

CONFIDENTIAL

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

ORIGINAL

Form ACO-1
June 2009

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

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

9/27/12

OPERATOR: License # 4787 **KCC**
Name: TDI, Inc. **SEP 27 2010**
Address 1: 1310 Bison Road
Address 2: CONFIDENTIAL
City: Hays State: KS Zip: 67601 + 9696
Contact Person: Tom Denning **RECEIVED**
Phone: (785) 628-2593
CONTRACTOR: License # 33350 **SEP 29 2010**
Name: Southwind Drilling
Wellsite Geologist: Herb Deined **KCC WICHITA**
Purchaser: Coffeyville Resources

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
 Conv. to GSW
 Plug Back: 3717' Plug Back Total Depth _____
 Commingled Permit #: _____
 Dual Completion Permit #: _____
 SWD Permit #: _____
 ENHR Permit #: _____
 GSW Permit #: _____

07/31/2010 08/07/2010 09/09/2010
Spud Date or Date Reached TD Completion Date or Recompletion Date

API No. 15 - 051-26015-00-00
Spot Description: _____
NW SW NW NE Sec. 6 Twp. 15 S. R. 19 East West
714 Feet from North / South Line of Section
2,410 Feet from East / West Line of Section
Footages Calculated from Nearest Outside Section Corner:
 NE NW SE SW
County: Ellis
Lease Name: Irvin Well #: 1
Field Name: wildcat
Producing Formation: Kansas City
Elevation: Ground: 2060' Kelly Bushing: 2070'
Total Depth: 3741' Plug Back Total Depth: 3480'
Amount of Surface Pipe Set and Cemented at: 222' Feet
Multiple Stage Cementing Collar Used? Yes No
If yes, show depth set: 1326' Feet
If Alternate II completion, cement circulated from: 1326'
feet depth to: surface w/ 130 sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)
Chloride content: 39,000 ppm Fluid volume: 1000 bbls
Dewatering method used: Removed free fluid. Evaporation
Location of fluid disposal if hauled offsite: _____
Operator Name: Hertel Oil Company, LLC
Lease Name: Oldham License #: 33625
Quarter NW/4 Sec. 4 Twp. 15 S. R. 18 East West
County: Ellis Permit #: D20214

INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

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.

Signature: [Signature]
Title: Tom Denning, President Date: 09/27/2010

KCC Office Use ONLY

- Letter of Confidentiality Received Date: 9/27/10 - 9/27/12
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: NJ Date: 10/30

Operator Name: TDI, Inc. Lease Name: Irvin Well #: 1
 Sec. 6 Twp. 15 S. R. 19 East West County: Ellis **CONFIDENTIAL**

INSTRUCTIONS: Show important tops and base 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. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

| | | | | |
|--|---|---|----------------------------------|---------------------------------|
| Drill Stem Tests Taken <i>(Attach Additional Sheets)</i> | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> Log | Formation (Top), Depth and Datum | <input type="checkbox"/> Sample |
| Samples Sent to Geological Survey | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Name | Top | Datum |
| Cores Taken | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Anhydrite | 1316' | +754' |
| Electric Log Run | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Topeka | 3046' | -976' |
| Electric Log Submitted Electronically <i>(If no, Submit Copy)</i> | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Heebner | 3314' | -1244' |
| List All E. Logs Run: | | Lansing/KC | 3360' | -1290' |
| Dual Compensated Porosity | | Base KC | 3588' | -1518' |
| Dual Induction | | Arbuckle | 3714' | -1644' |
| Microresistivity | | Reagan | 3732' | -1662' |

| CASING RECORD <input checked="" 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 |
| surface | 12 1/4" | 8 5/8" | 23# | 222' | common | 150 sxs | 2% gel, 3% cc |
| production | 7 7/8" | 5 1/2" | 14# | 3738' | ea-2 | 150 SXS | |

| ADDITIONAL CEMENTING / SQUEEZE RECORD | | | | |
|---|------------------|----------------|--------------|--|
| Purpose: | Depth Top Bottom | Type of Cement | # Sacks Used | Type and Percent Additives |
| <input type="checkbox"/> Perforate <input checked="" type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone | 1326' | SMD | 130 sxs | DV Cement from 1326' to surface. Cement did circulate. |

