	ess: 8100 E. 22nd st N #300 Wichita, KS 67226 gist: Nbr: me: #1-4 Edna Mae	API: 15-185-24023 Field: Rattlesnake Creek Country: USA
Well Nar Surface Locati Bottom Locati A License Numb Spud Da Regi Drilling Complet Surface Coordinat Bottom Hole Coordinat Ground Elevati K.B. Elevati Logged Interv Total Deg Formati Drilling Fluid Ty	ion: Section 4-23S-12W ion: API: 15-185-24023 ber: ate: 7/18/2018 ion: Stafford County ted: 7/26/2018 tes: 990' FSL & 330' FEL tes: ion: 1838.00ft ion: 1849.00ft val: 2700.00ft pth: 3800.00ft ion: rpe: Chemical (MudCo)	Time: 5:15 PM Time: 3:45 PM To: 3800.00ft
Well Ty Longitu N/S Co-c E/W Co-c	ide: ord: 990' FSL	Latitude:
Compa		
Addre Phone N Logged Contrac Rig Rig Ty Spud Da TD Da Rig Relea	Wichita, KS 67208 Nbr: 316-617-3959 By: Geologist CONTRACTOR stor: Murfin Drilling g #: 20 r/pe: mud rotary ate: 7/18/2018 ate: 7/26/2018	Name: Bruce Reed Time: 5:15 PM Time: 3:45 PM Time: 3:00 PM
K.B. Elevati K.B. to Grou Surface Casing: Production Casing: Daily Penetration: 07/1 07/2 07/2 07/2 07/2	ion: 1849.00ft Ground F ind: 11.00ft NOTES 8-5/8" at 295' 5-1/2" at 3796' 8/18 Spud @ 5:15 PM 9/18 313' 0/18 1855' 1/18 3113'	Elevation: 1838.00ft
07/23/18 3490' 07/24/18 3563' 07/25/18 3664' 07/26/18 3712' Drilling completed @ 3:45 PM 07/27/18 3800' Plug down @ 3:00 PM DRILL STEM TESTS DST #1 3310' to 3386' L/KC. Strong blow, BOB in 10 seconds, GTS in 3 minutes, spray fluid in 20 minutes during the initial flow period. Strong blow, BOB in 1 minute, spray fluid in 12 minutes during the second flow period. Gas was gauged at 727 Mcf/d and at 1,173 Mcf/d by the ord of each flow period.		
 the end of each flow period. Recovered: 70' Clean Gassy Oil, 60' OMCW (30% oil, 60 % water, 10% mud), 180' OMCW (10% oil, 80% water, 10% mud), 340' MCW (90% water, 10% mud). IFP: 30" 385-626 psi, ISIP: 60" 1192 psi, FFP: 30" 333-569 psi, FSIP: 90" 1163 psi DST #2 3432' to 3490' L/KC. Strong blow, BOB in 10 seconds, GTS in 1 minute during the initial flow period. Strong blow, BOB immediately during the second flow period. Gas was gauged at 1,592 Mcf/d and at 1,519 Mcf/d by the end of each flow period. Recovered: 40' GOCM (10% gas, 10% oil, 80% mud), 100' GOCM (30% gas, 10% oil, 60% mud), 100' HGOCM (30% gas, 30% oil, 40% mud). IFP: 30" 234-300 psi, ISIP: 60" 1135 psi, FFP: 60" 257-285 psi, FSIP: 90" 1126 psi DST #3 3490' to 3554' L/KC. Strong blow, BOB in 30 seconds, GTS in 25 minutes, 		
TSTM, during the initial flo TSTM, during the second f Recovered: 300' Clean Gas (50% oil, 50% mud). IFP: 30" 76-149 psi, ISIP: 0 DST #4 3574' to 3616' Vio Fair blow, BOB in 15 minu Recovered: 300' GIP, 20' 0 IFP: 30" 30-29 psi, ISIP: 60	ow period. Strong blow, BOB in 2 minu	utes, GTS in 5 minutes, 5% gas, 15% oil), 200' MO IP: 90" 966 psi g the initial flow period. 0" 123 psi
Fair blow, BOB in 20 minu Recovered: 600' GIP, 20' C (10% gas, 35% oil, 55% m IFP: 30" 28-34 psi, ISIP: 60 DST #6 3705' to 3712' Arb flow period. Weak blow th Recovered: 10' OSM	ttes during the second flow period. GSOCM (10% gas, 2% oil, 88% mud),	60' GHOCM 0" 799 psi iches during the initial low period.
