

OPERATOR

Company: HERTEL OIL COMPANY LLC
 Address: 704 E 12TH STREET
 HAYS, KANSAS 67601

Contact Geologist: MIKE HERTEL
 Contact Phone Nbr:

Well Name: LARRY # 1
 Location: N2 NE SE NE Sec.15-15s-18w
 Pool: WILDCAT
 State: KANSAS

API: 15-051-26,400-00-00
 Field: UN NAMED
 Country: USA

Scale 1:240 Imperial

Well Name: LARRY # 1
 Surface Location: N2 NE SE NE Sec.15-15s-18w
 Bottom Location:
 API: 15-051-26,400-00-00
 License Number: 33625
 Spud Date: 10/2/2012 Time: 10:00 AM
 Region: ELLIS COUNTY
 Drilling Completed: 10/9/2012 Time: 1:07 AM
 Surface Coordinates: 1635' FNL & 330' FEL
 Bottom Hole Coordinates:
 Ground Elevation: 2005.00ft
 K.B. Elevation: 2013.00ft
 Logged Interval: 2900.00ft To: 3700.00ft
 Total Depth: 3700.00ft
 Formation: LANSING-KANSAS CITY
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: Latitude:
 N/S Co-ord: 1635' FNL
 E/W Co-ord: 330' FEL

LOGGED BY

Company: SOLUTIONS CONSULTING
 Address: 108 W 35TH
 HAYS, KS 67601

Phone Nbr: (785) 639-1337
 Logged By: Geologist Name: HERB DEINES

CONTRACTOR

Contractor: DISCOVERY DRILLING INC
 Rig #: 4
 Rig Type: MUD ROTARY
 Spud Date: 10/2/2012 Time: 10:00 AM
 TD Date: 10/9/2012 Time: 1:07 AM
 Rig Release: 10/9/2012 Time: 11:00 PM

ELEVATIONS

K.B. Elevation: 2013.00ft Ground Elevation: 2005.00ft
 K.B. to Ground: 8.00ft

NOTES

RECOMMENDATION TO RUN PRODUCTION BASED ON POSITIVE STRUCTURE AND RESULTS OF DST # 1.

SUMMARY OF FORMATION TOPS AND CHRONOLOGY OF DAILY ACTIVITY

LARRY # 1

1635' FNL & 330' FEL, NE/4

Sec. 15-15s-19w

2004' GL 2012' KB

<u>FORMATION</u>	<u>SAMPLE TOPS</u>	<u>LOG TOPS</u>
Anhydrite	1212+ 800	1211+ 801
B-Anhydrite	1250+ 762	1247+ 765
Topeka	2976- 964	2984- 972
Heebner Shale	3250-1238	3253-1241
Toronto	3270-1258	3272-1260
LKC	3295-1283	3296-1284
BKC	3540-1528	3544-1532
Conglomerate Sand		3608-1596
Reworked Arbuckle		3636-1624
Arbuckle		3656-1644
RTD	3700-1688	
LTD		3701-1689

SUMMARY OF DAILY ACTIVITY

10-02-12	RU, Spud
10-03-12	1016', drilling, set 8 5/8" to 1219' w/ 450 sxs Common, 2%Gel, 3%CC, plug down 7:00PM, slope ¾ degree, WOC
10-04-12	1219', drill out plug
10-05-12	2292', drilling
10-06-12	2990', drilling
10-07-12	3335', drilling, short trip, DST # 1 3278'-3335' A-C, start DST # 2 3336'-3383' D-G
10-08-12	3409', finish DST # 2, drilling
10-09-12	3700', RTD @3700', short trip, logs, run production casing, RD

DST # 1 TEST SUMMARY

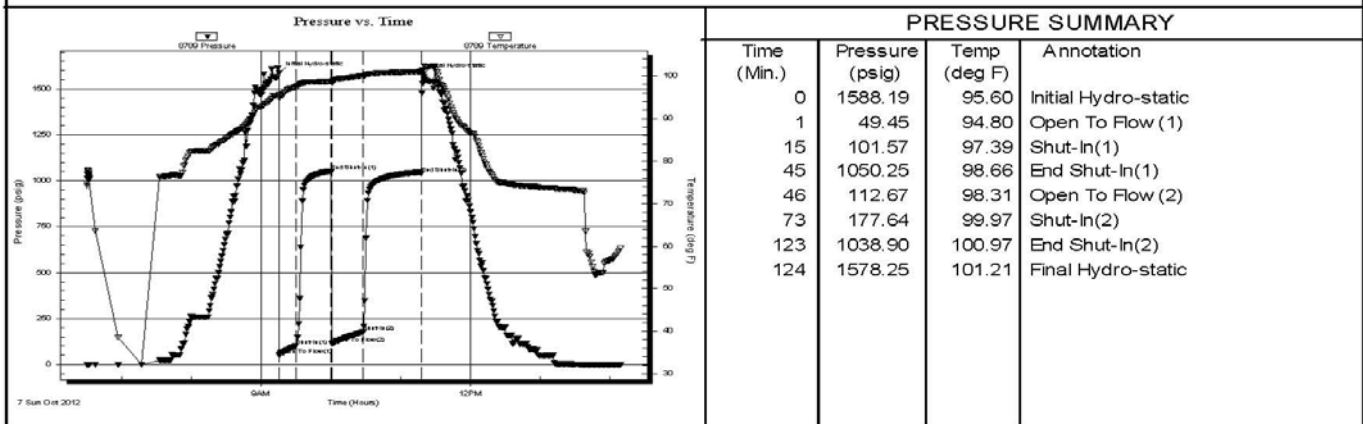
 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT	
	Hertel Oil Company LLC 704 E. 12TH St. Hays KS. 67601 ATTN: Herb	15-15s-19w Ellis KS Larry #1 Job Ticket: 51006 DST#: 1 Test Start: 2012.10.07 @ 06:30:00

