

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 # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

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 #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

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

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

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

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

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

County: _____ Permit #: _____

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

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

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

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

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

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

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

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: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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HYDRAULIC FRACTURING FLUID PRODUCT COMPONENT INFORMATION DISCLOSURE

Last Fracture Date:	10/18/2021
County:	Kearny
API Number (14 Digits):	15-093-21391-00-00
Operator Name:	Petroleum Development Company
Well Name and Number:	WLSR #1-13
Latitude:	38.14360949
Longitude:	101.1195956
Datum:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	4980
Total Base Fluid Volume (gal)*:	44430



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS#)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Authorized Representative's Name, Address and Phone Number
Water	Scout Energy Partners	Carrier/Base Fluid	Water	7732-18-5	100.00%	62.07871%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
Sand (Proppant)	Gore Nitrogen	Propping Agent	Crystalline Silica (quartz)	14808-60-7	100.00%	13.67637%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
BRK-0401	Rockwater	Oxidative Breaker	Ammonium Persulfate	7727-54-0	100.00%	0.63600%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
Plexsurf 210E	Chemplex	Flowback Aid	Methyl Alcohol	67-56-1	30.00%	0.95500%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
			Water	7732-18-5	60.00%	1.91000%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
			2-Butoxy-1-ethanol	111-76-2	5.00%	0.15900%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
			Alcohol, C9-C11, Ethoxylated	68439-46-3	5.00%	0.15900%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
			Alcohol, C12-C13, Ethoxylated	66455-14-9	5.00%	0.15900%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
			Tributyltetradecyl Phosphonium Chloride	81741-28-8	2.78%	0.03200%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
Bellaclac 300	BWA Water Additives	Water treatment	Poly[oxetane]bis[3-methylphenylethylmethylethylammonium chloride]	31512-74-0	2.22%	0.02500%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
			Propargyl Alcohol	107-49-7	10.00%	0.11400%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
			Alcohol, C14-15, ethoxylated	68951-67-7	25.00%	0.28400%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
			Ethanolamine, 2-hydroxy-N,N-dimethyl-,chloride	67-48-1	35.00%	2.13600%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
Clayplex 650	Chemplex	Potassium silicate substitute	Nitrogen, N@	7727-37-9	100.00%	23.93783%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
Nitrogen	Air Products	Energize Fluid	Methanol	67-56-1	100.00%	1.69200%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
DF 100	Drilling Fluid Technology	Foamer	Isopropyl Alcohol	67-63-0	10.00%	3.38400%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
			Ethylene Glycol Butyl Ether	111-76-2	20.00%	1.63700%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
Plexbreak 150	Chemplex	Nonemulsifier	Methyl Alcohol	67-56-1	60.00%	1.22800%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
			Cocamide Diethanolamine Salt	68603-42-9	45.00%	0.13600%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
			Diethanolamine	111-42-2	5.00%	0.13600%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
			Fatty Acid Diethanolamide	68155-07-7	5.00%	0.19100%	Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660
			Diethanediophosphonic Acid Ester Ammonium Salt	73070-48-1	7.00%		Gore Nitrogen, P.O. Box 65, Sealing, OK 73663, 580-922-4660

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

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Total Water Volume sources may include fresh water, produced water, and/or recycled water.** *Information is based on the maximum potential for concentration and thus the total may be over 100%.
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers' Material Safety Data Sheets (MSDS).**



DRILL STEM TEST REPORT

Prepared For: **Petroleum Development Co**

401 S. Boston AVE
STE 1850
Tulsa, OK 74103

ATTN: Ken LeBlanc

WLSR #1-13

13-22S-35W Kearny,KS

Start Date: 2021.09.14 @ 13:10:00

End Date: 2021.09.14 @ 22:55:19

Job Ticket #: 67105 DST #: 1

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

Printed: 2021.09.21 @ 11:39:14



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Petroleum Development Co

13-22S-35W Kearny,KS

401 S. Boston AVE
STE 1850
Tulsa, OK 74103
ATTN: Ken LeBlanc

WLSR #1-13

Job Ticket: 67105

DST#: 1

Test Start: 2021.09.14 @ 13:10:00

GENERAL INFORMATION:

Formation: **Morrow**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:44:50

Time Test Ended: 22:55:19

Test Type: Conventional Bottom Hole (Initial)

Tester: Martine Salinas

Unit No: 82

Interval: 4730.00 ft (KB) To 4820.00 ft (KB) (TVD)

Reference Elevations: 3025.00 ft (KB)

Total Depth: 4820.00 ft (KB) (TVD)

3017.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 8.00 ft

Serial #: 8734 Outside

Press@RunDepth: 43.20 psig @ 4731.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2021.09.14

End Date:

2021.09.14

Last Calib.: 2021.09.14

Start Time: 13:10:01

End Time:

22:55:19

Time On Btm: 2021.09.14 @ 16:44:40

Time Off Btm: 2021.09.14 @ 19:51:20

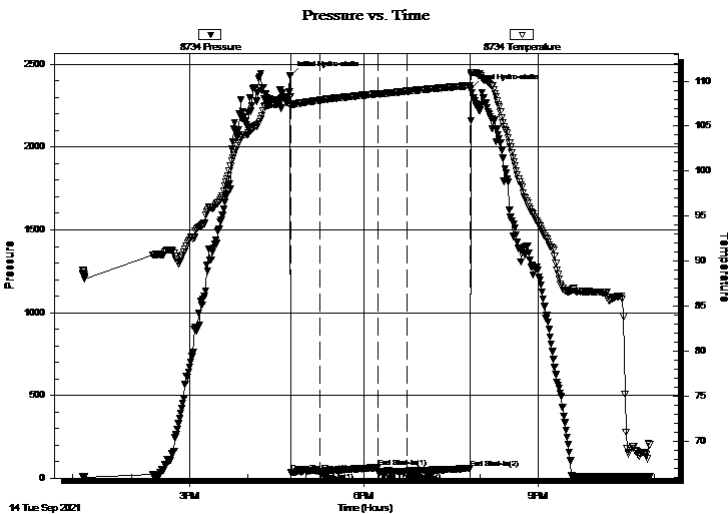
TEST COMMENT: 30-IF-Weak surface blow dead @ 6 mins

60-ISI-No return

30-FF-No blow

60-FSI-No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2431.94	108.26	Initial Hydro-static
1	33.90	107.15	Open To Flow (1)
31	37.33	107.88	Shut-In(1)
91	63.88	108.60	End Shut-In(1)
91	38.22	108.59	Open To Flow (2)
121	43.20	108.89	Shut-In(2)
186	60.92	109.52	End Shut-In(2)
187	2354.16	110.89	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	100% Mud	0.02

Gas Rates

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



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TESTING, INC**

DRILL STEM TEST REPORT

Petroleum Development Co

13-22S-35W Kearny,KS

401 S. Boston AVE
STE 1850
Tulsa, OK 74103
ATTN: Ken LeBlanc

WLSR #1-13

Job Ticket: 67105

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Total Depth: 4820.00 ft (KB) (TVD)

3017.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 8.00 ft

Serial #: 8959 Inside

Press@RunDepth: psig @ 4731.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2021.09.14

End Date:

2021.09.14

Last Calib.:

2021.09.14

Start Time: 13:10:01

End Time:

22:55:19

Time On Btm:

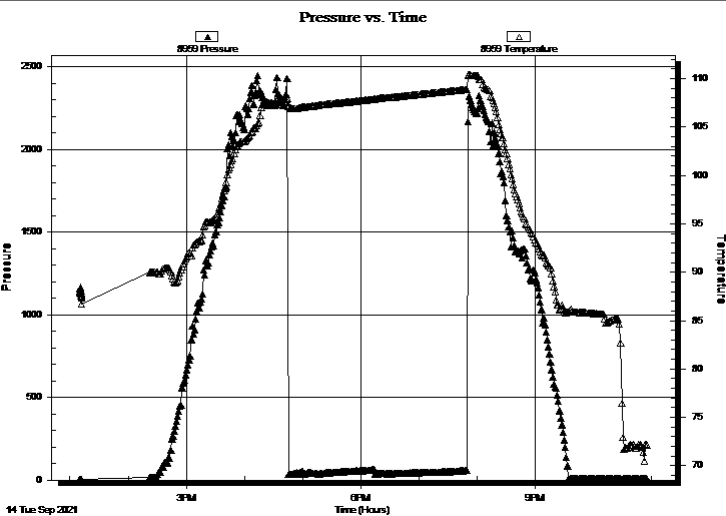
Time Off Btm:

TEST COMMENT: 30-IF-Weak surface blow dead @ 6 mins

60-ISI-No return

30-FF-No blow

60-FSI-No return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	100% Mud	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Petroleum Development Co

13-22S-35W Kearny,KS

401 S. Boston AVE
STE 1850
Tulsa, OK 74103
ATTN: Ken LeBlanc

WLSR #1-13

Job Ticket: 67105

DST#: 1

Test Start: 2021.09.14 @ 13:10:00

Tool Information

Drill Pipe:	Length: 4548.00 ft	Diameter: 3.80 inches	Volume: 63.80 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: 179.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 64.68 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4730.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	90.00 ft			
Tool Length:	122.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4703.00	
Hydraulic tool	5.00	1113		4708.00	
Jars	5.00	01-07		4713.00	
EM Tool	4.00			4717.00	
Safety Joint	3.00	-001		4720.00	
Packer	5.00			4725.00	32.00 Bottom Of Top Packer
Packer	5.00			4730.00	
Stubb	1.00			4731.00	
Recorder	0.00	8959	Inside	4731.00	
Recorder	0.00	8734	Outside	4731.00	
Perforations	22.00			4753.00	
Change Over Sub	1.00			4754.00	
Drill Pipe	62.00			4816.00	
Change Over Sub	1.00			4817.00	
Bullnose	3.00			4820.00	90.00 Bottom Packers & Anchor

Total Tool Length: 122.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Petroleum Development Co

13-22S-35W Kearny,KS

401 S. Boston AVE
STE 1850
Tulsa, OK 74103
ATTN: Ken LeBlanc

WLSR #1-13

Job Ticket: 67105

DST#: 1

Test Start: 2021.09.14 @ 13:10:00

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	100% Mud	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

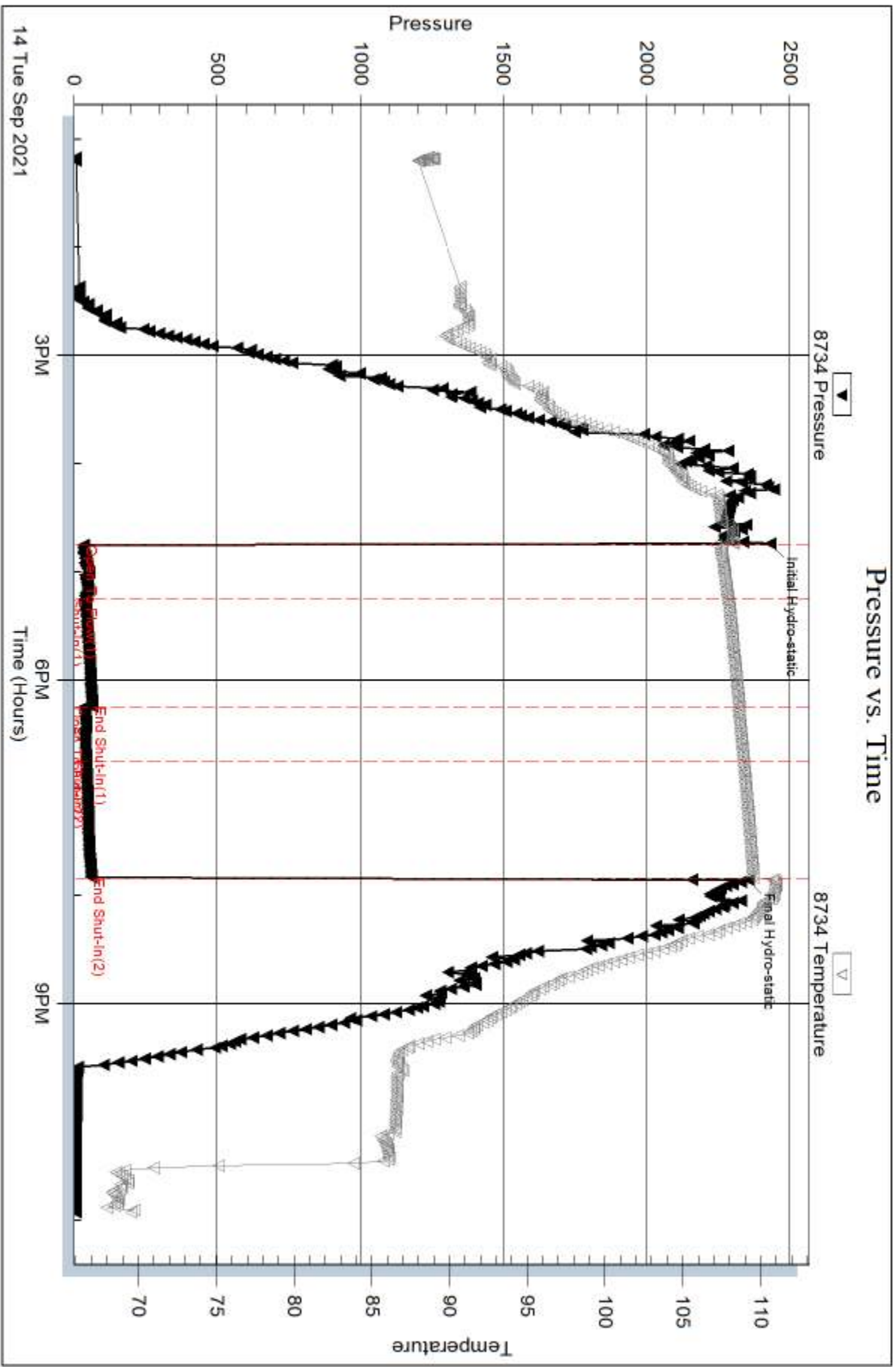
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



