KOLAR Document ID: 1462448

Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1
January 2018
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 35354
Name: Black Oak Exploration
Address 1: 1474 S. ST. PAUL ST.
Address 2:
City: DENVER State: CO Zip: 80210 + 2514
Contact Person: Clayton Camozzi
Phone: (303) 968-4949
CONTRACTOR: License # 30606
Name: Murfin Drilling Co., Inc.
Wellsite Geologist: Clayton Camozzi
Purchaser:

Designate Type of Completion:
☑ New Well ☐ Re-Entry ☐ Workover
☐ Oil ☐ WSW ☐ SWD
☐ Gas ☑ DH ☐ EOR
☐ OG ☐ GSW
☐ 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 EOR ☐ Conv. to SWD
☐ Plug Back ☐ Liner ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ EOR Permit #:
☐ GSW Permit #:

4/9/2019 Spud Date or Recompletion Date
4/15/2019 Date Reached TD
4/17/2019 Completion Date or Recompletion Date

API No.: 15-039-21260-00-00
Spot Description:
NW - SE - SE - SE Sec. 16 Twp. 2 S. R. 26 ☐ East ☑ West
640 Feet from ☐ North / ☑ South Line of Section
490 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: Decatur
Lease Name: STAPP FARMS Well #: 1-16
Field Name:
Producing Formation: N/A
Elevation: Ground: 2569 Kelly Bushing: 2574
Total Vertical Depth: 3755 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 242 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: 16500 ppm Fluid volume: 750 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: 06/07/2019
☐ **Confidential Release Date:** 06/06/2021
☑ **Wireline Log Received** ☑ **Drill Stem Tests Received**
☐ **Geologist Report / Mud Logs Received**
☐ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** Karen Ritter **Date:** 06/10/2019

Operator Name: Black Oak Exploration Lease Name: STAPP FARMS Well #: 1-16

Sec. 16 Twp. 2 S. R. 26 ☐ East ☑ West County: Decatur

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 *(Attach Additional Sheets)*	☑ Yes	☐ No
Samples Sent to Geological Survey	☑ Yes	☐ No
Cores Taken	☐ Yes	☑ No
Electric Log Run	☑ Yes	☐ No
Geologist Report / Mud Logs	☑ Yes	☐ No

List All E. Logs Run:
Attached

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

Name	Top	Datum
See Attached	See Attached	2574

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	12.250	8.625	23	242	Common	165	3% CC

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	-			
	-			

1. Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☑ No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*
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)*

Date of first Production/Injection or Resumed Production/ Injection:	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:	METHOD OF COMPLETION:	PRODUCTION INTERVAL:
☐ Vented ☐ Sold ☐ Used on Lease *(If vented, Submit ACO-18.)*	☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*	Top / Bottom

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record *(Amount and Kind of Material Used)*

TUBING RECORD: Size: Set At: Packer At:

Mail to: KCC - Conservation Division, 266 N. Main, Suite 220, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Black Oak Exploration
Well Name	STAPP FARMS 1-16
Doc ID	1462448

All Electric Logs Run

DIL
DUCP
MEL
BHCS

Form	ACO1 - Well Completion
Operator	Black Oak Exploration
Well Name	STAPP FARMS 1-16
Doc ID	1462448

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.250	8.625	23	242	Common	165	3% CC

HURRICANE SERVICES INC

Remit To: Hurricane Services, Inc.
250 N. Water, Suite 200
Wichita, KS 67202
316-303-9515

Customer:

BLACK OAK EXPLORATION
C/O TROVE ENERGY
PO BOX 18921
OKLAHOMA CITY, OK 73154

Invoice Date:	4/16/2019
Invoice #:	0341365
Lease Name:	Stapp Farms
Well #:	1-16
County:	Decatur
Job Number:	ICT1936

Date/Description	HRS/QTY	Rate	Total
Plug to Abandon	0.000	0.000	0.00
Light Eq Mileage	80.000	1.700	136.00
Heavy Eq Mileage	80.000	3.400	272.00
Ton Mileage	854.500	1.275	1,089.49
Cement Pump 230	1.000	637.500	637.50
H-Plug	240.000	11.050	2,652.00
Wooden plug 8 5/8"	1.000	127.500	127.50

Net Invoice	4,914.49
Sales Tax:	249.76
Total	5,164.25

TERMS: Net 30 days. Interest may be charged on past due invoice at rate of 1 ½% per month or maximum allowed by applicable state or federal laws. HSI has right to revoke any discounts applied in arriving at net invoice price if invoice is past due. If revoked, full invoice price without discount plus additional sales tax, as applicable, is due immediately and subject to interest charges. Customer agrees to pay all collection costs directly or indirectly incurred by HSI in the event HSI engages a third party to pursue collection of past due invoice.
SALES TAX: Services performed on oil, gas and water wells in Kansas are subject to sales tax, with certain exceptions. HSI relies on the well information provided by the customer in identifying whether the services performed on wells qualify for exemption.

WE APPRECIATE YOUR BUSINESS!

250 N. Water St., Suite #200
Wichita, KS 67202

HURRICANE SERVICES INC

Customer	Black Oak Exploration	Lease & Well #	Stapp Farms 1-16			Date	4/16/2019
Service District	Oakley Ks	County & State	Decatur Ks	Legals S/T/R	16-2-26W	Job #	
Job Type	PTA	☑ PROD ☐ INJ ☐ SWD		New Well?	☑ YES ☐ No	Ticket #	ICT1936

Equipment #	Driver
230	Paul
181/254	Kale
74	Travis

Job Safety Analysis - A Discussion of Hazards & Safety Procedures

☐ Hard hat	☐ Gloves	☐ Lockout/Tagout	☐ Warning Signs & Flagging
☐ H2S Monitor	☐ Eye Protection	☐ Required Permits	☐ Fall Protection
☐ Safety Footwear	☐ Respiratory Protection	☐ Slip/Trip/Fall Hazards	☐ Specific Job Sequence/Expectations
☐ FRC/Protective Clothing	☐ Additional Chemical/Acid PPE	☐ Overhead Hazards	☐ Muster Point/Medical Locations
☐ Hearing Protection	☐ Fire Extinguisher	☐ Additional concerns or issues noted below	

Comments

All cement and chemicals came from Oakley service yard

Product/ Service Code	Description	Unit of Measure	Quantity			Net Amount
M015	Light Equipment Mileage	mi	80.00			$136.00
M010	Heavy Equipment Mileage	mi	80.00			$272.00
M020	Ton Mileage	tm	854.50			$1,089.49
C010	Cement Pump	ea	1.00			$637.50
CP055	H-Plug	sack	240.00			$2,652.00
FE290	8 5/8" Wooden Plug	ea	1.00			$127.50

Customer Section: On the following scale how would you rate Hurricane Services Inc ?

Based on this job, how likely is it you would recommend HSI to a colleague?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Unlikely 1 2 3 4 5 6 7 8 9 10 Extremely Likely

				Net:	$4,914.49
Total Taxable	$ -	Tax Rate:			
State tax laws deem certain products and services used on new wells to be sales tax exempt. Hurricane Services relies on the customer provided well information above to make a determination if services and/or products are tax exempt.			Sale Tax:	$ -	
			Total:	$ 4,914.49	

HSI Representative: *Travis Williams*

TERMS: Cash in advance unless Hurricane Services Inc. (HSI) has approved credit prior to sale. Credit terms of sale for approved accounts are total invoice due on or before the 30th day from the date of invoice. Past due accounts shall pay interest on the balance past due at the rate of 1 ½% per month or the maximum allowable by applicable state or federal laws. In the event it is necessary to employ an agency and/or attorney to affect the collection, Customer hereby agrees to pay all fees directly or indirectly incurred for such collection. In the event that Customer's account with HSI becomes delinquent, HSI has the right to revoke any discounts previously applied in arriving at net invoice price. Upon revocation, the full invoice price without discount is immediately due and subject to collection. Prices quoted are estimates only and are good for 30 days from the date of issue. Pricing does not include federal, state, or local taxes, or royalties and stated price adjustments. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services. Any discount is based on 30 days net payment terms or cash. **DISCLAIMER NOTICE:** Technical data is presented in good faith, but no warranty is stated or implied. HSI assumes no liability for advice or recommendations made concerning the results fom the use of any product or service. The information presented is a best estimate of the actual results that may be achieved and should be used for comparison purposes and HSI makes no guarantee of future production performance. Customer represents and warrants that well and all associated equipment in acceptable condition to receive services by HSI. Likewise, the customer guarantees proper operational care of all customer owned equipment and property while HSI is on location performing services. The authorization below acknowledges the receipt and acceptance of all terms/conditions stated above, and Hurricane has been provided accurate well informaiton in determining taxable services.

X _____ **CUSTOMER AUTHORIZATION SIGNATURE**

CEMENT TREATMENT REPORT

Customer:	Black Oak Exploration	Well:	Stapp Farms 1-16	Ticket:	ICT1936
City, State:	Wichita Ks	County:	Decature	Date:	4/16/2019
Field Rep:	Arturo	S-T-R:	16-2-26W	Service:	PTA

Downhole Information	
Hole Size:	7 7/8
Hole Depth:	ft
Casing Size:	In
Casing Depth:	ft
Tubing / Liner:	In
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	bbls

Slurry	
Weight:	13.8 # / sx
Water / Sx:	7 gal / sx
Yield:	1 2/5 ft^3 / sx
Bbls / Ft.:	
Depth:	ft
Volume:	bbls
Excess:	%
Total Slurry:	60 bbls
Total Sacks:	240 sx

Cement Blend		
Product	%	#
Class A	60.0	13536
Gel	4.0	825
Fly ash	40.0	7104
PhenoSeal	0.3	60
Total		21,525

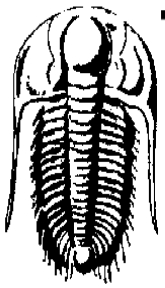
TIME	RATE	PSI	BBLs	REMARKS	TIME	RATE	PSI	BBLs	REMARKS
7:45 AM				Arrive					
7:50 AM				Safety meeting					
7:55 AM				Rig up					
9:00 AM	4.5	475.0	8.0	Mix 50 sks @ 1.41 yeild @ 2000					
9:10 AM	4.0	350.0	28.5	Dispalce					
9:15 AM				Rig pulls pipe					
9:30 AM	4.8	200.0	16.0	Mix 100 sks @ 1325					
9:40 AM	4.0	100.0	19.0	Displace					
9:45 AM				Rig pulls pipe					
10:30 AM			8.0	Mix 50 sks @ 295					
10:35 AM			4.0	Dispalce					
10:40 AM				Rig pulls pipe					
11:15 AM	3.0		9.0	Mix 10 sks DC, 30 sks RH, 15 sks MH					
11:40 AM				Wash up					
11:50 AM				Rig down					
12:10 PM				Depart					

CREW		UNIT
Cementer:	Travis Williams	74.0
Pump Operator:	Paul Williams	230.0
Bulk #1:	Kale Ochs	181-254
Bulk #2:		

SUMMARY		
Average Rate	Average Pressure	Total Fluid
4.06 bpm	281.25 psi	92.50 bbls

Hurricane Services, Inc.
250 N. Water
Wichita, KS 67202

3' Up-Hole Correction Geolog vs E-log tops	DRILLING WELL Stapp Farms 1-16 600 FSL / 505 FEL 16 - 2S - 26W 2574 KB				COMPARISON WELL New Nellie 1-15 Murfin: D&A 360 FSL / 3660 FEL 15 - 2S - 26W 2524 KB		Structural Relationship		COMPARISON WELL Stapp Farms 1-21 Murfin: PRODUCER 1350 FNL / 1320 FWL 21 - 2S - 26W 2550 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
STONE CORRAL	2085	489	2081	493	2026	498	-9	-5	2050	500	-11	-7
NEVA	2845	-271	2846	-272	2790	-266	-5	-6	2816	-266	-5	-6
TOPEKA	3241	-667	3238	-664	3189	-665	-2	1	3212	-662	-5	-2
LECOMPTON	3351	-777	3348	-774	3302	-778	1	4	3322	-772	-5	-2
HEENBER	3406	-832	3401	-827	3352	-828	-4	1	3377	-827	-5	0
LANSING	3445	-871	3440	-866	3394	-870	-1	4	3418	-868	-3	2
LANSING "B" Zone	3472	-898	3469	-895	3422	-898	0	3	3446	-896	-2	1
LANSING "D" Zone	3482	-908	3479	-905	3431	-907	-1	2	3455	-905	-3	0
LANSING "G" Zone	3520	-946	3517	-943	3470	-946	0	3	3494	-944	-2	1
LANSING "H" Zone	3551	-977	3548	-974	3500	-976	-1	2	3524	-974	-3	0
LANSING "J" Zone	3590	-1016	3584	-1010	3539	-1015	-1	5	3560	-1010	-6	0
LANSING "K" Zone	3606	-1032	3602	-1028	3557	-1033	1	5	3578	-1028	-4	0
BKC	3644	-1070	3640	-1066	3592	-1068	-2	2	3618	-1068	-2	2
ARBUCKLE			NDE		NDE				3777	-1227		
Total Depth	3755	-1181	3752	-1178	3780	-1256			3830	-1280		



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Black Oak Exploration**

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

Stapp Farms #1-16

16-2s-26w Decatur,KS

Start Date: 2019.04.13 @ 00:34:00

End Date: 2019.04.13 @ 07:37:30

Job Ticket #: 63284 DST #: 1

Trilobite Testing, Inc

1515 Commerce Parkway Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.04.16 @ 11:19:37

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63284 **DST#: 1**

Test Start: 2019.04.13 @ 00:34:00

GENERAL INFORMATION:

Formation: **"Toronto - LKC B"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:36:00
Time Test Ended: 07:37:30

Test Type: Conventional Bottom Hole (Initial)
Tester: Martine Salinas
Unit No: 82

Interval: 3404.00 ft (KB) To 3479.00 ft (KB) (TVD)
Total Depth: 3479.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

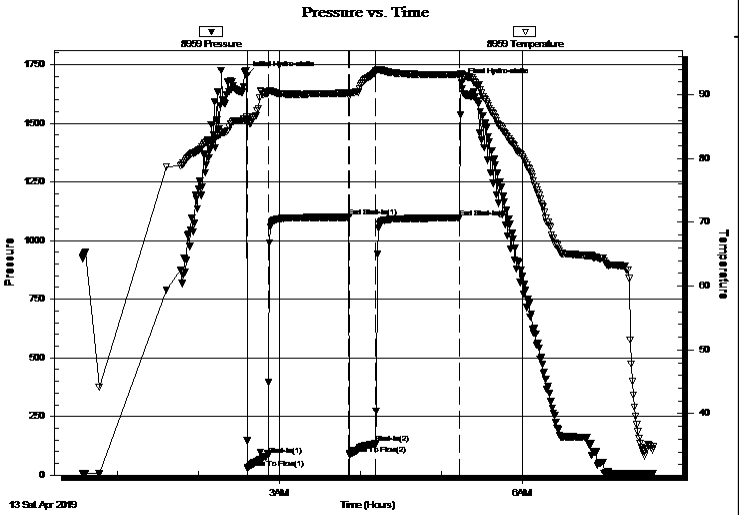
Reference Elevations: 2574.00 ft (KB)
2569.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8959 **Inside**

Press@RunDepth: 133.87 psig @ 3405.00 ft (KB)
Start Date: 2019.04.13 End Date: 2019.04.13
Start Time: 00:34:01 End Time: 07:37:30

Capacity: 8000.00 psig
Last Calib.: 2019.04.13
Time On Btm: 2019.04.13 @ 02:35:40
Time Off Btm: 2019.04.13 @ 05:15:09

TEST COMMENT: 15-IF-Surface blow built to 6"
60-ISI-No blow
15-FF-Surface blow built to 6"
60-FSI-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1704.69	86.46	Initial Hydro-static
1	27.14	86.11	Open To Flow (1)
16	85.99	90.30	Shut-In(1)
76	1099.69	90.29	End Shut-In(1)
77	87.48	90.19	Open To Flow (2)
96	133.87	93.64	Shut-In(2)
158	1096.33	93.21	End Shut-In(2)
160	1674.56	93.11	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	HMCW 43%M, 57%W	0.89
55.00	Mud 100% M	0.50

Gas Rates

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

DRILL STEM TEST REPORT

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63284 **DST#: 1**

Test Start: 2019.04.13 @ 00:34:00

GENERAL INFORMATION:

