



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1193787  
OIL & GAS CONSERVATION DIVISION

Form ACO-1  
August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening       Re-perf.       Conv. to ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1193787

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR: \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 7609

Date	11-25-13	Sec.	30	Twp.	14	Range	19	County	Ellis	State	KS	On Location	12:15 pm	Finish	4:00 pm
Lease								Location		buys Sto Anino RD w to 170					
Allen Gansh								Well No.		7					
Contractor								Owner		IN 1/2 w into					
Discovery								To Quality Oilwell Cementing, Inc.		You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.					
Type Job								Charge To		Hertel Oil					
plug								Street		Hertel Oil					
Hole Size								City		State					
7 7/8								T.D.							
Csg.								Depth		The above was done to satisfaction and supervision of owner agent or contractor.					
Drill pipe								Depth		Cement Amount Ordered					
Tbg. Size								Depth		270 60/40 490 gal					
Tool								Shoe Joint		Yu flow					
Cement Left in Csg.								Displace		Common 162					
Meas Line								EQUIPMENT		Poz. Mix 108					
No. Cementer								Helper		Gel. 10					
15								Matt		Calcium					
Bulktrk								Driver		Hulls					
13								Nick		Salt					
Bulktrk								Driver		Flowseal 67#					
Du								Darc		Kol-Seal					
JOB SERVICES & REMARKS								Mileage		Mud CLR 48					
Remarks:								Mileage		CFL-117 or CD110 CAF 38					
Rat Hole								Mileage		Sand					
30 5/8								280		Handling					
Mouse Hole								Mileage		Mileage					
20 5/8								Mileage		Mileage					
Centralizers								Mileage		Mileage					
Baskets								Mileage		Mileage					
D/V or Port Collar								Mileage		Mileage					
5K								Mileage		Mileage					
4th								Mileage		Mileage					
50 sk @ 3780								Mileage		Mileage					
25 sk @ 1420								Mileage		Mileage					
100 sk @ 680								Mileage		Mileage					
40 @ 280								Mileage		Mileage					
10 @ 40 w/c plug								Mileage		Mileage					
Pumptrk Charge								Mileage		Mileage					
plug								Mileage		Mileage					
13								Mileage		Mileage					
Signature								Mileage		Mileage					
Cliff Masfield								Mileage		Mileage					
Tax								Mileage		Mileage					
Discount								Mileage		Mileage					
Total Charge								Mileage		Mileage					



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Hertel Oil Co Inc

**30-14s-19w Ellis KS**

704 E 12th st  
Hays KS, 67601

**Allenbaugh #1**

Job Ticket: 55359

**DST#: 1**

ATTN: Chris Neeley

Test Start: 2013.11.25 @ 02:39:00

## GENERAL INFORMATION:

Formation: **LKC "I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:03:45

Time Test Ended: 08:47:30

Test Type: Conventional Straddle (Initial)

Tester: Cody Bloedorn

Unit No: 53

**Interval: 3590.00 ft (KB) To 3608.00 ft (KB) (TVD)**

Reference Elevations: 2128.00 ft (KB)

Total Depth: 3833.00 ft (KB) (TVD)

2123.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8648 Outside**

Press@RunDepth: 35.39 psig @ 3591.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.11.25 End Date: 2013.11.25

Last Calib.: 2013.11.25

Start Time: 02:39:05 End Time: 08:47:29

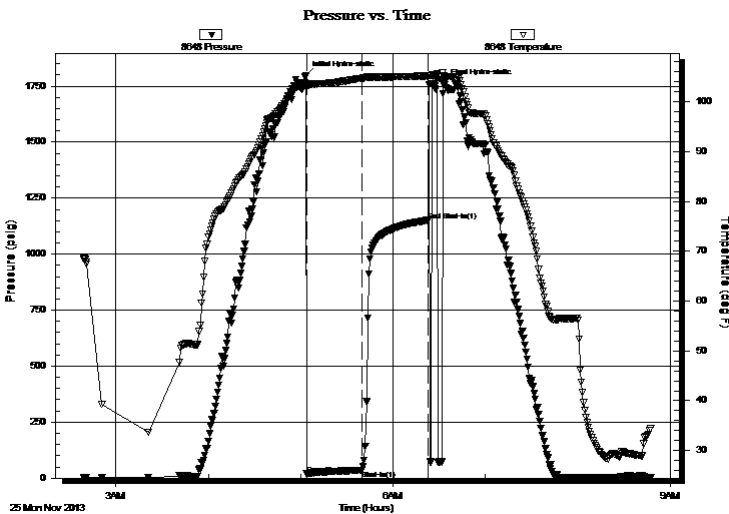
Time On Btm: 2013.11.25 @ 05:03:30

Time Off Btm: 2013.11.25 @ 06:32:45

TEST COMMENT: 45 - IF- 2 1/4" blow

45 - IS- No return

FF- Opened tool, lost mud in hole, pulled tool, reset tool and got 1/4" blow . pulled tool after 5 minutes.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1795.70	103.26	Initial Hydro-static
1	18.91	102.81	Open To Flow (1)
37	35.39	104.71	Shut-In(1)
79	1151.28	105.18	End Shut-In(1)
90	1762.13	105.16	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
112.00	Mud, with spots of oil, 100%M	1.30

