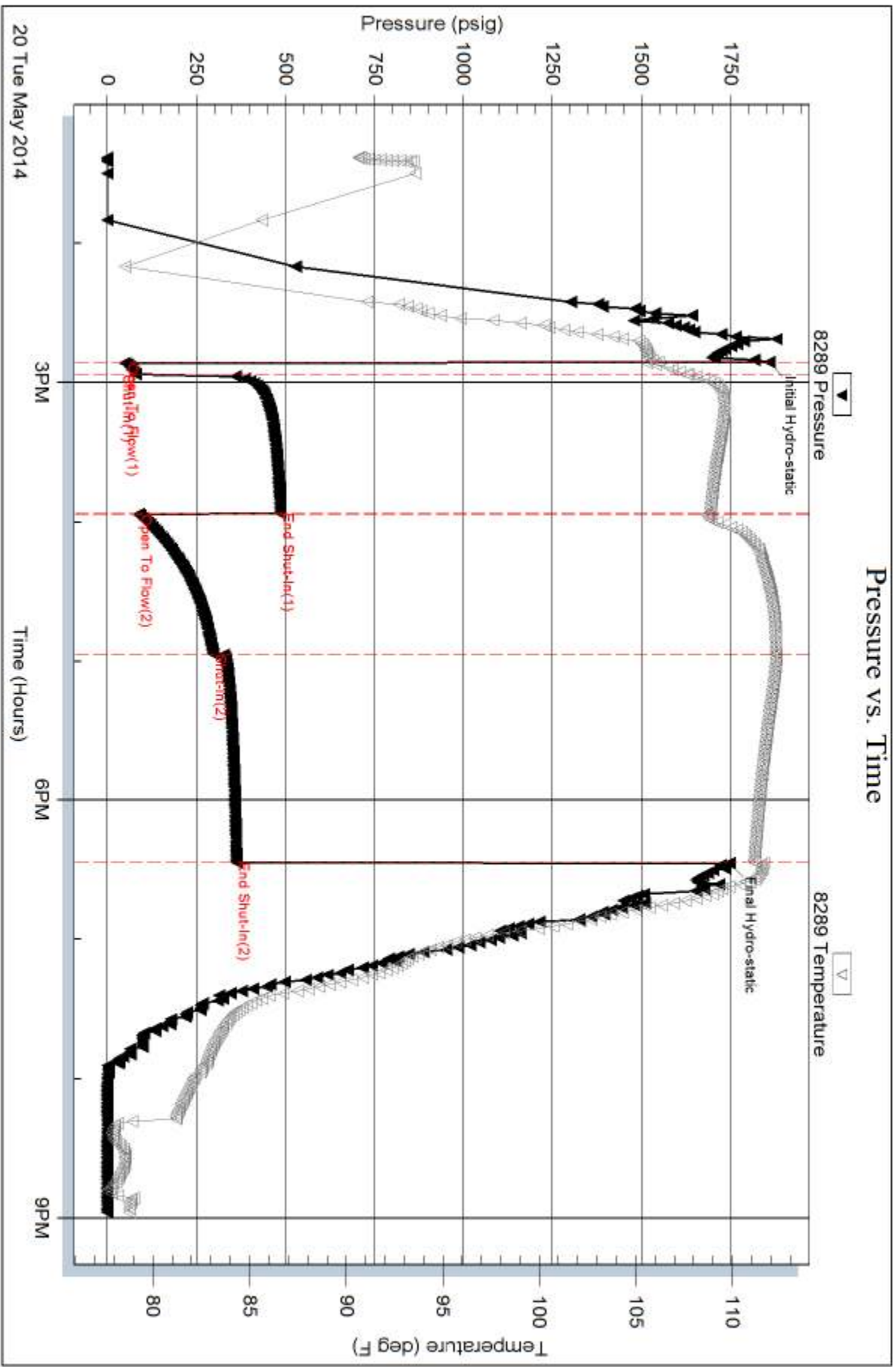
Recovery Comments: .145 @ 84

Serial #: 8289

Outside Hertel Oil Co LLC

CWD #1

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 58870

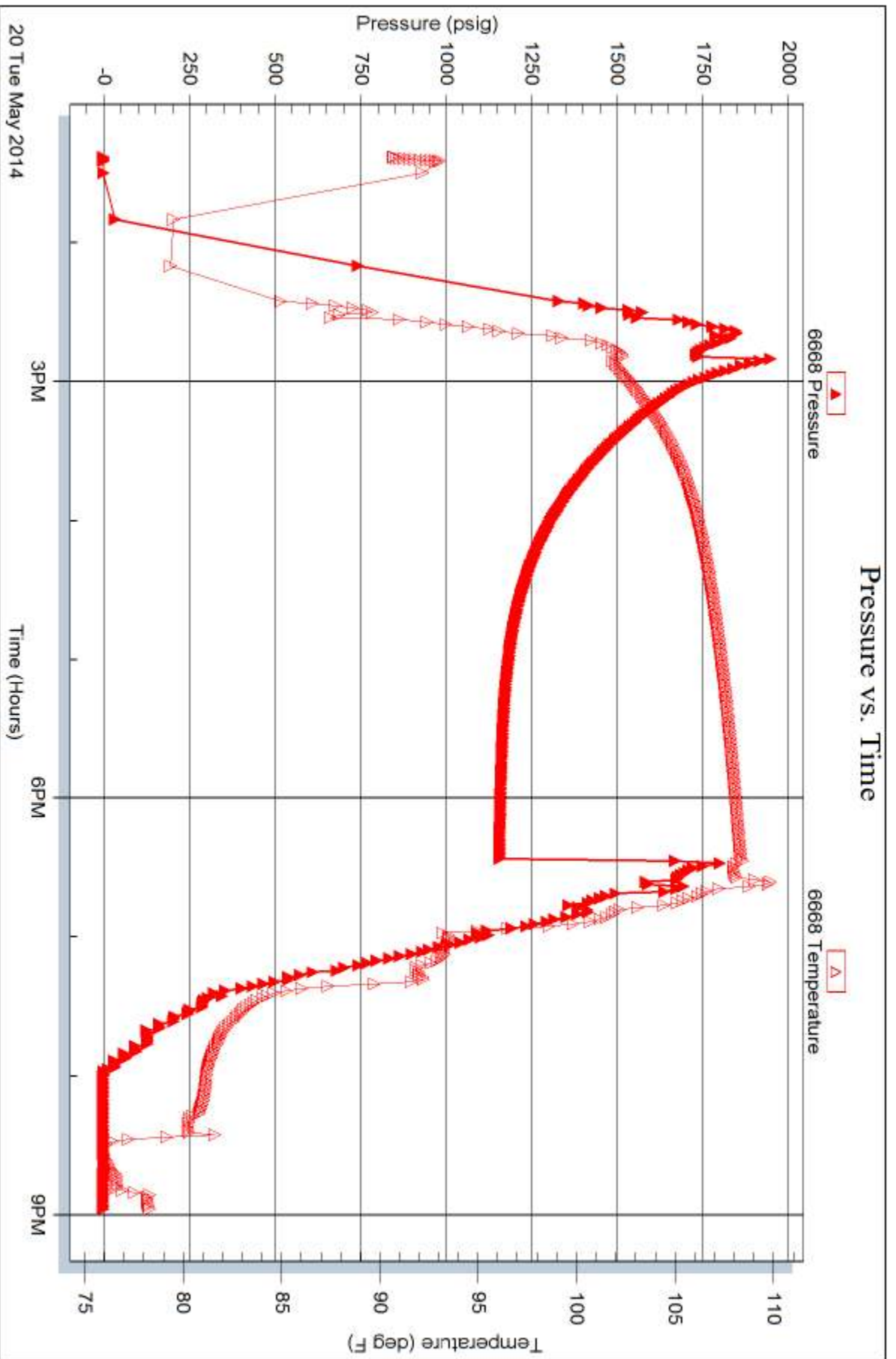
Printed: 2014.05.21 @ 10:48:43

Serial #: 6668

Below (Stratfield) Oil Co LLC

CWD #1

DST Test Number: 3



Tribble Testing, Inc

Ref. No: 58870

Printed: 2014.05.21 @ 10:48:43

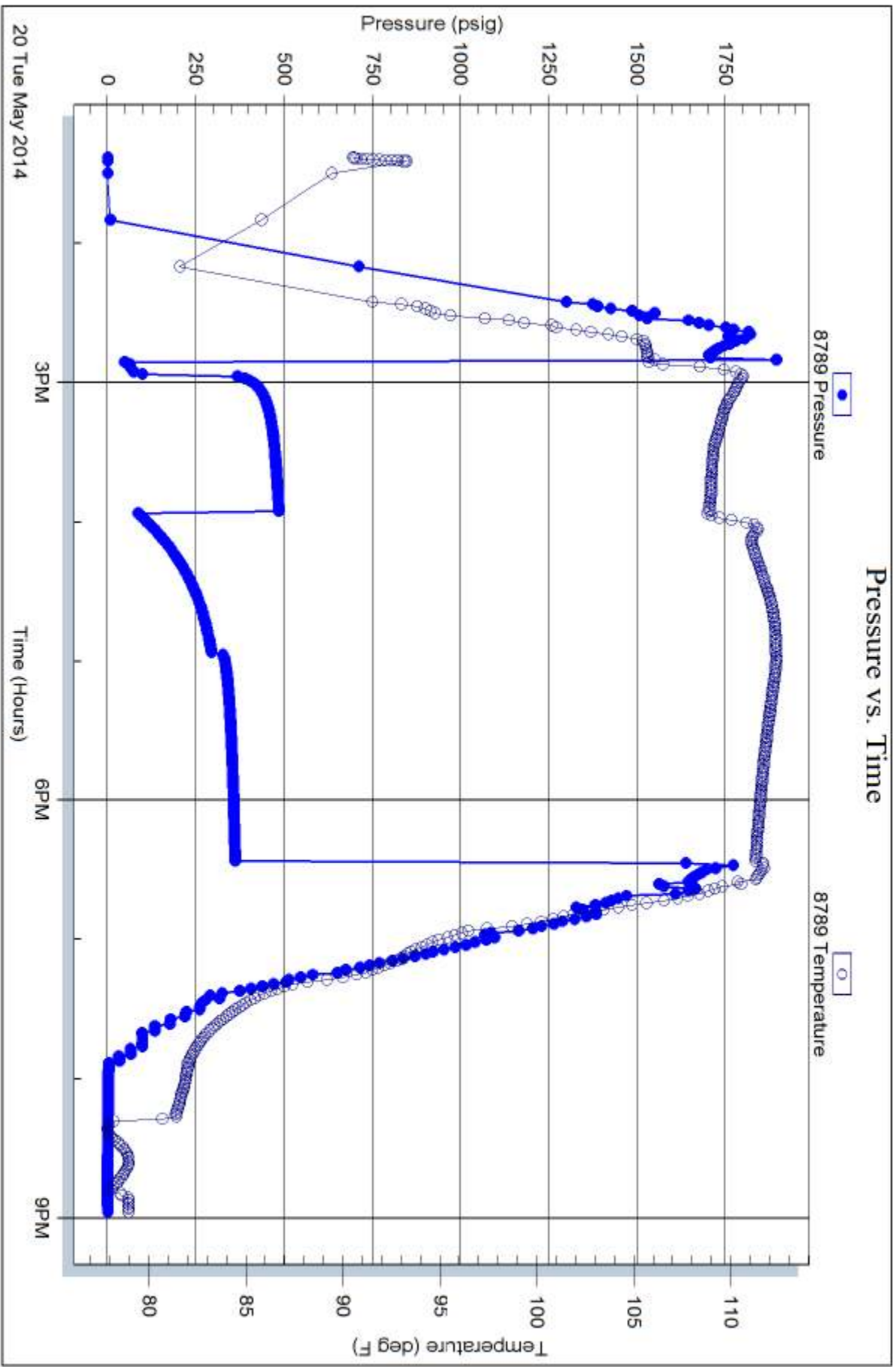
Serial #: 8789

Inside

Hertel Oil Co LLC

CWD #1

DST Test Number: 3



20 Tue May 2014

Trilobite Testing, Inc

Ref. No: 58870

Printed: 2014.05.21 @ 10:48:43



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58868

Well Name & No. CWD #1 Test No. 1 Date 5-19-14
 Company Hertel Oil Co. LLC Elevation 2110 KB 2102 GL
 Address 704 E 12th St. Hays KS 67601-3440
 Co. Rep / Geo. Randy Kilian Rig Discovery #2
 Location: Sec. 35 Twp. 14^s Rge. 19^w Co. Ellis State KS

