

Joshua R. Austin Petroleum Geologist

report for

RAMA Operating CO., Inc



COMPANY: RAMA Operating Company, Inc.

LEASE: Austin # 1-5

FIELD: Wildcat

LOCATION: SW-NW-NE-NE (536' FNL & 1018' FEL)

SEC: 5 TWSP: 25s RGE: 12w

COUNTY: Stafford STATE: Kansas

KB: <u>1902</u> GL: <u>1891</u>

API# <u>15-185-23974-00-00</u>

CONTRACTOR: Sterling Drilling (rig #4)

Spud: <u>11/29/2016</u> Comp: <u>12/05/2016</u>

RTD: <u>4250'</u> LTD: <u>4246'</u>

Mud Up: 2900' Type Mud: Chemical was displaced

Samples Saved From: 2900' to RTD

Drilling Time Kept From: 2900' to RTD

Samples Examined From: 2900' to RTD

Geological Supervision From: 3000' to RTD

Geologist on Well: Josh Austin

Surface Casing: <u>8 5/8" @ 294'</u> Production Casing: <u>5 1/2" @ 4245'</u>

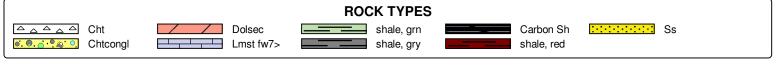
Electronic Surveys: By Pioneer Energy Services

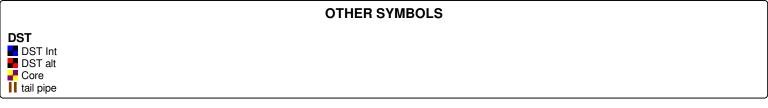
NOTES

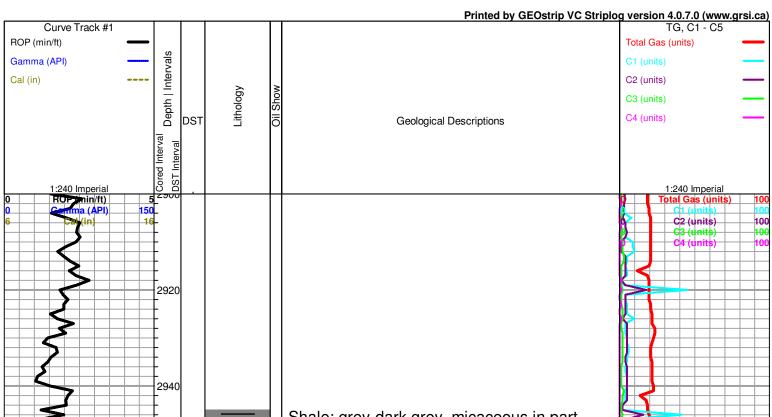
On the basis of the positive structural position, good sample shows and after evaluating the electric logs it was recommended by all parties involved in the Austin #1-5 to set 5 1/2" production casing to further test the Arbuckle and Lansing zones.

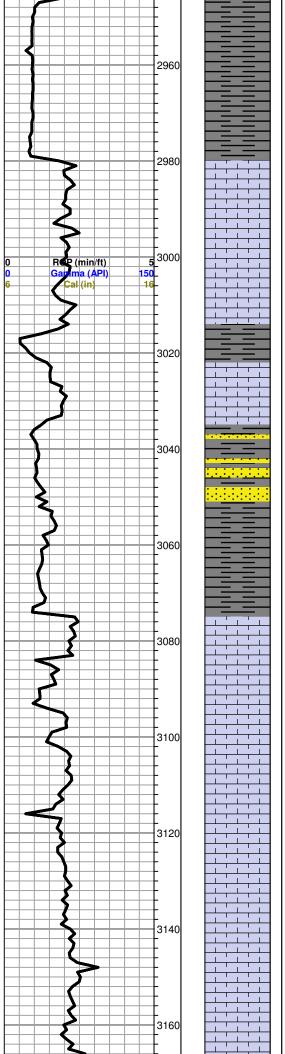
RAMA Operating Company Inc. well comparison sheet

