

Confidentiality Requested:

☐ Yes ☒ NoKANSAS 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 # 34674
 Name: H & D Exploration LLC
 Address 1: 165 WEST 1ST
 Address 2: PO BOX 387
 City: HOISINGTON State: KS Zip: 67544 + 0387
 Contact Person: Mitch Driscoll
 Phone: (620) 653-4791
 CONTRACTOR: License # 33350
 Name: Southwind Drilling, Inc.
 Wellsite Geologist: Musgrove Geologist LLC
 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 #: _____

7/26/2023 8/2/2023 8/2/2023
 Spud Date or Date Reached TD Completion Date or
 Recompletion Date Recompletion Date

API No.: 15-185-24145-00-00

Spot Description: _____

SW- NW- NW- NW Sec. 27 Twp. 25 S. R. 11 ☐ East ☒ West
530 Feet from ☒ North / ☐ South Line of Section
182 Feet from ☐ East / ☒ West Line of Section

Footages Calculated from Nearest Outside Section Corner:

☐ NE ☒ NW ☐ SE ☐ SWGPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84County: StaffordLease Name: DEBES UNIT Well #: 1

Field Name: _____

Producing Formation: NAElevation: Ground: 1834 Kelly Bushing: 4125Total Vertical Depth: 4135 Plug Back Total Depth: _____Amount of Surface Pipe Set and Cemented at: 647 FeetMultiple 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: 56000 ppm Fluid volume: 720 bblsDewatering method used: Hauled to Disposal

Location of fluid disposal if hauled offsite:

Operator Name: Mar-Lou Oil Co.Lease Name: Blakeslee License #: 33315Quarter SW Sec. 10 Twp. 21 S. R. 13 ☐ East ☒ WestCounty: Stafford Permit #: D28822

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 DistributionALT ☒ I ☐ II ☐ III Approved by: David Befort Date: 12/12/2023

Operator Name: H & D Exploration LLC Lease Name: DEBES UNIT Well #: 1
 Sec. 27 Twp. 25 S. R. 11 ☐ East ☒ West County: Stafford

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	☐ Log	Formation (Top), Depth and Datum	☐ Sample
Samples Sent to Geological Survey	☐ Yes ☒ No	Name Mississippi	Top 3884	Datum -2040
Cores Taken	☐ Yes ☒ No			
Electric Log Run	☒ Yes ☐ No			
Geologist Report / Mud Logs	☒ Yes ☐ No			
List All E. Logs Run:				
Dual Induction Compensated Density Micro				

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	8.63	23	647	60/40	450	4%cc

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
☐ Perforate				
☐ Protect Casing	-			
☐ Plug Back TD				
☐ Plug Off Zone	-			

- Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☒ No (If No, skip questions 2 and 3)
- Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No (If No, skip question 3)
- Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No (If No, fill out Page Three of the ACO-1)

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

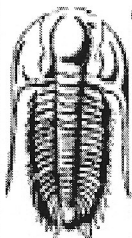
DISPOSITION OF GAS: ☐ Vented ☐ Sold ☐ Used on Lease (If vented, Submit ACO-18.)	METHOD OF COMPLETION: ☐ Open Hole ☐ Perf. ☐ Dually Comp. (Submit ACO-5) ☐ Commingled (Submit ACO-4)	PRODUCTION INTERVAL: Top Bottom

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:					

Form	ACO1 - Well Completion
Operator	H & D Exploration LLC
Well Name	DEBES UNIT 1
Doc ID	1739116

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	8.63	23	647	60/40	450	4%cc



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

H&D Explorations

165 West 1st
PO Box 387
Hoisington KS 67544
ATTN: Jim Musgrove

27-25S-11W/Stafford

Debes Unit #1

Job Ticket: 71102

DST#: 1

Test Start: 2023.07.31 @ 13:15:00

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:26:00

Time Test Ended: 19:21:30

Interval: **3879.00 ft (KB) To 3920.00 ft (KB) (TVD)**

Total Depth: 3920.00 ft (KB) (TVD)

Hole Diameter: 7.79 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Initial)

Tester: Richie Samora

Unit No: 66

Reference Elevations: 1844.00 ft (KB)

1834.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8355 Inside

Press@RunDepth: 44.14 psig @ 3885.00 ft (KB)

Start Date: 2023.07.31

End Date: 2023.07.31

Start Time: 13:15:05

End Time: 19:21:29

Capacity: 8000.00 psig

Last Calib.: 1899.12.30

Time On Btm: 2023.07.31 @ 15:12:00

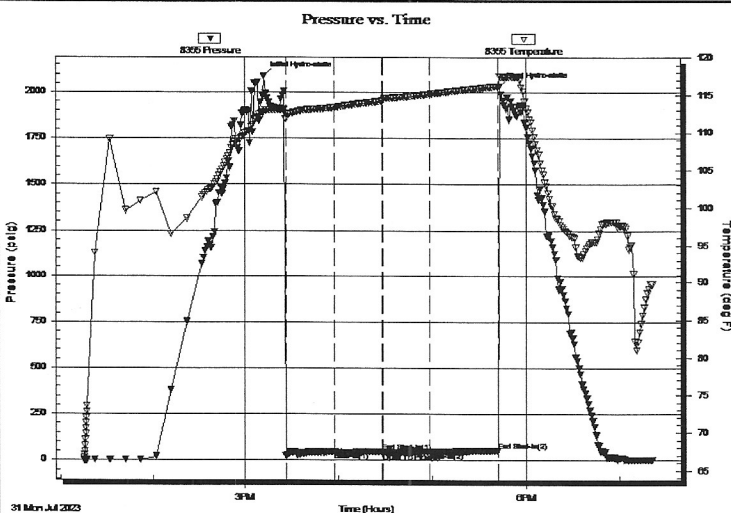
Time Off Btm: 2023.07.31 @ 17:43:00

TEST COMMENT: 30-IF: Weak blow built to one inch

30-ISI: No blow back

30-FF: No blow

45-FSI: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2087.68	112.77	Initial Hydro-static
14	25.23	111.78	Open To Flow (1)
45	45.97	113.37	Shut-In(1)
76	46.20	114.23	End Shut-In(1)
76	37.70	114.34	Open To Flow (2)
106	44.14	115.14	Shut-In(2)
150	51.56	116.22	End Shut-In(2)
151	2033.67	117.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	MUD 100%M	0.07

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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H&D Explorations

165 West 1st
PO Box 387
Hoisington KS 67544
ATTN: Jim Musgrove

27-25S-11W/Stafford

Debes Unit #1

Job Ticket: 71102

DST#: 1

Test Start: 2023.07.31 @ 13:15:00

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:26:00

Time Test Ended: 19:21:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Richie Samora

Unit No: 66

Interval: 3879.00 ft (KB) To 3920.00 ft (KB) (TVD)

Reference Elevations: 1844.00 ft (KB)

Total Depth: 3920.00 ft (KB) (TVD)

1834.00 ft (CF)

Hole Diameter: 7.79 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8289 **Outside**

Press@RunDepth: psig @ 3885.00 ft (KB)

Capacity: 8000.00 psia

Start Date: 2023.07.31

End Date: 2023.07.31

Last Calib.: 1899.12.30

Start Time: 13:15:01

End Time: 19:21:15

Time On Btm:

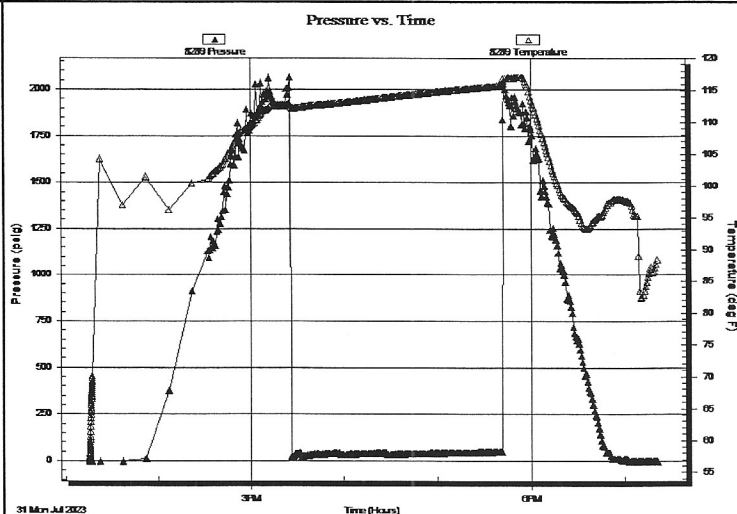
Time Off Btm:

TEST COMMENT: 30-IF: Weak blow built to one inch

30-|S|: No blow back

30-FF: No blow

45-FSI: No blow back



PRESSURE SUMMARY

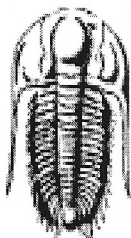
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
5.00	MUD 100%M	0.07

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

H&D Explorations

27-25S-11W/Stafford

165 West 1st
PO Box 387
Hoisington KS 67544
ATTN: Jim Musgrove

Debes Unit #1

Job Ticket: 71102

DST#: 1

Test Start: 2023.07.31 @ 13:15:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 58.00 sec/qt

Water Loss: 9.99 in³

Resistivity: ohm.m

Salinity: 6000.00 ppm

Filter Cake: 0.20 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	MUD 100%M	0.070

Total Length:

5.00 ft

Total Volume:

0.070 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8355

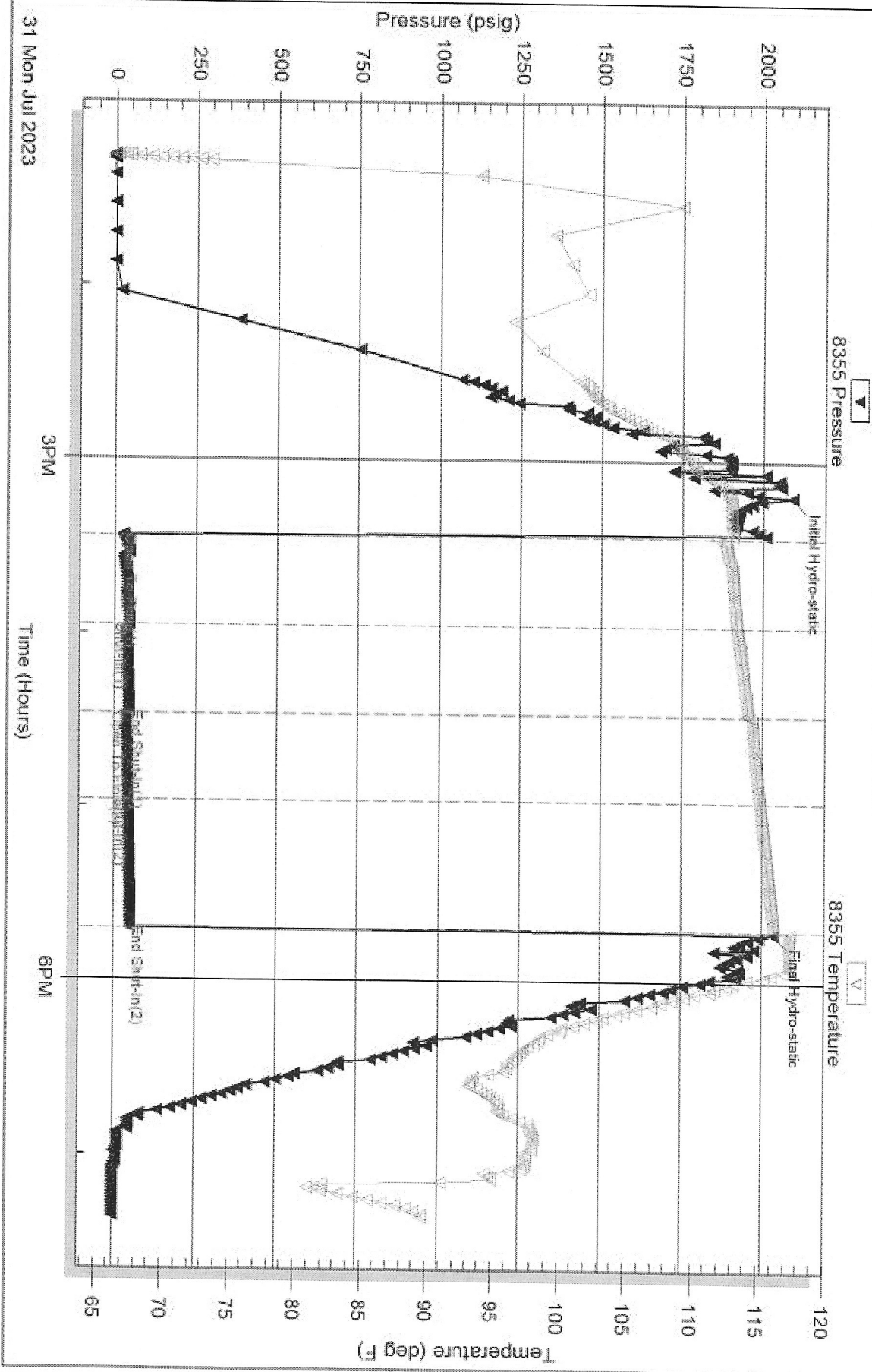
Inside

H&D Explorations

Debes Unit #1

DST Test Number: 1

Pressure vs. Time



Tribble Testing, Inc

Ref. No: 71102

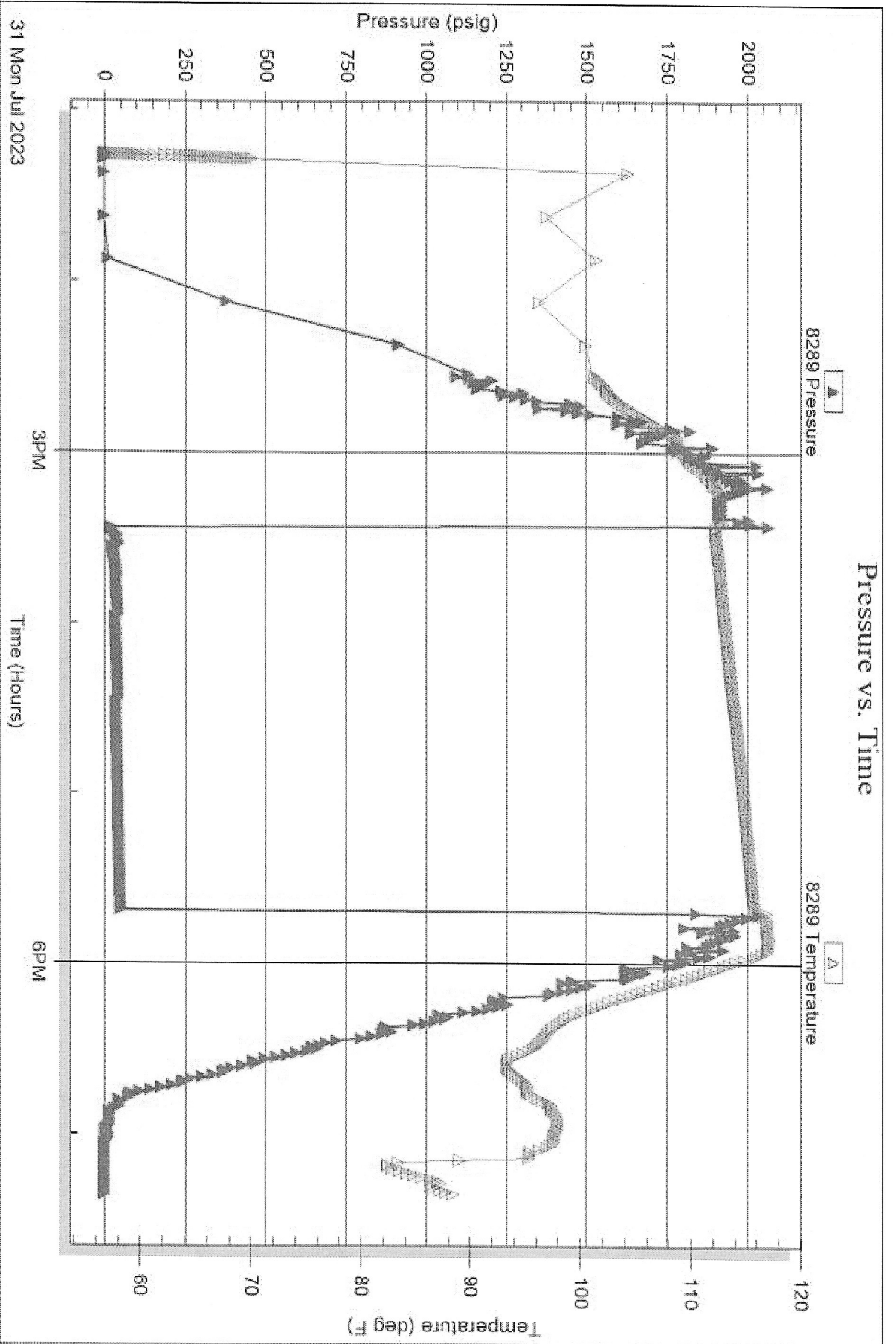
Printed: 2023.07.31 @ 21:29:14

Serial #: 8289

Outside H&D Explorations

Debes Unit #1

DST Test Number: 1



QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071

Home Office P.O. Box 32 Russell, KS 67665

No. 5898

Cell 785-324-1041

Date	7-27-23	Sec.	28	Twp.	25	Range	11	County	Stafford	State	KS	On Location		Finish	5:30 AM
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Debes unit

Location Stafford - 65 to 60th Street, 4E to 120th

Lease		Well No.	1	Owner	Acme, L.L. Son East side
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Contractor	Southwind		To Quality Oilwell Cementing, Inc.
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Type Job	Surface		You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
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Hole Size	12 1/4"	T.D.	649'	Charge To	H+D Exploration
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Csg.	8 3/8"	Depth	647'	Street	
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Tbg. Size		Depth		City		State	
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Tool		Depth		The above was done to satisfaction and supervision of owner agent or contractor.		
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Cement Left in Csg.	30'	Shoe Joint	30'	Cement Amount Ordered	450 60/40 4% CC 2% Gel
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Meas Line		Displace	39 1/4 bbls	1/2# Flt seal	
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EQUIPMENT

Pumptrk	18	No.	Cementer		Common
			Helper		Poz. Mix
Bulktrk	21	No.	Driver		Gel.
			Driver		
Bulktrk	24	No.	Driver		Calcium
			Driver		

JOB SERVICES & REMARKS

Remarks:	Cement did circulate	Hulls
Rat Hole		Salt
Mouse Hole		Flowseal
Centralizers		Kol-Seal
Baskets		Mud CLR 48
D/V or Port Collar		CFL-117 or CD110 CAF 38
		Sand
		Handling
		Mileage

FLOAT EQUIPMENT

	Guide Shoe	Rubber plug
	Centralizer	
	Baskets	
	AFU Inserts	
	Float Shoe	
	Latch Down	

	Pumptrk Charge	
	Mileage	

X Signature	Tax	
	Discount	
	Total Charge	

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071

Home Office P.O. Box 32 Russell, KS 67665

No. 8701

Cell 785-324-1041

Date	8-2-23	Sec.	27	Twp.	25	Range	11	County	Stafford	State	Ks	On Location		Finish	7:45 AM		
Lease	Dobes Unit							Well No.	#1	Owner	4E to 12th Ave, 1.1 S, E/Intro						
Contractor	Southwind #1							Location								Stafford - 65 to 6th Street	
Type Job	Plug							To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.									
Hole Size	7 7/8"							T.D.	4135'							Charge To	H+D Exploration
Csg.								Depth								Street	
Tbg. Size	4 1/2" D.P.							Depth	690'							City	State
Tool								Depth								The above was done to satisfaction and supervision of owner agent or contractor.	
Cement Left in Csg.								Shoe Joint								Cement Amount Ordered	160 60/40 4% Gel
Meas Line								Displace	H20							1/4# Flo Seal	
EQUIPMENT															Common		
Pumptrk	17	No.	Cementer	Tim								Poz. Mix					
Bulktrk	9	No.	Driver	Bryant								Gel.					
Bulktrk	9	No.	Driver	Bryant								Calcium					
JOB SERVICES & REMARKS															Hulls		
Remarks:	690' - 50 SX														Salt		
Rat Hole															Flowseal		
Mouse Hole	240' - 40 SX														Kol-Seal		
Centralizers															Mud CLR 48		
Baskets	60' - 20 SX														CFL-117 or CD110 CAF 38		
D/V or Port Collar															Sand		
Kathole w/ 30 SX															Handling		
Mousehole w/ 20 SX															Mileage		
FLOAT EQUIPMENT																	
Cement did Circulate															Guide Shoe		
															Centralizer		
															Baskets		
															AFU Inserts		
															Float Shoe		
															Latch Down		
															Pumptrk Charge		
															Mileage		
Tax Discount Total Charge																	
Signature																	

Southwind Drilling, Inc.

8 North Main PO Box 276 Ellinwood, KS 67526

Phone: (620) 564-3800 Fax: (620) 564-3845

Federal ID #: 41-2117616

Invoice Date:

8/2/2023

Invoice No.

2023-120

Bill To:

H&D Exploration
PO Box 387
Hoisington, KS 67544

Due Date:

9/3/2023

LEASE INFORMATION

Debes Unit #1

530' FNL & 182' FWL of Section 27-25S-11W Stafford County

FOOTAGE

AMOUNT

4135 Total Depth

10 Less Kelly Bushing to Ground

4125 Feet @ \$14.50 per foot Footage Total = \$59,812.50

DAYWORK SUMMARY

AMOUNT

\$475.00 per hour (see daywork detail on next page)

47.00 hours at \$475.00 per hour Daywork Total = \$22,325.00

OTHER CHARGES

AMOUNT

7/26/23 - 8/2/23	Fuel charge \$2.61 per gallon. 2257.20 gallons used	\$5,891.29
7/26/23 - 8/2/23	Rental of portable toilet & trash trailer	\$525.00
7/26/23 - 8/2/23	Rental of electric water transfer pump (pit to rig)	\$350.00
7/26/23 - 8/2/23	Move Charge (\$4000 credit)	\$4,739.50

TOTAL OF INVOICE: \$93,643.29

BALANCE: \$93,643.29

Thank you for using Southwind Drilling, Inc.

Thank you!



Southwind Drilling, Inc.
Plugging Orders & Reports

Lease: Debes Unit #1

Plugging Received from KCC Representative:

Name: ERIC Date: 7-31-2023 Time: 2:30 PM

1st plug @ 690 feet, 50 sacks Stands 11

2nd plug @ 240 feet, 40 sacks Stands 4

3rd plug @ 60 feet, 20 sacks Stands 1

4th plug @ _____ feet, _____ sacks Stands _____

5th plug @ _____ feet, _____ sacks Stands _____

Mousehole: 20 sacks

Rathole: 30 sacks

Total Cement Used: 160 sacks

Type of cement: 60/40, 40% Gel, 1/4" # F10 Seal

Plug Down @ 7:45 AM 8-02-2023

Call KCC When Completed:

Name: Nathan Date: 8-02-2023 Time: 3:00 PM

MORNING DRILLING REPORT

For: H&D Exploration, LLC

SOUTHWIND DRILLING, INC.

RIG No. 1

Well Name: Debes Unit #1

Location: 530' FNL & 182' FWL

Section: 27-25S-11W

County: Stafford

API: 15-185-24145-00-00

GL Elevation: 1834'

KB: 1844'

Est. TD: 4200'

Surface Pipe: 600'

Rig No. 1 (Pusher Frank Rome) 620-566-7324

Rig No. 1 (Doghouse) 620-566-7094

Southwind Drilling Office 620-564-3800

Surface Casing: Ran 15 joints of new 23#, 8 5/8" casing, tally @ 635', set @ 647', used 450 sacks of 60/40, 4% cc, 2% gel, cement circulated, by Quality, ticket #3698, plug down @ 5:30am on 7.27.23.

Plugging Info: Plugged well with 160 sacks of 60/40, 4% gel, 1/4# flo-seal- 1st plug @ 690' w/ 50 sacks, 2nd plug @ 240' w/ 40 sacks, 3rd plug @ 60' w/ 20 sacks, 30 sacks for RH, 20 sacks for MH, cemented by Quality, ticket #3701, plug down @ 7:45am on 8.2.23.

Rotary Total Depth: 4135'

Log Total Depth: 4134'

Geologist: Jim Musgrove



7:00 A.M. Depth: 4135'

CURRENT OPERATION: TEAR DOWN

Spud Date & Time:	07/26/23	07/27/23	07/28/23	07/29/23	07/30/23	07/31/23	08/01/23	08/02/23	Total
7/26/23 @ 1:45pm	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	
Total Depth (7:00am)	0	648	1739	2700	3454	3920	4025	4135	
Daily Progress	648	1091	961	754	466	105	110		4135
Ft. Per Hr.	76.24	75.24	46.88	33.89	25.53	13.55	15.17	#DIV/0!	41.77
Current Operation (7:00am)	Rig Up	WOC	Drilling	Drilling	Drilling	CFS	CFS	Plug	
Formation	Surface	Clay / Lime	Lime / Shale	Lime / Shale	Shale	Arbuckle	Arbuckle		
Fuel Used (39.6 Gal/Inch)	198.00	277.20	435.60	396.00	356.40	277.20	316.80		2257.20
Survey (degree & depth)	1° @ 648'					3/4° @ 3920'			
Mud Cost	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$10,954.30		\$10,954.30
Weight (# / Gal)									
Vis (Funnel)									
Water Loss (cc)									
Bit #1									
Bit Make / Type	JZ Button								
Bit Size	12 1/4								
Bit Hours	8.50								8.50
Bit #2									
Bit Make / Type		JZ HA23C	JZ HA23C	JZ HA23C	JZ HA23C				
Bit Size		7 7/8	7 7/8	7 7/8	7 7/8				
Bit Hours		14.50	20.50	22.25	18.25				75.50
Bit #3									
Bit Make / Type						JZ HA23C	JZ HA23C		
Bit Size						7 7/8	7 7/8		
Bit Hours						7.75	7.25		15.00
Bit Cumulative Hours	8.50	14.50	20.50	22.25	18.25	7.75	7.25	0.00	99.00
Drilling (Rotating) Hours	8.50	14.50	20.50	22.25	18.25	7.75	7.25	0.00	99.00
Daywork Hrs. (Operator's time)									
Rat Hole (> 75 Hrs)									0.00
Wait on Cement	1.50	6.50							8.00
Short Trip						3.00	1.00		4.00
Trip	0.50					6.75	3.75		11.00
Circulate	0.50				2.75	3.25	3.75		10.25
Tool						1.00			1.00
Testing						2.00			2.00
Clean Floor after DST									0.00
Logging							3.75		3.75
Wait on Tester									0.00
LDDP / LDDC							4.00	0.75	4.75
Run Casing / Circ / Cement	2.25								2.25
Lost Circulation (> 2hrs)									0.00
Jet Cellar / Set Slips									0.00
Nipple Down									0.00
Billable Hours	4.75	6.50	0.00	0.00	2.75	16.00	16.25	0.75	47.00
Non-Billable Hours (Southwind's time)									
Rig Up / Tear Down	6.50						7.25		13.75
Wait on Cement (NB)									0.00
Drill Rat Hole (< 75 hrs)	0.25								0.25
Drill Plug		0.50							0.50
Circulate / Trip (Surface)									0.00
Rig Repair	1.00	0.25		0.25	1.75				3.25
Connections	2.25	1.50	1.50	1.00	0.75				7.00
Jet/Displace	0.25	0.50	1.50						2.25
Surveys						0.25			0.25
Rig Check		0.25	0.50	0.50	0.50				1.75
Plugged Bit	0.50								0.50
Trip Time (NB)									0.00
Lost Circulation (< 2 hrs)									0.00
Lay Down Kelly / MH & RH							0.50		0.50
Non-Billable Hrs.	10.75	3.00	3.50	1.75	3.00	0.25	0.50	7.25	30.00
Footage Cost	\$ 9,396.00	\$ 15,819.50	\$ 13,934.50	\$ 10,933.00	\$ 6,757.00	\$ 1,522.50	\$ 1,450.00	\$ -	\$ 59,812.50
Daywork Cost	\$ 2,256.25	\$ 3,087.50	\$ -	\$ -	\$ 1,306.25	\$ 7,600.00	\$ 7,718.75	\$ 356.25	\$ 22,325.00
Combined Est. Cost*	\$ 11,652.25	\$ 18,907.00	\$ 13,934.50	\$ 10,933.00	\$ 8,063.25	\$ 9,122.50	\$ 9,168.75	\$ 356.25	\$ 82,137.50

*Please note that this is estimated footage & daywork cost only. Additional charges will apply on invoice (fuel surcharge, water transfer pump, etc)

DST #1 Info -

Footage Interval: 3879' - 3920'

Recovery: 1' Mud

Mississippi

DST #2 Info -

Footage Interval:

Recovery:

Anhydrite @ 565' - 586'

Displace @ 2565' - 2660'



PO Box 567
Russell, KS 67665
785-483-9780

Invoice

Date	Invoice #
7/31/2023	2914

Bill To
Southwind Drilling PO Box 276 Ellinwood, KS 67526

RECEIVED AUG 03 REC'D

COPY

Lease

Quantity	Description	Rate	Amount
	Blakeslee A #3 to Debes Unit #1		
	7/26/2023: Drive to location, haul loads, drive in.		
9	2009 Kenworth	155.00	1,395.00
1	Fuel Surcharge 10%	139.50	139.50
	10-21-13		
	33315		
	D 28822		
Total			\$1,534.50

THILL PRINTING CO., INC.

