

WELL GEOLOGIST'S REPORT
 FILE DRILLING TIME & SAMPLE LOG

COMPANY **BEREXCO LLC**

LEASE **STONE** NO. **2-19**

LOCATION **1896FNL & 1862FEL**

SEC. **19** TWP. **26S** RANG. **33W**

COUNTY **FINNEY** STATE **KANSAS**

FIELD **IVANHOE EXTENSION**

CONTRACTOR **BEREDCO DRIG. RIG NO. 2**

COMM. **7-2-2012** COMP. **7-16-2012**

RTD **5350** LTD **5334**

No. of DST'S **3** No. of CORES **NONE**

SAMPLES SAVED FROM **3700** TO **TD**

DRILLING TIME KEPT FROM **3700** TO **TD**

SAMPLES EXAMINED FROM **3700** TO **TD**

GEOLOGICAL SUPERVISION FROM **3700** TO **TD**

GEOLOGIST ON WELL **EDWIN H. GRIEVES**

FORMATION TOPS

FORMATION	SAMPLE	LOG	SUBSEA
BASE HEEBNER	3931	3919	977
LANSING FM.	3976	3961	1010
MARMATON	4568	4543	160
CHEROKEE	4692	4678	1736
MORROW	4943	4916	1984
CHESTER	5061	5045	2107
ST. LOUIS	5153	5119	2187
TD	5350	5334	

ELEVATIONS

KB **2942**

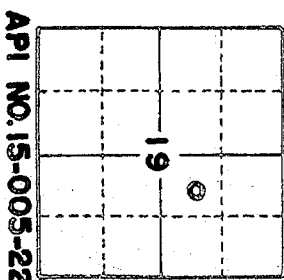
DF **2939**

GL **2929**

MEASUREMENTS ARE ALL FROM **KB**

SCALING RECORD
 878 of 1800 w/

EL. LOG ADDRESS PER DENNEUT-GRCALIPER M. SOMIC



REMARKS **Earth-Tech had an unmanned gas detection trailer on this well from 3700 feet to total depth.**

E-log tops 13 to 16 feet high to sample log tops

DST #4 Morrow Straddle Test 4935-5085

10 Strong Blow BOB 1 1/4 min - Strong Blow Back

FO Strong Blow BOB 2 1/2 min - GTS 25 min - Strong Blow Back

Rec 34 ft G+OCM 2% Gas 16% Oil 82% mud then unloaded clean oil

1034 ft CO Cir out 2.14 Gravity @ 60°

542 ft CO Cir out Drill Collars

90 ft OCM 6% oil 94% Mud

1700 ft total fluid

Last sample into truck 10% gas, 36% oil, 54% mud

Tool sample 100% oil

IHP 2466 #

IFP 245 to 450 # in 30 min

ISIP 967 # in 60 min

FFP 498 to 709 # in 60 min

FSIP 921 # in 120 min

FHP 2440 #

*Thank you,
 Edwin H. Grievess
 Geologist*

LITHOLOGY

- SANDSTONE
- LIMESTONE
- SHALE
- CHERT

- SILTSTONE
- DOLOMITE
- GRANITE WASH
- ANY & GTP

CHROMATOGRAPH

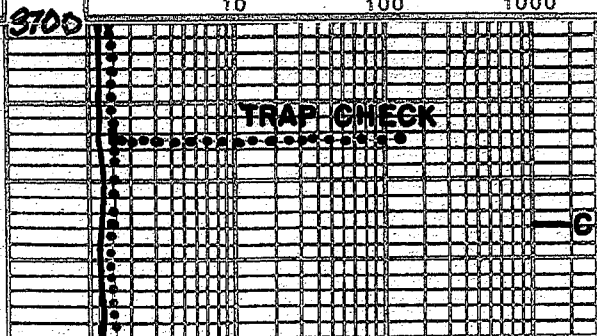
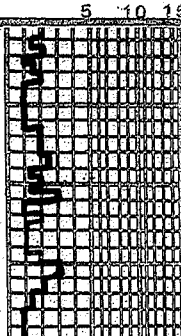
HOT WIRE BY TOTAL GAS VOLUME