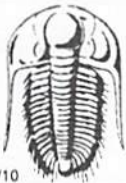
Interval Tested 3656-3720 Zone Tested Arbuckle
 Anchor Length 64 Drill Pipe Run 3631 Mud Wt. 9.2
 Top Packer Depth 3651 Drill Collars Run 0 Vis 60+
 Bottom Packer Depth 3656 Wt. Pipe Run 0 WL 7.6
 Total Depth 3720 Chlorides 5800 ppm System LCM 2

Blow Description IFP - Surface Blow Building to 7in.
ISIP - No Blow
FFP - BOB in 8min.
FSIP - No Blow

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|-------------|-----------|-----------|-----------|------|
| <u>125</u> | <u>MCW</u> | | <u>80</u> | <u>20</u> | |
| <u>250</u> | <u>0mcw</u> | <u>5</u> | <u>75</u> | <u>20</u> | |
| <u>375</u> | <u>0mcw</u> | <u>20</u> | <u>40</u> | <u>40</u> | |
| <u>1</u> | <u>CO</u> | | | | |

Rec Total 751 BHT 112 Gravity _____ API RW 1,259 @ 98 °F Chlorides 18000 ppm
 (A) Initial Hydrostatic 1864 Test 1150 T-On Location 4:50
 (B) First Initial Flow 27 Jars _____ T-Started ~~11:41~~ 9:37
 (C) First Final Flow 56 Safety Joint 75 T-Open 11:41
 (D) Initial Shut-In 1176 Circ Sub _____ T-Pulled 15:16
 (E) Second Initial Flow 61 Hourly Standby _____ T-Out 17:53
 (F) Second Final Flow 357 Mileage 25 RT 38.75 Comments _____
 (G) Final Shut-In 1177 Sampler _____
 (H) Final Hydrostatic 1826 Straddle _____ Ruined Shale Packer _____
 Initial Open 5 Shale Packer _____ Ruined Packer _____
 Initial Shut-In 60 Extra Packer _____ Extra Copies _____
 Final Flow 60 Extra Recorder _____ Sub Total 0
 Final Shut-In 90 Day Standby _____ Total 1263.75
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1263.75

Approved By _____ Our Representative [Signature]
 Trilobite Testing Inc. shall not be liable for damaged of any kind of 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, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58869

4/10

Well Name & No. CWD #1 Test No. 2 Date 5-20-14
 Company Hertel Oil Co. LLC Elevation 2110 KB 2102 GL
 Address 704 E 12th St Hays KS 67601-3440
 Co. Rep / Geo. Randy Kilian Rig Discovery #2
 Location: Sec. 35 Twp. 14^s Rge. 19W Co. Ellis State KS

Interval Tested 3688-3715 Zone Tested Arbuckle
 Anchor Length 27 (SSR) Drill Pipe Run 3692 Mud Wt. 9.2
 Top Packer Depth 3688 Drill Collars Run 0 Vis 60
 Bottom Packer Depth 3715 Wt. Pipe Run 0 WL 8.0
 Total Depth 3770 Chlorides 5900 ppm System LCM 2

Blow Description IFP - Surface Blow Building to 1 1/4 in.
ISIP - No. Blow
FFP - Surface Blow Building to 2 1/2 in.
FSIP - No Blow

| Rec | Feet of | %gas | %oil | %water | %mud |
|-----------|------------|-----------|------|-----------|------|
| <u>15</u> | <u>OCM</u> | <u>5</u> | | <u>95</u> | |
| <u>15</u> | <u>MCO</u> | <u>95</u> | | <u>5</u> | |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |

Rec Total 30 BHT 109 Gravity 24 API RW @ _____ °F Chlorides _____ ppm

| | | |
|-------------------------------------|--|---------------------------|
| (A) Initial Hydrostatic <u>1876</u> | <input checked="" type="checkbox"/> Test <u>1150</u> | T-On Location <u>3:46</u> |
| (B) First Initial Flow <u>23</u> | <input type="checkbox"/> Jars _____ | T-Started <u>4:40</u> |
| (C) First Final Flow <u>24</u> | <input checked="" type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>6:49</u> |
| (D) Initial Shut-In <u>1196</u> | <input type="checkbox"/> Circ Sub _____ | T-Pulled <u>10:24</u> |
| (E) Second Initial Flow <u>27</u> | <input type="checkbox"/> Hourly Standby _____ | T-Out <u>12:22</u> |
| (F) Second Final Flow <u>40</u> | <input checked="" type="checkbox"/> Mileage <u>38.75</u> | Comments _____ |
| (G) Final Shut-In <u>1194</u> | <input type="checkbox"/> Sampler _____ | |
| (H) Final Hydrostatic <u>1851</u> | <input checked="" type="checkbox"/> Straddle <u>600</u> | |

| | | |
|---------------------------|---|--|
| Initial Open <u>5</u> | <input type="checkbox"/> Shale Packer _____ | <input type="checkbox"/> Ruined Shale Packer _____ |
| Initial Shut-In <u>60</u> | <input type="checkbox"/> Extra Packer _____ | <input type="checkbox"/> Ruined Packer _____ |
| Final Flow <u>60</u> | <input type="checkbox"/> Extra Recorder _____ | <input type="checkbox"/> Extra Copies _____ |
| Final Shut-In <u>90</u> | <input type="checkbox"/> Day Standby _____ | Sub Total <u>0</u> |
| | <input type="checkbox"/> Accessibility _____ | Total <u>1863.75</u> |
| | Sub Total <u>1863.75</u> | MP/DST Disc't _____ |

Approved By _____ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of 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, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58870

4/10

Well Name & No. CWD #1 Test No. 3 Date 5-20-14
 Company Hertel Oil Co. LLC Elevation 2110 KB 2102 GL
 Address 704 E 12th St Hays KS 67601-3440
 Co. Rep / Geo. Randy Kilian Rig Discovery #2
 Location: Sec. 35 Twp. 14^S Rge. 19W Co. Ellis State KS

Interval Tested 3545-3595 Zone Tested LKC "I+J"
 Anchor Length 50 (175TP) Drill Pipe Run 3536 Mud Wt. 9.2
 Top Packer Depth 3545 Drill Collars Run 0 Vis 60
 Bottom Packer Depth 3595 Wt. Pipe Run 0 WL 8.0
 Total Depth 3770 Chlorides 5900 ppm System LCM 2

Blow Description IFP - BOB in 3min.
ISIP - Surface Blow in 2min. Dried in 40min.
FFP BOB in 5min.
FSIP - BOB in 12min. Dried Back in 68min.

