

GEOLOGIST'S REPORT

DRILLING TIME & SAMPLE LOG

COMPANY **BEREXCO LLC**
 LEASE **HT A** NO. **1-16**
 LOCATION **1992' FNL + 1991' FEL**
 SEC. **16** TWP. **23S** RNG. **32W**
 COUNTY **Finney** STATE **Kansas**
 FIELD **Wildcat**

ELEVATIONS
 KB **2910**
 DF **2908**
 GL **2898**
 MEASUREMENTS ARE ALL FROM **KB**

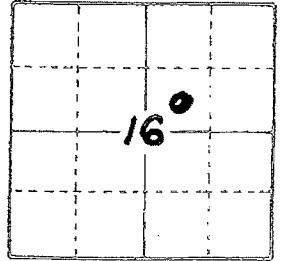
CONTRACTOR **Be Redco Delq Rig #1**
 COMM. **11-23-2014** COMP. **12-9-2014**
 RTD **4975** LTD **4974**
 No. of DST S **5** No. of CORES **None**

CASING RECORD
898' of **1790** w/ **800** SX.
 of w/ SX.
 of w/ SX.
 of w/ SX.

EL. LOG ACT Res: **SP GR**
DEN NEUT GR Caliper
ML SONIC

SAMPLES SAVED FROM **3600** TO **TD**
 DRILLING TIME KEPT FROM **3600** TO **TD**
 SAMPLES EXAMINED FROM **3600** TO **TD**
 GEOLOGICAL SUPERVISION FROM **3600** TO **TD**
 GEOLOGIST ON WELL **Edwin H. Grieves**

FORMATION TOPS	SAMPLE	LOG	SUBSEA
Base Heebner	3879	3878	- 968
Toronto	3893	3892	- 982
Lansing Fm.	3920	3921	- 1011
Kansas City Fm.	4262	4263	- 1353
BKC	4393	4401	- 1491
Marmaton Fm.	4416	4426	- 1516
Pawnee	4495	4495	- 1585
Ft. Scott	4525	4523	- 1613
Cheapeake	4545	4540	- 1630
Morrow Fm	Not Present		
St. Genevieve	4739	4721	- 1811
St. Louis	4768	4762	- 1852
TD	4975	4974	

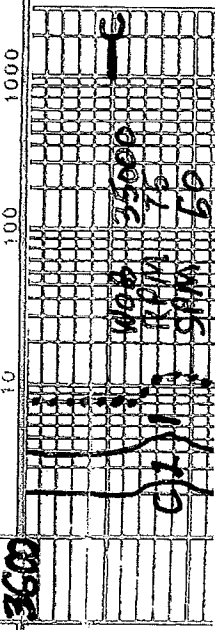


API# 15-055-22359

REMARKS **Earth-Tech had an unmanned gas detection trailer on this well from 3600 to total depth.**

Edwin H. Grieves
 Thank you to
 Edwin H. Grieves
 Geologist

LITHOLOGY	CHROMATOGRAPH	GAS SCALE
<p>SANDSTONE</p> <p>LI Limestone</p> <p>SHALE</p> <p>CHERT</p>	<p>SILTSTONE</p> <p>LI DOLOMITE</p> <p>GRANITE MASH</p> <p>ANY & GYP</p> <p>HOT WIRE BY TOTAL GAS VOLUME</p>	<p>C1 = METHANE</p> <p>C2 = ETHANE</p> <p>C3 = PROPANE</p> <p>C4 = ISOBUTANE</p> <p>C5 = BUTANE</p> <p>C6 = ISOPENTANE</p> <p>C7 = PENTANE</p>
<p>DRILL TIME SCALE</p> <p>0 5 10 15</p>	<p>SAMPLE DESCRIPTION</p>	<p>0 10 100 1000</p>



