Confidentiality Requested:
☐ Yes ☑ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1262935

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 # 5663
Name: Hess Oil Company
Address 1: PO BOX 1009
Address 2:
City: MCPHERSON State: KS Zip: 67460 + 1009
Contact Person: Bryan Hess
Phone: (620) 241-4640
CONTRACTOR: License # 5663
Name: Hess Oil Company
Wellsite Geologist: Roger Martin
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 #:

8/14/2015	8/22/2015	8/22/2015
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-051-26797-00-00
Spot Description:
SW_NE_NE_NW Sec. 16 Twp. 11 S. R. 16 ☐ East ☑ West
355 Feet from ☑ North / ☐ South Line of Section
2271 Feet from ☐ East / ☑ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☑ NW ☐ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)*, Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Ellis
Lease Name: Craig Well #: 1
Field Name:
Producing Formation: Arbuckle & LKC
Elevation: Ground: 1800 Kelly Bushing: 1805
Total Vertical Depth: 3420 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 218 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: 0 ppm Fluid volume: 0 bbls
Dewatering method used: Evaporated
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:** NAOMI JAMES **Date:** 10/12/2015

1262935

Operator Name: Hess Oil Company Lease Name: Craig Well #: 1

Sec. 16 Twp. 11 S. R. 16 ☐ East ☑ West County: Ellis

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 ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☐ Yes ☑ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☐ Yes ☑ No

List All E. Logs Run:

☐ Log Formation (Top), Depth and Datum ☑ Sample

Name	Top	Datum
Topeka	2717	-912
Heebner	2954	-1149
Toronto	2977	1172
Lansing	3003	-1198
Base Kansas City	3243	-1438
Arbuckle	3394	-1589
RTD	3420	-1615

CASING RECORD ☑ New ☐ 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	12.25	8.625	20	218	Common	150	80/20, 2% gel

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
____ Perforate ____ Protect Casing ____ Plug Back TD ____ 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 *(Amount and Kind of Material Used)*	Depth

TUBING RECORD: Size: Set At: Packer At: Liner Run: ☐ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)* _____

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

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)* _____

PRODUCTION INTERVAL:
_____
_____

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

ROGER L. MARTIN
INDEPENDENT PETROLEUM GEOLOGIST 316-250-6970

GEOLOGIST'S REPORT
DRILLING TIME AND SAMPLE LOG

COMPANY: HESS OIL COMPANY	ELEVATIONS
LEASE: CRAIG #1	KB 1805' GL 1800'
FIELD: LIEB EAST	Measurements Are All From KB: 1805'
LOCATION: 355' FNL & 2271' FWL (SW-NE-NE-NW/4)	API 15-051-26797-00-00
SECTION 16 TOWNSHIP 11S RANGE 16W	
COUNTY ELLIS STATE KANSAS	

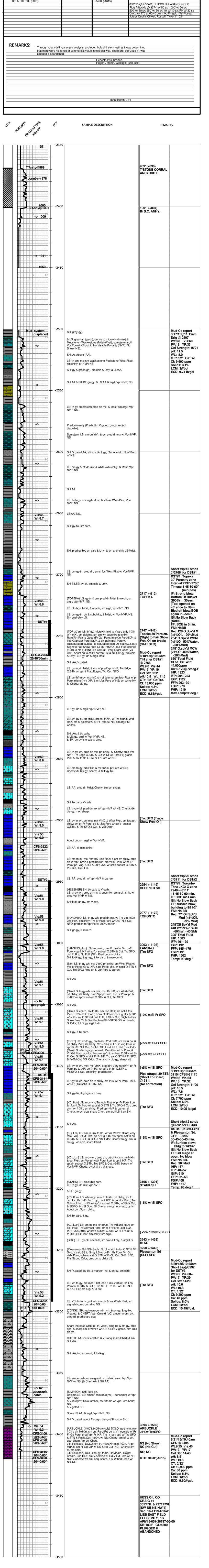
CONTRACTOR: MALLARD, J.V., INC.	CASING
SPUD 8/14/2015 COMP 8/21/2015	SURFACE 8&5/8" x 20#/ft set @ 218' Cmt'd w/150sx Com; 80/40 poz; 2%gel.
RTD 3420' (-1615) LTD NA	PRODUCTION NONE; P&A
ELECTRICAL SURVEYS: NO OPEN HOLE E-LOGS; 3 DST'S by TRILOBITE TESTING, Inc.	

FORMATION TOPS	LOG	SAMPLES	CHRONOLOGY
Top/ Stone Corral Anhydrite		969' (+836)	8/14/15; MIRU; Spud @ 4:30pm; Drld to 218'; Ran 5 jts of 8&5/8" x 20# surf.csg; set @ 218'; cmt'd w/ 150sx
B/S.C. Anhydrite		1001' (+804)	Common, 80/20 poz mix, 2% gel; Plug Dwn @ 11:30PM.
TOPEKA		2717' (-912)	8/15/15; WOC @ 6:30 AM;
Topeka 30' Poro.zone		2747' (-942)	Drld plug @ 7:30AM w/ 10' cmt.
Heebner SH		2954' (-1149)	8/16/15; Drlg @ 1612' @ 6:30AM.
Toronto		2977' (-1172)	8/17/15; Drlg @ 2395' @ 6:30AM.
LANSING		3003' (-1198)	Short Trip 15 stands @ 2766' for DST#1
Stark SH		3196' (-1391)	8/18/15; On bottom w/ DST#1 @ 2766' @ 6:30AM.
BASE/KANSAS CITY		3243' (-1338)	8/19/15; Drlg @ 3108' @~6:30AM; Short Trip 20 stnds @ 3111' for DST#2 @ 3111'
Pleasanton Sandstone		3250' (-1445)	8/20/15; Drlg @ 3237' @~6:30AM. Short trip 12 stands @ 3292' for DST#3 @ 3292'
ARBUCKLE		3394' (-1589)	8/21/15; CFS @ 3400' @~6:30AM
TOTAL DEPTH (RTD)		3420' (-1615)	8/22/15 @ 2:30AM; PLUGGED & ABANDONDED Plug Arbuckle @ 3374' w/ 50 sx; 1000' w/ 50 sx; 500' w/ 80 sx; 250' w/ 50 sx; 40' w/ 10 sx; RH w/ 30 sx Cmt'd w/ 270 sx 60/40 poz mix, 4% gel, 1/4# Floseal. Job by Quality Oilwell, Russell; Ticket # 1024

REMARKS: Through rotary drilling sample analysis, and open hole drill stem testing, it was determined that there were no zones of commercial value in this test well. Therefore, the Craig #1 was plugged & abandoned.

