

**GRAND
MESA****OPERATING COMPANY**

(316) 265-3000
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1700 N. WATERFRONT PARKWAY
BLDG. 600
WICHITA, KANSAS 67208-5514

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: E&E #1-34
Location: 351' FSL, 739' FEL, 34-13s-32w, Logan County, Kansas
License Number: API: 15-109-21027 Region: Logan County
Spud Date: 08/02/2011 Drilling Completed: 08/12/2011
Surface Coordinates: Lat: 38.874047
Long: -100.855715
Bottom Hole Vertical hole
Coordinates:
Ground Elevation (ft): 2874' K.B. Elevation (ft): 2879'
Logged Interval (ft): 3700' To: RTD Total Depth (ft): 4650'
Formation: Mississippian at RTD
Type of Drilling Fluid: Chemical

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

GEOLOGIST

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Company: Matson Geological Services, LLC
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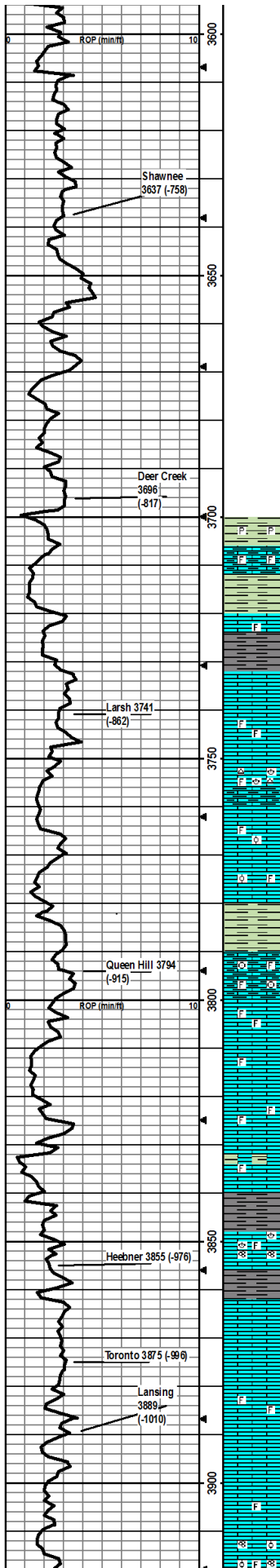
COMMENTS

Contractor: Murfin Drilling Company Rig #24
Pusher: Tony Martin
Surface Casing: 8 5/8" set at 222' w/165sx
Production Casing: 5 1/2" set to TD
Mud by: MudCo
DST's by: Diamond Testing
Logs by: Weatherford (DIL, CN-CD, ML)
RTD=4650'
LTD=4651'

FORMATION TOPS

Formation	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
B/Anh	2380'	-499	2380'	-499
Larsh	3741'	-862	3744'	-865
Queen Hill	3794'	-915	3799'	-920
Heebner Shale	3855'	-976	3858'	-979
Lansing	3899'	-1020	3904'	-1025
Muncie Creek Shale	4062'	-1183	4062'	-1183
Stark Shale	4148'	-1269	4148'	-1269
Hushpuckney Shale	4181'	-1302	4181'	-1302
Marmaton	4244'	-1365	4246'	-1367
Upper Fort Scott	4350'	-1471	4350'	-1471
Little Osage Shale	4374'	-1495	4376'	-1497
Excello Shale	4399'	-1520	4399'	-1520
Johnson Zone	4472'	-1593	4476'	-1597
Morrow	4505'	-1626	4504'	-1625
Mississippian	4534'	-1655	4534'	-1655
RTD	4650'	-1771		
LTD			4651'	-1772

rop ROP (min/ft)	Depth	Lithology	CFS Point	Oil Shows	Geological Descriptions	Remarks
<p>Anhydrite Top @ 2359 Bottom @ 2380</p> <p>Stoller 3506 (-627)</p>	<p>3330</p> <p>3350</p> <p>3400</p> <p>3450</p> <p>3500</p> <p>3550</p>				<p>Morning Report Depth/Activity</p> <p>Spud on 08-01-2011</p> <p>08-02, drill @ 222'</p> <p>08-03, drill @ 2230'</p> <p>08-04, drill @ 3050'</p> <p>08-05, drill @ 3700'</p> <p>08-06, DS T#1 @ 3942'</p> <p>08-07, drill @ 4000'</p> <p>08-08, DS T#3 @ 4142'</p> <p>08-09, drill @ 4340'</p> <p>08-10, drill @ 4396'</p> <p>08-11, drill @ 4492'</p> <p>08-12, drill @ 4590'</p> <p>ROP Data begins @ 3339'</p>	<p>Mudco Check #1 @ 0' 08/01/11</p> <p>Mudco Check #2 @ 2101' 08/03/11 8:30am wt vis pH chl 9.2 28 7.0 24000 FIT LCM nic 0</p> <p>Anhydrite: 2359-2380'</p> <p>Mudco Check #3 @ 3020' 08/04/11 8:30am wt vis pH chl 9.2 29 7.0 27000 FIT LCM nic 1</p>



