

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1329649
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: _____

1329649

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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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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. 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 Est 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

Quality Oilwell
Cementing

Pumptrk Charge	<i>Surface</i>
Mileage	<i>10</i>

X Signature *Chf 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						
EQUIPMENT													Common 180		
Pumptrk	18		No. Cementer			Chris			Poz. Mix						
			No. Helper			Nick			Gel.						
Bulktrk			No. Driver			Dana			Calcium						
Bulktrk	1.5		No. Driver						Hulls						
JOB SERVICES & REMARKS													Salt 17		
Remarks:													Flowseal		
Rat Hole	30SK												Kol-Seal 750#		
Mouse Hole	15SK												Mud CLR 48 500 gal		
Centralizers													CFL-117 or CD110 CAF 38		
Baskets													Sand		
D/V or Port Collar													Handling 200		
5 1/2 size 376.5. Baffle @ 3732													Mileage		
Est. circulation pump 500 gal mud clear													FLOAT EQUIPMENT		
Plug Reel hole mouse hole													Guide Shoe Port Collar		
Cement 5 1/2 with 135SK													Centralizer 8 Turbols		
Clear lines & Displace Plug													Baskets 2		
Lift pressure - 800#													AFU Inserts		
Low plug pressure - 1500#													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 Owl

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 4/6 gal

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 gal & had circulation **FLOAT EQUIPMENT**

mixed 200 sk shut down Guide Shoe _____

mixed 100 sk shut down Centralizer _____

mixed 180 sk 40 4/6 gel Baskets _____

& gel circulation cement AFU Inserts _____

to surface Float Shoe _____

Latch Down _____

Pumptrk Charge port collar

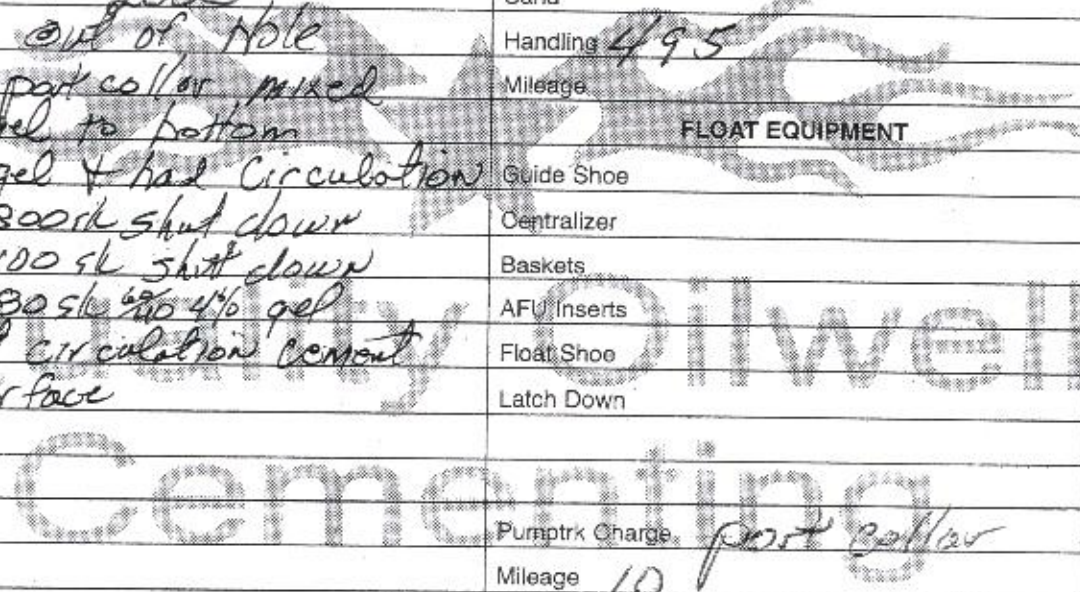
Mileage 10

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

2169 McCoy 3626 K
2156 Jason 3620

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 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		2198		2189		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	3601	-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

TIME ON: 12:27
 TIME OFF: 19:20

DRILL-STEM TEST TICKET
 FILE: ARNHOLD1DST1

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. ^{32' DP IN ANCHOR} Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

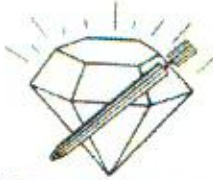
Blow: 1st Open: WEAK 3/4 INCH BLOW, BUILDING TO 3 1/2 INCHES. (NO BB)
 2nd Open: WEAK SURFACE BLOW, BUILDING TO 4 INCHES. (NO BB)