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Hertel Oil Co Inc

**30-14s-19w Ellis KS**

704 E 12th st  
Hays KS, 67601

**Allenbaugh #1**

Job Ticket: 55359

**DST#: 1**

ATTN: Chris Neeley

Test Start: 2013.11.25 @ 02:39:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbf

Water Loss: 6.00 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
112.00	Mud, w ith spots of oil, 100%M	1.298

Total Length: 112.00 ft      Total Volume: 1.298 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

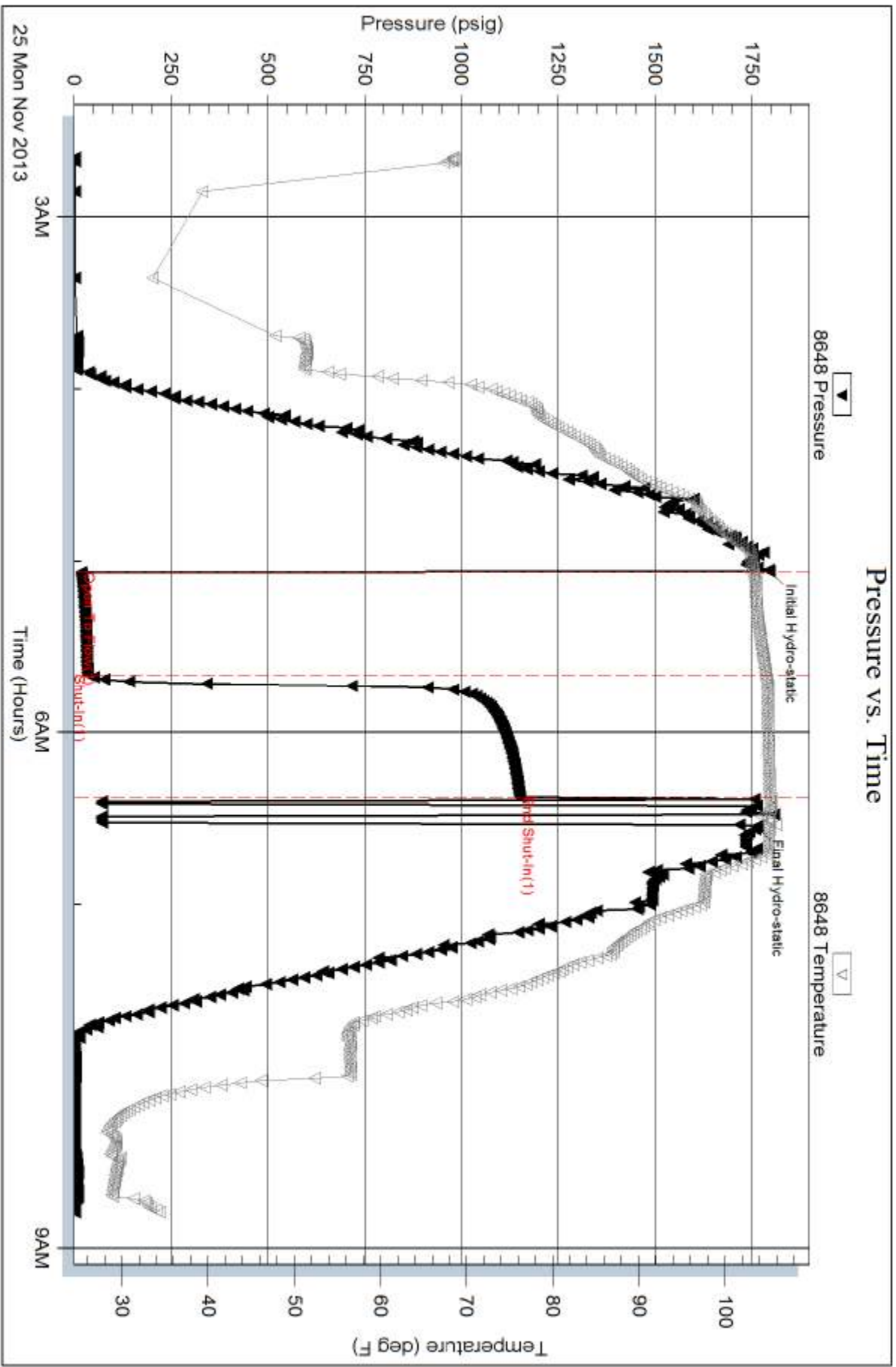
Recovery Comments:

Serial #: 8648

Outside Hentel Oil Co Inc

Allenbaugh #1

DST Test Number: 1



Tribble Testing, Inc

Ref. No: 55359

Printed: 2013.11.25 @ 09:12:04

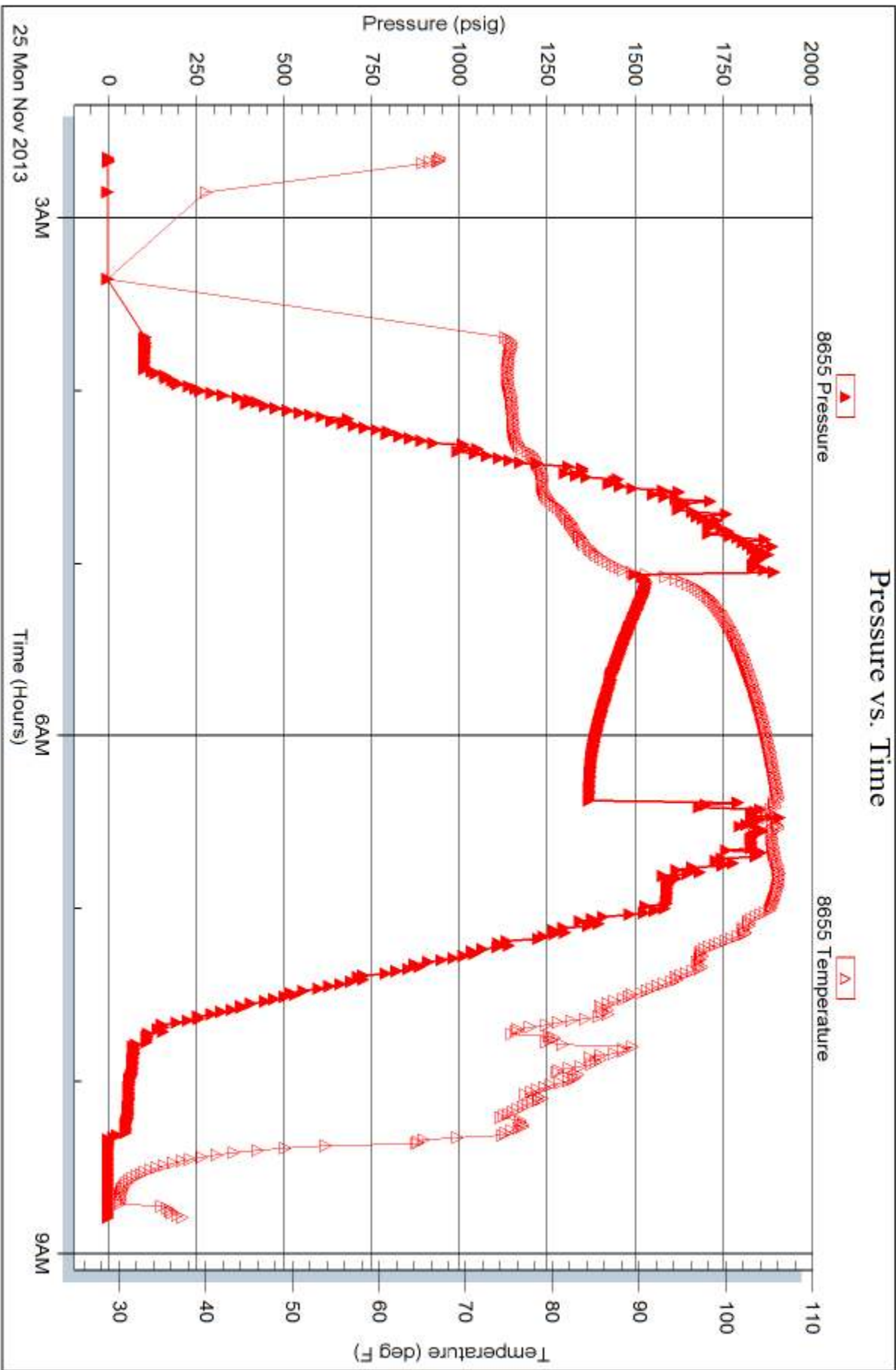


Serial #: 8655

Below (Stratfield) Oil Co Inc

Allenbaugh #1

DST Test Number: 1



**OPERATOR**

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

Contact Geologist: DAVE HERTEL  
 Contact Phone Nbr: 785-628-2445  
 Well Name: ALLENBAUGH #1  
 Location: S2-NW-SW-SE Sec. 30-14S-19W      API: 15-015-26,624-00-00  
 Pool: WILDCAT      Field: UNNAMED  
 State: KANSAS      Country: U.S.A.