Repectfully submitted,
Roger L Martin, Geologist (well-site)

(print length: 73")



DRILL STEM TEST REPORT

Trilobite Testing, Inc

Hess Oil Company, P. O. Box 1009, McPherson KS 67460-1009, ATTN: Roger Martin

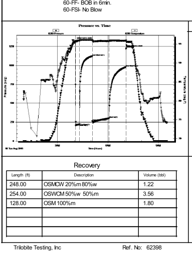
16 11s 16w Ellis — Craig # 1 — Job Ticket: 62398 — DST#: 1 — Test Start: 2015.08.18 @ 01:00:00

GENERAL INFORMATION:

Formation: Topeka
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:05:00
Time Test Ended: 09:30:00
Interval: 2737.00 ft (KB) To 2766.00 ft (KB) (TVD)
Total Depth: 2766.00 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: 1805.00 ft (KB), 1800.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8289 Outside
Press@RunDepth: 301.69 psig @ 2738.00 ft (KB)
Start Date: 2015.08.18 End Date: 2015.08.18
Start Time: 01:00:02 End Time: 09:30:30
Capacity: 8000.00 psig
Last Calib.: 2015.08.18
Time On Btm: 2015.08.18 @ 04:03:45
Time Off Btm: 2015.08.18 @ 07:04:45

TEST COMMENT: 15-IF-BOB in 30sec. Tool Opened on Slide. Bled off BOB in 5min.
45-ISI- No Blow
60-FF- BOB in 6min.
60-FSI- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1323.04	95.69	Initial Hydro-static
2	204.00	95.54	Open To Flow (1)
16	223.48	95.95	Shut-In(1)
61	1122.73	96.06	End Shut-In(1)
62	263.88	95.81	Open To Flow (2)
121	301.69	95.80	Shut-In(2)
181	979.93	95.87	End Shut-In(2)
181	1219.09	95.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
248.00	OSMCW 20%m 80%w	1.22
254.00	OSWCM 50%w 50%m	3.56
128.00	OSM 100%m	1.80

Gas Rates

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

Trilobite Testing, Inc Ref. No: 62398 Printed: 2015.08.18 @ 10:21:53

DRILL STEM TEST REPORT — FLUID SUMMARY

Hess Oil Company, P. O. Box 1009, McPherson KS 67460-1009, ATTN: Roger Martin

16 11s 16w Ellis — Craig # 1 — Job Ticket: 62398 — DST#: 1 — Test Start: 2015.08.18 @ 01:00:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 60.00 sec/qt
Water Loss: 7.97 in³
Resistivity: ohm.m
Salinity: 9600.00 ppm
Filter Cake: 3.00 inches
Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig
Oil API: deg API
Water Salinity: 44000 ppm

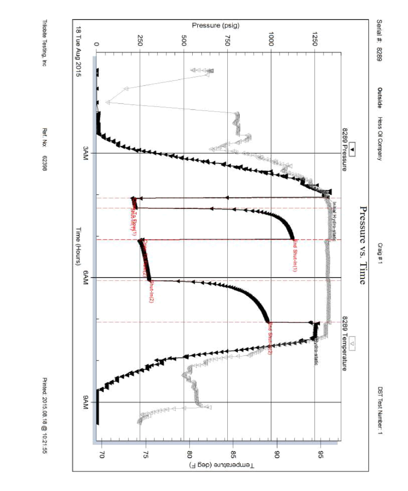
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
248.00	OSMCW 20%m 80%w	1.220
254.00	OSWCM 50%w 50%m	3.563
128.00	OSM 100%m	1.796

Total Length: 630.00 ft Total Volume: 6.579 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments: .170 @ 72

Trilobite Testing, Inc Ref. No: 62398 Printed: 2015.08.18 @ 10:21:55



DRILL STEM TEST REPORT

Hess Oil Company, P. O. Box 1009, McPherson KS 67460-1009, ATTN: Roger Martin

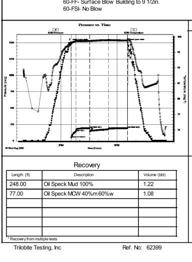
16 11s 16w Ellis — Craig # 1 — Job Ticket: 62399 — DST#: 2 — Test Start: 2015.08.19 @ 13:00:00

GENERAL INFORMATION:

Formation: LKC " A - G "
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:33:00
Time Test Ended: 20:37:00
Interval: 2949.00 ft (KB) To 3111.00 ft (KB) (TVD)
Total Depth: 3111.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Jim Svaty
Unit No: 76
Reference Elevations: 1805.00 ft (KB), 1800.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8289 Outside
Press@RunDepth: 175.42 psig @ 2957.00 ft (KB)
Start Date: 2015.08.19 End Date: 2015.08.19
Start Time: 13:00:02 End Time: 20:37:00
Capacity: 8000.00 psig
Last Calib.: 2015.08.19
Time On Btm: 2015.08.19 @ 15:32:30
Time Off Btm: 2015.08.19 @ 18:34:15

TEST COMMENT: 15-IF- BOB in 14min.
45-ISI- No Blow
60-FF- Surface Blow Building to 9 1/2in.
60-FSI- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1503.98	98.05	Initial Hydro-static
1	40.22	97.68	Open To Flow (1)
16	139.01	98.63	Shut-In(1)
60	192.29	98.66	End Shut-In(1)
61	145.72	98.64	Open To Flow (2)
121	175.42	98.94	Shut-In(2)
181	191.77	98.84	End Shut-In(2)
182	1502.39	99.20	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
248.00	Oil Speck Mud 100%	1.22
77.00	Oil Speck MCW 40%m 60%w	1.08

* Recovery from multiple tests

Gas Rates

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

Trilobite Testing, Inc Ref. No: 62399 Printed: 2015.08.19 @ 21:18:23

DRILL STEM TEST REPORT

Hess Oil Company, P. O. Box 1009, McPherson KS 67460-1009, ATTN: Roger Martin

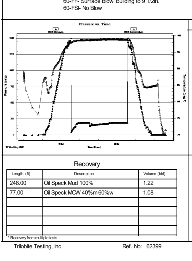
16 11s 16w Ellis — Craig # 1 — Job Ticket: 62399 — DST#: 2 — Test Start: 2015.08.19 @ 13:00:00

GENERAL INFORMATION:

