



KANSAS CORPORATION COMMISSION 1119807
OIL & GAS CONSERVATION DIVISION

Form ACO-1

June 2009

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

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

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 SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Conv. to GSW
- Plug Back: _____ Plug Back Total Depth _____
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date Date Reached TD Completion Date or Recompletion Date

API No. 15 - _____

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

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total 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

- Letter of Confidentiality Received
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report 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 and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <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 Electric Log Submitted Electronically <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i> 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				

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

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

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

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
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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> <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Pickrell Drilling Company, Inc.
Well Name	Norton 'B' 5
Doc ID	1119807

Tops

Name	Top	Datum
T/Anhydrite	1852	+ 669
B/Anhydrite	1874	+ 642
Heebner	3824	-1303
Lansing	3867	-1346
Stark	4116	-1595
Fort Scott	4373	-1852
Cherokee	4399	-1878
Mississippi	4483	-1962
Mississippi dolo	4493	-1972

ALLIED OIL & GAS SERVICES, LLC 059229

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

SERVICE POINT:
Great Bend, KS.

DATE <u>1-15-13</u>	SEC. <u>12</u>	TWP. <u>18S</u>	RANGE <u>26W</u>	CALLED OUT <u>10:30 AM</u>	ON LOCATION <u>2:46 AM</u>	JOB START <u>8:00 AM</u>	JOB FINISH <u>9:10 AM</u>
LEASE <u>Norton</u>	WELL # <u>48" 5</u>	Wess City 11W to Grid, North 2 3/4 mile. West			COUNTY <u>Wess</u>	STATE <u>KS</u>	
OLD OR <u>(NEW)</u> Circle one)			(80m.)		1.01 10.3		

CONTRACTOR Pickrell 10
 TYPE OF JOB Surface Casing
 HOLE SIZE 12 1/4" T.D. 276ft
 CASING SIZE 8 5/8" 23# DEPTH 271.5ft
 TUBING SIZE _____ DEPTH _____
 DRILL PIPE _____ DEPTH _____
 TOOL _____ DEPTH _____
 PRES. MAX _____ MINIMUM _____
 MEAS. LINE _____ SHOE JOINT 20ft
 CEMENT LEFT IN CSG. 20ft, 1,272 bbls, 5.35x
 PERFS. _____
 DISPLACEMENT 16 bbls Fresh Water

OWNER Pickrell Drilling Co, Inc
 CEMENT
 AMOUNT ORDERED 170sk "A" + 3% Cool
+ 2% Gel

EQUIPMENT

PUMP TRUCK	CEMENTER <u>Charles E King</u>	1
# <u>224</u>	HELPER <u>Joel Isaac</u>	2
BULK TRUCK		
# <u>544/198</u>	DRIVER <u>Joel Monahan</u>	2
BULK TRUCK		
# _____	DRIVER _____	

COMMON	<u>170</u>	@ <u>17.90</u>	<u>3043.00</u>
POZMIX		@	
GEL	<u>3</u>	@ <u>23.40</u>	<u>70.20</u>
CHLORIDE	<u>6</u>	@ <u>64.00</u>	<u>384.00</u>
ASC		@	
		@	
		@	
		@	
		@	
		@	
		@	
HANDLING	<u>183.5</u>	@ <u>2.48</u>	<u>455.28</u>
MILEAGE	<u>8.37 x 17 x</u>	<u>2.60</u>	<u>369.28</u>
			TOTAL <u>4,322.28</u>

REMARKS:
Pump 56bls Fresh Water
Pump 40.5 bbls Cement (170sk)
Displace with 16 bbls Fresh Water
Leave 20ft, 1,272 bbls, 5.35x Cement in Casing
Circulate 10 bbls, 4.5x Cement to Surface

SERVICE

DEPTH OF JOB	<u>276</u>	
PUMP TRUCK CHARGE	<u>1512.25</u>	
EXTRA FOOTAGE	@	
MILEAGE <u>HUM 17</u>	@ <u>7.70</u>	<u>130.80</u>
MANIFOLD	@	
<u>Hum 17</u>	@ <u>4.40</u>	<u>74.80</u>
	@	

CHARGE TO: Pickrell Drilling Co, Inc.
 STREET _____
 CITY _____ STATE _____ ZIP _____

TOTAL 1,717.25

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

PLUG & FLOAT EQUIPMENT

_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____

PRINTED NAME Mike Kern
 SIGNATURE [Signature]

TOTAL _____
 SALES TAX (If Any) 220.32
 TOTAL CHARGES 6,040.18
 DISCOUNT 25% 1,510.24 IF PAID IN 30 DAYS
4,530.13



Services, Inc.

CHARGE TO: Picknell Drilling
 ADDRESS _____
 CITY, STATE, ZIP CODE _____

TICKET No. **23803**

PAGE 1 OF 2

SERVICE LOCATIONS:
 1. New City, KS WELL/PROJECT NO. 5 LEASE Nopton B COUNTY/PARISH Moore STATE KS CITY New City DATE 25 Jan 13
 2. _____ TICKET TYPE SERVICE CONTRACTOR _____ RIG NAME/NO. _____ SHIPPED WET DELIVERED TO location ORDER NO. _____ OWNER _____
 3. _____ WELL TYPE _____ WELL CATEGORY Development JOB PURPOSE cement log string WELL PERMIT NO. _____ WELL LOCATION _____
 4. _____ INVOICE INSTRUCTIONS _____

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575					MILEAGE TRR 114	20	mi			6.00	120.00
579					Pump Charge	1	ea			1850.00	1850.00
402					Cent Analyzer	1/2	in			65.00	325.00
403					Cement Basket	1	ea			250.00	250.00
407					Miscel Flout skw w/ AUTO FILL	1/2	in			300.00	300.00
408					DV tool	1/2	in			2700.00	2700.00
417					DV catch down Plug & handle	1/2	in			200.00	200.00

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS
 DATE SIGNED 1-25-13 TIME SIGNED 1430
 A.M. P.M.