		DRILLING	WELL		COMPARISON WELL				
		Austin	#1-5			Dudre	y #1		
							Structural Relationship		
	1902	KB			1900	KB			
Formation	Sample	Sub-Sea	Log	Sub-Sea	Sample	Sub-Sea	Sample	Log	
Heebner	3390	-1488	3390	-1488	3388	-1488	0	0	
Toronto	3404	-1502	3404	-1502	3402	-1502	0	0	
Douglas	3432	-1530	3430	-1528	3429	-1529	-1	1	
Brown Lime	3540	-1638	3539	-1637	3540	-1640	2	3	
Lansing	3564	-1662	3565	-1663	3564	-1664	2	1	
Base KC	3844	-1942	3843	-1941	3844	-1944	2	3	
Viola	3970	-2068	3974	-2072	3970	-2070	2	-2	
Simpson Shale	4088	-2186	4086	-2184	4082	-2182	-4	-2	
Simpson Sand	4092	-2190	4092	-2190	4086	-2186	-4	-4	
Arbuckle	4168	-2266	4166	-2264	4167	-2267	1	3	
Total Depth	4250	-2348	4246	-2344	4251	-2351			









soft, silty

Sand; It. grey, very fine grained, micaceous, sub angular, friable, no shows

Shale; as above

HOWARD 2979 (-1077)

Limestone; cream, fine xln, chalky, dense, fossiliferous in part, poor visible porosity, no shows

Limestone; cream-grey, fine xln, fossilfierous in part, dense, slighlty chalky

Shale; grey-greyish green, micaceous, silty in part

Sand; grey-lt. grey, very fine grained, micaceous, sub angular, friable, questionable trace gas bubbles, very faint odor, NSFO

Shale and Sand as above

TOPEKA 3074 (-1172)

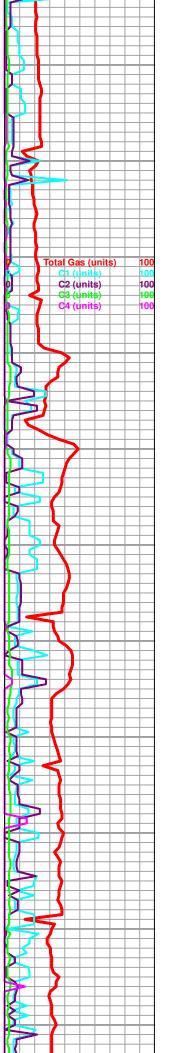
Limestone; cream-tan-buff, fine xln, dense, cherty, fossiliferous, poor visible porosity, no shows

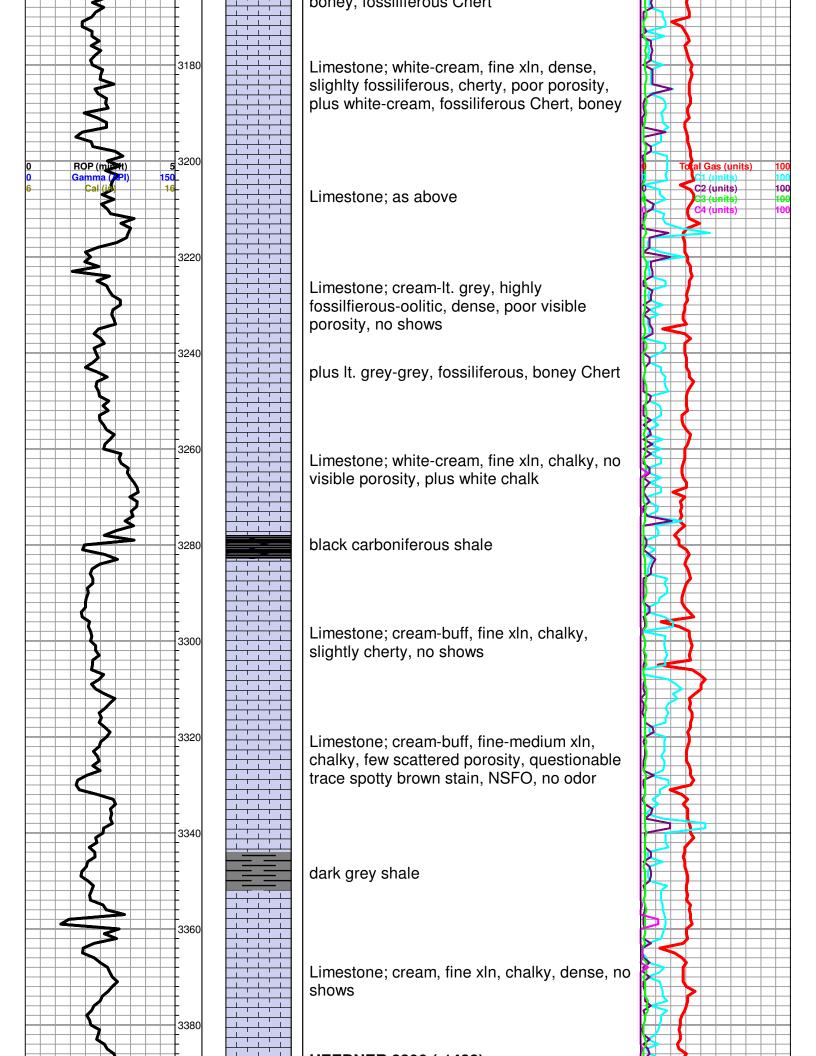
Limestone; cream, fine xln, chalky in part, dense, few cherty pieces, fossiliferous, poor porosity, no shows