GENERAL INFORMATION:

Formation: A-C	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock: ft (KB)	Tester: Cody Bloedorn
Time Tool Opened: 09:15:45	Unit No: 54
Time Test Ended: 14:09:45	Reference Elevations: 2012.00 ft (KB)
Interval: 3278.00 ft (KB) To 3335.00 ft (KB) (TVD)	2002.00 ft (CF)
Total Depth: 3335.00 ft (KB) (TVD)	KB to GR/CF: 10.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Fair

Serial #: 8789 Outside	Capacity: 8000.00 psig
Press@RunDepth: 177.64 psig @ 3317.00 ft (KB)	Last Calib.: 2012.10.07
Start Date: 2012.10.07 End Date: 2012.10.07	Time On Btm: 2012.10.07 @ 09:15:30
Start Time: 06:30:02 End Time: 14:09:45	Time Off Btm: 2012.10.07 @ 11:19:00

TEST COMMENT: 15 - IF- B.O.B. in 2 Minutes.
 30 - IS- 3" blow back in 18 Minutes, died back to a 1" blow.
 30 - FF- B.O.B. in 45 Seconds
 45 - FSI- B.O.B. in 4 Minutes. Died back to a 3" blow with G.T.S.



Recovery			Gas Rates		
Length (ft)	Description	Volume (bbl)	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
124.00	GHOCM, 10%M, 40%G, 50%O	1.17			
186.00	GMCO, 10%G, 20%M, 70%O	2.61			
62.00	GHOCM, 30%M, 30%O, 40%G	0.87			
31.00	GHOCM, 10%G, 30%O, 60%M	0.43			
0.00	2883' of G.I.P.	0.00			