| 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 |
|----------------|---|--|-------|
| 2 spf | 3496'-99' & 3487'-89' | 150 gals 15% MA | |
| 2 spf | 3428'-32' | 250 gals 15% MA & 1000 gals 15% NE | |
| 2 spf | 3416'-18' & 3407'-09' | 500 gals 15% MA & 1000 gals 15% NE | |
| 2 spf | 3387'-90' | 250 gals 15% MA & 750 gals 15% NE | |
| | Bridge plug set @ 3480' | | |

| | | |
|---|--|--|
| TUBING RECORD: Size: <u>2 7/8"</u> Set At: <u>3400'</u> Packer At: <u>3400'</u> | | Liner Run: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Date of First, Resumed Production, SWD or ENHR: <u>09/18/2010</u> | Producing Method: <input checked="" type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) _____ | |
| Estimated Production Per 24 Hours | Oil Bbls. <u>68</u> | Gas Mcf <u>0</u> Water Bbls. <u>0</u> Gas-Oil Ratio <u>,</u> Gravity <u>40</u> |

| | | |
|--|--|--|
| DISPOSITION OF GAS: <input checked="" 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 checked="" type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> | PRODUCTION INTERVAL: <u>3387'-90'</u> |
|--|--|--|

RECEIVED

ALLIED CEMENTING CO., LLC. 041736

SEP 27 2010

REMIT TO P.O. BOX 31
RUSSELL, KANSAS 67665

SERVICE POINT:
Russell Ks.

CONFIDENTIAL

| | | | | | | | |
|--|-----------------|-------------------------------------|------------------|------------|---------------------|--------------------------|----------------------------|
| DATE <u>2-31-10</u> | SEC. <u>6</u> | TWP. <u>15S</u> | RANGE <u>19W</u> | CALLED OUT | ON LOCATION | JOB START <u>9:30 AM</u> | JOB FINISH <u>10:00 PM</u> |
| LEASE <u>TRV'N</u> | WELL # <u>1</u> | LOCATION <u>ANTONIO Ks. 4 1/2 W</u> | | | COUNTY <u>ELLIS</u> | STATE <u>KANSAS</u> | |
| OLD OR <input checked="" type="radio"/> NEW (Circle one) | | | | | | | |

CONTRACTOR Southwind Drilling Ry #1

TYPE OF JOB Cement Surface

HOLE SIZE 12 1/4 T.D. 223

CASING SIZE 8 5/8 New DEPTH 222

TUBING SIZE 2 3/8 DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG. 15'

PERFS.

DISPLACEMENT 13.12 / BBL

EQUIPMENT

PUMP TRUCK CEMENTER Glen

398 HELPER Roy

BULK TRUCK

473 DRIVER RICHARD TWS

BULK TRUCK DRIVER JOHNEY F.

OWNER

CEMENT AMOUNT ORDERED 150 sk Comm.

27 GEL

370 cc

| | | | |
|----------|-----------------------|----------------|----------------|
| COMMON | <u>150</u> | @ <u>13.50</u> | <u>2025.00</u> |
| POZMIX | | @ | |
| GEL | <u>3</u> | @ <u>20.25</u> | <u>60.75</u> |
| CHLORIDE | <u>5</u> | @ <u>51.50</u> | <u>257.50</u> |
| ASC | | @ | |
| | | @ | |
| | | @ | |
| | | @ | |
| | | @ | |
| | | @ | |
| | | @ | |
| HANDLING | <u>75</u> | @ <u>2.25</u> | <u>168.75</u> |
| MILEAGE | <u>10 1/2 hr. @ 6</u> | | <u>300.00</u> |
| TOTAL | | | <u>2812.00</u> |

REMARKS:

Roy S JTS NEW 23'

8-5/8 CSG, SAT @ 222'

Received circulation, hooked up

to pump truck + mixed 150 sk

Comm. 3 1/2 cement + Disposed 13'

Cement did circulation

THANKS

CHARGE TO: T.D.I.

STREET _____

CITY _____ STATE _____ ZIP _____

SERVICE

| | | | |
|-------------------|----------|---------------|----------------|
| DEPTH OF JOB | | | |
| PUMP TRUCK CHARGE | | | <u>99.00</u> |
| EXTRA FOOTAGE | @ | | |
| MILEAGE | <u>7</u> | @ <u>7.00</u> | <u>49.00</u> |
| MANIFOLD | @ | | |
| | @ | | |
| | @ | | |
| TOTAL | | | <u>1038.00</u> |

RECEIVED PLUG & FLOAT EQUIPMENT

SEP 29 2010

KCC WICHITA

To Allied Cementing Co., LLC.
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME Frank Rome

SIGNATURE Frank Rome

SALES TAX (If Any) _____

TOTAL CHARGES _____

DISCOUNT _____ IF PAID IN 30 DAYS

JOB LOG

SWIFT Services, Inc.

