Marc Downing

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GEOLOGIC REPORT LOG

COMPANY: Downing-Nelson Oil Co. Inc.
WELL: K-M Unit #1-20
FIELD:
LOCATION: 2570' FNL – 600' FWL
SEC. 20 TWP. 20S RGE. 20 W
COUNTY: Pawnee
STATE: Kansas

20S 20W — 20

PRODUCTION: Dry
ELEVATION: KB 2205; DF —; GL 2196
Drilling Measured From: 2205 KB
Samples Saved From: 4000 To: TD
Drilling Time From: 3650 To: TD
Samples Examined From: 4000 To: TD
Geological Supervision From: 3700 To Total Depth
Wellsite Geologist: Alan Downing
Electrical Surveys: Pioneer
CDNL/GR – Microlog
Sonic – Dual Induction

OPERATOR: DNOCI
CONTRACTOR: Discovery Drlg Rig #3
COMM: 4-23-14 COMP: 5-3-14

CASING RECORD

SURF: 8 5/8" - 1180' PROD: –
TOTAL DEPTH DRILLERS: 4437
TOTAL DEPTH LOG: 4436

FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUB-SEA DATUM	STRUCTURAL POSITION
Anhydrite	1386	1384	+821	+1
Base	1412	1409	+798	+3
Heebner	3720	3718	-1513	-2
Lansing	3770	3768	-1562	-2
BKC	4080	4079	-1874	+1
Fort Scott	4254	4252	-2047	+2
Cherokee Sh.	4281	4279	-2074	+3
Detrital Miss	4341	4338	-2133	+2
Osage	4366	4364	-2159	NR
Gilmore City	4404	4400	-2195	NR

REFERENCE WELL FOR STRUCTURE: DNOCI
Miller-Kelter #1-20 2340' FSL – 1220' FW
Sec 20-20S-20W Paw Co., Ks

DRILL STEM TESTS

No.	Interval							

REMARKS AND RECOMMENDATIONS

LEGEND

Anhydrite, Salt, Sandstone, Shale, Carb sh, Limestone, Dol/Lime, Chert, Dolomite

DRILLING TIME IN MINUTES PER FOOT | DEPTH | LITHOLOGY | SAMPLE DESCRIPTIONS | OIL SHOWS | REMARKS

Drilling time tops:
- Heebner 3720 (-1515)
- Lansing 3770 (-1565)
- BKC 4080 (-1875)
- Fort Scott 4254
- Cherokee Sh. 4281 (-2076)
- Detrital Miss 4341 (-2136)
- Osage 4366 (-2161)
- Gilmore City 4406 (-2201)
- RTD: 4437 (-2232)
- LTD: 4436 (-2231)

Sample descriptions:
- Sh: Black - carb; Ls: Wht f. Vfxn all V. dse
- Sh: gm - Brown
- Ls: Wht Vfxn V. dse w few pcs clr sharp Ach all No show
- Black - carb
- Sh: grn - V. dark
- Ls: Wht - lt. Tan fxn sli ool w No app φ -
- Sh: grn - Brown - silty w Tan f. mxn Ls Lenses all No
- Ls: Tan fxn w lots Red shales - grn - shales & few ss clusters
- few Wht calcite clusters w good inter gr. φ - No show
- frosted Wht - Chert Wht Tan V. good weathered φ w V. gd SFO some total Blk sat total yellow - grn Flour good odor - vug φ — 15
- Chert Tan - clr sharp w lite edge stn few w weathered edge lt. spt SFO faint odor - mostly sharp Δ chert in 60" — 4
- 60" Wht Δ chert w few scatt edge stn V. scatt SFO - trace odor good yellow green Flour. — 7
- Cht. Wht trip Δ chert w some V. gd ooc φ Total sat stn gd odor Lt yellow Flour
- Δ chert Pdm Wht, all V. sharp edges w V. spt. stn (edge) NSFO — No odor.
- Ls: Wht f-Vfxn V dse

DST #1
4278-4348
30-30-30-30
Rec: 15' mud
IHP: 2170#
IFP: 24-30#
FFP: 32-34#
SIP: 166-108#
FHP: 2067#
Temp: 110°F

DST #2
4346-4359
30-30-30-30
Rec: 3' mud
IHP: 2196#
IFP: 18-21#
FFP: 22-24#
SIP: 1025-897#
FHP: 2151#
Temp: 111°F

DST #3
4356-4365
30-30-30-30
Rec: 3' mud w/ oil spt
IHP: 2209#
IFP: 19-24#
FFP: 25-28#
SIP: 1188-1122#
FHP: 2178#
Temp: 112°F

DST #4
Straddle
4365-4380
5-30-30-45
Initial Flow
Bob 15sec
ISI - Weak surface
FF - Bob 15sec
FSI - No Blow
Rec: 300' mud
2730 water
Misrun Bottom pkr did not hold
IHP: 2285#
IFP: 824-1018#
FFP: 904-1376#
SIP: 1385-1383#
FHP: 2157#
Temp: 123°F

DST #5
Straddle
4365-4378
30-45-30-45
IF Bob 12 min
No blow back
FF Bob 6 min
No Blow back
Rec:
1650' mw
Lower Pkr Held initial Flow the Failed on Shut in
IFP: 49-246#
FFP: 551-786#
SIP: 1369-1366#
FHP: 2200-1994#
Temp: 122°F

Alan Downing