

# 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. 3079

Date	Sec.	Twp.	Range	County	State	On Location	Finish
11-21-16	3	12	18	Ellis	KS		3:00pm

Location *1/2 St. Andrews 1/2 Einto*

Lease <i>Arnhold</i>	Well No. <i>1</i>	Owner 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.
Contractor <i>Discovery #51</i>		
Type Job <i>Surface</i>		
Hole Size <i>12 1/4</i>	T.D. <i>253</i>	Charge To <i>Jason Q</i>
Csg. <i>8 5/8</i>	Depth <i>252</i>	Street
Tbg. Size	Depth	City
Tool	Depth	State
Cement Left in Csg. <i>10'</i>	Shoe Joint	The above was done to satisfaction and supervision of owner agent or contractor
Meas Line	Displace <i>15 1/2 BCL</i>	Cement Amount Ordered <i>160 8/20 3/4 2/1 GEL</i>

**EQUIPMENT**

Pumptrk <i>18</i>	No.	Cemente	Common <i>130</i>
		Helper <i>Pa's</i>	
Bulktrk	No.	Driver <i>Mark Rock</i>	Poz. Mix <i>50</i>
		Driver	Gel. <i>3</i>
Bulktrk <i>15</i>	No.	Driver <i>Dwg</i>	Calcium <i>6</i>
		Driver	

**JOB SERVICES & REMARKS**

Remarks:	Hulls
Rat Hole	Salt
Mouse Hole	Flowseal
Centralizers	Kol-Seal
Baskets	Mud CLR 48
D/V or Port Collar	CFL-117 or CD110 CAF 38
<i>8 5/8 on bottom Best Circulation</i>	Sand
<i>Mix Hasky DeNair</i>	Handling <i>169</i>
<i>Cement (Circulation)</i>	Mileage

**FLOAT EQUIPMENT**

Guide Shoe
Centralizer
Baskets
AFU Inserts
Float Shoe
Latch Down
Pumptrk Charge <i>Surface</i>
Mileage <i>10</i>

Quality Oilwell Cementing

X Signature *Cliff Marshall*

Tax
Discount
Total Charge



# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

785-483-2025

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

No. 3083

785-324-1041

Date	11-28-16	Sec.	3	Twp.	12	Range	18	County	Ellis	State	KS	On Location		Finish	7:30
Location													Hays 9 1/2" E into		
Lease	Anhold		Well No. 1			Owner									
Contractor	Discovery #1		To Quality Oilwell Cementing, Inc.												
Type Job	Production String		You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed												
Hole Size	7 7/8		T.D.			3770			Charge To			Jason Oil			
Csg.	5 1/2		Depth			376.5			Street						
Tbg. Size			Depth						City			State			
Tool	Port Collar		Depth			2035			The above was done to satisfaction and supervision of owner agent or contractor						
Cement Left in Csg.	33.42		Shoe Joint			33.42			Cement Amount Ordered 180 10' Salt 5' Galsomite						
Meas Line			Displace			86 1/2 Bbl			500 gal mud clear						
<b>EQUIPMENT</b>													Common 180		
Pumptrk	18	No.	Cement Helper	Chris		Poz. Mix									
Bulktrk		No.	Driver	Nick		Gel.									
Bulktrk	1.5	No.	Driver	Dana		Calcium									
<b>JOB SERVICES &amp; REMARKS</b>													Hulls		
Remarks:											Salt 17				
Rat Hole	30SK		Flowseal												
Mouse Hole	15SK		Kol-Seal 750#												
Centralizers											Mud CLR 48 500 gal				
Baskets											CFL-117 or CD110 CAF 38				
D/V or Port Collar											Sand				
5 1/2 size 376.5. Baffle @ 3732													Handling 200		
Est. circulation pump 500 gal mud clear													Mileage		
Plug Reel hole mouse hole.													<b>FLOAT EQUIPMENT</b>		
Cement 5 1/2 with 135SK.													Guide Shoe Port Collar		
Clear lines & Displace Plug.													Centralizer 8 Turbols		
Lift pressure - 800#													Baskets 2		
Low plug pressure - 1500#													AFU Inserts		
													Float Shoe		
													Latch Down 1		
													Pumptrk Charge Prod String		
													Mileage 10		
													Tax		
													Discount		
													Total Charge		

X Signature *[Handwritten Signature]*



# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

One 785-483-2025  
Cell 785-324-1041

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

No. 8107

Date	1-10-17	Sec.	3	Twp.	12	Range	18	County	Fillis	State	Ks	On Location		Finish	4:00 pm
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Lease Arnold Location Hays 9 1/2 N E 1/4

Well No. 1 Owner To Quality Oilwell Cementing, Inc.

Contractor Co. Tools 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 port collar Charge To Jason Oul

Hole Size 5 1/2 T.D. \_\_\_\_\_ Street \_\_\_\_\_ State \_\_\_\_\_

Csg. 2 1/2 Depth \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

Tbg. Size \_\_\_\_\_ Depth \_\_\_\_\_ The above was done to satisfaction and supervision of owner agent or contractor.

Tool \_\_\_\_\_ Depth \_\_\_\_\_ Cement Amount Ordered 400 80% QMDC 1/4"

Cement Left in Csg. \_\_\_\_\_ Shoe Joint \_\_\_\_\_ 7 gal on side 180 40 4% gel

Meas Line \_\_\_\_\_ Displace \_\_\_\_\_ Common 110

**EQUIPMENT**

Pumptrk	13	No.	Cementer	<u>Dave</u>	Poz. Mix	<u>70</u>
			Helper		Gel.	<u>13</u>
Bulktrk	15	No.	Driver	<u>Stan</u>	Calcium	<u>400 80% QMDC</u>
			Driver			
Bulktrk		No.	Driver	<u>Tim</u>		
			Driver			