DATE 8-7-10 PAGE NO.

CUSTOMER
TDI

WELL NO.
#1

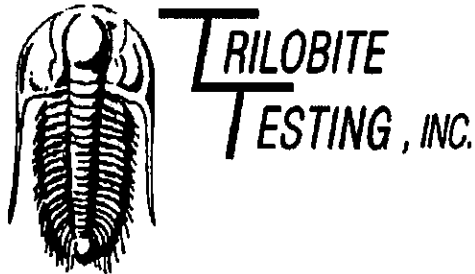
LEASE
IRVEN

JOB TYPE
5 1/2" LONGSTRING

TICKET NO.
18673

| CHART NO. | TIME | RATE (BPM) | VOLUME (BBL/GAL) | PUMPS | | PRESSURE (PSI) | | DESCRIPTION OF OPERATION AND MATERIALS |
|-----------|------|------------|------------------|-------|---|----------------|--------|--|
| | | | | T | C | TUBING | CASING | |
| | 1100 | | | | | | | ON LOCATION KCC SEP 27 2010 |
| | 1100 | | | | | | | START 5 1/2" CASING IN WELL CONFIDENTIAL |
| | | | | | | | | TD-3740 SET = 3739 TP-3743 5 1/2" #14 ST-21,50' CONTRACTORS-1,3,5,7,9,11,57,84 CMT BSPTS-2,12,58,85 DV TOOL = 1326' TOP * |
| | 1220 | | | | | | | DROP BALL - CIRCULATE ROTATE |
| | 1245 | 6 | 12 | | ✓ | 400 | | PUMP 500 GAL MUD FLUSH |
| | 1247 | 6 | 20 | | ✓ | 400 | | PUMP 20 BBW KCL - FLUSH |
| | 1255 | 4 | 36 | | ✓ | 250 | | MIX CEMENT - 150 SKS EA-2 = 15.4 PP6 |
| | 1304 | | | | | | | WASH OUT PUMP - LINES |
| | 1305 | | | | | | | RELEASE 1 ST STAGE LATCH DOWN PLUG |
| | 1307 | 6 1/2 | 0 | | ✓ | | | DISPARE PLUG |
| | 1322 | 6 | 90.8 | | | 1500 | | PLUG DOWN - PST UP LATCH IN PLUG |
| | 1324 | | | | | OK | | RELEASE PST - HELD |
| | 1325 | | | | | | | DROP DV OPENING PLUG |
| | 1335 | | | | ✓ | 1100 | | OPEN DV - CIRCULATE |
| | 1335 | 6 | 20 | | ✓ | 250 | | PUMP 20 BRIS KCL FLUSH |
| | 1340 | | 7-5 | | | | | PLUG RH (30SKS) MH (20SKS) |
| | 1345 | 5 1/2 | 69 | | | 200 | | MIX CEMENT - 125 SKS SMD = 11.2 PP6 |
| | 1358 | | | | | | | WASH OUT PUMP - LINES |
| | 1359 | | | | | | | RELEASE DV CLOSING PLUG |
| | 1400 | 6 | 0 | | ✓ | | | DISPARE PLUG |
| | 1405 | 4 | 32.3 | | | 1500 | | PLUG DOWN - PST UP CLOSE DV TOOL |
| | 1407 | | | | | OK | | RELEASE PST - HELD |
| | | | | | | | | RECEIVED SEP 29 2010 KCC WICHITA CIRCULATED 25 SKS CEMENT TO PST WASH TRUCK JOB COMPLETE |
| | 1500 | | | | | | | THANK YOU WAYNE, JOSH F., LANE |