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|---------------------------|-------------------|-----------------------------------|------------------------|------|
| <u>437</u> | <u>0MCW</u> | <u>3</u> | <u>75</u> | <u>22</u> | |
| <u>112</u> | <u>0CM</u> | <u>10</u> | <u>5</u> | <u>85</u> | |
| <u>40</u> | <u>0CM</u> | <u>50</u> | | <u>50</u> | |
| <u>10</u> | <u>CO</u> | <u>100</u> | | | |
| Rec | Feet of <u>458 DIP</u> | %gas | %oil | %water | %mud |
| Rec Total | <u>602</u> BHT <u>111</u> | Gravity <u>34</u> | API RW <u>.145</u> @ <u>84</u> °F | Chlorides <u>40000</u> | ppm |

(A) Initial Hydrostatic 1858 Test 1150 T-On Location 3:46
 (B) First Initial Flow 48 Jars 13:23
 (C) First Final Flow 80 Safety Joint 75 T-Open 14:52
 (D) Initial Shut-In 484 Circ Sub 18:27
 (E) Second Initial Flow 87 Hourly Standby 20:58
 (F) Second Final Flow 295 Mileage
 (G) Final Shut-In 361 Sampler
 (H) Final Hydrostatic 1747 Straddle 600 Ruined Shale Packer
 Shale Packer Ruined Packer
 Extra Packer Extra Copies

Initial Open 5
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90
 Sub Total 1825
 Total 1825
 MP/DST Disc't

Approved By _____ Our Representative [Signature]

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Randall Kilian Corporation

Geologist



**Certified Petroleum
Geologist #3351
License #224**

3951 Eveningglow Way
Castle Rock, CO 80104

Phone: 720-733-0420

Cell: 785-635-1349

E-mail: rkgeo53@hotmail.com

GEOLOGIST'S WELL REPORT

COMPANY HERTEL OIL CO LLC (33625)

WELL CWB #1

FIELD Antonino Townsite West

LOCATION (legal) Ap. W $\frac{1}{2}$ W $\frac{1}{2}$ SE

(footages) 1355' FSL & 2305' FEL

Section 35 TWP 14S RGE 19W

(Map) $\frac{1}{2}$ mi W & $\frac{1}{4}$ mi N of Antonino

COUNTY Ellis STATE Kansas

ELEVATION: 2104' K.B., 2096' G.L.

Depths measured from Kelly Bushing

A. P. I. NUMBER 15-051-26694

GEOLOGY BY Randall Kilian

PERTINENT WELL DATA

CONTRACTOR Discovery Drilling (31548)

RIG #2 HYDRAULICS D-375 6x14x60
(Terry Wickham TP)

DRILL PIPE 4 1/2" X-H COLLARS 6 1/2" 16 (487')

CASING: SURFACE 8 5/8" @ 222'w/ 150 sx Common

PRODUCTION _____

DRILLING FLUID. COMPANY Mud-Co/Service Mud, Inc.
(Gary Schmidtberger)

TYPE: Chemical

REMARKS: Full service

DRILL STEM TESTS: COMPANY Trilobite Testing Inc.
(Jim Svaty)

NUMBER OF TESTS Three (3)

ELECTIC LOGS: COMPANY Gemini Wireline Services

DETAIL (5") 3000' - RTD

TYPE DI, Comp. N-D, Micro

DRILLING TIME FROM 3000' TO RTD

SAMPLE TIME FROM 3000' TO RTD

SUPERVISION FROM 3000' TO RTD

VERTICAL DEVIATION 1° @ 223', 3/4° @ 3720'

PLUGGING REPORT 50 sx @ 3684', 25 @ 1352', 85 @ 652',
40 @ 271', 10 @ 40' 30 Rat, 15 Mouse, 255 sx 60/40 Poz; Ray Dinkel

RESERVE PIT 800 bbls., Chl. 41000

DRILL STEM TESTS

| NO | INTERVAL | IFP/TIME | ISIP/TIME | FFP/TIME | FSIP/TIME | IHP/FHP | RECOVERY |
|----|---------------------------|------------------|--------------|--------------------|--------------|----------------|---|
| 1 | Arb. 3656- 3720' | 27# 56# 5' | 1176# 60" | 61# 357# 60" | 1177# 90" | 1864# 1826# | 1' Oil 625' O&M,C,Wtr 125' M.,Wtr 14% Oil 18k |
| 2 | Arb. 3688- 3715' | 23# 24# 5" | 1196# 60" | 27# 40# 60" | 1194# 90" | 1876# 1851# | 15' M,Oil 15' O,C,Mud |
| 3 | LKc I-J 3545- 3595' | 44# 80# 5" | 484# 60" | 87# 295# 60" | 361# 90" | 1858# 1747# | 10' Oil 155' O,C,Mud 437' O,C,M,Wtr |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

| MUD RECORD | | | | | | |
|------------|-------|-----|-----|-----|------|----|
| CHK | DEPTH | WT | VIS | FIL | CHL | YP |
| 1 | 2915' | | | | | |
| 2 | 2967' | 8.8 | 46 | 7.2 | 1.9k | 12 |
| 3 | 3240' | 8.4 | 61 | | | |
| 4 | 3369' | 8.9 | 51 | 7.8 | 5.1k | 36 |
| 5 | 3535' | 8.9 | 59 | 8.0 | | |
| 6 | 3670' | 8.9 | 63 | | | |
| 7 | 3720' | 9.2 | 60+ | 7.6 | 5.8k | 29 |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |

Displaced
LCM 1#
LCM 1#
LCM 2# \$6362

| BIT RECORD | | | | | | |
|------------|--------|-------|-------|----------|-------|--------|
| NO | SIZE | MAKE | TYPE | DEPTHOUT | FEET | HOURS |
| 1 | 1 1/4" | IADC | 437 | 223' | 223' | 2 3/4 |
| 2 | 7 7/8" | HTCo. | GX20C | 2967' | 2744' | 40 3/4 |
| 3 | 7 7/8" | HTCo. | GX20C | 3770' | 803' | 31 3/4 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |

SUMMARY

The CWB #1 well was drilled with Discovery Drilling tools rig #2 beginning 5-14-14 and drilling was completed 5-20-14.

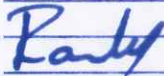
The drill site was located via a 3-D seismic survey.

The well ran high to nearby dry holes and 1' low to the referenced well down through the BKc. However, the Arbuckle was encountered high.

The top 6' of Arbuckle was tight. The oil/water contact is ap. 3717' (-1613). DST #1 over the top 16' down to 3720' (-1616) recovered mud, oil, and water so DST #2 was run over the upper 11'. Only 15' oil & 15' Mud was recovered from the upper Arbuckle on DST #2. DST #3 over the LKc I-J zones, was also a negative test.

