

# CLIFF OTTAWAY

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## GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY <u>PIONEER RESOURCES</u> LEASE <u>SCHEMPER-ROHME Unit #1</u> FIELD _____ LOCATION <u>NE 3E NE 3E</u> SEC <u>1</u> TWSP <u>3s</u> RGE <u>21W</u> COUNTY <u>NORTON</u> STATE <u>KANSAS</u>	ELEVATIONS KB <u>2307'</u> DF <u>2305'</u> GL <u>2299'</u> Measurements Are All From <u>K.B.</u>
CONTRACTOR <u>W.W. Dalg. Inc #12</u> SPUD <u>7-25-12</u> COMP _____ RTD _____ LTD _____ MUD UP <u>3100'</u> TYPE MUD <u>CHEMICAL</u>	CASING SURFACE <u>8 7/8 @ 250 w/ps</u> PRODUCTION <u>DVA</u> ELECTRICAL SURVEYS <u>CNL/CDL MEL/OIL</u> <u>MEL/BHAS</u>

### FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUB-SEA DATUM	STRUCTURAL POSITION		
				A	B	C
ANHYDRITE	1995	1995	+312	+299		
TOPEKA	3337	3334	-1027	-1038		
HEEBNER	3542	3538	-1231	-1235		
TORONTO	3565	3563	-1256	-1261		
LANSING-KC.	3585	3582	-1275	-1277		
BASE-KC.	3786	3780	-1473	-1485		
WARMANON	3817	3814	-1507	-1519		
ARBUCKLE	3914	3911	-1604	-1611		
P.T.D.	4048		-1741	-1679		
L.T.D.		4046	-1739	-1674		

### REFERENCE WELLS FOR STRUCTURE

A NOR-WEST K<sub>2</sub> OIL DEWITT No1 NE NE NE 31-2-20  
 B \_\_\_\_\_  
 C \_\_\_\_\_