BESTHORN OIL & GAS SERVICE, INC.**SHELL OILS & LUBRICANTS — Since 1942**

Phone (620) 587-3503

1340 NE 190th Road

CLAPLIN, KANSAS 67525-9639

COURTESY and SERVICE EXTENDED

CASH SALE	CREDIT SALE	GAUGE	
		START	END
	Y	29"	72"

INVOICE

72930

DATE

7-20-23

Customer Order No.

Sold to

Southwind Dig Inc

Delivery Address

City, State, Zip Code

Project Contract No.

Charge

*Debes Unit #1**Rig 1*

CODE	PRODUCT	GALS.	PRICE	FUEL TAXES		TOTAL	AMOUNT
				FEDERAL	STATE		
65	Unleaded, Min. Octane 87						
231	15-ppm Sulfur Dyed ULSD #1						
227	15-ppm Sulfur Dyed ULSD #2	1740				355.96	192.50
161	15-ppm Sulfur ULSD #1						
167	15-ppm Sulfur ULSD #2						
	Solvent 140 deg. F flash						

- ☐ This gas product does not meet requirements for reformulated gasoline. All gasoline products are properly additized. Meets minimum octane requirements.
- ☒ Dyed ULSD fuel, NON TAXABLE USE ONLY. Penalty for taxable use. Off highway only, not legal for motor vehicle use. Meets minimum cetane requirements.
- ☐ ULSD fuels are legal for motor vehicle use. This fuel contains no visible evidence of dye. Meets minimum cetane requirements.

CODE	PRODUCT	DRUMS/CASES		QTY. GALS.	PRICE/ GAL OR #	AMOUNT
		NUMBER	SIZE			
JA	ROTELLA T 15-40, 10-30	1	55/	55	14.9	797.50
	ROTELLA 10W 20W 20, 30, 40, 50					
	CHAIN OIL					
	80-90	2	35/	70	350	245.00

Thanks

SUB-TOTAL

7235.16

STATE SALES OR USE TAX % OF

DEDUCT \$

IF PAID IN

DAYS

SUBJECT TO CORRECTION OF ERRORS

TOTAL DUE

-144.70
7090.46**KANSAS SALES TAX EXEMPTION CERTIFICATE**

The undersigned hereby certifies that the petroleum products (other than gasoline) covered by this invoice on which the Kansas Sales Tax is not charged are purchased for use in the State of Kansas and claims them to be exempt from the Kansas Retailers' Sales Tax. The undersigned agrees that in the event he uses said petroleum products or any part thereof in any manner so as to make "THE SELLER" liable for the payment or collections of the Kansas Retailers' Sales Tax with respect thereto or if "THE SELLER" shall by regulation, assessment or decision of the Commission of Revenue and Taxation become liable for the payment of such tax with respect to said petroleum products covered by this invoice, then the undersigned will forthwith on demand pay "THE SELLER" the full amount of such tax including penalties, interest and costs.

Delivered By

Buyer acknowledges receipt of goods and agrees to the terms set forth by the Seller and listed below for all purchases made within one year of this date. A CARRYING CHARGE as computed by Seller's current Terms and Conditions (shown below) MAY be assessed against all late payments unless prior arrangements have been made.

Payment Received By

Date

Check Number

1 1/2% per month or an ANNUAL RATE of 18% per year.

*x Shaun ERP**posted*

Mud-Co / Service Mud Inc.

100 S. Main St., Suite #310, Wichita, Ks. 67202

Report: **1**

Daily Drilling Mud Report

Operator H&D Exploration LLC.		Contractor Southwind Drilling		Date: 07/26/23		Depth: 0	
Address Rig		Address Rig		Rig No. 1		Spud Date	
Report for Mr. Co. Rep		Report for Mr. Frank Rome		Section 27		Twp 25s	
Well Name & No. Debes Unit #1		County Stafford		State Kansas		Range 11w	

Operation Rig up		Casing 8 5/8 in. at 0		Mud Volume (BBL) 0 400		Circulation Data	
Present Activity 12 1/4 1 No		Intermediate in. at		Total Circulating Vol. 400		Opposite Drill Pipe 65	
Drill pipe sz 4 1/2 XH		Production / Liner in. at		Volume in Storage 0		Opposite Drill Collars 76	
Drill Collar size 6 1/4		Drilling mud type Gel & lime slurry		BBL/ Strk 0.137 60		Bottoms Up (Min.) 0	
				BBL/Min. GAL/Min. 8.2 345		System Total (Min) 49	

Sample from Flowline or Pit		Daily Mud Cost 0.00		Cumulative Mud Cost 0.00	
Flowline Temperature		Mud Properties			

Time Sample Taken 11:00 AM		MUD PROPERTIES SPECIFICATIONS			
Depth (Ft.) 0		Mud Wt. (lbs/gal.) 9.2-9.8		Viscosity 34-40	
Weight (lb/gal.)		Filtrate N/C		LCM 3-5#	

Mud Gradient (psi/ft.)		Please
Funnel Viscosity (Sec/qt. API)		keep
Plastic Viscosity cp		material
Yield Point (lb/100 sq.ft.)		covered
Gel Strength 10 sec/10 min.		at all
pH	Make up	times
Filtrate API (ml/30 min.)	Water	
Cake Thickness 32nd	Water	
Alkalinity, Mud (Pm)	Well	
Alkalinity, Filtrate (Pf/Mf)		
Chloride Content, ppm		
Calcium, ppm		
Sand Content (% by Vol)		
Solids Content (% by Vol.)		
Oil Content (% by Vol.)		
Water Content (% by Vol.)		
LCM, lbs/bbl.		
Reynold's #DP		
Reynold's # DC		
ECD lb/gal		

Suggest:

1. Spud with viscosity 36-40 sec/qt with Gel and Soda ash. Mix Lime as needed at flowline to increase viscosity.
2. Control weight 9.2-9.8 #/gal with water at flowditch
3. LCM 3-5# W/ HULLS Possible loss 640'

Under 8 5/8

Drill out from under surface with plenty of fresh water. Clean pits often or as needed to control mud wt. 9.2-9.5 lbs/gal.

1. SWEEP HOLE AS NEEDED TO CLEAN HOLE
100-WATER
1-SODA ASH 20 BBL SWEEPS
20-25 GEL POLYPLUS ON
4-SX HULLS CONNECTIONS
2. LCM AS NEEDED

FRAC MUD TO DISPLACE AT 2600'

100-water PUMP 7 MIN WATER
1-SODA ASH AHEAD OF FRAC MUD
1-CAUSTIC
1-LIGNITE
1/3-DRILLPAC
22 SX GEL
8-SX HULLS

AFTER DISPLACING

1. Control wt 9.2-9.4 w/ small stream water at flowline
2. Vis 48-55 w/ above premix 1/2sx drillpac gel up
3. Tourly 1-caustic 1/2-lignite>>2 hrs chem bbl
4. LCM 3-4# w/ hulls

DRILLING MUD INVENTORY				
Products:	Delivery	Transfer	On Hand	Used Cost
Premium Gel	210	210	420	
Lime	8		8	
Soda Ash	35		35	
Caustic Soda	19		19	
Lignite	20		20	
C/S Hulls	300		300	
Drill Pak	10		10	
Desco	2		2	
Poly	2		2	
Soapstix				
Xcide				
Sapp				
Barite				
MilGuard				

THANK YOU

Mud-Co / Service Mud Representative Brad Bortz	Home Address Pratt Ks.	Telephone Number 620-793-2421
Cell 620-793-2421	Warehouse Location Pratt Ks.	Telephone Number 620-672-2957

Mud-Co / Service Mud, Inc.

100 S. Main St., Suite #310, Wichita, Ks. 67202

Report: **2**

Daily Drilling Mud Report

Date: **07/27/23** Depth: **648**

Operator H&D Exploration LLC.	Contractor Southwind Drilling	Rig No. 1
Address Rig	Address Rig	Spud Date 07/26/23
Report for Mr. Co. Rep	Report for Mr. Frank Rome	Section 27 Twp 25s Range 11w
Well Name & No. Debes Unit #1	County Stafford	State Kansas

Operation WOC	Casing 8 5/8 in. at 647	Mud Volume (BBL) Hole 58 Pits 400	Liner Size 6 Stroke 14	Opposite Drill Pipe 203	Pump Pressure 0
Bit Size (in.) 7 7/8	No 2	Intermediate in. at	Total Circulating Vol. 458	Est. Hole/DS capacities 9 0	Opposite Drill Collars 369
Drill pipe sz 4 1/2	Type XH	Production / Liner in. at	Volume in Storage 40 BBL	BBI/ Strk 0.137 Strk / Min. 60	Bottoms Up (Min.) 6
Drill Collar size 6 1/4	Drilling mud type WATER & SWEEPS	BBL/Min. 8.2	GAL/Min. 345	System Total (Min) 56	Pump Make 0
					Pump Model 0

Sample from Flowline or Pit	Daily Mud Cost 974.50	Cumulative Mud Cost 974.50
Flowline Temperature		

Time Sample Taken 12:00PM	Depth (Ft.) 648	Weight (lb/gal.)	Mud Gradient (psi/ft.) 0.000	Funnel Viscosity (Sec/qt. API)	Plastic Viscosity cp	Yield Point (lb/100 sq.ft.)	Gel Strength 10 sec/10 min.	pH	Filtrate API (ml/30 min.)	Cake Thickness 32nd	Alkalinity, Mud (Pm)	Alkalinity, Filtrate (Pf/Mf)	Chloride Content, ppm	Calcium, ppm	Sand Content (% by Vol.)	Solids Content (% by Vol.)	Oil Content (% by Vol.)	Water Content (% by Vol.) 100.0	LCM, lbs/bbl.	Reynold's #DP #DIV/0!	Reynold's # DC #DIV/0!	ECD lb/gal #DIV/0!
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MUD PROPERTIES SPECIFICATIONS			
Mud Wt. (lbs/gal.) 9.2-9.5	Viscosity 28-32	Filtrate N/C	LCM AS NEEDED

Suggest....
Under 8 5/8
Drill out from under surface with plenty of fresh water. Clean pits often or as needed to control mud wt. 9.2-9.5 lbs/gal.

- SWEEP HOLE AS NEEDED TO CLEAN HOLE
100-WATER
1-SODA ASH 20 BBL SWEEPS
20-25 GEL POLYPLUS ON
4-SX HULLS CONNECTIONS
- LCM AS NEEDED

FRAC MUD TO DISPLACE AT 2600'
100-water PUMP 7 MIN WATER
1-SODA ASH AHEAD OF FRAC MUD
1-CAUSTIC
1-LIGNITE
1/3-DRILLPAC
22 SX GEL
8-SX HULLS

DRILLING MUD INVENTORY					
Products:	Prior Day	Delivery	On Hand	Used	Cost
Premium Gel	420		390	30	657.00
Lime	8		7	1	15.25
Soda Ash	35		35		
Caustic Soda	19		19		
Lignite	20		20		
C/S Hulls	300		287	13	302.25
Drill Pak	10		10		
Desco	2		2		
Poly	2		2		
Soapstix					
Xcide					
Sapp					
Barite					
MilGuard					

AFTER DISPLACING

- Control wt 9.2-9.4 w/ small stream water at flowline
- Vis 48-55 w/ above premix 1/2sx drillpac gel up
- Tourly 1-caustic 1/2-lignite>>2 hrs chem bbl
- LCM 3-4# w/ hulls

* No loss on surface hole

THANK YOU

Mud-Co / Service Mud Representative
Brad Bortz

Home Address
Pratt Ks.

Telephone Number
620-793-2421

Cell 620-793-2421

Warehouse Location
Pratt Ks.

Telephone Number
620-672-2957

Mud-Co / Service Mud, Inc.

100 S. Main St., Suite #310, Wichita, Ks. 67202

Report: **3**

Daily Drilling Mud Report

Date: **07/28/23** Depth: **2040**

Operator H&D Exploration LLC.	Contractor Southwind Drilling	Rig No. 1
Address Rig	Address Rig	Spud Date 07/26/23
Report for Mr. Co. Rep	Report for Mr. Frank Rome	Section 27 Twp 25s Range 11w
Well Name & No. Debes Unit #1	County Stafford	State Kansas

Operation		Casing		Mud Volume (BBL)		Circulation Data			
Present Activity				Hole	Pits	Liner Size	Stroke	Opposite Drill Pipe	Pump Pressure
DRILLING		8 5/8	in. at 647	184	400	6	14	203	768
Bit Size (in.)	No	Intermediate		Total Circulating Vol.		Est.Hole/DC capacities		Opposite Drill Collars	Pump Make
7 7/8	2	in. at		584		9	0	369	0
Drill pipe sz	Type	Production / Liner		Volume in Storage		BBL/ Strk	Strk / Min.	Bottoms Up (Min.)	Pump Model
4 1/2	XH	in. at		FRAC FULL		0.137	60	19	0
Drill Collar size		Drilling mud type				BBL./Min.	GAL./Min.	System Total (Min)	Critical GPM DC/DP
6 1/4		NATIVE & SWEEPS				8.2	345	71	79 124

Sample from Flowline ___ or Pit ___	Daily Mud Cost 5,627.07	Cumulative Mud Cost 6,601.57
Flowline Temperature ___	MUD PROPERTIES SPECIFICATIONS	

		MUD PROPERTIES SPECIFICATIONS			
		Mud Wt. (lbs/gal.) 9.0-9.6	Viscosity 28-32	Filtrate N/C	LCM AS NEEDED

Time Sample Taken	1:00PM
Depth (Ft.)	2,040
Weight (lb/gal.)	9.9
Mud Gradient (psi/ft.)	0.515
Funnel Viscosity (Sec/qt. API)	28
Plastic Viscosity cp	1
Yield Point (lb/100 sq.ft.)	3
Gel Strength 10 sec/10 min.	1/1
pH	7.0
Filtrate API (ml/30 min.)	N/C
Cake Thickness 32nd	HVY
Alkalinity, Mud (Pm)	
Alkalinity, Filtrate (Pf/Mf)	
Chloride Content, ppm	148,000
Calcium, ppm	HVY
Sand Content (% by Vol)	TRC
Solids Content (% by Vol.)	2.6
Oil Content (% by Vol.)	
Water Content (% by Vol.)	97.4
LCM, lbs/bbl.	TRC
Reynold's #DP	11,109
Reynold's # DC	23,975
ECD lb/gal	10.23

Drill out from under surface with plenty of fresh water. Clean pits often or as needed to control mud wt. 9.2-9.5 lbs/gal.