DRILL TIME SCALE

5 10 15

SAMPLE DESCRIPTION

GAS SCALE

10 100 1000

3600

3700

3800

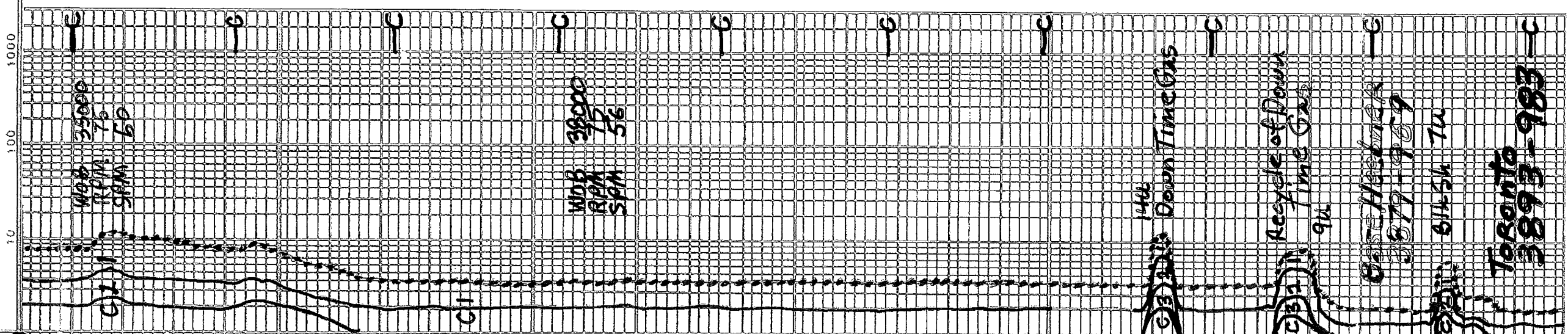
Interbedded Limestones

- 1. Faster Drdg. Lms. a bn. wht. to carn. xln. + tan; crypto. to v. fn. xln.; sub-chalk. Sub-succo. to v. succ. Ro. H. yel. fluor. No cut. abn. pet. o. r. v. tas. gd. micro-p. to interxln. por.
- 2. Slower Drdg. Lms. H. gray - sl. to faly sh. y. and gd. xln. tan to tan; crypto to v. v. fn. xln.; sub-chalk; sub-succ. Ro. + p. z. ck. str. n. d. gl. H. to H. yel. fluor. No cut. No Vis. por.

Interbedded Limestones Similar 3600 - 3795 w/ f. as top delg becoming oolitic if p₂

Sh. v. dk. gray. to black-carb. Sh. H. gray. to H. green; v. soft + mushy when wet

Lms. abn. wht. to carn. xln. + crypto. to H. tan; crypto. to v. v. fn. xln.; sub-chalk



Toronto 3893-983

Sh. v. drk. gray. to black-carb.
Sh. lt. gray. to lt. green; v. soft & mushy
when wet

Lms. abn. wht. to cream-chalk & cream
to lt. tan; crypto. to v. v. fn. xln.; subchlk
sub-succro. to v. succro & trs. packsta; 3900

dul. lk. yellow. to dk. yellow; No cut.
hv. trs. pr. to fm. micro-pp. por. ip's
lt. poss. interxln. por. ip's
Lms. gray; crypto. to v. v. fn. xln.; sub-succro
& packsta; dul. yellow. ip's; No cut; No vis. No
interbedded lms. st. & prob. thin shales

Lms. abn. wht. to cream-chalk & cream; lt.
tan to tan; crypto. to v. v. fn. xln.; subchlk
sub-succro. to v. succro; dul. lt. yellow.
fluor.; No cut; poss. interxln. por. in succro

Lms. lt. gray; grayish tan to tan; crypto
to v. v. fn. xln.; sub-chlk; sub-succro and
packsta; dul. yellow. ip's; No cut; No vis. No

prob. thin interbeds sh. med
to v. drk. gray; sl. to fl. y. calc. to
blk-carb. looking

Lms. lt. tan; v. v. fn. xln.; sub-succro
to v. succro; dul. yellow. to tan; yellow. No cut
scattered trs. v. pr. micro-pp. por.

Lms. hv. trs. wht. to cream-chalk and
lt. gray; grayish tan to tan; crypto
to v. v. fn. xln.; sub-chlk; sub-succro
& packsta; dul. yellow. to dul. lk. yellow. fluor.;
No cut; No vis. No R.

Interbedded Limestones
Faster Dalg. Lms. trs. to hv. trs.
wht. to cream - chlk. lt. tan to tan;
crypto. to v. v. fn. xln.; sub-chlk,
sub-succro. to succro; phantom
oolitic ip's; dul. yellow. fluor.; No cut
hv. trs. to abn. pr. fr. to g. micro-pp
& prob. interxln. por.

