KOLAR Document ID: 1364935

Confiden	tiality Requ	ested:
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
				U LLAGE

OPERATOR: License #	API No.:
Name:	Spot Description:
Address 1:	
Address 2:	Feet from Dorth / South Line of Section
City: State: Zip:+	Feet from East / West Line of Section
Contact Person:	Footages Calculated from Nearest Outside Section Corner:
Phone: ()	
CONTRACTOR: License #	GPS Location: Lat:, Long:
Name:	(e.g. xx.xxxx) (e.gxxx.xxxxx)
Wellsite Geologist:	Datum: NAD27 NAD83 WGS84
Purchaser:	County:
Designate Type of Completion:	Lease Name: Well #:
New Well Re-Entry Workover	Field Name:
	Producing Formation:
	Elevation: Ground: Kelly Bushing:
	Total Vertical Depth: Plug Back Total Depth:
CM (Coal Bed Methane)	Amount of Surface Pipe Set and Cemented at: Feet
Cathodic Other (Core, Expl., etc.):	Multiple Stage Cementing Collar Used?
If Workover/Re-entry: Old Well Info 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)
	Chloride content: ppm Fluid volume: bbls
Commingled Permit #: Dual Completion Permit #:	Dewatering method used:
Dual Completion Permit #: SWD Permit #:	
EOR Permit #:	Location of fluid disposal if hauled offsite:
GSW Permit #:	Operator Name:
	Lease Name: License #:
Spud Date or Date Reached TD Completion Date or	Quarter Sec TwpS. R East West
Recompletion Date 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 III Approved by: Date:						

KOLAR Document ID: 1364935

Operator Nam	ne:			Lease Name:	Well #:
Sec	Twp	S. R	East West	County:	

Page Two

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	Vrill Stem Tests Taken Yes No (Attach Additional Sheets)			Log Formation (Top), Depth and Datum Sample			Sample		
Samples Sent to Geolo			⁄es 🗌 No	1	Name	Э		Тор	Datum
Cores Taken Electric Log Run Geologist Report / Mud List All E. Logs Run:		□ Y □ Y	Yes ☐ No Yes ☐ No Yes ☐ No						
		Rep	CASING ort all strings set-c] Ne	w Used rmediate, productio	on. etc.		
Purpose of String	Size Hole Drilled	Siz	ze Casing et (In O.D.)	Weight Lbs. / Ft.		Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
[ADDITIONAL	CEMENTING /	SQU	EEZE RECORD			
Purpose:	Depth Top Bottom	Туре	e of Cement	# Sacks Use	ts Used Type and Percent Additives				
Protect Casing Plug Back TD Plug Off Zone									
 Did you perform a hydra Does the volume of the Was the hydraulic fracture 	total base fluid of the	hydraulic fr	acturing treatment		-	☐ Yes ns? ☐ Yes ☐ Yes	No (If No, s	kip questions 2 ar kip question 3) ill out Page Three	
Date of first Production/Inj Injection:	jection or Resumed Pr	oduction/	Producing Meth	iod:		Gas Lift 🗌 O	ther <i>(Explain)</i>		
Estimated Production Per 24 Hours	Oil	Bbls.	Gas	Mcf	Wate	er Bb	ls.	Gas-Oil Ratio	Gravity
DISPOSITIO	N OF GAS:		Ν	IETHOD OF COM	MPLE	TION:		PRODUCTIC Top	DN INTERVAL: Bottom
Vented Sold Used on Lease Open Hole Perf. [(If vented, Submit ACO-18.)			-	·	nit ACO-4)	юр	Bollom		
Shots Per Perforation Perforation Bridge Plug Bridge Plug Foot Top Bottom Type Set At		Bridge Plug Set At		Acid,		ementing Squeezend of Material Used)			
TUBING RECORD:	Size:	Set At:		Packer At:					

Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	TDM 1-15
Doc ID	1364935

Tops

Name	Тор	Datum
Anhydrite	2175	+670
Base Anhydrite	2201	+644
Heebner	3965	-1120
Lansing	4007	-1162
Stark Sh	4297	-1452
Pawnee	4488	-1643
Ft Scott	4536	-1691
Cherokee Sh	4557	-1712

Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	TDM 1-15
Doc ID	1364935

Perforations

Shots Per Foot	Perforation Top	Perforation Bottom	BridgePlugTyp e	BridgePlugSet At	Material Record
4	4450	4453	CIBP	4432	
4	4350	4353			150 gal 15% MCA, re-Ac 150 gal 15% MCA SQZ: w/ 50 sx Class A
4	4344	4346			4344-46, 4338-41 w/ 250 gal 15%MCA
4	4338	4341			SQZ: 4344-46, 4338-41, 4291-95 w/ 50 sx Class A
4	4291	4295			
4	4291	4295			250 gal 15% MCA
4	4246	4252			250 gal 15% MCA

Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	TDM 1-15
Doc ID	1364935

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	8.625	20	263	Class A		2% gel, 3% CC 1/4#/sk flocele
Production	7.875	5.5	15.5	4596	EA-2	125	7#/sk gilsonite, 1/4#/sk flocele

S	NIFT		CHARGE TO:	ARSON E	WOTNEERING INC]				TICKET	300	69
	vices, Inc.	C	CITY, STATE, ZIP CO	DDE							PAGE 1	OF	
SERVICE LOCATIONS	Ks WELL/PROJE		LEASE	~~~~	COUNTY/PARISH	STATE	СПТҮ			DA		NER	
2.	TICKET TYPE	I-IS	ror	IDM	RIG NAME/NO.		DELIVERED TO	5			6-2-17 RDER NO.	SAME	*
3.		" <u> </u> So	WELL CA		JOB PURPOSE	VIACT	WELL PERMIT	ເພັງ	BN		LL LOCATION	<u> </u>	
<u>4.</u>		Jel		ELOPMENT		SURFACE	MELL PERMIT	HU.			DEGHTON,	le-he	2.
REFERRAL LOCATION	INVOICE INS	TRUCTIONS	<u></u>									140,1	<u>దాల</u> ఎ 7.ఎగా
PRICE REFERENCE	SECONDARY REFERENCE PART NUMBER	E/ LOC	ACCOUNTING ACCT DF		DESCRIPTION		QTY.	U/M	ΩΤΥ.	UM	UNIT	AMOUN	<u>π</u>
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325		1		STANDARD	COMOT		165	545			12,25	202	1.25
276				FLOCELE			50	Ś			2125		2150
278		1		CAICOUM (HIDRODE		7	sias			4000		00.00
279		<u> </u>		BETTONETE	GEL		3	<u> ৬</u> ১৯			25.00		500
	···· •	-1		D-ADR			2	GAL			42,00		400
<u></u>		1		SERVICE C	HARGE CEMENT		165	دلاح			1 150	24'	2150
<u></u>		1		MENDMUM	DRAYAGE CHARGE		16210	uss.	324.2	m	25000	250	200
					<u> </u>								<u>i</u>
the terms and cond	Customer hereby acknow litions on the reverse side to, PAYMENT, RELEAS	hereof whic	h include,	REMIT	PAYMENT TO:	SUR OUR EQUIPMENT WITHOUT BREAK WE UNDERSTOO	PERFORMED	AGI	REE UN- DECIDED	DIS- AGREE	PAGE TOTAL	<u>40</u> 70	225
LIMITED WARR/		7 2 , 110210	siri, anu			MET YOUR NEED	S?				LAN &	- 407	103
MUST BE SIGNED BY CU	STOMER OR CUSTOMER'S AGEN	IT BRIOR TO			ERVICES, INC.	PERFORMED WIT	HOUT DELAY?				TUNIC	3663	1
L. L.	A DHal	e			. BOX 466	WE OPERATED TI AND PERFORMED CALCULATIONS) JOB				TAX	172	1/2
X PUT GUE			0	NESS CITY, KS 67560 SATISFACTORILY?				ERVICE					
	17 2	200	25С.Р.М.	m 785-798-2300			TOMER DID NOT	WISH		TOTAL	3836	88	
SWIFT OPERATOR	LAYNE WILL	· ·	APPROVA		VICES The customer hereby ackr	nowledges receipt of (ne materials an	d servio	es listed on th	is ticket	I	Thank	You!