KCC
SEP 27 2010
CONFIDENTIAL



DRILL STEM TEST REPORT

Prepared For: **TDI Oil Operations**

1310 Bison Rd
Hays, Ks
67601

ATTN: Herb Deines / Jeff La

6-15-19 Ellis,KS

Irvin #1

Start Date: 2010.08.04 @ 22:22:18

End Date: 2010.08.05 @ 04:22:12

Job Ticket #: 39535 DST #: 1

RECEIVED
SEP 29 2010
KCC WICHITA

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TDI Oil Operations

Irvin #1

1310 Bison Rd
Hays, Ks
67601
ATTN: Herb Deines / Jeff LaKs

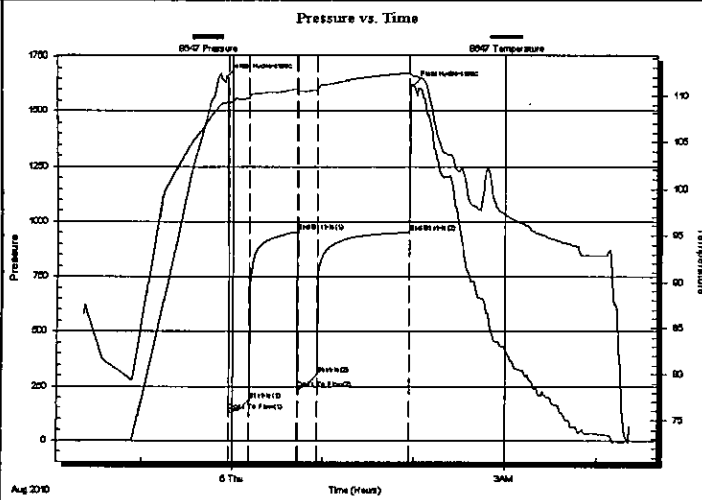
6-15-19 Ellis, KS
Job Ticket: 39535 DST#: 1
Test Start: 2010.08.04 @ 22:22:18

GENERAL INFORMATION:

Formation: **LKC "C-F"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:57:13
 Time Test Ended: 04:22:12
 Interval: **3376.00 ft (KB) To 3435.00 ft (KB) (TVD)**
 Total Depth: 3435.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole
 Tester: Brian Fairbank
 Unit No: 41
 Reference Elevations: 2070.00 ft (KB)
 2060.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8647 Inside
 Press@RunDepth: 302.63 psig @ 3385.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2010.08.04 End Date: 2010.08.05 Last Calib.: 2010.08.05
 Start Time: 22:22:18 End Time: 04:22:12 Time On Btm: 2010.08.04 @ 23:55:43
 Time Off Btm: 2010.08.05 @ 01:59:13

TEST COMMENT: IFP - BOB 40 sec.
 ISI - BOB 5 1/2 min.
 FFP - BOB 20 sec.
 FSI - BOB 3 1/2 min. GTS



PRESSURE SUMMARY

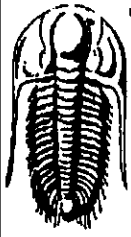
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1655.50 | 109.26 | Initial Hydro-static |
| 2 | 135.03 | 108.76 | Open To Flow (1) |
| 15 | 187.00 | 109.67 | Shut-In(1) |
| 47 | 954.01 | 110.74 | End Shut-In(1) |
| 48 | 237.82 | 110.58 | Open To Flow (2) |
| 60 | 302.63 | 110.65 | Shut-In(2) |
| 121 | 951.38 | 112.38 | End Shut-In(2) |
| 124 | 1617.74 | 112.10 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|----------------------|--------------|
| 280.00 | GMO 35%G, 45%O, 20%M | 3.93 |
| 710.00 | FREE OIL 95%, 5%M | 9.96 |
| 0.00 | GTS | 0.00 |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI Oil Operations

Irvin #1

1310 Bison Rd
Hays, Ks
67601

6-15-19 Ellis, KS

Job Ticket: 39535

DST#: 1

ATTN: Herb Daines / Jeff LaKs

Test Start: 2010.08.04 @ 22:22:18

Tool Information

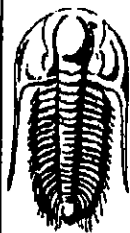
| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3383.00 ft | Diameter: 3.80 inches | Volume: 47.45 bbl | Tool Weight: 2500.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight to Pull Loose: 45000.00 lb |
| | | | <u>Total Volume: 47.45 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 27.00 ft | | | String Weight: Initial 35000.00 lb |
| Depth to Top Packer: | 3376.00 ft | | | Final 40000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 59.00 ft | | | |
| Tool Length: | 79.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Shut In Tool | 5.00 | | | 3361.00 | |
| Hydraulic tool | 5.00 | | | 3366.00 | |
| Packer | 5.00 | | | 3371.00 | 20.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 3376.00 | |
| Stubb | 1.00 | | | 3377.00 | |
| Perforations | 7.00 | | | 3384.00 | |
| Change Over Sub | 1.00 | | | 3385.00 | |
| Recorder | 0.00 | 8647 | Inside | 3385.00 | |
| Recorder | 0.00 | 8371 | Outside | 3385.00 | |
| Blank Spacing | 31.00 | | | 3416.00 | |
| Change Over Sub | 1.00 | | | 3417.00 | |
| Perforations | 15.00 | | | 3432.00 | |
| Bullnose | 3.00 | | | 3435.00 | 59.00 Bottom Packers & Anchor |

