



Scale 1:240 Imperial

Well Name: DR UNIT #1  
Surface Location: SE SW SE NE Sec. 21 - 6S - 20W  
Bottom Location:  
API: 15-163-24268-00-00  
License Number: 34903  
Spud Date: 12/5/2014 Time: 1:15 PM  
Region: ROOKS COUNTY KANSAS  
Drilling Completed: 12/11/2014 Time: 9:10 AM  
Surface Coordinates: 2415' FNL & 870' FEL  
Bottom Hole Coordinates:  
Ground Elevation: 2164.00ft  
K.B. Elevation: 2172.00ft  
Logged Interval: 2850.00ft To: 3700.00ft  
Total Depth: 3700.00ft  
Formation: LANSING - KANSAS CITY; ARBUCKLE  
Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

#### OPERATOR

Company: JASPAR COMPANY, INC.  
Address: 1681 LIMESTONE RD. SOUTH  
P.O. BOX 1120  
HAYS, KS 67601  
Contact Geologist: SHANE VEHIGE  
Contact Phone Nbr: (785) 623-6982  
Well Name: DR UNIT #1  
Location: SE SW SE NE Sec. 21 - 6S - 20W  
API: 15-163-24268-00-00  
Pool:  
State: KANSAS Field: TODD NORTHWEST  
Country: USA

#### SURFACE CO-ORDINATES

Well Type: Vertical  
Longitude: -99.5493707  
Latitude: 39.5179343  
N/S Co-ord: 2415' FNL  
E/W Co-ord: 870' FEL

#### LOGGED BY

Company: BIG CREEK CONSULTING, INC.  
Address: 1909 MAPLE  
ELLIS, KS 67637  
Phone Nbr: (785) 259-3737  
Logged By: Geologist Name: JEFF LAWLER

#### CONTRACTOR

Contractor: WW DRILLING, LLC  
Rig #: 12  
Rig Type: MUD ROTARY  
Spud Date: 12/5/2014 Time: 1:15 PM  
TD Date: 12/11/2014 Time: 9:10 AM  
Rig Release: 12/12/2014 Time: 6:30 AM

#### ELEVATIONS

K.B. Elevation: 2172.00ft  
K.B. to Ground: 8.00ft

Ground Elevation: 2164.00ft

**NOTES**


DUE TO ECONOMICAL RECOVERY ON DRILL STEM TEST #1 & #2 DECISION WAS MADE TO RUN 5 1/2" PRODUCTION PIPE AND FURHTER EVALUATE ZONES OF INTEREST WITH PERFORATION.

RESPECTFULLY SUBMITTED,  
JEFF LAWLER

**WELL COMPARISON SHEET**

FORMATION	D&R UNIT #1								LIBERTY OPERATIONS				BAIRD OIL COMPANY, LLC				JONES, SHELBURNE, & FARMER							
	SAMMONS #1				NE SW SE 21-6-20				FISCHLI #2				SE NENW 21-6-20				GARTELL #2				ATTEBERRY #1			
	KB		GL		2164		2191		KB		2206		KB		2159		KB		2186					
	LOG TOPS	SAMPLE TOPS	LOG	LOG	SMPL.	COMP. CARD	LOG	SMPL.	COMP. CARD	LOG	SMPL.	COMP. CARD	LOG	SMPL.	COMP. CARD	LOG	SMPL.	COMP. CARD	LOG	SMPL.				
DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	
ANHYDRITE TOP	1770	402	1774	398	1794	397	+ 5	+ 1	1813	393	+ 9	+ 5	1761	398	+ 4	+ 0	1790	396	+ 6	+ 2				
BASF	1803	369	1807	365	1819	372	- 3	- 7					1790	369	+ 0	- 4								
TOPEKA	3164	-992	3169	-997	3185	-994	+ 2	- 3	3216	-1010	+ 18	+ 13	3158	-999	+ 7	+ 2								
HEEBNER SHALE	3363	-1191	3368	-1196	3385	-1194	+ 3	- 2	3414	-1208	+ 17	+ 12	3358	-1199	+ 8	+ 3	3397	-1211	+ 20	+ 15				
TORONTO	3386	-1214	3391	-1219	3410	-1219	+ 5	+ 0	3435	-1229	+ 15	+ 10	3380	-1221	+ 7	+ 2	3418	-1232	+ 18	+ 13				
LKC	3401	-1229	3406	-1234	3425	-1234	+ 5	+ 0	3449	-1243	+ 14	+ 9	3395	-1236	+ 7	+ 2	3434	-1248	+ 19	+ 14				
BKC	3599	-1427	3606	-1434	3620	-1429	+ 2	- 5	3643	-1437	+ 10	+ 3	3594	-1435	+ 8	+ 1								
GORHAM SAND	3630	-1458	3641	-1469	3664	-1473	+ 15	+ 4					3630	-1471	+ 13	+ 2								
ARBUCKLE	3638	-1466	3649	-1477	3683	-1492	+ 26	+ 15	3676	-1470	+ 4	- 7	3670	-1511	+ 45	+ 34	3740	-1554	+ 88	+ 77				
TOTAL DEPTH	3698	-1526	3700	-1528	3691	-1500	- 26	- 28	3740	-1534	+ 8	+ 6	3686	-1527	+ 1	- 1	3772	-1586	+ 60	+ 58				

