KOLAR Document ID: 1509594

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 # 30606
Name: Murfin Drilling Co., Inc.
Address 1: 250 N WATER STE 300
Address 2:
City: WICHITA State: KS Zip: 67202 + 1216
Contact Person: Rob Kramer
Phone: (316) 267-3241
CONTRACTOR: License # 30606
Name: Murfin Drilling Co., Inc.
Wellsite Geologist: Clayton Erickson
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 #:

03/10/2020	03/20/2020	03/21/2020
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No.: 15-023-21541-00-00
Spot Description:
NW - SW - NE - NW Sec. 7 Twp. 3 S. R. 40 ☐ East ☑ West
900 Feet from ☑ North / ☐ South Line of Section
1420 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: Cheyenne
Lease Name: DUNN Well #: 1-7
Field Name:
Producing Formation: NA
Elevation: Ground: 3495 Kelly Bushing: 3500
Total Vertical Depth: 5250 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 350 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: 1600 ppm Fluid volume: 600 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: 05/12/2020
☐ **Confidential Release Date:** 05/12/2022
☑ **Wireline Log Received** ☑ **Drill Stem Tests Received**
☑ **Geologist Report / Mud Logs Received**
☐ **UIC Distribution**
ALT ☑ **I** ☐ **II** ☐ **III** **Approved by:** Karen Ritter **Date:** 05/13/2020

Operator Name: Murfin Drilling Co., Inc. Lease Name: DUNN Well #: 1-7

Sec. 7 Twp. 3 S. R. 40 ☐ East ☑ West County: Cheyenne

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	see attached

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	23	350	Common	300	3% cc, 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	-			
	-			

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	Murfin Drilling Co., Inc.
Well Name	DUNN 1-7
Doc ID	1509594

All Electric Logs Run

DIL
DUCP
MEL
BHCS

Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	DUNN 1-7
Doc ID	1509594

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	12.25	8.625	23	350	Common	300	3% cc, 2% gel

ERICKSON WELLSITE GEOLOGY

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

Well Name:	Dunn #1-7		
Well Id:			
Location:	NW SW NE NW Sec 7 T3S R40W		
License Number:	15-023-21541	Region:	Cheyenne County, KS
Spud Date:	3/10/2020	Drilling Completed:	3/20/2020
Surface Coordinates:	900'FNL & 1420' FWL		
Bottom Hole Coordinates:	Surface casing: 8 5/8" @ 350'		
Ground Elevation (ft):	3495	K.B. Elevation (ft):	3500
Logged Interval (ft):	4060 To: TD	Total Depth (ft):	5250
Formation:			
Type of Drilling Fluid:	Chemical Mud		

Printed by MudLog from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Murfin Drilling Co., Inc.
Address: 250 N Water, Suite 300
Wichita, KS 67202

GEOLOGIST

Name: Clayton Erickson
Company: Erickson Wellsite Geology
Address: 402 Palmer Street
P.O. Box 294
Loomis, NE 68958

DSTs

DST #1 4315-4435 30-60-30-60; Hydro: 2118-2121 IFP: 31-32 ISIP: 353 FFP: 33-34 FSIP: 280; Rec: 20' mud; BHT: 129F; IF: 3/4" ISI: dead FF: dead FSI: dead

DST #2 4533-4578 30-60-30-60; Hydro: 2245-2236 IFP: 429-1208 ISIP: 1485 FFP: 1222-1447; FSIP: 1488; Rec: 250' 85%w 15%m 2985' 97%w 3%m; BHT: 148F; IF: BOB 1min ISI: dead FF: BOB 1 min FSI: dead

COMMENTS

Based on carful examination of rock samples, DST results and e-logs it was decided to P&A.

FORMATION TOPS

	Log Tops	Sample tops
Anhydrite	3348(+152)	3350(+150)
Base Anhy	3382(+118)	3384(+116)
TOPEKA	4176(-676)	4174(-674)
OREAD	4288(-788)	4290(-790)
LANSING	4362(-862)	4365(-865)
Mound City	4654(-1154)	4651(-1151)
FT. SCOTT	4782(-1282)	4778(-1278)
OAKLEY	4859(-1359)	4863(-1363)
MISSISSIPPIAN	5128(-1628)	5130(-1630)
TD	5250(-1750)	5250(-1750)

ROCK TYPES

Anhy, Bent, Brec, Cht, Clyst, Carb. shale, Arkose, Dol, Gyp, Igne, Lmst, Meta, Mrlst, Salt, Shale, Shcol, Shgy, Sltst, Ss, Till

OTHER SYMBOLS

OIL SHOW: Even, Spotted, Ques, Dead

INTERVAL: Dst

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Murfin Driling Co Inc**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Clayton Erickson

Dunn #1-7

7-3S-40W Cheyenne,KS

Start Date: 2020.03.16 @ 08:16:00

End Date: 2020.03.16 @ 15:33:09

Job Ticket #: 66119 DST #: 1

Trilobite Testing, Inc

1515 Commerce Parkway Hays, KS 67601

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

Printed: 2020.03.23 @ 08:33:07

DRILL STEM TEST REPORT

Murfin Driling Co Inc

250 N. Water STE 300
Wichita, KS 67202

ATTN: Clayton Erickson

7-3S-40W Cheyenne,KS

Dunn #1-7

Job Ticket: 66119 **DST#: 1**

Test Start: 2020.03.16 @ 08:16:00

GENERAL INFORMATION:

Formation: **LKC " A - D "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:23:10
Time Test Ended: 15:33:09

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

Interval: 4315.00 ft (KB) To 4435.00 ft (KB) (TVD)
Total Depth: 4435.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