Total Tool Length: 79.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Oil Operations

Irvin #1

1310 Bison Rd
Hays, Ks
67601

6-15-19 Ellis, KS

Job Ticket: 39535

DST#: 1

ATTN: Herb Daines / Jeff LaKs

Test Start: 2010.08.04 @ 22:22:18

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

38 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.76 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|----------------------|---------------|
| 280.00 | GMO 35%G, 45%O, 20%M | 3.928 |
| 710.00 | FREE OIL 95%, 5%M | 9.959 |
| 0.00 | GTS | 0.000 |

Total Length: 990.00 ft

Total Volume: 13.887 bbl

Num Fluid Samples: 0

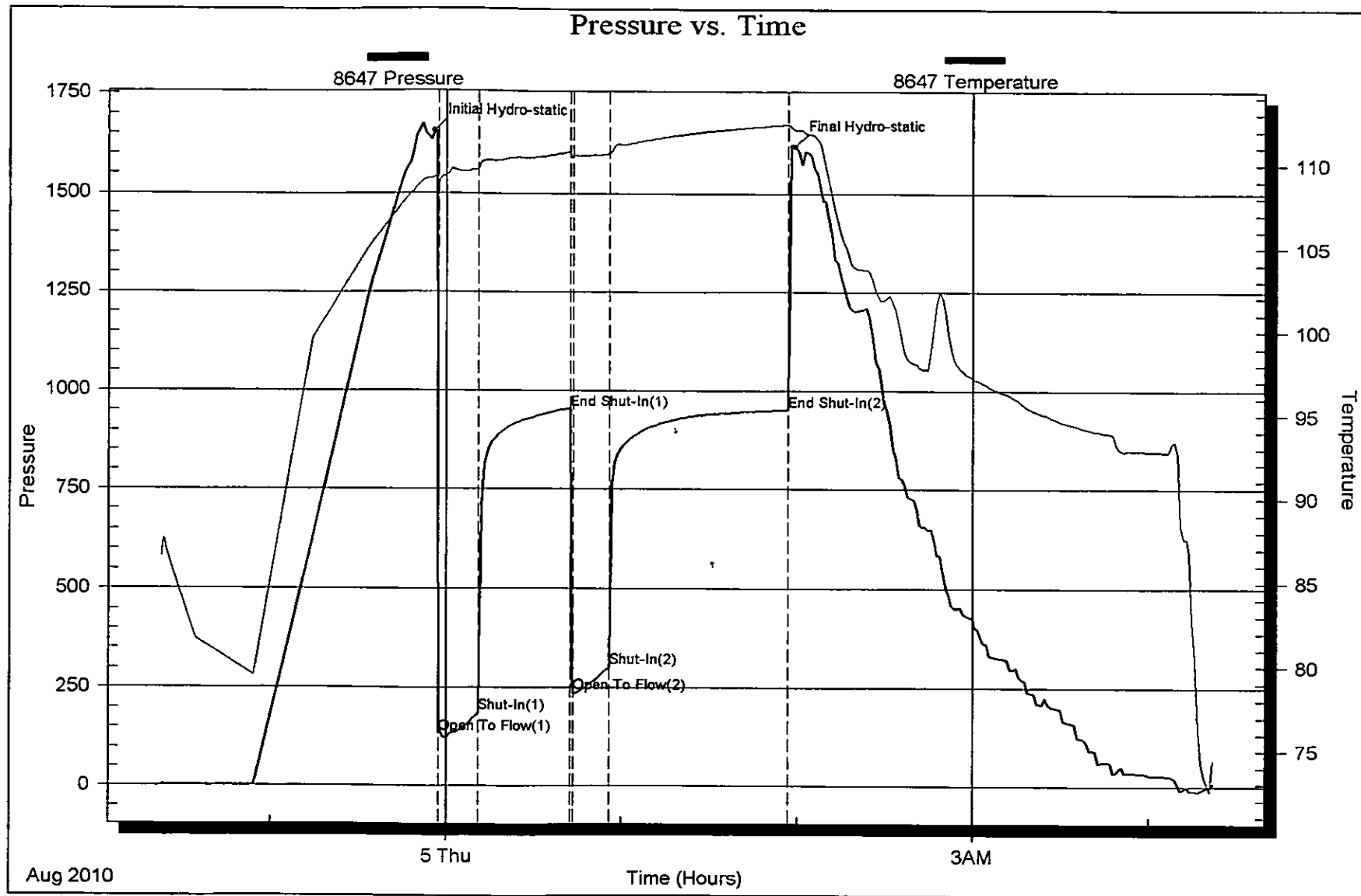
Num Gas Bombs: 0

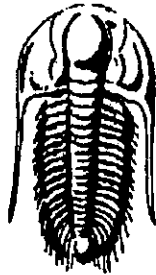
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Prepared For: **TDI Oil Operations**

