

# DAVID D MONTAGUE

## GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY KNIGHTON OIL COMPANY, INC.

LEASE No. 4 Kachelman

FIELD Albano West

LOCATION 1350' FEL & 330' FSL

SEC 11 TWPSP 25 S RGE 14 W

COUNTY Starbald STATE Kansas

CONTRACTOR Duke Drig., Rig 1

SPUD 9/8/14 COMP 9/15/14

RTD 4390' LTD 4389

MUD UP 3000' TYPE MUD chemical

ELEVATIONS

KB 1974

DF 1962

GL 1962

Measurements Are All From KB

CASING

SURFACE 8 5/8", 270'/300sx

PRODUCTION 5 1/2", 4340/260sx

ELECTRICAL SURVEYS

CNL/CDL & DIL

SAMPLES SAVED FROM 3450 TO RTD

DRILLING TIME KEPT FROM 3000 TO RTD

SAMPLES EXAMINED FROM 3500 TO RTD

GEOLOGICAL SUPERVISION FROM 3500 TO RTD

GEOLOGIST ON WELL Dave Montague (A.P. 15-185-23903-00-001)

FORMATION TOPS LOG SAMPLES

HEBNER	3514 (-1540)
LANSING	3684 (-1710)
MISSISSIPPIAN	4038 (-2064)
VIOLA	4120 (-2146)
SIMPSON SHALE	4278 (-2304)
ARBUCKLE	4330 (-2356)


DAILY PENETRATION				BIT RECORDS		
DATE	DEPTH	NO	SIZE	MAKE	TYPE	DEPTH DWT
9/8/14	SPUD, 6:45 PM	1	12 1/4"	Varel	RR	271'
9/9/14	W.O.C. 271'	2	7 7/8"	Varel	HE 21	
9/10/14	1700' Drig.					
9/11/14	2780' Drig.					
9/12/14	3657' Drig.					
9/13/14	3846' Drig.					
9/14/14	4328' Drig.					
9/15/14	4390', Pipe set					

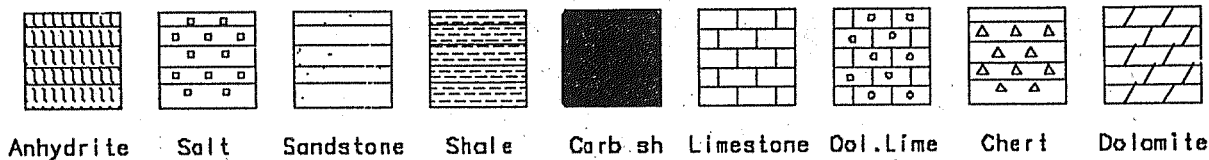
### DRILL STEM TESTS

No.	Interval	IFP/Time	ISIP/Time	FFP/Time	FSIP/Time	IHH-FHH
1	3801 to 3821	14-15 30"	740 60"	18-20 30"	704 60"	1845- 1836

REMARKS AND RECOMMENDATIONS

FEET 271'  
HOURS 2.5

LEGEND



SCALE " = 100'

MONT01-7

DRILLING TIME In Minutes	DEPTH	SAMPLE DESCRIPTION	REMARKS
0	3400		
5			
10			
15			
20			
	50	ls, crin, lt gray, fm-med Xln, cherty in pt cherty in pt, tr gray, qm sh	
		ls, lt gray, qm, fm-med Xln, a fresh, gray, slt loss, cherty in pt	vis 100, B. SWT, 5# LCM
		ls, lt gray, qm, fm-med Xln	Geologist on location 1:30 AM 9/12/14
		ls, buff, crin, fm Xln w/ls brn, blocky, hd w/tr sh, gray, dk gray, blk some argil ls	
		ls, crin, lt gray, fm-med Xln, slt sh in pt, plty cherty tr sh	
	3500	shale, blk, carb	
		ls, crin, tan, fm Xln sh, silty gray, salt	
		ls, crin, lt gray, fm Xln inter Xln, ppd	
		ls, tan, qm, med Xln blocky, dus w/ls buff fm Xln dus w/sh, dk gray, blk	
		ls, tan, w/sh, qm, qm	