Slower Dalg. Lms. lt. to med. gray -
shly. ip's to grayish tan to tan;
crypto. to v. v. fn. xln.; sub-chlk
sub-succro & packsta; phantom
oolitic ip's (gray & tan); dul. yellow. fluor.;
ip's; No cut; No vis. No R.

Sh. v. drk. gray. to black-carb.
Sh. med to v. drk. gray; sl. to v. carb. ip's
Lms. abn. wht. to cream-chalk & cream
crypto. to v. v. fn. xln.; sub-chlk; sub-succro
to succro; dul. lk. yellow. fluor.; No cut;
trs. pr. micro-pp. por.

Interbedded Limestones Similar
4032 - 4125

3893-983

Blksh tu

Toronto
3893-983

Lansing Fm
3920-1010

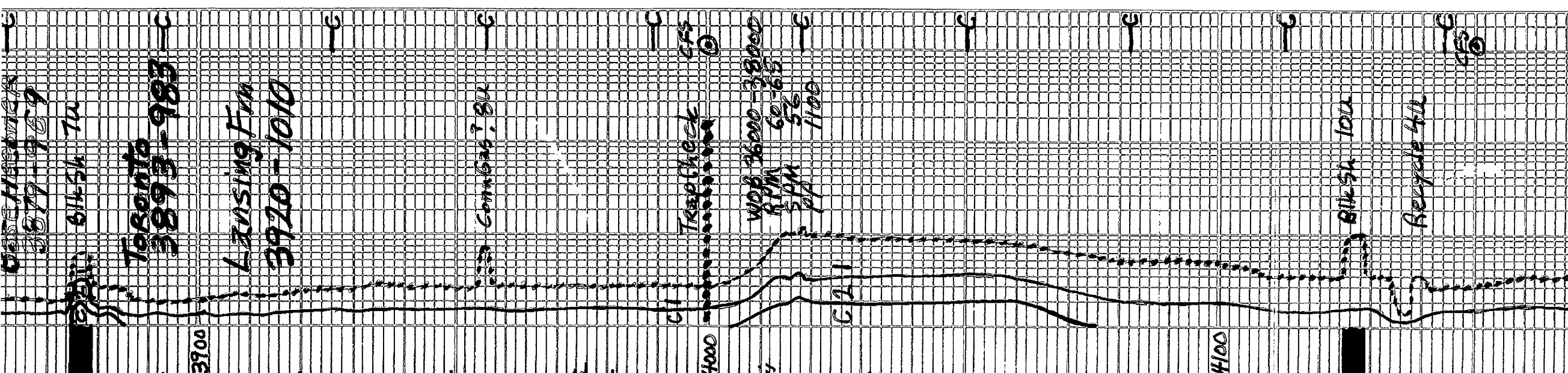
Comm Gas? BU

Tripp check

WOB 3600-38000
RPM 62-65
PPH 56
1100

Blksh tu

Recycle blk



Sh. med to v. dk. grey; sl. to calc. lps
Lms. a bn. wkt. to cream - chalked H. tan
crypto. to v. v. tan. xln. sub-chalk, sub-succro
In succro; dual. H. yel. fluor. No cut
Tras. pr. microp. pp. por

Interbedded Limestones Similar
4032 - 4125

4200

Lms. tan wht to cream, chalk to tan greyish lps
crypto. to v. v. tan. xln. y. to ext. y.
oolitic
matrix sub-succro to succro +
pachstn. dual. yel. to yel. fluor.
No cut; a bn. pr. pr. gd. to excel.
oolitic por; Quest. Perm. lps

Lms. similar 4196 - 4234 w/ less
oolitic + more oolitic w/ only pr
le. tog d. oolitic por. + v. Quest Perm.
Lms. greyish tan to tan; crypto to tan. xln
sub-chalk, sub-succro + pachstn.
Phantom oolitic lps; dual. yel. fluor
No cut; No Vis Por

Sh. v. drk. grey to black - carb
Lms. H. to med. grey - sl. to v. shly gray to
extly. calc. sh. crypto. xln. sub-chalk to
shly + pachstn.; No fluor.; No cut; No Vis Por

Lusts similar 4196 - 4234

Lms. H. to med. grey; tanish lps; sl. to
faly. shly. lps; crypto. xln. sub-chalky packsh
w/ tras. sub-litho gr. dual. yel. fluor. lps
No cut; No Vis Por

4300

Sh. v. drk grey to black - carb.