Formation: LKC " A - G "
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:33:00
Time Test Ended: 20:37:00
Interval: 2949.00 ft (KB) To 3111.00 ft (KB) (TVD)
Total Depth: 3111.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Jim Svaty
Unit No: 76
Reference Elevations: 1805.00 ft (KB), 1800.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 6668 Inside
Press@RunDepth: psig @ 2957.00 ft (KB)
Start Date: 2015.08.19 End Date: 2015.08.19
Start Time: 13:00:02 End Time: 20:36:45
Capacity: 8000.00 psig
Last Calib.: 2015.08.19
Time On Btm:
Time Off Btm:

TEST COMMENT: 15-IF- BOB in 14min.
45-ISI- No Blow
60-FF- Surface Blow Building to 9 1/2in.
60-FSI- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
248.00	Oil Speck Mud 100%	1.22
77.00	Oil Speck MCW 40%m 60%w	1.08

* Recovery from multiple tests

Gas Rates

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

Trilobite Testing, Inc Ref. No: 62399 Printed: 2015.08.19 @ 21:18:23

DRILL STEM TEST REPORT — FLUID SUMMARY

Hess Oil Company, P. O. Box 1009, McPherson KS 67460-1009, ATTN: Roger Martin

16 11s 16w Ellis — Craig # 1 — Job Ticket: 62399 — DST#: 2 — Test Start: 2015.08.19 @ 13:00:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 64.00 sec/qt
Water Loss: 7.60 in³
Resistivity: ohm.m
Salinity: 7700.00 ppm
Filter Cake: 2.00 inches
Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig
Oil API: deg API
Water Salinity: 40000 ppm

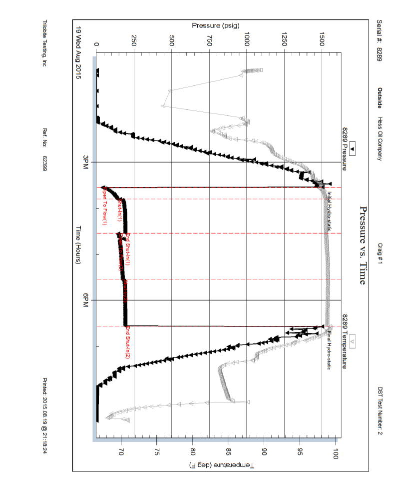
Recovery Information

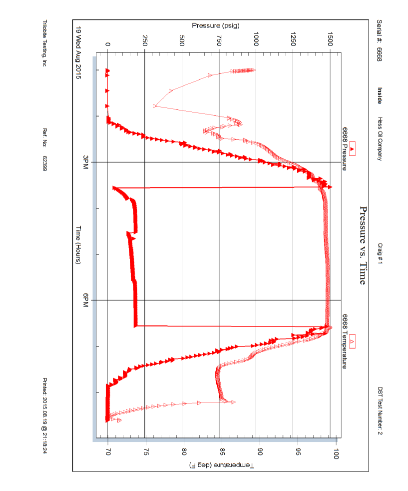
Recovery Table

Length ft	Description	Volume bbl
248.00	Oil Speck Mud 100%	1.220
77.00	Oil Speck MCW 40%m 60%w	1.080

Total Length: 325.00 ft Total Volume: 2.300 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments: .190 @ 73

Trilobite Testing, Inc Ref. No: 62399 Printed: 2015.08.19 @ 21:18:23





DRILL STEM TEST REPORT

Hess Oil Company, P. O. Box 1009, McPherson KS 67460-1009, ATTN: Roger Martin

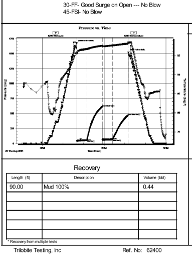
16 11s 16w Ellis — Craig # 1 — Job Ticket: 62400 — DST#: 3 — Test Start: 2015.08.20 @ 14:05:00

GENERAL INFORMATION:

Formation: LKC " H - L " & Plea
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 16:40:15
Time Test Ended: 21:00:00
Interval: 3111.00 ft (KB) To 3292.00 ft (KB) (TVD)
Total Depth: 3292.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Jim Svaty
Unit No: 76
Reference Elevations: 1805.00 ft (KB), 1800.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8289 Outside
Press@RunDepth: 68.90 psig @ 3117.00 ft (KB)
Start Date: 2015.08.20 End Date: 2015.08.20
Start Time: 14:05:02 End Time: 21:00:00
Capacity: 8000.00 psig
Last Calib.: 2015.08.20
Time On Btm: 2015.08.20 @ 16:40:00
Time Off Btm: 2015.08.20 @ 19:10:15

TEST COMMENT: 30-IF- Surface Blow Building to 1 3/4in. In 10min.
45-ISI- No Blow
30-FF- Good Surge on Open --- No Blow
45-FSI- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1671.43	95.80	Initial Hydro-static
1	40.90	95.41	Open To Flow (1)
30	57.01	96.77	Shut-In(1)
75	610.97	97.63	End Shut-In(1)
75	62.28	97.35	Open To Flow (2)
105	68.90	97.70	Shut-In(2)
150	468.91	98.16	End Shut-In(2)
151	1517.73	98.44	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	Mud 100%	0.44

* Recovery from multiple tests

Gas Rates

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

Trilobite Testing, Inc Ref. No: 62400 Printed: 2015.08.20 @ 23:10:53

DRILL STEM TEST REPORT — FLUID SUMMARY

Hess Oil Company, P. O. Box 1009, McPherson KS 67460-1009, ATTN: Roger Martin

16 11s 16w Ellis — Craig # 1 — Job Ticket: 62400 — DST#: 3 — Test Start: 2015.08.20 @ 14:05:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 10.00 lb/gal
Viscosity: 60.00 sec/qt
Water Loss: 10.77 in³
Resistivity: ohm.m
Salinity: 9200.00 ppm
Filter Cake: 2.00 inches
Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig
Oil API: deg API
Water Salinity: ppm

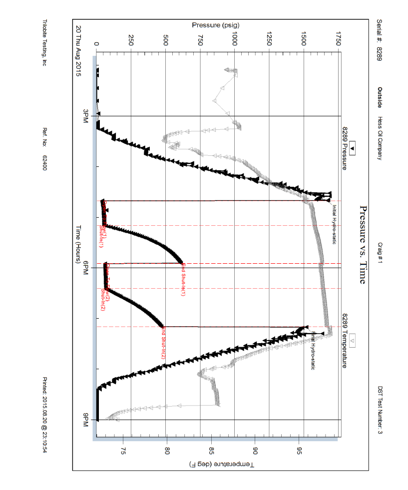
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	Mud 100%	0.443