Based upon all data, the well was plugged as a dry hole.

Respectfully,



Randall Kilian

ITION

E

ed well.

DRILLING TIME (min/ft)

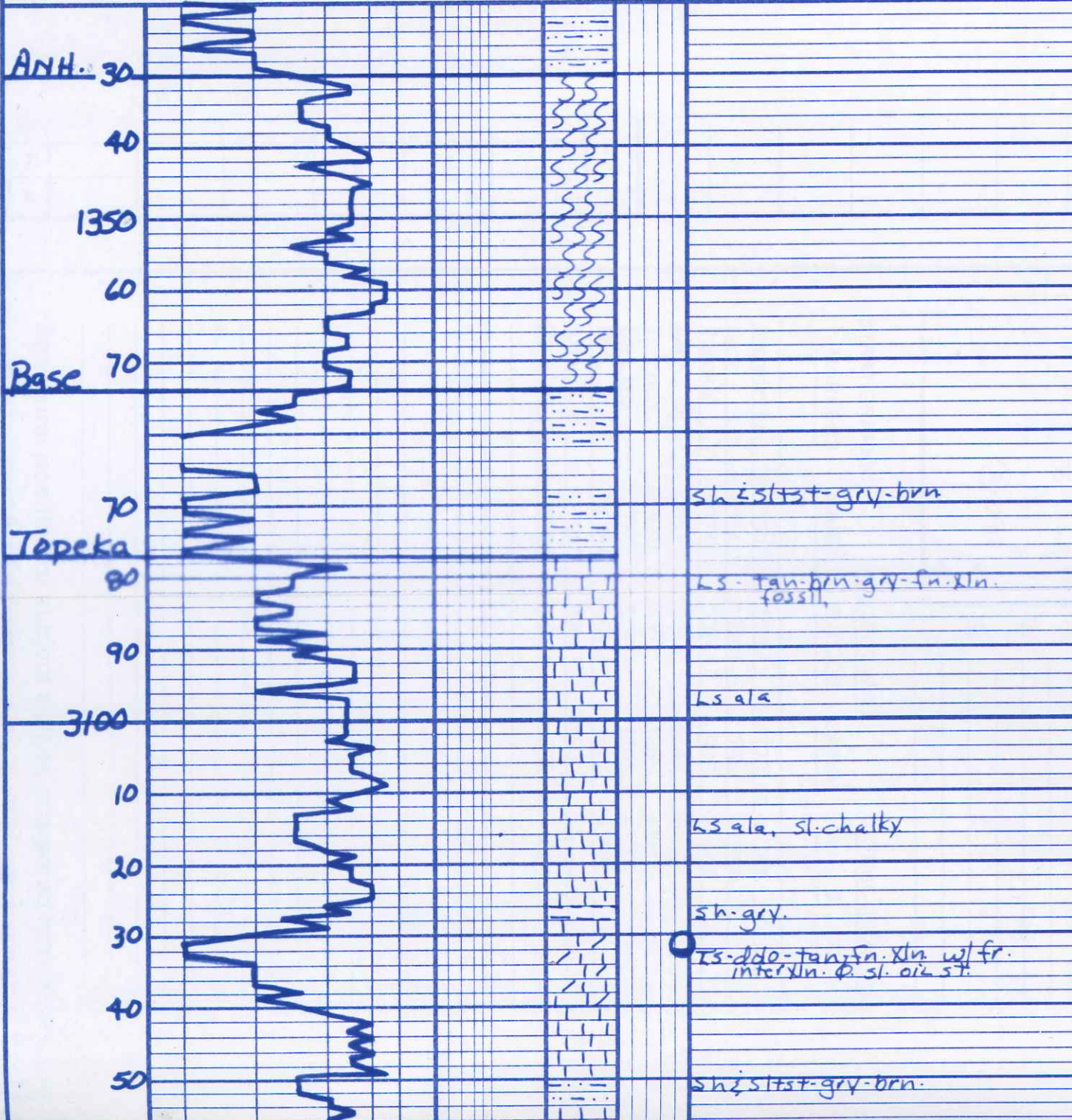
O & SHOWS

LITHOLOGY (LAGGED)