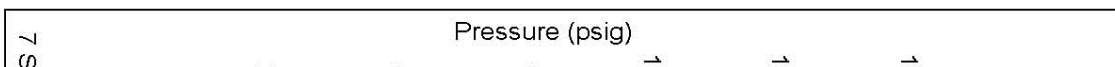
Trilobite Testing, Inc

Ref. No: 51006

Printed: 2012.10.07 @ 22:55:41

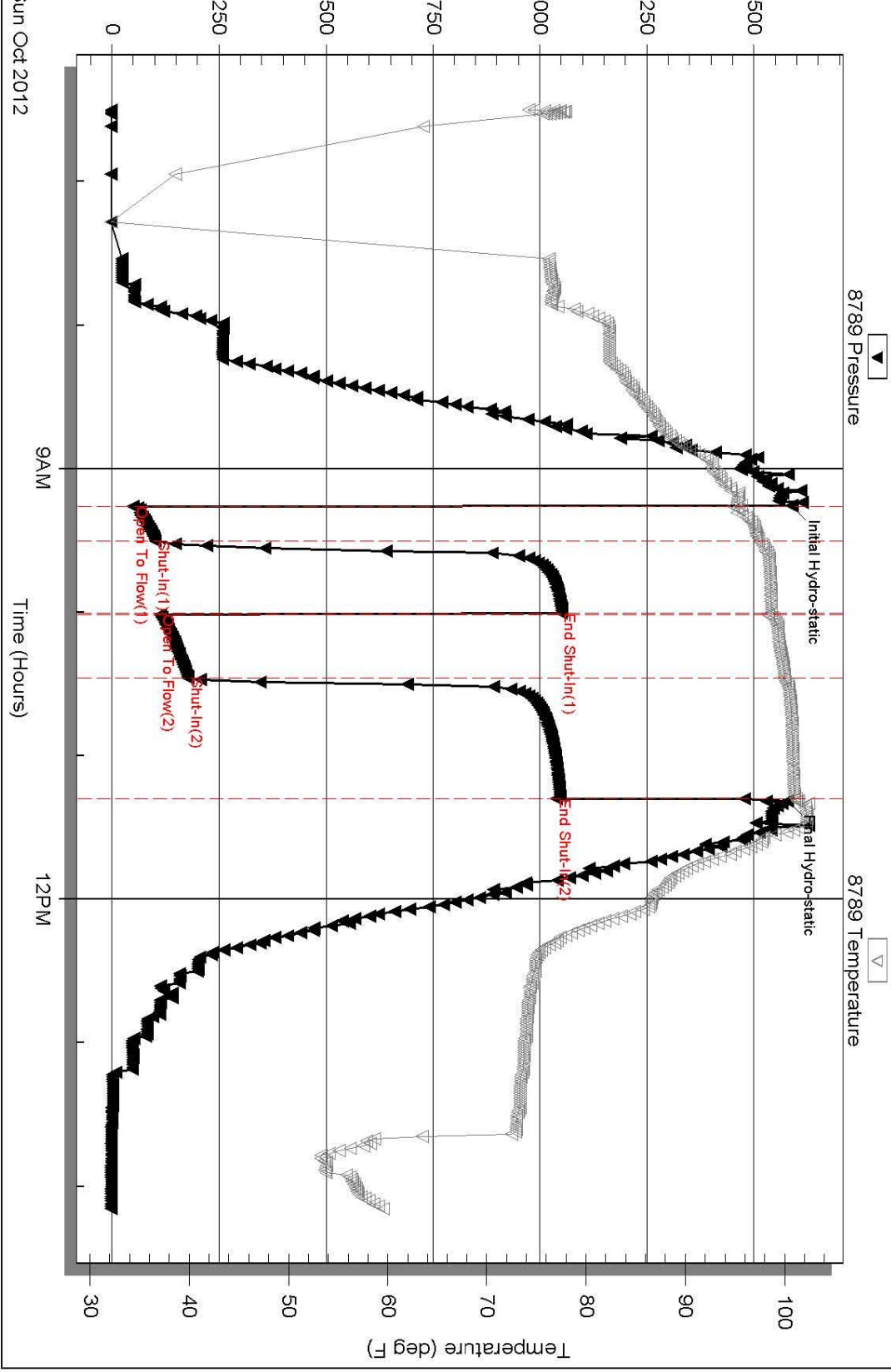
DST # 1 EXPANDED CHART

Trilobite



Series

Pressure vs. Time



DST # 2 TEST SUMMARY



DRILL STEM TEST REPORT

Hertel Oil Company LLC

704 E. 12TH St.
Hays KS, 67601

15-15s-19w Ellis KS

Larry #1

Job Ticket: 51007

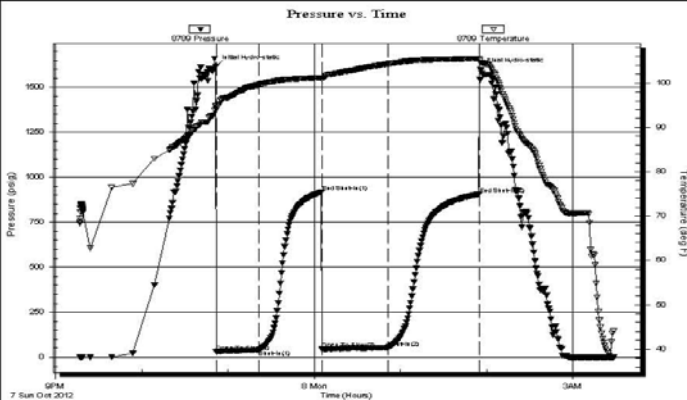
DST#: 2

GENERAL INFORMATION:

Formation: **KC "D-G"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:51:45
 Time Test Ended: 03:28:45
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Cody Bloodorn
 Unit No: 54
 Interval: **3336.00 ft (KB) To 3383.00 ft (KB) (TVD)**
 Total Depth: 3383.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Reference Elevations: 2012.00 ft (KB)
 2002.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8789 Outside
 Press@RunDepth: 53.62 psig @ 3375.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.10.07 End Date: 2012.10.08 Last Calib.: 2012.10.08
 Start Time: 21:17:02 End Time: 03:28:45 Time On Btm: 2012.10.07 @ 22:51:30
 Time Off Btm: 2012.10.08 @ 01:55:45

TEST COMMENT: 30 - IF- 1 1/4" blow.
 45 - IS- No blow back
 45 - FF- 3/4" blow
 60 - FSI- Noblow back