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) <u>2:32 PM</u> A.M. P.M.	Time Started Off Bottom <u>5:02 PM</u> A.M. P.M.	Maximum Temperature <u>96</u> deg.
Initial Hydrostatic Pressure _____ (A) <u>1560</u> P.S.I.	Initial Flow Period _____ Minutes <u>30</u> (B) <u>61</u> P.S.I. to (C) <u>78</u> P.S.I.	
Initial Closed In Period _____ Minutes <u>45</u> (D) <u>891</u> P.S.I.	Final Flow Period _____ Minutes <u>30</u> (E) <u>82</u> P.S.I. to (F) <u>108</u> P.S.I.	
Final Closed In Period _____ Minutes <u>45</u> (G) <u>845</u> P.S.I.	Final Hydrostatic Pressure _____ (H) <u>1547</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.

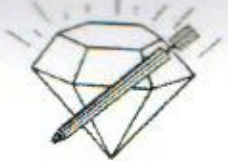
DST #2 TORONTO - LKC F 3410' - 3510'



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.



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

Price Job
Other Charges
Insurance
Total

Time Set Packer(s) 2:43 PM A.M. P.M. Time Started Off Bottom 5:46 PM A.M. P.M. Maximum Temperature 97 deg.
 Initial Hydrostatic Pressure _____ (A) 1591 P.S.I.
 Initial Flow Period _____ Minutes 15 (B) 27 P.S.I. to (C) 125 P.S.I.
 Initial Closed In Period _____ Minutes 48 (D) 773 P.S.I.
 Final Flow Period _____ Minutes 30 (E) 130 P.S.I. to (F) 218 P.S.I.
 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'

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 _____

Price Job
Other Charges
Insurance
Total

Remarks: _____

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

 Chtcong1	 Dolsec	 shale, grn	 Carbon Sh
 Dolprim	 Lmst fw7>	 shale, gry	 shale, red

ACCESSORIES

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

OTHER SYMBOLS

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

Depth Int	DST	Lithology	Oil Show	Geological Descriptions
-------------	-----	-----------	----------	-------------------------

1:240 Imperial
 ROP (min/ft) 5
 Gamma (API) 150
 Cal (in) 18

Cored Interval
 DST Interval

1:240 Imperial

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 degree

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

3010
3020
3030
3040
3050
3060
3070
3080
3090
3100
3110
3120
3130
3140
3150
3160
3170
3180
3190



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

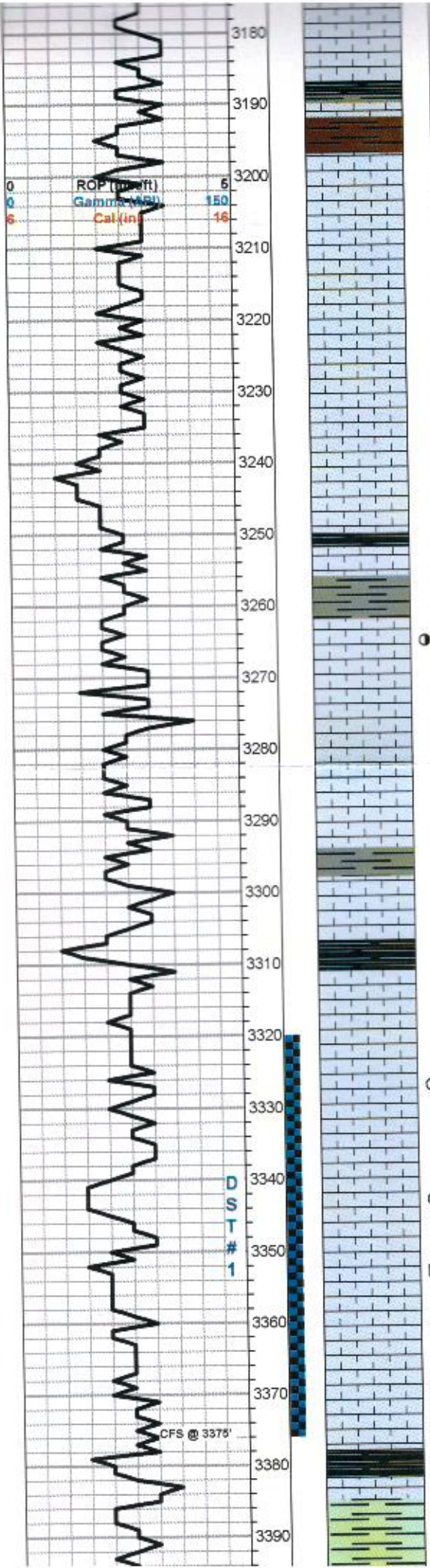
Lm- Tan Cream, VFXLN, dense, vry well cemented & tight w/ poor vis. porosity