REMARKS

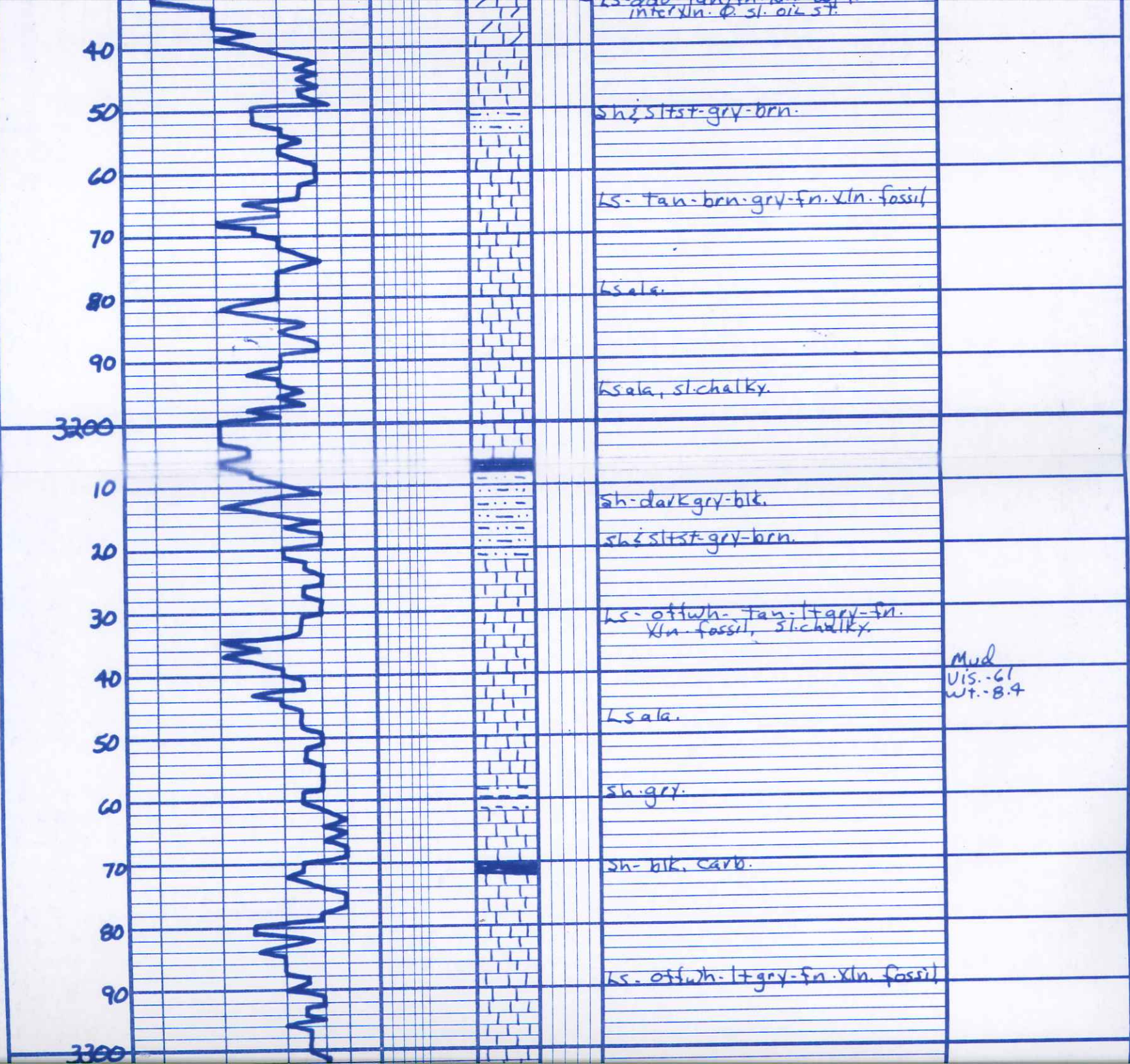
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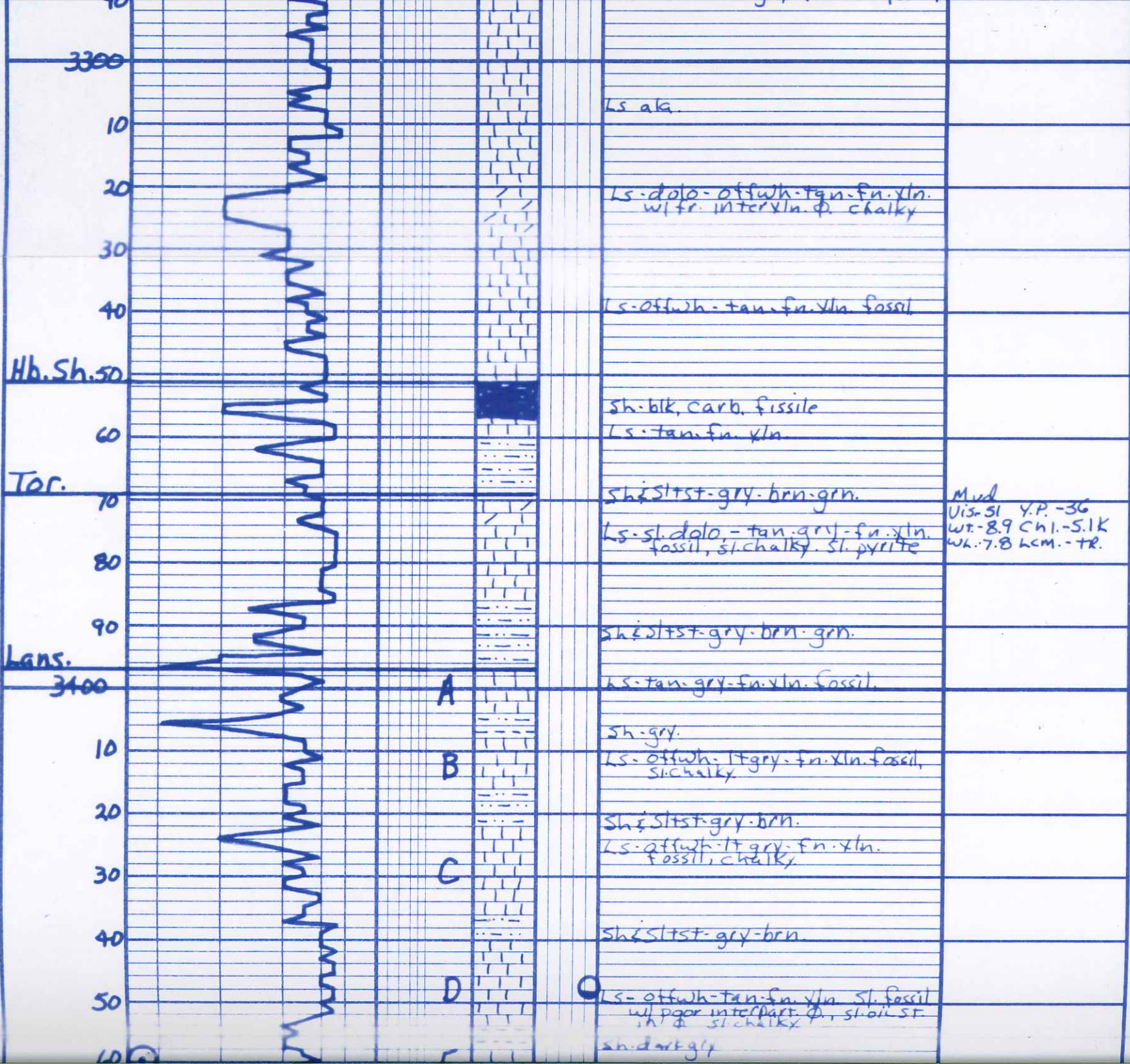
DST
POOR
FAIR
GOOD