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

DRILL TIME SCALE

SAMPLE DESCRIPTION

GAS SCALE



Interbedded limestones + scattered thin shales

3800

- ① Faster Drlg. Lms. abn wht. to crm-chlk and tan, grayish-IP's crypto to v.v. fin. TRs. sub-chlk, sub-sucro. to sucro. dul H. to H. yel. fluor., No Cut, abn. pr. to tas. fr. micro-pp. + poss. interxlu. por
- ② Slower Drlg. Lms. grayish. tan to TRs H. gray; crypto. to v.v. fin. sub-chlk sub-sucro, p. chstn. + TRs sub-lithogr. dul H. yel. fluor. IP's No cut; No Vis Por.
- ③ Scattered thin shales H. to med gray sl. to extly calc IP's

NOB 25000-30000
RPM 70
SPM 54
PP 1000

3900

Base Hednes
3931-989

sh v. drk gray to black-carb
Lms grayish. tan, cry. sh. l. p. chstn.
+ sub-l. lithogr. dul. H. yel. fluor. No cut
No Vis Por; poss. tas chert gray-opp.

BLK. SH. 6U

sh H. gray, greenish IP's
Lms. hvy. trs. wht. to crm-chlk + tan
crypto. to v.v. fin. xlu. sub-chlk, sub-sucro
to sucro. dul. H. to H. yel. fluor.; No cut
abn. pr. to tas. fr. micro-pp + prob.
interxlu. por

Toronto
3945-1003

Lms. grayish. tan to tan; crypto. to v.v. fin. sub-chlk, sub-sucro + p. chstn.; dul. H. yel. to tas H. yel. fluor.; No cut; No Vis Por

Lansing Fm.
3976-1034

Lms. trs. wht. to crm-chlk + tan; crypto. to v.v. fin. xlu.; tas sub-chlk; sub-sucro to sucro; tas phantom oolites; dul. gl. to gl. yel. + yel. fluor.; No cut; abn. pr. to tas fr. micro-pp. + prob. interxlu. por

Lms. H. to med. gray; crypto. to v.v. fin. xlu.; sl. trs sub-chlk; trs sub-sucro + p. chstn.

TRs. dul. yel. + fluor.; No cut; No Vis Por

Lms. similar 3959-3976 or string beam
2600

TRAP CHECK

Lms similar 3988-4013 becoming oolitic
Lms. hvy. trs. wht. to crm-chlk + tan to tan; crypto. to v.v. fin. xlu.; tas sub-chlk sub-sucro to sucro; tas phantom oolitic to sl. trs. phantom oolitic; dul. H. to H. yel. fluor.; No cut; abn. pr. to tas fr. micro-pp. + prob. interxlu. por
Lms. grayish. tan to tan; crypto. to v.v. fin. xlu.; tas sub-chlk; sub-sucro to sucro + p. chstn.

Lms. TRS. to abn. wh. 10 crum. chlk & grayish. tan to tan; crypto. to v. u. xlu.; sli. to fol. oolitic IP's; tan sli. to oolitic IP's; matrix for rock-chlk, sub-chlks, sub-sucro & packstn.; dul. lt. yel. to dul. yel. & trs. yel. & fluor.; No cut; trs. pr. to a oolitic. for trs. poor. micro-pp. por.

Lms lt. gray, tanish gray to grayish. tan; crypto to v. u. xlu.; trs. sub-chlk, sub-sucro, packstn.; trs. sub-l. thogu. dul. lt. yel. fluor. IP's; No cut; No Vis for.

Sh. v. drk. gray to black-carb. Lms similar 4382-4404

Lms. abn. wht. to cream. chlk w/ chlk oolites IP's and tan grayish. IP's; crypto. to v. u. xlu.; trs. sub-chlk, sub-sucro to sucro; y. dul. yel. fluor.; No cut trs. to hwy. trs. pr. to v. very micro-pp. por.

Lms. lt. gray. to tan; crypto to v. u. xlu. trs. sub-chlk, sub-sucro & packstn. dul. yel. fluor. IP's; No cut; No Vis for. w/ abn. chert. gray, opaque

Sh. med to v. drk gray calc to v. drk gray to blk carb

Interbedded limestones
 ① Lms. similar 4430-4455
 ② Lms. lt. med to drk gray; crypto. to v. u. xlu.; sli. trs. sub-sucro & packstn.; v. u. sli. trs. v. drk yel. fluor.; No cut; No Vis for w/ trs. to abn. chert gray, opaque

