KOLAR Document ID: 1472997

Confidentiality Requested:

Yes No

## Kansas Corporation Commission Oil & Gas Conservation Division

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

# WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License #	API No.:
Name:	Spot Description:
Address 1:	SecTwpS. R East West
Address 2:	Feet from North / South Line of Section
City:	Feet from East / West Line of Section
Contact Person:	Footages Calculated from Nearest Outside Section Corner:
Phone: ()	□NE □NW □SE □SW
CONTRACTOR: License #	GPS Location: Lat:, Long:
Name:	(e.g. xx.xxxxx) (e.gxxx.xxxxxx)
Wellsite Geologist:	Datum: NAD27 NAD83 WGS84
Purchaser:	County:
Designate Type of Completion:	Lease Name: Well #:
New Well Re-Entry Workover	Field Name:
	Producing Formation:
☐ Oil ☐ WSW ☐ SWD	Elevation: Ground: Kelly Bushing:
☐ Gas ☐ DH ☐ EOR	Total Vertical Depth: Plug Back Total Depth:
☐ OG ☐ GSW	Amount of Surface Pipe Set and Cemented at: Feet
<ul><li>☐ CM (Coal Bed Methane)</li><li>☐ Cathodic</li><li>☐ Other (Core, Expl., etc.):</li></ul>	Multiple Stage Cementing Collar Used? Yes No
	If yes, show depth set: Feet
If Workover/Re-entry: Old Well Info as follows:	
Operator:	If Alternate II completion, cement circulated from:
Well Name:	feet depth to: w/ sx cmt.
Original Comp. Date: Original Total Depth:	
☐ Deepening ☐ Re-perf. ☐ Conv. to EOR ☐ Conv. to SWD	Drilling Fluid Management Plan
Plug Back Liner Conv. to GSW Conv. to Producer	(Data must be collected from the Reserve Pit)
Commingled Permit #:	Chloride content: ppm Fluid volume: bbls
Dual Completion Permit #:	Dewatering method used:
SWD Permit #:	Location of fluid disposal if hauled offsite:
EOR Permit #:	·
GSW	Operator Name:
	Lease Name: License #:
Spud Date or Date Reached TD Completion Date or	QuarterSecTwpS. R East West
Recompletion Date Recompletion Date	County: Permit #:

#### **AFFIDAVIT**

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

**Submitted Electronically** 

KCC Office Use ONLY
Confidentiality Requested
Date:
Confidential Release Date:
☐ Wireline Log Received ☐ Drill Stem Tests Received
Geologist Report / Mud Logs Received
UIC Distribution
ALT I II Approved by: Date:

KOLAR Document ID: 1472997

#### Page Two

Operator Name:	:						_ Lease	Name: _				W	/ell #:	
SecTw	vp	S. R.		East	t 🗌 W	/est	Count	ty:						
open and closed and flow rates if	d, flowing a gas to sur rity Log, Fir	and shu face tes nal Logs	t-in pressu st, along w s run to ob	ures, who vith final otain Geo	ether sh chart(s ophysic	hut-in pre ). Attach cal Data a	ssure rea extra she and Final I	ached state eet if more Electric L	ic leve	, hydrosta e is needed	tic pressures d.	s, botton	n hole tempe	val tested, time tool erature, fluid recovery, v. Digital electronic log
Drill Stem Tests (Attach Addi		rs)			⁄es [	No			_og	Formatio	on (Top), Dep	oth and	Datum	Sample
Samples Sent to		•	ey		es [	No		Nan	ne				Тор	Datum
Cores Taken Electric Log Rur Geologist Repoi	rt / Mud Lo	gs			′es [ ′es [	No No No								
				Rep			RECORD			Used ate, producti	on. etc.			
Purpose of S	tring		Hole lled	Si	ze Casi et (In O.I	ng	We	eight s. / Ft.	5	Setting Depth	Type of Cemen		# Sacks Used	Type and Percent Additives
					4.0.0		OFNENT	-INIO / 00		DE00DD				
Purpose:		De	epth	Typ				ks Used	JEEZE	RECORD	Typo	and Pare	cent Additives	
Perforate Protect Ca	Ton Bottom				Type of Cement			No Oseu						
Plug Off Z	Zone													
<ol> <li>Did you perforn</li> <li>Does the volum</li> <li>Was the hydrau</li> </ol>	ne of the tota	al base fl	luid of the h	ydraulic fr	acturing					Yes Yes Yes	☐ No (If N	lo, skip c	questions 2 an question 3) t Page Three (	•
Date of first Produ	uction/Injecti	ion or Re	esumed Pro	duction/		ucing Meth	nod:	ing	Gas Li	ft 🗆 C	other (Explain)			
Estimated Produ	ction		Oil E	Bbls.			Mcf	Wa			bls.	Gas	s-Oil Ratio	Gravity
Per 24 Hours	8													
DISPOSITION OF GAS:  Vented Sold Used on Lease					METHOD O			F COMPLETION:  Dually Comp.  (Submit ACO-5)  (Submit ACO-4)			•	-	PRODUCTIC Top	N INTERVAL: Bottom
(If vent	ted, Submit A	.CO-18.)						(		, (842.				
Shots Per Foot							Bridge Plug Set At  Acid, Fracture, Shot, Cementing Squeeze F (Amount and Kind of Material Used)						Record	
TUBING RECOR	RD:	Size:		Set At:			Packer At:							

Form	ACO1 - Well Completion
Operator	Mull Drilling Company, Inc.
Well Name	SCHIPPERS 1-33
Doc ID	1472997

## All Electric Logs Run

CDL/CNL/PE
DIL
MEL
SONIC

Form	ACO1 - Well Completion
Operator	Mull Drilling Company, Inc.
Well Name	SCHIPPERS 1-33
Doc ID	1472997

