

# GEOLOGICAL REPORT

## DRILLING TIME AND SAMPLE LOG

COMPANY <u>Great Plains Energy Inc.</u>	ELEVATION
LEASE <u>Applegate # 1-30</u>	KB <u>2437</u>
FIELD <u>Oronoque Northeast</u>	DF <u>2435</u>
LOCATION <u>1485' FSL + 660' FWL</u>	GL <u>2429</u>
SEC <u>30</u> TWSP <u>25</u> RGE <u>23W</u>	Depths Measured From
COUNTY <u>Norton</u> STATE <u>Kansas</u>	Log <u>KB</u> Drilling <u>KB</u>
CONTRACTOR <u>WW Drilling Rig #12</u>	CASING
SPUD <u>8-27-14</u> COMP <u>9-4-14</u>	Surface <u>8 5/8" @ 261'</u>
SAMPLES SAVED FROM <u>3200</u> TO <u>R.T.D.</u>	Production <u>none</u>
ELECTRIC LOGS	
<u>Nabors</u>	

### FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE	E. LOG	DATUM <sup>E. log</sup>	A	B	C	D
Anhydrite	1998	1999 +	438	+442			
Base Anhydrite	2027	2028 +	409	+414			
Tapoka	3241	3242 -	805	-796			
Heebner	3417	3417 -	980	-974			
Toronto	3448	3449 -	1012	-1004			
Lansing	3461	3461 -	1024	-1016			
Base Kansas City	3643	3643 -	1206	-1200			
Marmaton	3683	3683 -	1246	-1241			
Granite Wash	3692	3692 -	1255				
Granite	3703	3704 -	1267	-1268			
Total Depth	3725	3725 -	1288	-1321			

### REFERENCE WELLS

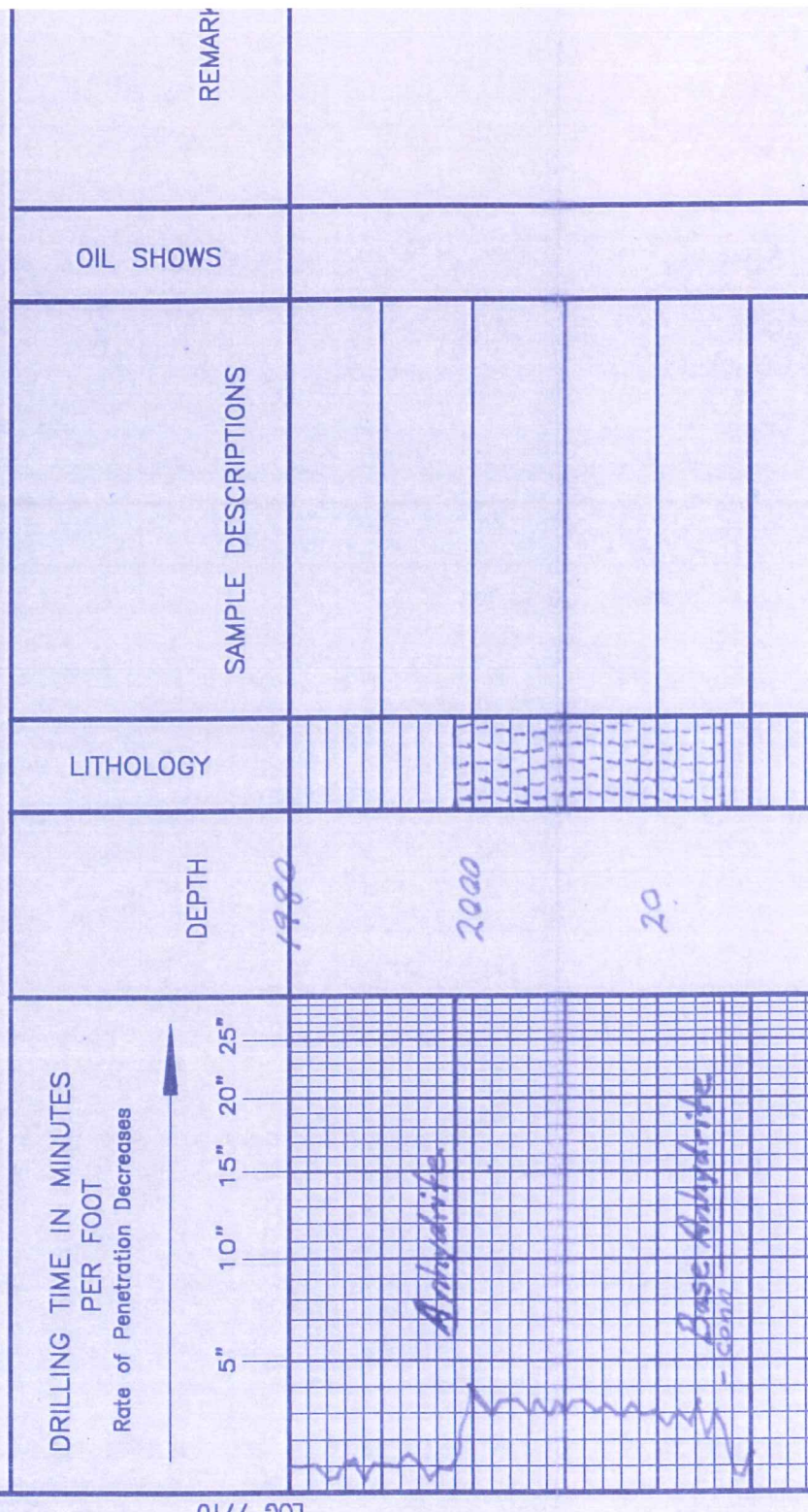
A	<u>G.P.E. Inc. Braun #1-25, SE-SE-SE, 25-25-24W</u>
B	
C	
D	

