KOLAR Document ID: 1444807

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: State	e:++	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-Er	ntry Workover	Field Name:
□ Oil □ WSW	□ SWD	Producing Formation:
☐ Gas ☐ DH	□ EOR	Elevation: Ground: Kelly Bushing:
□ og	 ☐ GSW	Total Vertical Depth: Plug Back Total Depth:
CM (Coal Bed Methane)		Amount of Surface Pipe Set and Cemented at: Feet
Cathodic Other (Core, E	Expl., etc.):	Multiple Stage Cementing Collar Used?
If Workover/Re-entry: Old Well Info a	as follows:	If yes, show depth set: Feet
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)
	2	Chloride content: ppm Fluid volume: bbls
•	Permit #:	Dewatering method used:
	Permit #: Permit #:	Location of fluid disposal if hauled offsite:
	Permit #:	Location of fluid disposal if fladied offsite.
	Permit #:	Operator Name:
		Lease Name: License #:
Spud Date or Date Reach	ed 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: 1444807

#### Page Two

Operator Name:					Lease Nam	ne:			Well #:	
Sec Tw	pS. F	R [	East	West	County:					
open and closed and flow rates if	, flowing and sh gas to surface t ty Log, Final Lo	nut-in pressurest, along wit	es, whe h final c ain Geo	ther shut-in pre hart(s). Attach physical Data a	essure reached extra sheet if r and Final Electr	station more : ric Loc	level, hydrosta space is needed	tic pressures, d.	bottom hole tempe	val tested, time tool erature, fluid recovery,  Digital electronic log
Drill Stem Tests (Attach Addit			Ye	es No		Lo	og Formatio	n (Top), Deptl	n and Datum	Sample
Samples Sent to	Geological Sur	vey	Ye	es 🗌 No		Name	)		Тор	Datum
Cores Taken Electric Log Run Geologist Repor List All E. Logs F	t / Mud Logs		Y€  Y€	es No						
			Repo		RECORD [	Nev	w Used rmediate, producti	on. etc.		
Purpose of St		ze Hole Orilled	Siz	e Casing (In O.D.)	Weight Lbs. / Ft.		Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
				ADDITIONAL	OF MENTING /					
Purpose:	[	Depth	Typo	of Cement	# Sacks Use		EEZE RECORD	Typo a	nd Percent Additives	
Perforate Protect Ca Plug Back	Top	Bottom	туре	or cement	# Sacks Use	,u		туре а	ia reicent Additives	
Plug Off Z										
Did you perform     Does the volum     Was the hydraul	e of the total base	fluid of the hyd	draulic fra	cturing treatmen		•	Yes ns? Yes	No (If No	, skip questions 2 an , skip question 3) , fill out Page Three o	,
Date of first Produ	ction/Injection or	Resumed Produ	uction/	Producing Meth			Coolift 0	thor (Fundain)		
Estimated Produc	otion	Oil Bb	le.	Flowing Gas	Pumping  Mcf	Wate		ther <i>(Explain)</i> bls.	Gas-Oil Ratio	Gravity
Per 24 Hours		Oli Bb	15.	Gas	IVICI	vvale	ı Di	JIS.	Gas-Oil Hallo	Gravity
DISPO	OSITION OF GAS	S:		N	METHOD OF CO	MPLE.	TION:		PRODUCTIO	N INTERVAL:
Vented	Sold Use	d on Lease		Open Hole		Dually		nmingled	Тор	Bottom
(If vente	ed, Submit ACO-18	.)			(5	SUDITIIL I	ACO-5) (Subi	mit ACO-4)		
Shots Per Foot	Perforation Top	Perforation Bottom	on	Bridge Plug Type	Bridge Plug Set At		Acid,		Cementing Squeeze Kind of Material Used)	Record
TUBING RECOR	D: Size:		Set At:		Packer At:					

Form	ACO1 - Well Completion
Operator	Ritchie Exploration, Inc.
Well Name	GERSTBERGER UNIT 1
Doc ID	1444807

### Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Type and Percent Additives
Surface	12.25	8.63	23	220	Common	3% cc, 2% gel



#1 Gerstberger Unit 2,547' FNL & 2,484' FWL 93' N & 174' E of E/2 E/2 W/2 Section 1-15S-37W Logan County, Kansas

API# 15-109-21576-0000 Elevation: GL: 3,302', KB: 3,310'

			Ref.
Sample Tops			Well
Anhydrite	2590	+720	-10
B/Anhydrite	2611	+699	-11
Stotler	3622	-312	-16
Heebner	3974	-664	-12
Toronto	3994	-684	-12
Lansing	4032	-722	-10
Muncie	4204	-894	-15
Stark	4297	-987	-20
Hush	4349	-1039	-18
BKC	4384	-1074	-10
Marmaton	4417	-1107	+2
Altamont	4435	-1125	-2
Pawnee	4508	-1198	-2
Myrick	4557	-1247	+1
Ft. Scott	4573	-1263	-2
Cherokee	4600	-1290	-1
Johnson	4694	-1384	-8
Morrow	4751	-1441	-7
Miss	4835	-1525	-13
RTD	4900	-1590	