REMIT PAYMENT TO:
 SWIFT SERVICES, INC.
 P.O. BOX 466
 NESS CITY, KS 67560
 785-798-2300

SURVEY

OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?	AGREE	UN-DECIDED	DIS-AGREE
WE UNDERSTOOD AND MET YOUR NEEDS?			
OUR SERVICE WAS PERFORMED WITHOUT DELAY?			
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?			
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	

CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL 1	5745.00
TOTAL	16,719.47

SWIFT OPERATOR Brian Campbell APPROVAL _____
 CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.
 Thank You!



Seawater, Inc.

PO Box 466
Ness City, KS 67560
Off: 785-798-2300

TICKET CONTINUATION

TICKET No. 23803

CUSTOMER: Picrell Drilling WELL: NORTON B #5 DATE: 05 Jan 13 PAGE: 2 OF 2

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	WELL				UNIT PRICE	AMOUNT
		LOC	ACCT	DF			QTY	U/M	QTY	U/M		
325		1				STAINLESS CONCRETE	75	SK			73.50	1012.50
327		1				60/40 POZ MIX (2% gel)	125	SK			10.00	1250.00
330		1				SWD CONCRETE	300	SK			16.50	4950.00
279		1				Bentonite gel	2	SK			25.00	50.00
283		1				SALT	300	LB			0.20	60.00
285		1				CFR-1	85	LB			4.00	340.00
276		1				Fluore	75	LB			2.00	150.00
281		1				MUD FLUSH	500	gal			1.25	625.00
281		1				Liquid KCL	4	gal			25.00	100.00
298		1				D-AE	5	gal			35.00	175.00
581		1				SEVICE CHARGE					2.00	1000.00
583		1				MILEAGE CHARGE					1.00	475.24
						TOTAL WEIGHT	47524					
						LOADED MILES	20					
						CUBIC FEET	475.24					

CONTINUATION TOTAL 18187.46

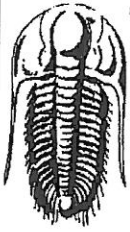
JOB LOG

SWIFT Services, Inc.

DATE 25 Jan 13 PAGE NO. 1

CUSTOMER Pickrell Drilling WELL NO. 5 LEASE NORTON B JOB TYPE cement long string TICKET NO. 23803

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								1st stage cement - 125 sk 60/40 poz (2% gel) 75 sk STD cement 10% salt
								2nd stage cement - 300 sk SMD w/ 1/2" floc 109 jts 4 1/2" 10.5" casing to tool pipe = 4540 shoe jts 21.02' Centralizers 1, 2, 3, 4, 6, 4 Basket #65 D.V. tool #65 - 18 1/2' LTD ~ 4554
	1430							on loc TRR 114
	1540							start 4 1/2" 10.5" casing in well
	1738							Drop ball - circulate
	1800	3 3/4	12				300	Pump 500 gal mud flush
		3 3/4	20				300	Pump 20 bbl KCl flush
	1815	3 3/4	29				300	mix 60/40 poz mix (2% gel) 135 sk @ 13.9 ppw
	1823	3 3/4	16				300	mix STANDARD cement w/ 10% salt 25 sk @ 15.6 ppw
								Drop Latch down plug - wash pump & line
	1830	6 3/4					200	Displace plug
		6 3/4	67				550	
	1840	6 3/4	72				1500	Land 1st plug
								Release pressure to truck - dried up
	1850							Drop bomb
	2000						1200	open DV tool
		3 3/4	20				300	Pump 20 bbl KCl flush
	2008							Plug Rtt 30 sks
	2015	4	150	✓			250	MIX SMD cement w/ 1/2" floc 270 sks @ 11.2 ppw
	2105							Drop 2nd stage plug - WASH PUMP - LINES
	2110	5 1/2	0	✓				Displace plug
	2115	5 1/2	28.8				1500	Land plug - Close DV TOOL Release pressure to truck - dried up wash truck
	2200							Rack up - THANK YOU BLAKE, DAUER, TAY, WANE, ISAAC
								* CIRCULATED 25 SKS OUT TO PAT



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Pickrell Drilling Company

12-18-26w Ness Co KS

100 S Main St.
STE 505
Wichita Ks 67202
ATTN: Jerry Smith

#5 Norton "B"

Job Ticket: 49028

DST#: 1

Test Start: 2013.01.22 @ 19:03:15

GENERAL INFORMATION:

Formation: **Ft. Scott**

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

Time Tool Opened: 21:51:45

Time Test Ended: 03:07:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Mike Roberts

Unit No: 65

Interval: **4344.00 ft (KB) To 4396.00 ft (KB) (TVD)**

Total Depth: **4396.00 ft (KB) (TVD)**

Hole Diameter: **7.88 inches** Hole Condition: **Poor**

Reference Elevations: **2521.00 ft (KB)**

2516.00 ft (CF)

