

# GEOLOGICAL REPORT

## DRILLING TIME AND SAMPLE LOG

COMPANY Great Plains Energy, Inc.  
 LEASE Odle 2-8  
 FIELD Wildcat  
 LOCATION SE SW SW (335 ft FSL, 1100 ft FWL)  
 SEC 8 TWSP 7S RGE 18W  
 COUNTY Rooks STATE Kansas

ELEVATION  
 KB 1944 feet  
 DF \_\_\_\_\_  
 GL 1939 feet  
 Depths Measured From  
 Log KB Drilling KB

CONTRACTOR WW Drilling Rig No. 6  
 SPUD 11 July 2013 COMP 18 July 2013  
 SAMPLES SAVED FROM 2800 TO TD (3515)

CASING  
 Surface 8 5/8" to 2 1/8 feet  
 Production \_\_\_\_\_  
 ELECTRIC LOGS  
 CND-DIL-MRES-BHGS by  
 Pioneer Logging Services

### FORMATION TOPS AND STRUCTURAL POSITION

| FORMATION          | SAMPLE | E. LOG | DATUM | A     | B     | C | D |
|--------------------|--------|--------|-------|-------|-------|---|---|
| Anhydrite          | 1416   | 1416   | 528   | +521  | +519  |   |   |
| Base / Anhydrite   | 1440   | 1446   | 498   | +408  | +487  |   |   |
| Topoka             | 2901   | 2900   | -956  | -954  | -968  |   |   |
| Oread              | 3049   | 3052   | -1108 | -1104 | -1117 |   |   |
| Heebner            | 3106   | 3104   | -1160 | -1157 | -1174 |   |   |
| Lansing            | 3146   | 3144   | -1200 | -1196 | -1214 |   |   |
| Base / Kansas City | 3375   | 3370   | -1426 | -1414 | -1437 |   |   |
| Penn Conglomerate  | 3460   | 3442   | -1498 | Als.  | -1517 |   |   |
| Arbuckle           | 3478   | 3470   | -1526 | -1506 | -1553 |   |   |
| RTD                | 3515   |        | -1571 |       |       |   |   |