Formation: **"Toronto - LKC B"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:36:00
Time Test Ended: 07:37:30

Test Type: Conventional Bottom Hole (Initial)
Tester: Martine Salinas
Unit No: 82

Interval: 3404.00 ft (KB) To 3479.00 ft (KB) (TVD)
Total Depth: 3479.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

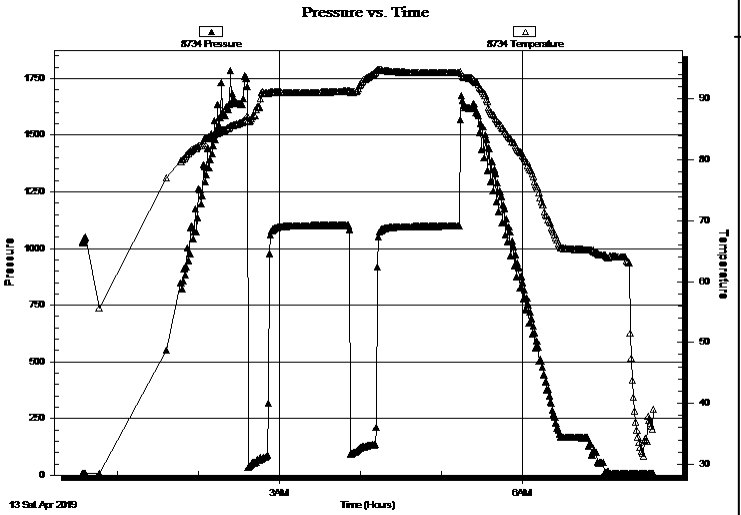
Reference Elevations: 2574.00 ft (KB)
2569.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8734 **Outside**

Press@RunDepth: psig @ 3405.00 ft (KB)
Start Date: 2019.04.13 End Date: 2019.04.13
Start Time: 00:34:01 End Time: 07:37:30

Capacity: 8000.00 psig
Last Calib.: 2019.04.13
Time On Btm:
Time Off Btm:

TEST COMMENT: 15-IF-Surface blow built to 6"
60-ISI-No blow
15-FF-Surface blow built to 6"
60-FSI-No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
180.00	HMCW 43%M, 57%W	0.89
55.00	Mud 100% M	0.50

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63284 **DST#: 1**

Test Start: 2019.04.13 @ 00:34:00

Tool Information

Drill Pipe:	Length:	3200.00 ft	Diameter:	3.80 inches	Volume:	44.89 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:	210.00 ft	Diameter:	2.25 inches	Volume:	1.03 bbl	Weight to Pull Loose:		90000.00 lb
					Total Volume:	45.92 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		34.00 ft					String Weight:	Initial	75000.00 lb
Depth to Top Packer:		3404.00 ft						Final	75000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		75.00 ft							
Tool Length:		103.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			3381.00		
Hydraulic tool	5.00	1113		3386.00		
Jars	5.00	01-07		3391.00		
Safety Joint	3.00	-001		3394.00		
Packer	5.00			3399.00	28.00	Bottom Of Top Packer
Packer	5.00			3404.00		
Stubb	1.00			3405.00		
Recorder	0.00	8959	Inside	3405.00		
Recorder	0.00	8734	Outside	3405.00		
Perforations	35.00			3440.00		
Change Over Sub	1.00			3441.00		
Drill Pipe	32.00			3473.00		
Change Over Sub	1.00			3474.00		
Bullnose	5.00			3479.00	75.00	Bottom Packers & Anchor
Total Tool Length:	**103.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63284 **DST#: 1**

Test Start: 2019.04.13 @ 00:34:00

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:	54000 ppm
Viscosity:	68.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	6.78 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	500.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	HMCW 43%M, 57%W	0.885
55.00	Mud 100% M	0.498

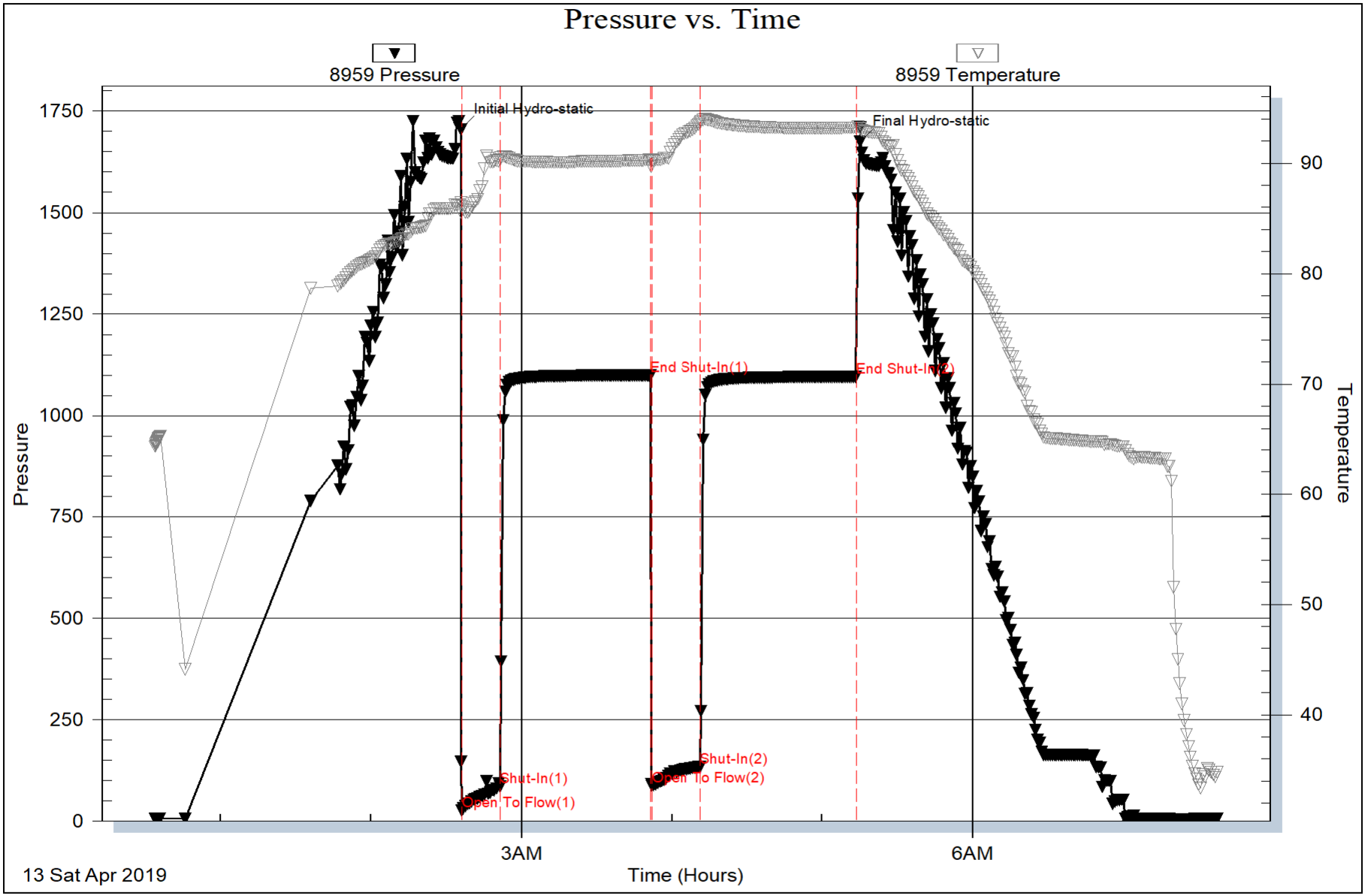
Total Length: 235.00 ft Total Volume: 1.383 bbl

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

Laboratory Name: Laboratory Location:

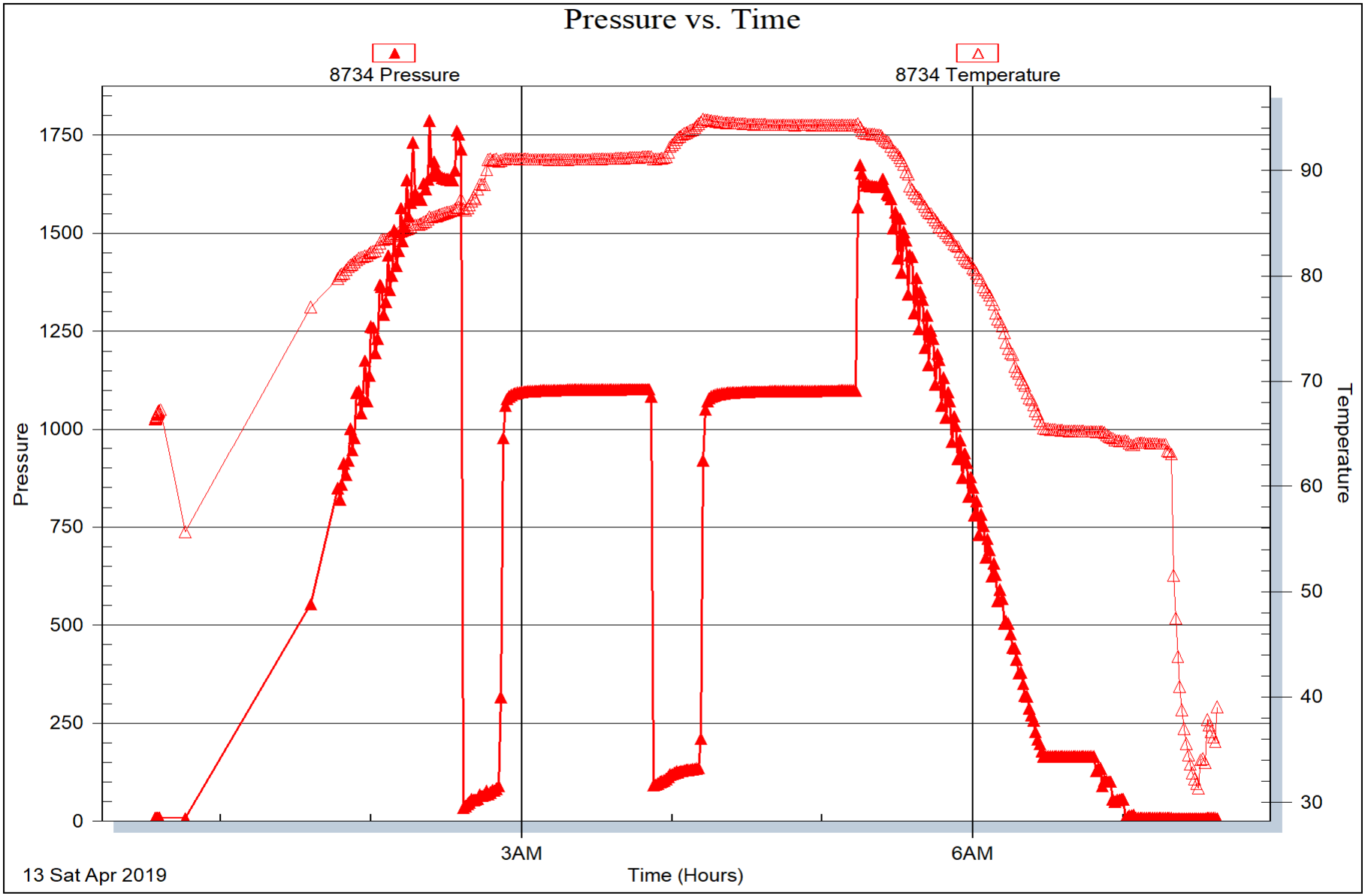
Recovery Comments: RW= .320 @ 32.2 degs = 54,000 PPM

Serial #: 8959 **Inside** Black Oak Exploration Stapp Farms #1-16 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 63284 Printed: 2019.04.16 @ 11:19:39

Serial #: 8734 **Outside** Black Oak Exploration Stapp Farms #1-16 DST Test Number: 1



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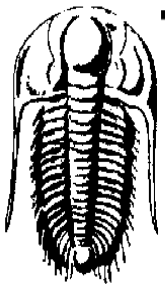


TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Black Oak Exploration**

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

Stapp Farms #1-16

16-2s-26w Decatur,KS

Start Date: 2019.04.13 @ 15:05:00
End Date: 2019.04.13 @ 22:00:09
Job Ticket #: 63285 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.04.16 @ 11:19:00

DRILL STEM TEST REPORT

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63285 **DST#: 2**

Test Start: 2019.04.13 @ 15:05:00

GENERAL INFORMATION:

Formation: **LKC " D "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:09:30
Time Test Ended: 22:00:09

Test Type: Conventional Bottom Hole (Reset)
Tester: Martine Salinas
Unit No: 82

Interval: 3485.00 ft (KB) To 3500.00 ft (KB) (TVD)
Total Depth: 3500.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

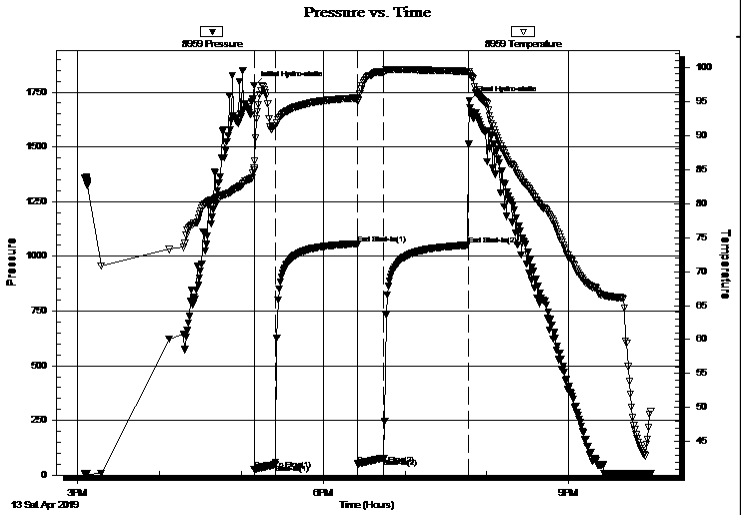
Reference Elevations: 2574.00 ft (KB)
2569.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8959 **Inside**

Press@RunDepth: 78.42 psig @ 3486.00 ft (KB)
Start Date: 2019.04.13 End Date: 2019.04.13
Start Time: 15:05:01 End Time: 22:00:10

Capacity: 8000.00 psig
Last Calib.: 2019.04.13
Time On Btm: 2019.04.13 @ 17:09:10
Time Off Btm: 2019.04.13 @ 19:47:09

TEST COMMENT: 15-IF-Surface blow built to 3"
60-ISI-No blow
20-FF-Surface blow built to 2 1/2"
60-FSI-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1779.77	85.19	Initial Hydro-static
1	25.74	86.21	Open To Flow (1)
16	48.98	91.45	Shut-In(1)
76	1057.47	95.50	End Shut-In(1)
77	51.11	95.05	Open To Flow (2)
96	78.42	99.30	Shut-In(2)
158	1050.97	99.40	End Shut-In(2)
158	1712.58	99.00	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
130.00	SOSMCW 1%O, 11%M, 88%W	0.64
0.00	Heavy oil spots in tool	0.00

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63285 **DST#: 2**

Test Start: 2019.04.13 @ 15:05:00

GENERAL INFORMATION:

Formation: **LKC " D "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:09:30
Time Test Ended: 22:00:09

Test Type: Conventional Bottom Hole (Reset)
Tester: Martine Salinas
Unit No: 82

Interval: 3485.00 ft (KB) To 3500.00 ft (KB) (TVD)
Total Depth: 3500.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

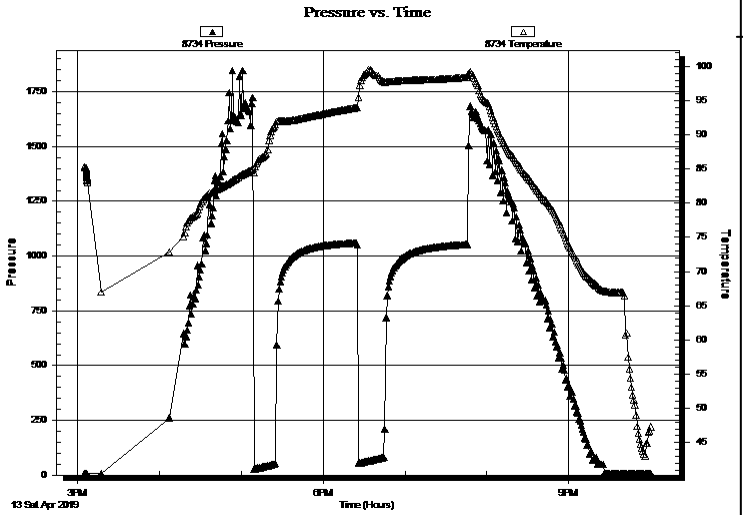
Reference Elevations: 2574.00 ft (KB)
2569.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8734 **Outside**