**DST #1 TORONTO - LKC A 3367' - 3425'**



**TRILOBITE TESTING, INC.**

**DRILL STEM TEST REPORT**

Jaspar Co. **21-6-20- Rooks Co.**

1681 Limestone Rd S **D&R Unit #1**  
PO Box 1120  
Hays KS 67601  
ATTN: Jeff Lawler

Job Ticket: 60698 **DST#: 1**  
Test Start: 2014.12.09 @ 05:52:50

**GENERAL INFORMATION:**

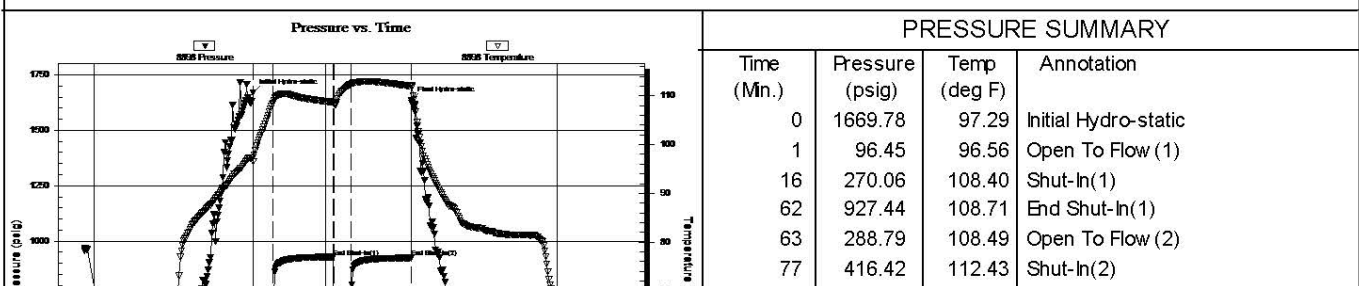
Formation: **Toronto-LKC A**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 08:04:00  
 Time Test Ended: 12:47:20  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Tate Lang  
 Unit No: 77

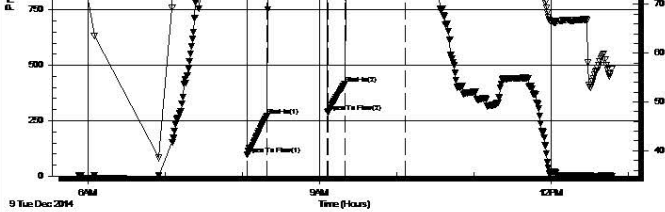
Interval: **3367.00 ft (KB) To 3425.00 ft (KB) (TVD)**  
 Total Depth: 3425.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Reference Elevations: 2172.00 ft (KB)  
 2164.00 ft (CF)  
 KB to GR/CF: 8.00 ft

**Serial #: 8898** **Outside**

Press@RunDepth: 416.42 psig @ 3369.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.12.09 End Date: 2014.12.09 Last Calib.: 2014.12.09  
 Start Time: 05:52:51 End Time: 12:47:20 Time On Btm: 2014.12.09 @ 08:03:50  
 Time Off Btm: 2014.12.09 @ 10:07:00

**TEST COMMENT:** 15-B.O.B. in 1 min  
 45-B.O.B. in 9 mins  
 15-B.O.B. in 1 min  
 45-B.O.B. in 9 mins





123	924.28	111.98	End Shut-In(2)
124	1634.81	112.11	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
180.00	MCOG 10%G 60%O 30%M	1.44
930.00	GO 25%G 75%O	13.05
0.00	990 GIP	0.00

**Gas Rates**

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

Trilobite Testing, Inc

Ref. No: 60698

Printed: 2014.12.09 @ 13:33:20

**LKC C - D 3426' - 3469'**



**DRILL STEM TEST REPORT**

Jaspar Co. **21-6-20- Rooks Co.**  
 1681 Limestone Rd S **D&R Unit #1**  
 PO Box 1120 Job Ticket: 60699 **DST#: 2**  
 Hays KS 67601 Test Start: 2014.12.09 @ 19:29:45  
 ATTN: Jeff Lawler

**GENERAL INFORMATION:**

Formation: **LKC C-D**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 21:28:45  
 Time Test Ended: 01:55:35  
 Interval: **3426.00 ft (KB) To 3469.00 ft (KB) (TVD)**  
 Total Depth: 3469.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Tate Lang  
 Unit No: 77  
 Reference Elevations: 2172.00 ft (KB)  
 2164.00 ft (CF)  
 KB to GR/CF: 8.00 ft