## Tops

Name	Тор	Datum				
Anhydrite	2540	+ 470				
B/Anhydrite	2568	+ 442				
Heebner	4007	- 997				
Lansing	4049	- 1039				
Stark	4263	- 1253				
Marmaton	4350	- 1340				
Pawnee	4441	- 1431				
Myrick Station	4488	- 1478				
Ft. Scott	4509	- 1499				
Cherokee	4537	- 1527				
Mississippian	4627	- 1617				

Form	ACO1 - Well Completion
Operator	Mull Drilling Company, Inc.
Well Name	SCHIPPERS 1-33
Doc ID	1472997

## Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement		Type and Percent Additives
Surface	12.25	8.625	23	287	Class A	170	3% cc, 2% gel
Production	7.875	5.5	15.5	4667	H-Con/H- Long	470	



EMENT	5 5 5 20	THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.		PORT								
		Mull Di	rilling		Well		Schipp	ers 1-3	3	Tick	et:	ICT2055
City, S	itate:				County:		Thom	as, KS			te:	6/12/2019
Field	Rep:	Scott			<b>5-</b> Т-R:			S-31W		Servi		Cement
				8								Centent
Down Hole		nformat			Slur	CONTRACTOR OF THE PARTY OF THE					Cement Ble	nd
Hole D			12.25		Weight:		7 #/sx	_		Product	%	#
Casing			287' 8.625"	-	Water / Sx:		/ gal/sx		Class	Α		15980
asing D	C1000000000000000000000000000000000000	<del></del>	287'	-	Yield:	1 2/5	ft <sup>3</sup> /sx	_	Gel			320
ubing / L			In		Bbls / Ft.:			4	CaCI			480
	epth:		ft		Depth: Volume:		ft	-	Metso			
ool / Pad	ker:				Excess:	110%	bbls	-	KolSe			
De	epth:		ft		Total Slurry:		bbis	-	Pheno	Seal		
splacem	ient:		17		Total Sacks:	170	SX	4	Salt			
				į			- JA					
IME R	ATE	PSI	BBLs		REMARKS	TIME	RATE	PSI	BBLs		Tota REMAI	<u> </u>
'pm					Arrivial							
)5pm		·		s	afety meeting							
0pm					Rig up							······································
0pm	5.0	200.0	65.0		nd displace cement							
pm		200.0		Shi	ut in plug down							
10pm				Wash	up and rig down	· · · · · · · · · · · · · · · · · · ·						
30pm					depart				<u> </u>			
				Cement	did circulate cellar							
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	$\neg +$									<u> </u>		
									<b>_</b>			
											1-746	
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		CREW										
Cement	ar.	and the former of the second district the	Ailon Ch		UNIT					SUMMAR	Y	
			Ailes Sha		73.0		Average Rate Ave			Average Pressure		luld
np Operat	or	1.	osh Mosi	or 1	230.0		5 bpm 200.00 psi					



CEMEN	T TRI	EATMEN	IT REP	ORT	~						
Gue	stomer	Mull Dr	illing	Well	:	Schippe	rs 1-33		Ticke		ICT2070
City	, State			County	:	Sherida	<b>*</b>	ICT2079			
Fle	ld Rep	Ray Bro	wn	S-T-R	<del></del>	33-105			Dat		5/21/2019
			Since the second season		<b>1</b>				Servic	<b>X</b>	Cement
	vnhole le Size:	Informati		Slu	Charles and the second second	<b>6</b>			· ·	ement Blenc	
	Depth:	<u> </u>	7.875 4680'		12/14.8	#/sx			Product	. %	#
The second	g Size:		5.5"	Water / Sx	15.4/6.6 2.56/1.51	gal/sx	-	Class	Α		47000
Casing			4667'	Bbls / Ft.:	35	ft <sup>3</sup> / sx	-	Gel			188
Tubing	/ Liner:		ìn	Depth:		ft		Metso		<u> </u>	846
	Depth:		ft	Volume	<u> </u>	bbls		KolSea	al		564
Tool / P				Excess		%		Pheno			1000 75
	Depth:		ft	Total Slurry:	190	bbls		Salt			1240
Displace	ement:		bbls	Total Sacks:	500	5X					1240
TIME	RATE	PSI	BBLs	REMARKS						Total	50,913
6pm					TIME -	RATE	PSI	BBLs		REMARI	
605pm				Arrivial Safety meeting							
610pm		* **		Rig up equip				<del> </del>			***************************************
645pm				Run in casing							
910pm				Circulate casing							
1040pm	4.0	400.0	25.0	Pump 200# Calcium and 200#							<del></del>
				Metso Flush							
11pm	4.0	100.0	15.0	Plug RH 30sx							
1110pm	6.0	400.0	176.0	Pump 270sx Hcon & 200sx H long							
1140pm 1145pm				Release plug and wash up							
1215am	6,0	1,800.0	111.5	Displace plug Plug down and held							
1230am		.,,,,,,,,,,	771.0	Rig down equip							
1255am				Depart	<del></del>						
				Cement did necirculate							
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									· · · · · · · · · · · · · · · · · · ·		
											<del></del>
		CREW		UNIT					SUMMAR	Υ	
	enter:	110	Miles Shav		[	Average Rate Average Pressure					ıld
Pump Ope		Plichan				5 b	pm	675.00	psi	327.50 i	
	ilk #1; ilk #2;		esse Jone ohn Polle								***



Company: Mull Drilling Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: Wildcat Job Number: 359 API #: 15-193-21044

Operation:
Uploading recovery &
pressures

**DATE**June **17**2019

DST #1 Formation: LKC "D,E,F"

Test Interval: 4085 -

Total Depth: 4145'

4145'

Time On: 02:37 06/17 Time Off: 08:23 06/17

Time On Bottom: 04:51 06/17 Time Off Bottom: 06:26 06/17

Electronic Volume Estimate: 41' 1st Open Minutes: 5 Current Reading: 1" at 5 min

Max Reading: 1"

1st Close Minutes: 30 Current Reading: 0" at 30 min Max Reading: 0" 2nd Open Minutes: 30 Current Reading: .1" at 30 min Max Reading: .3" 2nd Close Minutes: 30 Current Reading: 0" at 30 min Max Reading: 0"