PRESSURE PUMPING LLC

TICKET NUMBER 55928
LOCATION Calley 45
FOREMAN MILES Space

620-431-921	10 01 000-401-601	•		CEMEN	• •	•		•
DATE	CUSTOMER#	WEL	L NAME & NUM	BER	SECTION	TOWNSHIP	RANGE	COUNTY
1.20-18	7/73	12-8/516	1190 49	T. 1		15 3	37 W	Logan
STOMER	Calato	· ·		Bussel 501:	5	T saves	Toylog #	
LINGADDRE	SS Placetion	10		- 5	TRUCK#	DRIVER	TRUCK#	DRIVER
70.150X	783188				23/	Coreyl	#	
YILI		STATE	ZIP CODE_	-	700	Manuel 1		
VICHITA		Ks	67278-	3188	7031	Miles S		
B TYPE Sa	clair	HOLE SIZE 12		_ HOLE DEPT	L н <i>221</i>	CASING SIZE 8	WEIGHT 85	11/23#
SING DEPTH		DRILL PIPE	<i>7</i> -1	_ HOLE DEPTI _ TUBING	n_ <i>cc/</i>	CASING SIZE &	· · · · · · · · · · · · · · · · · · ·	* / CO
JRRY WEIGH		SLURRY VOL_	1,36		sk	CENENTIEET	OTHER In CASING 20	· · · · · · · · · · · · · · · · · · ·
	12,75hk	DISPLACEMEN		MIX PSI	>n	RATE_	III CASING <u>22</u>	<u>-                                      </u>
marks: S	· // / · · · · · · · · · · · · · · · ·	1 .	Λ	-	11. 0 4		ate Cesing	
10/1960 13	2 / 2 / 2 /	75 676 B	3 75-6/2	1 - 1 - 1 - 1 - 5	. / // \3	ernent die		ulate
	······································				<u> </u>		Herbe	21/11
					,		Thanks	Milste
ACCOUNT CODE	QUANITY	or UNITS	DE	SCRIPTION of	SERVICES or PF	RODUCT	UNIT PRICE	TOTAL
ACCOUNT CODE	QUANITY		DE PUMP CHARG		f SERVICES or PF	RODUCT		TOTAL
		40	PUMP CHARG	E	trade with the same to the sam	RODUCT	UNIT PRICE 1150,40 7115	TOTAL
CODE (E 047/		40 22 7815	PUMP CHARG		trade with the same to the sam	RODUCT	UNIT PRICE  1150, W  7115  Ullo, W	150,00 256,00
CODE (E 047/		40	PUMP CHARG	E	trade with the same to the sam	RODUCT	UNIT PRICE 1150,40 7115	TOTAL
CODE (E 047/		40 22 7815	PUMP CHARG	E	trade with the same to the sam	RODUCT	UNIT PRICE  1150, W  7115  Ulso, w	150,00 256,00
CODE (CO)		40 22 7815	PUMP CHARG	E	livery		UNIT PRICE  1150, W  7115  Who, w  24, w	150,00 256,00
CODE (CODE)		40 22 7815	PUMP CHARG	E	livery	SS 25%de	UNIT PRICE  1150, W  7115  Who, w  24, w	10TAL 1/50 a) 256, 00 460.00 4200
CODE (CODE)		40 22 7815	PUMP CHARG	E	livery		UNIT PRICE  1150, W  7115  Who, w  24, w	10TAL 1/50 a) 256, 00 460.00 4200
CODE (CODE)		40 22 7815	PUMP CHARG	E	livery		UNIT PRICE  1150, W  7115  Who, w  24, w	10TAL 1/50 a) 256, 00 460.00 4200
CODE (CODE)		40 22 7815	PUMP CHARG	E	livery		UNIT PRICE  1150, W  7115  Who, w  24, w	10TAL 1/50 a) 256, 00 460.00 4200
CODE (CODE)		40 22 7815	PUMP CHARG	E	livery		UNIT PRICE  1150, W  7115  Who, w  24, w	10TAL 1/50 a) 256, 00 460.00 4200
CODE (CODE)		40 22 7815	PUMP CHARG	E	livery		UNIT PRICE  1150, W  7115  Who, w  24, w	10TAL 1/50 a) 256, 00 460.00 4200
CODE ( )		40 22 7815	PUMP CHARG	E	livery		UNIT PRICE  1150, W  7115  Who, w  24, w	10TAL 1/50 a) 256, 00 460.00 4200
CODE ( )		40 22 7815	PUMP CHARG	E	livery		UNIT PRICE  1150, W  7115  Who, w  24, w	10TAL 1/50 a) 256, 00 460.00 4200

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.



