GEOLOGIST'S REPORT
DRILLING TIME AND SAMPLE LOG

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PetroNium Geologist

OPERATOR: Petro-Hunt, L.L.C.
LEASE: Bell 1-13
COUNTY: Williams
STATE: North Dakota
API #: 33-053-06294
LOCATION: 1991' FNL 1991' FWL
SECTION: 13
TOWNSHIP: 153 N
RANGE: 101 W
ELEVATION: GL: 2,000' KB: 2,025'
SPUD: 3-14-14 COMP: 4-1-14
TOTAL DEPTH: 5,500'
DRILLING TIME START FROM: 2,800' IN RED
DRILLING TIME END FROM: 5,500' IN RED
GEOLOGICAL SUPERVISION: HOURLY
DRILLING TIME SUPERVISION: HOURLY
FORMATION TOPS: ELECTRICAL LOG: SAMPLE: Nothernwestern
Drilling Contractor: Cyclone Drilling, Inc.
Rig #: 8
Contact: Bob
Cellular: 701-580-0174
Tool Pusher: Chuck Box

CASING
Surface: 9-5/8" @ 2,100'
Intermediate: 8-5/8" @ 5,500'
Production: N/A
Open Hole: 6-1/8" Bit

ELECTRICAL
Company: Nabors Completion & Production Services
Type: Triple Combo
Date: 4-1-14
Depth Driller: 5,500'
Depth Logger: 5,500'
Bottom Logged Interval: 5,500'
Top Logged Interval: 2,100'
Type of Fluid in Hole: Fresh Water
Salinity: 2,000 PPM
Density: 9.0 PPG
Viscosity: 28

MUD
Company: Cyclone Drilling, Inc.
Type: Fresh Water
Density: 8.6 PPG
Viscosity: 28

REMARKS:

Respectfully Submitted,

API #33-053-06294 09/08/2014

Tim Priest
Petroleum Geologist

LEGEND

Drilling Time Recorded | Sample Collected | Sample Washed | Sample Dried | Sample Bagged | Oil Shows | Gas Shows | Cores | Drill Stem Tests

DRILLING TIME IN MINUTES PER FOOT
Max Penetration Rate 1 Min/Ft

DEPTH	5	1.0	5	10	15	20	30
2400							
50							
2500							
50							
2600							
50							
2700							
50							
2800							
50							
2900							
50							
3000							
50							
3100							
50							
3200							
50							
3300							
50							
3400							
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3500							
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3600							
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3700							
50							
3800							
50							
3900							
50							
4000							
50							
4100							
50							
4200							
50							
4300							
50							
4400							
50							
4500							
50							
4600							
50							
4700							
50							
4800							
50							
4900							
50							
5000							