1. SWEEP HOLE AS NEEDED TO CLEAN HOLE
100-WATER
1-SODA ASH 20 BBL SWEEPS
20-25 GEL POLYPLUS ON
4-SX HULLS CONNECTIONS
2. LCM AS NEEDED

FRAC MUD TO DISPLACE AT 2600'
100-water PUMP 7 MIN WATER
1-SODA ASH AHEAD OF FRAC MUD
1-CAUSTIC
1-LIGNITE
1/3-DRILLPAC
22 SX GEL
8-SX HULLS

AFTER DISPLACING

Run small stream of water at flowline while drilling to help control mud wt. 9.0-9.4 lbs/gal.

Maintain viscosity 44-48 sec/qt with the following premix:
100 bbls water **AT 3200' 48-55 VIS**
2 sx Soda ash Use this premix as needed
1 sx Caustic to keep vis & wt in range, or
1 sx Lignite after each DST.
1/2 sx Pac
Hydrogel f/ 52 vis in active system

* Jet/clean pit and add to system over 1 1/2 hours.

LCM: 2-3 #/bbl with c/s hulls.

Tourly while drilling:
Mix 1 sx Caustic & 1/2 sx Lignite at chemical bbl. Add to system over 1 1/2 - 2 hours.

THANK YOU

DRILLING MUD INVENTORY				
Products:	Prior Day	Delivery	On Hand	Used Cost
Premium Gel	390		280	110 2,409.00
Lime	7		7	
Soda Ash	35		29	6 167.70
Caustic Soda	19		13	6 532.62
Lignite	20		14	6 184.50
C/S Hulls	287		238	49 1,139.25
Drill Pak	10		7	3 1,194.00
Desco	2		2	
Poly	2		2	
Soapstix				
Xcide				
Sapp				
Barite				
MilGuard				

Mud-Co / Service Mud Representative
Brad Bortz

Cell 620-793-2421

Home Addr at all times - especially on all trip operations.

Pratt Ks.

Warehouse Location
Pratt Ks.

620-793-2421

Telephone Number
620-672-2957

Mud-Co / Service Mud, Inc.

100 S. Main St., Suite #310, Wichita, Ks. 67202

Report: **4**

Daily Drilling Mud Report

Date: **07/29/23** Depth: **2886**

Operator H&D Exploration LLC.		Contractor Southwind Drilling		Rig No. 1	
Address Rig		Address Rig		Spud Date 07/26/23	
Report for Mr. Co. Rep		Report for Mr. Frank Rome		Section 27 Twp 25s Range 11w	
Well Name & No. Debes Unit #1		County Stafford		State Kansas	

Operation		Casing		Mud Volume (BBL)		Circulation Data			
Present Activity				Hole	Pits	Liner Size	Stroke	Opposite Drill Pipe	Pump Pressure
DRILLING		8 5/8	in. at 647	260	400	6	14	203	735
Bit Size (in.)	No	Intermediate		Total Circulating Vol.		Est.Hole/DS capacities		Opposite Drill Collars	Pump Make
7 7/8	2	in. at		660		9	0	369	0
Drill pipe sz	Type	Production / Liner		Volume in Storage		BBL/ Strk	Strk / Min.	Bottoms Up (Min.)	Pump Model
4 1/2	XH	in. at		Volume		0.137	60	27	0
Drill Collar size		Drilling mud type				BBL/Min.	GAL/Min.	System Total (Min)	Critical GPM DC/DP
6 1/4		CHEMICAL				8.2	345	80	263 371

Sample from Flowline ___ or Pit ___	Daily Mud Cost 1,370.93	Cumulative Mud Cost 7,972.50
Flowline Temperature ___	Mud Properties	

Time Sample Taken		MUD PROPERTIES SPECIFICATIONS			
12:15PM		Mud Wt. (lbs/gal.)	Viscosity	Filtrate	LCM
		9.0-9.4	44-48	8-10cc	2-3#
Depth (Ft.)	2,886	Suggest: <i>Add a premix every 8-10 hrs</i> Run small stream of water at flowline while drilling to help control mud wt. 9.0-9.4 lbs/gal. Maintain viscosity 44-48 sec/qt with the following premix: 50-WATER, 50-PITMUD AT 3200' 48-55 VIS 2 sx Soda ash Use this premix as needed 1 sx Caustic to keep vis & wt in range, or 1 sx Lignite after each DST. 1/2 sx Pac If wt 9.4 or higher all water in premix Hydrogel f/ 52 vis in active system *Jet/clean pit and add to system over 1 1/2 hours. LCM: 2-3 #/bbl with c/s hulls. Tourly while drilling: Mix 1 sx Caustic & 1/2 sx Lignite at chemical bbl. Add to system over 1 1/2 - 2 hours. Keep hole full on all trips do not shake pipe			
Weight (lb/gal.)	8.8				
Mud Gradient (psi/ft.)	0.458				
Funnel Viscosity (Sec/qt. API)	48				
Plastic Viscosity cp	12				
Yield Point (lb/100 sq.ft.)	16				
Gel Strength 10 sec/10 min.	9/28				
pH	11.0				
Filtrate API (ml/30 min.)	9.0				
Cake Thickness 32nd	1				
Alkalinity, Mud (Pm)					
Alkalinity, Filtrate (Pf/Mf)	1.0				
Chloride Content, ppm	3,500				
Calcium, ppm	80				
Sand Content (% by Vol)	TRC				
Solids Content (% by Vol.)	3.4				
Oil Content (% by Vol.)					
Water Content (% by Vol.)	96.6				
LCM, lbs/bbl.	3 1/2#				
Reynold's #DP	1,800				
Reynold's # DC	3,007				
ECD lb/gal	9.11				

DRILLING MUD INVENTORY					
Products:	Prior Day	Delivery	On Hand	Used	Cost
Premium Gel	280		226	54	1,182.60
Lime	7		4	3	45.75
Soda Ash	29		28	1	27.95
Caustic Soda	13		10	3	266.31
Lignite	14		13	1	30.75
C/S Hulls	238		238		
Drill Pak	7		8	-1	-398.00
Desco	2		2		
Poly	2		1	1	215.57
Soapstix					
Xcide					
Sapp					
Barite					
MilGuard					

Circulate hole & sample box clean prior to DSTs & Logs

55-60 vis for logs should have logging mud by TD
If vis needed pit mud gel up

After DSTs trip into 2500' pump salt section over the hill for 6-8 min, then add a premix when back to drilling

Displaced at 2660'

THANK YOU

Mud-Co / Service Mud Representative
Brad Bortz

Home Address
Pratt Ks.

Telephone Number
620-793-2421

Cell **620-793-2421**

Warehouse Location
Pratt Ks.

Telephone Number
620-672-2957

Mud-Co / Service Mud, Inc.

100 S. Main St., Suite #310, Wichita, Ks. 67202

Report: **5**

Daily Drilling Mud Report

Date: **07/30/23** Depth: **3505**

Operator H&D Exploration LLC.	Contractor Southwind Drilling	Rig No. 1
Address Rig	Address Rig	Spud Date 07/26/23
Report for Mr. Co. Rep	Report for Mr. Frank Rome	Section 27 Twp 25s Range 11w
Well Name & No. Debes Unit #1	County Stafford	State Kansas

Operation		Casing		Mud Volume (BBL)		Circulation Data			
Present Activity				Hole	Pits	Liner Size	Stroke	Opposite Drill Pipe	Pump Pressure
DRILLING		8 5/8	in. at 647	315	400	6	14	203	860
Bit Size (in.)	No	Intermediate		Total Circulating Vol.		Est. Hole/DS capacities		Opposite Drill Collars	Pump Make
7 7/8	2	in. at		715		9	0	369	0
Drill pipe sz	Type	Production / Liner		Volume in Storage		BBL/ Strk	Strk / Min.	Bottoms Up (Min.)	Pump Model
4 1/2	XH	in. at		80 BBL		0.137	60	32	0
Drill Collar size		Drilling mud type				BBL./Min.	GAL/Min.	System Total (Min)	Critical GPM DC/DP
6 1/4		CHEMICAL				8.2	345	87	#####
									#####

Sample from Flowline ___ or Pit ___	Daily Mud Cost 0.00	Cumulative Mud Cost 7,972.50
Flowline Temperature _____	Mud Properties	

Time Sample Taken		MUD PROPERTIES SPECIFICATIONS			
9:30 AM		Mud Wt. (lbs/gal.)	Viscosity	Filtrate	LCM
		9.0-9.4	50-55	8-10cc	3#
Depth (Ft.)		Suggest: Run small stream of water at flowline while drilling to help control mud wt. 9.0-9.4 lbs/gal. Maintain viscosity 50-55 sec/qt with the following premix: 100-WATER 2 sx Soda ash Jet & add over 2 hrs 2 sx Caustic Add premix every 8-10 hrs 1 sx Lignite to keep mud in shape 1- sx Pac Hydrogel f/ 52 vis in active system *Jet/clean pit and add to system over 1 1/2 hours. LCM: 3 #/bbl with c/s hulls. Tourly while drilling: Mix 1 sx Caustic & 1/2 sx Lignite at chemical bbl. Add to system over 1 1/2 - 2 hours. Keep hole full on all trips do not shake pipe			
Weight (lb/gal.)					
Mud Gradient (psi/ft.)					
Funnel Viscosity (Sec/qt. API)					
Plastic Viscosity cp					
Yield Point (lb/100 sq.ft.)					
Gel Strength 10 sec/10 min.					
pH					
Filtrate API (ml/30 min.)					
Cake Thickness 32nd					
Alkalinity, Mud (Pm)					
Alkalinity, Filtrate (Pf/Mf)					
Chloride Content, ppm					
Calcium, ppm					
Sand Content (% by Vol)					
Solids Content (% by Vol.)					
Oil Content (% by Vol.)					
Water Content (% by Vol.)					
LCM, lbs/bbl.					
Reynold's #DP					
Reynold's # DC					
ECD lb/gal					

DRILLING MUD INVENTORY				
Products:	Prior Day	Delivery	On Hand	Used Cost
Premium Gel	226		226	
Lime	4		4	
Soda Ash	28		28	
Caustic Soda	10		10	
Lignite	13		13	
C/S Hulls	238		238	
Drill Pak	8		8	
Desco	2		2	
Poly	1		1	
Soapstix				
Xcide				
Sapp				
Barite				
MilGuard				

Mud-Co / Service Mud Representative
Brad Bortz

Cell 620-793-2421

Home Address
Pratt Ks.

Warehouse Location
Pratt Ks.

Telephone Number
620-793-2421

Telephone Number
620-672-2957

Mud-Co / Service Mud, Inc.

100 S. Main St., Suite #310, Wichita, Ks. 67202

Report: **6**

Daily Drilling Mud Report

Date: **07/31/23** Depth: **3920**

Operator H&D Exploration LLC.	Contractor Southwind Drilling	Rig No. 1
Address Rig	Address Rig	Spud Date 07/26/23
Report for Mr. Co. Rep	Report for Mr. Frank Rome	Section 27 Twp 25s Range 11w
Well Name & No. Debes Unit #1	County Stafford	State Kansas

Operation		Casing		Mud Volume (BBL)		Circulation Data	
Present Activity ir/ after shorttrip	8 5/8	in. at	647	Hole 353	Pits 400	Liner Size 6	Stroke 14
Bit Size (in.) 7 7/8	No 2	Intermediate in. at		Total Circulating Vol. 753		Est. Hole/DS capacities 9	Opposite Drill Pipe 203
Drill pipe sz 4 1/2	Type XH	Production / Liner in. at		Volume in Storage 0		BBL/ Strk 0.137	Opposite Drill Collars 369
Drill Collar size 6 1/4	Drilling mud type CHEMICAL					Strk / Min. 60	Bottoms Up (Min.) 36
						BBL/Min. 8.2	Pump Pressure 950
						GAL/Min. 345	Pump Make 0
							Pump Model 0
							System Total (Min) 92
							Critical GPM DC/DP 262 360

Sample from Flowline ___ or Pit ___	Daily Mud Cost 743.49	Cumulative Mud Cost 8,715.99
Flowline Temperature ___	MUD PROPERTIES SPECIFICATIONS	

Time Sample Taken		Mud Properties		Mud Wt. (lbs/gal.)		Viscosity		Filtrate		LCM	
10:45 AM				9.0-9.4		50-55		8-10cc		2-3#	
Depth (Ft.)											
3,920											
Weight (lb/gal.)											
9.4											
Mud Gradient (psi/ft.)											
0.489											
Funnel Viscosity (Sec/qt. API)											
58											
Plastic Viscosity cp											
14											
Yield Point (lb/100 sq.ft.)											
16											
Gel Strength 10 sec/10 min.											
13/62											
pH											
9.5											
Filtrate API (ml/30 min.)											
10.0		Reserve									
Cake Thickness 32nd		1		Pit							
Alkalinity, Mud (Pm)											
Alkalinity, Filtrate (Pf/Mf)		.25									
Chloride Content, ppm		6,000									
Calcium, ppm		60									
Sand Content (% by Vol)		TRC									
Solids Content (% by Vol.)		7.5									
Oil Content (% by Vol.)											
Water Content (% by Vol.)		92.5									
LCM, lbs/bbl.		2#									
Reynold's #DP		1,883									
Reynold's # DC		2,990									
ECD lb/gal		9.72									

Suggest: **Have premix ready to add after DST #1**
Run small stream of water at flowline while drilling to help control mud wt. 9.0-9.4 lbs/gal.

Maintain viscosity 50-55 sec/qt with the following premix:
100-WATER
2 sx Soda ash Jet & add over 2 hrs
2 sx Caustic Add premix every 8-10 hrs
1 sx Lignite to keep mud in shape
1- sx Pac
Hydrogel f/ 52 vis in active system
*Jet/clean pit and add to system over 1 1/2 hours.

LCM: 3 #/bbl with c/s hulls.

Tourly while drilling:
Mix 1 sx Caustic & 1/2 sx Lignite at chemical bbl. Add to system over 1 1/2 - 2 hours.

Keep hole full on all trips do not shake pipe

Circulate hole & sample box clean prior to DSTs & Logs

55-60 vis for logs should have logging mud by TD
If vis needed pit mud gel up

After DSTs trip into 2500' pump salt section over the hill for 6-8 min, then add a premix when back to drilling

PLEASE KEEP MATERIALS COVERED THANKS

THANK YOU

DRILLING MUD INVENTORY					
Products:	Prior Day	Delivery	On Hand	Used	Cost
Premium Gel	226		226		
Lime	4		6	-2	-30.50
Soda Ash	28		22	6	167.70
Caustic Soda	10		8	2	177.54
Lignite	13		12	1	30.75
C/S Hulls	238		238		
Drill Pak	8		7	1	398.00
Desco	2		2		
Poly	1		1		
Soapstix					
Xcide					
Sapp					
Barite					
MilGuard					

Mud-Co / Service Mud Representative
Brad Bortz

Cell 620-793-2421

Home Address
Pratt Ks.