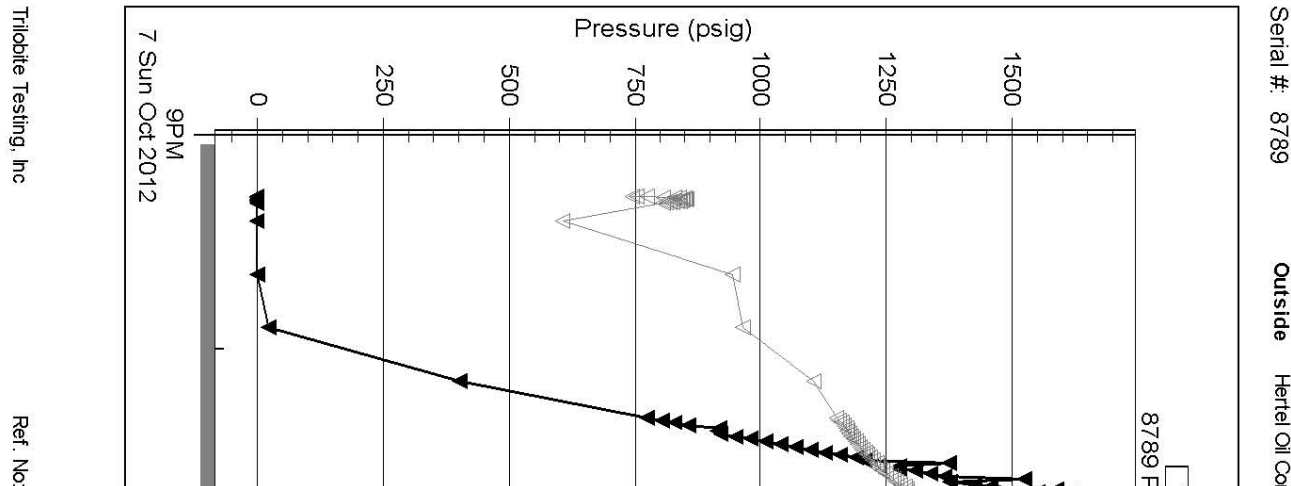


Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1618.11	94.87	Initial Hydro-static
1	30.73	94.07	Open To Flow (1)
30	40.71	99.57	Shut-In(1)
74	919.09	101.20	End Shut-In(1)
74	47.55	100.76	Open To Flow (2)
120	53.62	104.36	Shut-In(2)
184	906.39	105.57	End Shut-In(2)
185	1600.18	104.72	Final Hydro-static