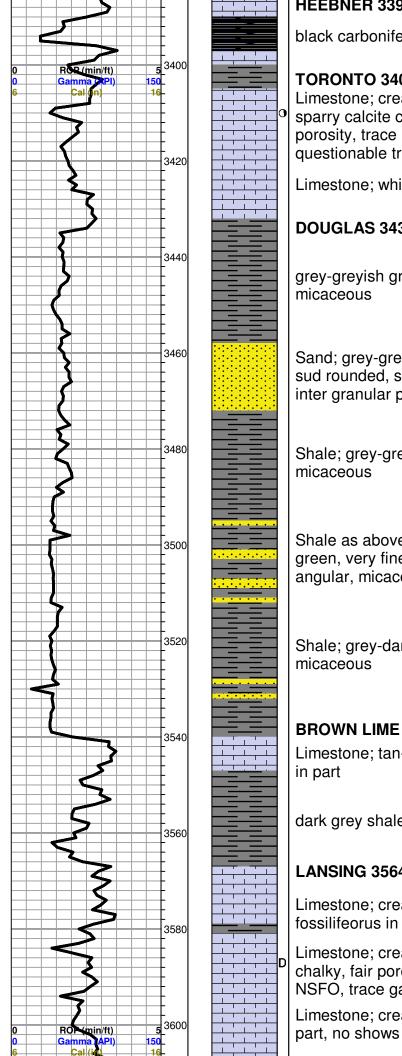
Limestone; cream-grey, fine-medium xln, fossiliferous in part, few nodules, no shows

Limestone; white-cream, fine xln, chalky, slighlty oolitic in part, fossiliferous, few cherty pieces, plus white chalk

Limestone; as above, plus white-cream,







HEEBNER 3390 (-1488)

black carboniferous shale

TORONTO 3404 (-1502)

Limestone; cream-white, medium xln, few sparry calcite crystals, fair intercrystalline porosity, trace light golden brown staining, questionable trace spotty lt. free oil, no odor

Limestone; white-cream, fine xln, chalky

DOUGLAS 3432 (-1530)

grey-greyish green shale, silty in part, slightly

Sand; grey-greyish green, very fine grained, sud rounded, sub angular, micaceous, poor inter granular porosity, no shows

Shale; grey-greyish green, soft, silty,

Shale as above plus trace Sand; grey-greyish green, very fine grained, sud rounded, sub angular, micaceous

Shale; grey-dark grey, silty in part, slightly

BROWN LIME 3540 (-1638)