**Scale 1:240 Imperial**

Well Name: ALLENBAUGH #1  
 Surface Location: S2-NW-SW-SE Sec. 30-14S-19W  
 Bottom Location:  
 API: 15-015-26,624-00-00  
 License Number: 33625  
 Spud Date: 11/20/2013      Time: 1:00 PM  
 Region: ELLIS COUNTY  
 Drilling Completed: 11/24/2013      Time: 4:30 PM  
 Surface Coordinates: 860' FSL & 2310' FEL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2126.00ft  
 K.B. Elevation: 2134.00ft  
 Logged Interval: 3000.00ft      To: 3833.00ft  
 Total Depth: 3833.00ft  
 Formation: LANSING - KANSAS CITY  
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -99.4744808      Latitude: 38.8005861  
 N/S Co-ord: 860' FSL  
 E/W Co-ord: 2310' FEL

**LOGGED BY**

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

Phone Nbr: 785-639-1337  
 Logged By: Geologist      Name: CHRIS NEELEY

**CONTRACTOR**

Contractor: DISCOVERY DRILLING  
 Rig #: 1  
 Rig Type: MUD ROTARY  
 Spud Date: 11/20/2013      Time: 1:00 PM  
 TD Date: 11/24/2013      Time: 4:30 PM  
 Rig Release: 11/25/2013      Time: 4:15 PM

**ELEVATIONS**

K.B. Elevation: 2134.00ft      Ground Elevation: 2126.00ft  
 K.B. to Ground: 8.00ft

**NOTES**

DECISION TO PLUG WELL WAS BASED UPON LOW STRUCTURAL POSITION, LACK OF DEVELOPED RESERVOIRS AS INDICATED BY GEOPHYSICAL LOG, AND LACK OF A POSITIVE DRILL STEM TEST RESULTS

OPEN HOLE LOGGING PERFORMED BY NABORS COMPLETION AND PRODUCTION SERVICES CO.: MICRO LOG, DUAL INDUCTION LOG, NEUTRON/DENSITY POROSITY LOG

DRILL STEM TESTING BY TRILOBITE TESTING INC.: ONE (1) STRADDLE PERFORMED

**FORMATION TOPS SUMMARY**

FORMATION	ALLENBAUGH #1			PFEIFER EXPLORATIONS, LLC				PETROLEUM MANAGEMENT, INC.			ROSEN OIL COMPANY, INC.			
	GROSS #1			GROSS #1				LILLY JOHNSON #1			ROHR #1 OWWO			
	S2-NW-SW-SE Sec. 30, T14S, R19W			SE-NW-NE-SE Sec. 30, T14S, R19W				SE-SW-NE Sec. 30, T14S, R19W			C-NW-NW Sec. 30, T14S, R19W			
	KB 2134			KB 2134				KB 2149			KB 2161			
	LOG TOPS	SAMPLE TOPS	MICRO LOG		LOG		RAG LOG		LOG		RAG LOG		LOG	
	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	CORR.	DEPTH	DATUM	CORR.	DEPTH	DATUM	CORR.	
ANHYDRITE	1407	+727	1408	+726	1400	+734	-7	1420	+729	-2	1493	+668	+59	
ANHYDRITE BASE	1443	+691	1443	+691	1443	+691	+0	1456	+693	-2	1450	+711	+20	
TOPEKA	3129	-995	3128	-994	3122	-988	-7	3138	-989	+4	3148	-987	+8	
HEEBNER	3395	-1261	3392	-1258	3385	-1251	-10	3404	-1255	-6	3416	-1255	-6	
TORONTO	3418	-1284	3414	-1280	3409	-1275	-9	3432	-1283	-1	3440	-1279	-5	
LANSING K.C.	3439	-1305	3435	-1301	3431	-1297	-8	3451	-1302	-3	3460	-1299	-6	
K.C. BASE	3687	-1553	3685	-1551	3683	-1549	-4	3704	-1555	2	3716	-1555	+2	
MARMATON	3739	-1605	3738	-1604	3726	-1592	-13	3750	-1601	-4	3751	-1590	-15	
ARBUCKLE	3799	-1665	3793	-1659	3762	-1628	-37	3778	-1629	-36	3796	-1635	-30	
RTD			3833	-1699	3820	-1686		3790	-1641		3807	-1646		
LTD	3838	-1704			3822	-1688		3791	-1642		3806	-1645		

**Daily Activity Report**

for


**Allenbaugh #1**

S2-NW-SW-SE of Section 30, Township 14 South, Range 19 West

11/20/13	Rig-up, Spud in: 1:00 pm, Slope: ¼° at 222', 8 5/8" surface casing set at: 222' with 150 sxs common 3% gel/2% CC, WOC
11/21/13	691' drilling
11/22/13	2228' drilling

11/22/13	2220 drilling
11/24/13	3647' drilling, RTD: 3833' at 3:30 pm and CFS, Short trip: 23 stands, CCH: 1 1/2 hours, Slope: 1 1/4°, Logging: Stack micro
11/25/13	Drill stem test #1: 3590'-3608' "I" zone, Well Plugged at 4:00pm