**JOB SERVICES & REMARKS**

Remarks: \_\_\_\_\_ Hulls \_\_\_\_\_

Rat Hole \_\_\_\_\_ Salt \_\_\_\_\_

Mouse Hole \_\_\_\_\_ Flowseal 200 H

Centralizers \_\_\_\_\_ Kol-Seal \_\_\_\_\_

Baskets \_\_\_\_\_ Mud CLR 48 \_\_\_\_\_

D/V or Port Collar 12 2035 CFL-117 or CD110 CAF 38 \_\_\_\_\_

circ oil out of hole Sand \_\_\_\_\_

opened port collar mixed Handling 495

4 1/2 sk gel to bottom Mileage \_\_\_\_\_

mixed 3 gel & had circulation **FLOAT EQUIPMENT**

mixed 200 sk shut down Guide Shoe \_\_\_\_\_

mixed 100 sk shut down Centralizer \_\_\_\_\_

mixed 180 sk 40 4% gel Baskets \_\_\_\_\_

to gel circulation cement AFU Inserts \_\_\_\_\_

to surface Float Shoe \_\_\_\_\_

Latch Down \_\_\_\_\_

Pumptrk Charge port collar

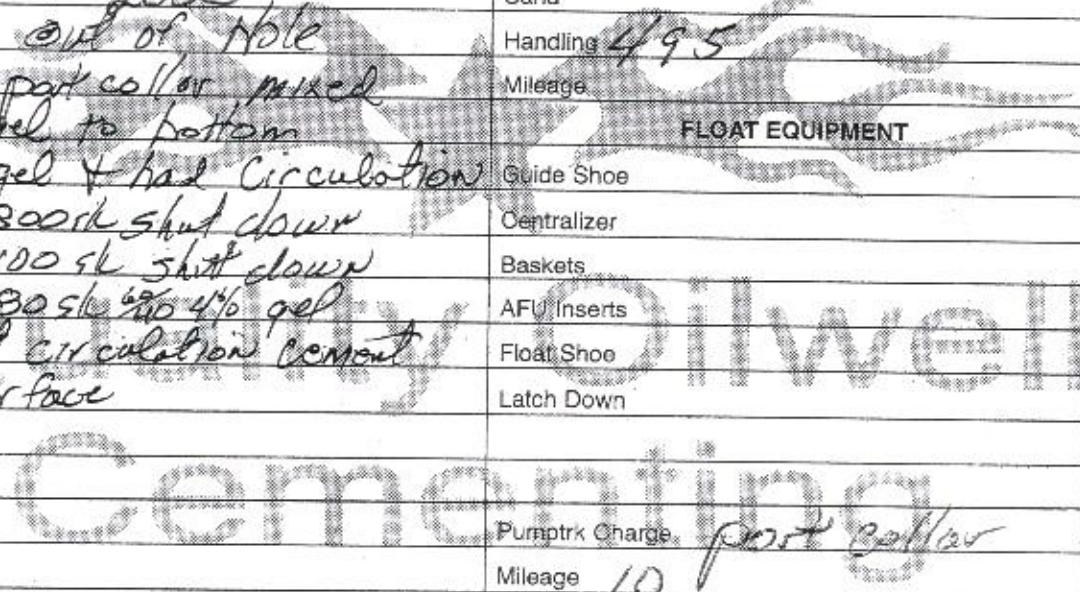
Mileage 10

Tax \_\_\_\_\_

Discount \_\_\_\_\_

Total Charge \_\_\_\_\_

X Signature



Scale 1:240 Imperial

Well Name: ARNHOLD #1  
Surface Location: NW SE NW Section 3 - 12S - 18W  
Bottom Location:  
API: 15-051-26852  
License Number: 33813  
Spud Date: 11/21/2016 Time: 9:00 AM  
Region: ELLIS COUNTY KANSAS  
Drilling Completed: 11/28/2016 Time: 3:38 AM  
Surface Coordinates: 1745' FSL & 835' FWL  
Bottom Hole Coordinates:  
Ground Elevation: 2148.00ft  
K.B. Elevation: 2156.00ft  
Logged Interval: 3000.00ft To: 3770.00ft  
Total Depth: 3770.00ft  
Formation: LANSING - KANSAS CITY; ARBUCKLE  
Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

**OPERATOR**

Company: JASON OIL COMPANY, LLC  
Address: 3718 183RD ST  
P.O. BOX 701  
RUSSELL, KS 67665  
Contact Geologist: SHELDON WEIGEL  
Contact Phone Nbr: (785) 483-4204  
Well Name: ARNHOLD #1  
Location: NW SE NW Section 3 - 12S - 18W  
API: 15-051-26852  
Pool:  
State: KANSAS Field: N/A  
Country: USA

**SURFACE CO-ORDINATES**

Well Type: Vertical  
Longitude: -99.3124891  
Latitude: 39.0354506  
N/S Co-ord: 1745' FSL  
E/W Co-ord: 835' FWL

**LOGGED BY**



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

*2169 McCoy 3626 K*  
*2156 Jason 3620*

**CONTRACTOR**

Contractor: DISCOVERY DRILLING  
Rig #: 1  
Rig Type: MUD ROTARY  
Spud Date: 11/21/2016 Time: 9:00 AM  
TD Date: 11/28/2016 Time: 3:38 AM



Phone Nbr: (785) 259-3737  
 Logged By: GEOLOGIST

Name: JEFF LAWLER

**CONTRACTOR**

Contractor: DISCOVERY DRILLING  
 Rig #: 1  
 Rig Type: MUD ROTARY  
 Spud Date: 11/21/2016  
 TD Date: 11/28/2016  
 Rig Release: 11/28/2016

Time: 9:00 AM  
 Time: 3:38 AM  
 Time: 8:00 PM

**ELEVATIONS**

K.B. Elevation: 2156.00ft  
 K.B. to Ground: 8.00ft  
 Ground Elevation: 2148.00ft

**NOTES**

DUE TO THE ECONOMICAL RECOVERY ON DST #2 THE DECISION WAS MADE TO RUN 5 1/2" PRODUCTION CASING AND FURTHER EVALUATE ZONES OF INTEREST UPON COMPLETION.