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



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

D 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

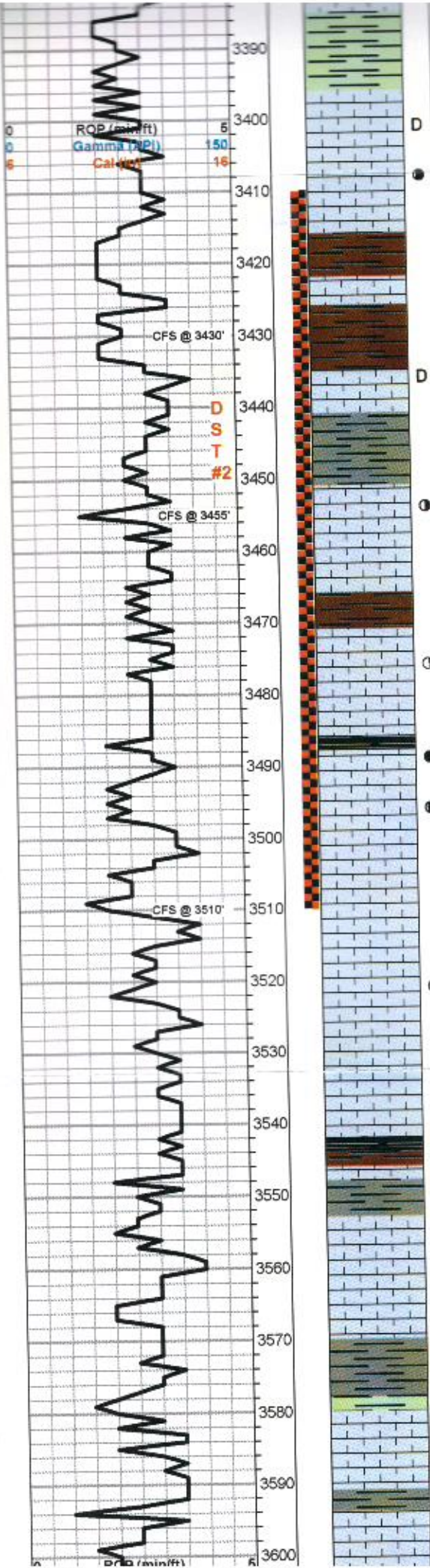
Lm- Cream Off White, VF-FXLN, dense, well cemented, mostly tight w/ min. vis. porosity, barren

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



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) IFF: 27-125# FFP: 130-218# SIP: 773-757#