PRESSURE PUMPING LLC
PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

AUTHORIZTION\_(

## 12107

TICKET NUMBER 55966

LOCATION Pallay VS

FOREMAN Walt Dinks

FIELD TICKET & TREATMENT REPORT CEMENT

MVoice #814666

ESTIMATED TOTAL

DATE\_

DATE CUSTO		LL NAME & NUMBER	SECTION	TÓWNSHIP	RANGE	COUNTY
11-30-18 711	13 Gerst	berger Unit #1	1	15-3	39 W	Logan
CÚSTOMÉR (2°1)		Russell		2011/110		
MAILING ADDRESS	chie Explo	Cotton 5 Sports		DRIVER	TRUCK#	DRIVER
P.O. BOX 783188		25 Huy J		Cory Do		<del> </del>
CITY		IZIP CODE 8-500	20 70	walt Di	the (*	<del> </del> -
Wichita	STATE KS	1118-3 8 5-W	)			
JOB TYPE PTA	HOLE SIZE	778 HOLE DEP		Casing Size & V	.L	<u>. 1</u>
CASING DEPTH	DRILL PIPE_	TUBING			AW 1715	_
SLURRY WEIGHT 13.3	SLURRY VOL		/sk	CEMENT LEFT In		
DISPLACEMENT	DISPLACEME	NT PSI MIX PSI	•	RATE	**	
REMARKS: Sate	Mostrus Ru	3 18 on WW#12	Pluca	s ardaro	0	•
		-1t	<del>, -=                                   </del>			
50-5Ks?	2600'					
100-5E5 2	2 1500	240 SKS	6940 por, 4	% (as 1 . 1/4	Flo-Sec	
50-5Ks &			,			
D 5/65 &	<del></del>	Wiper Plug	•			**************************************
30 565 in		7	•			<del></del>
	· · · · · · · · · · · · · · · · · · ·					
•						
ACCOUNT QU	JANITY or UNITS	DESCRIPTION	of SERVICES or PRO	DUCT	UNIT PRICE	TOTAL
Co0 450		PUMP CHARGE	_		1,500-00	1,500 00
C20002	40	MILEAGE	•		7.5	286 9
Ceo 710	1032	Ton milesee D	alwery		1 75	7224
			7		,	1 - 1 - 1
CC58291.	240 SKS	Lite Weight:	Blavia V		1600	3846 ª
CC 6075	60 #	Flo-Sea (	C CONTRACT		3 00	180 CX
CP 82181	1	85/8 Wooden	P/.30		16500	16500
CC5326	100#	Salt			75	n/c
U.5-226	100				2,0	1.1012
			-Auto-Auto-Auto-Auto-Auto-Auto-Auto-Auto			
			Andread State (			
		<del> </del>				<del>                                     </del>
		<del></del>				
	_				<u></u>	
						ノノ クラケゲ
						0,67,2
				20.55	<u> 25% -</u>	LA73 3
				2.55	25% -	1,673 3 1,673 3 5,020 =
			ANNEL	<u>less</u> :		
Ravin 3737		50	ANNE	<u> </u>	SALES TAX ESTIMATED	1,673 3 1,673 3 5,020 2 251.10

lareceived Time thec. 3 e20 8m 2.24 pM No. 33 7 lly amended in writing on the front of the form or in the customer's account records, at our orice, and continuous of service on the back of this form are in effect for services identified on this form