Length (ft)	Description	Volume (bbl)
45.00	Mud - with show of oil	0.61

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

DST # 2 EXPANDED CHART



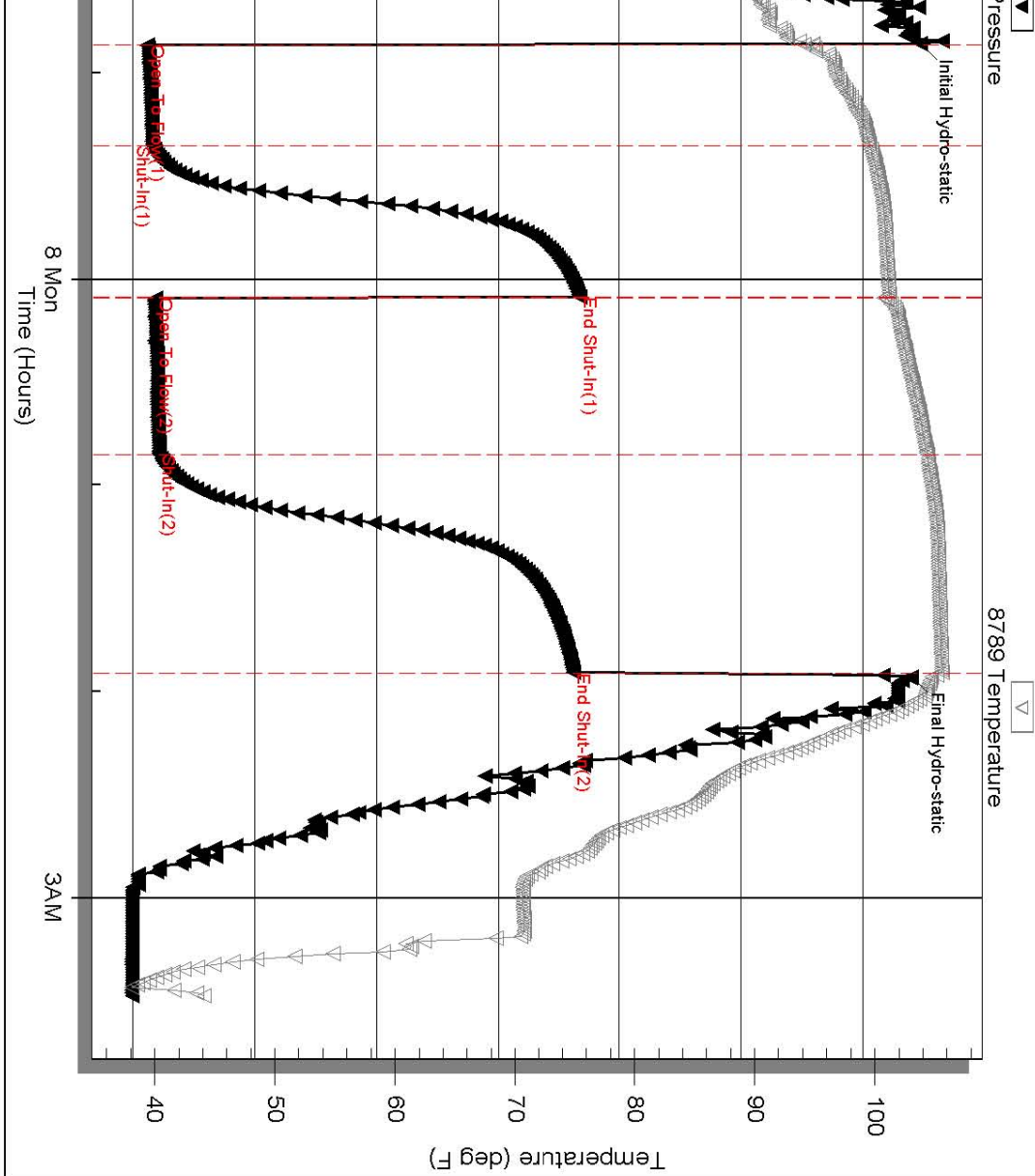
Trilobite Testing, Inc

Ref. No

Serial #: 8789

Outside Hertz Oil Co

Pressure vs. Time



51007

Printed: 2012.10.08 @ 06:39:37

ROCK TYPES

Clystgy	Dolsec	shale, gry	Calc Dol
Congl	Lmst fw<7	Carbon Sh	Dol Lime
Chtcongl	Lmst fw>7	shale, red	Lscongl
Dolprim	shale, grn	Ss	CglSandy

ACCESSORIES

MINERAL

- ▲ Chert, dark
- ≡ Nodules
- P Pyrite
- ◌ Varicolored chert
- △ Chert White

FOSSIL

- Oolite
- ⊕ Oomoldic

OTHER SYMBOLS

DST

- DST Int
- DST alt
- Core

Depth | Intervals
Cored Interval
DST Interval

DST

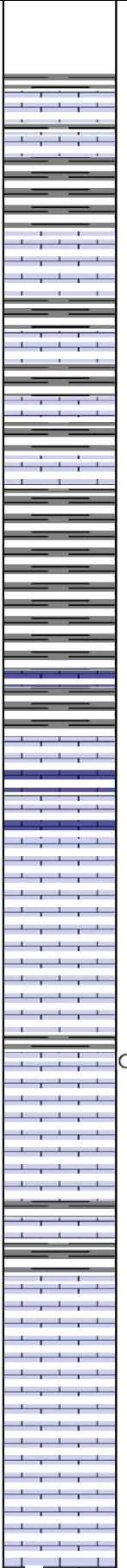
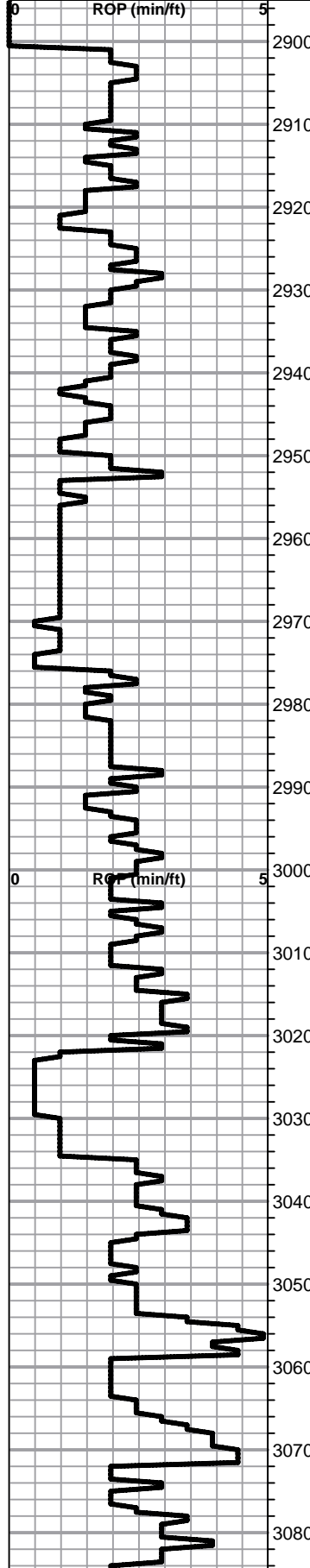
Lithology

Oil Show

Geological Descriptions

1:240 Imperial

1:240 Imperial
ROP (min/ft)