Inside Recorder





Company: Mull Drilling Company, Inc Lease: Schippers #1-33

Operation:
Uploading recovery & pressures

SEC: 33 TWN: 10S RNG: 31 County: THOMAS

State: Kansas Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: Wildcat Job Number: 359 API #: 15-193-21044

DATE
June
17
2019

DST #1	Formation: LKC	Test Interval: 4085 -	Total Depth: 4145'
	"D,E,F"	4145'	•

Time On: 02:37 06/17 Time Off: 08:23 06/17

Time On Bottom: 04:51 06/17 Time Off Bottom: 06:26 06/17

#### Recovered

<u>Foot</u>	<u>BBLS</u>	Description of Fluid	Gas %	Oil %	Water %	Mud %
1	0.01423	0	0	100	0	0
15	0.21345	SLOCM	0	5	0	95
60	0.33244	SLOCHMCW	0	2	68	30
60	0.2952	SLOCMCW	0	1	76	23

Total Recovered: 136 ft

Total Barrels Recovered: 0.85532

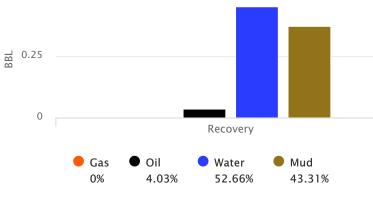
Close / Final Close

Reversed Out
NO

Initial Hydrostatic Pressure	2002	PSI
Initial Flow	34 to 49	PSI
Initial Closed in Pressure	1145	PSI
Final Flow Pressure	52 to 88	PSI
Final Closed in Pressure	1096	PSI
Final Hydrostatic Pressure	1997	PSI
Temperature	121	°F
Pressure Change Initial	4.3	%

GIP cubic foot volume: 0

# Recovery at a glance





Company: Mull Drilling Company, Inc Lease: Schippers #1-33

Operation:
Uploading recovery & pressures

Rig 8 Elevation: 3005 GL Field Name: Wildcat Pool: Wildcat Job Number: 359

API #: 15-193-21044

County: THOMAS State: Kansas

SEC: 33 TWN: 10S RNG: 31

Drilling Contractor: WW Drilling, LLC -

**DATE**June **17**2019

DST #1 Formation: LKC Test Interval: 4085 - Total Depth: 4145' "D,E,F" 4145'

Time On: 02:37 06/17 Time Off: 08:23 06/17

Time On Bottom: 04:51 06/17 Time Off Bottom: 06:26 06/17

#### **BUCKET MEASUREMENT:**

1st Open: 1/4" Blow built to 1" over 5 min.

1st Close: No Return

2nd Open: Weak surface blow built to 1/4" then died back to 1/8" over 30 min.

2nd Close: No Return

#### **REMARKS:**

Tool Sample: 0% Gas 5% Oil 45% Water 50% Mud

Measured RW: .2 @ 67 degrees °F

RW at Formation Temp: 0.115 @ 121 °F

Chlorides: 35000 ppm



Uploading recovery &

pressures

**Company: Mull Drilling** Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: Wildcat Job Number: 359 API #: 15-193-21044

**DATE** June 17

2019

**DST #1** Formation: LKC Test Interval: 4085 -"D,E,F"

4145'

Total Depth: 4145'

Time On: 02:37 06/17

Time Off: 08:23 06/17

Time On Bottom: 04:51 06/17 Time Off Bottom: 06:26 06/17

## **Down Hole Makeup**

**Heads Up:** 19.31 FT Packer 1: 4079.73 FT

**Drill Pipe:** 3955.47 FT Packer 2: 4084.73 FT

ID-3 1/2 Top Recorder: 4069.15 FT

Weight Pipe: 0 FT **Bottom Recorder:** 4088 FT

ID-2 7/8

Well Bore Size: 7 7/8 Collars: 116 FT

**Surface Choke:** 1" ID-2 1/4

**Bottom Choke:** 5/8" **Test Tool:** 33.57 FT

ID-3 1/2-FH Jars

Safety Joint

**Total Anchor:** 60.27

**Anchor Makeup** 

1 FT

3 FT

Packer Sub: Perforations: (top): 24 FT

4 1/2-FH

**Change Over:** .5 FT

Drill Pipe: (in anchor): 31.27 FT

ID-3 1/2

**Change Over:** .5 FT

4 1/2-FH

Perforations: (below):



Operation:
Uploading recovery & pressures

**Company: Mull Drilling** 

Company, Inc

**DST #1** 

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: Wildcat Job Number: 359 API #: 15-193-21044

<u>DATE</u>

June

**17** 2019

Formation: LKC "D,E,F"

Test Interval: 4085 -

Total Depth: 4145'

4145'

Time On: 02:37 06/17 Time Off: 08:23 06/17

Time On Bottom: 04:51 06/17 Time Off Bottom: 06:26 06/17

## **Mud Properties**

Mud Type: Chem Weight: 9.0 Viscosity: 50 Filtrate: 6.4 Chlorides: 1500 ppm



pressures

Operation:
Uploading recovery &

**Company: Mull Drilling** 

Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: Wildcat Job Number: 359 API #: 15-193-21044

DATE
June
17
2019

DST #1 Formation: LKC "D,E,F"

Test Interval: 4085 -

Total Depth: 4145'

4145'

Time On: 02:37 06/17 Time Off: 08:23 06/17

Time On Bottom: 04:51 06/17 Time Off Bottom: 06:26 06/17

## **Gas Volume Report**

1st Open							
Time	Orifice	PSI	MCF/D				

2nd Open						
Time	Orifice	PSI	MCF/D			



Company: Mull Drilling Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

Operation:
Uploading recovery & pressures

**DATE**June **17**2019

DST #2 Formation: LKC "H- Test Interval: 4175 - Total Depth: 4270'

