

# GEOLOGIST'S REPORT

DRILLING TIME & SAMPLE LOG NFC

COMPANY Berexco LLC NO. 7-13  
 LEASE Taden A  
 LOCATION 2302 FNL + 340 FEL  
 SEC. 13 TWP. 30S RANG. 8W  
 COUNTY Kingman STATE Kansas  
 FIELD Spivey-Grabs-Basil

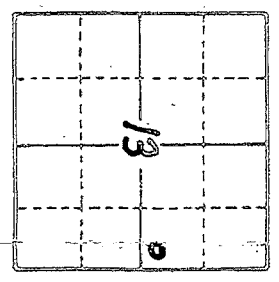
ELEVATIONS  
 KB 1484  
 DF 1482  
 GL 1472  
 MEASUREMENTS ARE ALL FROM KB

CONTRACTOR Berexco Dlg Rig #1  
 COMM. 9-24-2013 COMP. 10-2-2013  
 RTD 4380 LTD 4401  
 No. of DST'S NONE No. of CORES NONE

MEASURING RECORD  
 8 5/8" O.D. 355 W./...  
 EL. LOG AR. IND. SP. GR.  
DEN. METER OR CALIPER  
ML

SAMPLES SAVED FROM 3000 TO TD  
 DRILLING TIME KEPT FROM 3000 TO TD  
 SAMPLES EXAMINED FROM 3000 TO TD  
 GEOLOGICAL SUPERVISION FROM 3000 TO TD  
 GEOLOGIST ON WELL EDWIN H. GRIEVES

| FORMATION TOPS         | SAMPLE      | LOG         | SUBSEA       |
|------------------------|-------------|-------------|--------------|
| <u>BASE HEELER</u>     | <u>3113</u> | <u>3133</u> | <u>-1649</u> |
| <u>LANSMING</u>        | <u>3327</u> | <u>3348</u> | <u>-1864</u> |
| <u>KANSAS CITY "A"</u> | <u>3763</u> | <u>3781</u> | <u>-2297</u> |
| <u>KANSAS CITY "B"</u> | <u>3797</u> | <u>3815</u> | <u>-2331</u> |
| <u>PAWNEE</u>          | <u>3954</u> | <u>3973</u> | <u>-2489</u> |
| <u>FT. SCOTT</u>       | <u>3986</u> | <u>4000</u> | <u>-2574</u> |
| <u>CHEKROKEE</u>       | <u>4002</u> | <u>4024</u> | <u>-2540</u> |
| <u>MISSISSIPPI</u>     | <u>4100</u> | <u>4124</u> | <u>-2640</u> |
| <u>TD</u>              | <u>4380</u> | <u>4401</u> |              |



API# 15-095-22275

REMARKS Earth-Tech had an unmanned gas detection trailer on this well from 3000 feet to total depth.

Note Samples were poor to extremely poor on this well. Geological log 20 to 21 feet high to E-Log depths.

*Thank you,  
 Edwin H. Grievess  
 Geologist*

**LITHOLOGY**

|           |              |
|-----------|--------------|
| SANDSTONE | SILTSTONE    |
| LIMESTONE | DOLOMITE     |
| SHALE     | GRANITE WASH |
| CHERT     | ARMY B GP    |

**CHROMATOGRAPH**

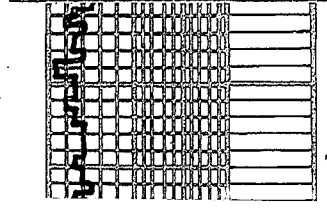
HOT WIRE BY TOTAL GAS VOLUME

|    |              |
|----|--------------|
| C1 | = METHANE    |
| C2 | = ETHANE     |
| C3 | = PROPANE    |
| C4 | = ISOBUTANE  |
| C5 | = BUTANE     |
| C6 | = ISOPENTANE |
| C7 | = PENTANE    |

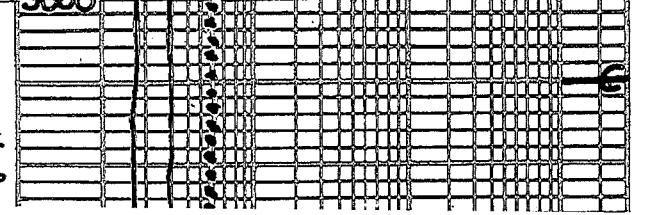
DRILL TIME SCALE  
 5 10 15

SAMPLE DESCRIPTION

GAS SCALE  
 3000 10 100 1000



Lms. trs. to abn. whit. to crm-chkb + H. tan to tan, grayish. 10% crypto. to



5 10 15

10 100 1000

3000

Lms. trs. to abn. wht. to crm-chlkt  
 H. tan to tan, grayish. IP's crypto. to  
 v.v. fn. xln; sub-chlk., sub-sucro. to  
 sucro. & trs. p. actin.; trs. phantom  
 oolitic; dub. yel. fluor. No Cut;  
 widely scattered trs very poor  
 micro-pp. por.

Sh med. to v. drk. gry. - sl. calc. IP's  
 to v. drk. gry. to black-carb.

Lms. tan; crypto. xln; trs sub-chlk  
 + p. actin.; dub. H. yel. fluor.  
 No Cut No Vis for

Sh. v. drk. gry. to black

Lms. similar 3094-3098  
 Sh. v. drk. gry. to black-carb.

Lms. similar 3094-3098  
 Sh. H. gry. greenish. IP's to trs  
 H. green to olive green

Lms. trs. to abn. wht. to crm-chlkt  
 crm. to tan; crypto. to v. fn. xln;  
 sub-chlk., sub-sucro. to sucro. & p. actin.  
 dub. yel. fluor.; No Cut; No Vis for

Sh H. to med. gray-greenish  
 IP's; calc. IP's to drk. gray.  
 sl. to faly. pyrit. IP's →  
 finely disseminated

Qtz. Sst. H. gray, tanish IP's  
 v.v. fn. to v. fn. gr.; ang. to trs  
 sub-rudded; clay-filled IP's &  
 silt-filled IP's; abn. sl. to very  
 muscovite micaceous; sl. calc  
 IP's; trs w/ v. dub. yel. fluor.;  
 No Cut; scattered trs very  
 poor micro-pp. por.

C21

3100

3200

C21

3300

Blk Sh 204

Blk Sh 204

Basal Heebner

3113-1629

Cont Gas 234?

muscovite micaceous, slight  
IP's; trs w/v. dul. yel. fluor.;  
No Cut; scattered trs very  
poor micro-pp. por.

Sh. H. to med. gray-sli to very  
silty IP's grading to siltstn.;  
sli. to fely. micaceous IP's  
v. abn. Qtz sst stringing in  
samples

Lms. grayish. tan to tau; crypto  
to v.v. fn. xln; sub-chlk;  
sub-sucro. & packstone;  
phantom oolitic IP's; dul. h. yel  
to dul. yel. fluor.; No Cut;  
w/v. widely scattered trs  
very. poor p.p. to micro-p.p  
por. w/prob. scattered  
interbeds shs. med to drk.  
gray. - calc

Lms. H. gray to tau; crypto. to  
fn. xln. w/trs. med. xln; sub-  
chlk, sub-sucro to trs. sucro.  
phantom oolitic or phantom  
oolitic; dul. h. yel. fluor.  
No Cut; hvy. trs pr. to tr. ppt  
micro-pp por & poss. vugular por

3484-3508 Lms. similar 3327-3476

Interbedded Limestones & Shales.  
① Lms. grayish. tan to tau; crypto.  
to v.v. fn. xln; trs. sub-chlk,  
hvy. trs sub-sucro. & packstns  
dul. yel. fluor.; No Cut; No Vis Por.  
② Lms. H. to med gray-sli. to extly  
shly. grading to v. calc. shls.  
crypto. xln; packstn; No fluor  
No Cut; No Vis Por  
③ Sh. med to v. drk. gray-sli to  
v. calc. IP's

3300

3400

3500

Conchas 2348 = C

Lansing  
3327-1848 = E

321

Dev. Sand.

321

Dev. Sand. = C

shly. gray to v. calc. shls;  
crypto. xln; packstn; No fluor  
No Cut; No Vis Por

③ Sh. med to v. drk. gray. - sli to  
v. calc. IP's

Lms. tes. wht. to cream - chlk & H. tan  
to tan; crypto. to v. v. fn. xln; j  
sub-chlk; sub-sucro to sucro  
phantom oolitic; or phant. oolitic  
IP's; dul. yel. fluor; No cut; Vis por  
Tol. p.p.; micro pp & poss. interxln por  
only v. sli. tes. of sample is real???

Lms. H. gray, grayish. tan to tes. tan; crypto  
to v. v. fn. xln; tes sub-chlk;  
Sub-sucro. + packstn; v. dul. yel.  
fluor. IP's; No cut; No Vis Por  
w/ prob. interbeds shs  
med to v. drk. gray - calc. IP's

Poss. Lms. similar 3611-3627  
only the sli. tes. in samples???

Lms. grayish. tan to tan; crypto to  
tes v. v. fn. gr.; tes sub-chlk,  
tes. sub-sucro, packstn. and  
tes. sub-lithogr.; sli tes very  
dul yel. fluor; No Cut; No Vis Por

Lms. grayish. tan to tan; crypto to  
v. v. fn. xln; phantom oolitic to  
oolitic w/ phantom oolitic; sub-sucro  
to tes sub-sucro; dul. yel. fluor; No cut  
abn. por to tes. fctogd pp. to micro pp  
porosity

3744-3758 Lms similar 3678-3738  
sli shly IP's

Sh. v. drk. gray to black - carb  
Sh. med to v. drk. gray. - sh to v. calc.

