



**Oil & Gas Well Drilling
Water Wells
Geo-Loop Installation**

11 Lewis Drive Paola, KS 66071

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WELL LOG

A & L Energy Operations, LLC
Alma #4
API #15-059-26,667
May 20 - May 21, 2014

<u>Thickness of Strata</u>	<u>Formation</u>	<u>Total</u>
10	soil & clay	10
8	lime	18
5	shale	23
22	lime	45
26	shale	71
16	lime	87
4	shale	91
6	lime	97
82	shale	179
20	lime	199
27	shale	226
5	lime	231
29	shale	260
11	lime	271
2	shale	273
2	lime	275
16	shale	291
23	lime	314
7	shale	321 oil show
24	lime	345
6	shale	351
8	lime	359 base of the Kansas City
51	shale	410
6	sand	416
92	shale	508
8	lime	516
23	shale	539
17	sand	556 white, no oil
1	coal	557
8	shale	565
8	lime	573
11	shale	584
4	lime	588
19	shale	607
3	lime	610
3	shale	613
5	lime	618 good bleeding
6	shale	624

1	broken sand	625 brown & green, light bleeding
3	oil sand	628 brown, light bleeding
2	broken sand	630 brown & green, light bleeding
4	oil sand	634 brown, light bleeding
1	broken sand	635 brown & green, light bleeding
1	limey sand	636 white, no oil
2	broken sand	638 brown & grey, 90% bleeding
9	oil sand	647 brown 80% bleeding
5	oil sand	652 black 20% bleeding
61	sandy shale	713 brown & grey snd, no bleeding
		713 TD

Drilled a 9 7/8" hole to 22.6'

Drilled a 5 5/8" hole to 713'

Set 22.6' of 9 7/8" casing threaded and coupled cemented with 5 sacks of cement.

Set 703' of 2 7/8" 8 round upset 3 centralizers, 1 float shoe, 1 clamp.

Core Times		
	<u>Minutes</u>	<u>Seconds</u>
625		54
626		41
627		48
628		41
629		39
630		45
631		40
632		39
633		33
634		38
635		42
636		38
637		45
638		57
639		34
640		44
641		46
642		44
643		41
644		43
645		45
646		47
647		43
648		43
649		49
650		45
651		42
652		41
653		45
654		46
655		44
656	1	0
657	1	20
658	1	40
659	1	33
660	1	25
661	1	18
662	1	8
663	1	36
664	2	14