HEEBNER  
3514 (-1540)

Log Top

GIP, Dec 30'  
w/ (1% Oil)

RECOVERY

50

blk  
ls, con, buff, fm xln  
to inter xln  
ls, Ad. w/ sh, qm, qm  
argil ls in pt  
sh, qm, green, red, blk  
w/ to siltstone, dus  
sh, qm, qm, red, blk  
w/ siltstone, fm, mica w/  
ls, fm xln

vis 50, 8.7 wt, 4# LCM

3600

Siltstone, Compact  
w/ qm shale

Shale, qm w/ siltstone

clock stopped -  
replace clock -

50

ls, con, blk, med-fm xln  
dus, blk, w/ ls brown

sh, qm, dull qm

sh, qm

Drly @ 31657 @ 7 AM  
9/12/14

ls, con, tan, fm-med xln

1. 70% sh, qm, dk qm, mica  
w/ 30% ls, con, tan, brn  
fm-med-cvs xln w/ ls, qm  
argil

vis 46, 8.7 wt, 4# LCM

LANSING  
3684 (-1710)

ls, con, tan, qm, med-fm  
xln, sli sh, sl. foss (shale)

3700

sh, qm, blk, argil ls in pt  
ls, tan, qm, brn, dus  
argil in pt

ls, blk, buff, fm xln, sli s  
sl. chalky w/ ls, tan, qm, med  
xln, foss, no flux, vis, slight odor

Slight odor, NSO

ls, qm, tan, med xln, foss in  
pt w/ sh, qm, qm, argil

ls, lt qm, con, qm, fm-med  
xln, dus

Add pre-mix

50

sh, blk (carb.)  
ls, blk, fm xln, fm-fm xln  
sli s, seat bright flux NSO

sl. slt odor, NSO

ls, brn, gry, med Xln,  
ls, crm, buff, chalky

ls, gry, brn, sh, sdy, pr, ool,  
couple pc's w/ sfo, ls, wh-crm  
in Xln, sdy, pr, ool in couple pc's  
sfo, sh odor

ls, crm, wh, in Xln, med  
ls, crm, in Xln, dus

ls, crm, lt gry, fu-vth  
Xln, sh, in pt, ptly chalky

ls, crm, gry, brn, foss  
compact, NVB, tr sh, grn  
circ 40 min

ls, crm, wh, fu Xln w/ool ls,  
ool, ool, even sdy in pt  
sfo, few odor

ls, tan, lt gry, light, litho in  
pt, sdy, white, fresh

ls, dk, w/ sh, dk gry, gry  
circ 20" spl

ls, tan, crm, fu Xln, foss,  
ool w/ pr ool, pr interxln of  
sdy, sfo in few pcs  
circ 40" spl

ls, crm, fu Xln, dus w/ ptly  
chalky, ls, crm, sh, foss, few  
pc's w/ interxln of, sfo on break  
ls, crm, tan, fu Xln, dus  
w/ ls, gry, foss, hd

Shale, gry, gry-gry  
ls, gry, tan, fu Xln, dus

ls, white, sdy, fu Xln,  
few pc's w/ spt bright flwr, sfo

ls, crm, foss, fu ool w/ pr ool  
few pc's sfo on break

ls, tan, crm, lt gry, fu Xln  
mostly dus circ 20" spl -  
sh, blk (trace amt) ls mostly du  
couple pc's fu Xln, sdy, sfo  
circ 40" spl

ls, lt gry, gry, blocky, dus  
ls, crm, litho, chert, wh, gry  
sh, lt green, tr blk

ls, lt gry, gry w/ crm litho  
& chert, wh, gry fresh  
ls, gry, lt gry, fu Xln, dus  
litho & sdy in pt