KB to GR/CF: **5.00 ft**

Serial #: 8646

Press@RunDepth: **37.55 psig @ ft (KB)**

Start Date: **2013.01.22**

End Date: **2013.01.23**

Capacity: **8000.00 psig**

Last Calib.: **2013.01.23**

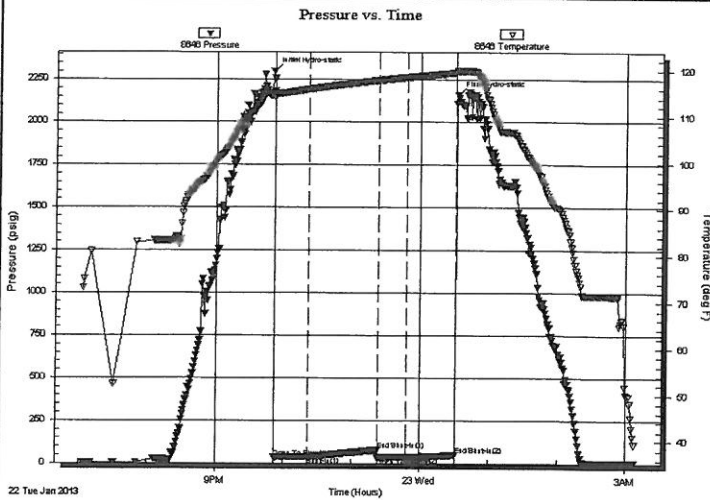
Start Time: **19:03:15**

End Time: **03:07:15**

Time On Btm: **2013.01.22 @ 21:50:30**

Time Off Btm: **2013.01.23 @ 00:32:00**

TEST COMMENT: IF: Built to 1/2" blow
IS: No return blow
FF: Built to weak surface blow and died in 5 min.
FS: No return blow



PRESSURE SUMMARY

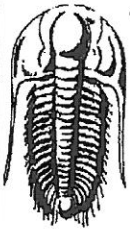
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2299.36	115.33	Initial Hydro-static
2	35.28	114.19	Open To Flow (1)
31	38.81	115.96	Shut-In(1)
93	78.77	117.89	End Shut-In(1)
93	33.47	117.89	Open To Flow (2)
118	37.55	118.53	Shut-In(2)
161	49.37	119.51	End Shut-In(2)
162	2159.25	120.02	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	mud 100% m	0.28

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Pickrell Drilling Company

12-18-26w Ness Co KS

100 S Main St.
STE 505
Wichita Ks 67202
ATTN: Jerry Smith

#5 Norton "B"

Job Ticket: 49028

DST#: 1

Test Start: 2013.01.22 @ 19:03:15

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 51.00 sec/qt

Water Loss: 7.97 in³

Resistivity: 0.00 ohm.m

Salinity: 5000.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

0 deg API

Water Salinity:

0 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	mud 100% _m	0.281

Total Length: 20.00 ft Total Volume: 0.281 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

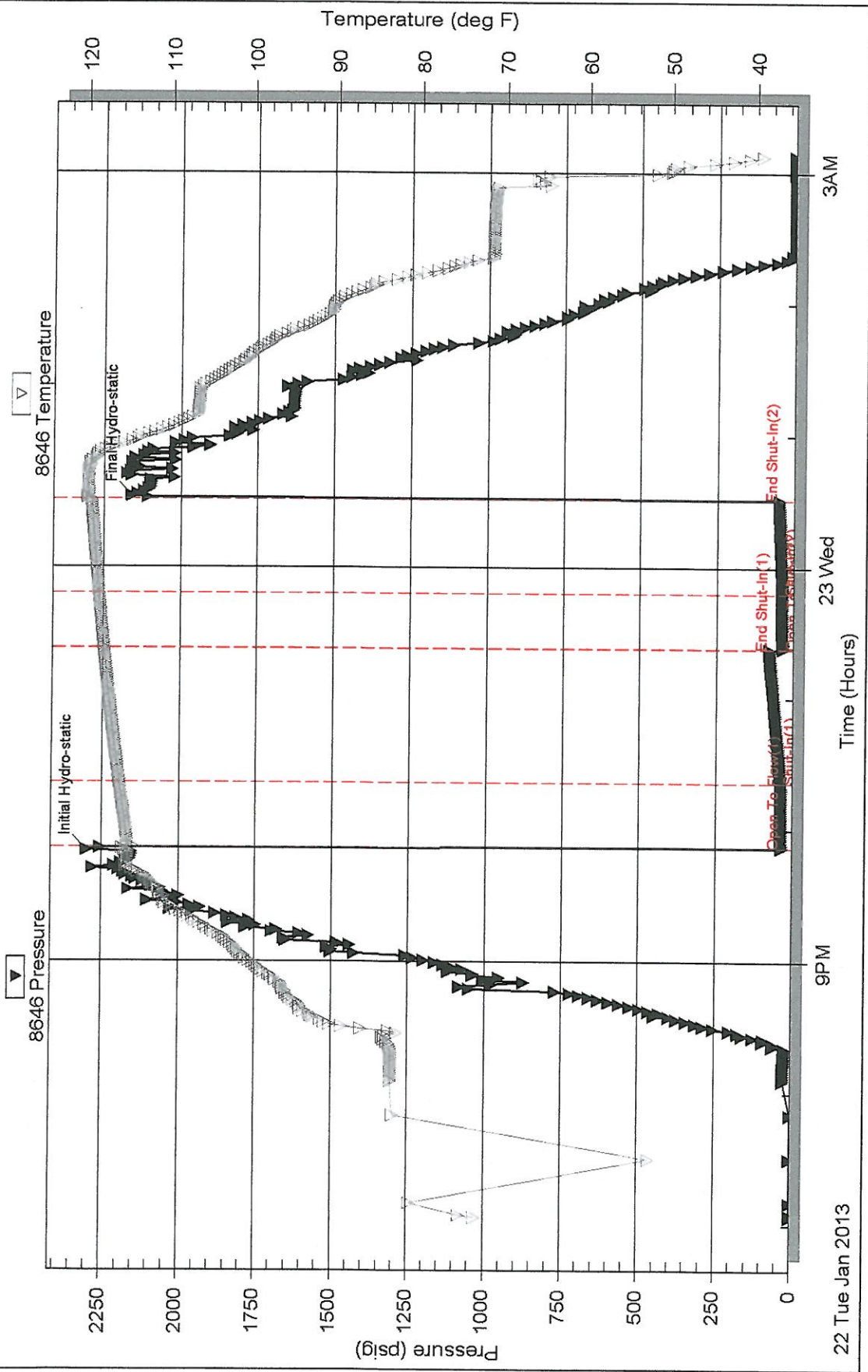
Serial #: 8646

Rickrell Drilling Company

#5 Norton "B"