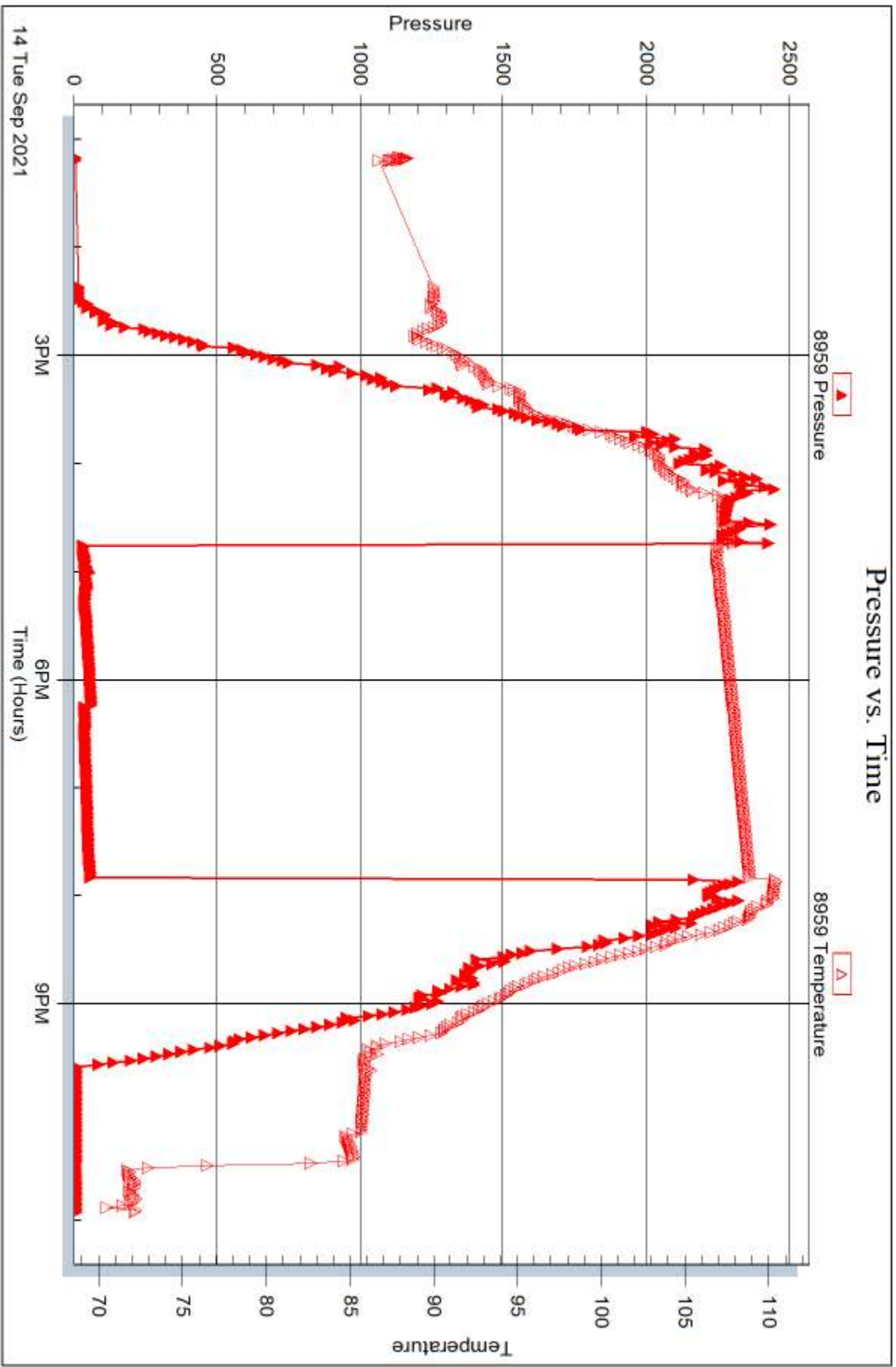
Serial #: 8959

Inside

Petroleum Development Co

WLSR#1-13

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 67105

Printed: 2021.09.21 @ 11:39:16



DRILL STEM TEST REPORT

Prepared For: **Petroleum Development Co**

401 S. Boston AVE
STE 1850
Tulsa, OK 74103

ATTN: Ken LeBlanc

WLSR #1-13

13-22S-35W Kearny,KS

Start Date: 2021.09.16 @ 09:43:00

End Date: 2021.09.16 @ 21:39:49

Job Ticket #: 67106 DST #: 2

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

Printed: 2021.09.21 @ 11:37:48

Petroleum Development Co
13-22S-35W Kearny,KS
WLSR #1-13
DST # 2
Morrow
2021.09.16



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Petroleum Development Co

13-22S-35W Kearny,KS

401 S. Boston AVE
STE 1850
Tulsa, OK 74103
ATTN: Ken LeBlanc

WLSR #1-13

Job Ticket: 67106

DST#: 2

Test Start: 2021.09.16 @ 09:43:00

GENERAL INFORMATION:

Formation: **Morrow**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:12:09

Time Test Ended: 21:39:49

Test Type: Conventional Bottom Hole (Reset)

Tester: Martine Salinas

Unit No: 82

Interval: 4716.00 ft (KB) To 4976.00 ft (KB) (TVD)

Reference Elevations: 3025.00 ft (KB)

Total Depth: 4976.00 ft (KB) (TVD)

3017.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 8.00 ft

Serial #: 8734 Outside

Press@RunDepth: 175.02 psig @ 4717.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2021.09.16

End Date: 2021.09.16

Last Calib.: 2021.09.16

Start Time: 09:43:01

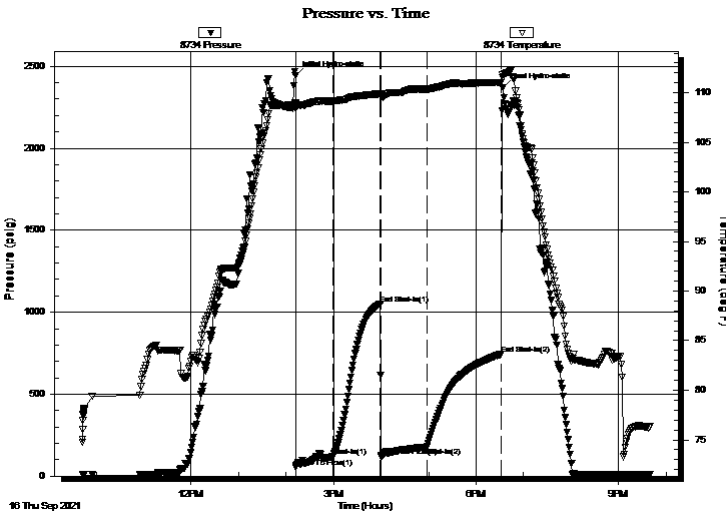
End Time: 21:39:49

Time On Btm: 2021.09.16 @ 14:11:50

Time Off Btm: 2021.09.16 @ 18:33:49

TEST COMMENT: 30-IF-1/2" to 3 3/4"
60-ISI-No return
60-FF-B.O.B (11 inches) @ 18 mins (blow increased to 20 1/4")
90-FSI-Return blow to 1" dead @ 50 mins

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2441.36	108.95	Initial Hydro-static
1	54.98	108.38	Open To Flow (1)
48	118.08	109.16	Shut-In(1)
108	1050.39	109.89	End Shut-In(1)
109	120.87	109.55	Open To Flow (2)
166	175.02	110.36	Shut-In(2)
260	743.80	111.03	End Shut-In(2)
262	2368.54	111.53	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
270.00	GOCM 23%G, 32%O, 45%M	2.16
60.00	SOCM 5%O, 95%M	0.84
0.00	60' GIP	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Petroleum Development Co

13-22S-35W Kearny,KS

401 S. Boston AVE
STE 1850
Tulsa, OK 74103
ATTN: Ken LeBlanc

WLSR #1-13

Job Ticket: 67106

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Total Depth: 4976.00 ft (KB) (TVD)

3017.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 8.00 ft

Serial #: 8959 Inside

Press@RunDepth: psig @ 4717.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2021.09.16

End Date: 2021.09.16

Last Calib.: 2021.09.16

Start Time: 09:43:01

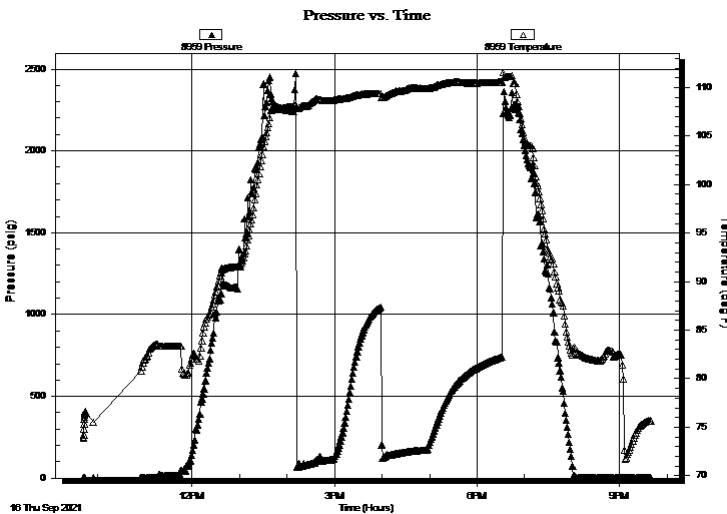
End Time: 21:39:40

Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IF-1/2" to 3 3/4"
60-ISI-No return
60-FF-B.O.B (11 inches) @ 18 mins (blow increased to 20 1/4")
90-FSI-Return blow to 1" dead @ 50 mins

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
270.00	GOCM 23%G, 32%O, 45%M	2.16
60.00	SOCM 5%O, 95%M	0.84
0.00	60' GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Petroleum Development Co

13-22S-35W Kearny,KS

401 S. Boston AVE
STE 1850
Tulsa, OK 74103
ATTN: Ken LeBlanc

WLSR #1-13

Job Ticket: 67106

DST#: 2

Test Start: 2021.09.16 @ 09:43:00

Tool Information

Drill Pipe:	Length: 4517.00 ft	Diameter: 3.80 inches	Volume: 63.36 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: 179.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose:	100000.0 lb
			<u>Total Volume: 64.24 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial	68000.00 lb
Depth to Top Packer:	4716.00 ft			Final	71000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	260.00 ft				
Tool Length:	292.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments: Pulled 30K over STWT and ruined Shale Packer

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4689.00	
Hydraulic tool	5.00	1113		4694.00	
Jars	5.00	01-07		4699.00	
EM Tool	4.00			4703.00	
Safety Joint	3.00	-001		4706.00	
Packer	5.00			4711.00	32.00 Bottom Of Top Packer
Packer	5.00			4716.00	
Packer - Shale	0.00			4716.00	
Stubb	1.00			4717.00	
Recorder	0.00	8959	Inside	4717.00	
Recorder	0.00	8734	Outside	4717.00	
Perforations	30.00			4747.00	
Change Over Sub	1.00			4748.00	
Drill Pipe	219.00			4967.00	
Change Over Sub	1.00			4968.00	
Perforations	3.00			4971.00	
Bullnose	5.00			4976.00	260.00 Bottom Packers & Anchor
Total Tool Length:	292.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Petroleum Development Co

13-22S-35W Kearny,KS

401 S. Boston AVE
STE 1850
Tulsa, OK 74103
ATTN: Ken LeBlanc

WLSR #1-13

Job Ticket: 67106

DST#: 2

Test Start: 2021.09.16 @ 09:43:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 56.00 sec/qt
Water Loss: 8.79 in³
Resistivity: ohm.m
Salinity: 4800.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
270.00	GOCM 23%G, 32%O, 45%M	2.157
60.00	SOCM 5%O, 95%M	0.842
0.00	60' GIP	0.000

Total Length: 330.00 ft Total Volume: 2.999 bbl

Num Fluid Samples: 0

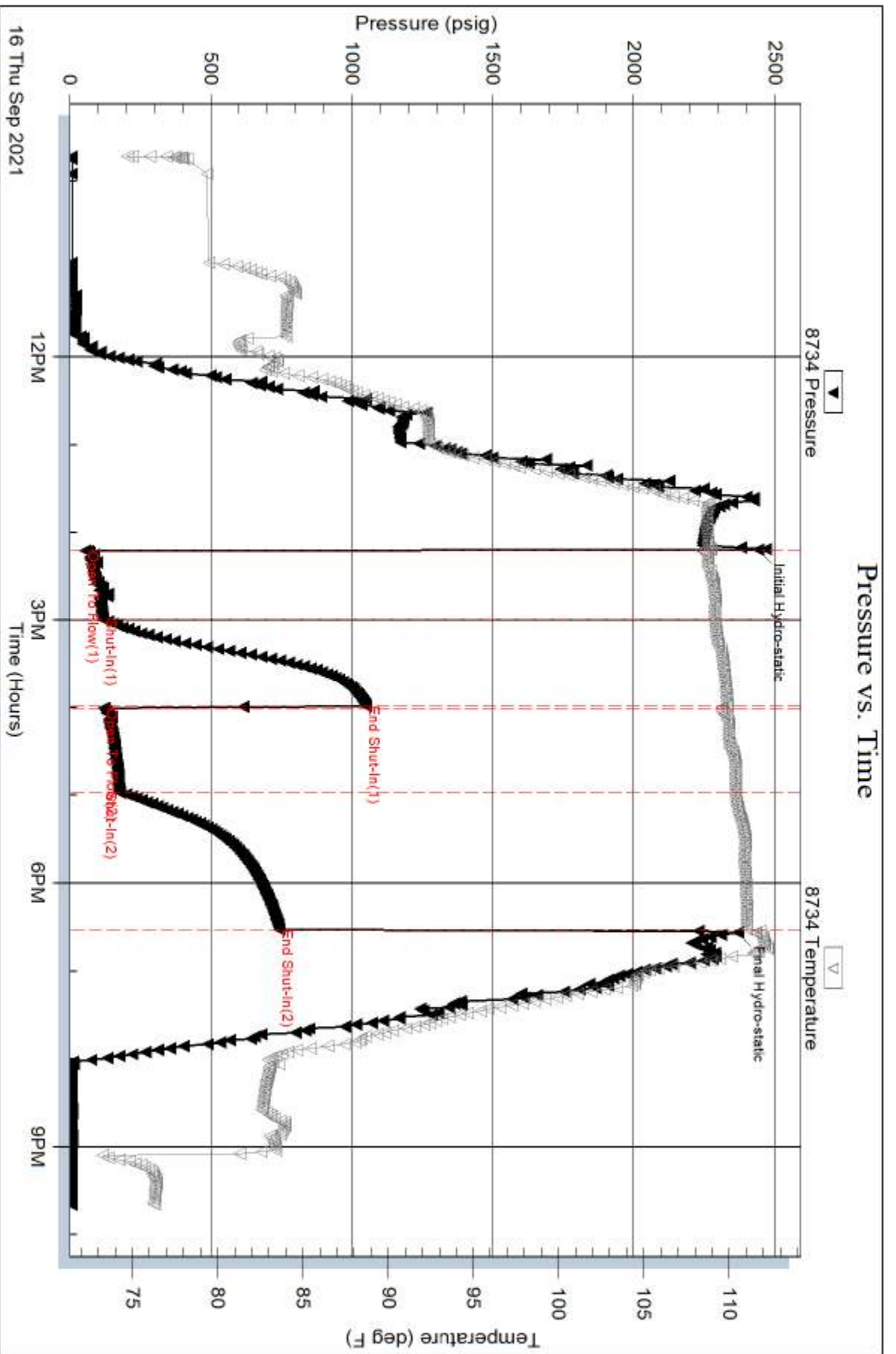
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



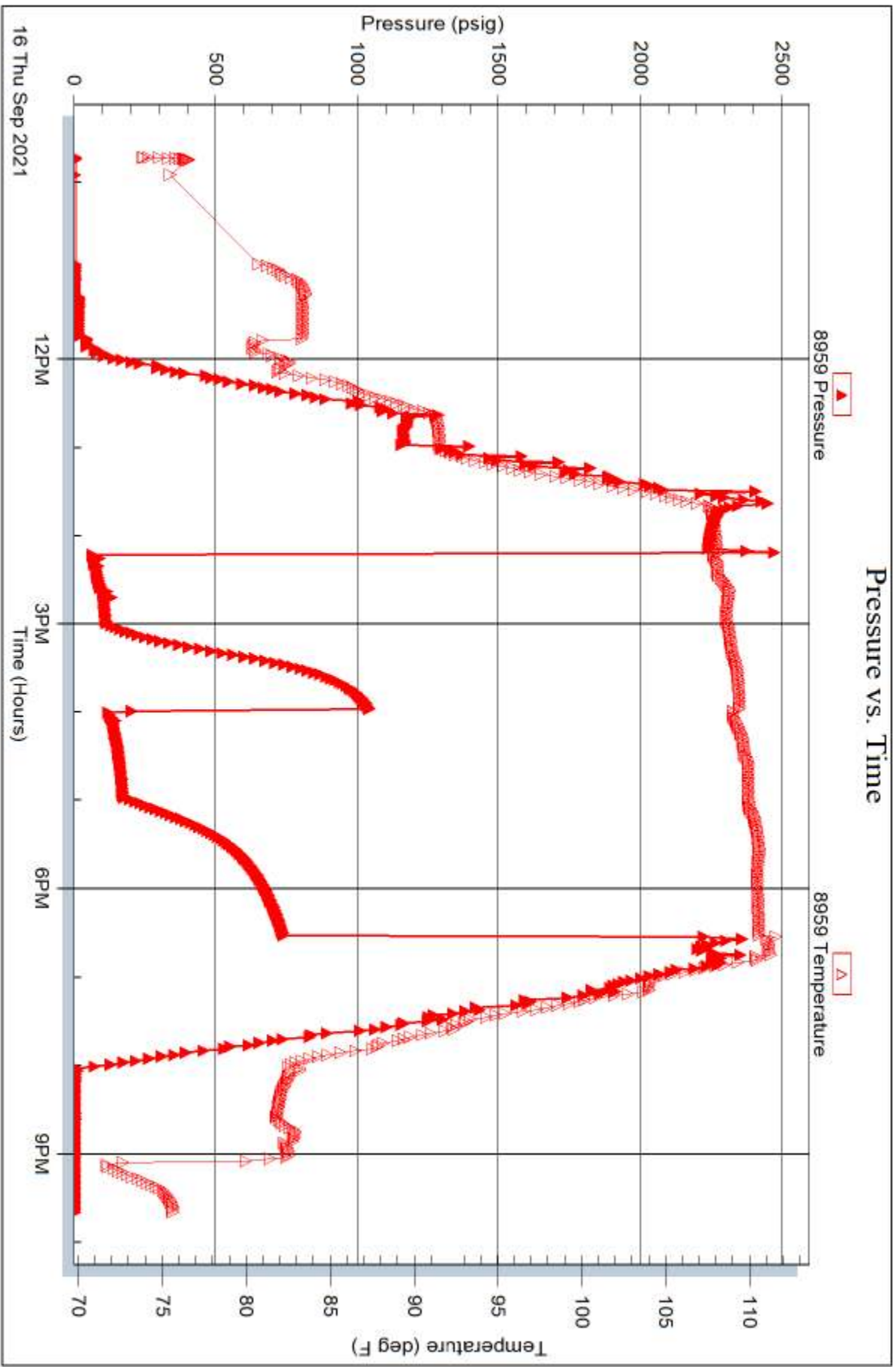
Serial #: 8959

Inside

Petroleum Development Co

WLSR#1-13

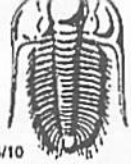
DST Test Number: 2



Tribble Testing, Inc

Ref. No: 67106

Printed: 2021.09.21 @ 11:37:50



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 67105

Well Name & No. WLSR #1-13 Test No. 1 Date 9-14-21
 Company Petroleum Development Company Elevation 3025 KB ~~3017~~ 3017 GL
 Address 401 S. Boston Ave STE 1850 Tulsa, OK 74103
 Co. Rep / Geo. Ken LeBlanc Rig Murfin #112
 Location: Sec. 13 Twp 22 Rge. 35W Co. Kearny State KS

Interval Tested 4730-4820 Zone Tested Morrow
 Anchor Length 90' Drill Pipe Run 4548 Mud Wt. 9.1
 Top Packer Depth 4725 Drill Collars Run 179 Vis 58
 Bottom Packer Depth 4730 Wt. Pipe Run — WL 8.0
 Total Depth 4820 Chlorides 4500 ppm System LCM 4H

Blow Description IF - Weak surface blow dead @ 6 mins
IF - No return
FF - No blow
FF - No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud</u>			<u>100</u>	
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

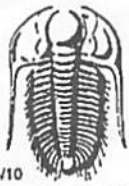
Rec Total 5 BHT 111 Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic 2432 Test 1450 T-On Location 11:15
 (B) First Initial Flow 34 Jars 250 T-Started 13:10
 (C) First Final Flow 37 Safety Joint 75 T-Open 16:45
 (D) Initial Shut-In 64 Circ Sub _____ T-Pulled 19:45
 (E) Second Initial Flow 38 Hourly Standby 1.5h 150 T-Out 22:55
 (F) Second Final Flow 43 Mileage 116 RT 145 Comments _____
 (G) Final Shut-In 61 Sampler _____
 (H) Final Hydrostatic 2354 Straddle _____ EM Tool 350
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60

Sub Total 2070 MP/DST Disc't _____
 Sub Total 2420

Approved By _____ Our Representative [Signature]
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 67106

Well Name & No. WLSR #1-13 Test No. 2 Date 9-16-21
 Company Petroleum Development Company Elevation 3025 KB 3017 GL
 Address 401 S. Boston Ave. STE 1850 Tulsa, OK 74103
 Co. Rep / Geo. Ken LeBlanc Rig Murfin #112
 Location: Sec. 13 Twp 22 Rge. 35W Co. Kearny State KS

Interval Tested 4716 - 4976 L.T.D. Zone Tested Morrow
 Anchor Length 260' Drill Pipe Run 4517 Mud Wt. 9.1
 Top Packer Depth 4711 Drill Collars Run 179 Vis 56
 Bottom Packer Depth 4716 (Shale) Wt. Pipe Run — WL 8.8
 Total Depth 4976 L.T.D. Chlorides 4800 ppm System LCM 2#

Blow Description IF - 1/2" to 3/4"
ISZ - No return
FF - B.O.B (11 inches) @ 18 mins (blow increased to 20'4")
ESI - Return blow to 1" + decreasing dead @ 50 mins

Rec	Feet of	%gas	%oil	%water	%mud
<u>270</u>	<u>60 CM</u>	<u>23</u>	<u>32</u>	<u>45</u>	
<u>60</u>	<u>50 CM</u>	<u>5</u>		<u>95</u>	
<u>0</u>	<u>60' GIP</u>				

Rec Total 330 BHT 112 Gravity — API RW — @ — F Chlorides — ppm

(A) Initial Hydrostatic <u>2441</u>	<input checked="" type="checkbox"/> Test <u>1450</u>	T-On Location <u>08:15</u>
(B) First Initial Flow <u>55</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>09:43</u>
(C) First Final Flow <u>118</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>14:13</u>
(D) Initial Shut-In <u>1050</u>	<input type="checkbox"/> Circ Sub <u>—</u>	T-Pulled <u>18:28</u>
(E) Second Initial Flow <u>121</u>	<input checked="" type="checkbox"/> Hourly Standby <u>2hr 200</u>	T-Out <u>21:40</u>
(F) Second Final Flow <u>175</u>	<input checked="" type="checkbox"/> Mileage <u>116 RT 145</u>	Comments <u>Tool loaded</u>
(G) Final Shut-In <u>744</u>	<input type="checkbox"/> Sampler <u>—</u>	<u>@ 22:30</u>
(H) Final Hydrostatic <u>2369</u>	<input type="checkbox"/> Straddle <u>—</u>	<input type="checkbox"/> EM Tool <u>—</u>
Initial Open <u>45</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input checked="" type="checkbox"/> Ruined Shale Packer <u>365</u>
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer <u>—</u>	<input type="checkbox"/> Ruined Packer <u>—</u>
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder <u>—</u>	<input type="checkbox"/> Extra Copies <u>—</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby <u>—</u>	Sub Total <u>365</u>
	<input type="checkbox"/> Accessibility <u>—</u>	Total <u>2735</u>
	Sub Total <u>2370</u>	MP/DST Disc't <u>—</u>

Approved By _____ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

Conservation Division
266 N. Main St., Ste. 220
Wichita, KS 67202-1513



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Dwight D. Keen, Chair
Susan K. Duffy, Commissioner
Andrew J. French, Commissioner

Laura Kelly, Governor

April 14, 2022

Wm. Dennis Ingram
Petroleum Development Company
401 S BOSTON AVE STE 1850
TULSA, OK 74103-4005

Re: ACO-1
API 15-093-21991-00-00
WLSR 1-13
NW/4 Sec.13-22S-35W
Kearny County, Kansas

Dear Wm. Dennis Ingram:

K.A.R. 82-3-107 provides for all completion information to be filed within 120 days of the spud date. Subsection(e)(2) of that regulation states "All rights to confidentiality shall be lost if the filings are not timely."

The above referenced well was spudded on 09/07/2021 and the ACO-1 was received on April 14, 2022 (not within the 120 days timely requirement).

Therefore, your request for confidential treatment of data contained within the ACO-1 filing cannot be granted at this time.

If you should have any questions, please do not hesitate to contact me at (316)337-6200.

Sincerely,

Production Department



Customer	Petroleum Development	Lease & Well #	WLSR 1-13	Date	9/9/2021
Service District	Oakley KS	County & State	Kearny KS	Legals S/T/R	13-22S-35W
Job Type	8.625" Surface	<input checked="" type="checkbox"/> PROD <input type="checkbox"/> INJ <input type="checkbox"/> SWD	New Well?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> No	Job #
Equipment #	Driver	Ticket #			

Equipment #	Driver	Job Safety Analysis - A Discussion of Hazards & Safety Procedures			
194/250	Fennis	<input checked="" type="checkbox"/> Hard hat	<input checked="" type="checkbox"/> Gloves	<input type="checkbox"/> Lockout/Tagout	<input type="checkbox"/> Warning Signs & Flagging
180/520	Mike	<input checked="" type="checkbox"/> H2S Monitor	<input checked="" type="checkbox"/> Eye Protection	<input type="checkbox"/> Required Permits	<input type="checkbox"/> Fall Protection
242	Kale	<input checked="" type="checkbox"/> Safety Footwear	<input checked="" type="checkbox"/> Respiratory Protection	<input checked="" type="checkbox"/> Slip/Trip/Fall Hazards	<input type="checkbox"/> Specific Job Sequence/Expectations
		<input checked="" type="checkbox"/> FRC/Protective Clothing	<input type="checkbox"/> Additional Chemical/Acid PPE	<input checked="" type="checkbox"/> Overhead Hazards	<input checked="" type="checkbox"/> Muster Point/Medical Locations
		<input checked="" type="checkbox"/> Hearing Protection	<input checked="" type="checkbox"/> Fire Extinguisher	<input type="checkbox"/> Additional concerns or issues noted below	

Comments

Muster point entrance to location. Person in charge of head count Fennis. Nearest hospital Garden City KS. Emergency # 911.

Product/Service Code	Description	Unit of Measure	Quantity	Net Amount
CP050	H-Lite	sack	465.00	\$5,440.50
CP010	Class A Cement	sack	150.00	\$2,295.00
CP140	Granulated Salt	lb	1,215.00	\$546.75
CP116	Water Control Agent	lb	81.00	\$1,822.50
CP112	Sodium Metasilicate	lb	141.00	\$190.35
CP105	Gypsum	lb	282.00	\$253.80
CP120	Cello-flake	lb	137.00	\$215.78
FE260	8 5/8" Guide Shoe	ea	1.00	\$540.00
FE250	8 5/8" Centralizer	ea	6.00	\$486.00
FE275	8 5/8" AFU Flapper Insert Valve	ea	1.00	\$337.50
FE285	8 5/8" Rubber Plug	ea	1.00	\$157.50
M015	Light Equipment Mileage	mi	80.00	\$144.00
M010	Heavy Equipment Mileage	mi	160.00	\$576.00
M020	Ton Mileage	tm	2,184.00	\$2,948.40
C050	Cement Plug Container	job	1.00	\$225.00
D010	Depth Charge: 0'-500'	job	1.00	\$900.00

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

Net: **\$17,079.08**

Total Taxable \$ - Tax Rate:

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

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: \$ 17,079.08

HSI Representative: *Fennis Garduno*

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 1/2% 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 from 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 information in determining taxable services.