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JOBLO	DG					SWIF	T Seri	uices. Inc. DATE PAGE NO. 6-2-17 1
CUSTOM		EDTNG	WELL NO.	15		LEASE	'om	JOB TYPE TICKET NO. 85/8" SURFACE 30069
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) SAL)		MPS C		JRE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	2200							ON LOCATEON (RUNNENG CASENG)
								TD-264 SET = 263 TP-263 85/8 # 20 15' CEMWY LEFY IN CASING
	2315							CORCULATE WELL
	2340	6	40		>		/১০	MEX CEMENT- 165 STANDARD, 2% GEL, 3% CC 1/4 * FLOCELE P/SK
	2347	Ь	0		~			DISPLACE COMENT
	2350		16.2					CEMENT DISPLACED - SHUT IN
								CIRCULATES 20 SKS CEMPIT TO PIT
								WASH TRUCK
	0100							JOB COMPLETE
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Image: Second and the constrained of the constrained			5 DNTRAC		ASE	IDM Lane	145 SHIPPED	Digh	ion		6	-9-17			
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578 I Pump Charge - Longetring 5% in I isb 10 ml 1250	REFERENCE					DESCRIPTION		QTY.	UM	QTY.	U/M			AMOUNT	
4119 1 Rotating Head Repted 5/4 in 1/36 1200 / 200 /			1		L					40	mí	<u> </u>			<u> </u>
LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAVMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions. REMIT PAYMENT TO: NUT ESCONDER OR CUSTOMER ACCUSTOMER BACKTONER ACCUSTOMER						Rotating Head Rental	<u>`g</u>		+ • • •		∇	_12201			
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LIMITED WARRANTY provisions. MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS X DATE SIGNED G-9-17 TIME SIGNED D CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES MUST BE SIGNED BY CUSTOMER'S AGENT PRIOR TO SWIFT SERVICES, INC. P.O. BOX 466 NESS CITY, KS 67560 785-798-2300 Image: Customer Acceptance of Materials and Services Instead on this ticket.	the terms and cond	ditions on the reverse side here	of whi	ch include	.]	REMIT PAYMENT TO:	OUR EQUIPMENT WITHOUT BREAK	DOWN?	AGR		DIS. AGREE	PAGE TOTA	2		175
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swift OPERATOR David Kuchn APPROVAL Thank You!			R ACC		DF MA PROVA	TERIALS AND SERVICES The customer hereby ackno u	ov ledges receipt of t	he materials ar	nd servic	es listed on th	ns ticket.		(ou!