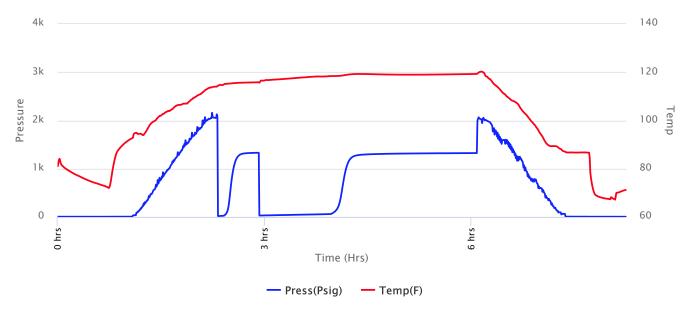
Time On: 23:23 06/17 Time Off: 07:24 06/18

Time On Bottom: 01:39 06/18 Time Off Bottom: 05:14 06/18

Electronic Volume Estimate: 230' 1st Open Minutes: 5 Current Reading: .25" at 5 min Max Reading: .25" 1st Close Minutes: 30 Current Reading: 0" at 30 min Max Reading: 0"

2nd Open Minutes: 60 Current Reading: 12.5" at 60 min Max Reading: 12.5" 2nd Close Minutes: 120 Current Reading: 1" at 120 min Max Reading: 1"

Inside Recorder





Uploading recovery &

pressures

Company: Mull Drilling Company, Inc Lease: Schippers #1-33 SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

<u>DATE</u> June **17** 2019

DST #2 Formation: LKC "H- Test Interval: 4175 - Total Depth: 4270'

Time On: 23:23 06/17 Time Off: 07:24 06/18

Time On Bottom: 01:39 06/18 Time Off Bottom: 05:14 06/18

#### Recovered

<u>Foot</u>	<u>BBLS</u>	Description of Fluid	<u>Gas %</u>	<u>Oil %</u>	Water %	<u>Mud %</u>
150	1.79934	G	100	0	0	0
20	0.0984	НОСМ	0	30	0	70
60	0.2952	SLWCOCM	0	20	5	75

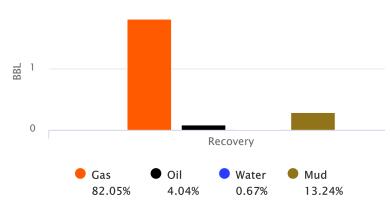
Total Recovered: 230 ft

Total Barrels Recovered: 2.19294

NO	Reversed Out
	NO

Initial Hydrostatic Pressure	2062	PSI
Initial Flow	18 to 24	PSI
Initial Closed in Pressure	1331	PSI
Final Flow Pressure	31 to 60	PSI
Final Closed in Pressure	1324	PSI
Final Hydrostatic Pressure	2025	PSI
Temperature	120	°F
Pressure Change Initial	0.5	%
Close / Final Close		

#### Recovery at a glance



GIP cubic foot volume: 10.10239



Company: Mull Drilling Company, Inc Lease: Schippers #1-33

Operation:
Uploading recovery & pressures

State: Kansas
Drilling Contractor: WW Drilling, LLC -

SEC: 33 TWN: 10S RNG: 31W

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

County: THOMAS

**DATE**June **17**2019

DST #2 Formation: LKC "H- Test Interval: 4175 - Total Depth: 4270'

Time On: 23:23 06/17 Time Off: 07:24 06/18

Time On Bottom: 01:39 06/18 Time Off Bottom: 05:14 06/18

#### **BUCKET MEASUREMENT:**

1st Open: 1/8" Blow built to 1/4" over 5 min.

1st Close: No Return 2nd Open: BoB in 47 min.

2nd Close: Weak surface Return built to 1" over 120 min.

**REMARKS:** 

Tool Sample: 0% Gas 20% Oil 5% Water 75% Mud



**Company: Mull Drilling** Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

Operation: Uploading recovery & pressures

> **DATE** June

17

2019

**DST #2** Formation: LKC "H-Test Interval: 4175 -Total Depth: 4270' 4270'

Time On: 23:23 06/17 Time Off: 07:24 06/18

Time On Bottom: 01:39 06/18 Time Off Bottom: 05:14 06/18

## **Down Hole Makeup**

**Heads Up:** 22.83 FT Packer 1: 4170.21 FT

**Drill Pipe:** 4049.47 FT Packer 2: 4175.21 FT

ID-3 1/2 Top Recorder: 4159.63 FT

Weight Pipe: 0 FT **Bottom Recorder:** 4178 FT

ID-2 7/8

Well Bore Size: 7 7/8 Collars: 116 FT

**Surface Choke:** 1" ID-2 1/4

**Bottom Choke:** 5/8" **Test Tool:** 33.57 FT

ID-3 1/2-FH

Jars

Safety Joint

**Total Anchor:** 94.79

**Anchor Makeup** 

27 FT

Packer Sub: 1 FT

Perforations: (top):

**Change Over:** .5 FT

4 1/2-FH

Drill Pipe: (in anchor): 62.79 FT

ID-3 1/2

**Change Over:** .5 FT

Perforations: (below): 3 FT

4 1/2-FH



Operation: Uploading recovery & pressures

**Company: Mull Drilling** 

Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

**DATE** 

June

17

2019

Formation: LKC "H-J" DST #2 Test Interval: 4175 -Total Depth: 4270'

4270'

Time On: 23:23 06/17 Time Off: 07:24 06/18

Time On Bottom: 01:39 06/18 Time Off Bottom: 05:14 06/18

## **Mud Properties**

Chlorides: 2200 ppm Mud Type: Chem Weight: 9.2 Viscosity: 56 Filtrate: 6.4



Operation:
Uploading recovery & pressures

**Company: Mull Drilling** 

Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

**PSI** 

MCF/D

**DATE**June **17**2019

DST #2 Formation: LKC "H- Test Interval: 4175 - Total Depth: 4270'

