

GEOLOGIST'S REPORT
DRILLING TIME AND SAMPLE LOG

COMPANY SHAKEESPARE OIL CO.
LEASE Rudolph-1-22
FIELD Wichita
LOCATION 1450 FSL, 1350' FEL
SEC 28 T19SP 16S R0E 34W
COUNTY Scott STATE Kansas
CONTRACTOR HD Rig #2
SPUD 4-1-13 **COMP** 4-16-13
RTD 4940' **LTD** 4939'
MUD UP 3350' **TYPE MUD** Chemical
SAMPLES SAVED FROM 3800' to RTD
DRILLING TIME KEPT FROM 3800' to RTD
SAMPLES EXAMINED FROM 3800' to RTD
GEOLOGICAL SUPERVISION FROM 3900' to RTD
GEOLOGIST ON WELL Tim Priest

FROM KB
MEASUREMENTS ARE ALL

CASING
CONDUCTOR N/A
SURFACE 8-5/8" @ 264'
PRODUCTION 5 1/2" @ 4940'
ELECTRICAL SURVEYS
CND/D/SP/P/E
Micro
By: Weatherford

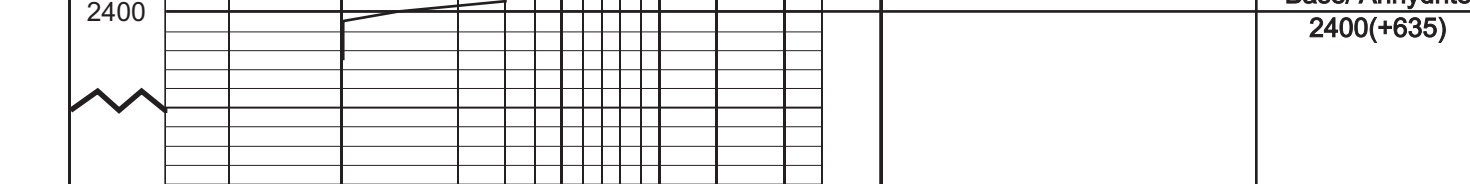
FORMATION TOPS **ELECTRIC LOG** **SAMPLE**
 Anhydrite 2382 (-657) 2380 (+653)
 Heebner Shale 3946 (-913) 3947 (-912)
 Lansing 3987 (-952) 3988 (-953)
 Stark 4264 (-1229) 4266 (-1231)
 B/K.C. 4359 (-1324) 4362 (-1327)
 Fort Scott 4533 (-1498) 4535 (-1500)
 Cherokee Shale 4560 (-1525) 4562 (-1527)
 Mississippian 4694 (-1639) 4696 (-1661)

REMARKS Due to the results of DSTs, it was decided to set production casing to further test the well.

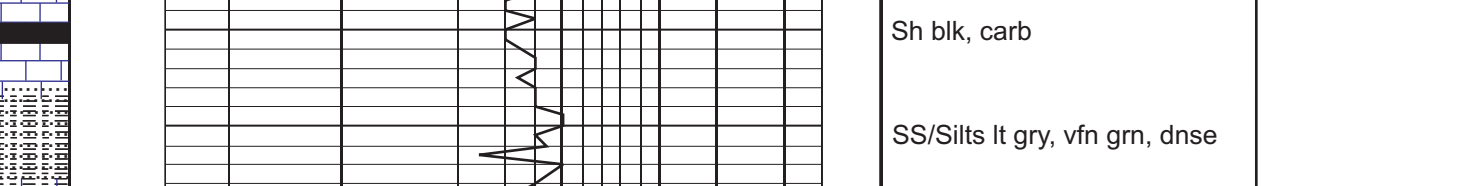
Respectfully Submitted,
 Tim Priest
 Petroleum Geologist