X _____ **CUSTOMER AUTHORIZATION SIGNATURE**



CEMENT TREATMENT REPORT

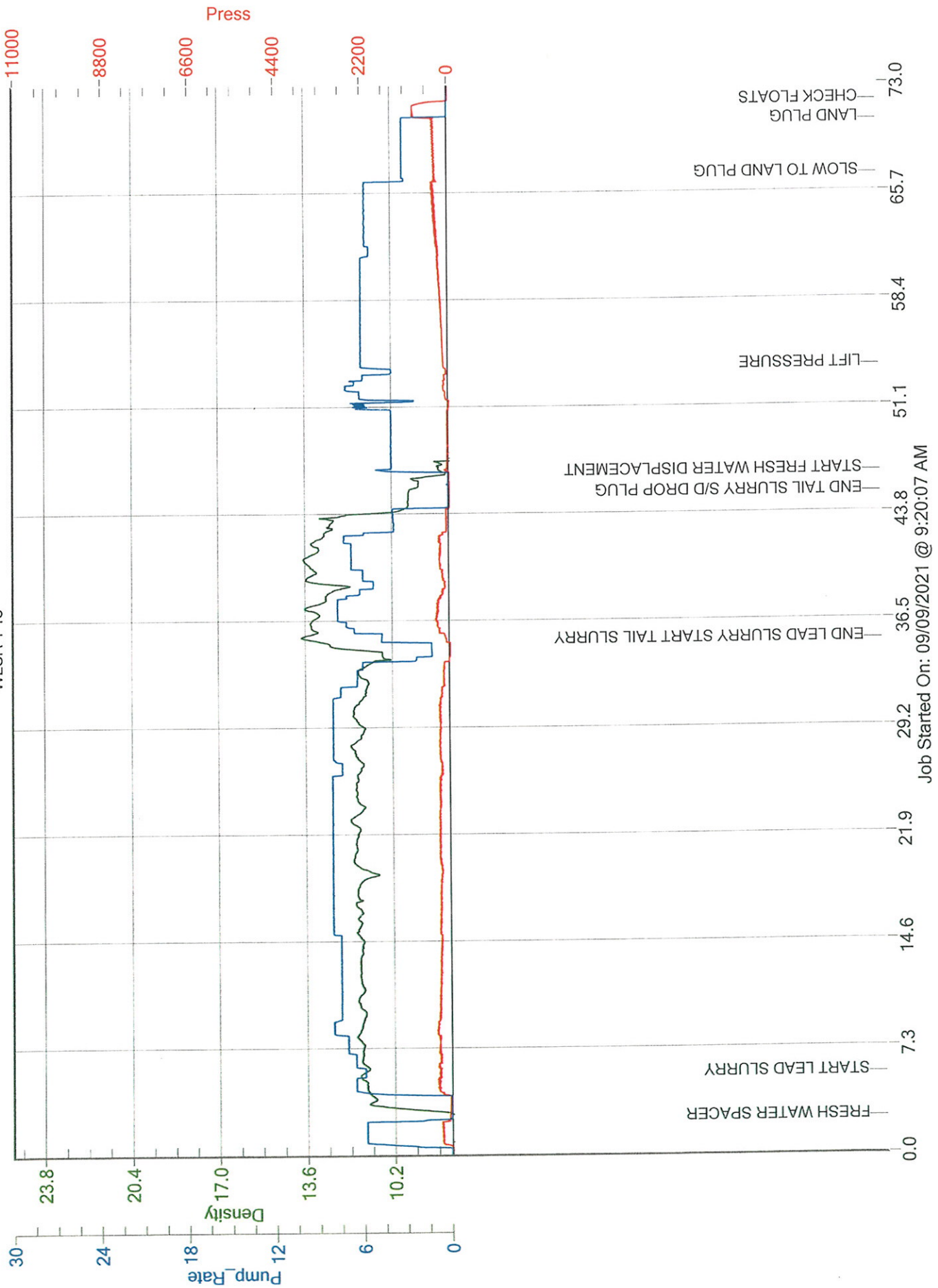
Customer: Petroleum Development	Well: WLSR 1-13	Ticket: WP1837
City, State:	County: Kearny KS	Date: 9/9/2021
Field Rep: Fennis Garduno	S-T-R: 13-22S-35W	Service: 8.625" Surface

Downhole Information		Calculated Slurry - Lead		Calculated Slurry - Tail	
Hole Size:	12.25 in	Blend:	65/35/6 POZ MIX	Blend:	Class A
Hole Depth:	1851 ft	Weight:	11.3 ppg	Weight:	13.2 ppg
Casing Size:	8 5/8 in	Water / Sx:	16.5 gal / sx	Water / Sx:	9.8 gal / sx
Casing Depth:	1841.54 ft	Yield:	2.73 ft ³ / sx	Yield:	1.81 ft ³ / sx
Tubing / Liner:	in	Annular Bbls / Ft.:	bbs / ft.	Annular Bbls / Ft.:	bbs / ft.
Depth:	ft	Depth:	ft	Depth:	ft
Tool / Packer:		Annular Volume:	0.0 bbls	Annular Volume:	0 bbls
Tool Depth:	ft	Excess:		Excess:	
Displacement:	114.6 bbls	Total Slurry:	226.0 bbls	Total Slurry:	48.5 bbls
		Total Sacks:	465 sx	Total Sacks:	150 sx

TIME	RATE	PSI	BBLs	TOTAL BBLs	REMARKS
5:00 PM				-	Deliver float equipment 9-8-21
1:20 AM				-	Rig call 9-9-21
2:30 AM				-	Journey management meeting
2:45 AM				-	Convoy to location
4:15 AM				-	Arrive on location / safety meeting
4:20 AM				-	Spot in / rig up equipment
				-	Total pipe ran 1841.54' shoe jt 42.16' AFU insert @ 1799.38'
9:00 AM		300.0		-	Rig land casing , drop ball , blow insert , circulate
9:20 AM	6.0	230.0	10.0	10.0	Hook cementing equipment to casing , pump fresh water spacer
9:24 AM	8.0	310.0	226.0	236.0	Mix 465 sx 65/35/6 pozmix 2 11.3 ppg
9:55 AM	7.0	240.0	48.5	284.5	Mix 150 sx Class A w/ additives @ 13.2 ppg
10:00 AM					S/D drop plug
10:05 AM	6.0	30.0			Start fresh water displacement washing up on top of plug
10:16 AM	6.0	120.0	50.0		See cement to surface
10:20 AM	6.0	250.0	70.0		See lift pressure
10:25 AM	3.0	300.0	100.0		Slow to land plug
10:30 AM	3.0	800.0	114.6		Land plug 500 psi over last circulation pressure of 300 psi
10:35 AM					Check floats , floats held got .5 bbl back
10:40 AM		-			Leave cement plug container shut in on casing NO PRESSURE per company rep request
11:00 AM					Rig down , leave location
					CIRCULATED 64 BBLs / 132 SX POZ MIX TO SURFACE

CREW		UNIT	SUMMARY		
Cementer:	Fennis	194/250	Average Rate	Average Pressure	Total Fluid
Pump Operator:	Mike	180/520	5.6 bpm	258 psi	619 bbls
Bulk #1:	Kale	242			
Bulk #2:					

PDC
WLSR 113



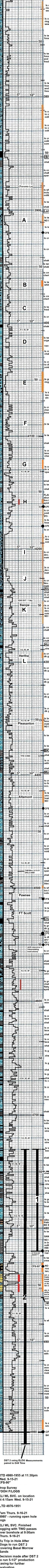
Job Started On: 09/09/2021 @ 9:20:07 AM

FIELD (First Look) REPORT

formations with samples shows
formation porosity indicator

Lithology Legend

	limestone		shales gray		maroon		green
	dolomite		black shales				
	sandstone		chert				



3702 DRLG W/BIT 3 7-7/8" Smith F27 Jets
3-15's in at 3597'

Is cream to white fn and med oolitic, ringed grades to chalky and weathered

Is cream to white fn and med oolitic, ringed grades to chalky and weathered

Is tan vfn and fn oolitic, ringed, highly fossilif, equal ls white fn xln-chalky ls

Is tan vfn and fn oolitic, ringed, highly fossilif, equal ls cream-white chalky and fn xln, assoc. chert milky to white fresh, opaque

Is tan vfn and fn oolitic, ringed, highly fossilif, equal ls cream-white chalky and fn xln, assoc. chert milky to white fresh, opaque

Is cream and tan fn and med oolitic, ringed grades to chalky ls, assoc. chert 5-10%, lt gry-white, fresh, oolitic

Is cream-white fn xln to chalky, some slightly oolitic with chert white and cream, fresh, opaque some tan-cream spots

50 shales black, carb.