Formation Sam Heebner 3147 Brown Lime 3278 Lansing 3305 Stark 3496	8' -1429 3276' 5' -1456 3303'	Datum Comparison* -1295 +5 -1427 +9 -1454 +10 -1643 +7
Base KC3549Viola3585Simpson3665Arbuckle3702	9' -1700 3547' 5' -1736 3584' 5' -1816 3662'	-1698 +7 -1735 +21 -1813 +2 -1851 +12
Cht Dolprim	ROCK TYPES Lmst fw7> shale, gry Carbon Sh ACCESSORIES OTHER SYMBOLS	
INTERVALS Oil Show ■ Core ● Good Show • DST ● Fair Show ● Poor Show ● Spotted or T ○ Questionable D Dead Oil Str ■ Fluorescence ★ Gas Curve Track #1 ROP (min/ft) Gamma (API) Str	DST DST Int DST alt Core Itail pipe le Stn n ce	rinted by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca TG, C1 - C5 Total Gas (units) C1 (units) C2 (units)
Gamma (API) Gamma (API) 1:240 Imperial Control Contro Control Control Control	Abore Abore Bore Bore	C3 (units)
	Shale: gray-green-brown, few pieces slig	
	Limestone: cream-white-gray, fine crystal sub chalky Sample missing	line to slightly fossiliferous,
0 ROP (min/ft) 10 2800 0 Gamma (API) 150 1 1 1 1 1 2 2 2 1 2 2 2 1 1 1 1 1 1 2 2 2 2 2	Limestone: cream, fine crystalline, slightly	y fossiliferous, sub chalky 0 Total Gas (units) 10 0 C2 (units) 10 0 C3 (units) 10 0 C4 (units) 10 0 0 C4 (units) 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	Sample carries lots of gray shale	
	Limestone: cream-tan-white, chalky	
	Limestone: light gray-white, fine crystallin Limestone: light gray-white, fine crystallin Limestone: as above, very chalky, fossilif	
	LImestone: cream-white-light tan, mostly very chalky Shale: gray	fossiliferous with some oolitic,
2960 2980 2980 1 1 1 1 1 1 1 1 1 1 1 1 1	Limestone: cream-white-light tan, highly f	ossiliferous with some visible - <td< th=""></td<>
0 ROP (min/ft) 10 3000 0 Gamma (API) 150 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Limestone: as above	0 Total Gas (units) 10 0 C1 (units) 10 0 C2 (units) 10 0 C3 (units) 10 0 C3 (units) 10 0 C4 (units) 10
	Sample missing	risible porosity, fossiliferous,
	Limestone: cream-white-medium tan, fine sub chalky	
	Limestone: cream-light tan, highly fossilif porosity, rare chalky piece Bit trip @ 3113'/Geologis Limestone: cream-white-light tan, fine cry dense, sub chalky, no shows Limestone: cream-light tan-gray, fine crys fossiliferous, poor visible porosity, dense,	St on location Depth 3113' Mud Weight 9.0 Funnel Viscosity 63 API Filltrate 8.8 Chloride 3,100 Stalline, very slightly 0
	Heebner 3147 Shale: black, carbonaceous, soft, some r limestone, very dense Shale: pale green-gray-red	nedium-tan, micro-crystalline
0 ROP (min/ft) 10 3200	Limestone: cream-light tan-light gray, fine poor visible inter-fossiliferous porosity, no Shale: gray-green Shale: light gray-brown-red Shale: as above	> shows
0 Gamma (API) 150 3220	Shale: light gray-some red-brown, slightly Shale: gray, silty to slightly sandy Shale: gray-light gray, silty to sandy	0 C1 (units) 10 0 C2 (units) 10
3240	Shale: as above Shale: gray, few pieces limestone fragment Shale: gray, soft, few limestone fragment Shale: as above	
	Brown Lime 327 Limestone: light tan-brown, fine ro micro- dense Shale: gray-green-brown Shale: gray-green-brown 1 Lansing 3305	crystalline, no visible porosity,
	Limestone: cream-white-light tan, fine cry porosity, dense, no odor, no show free oil Limestone: cream-light tan, fine crystallin porosity, very slight odor in fresh, no show yellow fluoresence Circulated at 3340' Limestone: cream-light fossilferous, poor to fair visible porosity, f pieces, slight show free oil	e to fossilferous, poor visible w free oil, some scattered, dull
	 pieces, slight snow free oil Limestone: cream-light tan-gray, fine to n visible porosity, looks tite, faint odor in free Limestone: cream-brown, fine crystalline, Limestone: cream-gray-brown, fine crystalline, Limestone: cream-gray-brown, fine crystalline, Limestone: cream-gray-brown, fine crystalline, 	alline, few pieces fossiliferous,
0 ROP (min/ft) 10 Gamma (API) 150	Circulated at 3388' Limestone: cream, fin scattered ollitic piece, poor to fair visible p show free oil, bright fluorescence Limestone: cream-light gray, fine crystalli visible porosity, dense, no show Limestone: cream-white-light tan, fine cry poor visible porosity, no odor in fresh, sub	borosity, fair odor in fresh, ne, few pieces oolitic, poor rstalline, rare oolicastic piece, o shaley Hunde Viscosity 72 API Filltrate 9.6 Chloride 8,000 0 Total Gas (units) 10 0 C2 (units) 10 0 C3 (u