API #15-171-20938-00-00

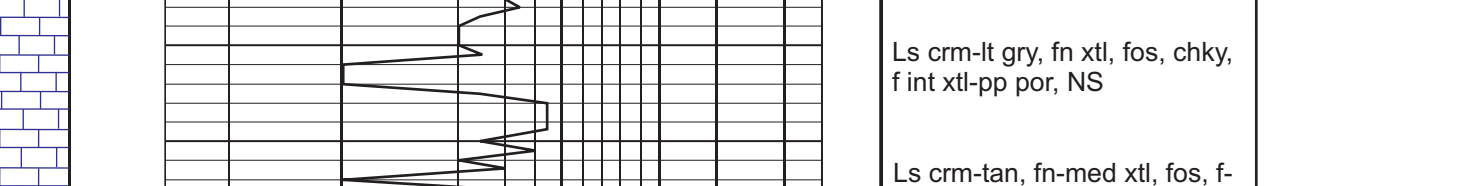
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LEGEND



DEPTH **DRILLING TIME IN MINUTES PER FOOT** **SAMPLE DESCRIPTION** **REMARKS**



LITHOLOGY

Anhydrite 2380(+655)

Base/ Anhydrite 2400(+635)

Ls crm-tan, fn xtl, fos, chky, dnse
 Sh blk, carb
 SS/Silts lt gry, vfn grn, dnse
 Ls tan, vfn xtl, dnse

Ls crm-tan, fn-med xtl, fos, f-gd int xtl por, NS
 Sh blk, carb
 Ls crm-tan, fn-med xtl, fos, f-gd int xtl por, NS

Ls crm-lt gry, vfn xtl, dnse, w/ wh cht
 Ls crm-lt gry, fn xtl, fos, chky, f int xtl-pp por, NS
 Ls crm-gry, fn xtl, fos, chky, f-gd int xtl-pp por, NS

Heebner 3947 (-912)
 Sh blk, carb
 Sh gry-dk gry, calc

Toronto 3986 (-931)
 Ls crm-lt gry, fn xtl, fos, chky, p-f int xtl-pp por, NS
 Sh grn-gry

Lansing 3988 (-953)
 Ls crm-lt gry, fn xtl, fos, chky, p-f int xtl-pp por, NS
 Ls crm, fn xtl, fos, chky, chty, dnse
 Ls crm-lt gry, fn xtl, fos, chky, p-f int xtl-pp por, NS
 Sh blk, carb
 Sh gry, calc

DST # 1 (4014'-4055')
 15'-30'-60'
 FF: Bob in 2 3/4", no return
 Rec: 563 MCW(60%W,40%M), 1235 MCW(56%W,43%M), Total: 1798#
 Fps: 101-426#(440-807#)
 SIPS: 1016#(1018#)
 HSPs: 1056#(1026#)
 BHT: 124 deg F
 Chlcr: 22 deg F

DST # 2 (4068'-4092')
 30'-30'-60'
 FF: (bottom packer failed)
 FF: Built to 1 in, no return
 Rec: 49 CO, 82 COW
 62%CO,29%W,68%MO
 60%W(85%W,15%M), 248 VM
 45%W(55%M), 135# MCW
 62%W(58%M), Total: 1613
 Fps: 105-420#(437-787#)
 SIPS: 1133#(1128#)
 HSPs: 2044#(1807#)
 BHT: 114 deg F
 Chlcr: 34.00ppm

Muncie Creek 4168 (-1133)
 Ls crm-lt gry, vfn xtl, chty, dnse
 Sh blk, carb
 Ls crm-tan, fn xtl, sil fos, sil chty, dnse
 Ls crm, fn xtl, fos, chky, p int xtl-pp por, NS
 Ls crm, fn xtl, fos, chky, p int xtl-pp por, NS
 Sh dk gry-blk
 Ls crm-gry motld, vfn xtl, fos, arg in prt, dnse
 Ls crm-lt gry, vfn xtl, sil chty, dnse
 Ls crm-lt gry, vfn xtl, fos, dnse
 Sh gry-dk gry
 Ls crm, fn xtl, ool, chky, f int xtl & ooc por, NS
 Ls crm-lt gry, vfn xtl, fos, dnse

Stark Shale 4266 (-1231)
 Sh blk, carb
 Sh gry-gry
 Ls crm-lt gry, fn xtl, fos, chky, p int xtl & int frag por, NS
 Ls crm-gry, vfn xtl, dnse
 Ls crm-gry, fn xtl, fos, chky, p-f int xtl-pp por, NS