Warehouse Location
Pratt Ks.

Telephone Number
620-793-2421

Telephone Number
620-672-2957

Mud-Co / Service Mud. Inc.

100 S. Main St., Suite #310, Wichita, Ks. 67202

Report: **7**

Daily Drilling Mud Report

Date: **08/01/23** Depth: **4039**

Operator H&D Exploration LLC.	Contractor Southwind Drilling	Rig No. 1
Address Rig	Address Rig	Spud Date 07/26/23
Report for Mr. Co. Rep	Report for Mr. Frank Rome	Section 27 Twp 25s Range 11w
Well Name & No. Debes Unit #1	County Stafford	State Kansas

Operation		Casing		Mud Volume (BBL)		Liner Size		Stroke		Circulation Data	
Present Activity DRILLING		8 5/8 in. at 647		364 Hole 400 Pits		6		14		Opposite Drill Pipe	Pump Pressure
Bit Size (in.) 7 7/8		Intermediate		Total Circulating Vol. 764		Est. Hole/DS capacities		9		Opposite Drill Collars	Pump Make
No 2		in. at		Volume in Storage 0		BBL/ Strk		Strk / Min.		Bottoms Up (Min.)	Pump Model
Drill pipe sz 4 1/2		Production / Liner				0.137		60		37	0
Type XH		in. at				BBL./Min.		GAL/Min.		System Total (Min)	Critical GPM DC/DP
Drill Collar size 6 1/4		Drilling mud type CHEMICAL				8.2		345		93	##### #####

Sample from Flowline or Pit	Daily Mud Cost 2,376.21	Cumulative Mud Cost 11,092.20
Flowline Temperature	MUD PROPERTIES SPECIFICATIONS	

Time Sample Taken		Mud Properties		Mud Wt. (lbs/gal.)		Viscosity		Filtrate		LCM	
8:15 AM				9.0-9.4		50-55		8-10cc		3#	
Depth (Ft.)											
4,039											
Weight (lb/gal.)		9.6+									
Mud Gradient (psi/ft.)		0.499									
Funnel Viscosity (Sec/qt. API)		61									
Plastic Viscosity cp		17									
Yield Point (lb/100 sq.ft.)		21									
Gel Strength 10 sec/10 min.		14/58									
pH		10.0									
Filtrate API (ml/30 min.)		9.8		Reserve							
Cake Thickness 32nd		1		Pit							
Alkalinity, Mud (Pm)											
Alkalinity, Filtrate (Pf/Mf)		.45									
Chloride Content, ppm		8,000									
Calcium, ppm		80									
Sand Content (% by Vol)		TRC									
Solids Content (% by Vol.)		8.8									
Oil Content (% by Vol.)											
Water Content (% by Vol.)		91.2									
LCM, lbs/bbl.		1 1/2#									
Reynold's #DP		#####									
Reynold's # DC		#####									
ECD lb/gal		#####									

DRILLING MUD INVENTORY					
Products:	Prior Day	Delivery	On Hand	Used	Cost
Premium Gel	226		179	47	1,029.30
Lime	6		6		
Soda Ash	22		24	-2	-55.90
Caustic Soda	8		5	3	266.31
Lignite	12		10	2	61.50
C/S Hulls	238		226	12	279.00
Drill Pak	7		5	2	796.00
Desco	2		2		
Poly	1		1		
Soapstix					
Xcide					
Sapp					
Barite					
MilGuard					

Suggest:

Run small stream of water at flowline while drilling to help control mud wt. 9.0-9.4 lbs/gal.

Maintain viscosity 50-55 sec/qt with the following premix:

100-WATER
2 sx Soda ash Jet & add over 2 hrs
2 sx Caustic Add premix every 8-10 hrs
1 sx Lignite to keep mud in shape
1- sx Pac
Hydrogel f/ 52 vis in active system
*Jet/clean pit and add to system over 1 1/2 hours.

LCM: 3 #/bbl with c/s hulls.

Tourly while drilling:

Mix 1 sx Caustic & 1/2 sx Lignite at chemical bbl. Add to system over 1 1/2 - 2 hours.

Keep hole full on all trips do not shake pipe

Circulate hole & sample box clean prior to DSTs & Logs

55-60 vis for logs should have logging mud by TD
If vis needed pit mud gel up

After DSTs trip into 2500' pump salt section over the hill for 6-8 min, then add a premix when back to drilling

Desco treatment if casing ran
50-water Add over 1 circulation while circulating
50-pitmud casing for cement for 40-42 vis, for
1-desco cementing or follow co. mans orders

PLEASE KEEP MATERIALS COVERED THANKS

* DST #1 AT 3920'

THANK YOU

Mud-Co / Service Mud Representative
Brad Bortz

Cell 620-793-2421

Home Address
Pratt Ks.

Warehouse Location
Pratt Ks.

Telephone Number
620-793-2421

Telephone Number
620-672-2957

Mud-Co / Service Mud. Inc.

100 S. Main St., Suite #310, Wichita, Ks. 67202

Report: **8**

Daily Drilling Mud Report

Date: **08/02/23** Depth: **4135**

Operator H&D Exploration LLC.		Contractor Southwind Drilling		Rig No. 1	
Address Rig		Address Rig		Spud Date 07/26/23	
Report for Mr. Co. Rep		Report for Mr. Frank Rome		Section 27	Twp 25s
Well Name & No. Debes Unit #1		County Stafford		State Kansas	

Operation		Casing		Mud Volume (BBL)		Circulation Data	
Present Activity WOO		8 5/8 in. at 647		Hole 372 Pits 400		Liner Size 6 Stroke 14	
Bit Size (in.) 7 7/8		Intermediate in. at		Total Circulating Vol. 772		Opposite Drill Pipe 203	
Drill pipe sz 4 1/2		Production / Liner in. at		Volume in Storage 0		Opposite Drill Collars 369	
Drill Collar size 6 1/4		Drilling mud type CHEMICAL		BBL/ Strk 0.137 Strk / Min. 60		Bottoms Up (Min.) 38	
				BBL./Min. 8.2 GAL/Min. 345		System Total (Min.) 94	
						Critical GPM DC/DP #####	

Sample from Flowline ___ or Pit ___	Daily Mud Cost -137.90	Cumulative Mud Cost 10,954.30
Flowline Temperature _____		

MUD PROPERTIES SPECIFICATIONS	
Mud Wt. (lbs/gal.) 9.0-9.4	Viscosity 50-55
Filtrate 8-10cc	LCM 3#

Time Sample Taken	12:30AM
Depth (Ft.)	4,135
Weight (lb/gal.)	
Mud Gradient (psi/ft.)	0.000
Funnel Viscosity (Sec/qt. API)	
Plastic Viscosity cp	
Yield Point (lb/100 sq.ft.)	
Gel Strength 10 sec/10 min.	
pH	
Filtrate API (ml/30 min.)	Reserve
Cake Thickness 32nd	Pit
Alkalinity, Mud (Pm)	1,500 BBL
Alkalinity, Filtrate (Pf/Mf)	
Chloride Content, ppm	33,000
Calcium. ppm	HVY
Sand Content (% by Vol)	
Solids Content (% by Vol.)	
Oil Content (% by Vol.)	
Water Content (% by Vol.)	100.0
LCM, lbs/bbl.	
Reynold's #DP	#DIV/0!
Reynold's # DC	#DIV/0!
ECD lb/gal	#DIV/0!

RID-4135'
LTD-4134'
LOGED OK
1-DST
CASING ??

THANK YOU
FINAL

Keep hole full do not shake pipe

Desco treatment if casing ran
50-water Add over 1 circulation while circulating
50-pitmud casing for cement for 40-42 vis, for
1-desco cementing or follow co. mans orders

DRILLING MUD INVENTORY				
Products:	Prior Day	Delivery	On Hand	Used
Premium Gel	179		165	14
Lime	6		6	
Soda Ash	24		24	
Caustic Soda	5		5	
Lignite	10		10	
C/S Hulls	226		228	-2
Drill Pak	5		6	-1
Desco	2		2	
Poly	1		1	
Soapstix				
Xcide				
Sapp				
Barite				
MilGuard				

Mud-Co / Service Mud Representative
Brad Bortz

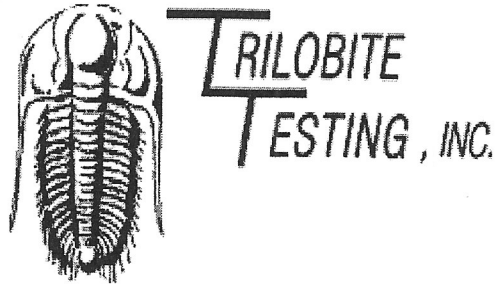
Home Address
Pratt Ks.

Telephone Number
620-793-2421

Cell 620-793-2421

Warehouse Location
Pratt Ks.

Telephone Number
620-672-2957



DRILL STEM TEST REPORT

Prepared For: **H&D Explorations**

PO Box 387
Hoisington KS 67544

ATTN: Jim Musgrove

Debes Unit #1

27-25S-11W Stafford,KS

Start Date: 2023.07.31 @ 13:15:00

End Date: 2023.07.31 @ 19:21:30

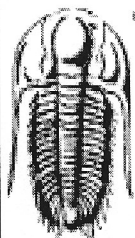
Job Ticket #: 71102 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2023.08.08 @ 10:58:29



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

H&D Explorations

27-25S-11W/Stafford

165 West 1st
PO Box 387
Hoisington KS 67544
ATTN: Jim Musgrove

Debes Unit #1

Job Ticket: 71102

DST#: 1

Test Start: 2023.07.31 @ 13:15:00

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:26:00

Time Test Ended: 19:21:30

Interval: **3879.00 ft (KB) To 3920.00 ft (KB) (TVD)**

Total Depth: 3920.00 ft (KB) (TVD)

Hole Diameter: 7.79 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Initial)

Tester: Richie Samora

Unit No: 66

Reference Elevations: 1844.00 ft (KB)

1834.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8355 Inside

Press@RunDepth: 44.14 psig @ 3885.00 ft (KB)

Start Date: 2023.07.31 End Date: 2023.07.31

Start Time: 13:15:05 End Time: 19:21:29

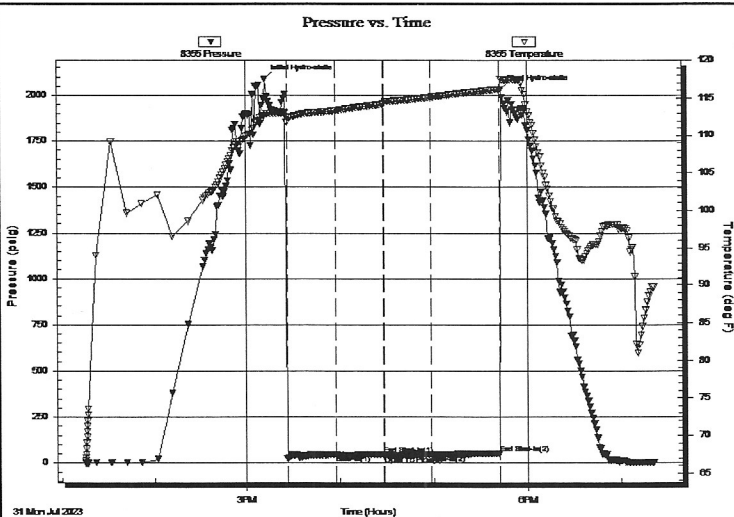
Capacity: 8000.00 psig

Last Calib.: 1899.12.30

Time On Btm: 2023.07.31 @ 15:12:00

Time Off Btm: 2023.07.31 @ 17:43:00

TEST COMMENT: 30-IF: Weak blow built to one inch
30-ISI: No blow back
30-FF: No blow
45-FSI: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2087.68	112.77	Initial Hydro-static
14	25.23	111.78	Open To Flow (1)
45	45.97	113.37	Shut-In(1)
76	46.20	114.23	End Shut-In(1)
76	37.70	114.34	Open To Flow (2)
106	44.14	115.14	Shut-In(2)
150	51.56	116.22	End Shut-In(2)
151	2033.67	117.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	MUD 100%M	0.07

Gas Rates

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



H&D Explorations

165 West 1st
PO Box 387
Hoisington KS 67544
ATTN: Jim Musgrove

Debes Unit #1

Job Ticket: 71102

DST#: 1

Test Start: 2023.07.31 @ 13:15:00

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:26:00

Time Test Ended: 19:21:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Richie Samora

Unit No: 66

Interval: 3879.00 ft (KB) To 3920.00 ft (KB) (TVD)

Reference Elevations: 1844.00 ft (KB)

Total Depth: 3920.00 ft (KB) (TVD)

1834.00 ft (CF)

Hole Diameter: 7.79 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8289 Outside

Press@RunDepth: psig @ 3885.00 ft (KB)

Start Date: 2023.07.31 End Date: 2023.07.31

Start Time: 13:15:01 End Time: 19:21:15

Capacity: 8000.00 psia

Last Calib.: 1899.12.30

Time On Btm:

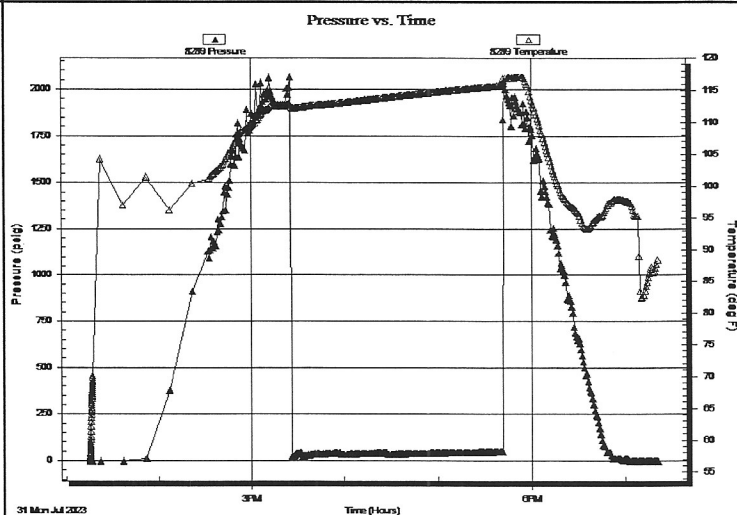
Time Off Btm:

TEST COMMENT: 30-IF: Weak blow built to one inch

30-ISI: No blow back

30-FF: No blow

45-FSI: No blow back



PRESSURE SUMMARY

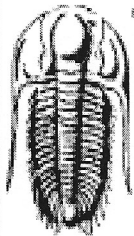
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
5.00	MUD 100%M	0.07

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

H&D Explorations

27-25S-11W/Stafford

165 West 1st
PO Box 387
Hoisington KS 67544
ATTN: Jim Musgrove

Debes Unit #1

Job Ticket: 71102

DST#: 1

Test Start: 2023.07.31 @ 13:15:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 58.00 sec/qt
Water Loss: 9.99 in³
Resistivity: ohm.m
Salinity: 6000.00 ppm
Filter Cake: 0.20 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
5.00	MUD 100%M	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8355

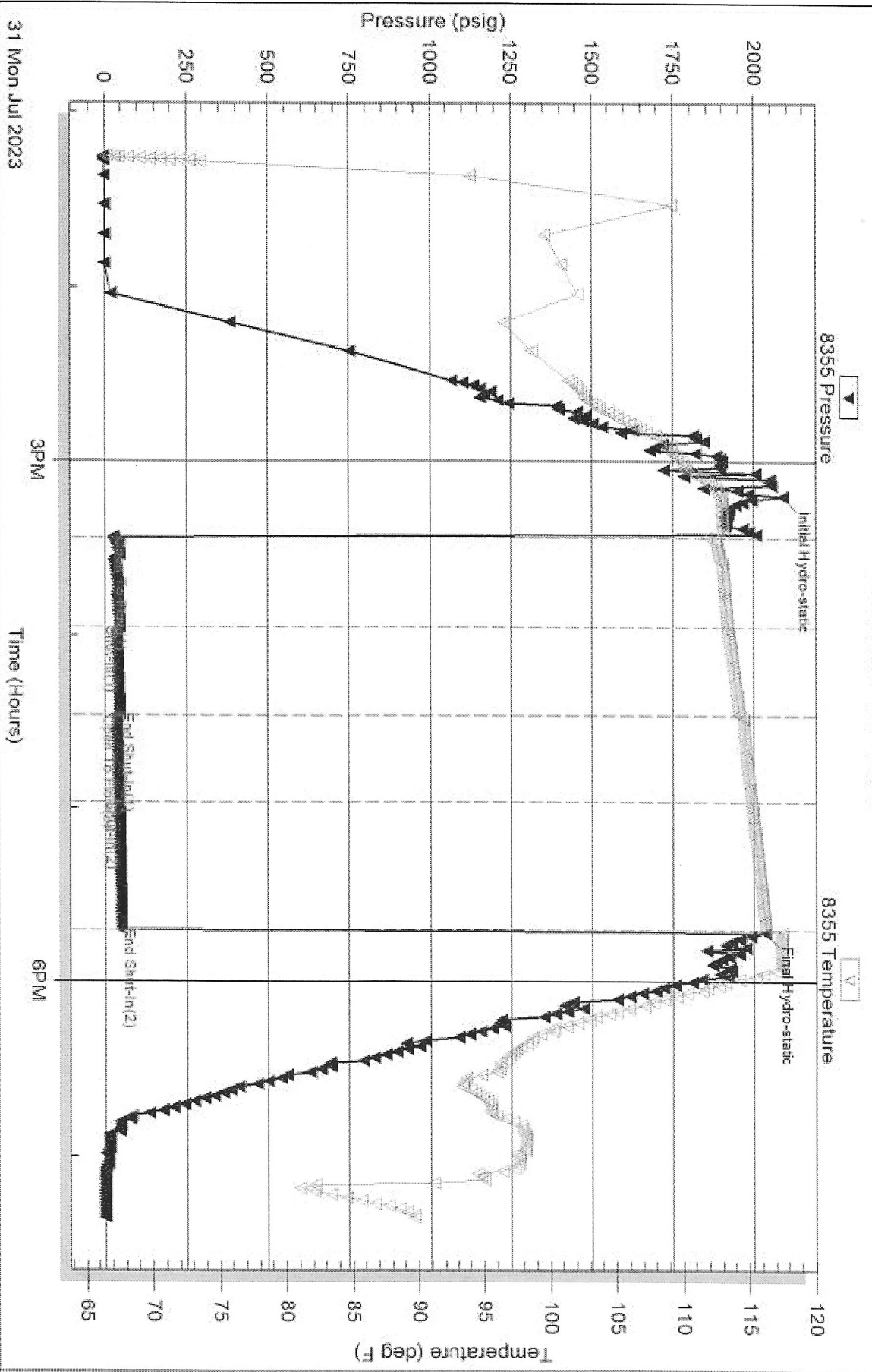
Inside

H&D Explorations

Debes Unit #1

DST Test Number: 1

Pressure vs. Time

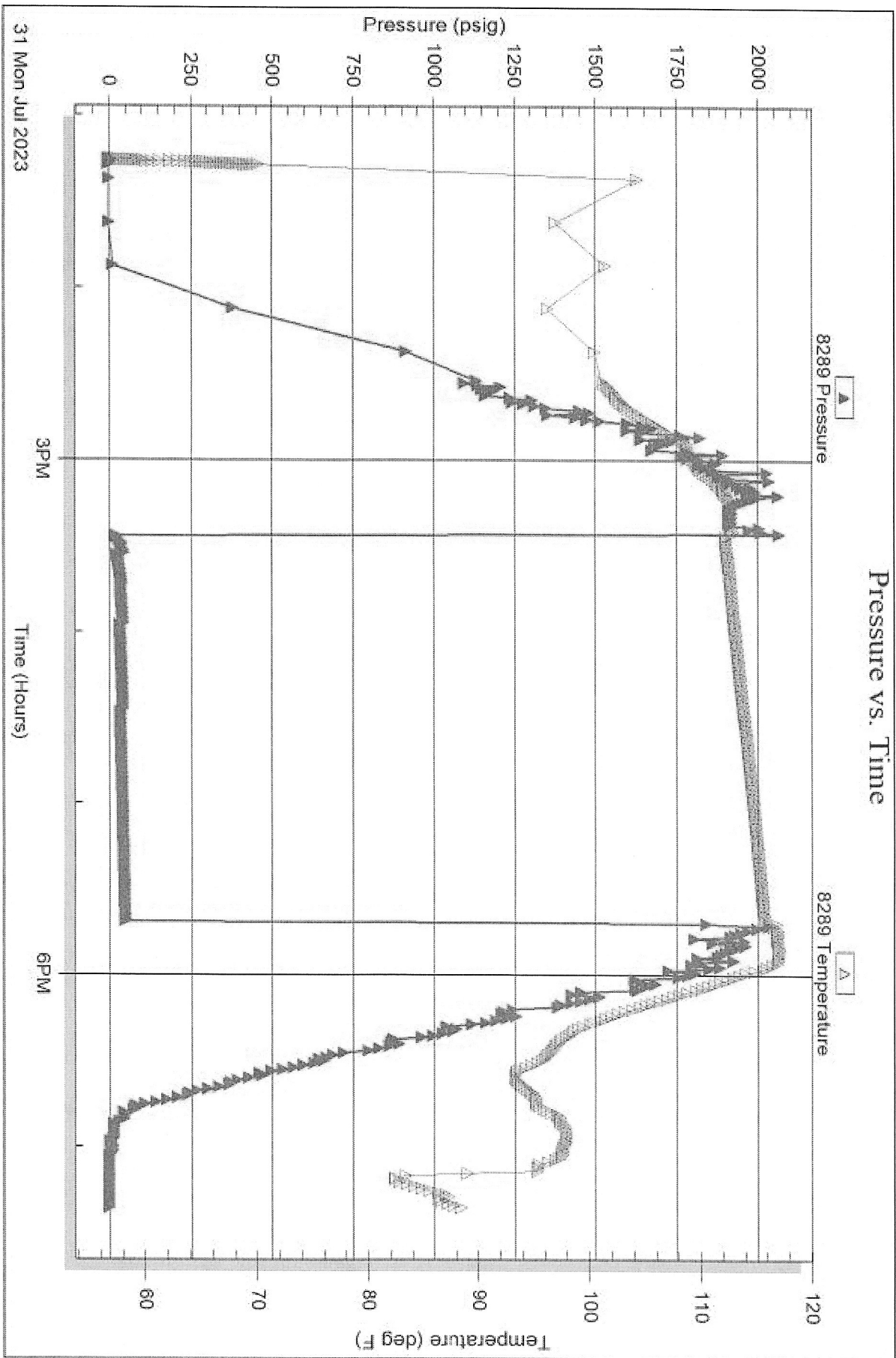


Serial #: 8289

Outside H&D Explorations

Debes Unit #1

DST Test Number: 1





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 71102

Well Name & No. Abes Unit 1 Test No. 1 Date 7-31-23
Company H&D Exploration LLC Elevation 1844 KB 1834 AL
Address 165 West 1st PO BOX 387 Haisington KS 67544
Co. Rep / Geo. Jim Musgrave Rig Southwind 1
Location: Sec. 27 Twp 25S Rge 11W Co. Stafford State KS

Interval Tested 3879 - 3920 Zone Tested Mississippi
Anchor Length 41' Drill Pipe Run 3871 Mud Wt. 9.4
Top Packer Depth 3875 Drill Collars Run 0 Vis 58
Bottom Packer Depth 3879 Wt. Pipe Run 0 WL 10.0
Total Depth 3920 Chlorides 6000 ppm System LCM 2H

Blow Description IF: Weak surface blow built to 1 inch

IS1: No blowback

EF: No blow

ESI: No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>MUD</u>	<u>0</u>	<u>0</u>	<u>0</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	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5' BHT 117.5 Gravity NA API RW NA °F Chlorides NA ppm

Initial Hydrostatic 2088 ☒ Test 1800 ☐ Ruined Shale Packer

Initial Flow 25 to 46 ☒ Jars 300 ☐ Ruined Packer

Initial Shut-In 46 ☐ Circ Sub ☐ Hotel

Final Flow 38 to 44 ☐ Hourly Standby ☐ EM Tool Successful Had 2 readings

Final Shut-In 52 ☒ Mileage 48 84 + 84 ☐ Accessibility -350

Final Hydrostatic 2034 ☐ Sampler ☐ Gas Sample

T-On Location 11:20 ☐ Straddle ☐ Oversized Hole

Initial Flow 30 T-Started 1345 ☐ Shale Packer ☐ Sub Total -350

Initial Shut-In 30 T-Open 1525 ☐ Extra Packer ☐ Total 1918

Final Flow 30 T-Pulled 17:42 ☐ Extra Recorder ☐ Tool Loaded 8/1 @ 19:15

Final Shut-In 45 T-Out 19:24 ☐ Day Standby ☐ MP/DST Disc't

Comments Bull on 6 1315

ENG 180

Approved By _____ Our Representative Pickie Samson

Trilobite Testing Inc. shall not be liable for damage of any kind of 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.

Company: HD Exploration LLC
Address: 165 West 1st
Hoisington, Kansas 67544-0387

Contact Geologist: Jim Musgrove
Contact Phone Nbr: 620-786-0839
Well Name: Debes Unit #1
Location: 27-25s-11w SW-NW-NW-NW
API: 15-185-24145-00-00
Pool:
State: Kansas

Field: Wildcat
Country: USA



H&D Exploration, LLC

Scale 1:240 Imperial

Well Name: Debes Unit #1
Surface Location: 27-25s-11w SW-NW-NW-NW
Bottom Location:
API: 15-185-24145-00-00
License Number: 34674
Spud Date: 7/26/2023
Region: Stafford
Drilling Completed: 8/1/2023
Surface Coordinates: 530' FNL & 182' FWL
Bottom Hole Coordinates:
Ground Elevation: 1834.00ft
K.B. Elevation: 1844.00ft
Logged Interval: 0.00ft
Total Depth: 4135.00ft
Formation: Arbuckle
Drilling Fluid Type: Chemical/Fresh Water Gel

Time: 12:00 AM
Time: 12:00 AM
To: 4134.00ft

CASING SUMMARY

	Surface	Intermediate	Main		
Bit Size					
Hole Size					
	Size	Set At	Type	# of Joints	Drilled Out At
Surf Casing	8 5/8" in	647' ft			
Int Casing					
Prod Casing	None in	None ft			

CASING SEQUENCE

Type	Hole Size	Casing Size	At
	0.00 in	0.00	0.00 ft

OPEN HOLE LOGS

Logging Company: Eli
Logging Engineer: Cole Robben
Truck #:
Logging Date:
Logs Run: 0
Time Spent:
Logs Run Successful: 0

LOGS RUN

Tool	Logged Interval	Logged Interval	Hours	Remarks	Run #
	0.00ft	0.00ft	0.00		0

LOGGING OPERATION SUMMARY

Date	From	To	Description Of Operation
------	------	----	--------------------------

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude:
 Latitude:
 N/S Co-ord: 530' FNL
 E/W Co-ord: 182' FWL

LOGGED BY

Company: James C Musgrove Petroleum LLC
 Address: 212 Main Street/PO Box 215
 Claflin, KS 67525

Phone Nbr: 620-588-4250 620-786-0839
 Logged By: KLG #307

Name: James C Musgrove

CONTRACTOR

Contractor: Southwind Drilling
 Rig #: 1
 Rig Type: mud rotary
 Spud Date: 7/26/2023
 TD Date: 8/1/2023
 Rig Release:

Time: 12:00 AM
 Time: 12:00 AM
 Time:

ELEVATIONS

K.B. Elevation: 1844.00ft
 K.B. to Ground: 10.00ft

Ground Elevation: 1834.00ft

NOTES

Notes:

The H&D Exploration LLC, Debes Unit #1 was plugged and abandoned at the Rotary Total Depth 4135

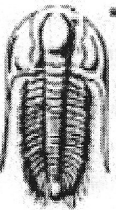
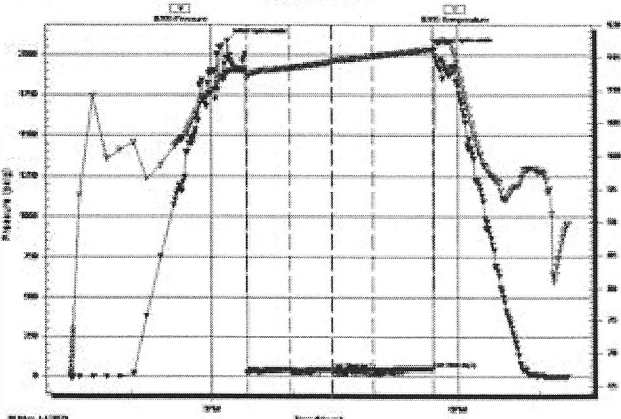
Respectfully yours,