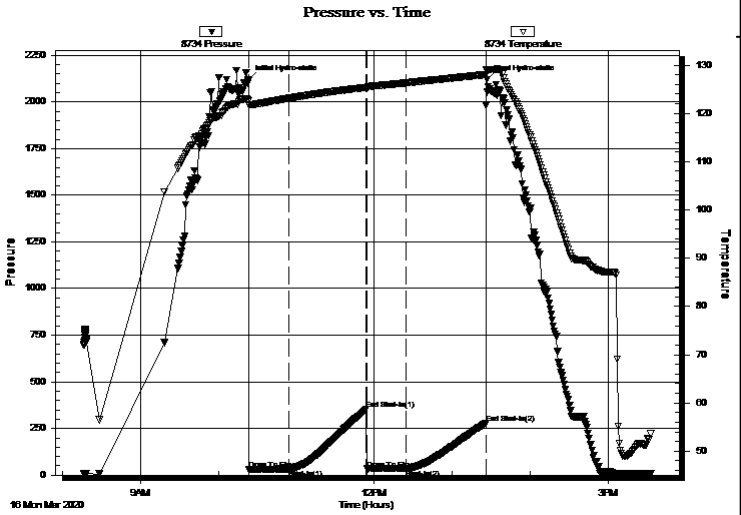
Reference Elevations: 3500.00 ft (KB)
3495.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8734 **Outside**

Press@RunDepth: 33.62 psig @ 4316.00 ft (KB)
Start Date: 2020.03.16 End Date: 2020.03.16
Start Time: 08:16:01 End Time: 15:33:10

Capacity: 8000.00 psig
Last Calib.: 2020.03.16
Time On Btm: 2020.03.16 @ 10:23:00
Time Off Btm: 2020.03.16 @ 13:26:39

TEST COMMENT: 30-IF-Blow built to 3/4" @ 10 mins & maintained blow
60-ISI-No blow back
30-FF-No blow
60-FSI-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2117.71	122.60	Initial Hydro-static
1	31.40	121.72	Open To Flow (1)
31	31.75	123.14	Shut-In(1)
91	353.07	125.41	End Shut-In(1)
92	33.42	125.27	Open To Flow (2)
122	33.62	126.32	Shut-In(2)
183	279.72	128.04	End Shut-In(2)
184	2120.71	128.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	100% Mud	0.10

Gas Rates

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

DRILL STEM TEST REPORT

Murfin Driling Co Inc

250 N. Water STE 300
Wichita, KS 67202

ATTN: Clayton Erickson

7-3S-40W Cheyenne,KS

Dunn #1-7

Job Ticket: 66119 **DST#: 1**

Test Start: 2020.03.16 @ 08:16:00

GENERAL INFORMATION:

Formation: **LKC " A - D "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:23:10
Time Test Ended: 15:33:09

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

Interval: 4315.00 ft (KB) To 4435.00 ft (KB) (TVD)
Total Depth: 4435.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

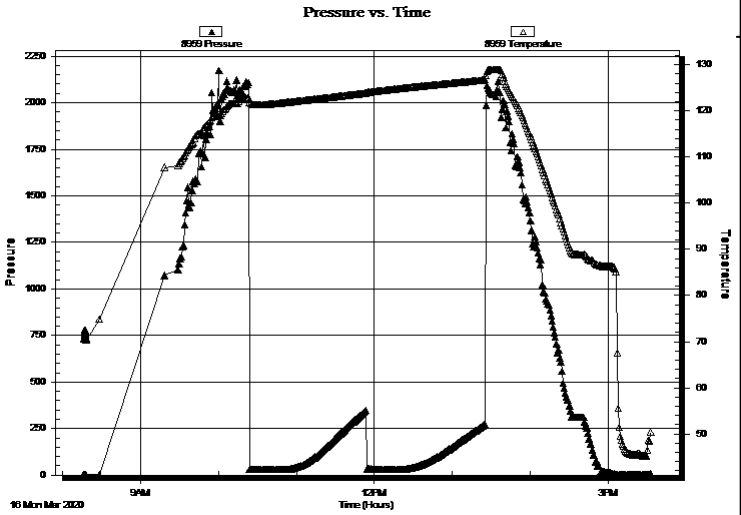
Reference Elevations: 3500.00 ft (KB)
3495.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8959 **Inside**

Press@RunDepth: psig @ 4316.00 ft (KB)
Start Date: 2020.03.16 End Date: 2020.03.16
Start Time: 08:16:01 End Time: 15:33:10

Capacity: 8000.00 psig
Last Calib.: 2020.03.16
Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IF-Blow built to 3/4" @ 10 mins & maintained blow
60-ISI-No blow back
30-FF-No blow
60-FSI-No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
20.00	100% Mud	0.10

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Driling Co Inc

250 N. Water STE 300
Wichita, KS 67202

ATTN: Clayton Erickson

7-3S-40W Cheyenne,KS

Dunn #1-7

Job Ticket: 66119 **DST#: 1**

Test Start: 2020.03.16 @ 08:16:00

Tool Information

Drill Pipe:	Length:	4161.00 ft	Diameter:	3.80 inches	Volume:	58.37 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:	150.00 ft	Diameter:	2.25 inches	Volume:	0.74 bbl	Weight to Pull Loose:		70000.00 lb
					Total Volume:	59.11 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		24.00 ft					String Weight:	Initial	60000.00 lb
Depth to Top Packer:		4315.00 ft						Final	60000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		120.00 ft							
Tool Length:		148.00 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			4292.00		
Hydraulic tool	5.00	1113		4297.00		
Jars	5.00	01-07		4302.00		
Safety Joint	3.00	-001		4305.00		
Packer	5.00			4310.00	28.00	Bottom Of Top Packer
Packer	5.00			4315.00		
Stubb	1.00			4316.00		
Recorder	0.00	8959	Inside	4316.00		
Recorder	0.00	8734	Outside	4316.00		
Perforations	18.00			4334.00		
Change Over Sub	1.00			4335.00		
Drill Pipe	94.00			4429.00		
Change Over Sub	1.00			4430.00		
Bullnose	5.00			4435.00	120.00	Bottom Packers & Anchor
Total Tool Length:	**148.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Driling Co Inc