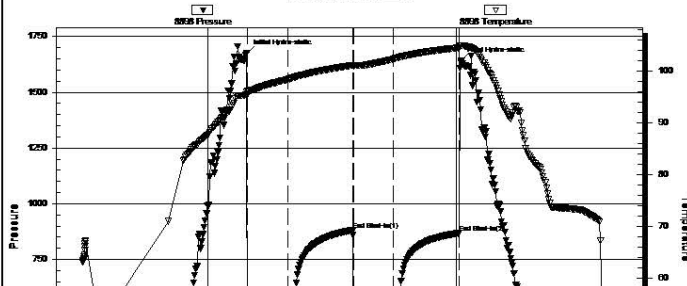
**Serial #: 8898**

**Outside**

Press@RunDepth: 81.58 psig @ 3433.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.12.09 End Date: 2014.12.10 Last Calib.: 2014.12.10  
 Start Time: 19:29:46 End Time: 01:55:35 Time On Btm: 2014.12.09 @ 21:28:35  
 Time Off Btm: 2014.12.10 @ 00:03:24

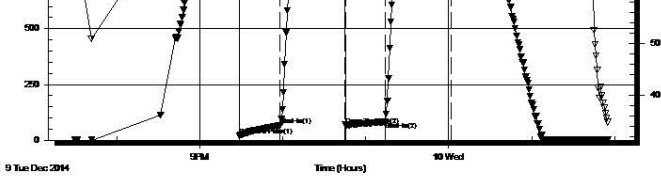
TEST COMMENT: 30-B.O.B. in 27 mins  
 45-Weak surface blow built to 1/4 in  
 30-B.O.B. in 21 mins  
 45-Weak surface blow built to

**Pressure vs. Time**



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1675.10	96.10	Initial Hydro-static
1	18.61	95.26	Open To Flow (1)
30	66.13	98.38	Shut-In(1)
76	880.22	101.10	End Shut-In(1)
77	68.82	100.99	Open To Flow (2)
106	81.58	102.31	Shut-In(2)
154	868.16	104.51	End Shut-In(2)



155	1639.81	104.93	Final Hydro-static
-----	---------	--------	--------------------

**Recovery**

Length (ft)	Description	Volume (bbl)
60.00	SGOCM 5%G 15%O 80%M	0.30
60.00	GOCM 5%G 40%O 55%M	0.30
30.00	MCGO 20%G 40%O 40%M	0.42
10.00	GO 10%G 90%O	0.14
0.00	140 GIP	0.00

**Gas Rates**

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

\* Recovery from multiple tests

Trilobite Testing, Inc

Ref. No: 60699

Printed: 2014.12.10 @ 08:20:25

**DST #3 LKC J - K 3563' - 3600'**



**DRILL STEM TEST REPORT**

Jaspar Co. **21-6-20- Rooks Co.**  
 1681 Limestone Rd S **D&R Unit #1**  
 PO Box 1120 Job Ticket: 60700 **DST#: 3**  
 Hays KS 67601 Test Start: 2014.12.10 @ 19:50:08  
 ATTN: Jeff Lawler

**GENERAL INFORMATION:**

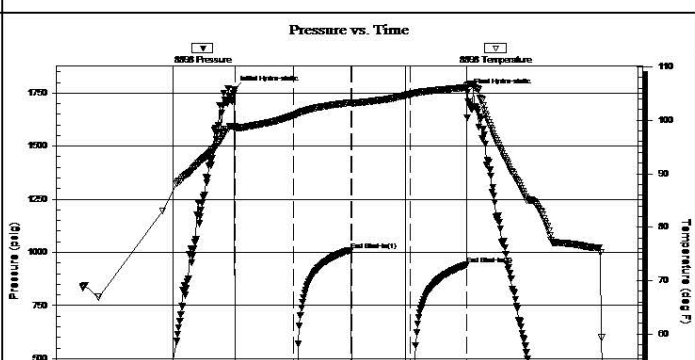
Formation: **LKC J&K**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 21:47:48  
 Time Test Ended: 02:42:58  
 Interval: **3563.00 ft (KB) To 3600.00 ft (KB) (TVD)**  
 Total Depth: 3600.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Tate Lang  
 Unit No: 77  
 Reference Elevations: 2172.00 ft (KB)  
 2164.00 ft (CF)  
 KB to GR/CF: 8.00 ft

**Serial #: 8898**

**Outside**

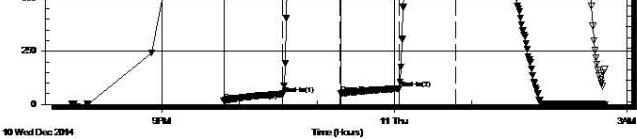
Press@RunDepth: 73.56 psig @ 3565.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.12.10 End Date: 2014.12.11 Last Calib.: 2014.12.11  
 Start Time: 19:50:09 End Time: 02:42:58 Time On Btm: 2014.12.10 @ 21:47:38  
 Time Off Btm: 2014.12.11 @ 00:48:08

TEST COMMENT: 45-Fair blow built to 4 in  
 45-Dead no blow back  
 45-Weak surface blow built to 2 1/2 in  
 45-Dead no blow back



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1767.40	98.93	Initial Hydro-static
1	18.01	98.29	Open To Flow (1)
46	49.36	100.94	Shut-In(1)
91	1007.82	103.36	End Shut-In(1)
91	51.91	103.15	Open To Flow (2)
136	73.56	104.88	Shut-In(2)
180	942.54	106.14	End Shut-In(2)
181	1753.15	106.47	Final Hydro-static