Time On: 23:23 06/17 Time Off: 07:24 06/18

Time On Bottom: 01:39 06/18 Time Off Bottom: 05:14 06/18

## **Gas Volume Report**

	1st Op	en			2nd O <sub>l</sub>	oen
Time	Orifice	PSI	MCF/D	Time	Orifice	Ρ



Company: Mull Drilling Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

Operation:
Uploading recovery & pressures

**DATE**June **19**2019

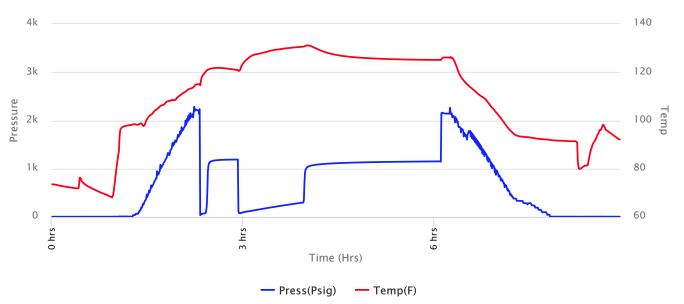
DST #3 Formation: Pawnee Test Interval: 4420 - Total Depth: 4460'

Time On: 06:47 06/19 Time Off: 15:28 06/19

Time On Bottom: 09:03 06/19 Time Off Bottom: 12:38 06/19

Electronic Volume Estimate: 4417' 1st Open Minutes: 5 Current Reading: 34.2" at 5 min Max Reading: 34.2" 1st Close Minutes: 30 Current Reading: .1" at 30 min Max Reading: .1" 2nd Open Minutes: 60 Current Reading: 392.3" at 60 min Max Reading: 392.3" 2nd Close Minutes: 120 Current Reading: 68.5" at 120 min Max Reading: 68.9"

Inside Recorder





Company: Mull Drilling Company, Inc Lease: Schippers #1-33

Operation:
Uploading recovery & pressures

State: Kansas Drilling Contractor: WW Drilling, LLC -

SEC: 33 TWN: 10S RNG: 31W

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

County: THOMAS

DATE	
June	
19	
2019	

DST #3 Formation: Pawnee Test Interval: 4420 - Total Depth: 4460'

Time On: 06:47 06/19 Time Off: 15:28 06/19

Time On Bottom: 09:03 06/19 Time Off Bottom: 12:38 06/19

#### Recovered

<u>Foot</u>	<u>BBLS</u>	Description of Fluid	<u>Gas %</u>	<u>Oil %</u>	Water %	Mud %
3685	52.43755	G	100	0	0	0
126	1.79298	SLGCO	10	90	0	0
220	3.1306	SLGCO	15	85	0	0
157	2.23411	SLMCSLGCO	15	79	0	6
126	1.79298	SLMCSLGCO	10	87	0	3
123	1.22893	SLMCGCO	20	78	0	2
60	0 2952	SLOCGCM	20	3	0	77

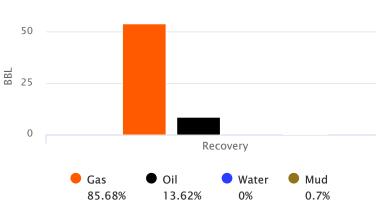
Total Recovered: 4497 ft

Total Barrels Recovered: 62.91235

Reversed Out
NO

Initial Hydrostatic Pressure	2211	PSI
Initial Flow	37 to 78	PSI
Initial Closed in Pressure	1191	PSI
Final Flow Pressure	78 to 295	PSI
Final Closed in Pressure	1151	PSI
Final Hydrostatic Pressure	2162	PSI
Temperature	131	°F
Pressure Change Initial	3.3	%
Close / Final Close		

## Recovery at a glance



GIP cubic foot volume: 302.65343



Operation: Uploading recovery & pressures

# **Company: Mull Drilling** Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

<u>DATE</u> June 19 2019

**DST #3 Formation: Pawnee** Test Interval: 4420 -Total Depth: 4460'

4460'

Time On: 06:47 06/19 Time Off: 15:28 06/19

Time On Bottom: 09:03 06/19 Time Off Bottom: 12:38 06/19

#### **BUCKET MEASUREMENT:**

1st Open: BoB in 2 min. 15 sec.

1st Close: Weak Surface Return started at 6 min. Did not build or die.

2nd Open: BoB in 1 min. 17 sec. 2nd Close: BoB in 9 min. 53 sec.

**REMARKS:** 

Gas to surface at end of final flow period. Slight odor too weak to measure.

Tool Sample: 30% Gas 50% Oil 0% Water 20% Mud

Gravity: 39.5 @ 60 °F



**Company: Mull Drilling** Company, Inc Lease: Schippers #1-33

Operation: Uploading recovery & pressures

Rig 8 Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359

County: THOMAS State: Kansas

SEC: 33 TWN: 10S RNG: 31W

Drilling Contractor: WW Drilling, LLC -

API #: 15-193-21044

**DATE** June 19 2019

**DST #3 Formation: Pawnee** Test Interval: 4420 -Total Depth: 4460'

4460'

Time On: 06:47 06/19 Time Off: 15:28 06/19

Time On Bottom: 09:03 06/19 Time Off Bottom: 12:38 06/19

## **Down Hole Makeup**

**Heads Up:** 30.15 FT Packer 1: 4414.59 FT

**Drill Pipe:** 4301.17 FT Packer 2: 4419.59 FT

ID-3 1/2 Top Recorder: 4404.01 FT

Weight Pipe: 0 FT **Bottom Recorder:** 4425 FT

ID-2 7/8

Well Bore Size: 7 7/8 Collars: 116 FT

**Surface Choke:** 1" ID-2 1/4

**Bottom Choke:** 5/8" **Test Tool:** 33.57 FT

ID-3 1/2-FH Jars

Safety Joint

**Total Anchor:** 40.41

**Anchor Makeup** 

Packer Sub: 1 FT

Perforations: (top): 4 FT

4 1/2-FH

**Change Over:** .5 FT

Drill Pipe: (in anchor): 31.41 FT

ID-3 1/2

Perforations: (below):