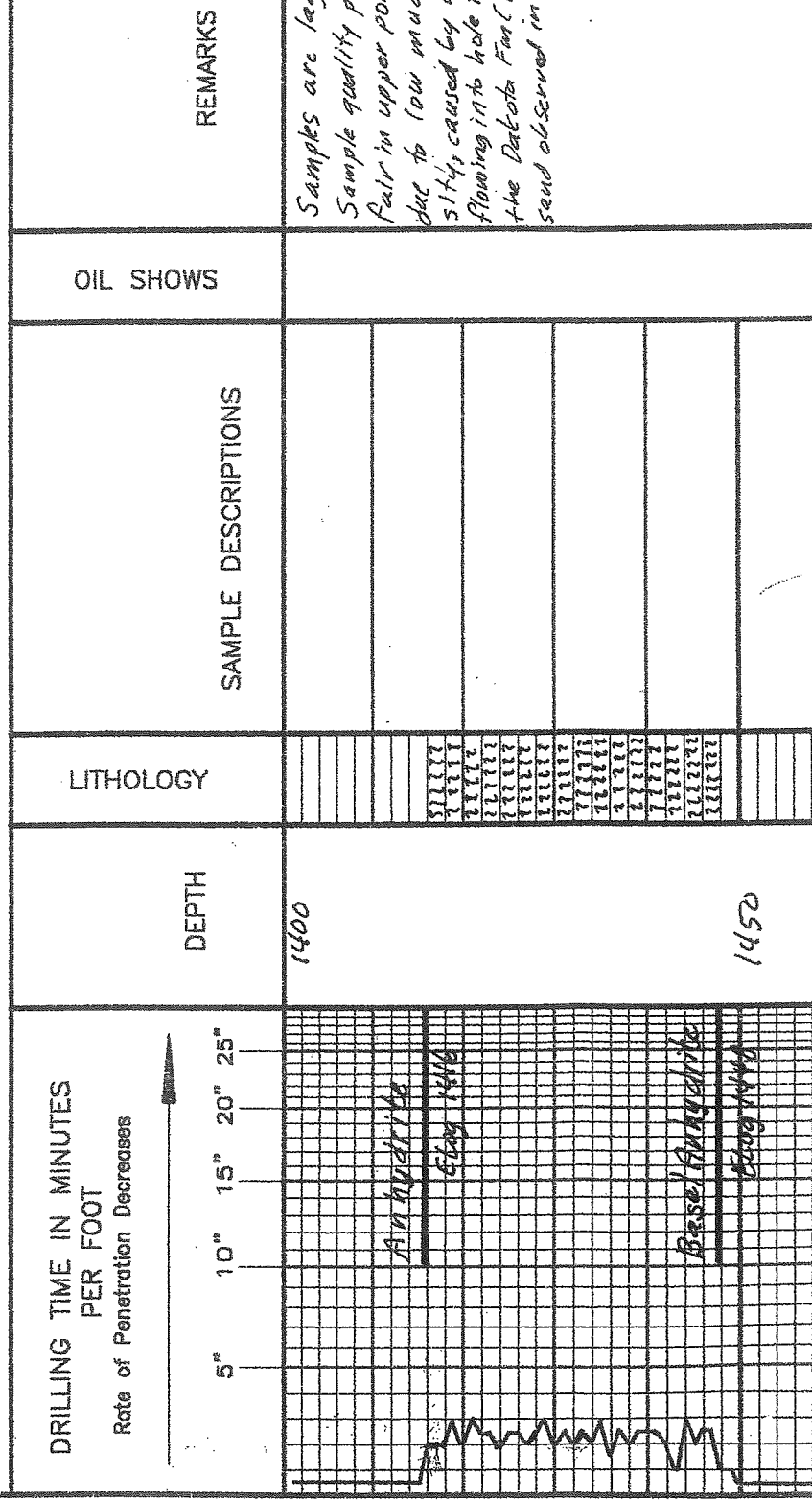
### REFERENCE WELLS

- A Great Plains Energy / Odle 1-8 (SW SE SW, Sec 8, T7S, R18W)
- B N-B Co. & ESP Development / Bryant #1 (NW SW NE, Sec 17, T7S, R18W)
- C \_\_\_\_\_
- D \_\_\_\_\_

REMARKS Plugged & abandoned.

### LEGEND

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



REMARKS  
 Samples are lag.  
 Sample quality poor  
 Fair in upper part  
 due to low mud  
 slugs caused by  
 flowing in to hole from  
 the Dakota Fm (L)  
 sand observed in s

2800

2850

2900

2950

3000

LS, tan. g. wt, v. mgn wst, dns, z,  
sparse- occ fs, p, tr glauc., becomes  
gn, m.c. p. st w/ ls powdered  
frag. con. men, fs, p, v. p. v. g. b.

MSO

ST5, rdsh g p g

LS, as above in some mst.  
tr. w. g. i. becomes l g bn. tan,  
f. m. gn mst mst, dns, t.  
sparse fs, occ glauc.

Dec. sh, some r. org w. g

SH, dg g gn

LS, wt. g. bn. crm, f. m. gn, mst.  
mst, fs, li, dns, t, MSO.

Tr col'c LS

Dec. tan mst

SH, r bn g dg. blk

LS & SH interbedded; LS is dg, f-c  
gnst, dns, t, fs, glauc; SH is

r bn g dg. No

SH, dg. blk. blk

carbonaceous.