SAMPLE DESCRIPTION	REMARKS
	Ashville 2452(-427)
	Swift Ashville 2482(-457)
Lx con-tan, fr-vf, fos, crbg, f-gd int vfr & lot frag por, NS	
Sh-gry	
Lx-gm-gry, vfr-vf, sil ch|y, dose	
Lx con-tan fr-vf, sil fos, chby arg in part	
Sh-blk, carb	
SS f-gry, ch-gm, fiable, w/grs Sh	
Lx-gm-gry, vfr-vf, sil ch|y, dose	
Lx con-tan/gry, f-vf, fos, chby, p-f int vf-p por, NS	
Lx con-tan, fr-vf, fos, crbg, f-gd int vf-p por, NS	
Sh-gry-blk	
Sh gry-blk gry, calc in prt	
Lx con-tl gry, fr-vf, sil ch|y, p-f int vf-p por, NS	
Lx con-tl gry, fr-vf, fos, chby, f int pl por, NS	
Sh-gry	
Lx-gm-gry, fr-vf, fos, chby, f-m int & frag por, NS	Heebner 4025 (-2000)
Sh-blk, carb	
Lx f-gry, vfr-vf, dose	
Lx con-tan, fr-vf, fos, chby, f-m int vf-p por, NS	Toronto 4042 (-2017)
Lx gry, vfr-vf, dose	
Lx con-tan, fr-vf, fos, crbg, f-m int pl por, NS	
Lx con-tan, fr-vf, p int vf por, NS	Lansing 4070 (-2045)
Sh-gry	
Lx con, fr-vf, fos, chby, dose	
Lx con, fr-vf, fos, chby, f-m int vf-p por, NS	
Lx con-tl gry, vfr-vf, sil ch|y, dose	
Sh-blk, carb	
Sh-gm-gry, calc	
Lx-tnt gry, vfr-vf, fos, dose	
Sh-gry	
Lx con-tl gry, vfr-vf, sil fos, dose	
Lx con-tl gray, vfr-vf, sil fos, chby, dose	
Sh-blk	
Lx con-tl gry, vfr-vf, sil fos, chby, dose	
Sh gry-blk gry	
Lx con-tl gry, vfr-vf, sil fos, chby, dose	
Sh gry-blk gry	
Lx con-tl gry, fr-vf, fos-sod, chby, f-vf & lot sod, NS	
Lx con-tl gry, fr-vf, fos, sil sd, p-f int vf-p por, NS	
Lx con-tl gry, vfr-vf, sil ch|y, dose	Marmaton Creek 4287 (-2262)
Sh-blk, carb	
Lx con-tl gry, vfr-vf, sil ch|y, dose	
Sh-gm-gry	
Lx con-tan, fr-vf, sil fos, dose	
Lx con-tl gry, fr-vf, fos, chby, sd, SSFO, sd odd, no fluor	
Lx con-tl gry, vfr-vf, sil fos, dose	
Sh-gm-gry	
Lx con-tl gry, fr-vf, fos, chby, dose	
Sh-blk, carb	Mark Shale 4300 (-2275)
Sh-gm-gry, calc	
Lx-tan/gry, fr-vf, fos, p-f int vf-p por, NS	
Lx con-tan, fr-vf, fos,sd, sil ch|y, dose, sd odd, no fluor	
Lx-tan/gry, fr-vf, sd, w/int bed gd, SS	
Lx con-tl gry, fr-vf, sd, SSFO, SSFO, sd odd, no fluor	Huntsville Shale 4362 (-2337)
Sh-blk, carb	
Lx-tan/gry, fr-vf, sd, w/int bed gd, SS	
Lx con-tl gry, fr-vf, sd, chby, dose, sd odd, no fluor	
Lx-tl gry, fr-vf, sd, SSFO, SSFO, f-vf int vf-p por, NS	
Sh-gry	
Lx-tl gry, fr-vf, sd, fos, p-f int vf-p por, NS	
Sh-blk	
Lx con-tl gry, vfr-vf, fos, chby, dose	BAK-C 4412 (-2387)
Sh dk gry	
Lx con-tan, fr-vf, fos, sd, chby, sd odd, no fluor, SSFO, SSFO, SSFO, SSFO, SSFO, SSFO, SSFO, SSFO, no fluor	
Sh dk gry-blk	
Lx tan/gry, vfr-vf, dose	
Sh gm-gry	
Sh var col, silty, sandy	
Sh gry-dk gry	
Lx con-tl gry, vfr-vf, dose	
Sh gm-gry, calc	Marmaton 4597 (-2572)
Lx con-tl gray, fr-vf, fos,sd, sil ch|y, dose, sd odd, no fluor, SSFO, SSFO, sd odd, no fluor	Cut 1 Interval 4600-4660 Recovered 60' Total Gas 1,000 Max Gas 1,000 Gas Flared Yes Gas Sampled Yes Gas Ignited Yes
Lx con-tl gray, vfr-vf, fos, dose	
Lx con-tan, fr-vf, sil fos, sd, p-f int vf-p por, NS	
Lx con-tl gry, fr-vf, fos,sd, sil ch|y, dose, sd odd, no fluor	
Lx con-tl gry, fr-vf, fos, sd, chby, dose	
Lx con-tl gry, fr-vf, sd, w/int bed gd, SS	
Lx con-tl gry, fr-vf, sil, chby, dose	Pawnee 4613 (-2588)
Lx con-tan, fr-vf, fos, dose	
Lx con-tan, vfr-vf, sil, chby, dose	
Sh-blk, carb	
Sh-gm-gry	Myrtle Shale 4640 (-2615)
Lx tan-gry, vfr-vf, chby, dose	Fort Scott 4656 (-2631)
Lx con-tan, fr-vf, fos, chby, p int vf-p por, NS	
Lx tan-gry, vfr-vf, sd in prt, sil ch|y, dose	
Sh gy-dk gry	
Lx tan-gry, mic sil, chby, dose	Cherokee Shale 4717 (-2692)
Sh-blk, carb	
Lx con-tan/gry, fr-vf, fos,sd, f int frag por, NS	
Lx con-tl gry, vfr-vf, dose	
Lx tan-gry, vfr-vf, w/int bed gd,w Sh	
Sh-blk, carb	
Lx con-tan/gry, vfr-vf, sil ch|y, dose	
Sh gry-dk gry	
Lx con-tan/gry, vfr-vf, sil fos, sil ch|y, dose	Johnson Zone 4741 (-2716)
Lx con-tan/gry, vfr-vf, sil ch|y, chby, dose	
Lx con-tan/gry, mic sil, chby, dose	
Sh dk gry-blk	
Lx tan-gry, mic sil, sil ch|y, dose	
Lx con-tan/gry, vfr-vf, sil fos, sil ch|y, dose	
Lx con-tan/gry, vfr-vf, sil fos, sd, SSFO, no odor, sd fluor	
Lx tan-gry, mic sil, sil fos, sd ch|y, dose	
Lx tan-gry, mic sil, fos, sd ch|y, dose	
Sh gry-dk gry, calc in prt	
Sh-gry-gry-dk gry,sdy, silty	
Sh gry-dk gry, bk	
SS f-gry, fr-gm, silty in prt, fos, NS	
Sh var col, silty	
SS f-gry, fr-gm, silty in prt, fos, NS	
SS f-gry, fr-med gm, silty, fos, NS	
Lx con-tan, fr-vf, sandy, dose	
Sh gry-dk gry, silty, pyritic	
Sh gry-dk gry, silty, pyritic	
Sh gry-dk gry, silty, pyritic	
SS f-gry, fr-med gm, silty, fos, calc in prt	Mississippian 4956 (-2931)
Lx con-tan, fr-vf, sandy, dose	
Lx con-tl gry, sandy, dose	
Lx con-tan/l gry, mic sil, sandy, dose	
	Total Depth 5000 (-2944)