RESPECTFULLY SUBMITTED,  
 JEFF LAWLER

**WELL COMPARISON SHEET**

FORMATION	ARNHOLD #1				HOLLOW DRILLING CO				VINCENT OIL COMPANY				P&A 8-56				MCCOY PET. CORP.			
	2156		2148		2183		2153		2153		2153		2198		2189		2189			
	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS		
ANHYDRITE TOP	1436	720	1438	718	1455	730	10	12	1456	717	3	1			1434	735	15	17		
BASE	1468	688	1471	685					1480	673	15	12			1468	701	13	16		
TOPEKA	3145	989	3145	989	3154	969	20	20	3130	977	12	12	3165	968	21	21	3153	984	5	5
HEEDNER	3376	-1220	3378	-1222	3416	-1231	11	9	3388	-1235	15	13	3420	-1222	2	0	3385	-1216	4	6
TORONTO	3397	-1245	3395	-1239					3408	-1235	14	16					3406	-1235	6	4
LKC	3421	-1285	3422	-1266	3450	-1275	10	9	3432	-1279	14	13	3465	-1268	3	2	3430	-1261	4	5
BKC	3661	-1505	3640	-1493	3704	-1510	14	26	3677	-1524	19	31					3670	-1501	4	8
CONGLOMERATE	3672	-1516	3672	-1516	3730	-1515	29	29									3670	-1501	4	8
ARRUCKLE	3691	-1535	3702	-1545									3741	-1543	8	3	3688	-1519	3	3
TOTAL DEPTH	3770	-1614	3770	-1614	3838	-1653	34	39	3730	-1577	37	37	3751	-1551	61	61	3739	-1570	44	48

**DST #1 PLATTSMOUTH 3320' - 3375' 30-45-30-45**



**DIAMOND TESTING**  
 P.O. Box 157  
 HOISINGTON, KANSAS 67544  
 (800) 542-7313  
**DRILL-STEM TEST TICKET**  
 FILE: ARNHOLD1DST1

TIME ON: 12:27

TIME OFF: 19:20

Company JASON OIL COMPANY, LLC Lease & Well No. ARNHOLD #1  
 Contractor DISCOVERY DRILLING, INC., RIG #1 Charge to JASON OIL COMPANY, LLC  
 Elevation 2156 KB Formation PLATTSMOUTH Effective Pay \_\_\_\_\_ Ft. Ticket No. T574  
 Date 11-25-16 Sec. 3 Twp. 12 S Range 18 W County ELLIS State KANSAS  
 Test Approved By JEFF LAWLER Diamond Representative TIM VENTERS

Formation Test No. 1 Interval Tested from 3320 ft. to 3375 ft. Total Depth 3375 ft.

Packer Depth 3315 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.

Packer Depth 3320 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.

Depth of Selective Zone Set \_\_\_\_\_

Top Recorder Depth (Inside) 3308 ft. Recorder Number 5504 Cap. 5,000 P.S.I.

Bottom Recorder Depth (Outside) 3372 ft. Recorder Number 11029 Cap. 5,025 P.S.I.

Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ P.S.I.

Mud Type CHEMICAL Viscosity 48 Drill Collar Length 0 ft. I.D. 2 1/4 in.

Weight 8.8 Water Loss 8.8 cc. Weight Pipe Length 312 ft. I.D. 2 7/8 in.



Packer Depth 3320 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.

Depth of Selective Zone Set \_\_\_\_\_

Top Recorder Depth (Inside) 3308 ft. Recorder Number 5504 Cap. 5,000 P.S.I.

Bottom Recorder Depth (Outside) 3372 ft. Recorder Number 11029 Cap. 5,025 P.S.I.

Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ P.S.I.

Mud Type CHEMICAL Viscosity 48 Drill Collar Length 0 ft. I.D. 2 1/4 in.

Weight 8.8 Water Loss 8.8 cc. Weight Pipe Length 312 ft. I.D. 2 7/8 in.

Chlorides 7,000 P.P.M. Drill Pipe Length 2982 ft. I.D. 3 1/2 in.

Jars: Make STERLING Serial Number \_\_\_\_\_ Test Tool Length 28 ft. Tool Size 3 1/2-IF in.

Did Well Flow? NO Reversed Out NO Anchor Length 23 ft. Size 4 1/2-FH in.

Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. <sup>32' DP IN ANCHOR</sup> Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: WEAK 3/4 INCH BLOW, BUILDING TO 3 1/2 INCHES. (NO BB)

2nd Open: WEAK SURFACE BLOW, BUILDING TO 4 INCHES. (NO BB)

Recovered 170 ft. of DRILLING MUD

Recovered 65 ft. of VHWCM, 49% WATER, 51% MUD

Recovered 235 ft. of TOTAL FLUID

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_ CHLORIDES: 22,000 ppm

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_ PH: 6.0

Remarks: \_\_\_\_\_ RW: .36 @ 58 deg.

WE SLID ABOUT 8-10 FEET WHEN SETTING TOOL, AND IT KEPT LOSING WEIGHT.

TOOL SAMPLE: 64% WATER, 36% MUD

Time Set Packer(s) 2:32 PM A.M. Time Started Off Bottom 5:02 PM A.M. Maximum Temperature 96 deg.

Initial Hydrostatic Pressure \_\_\_\_\_ (A) 1560 P.S.I.

Initial Flow Period \_\_\_\_\_ Minutes 30 (B) 61 P.S.I. to (C) 78 P.S.I.

Initial Closed In Period \_\_\_\_\_ Minutes 45 (D) 891 P.S.I.

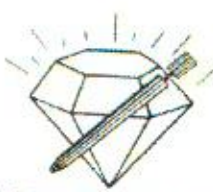
Final Flow Period \_\_\_\_\_ Minutes 30 (E) 82 P.S.I. to (F) 108 P.S.I.

Final Closed In Period \_\_\_\_\_ Minutes 45 (G) 845 P.S.I.