Limestone; tan-brown, fine xln, dense, cherty

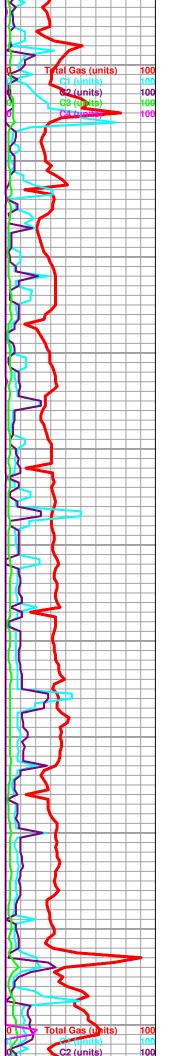
dark grey shale

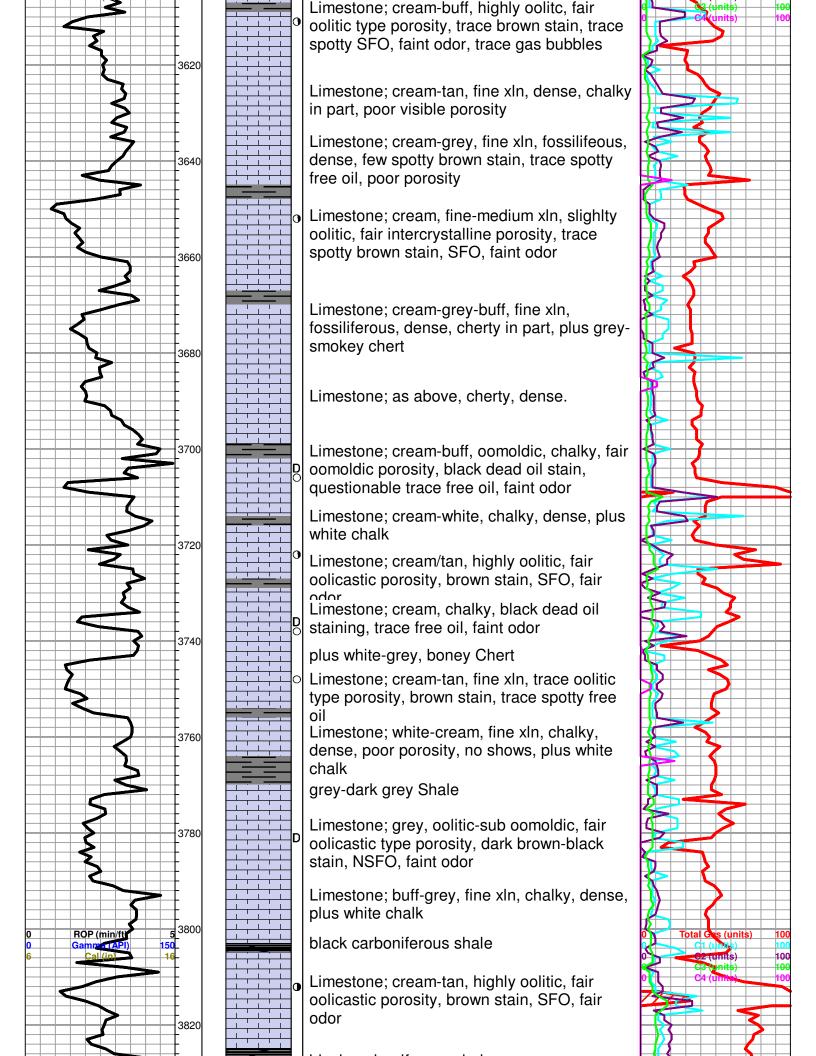
LANSING 3564 (-1662)

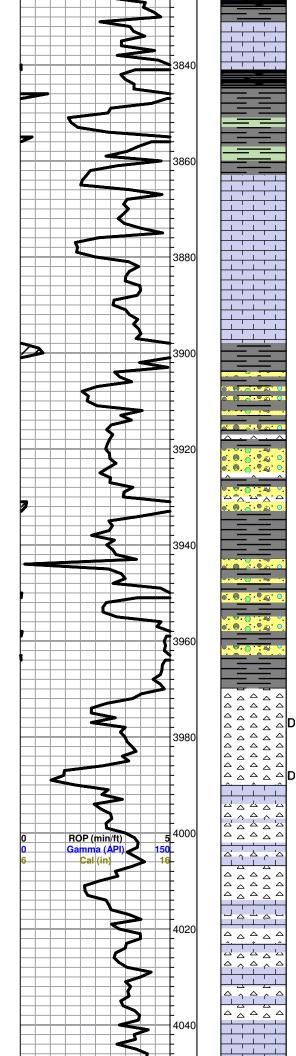
Limestone; cream, fine xln, dense, fossilifeorus in part, no shows

Limestone; cream, highly oolitic in part, chalky, fair porosity, black "dead oil" stain, NSFO, trace gas bubbles, good gassy odor

Limestone; cream-grey, cherty, mottled in part, no shows







black carboniterous shale

BASE KANSAS CITY 3844 (-1942)

black carboniferous shale

grey-green shale

Limestone; cream, fine xln, chalky, dense, poor visible porosity, no shows

Limestone; cream, fine xln, chalky, few oolitic pieces, trace spotty brown stain, questionable trace free oil, faint odor