	FORMATION         SAMPLE TOP         ELECTRIC LOG TOP         SUB-SEA DATUM         STRUCTURAL POSITION           Anhydrite         2590         2585         725         730         748         72           Base Anhydrite         2610         2606         704         710         729         72           Stotler         3622         3618         -308         -296         -306         -32           Heebner         3974         3973         -663         -652         -668         -7           Lansing         4204         4208         -898         -879         -896         -96           BKC         4384         4397         -1087         -1064         -1080         -110           Altamont         4435         4432         -1122         -1123         -1127         -116           Ft Scott         4573         4580         -1270         -1261         -1266         -137           Cherokee SH         4694         4697         -1387         -1376         -1387         -145           Mississippi         4835         4833         -1523         -1512         -1546         -16           A Cobalt #1-2 KSF'A' 2330'FSL 2235'FEL 2-15-37W         -160'FS	COMPANY RITCHIE EXPLORATION  LEASE #1 Gerstberger Unit  FIELD Wildcat  LOCATION 2.547'FNL.2.484'FWL  SEC_1 TWSP_15 RGE 37W  COUNTY LOGAN STATE KS  CONTRACTOR WW Rig #12  SPUD11/19/18 COMP 11/30/18  RTD 4900 LTD 4900  MUD UP 3275' TYPE MUD Chem  FORMATION TOPS AND STRUCTURAL POSITION  ELECTRICAL SURVEY  DVAL IND MICRO  COMP N/D SONIC	Max R. Lovely  GEOLOGIST'S REPORT  DRILLING TIME AND SAMPLE LOG
	725 725 708 708 708 709 -1107 -1341 -1341 -1480	LEGEND  LEGEND	
LOG 7710	Anhydrite Salt Sandstone S  DRILLING TIME IN MINUTES PER FOOT Rate of Penetration Decredses  DEPTH 5" 10" 15" 20" 25"	hale Carb sh Limestone Ool.Lime Chert  OIL SHOWS  SAMPLE DESCRIPTIONS	Dolomite REMARKS
	2600  BASE AWHYDRITE 2590 4720  2600  BASE AWHYDRITE 2610 +700		
	3550		7:AM 11-23-18 DRLG@ 3553
	3600 STOTLER		MUD CHECK VIS: 6.5 WT: 9.0 CHLOR: 5,000 LCM: 1 FILT: 8.0
	3622 - 312		SARAN
	3700	LS. WHT, LT TAN, FXTLN, SL DNS, M HRD. Pcs W 2NDRY REXTL'D  FRACS, VP Ø, NS  LS. DK GRY, FXTLN, HRD, Pcs ABUN FOSS, TITE, NS  SS, GRY, SLTY + SHLY, M + F GRNS SOFT, W SORT, G Ø, NS	START SAMPLES  @ 3704' TRIP OUT  HOLE IN PIPE  CHANGED BIT
		SH, BURG, GRY  LS, TAN, FXTLN, SLBRTL, MHRD, FOSS, SLALGAL, P. 9. NS  LS.CRM, WHT, FXTLN, HRD, SLFOSS, TITE, NS  LS, BRN, VF XTLN, DNS, V HRD, THE NS  O CHALK, BRT WHT, CLEAN  O DOLO, LT TAN, VF XTLN, V HRD, DNS, TITE, NS  SH, GRY  SH, GRY	
	3800	LS. TAN, CRM, FXTLN, MED HRD, ABUN FOSS, VG. FOSS ØINS  LS, LT GRY, MED + CRS XTLN, V BRTTL, SOFT, FXTLNØINS  LS.GRY, F+M XTLN, HRD, VFOSS, VP ØINS  LS.TAN, BRN, VF XTLN CMT'D FOSS, M HRD, FAIR FOSS ØINS  LS.WHT, FXTLN, M HRD, ABUN SML FOSS, NO APPØINS, SCT CHLK  O	7:Am 11-24-18 DRLG@3809'
		LS, WHT, CRM, GRY, F XTLN CMT'D  FOSS, P FOSS Ø, NS, HRD  LS, TAN, F XTLN, M HRD, V FOSS.  SL BRITL, P FOSS Ø, NS  LS, TAN, CHLKY, F XTLN, M HRD,  BRITL, G XTLNØ, NS  LS, CRM, WHT, TAN, PCS CHLKY,  FXTLN, FEW DOLO-MXTLN, SOFT,  GRITL, G XTLNØ, NS  LS, CRM, F XTLN I HRD, F XTLNØ,  NS "TRASHY SAMPLE"  LS, BRN, F XTLN, HRD, TITE, NS	MUP CHECK VIS: 63 WT: 9.5 — CHLOR: IZ,000 LCM: I FILT: II.2