Final Hydrostatic Pressure \_\_\_\_\_ (H) 1547 P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

**DST #2 TORONTO - LKC F 3410' - 3510'**



**DIAMOND TESTING**  
 P.O. Box 157  
 HOISINGTON, KANSAS 67544  
 (800) 542-7313  
**DRILL-STEM TEST TICKET**  
 FILE: ARNHOLD1DST2

TIME ON: 11:41  
 TIME OFF: 20:21

Company JASON OIL COMPANY, LLC Lease & Well No. ARNHOLD #1

Contractor DISCOVERY DRILLING, INC., RIG #1 Charge to JASON OIL COMPANY, LLC

Elevation 2156 KB Formation TORONTO-LKC "F" Effective Pay \_\_\_\_\_ Ft. Ticket No. T575

Date 11-26-16 Sec. 3 Twp. 12 S Range 18 W County ELLIS State KANSAS

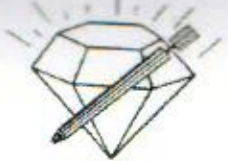
Test Approved By JEFF LAWLER Diamond Representative TIM VENTERS

Formation Test No. 2 Interval Tested from 3410 ft. to 3510 ft. Total Depth 3510 ft.

Packer Depth 3405 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.

Packer Depth 3410 ft. Size \_\_\_\_\_ in. Packer depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.





**DIAMOND TESTING**  
 P.O. Box 157  
 HOISINGTON, KANSAS 67544  
 (800) 542-7313  
**DRILL-STEM TEST TICKET**  
 FILE: ARNHOLD1DST2

TIME ON: 11:41  
 TIME OFF: 20:21

Company JASON OIL COMPANY, LLC Lease & Well No. ARNHOLD #1  
 Contractor DISCOVERY DRILLING, INC., RIG #1 Charge to JASON OIL COMPANY, LLC  
 Elevation 2156 KB Formation TORONTO-LKC "F" Effective Pay \_\_\_\_\_ Ft. Ticket No. T575  
 Date 11-26-16 Sec. 3 Twp. 12 S Range 18 W County ELLIS State KANSAS  
 Test Approved By JEFF LAWLER Diamond Representative TIM VENTERS

Formation Test No. 2 Interval Tested from 3410 ft. to 3510 ft. Total Depth 3510 ft.  
 Packer Depth 3405 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.  
 Packer Depth 3410 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.  
 Depth of Selective Zone Set \_\_\_\_\_

Top Recorder Depth (Inside) 3398 ft. Recorder Number 5504 Cap. 5,000 P.S.I.  
 Bottom Recorder Depth (Outside) 3507 ft. Recorder Number 11029 Cap. 5,025 P.S.I.  
 Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ P.S.I.

Mud Type CHEMICAL Viscosity 68 Drill Collar Length 0 ft. I.D. 2 1/4 in.  
 Weight 8.8 Water Loss 7.2 cc. Weight Pipe Length 312 ft. I.D. 2 7/8 in.  
 Chlorides 5,500 P.P.M. Drill Pipe Length 3072 ft. I.D. 3 1/2 in.  
 Jars: Make STERLING Serial Number \_\_\_\_\_ Test Tool Length 28 ft. Tool Size 3 1/2-IF in.  
 Did Well Flow? NO Reversed Out NO Anchor Length 36 ft. Size 4 1/2-FH in.  
 Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow 1st Open: WEAK 1/2 INCH BLOW, BUILDING, REACHING BOB 8 MIN. (NO BB)  
 2nd Open: WEAK 1/2 INCH BLOW, BUILDING, REACHING BOB 10 1/2 MIN. (WS BB)

Recovered 175 ft. of GAS IN PIPE  
 Recovered 85 ft. of G,SWHOCM, 3% GAS, 22% OIL, 75% MUD  
 Recovered 65 ft. of G,SWHOCM, 2% GAS, 35% OIL, 7% WATER, 54% MUD  
 Recovered 310 ft. of G,W&MCO, 6% GAS, 51% OIL, 24% WATER, 19% MUD  
 Recovered 460 ft. of TOAL FLUID CHLORIDES: 38,000 ppm  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_ PH: 6.0  
 Remarks: RW: .28 @ 54 deg.  
THE BLOW BACK DURING FINAL SHUT-IN DIDN'T LAST THE WHOLD PERIOD.  
TOOL SAMPLE: 4% GAS, 59% OIL, 19% WATER, 18% MUD

Time Set Packer(s) <u>2:43 PM</u>	A.M. P.M.	Time Started Off Bottom <u>5:46 PM</u>	A.M. P.M.	Maximum Temperature <u>97</u> deg.
Initial Hydrostatic Pressure _____	(A)	<u>1591</u> P.S.I.		
Initial Flow Period _____ Minutes	(B)	<u>27</u> P.S.I. to (C)	<u>125</u> P.S.I.	
Initial Closed In Period _____ Minutes	(D)	<u>773</u> P.S.I.		
Final Flow Period _____ Minutes	(E)	<u>130</u> P.S.I. to (F)	<u>218</u> P.S.I.	
Final Closed In Period _____ Minutes	(G)	<u>757</u> P.S.I.		
Final Hydrostatic Pressure _____	(H)	<u>1589</u> P.S.I.		

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

DST #3 ARBUCKLE 3647' - 3705'

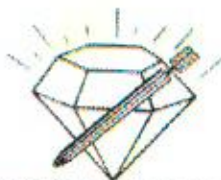


Final Closed In Period \_\_\_\_\_ Minutes 90 (G) 757 P.S.I.