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TICKET CONTINUATION

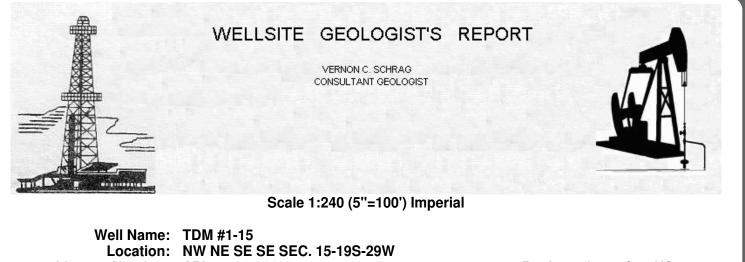
SW	FT		ox 466			TICKET CONTINUATION	No. #30584						
Service	Nes Off	s City : 785	KS 675	560 100		Customen Engineering	WELL	m."	1-15	DATE 6-9-17	PAGE OF2		
PRICE REFERENCE	SECONDARY REFERENCE/	LOC	ACCT	G DF	TIME	DESCRIPTION	QTY	U/M	QTY UIN		AMOUNT		
3)5						Stundard Cement (EA.	2)		175 sh				
284		1				Culsen	5	1%	8 4	30100	2701		
283	:	1				Salt	10	1%	900116	00 120	1 100		
292						Halad 322		%	150.16		1100		
276						Flocele	<u> </u>	116	2516	<u>λ</u> 2 ²⁵			
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581		1				SERVICE CHARGE	CUBIC FEE		175	152	202		
<i>5</i> 83		11				MILEAGE TOTAL WEIGHT LOADED MILES 2	D TON MILES		391	00 75	293 25		
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JOB LC			1		1	T Seri	uices. Inc.	DATE PAGE NO
CUSTOM	Engine		WELL NO.	5		DM	JOB TYPE Longstring	TICKET NO. # 30584
CHART	TIME	RATE	VOLUME (BBL) (G.L)	PUMPS	PRESSL	JRE (PSI)	DESCRIPTION OF OPER	ATION AND MATERIALS
NO.	1400	(BPM)	(BBL) (CAL)	T C	TUBING	CASING	1	51/2" 15.51
	1400						On location	
							RTD-4600'	LTD-4597'
							TP- 4599	SJ - 42,44'
							P.C 2142	
-							Rig Running Pipe	
							<u>y</u> 114 y 1.p-	
	1520						Drop Ball Circulate	Rotale
								· · · · · · · · · · · · · · · · · · ·
	1530	61/2	15	1		350	Pump 15 bbl 14CL	Flush
		61/2	12	1		350	Pump 500gal Flo	check 21
		61/2	5	V		350	Pump 5 bbl KCL	Flush
			7.5		_		Plug RH-MH	(30-20)
		1.14						
	1645	41/2	32			200	mix 125 shs EA.2	ω/7º Gilsonile @ 15
<u>.</u>								1
							wash out Pump/1	Lines
							Release Latch Down	<u>rlug</u>
	1705	61/2	Ø			100	Start Displacement	·····
	1/0-2	61/2	90			300	Lift Pressure	
		61/2	108			$\overline{\mathcal{T}}$	Max Lift Pressure	
	1725	61/2	108.5			$\frac{2}{15\pi}$	Land Latch Down	Plus
							Fancy Farm NOWN	I Ing
							Release Pressure	* Plug Hold *
								ing india.
							wash up truck	
	1800						Job Complete	
							Th	Preshon Wayne
			-				Dave Dave	Prashon Wayne
		 						
							<u> </u>	

SWIF Services, 1	ADDRESS	D: LARSON EN	g:neeting				r	PAGE	3039	91
service Locations 1. / LAD Way, KS 2. 3. 4.	WELLIPROJECT NO.	EASE TDM Chrosene Vell Category Deuelopment	COUNTY/PARISH LANL RIG NAME/NO. JOB PURPOSE CEMENT PUT COLLAR	- MOT	City Dighter Dighter Ibcatio Well Permit NO.		DATE ID () J. A (ORDER NO. WELL LOCATION	7	NER	
	REFERENCE/ ACCOUNT UMBER LOC ACCT { 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	DF MILEAGE PUND (IND.12	neit		017. UM 40 Min 160 Sk 40 15 2 gel 240 Sk 33882 16	0TV.	Ľ	50	ANOUNT 200 1250 2520 90 84 360 358	60 00
LEGAL TERMS: Customer herel the terms and conditions on the re- but are not limited to, PAYMENT LIMITED WARRANTY provision MUST BE SIGNED BY CUSTOMER OR CUSTO START OF WORK OF DELIVERY OF GOODS X DATE SIGNED	Verse side hereof which includ, , RELEASE, INDEMNITY, an s. MER'S AGENT PRIOR TO AE SIGNED A.M. CUSTOMER ACCEPTANCE	e, REMIT SWIFT S P.O NESS C 785	PAYMENT TO: ERVICES, INC. BOX 466 ITY, KS 67560 5-798-2300		PERFORMED NOWN? AND ? S OUT DELAY? E EQUIPMENT JOB D WITH OUR SERVICE L] YES OMER DID NOT WISH 1		1070 1070 1070 1070 1070	Drzc y ł	411,2 - 4376 - 4376 - 181. - 4557	20000