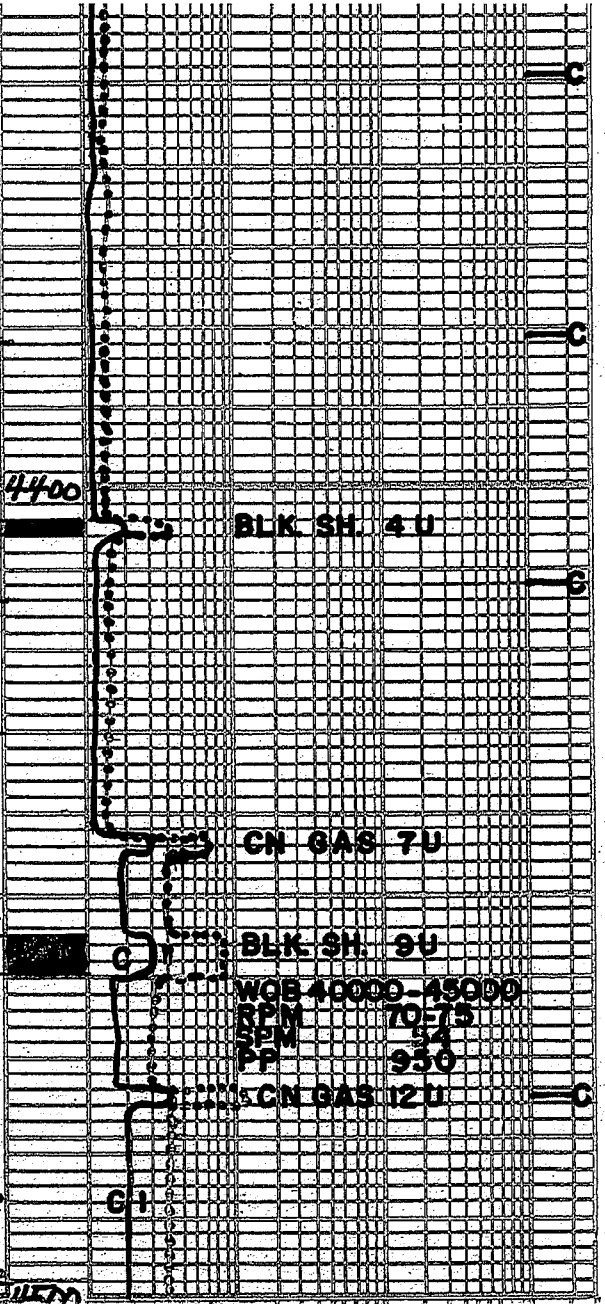
Lms. med to drk gray - fol. to very shly grading to v. cal's shs. IP's; crypto to v. u. xlu. trs. sub-sucro & packstn.; No fluor. No cut No Vis for

Sh. lt. to med. gray; sli. calc. IP's soft & mushy IP's when wet
 Lms. abn. wht. to cream. chlk & tan to tan crypto. to v. u. xlu.; trs. sub-chlk, sub-sucro to sucro; dul. lt. yel. to dul. yel. fluor. No cut; v. sli. trs. (2 pieces) gl. yel. fluor. w/ tan oil st. when stove dried good. milky cut; v. widely scattered v. fin. micro-pp. por. w/ possible intercaly por.

4574-4607 Lms. lt. to med. gray, tanish IP's to tan; crypto. to v. u. xlu.; trs. phantom oolitic to tan. oolitic; trs. sub-sucro, sub-sucro packstn. & sli. trs. sub-l. thogu.; dul. lt. yel. to fol. chlk; No cut; No Vis for w/ sli. trs. chert gray. to tan, opaque

Lms similar 4574-4607 w/ trs. to hwy. trs. chlk - wht. to cream.

Sh. v. drk gray to black-carb
 Lms. lt. gray to tan; crypto. to v. u. xlu.; sub-sucro & packstn.; trs. oolitic dul. yel. fluor.; No cut; No Vis for
 Lms. hwy. trs. to abn. wht. to cream. chlk w/ tan oolites. IP's & cream. to tan; crypto to v. u. xlu.; matrix for rock-chlk, sub-chlk sub-sucro & sli. trs. packstn.; v. dul. lt. yel. fluor. & No cut; trs. pr. oolitic por. scattered trs. pr. micro-pp. por; hwy. trs. chert gray to tan; opaque to sli. trs. tan & znsli.



Vertical text on the left margin, possibly a well name or section identifier, including '4400', '4568', and '4638'.