3450.jpg

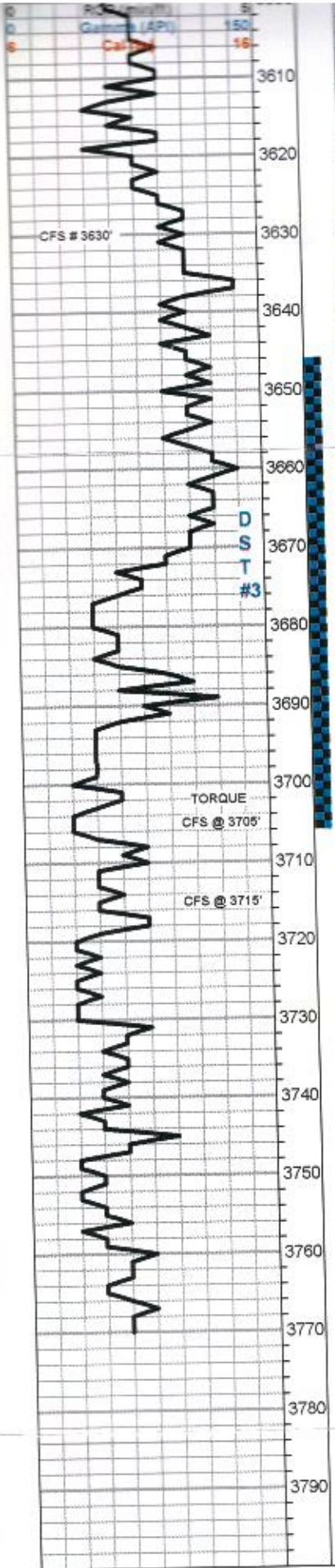
3475.jpg

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

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

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

No. 3079

Cell 785-324-1041

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

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 *Chf 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						
EQUIPMENT													Common 180		
Pumptrk	18		No. Cementer			Chris			Poz. Mix						
			No. Helper						Gel.						
Bulktrk			No. Driver			Nick			Calcium						
Bulktrk	1.5		No. Driver			Dana			Hulls						
JOB SERVICES & REMARKS															
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.													FLOAT EQUIPMENT		
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
------	---------	------	---	------	----	-------	----	--------	--------	-------	----	-------------	--	--------	---------

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 4/6 gal

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 4/6 gel Baskets _____

to gel circulation cement AFU Inserts _____

to surface Float Shoe _____

Latch Down _____

Pumptrk Charge port collar

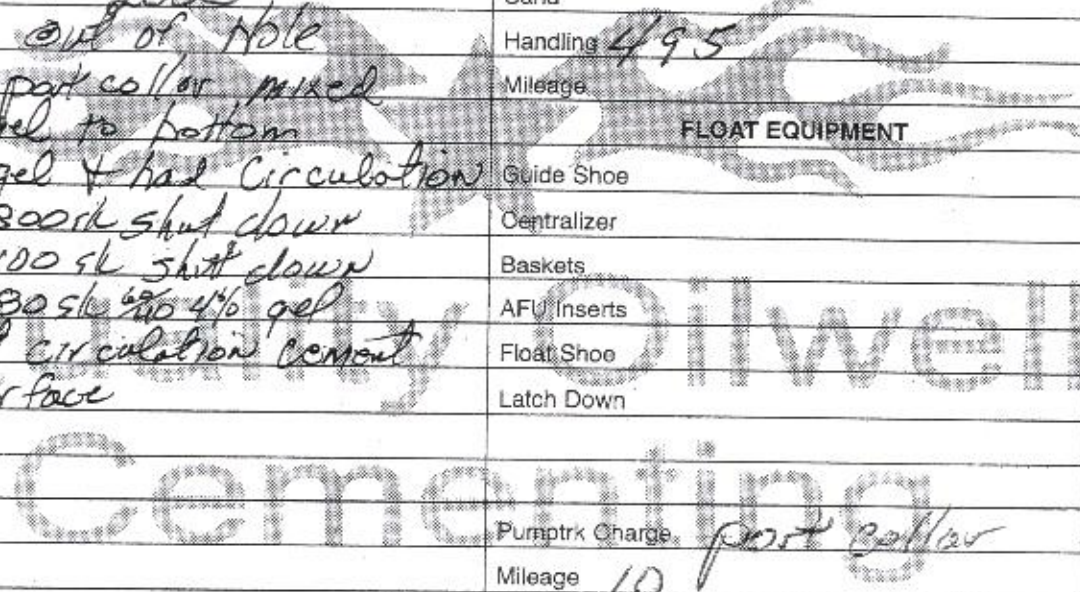
Mileage 10

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		2198		2189		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. ^{32' DP IN ANCHOR} 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. P.M. Time Started Off Bottom 5:02 PM A.M. P.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

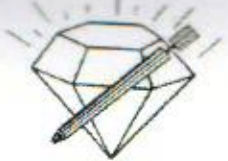
Date 11-26-16 Sec. 3 Twp. 12 S Range 18 W County ELLIS State KANSAS

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

Price Job
Other Charges
Insurance
Total

Time Set Packer(s) 2:43 PM A.M. P.M. Time Started Off Bottom 5:46 PM A.M. P.M. Maximum Temperature 97 deg.
 Initial Hydrostatic Pressure _____ (A) 1591 P.S.I.
 Initial Flow Period _____ Minutes 15 (B) 27 P.S.I. to (C) 125 P.S.I.
 Initial Closed In Period _____ Minutes 48 (D) 773 P.S.I.
 Final Flow Period _____ Minutes 30 (E) 130 P.S.I. to (F) 218 P.S.I.
 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'