DST Test Number: 1

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 49028

Printed: 2013.01.23 @ 06:31:58



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Pickrell Drilling Company

12-18-26w Ness Co KS

100 S Main St.
STE 505
Wichita Ks 67202
ATTN: Jerry Smith

#5 Norton "B"

Job Ticket: 49029 DST#: 2
Test Start: 2013.01.23 @ 21:57:15

GENERAL INFORMATION:

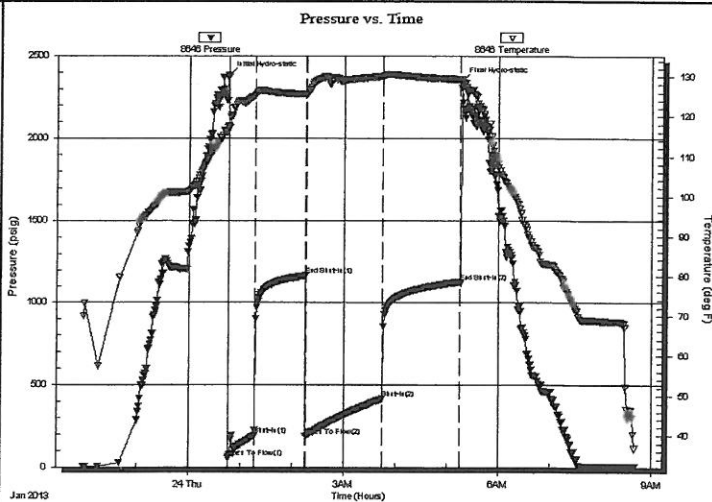
Formation: **Miss**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 00:45:15
 Time Test Ended: 08:39:15
 Interval: **4437.00 ft (KB) To 4496.00 ft (KB) (TVD)**
 Total Depth: 4396.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Poor
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 65
 Reference Elevations: 2521.00 ft (KB)
 2516.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8646

Inside

Press@RunDepth: 416.96 psig @ 4438.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.01.23 End Date: 2013.01.24 Last Calib.: 2013.01.24
 Start Time: 21:57:15 End Time: 08:39:15 Time On Btm: 2013.01.24 @ 00:44:30
 Time Off Btm: 2013.01.24 @ 05:17:00

TEST COMMENT: IF:BOB in 8 min.
 IS:No return blow
 FF:BOB in 17 min.
 FS:No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2385.15	117.51	Initial Hydro-static
1	56.72	116.89	Open To Flow (1)
31	191.28	125.32	Shut-In(1)
90	1164.56	125.64	End Shut-In(1)
91	188.64	125.29	Open To Flow (2)
180	416.96	130.04	Shut-In(2)
271	1127.29	129.36	End Shut-In(2)
273	2346.34	128.81	Final Hydro-static

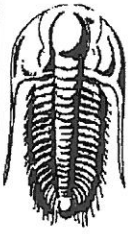
Recovery

Length (ft)	Description	Volume (bb)
320.00	gcom 5%g 45%o 50%m	4.49
62.00	gcw om 10%g 10%w 40%o 40%m	0.87
124.00	gcom 10%g 20%o 70%m	1.74
248.00	gcw mo 20%g 20%w 20%m 40%o	3.48
124.00	mcw 20%m 80%w	1.74

* Recovery from multiple tests

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Pickrell Drilling Company
100 S Main St.
STE 505
Wichita Ks 67202
ATTN: Jerry Smith

12-18-26w Ness Co KS
#5 Norton "B"
Job Ticket: 49029 DST#: 2
Test Start: 2013.01.23 @ 21:57:15

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 19000 ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.97 in ³	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 5000.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
320.00	gcom 5%g 45%o 50%m	4.489
62.00	gcw om 10%g 10%w 40%o 40%m	0.870
124.00	gcom 10%g 20%o 70%m	1.739
248.00	gcw mo 20%g 20%w 20%m 40%o	3.479
124.00	mcw 20%m 80%w	1.739

Total Length: 878.00 ft Total Volume: 12.316 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: RW=.740@39.1*=19,000 ppm