Final Hydrostatic Pressure \_\_\_\_\_ (H) 1589 P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

### DST #3 ARBUCKLE 3647' - 3705'



**DIAMOND TESTING**  
P.O. Box 157  
HOISINGTON, KANSAS 67544  
(800) 542-7313  
**DRILL-STEM TEST TICKET**  
FILE: ARNHOLD1DST3

TIME ON: 14:48

TIME OFF: 21:29

Company JASON OIL COMPANY, LLC Lease & Well No. ARNHOLD #1

Contractor DISCOVERY DRILLING, INC., RIG #1 Charge to JASON OIL COMPANY, LLC

Elevation 2156 KB Formation ARBUCKLE Effective Pay \_\_\_\_\_ Ft. Ticket No. T576

Date 11-27-16 Sec. 3 Twp. 12 S Range 18 W County ELLIS State KANSAS

Test Approved By JEFF LAWLER Diamond Representative TIM VENTERS

Formation Test No. 3 Interval Tested from 3647 ft. to 3705 ft. Total Depth 3705 ft.

Packer Depth 3642 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.

Packer Depth 3647 ft. Size 6 3/4 in. Packer depth \_\_\_\_\_ ft. Size 6 3/4 in.

Depth of Selective Zone Set \_\_\_\_\_

Top Recorder Depth (Inside) 3635 ft. Recorder Number 5504 Cap. 5,000 P.S.I.

Bottom Recorder Depth (Outside) 3702 ft. Recorder Number 11029 Cap. 5,025 P.S.I.

Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_ P.S.I.

Mud Type CHEMICAL Viscosity 54 Drill Collar Length 0 ft. I.D. 2 1/4 in.

Weight 8.7 Water Loss 7.6 cc. Weight Pipe Length 312 ft. I.D. 2 7/8 in.

Chlorides 7,000 P.P.M. Drill Pipe Length 3309 ft. I.D. 3 1/2 in.

Jars: Make STERLING Serial Number \_\_\_\_\_ Test Tool Length 26 ft. Tool Size 3 1/2-FH in.

Did Well Flow? NO Reversed Out NO Anchor Length 26 ft. Size 4 1/2-FH in.

Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: WEAK SURFACE BLOW, BUILDING TO 1 INCH. (NO BB)

2nd Open: VERY WEAK SURFACE BLOW, BUILDING TO 1/4 INCH. (NO BB)

Recovered 20 ft. of HOCM, 46% OIL, 54% MUD

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Remarks: \_\_\_\_\_

Price Job
Other Charges
Insurance
Total

TOOL SAMPLE: 14% OIL, 86% MUD

Time Set Packer(s) 5:28 PM A.M. P.M. Time Started Off Bottom 7:28 PM A.M. P.M. Maximum Temperature 98 deg.

Initial Hydrostatic Pressure \_\_\_\_\_ (A) 1720 P.S.I.

Initial Flow Period \_\_\_\_\_ Minutes 30 (B) 11 P.S.I. to (C) 19 P.S.I.

Initial Closed In Period \_\_\_\_\_ Minutes 30 (D) 808 P.S.I.

Final Flow Period \_\_\_\_\_ Minutes 30 (E) 21 P.S.I. to (F) 23 P.S.I.



Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Remarks: \_\_\_\_\_

	Price Job
	Other Charges
	Insurance
	Total

TOOL SAMPLE: 14% OIL, 86% MUD

Time Set Packer(s) 5:28 PM A.M. P.M. Time Started Off Bottom 7:28 PM A.M. P.M. Maximum Temperature 98 deg.

Initial Hydrostatic Pressure..... (A) 1720 P.S.I.

Initial Flow Period..... Minutes 30 (B) 11 P.S.I. to (C) 19 P.S.I.

Initial Closed In Period..... Minutes 30 (D) 808 P.S.I.

Final Flow Period..... Minutes 30 (E) 21 P.S.I. to (F) 23 P.S.I.

Final Closed In Period..... Minutes 30 (G) 713 P.S.I.

Final Hydrostatic Pressure..... (H) 1718 P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

**ROCK TYPES**

 Chtcongl	 Dolsec	 shale, grn	 Carbon Sh
 Dolprim	 Lmst fw7>	 shale, gry	 shale, red





**ACCESSORIES**

<b>MINERAL</b>	<b>FOSSIL</b>	<b>STRINGER</b>	<b>TEXTURE</b>
• Sandy	◊ Oomoldic	~~~~ Chert	C Chalky
◊ Euhed rhombs of dol or		■ Limestone	

**OTHER SYMBOLS**

<b>MISC</b>	<b>DST</b>
 Daily Report	 DST Int
 Digital Photo	 DST alt
 Document	
 Folder	
 Link	
 Vertical Log File	
 Horizontal Log File	
 Core Log File	
 Drill Cuttings Rpt	

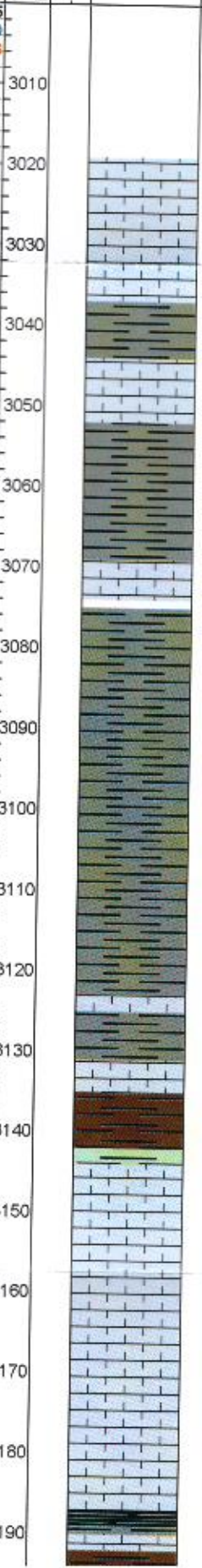
Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)

Curve Track #1									Curve Track #3
ROP (min/ft)		Depth   Intervals DST	Lithology	Oil Show	Geological Descriptions				
Gamma (API)									
Cal (in)									
									



Depth   Int	DST	Lithology	Oil Show	Geological Descriptions
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1:240 Imperial  
 ROP (min/ft) 5  
 Gamma (API) 150  
 Cal (in) 18



**1' DRILL TIME THROUGH ANHYDRITE FROM 1420' - 1500'**  
**1' DRILL TIME FROM 3020' - RTD**  
**10' WET/DRY SAMPLES FROM 3070' - RTD**