James C Musgrove
 Petroleum Geologist

well comparison sheet

DEBES UNIT #1 H&D EXPLORATION LLC SW-NW-NW-NW 27-25s-11w					GAMBLE #1 H&D EXPLORATION LLC SE-NW-NE-SE 21-25s-11w				DOZIER #1 H&D EXPLORATION LLC NE-NE-SW-NW 21-25s-11w			
1844 KB					1820 KB		Relationship		1824 KB		Structural Relationship	
Formation	Log	Sub-Sea	Sample	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Heebner	3325	-1481			3286	-1466		-15	3314	-1490		9
Toronto	3340	-1496			3300	-1480		-16	3331	-1507		11
Douglas	3353	-1509			3315	-1495		-14	3344	-1520		11
Brown Lime	3493	-1649			3455	-1635		-14	3487	-1663		14
Lansing	3523	-1679			3485	-1665		-14	3513	-1689		10
Base Kansas City	3821	-1977			3781	-1961		-16	3820	-1996		19
Mississippian	3884	-2040			3819	-1999		-41	3941	-2117		77
Kinderhook	3902	-2058			3880	-2050						

Rotary Total Depth	4135	-2291		4200	-2380		89	4200	-2376		85
Total Log Depth	4134	-2290		4200	-2380		90	4202	-2378		88

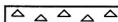
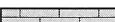
 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT																																													
	H&D Explorations 165 West 1st PO Box 367 Hoisington KS 67544 ATTN: Jim Musgrove	27-25S-11W/Stafford Debes Unit #1 Job Ticket: 71102 DST#: 1 Test Start: 2023.07.31 @ 13:15:00																																												
GENERAL INFORMATION:																																														
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TEST COMMENT: 30-IF: Weak blow built to one inch 30-ISI: No blow back 30-FF: No blow 45-FSI: No blow back																																														
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TriLOBite Testing, Inc

Ref. No: 71102

Printed: 2023.07.31 @ 21:29:14

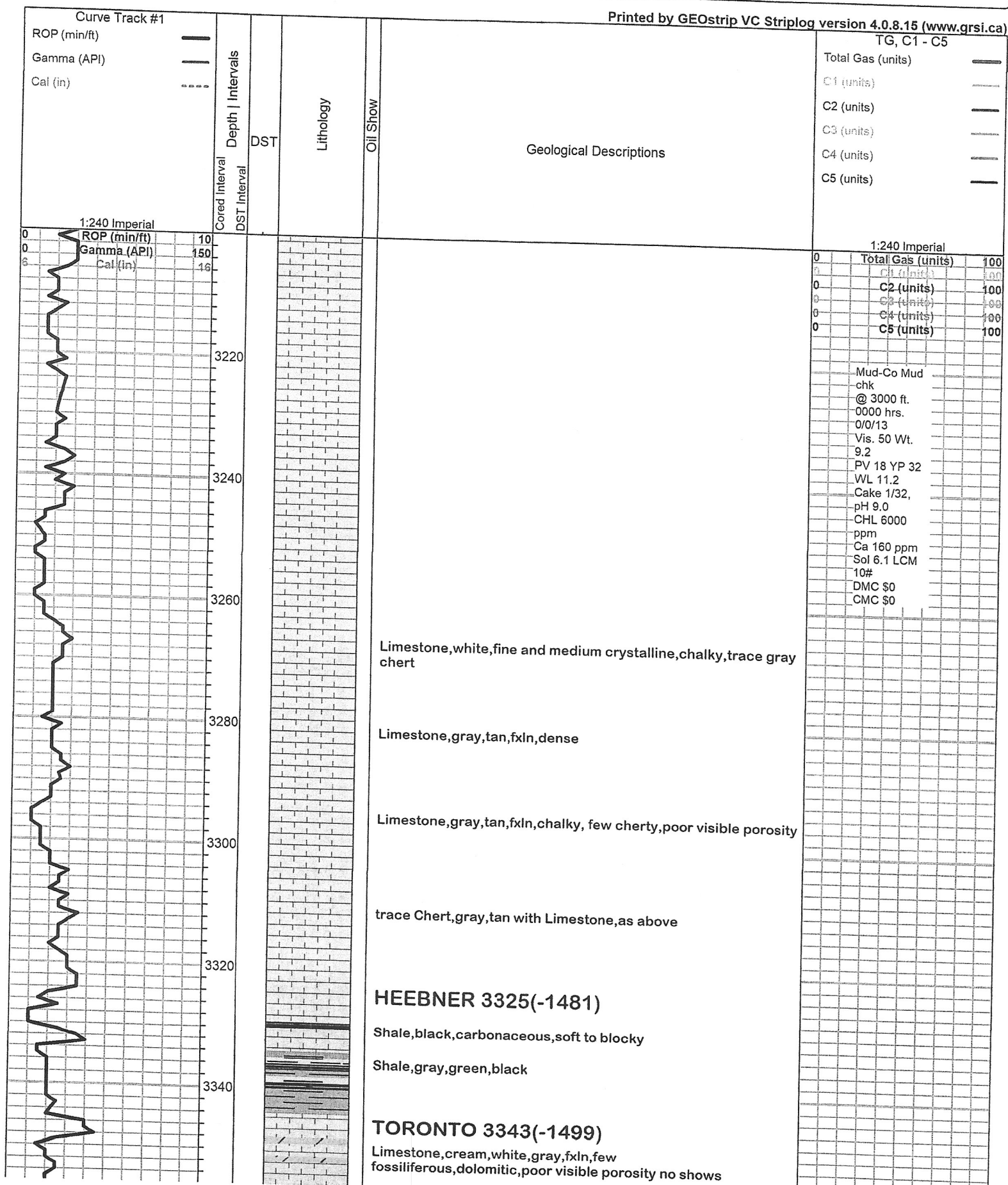
ROCK TYPES

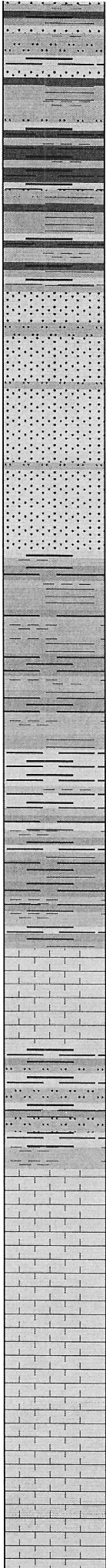
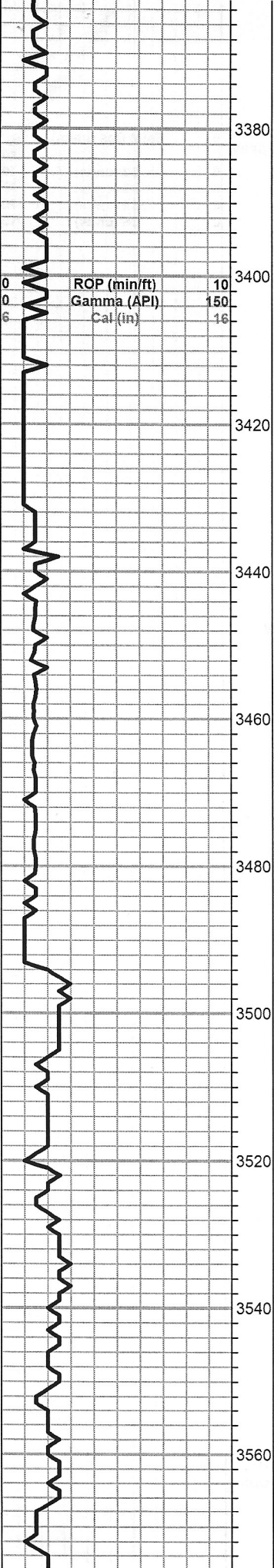
 Cht  Cht vari  Clystgy  Clystcol  Dolprim  Dolsec	 Lmst fw7>  shale, grn  shale, gry  Carbon Sh  shale, red  Shcol	 Ss  Sltst
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OTHER SYMBOLS

Core
tail pipe

Printed by GEOSTrip VC Striplog version 4.0.8.15 (www.grsi.ca)





Shale,gray,grayish green,rusty brown,silty

Sand,grayish green,vfg,micaeous,silty in part

as above

Sand,gray,grayish green, vfg,micaeous,friable,scatterd intergranular porosity, no shows

as above

Varied colored silty Shales

increase varied shades of gray silty shales

BROWN LIME 3494(-1650)

Limestone,tan,brown,slightly fossiliferous,dense

Shale,gray,grayish green ,silty,soft

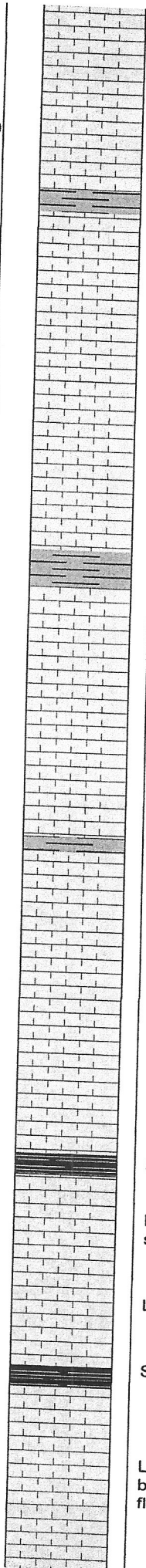
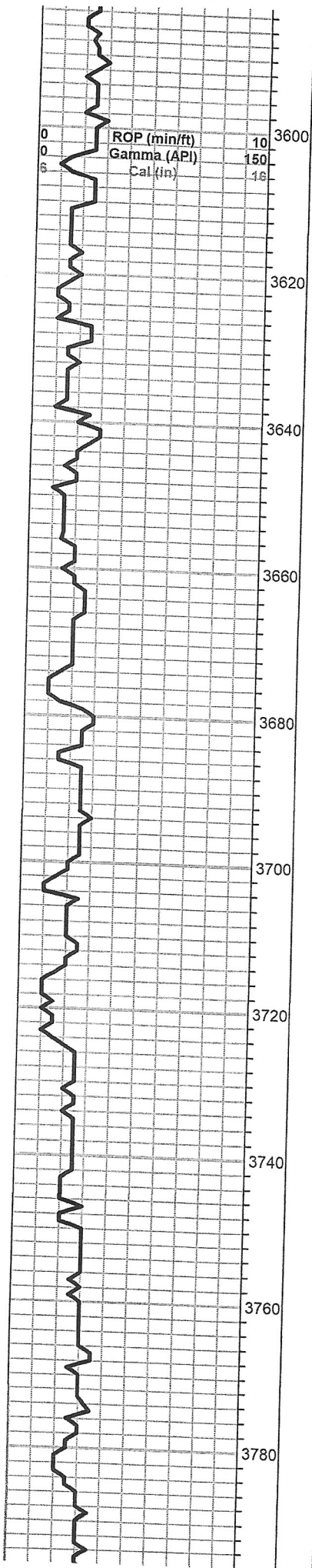
LANSING 3521(-1677)

Limestone,white,gray,medium crystalline,scattered porosity,chalky in part,(barren)

Limestone,gray,sub-oomodic,chalky,sparry calcite replacement in some porosity, no shows

Limestone,tan,gray,fossiliferous,chalky,poor visible porosity, no stain, no free oil ,faint odor

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100
0	C5 (units)	100



Limestone,tan,brown,txin,slightly cherty(dense)

Limestone,gray,fxln,slightly cherty,pyrite inclusions, trace gray to black stain, no free oil and no odor

Limestone,gray,tan,fxln,chalky, scattered pinpoint type porosity,gray stain, no free oil and no odor

Limestone,as above with gray,white, fossiliferous,Cherts

shale,gray,black

Limestone,gray,tan,fossiliferous,with dark gray,gray,boney Cherts

Limestone,white,gray,fine and medium crystalline,trace gray,white, suboomoldic ,chalky Limestone, no shows

Shale,gray,rusty brown

Limestone,gray,brown,oomodic,poorly developed porosity,no shows

Limestone,gray,white,finely oolitic,(bioclastic),poor to fair porosity,no stain,no flurs,no free oil and questionable odor

Shale,black,carbonaceous,soft

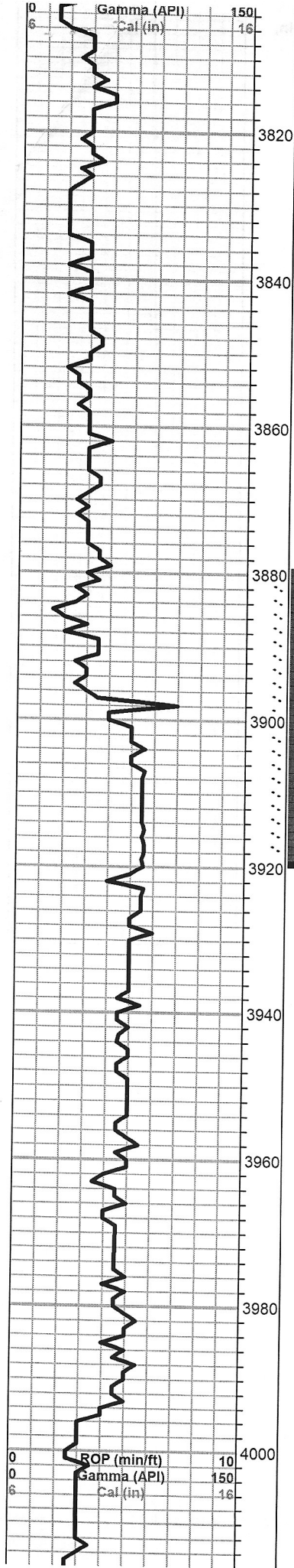
Limestone,tan,gray,fossiliferous,poor porosity,trace spotted stain, trace of free oil and no odor

Limestone,tan,oolitic,slightly cherty,dense

Shale,black,carbonaceous,soft

Limestone,white,gray,fine to medium crystalline, fossiliferous, black and gray to brown spotted stain, trace of free oil and dull flurs.

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100
0	C5 (units)	100



Limestone,tan,fossiliferous, with abundant
Chert,gray,fossiliferous,boney

BASE KANSAS CITY 3824(-1980)

Shale,black,carbonaceous,soft, with gray, gritty shale

Limestone,gray,fossiliferous,dense,chalky

varied colored shales

Limestone,tan,fxln,dense,with lime green tinted
Limestone,chalky

Limestone,as above,dense

MISSISSIPPI 3882(-2038)

Chert,white,gray,green tinted,boney,black and brown edge
staining,no free oil and no odor,no flurs.

KINDERHOOK 3898

Shale,green,purple,rusty brown,silty

Varied colored silty ,calcareous shales

as above, trace pyrite

Shale,gray,purple gray,green, lime green

VIOLA 3996(-2152)

Dolomite,gray,light gray,fxln,granular,poor porosity, trace
pyrite inclusions,with gray,translucent to opaque Cherts.