Press@RunDepth: psig @ 3486.00 ft (KB)
Start Date: 2019.04.13 End Date: 2019.04.13
Start Time: 15:05:01 End Time: 22:00:20

Capacity: 8000.00 psig
Last Calib.: 2019.04.13
Time On Btm:
Time Off Btm:

TEST COMMENT: 15-IF-Surface blow built to 3"
60-ISI-No blow
20-FF-Surface blow built to 2 1/2"
60-FSI-No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
130.00	SOSMCW 1%O, 11%M, 88%W	0.64
0.00	Heavy oil spots in tool	0.00

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63285 **DST#: 2**

Test Start: 2019.04.13 @ 15:05:00

Tool Information

Drill Pipe:	Length:	3264.00 ft	Diameter:	3.80 inches	Volume:	45.79 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:	210.00 ft	Diameter:	2.25 inches	Volume:	1.03 bbl	Weight to Pull Loose:		92000.00 lb
					Total Volume:	46.82 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		17.00 ft					String Weight:	Initial	80000.00 lb
Depth to Top Packer:		3485.00 ft						Final	80000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		15.00 ft							
Tool Length:		43.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			3462.00		
Hydraulic tool	5.00	1113		3467.00		
Jars	5.00	01-07		3472.00		
Safety Joint	3.00	-001		3475.00		
Packer	5.00			3480.00	28.00	Bottom Of Top Packer
Packer	5.00			3485.00		
Packer - Shale	0.00			3485.00		
Stubb	1.00			3486.00		
Recorder	0.00	8959	Inside	3486.00		
Recorder	0.00	8734	Outside	3486.00		
Perforations	9.00			3495.00		
Bullnose	5.00			3500.00	15.00	Bottom Packers & Anchor
Total Tool Length:	**43.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63285 **DST#: 2**

Test Start: 2019.04.13 @ 15:05:00

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:	80000 ppm
Viscosity:	70.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	6.78 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	500.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
130.00	SOSMCW 1%O, 11%M, 88%W	0.639
0.00	Heavy oil spots in tool	0.000

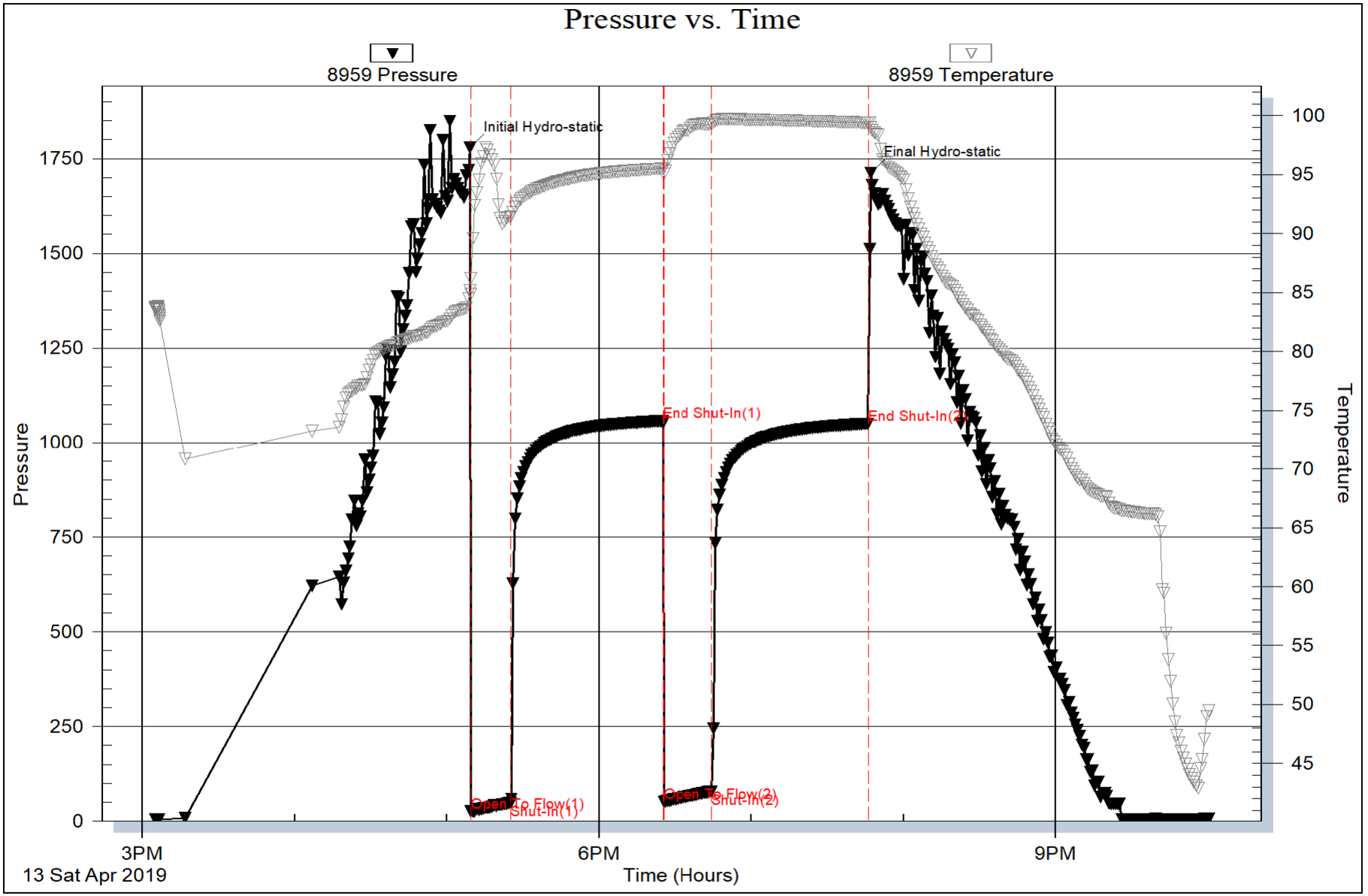
Total Length: 130.00 ft Total Volume: 0.639 bbl

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

Laboratory Name: Laboratory Location:

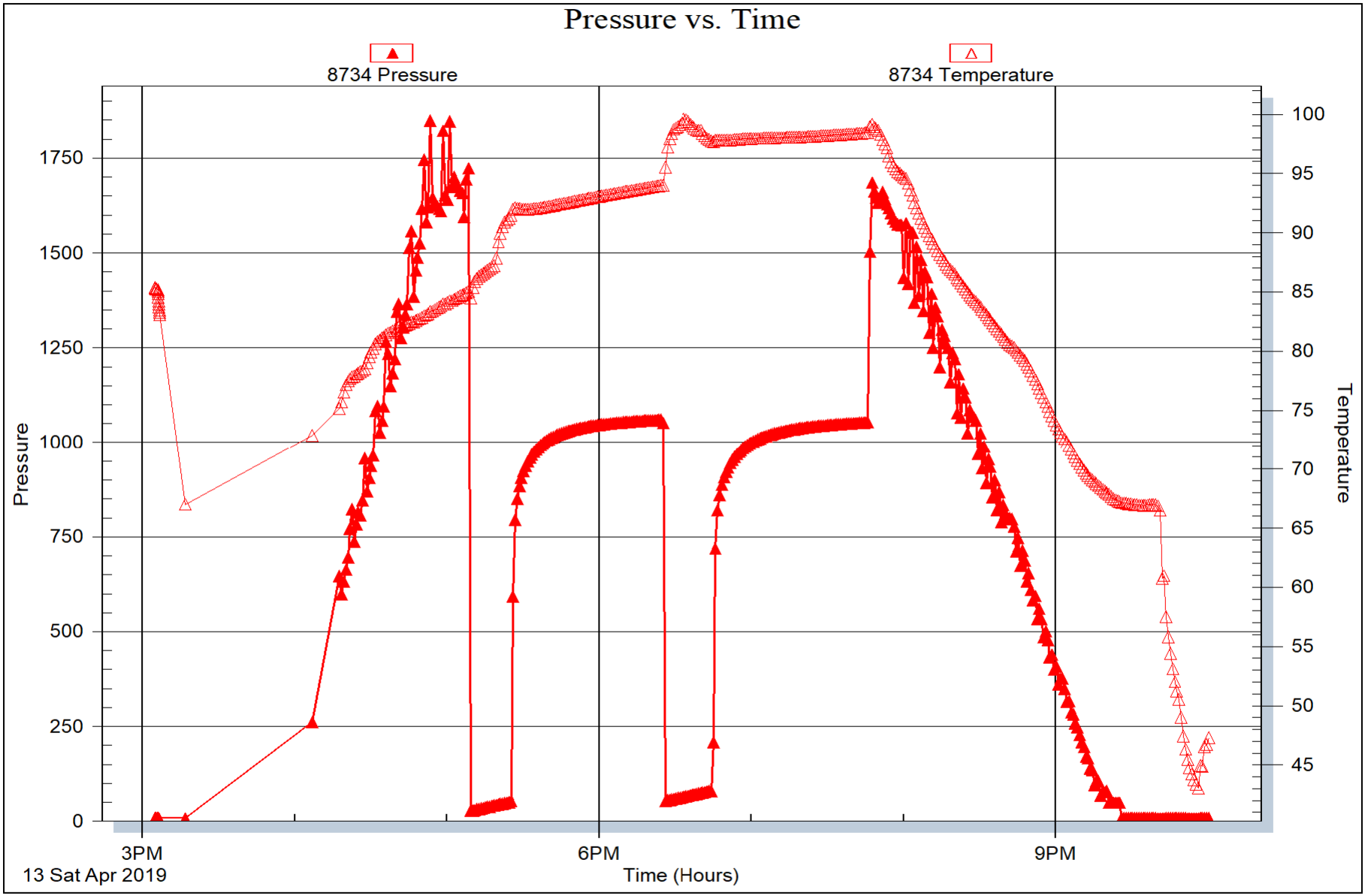
Recovery Comments: RW = .155 @ 46 degs = 80,000PPM

Serial #: 8959 **Inside** Black Oak Exploration Stapp Farms #1-16 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 63285 Printed: 2019.04.16 @ 11:19:01

Serial #: 8734 **Outside** Black Oak Exploration Stapp Farms #1-16 DST Test Number: 2



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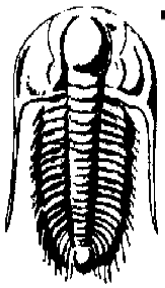


TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Black Oak Exploration**

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

Stapp Farms #1-16

16-2s-26w Decatur,KS

Start Date: 2019.04.14 @ 13:05:00
End Date: 2019.04.14 @ 19:28:09
Job Ticket #: 63286 DST #: 3

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.04.16 @ 11:18:14

DRILL STEM TEST REPORT

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63286 **DST#: 3**

Test Start: 2019.04.14 @ 13:05:00

GENERAL INFORMATION:

Formation: **LKC "H - J"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:05:30
Time Test Ended: 19:28:09

Test Type: Conventional Bottom Hole (Reset)
Tester: Martine Salinas
Unit No: 82

Interval: 3535.00 ft (KB) To 3597.00 ft (KB) (TVD)
Total Depth: 3597.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

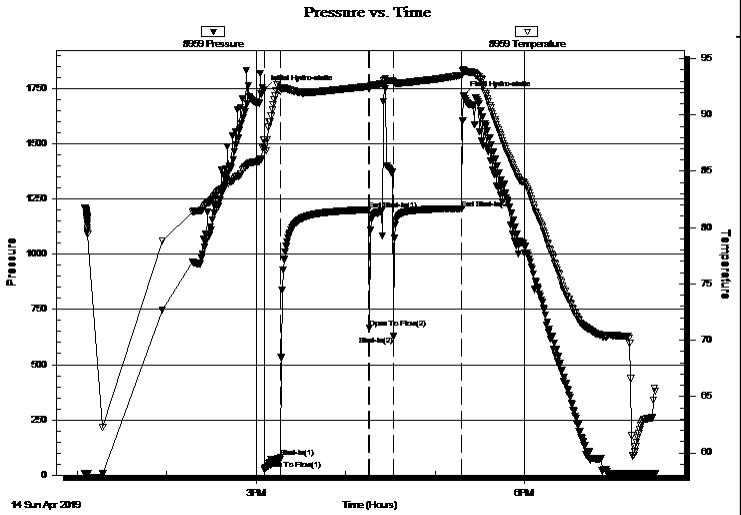
Reference Elevations: 2574.00 ft (KB)
2569.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8959 **Inside**

Press@RunDepth: 627.52 psig @ 3536.00 ft (KB)
Start Date: 2019.04.14 End Date: 2019.04.14
Start Time: 13:05:01 End Time: 19:28:10

Capacity: 8000.00 psig
Last Calib.: 2019.04.14
Time On Btm: 2019.04.14 @ 15:05:20
Time Off Btm: 2019.04.14 @ 17:19:00

TEST COMMENT: 10-IF-Surface blow built to 4 1/2"
60-ISI-No blow
15-FF-No blow , flushed tool, No blow
45-FSI-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1745.04	87.77	Initial Hydro-static
1	26.97	86.98	Open To Flow (1)
11	79.53	92.06	Shut-In(1)
71	1201.59	92.53	End Shut-In(1)
71	665.72	92.42	Open To Flow (2)
87	627.52	92.96	Shut-In(2)
133	1206.46	93.50	End Shut-In(2)
134	1718.84	94.04	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	HWCM 45%W, 55%M	0.32

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63286 **DST#: 3**

Test Start: 2019.04.14 @ 13:05:00

GENERAL INFORMATION:

Formation: **LKC "H - J"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:05:30
Time Test Ended: 19:28:09

Test Type: Conventional Bottom Hole (Reset)
Tester: Martine Salinas
Unit No: 82

Interval: 3535.00 ft (KB) To 3597.00 ft (KB) (TVD)
Total Depth: 3597.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

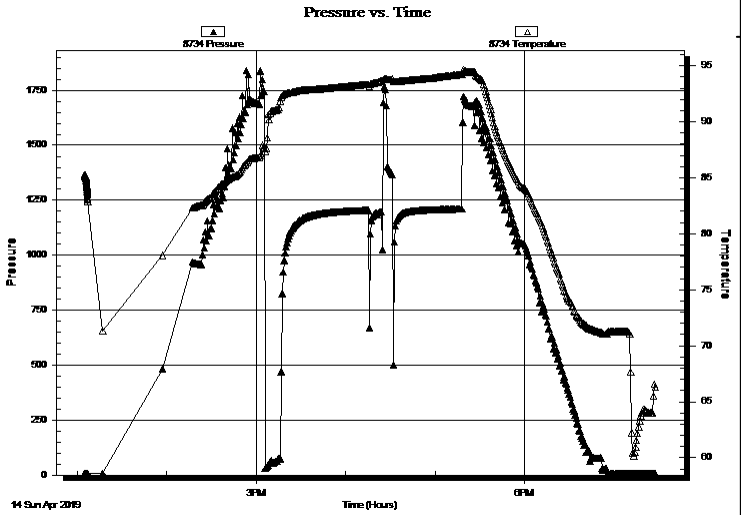
Reference Elevations: 2574.00 ft (KB)
2569.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8734 **Outside**

Press@RunDepth: psig @ 3536.00 ft (KB)
Start Date: 2019.04.14 End Date: 2019.04.14
Start Time: 13:05:01 End Time: 19:28:10

Capacity: 8000.00 psig
Last Calib.: 2019.04.14
Time On Btm:
Time Off Btm:

TEST COMMENT: 10-IF-Surface blow built to 4 1/2"
60-ISI-No blow
15-FF-No blow , flushed tool, No blow
45-FSI-No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
65.00	HWCM 45%W, 55%M	0.32