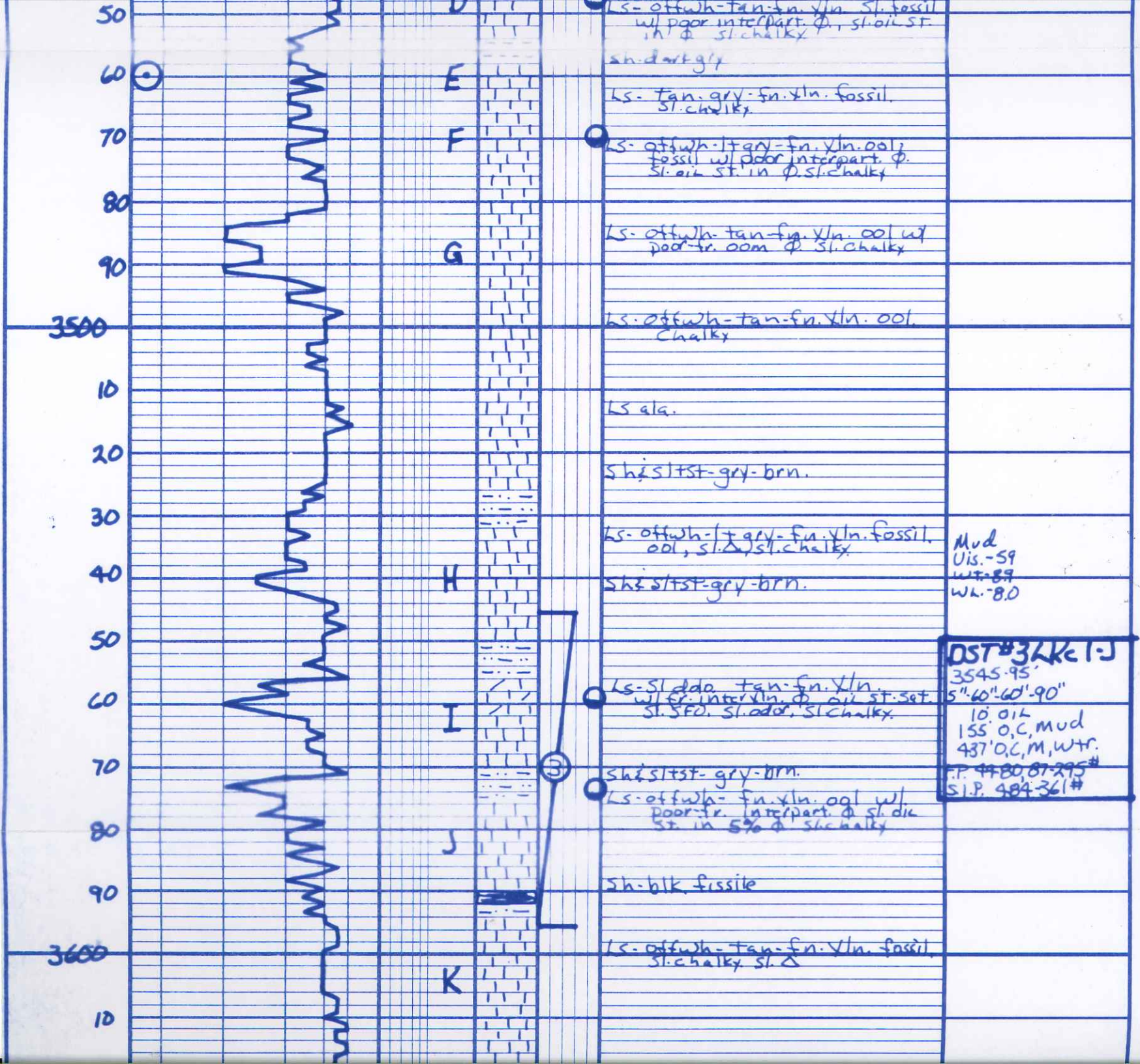


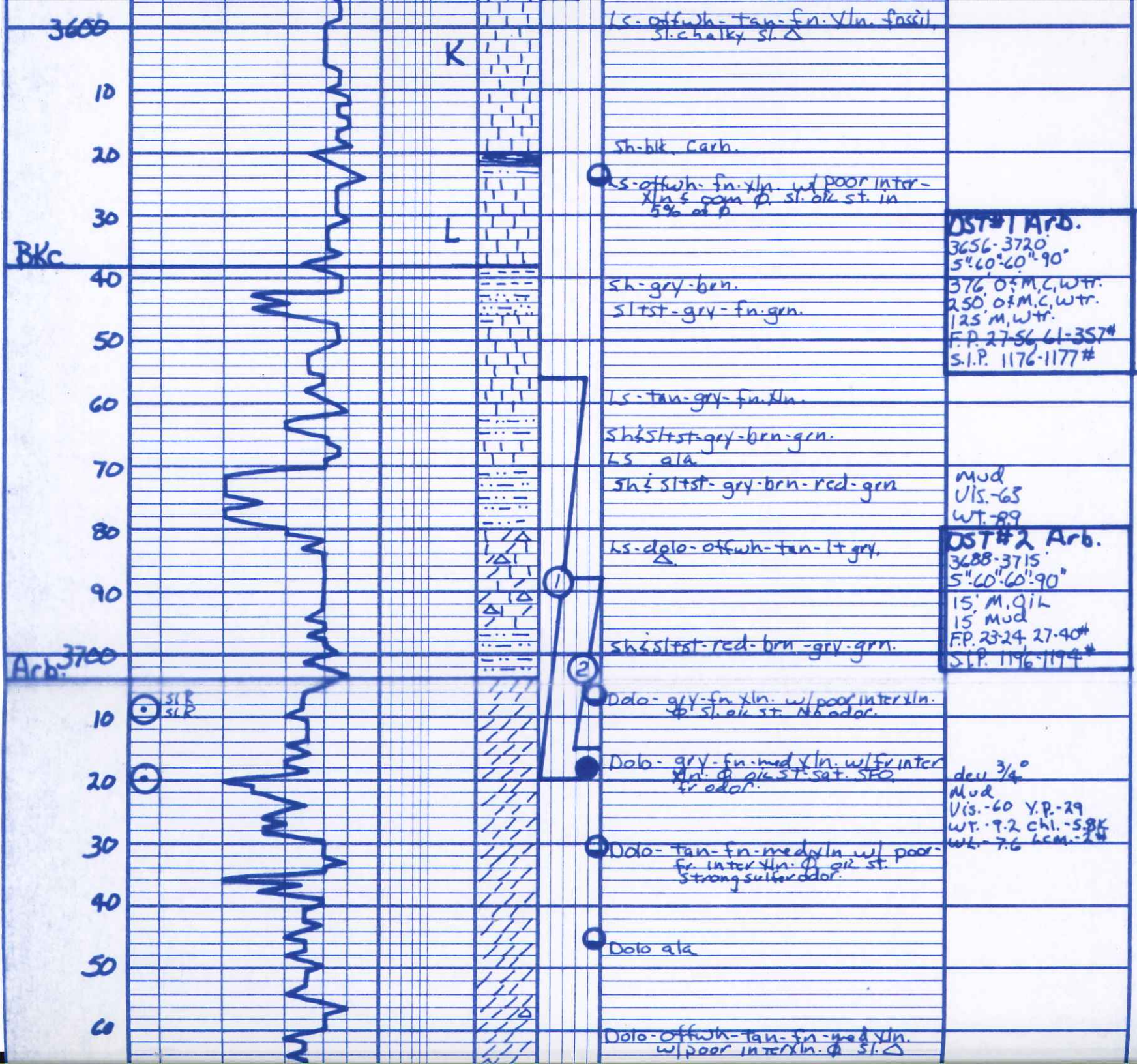
Displaced @ 2915'
Mud @ 2967
Vis. - 96 Y.P. - 12
WT. - 88 Chl. - 1.95
Wk. - 7.2 LCM - 1