**GEOLOGICAL SUPERVISION BY JEFF LAWLER FROM 3070' - RTD**

**8 5/8" SURFACE PIPE SET @ 252' SURVEY 3/4 degress**

**ANHYDRITE TOP 1438' (+718) E-LOG 1436' (+720)**  
**ANHYDRITE BASE 141471' (+685) E-LOG 1468' (+688)**

Lm- Cream Off White, FXLN, sl granular, loosely to well cemented, dense XLN porosity, barren

Sh- Gray Green, silty & calcareous, semi-gummy clumps

Lm- Gray Cream, FXLN, fsl mix of trashy bioclastic w/ XLN & secondary reXLN porosity & loosely cemented, fsl w/ glauconite inclusions, dense XLN porosity, mod. well dev. barren

Sh- Drk & Lt Gray, dense slivers, gummy argillaceous wash & clumps, much gummy white chalk

Sh- A/A Ss- Vf-Fn Grn, consolidated & well sorted, sub-rounded, micaceous, intergranular porosity, barren

Sh- Drk & Lt Gray Green, slick slivers, argillaceous clumps & wash, dense & silty

Lm- Cream Off White, VFXLN, dense, well cemented, mostly tight w/ sctrd XLN porosity, barren

**TOPEKA 3145' (-989) E-LOG 3145' (-989)** Lm- Cream Off White, FXLN, fsl & oolitic, poorly dev. w/ sctrd XLN porosity, vry clean & barren

Lm- Tan Cream, VFXLN, dense, vry well cemented & tight w/ poor vis. porosity

Lm- Buff Tan Cream, VFXLN, dense, well cemented, mostly tight w/ sctrd XLN porosity, most sl fsl, barren

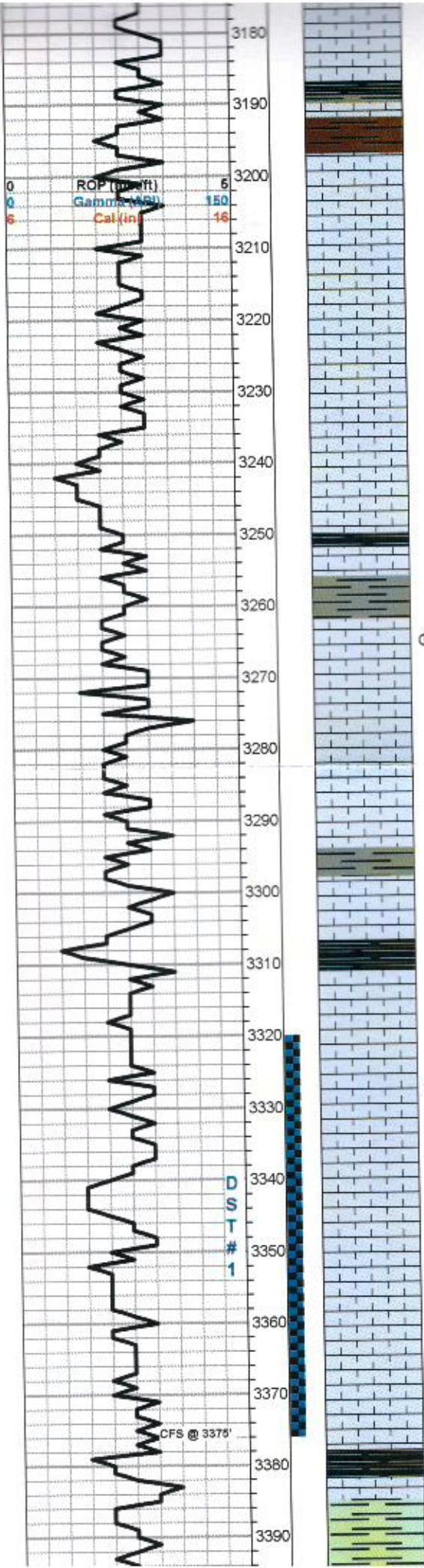
Lm- Cream Tan, VF-FXLN, mix of tight, well cemented cherty Ls w/ min. vis. porosity & poorly dev. & tight oolitic Ls w/ sctrd micro XLN porosity, clean & barren

Lm- Buff, FXLN, fsl, dense, well cemented, poorly dev. w/ sctrd XLN porosity

Sh- Black Gray Maroon, fissile & carbonaceous, silty & soft, gritty & earthy

1:240 Imperial





Lm- Buff, FXLN, fsl, dense, well cemented, poorly dev. w/ sctrd XLN porosity

Sh- Black Gray Maroon, fissile & carbonaceous, silty & soft, gritty & earthy

Lm- Gray, FXLN, dense, sl fsl, trashy, poorly dev. & sl chalky & mottled

Lm- A/A

Lm- Cream, FXLN, loosely cemented & chalky, mottled, sctrd XLN porosity

Lm/Chert- Tan Milky Cream, sharp porcelain like cherty Ls w/ no vis. porosity

Lm- Cream Tan, FXLN, dense XLN & reXLN porosity, sl mottled, secondary reXLN veins

Sh- Black Gray, fissile, soft & flakey

Lm- Cream Off White, Fn Grn, chalky mud supported matrix, loosely cemented, mottled

Lm- Cream Off White, VFXLN, dense well cemented & tight w/ min. vis. porosity, 4-5 pos of Off White FXLN, dense, well cemented, sctrd XLN & vf fn ppt porosity, sctrd clear replacement cementation & reXLN inclusions, SCTRD DRK STN, NSFO, WK ODR

Lm- Gray Buff, FXLN, fsl w/ few fragments, well cemented w/ sctrd XLN porosity

Sh- Gray Maroon, soft & crumbly, gritty & earthy

Sh- Gray Green Maroon, silty & calcareous, gritty & earthy, sl sandy green wash, some shaley Ss/ sandy shales

Lm- Cream Gray, FXLN, fsl, well cemented & poorly dev. w/ sctrd XLN porosity, some trashy