.5 FT

3 FT

4 1/2-FH

**Change Over:** 



Operation:
Uploading recovery & pressures

**Company: Mull Drilling** 

Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

<u>DATE</u> June **19** 2019 DST #3 Formation: Pawnee Test Interval: 4420 - Total Depth: 4460'

4460'

Time On: 06:47 06/19 Time Off: 15:28 06/19

Time On Bottom: 09:03 06/19 Time Off Bottom: 12:38 06/19

## **Mud Properties**

Mud Type: Chem Weight: 9.3 Viscosity: 59 Filtrate: 7.2 Chlorides: 3000 ppm



Operation:
Uploading recovery & pressures

# **Company: Mull Drilling**

Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

**PSI** 

MCF/D

DATE
June
19
2019

DST #3 Formation: Pawnee Test Interval: 4420 - Total Depth: 4460'

4460'

Time On: 06:47 06/19 Time Off: 15:28 06/19

Time On Bottom: 09:03 06/19 Time Off Bottom: 12:38 06/19

## **Gas Volume Report**

1st Open				2nd Op	oen	
Time	Orifice	PSI	MCF/D	Time	Orifice	P



Company: Mull Drilling Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

Operation:
Uploading recovery & pressures

**DATE**June **20**2019

DST #4 Formation: Cherokee Snd.

Test Interval: 4530 -

Total Depth: 4600'

4600'

Time On: 11:52 06/20 Time Off: 18:40 06/20

Time On Bottom: 14:55 06/20 Time Off Bottom: 16:30 06/20

Electronic Volume Estimate:

4'

1st Open Minutes: 5 Current Reading: .1" at 5 min

Max Reading: .1"

1st Close Minutes: 30 Current Reading: 0" at 30 min

Max Reading: 0"

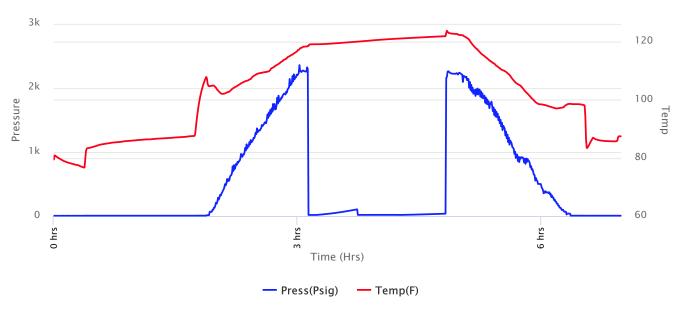
2nd Open Minutes: 30 Current Reading: 0" at 30 min

Max Reading: 0"

2nd Close Minutes: 30 Current Reading: 0" at 30 min

Max Reading: 0"

Inside Recorder





**Company: Mull Drilling** Company, Inc

Operation: Uploading recovery & pressures

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

<b>DATE</b>	
June	
20	
2019	

Total Depth: 4600' **DST #4** Formation: Test Interval: 4530 -Cherokee Snd. 4600'

> Time On: 11:52 06/20 Time Off: 18:40 06/20

Time On Bottom: 14:55 06/20 Time Off Bottom: 16:30 06/20

#### Recovered

**Description of Fluid** Mud % **BBLS** Gas % <u>Oil %</u> Water % **Foot** 5 M (trace O) 0 99.9 0.0246 .1 0

Total Recovered: 5 ft

Total Barrels Recovered: 0.0246

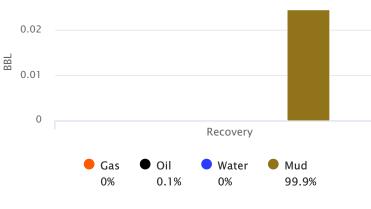
Close / Final Close

Reversed Out
NO

Initial Hydrostatic Pressure	2262	PSI
Initial Flow	17 to 18	PSI
Initial Closed in Pressure	105	PSI
Final Flow Pressure	18 to 19	PSI
Final Closed in Pressure	37	PSI
Final Hydrostatic Pressure	2221	PSI
Temperature	122	°F
Pressure Change Initial	64.9	%

GIP cubic foot volume: 0

# Recovery at a glance





Uploading recovery &

pressures

Company: Mull Drilling Company, Inc Lease: Schippers #1-33 SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

DATE
June
20
2019

DST #4 Formation: Test Interval: 4530 - Total Depth: 4600' Cherokee Snd. 4600'

Time On: 11:52 06/20 Time Off: 18:40 06/20

Time On Bottom: 14:55 06/20 Time Off Bottom: 16:30 06/20

#### **BUCKET MEASUREMENT:**

1st Open: Surface Blow did not build or die

1st Close: No Return 2nd Open: No Blow 2nd Close: No Return

**REMARKS:** 

Tool Sample: 0% Gas .1% Oil 0% Water 99.9% Mud



Uploading recovery &

pressures

Company: Mull Drilling Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

DATE June 20

2019

DST #4 Formation: Test Interval: 4530 - Total Depth: 4600' Cherokee Snd. 4600'

Time On: 11:52 06/20 Time Off: 18:40 06/20

Time On Bottom: 14:55 06/20 Time Off Bottom: 16:30 06/20

## **Down Hole Makeup**

**Heads Up:** 9.779999999999 FT **Packer 1:** 4524.75 FT

**Drill Pipe:** 4390.96 FT **Packer 2:** 4529.75 FT

ID-3 1/2

**Top Recorder:** 4514.17 FT

Weight Pipe: FT

ID-2 7/8

Bottom Recorder: 4533 FT

Collars: 116 FT

Well Bore Size: 7 7/8

ID-2 1/4

Surface Choke: 1"

Test Tool: 33.57 FT

Bottom Choke: 5/8"

ID-3 1/2-FH

Jars

Safety Joint

Total Anchor: 70.25

Anchor Makeup

Packer Sub: 1 FT

Perforations: (top): 34 FT

4 1/2-FH

Change Over: .5 FT

Drill Pipe: (in anchor): 31.25 FT

ID-3 1/2

Change Over: .5 FT

Perforations: (below): 3 FT

4 1/2-FH



Uploading recovery &

pressures

Company: Mull Drilling Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

DATE
June
20
2019

DST #4 Formation: Test Interval: 4530 - Total Depth: 4600' Cherokee Snd. 4600'