Interbedded Limestones
① Slower Orig. Lms. H. to med. grey,
tanish lps; sl. to faly. shly. lps;
crypto. xln. sub-chalky or shly
pachstn. + tras sub-litho gr.; dual. yel
to dual. H. yel. fluor. lps; No cut;
No Vis. por.

② Faster Orig. Lms. tan wht. to cream -
chalk + H. grad. to tan; crypto. to v. v. tan
xln. + tras. sl. to faly. oolitic por.
tras. v. to ext. y. oolitic matrix
sub-chalky sub-succro + pachstn.;
dual. yel. to yel. fluor. lps; tras.
to fl. oolitic por; Quest Perm.

Lms. greyish tan to tan; crypto to tanish xln.
v. to ext. y. oolitic por. sl. to shly oolitic
matrix + tras. sub-chalk, sub-succro + pachstn.
dual. H. to H. yel. fluor.; No cut; w/ tras. for to fl.
+ tras. gd. oolitic por; Prob No Perm.

Lms. similar 4302 - 4370 # 1
Slower Orig description

4400

Lms. H. to med grey - faly to extly. shly
grayng lps to extly calc shs w/ tras
v. drk. grey to black - carb

4416 - 4454 Lms H. to med grey - sl. to
faly. shly + greyish. tan to tan;
crypto. to v. v. tan. xln. phantom oolitic
lps; dual H. yel. fluor. lps; No cut;
No Vis por.

Receipt 411

Kansas City, Mo
4262-1352

Trap Check

4371 - 4403

WIP 35000
ROM 60
SPM 56
PP 1180

MARKS IN SECTION
4416 1500

Trap Check

V. dark gray to black - carb

4416-4454 Lms. lt. to med. gray - sli. to faly. Shly. + grayish. Tan to tan. crypto. to v.v. ch. xln.; phantom oolitic IP's; dul. lt. yel. fluor. IP's; No cut; No Vis pore.

4454-4458 Lms. tan, xln. xln.; sub-sucro to sucro; spid. to even brn. oil str. when dried; yel. to gl. yel. PR, R. w/ flush. to gl. stem. cuts to inter. xln. por.

4458-4494 Lms. similar 4416-4454

Sh. med. to v. dark gray - sli. to med. carb
4498-4411 Lms. hwy. to white carb - sh. v. tan w/ tan to brn. tan spid. to even oil str. crypto. to v.v. ch. xln.; strong oil. calc. Phant. to oolitic IP's; sub-chly sub-sucro to v. sucro; tan. w/ calc. to wh. xln. to med. calc. xln. to v. ch. bet. yel. gl. to yel. to dark. yel. to gl. PR to tan. to gl. stem. cuts; abn. micro. - pp. to inter. xln. por.