**DST #1 3590' TO 3608' KANSAS CITY "I" ZONE**

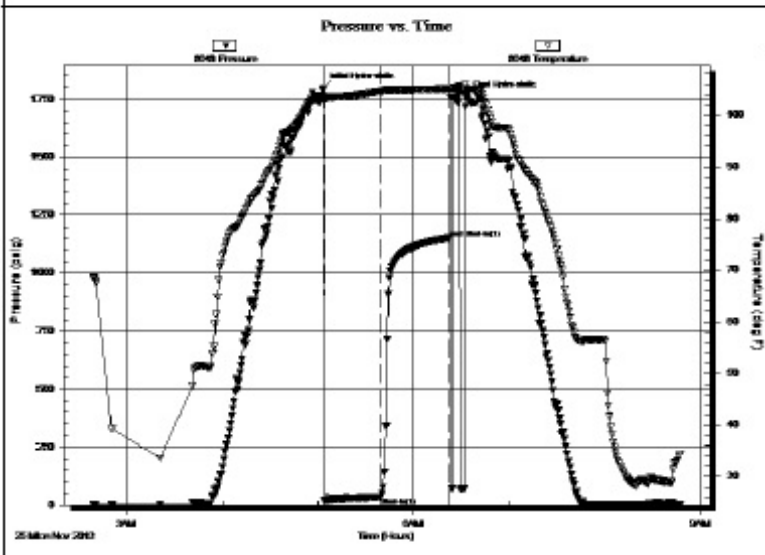
 <b>TRILOBITE TESTING, INC.</b>	<b>DRILL STEM TEST REPORT</b>	
	Hertel Oil Co Inc	30-14s-19w Ellis KS
	704 E 12th st Hays KS, 67601	<b>Allenbaugh #1</b>
ATTN: Chris Neeley	Job Ticket: 55359	DST#: 1
	Test Start: 2013.11.25 @ 02:39:00	

**GENERAL INFORMATION:**

Formation: LKC "I"	Test Type: Conventional Straddle (Initial)
Deviated: No Whipstock: ft (KB)	Tester: Cody Bloedorn
Time Tool Opened: 05:03:45	Unit No: 53
Time Test Ended: 08:47:30	
Interval: 3590.00 ft (KB) To 3608.00 ft (KB) (TVD)	Reference Elevations: 2128.00 ft (KB)
Total Depth: 3833.00 ft (KB) (TVD)	2123.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair	KB to GR/CF: 5.00 ft

<b>Serial #: 8648</b>	<b>Outside</b>		
Press@RunDepth: 35.39 psig @ 3591.00 ft (KB)	Capacity: 8000.00 psig		
Start Date: 2013.11.25	End Date: 2013.11.25	Last Calib.: 2013.11.25	
Start Time: 02:39:05	End Time: 08:47:29	Time On Btm: 2013.11.25 @ 05:03:30	
		Time Off Btm: 2013.11.25 @ 06:32:45	

**TEST COMMENT:** 45 - IF- 2 1/4" blow  
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PRESSURE SUMMARY			
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Recovery		
Length (ft)	Description	Volume (bbl)
112.00	Mud, w ith spots of oil, 100%M	1.30

Gas Rates			
	Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/d)

Trilobite Testing, Inc

Ref. No: 55359

Printed: 2013.11.25 @ 09:12:02

**ROCK TYPES**

Cht vari	Lmst fw7> shale, grn	Carbon Sh	Ss
Dolprim	shale, gry	shale, red	CglSandy
Dol Lime		Shcol	SsPebblely

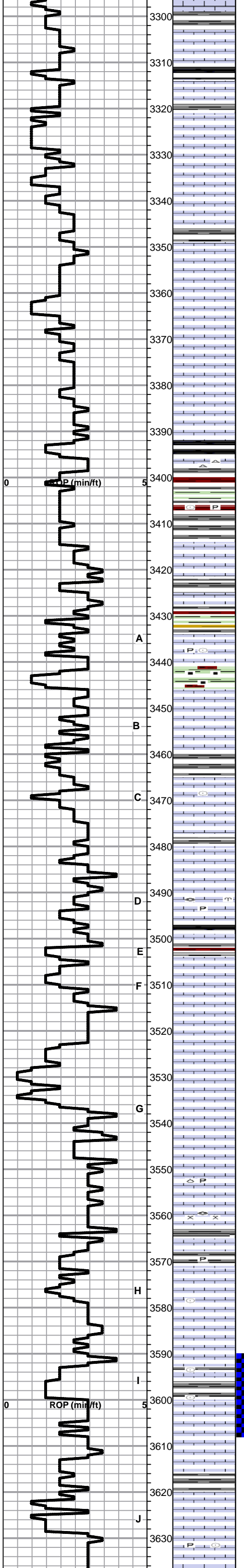
**ACCESSORIES**

<b>MINERAL</b>	<b>FOSSIL</b>	<b>STRINGER</b>
■ Carbonaceous Flakes	∧ Bioclastic or Fragmental	● Conglomerate
▲ Chert, dark	△ Brachiopod	— green shale
∟ Dolomitic	∩ Bryozoa	— red shale
∩ Glauconite	○ Crinoids	— carb shale
P Pyrite	⊙ Gastropod	
* Sandy	⊙ Oolite	
△ Chert White	∩ Pelecypod	
Mc Mica	X Sponge Spicules	
	⊙ Fossilinid	

**OTHER SYMBOLS**

<b>DST</b>
■ DST Int
■ DST alt

Curve Track #1 ROP (min/ft)	Depth   Intervals Cored Interval DST Interval	Lithology	DST	Oil Show	Geological Descriptions	Curve Track #3
<p>1:240 Imperial ROP (min/ft)</p>	<p>5 3000 3010 3020 3030 3040 3050 3060 3070 3080 3090 3100 3110 3120 3130 3140 3150 3160 3170 3180 3190 3200 3210 3220 3230 3240 3250 3260 3270 3280 3290</p>				<p>BEGIN 1' DRILL TIME 3000' TO RTD            BEGIN 10' WET AND DRY SAMPLES FROM 3100' TO RTD  <b><u>ANHYDRITE TOP 1408 (+726)</u></b>  <b><u>ANHYDRITE BASE 1443 (+691)</u></b></p> <p>Shale- gray, argillaceous, micaceous, sticky</p> <p>Lime- dark gray to tan, fxlN, fossiliferous, microporosity, brittle, sharp</p> <p>Lime- lt gray-tan, vfxln matrix, pisolitic packstone</p> <p>Shale- dark gray, hard, waxy, some dove gray and gray-green soft sticky wash</p> <p>Lime- dark brown, mottled, vfxln, trashy, well consolidated</p> <p>Shale- dark gray, thinly laminated, waxy, hard, micaceous, few chips of gray-green and red</p> <p><b><u>TOPEKA 3128 (-994)</u></b></p> <p>Lime- lt tan to cream, vfxln, fossiliferous in part, dissolution porosity backfilled with calcite</p> <p>Lime- lt gray to cream, chalky; lt brown and gray, vfxln to compact, scattered fossil frags, brittle, hard on crush, no visible porosity</p> <p>Lime- med to lt gray, vfxln to compact, hard on crush, slightly chalky margins in part</p> <p>A/A; lt gray to off-white, chalky w/chalky porosity</p> <p>Shale- gray, pyritic, thinly laminated</p> <p>Lime- tan, vfxln, consistent pinpoint porosity, soft on crush, NO SHOW, STAIN, OR ODOR</p> <p>Lime- medium gray, compact, very hard and consolidated; dark gray, moderately consolidated, contains fossils and light colored lime clasts</p> <p>Shale- dark gray with thinly laminated black</p> <p>Lime- lt gray to lt tan, compact, fossiliferous in part, very well consolidated, hard on crush</p> <p>Lime- lt brown to med gray, vfxln to compact, hard on crush</p> <p>Lime- lt gray-tan, grainstone, fxlN, consistent pinpoint porosity, soft on crush, NO ODOR, OIL, OR STAIN</p> <p>Cherty gray mottled matrix, fossiliferous, calcite fossil frags            Lime- A/A, less gritty, chalky</p> <p>Chalk- lt gray to off-white, sticky, some with clasts</p> <p>Lime- lt gray/tan mottled, grainy, fxlN, fossiliferous, consistent pinpoint porosity, chaotic texture</p> <p>Chalk- significant increase in sticky clay balls</p> <p>Lime- lt to med brown, fxlN, fair to good consistent pinpoint porosity</p> <p>Shale- black, carbonaceous, pyritic            Lime- tan, vfxln to compact, hard on crush</p> <p>Lime- lt tan-gray, vfxln to compact, clean, tight, hard on crush</p> <p>Shale- dark gray, waxy, hard; few chips of red-orange</p> <p>Lime- tan, fxlN, gritty, fossiliferous, consistent pinpoint porosity, moderate consolidation, NO SHOW</p> <p>A/A with lt/dark gray mottled, vfxln, grainy, chalky, soft on crush, chalky porosity</p>	<p>1:240 Imperial</p> <p>8 5/8" SURFACE CASING SET TO 222' W/150 SXS COMMON 3%CC2%GEL</p> <p>SLOPE AT 222': 1 1/4 DEGREE</p>



porosity  
 Shale- dark gray with black stringers, few chips red  
 Lime- lt gray, vfxln, soft on crush, consistent pinpoint porosity

Shale- black, hard, laminated, carbonaceous  
 Lime- tan, vfxln to compact, very well indurated

Lime- tan, fxln, gritty, soft on crush, good pinpoint intergranular porosity, FEW DROPS FREE OIL FLOATING IN CUP, GOOD ODOR, QUESTIONABLE SHOW IN CUTTINGS

Lime- tan/gray, chalky, soft on crush, thinly bedded, slightly gritty; chalk wash

Lime- lt gray to cream, compact, tight, clean, very well compacted

Shale- dark gray

Lime- lt gray to cream, vfxln, consistent pinpoint porosity with scattered fair intergranular porosity, hard on crush, FAINT TO FAIR ODOR IN CUP, SCUM OIL FLOATING IN WATER, MINOR AMOUNT OF OIL ON CRUSH, SCATTERED LT BROWN STAINING IN POROSITY