250 N. Water STE 300
Wichita, KS 67202

ATTN: Clayton Erickson

7-3S-40W Cheyenne,KS

Dunn #1-7

Job Ticket: 66119 **DST#: 1**

Test Start: 2020.03.16 @ 08:16:00

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:	ppm
Viscosity:	53.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	6.39 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	600.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

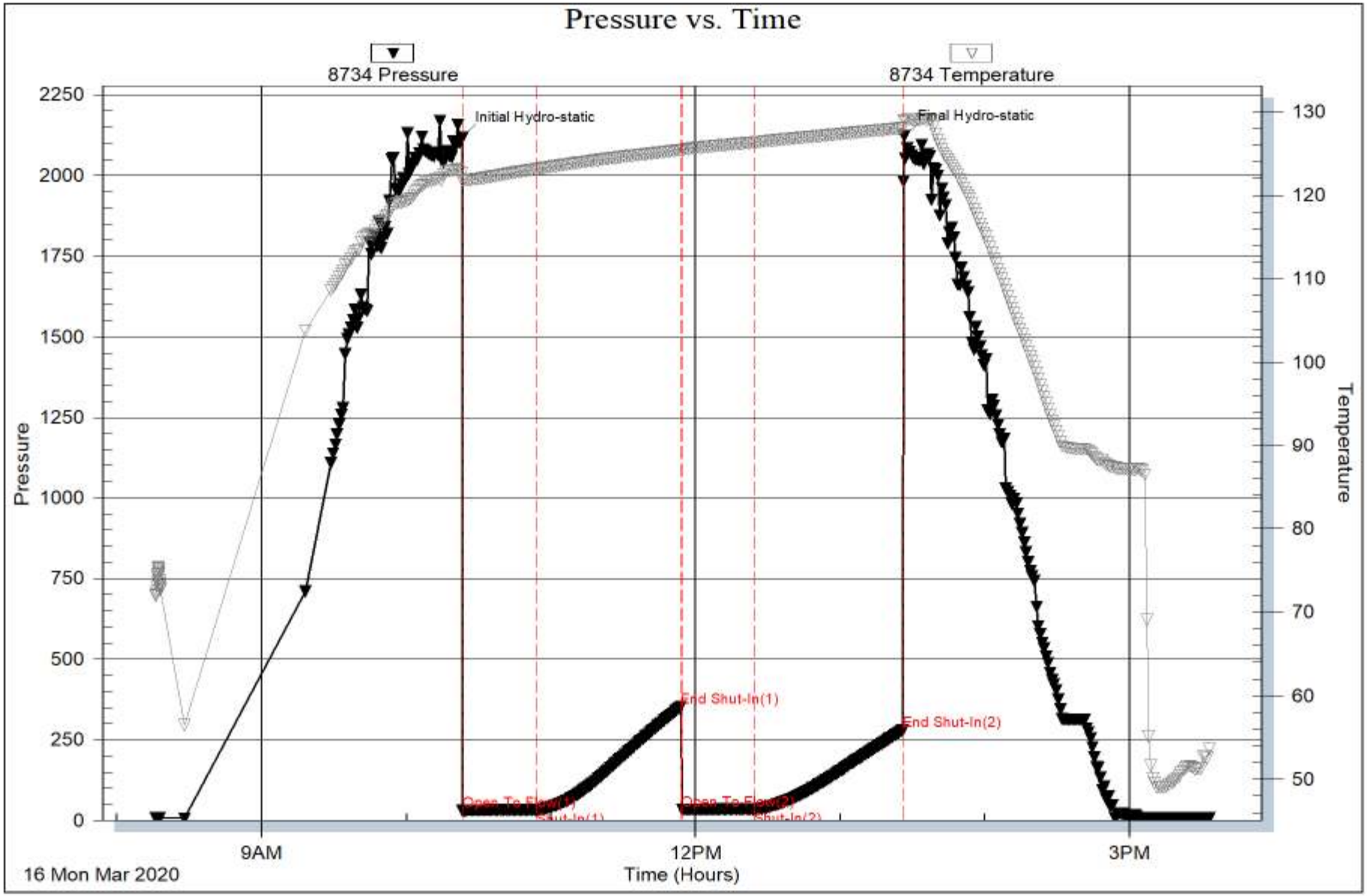
Recovery Table

Length ft	Description	Volume bbl
20.00	100% Mud	0.098

Total Length: 20.00 ft Total Volume: 0.098 bbl

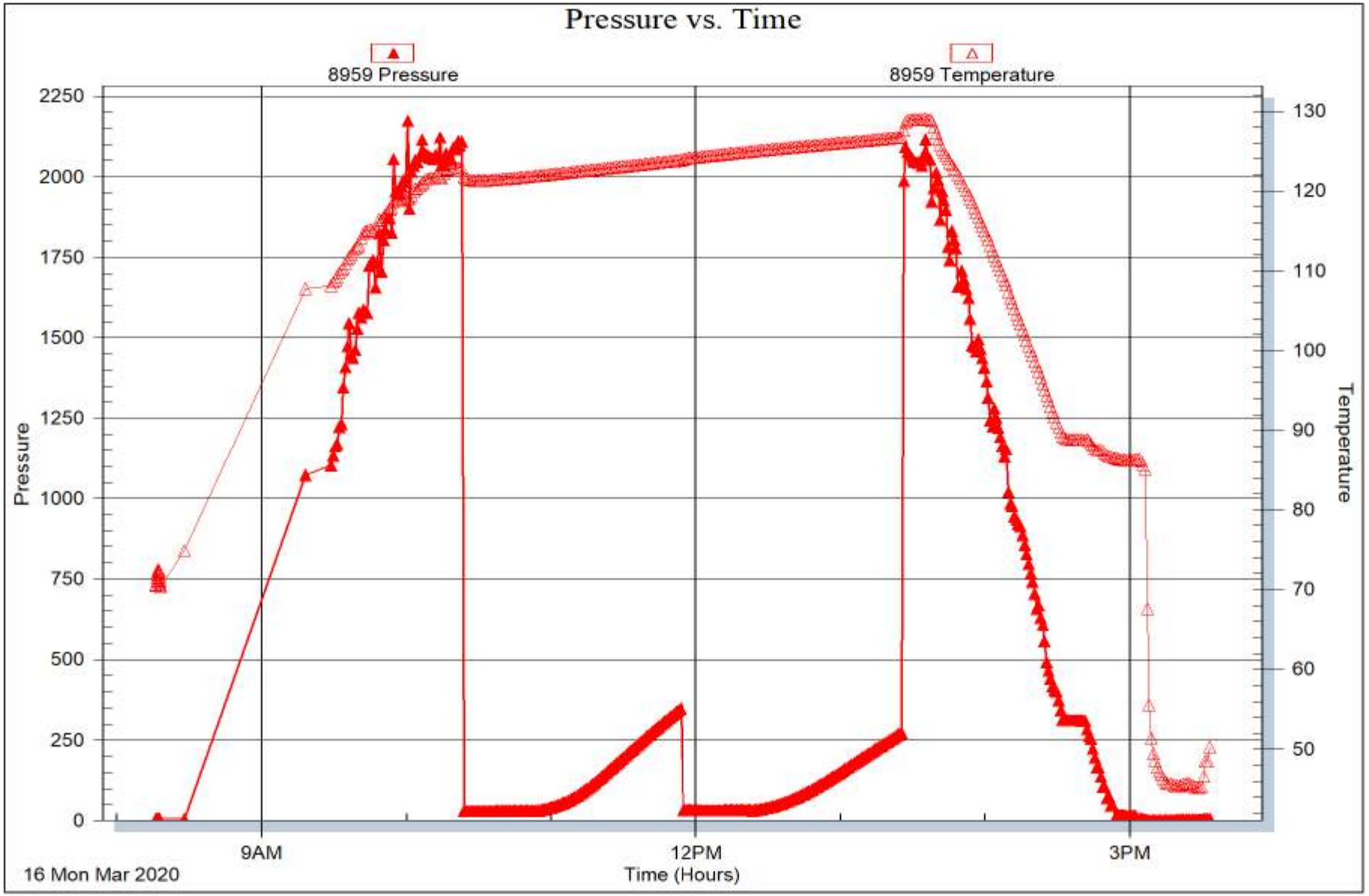
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8734 **Outside** Murfin Drilling Co Inc Dunn #1-7 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 66119 Printed: 2020.03.23 @ 08:33:07

Serial #: 8959 **Inside** Murfin Drilling Co Inc Dunn #1-7 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 66119 Printed: 2020.03.23 @ 08:33:07

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Murfin Driling Co Inc**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Clayton Erickson

Dunn #1-7

7-3S-40W Cheyenne,KS

Start Date: 2020.03.17 @ 11:50:00