1310 Bison Rd
Hays, Ks
67601

ATTN: Herb Deines / Jeff La

6-15-19 Ellis,KS

Irvin #1

Start Date: 2010.08.05 @ 13:49:23

End Date: 2010.08.05 @ 18:47:47

Job Ticket #: 39536 DST #: 2

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TDI Oil Operations

Irvin #1

1310 Bison Rd
Hays, Ks
67601

6-15-19 Ells, KS

Job Ticket: 39536

DST#: 2

ATTN: Herb Deines / Jeff LaKs

Test Start: 2010.08.05 @ 13:49:23

GENERAL INFORMATION:

Formation: **LKC "G-H"**

Deviated: **No Whipstock** ft (KB)

Time Tool Opened: 15:25:18

Time Test Ended: 18:47:47

Test Type: **Conventional Bottom Hole**

Tester: **Brian Fairbank**

Unit No: **41**

Interval: **3436.00 ft (KB) To 3505.00 ft (KB) (TVD)**

Reference Elevations: **2070.00 ft (KB)**

Total Depth: **3505.00 ft (KB) (TVD)**

2060.00 ft (CF)

Hole Diameter: **7.88 inches** Hole Condition: **Good**

KB to GR/CF: **10.00 ft**

Serial #: **8647**

Inside

Press@RunDepth: **103.46 psig @ 3439.00 ft (KB)**

Capacity: **8000.00 psig**

Start Date: **2010.08.05**

End Date: **2010.08.05**

Last Calib.: **2010.08.05**

Start Time: **13:49:23**

End Time: **18:47:47**

Time On Btm: **2010.08.05 @ 15:23:48**

Time Off Btm: **2010.08.05 @ 17:27:48**

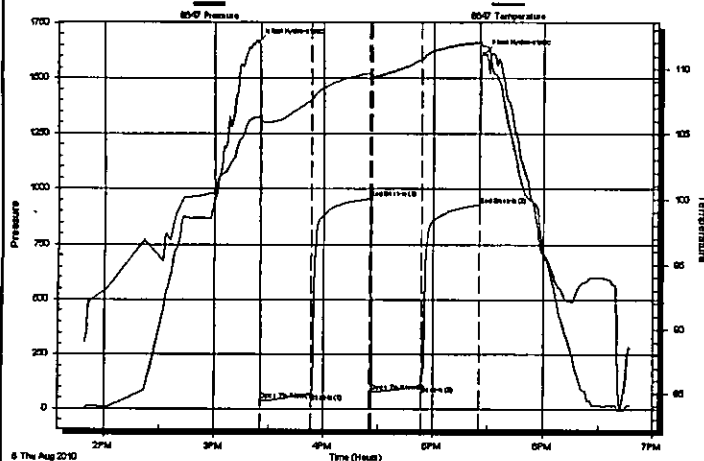
TEST COMMENT: **I FP - weak to good blow 1/2" - 9"**

ISI - no blow back

FFP - weak to good blow sur - 6 1/2"

FSI - no blow back

Pressure vs. Time



PRESSURE SUMMARY

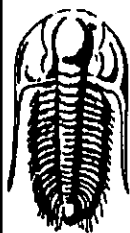
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1664.39 | 106.29 | Initial Hydro-static |
| 2 | 36.92 | 105.82 | Open To Flow (1) |
| 30 | 68.59 | 107.60 | Shut-In (1) |
| 62 | 955.63 | 109.68 | End Shut-In (1) |
| 63 | 76.95 | 109.48 | Open To Flow (2) |
| 90 | 103.46 | 110.74 | Shut-In (2) |
| 122 | 927.07 | 112.03 | End Shut-In (2) |
| 124 | 1613.92 | 111.74 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|--------------|--------------|
| 5.00 | mud 100% | 0.07 |
| 145.00 | MV 95%W, 5%M | 2.03 |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI Oil Operations