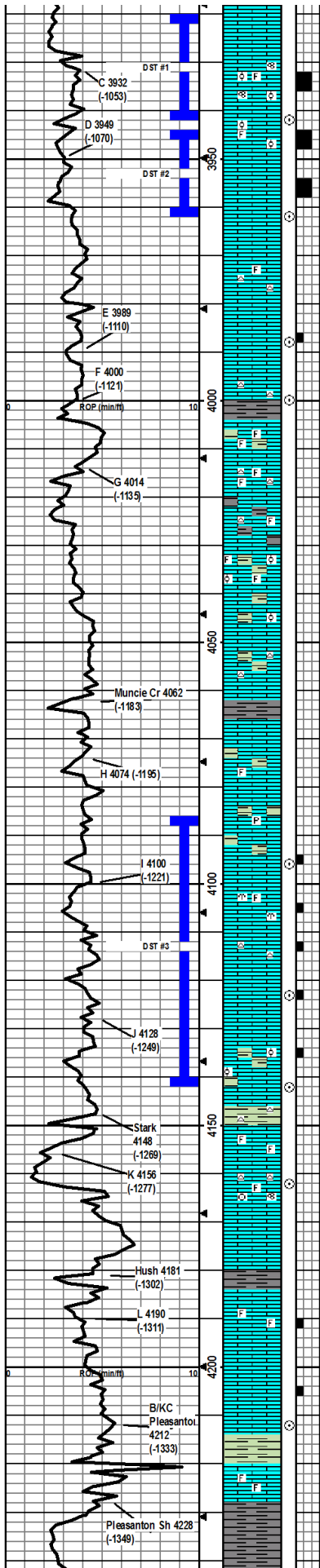
Started collecting cutting samples @ 3710'.

- SH: med gry w/ min amt of lt green, fissile, some pyrite xtals.
- LS: crm to buff-gry, hrd, some med gry SH, micro-xtal w/ foss frags, no vis por.
- SH: med gry, silt glau, soft, fissile
- LS: crm to lt gry, hard, micro-xtal, min amt of foss frags, no vis por.
- SH: med-dk gry, soft, fissile
- LS: crm and lt gry, micro-fn xtal, some xtal in por.
- LS: crm-brn, fn xtal, some foss frags, no vis por.
- LS: crm, micro xtal w/ fn frac filled xtals, foss brnc and frags, min white chrt, no vis por.
- Same as above w/ med to dk gry SH.
- LS: crm-lt brn w/ med gry, micro-fn xtal, some foss frags, one pcs ool w/ rug por.
- LS: crm-lt brn, micro-fn xtal, foss frags and ool, no vis por.
- SH: med-dk gry, soft, fissile
- LS: crm-lt brn w/ some lt gry, micro-xtal, some foss, crin and frags, some med-dk gry SH, no vis por.
- LS: lt brn to med gry, micro-xtal, some small foss frags, no vis por.
- LS: white to lt brn, micro-fn xtal, min small foss frags, no vis por.
- LS: white to lt gry, micro-xtal, min small foss frags, no vis por.
- LS: lt brn and lt gry, micro-xtal, min small foss frags, med-dk gry fissile SH, no vis por.
- SH: med-dk gry, soft, fissile
- LS: crm to lt gry, micro-fn xtal, foss fusilnd brnc and frags, no vis por.
- SH: dk gry-blk, soft.
- LS: crm to lt brn w- some lt gry, micro-xtal w/ some fn xtals, no vis por.
- LS: crm to lt brn, micro and fn xtal, no vis por.
- LS: white to crm w/ some lt brn, fn xtal, some foss frags, no vis por.
- Same as above.
- LS: white to crm, micro-fn xtal, min amt of foss frags, no vis por.
- LS: white to crm, micro-fn xtal, min amt of foss ool fusilnd and frags, min amt in-xtal por, no odor, no flor, ns.