Lime- lt brown w/reddish brown flecks, fxln, sparry, fossil frags, brittle, hard

Lime- gray and brown mottle, fxln, granular, soft on crush

**HEEBNER 3392 (-1258)**

Lime- lt gray, compact, some chalky margins, very hard  
 Shale- few chips A/A; gray-green, sticky argillaceous, few chips hard red, blocky

Shale- brownish-red, ranges from hard and gritty to sticky clay wash

**TORONTO 3414 (-1280)**

Lime- cream, vfxln to compact, chert-like luster, angular pieces, very well consolidated, very hard, clean, barren

Lime- cream with some gray tint from shale boundary, compact, angular chips, very clean, barren, tight

**LANSING/KANSAS CITY 3435 (-1301)**

Lime- cream, vfxln, few chips sporadically fusumoldic, inter/intragranular porosity, DARK SPOTTY TO SATURATED STAIN, MIX OF LIVELY DARK OIL AND DEAD OIL IN TRAY/ON CRUSH, NO ODOR

Shale- green, hard, dark inclusions; sticky red, maroon, purple

Lime- dark gray/tan w/small lt gray ooids, grain supported, compact matrix, grading into vfxln to compact, dark gray, fossiliferous in part

Lime- medium brown, compact, scattered pinpoint to small-scale vuggy porosity, pores stained with lt brown oil, FEW DROPS OIL ON CRUSH, FAINT ODOR IN CUP, FAIR SHOW

Lime- lt tan-cream, compact matrix, well consolidated, oolitic to oolitic, sporadic intergranular porosity W/ LIGHT REDDISH-BROWN STAIN, FAINT ODOR, NO OIL ON CRUSH/NO FREE OIL

Lime- gray to cream with green tint on some chips, fxln to vfxln, sucrosic in part, most chips very well compacted

Lime- A/A

Shale- black, carbonaceous, blocky, slick, dark gray, splintery, waxy, few chips red, green wash

Lime- tan, vfxln to compact, sparry fill, hard, clean, barren

Lime- off-white, fxln to compact, sparry, grading into oolitic/oolitic with good intergranular porosity, some calcite backfill, some chips friable, DARK STAIN, FAIR ODOR, NO OIL ON CRUSH, SOME CHIPS PRODUCE ODOR ON CRUSH

Lime- off-white to lt gray, vfxln, hard, brittle, clean, barren, chalky in part- significant increase in chalk clusters

Lime- tan, fxln, oolitic to oomoldic, rotted appearance in part, clean

Lime- gray-tan, vfxln, clean, barren, tight

Lime- med gray-tan, vfxln to compact

Shale- black, carbonaceous, hard; gray, slivers

Chert- lt gray to dark gray, fossiliferous

Lime- tan to off-white, vfxln, chalky w/pinpoint porosity in part, oomoldic in part, mostly tight

Lime- tan, medfxln to vfxln, cherty in part, fossiliferous to oolitic/moldic, pinpoint to vuggy intergranular porosity, most chips well consolidated, few chips friable, MED BROWN SATURATED STAIN, GOOD ODOR/ODOR ON CRUSH

Shale- gray, thinly laminated, grey-green

Lime- gray, vfxln, tight

Lime- cream, vfxln matrix, cherty in part, oolitic/moldic, fair porosity, SPOTTY STAIN-FAIR TO GOOD, OIL ON CRUSH, GOOD ODOR

Lime- tan, vfxln, scattered pinpoint porosity, limited channel or fracture porosity, chalky in part, LIGHT SURFACE STAINING IN POROSITY, MINIMAL TO NO OIL ON CRUSH

Lime- lt gray to cream, fxln, oomoldic porosity, sucrosic in part, clean, barren

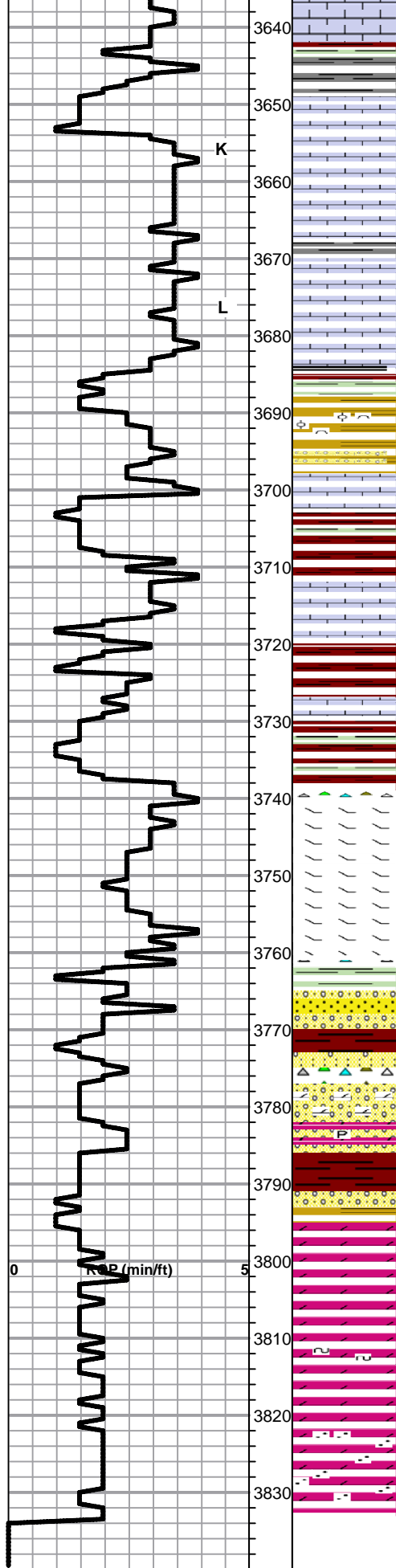
Lime- tan to cream, vfxln, tight and clean, limited backfilled fracture porosity, chalky in part, RARE LIGHT STAIN, NO ODOR, NO OIL ON CRUSH, NFO