3800-05 spl, ls, tan  
fu Xln, foss, ool w/ pr ool  
sfo, insto, no odor

Andy's Mud ✓  
Vis 61, 9.0 wt, 7.2 WL  
chl 3000 PPM, 8# LCM

ls, tan, litho in pt  
24 stand short trip  
SHT 1°  
Strap 1.09 short

Vis 47, 8.8 wt, 4# LCM

Dilg @ 3850 @ 7 AM  
9/13/14

Adding Premix  
DST No. 1, 3807-3827  
30-60-30-60, SB, off  
BOB in 4 min., 750' GIP,  
Rec 30' VSOCM (1% Oil)  
BHP 740-704  
FP 14-15: 18-20  
HP 1848-1836  
BHT 109°  
Diamond Testires (Jason M.)

Andy's Mud ✓  
Vis 56, 9.0 wt, 8 WL  
5000 chl, 5# LCM

Vis 55, 8.9 wt, 6# LCM

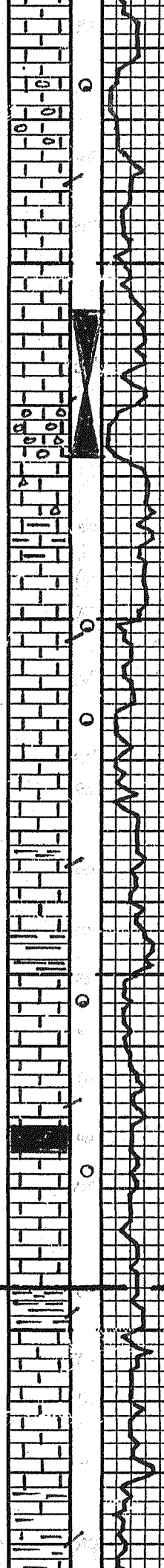
3800

50

3900

50

BRC  
3944 (1-1970)



Congl, Shales, blk, red, gray  
Siltstone, ls, tan, brown

4000

Sh, gray, green  
ls blk, light gray, tan-med  
Xhr, cherty  
ls, conc, du Xhr, ool w/ pr  
ooce, pr vis, fr resd. str

MISSISSIPPIAN  
4038(-2064)

Log top

Sh, green, blk, gray  
ls, gray, dus, str

Sh, gray, green-red  
ls, gray-green, blocky

50

Chert, wh, orange, fresh  
Sharp ls, litho  
70-80 Spi, chert, weath  
H gray, pp, edge fluor, nsto  
ls, gray, dus, blocky  
Sh, gray, green, dull gray

Sh, purple, gray (green,  
Chert A.K.

Sh, gray, red, gray-red, s  
Congl. Vari color Sh, s

4100

Sh, gray, gray  
ls, tan, brown, dus  
Chert, tan, wh fresh

vis 50, 9.2 uH, 6# lcu

VIOLA  
4120(-2146)

Sh, green, red-gray, gray  
ls, conc, med Xhr, dus  
Chert, wh, orange, fresh

Chert, conc, dolomitic in  
pt, weath. frigiditic in pt  
Scat str, s to on break  
w/ dolo, white du Xhr, ns  
dolo, conc, du Xhr, gd inter Xhr  
even Sat, sfo, gd odor