Time On: 11:52 06/20 Time Off: 18:40 06/20

Time On Bottom: 14:55 06/20 Time Off Bottom: 16:30 06/20

## **Mud Properties**

Mud Type: Chem Weight: 9.4 Viscosity: 64 Filtrate: 8.8 Chlorides: 3400 ppm



Uploading recovery &

pressures

Company: Mull Drilling Company, Inc

Lease: Schippers #1-33

SEC: 33 TWN: 10S RNG: 31W

County: THOMAS State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 8

Elevation: 3005 GL Field Name: Wildcat Pool: WILDCAT Job Number: 359 API #: 15-193-21044

DATE
June
20
2019

DST #4 Formation: Cherokee Snd.

Test Interval: 4530 -

Total Depth: 4600'

4600'

Time On: 11:52 06/20 Time Off: 18:40 06/20

Time On Bottom: 14:55 06/20 Time Off Bottom: 16:30 06/20

## **Gas Volume Report**

1st Open				
Time	Orifice	PSI	MCF/D	

2nd Open				
Time	Orifice	PSI	MCF/D	

#### KEVIN L. KESSLER CONSULTING PETROLEUM GEOLOGIST (316) 522 - 7338 **ELEVATION OPERATOR:** MULL DRILLING CO. INC. LEASE: SCHIPPERS **KB**: 3010' **WELL #:** 1 - 33 **LOCATION**: 1243' FSL & 1732' FWL GL: 3005' **SEC**: 33 **TWP**: 10 S **RGE**: 31 W MEASURMENTS FROM: **COUNTY:** THOMAS **STATE:** KANSAS KB CONTRACTOR: W W RIG # 8 CASING RECORD: SURFACE: COMM: 06 - 12 - 2019 COMP: 06 - 21 - 2019 8 5/8" @ 287' RTD: 4680' LTD: 4681' PRODUCTION: GEOLOGICAL SUPERVISION FROM: 3800' TO: RTD 5 1/2" @ 4680' SAMPLES SAVED FROM: 3800' TO: RTD SAMPLE TOP DATUM TOP LOG DATUM COMP. FORMATION: **ELECTRICAL SURVEYS:** DIL 4007 - 997 **HEEBNER** -997 + 054007 CNL/CDL 4050 4050 LANSING - 1040 - 1040 + 06 **MICRO** 4262 + 06 STARK - 1252 4262 - 1252 SONIC BASE/KC - 1312 4322 4322 + 04 - 1312 4536 - 1526 CHEROKEE 4536 - 1526 + 14 + 18 **MISSISSIPPI** 4628 - 1618 4628 - 1618 REFERENCE WELL FOR STRUCTURAL COMPARISON: ABERCROMBIE #1 MILLER 33-10S-31W THOMAS CO KS 3800 -LST: CRM - WHT - TAN FXTAL SUBCHKY -CHKY ARENACEOUS IN PART SLI FOSS FR AMT GRAY SILTY SHALE NO VIS. POR. NSO SHALE: GRAY SILTY SANDY NO VIS. POR.NSO 3850 MUD CHECK @ 1850' LST: CRM - GRAY FXTAL SUBCHKY -DNSE SLI FOSS. MINOR GRAY SHALE NO VIS. POR. NSO LST: CRM - GRAY FXTAL ARENACEOUS IN PART SLI FOSS NO VIS. POR. NSO SHALE: BLK CARB. W/LST. A. A. NO VIS. POR. NSO 3900 LST: CRM - TAN - BRN FXTAL SUBCHKY -CHKY AREN. IN PART MINOR FOSS. 0 OOLITIC IN PART PR VIS. INTERPRT. 0 POR. NSO 0 LST: CRM - TAN FXTAL SOFT CHKY OOLITIC AREN. IN PART NO VIS. POR. LST: CRM - GAY FXTAL SUBCHKY - DNSE SLI FOSS. MINOR OOLITES AREN. IN 3950 -MUD CHECK @ 3950' PART FR AMT. GRAY SILTY SHALE NO VIS. POR. NSO М 0 SHALE: BLK CARB. NO VIS. POR. NSO 0 LST: CRM - GRAY A . . A ABUND GRAY -0 DRK GRAY CALC. SHALE NO VIS. POR. LST: CRM - TAN FXTAL SOFT CHKY FLAGGY IN PART SLI FOSS, FR AMT. GRAY SHALE NO VIS. POR. NSO 4000 HEEBN <del>ER 4007 ( i- 9</del> 971) SHALE: BLK CARB. W/ DNSE MOTTLED LST. NO VIS. POR. NSO SHALE: GRAY CALC. NO VIS. POR. NSO MIT CHECK@ 4050 LST: WHT - CRM FXTAL SUBCHKY -DNSE CHERTY IN PART NO VIS. POR. NSO W/T LST: WHT - CRM FXTAL MOST DNSE HARD SLI CHERTY W/ WHT - GRAY FRESH CHERT SLI FOSS NO VIS. POR. ANSIN G 4050 ( -1040) 4050 -LST: WHT - CRM FXTAL SUBCHKY -DNSE OOLITIC SLI FOSS. FR INTRPRT. POR. NSO SHALE: GRAY CALC. NO VIS. POR. NSO LST: WHT - CRM FXTAL DNSR BLOCKY NO VIS. POR. NSO SHALE: GRAY SILTY NO VIS. POR. NSO 4100 -DST # 1 (4085 - 4145) LST: CRM - GRAY FXTAL DNSE SLI FOSS. NO VIS. POR. NSO REC: 136 SOCMW4%0 IFP: LST: WHT - CRM FXTAL SUBCHKY -ISIP: 1145# DNSE FOSS IN PRT. MINOR OOLITES F\$IF FSFO FNT - FR ODOR SCATT MED BRN 1096# # SUBSAT STN FR INTRPRT. POR LST: CRM - GRAY - WHT FXTAL SUBCHKY - MOSTLY DNSE FOSS. IN PART NO VIS. POR. NSO LST: WHT - CRM FXTAL SUBCHKY FOSS. NO VIS. POR. NSO SHALE: GRAY SILTY W/ FR AMT FLAGGY BRITTLE LST. CRM - GRAY NO VIS. POR. 4150 CHECK @ 4 MUI 150' LST: WHT - CRM - GRAY FXTAL SUBCHY W/T - DNSE FOSS. IN PART NO VIS. POR. LST: A. A. NO VIS POR. NSO SHALE: GRAY - DRK GRAY NSO SHALE: BLK CARB. NSO SHALE: GRAY CALC. NSO 4200 -# 2 (4175 - 4270 ) DST 80' SLIWC 8 OCM 23%O LST: CRM - GRAY FXTAL DNSE BLOCKY IFP. 18:-24# SLI FOSS. TRC SFO NO ODOR 1 PCE W/ ISIP: 1331# DRK BRN SPTY STN PR INTRPRT. POR F\$IF SHALE: BLK CARB. W/ DNSE HARD GRAY 1324# LST. FR AMT GRAY SILTY SHALE NO Ś VIS. POR. NSO # CHECK@ LST: CRM - WHITE FXTAL MOST DNSE MUI 250' HARD NO VIS. POR. NSO VIS W/T 4250 LST: WHT - CRM - GRAY FXTAL SUBCHKY - DNSE FOSS. IN PARTFR -GDSFO GD ODOR FR AMT - ABUND. LT -MED BRN SAT STN FR INTRPRT. POR SHALE: BLK CARB W/ MINOR DNSE MOTTLED LST. NO VIS. POR. NSO SHALE: GRAY - DRK GRAY CALC. NO VIS. LST: CRM - GRAY FXTAL MOST DNSE MINOR OOLITES RARE FOSS. NO VIS. POR. NSO 4300 SHALE: BLK CARB. W/ MINOR AMT DNSE REGRESSIVE LST. NO VIS. POR. NSO SHALE: GRAY - DRK GRAY SILTY NO VIS. POR. NSO LST: A. A. MOST DNSE RARE FOSS. NO VIS. POR. NSO SHALE GRAY NSO LST: DOLOMITIC IN PART SLI FOSS NO VIS. POR. NSO 4350 MUD CHECK @ 4350' DOLO: A. A. VERY SANDY A. A. W/ SHOW A. A. VV/I LST: CRM - TAN FXTAL DNSE HARD NO VIS. POR. NSO SHALE: GRAY - DRK GRAY - BLK CARB. NO VIS. POR. NSO SHALE: A. A. NO VIS. POR. NSO SHALE: DRK GRAY - BLK NSO 4400 LST: CRM - TAN - BRN FXTAL SUBCHKY -DNSE RARE FOSS. NO VIS. POR. NSO SHALE: BROWN ARGILACEOUS EARTHY NO VIS. POR. NSO DST #3 (4420 -460 RECI812 MCGO 78% LST: CRM - GRAY FXTAL MOST DNSE IFP 7 . 78# MICRITIC IN PART NO VIS. POR. NSO TSIP: 1191# FFP: 78 - 295# F\$IF LST: A. A. W/ FR AMT BRN EATHY :1151# ΣT ARGILACEOUS SHALE NO VIS. POR. NSO LST: CRM - GRAY FXTAL DNSE OOLITIC VSSFO STRONG ODOR ABUND LT BRN SAT STN EXCEL. INTERPRT. POR 4450 -MUD CHECK @ 4450' A. A. MOSTLY DNSE NO VIS. POR. NSO M/I LST: CRM - GRAY DNSE BLOCKY RARE FOSS. NO VIS. POR. NSO SHALE: GRAY CALC. NSO LST: CRM - GRAY DNSE SLI FOSS VSSFO STRONG SULF. ODOR 2 - 3 PCS W/SPTY MED BRN STN PR VUGGY POR. 4500 SHALE: BLK CARB. NO VIS. POR. NSO LST: CRM - GRAY FXTAL SUBCHKY -MOSTLY DNSE SLI FOSS. NO VIS. POR. LST: A. A. NO VIS. POR. NSO CHEROKEE 4536 ( 1526 DST #4 (4530 6d0 ' SHALE: BLK CARB. FISSILE NO VIS. POR. <u>5 MUD S</u> 17 - 18# IFP: 4550 -TSIP: 105# FFP: 18 - 19# LST: CRM - GRAY FXTAL MOST DNSE RARE FOSS. NO VIS. POR. NSO F\$IF 37# Ś