Irvin #1

1310 Bison Rd
Hays, Ks
67601

6-15-19 Ells, KS

Job Ticket: 39536

DST#: 2

ATTN: Herb Deines / Jeff LaKs

Test Start: 2010.08.05 @ 13:49:23

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3446.00 ft | Diameter: 3.80 inches | Volume: 48.34 bbl | Tool Weight: 2500.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight to Pull Loose: 45000.00 lb |
| | | | <u>Total Volume: 48.34 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 30.00 ft | | | String Weight: Initial 34000.00 lb |
| Depth to Top Packer: | 3436.00 ft | | | Final 35000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 69.00 ft | | | |
| Tool Length: | 89.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Shut In Tool | 5.00 | | | 3421.00 | |
| Hydraulic tool | 5.00 | | | 3426.00 | |
| Packer | 5.00 | | | 3431.00 | 20.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 3436.00 | |
| Stubb | 1.00 | | | 3437.00 | |
| Perforations | 1.00 | | | 3438.00 | |
| Change Over Sub | 1.00 | | | 3439.00 | |
| Recorder | 0.00 | 8647 | Inside | 3439.00 | |
| Recorder | 0.00 | 8371 | Outside | 3439.00 | |
| Blank Spacing | 62.00 | | | 3501.00 | |
| Change Over Sub | 1.00 | | | 3502.00 | |
| Bullnose | 3.00 | | | 3505.00 | 69.00 Bottom Packers & Anchor |

Total Tool Length: 89.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Oil Operations

Irvin #1

1310 Bison Rd
Hays, Ks
67601

6-15-19 Ellis, KS

Job Ticket: 39536

DST#: 2

ATTN: Herb Deines / Jeff LaKs

Test Start: 2010.08.05 @ 13:49:23

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 58.00 sec/qt

Water Loss: 7.78 in²

Resistivity: ohm.m

Salinity: 4900.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API: deg API

Water Salinity: 32000 ppm

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|---------------|---------------|
| 5.00 | mud 100% | 0.070 |
| 145.00 | MWV 95%W, 5%M | 2.034 |