DST Test Number: 2

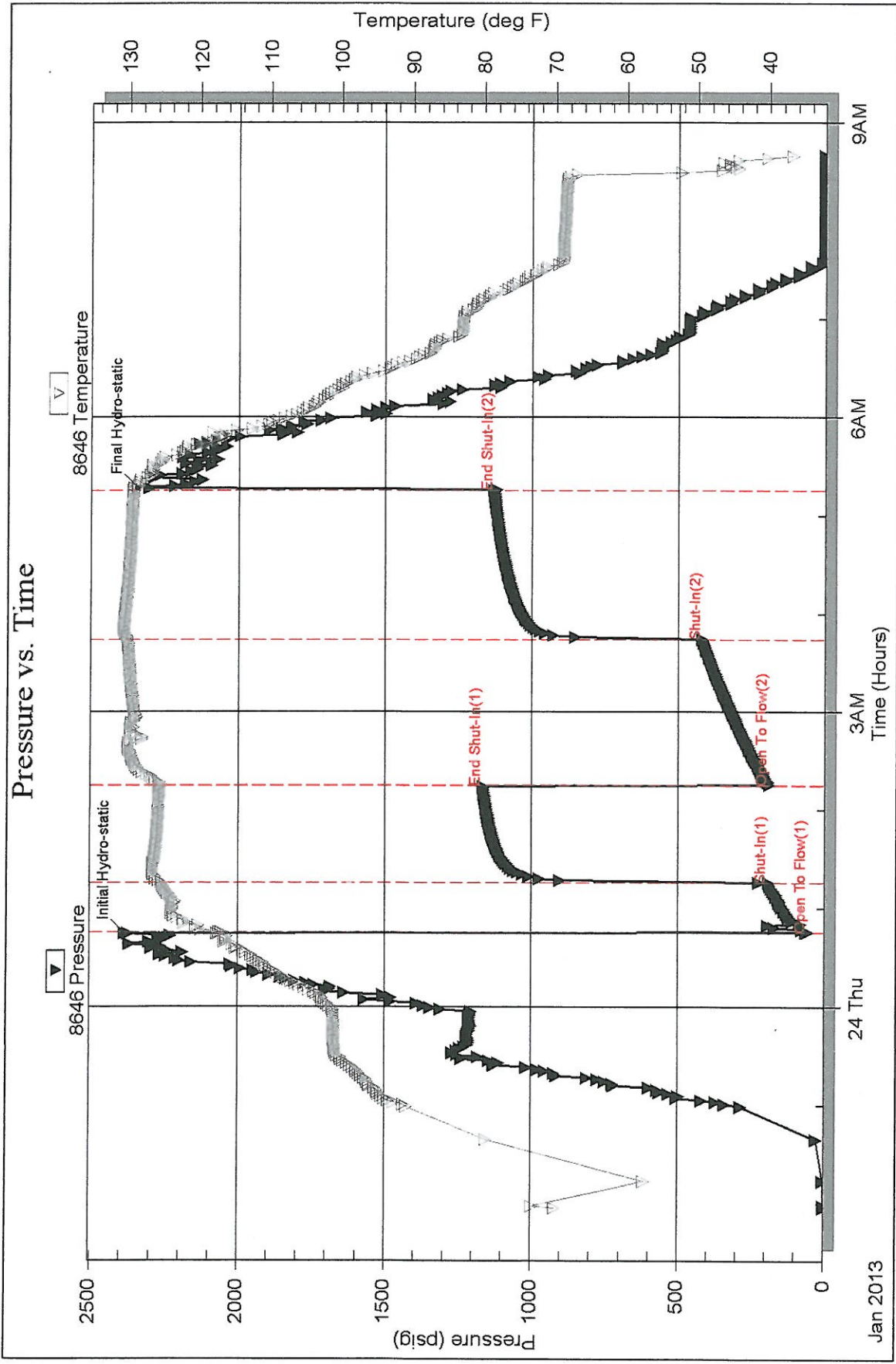
#5 Norton "B"

Hickrell Drilling Company

Inside

Serial #: 8646

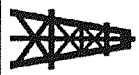
Pressure vs. Time



Printed: 2013.01.24 @ 09:16:03

Ref. No: 49029

Trilobite Testing, Inc



JERRY A. SMITH

CERTIFIED PETROLEUM GEOLOGIST

GEOLOGIST'S REPORT DRILLING TIME and SAMPLE LOG

COMPANY: PICKRELL DRILLING COMPANY, INC.		ELEVATIONS	
LEASE: #5 NORTON "B"		K.B. 2521	
FIELD: T & L		D.F. 2519	
LOCATION: 2250' FNL & 2110' FWL		G.L. 2514	
SEC. 12	TWSP. 18	RNG. 26 W	Measurements Are All From:
COUNTY: NESS	STATE: KANSAS		KB
CONTRACTOR: COMPANY TOOLS, RIG #10		CASING	
SPUD: 1/14/13	COMP. 1/25/13	SURFACE: 8 5/8 " @ 271'	
RTD. 4500	LTD. 4554	PRODUCTION: 4 1/2 " @ 4552'	
MUD UP: 3424	TYPE MUD: CHEMICAL		ELECTRICAL SURVEYS
API No. 15-135-25523		NABORS: CDL/CNL, DIL, MEL/SON	
SAMPLES SAVED FROM: 3500		TO: RTD	
DRILLING TIME KEPT FROM: 1750/3500		TO: 1950/RTD	
SAMPLES EXAMINED FROM: 3500		TO: RTD	
GEOLOGICAL SUPERVISOR FROM: 3690		TO: RTD	
GEOLOGIST ON WELL: JERRY A. SMITH			

FORMATION TOPS	LOG	SAMPLES
ANHYDRITE	1853 (+668)	1855 (+666)
HEEBNER	3825 (-1304)	3820 (-1299)
LANSING	3867 (-1346)	3861 (-1340)
STARK	4116 (-1595)	4112 (-1591)
PAWNEE	4314 (-1793)	4310 (-1789)
FT. SCOTT	4374 (-1853)	4370 (-1849)
CHEROKEE	4399 (-1878)	4395 (-1874)
MISSISSIPPIAN	4483 (-1962)	4480 (-1959)
MISS. POROSITY	4493 (-1972)	4488 (-1967)

LEGEND

Anhydrite	Salt	Sandstone	Shale	Carb sh	Limestone	Ool. Lime	Chert	Dolomite

DEPTH	DRILLING TIME IN MINUTES PER FOOT Rate of Penetration Increases	SAMPLE DESCRIPTIONS	REMARKS
5"			NO GAS DETECTOR DST'S (2) TRILOBITE MUD: ANDY'S MUD & CHEMICAL S.H.T.'s 276' 3/4" 2316' 3/4" 786' 1/2" 2815' 0"
10"			
15"			
20"			
25"			

1286' 1/2° 4396' 1°
1817' 3/4°

VERT. LOG SCALE: 2" = 100'

50

1800

50

ANHYDRITE
1855 (+666) SMPL
1853 (+668) LOG

B/ANHYDRITE
1880 (+641) SMPL
1879 (+642) LOG

1900

50

VERT. LOG SCALE: 5" = 100'

3500

SH - GY, GY - GN, RD.