NSO LST. NO VIS. POR. NSO 4600 INTRGRAN POR. POR. NSO MISSISSIPPI 4628 ( 1618) PART NO VIS. POR. NSO 4650 M CHECK @ 4650'

HARD NO VIS. POR. NSO

LST: CRM - GRAY FXTAL DNSE SLI FOSS. FR AMT BLK CARB. SHALE NO VIS. POR. SHALE: GRAY - DRK GRAY - BLK W/ INTERBEDDED GRAY FLAGGY DNSE SAND: QTZ. FN GRN WELL SORTED FRIABLE - SUBFRIABLE FSFO FR ODOR FR AMT MED - DRK BRNSAT STN PR - FR SHALE: GRAY - DRK GRAY SILTY NO VIS. LST: DOLOMITIC RARE FOSS. DNSE LST: A. A. NO VIS. POR. NSO LST: CRM - GRAY DNSE DOLOMITIC IN VIS DOLO: CRM- TAN FXTAL DNSE W/T SUCROSIC IN PART NO VIS. POR. NSO DOLO: A. A. NO VIS. POR. NSO DOLO: A. A. NSO

COMMENTS: 5 1/2" PRODUCTION CASING WAS RUN TO FURTHER TEST THE PRODUCTIVITY OF THIS WELL

KEVIN L. KESSLER