	3900	TRASHY SAMPLE"  A.A.  LS, TAN, GRY, F XTLN, HRD, SCT FEW SML FOSS WN, NO VIS B.NS  SH.GRY, BURG  LS, WHT, CRM, GRY, VF XTLN, SL DNS M HRD, VP B.NS  A CHT, WHT, TRIP, FOSS, PCS SHARP, NC  SH, GRY, BURG, ORNG	
	C. HEEBNER 3974 -664  TORONTO 3994 -684 4000	LS.TAN, BUFF, VF XTLN, SOFT, PØ,  CHLKY, NS  LS.WHT, VF XTLN, SOFT, CHLKY,  VF XTLN Ø,NS  SH, BLK, CARB  LS, GRY, F XTLN, SOFT, CHLKY, WET  NS  LS, BRN, SHLY, SOFT, F+M XTLN,  F+G Ø,NS  LS, TANYBRN, VF XTLN CMT'D FOSS,  ABUN FOSS, V HRD, DNS, TITE, NS	
	CLAWSING 4032 -722	LS. CRM, V F XTLN, DNS, M HRD, SL  BRITL, TITE, NS  LS. WHT/CRM, F XTLN, V HRD, TITE  NS  LS. GRY, VF XTLN, DNS, M HRD,  NO F.NS  CHALK, WHT, LT TAN  SH, RED  LS. BUFF, F XTLN, HRD, ABUN FOSS,  YG F.NS  LS, TAN, CRM, VF XTLN, DNS, HRD,  TITE, NS  LS, CRM, HRD, VF XTLN CMTD OOLS,  VW CMT'D P CMT'D, P G Ø,  YARI SIZE OOLS, NS	
	4100	SH, GRY, SNDY  LS. CRM / WHY, F > M XTLN, HRD, SCT BRN CHT - FRESH, FOSS, SCT POS W GXTLN LS B, NS  LS, BRN, GRY, VF XTLN, V DNS, V HRD, TITE, NS  LS, WHT, CRM, F XTLN, V BRTIL, SL CHLKY, S > M HRD, NO VIS B, NS  LS. WHT, F > M XTLN, SCT CRS XTL CLUSTERS, HRD, V FEW FOSS, PXTLN B  LS, TAN, F XTLN, HRD, ABUN WELL CMT'D FOSS, TITE, NS  PCS DNS, TITE, NS	JET, ADD PRE MIX
	C-55 4K	LS. CRM, TAN, VF XTLN, DNS, V HRD, TITE, NS  SH. BLK, RED, GRY LS. CRM, VF XTLN, V HRD, DNS, ABUN W CMT'D FUSIL, TITE, NS  LS. GRY, VF XTLN IV DNS, V HRD, TITE, NS  LS. BRN I M XTLN, V HRD, TITE, NS  LS. WHT I F XTLN, HRD, SCT LG OOLS, W CMT'D OOLS, TITE, NS  LS. CRM, WHT, F XTLN, DNS, HRD, TITE, NS  SH, RED  LS. WHT, TAN, BRN, GRY, VF XTLN, HRD, VW CMT'D OOL + FOSS, TITE, NS	7:Am 11-25-18 DRLG @ 4140' MUD CHECK VIS: 61 WT:9.1 CHLOR: 5,500 LCM: 2 FILT: 7.2
	4200 MUNCIE 4200 MUNCIE 4204 - 894	LS, WHT/GRY, VF XTLN, DNS, Y HRD, CLEAN LS, TITEINS  LS. GRY, LT GRY, F XTLN, DNS, V BRTTL, NO VIS XTLN Ø, NS  CHT, GRY, WHT, FRESH, SHARP, FRAC'D, NS  SH, V DK GRY/BLK  CHT, DK BRN, SHARP, FOSS V/N, FRACS, NS  CHALK  CHT, LT GRY, FRESH, SHARP  CHT, LT GRY, FRESH, SHARP	
		DOLO, BUFF, FXTLN, V HRD, FAIR  PP  LS, CRM, ITAN, F + M XTLN, HRD,  STRKY FXTLN Ø, NS, V CHTY-WHT  LS, GRY, F + M XTLN, BRITL, V SHLY,  NS  SH, BURG, RED, GRN  LS, GRY, F XTLN, HRD, ABUN FOSS +  FRAGS, TITE, NS  LS. CRM, WHT, F XTLN, SL DNS,  MED HRD, NO VIS Ø, NS  LS, WHT/CRM, F XTLN, S + M HRD,  SL CHLKY, NO VIS Ø, NS	JET #1 - ADD PREMIX  RED SHALE FLOOD  TRIP FOR IT OLE IN PIPE —  @ 44 STNDS
	STARK 4300 4297 - 987	LS. TAN, GRY, F + CRS XTLN, BRITL, MHRD, V SL CHLK, NO VIS & NS  LS, LT GRY, F XTLN, DNS, HRD, POOR PP XTLN Ø, NS  SH, BLK, CARB  SS, V SLTY, GRY, VF GRNS, V SOFT, NS LS. GRY, VF XTLN, V HRD, DNS, T ITE NS  LS. TAN, F XTLN, M HRD + V HRD, NO VIS Ø, NS  LS. WHT / TAN, F XTLN W/ LG XTLS W/N, M HRD, NO VIS Ø, NS  LS, WHT / CRM, VF XTLN, S > MED HRD, SL DNS, FEW SCT GRY / WHT CHT, NS	e 94 STNDS
	##\$ 445"  ##\$ 445"  ##\$ 445"  ##\$ 445"  ##\$ 445"  ##\$ 445"  ##\$ 445"  ##\$ 445"  ##\$ BKC  ##\$ 438# -107#	LS, BRN, M XTLN, HRD, SCT LG FOSS,  ? PPO, NS  SH, BLK  LS, TAN, F XTLN, HRD, PCS DNS, TITE, NS  LS, BRN, VF XTLN, V HRD, W CMT'D  MED OOLS, THE, NS  LS, BRN, TAN, F XTLN, MED HRD, MED  XTLS W/N, FEW FOSS, FAIR Ø, NS  A.A.  SH, GRY, SNDY  LS, GRY, VF XTLN, V DNS + HRD, TITE, NS  SH, BLK, CARB  LS, GRY, TAN, C HLKY, SCT OOL + FRAG, GØ, NS, PYR	7:AM 11-26-18 DRLG @ 4345' MUD CHECK VIS: 62 CHLOR: 7,000 LCM: 2 FILT: 8.8