20

SH - GY, GY - GN, RD.
SCAT GRM, FX, DSE LM

40

LM - GRM, LT GY, FX, Foss.
DSE

MUD @ 3548':
8.8 WT, 55 VIS, 7.6 FILT,
3000 CHLOR, 2# LCM

60

SH - M - DK GY

80

LM - GRM, FX, Foss. w/
SCAT Foss Mid & N.S.

LM - AA, INC IN Ø. N.S.
SIL CHKY

3600

Lm - Gray L. GY. FX.
DISE. SHLY.

20

Lm - L. GY. FX. SASKY
FOSS. DISE.

40

Lm - AA. V. SHLY.

Lm - CRM. L. GY. FX.
FR VGY ϕ . NS.

60

Lm - AA. FR \rightarrow Gd VGY
 ϕ . NS.

80

SH - DK GY \rightarrow BLK, CARB.

3700

Lm - L \rightarrow M GY. FX. SUR-
SHLY. FOSS IN PR. NO
VIS ϕ .

Lm - AA. w/ SCATT. PR \rightarrow
FR VGY ϕ FOSS MAD
 ϕ . NS.

20

Lm - AA. NS.

Lm - AA. NS. w/ ABD
M \rightarrow DK GY SH.

40

SH - DK GY.

Lm - CRM. L. GY. FX.
SUB - CRKY. FR VGY ϕ
FOSS MAD ϕ . NS.

60

Lm - AA.

80

SH - M \rightarrow DK GY.

Lm - L \rightarrow M GY. FX.
ABD. SH - AA.

3800

Lm - L \rightarrow M GY. SCATT PR
VGY ϕ . NS.

Lm - M GY. FX. DISE.

Lm - CRM. FX. FR VGY
 ϕ . NS.

HEEBNER
2020 / 1200 / 0000

3820 (-1299) SMPL
3825 (-1304) LOG

SH - BLK, CARB.

SH - DK GY - GN.

LM - CRM. FX. CHRY.

SH - DK GY, GY - GN.

LANSING
3861 (-1340) SMPL
3867 (-1346) LOG

LM - CRM, Lt GY. FX.
DSE.

LM - AA.

LM - AA.

SH - GY.

3900

LM - M GY GY - TN. FX.
DSE. No VIS. ⌀.

SH - DK GY.

LM - CRM, V CHRY. No
VIS. ⌀.

LM - AA. SHLY.

LM - Lt GY. FX. DSE.
w/ HARD DK GY, GN -
GY SH.

LM - Lt → M GY. FX.
DSE.

LM - CRM, Lt TN. FX.
GP V GY ⌀. VIS.
SCATT. COMID. ⌀.

LM - CRM. FX. DSE →
SUB - CHRY.

4000

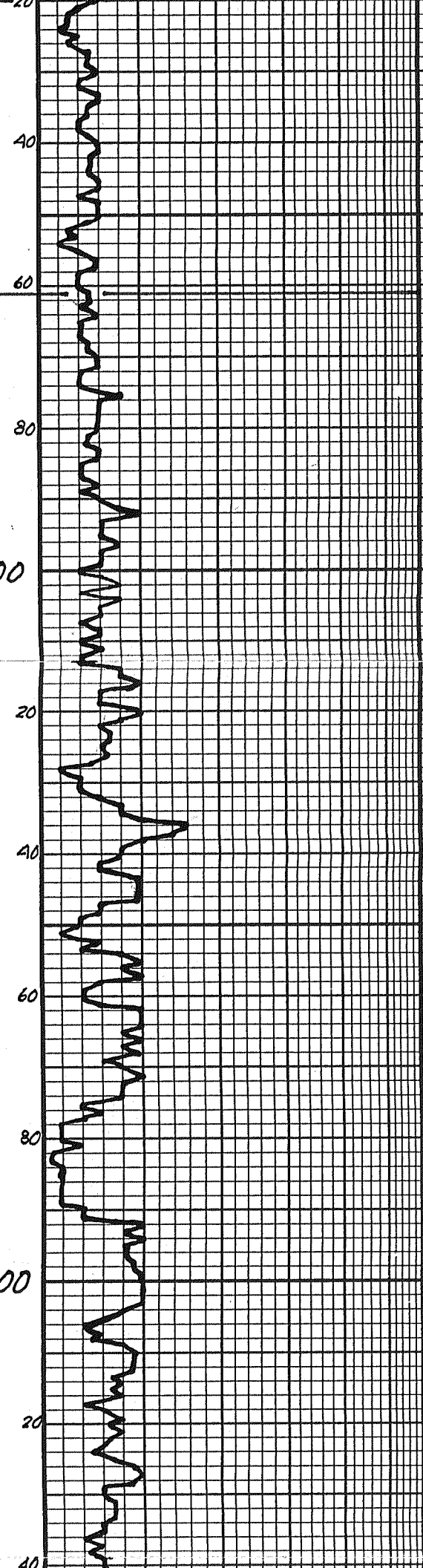
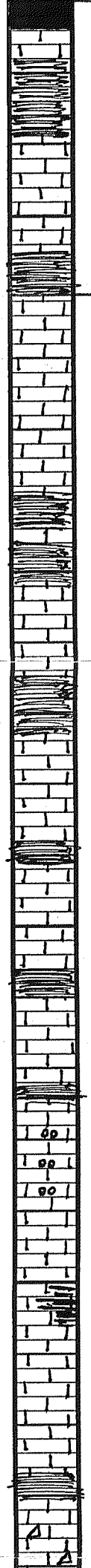
SH - DK GY, GY - GN.