### Recovery

Length (ft)	Description	Volume (bbl)
120.00	SMCW 10%W 90%M	0.60

\* Recovery from multiple tests

### Gas Rates

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

Trilobite Testing, Inc

Ref. No: 60700

Printed: 2014.12.11 @ 08:27:38

### ROCK TYPES

Dolprim	shale, grn	Carbon Sh	Arg/Shale	Lscongl
Lmst fw7>	shale, gry	shale, red	Ss	

### ACCESSORIES

#### MINERAL

↙ Dolomitic

### OTHER SYMBOLS

#### MISC

- Daily Report
- Digital Photo
- Document
- Folder
- Link
- Vertical Log File
- Horizontal Log File
- Core Log File
- Drill Cuttings Rpt

#### DST

- DST Int
- DST alt

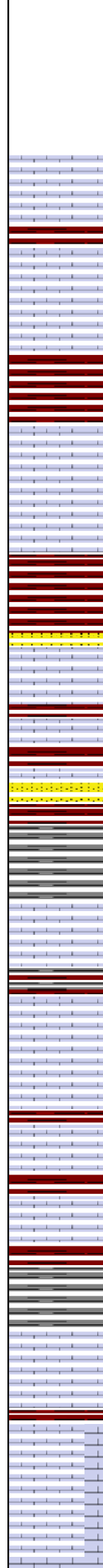
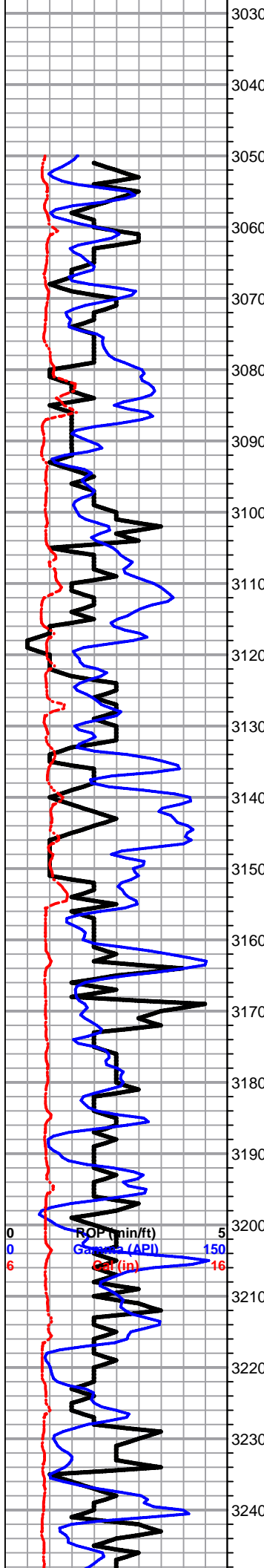
Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)

Curve Track #1	Depth   Intervals	DST	Lithology	Oil Show	Geological Descriptions	Curve Track #3
ROP (min/ft) Gamma (API) Cal (in)	Cored Interval DST Interval					
1:240 Imperial 0 ROP (min/ft) 5 0 Gamma (API) 150 6 Cal (in) 16	3010				<b>1' DRILL TIME THROUGH THE ANHYDRITE FROM 1750' - 1820'</b> <b>1' DRILL TIME FROM 3050' - RTD</b> <b>10' WET/DRY SAMPLES FROM 3100' - RTD</b>  <b>GEOLOGICAL SUPERVISION BY JEFF LAWLER FROM 3100' - RTD</b>	1:240 Imperial
	3020					

**DRILLER'S ANHYDRITE TOP 1774' (+398) E-LOG 1770' (+402)**  
**DRILLER'S ANHYDRITE BASE 1807' (+365) E-LOG 1803' (+369)**

**SAMPLE DESCRIPTION AND LITHOLOGY REPRESENTATIVE OF LAGGED SAMPLES**

**\*\*NOTE: THERE IS AN ~4' - 6' UPHOLE CORRECTION TO CORRELATE DRILL TIME TO POROSITY LOG CURVES\*\***

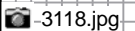


Sh- Maroon Gray Lm Green, gummy wash, silty & calcareous, silty & soft

Lm- Cream Tan, VFXLN Vf Grn, dense, well cemented, trashy high-energy mix, poor vis. porosity, some mud supported matrix

Sh- Maroon Gray Lm Green, abundant sl sandy gummy wash

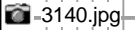
Ss- Dove Gray, Fn Grn, friable, sl unconsolidated, well sorted, sub-angular, spkld w/ glauconite, LT STN, FR SFO UPON CRUSH, FR ODR (many pcs)



Lm- Black Drk Gray, VF-FXLN, dense, well cemented trashy high-energy bioclastic w/ XLN porosity,

Lm- Cream Off White, VFXLN & Vf Grn, dense, sl fsl, poorly dev. w/ sctrd micro XLN & XLN porosity, some chalky mud supported matrix, barren

Ss- Frosted Gray, Vf Grn, loosely cemented, semi-friable, micaceous, spkld w/ glauconite, DRK SAT STN, HVY FR O, STRNG ODR, MUCH FREE FLOATING OIL IN WET CUP (6-8 pcs)