Hushpuckney Shale 4312 (-1277)
 Sh blk, carb
 Ls lt gry-gry, fn xtl, fos, sil chky, p-f int xtl-pp por, spdt sil sat stn, SFO, f odor, dull fluor
 Ls tan-gry, vfn xtl, sil fos, chky, dnse
 Ls crm-lt gry, vfn xtl, dnse

B/K.C. 4360 (-1325)
 Sh dk gry-blk
 Ls crm-lt gry, vfn xtl, dnse
 Ls lt gry-gry, fn xtl, fos-sub ool, p-f int xtl & pp-vug por, NS
 Sh blk, carb
 SS/Silts lt gry-gry, vfn-fn grm, sil fria-tite, NS
 Ls crm-lt gry, vfn xtl, dnse
 Sh gry-blk
 Ls crm-lt gry, vfn xtl, dnse
 Sh gry-gry
 Ls crm-lt gry, vfn xtl, dnse
 Ls gry, mic xtl, sil fos, dnse
 Ls crm-lt gry, fn xtl, fos-ool, sil chky, p-f int xtl-pp por, spdt-sil sat stn, SSFO, sil odor, dull fluor
 Ls crm-lt gry, vfn xtl, dnse
 Sh blk, carb
 Ls lt gry-gry, vfn xtl, arg in prt
 Ls crm-lt gry, fn xtl, fos, sil chky, p-f int xtl-pp por, spdt stn on few pcs, VSSFO, no odor, dull fluor
 Ls crm-lt gry, fn xtl, sil fos, sil chky, p int xtl-pp por, NS
 Ls crm-tan, vfn xtl, chty, dnse
 Sh blk, carb

DST # 3 (4305'-4340')
 15'-30'-60'
 FF: Bob in 2 3/4", no return
 Rec: 20# WM wool sps, 67%W(79%W), 248 VM
 45%W(55%M), 135# MCW
 62%W(58%M), Total: 1613
 Fps: 135-420#(437-787#)
 SIPS: 1133#(1128#)
 HSPs: 2167#(2035#)
 BHT: 122 deg F
 Chlcr: 55.00ppm

Marmaton 4411 (-1376)
 Ls crm-lt gry, vfn xtl, dnse
 Ls crm-lt gry, vfn xtl, dnse
 Sh gry-blk
 Ls crm-lt gry, fn xtl, fos-sub ool, chky, p-f int xtl-pp por, spdt-sil sat stn, SFO, f-strong odor, dull-f fluor
 Ls crm-lt gry, fn xtl, fos, dnse
 Ls gry, mic xtl, sil fos, dnse
 Ls crm-lt gry, fn xtl, fos-ool, sil chky, p-f int xtl-pp por, spdt-sil sat stn, SSFO, sil odor, dull fluor
 Ls crm-lt gry, vfn xtl, dnse
 Sh blk, carb
 Ls lt gry-gry, vfn xtl, arg in prt
 Ls crm-lt gry, fn xtl, fos, sil chky, p-f int xtl-pp por, spdt stn on few pcs, VSSFO, no odor, dull fluor
 Ls crm-lt gry, fn xtl, sil fos, sil chky, p int xtl-pp por, NS
 Ls crm-tan, vfn xtl, chty, dnse
 Sh blk, carb

Pawnee 4483 (-1448)
 Ls lt gry-gry, vfn xtl, arg in prt
 Ls crm-lt gry, fn xtl, fos, sil chky, p-f int xtl-pp por, spdt stn on few pcs, VSSFO, no odor, dull fluor
 Ls crm-lt gry, fn xtl, sil fos, sil chky, p int xtl-pp por, NS
 Ls crm-tan, vfn xtl, chty, dnse
 Sh blk, carb

DST # 4 (4370'-4425')
 30'-30'-30'-30'
 FF: Died in 9", no return
 FF: No flow, no return
 Rec: 20 OSM
 Fps: 24-27#(26-28#)
 SIPS: 374#(468#)
 HSPs: 2202#(2127#)
 BHT: 115 deg F