	4400  MARMATON 1417 -1107  ALTAMONT 14435 -1125	LS, CRY, BRN, TAN, VFXTLN, HRU, FEW POSS, NO VIS B, NS  LS, BRN, F XTLN, SOFT, V BRTTL, ABUN PCMT'D OOLS, VG OOLB, NS  SS, LT GRY CMT, F CLR GRNS, W SORT, SOFT -> FRIABLE, VG G, NS  LS, CRM, VF XTLN, SOFT, CHLKY, NS  LS, CRM, VF XTLN, SOFT, CHLKY, NS  LS, CRY, F XTLN, V HRD, SL DNS, TITE, NS  SH, RED, GRY  LS, CRM, F XYLN, V HRD, ABUN S->M OOLS, VW CMT'D OOLS, TITE, NS SOFT, VG INT XTLN, V BRTTL. SOFT, VG INT XTLN B, NS	SAMPLES POOR - PLUGGED JET-
	4500	SOFT, VG (NT XTLN Ø NS)  LS, DK BRN, VF XTLN, DNS, HRA,  TITE, NS  LS, A.A., WHT CORAL  SHIGRY	DST#1 4403-4487 30-45-45-60 IF: BOB 1072mW 151: NOBB FF: BOB 15 MIN FS1: NOBB REC: 615' HMCW 185'SL MCW FP: 26-217, 225-385 SIP: 1201-1190 HP: 2165-2144 STRAP 4499.23 BOARD 4499.23 BOARD 4499.87 SHORT 64' 7'AM 11-27-18 DST#1@4487' MUD CHECK VIS: 64 CHLOR: 8,000 LCM: 2 FILT: 8,0
	PAWNEE 4508-1198	SHIP RY  LSI DK GRY, VF XTLN, DNS, HRD,  TITE, NS  LSPYR, NS  LSPYR, NS  SHIP RY  LSPYR, NS  LSTAN, FXTLN, HRD, SL DNS, TITE, NS  LS, TAN, FXTLN, HRD, SL DNS, TITE, NS	SAMPLES VERY POOR RED. GRY SHALE FLOOD
	MYRICK 4557-1247  FT SCOTT 4573-1263  CHEROKEE SH 4600 4600 4600 4600 4600	SHIBLK, CARB  SHIBLK, CARB  SHIBLK, CARB  SHIBLK, CARB  SIND HAD BRN, VF XTLN, BRITL,  LSIND HAD, NO APPOINS  ITAN, VF XTLN, HRD, A BUN VARI  LSIND HARP, NS  SHIBLK, GRY, BURG  SHIBLK, GRY, BURG  LSICY FOSS PCS, TITE, NS  LSICY FOSS PCS, TITE, NS  LSICY FOSS PCS, TITE, NS  LSICY FOSS CHT, NS  A.A.  A.  A.  A.  A.  A.  A.  A.  A.	7:AM 11-28-18 CFS IN FT SCOTT @ 4600
	7600 -1240	LS, HRD, TITE, NS  t, BLK, GRY  SH,  TAN, GRY, FXTLN, DNS, HRD,  LS, PYR, TITE, NS  SH,  LS, TAN, CRM, FXTLN, HRD, NO  LS, US Ø, NS  1, BRN, VF XTLN, DNS, V HRD,  LS, BRTTL, TITE, NS  R.A.	MUD CHECK VIS: 50 WT: 9.2 CHLOR: 7,000 LCM: 2. FILT: 8.0
	JOHNSON 4694 -1384 4700	LS: TAN, V FXTLN, V DNS, V HRD,  LS: TAN, V FXTLN, V DNS, CLEAN,  CHT, BRN, FRESH, WHT-V FOSS, SHARP,  A  SH; BLK, CARB  LS; BRN, TAN, F XTLN, DNS, HRD,  TITE, NS  AA	
	MORROW SH 4751 -1441	A CHT, BRN, OPKQ, FRESH, NS  A A LS: TAN, F XTLN, SL DNS, MED HRD.  I TITE, NS  CHT, DK BRN, BLK-SL FOSS, OPAQ, SHARP, FRACO, NS  LS: GRY, F XTLN, SL BRTTL, HRD,  TITE, NS  SHIDK GRY LS; WHT, F XTLN, M HRD, SL CHLKY, SKTLN ONS	
	4800	SH, RED. BURG  LS, GRY, TAN, F + M XTLN, M HRD,  SL FOSS, F XTLN Ø, NS  SLTSTN, GRY, FINE GRNS, F SORT,  SH, GRY, GRN, BURG  SH, GRN, GRY, BRN, GRY/BRN-SNDY  SH, LT+ DK GRY, GRN, PYR  SH, GRY, STICKY, PYR  SH, GRY, GRN, PYR	
-	M155 4835-1525	SH, GRY, GRN  SS,CLR GRNS, M > LGCRNS, SCT COORSE GRNS, P WHT CMT, VG Ø, P SORT, ANG, SOFT TO FRIABLE, NS  SS,CLR SML GRNS, W SORT, RND, VW CMTID, V HRD, P Ø, NS  SS, CLR GRNS, LT GRN GLAUC CMT, SOFT TO FRIABLE, W SORT SML GRNS, GNS LS, WHT. TAN, LT GRY, FXTLN, SOFT, SNPY, NO APPØ, NS  LS, TAN, CRM, BRN, F XTLN, V HRD, TITE, NS  LS, WHT, F XTLN, V SNDY, V HRD, NO VIS Ø, NS	JET#1 - ADD PREMIX  7:Am 11-29-18     DRLG @ 4835     MUD CHECK  VIS: 55
	4900	LS, WHY, FXTLN, LG+ SML SNDY  GRNS W/N, ROUGH TXT, S > MED HRD,  F > G B.NS  LS. GRY, BRN, M XTLN, HRD, NO VISØ NS  LS. WHY, FXTLN, BRTTL, MHRD,  SL CHLKY, NO VISØ, NS  LS, TAN, CRM, FXTLN, MHRD,  TITEINS	DEV 10.  Il STAND SHORT TRIP  —
			DIAMOND TESTING — TIM YENTERS  MUD-CO: REID ATKINS ELI LOGGING —



