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Mai Oil Operations
Krug 'L' #2
S/2-NE-SE-NW (1875'FNL&2310'FWL)
Section 15-15s-14w
Russell County, Kansas
Page 1

5 1/2" Production Casing Set

Contractor: Southwind Drilling Co. (Rig #3)
Commenced: February 13, 2014
Completed: February 17, 2014
Elevation: 1787' K.B; 1779' D.F; 1773' G.L.
Casing program: Surface; 8 5/8" @ 534'
Production; 5 1/2" @ 3299'
Sample: Samples saved and examined 2800' to the Rotary Total Depth.
Drilling time: One (1) foot drilling time recorded and kept 2800 ft. to the Rotary Total Depth.
Measurements: All depths measured from the Kelly Bushing.
Drill Stem Tests: None.
Electric Log: By Nabors; Dual Induction, Compensated Density/Neutron Log and Micro.

<u>Formation</u>	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite	793	+994
Base Anhydrite	826	+961
Grand Haven	2338	-551
1 st Tarkio Sad	2350	-563
Dover	2364	-577
2 nd Tarkio Sand	2380	-593
Tarkio Lime	2408	-621
Elmont	2470	-683
Howard	2609	-822
Topeka	2675	-888
Heebner	2908	-1121
Toronto	2925	-1138
Lansing	2970	-1183
Base Kansas City	3173	-1396
Arbuckle	3217	-1430
Rotary Total Depth	3300	-1513
Log Total Depth	3299	-1512

(All tops and zones corrected to Electric Log measurements).

SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.

TARKIO SANDS SECTION

2350-2470' No samples or drilling time was caught and/or kept through the Tarkio Sections. (Remarks: the hole was flowing water and it was decided to mud up with starch mud at 2700ft.)

TOPEKA SECTION

2835-2845' Limestone; tan, fossiliferous, chalky, poor porosity, trace black/brown stain, no show of free oil and no odor in fresh samples.

2854-2870' Limestone; tan, fossiliferous, fair fossil cast porosity, fair stain and saturation, show of free oil in fresh samples

TORONTO SECTION

2925-2939' Limestone; white/gray, finely crystalline, oolitic, chalky, questionable stain/discoloration, no free oil and no odor, trace gray chert.

LANSING SECTION

2970-2980' Limestone; gray and white, fine and medium crystalline, scattered intercrystalline porosity, chalky, dark brown/brown stain, no free oil and no odor in fresh samples.

2994-3004' Limestone; tan, few sub oomoldic, poor porosity, trace poor stain, no free oil and no odor in fresh samples.

3006-3013' Limestone; as above, poor porosity, questionable edge staining, no show of free oil and no odor.

3050-3060' Limestone; gray, finely oomoldic, chalky, poorly developed porosity, no shows.

3062-3077' Limestone; gray, white, oomoldic, scattered porosity, trace brown stain, no free oil and no odor in fresh samples.

3134-3140' Limestone; gray, white, cream, finely crystalline, sub oomoldic, chalky, no stain, no free oil and no odor.

3152-3160' Limestone; gray, oomoldic, good oomoldic porosity, gray and brown stain, show of free oil and faint/fair odor in fresh samples.

3185-3196' Limestone; tan, finely and medium crystalline, few fossiliferous, chalky, brown and golden brown stain, show of free oil and odor in fresh samples.

ARBUCKLE SECTION

- 3217-3230' Dolomite; white/cream, medium crystalline, fair/good intercrystalline porosity, golden brown to brown stain and saturation, show of free oil and good odor in fresh samples.
- 3230-3235' Dolomite; as above, good porosity, brown and golden brown stain and saturation, show of free oil and good odor in fresh samples.
- 3235-3240' Dolomite; white, gray, medium crystalline, few coarse crystalline, good intercrystalline and vuggy type porosity, good stain and saturation, good show of free oil and fair odor in fresh samples.
- 3240-3260' Dolomite; as above, fair to good porosity, brown and golden brown stain, show of free oil and fair odor, plus white/gray, oolitic, opaque chert.
- 3260-3280' Dolomite; cream, white, medium crystalline, scattered porosity, no shows.
- 3280-3300' Dolomite; as above, sandy in part, trace gray and white chert and iron pyrite.

Rotary Total Depth 3300
Log Total Depth 3299

Recommendations:

5 1/2" production casing was set and cemented in the Krug 'L' #2.

Respectfully submitted;

James C. Musgrove
James C. Musgrove,
Petroleum Geologist LLC



3299-3300 Dolomite; as above, sandy in part, trace gray and white chert and iron pyrite.

Rotary Total Depth 3300
Log Total Depth 3299

Recommendations:
5 1/2" production casing was set and cemented in the Krug 'L' #2.