Mudco Check #4 @ 3656'
 08/05/11 5:00am
 wt vis pH chl
 8.8 54 11.0 2200
 Filt LCM
 6.4 1

Mudco Check #5 @ 3942'
 08/06/11 5:30am
 wt vis pH chl
 9.3 53 10.5 1800
 Filt LCM
 7.2 2

DST 1)3920-3942
 3045/6060.



LS: crm to lt brn, micro-fn xtal, some sily chalky pcs, foss ool fusulin, some in-xtal and frac por, no cup odor but st odor when crushed, flor, sh brn fo in-xtal por. Few pcs in 30" smp, more pcs in 60" smp.

LS: crm, micro-fn xtal, ool and frag foss, in-xtal vug por, cup and hand crushed odor, flor, sh dk-brn fo in-xtal por.

LS: crm, micro-xtal w/fn-xtals in vug por, no cup odor but st odor when crushed, flor, sh dk-brn fo in-xtal por. Similar shows in 30" and 60" smpls.

LS: crm, micro to fn-xtal, some white chalky pcs, sm all ool and min foss frags, some white chrt, some green and gry SH, sm in-xtal and pinpt por, no cup or crushed odor, ns.

LS: crm, micro to fn-xtal, mn amt white chalky pcs, min in-xtal and pinpt por, one pcs w/vug por and fo in the 60" smp poss re-clr smp from above.

LS: crm to lt brn, micro to fn-xtal, chert, min amt of pinpt por, no odor, ns.
SH: med green to dk gry, soft fissile.

LS: crm-lt brn, micro to fn-xtal, foss frags, some green-gray and gray SH, no vis por, no odor, ns.

LS: crm, micro to fn-xtal, foss frags, min chert, m in chalky pcs, pinpt por, no odor, ns.
Same as above w/lt to dk gry SH.

LS: crm-lt brn, micro to fn-xtal, ool and foss frags, min chalky, ool vug por, some brn SH, no odor, ns.

LS: crm-lt brn, micro to fn-xtal, stt less ool, some lt-dk gry SH, one pcs of greenish gry SS, m in ool por, ns.

LS: crm, fn-xtal, stt amt chert, some green and gry SH, no vis por, ns.
SH: dk gry to bk, soft, fissile.

LS: crm-lt brn w/min white and lt gry, micro-fn xtal, some brn and gry SH, min foss frags, no vis por, ns.

LS: crm-lt brn, fn xtal, lt-med gry and green SH w/m in pyrite, no vis por, ns.

LS: white-crm w/some lt brn, micro-fn xtal, med gry and brn SH, most smp w/no vis por, one pcs w/vug in-xtal por w/brn oil staining, flor and oil cut w/solvent.

LS: crm-lt brn, micro-fn xtal, min foss w/bryozon, most smp w/no vis por, one pcs w/vug in-xtal por w/fo, stt odor when crushed, stt sfo.

LS: white-crm, micro-fn xtal, min foss, chrt, most smp w/no vis por, few pcs w/in-xtal por and stt fo, stt odor when crushed, stt sfo.

LS: crm, micro-fn xtal, some pcs w/in-xtal por and brn staining and stt fo, stt odor when crushed, flor, stt sfo.

LS: crm to lt gry, micro-fn xtal, lt green-gry and dk gry SH, ool foss w/ vug and in-xtal por, stt odor when crushed, flor, stt sfo.

SH: med green-gry to gry w/min amt red-brn and dk gry - blk, soft-firm, min amt pyrite.

LS: white crm and gry-crm, micro-fn xtal, m in chalky pcs, some min foss frags, no vis por, no odor, ns.

LS: crm-med gry brn, micro-fn xtal, min chert, min amt of foss frags w/crin and fusilin, one pcs w/in-xtal fn por w/brn oil staining, no cup or crush odor, stt s staining.

LS: white, lt gry and dk brn, fn xtal, foss frags, no vis por, no odor, ns.
SH: med-dk gry w/lt-med green-gry, soft to brittle.

LS: white to lt-brn and lt-gry, fn xtal, foss frags, one pcs w/vug in-xtal por and brn fo, flor, stt sfo.

LS: white-crm, fn xtal, min foss frags, most pcs w/no por, one pcs in 30" and one in 60" smp w/show in in-xtal por, flor, stt sfo.

SH: dk green and med-dk gry, fissile some glauconitic.

LS: white and crm w/lt gry, micro-fn xtal, some foss frags, some white chalky pcs, no vis por, ns.
SH: dk gry-blk, red br and greenish gry, soft to firm, fissile, some siltstn pcs.