Lms. similar 3738-3744

Sh. v. drk. gray. to black - carb

Lms. similar 3678-3738  
Lms. tan, grayish. IP's; crypto. to v. v. fn. xln  
phantom oolitic to oolitic; or phantom  
oolitic to oolitic; many sub-sucro  
to sucro + tes packstn; dul. yel. fluor.  
No cut; abn. por. to tes. fctogd pp. to exc. oolitic  
p.p.; micro pp & prob interxln por.

Lms. H. gray. - sli shly to tan; crypto  
to v. v. fn. xln; tes sub-chlk,  
sub-sucro + packstn; tes. dul  
yel. fluor. IP's; No Cut; No Vis Por

Dev. Surf. E

3600

Con Gas 2307

Sh Gas Show 224

Recycle 160

Trap Check E

3700

KANSAS CITY A

3763-2279

Blk. sh 846

Recycle 400

Blk. sh 554

3800

Recycle 324

KANSAS CITY B

45321: 3797-2313

© EFS

Geological  
Notes



No Cut; abn. pr. tr. qd. to ex. col. mic. p.p., mic. opp. prob. inter. por.

4532 1: 3797-2313

Lms. H. gray - sl. shly to tan; crypto to v.v. fu. xlu.; trs. sub-chlk, sub-succo + packstn; trs. dul. yel. fluor. IP's; No Cut; No vis. por.

CFS

Sh. med to v. drk. gray - sl. to very calc to black-carb. looking

Lms. H. gray to tanish-gray. crypto to v.v. fu. xlu.; trs. sub-succo packstn. + trs. sub-lithogr. trs. dul. yel. fluor. IP's; No Cut; No vis. por. ? Sh. v. drk. gray to black-carb?

900

Lms. H. gray to tan; crypto. to v.v. fu. xlu.; trs. sub-chlk, sub-succo packstn. + trs. sub-lithogr. trs. dul. yel. fluor. IP's; No Cut No vis. por.

Sh. v. drk. gray to black-carb

Lms. similar 3912-3948

Blk Sh 690  
Pawnee 3954-2470  
CFS

Sh. v. drk. gray to black-carb.

Lms. similar 3912-3948 becoming very shly IP's

Blk Sh 500  
F. Scott 3986-2502

Sh. v. drk. gray to black-carb.

Lms. similar 3912-3948 becoming extly shly. gradng. to very calc. shales

4000  
4532 2049  
Cherokee 4004-2520

Shs. drk. gray to v. drk. gray + black; sl. to very carb. and sl. to very calc. IP's

Dev. Surv.  
WOB 3200-3400  
RAM 85  
SPM 54  
PP 1300

Mississippi 4100-2616  
CFS

Chert wht. w/ spid to even brown oil stn; good oil order; sl. to highly weathered w/ trs to hvy trs. fresh; gldn. yel. fluor. w/ flush to good stream. cuts.

4100

Sho 880-4

4532

Chert wht. w/ sptd to even brown oil stu; good oil order; sli. to highly weathered w/ trs to hvy trs. Fresh; gldn. yel. fluor. w/ flush to good streaking. Cuts; abn. pr. to fr. + trs good to excel. pp. to micro-pp por.

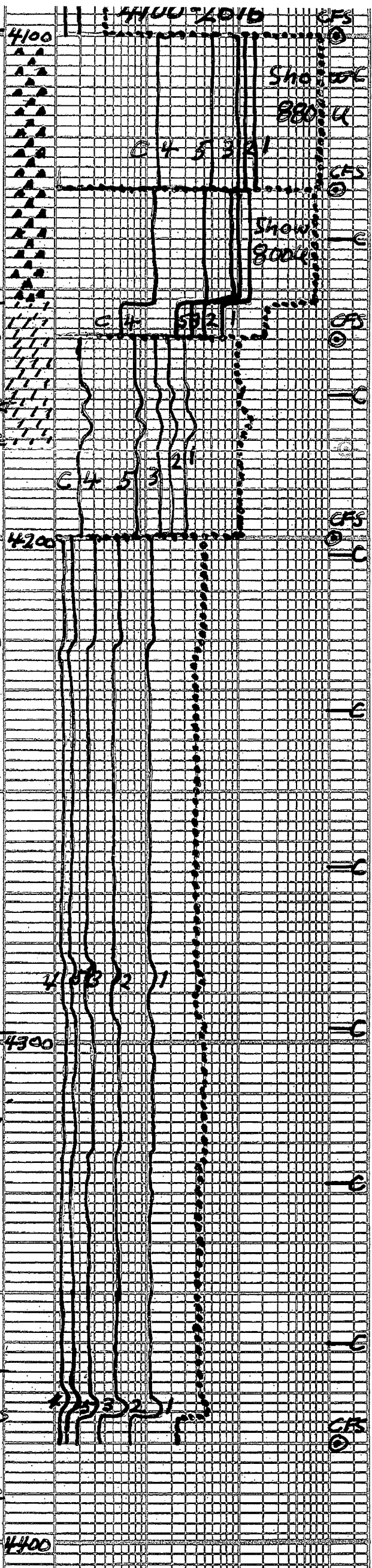
Dol. wht, crm. to tan, crypto. to v. fn. xlm; chlk, sub-chlk, sub-sucro to sucro, widely scattered trs sptd. brn. oil. stu. w/ gldn. yel. fluor. w/ faint to fair streaking cuts No Vis Por. w/ abn wht. Fresh chert + trs. chert similar. 4100-4153 poss streaking in samples from above.