End Date: 2020.03.17 @ 19:49:39

Job Ticket #: 66120 DST #: 2

Trilobite Testing, Inc

1515 Commerce Parkway Hays, KS 67601

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

Printed: 2020.03.23 @ 08:31:34

DRILL STEM TEST REPORT

Murfin Driling Co Inc

250 N. Water STE 300
Wichita, KS 67202

ATTN: Clayton Erickson

7-3S-40W Cheyenne,KS

Dunn #1-7

Job Ticket: 66120 **DST#: 2**

Test Start: 2020.03.17 @ 11:50:00

GENERAL INFORMATION:

Formation: **LKC " J "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:33:10
Time Test Ended: 19:49:39

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

Interval: 4533.00 ft (KB) To 4578.00 ft (KB) (TVD)
Total Depth: 4578.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

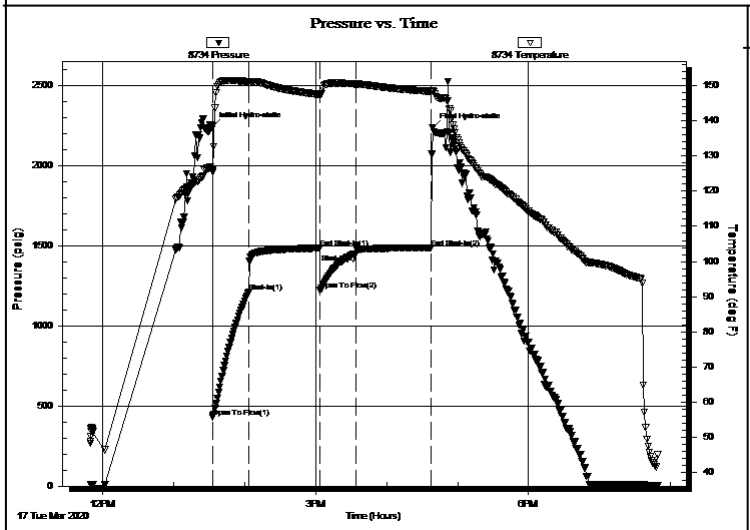
Reference Elevations: 3500.00 ft (KB)
3495.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8734 **Outside**

Press@RunDepth: 1446.83 psig @ 4534.00 ft (KB)
Start Date: 2020.03.17 End Date: 2020.03.17
Start Time: 11:50:01 End Time: 19:49:40

Capacity: 8000.00 psig
Last Calib.: 2020.03.17
Time On Btm: 2020.03.17 @ 13:32:50
Time Off Btm: 2020.03.17 @ 16:39:00