DRILL STEM TEST #1  
 3590-3608'  
 45-45

IFP: 18-35  
 ISIP: 1151

RECOVERY  
 112' MUD

WEAK SURFACE BLOW ON FIRST OPEN. NO BLOW ON SECOND OPEN, FLUSHED TOOL AND PACKER FAILED. DECISION TO PULL TOOL



Shale- red, green, gray

Lime- cream, vfxln, oolitic with oomoldic porosity in part, clean, NO SHOW

Lime- brownish-tan, mxln, cherty in part, significant calcite backfill, consistent pinpoint porosity, some grains are very small oolites

Lime- gray, fxln to vfxln, tight, well compacted, sharp angular chips

Lime- cream to white, fxln to vfxln, fossiliferous in part, brittle, chalky in part, clean, barren

Lime- A/A  
**BASE KANSAS CITY 3685 (-1551)**  
 Shale- black carbonaceous, red-orange, gray, green, maroon  
 Lime- gray to lt tan, oolitic and speckled in part, brecciated or conglomeritic in part, fossiliferous, occasional vuggy porosity, mostly tight

Lime- off-white, compact, pinpoint porosity along margins, LT BROWN STAIN IN PORES, NO OIL

Abundant red sticky clay wash, increase in conglomeritic, sandy lime

Lime- oolitic grain supported packstone, tan oolites in brown cement, very compacted, fractures across grains, no visible porosity

Lime- cream with slight red tint, sandy, clear quartz grains, oolitic, mud supported

**MARMATON 3738 (-1604)**  
 cherty lime- orange, bedded with flesh colored, fxln, sucrosic

● Chert- orange, brown, tan, white, bedded, fractured, secondary mineralization, very well consolidated, pinpoint porosity in some chips, DARK STAIN, LIGHT LIVELY OIL ON CRUSH, OIL IN CUP

Lime- tan, fxln, good consistent pinpoint porosity, cherty, grading into cryptoxln chert, also tan, SHOWS A/A in a few chips

Sand- quartz, mxln, clear, subangular, well sorted, moderate sphericity, moderate clear cementation, friable, few pink/dark clasts, little to no shale, chalk or clay, CONSIDERABLE AMOUNT OF FREE OIL BLEEDING FROM SAND, FAINT ODOR, TOTAL SATURATION BY DARK STAIN, LIVELY OIL ON CRUSH/PRESSURE

● **CONGLOMERATE SAND 3768 (-1634)**  
 Sand- peach, white cement, less mature than above, flaky dead oil more abundant, strong Ar buckle-like odor

D  
 D Sand- dolomitic, white to tan, mxln, sucrosic, BLACK, STICKY, DEAD OIL STAIN, LIVELY OIL ON CRUSH

**ARBUCKLE 3795 (-1661)**  
 Dol- tan, mxln, sucrosic, subhedral, clean, hard, NO STAIN/OIL

Dol-A/A

A/A- no observed change in lithology

Dol- slightly darker than above-lt gray-tan, sandy bimodal grain size, clear quartz grains, glauconitic

**RTD 3833 (-1699)**  
**LTD 3838 (-1704)**

STAINING WAS NOTED IN A NUMBER OF LKC CARBONATE BENCHES BUT THE MICROLOG SHOWED NO PERMEABILITY IN ANY OF THE BENCHES.

MICROLOG SHOWED POOR PERMEABILITY DEVELOPMENT IN THIS SAND SECTION

1ST PLUG @3780' W/50 SXS  
 2ND PLUG @1420' W/25 SXS  
 3RD PLUG @680' W/100 SXS  
 4TH PLUG @280' W/40 SXS  
 5TH PLUG @ 40' W/10 SXS  
 RATHOLE W/30 SXS  
 MOUSEHOLE W/15 SXS

SLOPE AT RTD: 1 1/4 DEGREE