Dol., hvy Dol to Dol. Lmst. crm. H. tan to tan; crypto to v. v. fn. xlm sub-chlk; sub-sucro; dul. lt. yel fluor; No cuts; No Vis Por. w/ trs. to abn. wht. Fresh chert - opaque (poss from above)

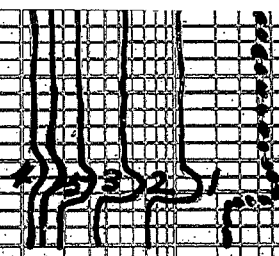
Lms. sli to very Dolomitic IP's; Tan, grayish IP's; crypto. to v. v. fn. xlm; trs sub-sucro, packets + trs. sub-lithogr.; dul. yel to dul. lt. yel. fluor; No cut No Vis Por.; w/ trs to hvy trs Chert wht to lt. gry; opaque

Poss. Sh Death Hole Samples Shs lt. gry to dk. grys, greens Reds, ect could be New - could be Old w/ abn lms of unknown origins - sort of like the rest of this hole

7/8 inch Bit Info in out



Poss. Sh Death Hole Samples  
 Shs lt. gray to v. dk. grays, greens  
 Reds, ect could be New -  
 Could be Old w/ Uabu lumps  
 of unknown origins -  
 sort of like the rest of this hole  
 TD 4380



CFS  
 ©

7 7/8 inch Bit Info in out  
 #1 New Smith F12Y 355' 4380'  
 Dev. Surv.  
 1. 991 3/4° 5. 3417 3 1/2° ??  
 2. 1509 3/4° 6. 3511 3/4°  
 3. 2017 1° 7. 4013 1°  
 4. 3398 1° 8. 4380 3/4° TD

4400

Cir. Points  
 1. 3830 4. 4130 7. 4380 TD  
 2. 3970 5. 4160  
 3. 4100 6. 4200

Daily Drilg. Report

|         |         |         |
|---------|---------|---------|
| 1. 2948 | 7:00 AM | 9-28-13 |
| 2. 3000 | 9:53 AM | 9-28-13 |
| 3. 3668 | 7:00 AM | 9-29-13 |
| 4. 4096 | 7:00 AM | 9-30-13 |
| 5. 4450 | 7:00 AM | 10-1-13 |
| 6. 4480 | 7:00 AM | 10-2-13 |

No DST's Run

Mud Info:

| Date      | 9-27  | 9-28  | 9-29  | 9-30  | 10-1  |
|-----------|-------|-------|-------|-------|-------|
| Time      | 4:30P | 2:30A | 8:00A | 4:00P | 1:30P |
| Depth     | 2385  | 3201  | 3676  | 4200  | 4380  |
| Wt.       | 9.3   | 9.0   | 9.5+  | 9.4   | 9.5+  |
| Vis       | 27    | 41    | 48    | 42    | 70    |
| PV        | -     | 13    | 15    | 14    | 20    |
| YP        | -     | 14    | 16    | 14    | 24    |
| GS        | -     | 9/36  | 14/44 | 14/38 | 18/68 |
| WL        | NC    | 10.8  | 12.4  | 10.4  | 9.4   |
| Cake Hvy. | 1/32  | 1/32  | 1/32  | 1/32  |       |
| pH        | 7.0   | 10.0  | 10.0  | 11.5  | 10.5  |
| CH        | 10800 | 10000 | 12000 | 5500  | 5000  |
| Ca Hvy    | 80    | 80    | 80    | 80    |       |
| LCM       | 0     | 0     | 0     | 2     | 3     |

OPERATOR BEREXCO LLC  
 LEASE TJADEN A NO. 7-13  
 ELEVATION 1484KB RTD 4380

LOCATION 2302 FNL + 340 FEL  
 SEC. 13 TWP. 30S RANG. 8W  
 COUNTY KINGMAN STATE KANSAS