Myric Station 4519 (-1484)
 Ls crm-lt gry, fn xtl, fos, chky, sil chty, p int xtl-pp por, spdt stn, VSSFO, sil odor, dull fluor
 Sh blk, carb
 Ls crm-tan, fn xtl, ool, sil chky, p int xtl-pp por, spdt-sil sat stn on few pcs, VSSFO, sil odor, no fluor
 Sh gry-dk gry
 Ls crm-tan-gry, vfn xtl, dnse

Fort Scott 4535 (-1500)
 Ls crm-tan, fn xtl, ool, sil chky, p int xtl-pp por, spdt-sil sat stn on few pcs, VSSFO, sil odor, no fluor
 Sh gry-dk gry
 Ls crm-tan-gry, vfn xtl, dnse

Cherokee Shale 4562 (-1527)
 Sh blk, carb
 Ls crm-tan-gry motld, fn xtl, fos, chky, f int frag por, NS
 Sh grn-gry
 Ls crm-lt gry, vfn xtl, dnse
 Ls tan-gry, vfn xtl, w/int bed blk carb Sh
 Sh grn-gry
 Ls crm-lt gry, vfn xtl, dnse
 Sh grn-gry

Johnson Zone 4607 (-1572)
 Ls crm-lt gry, vfn xtl, sil fos, sil chky, no vis por, NS
 Ls tan-gry, vfn xtl, chky, dnse
 Ls crm-lt gry, vfn xtl, sil chty, dnse
 Ls crm-lt gry, vfn-fn xtl, sil fos, p int xtl-pp por, spdt stn on few pcs, VSSFO, sil odor, dull fluor
 Ls lt gry-gry, vfn xtl, dnse
 Ls crm-lt gry, vfn-fn xtl, sil fos, p int xtl-pp por, spdt-sil sat stn, SSFO, sil odor, dull fluor
 Ls crm-tan, vfn xtl, dnse
 SS clear-gry-dk gry, fn-med chky, well cement, sil fria, sme dk inclusions, dirty, sil sat stn, SSFO, sil-f odor, no fluor
 Sh grn-gry, silty
 SS lt gry-gry, fn grm, friable w/ sme loose grms, few pcs w/int stn, SSFO, sil odor, dull fluor

Mississippian 4696 (-1661)
 Ls crm-tan-lt gry, vfn xtl, sil sandy, dnse
 Ls crm-lt gry, vfn xtl, v sandy, chky, sil fria, most dnse
 Ls crm-lt gry, vfn xtl, v sandy, chky, sil fria, most dnse
 Ls lt gry-gry, vfn xtl, ool, sil chky, dnse
 Ls crm-lt gry, mic xtl, dnse
 ? Poor samples. Abundant red shale from uphole. Very few sand pcs or loose grains)
 Ls crm-tan, mic xtl, sil sandy, sil chty, dnse
 Ls crm-lt gry, vfn xtl, sub chky, dnse
 Ls lt gry, vfn xtl, ool, sil chky, dnse
 Ls crm-lt gry, mic xtl, dnse
 Ls crm-lt gry motld, fn xtl, sil dolo in prt, fos, p-f int xtl & int frag por, NS
 Ls/Dol tan-gry, fn xtl, suc in prt, sme int xtl por, most dnse, NS
 Ls/Dol crm-tan-gry motld, fn xtl, suc in prt, sil chky, p int xtl por, NS
 Ls crm-tan, mic xtl, chty, dnse
 Ls lt gry-gry motld, vfn xtl, dolo in prt, sub chky in prt, dnse

Spergen 4880 (-1845)
 Ls crm-lt gry motld, fn xtl, sil dolo in prt, fos, p-f int xtl & int frag por, NS
 Ls/Dol tan-gry, fn xtl, suc in prt, sme int xtl por, most dnse, NS
 Ls/Dol crm-tan-gry motld, fn xtl, suc in prt, sil chky, p int xtl por, NS
 Ls crm-tan, mic xtl, chty, dnse
 Ls lt gry-gry motld, vfn xtl, dolo in prt, sub chky in prt, dnse

Total Depth 4940' (-1905)