1st: initial week blow built to 4.5".
2nd: initial week blow built to 4".
Rec 1" CO, 177' SOCMW
IFP: 6-52#,
ISIP: 11.71#,
FFP: 56-34#,
FSP: 114.7#.

CFS @ 3942' 30"60"

DST 2)3944-3962
30454560,
1st: initial wk suf blow BOB @ 16".
2nd: initial wk suf blow BOB @ 19.5".
Rec 565' 6MW,
IFP: 9-134#,
ISIP: 11.56#,
FFP: 137-261#,
FSP: 114.8#.

CFS @ 3962' 30"60"

Mudco Check #5 @ 3988'
08/07/11 6:30am
wt vis pH chl
9.0 59 9.5 2500
FIT LCM
8.8 2

CFS @ 3988' 30"60"

CFS @ 4000' 30"60"

DST 3)4068-4142
30303030,
1st: initial wk suf blow increased to 1/2".
2nd: initial few bubbles on tool open then no blow,
Rec 5' DM,
IFP: 6-12#,
ISIP: 64.1#,
FFP: 10-19#,
FSP: 63.1#.

CFS @ 4096' 30"60"

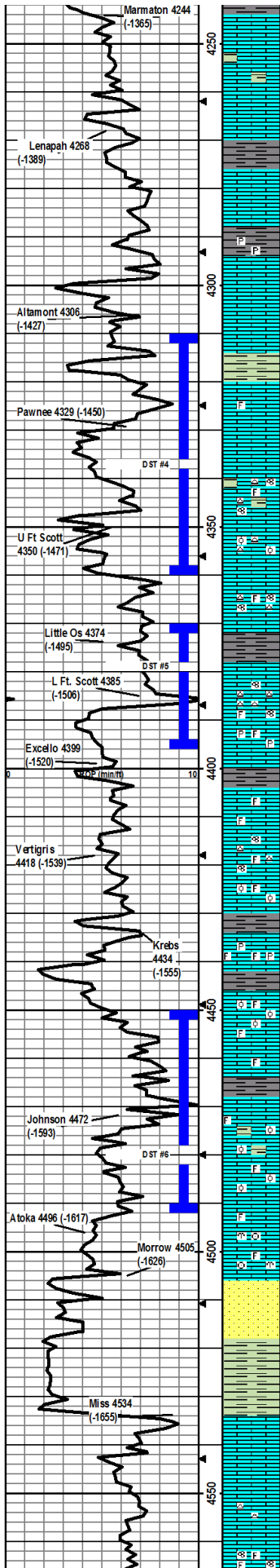
CFS @ 4123' 30"60"

CFS @ 4142' 30"60"

Mudco Check #7 @ 4142'
08/08/11 5:00am
wt vis pH chl
9.3 54 10.5 2400
FIT LCM
8.0 2

CFS @ 4162' 30"60"

CFS @ 4212' 30"60"



LS: white-cream w/min amt of lt gry, fn-xtal, no vis por, ns

Same as above, w/greenish gry and gry SH, soft-firm, fissile.

LS: white-cream w/min amt of gry and red brn, fn-xtal, min amt white soft chalky pcs, no vis por, ns.

SH: med-dk gry - greenish gry - red brn, firm, fissile.

LS: cream to red brn, micro-fn xtal, some silty pcs, min pinpt and frac por, ns.

SH: med-dk gry - greenish gry - red brn, min silty pcs, fissile, min amt pyrite

LS: cream-lt gry cream and lt brn, micro-fn xtal, no vis por, ns.

LS: cream-lt brn, fn xtal, min amt frac por, ns.

SH: green-gry lt-dk gry and red brn, some silty.

LS: cream-lt brn, micro-fn xtal, min foss frags, no vis por, ns.

LS: white-cream, fn xtal, some in-xtal por, odor when crushed in 30" smpl, cup odor in 60" smpl, floor, slt sfo.

LS: cream-lt brn w/min lt gry, micro-fn xtal, foss frags and fusilin, min chert, some med-dk gry SH, some frac por, no odor, ns.

LS: white-lt brn, micro-fn xtal, small ool, min chert, in-xtal por, strong odor when crushed, floor, cuts w/light fluid, gsb.

LS: cream-lt brn, micro-fn xtal, foss frags w/fusilin, chert, min pyrite, no vis por, ns.

SH: dk gry and blk w/some soft med gry and greenish gry, fissile

LS: cream-lt gryish brn, micro-fn xtal, min amt of foss frags w/fusilin, abund chert, no vis por, ns.