Inter bedded LS & SH w/ some SFS

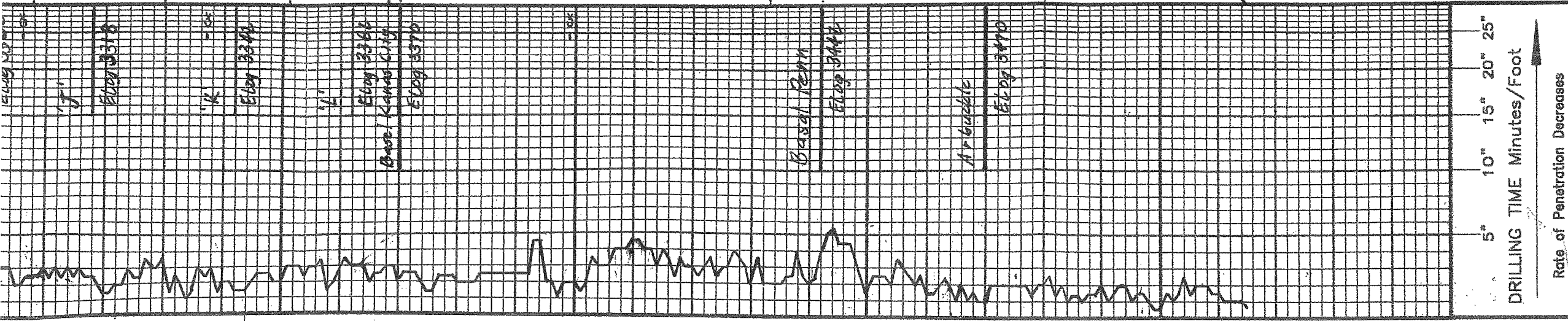
LS is. AA, becoming tan-ly  
m-c. gn, mst, tr. col'c, glauc, fs, li,  
dns, t, MSO.

SH is dg, carbonaceous @ base

Topokko

2900-2950





| LITHOLOGY   | SAMPLE DESCRIPTIONS   | OIL SHOWS |
|---|---|-----------|
| SH, AA  | occ clay, v pr vgy f, v pr show<br>spnd bn oil                                  |           |
| LS, crm, f-m gn, sub-w rd, w ccnc<br>w/p lbr c, glauc.                          | LS, crm, f-m gn, sub-w rd, w ccnc<br>w/p lbr c, glauc.                          |           |
| LS, crm, f-m gn, wst, dms, t<br>w sparse ool, vpr lgr c, vpr<br>vpr spty bn oil | LS, crm, f-m gn, wst, dms, t<br>w sparse ool, vpr lgr c, vpr<br>vpr spty bn oil |           |
| SH, g, rbn, ggn   | SH, g, rbn, ggn   |           |
| SH, variegated  | SH, variegated  |           |
| LS, crm, f-m gn, wst, dms, t<br>w sparse ool, vpr lgr c, vpr<br>vpr spty bn oil | LS, crm, f-m gn, wst, dms, t<br>w sparse ool, vpr lgr c, vpr<br>vpr spty bn oil |           |
| SH, variegated, w/minor LS, w<br>m-c gn pst, ct wt-org strand                   | SH, variegated, w/minor LS, w<br>m-c gn pst, ct wt-org strand                   |           |
| Dol, w-l, g, f-m gn, griv, d, cch,<br>t, dms, t, lgr c, NSD                     | Dol, w-l, g, f-m gn, griv, d, cch,<br>t, dms, t, lgr c, NSD                     |           |

30-60' 25-90'  
Hyd: 1594-1542  
IFP: 23-34 FSIP: 9  
FFP: 20-37 FSIP: 9  
IF: Surface blow  
1st: No blow  
FF: No blow  
FSI: No blow  
Recovery: 15 ft OCM  
(30% O, 70%)

Mud Tests:  
② 3240 ft: Mud Wt:  
Visc: 2  
WL: 6  
LCM: 2  
② 3310 ft: Mud Wt:  
Visc: 2  
WL: 2  
LCM: 2  
② 3330 ft: Mud Wt:  
Visc: 47  
WL: 72  
LCM: 24

DST No. 6: 3354-3  
30-60-30-50  
Hyd: 160-1580  
IFP: 21-23 FSIP: 70  
FFP: 21-23 FSIP: 58  
IF: No blow  
1st: No blow  
FF: No blow  
FSI: No blow  
Recovery: 2 ft OCM  
(2% O, 98%)

Air buckle hep @ 34

② 3515 ft: Mud Wt 9  
Visc: 48, WL 0.0, 1