Total Length: 90.00 ft Total Volume: 0.443 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Trilobite Testing, Inc Ref. No: 62400 Printed: 2015.08.20 @ 23:10:54



DRILL STEM TEST REPORT

Hess Oil Company

P. O. Box 1009
McPherson KS 67460-1009

ATTN: Roger Martin

16 11s 16w Ellis

Craig # 1

Job Ticket: 62398 **DST#: 1**

Test Start: 2015.08.18 @ 01:00:00

GENERAL INFORMATION:

Formation: **Topeka**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:05:00
Time Test Ended: 09:30:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Jim Svaty
Unit No: 76

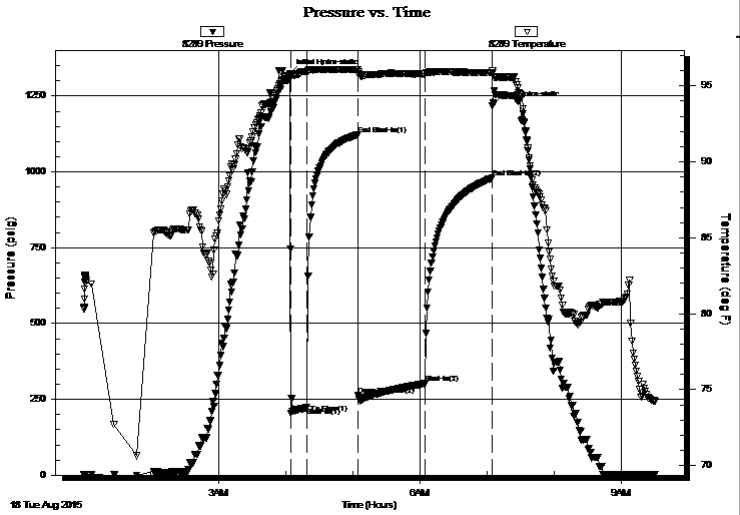
Interval: 2737.00 ft (KB) To 2766.00 ft (KB) (TVD)
Total Depth: 2766.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1805.00 ft (KB)
1800.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8289 **Outside**

Press@RunDepth:	301.69 psig @	2738.00 ft (KB)		Capacity:	8000.00 psig
Start Date:	2015.08.18	End Date:	2015.08.18	Last Calib.:	2015.08.18
Start Time:	01:00:02	End Time:	09:30:30	Time On Btm:	2015.08.18 @ 04:03:45
				Time Off Btm:	2015.08.18 @ 07:04:45

TEST COMMENT: 15-IF-BOB in 30sec. Tool Opened on Slide. Bled off BOB in 5min.
45-ISI- No Blow
60-FF- BOB in 6min.
60-FSI- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1323.04	95.69	Initial Hydro-static
2	204.00	95.54	Open To Flow (1)
16	223.48	95.95	Shut-In(1)
61	1122.73	96.06	End Shut-In(1)
62	263.88	95.81	Open To Flow (2)
121	301.69	95.80	Shut-In(2)
181	979.93	95.87	End Shut-In(2)
181	1219.09	95.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
248.00	OSMCW 20%m 80%w	1.22
254.00	OSWCM 50%w 50%m	3.56
128.00	OSM 100%m	1.80

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Company

P. O. Box 1009
McPherson KS 67460-1009

ATTN: Roger Martin

16 11s 16w Ellis

Craig # 1

Job Ticket: 62398 **DST#: 1**

Test Start: 2015.08.18 @ 01:00:00

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:	44000 ppm
Viscosity:	60.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.97 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	9600.00 ppm				
Filter Cake:	3.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
248.00	OSMCW 20%m 80%w	1.220
254.00	OSWCM 50%w 50%m	3.563
128.00	OSM 100%m	1.796

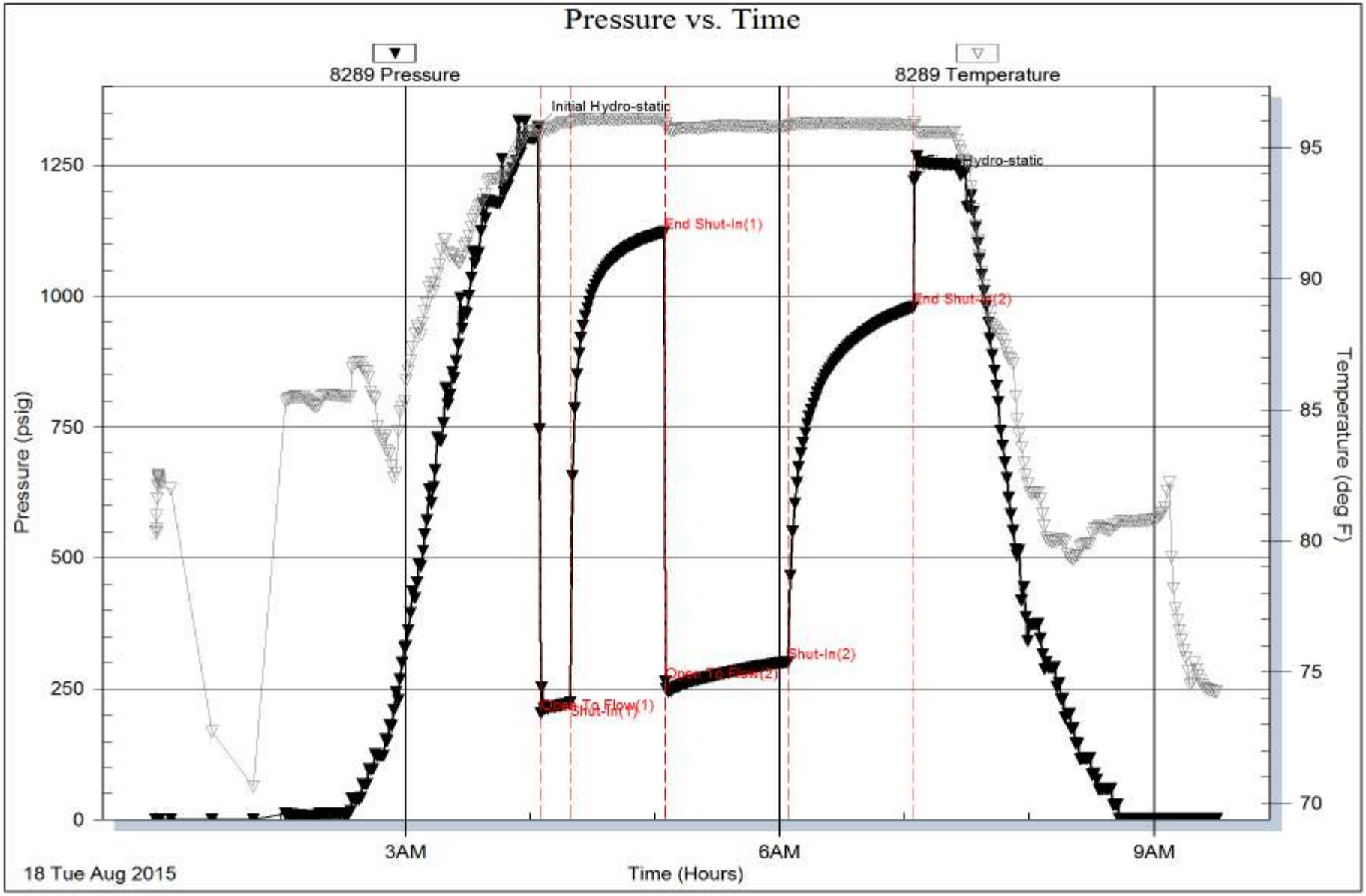
Total Length: 630.00 ft Total Volume: 6.579 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: .170 @ 72

Serial #: 8289 **Outside** Hess Oil Company Craig # 1 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 62398 Printed: 2015.08.18 @ 10:21:55

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Hess Oil Company

P. O. Box 1009
McPherson KS 67460-1009

ATTN: Roger Martin

16 11s 16w Ellis

Craig # 1

Job Ticket: 62399 **DST#: 2**

Test Start: 2015.08.19 @ 13:00:00

GENERAL INFORMATION:

Formation: **LKC " A - G "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:33:00
Time Test Ended: 20:37:00

Test Type: Conventional Bottom Hole (Reset)
Tester: Jim Svaty
Unit No: 76

Interval: 2949.00 ft (KB) To 3111.00 ft (KB) (TVD)
Total Depth: 3111.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

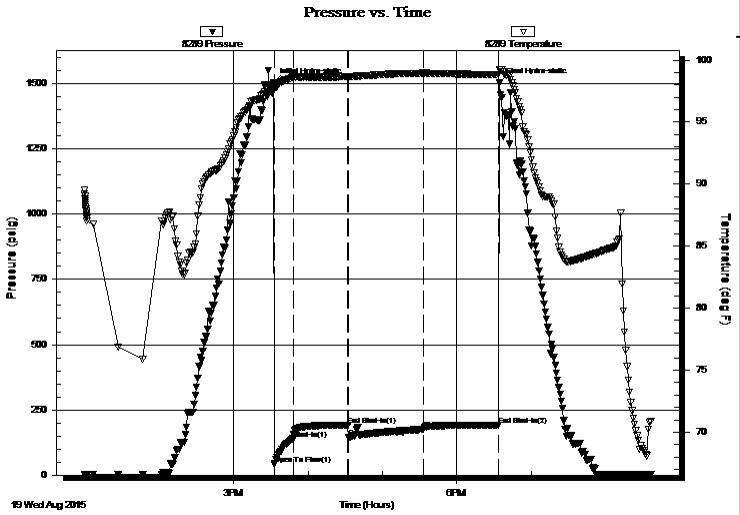
Reference Elevations: 1805.00 ft (KB)
1800.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8289 **Outside**

Press@RunDepth: 175.42 psig @ 2957.00 ft (KB)
Start Date: 2015.08.19 End Date: 2015.08.19
Start Time: 13:00:02 End Time: 20:37:00

Capacity: 8000.00 psig
Last Calib.: 2015.08.19
Time On Btm: 2015.08.19 @ 15:32:30
Time Off Btm: 2015.08.19 @ 18:34:15

TEST COMMENT:
15-IF- BOB in 14min.
45-ISI- No Blow
60-FF- Surface Blow Building to 9 1/2in.
60-FSI- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1503.98	98.05	Initial Hydro-static
1	40.22	97.68	Open To Flow (1)
16	139.01	98.63	Shut-In(1)
60	192.29	98.66	End Shut-In(1)
61	145.72	98.64	Open To Flow (2)
121	175.42	98.94	Shut-In(2)
181	191.77	98.84	End Shut-In(2)
182	1502.39	99.20	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
248.00	Oil Speck Mud 100%	1.22
77.00	Oil Speck MCW 40%m 60%w	1.08

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Hess Oil Company

P. O. Box 1009
McPherson KS 67460-1009

ATTN: Roger Martin

16 11s 16w Ellis

Craig # 1

Job Ticket: 62399 **DST#: 2**

Test Start: 2015.08.19 @ 13:00:00

GENERAL INFORMATION:

Formation: **LKC " A - G "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:33:00
Time Test Ended: 20:37:00

Test Type: Conventional Bottom Hole (Reset)
Tester: Jim Svaty
Unit No: 76

Interval: 2949.00 ft (KB) To 3111.00 ft (KB) (TVD)
Total Depth: 3111.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

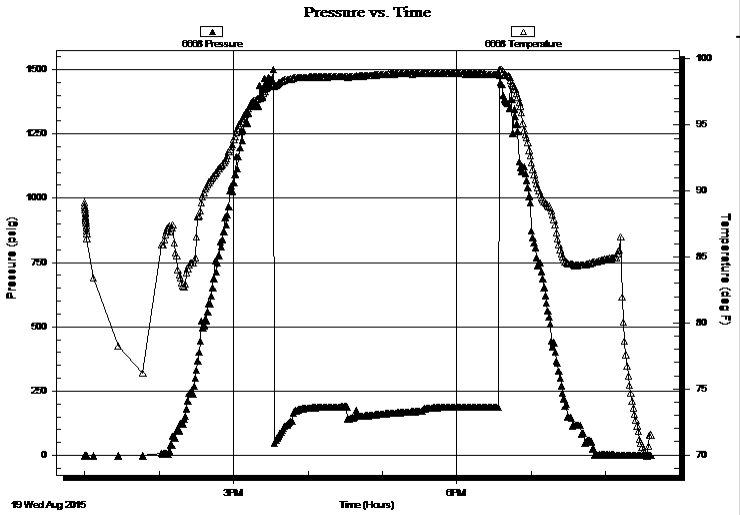
Reference Elevations: 1805.00 ft (KB)
1800.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 6668 **Inside**

Press@RunDepth: psig @ 2957.00 ft (KB)
Start Date: 2015.08.19 End Date: 2015.08.19
Start Time: 13:00:02 End Time: 20:36:45

Capacity: 8000.00 psig
Last Calib.: 2015.08.19
Time On Btm:
Time Off Btm:

TEST COMMENT:
15-IF- BOB in 14min.
45-ISI- No Blow
60-FF- Surface Blow Building to 9 1/2in.
60-FSI- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
248.00	Oil Speck Mud 100%	1.22
77.00	Oil Speck MCW 40%m 60%w	1.08

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Company

P. O. Box 1009
McPherson KS 67460-1009

ATTN: Roger Martin

16 11s 16w Ellis

Craig # 1

Job Ticket: 62399 **DST#: 2**

Test Start: 2015.08.19 @ 13:00:00

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:	40000 ppm
Viscosity:	64.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.60 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	7700.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
248.00	Oil Speck Mud 100%	1.220
77.00	Oil Speck MCW 40%m 60%w	1.080

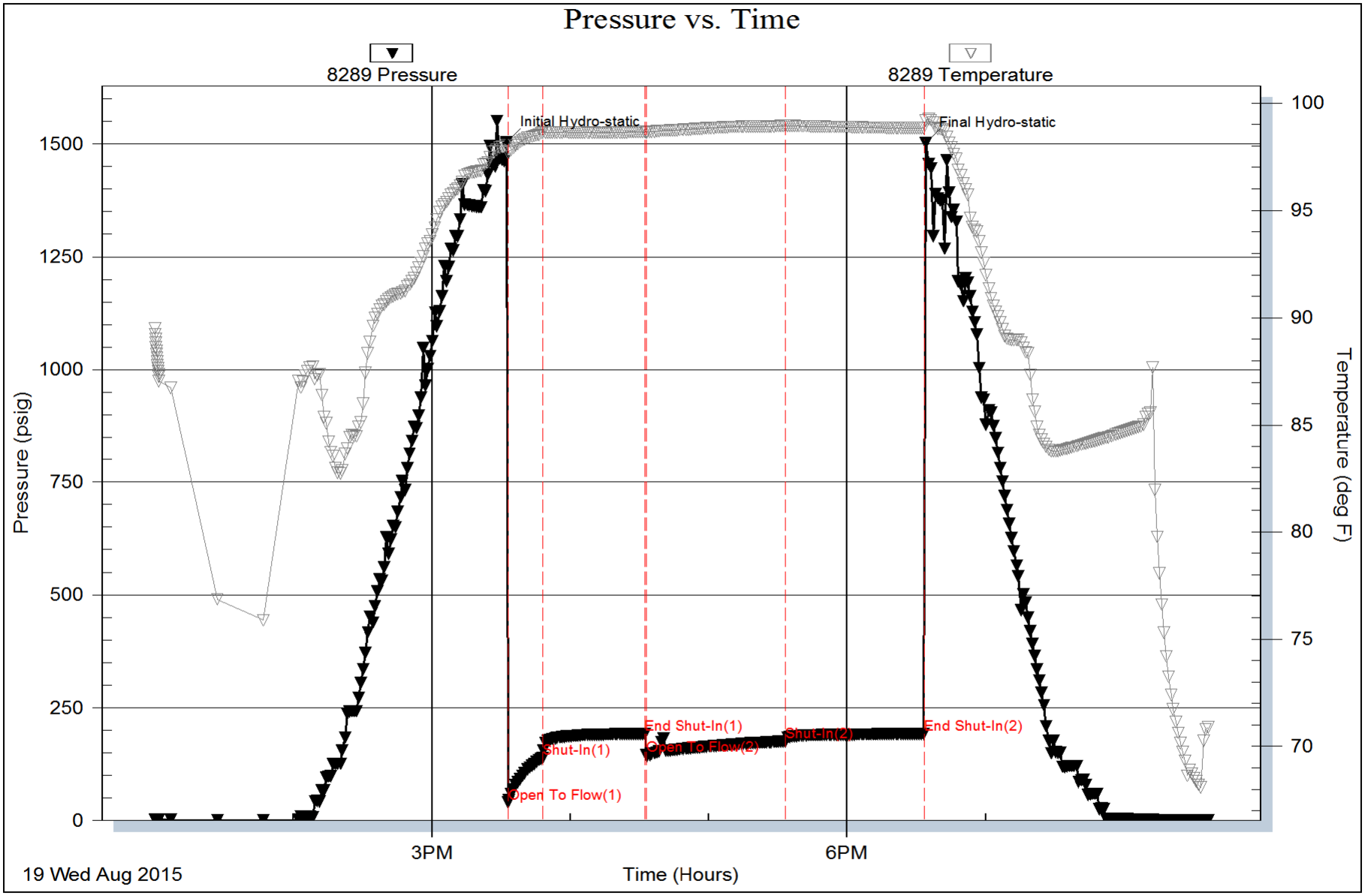
Total Length: 325.00 ft Total Volume: 2.300 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