BEGIN 1' DRILL TIME FROM 2900' TO RTD
 BEGIN 10' WET AND DRY SAMPLES FROM 2950' TO RTD

ANHYDRITE SPL TOP 1211+801 ELog 1211+801
ANHYDRITE SPL BASE 1250+762 ELog 1247+765

Lime, brn-gray, fnxln, fossiliferous in brn lime. shaley in part

Lime, brn-gray, fnxln, scattered fusulinids

Lime, med-dark brn, fnxln, slightly fossiliferous

Lime, brn, fnxln, fossiliferous

Shale, lt-med gray, soft blocky

TOPEKA SPL 2976-964 ELog 2984-972

Lime, crm-med brn, fnxln, slightly fossiliferous

Lime, crm-lt brn, fnxln-granular in part, slightly fossiliferous,
 scattered bedded chalk in part

Lime, lt-med brn-grayish brn, fnxln, fossiliferous in part

Lime, lt-med brn-grayish brn, fnxln, slightly fossiliferous

Lime, brnsh gray, fnxln, slightly fossiliferous-fusulinids

Lime, tan-lt brn, granular grading into microoolitic lime with
 chalk Trace of light gassy oil noted in top of zone in a fine
 granular, med brn limestone with interxln porosity.

Lime, lt-med brn-grayish brn, fnxln, slightly fossiliferous

Shale, med gray, soft blocky

Lime, lt-med brn-grayish brn, fnxln-vfxln, slightly
 fossiliferous

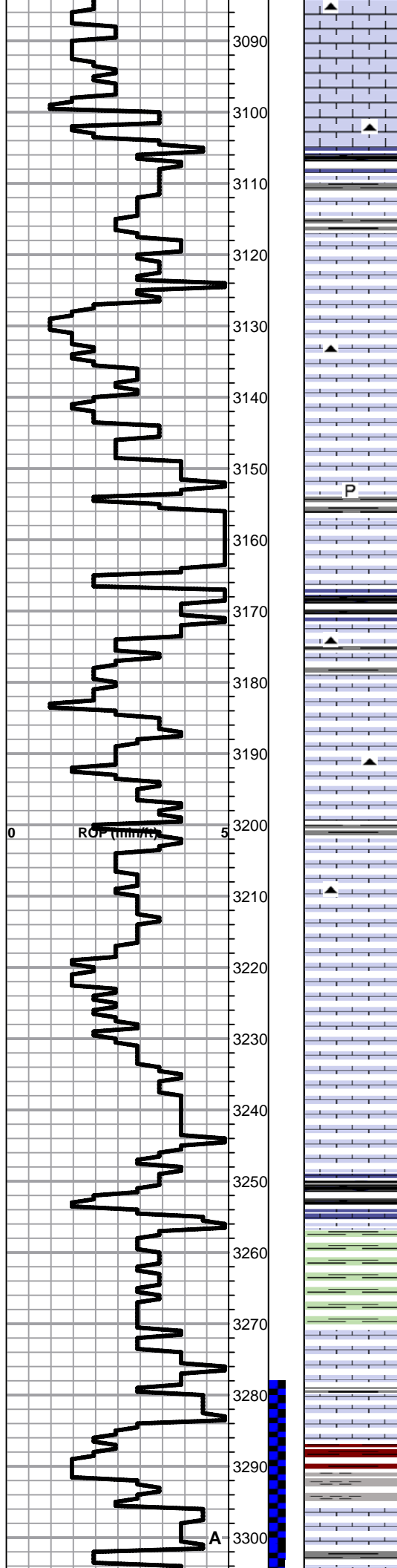
Lime, lt-med brn, fnxln-granular, slight chalk in part, NS

Lime, lt-med brn, fnxln-granular, slightly fossiliferous

Lime lt-med brn-grayish brn, fnxln, slightly fossiliferous,
 fusulinids fossiliferous light gray chert

8 5/8" SURFACE CASING SET
 TO 1219' W/ 450 SXS.
 COMMON, 2%GEL,3%CC
 PLUG DOWN 7:00 PM ON
 10-03-2012

**ZONE NOT PRODUCTIVE IN
 AREA AND IS LIKEY VERY
 THINLY DEVELOPED AND
 NON-COMMERICAL. LOCATED
 ON VERY TOP OF POROSITY
 BREAK**



Lime, med brn-grayish brn, fnxln-granular

Lime, med grn, fnxln-granular, slightly fossiliferous

Shale, gray-black carbonaceous, fissile, blocky

Lime, lt-med brn, fnxln

Lime, tan-lt brn, fn-vfxln, slightly fossiliferous

Lime, crm-lt brn, fnxln-cryptoxln, hard on crush

Lime, lt brn, granular, slight chalk in part, lt white wash, slightly fossiliferous, NS

Lime, med brn-gray, granular-fnxln, gray, fossiliferous chert

Lime, lt-med brn-grayish brn, fn-vfxln, pyritic

Lime, med brn,vfxln

Shale, gray-black carbonaceous, fissile, blocky

Lime, lt-med brn, fn-vfxln

Lime, lt brn-grayish brn, fn-vfxln grading into granular, slightly chalky lime

Lime, lt-med brn, fnxln-granular, slightly chalky with scattered fossiliferous chert

Lime, lt-med brn-grayish brn, fnxln-granular, chalk in part

Lime, lt-med brn-grayish brn, fnxln, slightly chalky with few clumps of sticky chalk

Lime, lt-med brn, granular, slight chalk

Lime, lt-med brn, fnxln grading into vfxln

Lime, lt-med brn, fn-vfxln

HEEBNER SHALE SPL 3250-1238 ELog 3253-1241

Shale, black carbonaceous, fissile
Lime, med brn vfxln.