TEST COMMENT: 30-IF-B.O.B (11 inches) @ 1 min (blow increased to 407 1/2")
60-ISI-No blow back
30-FF-B.O.B(11 inches) @ 1 min (blow increased to 139 1/2")
60-FSI-No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2245.37	126.30	Initial Hydro-static
1	428.90	125.95	Open To Flow (1)
31	1208.49	151.09	Shut-In(1)
91	1485.25	147.42	End Shut-In(1)
92	1222.06	147.25	Open To Flow (2)
122	1446.83	150.38	Shut-In(2)
185	1487.74	148.30	End Shut-In(2)
187	2235.83	148.44	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2985.00	MSW 3%M, 97%W	40.51
250.00	MCW 15%M, 85%W	3.51

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Murfin Driling Co Inc

250 N. Water STE 300
Wichita, KS 67202

ATTN: Clayton Erickson

7-3S-40W Cheyenne,KS

Dunn #1-7

Job Ticket: 66120 **DST#: 2**

Test Start: 2020.03.17 @ 11:50:00

GENERAL INFORMATION:

Formation: **LKC " J "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:33:10
Time Test Ended: 19:49:39

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

Interval: 4533.00 ft (KB) To 4578.00 ft (KB) (TVD)
Total Depth: 4578.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

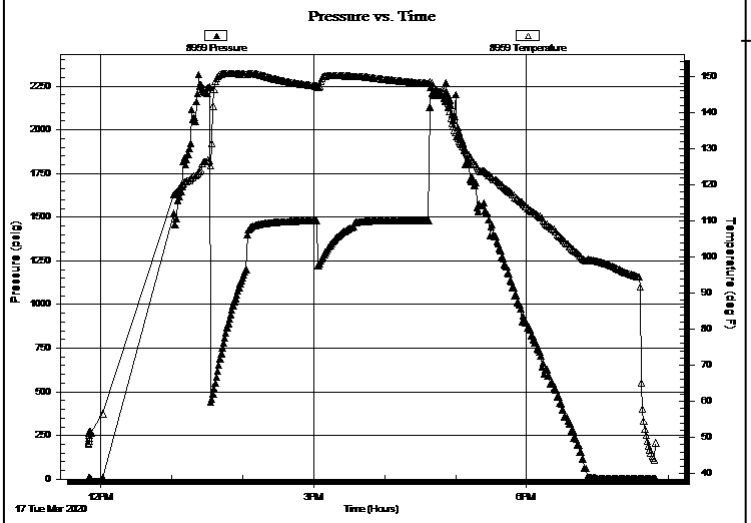
Reference Elevations: 3500.00 ft (KB)
3495.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8959 **Inside**

Press@RunDepth: psig @ 4534.00 ft (KB)
Start Date: 2020.03.17 End Date: 2020.03.17
Start Time: 11:50:01 End Time: 19:49:40

Capacity: 8000.00 psig
Last Calib.: 2020.03.17
Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IF-B.O.B (11 inches) @ 1 min (blow increased to 407 1/2")
60-ISI-No blow back
30-FF-B.O.B(11 inches) @ 1 min (blow increased to 139 1/2")
60-FSI-No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2985.00	MSW 3%M, 97%W	40.51
250.00	MCW 15%M, 85%W	3.51

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Driling Co Inc

250 N. Water STE 300
Wichita, KS 67202

ATTN: Clayton Erickson

7-3S-40W Cheyenne,KS

Dunn #1-7

Job Ticket: 66120 **DST#: 2**

Test Start: 2020.03.17 @ 11:50:00

Tool Information

Drill Pipe:	Length:	4382.00 ft	Diameter:	3.80 inches	Volume:	61.47 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:	150.00 ft	Diameter:	2.25 inches	Volume:	0.74 bbl	Weight to Pull Loose:		70000.00 lb
					Total Volume:	62.21 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		27.00 ft					String Weight:	Initial	60000.00 lb
Depth to Top Packer:		4533.00 ft						Final	62000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		45.00 ft							
Tool Length:		73.00 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			4510.00		
Hydraulic tool	5.00	1113		4515.00		
Jars	5.00	01-07		4520.00		
Safety Joint	3.00	-001		4523.00		
Packer	5.00			4528.00	28.00	Bottom Of Top Packer
Packer	5.00			4533.00		
Stubb	1.00			4534.00		
Recorder	0.00	8959	Inside	4534.00		
Recorder	0.00	8734	Outside	4534.00		
Perforations	5.00			4539.00		
Change Over Sub	1.00			4540.00		
Drill Pipe	32.00			4572.00		
Change Over Sub	1.00			4573.00		
Bullnose	5.00			4578.00	45.00	Bottom Packers & Anchor
Total Tool Length:	**73.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Driling Co Inc

250 N. Water STE 300
Wichita, KS 67202

ATTN: Clayton Erickson

7-3S-40W Cheyenne,KS

Dunn #1-7

Job Ticket: 66120 **DST#: 2**

Test Start: 2020.03.17 @ 11:50:00

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:	22000 ppm
Viscosity:	61.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	5.99 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	600.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2985.00	MSW 3%M, 97%W	40.505
250.00	MCW 15%M, 85%W	3.507