Lm- Cream, FXLN, fsl & sl oolitic, mod. well dev. w/ mostly consistent fn ppt interoolite porosity, LT BRWN STN, NSFO, WK-FR ODR

Lm- Gray Buff, FXLN, some loosely cemented & chalky, trashy, heavily mottled

Lm- Off White, massive oolite clusters w/ sctrd reXLN inclusions, DRK STN, TR FO, FR ODR, SHEEN ON TOP OF WET CUP

Lm- White, FXLN, fsl & oolite clusters, loosely cemented, chalky, BLK DEAD RESIDUAL STN, NSFO, WK ODR

Chert- Black Drk Brown, fsl porcelain like bedded chert, no vis. porosity

Lm- Cream Off White, Fn Grn, loosely cemented mud supported matrix, chalky, heavily mottled

**HEEBNER 3378' (-1222) E-LOG 3376' (-1220)** Sh- Black Gray Maroon, fissile & carbonaceous, slick flat slivers, gritty & earthy

Sh- Green, sl sandy wash & gummy clumps

SHORT TRIP SURVEY 1dgr. STRAP -0.62

DST #1 3320' - 3375' PLATTSMOUTH 30-45-30-48

235' TOTAL FLUID 170' MUD 65' VLWCM (49% W, 51%M)

IFP: 61-79# FFP: 82-108# SIP: 891-845#

3327.jpg

3342.jpg



Sh- Green, sl sandy wash & gummy clumps

**TORONTO 3395' (-1239) E-LOG 3397' (-1241)** Lm- Cream Off White, VF-FXLN, dense, well cemented, poorly dev. fsl w/ sctrd XLN porosity, FEW PCS W/ BLK TARRY EDGE STN, NSFO, NO ODR

Lm- White Off White, VF-Med XLN, mix of tight w/ min. vis. porosity & soft white chalk & well dev. w/ ppt to sctrd ppt reXLN veins, DRK STN, NSFO, WK ODR

**LKC 3422' (-1266) E-LOG 3421' (-1265)** Lm- Cream Tan Buff, FXLN, dense, well cemented, sctrd XLN porosity, barren

Lm- Cream Off White, VFXLN, dense, well cemented, tight w/ sctrd XLN porosity, some chalky in part, SCTRD BLK RESIDUAL STN, NSFO, NO ODR

Sh- Gray Maroon Green, blocky & waxy, gritty, soft & calcareous

Lm- Cream Tan, FXLN, mod. well dev. oolitic w/ dense XLN & sctrd fn ppt porosity, SCTRD LT BRWN STN, NSFO, TR ODR

Lm- Cream Tan, VFXLN, dense, well cemented, some chalky in part, poor vis. porosity, barren

Lm- Cream Off White, VF-FXLN, fsl, sctrd dev. w/ XLN porosity, some reXLN veins, SCTRD LT STN, NSFO, FR ODR

Lm- A/A some sl chalky in part & soft white chalk, vry clean & barren

Lm- Cream Tan, VFXLN, well dev. w/ consistent ppt & XLN porosity, LT SAT STN, NSFO, FR ODR

Lm- Cream Off White, MED XLN, well dev. oolitic clusters w/ sctrd ppt interoolite porosity, reXLN w/in porosity, SCTRD DRK STN, TR GSY BUBBLES UPON CRUSH, FR ODR, HVY SHEEN ON WET CUP

Lm- Cream Tan, VF-FXLN, mod. well dev. w/ sctrd XLN & vuggy porosity, well cemented, SCTRD DRK STN, WK SFO, WK ODR

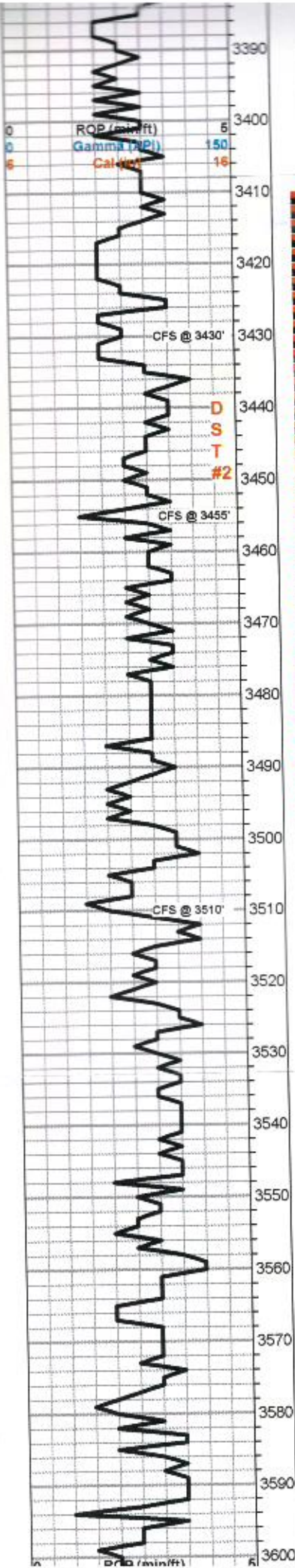
Lm- Cream Off White, VF-FXLN, dense, well cemented, mostly tight w/ min. vis. porosity, barren

Sh- Black Maroon Gray Green, fissile & carbonaceous, dense, slick slivers, argillaceous wash

Lm- White Cream, VFXLN, dense well cemented & mostly tight cherty & dolomitic Ls, micro XLN porosity at best, tight, vry clean & barren

Lm- Cream Off White, VFXLN, dense, poorly dev & mostly tight w/ sctrd micro XLN porosity, a few sl chalky in part, vry clean & barren