HC. JOB TYPE CEMULT POIL COLLAR TICKET NO. 30391 PAGE NO. SWIFT Services. Inc. JOBLOG CUSTOMER Engineering WELL NO. LEASE DM Rate (BPM) CHART NO. Volume (BBL) (GAL) PUMPS PRESSURE (PSI) DESCRIPTION OF OPERATION AND MATERIALS TIME ΤC TUBING CASING T 240 sh SAD count of 9t flocale. 23 × 53 2140 portcollar onloc TPX114 0830 Jest-to 1000 psi ~ held open part collar 0647 (000) 1000 thj rote 32 0858 400 2 Mix SIND const @ 11,2000 crec fluid to surface 0903 3Ł 400 35 12 400 + cement to surprise 32 Ëb 500 gus Displace w/ #20 7 shut in 23 close port co Mae test to 1000ps; - kelde RUN 5 jonts Reverse hole clean OGUT 20 Wash terck Pull tool Rock up Job complete fluts Black & server 1030 ŝ

1



Licence Number: API: 15-101-22594 Spud Date: June 02, 2017 Surface Coordinates: 1153' FSL & 439' FEL

Region: Lane Co., KS Drilling Completed: June 09, 2017

Bottom Hole Coordinates: Ground Elevation (ft): 2835' K.B. Elevation (ft): 2845' Total Depth (ft): 4600' Logged Interval (ft): 3800' To: Formation: Cherokee Lime To: RTD Type of Drilling Fluid: Chemical Premix (Displaced) Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR:

Company: Larson Engineering Inc. Address: 562 West State Road 4 Olmitz, KS 67564-8561

DRILLING CONTRACTOR:

Southwind Drilling Co., Rig #1

DP 4.5" XH (16.6#); DC 6-1/4" x 2-3/8" x 461.93', Kelly 40.00', Tool Joint 5.5"; Bit: JZ-ENP0121, 7-7/8", standard jets 14-14-14; rpm 80, WOB 35k; Kelly Bushing 10' above ground level; Larry Beavers (tool pusher).

CASING:

Ran 6 jts new 8-5/8" 20# R3 STC 8rd csg. Tallied 253', set @ 263' KB.

Ran 109 jts new MWP 5-1/2" 15.5# R3 LTC 8rd csg. Tallied 4600.90', set @ 4596' KB.

CIRCULATION SYSTEM:

Pump: BH-800, triplex, 6 x 8.5, 110 spm, Chemical, premix, displaced, earth pits, MudCo/Service Mud, Inc., Jason Whiting

OPEN HOLE LOGS:

Stack: DN, DI (SP), ML (Run-1); Guard (Run-2) due to tool problems; No Sonic; 5" detail LTD-3600; 2" DI to suface casing; Pioneer Wireline Services, Hays, KS, Dan Schmidt, LTD 4597, RTD 4600. Difference probably due to fill on bottom.

DRILL STEM TESTS:

ROP (min/ft) Five Ten	DST	Lithology	Porosity and Show	Depth	Geological Descriptions	Fi	G (ur ifty ne	nits)	Т	otal	Gas	5		
ROP 15						0				Hot-	Wire			1