Lm- Drk Gray, FXLN, trashy high-energy fsl w/ bioclastics, dense XLN & sctrd secondary recrystallization porosity

Sh- Maroon Gray Lm Green, gritty & earthy, gummy wash & soft sandy lime, silty & calcareous lime

**TOPEKA 3169' (-997) E-LOG 3164' (-992)** Drk & Lt Gray Tan, VFXLN, dense trashy high-energy mix w/ fsl fragments, dense XLN & secondary recrystallization porosity, some chalky mud supported matrix

Lm- Cream Off White, VF-FXLN, dense, mostly tight, few w/ sctrd micro XLN porosity, clean & barren

Lm- Cream Gray, mix of VFXLN, dense, well cemented, tight w/ sctrd micro XLN & XLN porosity & trashy high-energy bioclastic mix w/ dense XLN & secondary recrystallization porosity

Sh/Ss- Gray, soft, silty & calcareous, fn grn well cemented Ss, consolidated & sorted, shaley, barren

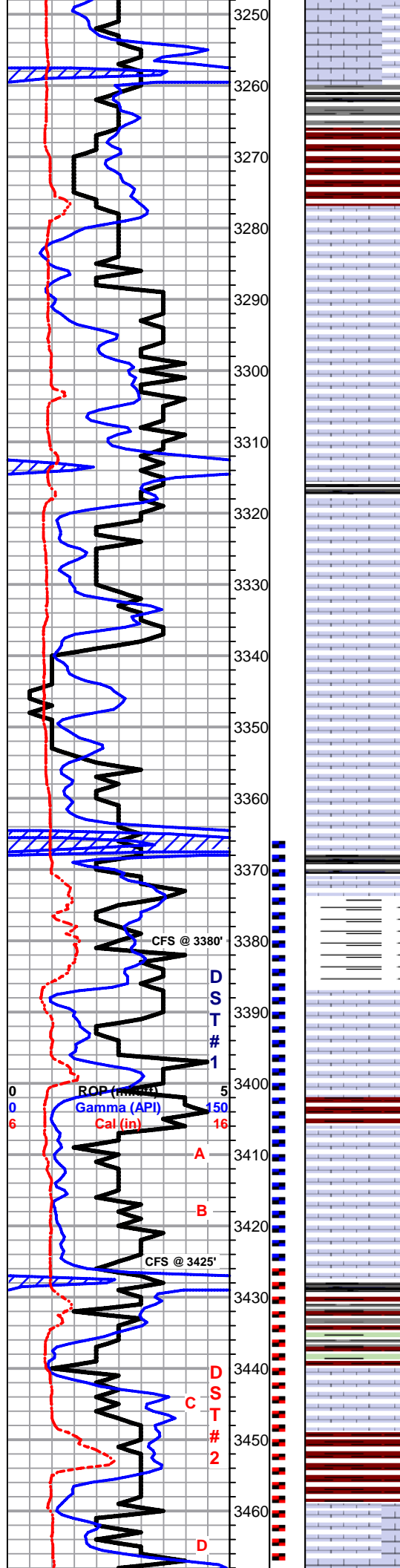
Lm- Cream Off White, VF-FXLN Vf Grn, oolitic mix, sctrd dev., much clear replacement cementation, sctrd XLN & fn ppt interoolite porosity, some w/ poor vis. porosity, some soft white chalk

Lm/Chert- Cream Off White, VF-FXLN, dense, well cemented, mostly tight w/ sctrd micro XLN porosity, few pcs of sl dolomitic Ls, several pcs of bone white/cream fresh bedded chert/cherty Ls w/o vis. porosity, all vry clean & barren

Lm- Lt & Drk Gray, dense, sl trashy w/ fsl fragments, sctrd-dense XLN porosity, some

ROP (min/ft) 5  
 Gamma (API) 150  
 GPR (in) 16





sctrd secondary recrystallization

Sh- Black Maroon Gray Lm Green, fissile & carbonaceous, gritty & soft, silty & calcareous

Sh- Maroon Gray Lm Green, sandy gummy wash

Lm- Cream Tan, VF-FXLN Vf Grn, dense tight mix, poor vis. porosity, some chalky mud supported matrix, all vry clean & barren

Lm- Gray Buff Mustard, VF-FXLN, dense, tight trashy mix, high-energy w/ fsl fragments & bioclastic, dense XLN porosity

Lm- Cream Tan, FXLN, dense, well cemented, sl fsl, poorly dev. w/ dense XLN porosity & sctrd secondary recrystallization porosity

Sh- Black Gray Maroon Lm Green, fissile & carbonaceous, much semi-gummy various colored wash, silty lime

Lm- Cream Buff, VF-FXLN, mix, sl fsl, well cemented w/ sctrd XLN & vry fn ppt porosity & dense, well cemented w/ mostly consistent vry fn ppt porosity throughout, SCTRD LT STN, SL TR FO, STRNG SULFURIC ODR (several pcs)

Lm- Cream Off White, VFXLN, massive, unconsolidated, sctrd crs XLN recrystallization, sctrd micro XLN porosity, barren, sl trashy

Lm- Cream, VFXLN, dense, vry well cemented, grainy sl dolomitic Ls w/ consistent micro XLN porosity throughout, WK SPOTTY STN, NSFO, GD ODR?? (2-3 pcs)