Total Length: 150.00 ft Total Volume: 2.104 bbl

Num Fluid Samples: 0

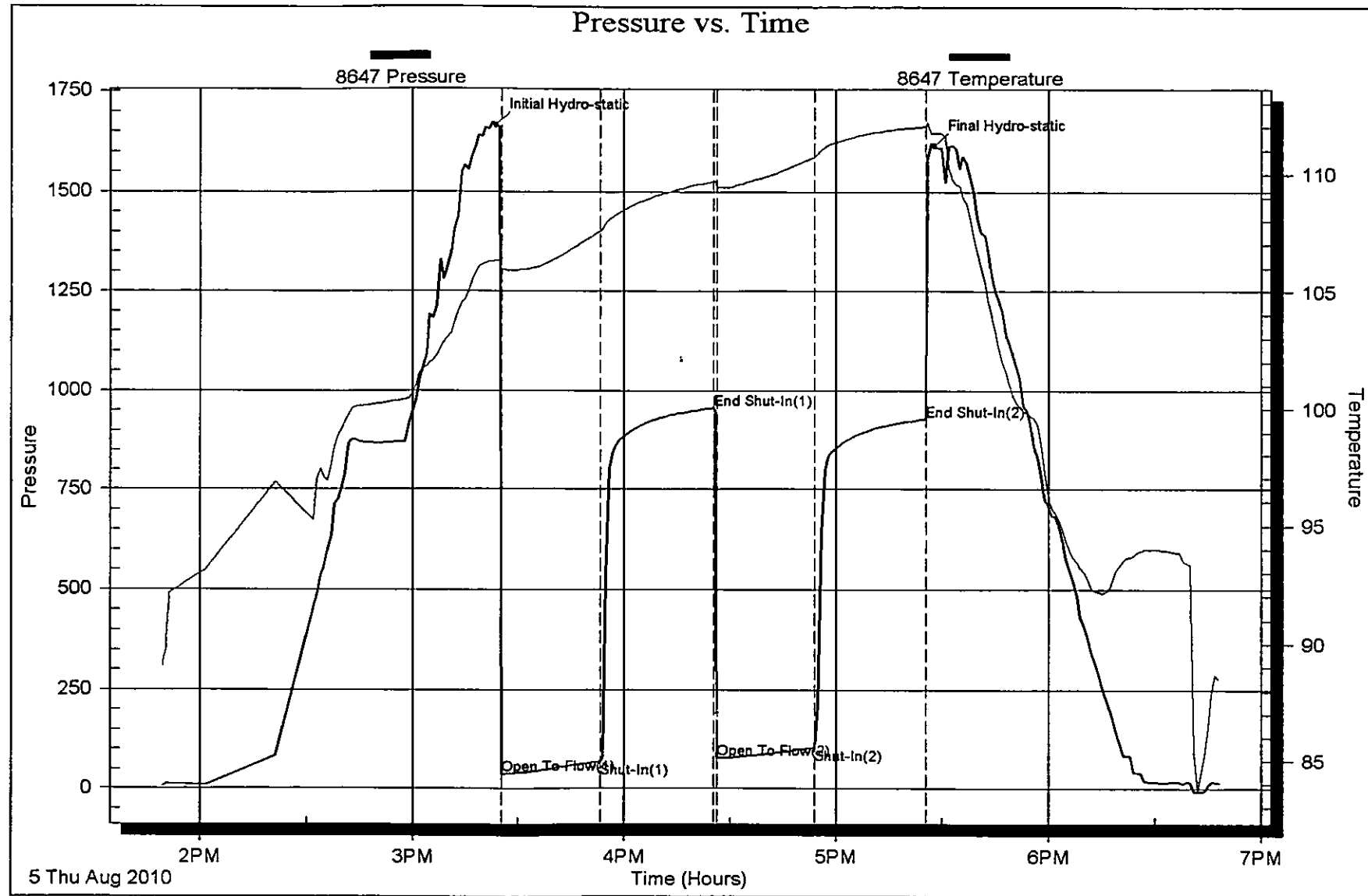
Num Gas Bombs: 0

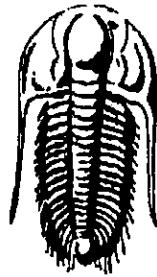
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Prepared For: **TDI Oil Operations**

1310 Bison Rd
Hays, Ks
67601

ATTN: Herb Deines / Jeff La

6-15-19 Ellis,KS

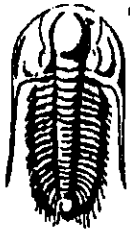
Irvin #1

Start Date: 2010.08.06 @ 03:43:32

End Date: 2010.08.06 @ 07:19:57

Job Ticket #: 39537 DST #: 3

Trilobite Testing, Inc
PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI Oil Operations

Irvin #1

1310 Bison Rd
Hays, Ks
67601

6-15-19 Ellis, KS

Job Ticket: 39537

DST#: 3

ATTN: Herb Deines / Jeff LaKs

Test Start: 2010.08.06 @ 03:43:32

Tool Information

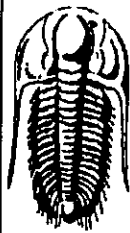
| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3509.00 ft | Diameter: 3.80 inches | Volume: 49.22 bbl | Tool Weight: 2500.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: 25000.00 lb |
| Drill Collar: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight to Pull Loose: 42000.00 lb |
| | | | <u>Total Volume: 49.22 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 27.00 ft | | | String Weight: Initial 36000.00 lb |
| Depth to Top Packer: | 3502.00 ft | | | Final 36000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 60.00 ft | | | |
| Tool Length: | 80.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Shut In Tool | 5.00 | | | 3487.00 | |
| Hydraulic tool | 5.00 | | | 3492.00 | |
| Packer | 5.00 | | | 3497.00 | 20.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 3502.00 | " |
| Stubb | 1.00 | | | 3503.00 | |
| Perforations | 3.00 | | | 3506.00 | |
| Change Over Sub | 1.00 | | | 3507.00 | |
| Recorder | 0.00 | 8647 | Inside | 3507.00 | |
| Recorder | 0.00 | 8371 | Outside | 3507.00 | |
| Blank Spacing | 31.00 | | | 3538.00 | |
| Change Over Sub | 1.00 | | | 3539.00 | |
| Perforations | 20.00 | | | 3559.00 | |
| Bullnose | 3.00 | | | 3562.00 | 60.00 Bottom Packers & Anchor |

Total Tool Length: 80.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Oil Operations

Irvin #1

1310 Bison Rd
Hays, Ks
67601

6-15-19 Ellis, KS

Job Ticket: 39537

DST#: 3

ATTN: Herb Deines / Jeff LaKs

Test Start: 2010.08.06 @ 03:43:32

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:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4900.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------|---------------|
| 2.00 | mud 100% | 0.028 |

Total Length: 2.00 ft

Total Volume: 0.028 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