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63286 **DST#: 3**

Test Start: 2019.04.14 @ 13:05:00

Tool Information

Drill Pipe:	Length:	3328.00 ft	Diameter:	3.80 inches	Volume:	46.68 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:	210.00 ft	Diameter:	2.25 inches	Volume:	1.03 bbl	Weight to Pull Loose:		85000.00 lb
					Total Volume:	47.71 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		31.00 ft					String Weight:	Initial	80000.00 lb
Depth to Top Packer:		3535.00 ft						Final	80000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		62.00 ft							
Tool Length:		90.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			3512.00		
Hydraulic tool	5.00	1113		3517.00		
Jars	5.00	01-07		3522.00		
Safety Joint	3.00	-001		3525.00		
Packer	5.00			3530.00	28.00	Bottom Of Top Packer
Packer	5.00			3535.00		
Stubb	1.00			3536.00		
Recorder	0.00	8959	Inside	3536.00		
Recorder	0.00	8734	Outside	3536.00		
Perforations	22.00			3558.00		
Change Over Sub	1.00			3559.00		
Drill Pipe	32.00			3591.00		
Change Over Sub	1.00			3592.00		
Bullnose	5.00			3597.00	62.00	Bottom Packers & Anchor
Total Tool Length:	**90.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63286 **DST#: 3**

Test Start: 2019.04.14 @ 13:05:00

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:	36000 ppm
Viscosity:	58.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	6.79 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	500.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

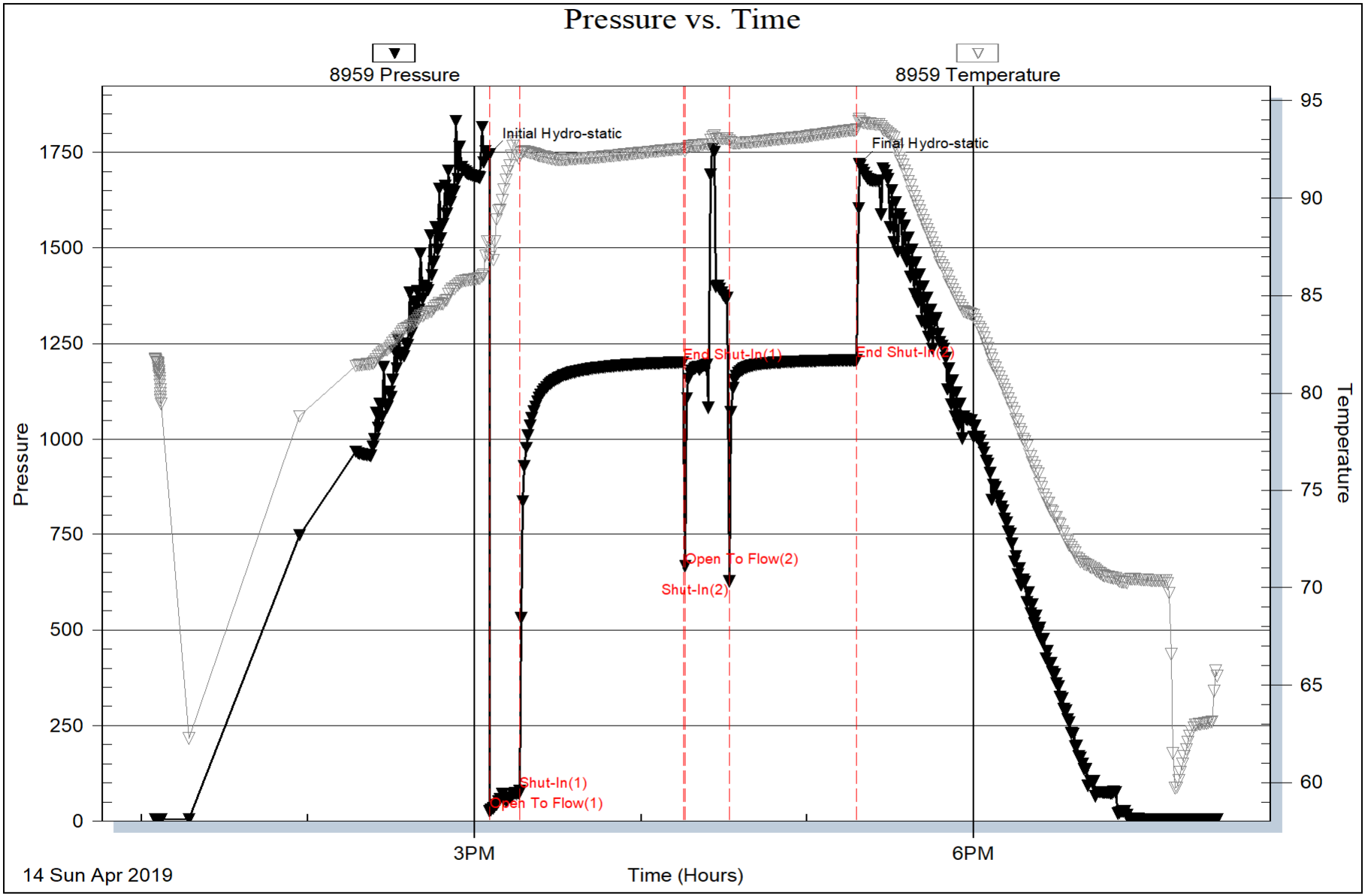
Recovery Table

Length ft	Description	Volume bbl
65.00	HWCM 45%W, 55%M	0.320

Total Length: 65.00 ft Total Volume: 0.320 bbl

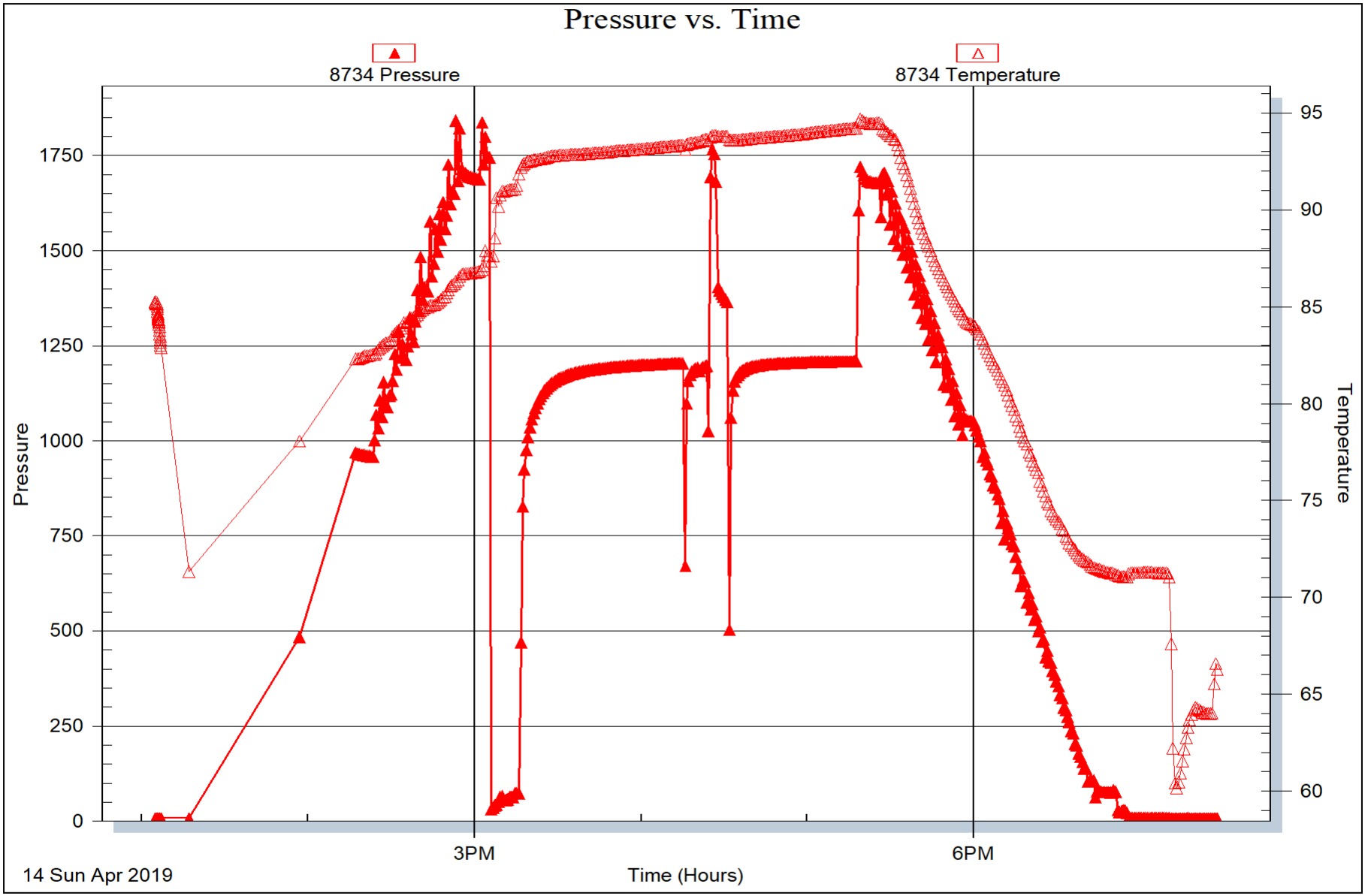
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments: RW= .216 @ 67.5 degs = 36,000PPM

Serial #: 8959 **Inside** Black Oak Exploration Stapp Farms #1-16 DST Test Number: 3



Trilobite Testing, Inc Ref. No: 63286 Printed: 2019.04.16 @ 11:18:15

Serial #: 8734 **Outside** Black Oak Exploration Stapp Farms #1-16 DST Test Number: 3



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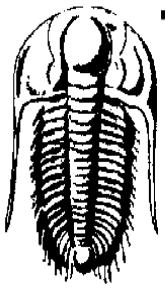


TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Black Oak Exploration**

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

Stapp Farms #1-16

16-2s-26w Decatur,KS

Start Date: 2019.04.15 @ 02:41:00
End Date: 2019.04.15 @ 09:10:50
Job Ticket #: 63287 DST #: 4

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.04.16 @ 11:09:17

DRILL STEM TEST REPORT

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63287 **DST#: 4**

Test Start: 2019.04.15 @ 02:41:00

GENERAL INFORMATION:

Formation: **LKC " K "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:25:50
Time Test Ended: 09:10:50

Test Type: Conventional Bottom Hole (Reset)
Tester: Martine Salinas
Unit No: 82

Interval: 3596.00 ft (KB) To 3624.00 ft (KB) (TVD)
Total Depth: 3624.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

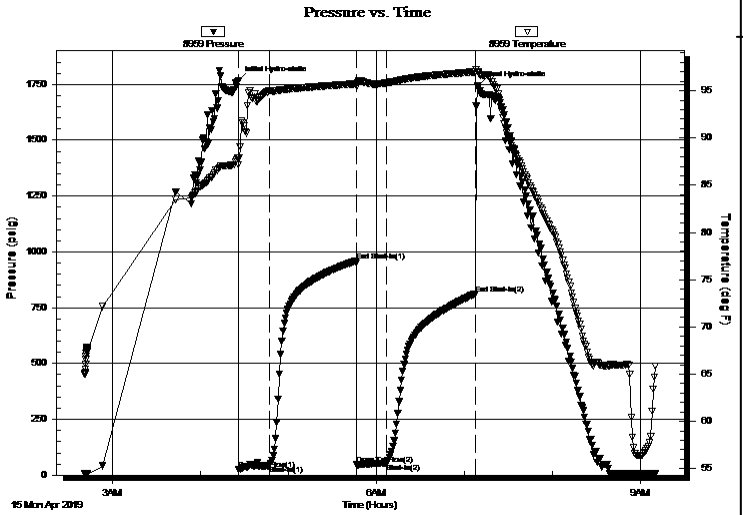
Reference Elevations: 2574.00 ft (KB)
2569.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8959 **Inside**

Press@RunDepth: 54.83 psig @ 3597.00 ft (KB)
Start Date: 2019.04.15 End Date: 2019.04.15
Start Time: 02:41:01 End Time: 09:10:50

Capacity: 8000.00 psig
Last Calib.: 2019.04.15
Time On Btm: 2019.04.15 @ 04:25:40
Time Off Btm: 2019.04.15 @ 07:09:09

TEST COMMENT: 20-IF-Surface blow built to 2 1/4"
60-ISI-No blow
20-FF-Surface blow built to 1"
60-FSI-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1766.55	87.94	Initial Hydro-static
1	24.55	87.14	Open To Flow (1)
22	42.59	95.00	Shut-In(1)
81	959.51	95.73	End Shut-In(1)
81	47.83	95.48	Open To Flow (2)
101	54.83	95.81	Shut-In(2)
162	811.81	97.00	End Shut-In(2)
164	1743.73	96.99	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GSOWCM 3%G, 2%O, 35%W, 60%M	0.30
5.00	CGO 5%G, 95%O	0.02

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63287 **DST#: 4**

Test Start: 2019.04.15 @ 02:41:00

GENERAL INFORMATION:

Formation: **LKC " K "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:25:50
Time Test Ended: 09:10:50

Test Type: Conventional Bottom Hole (Reset)
Tester: Martine Salinas
Unit No: 82

Interval: 3596.00 ft (KB) To 3624.00 ft (KB) (TVD)
Total Depth: 3624.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

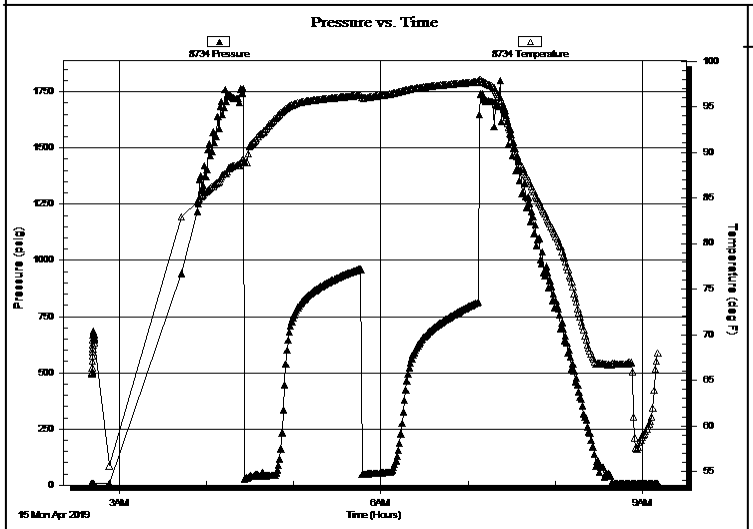
Reference Elevations: 2574.00 ft (KB)
2569.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8734 **Outside**

Press@RunDepth: psig @ 3597.00 ft (KB)
Start Date: 2019.04.15 End Date: 2019.04.15
Start Time: 02:41:01 End Time: 09:10:50

Capacity: 8000.00 psig
Last Calib.: 2019.04.15
Time On Btm:
Time Off Btm:

TEST COMMENT: 20-IF-Surface blow built to 2 1/4"
60-ISI-No blow
20-FF-Surface blow built to 1"
60-FSI-No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GSOWCM 3%G, 2%O, 35%W, 60%M	0.30
5.00	CGO 5%G, 95%O	0.02

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63287 **DST#: 4**

Test Start: 2019.04.15 @ 02:41:00

Tool Information

Drill Pipe:	Length:	3391.00 ft	Diameter:	3.80 inches	Volume:	47.57 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:		30000.00 lb
Drill Collar:	Length:	210.00 ft	Diameter:	2.25 inches	Volume:	1.03 bbl	Weight to Pull Loose:		90000.00 lb
					Total Volume:	48.60 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		33.00 ft					String Weight:	Initial	76000.00 lb
Depth to Top Packer:		3596.00 ft						Final	76000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		28.00 ft							
Tool Length:		56.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			3573.00		
Hydraulic tool	5.00	1113		3578.00		
Jars	5.00	01-07		3583.00		
Safety Joint	3.00	-001		3586.00		
Packer	5.00			3591.00	28.00	Bottom Of Top Packer
Packer	5.00			3596.00		
Packer - Shale	0.00			3596.00		
Stubb	1.00			3597.00		
Recorder	0.00	8959	Inside	3597.00		
Recorder	0.00	8734	Outside	3597.00		
Perforations	22.00			3619.00		
Bullnose	5.00			3624.00	28.00	Bottom Packers & Anchor
Total Tool Length:	**56.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16-2s-26w Decatur,KS

Stapp Farms #1-16

Job Ticket: 63287 **DST#: 4**

Test Start: 2019.04.15 @ 02:41:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	25.4 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	21000 ppm
Viscosity:	56.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	6.79 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	500.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	GSOWCM 3%G, 2%O, 35%W, 60%M	0.295
5.00	CGO 5%G, 95%O	0.025