## Company: Ritchie Exploration, Inc.

Lease: Gerstberger Unit #1

SEC: 1 TWN: 15S RNG: 37W County: LOGAN

State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 12

Elevation: 3298 EST Field Name: Wildcat Pool: Wildcat Job Number: 287

#### Operation:

Uploading recovery & pressures

**DATE** November

**27** 2018

DST #1 Formation: Altamont Test Interval: 4403 - Total Depth: 4487'

Time On: 00:03 11/27 Time Off: 09:20 11/27

Time On Bottom: 03:08 11/27 Time Off Bottom: 06:08 11/27

Electronic Volume Estimate: 832' 1st Open Minutes: 30 Current Reading: 30.3" at 30 min

Max Reading: 30.3"

1st Close Minutes: 45 Current Reading: 0" at 45 min

Max Reading: 0"

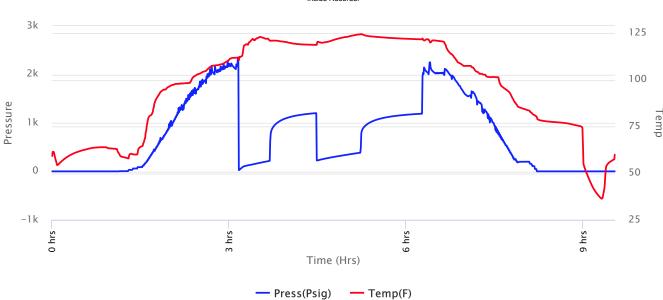
2nd Open Minutes: 45 Current Reading:

32.9" at 45 min Max Reading: 32.9" Minutes: 60 Current Reading: 0" at 60 min

2nd Close

Max Reading: 0"

Inside Recorder





# Company: Ritchie Exploration, Inc.

Lease: Gerstberger Unit #1

SEC: 1 TWN: 15S RNG: 37W

County: LOGAN State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 12

Elevation: 3298 EST Field Name: Wildcat Pool: Wildcat Job Number: 287

#### Operation:

Uploading recovery & pressures

**DATE** November

**27** 2018

DST #1 Formation: Altamont Test Interval: 4403 - Total Depth: 4487

4487'

Time On: 00:03 11/27 Time Off: 09:20 11/27

Time On Bottom: 03:08 11/27 Time Off Bottom: 06:08 11/27

#### Recovered

<u>Foot</u>	<u>BBLS</u>	Description of Fluid	Gas %	Oil %	Water %	Mud %
615	8.75145	HMCW	0	0	53	47
185	0.9702495	SLMCW	0	0	86	14

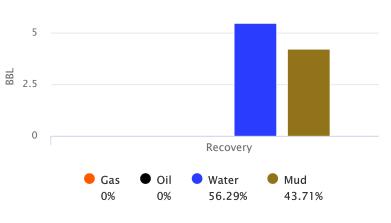
Total Recovered: 800 ft

Total Barrels Recovered: 9.7216995

Reversed Out NO

Initial Hydrostatic Pressure	2165	PSI
Initial Flow	26 to 217	PSI
<b>Initial Closed in Pressure</b>	1201	PSI
Final Flow Pressure	225 to 385	PSI
Final Closed in Pressure	1190	PSI
Final Hydrostatic Pressure	2144	PSI
Temperature	125	°F
Pressure Change Initial	1.0	%
Close / Final Close		

#### Recovery at a glance





Operation:

Uploading recovery &

pressures

Company: Ritchie Exploration, Inc.