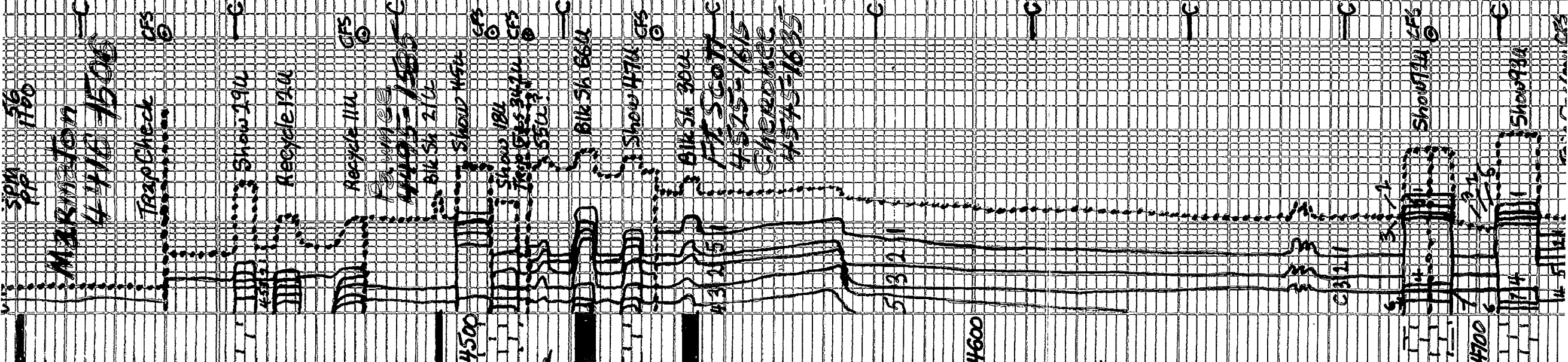
A. 4571-4572 Lms. similar 4416-4454
B. 4521-25 Sh. dark gray to blk. carb.
C. 4525-30 Lms. similar 4416-4454
D. 4530-34 Lms. H. gray. w/ hwy. to v. lt. tan spid. to even oil str. crypto. to v.v. ch. xln.; extremely oolitic; matrix sub-sucro to sucro; dul. yel. fluor.; sli. ring cuts; IP's; abn. pr. to f. ch. micro-pp. por
V. Quest. fern.
E. 4534-4541 Lms. similar 4416-4454
F. 4541-4545 Sh. v. dark gray to black - carb

4545-4685 Interbedded lms + shs
① Lms. lt., med. to tan. dark gray - sli. to extly. Shly. grading IP's to extly. calc. shs; crypto to v.v. ch. xln.; sub-chly to sh. to v. sucro - sub-sucro; scatter. trs. oolitic (gray) trs. dul. yel. fluor. IP's; No cut No Vis. por.

② Lms. lt. gray to tan; crypto. to v. ch. xln.; tan. sub-chly; sub-sucro to pack. stn. i. scattered trs. oolitic (tan + gray); dul. yel. fluor. IP's; No cut; No Vis. por.
③ Sh. med. to v. dark gray - sli. to extly. calc. IP's w/ tan. grading to extly. shly. lms

④ Sh. v. dark gray to black - carb.
G. 4685-4695 Lms. H. gray; tanish IP's w/ hwy. tan. ban. spid. to even oil str. crypto to v.v. ch. xln.; tan. fash; pack. stn. w/ hwy. tan. sub-sucro to sucro; dul. gl. to gl. yel. fluor. w/ flush. to gl. stem. cuts; PR to gl. micro-pp. prob. i. inter. xln. por. in sucro. Prob. along fractures + hwy. tan solution pores.
H. 4695-4704 Lms. similar #1 Description 4416-4454

I. 4704-4712 Lms. ban. from oil str. crypto to xln. oolites w/ v. ch. xln. sucro. matrix. Dul. gl. to gl. yel. fluor. w/ flush. to med. stem. cuts



H. 4695-4704 Lms similar
 #1 Description 4445-4685

I. 4704-4712 Lms. ban from
 oil str; crypto xln oolites w/
 v. fn. xln. s. c. m. matrix.
 dai. glen tog dx. of. fluore
 w/ flash. to gal. stream. g. c. s.
 abn. p. r. t. o. g. d. m. i. c. e. o. o. l. i. t. e. s.
 p. r. o. b. c. x. l. m. i. t. e. r. x. l. n. p. o. r.
 h. y. t. e. s. t. o. z. b. n. l. o. o. s. e. o. o. l. i. t. e. s.
 some shud. brown

J. 4712-4721 Lms. similar
 #1 Description 4445-4685

K. 4721-4729 Sh. blue green
 waxy w/ h. y. t. e. s. r. e. d. s. t. m. a. r. r. o. n. s.
 w. h. y. t. e. s. w. e. a. r. e. d. l. a. s. t. s.