LM - CRM, Lt TN. FX. DSE.
SPSLY FOSS.

SH - DK GY.

SCATT M GY, FX, DSE LM.

SH - DK GY.



Handwritten geological descriptions and sample information in the right column, including lithological notes and sample identifiers.

LM - CRM, FA, FOSSE, DSE,
w/ CHY - CRM, CRP,
DHP, DSE.

LM-AA.

LM-AA.

LM-CRM, FX, DSE, HD.

SH-DK GY, GY-GN.

LM-MGY, FX, DSE.

LM-MGY, FX, FR DONALD
D. NS.

LM-AA, No Vis ϕ .

SH-BLK, CARB.

LM-MGY \rightarrow GY-TN, VE
 \rightarrow FX, DSE, HD.

LM-AA.

LM-LT \rightarrow MGY, FX,
DSE, w/ ABD W/H,
SET CHK.

LM-AA, Mostly DSE,
RARE, SCATT VGY ϕ ,
NS.

SH-BLK, CARB.

LM-CRM, SUB-CHKY \rightarrow
CHKY, w/ LM-LT \rightarrow M
GY, FX, DSE.

LM-CRM, LT \rightarrow MGY-AA.

LM-AA, B'CMING SHLY.

ABD SH-M \rightarrow DK GY,
GY-GN, BLK, VE
RD SH.

LM-CRM, LT \rightarrow MGY, FX,
SUB-CHKY \rightarrow DSE, ABD
SH-M \rightarrow DK GY, BLK.

LM & SH-AA, DEC IN
SH.

LM-CRM, LT \rightarrow MGY, FX,
SUB-CHKY \rightarrow DSE,
w/ SCATT MGY, GN,
BLK SH.

SH-DK GY, GY-GN.

LM-MGY, GY-TN, FX,
DSE, ABD SH-AA.

SH-DK GY.

LM-CRM, FX, SUB-CHKY,
DSE, ABD DK GY SH.

MUD @ 4055':
9.1 WT, 56 VIS, 8.8 FILT,
4000 CHLOR, 1.5# LCM

STARK
4112 (-1591) SMPL
4116 (-1595) LOG

BASE KANSAS CITY
4181 (-1660) SMPL
4184 (-1663) LOG

DST #1: 4344-96
30-60-30-30
IF: 1/2" BLOW
ISI: No BLOW BACK
FF: WK SURF BLOW,
DIED IN 5 MIN

4100

4200

60

80

20

40

60

80

20

40

60

00100
001

FSI: No BLOW BACK

RECOVERY:
20' MUD

SIP'S: 78-49#
FP'S: 35-38/33-37#
HP'S: 2299-2159#
BHT: 120° F

4300

LM - CRM. FX. SUB-CHKY.
DSE. w/ ABD BY SH.
LM - CRM. FX. DSE.
SHLY
LM - AA.
LM - AA.

PAWNEE
4310 (-1789) SMPL
4314 (-1793) LOG

20

SH - BLK, CARB.
LM - CRM, LG BY, FX.
SUB-CHKY. DSE. POSS.
LM - LG -> M BY, FX.
DSE.
LM - AA ARGILL.

MUD @ 4370':
9.2 WT, 51 VIS, 8.0 FILT,
5000 CHLOR, 2.5# LCM

40

LM - CRM, LG -> M BY, FX.
DSE, SHLY - M ->
DK BY, BY - GN SH.
SHLY LM - AA.

FT. SCOTT
4370 (-1849) SMPL
4374 (-1853) LOG

60

SH - DK BY -> BLK, CARB.
LM - LG BY, FX. SCAT PR
-> FR VEG Q. W/K
ODOR. PR SHO DK F.O.
LM - M BY, FX DSE. No
VIS Q. AS. W/K ODOR.
SH - DK BY, BY - GN.

CHEROKEE
4395 (-1874) SMPL
4399 (-1878) LOG

80

LM - CRM LG BY, FX. TA
PR -> FR VEG Q. PR ODOR. DK
SPIN. SHO F.O.
SH - BLK, CARB.
LM - DK BY, BY - IN. FX. DSE.

PIPE STRAP @ 4396':
4411.79 STRAP
4408.25 BOARD
3.54 LONG

4400

SH - DK BY.
LM - CRM, SUB-CHKY -> BY -
IN, FX, DSE.
SH - DK BY, RP, GRN. TA
SP - BY - GRN. PG. W.RD, PR JAR
TITER.
LM - BY - TA, FX DSE. w/ ABD
DK BY, SH. SCAT RD.
GRN SH.
LM - CRM, CHKY -> M -> DK BY
FX DSE. w/ ABD SH - M ->
BY BY, GRN, RP.
LM & SH - AA. w/ ABD CNT -
CRM, LG BY - TA, REDDISH
TA, ODOR -> SEMI TRSL. SHP,
DSE.

CONGLOMERATE
4460 (-1939) SMPL
4464 (-1943) LOG

20

CNT - AA w/ BLK, DEAD SYN.
SCAT LM & SH - AA.
PREDDM CNT - CRM, LG -> M BY
ODOR. SHP. DSE -> PART. WEA.
FR ODOR. GO SYN. SSFOH
WEA P.C.S.
CNT - AA. FR SHO GAS BUBB.
GO SHO F.G.O.
CNT - AA. GO ODOR. GO SHO.