Shale; variety of colors, gummy/soft, plus Chert; multi colors, Limestone; grey-cream, fine xln, chalky

Chert; orange-yellow-tan, semi tripolitic in part
Shale and Chert as above

Shale; grey-green-maroon, soft/gummy, plus Chert, yellow, cream, orange, plus Limestone; cream, fine xln, chalky

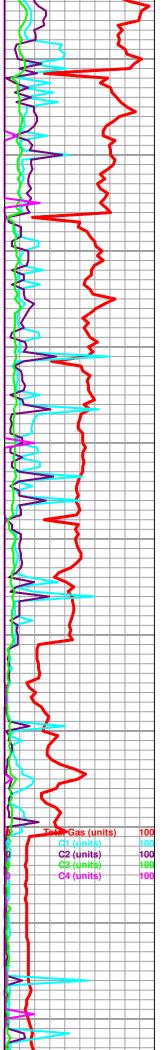
VIOLA 3970 (-2068)

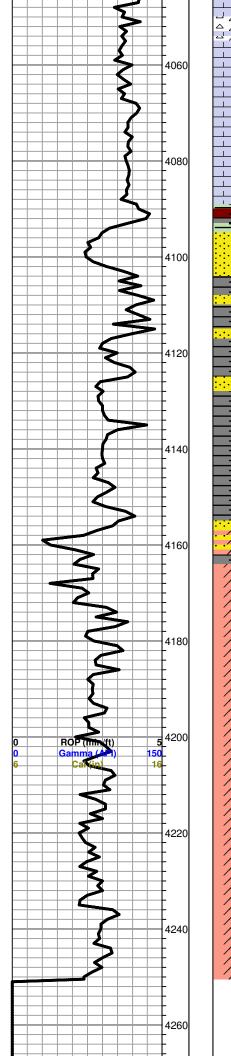
Chert; white, translucent, boney, semi tripolitic, few black edge staining, NSFO

Chert; grey-white-translucent, boney, semi tripolitic, few black edge staining, NSFO, "gassy" odor

Chert as above plus, Limestone; grey-cream, fine xln, dense, chalky in part, slightly cherty, white Chalk

Chert; grey-white-translucent, boney, semi tripolitic, Limestone; cream, fine-medium, granular, chalky in part, plus white chalk





Limestone; cream-buff, fine xln, dense, cherty, no visible porosity, plus Chert; lt. grey-white-buff, boney

as above

SIMPSON SHALE 4088 (-2186)

Shale; grey-green, waxey in part

SIMPSON SAND 4092 (-2190)

Sand; grey-clear, sub rounded, sub angular, dense, poor intergranular porosity, no shows

Sand as above, poorly sorted in part

Shale; grey-greyish green

Sand; grey-clear, medium grained, angular, sub rounded, friable in part, fair inter granular porosity, questionable trace black dead oil stain, NSFO, no odor

Shale as above

Sand; cream-tan, medium grained, sub rounded, dense, poor inter granular porosity, no shows

ARBUCKLE 4168 (-2266)

Dolomite; buff-lt. grey, fine xln, fair intercrystalline porosity, trace golden brown stain, trace spotty free oil, faint odor

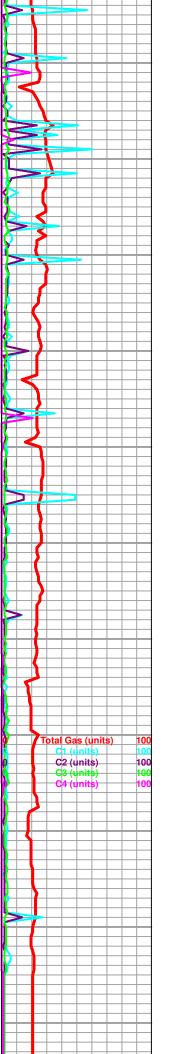
Dolomite; grey-cream, fine xln, slighlty sucrosic, sandy/granular in part, poor visible porosity, no shows, trace white Chert

Dolomite; tan-buff, fine-medium xln, dense, poor visible porosity, no show Chert; white-grey, boney, fossiliferous in part

as above

Dolomite; cream-tan-grey, fine xln, dense, cherty in part, few inter xln type porosity, no shows, trace Chert; white

ROTARY TOTAL DEPTH 4250 (-2348)



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