Shale, lt green, forming soft mud

TORONTO SPL 3270-1258 ELog 3272-1260

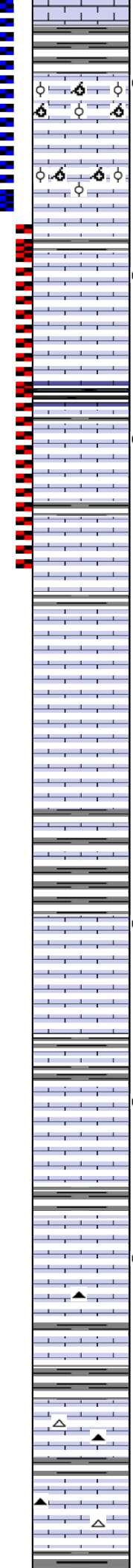
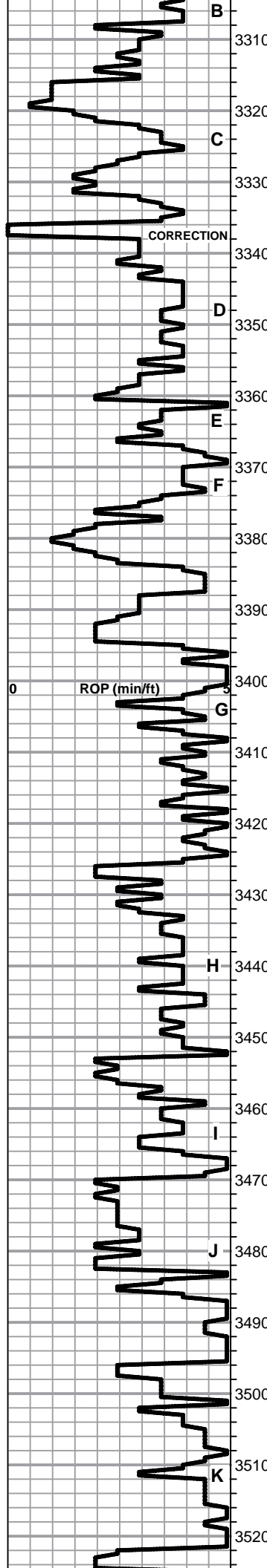
Lime, wht-crm, fn-vfxln, 1 piece with trace of staining

Lime, lt-med brn, vfxln

Shale, reddish brn, soft, lt red wash

LKC SPL 3295-1283 ELog 3296-1284

Lime, med brn, fnxln, fossiliferous in part, lt scattered stain in interfossiliferous lime chip.



Lime, med brn, fnxln

Shale, med gray, calcareous with fossil fragments

Lime, oolitic/oolimoldic with saturated staining, fair odor with good development.

Lime, lt-med brn, fnxln-oolocastic/oolitic, increasing chalk content

Lime, crm-lt brn, mostly fnxln, slight chalk, few chips with lt scattered staining in pinpoint porosity, very lite odor

Lime, tan, fnln

Shale, gray to black carbonaceous

Lime, lt gray, fnxln

Lime, tan, fnxln with scattered pinpoint porosity with lite stain and very lite odor.

Lime, crm-tan, granular with chalky white wash, NS

Lime, crm-tan, fnxln-granular, slightly chalky, NS

Lime, crm-lt brn, fnxln-crypto xln

Lime, lt brn-lt gray, fnxln-crypto xln, chalk in part

Lime, lt brn grading to dark brn, fnxln

Shale, gray, soft blocky

Lime, lt-med brn, fnxln, trace of oil staining, very lite odor in interxln and scattered vuggy porosity

Lime, tan-lt brn, fn-vfxln, bedded chalk in part

Lime, lt brn, fnxln with scattered oolitic lime with scattered staining with interxln and scattered pinpoint vuggy porosity

Lime, lt-med brn, fn-vfxln, bedded chalk in part

Lime, crm-tan-lt brn, fnxln with few chips with dark oil stain, no odor, NFO

Lime, tan-lt brn, fnxln, chalk in part

Lime, crm-lt-med brn, fnxln

Shale, gray-black carbonaceous

Lime, crm-lt brn, fnxln-crypto xln, bedded chalk in part, NS

Lime, crm-lt brn, fnxln-crypto xln

Lime, med brn, fnxln

PERFORATE LOG INTERVAL 3319'-3326'. WATER HAS BEEN FOUND IN SECOND "C" BREAK AND WOULD NOT RECOMMEND PERFORATING INITIALLY

PIPE STRAP @ 3335'
 STRAP 3341.92
 BOARD 3340.54
 DIFF 1.38

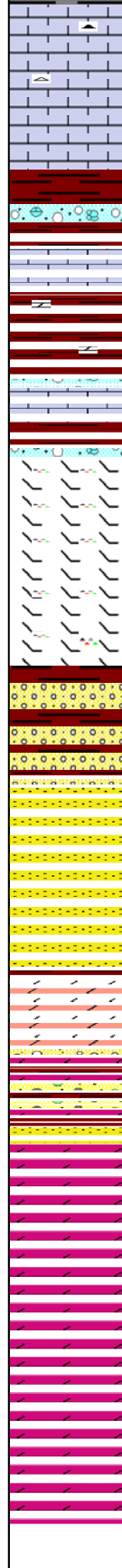
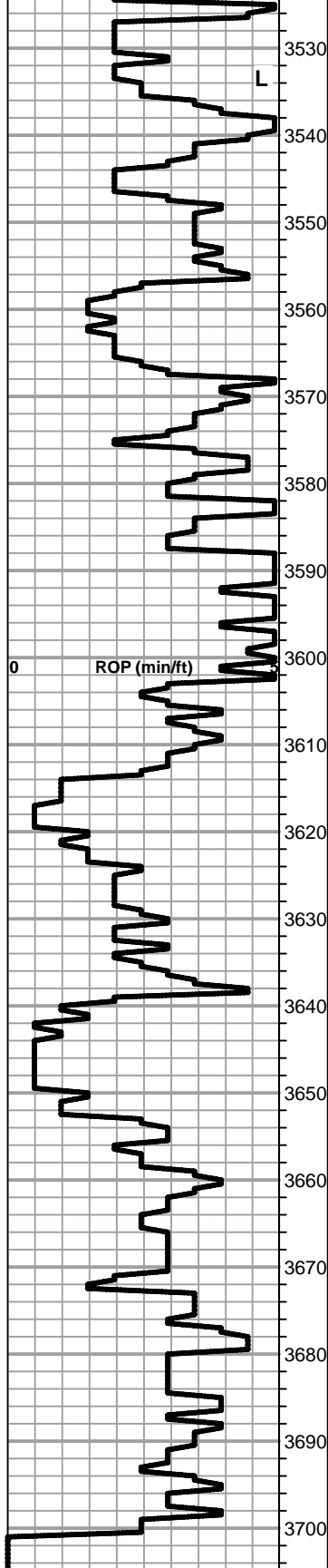
PERFORATE LOG INTERVAL 3344-46, LOG SHOWS ZONE MAY HAVE SOME PERMEABILITY RESTRICTION

DST # 2 3336' TO 3383' SEE HEADER FOR TEST SUMMARY
 PERFORATE LOG INTERVAL 3367-69. ZONE THIN AND MAY HAVE SOME PERMEABILITY RESTRICTION

PERFORATE LOG INTERVAL 3434-36. ZONE THIN AND MAY HAVE SOME PERMEABILITY RESTRICTION

PERFORATE LOG INTERVAL 3458-60. ZONE THIN AND MAY HAVE SOME PERMEABILITY RESTRICTION

PERFORATE LOG INTERVAL 3482-84. ZONE THIN AND MAY HAVE SOME PERMEABILITY RESTRICTION



Lime, crm-lt brn, fnxln-crypto xln, brittle on break, NS

BKC SPL 3540-1528 ELog 3544-1532

Shale, reddish brn, soft blocky
Clastic lime mix with red shale staining

Lime, lt-med brn, fnxln, bedded chalk

Shale, reddish brn-brn, blocky,
Chert nodules, very lite red wash

Lime, med brn, fnxln

Lime, tan-lt brn, dolomitic in part, hard on crush, vari color
cherts including orange, fresh, sharp chert

Lime, lt-med brn, fnxln, hard on crush, cherty

Sandstone, cemented, scattered staining in part, with mix
of recrystallized dolomite becoming less with depth

● Sandstone, grading into fair sorted, subrounded, sand with
saturated staining, lt odor, friable in part with SFO on break

Sandstone as above with increasing cementation with depth

REWORKED ARBUCKLE 3636-1624

Reworked dolomite mixed with cherts, sand and shale,
scattered gilsonite with specks of hvy dark oil, no odor

ARBUCKLE 3656-1644

Dolomite, crm-lt brn, fnxln-granular, NS

Dolomite, lt brn, fnxln-granular, NS

Dolomite, ivory-crm, fnxln-granular

Dolomite, ivory-crm, fnxln-granular

Dolomite, fn-cxln, granular

PERFORATE LOG INTERVAL
3616-22, SWAB TO
DETERMINE IF ZONE WILL
GIVE UP OIL NATURALLY.