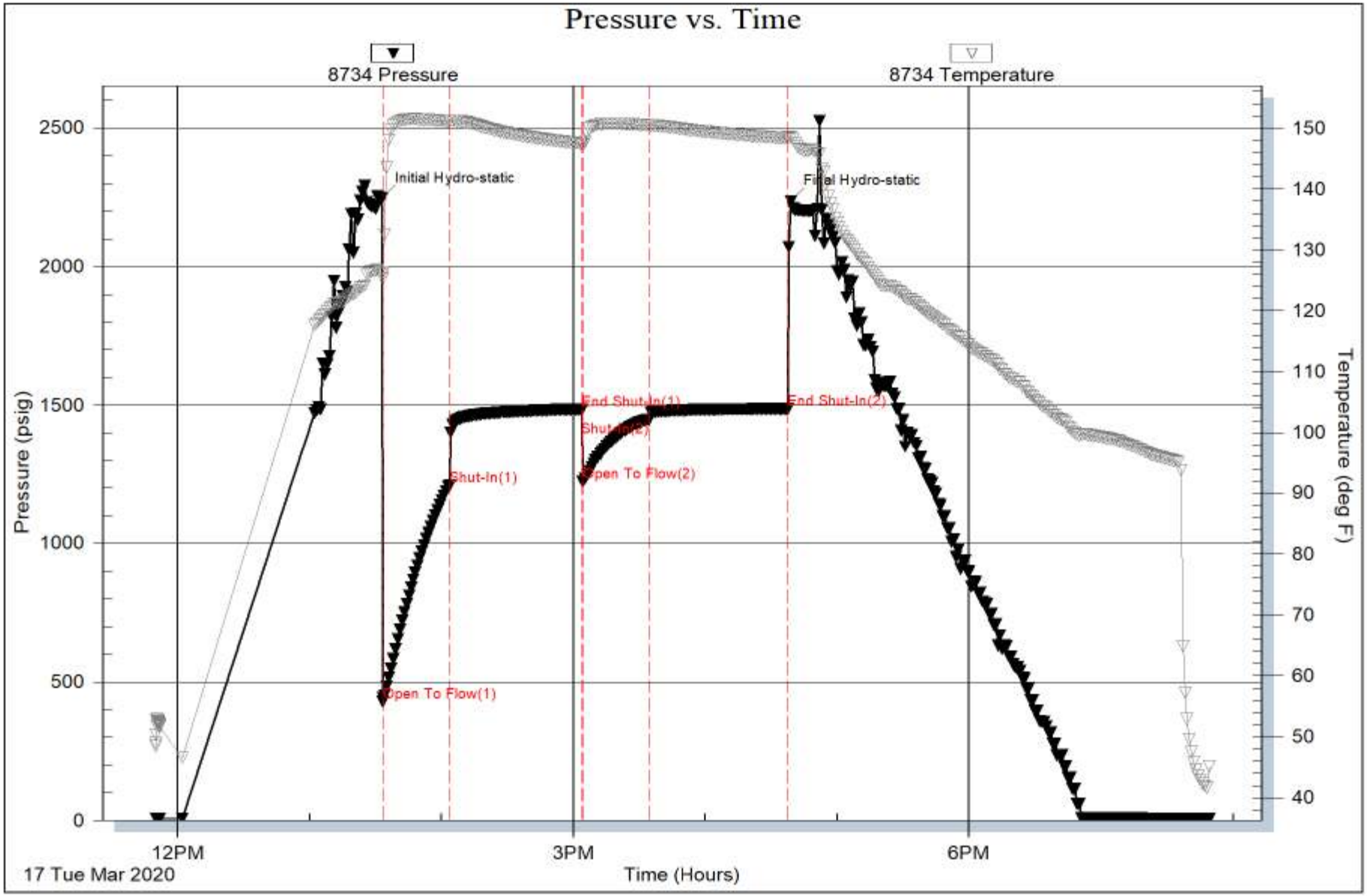
Total Length: 3235.00 ft Total Volume: 44.012 bbl

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

Laboratory Name: Laboratory Location:

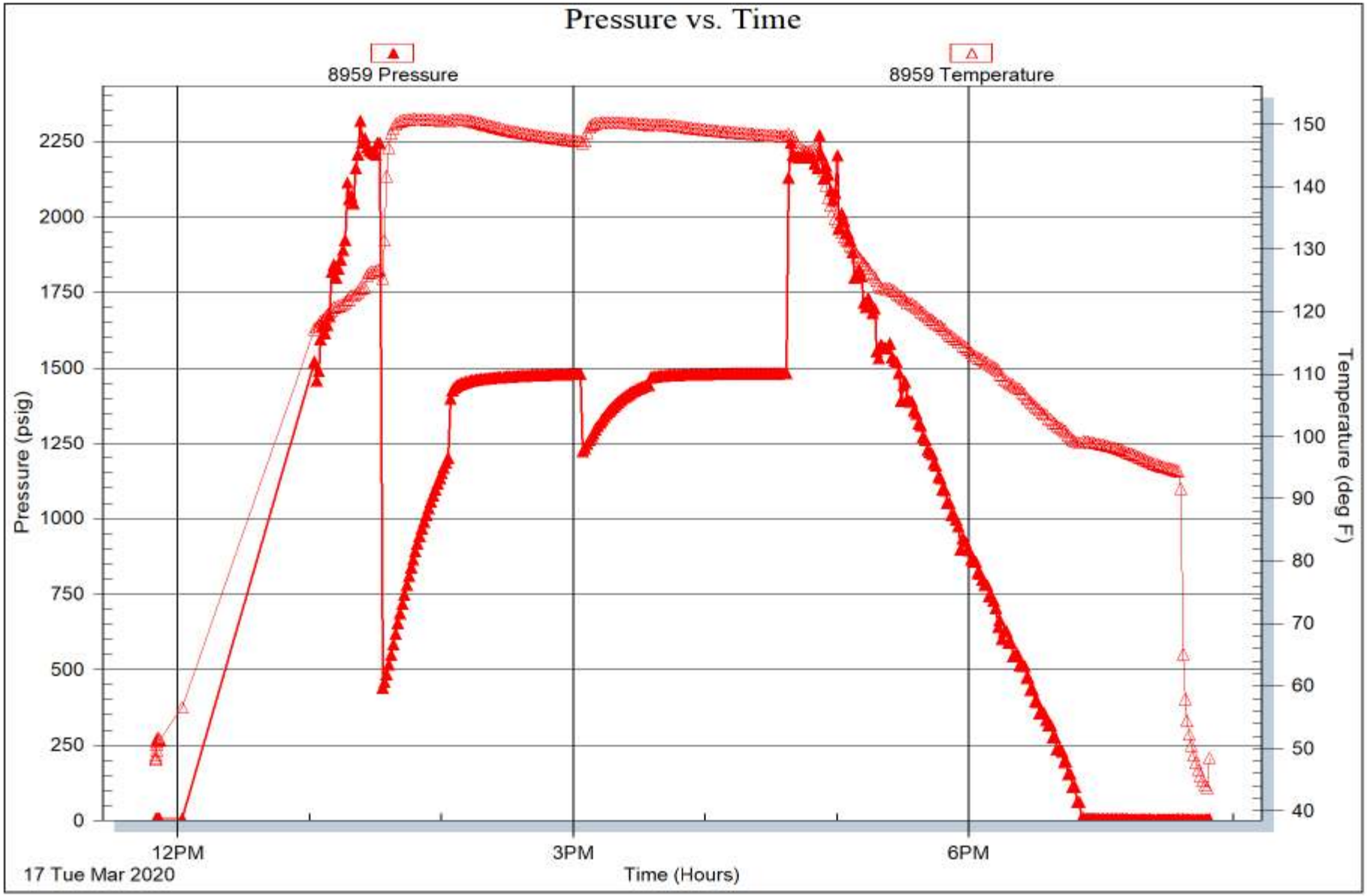
Recovery Comments: RW= .505 @ 43.5 degs = 22,000PPM