Lease: Gerstberger Unit #1

SEC: 1 TWN: 15S RNG: 37W

County: LOGAN State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 12

Elevation: 3298 EST Field Name: Wildcat Pool: Wildcat Job Number: 287

**DATE** November

27 2018 DST #1 **Formation: Altamont** Test Interval: 4403 -Total Depth: 4487' 4487'

Time On: 00:03 11/27 Time Off: 09:20 11/27

Time On Bottom: 03:08 11/27 Time Off Bottom: 06:08 11/27

#### **BUCKET MEASUREMENT:**

1st Open: 1/2" blow building to BOB 10 1/2 min

1st Close: No BB

2nd Open: 1/4" blow building to BOB 15 min.

2nd Close: No BB

**REMARKS:** 

Tool Sample: 0% Gas 0% Oil 98% Water 2% Mud

Ph: 8.0

Measured RW: .32 @ 60 degrees °F

RW at Formation Temp: 0.162 @ 125 °F

Chlorides: 25,000 ppm



### Company: Ritchie Exploration, SEC: 1 IWN: 15 County: LOGAN Inc.

Lease: Gerstberger Unit #1

Drilling Contractor: WW Drilling, LLC -

SEC: 1 TWN: 15S RNG: 37W

Rig 12

Elevation: 3298 EST Field Name: Wildcat Pool: Wildcat Job Number: 287

7 7/8

State: Kansas

#### Operation:

Uploading recovery & pressures

**DATE** 

November

27 2018 **DST #1 Formation: Altamont** Test Interval: 4403 -Total Depth: 4487'

4487'

Well Bore Size:

Time On: 00:03 11/27 Time Off: 09:20 11/27

Time On Bottom: 03:08 11/27 Time Off Bottom: 06:08 11/27

#### **Down Hole Makeup**

**Heads Up:** 11.22 FT Packer 1: 4397.74 FT

**Drill Pipe:** 4202.84 FT Packer 2: 4402.74 FT

ID-3 1/2

Top Recorder: 4387.16 FT

Weight Pipe: 0 FT

**Bottom Recorder:** 4474 FT ID-2 7/8

Collars: 178.55 FT

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

**Test Tool:** 

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

ID-3 1/2-FH

Jars Safety Joint

**Total Anchor:** 84.26

Packer Sub: 1 FT

**Anchor Makeup** 

Perforations: (top): 5 FT

4 1/2-FH

**Change Over:** 1 FT

Drill Pipe: (in anchor): 62.26 FT

ID-3 1/2

**Change Over:** 1 FT

Perforations: (below): 14 FT

4 1/2-FH



Operation:

Uploading recovery &

pressures

Company: Ritchie Exploration, SEC: 1 TWN: 15S RNG: 37W County: LOGAN

Inc.

Lease: Gerstberger Unit #1

State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 12

Elevation: 3298 EST Field Name: Wildcat Pool: Wildcat Job Number: 287

**DATE** November

27 2018 **DST #1 Formation: Altamont** Test Interval: 4403 -Total Depth: 4487'

4487'

Time On: 00:03 11/27 Time Off: 09:20 11/27

Time On Bottom: 03:08 11/27 Time Off Bottom: 06:08 11/27

#### **Mud Properties**

Chlorides: 7,000 ppm Mud Type: Chemical Weight: 9.6 Viscosity: 62 Filtrate: 8.9



Operation:

Uploading recovery &

pressures

Company: Ritchie Exploration, Inc.

Lease: Gerstberger Unit #1

SEC: 1 TWN: 15S RNG: 37W County: LOGAN

County: LOGAN State: Kansas

Drilling Contractor: WW Drilling, LLC -

Rig 12

Elevation: 3298 EST Field Name: Wildcat Pool: Wildcat Job Number: 287

DATE November 27

2018

DST #1 Formation: Altamont Test Interval: 4403 - Total Depth: 4487'

4487'

Time On: 00:03 11/27 Time Off: 09:20 11/27

Time On Bottom: 03:08 11/27 Time Off Bottom: 06:08 11/27

#### **Gas Volume Report**

1st Open 2nd Open

Time	Orifice	PSI	MCF/D	Time	Orifice	PSI	MCF/D
				I			