50

Chert, white, fresh w/ Scat  
dolo, du Xhr, less of show  
gd odor

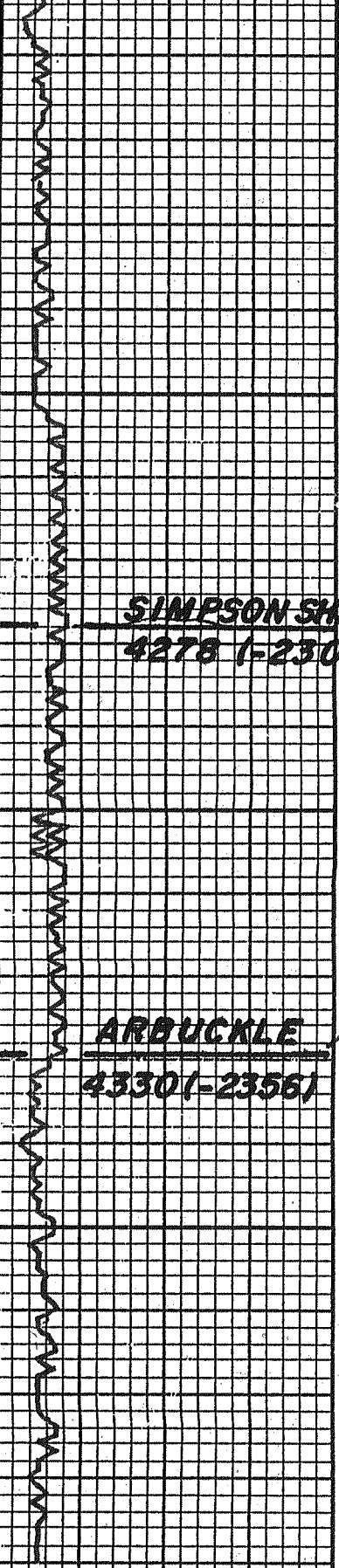
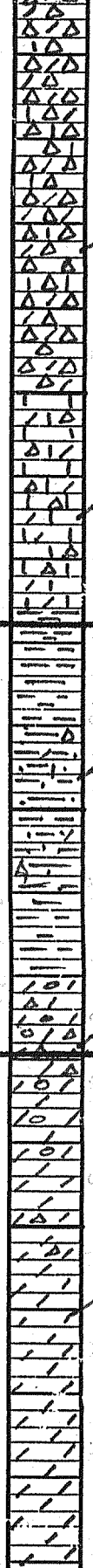
Chert, wh, fresh, dolo, compact  
less of, less show, ls, dus

Chert & dolo AA w/ 15%  
bright Spotty fluor, nsto

4200

Chert wh, fresh, dolo, conc  
H gray, du Xhr, fr, bright  
fluor, ls, conc, dus





**SIMPSON SHALE**  
4278 (1-2304)

**ARBUCKLE**  
4330 (1-2356)

50

4300

50

Chert, wh, fresh  
dolo, fm xln, bright fluor  
becoming less  
ls, con, dus  
Chert, smoky gray, white  
fresh, bright fluor along frac.

Mostly chert, wh, smoky gray  
frac, great dolo

Chert, wh, smoky gray, fresh  
dolo/ls, lt gray, con, pr p

dolo ls, con, lt gray, fm xln  
ls, phy foss, sti chalky

ls, tan, brn, sdy in pt, phy  
foss, chert, wh, gray fresh  
sh, blk, green, red  
inc in sh, green, waxey

sh, gray, qm, tr sst, gray  
ls, fm med gray, compact  
w/ dolo sst, light, chert wh, gray  
A-A, sti inc sst

tr aut blk shale

dolo, lt gray, con, fm xln  
dus, chert wh, fresh  
dolo, tan, con, fm xln, sue  
pr inter xln w, chert, fresh  
ls, dus, dolo, sti not w/ ore

dolo, gray, fm xln, gd inter xln  
w, pluggy w in pt

Chert, wh, fresh

dolo, con, lt gray, fm xln  
sue in pt, pr - tr inter xln w  
sti not w/ ore

dolo, con, lt gray, fm xln  
sue in pt, scat pluggy w  
ppp, pr - tr inter xln w

Vis 51, 9.1 wt, 7# LCM

Vis 49, 9.3 wt, 7# LCM

Drlg @ 4328 @ 7AM  
9/14/14

Andy's Mud ✓  
Vis 53, 9.5 wt, 8 W.L.  
chl 5000ppm, 5# LCM

Reached TD @ 10AM  
9/14/14  
20 stand Short trip  
Circ 90 min  
Hole lost 20 bbl mud  
while Circ -  
have been losing Circ  
Hole bit at 2000m

In Minutes	DRILLING TIME	DEPTH	SAMPLE DESCRIPTION	REMARKS
		50		PHU-001 at approx 1300'
				SHT @ 4390', 1°