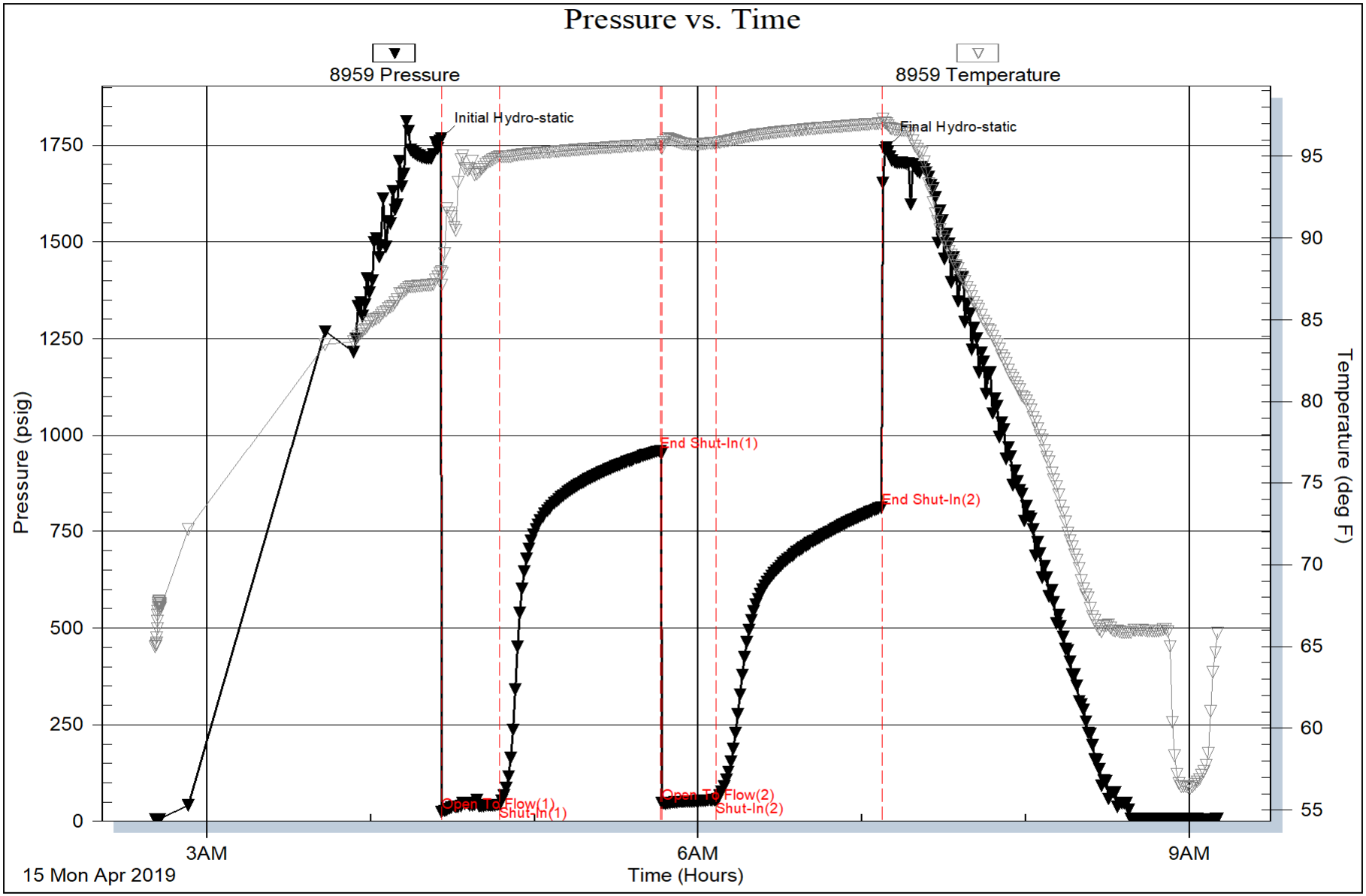
Total Length: 65.00 ft Total Volume: 0.320 bbl

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

Laboratory Name: Laboratory Location:

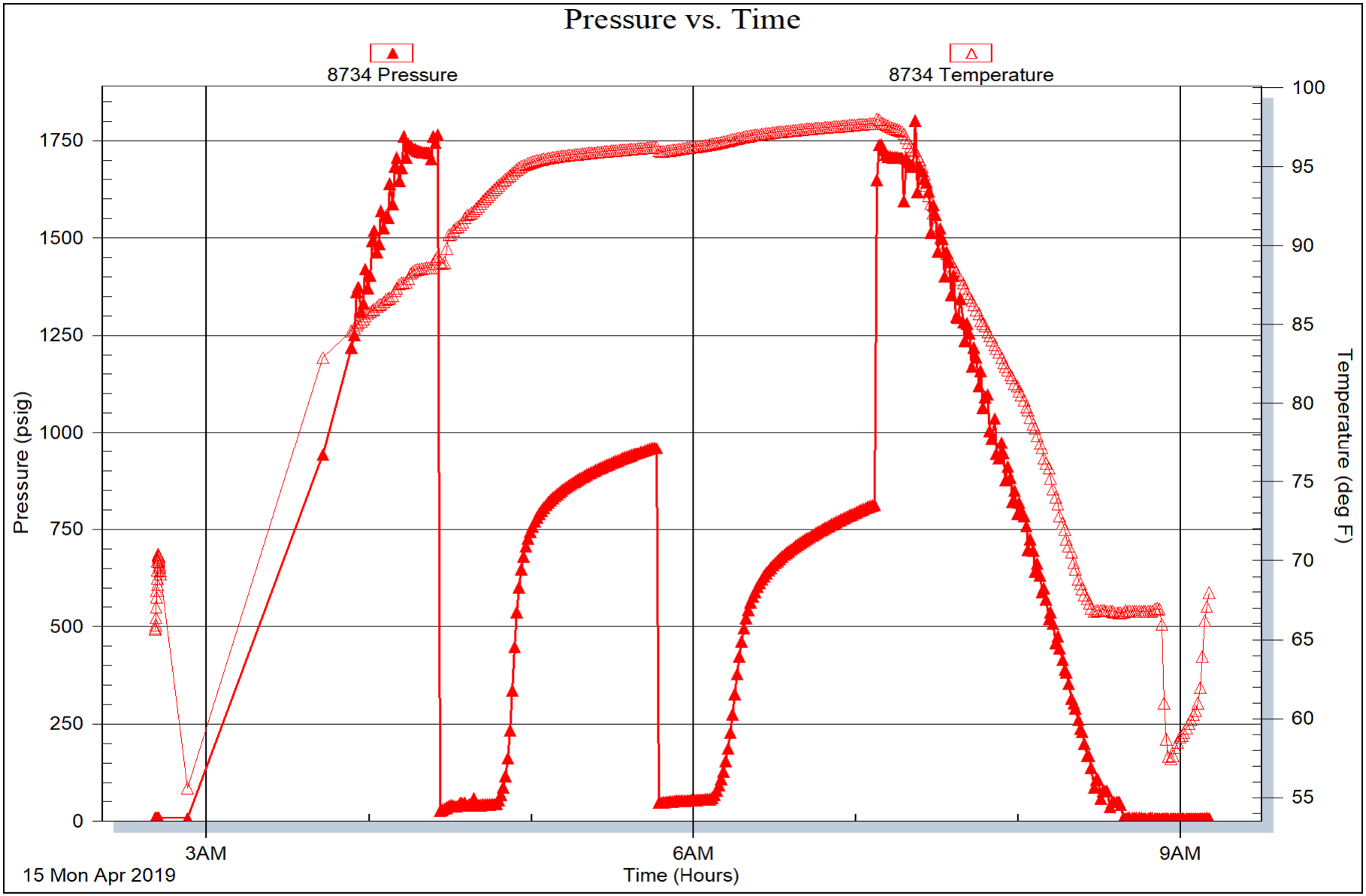
Recovery Comments: Gravity of oil = 26 @ 66 degs
Gravity corrected to 25.4 @ 60 degs
RW= .390 @ 60 degs = 21,000PPM

Serial #: 8959 **Inside** Black Oak Exploration Stapp Farms #1-16 DST Test Number: 4



Trilobite Testing, Inc Ref. No: 63287 Printed: 2019.04.16 @ 11:09:18

Serial #: 8734 **Outside** Black Oak Exploration Stapp Farms #1-16 DST Test Number: 4



Trilobite Testing, Inc Ref. No: 63287 Printed: 2019.04.16 @ 11:09:18

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 63284

Well Name & No. Stapp Farms #1-16 Test No. 1 Date 04-12-19

Company Black Oak Exploration Elevation 2574 KB 2569 GL

Address 1474 S St. Paul St. Denver, CO 80210

Co. Rep / Geo. Clayton Camozzi Rig Murfin #7

Location: Sec. 16 Twp 2 Rge. 26 Co. Decatur State KS

Interval Tested 3404-3479 Zone Tested "Toronto-LKC "R""

Anchor Length 75' Drill Pipe Run 3200 Mud Wt. 9.0

Top Packer Depth 3399 Drill Collars Run 210 Vis 68

Bottom Packer Depth 3404 Wt. Pipe Run — WL 6.8

Total Depth 3479 Chlorides 500 ppm System LCM 13#

Blow Description IF - S. blow built to 6"

ISI - No blow

FF - S blow built to 6"

FSI - No blow

Rec 180	Feet of HMCW	%gas	%oil 57	%water 43	%mud	
Rec 55	Feet of Mud	%gas	%oil	%water 100	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	

Rec Total 235 BHT 93 Gravity — API RW .320 @ 32.2 °F Chlorides 54,000 ppm

(A) Initial Hydrostatic 1705	☒ Test 1200	T-On Location 23:15
(B) First Initial Flow 27	☒ Jars 250	T-Started 00:34
(C) First Final Flow 86	☒ Safety Joint 75	T-Open 02:36
(D) Initial Shut-In 1100	☐ Circ Sub	T-Pulled 05:11
(E) Second Initial Flow 87	☐ Hourly Standby	T-Out 07:37
(F) Second Final Flow 134	☒ Mileage 40 RT 40	Comments
(G) Final Shut-In 1096	☐ Sampler	
(H) Final Hydrostatic 1675	☐ Straddle	☐ Ruined Shale Packer
	☐ Shale Packer	☐ Ruined Packer
Initial Open 15	☐ Extra Packer	☐ Extra Copies
Initial Shut-In 60	☐ Extra Recorder	Sub Total 0
Final Flow 20	☐ Day Standby	Total 1565
Final Shut-In 60	☐ Accessibility	MP/DST Disc't
	Sub Total 1565	

Approved By _____ Our Representative Matthew Salmans

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 63285

Well Name & No. Stapp Farms #1-16 Test No. 2 Date 04-13-19

Company Black Oak Exploration Elevation 2574 KB 2569 GL

Address 1474 S. St. Paul St. Denver Co. 80210

Co. Rep / Geo. Clayton Camozzi Rig Murfin #7

Location: Sec. 16 Twp 2 Rge. 26 Co. Decatur State KS.

Interval Tested 3485- 3500 Zone Tested LKC "D"

Anchor Length 15' Drill Pipe Run 3264 Mud Wt. 8.9

Top Packer Depth 3480 Drill Collars Run 210 Vis 70

Bottom Packer Depth 3485 (Shale) Wt. Pipe Run — WL 6.8

Total Depth 3500 Chlorides 500 ppm System LCM 16#

Blow Description IF: S. blow built to 3"

ISI: No blow

FF: S. blow built to 2½"

FSI: No blow

Rec 130	Feet of SOSMCW	%gas	%oil 1	%water 88	%mud 11
Rec 0	Feet of Heavy oil spots in tool	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 130 BHT 99 Gravity — API RW .155 @ 46 °F Chlorides 80,000 ppm

(A) Initial Hydrostatic 1780	☒ Test 1200	T-On Location 14:45
(B) First Initial Flow 26	☒ Jars 250	T-Started 15:05
(C) First Final Flow 49	☒ Safety Joint 75	T-Open 17:09
(D) Initial Shut-In 1057	☐ Circ Sub	T-Pulled 19:44
(E) Second Initial Flow 51	☐ Hourly Standby	T-Out 22:00
(F) Second Final Flow 78	☒ Mileage 40RT 40	Comments
(G) Final Shut-In 1051	☐ Sampler	
(H) Final Hydrostatic 1713	☐ Straddle	☐ Ruined Shale Packer
	☒ Shale Packer 250	☐ Ruined Packer
Initial Open 15	☐ Extra Packer	☐ Extra Copies
Initial Shut-In 60	☐ Extra Recorder	Sub Total 0
Final Flow 20	☐ Day Standby	Total 1815
Final Shut-In 60	☐ Accessibility	MP/DST Disc't
	Sub Total 1815	

Approved By _____ Our Representative Matthew Salmans

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 63286

Well Name & No. Stapp Farms #1-16 Test No. 3 Date 4-14-19

Company Black Oak Exploration Elevation 2574 KB 2569 GL

Address 1474 S. St. Paul St. Denver, CO 80210

Co. Rep / Geo Clayton Camozzi Rig Murfin #7

Location: Sec. 16 Twp 2 Rge. 26 Co. Decatur State KS

Interval Tested 3535-3597 Zone Tested Lansing H, J

Anchor Length 62 Drill Pipe Run 3328 Mud Wt. 8.9

Top Packer Depth 3530 Drill Collars Run 210 Vis 58

Bottom Packer Depth 3535 Wt. Pipe Run — WL 6.8

Total Depth 3597 Chlorides 500 ppm System LCM 10#

Blow Description IF: S. blow built to 4½"

ISI - No blow

FF: No blow @ 10 mins, Flushed tool, No blow

FSI: No blow

Rec 65	Feet of HNCM	%gas	%oil 45	%water 55	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	

Rec Total 65 BHT 94 Gravity — API RW .216 @ 67.5 °F Chlorides 36,000 ppm

(A) Initial Hydrostatic 1745.	☒ Test 1200	T-On Location 13:00	
(B) First Initial Flow 27	☒ Jars 250	T-Started 13:05	
(C) First Final Flow 80	☒ Safety Joint 75	T-Open 15:06	
(D) Initial Shut-In 1202	☐ Circ Sub	T-Pulled 17:16	
(E) Second Initial Flow 666	☐ Hourly Standby	T-Out 19:28	
(F) Second Final Flow 628	☒ Mileage 40RT 40	Comments Tool Plugged off on Final Flow	
(G) Final Shut-In 1206	☐ Sampler		
(H) Final Hydrostatic 1719	☐ Straddle	☐ Ruined Shale Packer	
	☐ Shale Packer	☐ Ruined Packer	
Initial Open 10	☐ Extra Packer	☐ Extra Copies	
Initial Shut-In 60	☐ Extra Recorder	Sub Total 0	
Final Flow 15	☐ Day Standby	Total 1565	
Final Shut-In 45	☐ Accessibility	MP/DST Disc't	
	Sub Total 1565		

Approved By _____ Our Representative Clayton Camozzi

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 63287

Well Name & No. Stapp Farms #1-16 Test No. 4 Date 4-15-19

Company Black Oak Exploration Elevation 2574 KB 2569 GL

Address 1474 S. St. Paul St. Denver, CO 80210

Co. Rep / Geo. Clayton Camozzi Rig Murfin #7

Location: Sec. 16 Twp 9 Rge. 26 Co. Decatur State KS

Interval Tested 3596-3624 Zone Tested Lansing 'K'

Anchor Length 28' Drill Pipe Run 3391 Mud Wt. 8.8

Top Packer Depth 3591 Drill Collars Run 210 Vis 56

Bottom Packer Depth 3596 (Shale) Wt. Pipe Run — WL 6.8

Total Depth 3624 Chlorides 500 ppm System LCM 10#

Blow Description IF: S. blow built to 2 1/4"

ISI: No blow

FF: S. blow built to 1"

FSI: No blow

Rec 60	Feet of GOSWCM	3 %gas	2 %oil	35 %water	60 %mud
Rec 5	Feet of CGO	5 %gas	95 %oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 65' BHT 97 Gravity 25.4 API RW .390 @ 60 °F Chlorides 21,000 ppm