[B/Heebner Shale 3853-828]

shales dk gry to blk

Is cream to tan fn xln dn, few med xln, weathered and chalky, assoc. chert white and cream, fresh, opaque, sparse dolomite tan fn sucrosic

(Toronto Ls)

Is white and tan fn xln-chalky, lesser ls gry med xln, included with organics; sparse chert white, opaque, oolitic in part

Is tan and cream fn xln to chalky shales gry, dk gry

3900 [Lansing 3901-876]

Is tan coarsely oolitic and oomoldic, NO SHOWS OIL OR GAS, NO GAS INC.

Is tan fn xln dn

CFS-45°

Is cream-white fn xln dn to chalky

Is cream-white fn xln dn to chalky

shales gry, dk gry

50 shales tan to white fn xln dn

shales gry, dk gry

Is cream-white fn xln dn, equally chalky, assoc. chert white to lt gry, fresh, opaque

Is tan med-coarsely oolitic and oomoldic, sparse chert white to milky, fresh, opaque, fossilif

Is cream-white fn xln dn, equally chalky, assoc. chert white to lt gry, fresh, opaque

Is tan med-coarsely oomoldic, assoc. chert white fresh, opaque

Is cream-white, fn xln dn, traces of chert

4000 shales dk gry to blk

Is tan and brn fn xln dn, included with coarse organics to chalky

7AM Sun. 9-12-1-21 DRLG 4020'

Is cream to lt gry fn xln dn to weathered and chalky, few fossilif

Is cream-lt gry fn xln dn to chalky, lesser ls gry to dk gry coarse-very coarsely oolitic, ringed, dk gry ooids, scattered chert tan-brn, fresh, oolitic

Is gry-brn coarse and very coarsely oolitic, ringed with dk gry ooids grades to chalky

Is tan vfn oolitic, sandy app., chalk laced, lesser fn-med oolitic, equal ls tan and cream fn xln dn-chalky

MUD-CO at 4069'
WT: 9.2, VIS: 46
WL: 8.0, CHL: 4.6K
LCM: 2#

Is cream-white fn xln dn, slightly oolitic, scattered chert white and milky to lt gry, fresh, opaque, fossilif

Is tan and lt gry fn xln dn grades to chalky ls

4100 Is tan and lt gry fn xln dn grades to chalky ls

shales gry, dk gry and blk

Is cream-tan fn xln dn grades to chalky, slightly oolitic, lesser ls cream to gry fn and med oolitic, chalky, fossilif, chert lt gry and milky, fresh, opaque and oolitic

Is cream-white fn xln dn-chalky, lesser ls brn and lt gry fn xln dn to sub-oolitic, sparse chert tan-brn mixed, fresh, opaque

shales gry, dk gry to blk

Is tan-brn fn xln dn

50 shales gry, dk gry, blue-green, green, some maroon

FLASH ODOR, ls lt gry and cream fn tan coarsely oolitic, abundant chalk, RPTD PCS, with sparsely spnd heavy dark brn live to listless oil, sparse brn stain, no fluor wet, fair gold end fluor dry, fast milky blue-gold cut, NO GAS INC.

CFS-60°

Is cream-tan and brn fn and med oolitic, ringed, some w/dk gry ooids, occ. coarse ls clasts and nodules, sparse chert milky to lt gry, fresh, opaque, oolitic

Is brn med oolitic and xln grades to weathered, dk gry ooids, fossilif in part

CFS-60°

Is cream to lt gry fn xln to oolitic

Is cream-tan med and coarsely oomoldic and lesser oolitic, well dev. oomoldic porosity, hollowed shell frags and coated cream ooids in porosity, NO SHOWS OIL OR GAS, NO GAS INC.

4200 Is cream to tan med and coarsely oomoldic and lesser oolitic, well dev. oomoldic porosity, cream uncoated ooids in tan subopaque matrix

Is cream to tan med and coarsely oomoldic and lesser oolitic, well dev. oomoldic porosity, cream uncoated ooids in tan subopaque matrix

Is cream to tan med and coarsely oomoldic, lesser oolitic, well dev. oomoldic porosity, cream coated ooids in tan subopaque matrix, increase in ls tan fn xln

4246-SHT -1 deg

50 [Stark Shale 4236-1211]

shales blk, carb.

Is cream-tan fn and med oolitic to xln, chalky shales gry, dk gry

Is cream-tan fn and med oolitic to xln, chalky

Is cream-tan fn and med oolitic to xln, chalky and ls cream med and med-coarsely oomoldic, well dev. oomoldic porosity, some ringed and coated ooids in cream matrix

NO SHOWS OIL OR GAS, NO GAS INC.

Is cream to tan fn and med oolitic to xln, chalky, sparse chert milky, fresh, opaque

4285 [Hush Shale 4285-1260]

CFS-60°

shales black and dk gry

Is cream and lt gry fn and med suboolitic, occ. dk gry ooids and clasts

4300 Is cream and lt gry fn and med suboolitic, occ. dk gry ooids and clasts

Is cream to tan fn xln dn, some with fn-med dk gry organics

Is cream to tan fn xln dn, some with fn-med dk gry organics

Is cream to tan fn xln dn, some with fn-med dk gry organics

Is brn fn-med oolitic, ringed in dn matrix, lesser cream with dark gry ooids in chalky matrix

NO SHOWS OIL OR GAS, NO GAS INC.

Is tan to brn fn xln dn

Is tan to brn fn xln dn

4378 [BKC 4378-1353]

shales gry-green, green, dk gry

Is cream to tan fn xln dn interbedded with shales green, dk gry, gry

shales gry-green, dk gry, green with blk

4400 [Marmaton 4398-1373]

Is cream to tan fn xln dn, scattered chalk to fn suboolitic, assoc. ls cream vfn oolitic, occ. coarse inclusions

Is tan and brn coarsely oolitic, subopaque uncoated ooids and clasts in cream dn matrix, weathered in part

NO SHOWS OIL OR GAS, NO GAS INC.

CFS-60°

Is cream-tan fn xln dn, some med xln with assoc. chalk

Is cream-tan fn xln dn, some med xln with assoc. chalk

50 Is cream and tan fn-med suboolitic and fn xln dn

shales dk gry, gry and blk, scattered ls frags

Is cream and tan fn xln dn, laced with chalk, sparse ls gry-brn med oolitic w/dk gry ringed ooids

Is cream and tan fn xln DN, SMOOTH, some chalky

7AM Mon. 9-13-21 DRLG 4448'

Is dk gry fn xln dn w/med oolites, argillac, in part, sparse chert reddish brn med oomoldic, subopaque shales dk gry to blk with ls cream fn xln dn

shales dk gry, dk gry, few blk, calc. in part, assoc. black

4500 Is white and cream fn xln dn, assoc. chalk, lesser ls dk brn fn xln dn, sparse chert milky to lt gry, fresh, subopaque

CFS-60°

shales blk and dk gry

Is tan and lt gry fn and some med xln dn, fn-med suboolitic in part, dk gry ooids, assoc. chalk

4527 [Cherokee Shale 4527-1502]

shales black, carb., lesser dk gry, firm

Is gry-brn fn xln dn, lesser ls gry-brn fn-med oolitic, ringed, dk gry ooids (CNE PC, with brn flaky oil on break from fractures grades to weathered)

CFS-60°

Is dk brn and dk gry med and coarsely oolitic, blk to dk gry uncoated clasts grades to chalky, equal ls tan-gry fn xln dn

CFS-60°

Is cream and white CHALKY with dk gry-brn ooids, uncoated, some in dn matrix

shales dk gry, gry to blk, brittle and firm

MIXED WITH CHALKY ls

Is gry-brn fn gry coarsely oolitic, some ringed, most uncoated dk gry and brn clasts, chalk thru-out

Is gry, dk gry med xln to oolitic, dk gry ooids in dn to chalky matrix, few pcs with brn sparsely spnd stain, occ. flaky oil on break, none wet and rare even saturation, dull spnd fluor dry, brn spd, no odor, fast cut, no vis porosity

4600 Is cream to tan fn xln dn, med suboolitic to chalky assoc. fn-med oolitic w/dk gry ooids

shales blk and dk gry

Is cream-tan and some brn fn xln dn, smooth in part, laced with chalk grades to chalky ls

shales lt gry, gry, clayey

Is cream-tan and some brn fn xln dn, smooth in part, laced with chalk grades to chalky ls

shales lt gry, gry, soft, clayey

Is cream-tan and some brn fn xln dn, smooth in part, laced with chalk grades to chalky ls

shales lt gry, gry, soft, clayey

Is gry and tan fn xln dn

shales lt gry, gry, soft, clayey

Is gry and tan fn xln dn

shales blk and dk gry mixed with ls cream to tan fn xln dn

Is cream to lt gry fn xln dn

Is cream to tan fn xln dn grades to weathered, traces of chert tan-brn fresh, opaque

4700 shales gry-green, green, dk gry

Is tan fn xln dn, some slightly oolitic to suboolitic

Is tan and lt gry fn xln dn and shales streaks dk gry to blk

Is tan-brn and lt gry fn xln dn, shale tops.