Serial #: 8734 **Outside** Murfin Drilling Co Inc Dunn #1-7 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 66120 Printed: 2020.03.23 @ 08:31:34

Serial #: 8959 **Inside** Murfin Drilling Co Inc Dunn #1-7 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 66120 Printed: 2020.03.23 @ 08:31:35

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket 66119

NO.

Well Name & No. Dunn #1-7 Test No. 1 Date 3-16-20

Company Murfin Drilling Co INC Elevation 3500 KB 3495. GL

Address 250 N. Water STE 300, Wichita, KS 67202

Co. Rep / Geo. Clayton Ericksson. Rig Murfin #3

Location: Sec. 7 Twp 35. Rge. 40W. Co. Cheyenne State KS

Interval Tested 4315-4435 Zone Tested LKC "A-D"

Anchor Length 120' Drill Pipe Run 4161 Mud Wt. 8.9

Top Packer Depth 4310 Drill Collars Run 150 Vis 53

Bottom Packer Depth 4315 Wt. Pipe Run — WL 6.4

Total Depth 4435 Chlorides 600 ppm System LCM 2#

Blow Description IF: Blow built to 3/4" @ 10 Mins & Maintained blow

ISI: No blowback

FF: No blow

FSI: No blow

Rec 20	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	Feet of	%gas	%oil	%water	%mud	

Rec Total 20 BHT 129 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2118	☒ Test 1300	T-On Location 07:30	
(B) First Initial Flow 31	☒ Jars 250	T-Started 08:16	
(C) First Final Flow 32	☒ Safety Joint 75	T-Open 10:24	
(D) Initial Shut-In 353	☐ Circ Sub	T-Pulled 13:24	
(E) Second Initial Flow 33	☐ Hourly Standby	T-Out 15:34	
(F) Second Final Flow 34	☒ Mileage 150 RT F/Oberlin. 150	Comments	
(G) Final Shut-In 280	☐ Sampler		
(H) Final Hydrostatic 2121	☐ Straddle	☐ EM Tool	
	☐ Shale Packer	☐ Ruined Shale Packer	
Initial Open 30	☐ Extra Packer	☐ Ruined Packer	
Initial Shut-In 60	☐ Extra Recorder	☐ Extra Copies	
Final Flow 30	☐ Day Standby	Sub Total 0	
Final Shut-In 60	☐ Accessibility	Total 1775	
	Sub Total 1775	MP/DST Disc't	

Approved By _____ Our Representative _____

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket NO. 66120

Well Name & No. Dunn #1-7 Test No. 2 Date 3-17-20

Company Murfin Drilling Co INC Elevation 3500 KB 3495. GL

Address 250 N. Water STE 300 Wichita, KS 67202

Co. Rep / Geo. Clayton Erickson Rig Murfin #3

Location: Sec. 7 Twp 35. Rge. 40W. Co. Cheyenne State KS

Interval Tested 4533 - 4578 Zone Tested LKC "J"

Anchor Length 45 Drill Pipe Run 4382. Mud Wt. 9.1

Top Packer Depth 4528 Drill Collars Run 150 Vis 61

Bottom Packer Depth 4533 Wt. Pipe Run — WL 6.0

Total Depth 4578 Chlorides 600 ppm System LCM 3#

Blow Description IF - B.O.B (11 inches) @ 1 min (blow increased to 407 1/2")

ISI - No blowback

FF - B.O.B (11 inches) @ 1 min (blow increased to 139 1/2")

FSI - No blowback

Rec 2985.	Feet of MSW	%gas	%oil 97	%water 3	%mud	
Rec 250	Feet of MCW	%gas	%oil 85	%water 15	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	

Rec Total 3235 BHT 148 Gravity — API RW .505 @ 43.5 °F Chlorides 22,000 ppm

(A) Initial Hydrostatic	2245	☒ Test	1300	T-On Location	11:50
(B) First Initial Flow	429	☒ Jars	250	T-Started	11:50
(C) First Final Flow	1208	☒ Safety Joint	75	T-Open	13:34
(D) Initial Shut-In	1485	☐ Circ Sub		T-Pulled	16:34
(E) Second Initial Flow	1222	☐ Hourly Standby		T-Out	19:51
(F) Second Final Flow	1447	☒ Mileage	150 RT Floberlin X2 300	Comments	Tools loaded @ 03:00 3-21-20
(G) Final Shut-In	1488	☐ Sampler			
(H) Final Hydrostatic	2236.	☐ Straddle		☐ EM Tool	
		☐ Shale Packer		☐ Ruined Shale Packer	
Initial Open	30	☐ Extra Packer		☐ Ruined Packer	
Initial Shut-In	60	☐ Extra Recorder		☐ Extra Copies	
Final Flow	30	☒ Day Standby	X2	Sub Total	0
Final Shut-In	60	☐ Accessibility		Total	1925
		Sub Total	1925	MP/DST Disc't	