MISSISSIPPIAN
4480 (-1959) SMPL
4482 (-1962) LOG

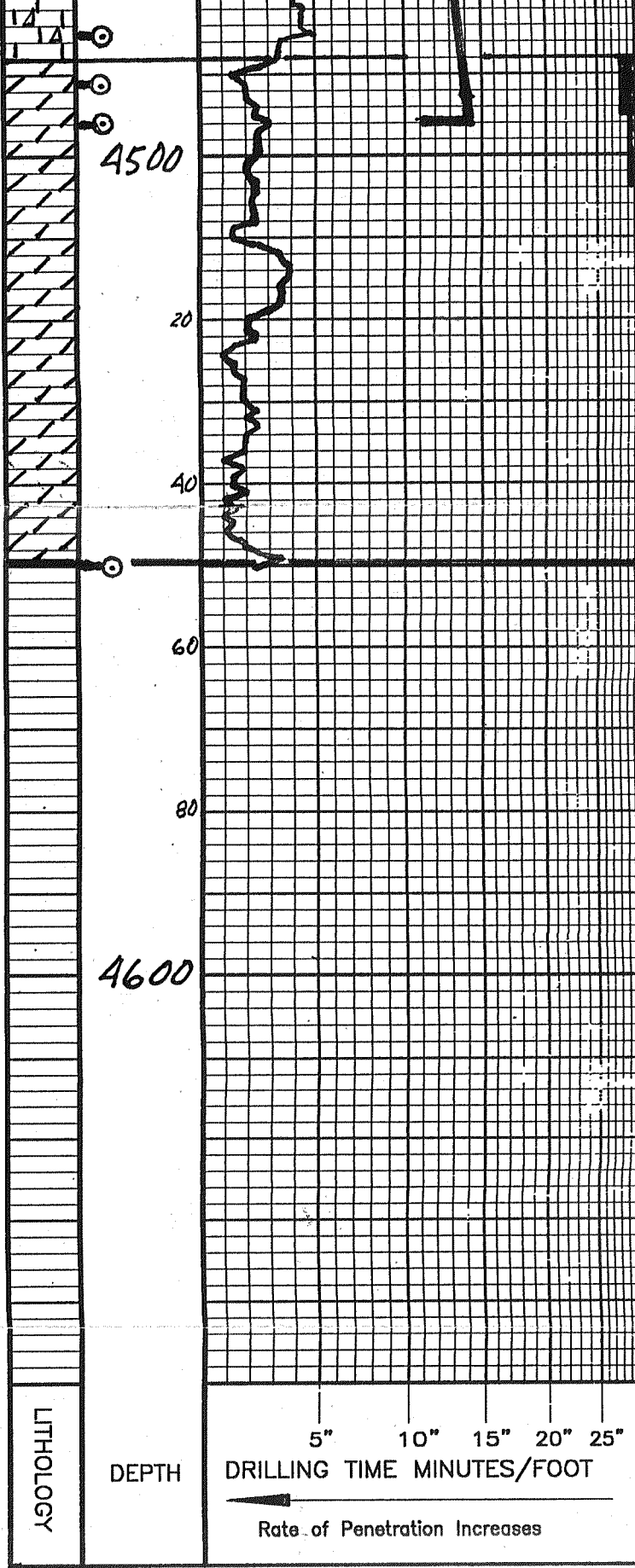
40

60

80

D
S
T
#1

D
S
T
#2



CNT- AA w/ TR CRM, FX,
 DSE GULFK LM,
 CRT- M GY OPO, HLY WEA.
 JTR ODR. GO. SHO GO.
 Dolo- GY- TR, FX, GO, GY, P,
 GO ODR. GO. SHO F GO.

 Dolo- TR, GY- BRN, FX, FMY
 SUCRO, FB, VGY O, SAL
 SHO PD, SCAT WH, JCY,
 SOL CHK.

 Dolo- AA. No Vis O, NS. w/
 Dolo- CRM- VFG- FMY
 SUCRO. DSE. CHKY.

 Dolo- CRM, Lr TH, FX, PR- 1/P
 VGY O, SCAT BAK STN IN
 JOME O (LOOKS DEAD).
 V WK ODR.

 Dolo- AA. SPY BAK STN.
 V CHKY.

 Dolo- CRM, Lr GY, Lr TH.
 FX, FMY, SUCRO, SCAT
 VGY O. No Vis SHO. WK,
 FLEETING ODR.

4483 (-1962) LOG
 MISS. POROSITY
 4488 (-1967) SMPL
 4493 (-1972) LOG

MUD @ 4496':
 9.3 WT, 46 VIS, 8.8 FILT,
 6000 CHLOR, 2# LCM

TOTAL DEPTH
 4550 (-2029) ROTARY
 4554 (-2033) LOG

DST#2: 4437-96
 30-60-90-90
 IF: BOB IN 8 MIN.
 ISI: No BLOW BACK
 FF: BOB IN 17 MIN
 FSI: No BLOW BACK

 RECOVERY:
 320' GCOM
 (5% G, 45% O, 50% M)

 62' GCWOM
 (10% G, 40% O,
 10% W, 40% M)

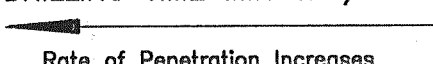
 124' GCOM
 (10% G, 20% O,
 70% M)

248' GCWMO
 (20% G, 40% O,
 20% W, 20% M)

 124' MCW
 (80% W, 20% M)

 878' TF
 19,000 ppm CHLOR

 SIP'S: 1164-1127#
 FP'S: 56-191/188-416#
 HP'S: 2385-2346#
 BHT: 130° F

LITHOLOGY	DEPTH	DRILLING TIME MINUTES/FOOT 	SAMPLE DESCRIPTIONS	REMARKS
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COMPANY: PICKRELL DRILLING COMPANY, INC.		ELEVATION: 2521 KB		
LEASE: #5 NORTON "B"				
LOCATION: 2250' FNL & 2110' FWL	SEC 12	TWP 18	RGE 26W	
COUNTY: NESS	STATE: KANSAS			