Dolomite,gray,fine and medium crystalline,with Chert as above

0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100
0	C5 (units)	100

DST#1 3879-3920

30-30-30-30

Blow,weak

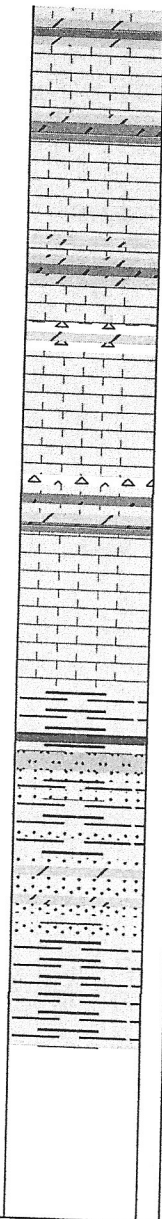
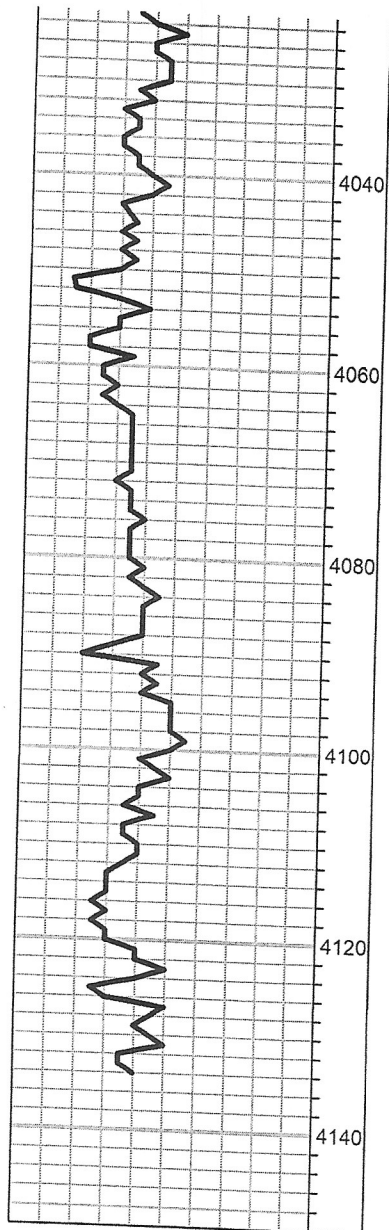
Recovery 5'mud

BHP 46-52 psi

FP 25-46,38-44 psi

HSR 2088-2034 psi

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100
0	C5 (units)	100



Dolomite, as above, with Limestone, gray, white, dolomitic, fxl, and scattered Cherts

Limestone, gray, white, dolomitic, and Chert, brown, boney

Dolomite, gray, tan, granular, sucrosic, and Chert, white, tan, gray, boney to opaque

Limestone, white, gray, fine and medium crystalline, chlkly

SIMPSON 4096(-2252)

Shale, gray, green, maroon

Sand, tan, gray, white, fine to medium grained, dolomitic, black shale inclusions, poor visible porosity, no shows

Shale, green, blue green, maroon, subwaxy

ROTARY TOTAL DEPTH 4135(-2291)

Southwind Drilling, Inc.

8 North Main PO Box 276 Ellinwood, KS 67526

Phone: (620) 564-3800 Fax: (620) 564-3845

Federal ID #: 41-2117616

Invoice Date:

8/2/2023

Invoice No.

2023-120

Bill To:

H&D Exploration
PO Box 387
Hoisington, KS 67544

Due Date:

9/3/2023

LEASE INFORMATION

Debes Unit #1

530' FNL & 182' FWL of Section 27-25S-11W Stafford County

FOOTAGE

	AMOUNT
4135 Total Depth	
10 Less Kelly Bushing to Ground	
4125 Feet @ \$14.50 per foot	
Footage Total =	\$59,812.50

DAYWORK SUMMARY

	AMOUNT
\$475.00 per hour (see daywork detail on next page)	
47.00 hours at \$475.00 per hour	
Daywork Total =	\$22,325.00

OTHER CHARGES

	AMOUNT
7/26/23 - 8/2/23 Fuel charge \$2.61 per gallon. 2257.20 gallons used	\$5,891.29
7/26/23 - 8/2/23 Rental of portable toilet & trash trailer	\$525.00
7/26/23 - 8/2/23 Rental of electric water transfer pump (pit to rig)	\$350.00
7/26/23 - 8/2/23 Move Charge (\$4000 credit)	\$4,739.50

TOTAL OF INVOICE: \$93,643.29

BALANCE: \$93,643.29

Thank you for using Southwind Drilling, Inc.

Thank you!



Southwind Drilling, Inc.
Plugging Orders & Reports

Lease: Debes Unit #1

Plugging Received from KCC Representative:

Name: ERIC Date: 7-31-2023 Time: 2:30 PM

1st plug @ 690 feet, 50 sacks Stands 11

2nd plug @ 240 feet, 40 sacks Stands 4

3rd plug @ 60 feet, 20 sacks Stands 1

4th plug @ _____ feet, _____ sacks Stands _____

5th plug @ _____ feet, _____ sacks Stands _____

Mousehole: 20 sacks

Rathole: 30 sacks

Total Cement Used: 160 sacks

Type of cement: 60/40, 40% Gel, 1/4" # F10 Seal

Plug Down @ 7:45 AM 8-02-2023

Call KCC When Completed:

Name: Nathan Date: 8-02-2023 Time: 3:00 PM

MORNING DRILLING REPORT

For: H&D Exploration, LLC

SOUTHWIND DRILLING, INC.

RIG No. 1

Well Name: Debes Unit #1

Location: 530' FNL & 182' FWL

Section: 27-25S-11W

County: Stafford

API: 15-185-24145-00-00

GL Elevation: 1834'

KB: 1844'

Est. TD: 4200'

Surface Pipe: 600'

Rig No. 1 (Pusher Frank Rome) 620-566-7324

Rig No. 1 (Doghouse) 620-566-7094

Southwind Drilling Office 620-564-3800



Surface Casing: Ran 15 joints of new 23#, 8 5/8" casing, tally @ 635', set @ 647', used 450 sacks of 60/40, 4% cc, 2% gel, cement circulated, by Quality, ticket #3698, plug down @ 5:30am on 7.27.23.

Plugging Info: Plugged well with 160 sacks of 60/40, 4% gel, 1/4# flo-seal- 1st plug @ 690' w/ 50 sacks, 2nd plug @ 240' w/ 40 sacks, 3rd plug @ 60' w/ 20 sacks, 30 sacks for RH, 20 sacks for MH, cemented by Quality, ticket #3701, plug down @ 7:45am on 8.2.23.

Rotary Total Depth: 4135'

Log Total Depth: 4134'

Geologist: Jim Musgrove

7:00 A.M. Depth: 4135'

CURRENT OPERATION: TEAR DOWN

Spud Date & Time:	07/26/23	07/27/23	07/28/23	07/29/23	07/30/23	07/31/23	08/01/23	08/02/23	Total
7/26/23 @ 1:45pm	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	
Total Depth (7:00am)	0	648	1739	2700	3454	3920	4025	4135	
Daily Progress	648	1091	961	754	466	105	110		4135
Ft. Per Hr.	76.24	75.24	46.88	33.89	25.53	13.55	15.17	#DIV/0!	41.77
Current Operation (7:00am)	Rig Up	WOC	Drilling	Drilling	Drilling	CFS	CFS	Plug	
Formation	Surface	Clay / Lime	Lime / Shale	Lime / Shale	Shale	Arbuckle	Arbuckle		
Fuel Used (39.6 Gal/Inch)	198.00	277.20	435.60	396.00	356.40	277.20	316.80		2257.20
Survey (degree & depth)	1" @ 648'					3/4" @ 3920'			
Mud Cost	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$10,954.30		\$10,954.30
Weight (# / Gal)									
Vis (Funnel)									
Water Loss (cc)									
Bit #1									
Bit Make / Type	JZ Button								
Bit Size	12 1/4								
Bit Hours	8.50								8.50
Bit #2									
Bit Make / Type		JZ HA23C	JZ HA23C	JZ HA23C	JZ HA23C				
Bit Size		7 7/8	7 7/8	7 7/8	7 7/8				
Bit Hours		14.50	20.50	22.25	18.25				75.50
Bit #3									
Bit Make / Type						JZ HA23C	JZ HA23C		
Bit Size						7 7/8	7 7/8		
Bit Hours						7.75	7.25		15.00
Bit Cumulative Hours	8.50	14.50	20.50	22.25	18.25	7.75	7.25	0.00	99.00
Drilling (Rotating) Hours	8.50	14.50	20.50	22.25	18.25	7.75	7.25	0.00	99.00
Daywork Hrs. (Operator's time)									
Rat Hole (> .75 Hrs)									0.00
Wait on Cement	1.50	6.50							8.00
Short Trip						3.00	1.00		4.00
Trip	0.50					6.75	3.75		11.00
Circulate	0.50				2.75	3.25	3.75		10.25
Tool						1.00			1.00
Testing						2.00			2.00
Clean Floor after DST									0.00
Logging							3.75		3.75
Wait on Tester									0.00
LDDP / LDDC							4.00	0.75	4.75
Run Casing / Circ / Cement	2.25								2.25
Lost Circulation (> 2hrs)									0.00
Jet Cellar / Set Slips									0.00
Nipple Down									0.00
Billable Hours	4.75	6.50	0.00	0.00	2.75	16.00	16.25	0.75	47.00
Non-Billable Hours (Southwind's time)									
Rig Up / Tear Down	6.50								13.75
Wait on Cement (NB)							7.25		0.00
Drill Rat Hole (< .75 hrs)	0.25								0.25
Drill Plug		0.50							0.50
Circulate / Trip (Surface)									0.00
Rig Repair	1.00	0.25		0.25	1.75				3.25
Connections	2.25	1.50	1.50	1.00	0.75				7.00
Jet/Displace	0.25	0.50	1.50						2.25
Surveys						0.25			0.25
Rig Check		0.25	0.50	0.50	0.50				1.75
Plugged Bit	0.50								0.50
Trip Time (NB)									0.00
Lost Circulation (< 2 hrs)									0.00
Lay Down Kelly / MH & RH							0.50		0.50
Non-Billable Hrs.	10.75	3.00	3.50	1.75	3.00	0.25	0.50	7.25	30.00
Footage Cost	\$ 9,396.00	\$ 15,819.50	\$ 13,934.50	\$ 10,933.00	\$ 6,757.00	\$ 1,522.50	\$ 1,450.00	\$ -	\$ 59,812.50
Daywork Cost	\$ 2,256.25	\$ 3,087.50	\$ -	\$ -	\$ 1,306.25	\$ 7,600.00	\$ 7,718.75	\$ 356.25	\$ 22,325.00
Combined Est. Cost*	\$ 11,652.25	\$ 18,907.00	\$ 13,934.50	\$ 10,933.00	\$ 8,063.25	\$ 9,122.50	\$ 9,168.75	\$ 356.25	\$ 82,137.50

*Please note that this is estimated footage & daywork cost only. Additional charges will apply on invoice (fuel surcharge, water transfer pump, etc)

DST #1 Info -

Footage Interval: 3879' - 3920'

Recovery: 1' Mud

Mississippi

DST #2 Info -

Footage Interval:

Recovery:

Anhydrite @ 566' - 586'

Displace @ 2565' - 2660'

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071

Home Office P.O. Box 32 Russell, KS 67665

No. 8898

Cell 785-324-1041

Date 7-27-23	Sec. 23	Twp. 25	Range 11	County Stafford	State KS	On Location	Finish 5:30 AM
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Lease Debes unit				Well No. 1	Owner Ace, L.L.S on East side
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Contractor Southwind	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.	
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Type Job Surface	Charge To H+D Exploration
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Hole Size 12 1/4"	T.D. 649'	Street
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Csg. 8 3/8"	Depth 647'	City	State
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Tbg. Size	Depth	The above was done to satisfaction and supervision of owner agent or contractor.	
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Tool	Depth	Cement Amount Ordered 450 60/40 4% CC 2% Gel
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Cement Left in Csg. 30'	Shoe Joint 30'	Cement Amount Ordered 450 60/40 4% CC 2% Gel
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Meas Line	Displace 39 1/4 bbls	1/2# Flo seal
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EQUIPMENT

Pumptrk 18	No. Cementer	Common
	Helper	Poz. Mix
Bulktrk 21	No. Driver	Gel.
	Driver	Calcium
Bulktrk 24	No. Driver	
	Driver	

JOB SERVICES & REMARKS

Remarks: Cement did Circulate	Hulls
Rat Hole	Salt
Mouse Hole	Flowseal
Centralizers	Koi-Seal
Baskets	Mud CLR 48
D/V or Port Collar	CFL-117 or CD110 CAF 38
	Sand
	Handling
	Mileage

FLOAT EQUIPMENT

Guide Shoe	Rubber plug
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	

Pumptrk Charge	
Mileage	

Signature	Tax
	Discount
	Total Charge

QUALITY OILWELL CEMENTING, INC.

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Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 3701

Date	8-2-23	Sec.	27	Twp.	25	Range	11	County	Stafford	State	Ks	On Location		Finish	7:45 AM
Lease	Debes Unit							Well No.	Stafford - 65 to 60th Street, 4E to 12th Ave, 1.1 S, E/Intro						
Contractor	Southwind #1							Owner	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.						
Type Job	Plug							Charge To	H+D Exploration						
Hole Size	7 7/8"							T.D.	4135'						
Csg.								Depth							
Tbg. Size	4 1/2" D.P.							Depth	690'						
Tool								Depth							
Cement Left in Csg.								Shoe Joint							
Meas Line								Displace	H2O						
EQUIPMENT								Common							
Pumptrk	17	No.	Cementer	Tim				Poz. Mix							
Bulktrk	9	No.	Driver	Bryant				Gel.							
Bulktrk	9	No.	Driver	Rick				Calcium							
JOB SERVICES & REMARKS								Hulls							
Remarks:	690' - 50.5x							Salt							
Rat Hole								Flowseal							
Mouse Hole	240' - 40.5x							Kol-Seal							
Centralizers								Mud CLR 48							
Baskets	60' - 20.5x							CFL-117 or CD110 CAF 38							
D/V or Port Collar								Sand							
Kathole	w/ 30.5x							Handling							
Mousehole	w/ 20.5x							Mileage							
FLOAT EQUIPMENT															
								Guide Shoe							
								Centralizer							
								Baskets							
								AFU Inserts							
								Float Shoe							
								Latch Down							
								Pumptrk Charge							
								Mileage							
								Tax							
								Discount							
								Total Charge							
Signature															