Approved By _____ Our Representative Martin Adams

	MDCI Dunn #1-7 600FNL 1420FWL Sec. 7-T3S-R40W 3500' KB					
Formation	Sample top	Datum	Ref	Log Top	Datum	Ref
Anhydrite	3350	+150	-16	3346	+154	-12
B/Anhydrite	3384	+116	-12	3384	+116	-12
Topeka	4174	-674	-14	4165	-665	-5
Oread	4290	-790	-4	4288	-788	-2
Lansing	4365	-865	-10	4361	-861	-6
Stark				4586	-1086	-7
Mound City	4651	-1151	-4	4653	-1153	-6
Ft Scott	4784	-1284	-7	4782	-1282	-5
Oakley	4863	-1363	-9	4858	-1358	-4
Mississippian	5130	-1630	-7	5116	-1616	+7
RTD	5250					
LTD				5250		

CEMENT TREATMENT REPORT

Customer:	Murfin Drilling Co	Well:	Dunn 1-7	Ticket:	ICT 3402
City, State:	Oakley KS	County:	Cheyenne CO	Date:	3/10/2020
Field Rep:	Greg	S-T-R:	7-3-40W	Service:	Surface

Downhole Information	
Hole Size:	12.25 in
Hole Depth:	349 ft
Casing Size:	8 5/8 in
Casing Depth:	350 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	20.9 bbls

Calculated Slurry	
Weight:	14.8 # / sx
Water / Sx:	6.88 gal / sx
Yield:	1.41 ft^3 / sx
Bbls / Ft.:	0.0735
Depth:	350 ft
Annular Volume:	25.725 bbls
Excess:	190%
Total Slurry:	74.6 bbls
Total Sacks:	300 sx

Product	% / #	#
Class A		
Poz		
Gel		
CaCl		
Gypsum		
Metso		
Kol Seal		
Flo Seal		
Salt (bww)		
	Total	-

TIME	RATE	PSI	BBLs	REMARKS
6:50 PM				Arrive on location
6:55 PM				Safety meeting
7:00 PM				Rig up pump truck
8:05 PM				Start running casing
9:00 PM				Stop running casing
9:05 PM				Start circulation
				Rig Circulates with mud pumped by rig
9:20 PM				Stop circulation
9:22 PM				Hook up to pump
9:25 PM	3.5	200.0	5.0	H2O ahead
9:27 PM	4.0	150.0	75.9	Mix 300 sks H-325
9:32 PM	4.0	150.0	21.0	Displace with H2O
9:24 PM		100.0		Plug down
9:30 PM				Rig down pump truck
9:24 PM				Depart location

	CREW	UNIT
Cementer:	Cory	73
Pump Operator:	Michael	209
Bulk #1:	John	242
Bulk #2:		

SUMMARY		
Average Rate	Average Pressure	Total Fluid
3.83333 bpm	150 psi	102 bbls

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

CEMENT TREATMENT REPORT

Customer:	Murfin Drilling Company	Well:	Dunn #1-7	Ticket:	ICT3437
City, State:	Oakley Ks	County:	Cheyenne Ks	Date:	3/21/2020
Field Rep:	Jay Ruzicka	S-T-R:	7/3S/40W	Service:	PTA

Downhole Information	
Hole Size:	4.5 in
Hole Depth:	5250 ft
Casing Size:	in
Casing Depth:	ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	bbls

Calculated Slurry	
Weight:	13.8 # / sx
Water / Sx:	6.93 gal / sx
Yield:	1.42 ft^3 / sx
Bbls / Ft.:	
Depth:	ft
Annular Volume:	0 bbls
Excess:	
Total Slurry:	0.0 bbls
Total Sacks:	255 sx

Product	% / #	#
Class A	60.00	14382
Poz	40.00	7548
Gel	4.00	877
CaCl		
Gypsum		
Metso		
Kol Seal		
Flo Seal		
Salt (bww)		
	Total	22,807

TIME	RATE	PSI	BBLs	REMARKS
7:00 AM				Arrived on location
7:02 AM				Safety meeting
7:15 AM				Rig up pump truck
7:25 AM	3.0	150.0	5.0	Pump H2o ahead
7:30 AM	4.0	150.0	8.0	Set 1st plug at 3400' with 50 sks H-plug
7:34 AM	3.0	100.0	5.0	Pump H2o behind
7:40 AM				Displace with rig mud 3 min
8:00 AM				Pull pipe to 2500'
8:15 AM	3.0	150.0	5.0	Pump H2o ahead
8:20 AM	4.0	150.0	16.0	Set 2nd plug at 2500' with 100sks H-plug
8:25 AM	3.0	100.0	5.0	Pump H2o behind
8:32 AM				Displace with rig mud 2min
9:25 AM				Pull pipe to 400'
9:30 AM	4.0	100.0	8.0	Set 3rd plug at 400' with 50 sks H-plug
9:38 AM	3.0	100.0	1.5	Displace with H2o
10:00 AM				Pull pipe out of hole
10:20 AM	3.0	50.0	5.0	Plug Rat hole with 30 sks H- plug
10:22 AM	3.0	50.0	2.5	Plug Mouse hole with 15 sks H-plug
10:25 AM	3.0	50.0	1.5	Plug top 40' with 10 sks
10:30 AM				Done/ Plugs down
10:35 AM				Wash up pump and lines
10:45 AM				Rig down pump truck
10:50 AM				Depart location

CREW		UNIT
Cementer:	Cory Davis	74
Pump Operator:	John Polly	208
Bulk #1:	Kale Ocha	242
Bulk #2:		

SUMMARY		
Average Rate	Average Pressure	Total Fluid
3.27273 bpm	105 psi	63 bbls

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