START DIGITAL ROP					PLES E NOT				IESTE	D BY	THE S	TATE	AND
		3850	LS: It grayish-brown; mic-vf xtal; dense, platey; no visible porosity; N.S., 3870.										
	ø		LS: It grayish brown; mic-vf xtal; soft chalk in part; v-finely oolitic; fine oom por., dull fluor., N.S., 3880.										
			LS: It-brown to gray-brn; mic-vf xtal; chalky in part; trc. opaq. chert; no visible porosity; N.S.										
			LS: md-dk grayish brown; vf-xtal; shaley; poor porosity; N.S.										
		3900	Shale: dk gray; trace 3910.										
			LS: md grayish brown; vf-xtal, dense, platey; no visible poroisty; N.S.										
			LS: It-md grayish brown; mic-vf xtal; chalky in part; no visible porosity; N.S.										
			LS: as above. LS: It grayish brown; vf-xtal; sli cherty; chalky in part; no visible porosity; N.S.										
		3950	Samples in this interval thru to 3960 are not trustworthy. Sample catcher is slack and no shaley										
			lime from Oread is found. HEEBNER 3965 (-1120)										
	-		Shale: black; carbonaceous; few chips 3980. LS: dense; indistinct; Shale: gray, green; calcareous; poorly expressed.										
F Toronto			LS: It brown w/white soft chalk; mic-vf xtal; no visible porosity; weak mineral fluor., N.S., 4005.										
		4000	LS: It brown w/white chalky portions; mic-vf; no visible porosity; dull mineral fluor; N.S.	0				Hot-	Wire				100
	-		Shale: green, gray, calc. in part; LANSING 4007 (-1162) LS: It brown; vf-xtal; sli granular in part; trc peletal; dense; no visible porosity; N.S.										
			LS: It brown; vf-xtal; dense, platey; much opaq. chert; no visible porosity; N.S., 4030.										
			LS: as above. Shale: green to dk gray;										
		4050	Shale: green, gray; LS: It brown; vf-xtal; finely granular; tight int grain porosity: dull fluor : N.S. 4060, 4070										
		4	porosity; dull fluor.; N.S., 4060, 4070. Shale: gray, greenish gray;										
			LS: It brown; vf-xtal; trc white, opaq. chert; trc. soft chalk; dense; no visible porosity; N.S. LS: as above.										
		4100	Shale: gray, dk gray; LS: gray to brown; vf-xtal; dense; no visible porosity; N.S. LS: It brown; vf-xtal; granular, fos-frag, trc oolitic;										
		4	tight int grain & fine vug porosity; only dull fluor.; few chips spotted dry stain; no visible oil; <1% 4210 & 4220.										
			LS: It brown; mic-vf xtal; chalky parts; poor porosity; dull fluor.; N.S.										
G-zone	ø		LS: It brown; vf-xtal; med ~ coarse oomoldic porosity; N.S., trc 4150, much 4160.										
	ø	4150	LS: oomoldic as above.										
		41	LS: It grayish brown; vf-xtal; dense; chalky in part; no visible porosity; N.S. LS: It brn to It gray-brn; mic-vf xtal; chalky; no visible										
			porosity; N.S. LS; It brown to grayish brown; vf-xtal; dense; no visible porosity; N. S.										
			LS: It brown & It gray mixed; vf-xtal; dense; no visible porosity; N.S.										
	•	4200	MUNCIE CREEK 4191 (-1346) Shale: black; carbonaceous; much 4210. LS: md-dk brown; vf-xtal; sli fos-frag; dense; <1% fine drusy vug por. w/spotted dry stain; dull fluor.; no										
0 ROP 15	•	42	visible oil; 4210. LS: It brown; vf-xtal; fine, sli drusy vug por., dull fluor; <% dry stain; no visible oil; 4220.	0				Hot-	Wire				100
	•		LS: v-lt brown; vf-f xtal; tight int xtal porosity, dull fluor., sli wet stain; VSSO after crushing; 1% spotted dry stains; 4230.										
			Shale: dk gray, black; 4250. LS: md-dk brown; vf-xtal; dense, platey; N.S.										
	•	4250	LS: It brown to gray; vf-xtal; few chips drusy vug porosity; dull fluor.; spotted dry stain; no visible oil; 4250. LS: It brown to gray; vf-xtal; <1% fine, drusy vug										
		42	porosity w/spotted dry stains; no visible oil; 4260, 4270.										