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 _____

Price Job
Other Charges
Insurance
Total

Remarks: _____

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

Chtcong1	Dolsec	shale, grn	Carbon Sh
Dolprim	Lmst fw7>	shale, gry	shale, red

ACCESSORIES

MINERAL • Sandy ◊ Euhed rhombs of dol or	FOSSIL ◊ Oomoldic	STRINGER ~ Chert ■ Limestone	TEXTURE C Chalky
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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
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Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)

Curve Track #1	ROP (min/ft)	—	Depth Intervals	DST	Lithology	Oil Show	Geological Descriptions	Curve Track #3
	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

Cored Interval
 DST Interval

1:240 Imperial

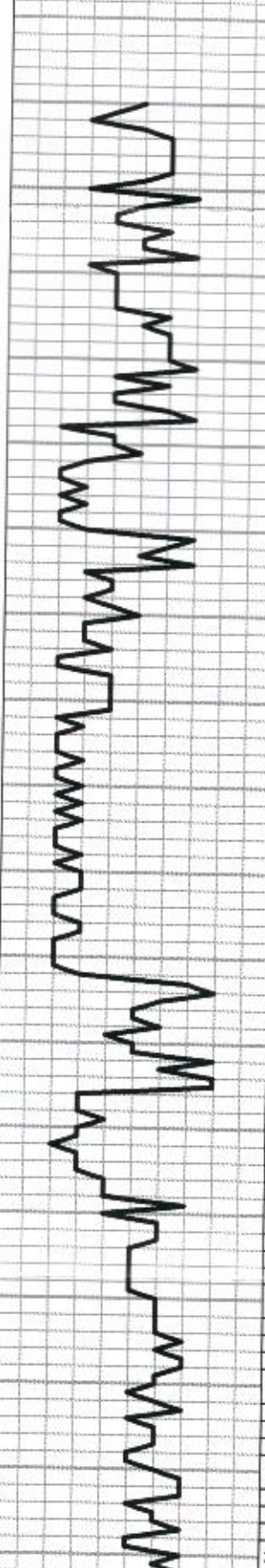
1' DRILL TIME THROUGH ANHYDRITE FROM 1420' - 1500'
1' DRILL TIME FROM 3020' - RTD
10' WET/DRY SAMPLES FROM 3070' - RTD

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)

3010
3020
3030
3040
3050
3060
3070
3080
3090
3100
3110
3120
3130
3140
3150
3160
3170
3180
3190



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/ scstrd XLN porosity, barren

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

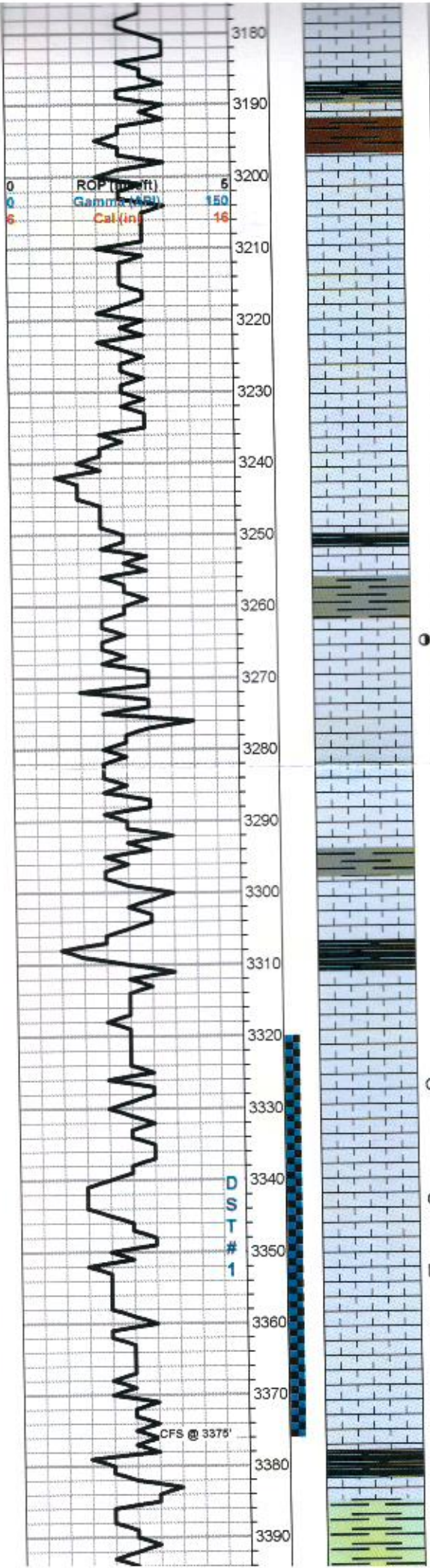
Lm- Tan Cream, VFXLN, dense, vry well cemented & tight w/ poor vis. porosity

