

Robert L. Milford

PETROLEUM GEOLOGIST
Wichita, Kansas

GEOLOGISTS' REPORT

DRILLING TIME AND SAMPLE LOGS

OPERATOR **Murfin Drilling Company, Inc.**
 LEASE **Ruder Unit #2-36**
 LOC. SPOT **5'N & 40'E of C S2 S2 S2**
 LOC. FOOTAGE **335' FSL 2 600' FEL**

SEC. **36** TWP. **10S** R. **10S** W. **24W**
 COUNTY **Gnadhorn** STATE **Kansas**
 API **15-065-23937-00-00**

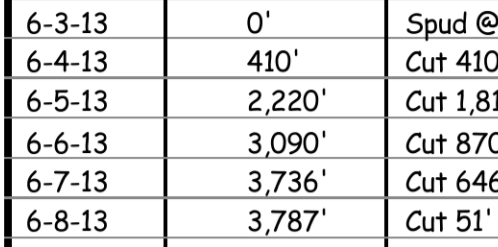
CONTRACTOR **Murfin Drilling Co., Inc.** RIG NO. **16**
 DRILLING STARTED **6-3-2013** COMPLETED **6-9-2013**
 MUD DISPLACED **2,955'** MUD TYPE **Chemical**
 DRILLING TIME KEPT FROM **3,330'** TO **RTD**
 SAMPLES SAVED FROM **3,330'** TO **RTD**
 SAMPLES EXAMINED FROM **3,330'** TO **RTD**
 GEOLOGICAL SUPERVISION FROM **3,263'** TO **RTD**

FORMATION NAME	TOP	LOG DATUM	SAMPLE TOP	SAMPLE DATUM
Stone Corral	1,931'	+400	1,934'	+397
Base Stone Corral	1,972'	+359	1,975'	+356
Topeka	3,437'	-1106	3,440'	-1109
Heebner	3,656'	-1325	3,661'	-1330
Toronto	3,678'	-1347	3,683'	-1352
Lansing	3,691'	-1360	3,696'	-1365
Stark	3,882'	-1551	3,886'	-1555
B/KC	3,927'	-1596	3,931'	-1600
Total Depth	3,982'	-1651	3,985'	-1654

ELEVATIONS
 KB **2,331'**
 CL **2,326'**

MEASUREMENTS FROM KB
 CASING RECORD
 Conductor
 Surface **8.5/8" @ 218'**
 w/ 150 sticks cement
 Production none

ELECTRICAL SURVEYS
 Pioneer Wireline:
 Dual Induction Log
 Dual Compensated -
 Porosity Log
 Microresistivity Log
 Borehole Compensated-
 Sonic Log



DATE	7:00 AM DEPTH	REMARKS
6-3-13	0'	Spud @ 4:00 pm. Plug down @ 8:00 pm. Drilled out plug @ 4:00 am on 6-4-13
6-4-13	410'	Cut 410' in last 24 hrs.
6-5-13	2,220'	Cut 1,810' in last 24 hrs; 21.5 hrs drlg. Dev.: 0.5° @ 2258'
6-6-13	3,090'	Cut 870' in last 24 hrs; 21.5 hrs drlg. DST #1 @ 3763', DST #2 @ 3787'
6-7-13	3,736'	Cut 646' in last 24 hrs; 2.25 hrs drlg. DST #3 @ 3888'
6-8-13	3,787'	Cut 51' in last 24 hrs; 5.25 hrs drlg. RTD 3985' @ 11:10 am. P&A
6-9-13	3,908'	Cut 77' in last 24 hrs; 3.25 hrs drlg.
6-10-13	3,985'	