LS: cream-lt brn, micro-fn xtal, foss frags, min pyrite, gd vug por, gd cup odor, floor, gsf.

SH: med-dk gry and blk w/min med greenish gry, fissile, soft.

LS: cream and gryish cream, micro-xtal, some foss frags, no vis por, ns.

LS: cream-med brnsh gry, micro-fn xtal, some foss frags and fusilin, min chert, one pcs w/fo in-xtal por, floor, odor when crushed, slt sfo.

LS: cream-lt brn w/some med gry, micro-fn xtal, foss ool and frags, mostly dense w/no por, one pcs w/fo in ool por, no floor, odor when crushed, slt sfo.

SH: blk and dk-greenish gry, soft, fissile.

LS: cream-lt gryish brn, micro-fn xtal, some chalky, some chert, min pyrite, foss frags, no vis por, ns.

SH: blk, brittle, fissile.

LS: white-lt brn, micro-fn xtal, abund ool and foss frags, min chert, some frac and in-ool por, ns.

LS: cream-lt gryish brn, micro-fn frac xtal, some med-dk gry SH, min foss frags, pinpt-vug in-xtal por, slt cup and gd crushed odor, floor, gsf.

Same as above.

SH: med-dk gry and blk, soft to brittle, fissile.

LS: cream-med gryish brn, micro-fn w/frac xtal, min foss frags and ool, some dk-gry-blk SH, pinpt and frac w/min vug por, cup odor, floor, sfo.

LS: cream-lt br, micro-fn xtal, foss frags and ool, pinpt to wig ool por, strg cup odor, floor, vsgfo floating in tray.

LS: cream-lt brn, micro-fn xtal, min foss frags, min pinpt in-xtal por, ns.

LS: cream-lt gryish brn, micro-fn xtal, foss bryzn crin and frags, in-xtal por, slt odor when crushed, no floor, dk brn-blk staining, no drops when broken, no fo.

Silts: white-lt brn, fn grnd, some lt-gry glau pcs, subangl-well rnd, well sorted, friable, caco3 matrix, in-granular por, ns.

SH: med greenish-gry dk-gry red-brn, soft-brittle, fissile.

Same as above.

Silts: white-cream slightly glauconitic, subangl-well rnd, well sorted, friable, caco3 matix, in-granular por, ns.

Silts: white-cream, subangl-well rnd, well sorted, friable, caco3 matrix, in-granular por, ns.

LS: cream-lt brn, micro xtal, min chert, no vis por, ns.

LS: cream-lt gryish brn, micro-fn xtal, foss frags and fusilin, no vis por, ns.

DST 4)4310-4360

30456090,
1st: Initial wk surf blow
increased to 7".
2nd: Initial wk surf blow
increased to BOB in 39 min.
Rec 250" GIP,
Rec 150" TF: 12" CO, 108"
GHOCVM, 30" GMV
IFP: 7-58#,
ISIP: 1057#,
FFP: 63-83#,
FSP: 1074#.

Mudco Check #8 @ 4327'
08/09/11 9:30am
wt vis pH chl
9.2 57 10.0 2800
FIT LCM
7.2 2

CFS @ 4340' 30" 60"

DST 5)4370-4396

30456090,
1st: GSB, 1" immed and
BOB in 6 min, 8.5" BlvBk thru
22 min.
2nd: GSB, 2" immed and BOB
in 6.25 min, BOB BlvBk thru
27 min.
Rec 2587" GIP
Rec 555" TF: 281" GO, 156"
GMCO, 118" GMCO,
IFP: 16-78#,
ISIP: 1000#,
FFP: 93-170#,
FSP: 984#.

Mudco Check #9 @ 4396'
08/10/11 7:30am
wt vis pH chl
9.3 59 10.0 3400
FIT LCM
8.8 2

CFS @ 4396' 30" 60"

DST 5)4450-4492

30456090,
1st: Initial VSB built to 10.5",
wk 1" BlvBk.
2nd: GSB, 1" immed and BOB
in 19 min, wk 1" BlvBk.
Rec 440" GIP,
Rec 180" TF: GHOCM,
IFP: 9-44#,
ISIP: 946#,
FFP: 44-74#,
FSP: 933#.

CFS @ 4492' 30" 60"

Mudco Check #10 @ 4482'
08/11/11 8:15am
wt vis pH chl
9.3 52 10.5 3200
FIT LCM
8.8 3

CFS @ 4533' 30"