	Limestone: cream-white-light gray, fine cr visible porosity, trace chalky, no shows Limestone: cream-white-light tan, fine cry few pieces cavenous and vuggy porosity, Limestone: white, chalky, barren Circulated at 3450' Limestone: cream-light	rytsalline to fossiliferous, poor
	poor visible porosity, trace chalky, few pieces bright yellow fluorescence, ve	bor visible porosity, appears tite, dull mineral fluorescence
	Circulated at 3490' Limestone: cream, fin fair visible inter-fossiliferous porosity with show light brown oil, moderate to good flu Stark 3490' Shale: medium-dark gray Limestone: cream-light tan, fine crystallin scattered fair vugular porosity, good odor bright fluorescence	e, oolitic to oolicastic,
	Limestone: more light-tan-cream, fine cry Limestone: as above, sub shaley Limestone: cream-white, fine crystalline, inter-oolicastic porosity, fain odor with slig bubble B/KC 3549	oolitic to oolicastic, fair visible ght show free oil and gas Depth 3549' Mud Weight 9.0
3560	Shale: dark gray, soft, few pieces red Shale: gray-green, with some tan-gray livisible porosity, dense Limestone: cream-light tan, fine to micro gray-red shales Shales: gray-green-red	rrystalline, dense, abundant
0 ROP (min/ft) 10 0 Gamma (API) 150 4 A 4 A 4 A 4 A 4 A 4 A 4 A 4 A	 Viola 3585 Chert: white, opaque to semi-transluscen pieces brown, sandy dolomite with very s Circulated at 3616' Chert: cream-white, v and blocky, good odor, no show free oil, t fluorescence, few pieces sandy dolomite, trace chalky material. Note: few pieces w and gas bubble 	It, very sharp and blocky, few light show free oil, no odor Depth 3595' Mud Weight 9.0 Funnel Viscosity 89 API Filltrate 14.6 Chloride 15,200 0 C2 (units) 10 0 C2 (units) 10 0 C2 (units) 10 0 0 C2 (units) 10 0 0 C2 (units) 10 0 0 0 C2 (units) 10 0 0 0 0 C2 (units) 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	 and gas bubble and gas bubble Chert: cream-white-gray, vitreous, sharp fossiliferous, very fare weathered piece, short fossiliferous, very fare weathered pieces appear sandy the weathered pieces bleed oil and gas b Circulated at 3654' Chert, shale, limestor Circulated at 3664' Chert: tan-white-off weathered pieces appear sandy the weathered piece fossiliferous fos	and blocky, few pieces some odor in fresh, some edge que, sharp and blocky, y to cottony, fair odor, most of ubble, good fluorescence
	Circulated at 3654' Chert: tan-White-off w with black edge stain, limestone: gray-brod dense, few pieces sandy dolomite with sh Simpson Shale 3 Circulated at 3676' Shale: gray-brown, fe pieces shale very slightly sandy, no appa Circulated at 3690' Shale: predominantly soft	wwn, fine t medium crystalline, now free oil 665' (-1816) w pieces turquoise blue, few rent sandstone gray-red-brown, slightly silty, Depth 3676' Mud Weight 8.9 Funnel Viscosity 53 API Filltrate 11.2
3700	Soft Shale: as above, vari-colored, soft Circulated at 3702' Shales: as above, ver Arbuckle 3702 Circulated at 3710' Dolomite: cream-light medium to coarse crystalline, inter-crysta fresh, rainbow show oil, moderate fluores Circulated 3712' Dolomite: as above, look in shows	y faint odor 2' (-1853) tan, fine crystalline, with some lline porosity, good odor in cence ss tite, no significant increase Depth 3712'
3720 3740 3740	 in shows Circulated at 3717' Dolomite: cream, fine visible inter-crystalline porosity, trace vug fresh, no show free oil Circulated at 3722' Dolomite: cream-light coarse crsyatlline, rare scattered vugular show free oil Dolomite: light tan-cream-gray, fine crysta pieces, poor visible porosity, slight odor in white chert 	to medium crystalline, poor ular porosity, tite, faint odor in gray, some fine to medium porosity, faint odor in fresh, no alline, some medium crystalline
3760	 Dolomite: light tan-cream, more medium or crystalline, scattered vuggy porosity, very Dolomite: as above, very cherty, decrease Dolomite: as above, cherty Dolomite: light tan, most pieces fine cryst porosity, lots of white chert, no shows 	e in shows, almost barren
0 ROP (min/ft) 10 3800 0 Gamma (API) 150		alline, poor to no visible 0 Total Gas (units) 0 C1 (units) 0 C2 (units) 0 C3 (units) 0 C3 (units) 0 C4 (units) 0 C4 (units)