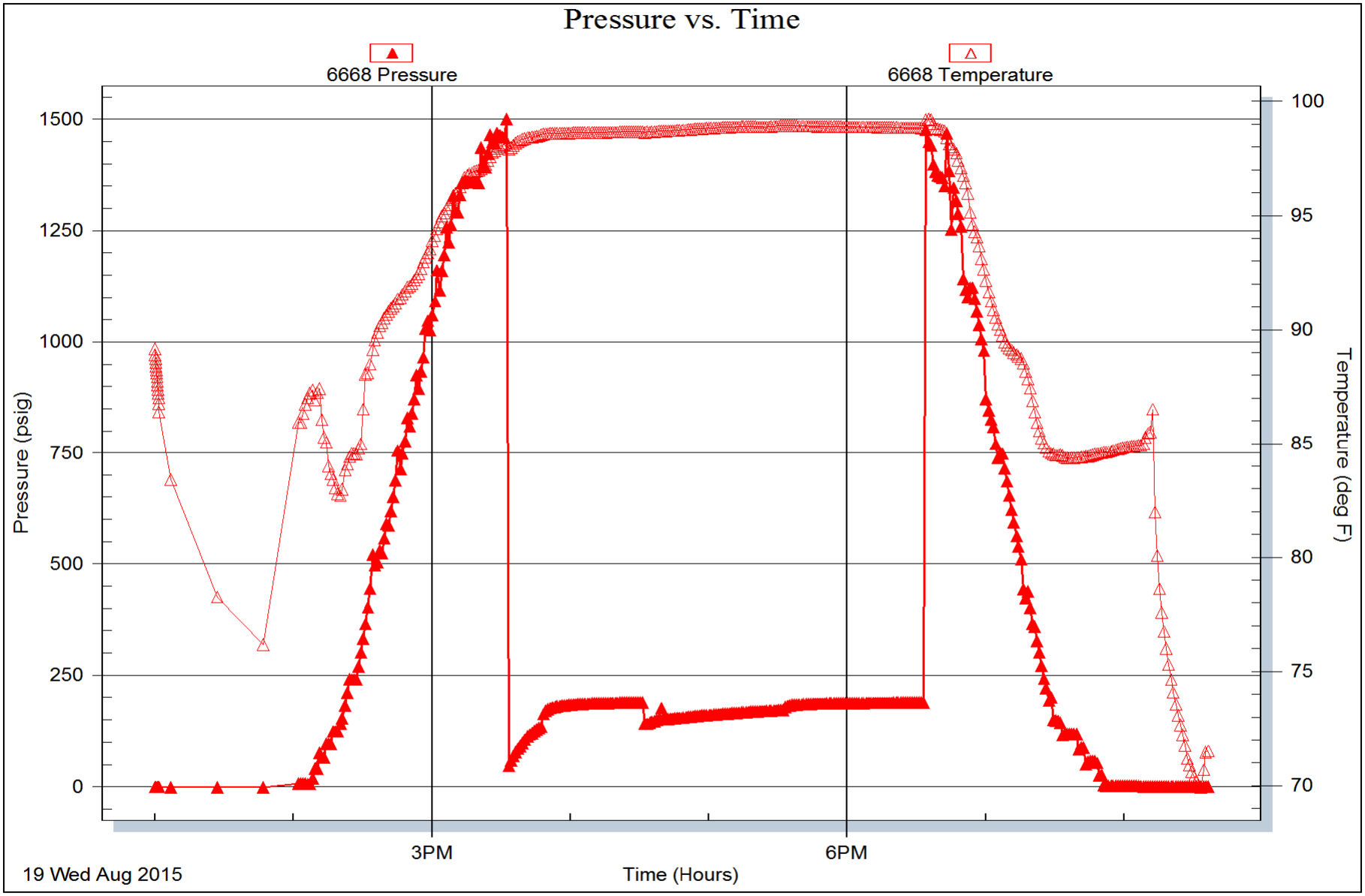
Recovery Comments: .190 @ 73

Serial #: 8289 **Outside** Hess Oil Company Craig # 1 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 62399 Printed: 2015.08.19 @ 21:18:24

Serial #: 6668 **Inside** Hess Oil Company Craig # 1 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 62399 Printed: 2015.08.19 @ 21:18:24

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Hess Oil Company

P. O. Box 1009
McPherson KS 67460-1009

ATTN: Roger Martin

16 11s 16w Ellis

Craig # 1

Job Ticket: 62400 **DST#: 3**

Test Start: 2015.08.20 @ 14:05:00

GENERAL INFORMATION:

Formation: **LKC " H - L " & Plea**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 16:40:15
Time Test Ended: 21:00:00

Test Type: Conventional Bottom Hole (Reset)
Tester: Jim Svaty
Unit No: 76

Interval: 3111.00 ft (KB) To 3292.00 ft (KB) (TVD)
Total Depth: 3292.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

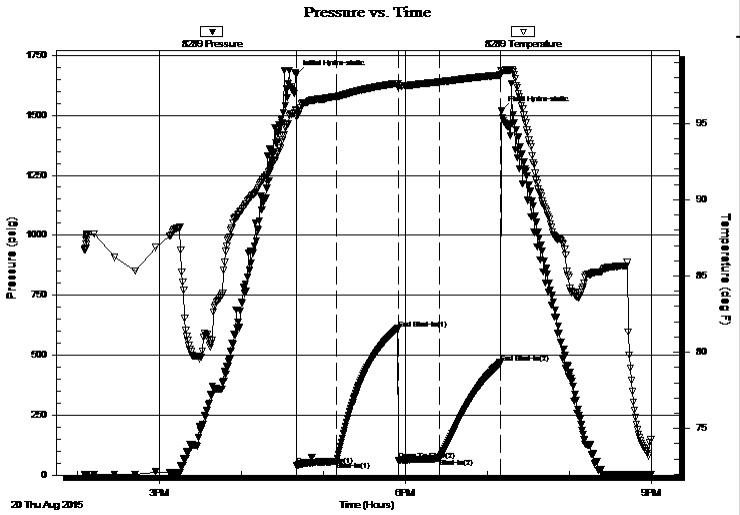
Reference Elevations: 1805.00 ft (KB)
1800.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8289 **Outside**

Press@RunDepth: 68.90 psig @ 3117.00 ft (KB)
Start Date: 2015.08.20 End Date: 2015.08.20
Start Time: 14:05:02 End Time: 21:00:00

Capacity: 8000.00 psig
Last Calib.: 2015.08.20
Time On Btm: 2015.08.20 @ 16:40:00
Time Off Btm: 2015.08.20 @ 19:10:15

TEST COMMENT: 30-IF- Surface Blow Building to 1 3/4in. In 10min.
45-ISI- No Blow
30-FF- Good Surge on Open --- No Blow
45-FSI- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1671.43	95.80	Initial Hydro-static
1	40.90	95.41	Open To Flow (1)
30	57.01	96.77	Shut-In(1)
75	610.97	97.63	End Shut-In(1)
75	62.28	97.35	Open To Flow (2)
105	68.90	97.70	Shut-In(2)
150	468.91	98.16	End Shut-In(2)
151	1517.73	98.44	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	Mud 100%	0.44

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Company

P. O. Box 1009
McPherson KS 67460-1009

ATTN: Roger Martin

16 11s 16w Ellis

Craig # 1

Job Ticket: 62400 **DST#: 3**

Test Start: 2015.08.20 @ 14:05:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	10.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	60.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	10.77 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	9200.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	Mud 100%	0.443