**HEEBNER 3368' (-1196) E-LOG 3363' (-1191)** Sh- Black, abundant fissile & carbonaceous pcs

Sh- abundant gummy argillaceous clumps & sandy lime wash

Sh- A/A w/ gummy maroon wash

**TORONTO 3391' (-1219) E-LOG 3386' (-1214)** Lm- Cream Off White, F-Med XLN, fsl & oolitic, well dev. w/ mostly consistent ppt inter oolite porosity throughout, sctrd recrystallization w/in porosity, DRK SCTRD STN, NSFO, GD SULFURIC ODR, several pcs of golden brown/cream fesh bedded chert/cherty Ls w/ov vis porosity

**LKC 3406' (-1234) E-LOG 3401' (-1229)** Lm- Cream Off White, F-Med XLN, oolitic & fsl, well dev. w/ sctrd fn ppt inter oolite porosity, LT BRWN STN, SL-FR SFO, STRONG SULFURIC ODR (many pcs), FEW PCS W/ GSY BUBBLES WHEN HEATED UNDER LAMP

Lm- Cream Off White, VF-FXLN, sl fsl, sl less dev. w/ sctrd-dense XLN porosity, LT BRWN STN, SL TR FO, OILY SHEEN, STRNG ODR (many pcs)

Lm- Cream Off White, VF-FXLN, sl fsl, sctrd XLN porosity, much barren porosity, some tight w/ min. vis. porosity & small amount of soft white chalk

Sh- Black Maroon Gray Lm Green, soft & carbonaceous, gritty & earthy, silty & dense, soft & calcareous

Lm- Cream Off White, VF-Med XLN, oolitic w/ sctrd fn ppt inter oolite porosity, some w/ XLN porosity, LT BRWN STN, TR FO, GD SULFURIC ODR (possible carryover) (many pcs)

Sh- Maroon Gray Lm Green, gritty & earthy, some gummy maroon & gray wash, silty & calcareous green pcs, som sl unconsolidated & pebbly

Lm- Off White Buff, VF-FXLN, mix of off white FXLN w/ sctrd dev & sctrd XLN & vry fn ppt porosity, LT BRWN STN, TR FO, GD SULFURIC ODR? (possible carryover from DST #1) (several pcs) & buff VFXLN, dense, well cemented, mostly tight w/ poor vis. porosity

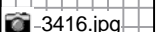
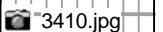
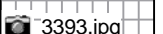
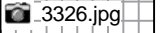
SHORT TRIP SURVEY 3/4 dgr. STRAP +0.14'

DST #1 TORONTO - LKC A 3367' - 3425' 15-45-15-45

1110' TOTAL FLUID 990' GIP

930' GSY OIL (25% G, 75% O) Gr: 37 API 180' MCGO (10%G, 60%O, 30% M)

IFP: 96-270# FFP: 288-416# SIP: 927-924#



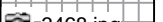
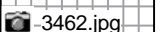
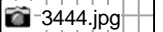
SHORT TRIP SURVEY 3/4 dgr.

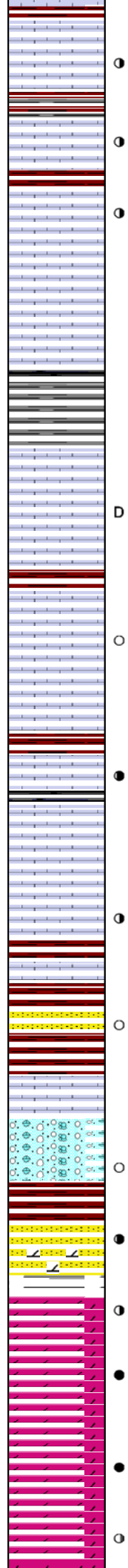
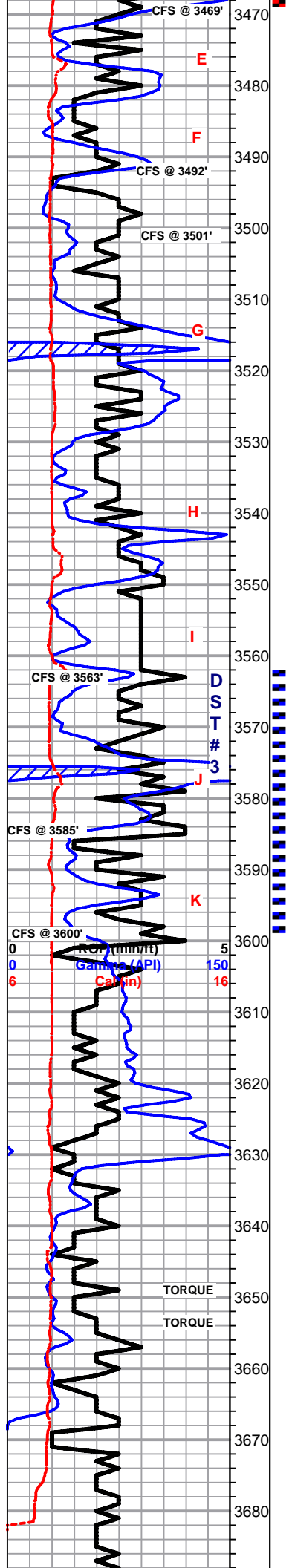
DST #3 LKC J - K 3563' - 3600'