Is tan-brn and lt gry fn xln dn, thin bedded shales blk and gry

shales blk, carb.

Is tan and cream to lt gry fn xln dn

9.1, 5.6, 3.9

50 shales blk and dk gry [Morrow Shale 4750-1725]

shales lt green, green, vsl pyritic

Is tan and cream to lt gry fn xln dn

shales lt green, green, vsl pyritic

Is tan and cream to lt gry fn xln dn

shales lt green, green, vsl pyritic

Is gry, lt gry to tan fn xln dn, lesser ls brn fn-med oolitic with dk gry ooids

shales dk gry to blk with lt green, glauc.

Is tan-brn fn xln dn, some oolitic

Is tan-brn and lt gry, well sorted, angular, friable, heavily included with micas and organics

NO SHOWS OIL OR GAS, NO GAS INC.

4800 Is tan-brn fn xln dn, some oolitic

SAND ZONE

NO SAND CLUSTERS - scattered fine loose clear qtz in bottom of tray, change in odor, not sweet or sulfur, no fluor wet or dry

HW-10u, recycled HW-18u

CFS-60°

7AM Wed. 9-16-21 DRLG 4848'

Is tan-brn med oolitic, dk brn and cream clasts and nodules in dn matrix

NO ODOR, rare loose qtz grains, clear, rounded to subrnd, traces of silstone

tan, HW-30u

NO ODOR, rare loose qtz grains, clear, rounded to subrnd, traces of silstone

NOTE: CREAM-TAN VFN AND FN GRAIN, FAIR TO WELL SORTED, ROUNDED, MISC. NO ODOR, FAIR SHOWS dk brn live and listless oil on break, scattered shows of gas grades to salt lt gry to lt green loose vfn and fn round to subrnd clear qtz grains, no fluor wet or dry, spnd brn to some hvly brn stain in sat clusters, weak to fair cut

qtz, loose vfn and fn clear grains thru-out, small amts of sat 2-3% white tan fn grain, well sorted, rounded, clear with fair shows dark brn vfn oil on break and clinging to porosity in good intergranular porosity, friable, no fluor wet, dull to no fluor dry, spnd brn stain, fair cut

Mississippian Unconf. 4861-1836

Is white fn arenac. grades to chalky, CHALK 5%+

Is white fn arenac. grades to chalky, CHALK 5%+

Is cream to white fn arenac. some slightly laced with pyrite, lesser ls tan-brn fn xln dn

4900 Is cream-white fn arenac. becoming chalky, assoc. ls cream-tan med arenac., subopaque, clear and tan rounded qtz grains in chalky matrix

Is cream-white fn arenac. becoming chalky, assoc. ls cream-tan med arenac., subopaque, clear and tan rounded qtz grains in chalky matrix

50 Is white fn arenac. with fine glauc. specks to suboolitic, chalky, CHALK THRU-OUT

Is cream-white fn arenac. to suboolitic, chalky, small amts of ls cream fn and fn-med oolitic

CFS-90°

SHT at 4980' - 1 deg

SHT at 353' - 1 deg
at 800' - 1-1/2 deg
at 1309' - 1-1/2 deg
at 1845' - 1-1/4 deg
at 2536' - 2 deg
at 2567' - 1 deg
at 3036' - 3/4 deg
at 3597' - 1 deg

MUD-CO at 1347'
WT: 9.8, VIS: 40
WL: NC, CHL: NC
LCM: 4#

MUD-CO at 1855'
WT: 10.2, VIS: 41
WL: NC, CHL: 18K
LCM: 5#

MUD-CO at 2220'
WT: 9.3, VIS: 32
WL: NC, CHL: 62K
LCM: trace

MUD-CO at 3393'
WT: 8.6, VIS: 48
WL: 8.0, CHL: 3K
LCM: 2#

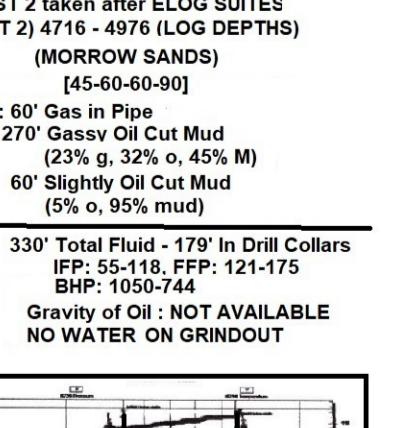
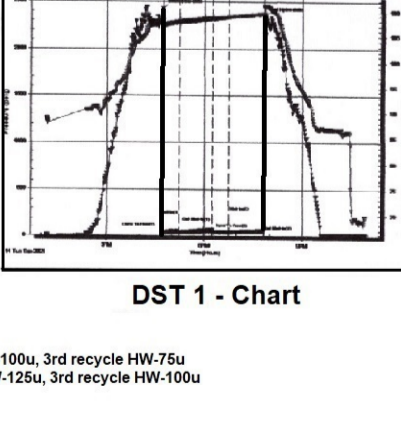
MUD-CO at 4069'
WT: 9.2, VIS: 46
WL: 8.0, CHL: 4.6K
LCM: 2#

MUD-CO at 4510'
WT: 9.1, VIS: 52
WL: 8.0, CHL: 4.2K
LCM: 3#

MUD-CO at 4820'
WT: 9.3, VIS: 53
WL: 8.0, CHL: 4.5K
LCM: 3#

MUD-CO at 4820' - ADST 1
WT: 9.3, VIS: 50
WL: 8.8, CHL: 4.8K
LCM: 3#

MUD-CO at 4980'
WT: 9.3, VIS: 49
WL: 8.8, CHL: 5.4K
LCM: 3#



RTD 4980-1955 at 11:30pm
Wed. 9-15-21
CFS-90°

Drop Survey
TOOH F/LOGS

ELI WL SVC. on location
at 4:15am Wed. 9-15-21

LTD 4976-1951

7am Thurs. 9-16-21
4980' - running open hole
logs

ELI WL SVC. Finished
logging with TWO passes
over borehole at 9:00am
Thurs. 9-16-21

To Trip in Hole After
ELI to run DST 2
covering Basal Morrow
Sands

Decision made after DST 2
to run 5-1/2" production
casing for further
evaluation

NOTE: DST 1 - The test tool appeared to be the EIGHT (8) foot shallow to setting on bottom. It was assumed that we were bridged off. Efforts were made to slide the test string to bottom. They appeared to be no indication that the test tool was bridged off or we were not on bottom. A conventional DST was run with the times of 30-60-30-60. Subsequent to the DST 1 it was brought to our attention that a measurement problem may be pinpointed to the setting of surface casing. Reported surface casing depth was 1855 feet, however it is noted that EIGHT (8) feet of casing was cut from the 1855 feet in order to get the casing in the proper position, which was at 1847 feet. This difference was not placed of record. Upon drilling out below surface casing the geograph began at 1855 feet when in actuality it should have been set at 1847 feet. So the PDC WLSR 1-13 is EIGHT (8) foot shallow on all geologic markers to reported data. NO CORRECTION will be made to the geograph.

NOTE: There is as much as SEVENTEEN (17) feet of difference between downhole drill tops versus equivalent elog tops. Drill Time picks are LOW to elog

Example - Morrow Shale
drill time - 4753'

The issue/problem appears to have developed before surface casing measurements.

Base Surface Casing - elog 1842'
drift 1847'
geograph/Bit Record 1855'