Respectfully submitted;

James C. Musgrove

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 7103

Date	Sec.	Twp.	Range	County	State	On Location	Finish
2-14-14	15	15	14	Russell	Ks		1:30AM

Location: Russell 5 to Winterset Rd, 3/4 W, N 2

Lease	Well No.	Owner
Krug L	2	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
Contractor		
Southwind	3	
Type Job		
Surface		
Hole Size	T.D.	Charge To
12 1/4	534	Mg oil
Csg.	Depth	Street
8 5/8	534	
Tbg. Size	Depth	City
		State
Tool	Depth	The above was done to satisfaction and supervision of owner agent or contractor.
Cement Left in Csg.	Shoe Joint	Cement Amount Ordered
	20	250 sk 60/40 3%cc 2%gel
Meas Line	Displace	
	32 1/2 bbl	

EQUIPMENT

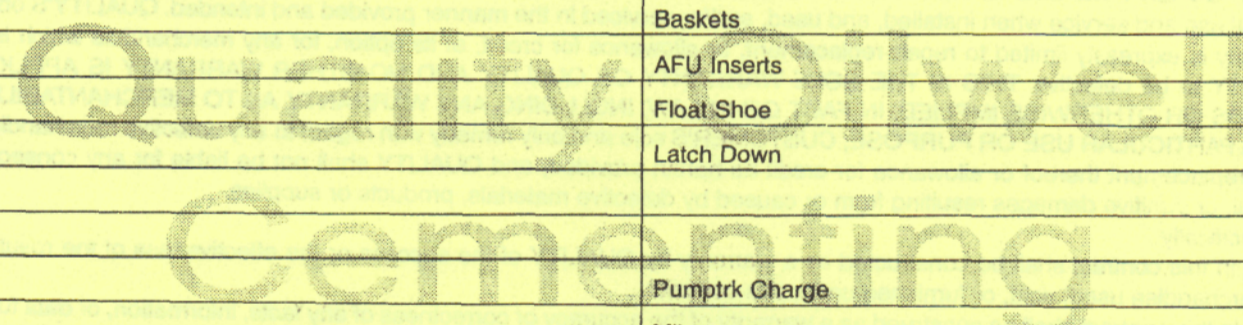
	No.	Cementer	Common
Pumptrk	17	Helper	Poz. Mix
		Nick	
	No.	Driver	Gel.
Bulktrk	3	David	
	No.	Driver	Calcium
Bulktrk	PH	Travis	

JOB SERVICES & REMARKS

Remarks:	Hulls
cement did circulate	Salt
Rat Hole	Flowseal
Mouse Hole	Kol-Seal
Centralizers	Mud CLR 48
Baskets	CFL-117 or CD110 CAF 38
D/V or Port Collar	Sand
	Handling
	Mileage

FLOAT EQUIPMENT

	Guide Shoe
	Centralizer
	Baskets
	AFU Inserts
	Float Shoe
	Latch Down



Pumptrk Charge

Mileage

Tax

Discount

Total Charge

X Signature

Signature

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 460

Date	2-18-14	Sec.	15	Twp.	15	Range	14	County	Russell	State	Ks	On Location	2:00 AM	Finish	
Lease								Location		Russell Sta Unit 5 Set 74W					
Lease								Well No.		2					
Contractor								Owner		N INTO					
Type Job								To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.							
Hole Size								Charge To		M Oil					
Csg.								Street		M Oil					
Tbg. Size								City		State					
Tool								The above was done to satisfaction and supervision of owner agent or contractor.							
Cement Left in Csg.								Shoe Joint		Cement Amount Ordered					
Meas Line								Displace		15 90 salt Yu-flow					
EQUIPMENT								Common							
Pumptrk								No.		100 60/40 2% gel					
Bulktrk								No.		10% salt Yu-flow					
Bulktrk								No.		Gel.					
Bulktrk								No.		Calcium					
JOB SERVICES & REMARKS								Hulls							
Remarks:								Salt							
Rat Hole								Flowseal							
Mouse Hole								Kol-Seal							
Centralizers								Mud CLR 48							
Baskets								CFL-117 or CD110 CAF 38							
D/V or Port Collar								Sand							
Dropped Bulk								Handling							
US Min								Mileage							
plug Rat hole								FLOAT EQUIPMENT							
70 s/s down hole								Guide Shoe							
Dis placed with water								Centralizer							
80 BBL								Baskets							
L ft 8.00 PSI								AFU Inserts							
Land 1600 PSI								Float Shoe							
								Latch Down							
								Pumptrk Charge							
								Mileage							
								Tax							
								Discount							
X Signature								Total Charge							