L. 4729-4742 Lms. wht, crn, Hggy.
 #1 Description 4445-4685

M. 4742-4768 Lms. similar
 #1 Description 4445-4685

N. 4768-4778 Lms. wht, crn, Hggy.
 #1 Description 4445-4685

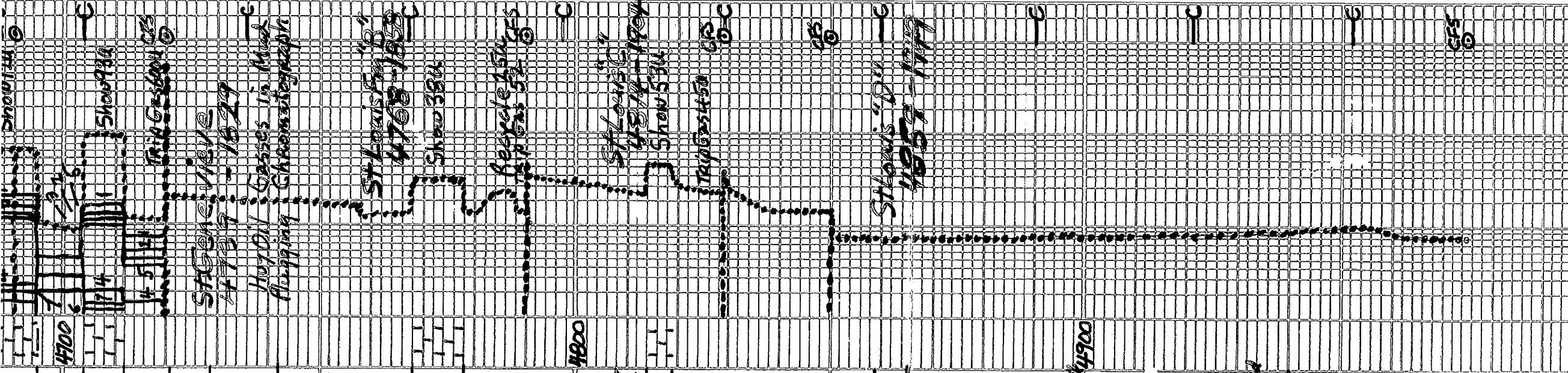
O. 4778-4789 Lms. wht, crn, Hggy.
 #1 Description 4445-4685

P. 4789-4819 Lms. wht, crn, Hggy.
 #1 Description 4445-4685

Q. 4819-4859 Lms. wht, crn, Hggy.
 #1 Description 4445-4685

R. 4859-4938 Lms. wht, crn, Hggy.
 #1 Description 4445-4685

S. 4938-4975 Lms. wht, crn, Hggy.
 #1 Description 4445-4685



4700
 4704
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SHOW 938
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 SHOW 1000

STONEVIEW
 4729-1829
 HOY OIL GASSES IN MUD
 PLIPPING CHROMIUM TO GRAPH

ST. LOUIS 514
 4768-1829
 SHOW 380

ST. LOUIS 514
 4778-1829
 SHOW 530

ST. LOUIS 514
 4789-1829
 SHOW 530

ST. LOUIS 514
 4819-1829
 SHOW 530

ST. LOUIS 514
 4859-1829
 SHOW 530

ST. LOUIS 514
 4938-1829
 SHOW 530

ST. LOUIS 514
 4975-1829
 SHOW 530

7 7/8 inch Bit Into

1. New Smith TC FHi 184
in 1790 out 4512
2. Acorn Smith TC F 271
in 4512 out 4537
3. Ream Smith TC F Hi 18 44PS
in 4537 out 4415 44PS

Cir. Points

1. 4000 4537
2. 4150 4690
3. 4380 4720
4. 4440 4790
5. 4480 4829
6. 4505 4850
7. 4512 4975 TP

Dev. Surf.

- 4 4512 10° TD
- 5 4720 20°
- 6 4975 34°

Daily Drly Progress:

1. 3600 11-28-14 4:52 PM
2. 3916 7:00 AM
3. 4349 7:00 AM
4. 4512 7:00 AM
5. 4512 7:00 AM
6. 4537 7:00 AM
7. 4720 7:00 AM
8. 4720 7:00 AM
9. 4790 7:00 AM
10. 4829 7:00 AM
11. 4932 7:00 AM
12. 4975 7:00 AM

DST #1 Pawnee 4492-4512

IO Bob 117 min Fo Bob 12 min
 Rec 1183' GIP
 105' fluid 28 Gas 99.2 oil 62 mud
 Tool Samp. 18 Gas; 30 oil; 69 mud
 Oil Gravity 31.2 @ 60°F