(A) Initial Hydrostatic 1767	[X] Test 1200	T-On Location 02:30
(B) First Initial Flow 25	[X] Jars 250	T-Started 02:41
(C) First Final Flow 43	[X] Safety Joint 75	T-Open 04:27
(D) Initial Shut-In 960	[ ] Circ Sub	T-Pulled 07:07
(E) Second Initial Flow 48	[ ] Hourly Standby	T-Out 09:11
(F) Second Final Flow 55	[X] Mileage 40RT XZ 40+40	Comments Released @ 06:00
(G) Final Shut-In 812	[ ] Sampler	Tools loaded @ 07:00 4-16-19
(H) Final Hydrostatic 1744	[ ] Straddle	[ ] Ruined Shale Packer
	[X] Shale Packer 250	[ ] Ruined Packer
Initial Open 20	[ ] Extra Packer	[ ] Extra Copies
Initial Shut-In 60	[ ] Extra Recorder	Sub Total 0
Final Flow 20	[ ] Day Standby	Total 1855
Final Shut-In 60	[ ] Accessibility	MP/DST Disc't
	Sub Total 1855	

Approved By _____ Our Representative Clayton Camozzi

BLACK OAK

EXPLORATION

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name:	Stapp Farms 1-16		
Well Id:			
Location:	Section 16 - 2S - 26W Decatur Co, Kansas		
License Number:	API # 15-039-21260-0000	Region:	Wildcat
Spud Date:	4/09/2019	Drilling Completed:	4/15/2019
Surface Coordinates:	600 FSL & 505 FEL		
Bottom Hole Coordinates:			
Ground Elevation (ft):	2569'	K.B. Elevation (ft):	2574'
Logged Interval (ft):	3200 To: 3755	Total Depth (ft):	3755
Formation:	Lansing Kansas City		
Type of Drilling Fluid:	Chemical Gel/Polymer Fresh Water -Based		

OPERATOR

Company: BLACK OAK EXPLORATION, LLC
Address: 1474 S St Paul St
Denver CO 80210

GEOLOGIST

Name: Clayton Camozzi
Company: Black Oak Exploration, LLC
Address: 1474 S St Paul St
Denver CO 80210
Cell: 303.968.4999

REMARKS

After review of the open hole logs, DST data and geological log data it was recommended to plug and abandon the Stapp Farms 1-16. The sample will be delivered, processed and available for review at the KGS Library located in Wichita, Kansas. Note there is a 3' uphole correction on the drill time vs E-logs. The gamma ray curve has been shifted 3' downhole to match the drill time on this log.
Respectfully, Clayton Camozzi

Black Oak Exploration, LLC

WELL COMPARISON SHEET

Company: Black Oak Exploration, LLC
1474 S St Paul St
Denver, CO 80210
Contact: Clayton Camozzi 303-968-4999 (Cell)

Well: Stapp Farms 1-16
Location: 600 FSL / 505 FEL
16 - 2S - 26W
Decatur Co., KS

Elevation: 2574' KB 2569' GL
Field: Wildcat
API No: 15-039- 21260-0000
Surface Casing: 8 5/8" set @ 242' KB

Wellsite Geologist: Clayton Camozzi Cell: (303) 968-4999

Drilling Contractor: Murfin Drilling Co Rig #7. Rig Phone (785-443-5616), Tool Pusher Arturo Cabezas (785-443-0494)

3' Up-Hole Correction
Geolog vs E-log tops

	DRILLING WELL Stapp Farms 1-16 600 FSL / 505 FEL 16 - 2S - 26W 2574 KB				COMPARISON WELL New Nellie 1-15 Murfin: D&A 360 FSL / 3660 FEL 15 - 2S - 26W 2524 KB				COMPARISON WELL Stapp Farms 1-21 Murfin: PRODUCER 1350 FNL / 1320 FWL 21 - 2S - 26W 2550 KB				
							Structural Relationship				Structural Relationship		
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log	Prog
STONE CORRAL	2085	489	2081	493	2026	498	-9	-5	2050	500	-11	-7	-9
NEVA	2845	-271	2846	-272	2790	-266	-5	-6	2816	-266	-5	-6	-5
TOPEKA	3241	-667	3238	-664	3189	-665	-2	1	3212	-662	-5	-2	-6
LECOMPTON	3351	-777	3348	-774	3302	-778	1	4	3322	-772	-5	-2	-4
HEENBER	3406	-832	3401	-827	3352	-828	-4	1	3377	-827	-5	0	-5
LANSING	3445	-871	3440	-866	3394	-870	-1	4	3418	-868	-3	2	-2
LANSING "B" Zone	3472	-898	3469	-895	3422	-898	0	3	3446	-896	-2	1	-1
LANSING "D" Zone	3482	-908	3479	-905	3431	-907	-1	2	3455	-905	-3	0	-2
LANSING "G" Zone	3520	-946	3517	-943	3470	-946	0	3	3494	-944	-2	1	-1
LANSING "H" Zone	3551	-977	3548	-974	3500	-976	-1	2	3524	-974	-3	0	-2
LANSING "J" Zone	3590	-1016	3584	-1010	3539	-1015	-1	5	3560	-1010	-6	0	-3
LANSING "K" Zone	3606	-1032	3602	-1028	3557	-1033	1	5	3578	-1028	-4	0	-1
BKC	3644	-1070	3640	-1066	3592	-1068	-2	2	3618	-1068	-2	2	-3
ARBUCKLE			NDE		NDE				3777	-1227			
Total Depth	3755	-1181	3752	-1178	3780	-1256			3830	-1280			

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16 - 2 - 26 Decatur,KS

Stapp Farms # 1-16

Job Ticket: 63284 **DST#: 1**

Test Start: 2019.04.13 @ 00:34:00

GENERAL INFORMATION:

Formation: **" Toronto - LKC B "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:36:00
Time Test Ended: 07:37:30

Test Type: Conventional Bottom Hole (Initial)
Tester: Martine Salinas
Unit No: 82

Interval: 3404.00 ft (KB) To 3479.00 ft (KB) (TVD)
Total Depth: 3479.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

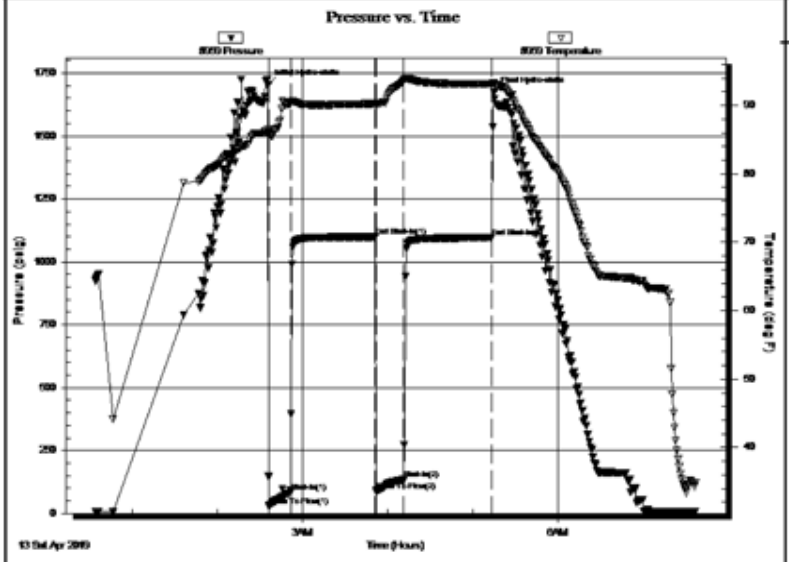
Reference Elevations: 2574.00 ft (KB)
2569.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8959 **Inside**

Press@RunDepth: 133.87 psig @ 3405.00 ft (KB)
Start Date: 2019.04.13 End Date: 2019.04.13
Start Time: 00:34:01 End Time: 07:37:30

Capacity: 8000.00 psig
Last Calib.: 2019.04.13
Time On Btm: 2019.04.13 @ 02:35:40
Time Off Btm: 2019.04.13 @ 05:15:09

TEST COMMENT: 15-IF-S.blow built to 6"
60-ISI-No blow
15-FF-S.blow built to 6"
60-FSI-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1704.69	86.46	Initial Hydro-static
1	27.14	86.11	Open To Flow (1)
16	85.99	90.30	Shut-In(1)
76	1099.69	90.29	End Shut-In(1)
77	87.48	90.19	Open To Flow (2)
96	133.87	93.64	Shut-In(2)
158	1096.33	93.21	End Shut-In(2)
160	1674.56	93.11	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	HMCW 43%M, 57%W	0.89
55.00	Mud 100% M	0.50

Gas Rates

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

DRILL STEM TEST REPORT

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16 - 2 - 26 Decatur,KS

Stapp Farms # 1-16

Job Ticket: 63285 **DST#: 2**

Test Start: 2019.04.13 @ 15:05:00

GENERAL INFORMATION:

Formation: **LKC " D "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:09:30
Time Test Ended: 22:00:09

Test Type: Conventional Bottom Hole (Reset)
Tester: Martine Salinas
Unit No: 82

Interval: 3485.00 ft (KB) To 3500.00 ft (KB) (TVD)
Total Depth: 3500.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

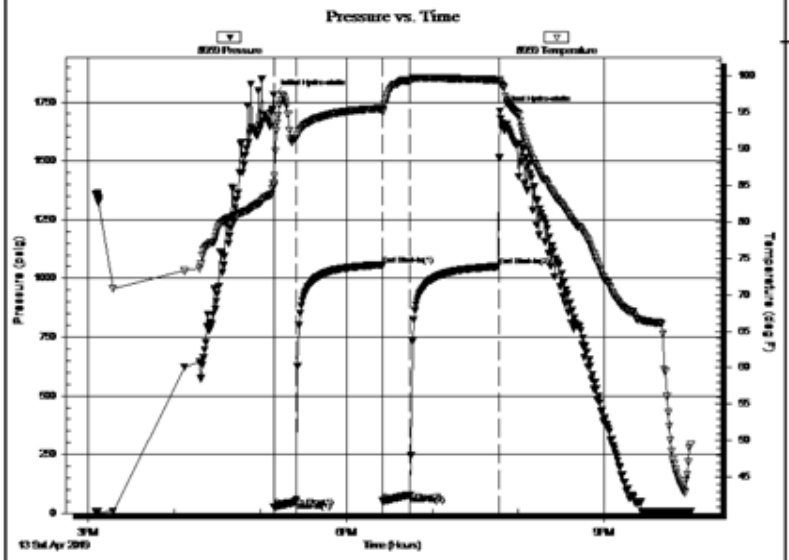
Reference Elevations: 2574.00 ft (KB)
2569.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8959 **Inside**

Press@RunDepth: 78.42 psig @ 3486.00 ft (KB)
Start Date: 2019.04.13 End Date: 2019.04.13
Start Time: 15:05:01 End Time: 22:00:10

Capacity: 8000.00 psig
Last Calib.: 2019.04.13
Time On Btm: 2019.04.13 @ 17:09:10
Time Off Btm: 2019.04.13 @ 19:47:09

TEST COMMENT: 15-IF-S.blow built to 3"
60-ISI-No blow
20-FF-S.blow built to 2 1/2"
60-FSI-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1779.77	85.19	Initial Hydro-static
1	25.74	86.21	Open To Flow (1)
16	48.98	91.45	Shut-In(1)
76	1057.47	95.50	End Shut-In(1)
77	51.11	95.05	Open To Flow (2)
96	78.42	99.30	Shut-In(2)
158	1050.97	99.40	End Shut-In(2)
158	1712.58	99.00	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
130.00	SOSMCW 1%O, 11%M, 88%W	0.64
0.00	Heavy oil spots in tool	0.00

Gas Rates

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

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16 - 2 - 26 Decatur,KS

Stapp Farms # 1-16

Job Ticket: 63286 **DST#: 3**

Test Start: 2019.04.14 @ 13:05:00

GENERAL INFORMATION:

Formation: **Lansing H, J**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:05:30
Time Test Ended: 19:28:09

Test Type: Conventional Bottom Hole (Reset)
Tester: Martine Salinas
Unit No: 82

Interval: 3535.00 ft (KB) To 3597.00 ft (KB) (TVD)
Total Depth: 3597.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

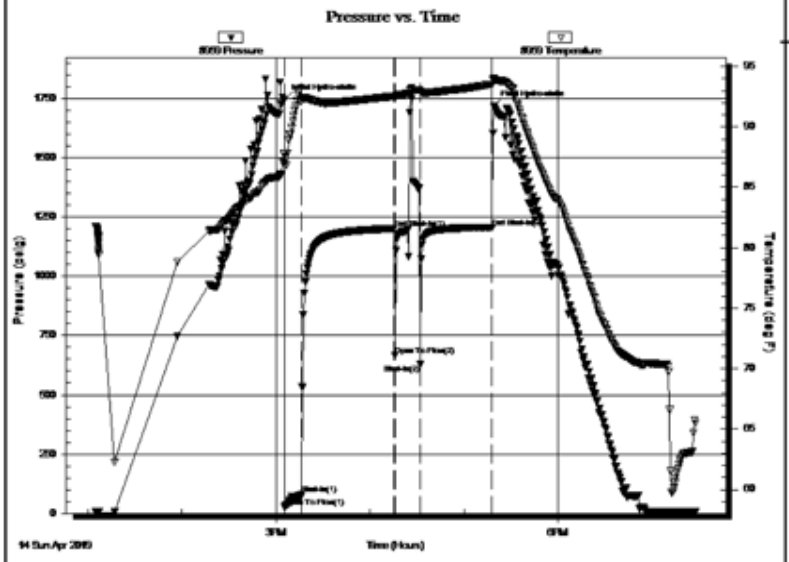
Reference Elevations: 2574.00 ft (KB)
2569.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8959 **Inside**

Press@RunDepth: 627.52 psig @ 3536.00 ft (KB)
Start Date: 2019.04.14 End Date: 2019.04.14
Start Time: 13:05:01 End Time: 19:28:10

Capacity: 8000.00 psig
Last Calib.: 2019.04.14
Time On Btm: 2019.04.14 @ 15:05:20
Time Off Btm: 2019.04.14 @ 17:19:00

TEST COMMENT: 10-IF-S.blow built to 4 1/2"
60-ISI-No blow
15-FF-No blow , flushed tool, No blow
45-FSI-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1745.04	87.77	Initial Hydro-static
1	26.97	86.98	Open To Flow (1)
11	79.53	92.06	Shut-In(1)
71	1201.59	92.53	End Shut-In(1)
71	665.72	92.42	Open To Flow (2)
87	627.52	92.96	Shut-In(2)
133	1206.46	93.50	End Shut-In(2)
134	1718.84	94.04	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	HWCM 45%W, 55%M	0.32

Gas Rates

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

DRILL STEM TEST REPORT

Black Oak Exploration

1474 S. St. Paul St.
Denver, CO 80210

ATTN: Clayton Camozzi

16 - 2 - 26 Decatur,KS

Stapp Farms # 1-16

Job Ticket: 63287 **DST#: 4**

Test Start: 2019.04.15 @ 02:41:00

GENERAL INFORMATION:

Formation: **Lansing " K "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:25:50
Time Test Ended: 09:10:50

Test Type: Conventional Bottom Hole (Reset)
Tester: Martine Salinas
Unit No: 82

Interval: 3596.00 ft (KB) To 3624.00 ft (KB) (TVD)
Total Depth: 3624.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

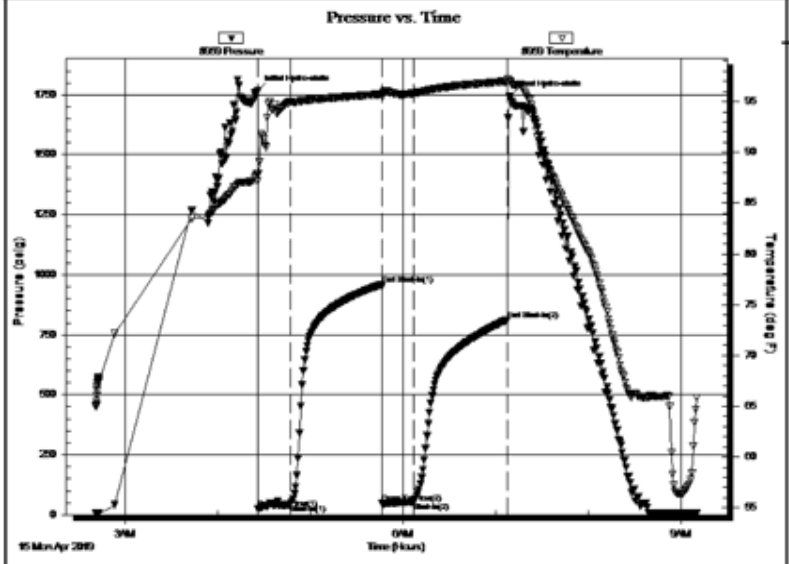
Reference Elevations: 2574.00 ft (KB)
2569.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8959 **Inside**

Press@RunDepth: 54.83 psig @ 3597.00 ft (KB)
Start Date: 2019.04.15 End Date: 2019.04.15
Start Time: 02:41:01 End Time: 09:10:50

Capacity: 8000.00 psig
Last Calib.: 2019.04.15
Time On Btm: 2019.04.15 @ 04:25:40
Time Off Btm: 2019.04.15 @ 07:09:09

TEST COMMENT: 20-IF-S.blow built to 2 1/4"
60-ISI-No blow
20-FF-S.blow built to 1"
60-FSI-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1766.55	87.94	Initial Hydro-static
1	24.55	87.14	Open To Flow (1)
22	42.59	95.00	Shut-In(1)
81	959.51	95.73	End Shut-In(1)
81	47.83	95.48	Open To Flow (2)
101	54.83	95.81	Shut-In(2)
162	811.81	97.00	End Shut-In(2)
164	1743.73	96.99	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GSOWCM 3%G, 2%O, 35%W, 60%M	0.30
5.00	CGO 5%G, 95%O	0.02

Gas Rates

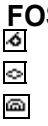
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

ROCK TYPES

LITHOLOGY

Anhy
Bent
Brec
Cht
Clyst
Coal
Congl
Dol
Gyp
Igne
Lmst
Meta
Mrlst
Salt
Shale
Shcol
Shgy
Sltst
Ss
Till
Sltstn
Shale
Sandylms
Lms
Gry sh
Dtd
Dol
Carb sh
pipesymbol
unknown lith
Red shale

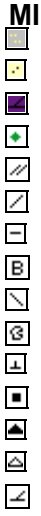
FOSSIL



Oomoldic
Fuss
Algae

Amph
Belm
Bioclst
Brach
Bryozoa
Cephal
Coral
Crin
Echin
Fish
Foram
Fossil
Gastro
Oolite
Ostra
Pelec
Pellet
Pisolite
Plant
Strom

MINERAL



Slty
Sand
Dol
Chlorite
Anhy
Arggrn
Arg
Bent
Bit
Brecfrag
Calc
Carb
Chtdk
Chtlt
Dol

Feldspar
Ferrpel
Ferr
Glau
Gyp
Hvymin
Kaol
Marl
Minxl
Nodule
Phos
Pyr
Salt
Sandy
Silt
Sil
Sulphur
Tuff

STRINGER

Sh
Sandylms
Lms
Grysltt
Grysh
Dol
Clystn
Carbsh
Anhy
Arg
Bent
Coal
Dol
Gyp
Ls
Mrst
Sltstrg

Ssstrg

TEXTURE

Boundst
Chalky
Cryxln
Earthy
Finexln
Grainst
Lithogr
Microxln
Mudst
Packst
Wackest

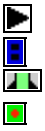
OIL SHOW

Gas show
Even
Spotted
Ques
Dead

INTERVAL

Dst
Core
Dst
Straddle test tail pip

EVENT



Rft
Sidewall
Dst
Open hole
Perforations

Curve Track 1

ROP (Min/Ft)
Gamma (API)
Caliper (inches)

Depth	Lithology	Oil Shows	Geological Descriptions	Engineering Data

Engineering Data

TG (Units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
C5 (units)

0 ROP (Min/Ft) 10
1 Gamma (API) 150
6 Caliper (inches) 16

0 TG, C1-C5 30

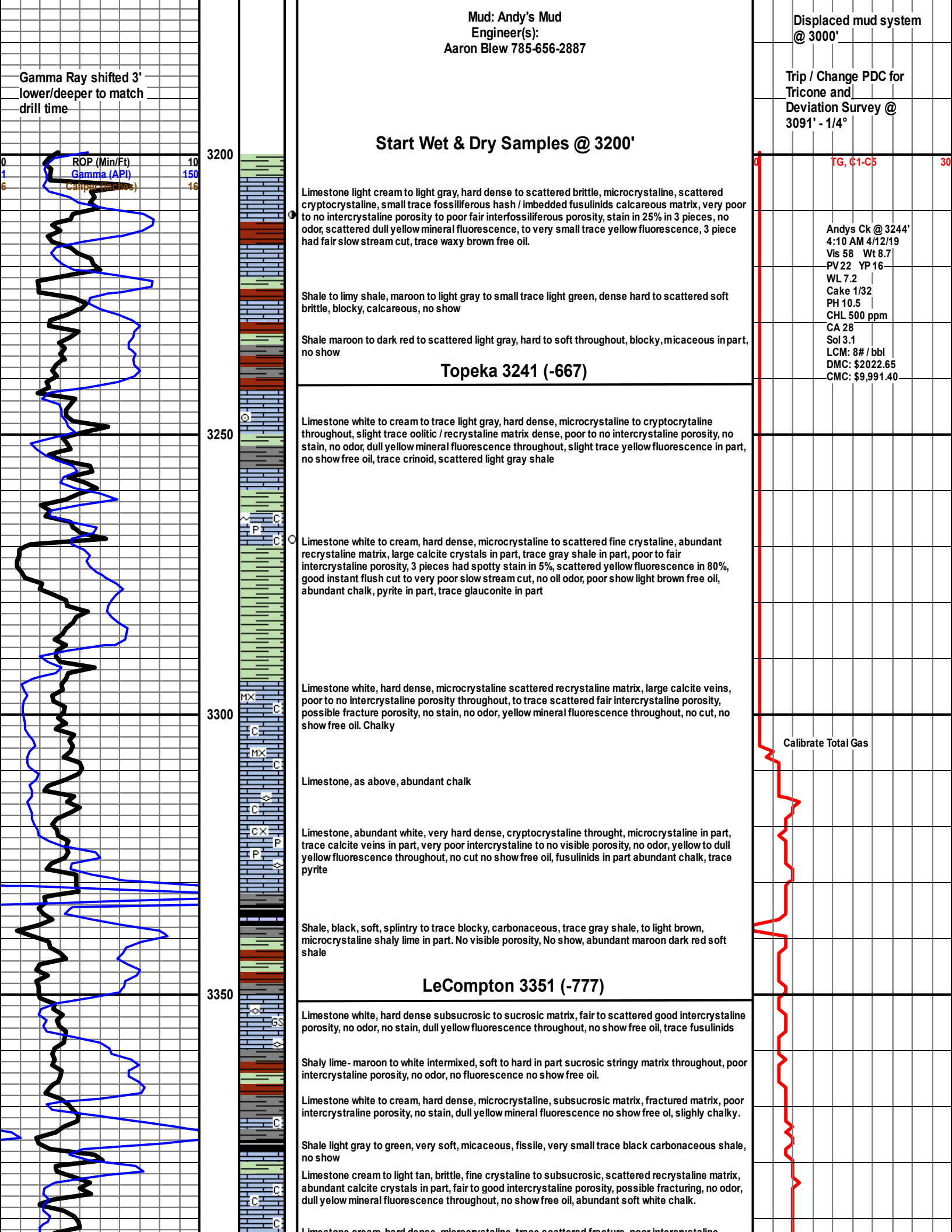
3150

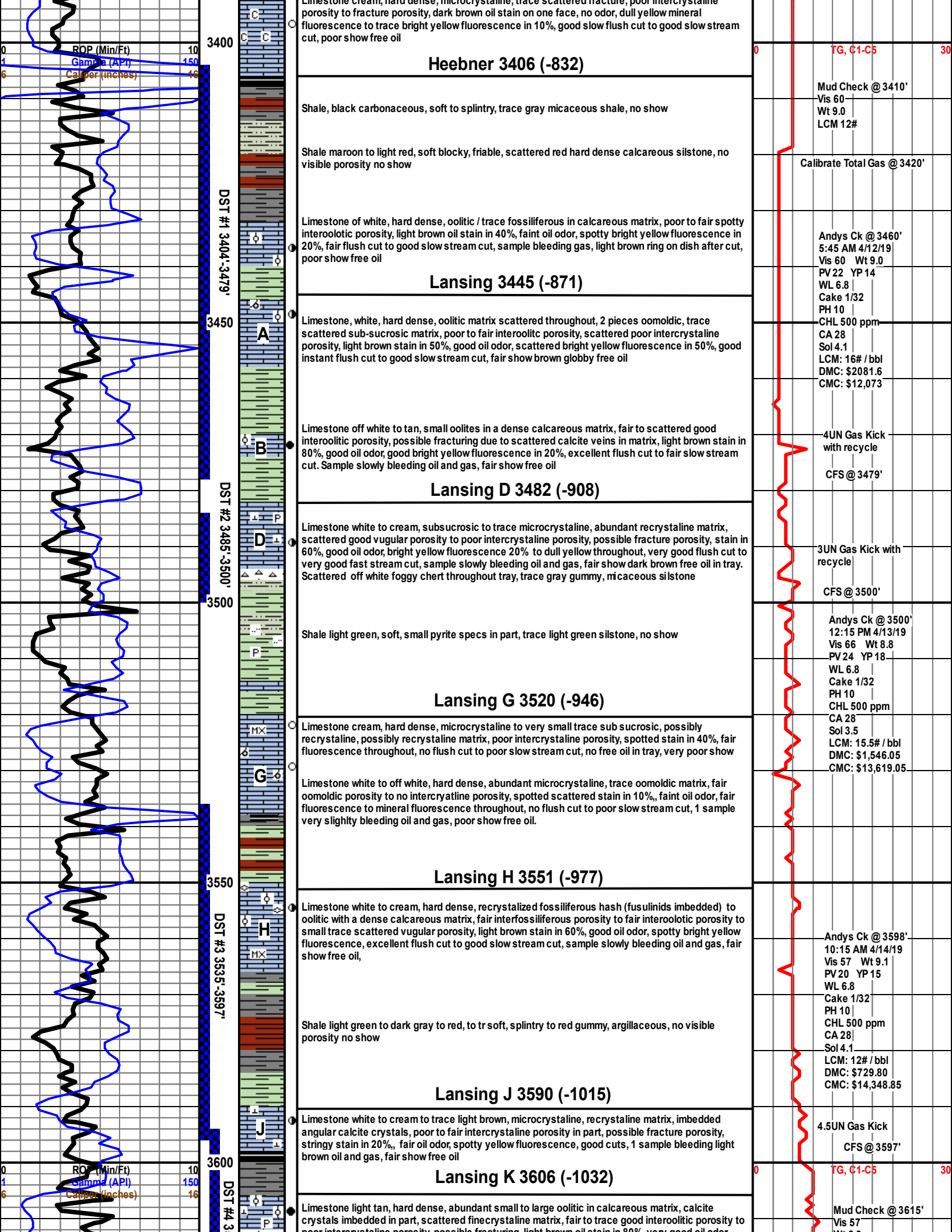
Black Oak Exploration
Stapp Farms 1-16
600' FSL & 505' FEL
Sec. 16- 2S - 26W
Decatur Co, KS

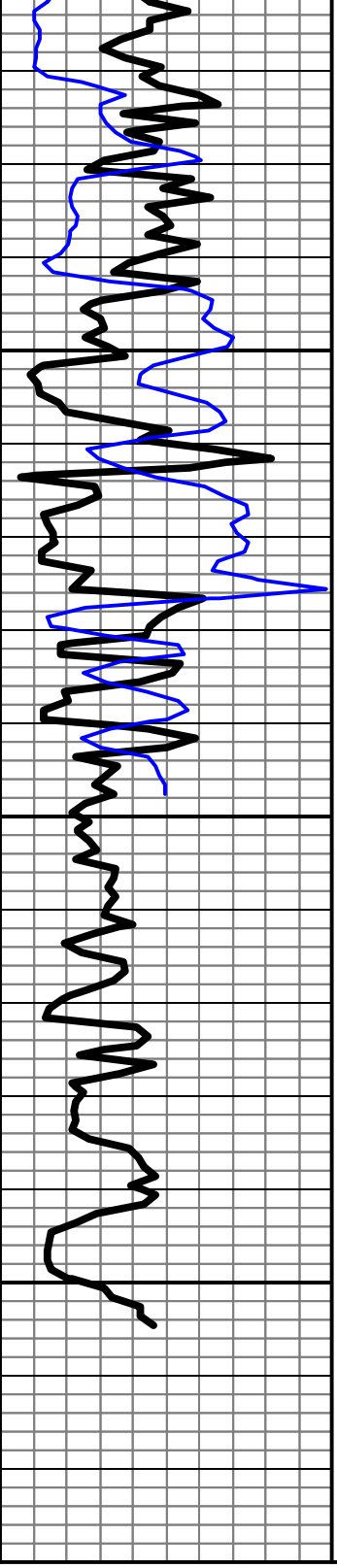
Drilling Company: Murfin Drilling Co
Rig #7 785-443-5616 Tool Pusher: Arturo Cabezas 785-470-7203

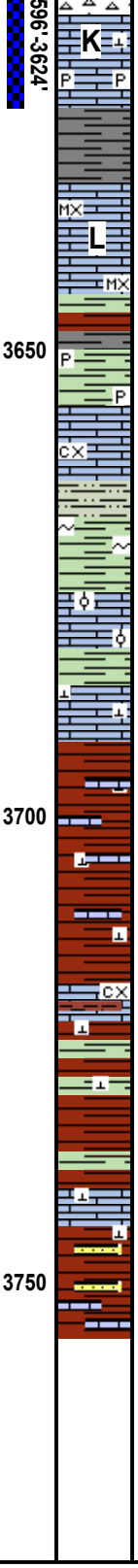
Geologist, Clayton Camozzi on Location @ 3150'
8:30 PM April 11, 2019

Ran 5 joints of 23# New 8 5/8" surface casing. Tally @ 232.39'. Set @ 242KB' Cement with 165 sacks of common, 2% gel, 3% calcium chloride. Cement did circulate. Plug down @ 7:30 am on 4-10-19 by Hurricane


Mud: Andy's Mud
Engineer(s):
Aaron Blew 785-656-2887
Displaced mud system @ 3000'
Gamma Ray shifted 3' lower/deeper to match drill time
Trip / Change PDC for Tricone and Deviation Survey @ 3091' - 1/4°
Start Wet & Dry Samples @ 3200'
0 ROP (Min/Ft) 10
1 Gamma (API) 150
6 Caliper (Inches) 16
0 TG, C1-C5 30
3200
3250
3300
3350
Limestone light cream to light gray, hard dense to scattered brittle, microcrystaline, scattered cryptocrystaline, small trace fossiliferous hash / imbedded fusulinids calcareous matrix, very poor to no intercrystaline porosity to poor fair interfossiliferous porosity, stain in 25% in 3 pieces, no odor, scattered dull yellow mineral fluorescence, to very small trace yellow fluorescence, 3 piece had fair slow stream cut, trace waxy brown free oil.
Shale to limy shale, maroon to light gray to small trace light green, dense hard to scattered soft brittle, blocky, calcareous, no show
Shale maroon to dark red to scattered light gray, hard to soft throughout, blocky, micaceous in part, no show
Topeka 3241 (-667)
Limestone white to cream to trace light gray, hard dense, microcrystaline to cryptocrytaline throughout, slight trace oolitic / recrystaline matrix dense, poor to no intercrystaline porosity, no stain, no odor, dull yellow mineral fluorescence throughout, slight trace yellow fluorescence in part, no show free oil, trace crinoid, scattered light gray shale
Limestone white to cream, hard dense, microcrystaline to scattered fine crystaline, abundant recrystaline matrix, large calcite crystals in part, trace gray shale in part, poor to fair intercrystaline porosity, 3 pieces had spotty stain in 5%, scattered yellow fluorescence in 80%, good instant flush cut to very poor slow stream cut, no oil odor, poor show light brown free oil, abundant chalk, pyrite in part, trace glauconite in part
Limestone white, hard dense, microcrystaline scattered recrystaline matrix, large calcite veins, poor to no intercrystaline porosity throughout, to trace scattered fair intercrystaline porosity, possible fracture porosity, no stain, no odor, yellow mineral fluorescence throughout, no cut, no show free oil. Chalky
Limestone, as above, abundant chalk
Limestone, abundant white, very hard dense, cryptocrystaline throught, microcrystaline in part, trace calcite veins in part, very poor intercrystaline to no visible porosity, no odor, yellow to dull yellow fluorescence throughout, no cut no show free oil, fusulinids in part abundant chalk, trace pyrite
Shale, black, soft, splintry to trace blocky, carbonaceous, trace gray shale, to light brown, microcrystaline shaly lime in part. No visible porosity, No show, abundant maroon dark red soft shale
LeCompton 3351 (-777)
Limestone white, hard dense subsucrosic to sucrosic matrix, fair to scattered good intercrystaline porosity, no odor, no stain, dull yellow fluorescence throughout, no show free oil, trace fusulinids
Shaly lime- maroon to white intermixed, soft to hard in part sucrosic stringy matrix throughout, poor intercrystaline porosity, no odor, no fluorescence no show free oil.
Limestone white to cream, hard dense, microcrystaline, subsucrosic matrix, fractured matrix, poor intercrystraline porosity, no stain, dull yellow mineral fluorescence no show free ol, slighly chalky.
Shale light gray to green, very soft, micaceous, fissile, very small trace black carbonaceous shale, no show
Limestone cream to light tan, brittle, fine crystaline to subsucrosic, scattered recrystaline matrix, abundant calcite crystals in part, fair to good intercrystaline porosity, possible fracturing, no odor, dull yelow mineral fluorescence throughout, no show free oil, abundant soft white chalk.
Andys Ck @ 3244'
4:10 AM 4/12/19
Vis 58 Wt 8.7
PV 22 YP 16
WL 7.2
Cake 1/32
PH 10.5
CHL 500 ppm
CA 28
Sol 3.1
LCM: 8# / bbl
DMC: $2022.65
CMC: $9,991.40
Calibrate Total Gas