45-45-45-45

150' SWCM w/ OIL SPOTS (10%W, 90%M)

IFP: 18-49# FFP: 52-74# SIP: 1008-943#





**40"**- A/A w/ incr. in off white cream VFXLN, vry well cemented, sctrd XLN & ppt porosity, some w/ crse. recrystallization, recrystallization w/in porosity, LT-DRK SCTRDR STN, SL INCR. IN FR O, ODR A/A, 1-2 pcs of mod. dev. & oolitic w/ sctrd XLN & fn ppt inter oolite porosity, STN & ODR A/A

**3476'**- Lm- White Off White, FXLN, oolitic w/ few fusulinids, mod. well dev. w/ mostly consistent ppt inter fsl & oolite porosity, some sl chalky in part & soft white chalk, LT BRWN STN, TR FO UPON CRUSH, FR SULFURIC ODR (carryover??) (several pcs)

**3487'**- Lm- Cream Off White, F-Med XLN, well dev. oolitic w/ consistent fn ppt & ppt inter oolite porosity, SCTRDR DRK STN, FR GSY FO UPON CRUSH, FR-GD SULFURIC ODR (carryover??) (6-10 pcs), some dense VFXLN, massive & vry well cemented w/ sctrd recrystallization, poor vis. porosity, barren

Lm- Cream Off White, VF-FXLN, mix of mod. dev. oolitic w/ sctrd fn ppt & XLN porosity, SCTRDR LT STN, TR FO, ODR (possible carryover) (4-6 pcs)

Lm- Gray Buff, VF-FXLN Vf Grn, dense mostly tight mix, some loosely cemented & crumbly, some well cemented & lithographic, some mud supported matrix, all barren

Sh- Black Maroon Gray Lm Green, fissile & carbonaceous, gritty & earthy, silty & calcareous

Lm- Tan, VFXLN, dense, well cemented, tight w/ sctrd micro XLN porosity, tight, SCTRDR EDGE GILSONITE DO STN, NO SFO

Lm- Gray Lm Green, VF-FXLN Vf Grn, dense, well cemented, tight, some chalky & w/ some mud supported matrix, barren

Lm- Tan Cream, VF-FXLN, dense, well cemented, mostly tight w/ sctrd vry fn ppt porosity, some chalky in part, SCTRDR LT STN, NO SFO, ODR?? (probable carryover)

Lm- Tan, VFXLN, dense, vry well cemented, tight, some chalky, poor vis. porosity

Lm- Off White, FXLN, fsl & sl oolitic, loosely-well cemented, dense XLN & vry fn ppt porosity, LT BRWN STN, TR FO, SOME SL FLAKEY, STRNG SULFUIC ODR, SLW STRM WET CUT

Sh- Black Gray Maroon, dense & semi-waxy, silty & soft, gritty & earthy

Lm- Off White, VF-MedXLN, oolitic, mod. dev. w/ sctrd ppt inter oolite porosity, some chalky in part & some soft white chalk, SCTRDR DRK STN, TR GSY BUBBLES UPON CRUSH, FR SULFURIC ODR, some w/ much barren porosity

**40"**- Lm- Cream, FXLN, fsl, poorly dev. w/ sctrd XLN porosity, some soft white chalk, all clean & barren

Lm- White, VF-FXLN, dense, semi-crumbly, much soft white chalk, vry clean & barren

**BKC 3606' (-1434) E-LOG 3599' (-1427)** Sh- Maroon Gray Lm Green, gritty & earthy, many gummy clumps & white chalk, unconsolidated w/ organics, silty & calcareous, Ss- Drk Gray, shaley/limey loosely cemented Ss, spkld, & well sorted, WK SPOTTTY STN, NSFO, ? ODR (probable carryover) (4-6 pcs)

Lm- Cream Off White, FXLN, sl fsl, unconsolidated & spkld w/ sediment, sctrd XLN porosity, barren

Lm- Cream Tan, FXLN, dense, sl chalky, fsl fragments, unconsolidated, dense XLN porosity, most loosely cemented & crumbly, SCTRDR LT & DRK STN, TR FO, FR SULFURIC ODR (new odor) (several pcs)

**GORHAM SAND 3641' (-1469) E-LOG 3630' (-1458)** Sand/Dolomite- unconsolidated & poorly sorted, round to sub-angular, some friable, some well cemented w/ dolomite cementation, SCTRDR DRK STN, TR-FR SFO, GD SULFURIC ODR (many various pcs), some white sucrosic to sub-sucrosic FXLN poorly-well dev. dolomite, some w/ vis. euhedral rhombs, sctrd micro XLN to sub-vuggy porosity, STN A/A

**ARBUCKLE 3649' (-1477) E-LOG 3638' (-1466)** Dolomite- White Cream Mustard, VF-Med XLN, mostly well dev. sub-sucrosic to sucrosic w/ vis. euhedral rhombs, well cemented, SCTRDR DRK STN, TR-GD SFO, GD SULFURIC ODR (<80% of 3670' sample), SOME FREE FLOATING OIL IN WET CUP