J-zone	111. I 1211 15		LS: It brown; vf-xtal; fine to med oolitic to oomoldic por., trc fos-moldic & vug por., weak spotted fluor., str odor, SSO, 5-10% of por. is spotted to sat. dry										
			stains; trc 4290, much 4300. LS: It gray; mic-vf xtal; dense to chalky in part; no										
• Stark		00	visible porosity; N.S. STARK SH 4297 (-1452) Shale: black; carbon., only few chips 4310.		SAMF Ked.	PLEIS	MOS	TLY J-	оомс	DLDIC	. SO J	12 MA	Y BE-
		4300	LS: It grayish brown; vf xtal; dense; N.S. Shale: green, gray; calcareous in part; ?	-OON -App	WS 43 IOLDIC EARS IE NOT	C FLO THAT	AT. HO THER	OWEV	ER, Al Y BE K	FTER	LOGS	п –	
			LS: It brown to gray; mic-vf xtal; much gray to white, opaq chert; minor chalk; no visible porosity; N.S., 4320, 4330. LS: It brown to gray; vf-xtal; dense; minor cherts; no										
			visible porosity; N.S.; trc stains 4230, 4340 are probably float. HUSHPUCKNEY 4337 (-1492)		ws 433	0, 434	0 are	trace.					
	•	4350	Shale: black; carbonaceous; 4350. LS: It-md grayish brown; vf-xtal; drusy vug porosity, trc coarse calcites; spotted stains; VSSO; weak fluor., 1% spotted dry stains; 4350. LS: It-md grayish brown; vf-xtal; sli. fos; coarse										
	₩	45	calcites w/stains; weak fluor.; drusy vug porosity; 2-5% spotted dry stains; S.S.O., 4360, decr 4370. Shale: gray; calcareous;										
			LS: It brown to grayish-brn; vf-xtal; sli granular in part; mostly dense; trc coarse sphalerite; no visible porosity; dull fluor.; N.S. (trc stains 4380 are prob. float).										
			LS: It brown to grayish-brown; vf-xtal; dense to sli. chalky; semi-opaq. cherts; no visible porosity; N.S.										
		1400	LS: dk grayish brown; shaley, peletal 4410. SiltSt: green-gray; marly in part; trc 4410, incr 4420.										
	· · · · · · · · · · · · · · · · · · ·	4							Wire				100
	•		LS: md-dk brown; vf-xtal; trc drusy vug porosity w/med-coarse rhombics; heavy, dk brn wet stain; weak fluor., VSSO at best; 1% 4430, decr to trace 4440.										
			LS/Shale: dk grayish brown; drab; mixed lime & shales; N.S.										
		4450	LS: It brown; vf-xtal; <1% drusy vug porosity,	ריים	NOTS)	67-	VEr		(FP		
		4	weak fluor., spotted to sat. dry stains; no visible oil; nothing at 4460, shows in 4470. LS: It brown; vf-xtal; dense to sli chalky; trc pink chert; no visible porosity; N.S.		NOT S 460 ?-		. aviiN		n (וטי. 	-n A		-UA
			LS: md - dk grayish brown; vf-xtal; dense; no visible				_						
			porosity; N.S. Shale: dk grav. green: PAWNEE 4488 (-1643)										
	•	4500	LS: v-lt brown; mic-vf xtal; chalky in part; gray, semi-opac. chert; trc coarse vug porosity w/spotted black stain; no visible oil; 4500, 4510.										
		4	LS: chalky as above. Shale: black; 4520. LS: md-dk grayish brown; vf-xtal; dense; N.S.										
			LS: Ind-dk grayish brown; vi-xtal; dense; N.S. Shale: greens; LS: It grayish brown; mic-vf xtal; dense to chalky in part; no visible poroisty; N.S.										
Ft. Scott	1		Shale: black; carbonaceous; 4550. FT. SCOTT 4536 (-1691) LS: grayish brown; f-m xtal; various granular chert;										
		4550	med oomoldic porosity; trc stain at best; 4550. LS: dk gray; vf-xtal; coarse granular in part; tight int grain por., black sat. stain & scattered vug por with dk brn stain, weak fluor., S.S.O. trace 4550-30 min, 4560.										
		4	CHEROKEE SH 4557 (-1712) LS: It-md grayish brown; vf-xtal; dense; chalky in										
			part; no visible porosity; N.S. LS: as above.										
			LS: md brown; mic-xtal; dense; N.S., w/gray green shales; LS/Shale as above.	-WIP	PULL Er Tri Tom, (РТО	COLL	ARS. /	ALMO	ST ST	UCK.		
		00	LS: gray; vf-xtal; dense; no visible porosity; N.S.		JEERL								
0 ROP 4600 15 RTD 3:16 PM		4600	ROTARY TOTAL DEPTH 4600 (-1755)	0				Hot-	Wire				100