Max Temp. 111°F

IHP 2146 FFP 46-82 in 60 min
 IFP 12-41 in 30 min FSP 1169 in 120 min
 ISIP 1174 in 60 min FHP 2051

DST #2 Ft. Scott 4518-4537

IO weak surf. blow 20 min Fo No Blow
 Rec 5' Drly Mud Tool Samp pushed
 IHP 2156 FFP 14-16 in 30 min
 IFP 9-13 in 30 FSP 1068 in 120 min
 ISIP 1011 in 60 FHP 2132 Temp 107°F

DST #3 Unconf. Zn 4683-4720

IO weak surf. blow 20 min
 FO Strong surf. blow 27 min
 Rec 100' GIP

1 ft clean oil 100% oil Gas 166 @ 60°F
 99 ft 20 gas 55% oil + 25% mud

100 ft Total fluid Max Temp 114°F
 tool sample Gasses w/ some Gassy Oil

IHP 2262 FFP 41-55 in 60 min
 IFP 16-43 in 30 min FSP 202 in 120 min
 ISIP 207 in 60 min FHP 2229

DST #4 St. Louis "B" 4765-4790

IO No Blow FO No Blow

Rec 2 ft 100% mud w/ A thin
 sample of oil

Tool Sample Mud w/ A Thin
 Sample of oil Max Temp 116°F

IHP 2230 FFP 14-16 in 30 min
 IFP 13-40 in 30 min FSP 976 in 120 min
 ISIP 977 in 60 min FHP 2185

DST #5 St. Louis "C" 4810-4829

IO weak surf. blow 3 min
 FO No Blow

Rec 2 ft Mud w/ A Thick sample
 Tool Sample 100% mud; Max Temp 116°F

IHP 2226 FFP 10-12 in 30 min
 ISIP 8-11 in 30 min FSP 590/766 in 120/150 min
 Max Temp 116°F

Mud Info:

Date	11-28	11-29	11-30	12-1	12-2	12-3	12-4	12-5
Time	11:00 A	7:45 A	11:00 P	11:05 A	11:30 P	1:30 P	1:00 P	11:00 P

Depth	3461	3977	4490	4512	4512	4549	4720	4768
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Wt.	8.6	9.2	9.4	9.35	9.35	9.1	9.2	9.1
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Rec 2-ft Mud w/ A Thick seam oil
 Tool sample 1006 mud; Max Temp 116 of
 IHP 2226 FFP 10-12 in 30 min
 IEP 8-11 in 30 min FSP 590/766 in 120/150 min
 ISIP 389 in 60 min FHP 2225
 Max Temp 116 of

Mud Log:

Date	11-20 11:00A	11-19 11:30P	12-1 11:05A	12-2 11:35P	12-3 11:30P	12-4 11:00P	12-4 11:00P
Depth	3461	3977	4490	4512	4543	4720	4768
Wt.	8.6	9.2	9.4	9.35	9.4	9.2	9.2
Vis	47	45	56	64	55	60	58
PV	14	13	18	19	17	18	17
YP	15	14	18	22	18	20	19
SS	15/44	14/43	17/55	18/56	19/54	17/56	18/56
NL	10.8	10.8	8.4	8.0	8.4	9.2	8.0
Clay	1/32	1/32	1/32	1/32	1/32	1/32	1/32
PH	11.5	11.0	9.5	9.0	9.5	9.5	9.5
CHI	1800	3100	3400	1800	1900	1400	1550
CA	20	20	20	20	20	20	20
LCM	1	2	2	2	1 1/2	1	1 1/2

Date	11-20 11:50P	11-20 12:00P	11-20 12:05P				
Depth	4790	4829	4975				
Wt.	9.2	9.2	9.2				
Vis	57	56	55				
PV	16	17	17				
YP	18	18	18				
SS	17/50	17/53	17/50				
NL	7.2	7.6	7.6				
Clay	1/32	1/32	1/32				
PH	9.5	9.0	9.5				
CHI	2550	1500	1800				
CA	20	20	20				
LCM	2	2	2				

OPERATOR Berexco LLC LOCATION 1992' FNL-1991' FEL
 LEASE HT A NO. 1-1-16 SEC 16 TWP. 23S RANG. 32W
 ELEVATION 2910MB RTD 4975 COUR. STATE Finney Kansas