**3662'**- Dolomite- Cream Tan, VF-FXLN, dense, well cemented, mostly consistent XLN porosity throughout, SAT TO SUB-SAT DRK STN, HVY SFO, SOME BLEEDING, GD ODR, HVY FREE FLOATING OIL ON WET CUP (many pcs), some w/ sctrd barren porosity

**3674'**- Dolomite- A/A, some w/ more sctrd barren porosity, some w/ STN A/A & HEAVIER BLEEDING FO, STRNG ODR, HVY FLOATING FREE OIL IN CUP

**3683'**- Dolomite- Cream, VF-FXLN, dense, well cemented, gritty & grainy, dense micro XLN porosity, mostly barren porosity (<80% of tray), several pcs w/ SCTRDR BK STN, NSEQ, FR ODR (probably carryover)

3468.jpg

3476.jpg

3487.jpg

3496.jpg

DST #2 LKC C-D  
3426' - 3469'  
30-45-30-45

160' TOTAL FLUID  
140' GIP

10' GSY OIL  
(10% G, 90% O)

30' MCGO  
(20%G, 40%O, 40% M)

60' GOCM  
(5%G, 40%O, 55% M)

60' SGOCM  
(5%G, 15%O, 80% M)

IFP: 19-66#  
FFP: 69-82#  
SIP: 880-868#

3540.jpg

3560.jpg

3578.jpg

3596.jpg

3610.jpg

3632.jpg

3642.jpg

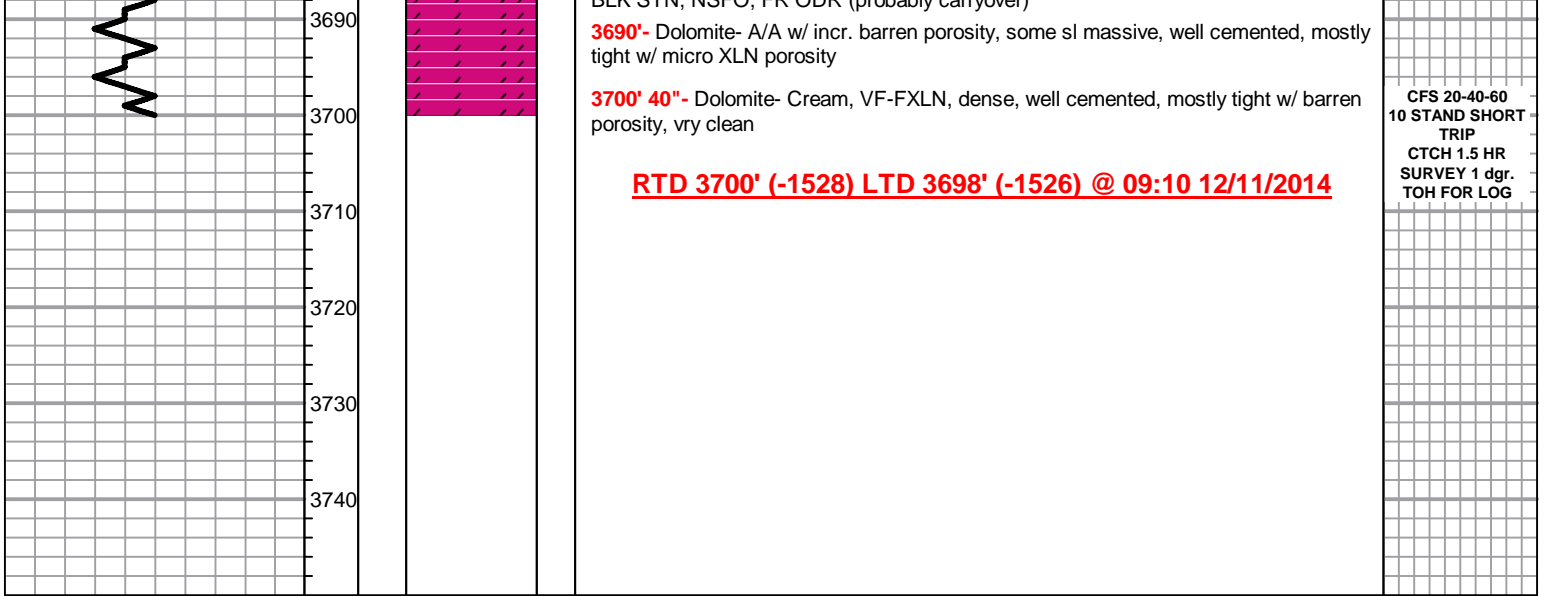
3652.jpg

3662.jpg

3674.jpg

3683.jpg





3118.jpg

A058 1280x1024 2014/12/08 14:08:13 Unit: mm Magnification: 154x 1



3118' x 40







0.5 mm

3326' X 20

















0.5 mm

3444' X 20













0.2 mm

3487' x 40







0.2 mm

3540' X





0.2 mm

3560' X 30





0.2 mm

3578" X 30









0.2 mm

3632' x 35





0.5 mm

3642' x 25









0.5 mm





0.5 mm

3674' x 20