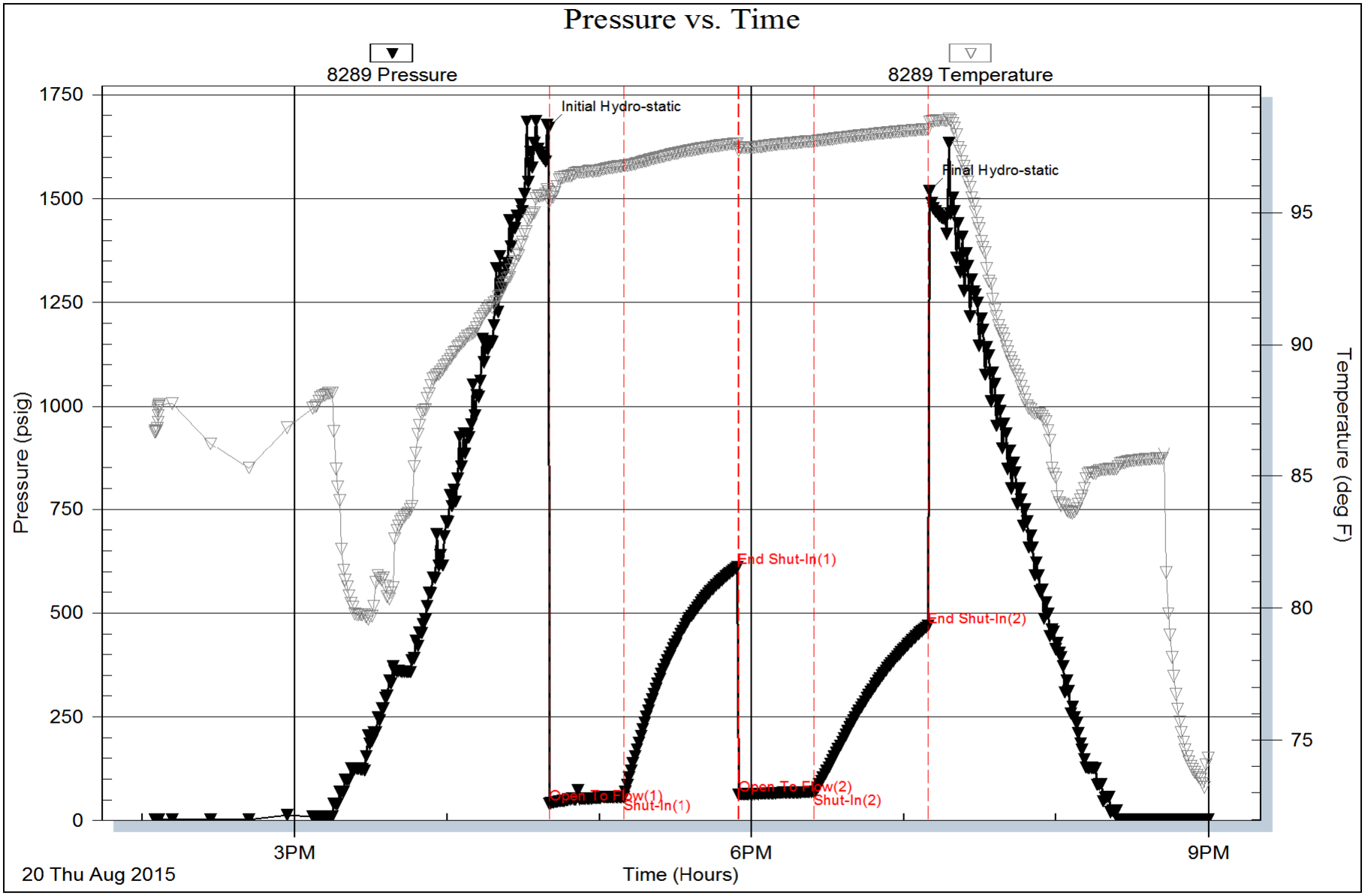
Total Length: 90.00 ft Total Volume: 0.443 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:

Serial #: 8289 **Outside** Hess Oil Company Craig # 1 DST Test Number: 3



Trilobite Testing, Inc Ref. No: 62400 Printed: 2015.08.20 @ 23:10:54

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025 Home Office P.O. Box 32 Russell, KS 67665 No. 1606

Cell 785-324-1041

Date	Sec.	Twp.	Range	County	State	On Location	Finish
8-14-15	16	11	16	Ellis	Ks		11:30PM

Location Fairport N to Wiles Rd, W to 370 Rd, N to Rices View Rd, W to Vincent Rd 1/4 N 1/4 E N+E

Lease Craig Well No. 1

Owner

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.

Contractor Mallard Rig

Type Job Surface

Hole Size 12 1/4" T.D. 218'

Csg. 8 5/8" Depth 217'

Tbg. Size Depth

Tool Depth

Cement Left in Csg. 15' Shoe Joint 15'

Meas Line Displace 12 3/4 Bls

Charge To Hess Oil

Street

City State

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

Cement Amount Ordered 150 80/20 3+2

EQUIPMENT

Pumptrk 18	No.	Cementer	
		Helper	Travis
Bulktrk 3	No.	Driver	
		Driver	Doug
Bulktrk PU	No.	Driver	
		Driver	Rick

JOB SERVICES & REMARKS

Remarks: Cement did Circulate

Rat Hole	
Mouse Hole	
Centralizers	
Baskets	
D/V or Port Collar	

Common	120
Poz. Mix	30
Gel.	3
Calcium	6
Hulls	
Salt	
Flowseal	
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	159
Mileage	

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	Surface
Mileage	25
Tax	
Discount	
Total Charge	

X Signature

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. 1024

Date	Sec.	Twp.	Range	County	State	On Location	Finish
8-21-15	16	11	16	Ellis	KS	5:30 PM	2:30 AM

Location

Lease: Craig | Well No. #1

Contractor: Mallard

Type Job: Plug

Hole Size: 7 7/8 | T.D. 3420

Csg. Drill Pipe | Depth

Tbg. Size | Depth

Tool | Depth

Cement Left in Csg. | Shoe Joint

Meas Line | Displace

EQUIPMENT

Pumptrk 18 No. | Cementer | Helper Nick

Bulktrk 9 No. | Driver | Driver Doug

Bulktrk PU No. | Driver | Driver Brett

(8 Hrs)

JOB SERVICES & REMARKS

Remarks:

Rat Hole - 30 sx

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

1st Plug @ 3400 w/ 50 sx
2nd Plug @ 1000 w/ 50 sx
3rd Plug @ 500 w/ 80 sx
4th Plug @ 250 w/ 50 sx
5th Plug @ 40 w/ 10 sx

Owner

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.

Charge To: Hess Oil

Street

City | State

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

Cement Amount Ordered: 270 60/40 4% Gel

Common	162
Poz. Mix	108
Gel.	10
Calcium	
Hulls	
Salt	
Flowseal	67
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	280
Mileage	
8 5/8 FLOAT EQUIPMENT	
Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Wood Plug	
Pumptrk Charge	plug
Mileage	25
Tax	
Discount	
Total Charge	

X Signature

Quality Oilwell Cementing