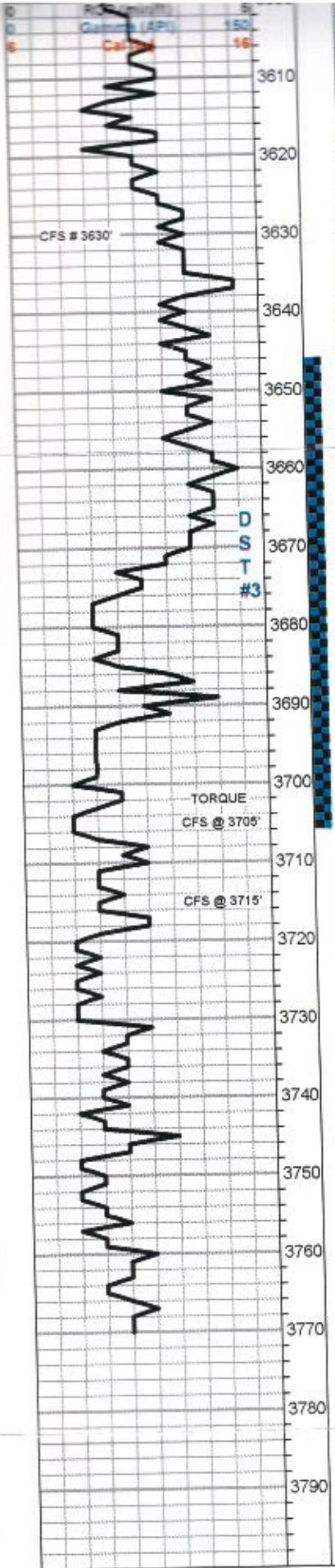
Lm- Off White, FXLN, mod. well dev. mix of oolitic Ls w/ mostly consistent fn ppt & XLN porosity w/ DRK STN, TR FO UPON CRUSH & sl loosely cemented, chalky in part, sctrd to dense XLN porosity, SCTRD LT STN, NSFO, ALL W/ WK ODR



Log descriptions and annotations for various depths, including TORONTO and LKC well logs.

3408.jpg  
SHORT TRIP CTCH  
DST #2  
TORONTO-LKC F  
3410' - 3510'  
15-45-30-90  
480' TOTAL FLUID  
175' GIP  
85' GOCM  
(3%G, 22%O,  
75%M)  
65' GSWHOCM  
(2%G, 35%O, 7%W,  
54%M)  
310' GWSMCO  
(8%G, 51%O,  
24%W, 19%M)  
IFP: 27-125#  
FFP: 130-218#  
SIP: 773-757#  
3450.jpg  
3475.jpg  
3490.jpg  
3495.jpg  
3520.jpg  
3585.jpg





Sh- Black Gray Green, slick black silvers, silty & soft, argillaceous wash

Lm- Cream Off White, MED XLN, well dev. oolitic Ls w/ XLN & sctrd ppt inter oolite, SCTRDRK STN, NSFO, WK ODR

Lm- FXLN, mix of mod. dev. oolitic Ls w/ XLN & fn ppt interoolite porosity, SCTRDRK STN, TR FO, WK ODR, & mostly tight micro XLN & XLN porosity, vry clean & barren, some soft white chalk

**BKC 3649' (-1493) E-LOG 3461' (-1505)** Sh- Maroon Gray, gritty & earthy w/ some argillaceous clumps, gritty & dense

**CONGLOMERATE 3672' (-1516) E-LOG 3672' (-1516)** Chert- Salmon Translucent, dense detrital & vitreous chert, Lm- Cream Off White, FXLN, tight oolitic w/ clear replacement cementation, some w/ glauconite inclusions, Sh- Mint Green w/ black round inclusions & maroon sandy shale/Shaley Ss

**ARBUCKLE 3702' (-1546) E-LOG 3691' (-1535) 3705' 20"** Sh- Abundant mint green & maroon argillaceous clumps, Chert- Clear & Translucent vitreous chert, some w/ fracturing, some conglomerate clear chert w/ sub-rounded qtz. inclusions  
**40"**- Dolomite- White Cream Yellow, mix of VFXLN, dense, well cemented & tight w/ micro XLN porosity, barren, oolitic/oomoldic Tan w/ XLN, ppt & vuggy porosity, SAT BLK STN, GD SFO, clear sandy dolomite w/ min. cementation, barren, Cream mod. well dev. w/ vis. rhombs & XLN porosity w/in, BLK STN, BLEEDING SFO, GD ODR  
**60"**- Dolomite- A/A w/ increase in VF-FXLN, dense, well cemented, w/ micro XLN & XLN porosity throughout, most barren, SOME w/ SCTRDRK STN, BLEEDING SFO, ALL w/ GD ODR, CONSIDERABLE AMOUNT OF FREE OIL ON TOP OF WET CUP

**3715"**- Dolomite- mix of FXLN, loosley cemented w/ consistent XLN porosity throughout, SAT DRK STN, GD SFO, MED XLN w/ vis. rhombs, ppt interXLN porosity, SCTRDRK STN, GD SFO, ALL w/ GD ODR & AMPLE FREE OIL ON TOP OF WET CUP, VF-FXLN, vry well cemented, mostly tight w/ micro XLN porosity, mostly barren

Sh- White Mint Green, argillaceous wash

Dolo- Cream Yellowish, VF-FXLN, dense, well cemented, consisted micro XLN porosity, mostly barren & tight, still ample A/A & free oil

Dolo- Cream Tan Off White, F-MED XLN, dev. varies from mostly tight w/ micro XLN to well dev. & vis. rhombs w/ ppt to vuggy oomoldic, varying staining, free oil & GD ODR, some barren

Dolo- Off White Cream Tan Salmon, VFXLN, dense well cemented, mostly tight w/ consistent micro XLN porosity, much gummy white clay, several pcs of translucent vitreous chert, all barren

**RTD 3770' (-1614) LTD 3770' (-1614) @ 03:38 11/28/16**

3615.jpg

3636.jpg

DST #3  
3647' - 3705'  
ARBUCKLE  
30-30-30-30

20' HOCM  
(46% O, 54% M)

IPP: 11-10#  
PPP: 21-23#  
SIP: 808-713#

3705.jpg

CFS 20-40-60  
SURVEY 1 1/4 dgr  
TOH FOR LOG