Lm- Buff Tan Cream, VFXLN, dense, well cemented, mostly tight w/ scstrd 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/ scstrd micro XLN porosity, clean & barren

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

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



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

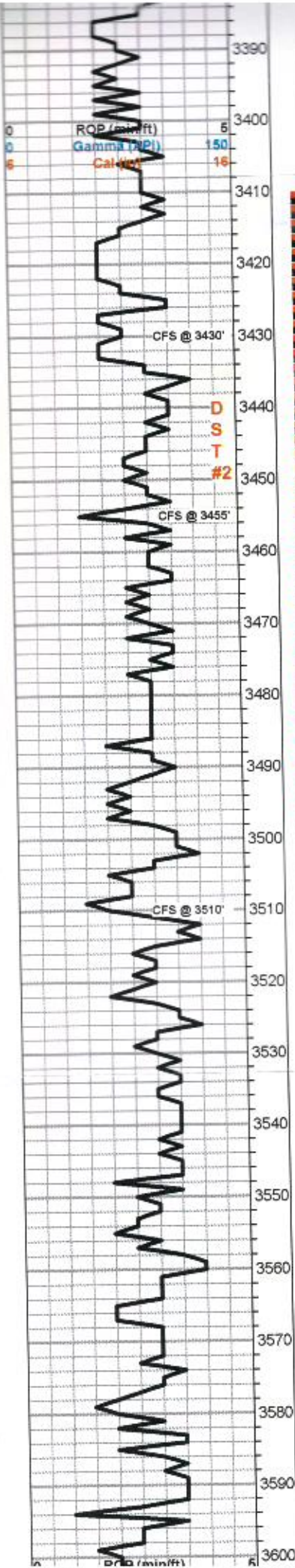
Lm- Cream Off White, VF-FXLN, dense, well cemented, mostly tight w/ min. vis. porosity, barren

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

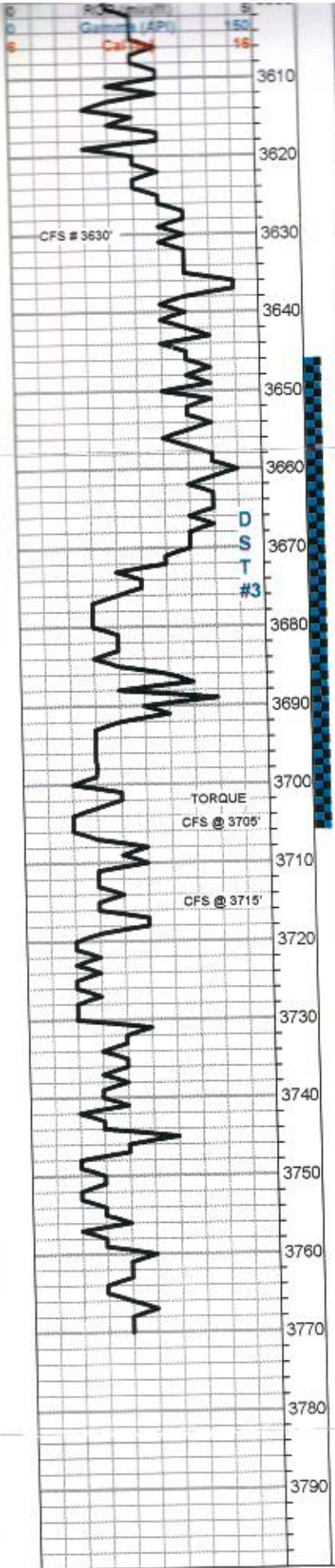
Lm- Cream Off White, VFXLN, dense, poorly dev & mostly tight w/ sctrd micro XLN porosity, a few sl chalky in part, vry clean & barren

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 lithology and well characteristics.

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 VF-XLN, 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, VF-XLN, 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