Remarks

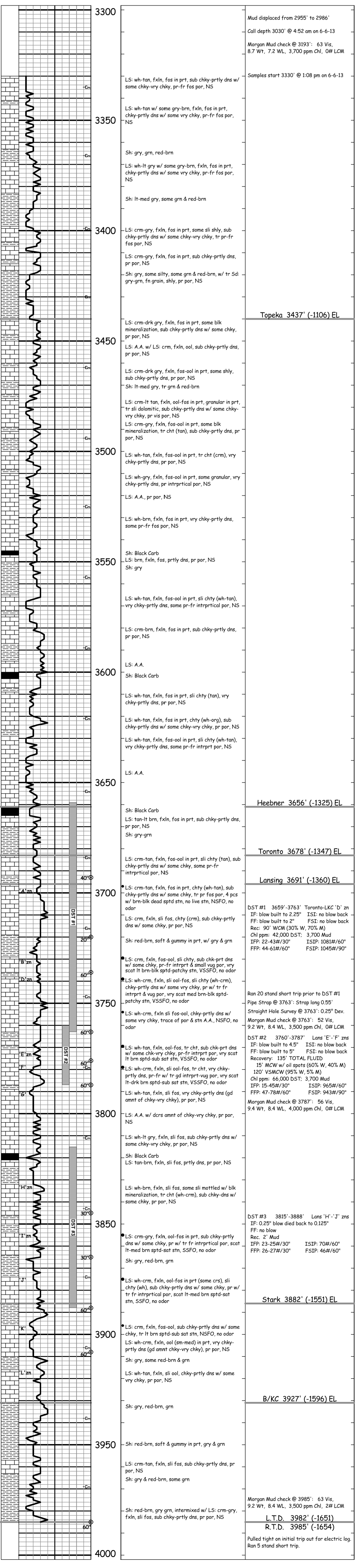
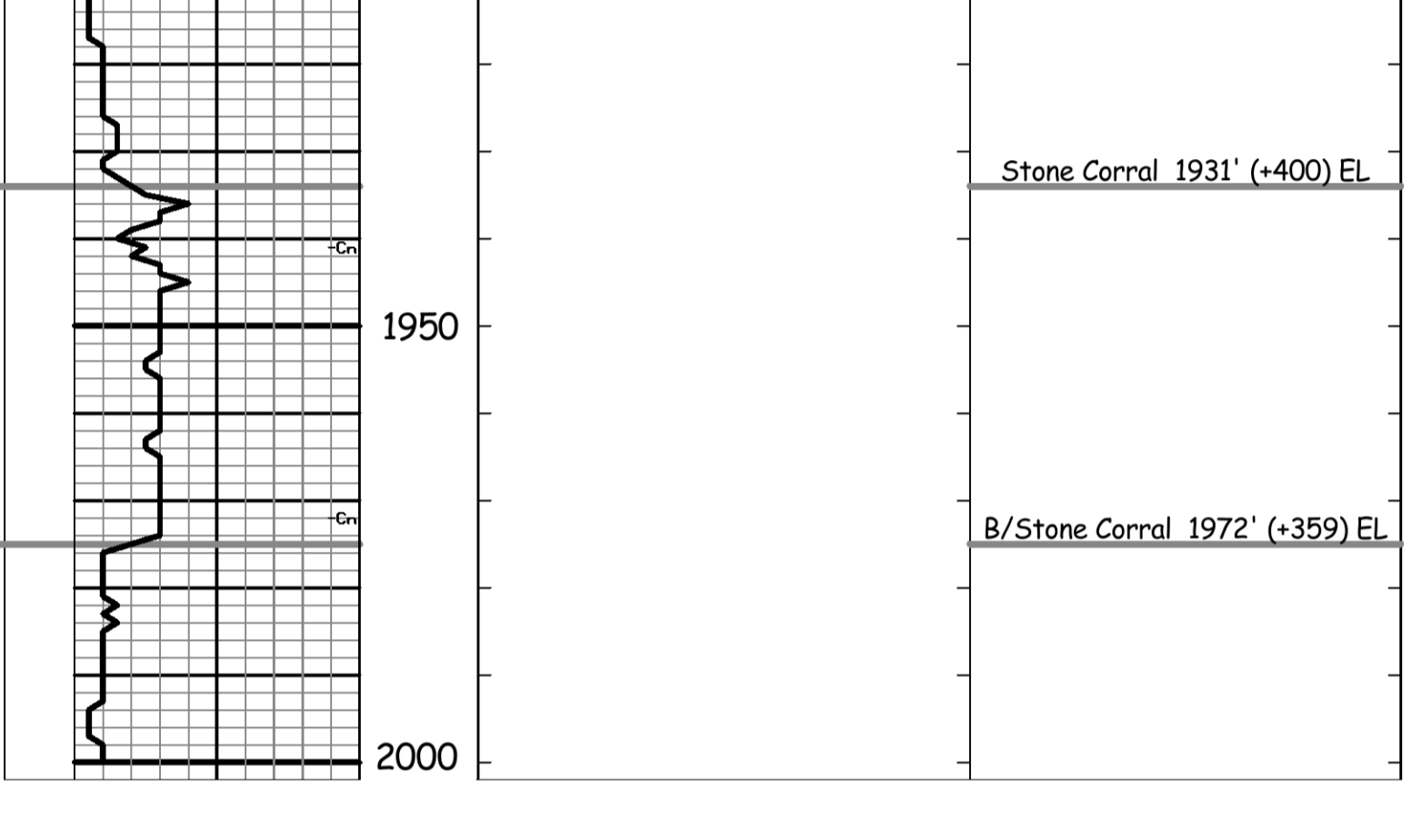
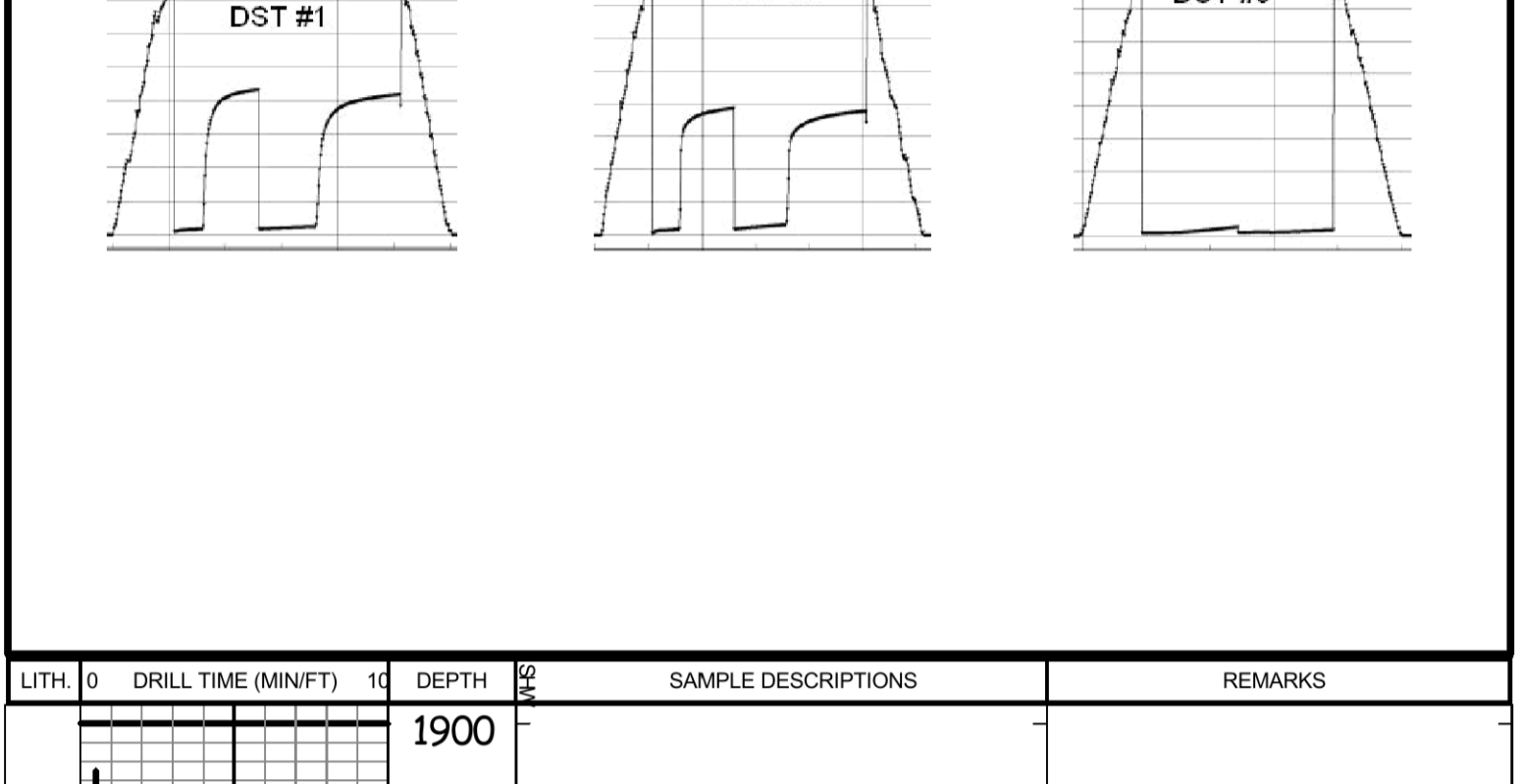
The electric log measurements correlate from 3' to 5' higher to the drilling measurements.

Formation tops and lithology on this report have been corrected to the electric log.

The drilling samples were deposited at the Kansas Geological Survey office in Wichita.

Respectfully submitted,

Robert L. Milford



Morgan Mud check @ 3985': 63 Vis, 9.2 Wt, 8.4 WL, 3,500 ppm Chl, 2# LCM

L.T.D. 3982' (-1651)
 R.T.D. 3985' (-1654)

Pulled tight on initial trip out for electric log. Ran 5 stand short trip.