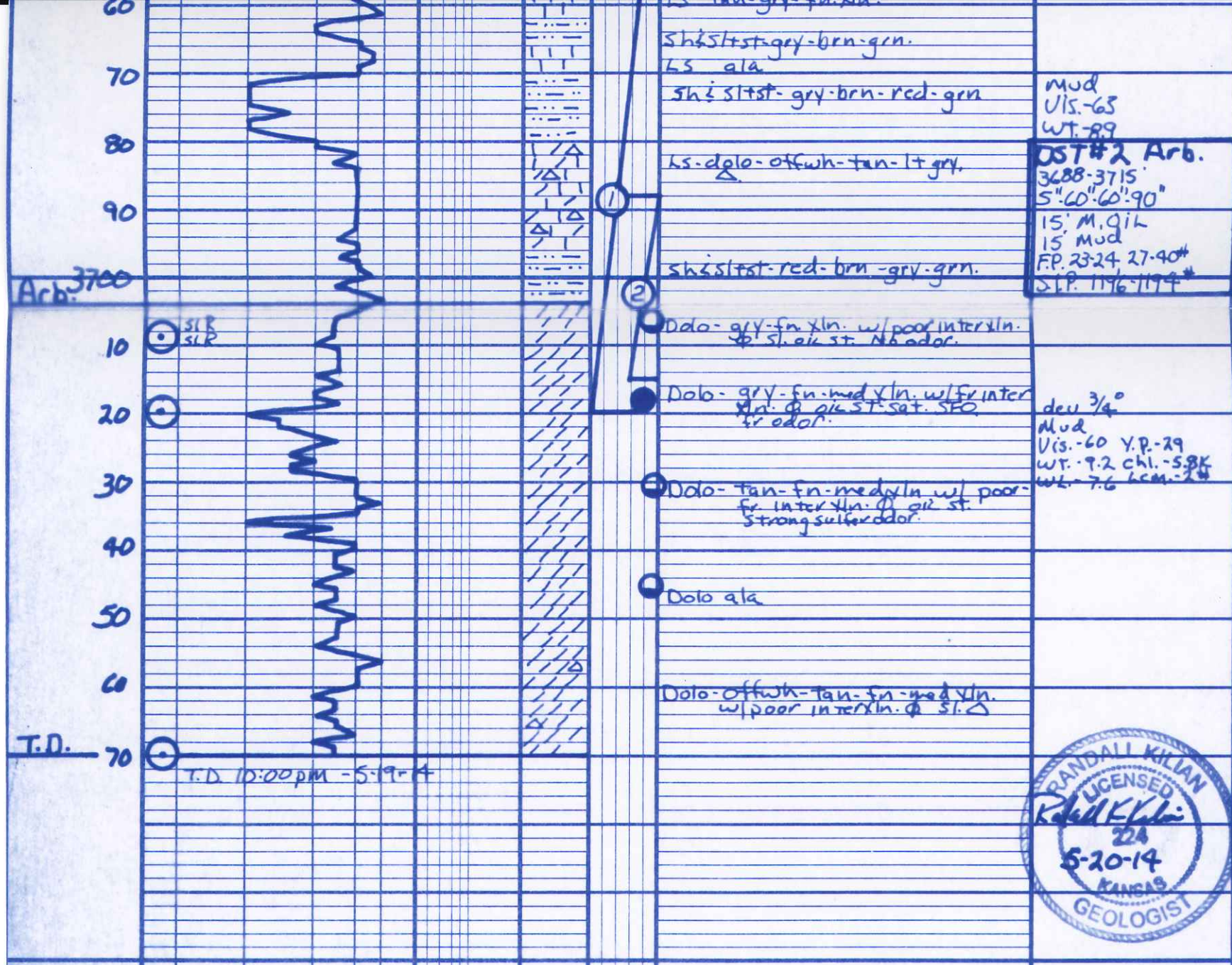
geo on location
6:00pm 5-17-19











QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 431

| | | | | | | | | | | | | | | | |
|------|---------|------|----|------|----|-------|----|--------|-------|-------|----|-------------|--|--------|--------|
| Date | 9-14-14 | Sec. | 35 | Twp. | 14 | Range | 14 | County | Ellis | State | KS | On Location | | Finish | 8:30pm |
|------|---------|------|----|------|----|-------|----|--------|-------|-------|----|-------------|--|--------|--------|

Lease **CW B** Location **Antio 1/2 h Vintc**

Well No. **#2** Owner

Contractor **DISCOVER** **2**
Type Job **Surface**
To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish
cementer and helper to assist owner or contractor to do work as listed.

Hole Size **12 1/4** T.D. **222** Charge To **Hertel Oil**

Csg. **8 1/2** Depth Street

Tbg. Size Depth City State

Tool Depth The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg. **20** Shoe Joint **20** Cement Amount Ordered **150 3%CC**

Meas Line Displace **12 3/4** **2%CC**

EQUIPMENT Common **150**

| | | | | | | |
|---------|----|-----|----------|------------|--|----------|
| Pumptrk | 16 | No. | Cementer | Tom | | Poz. Mix |
| | | | Helper | | | |

| | | | | | | | |
|---------|----|-----|--------|-------------|--|------|----------|
| Bulktrk | 13 | No. | Driver | Bill | | Gel. | 3 |
| | | | Driver | | | | |

| | | | | | | | |
|---------|-----------|-----|--------|--------------|--|---------|----------|
| Bulktrk | DC | No. | Driver | Lomte | | Calcium | 5 |
| | | | Driver | | | | |

JOB SERVICES & REMARKS Hulls

Remarks: Salt

Rat Hole Flowseal

Mouse Hole Kol-Seal

Centralizers Mud CLR 48

Baskets CFL-117 or CD110 CAF 38

D/V or Port Collar Sand

Handling **158**

Mileage

FLOAT EQUIPMENT

Guide Shoe

Centralizer

Baskets

AFU Inserts

Float Shoe

Latch Down

Pumptrk Charge **Surface**

Mileage **10**

Tax

Discount

Total Charge

X Signature **[Signature]**