REMARKS  
 This well ran 8 feet lower on the Lansing top than the nearby producer.  
 Due to the low structural position it was decided no further testing was warranted and the well was plugged and abandoned.

Richard B. Bodd  
 9-4-14

### LEGEND

- Dolomite
- Chert
- Ool. Lime
- Limestone
- Carb sh
- Shale
- Sandstone
- Salt
- Anhydrite





Base Abundrite  
-cm

-cm

-cm

-cm

Topok

-cm

-cm

-cm

-cm

3150

3200

20

40

60

80

3300

20

40

60

LS: wh-tn-lt. gry fslf dns  
N.S.O.

LS: a.a. incr. cky

Sh: gry + brn

LS: wh-tn-lt. gry cky-  
fslf dns N.S.O.

Sh: brn sly

LS: tn-lt. brn -yel fslf  
dns N.S.O.

Sh: brn sly + gry

LS: wh-tn-gry sli. cky -fslf  
dns

LS: wh-tn sli. cky -fxln -  
sli. fslf Tr. pp N.S.O.

LS: wh-tn-lt. gry cky -fslf  
pp N.S.O.

Sh: brn

LS: a.a

Sh: brn sly

Tr. SS: wh-clr V. fn. gn  
Consol. in gran. N.S.O.

Sh: brn + gry

LS: wh-tn cky -fxln sli. ool  
w/ foss. incl. pp N.S.O.

LS: wh-tn cky -fxln ool  
pp N.S.O.

LS: wh-tn cky -fxln ool  
pp N.S.O.

LS: wh-tn fxln dns

Sh: blk carb

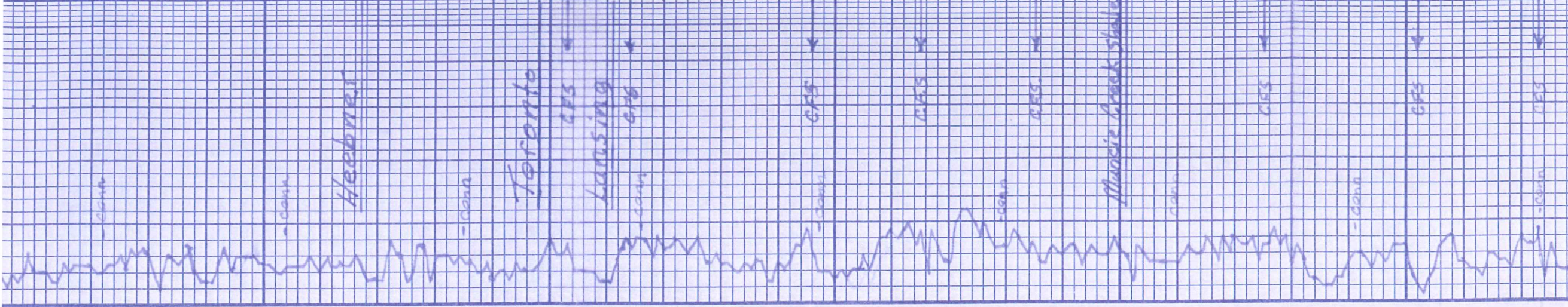
LS: tn. gry fslf dns

Sh: gry + brn

LS: wh-tn cky -fxln ool  
pp Tr. V. pp N.S.O.