ROP (Min/Ft) 0 10
Gamma (API) 1 150
Caliper (inches) 6 16
3400
3450
3500
3550
3600
DST #1 3404'-3479'
DST #2 3485'-3500'
DST #3 3535'-3597'
DST #4 3
C
A
B
P
D
MX
G
H
J
Limestone cream, hard dense, microcrystaline, trace scattered fracture, poor intercrystaline porosity to fracture porosity, dark brown oil stain on one face, no odor, dull yellow mineral fluorescence to trace bright yellow fluorescence in 10%, good slow flush cut to good slow stream cut, poor show free oil
Heebner 3406 (-832)
Shale, black carbonaceous, soft to splintry, trace gray micaceous shale, no show
Shale maroon to light red, soft blocky, friable, scattered red hard dense calcareous silstone, no visible porosity no show
Limestone of white, hard dense, oolitic / trace fossiliferous in calcareous matrix, poor to fair spotty interoolotic porosity, light brown oil stain in 40%, faint oil odor, spotty bright yellow fluorescence in 20%, fair flush cut to good slow stream cut, sample bleeding gas, light brown ring on dish after cut, poor show free oil
Lansing 3445 (-871)
Limestone, white, hard dense, oolitic matrix scattered throughout, 2 pieces oomoldic, trace scattered sub-sucrosic matrix, poor to fair interoolitc porosity, scattered poor intercrystaline porosity, light brown stain in 50%, good oil odor, scattered bright yellow fluorescence in 50%, good instant flush cut to good slow stream cut, fair show brown globby free oil
Limestone off white to tan, small oolites in a dense calcareous matrix, fair to scattered good interoolitic porosity, possible fracturing due to scattered calcite veins in matrix, light brown stain in 80%, good oil odor, good bright yellow fluorescence in 20%, excellent flush cut to fair slow stream cut. Sample slowly bleeding oil and gas, fair show free oil
Lansing D 3482 (-908)
Limestone white to cream, subsucrosic to trace microcrystaline, abundant recrystaline matrix, scattered good vugular porosity to poor intercrystaline porosity, possible fracture porosity, stain in 60%, good oil odor, bright yellow fluorescence 20% to dull yellow throughout, very good flush cut to very good fast stream cut, sample slowly bleeding oil and gas, fair show dark brown free oil in tray. Scattered off white foggy chert throughout tray, trace gray gummy, micaceous silstone
Shale light green, soft, small pyrite specs in part, trace light green silstone, no show
Lansing G 3520 (-946)
Limestone cream, hard dense, microcrystaline to very small trace sub sucrosic, possibly recrystaline, possibly recrystaline matrix, poor intercrystaline porosity, spotted stain in 40%, fair fluorescence throughout, no flush cut to poor slow stream cut, no free oil in tray, very poor show
Limestone white to off white, hard dense, abundant microcrystaline, trace oomoldic matrix, fair oomoldic porosity to no intercryatline porosity, spotted scattered stain in 10%,, faint oil odor, fair fluorescence to mineral fluorescence throughout, no flush cut to poor slow stream cut, 1 sample very slighlty bleeding oil and gas, poor show free oil.
Lansing H 3551 (-977)
Limestone white to cream, hard dense, recrystalized fossiliferous hash (fusulinids imbedded) to oolitic with a dense calcareous matrix, fair interfossiliferous porosity to fair interoolotic porosity to small trace scattered vugular porosity, light brown stain in 60%, good oil odor, spotty bright yellow fluorescence, excellent flush cut to good slow stream cut, sample slowly bleeding oil and gas, fair show free oil,
Shale light green to dark gray to red, to tr soft, splintry to red gummy, argillaceous, no visible porosity no show
Lansing J 3590 (-1015)
Limestone white to cream to trace light brown, microcrystaline, recrystaline matrix, imbedded angular calcite crystals, poor to fair intercrystaline porosity in part, possible fracture porosity, stringy stain in 20%,, fair oil odor, spotty yellow fluorescence, good cuts, 1 sample bleeding light brown oil and gas, fair show free oil
Lansing K 3606 (-1032)
Limestone light tan, hard dense, abundant small to large oolitic in calcareous matrix, calcite crystals imbedded in part, scattered finecrystaline matrix, fair to trace good interoolitic porosity to
0 TG, C1-C5 30
Mud Check @ 3410'
Vis 60
Wt 9.0
LCM 12#
Calibrate Total Gas @ 3420'
Andys Ck @ 3460'
5:45 AM 4/12/19
Vis 60 Wt 9.0
PV 22 YP 14
WL 6.8
Cake 1/32
PH 10
CHL 500 ppm
CA 28
Sol 4.1
LCM: 16# / bbl
DMC: $2081.6
CMC: $12,073
4UN Gas Kick with recycle
CFS @ 3479'
3UN Gas Kick with recycle
CFS @ 3500'
Andys Ck @ 3500'
12:15 PM 4/13/19
Vis 66 Wt 8.8
PV 24 YP 18
WL 6.8
Cake 1/32
PH 10
CHL 500 ppm
CA 28
Sol 3.5
LCM: 15.5# / bbl
DMC: $1,546.05
CMC: $13,619.05
Andys Ck @ 3598'
10:15 AM 4/14/19
Vis 57 Wt 9.1
PV 20 YP 15
WL 6.8
Cake 1/32
PH 10
CHL 500 ppm
CA 28
Sol 4.1
LCM: 12# / bbl
DMC: $729.80
CMC: $14,348.85
4.5UN Gas Kick
CFS @ 3597'
0 TG, C1-C5 30
Mud Check @ 3615'
Vis 57





poor intercrystaline porosity, possible fracturing, light brown oil stain in 80 %, very good oil odor, very good bright yellow fluorescence throughout, excellent flush cut to good slow blue stream cut, sample slowly bleeding gas, small trace free oil in tray. Trace off white chert trace pyrite.

Limestone cream, very hard dense, cryptocrystaline, very slight black sticky dead oil stain along plane, pyrite in part

Limestone white to cream, hard dense, microcrystaline, trace oolitic in dense calcareous matrix, scattered calcite crystals in part, very poor to no visible porosity, no odor, no stain, scattered spotted fluorescence in 10%, no cut, no show

BKC 3644 (-1070)

3650

Shale light gray to trace green to maroon, hard dense, to very brittle, gummy, no visible porosity no show, pyrite

Limestone white, cryptocrystaline, very hard dense, no intercrystaline porosity, mineral fluorescence in part, no odor no cut, no show

Silstone to possible very fine sand grains, well sorted, good intergranular porosity, glacaunite in part, no show

Limestone cream, hard dense, abundant medium oolites in a calcareous matrix, trace silt inclusions, poor to no interystaline porosity, mineral fluorescence, spotted scattered fluorescence to mineral fluorescence throughout, no cut, no show

Limestone as above - scattered purple silty lime, hard dense, blocky

3700

Shale, red to maroon with lime grains in part, very soft gummy to blocky, no visible porosity no show

Shale as above

Shale, maroon, to red, to light purple, hard dense to trace soft, no visible porosity, no show, trace angular poorly sorted lime and calcite grains in shaly calcareous matrix, hard dense, no porosity no show

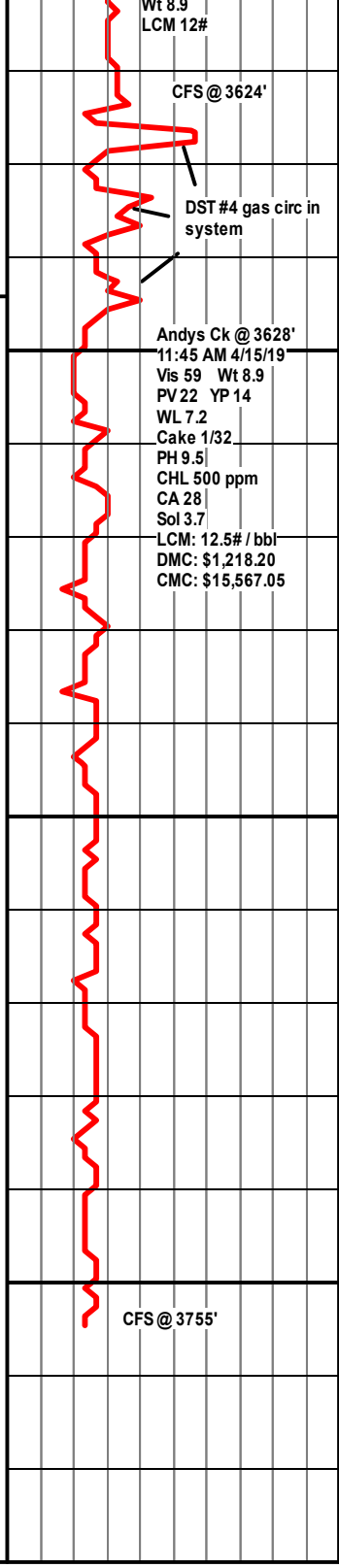
Limestone light tan, hard dense, microcrystaline scattered throughout, red shale stringers in part, no visible porosity, no odor, yellow mineral fluorescence in part, no show, trace blocky pyrite

3750

Shale light red to maroon, to scattered purple, very soft gummy, trace lime grains in part, no fluorescence, no odor, no show. Scattered light gray micaceous silt stringers in part.

TD 3755' @ 7:00pm CDT 4-15-2019

Weatherford on location @ 8:30pm for open hole logs



250 N. Water St., Suite #200
Wichita, KS 67202

HURRICANE SERVICES INC

Customer	Black Oak		Lease & Well #	Stapp Farms 1-16		Date	4/9/2019
Service District	Oakley Ks		County & State	Decature Ks	Legals S/T/R 16-2-26	Job #	
Job Type	Surface	☑ PROD ☐ INJ ☐ SWD	New Well?	☑ YES ☐ No		Ticket #	ICT1911

Equipment #	Driver
230	Michael
182/256	Alan
74	Travis

Job Safety Analysis - A Discussion of Hazards & Safety Procedures

☐ Hard hat	☐ Gloves	☐ Lockout/Tagout	☐ Warning Signs & Flagging
☐ H2S Monitor	☐ Eye Protection	☐ Required Permits	☐ Fall Protection
☐ Safety Footwear	☐ Respiratory Protection	☐ Slip/Trip/Fall Hazards	☐ Specific Job Sequence/Expectations
☐ FRC/Protective Clothing	☐ Additional Chemical/Acid PPE	☐ Overhead Hazards	☐ Muster Point/Medical Locations
☐ Hearing Protection	☐ Fire Extinguisher	☐ Additional concerns or issues noted below	

Comments

All cement and chemicals came from Oakley service yard

Product/ Service Code	Description	Unit of Measure	Quantity			Net Amount
M015	Light Equipment Mileage	mi	85.00			$144.50
M010	Heavy Equipment Mileage	mi	85.00			$289.00
C010	Cement Pump	ea	1.00			$637.50
CP015	H-325	sack	165.00			$2,805.00
M020	Ton Mileage	tm	694.00			$884.85

Customer Section: On the following scale how would you rate Hurricane Services Inc ?

Based on this job, how likely is it you would recommend HSI to a colleague?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Unlikely 1 2 3 4 5 6 7 8 9 10 Extremely Likely

				Net:	$4,760.85
Total Taxable	$ -	Tax Rate:			
State tax laws deem certain products and services used on new wells to be sales tax exempt. Hurricane Services relies on the customer provided well information above to make a determination if services and/or products are tax exempt.				Sale Tax:	$ -
				Total:	$ 4,760.85

HSI Representative: Travis Williams

TERMS: Cash in advance unless Hurricane Services Inc. (HSI) has approved credit prior to sale. Credit terms of sale for approved accounts are total invoice due on or before the 30th day from the date of invoice. Past due accounts shall pay interest on the balance past due at the rate of 1 ½% per month or the maximum allowable by applicable state or federal laws. In the event it is necessary to employ an agency and/or attorney to affect the collection, Customer hereby agrees to pay all fees directly or indirectly incurred for such collection. In the event that Customer's account with HSI becomes delinquent, HSI has the right to revoke any discounts previously applied in arriving at net invoice price. Upon revocation, the full invoice price without discount is immediately due and subject to collection. Prices quoted are estimates only and are good for 30 days from the date of issue. Pricing does not include federal, state, or local taxes, or royalties and stated price adjustments. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services. Any discount is based on 30 days net payment terms or cash. DISCLAIMER NOTICE: Technical data is presented in good faith, but no warranty is stated or implied. HSI assumes no liability for advice or recommendations made concerning the results fom the use of any product or service. The information presented is a best estimate of the actual results that may be achieved and should be used for comparison purposes and HSI makes no guarantee of future production performance. Customer represents and warrants that well and all associated equipment in acceptable condition to receive services by HSI. Likewise, the customer guarantees proper operational care of all customer owned equipment and property while HSI is on location performing services. The authorization below acknowledges the receipt and acceptance of all terms/conditions stated above, and Hurricane has been provided accurate well informaiton in determining taxable services.

x _____ CUSTOMER AUTHORIZATION SIGNATURE

CEMENT TREATMENT REPORT

Customer:	Black Oak	Well:	Stapp Farms 1-16	Ticket:	ICT1911
City, State:		County:	Decature	Date:	4/9/2019
Field Rep:	Arturo	S-T-R:		Service:	Surface

Downhole Information	
Hole Size:	12.25
Hole Depth:	242
Casing Size:	8.625
Casing Depth:	240
Tubing / Liner:	In
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	14

Slurry	
Weight:	14.8 # / sx
Water / Sx:	6 7/8 gal / sx
Yield:	1 2/5 ft^3 / sx
Bbls / Ft.:	
Depth:	ft
Volume:	bbls
Excess:	125% %
Total Slurry:	41.5 bbls
Total Sacks:	165 sx

Cement Blend		
Product	%	#
Class A	100.0	15510
Gel	2.0	310
CaCl	3.0	465
Metso		
KolSeal		
Flo seal	0.3	41
Salt		
Total		16,326

TIME	RATE	PSI	BBLs	REMARKS	TIME	RATE	PSI	BBLs	REMARKS
5:45 PM				Arrive					
5:50 PM				Safety meeting					
5:55 PM				Rig up					
6:15 PM				Rig runs casing					
7:00 PM				Casing on bottom/ Circulate					
7:10 PM	5.0	300.0	41.5	Mix 165 sks @ 1.41 yeild					
7:25 PM	4.0	300.0	14.0	Displace					
7:35 PM		200.0		End dlplacement/ shut in well					
7:40 PM				Wash up					
7:45 PM				Rig down					
8:00 PM				Depart					
				Cement to cellar					

	CREW	UNIT
Cementer:	Travis Williams	74.0
Pump Operator:	Michael Rebarchek	230.0
Bulk #1:	Alan Ryan	182-256
Bulk #2:		

SUMMARY		
Average Rate	Average Pressure	Total Fluid
4.5 bpm	266.67 psi	55.50 bbls

Hurricane Services, Inc.
250 N. Water
Wichita, KS 67202