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Lms. similar to 5155-2210 graining to
Lms. 17 gray to tan; crypto. to v. tu

Xln; sub-clk; sub-succo + pectin;
dul. H. yel. to yel. fluok; No Cut
No Vis Por.; w/ scattered tin chest
off wbt, gray. to tan; opque

TD 5350

7 7/8 inch Bit Info:

#1 New Smith F124
in 1800 out 4990

#2 Rerun Smith F274
in 4990 out 5350 TD

Cir. Points

1. 4018	7. 4650	13. 5030
2. 4029	8. 4930	14. 5050
3. 4068	9. 4950	15. 5060
4. 4176	10. 4970	16. 5080
5. 4280	11. 4990	17. 5277
6. 4618	12. 5010	18. 5350 TD

DST #1 Mazzaton B⁴ 4580-4618

TD weak surface blow

FO v. weak surface blow died 3 min

Rec 5 ft 100% Mud

Tool sample 100% mud w/ spty oil specks

IHP 2191#

IFP 6 to 7 in 15 min

ISIP 14# in 30 min

FFP 6-8# in 30 min

FSIP 16# in 60 min

FHP 2189#

DST #2 Morrow 4954-4990

Packer Failure

DST #3 Morrow 4961-4990

MisRun Tool Plugged

Daily Dalg. Progress

1. 3360	7:AM	7-7-12
2. 3700	7:05 PM	7-7-12
3. 4018	7:00 AM	7-8-12
4. 4400	7:00 AM	7-9-12
5. 4618	7:00 AM	7-10-12
6. 4773	7:00 AM	7-11-12
7. 4990	7:00 AM	7-12-12
8. 4990	7:00 AM	7-13-12
9. 5169	7:00 AM	7-14-12
10. 5350	7:00 AM	7-15-12
11. 5350	7:00 AM	7-16-12
12. 5350	7:00 AM	7-17-12

Mud Info:

Date	7-6	7-7	7-8	7-9	7-10	7-11	7-12	7-13
	8:50A	8:10A	9:15A	9:00A	10:15A	11:40A	1:15P	1:30A
Depth	2729	3402	4029	4489	4618	4858	4990	4990
Wt.	9.6	9.6	9.0	9.3	9.3	9.4	9.4	9.4
Vis	30	30	47	51	64	55	51	68
PV	-	-	15	16	18	17	18	22
YP	-	-	17	20	23	20	14	22
GS	-	-	14/33	14/37	15/45	15/40	16/38	14/32
WL	-	-	8.0	6.4	6.4	7.3	8.0	8.0
Cake	-	-	-	1/20	1/20	1/20	1/20	1/20

7.	4990	7:00 AM	7-12-12
8.	4990	7:00 AM	7-13-12
9.	5169	7:00 AM	7-14-12
10.	5350	7:00 AM	7-15-12
11.	5350	7:00 AM	7-16-12
12.	5350	7:00 AM	7-17-12

Mud Info:

Date	7-6 8:50A	7-7 8:10A	7-8 9:15A	7-9 9:00A	7-10 10:15A	7-11 11:40A	7-12 7:15P	7-13 7:30A
Depth	2729	3402	4029	4489	4618	4858	4990	4994
Wt.	9.6	9.6	9.0	9.3	9.3	9.4	9.4	9.4
Vis	30	30	47	51	64	55	51	68
PV	-	-	15	16	18	17	18	22
YP	-	-	17	20	23	20	14	22
GS	-	-	14/33	14/31	15/45	15/40	16/38	24/62
WL	-	-	8.0	6.4	6.4	7.3	8.0	8.0
Cake	-	-	-	1/32	1/32	1/32	1/32	1/32
pH	7.0	7.0	11.0	10.5	11.0	10.0	10.5	10.5
chl	36000	18000	1900	1900	1800	2400	3000	3100
Ca	hvy.	hvy	40	40	40	40	40	40
LCM	2	2	2	2	1	3	3	3

Date	7-14 4:15P	7-15 7:30A	7-16 1:30P				
Depth	5277	5350	5350				
Wt.	9.5	9.6	9.3				
Vis	52	62	55				
PV	16	20	16				
YP	14	22	20				
GS	18/66	26/68	20/42				
WL	8.4	6.4	8.0				
Cake	1/32	1/32	1/32				
pH	9.5	11.5	10.5				
chl	3800	3800	3500				
Ca	40	40	40				
LCM	3	2	3				

OPERATOR BEREXCO LLC LOCATION 1896FNL & 1862FEL
 LEASE STONE NO. 2-19 SEC. 19 TWP. 26S RNO. 33W
 ELEVATION 2942KB RTD 5350 COUNTY FINNEY STATE KANSAS