Samples are  
good Sam

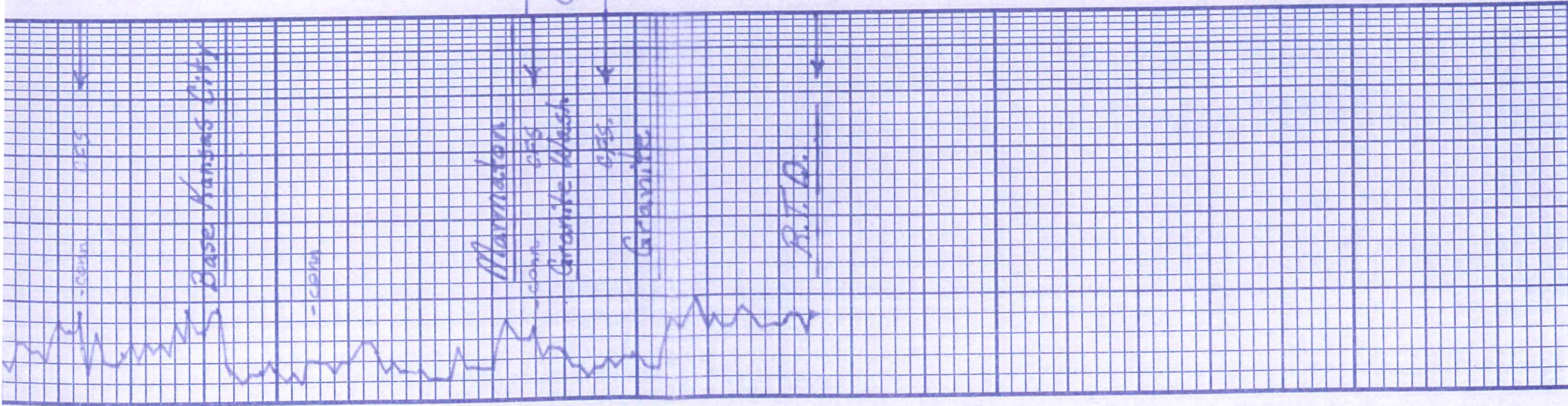




60	LS: wh-tn cky-fxln oöl pp φ N.S.O. Sh: brn slty
80	LS: wh-tn fsif dns N.S.O.
3400	LS: wh-tn cky-fxln oöl pp φ N.S.O. LS: a. inc. foss inclus mostly sh
20	LS: tn-lt. gry-fxln-fsif dns Sh: Bk Carb
40	Sh: brn + gry Sh: a. wht gry
60	LS: wh-tn slicky-fsif oöl w/ foss inclus pp φ - slt vgy φ Lt. sptd o stn. F.P. on crushing. Phos. + glau. Sph. No odor
80	LS: wh-tn fxln oöl pp φ N.S.O. No carb
'A'	LS: wh-tn fxln dns Sh: brn slty
'B'	LS: wh-tn fxln-fsif oöl w/ abund foss inclus pp φ - vgy φ Lt rainbow s.o. Lt. o. sh floating F.P. gd odor
'C'	LS: wh-tn fxln oöl. In part φ Lt. fr. o stn Lt. rainbow S.O. Tr. floating F.P. fr. odor
3500	Sh: brn Sh: yellow fsif dns
20	LS: wh-ta fxln-fsif tr pr. pp φ Tr sptd o stn N.F.a. No odor
'E'	LS: wh-tn fxln dns
'F'	Tr. blk carb. sh Sh: brn + gry
40	LS: wh-tn gry fsif pr. pp φ Tr. lt. sptd o stn R.T. sh. diss on crushing No odor
60	Sh: brn, gry, grn
'H'	LS: wh-tn sli. cky-fsif Tr. pr. pp φ Sptd Lt. fr. o stn Tr. pp F.P. gd odor 2 pcs. 55 v. fr. gn consol friable drk o stn N.F.a. No odor gd sat
80	Sh: brn, gry, grn
13600	LS: wh-tn sli. cky-fsif Tr. pr. pp φ Sptd o stn N.F.a. Sh: brn
20	LS: wh-tn-vel sli. cky-fxln Tr. fsif w/ isol vugs pr. Lt. Sptd o stn N.F.a. Sh: brn

Strap 3  
 Board 3  
 Diff.  
 Incline @ 3  
 Trilobite 7  
 DST # 134  
 30-60-  
 IF: 8.0.B.in  
 ISI: No blo  
 FF: B.O.B. i  
 FSI: No blo  
 Recovery: 8  
 95' acmw 11  
 126' MW 807  
 441' MW 902  
 126' MW 902  
 32' wtr  
 Hyd: 1691-  
 FP: 23-195-  
 BHP: 1086-  
 BHT: 96°F  
 DST # 23  
 75-30-  
 Drive Chain b  
 open is long  
 IF: 27 min  
 FF: No blou  
 Recovery: 50  
 Hyd: 1709-1  
 FP: 17-18/1  
 BHP: 38-3  
 BHTemp: 97  
 DST # 33  
 45-45-42  
 IF: wk blow i  
 FF: wk blow i  
 Recovery: 63  
 Hyd: 1781-  
 FP: 16-30-  
 BHP: 1059-  
 BHTemp: 97





20' K	LS: wh-tn-yel sli. cky-feln Tr fslf w/isol vls. pr. kt. Spd 0 stn N.F.O.
40' L	Sh: brn LS: wh-tn-yel fxl n- microXln dns N.S.O.
60	Sh: brn Tr. S.S. wh. v. fn gn. Consol. ingran. φ N.S.O.
80	LS: wh-brn-yel fslf sli. shly dns Sh: brn Shly Lm: wh-brn
3700	LS: wh-tn fxl n - v. sli. fslf dns N.S.O. SS: wh-clr. md. gn. Consol Tr. coarse gn uncol. frosted Sli: rd Lt. O Str. F.G. fragor vamin. Qtz, biot, felds Qtz, biotite, feldspar Quartz, biotite, feldspar
20	
40	

DST#4  
3a-60-4  
IF: wk blow  
ISI: No blow  
FF: wk blow  
FSI: No blow  
Recovery: 92%  
HYd: 1835-  
FP: 18-55/  
BHP: 950-  
BHTemp: 9  
Chlorides: