Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1262113

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 # 33335
Name: IA Operating, Inc.
Address 1: 9915 W 21ST ST, STE B
Address 2:
City: WICHITA State: KS Zip: 67205 + __ __ __ __
Contact Person: Jonathan Allen
Phone: (316) 721-0036
CONTRACTOR: License # 31548
Name: Discovery Drilling
Wellsite Geologist: Jeff Lawler
Purchaser: None

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 #:

07/18/2015	07/24/2015	07/25/2015
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-179-21407-00-00
Spot Description:
NW NW SE NE Sec. 21 Twp. 8 S. R. 26 ☐ East ☑ West
1518 Feet from ☑ North / ☐ South Line of Section
1076 Feet from ☑ East / ☐ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☑ NE ☐ NW ☐ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Sheridan
Lease Name: Archer Well #: 21-2
Field Name:
Producing Formation: N/A
Elevation: Ground: 2413 Kelly Bushing: 2421
Total Vertical Depth: 3880 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 240 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: 20000 ppm Fluid volume: 270 bbls
Dewatering method used: Hauled to Disposal

Location of fluid disposal if hauled offsite:

Operator Name: Dreiling Oil, Inc. Dreiling Oil Inc
Lease Name: Sutor #5 SWD License #: 5145
Quarter SE Sec. 30 Twp. 8 S. R. 26 ☐ East ☑ West
County: Sheridan Permit #: D-28345

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: 08/26/2015
☑ **Confidential Release Date:** 08/25/2017
☑ **Wireline Log Received**
☑ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** NAOMI JAMES **Date:** 08/27/2015

1262113

Operator Name: IA Operating, Inc. Lease Name: Archer Well #: 21-2

Sec. 21 Twp. 8 S. R. 26 ☐ East ☑ West County: Sheridan

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 ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

Attached

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Anhydrite	2054	+367
Topeka	3353	-932
Heebner	3559	-1138
Lansing	3596	-1175
BKC	3807	-1386
LTD	3880	-1459

CASING RECORD ☑ New ☐ 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
Surface	12.250	8.625	23	240	Common	175	2% Gel, 3% CC

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
☐ Perforate ☐ Protect Casing ☑ Plug Back TD ☐ Plug Off Zone	-	60/40 POZ	255	4% Gel, 1/4# flocel
	-			

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 *(Amount and Kind of Material Used)*	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:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)*

PRODUCTION INTERVAL:

Form	ACO1 - Well Completion
Operator	IA Operating, Inc.
Well Name	Archer 21-2
Doc ID	1262113

All Electric Logs Run

Geolosigsts Log Report
Compensated Density Neutron Log
Dual Induction Log
Micro Log
Sonic Log

Form	ACO1 - Well Completion
Operator	IA Operating, Inc.
Well Name	Archer 21-2
Doc ID	1262113

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.250	8.625	23	240	Common	175	2% Gel, 3% CC

OPERATOR

Company:	IA OPERATING, INC.		
Address:	9915 W 21ST ST STE B WICHITA, KS 67205		
Contact Geologist:	JULIE BURROWS		
Contact Phone Nbr:	(620) 721-0036		
Well Name:	ARCHER #21-2		
Location:	NW NW SE NE Sec. 21 - 8S - 26W		
API:	15-179-21407		
Pool:		Field:	STUDLEY WEST
State:	KANSAS	Country:	USA

Scale 1:240 Imperial

Well Name:	ARCHER #21-2		
Surface Location:	NW NW SE NE Sec. 21 - 8S - 26W		
Bottom Location:			
API:	15-179-21407		
License Number:	33335		
Spud Date:	7/18/2015	Time:	12:45 PM
Region:	SHERIDAN COUNTY KANSAS		
Drilling Completed:	7/24/2015	Time:	3:49 AM
Surface Coordinates:	1518' FNL & 1076' FEL		
Bottom Hole Coordinates:			
Ground Elevation:	2413.00ft		
K.B. Elevation:	2421.00ft		
Logged Interval:	3250.00ft	To:	3880.00ft
Total Depth:	3880.00ft		
Formation:	LANSING - KANSAS CITY		
Drilling Fluid Type:	FRESH WATER / CHEMICAL GEL		

SURFACE CO-ORDINATES

Well Type:	Vertical
Longitude:	-100.2218082
Latitude:	39.3452584
N/S Co-ord:	1518' FNL
E/W Co-ord:	1076' FEL

LOGGED BY

BIG CREEK CONSULTING

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

CONTRACTOR

Contractor:	DISCOVERY DRILLING		
Rig #:	4		
Rig Type:	MUD ROTARY		
Spud Date:	7/18/2015	Time:	12:45 PM
TD Date:	7/24/2015	Time:	3:49 AM
Rig Release:		Time:	

ELEVATIONS

K.B. Elevation: 2421.00ft
K.B. to Ground: 8.00ft
Ground Elevation: 2413.00ft

NOTES

WELL COMPARISON SHEET

					•						¤						¤						¤					
					IA OPERATING						C-G DRILLING & N APPLEMAN						HESS OIL CO.						D&D DRLG. CO.					
					ARCHER 21-1						McCLELLAND #1						LINDENMAN #1						MISER #1					
	ARCHER 21-2				NW NE NE SE 21-8-26						NE NE SW 21-8-26						C E/2 NW 21-8-26						NE NE 21-8-26					
	KB	2421	GL	2413	KB	2491					KB	2423					KB	2432					KB	2415				
	LOG TOPS		SAMPLE TOPS		LOGS		LOG		SMPL.		COMP. CARD		LOG		SMPL.		LOGS		LOG		SMPL.		COMP. CARD		LOG		SMPL.	
FORMATION	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	CORR.		CORR.		DEPTH	DATUM	CORR.		CORR.		DEPTH	DATUM	CORR.		CORR.		DEPTH	DATUM	CORR.		CORR.	
ANHYDRITE TOP	2054	367	2054	367	2114	377	-	10	-	10	2048	375	-	8	-	8	2064	368	-	1	-	1	2056	359	+	8	+	8
BASE	2088	333	2088	333	2148	343	-	10	-	10																		
TOPEKA	3353	-932	3358	-937	3420	-929	-	3	-	8							3363	-931	-	1	-	6	3362	-947	+	15	+	10
HEEBNER	3559	-1138	3562	-1141	3623	-1132	-	6	-	9	3566	-1143	+	5	+	2	3570	-1138	+	0	-	3	3574	-1159	+	21	+	18
TORONTO	3581	-1160	3582	-1161	3645	-1154	-	6	-	7							3594	-1162	+	2	+	1	3595	-1180	+	20	+	19
LKC	3596	-1175	3597	-1176	3660	-1169	-	6	-	7	3603	-1180	+	5	+	4	3609	-1177	+	2	+	1	3614	-1199	+	24	+	23
BKC	3807	-1386	3813	-1392	3879	-1388	+	2	-	4	3823	-1400	+	14	+	8	3820	-1388	+	2	-	4	3826	-1411	+	25	+	19
TOTAL DEPTH	3880	-1459	3880	-1459	3925	-1434	-	25	-	25	3837	-1414	-	45	-	45	3850	-1418	-	41	-	41	3850	-1435	-	24	-	24

DST #1 LKC C-D 3613' - 3650'

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

IA Operating Inc

9915 W 21st St Ste B
Wichita KS 67205

ATTN: Jeff Lawler

21 8s 26w Sheridan

Archer # 21-2

Job Ticket: 62393 **DST#: 1**

Test Start: 2015.07.22 @ 11:11:00

GENERAL INFORMATION:

Formation: **LKC " C & D"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:04:15
Time Test Ended: 17:24:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Jim Svaty
Unit No: 76

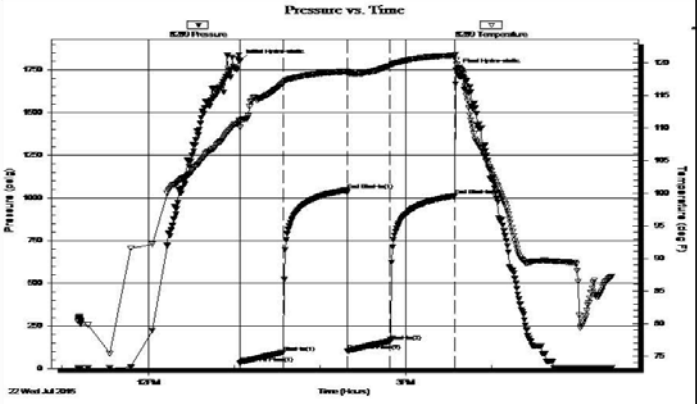
Interval: 3613.00 ft (KB) To 3650.00 ft (KB) (TVD)
Total Depth: 3650.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2421.00 ft (KB)
2413.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8289 **Outside**
Press@RunDepth: 159.29 psig @ 3618.00 ft (KB)
Start Date: 2015.07.22 End Date: 2015.07.22
Start Time: 11:11:02 End Time: 17:24:15

Capacity: 8000.00 psig
Last Calib.: 2015.07.22
Time On Btm: 2015.07.22 @ 13:04:00
Time Off Btm: 2015.07.22 @ 15:35:15

TEST COMMENT: 30-IF- BOB in 17min.
45-ISI- No Blow
30-FF- BOB in 22min.
45-FSI- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1800.48	111.20	Initial Hydro-static
1	30.05	110.05	Open To Flow (1)
31	95.38	116.88	Shut-In(1)
75	1044.32	118.66	End Shut-In(1)
76	103.77	118.34	Open To Flow (2)
105	159.29	119.54	Shut-In(2)
151	1011.35	121.13	End Shut-In(2)
152	1749.26	120.45	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	Oil Specked MCW 45%m 55%w	0.59
248.00	MCW %5m 95%w	3.48

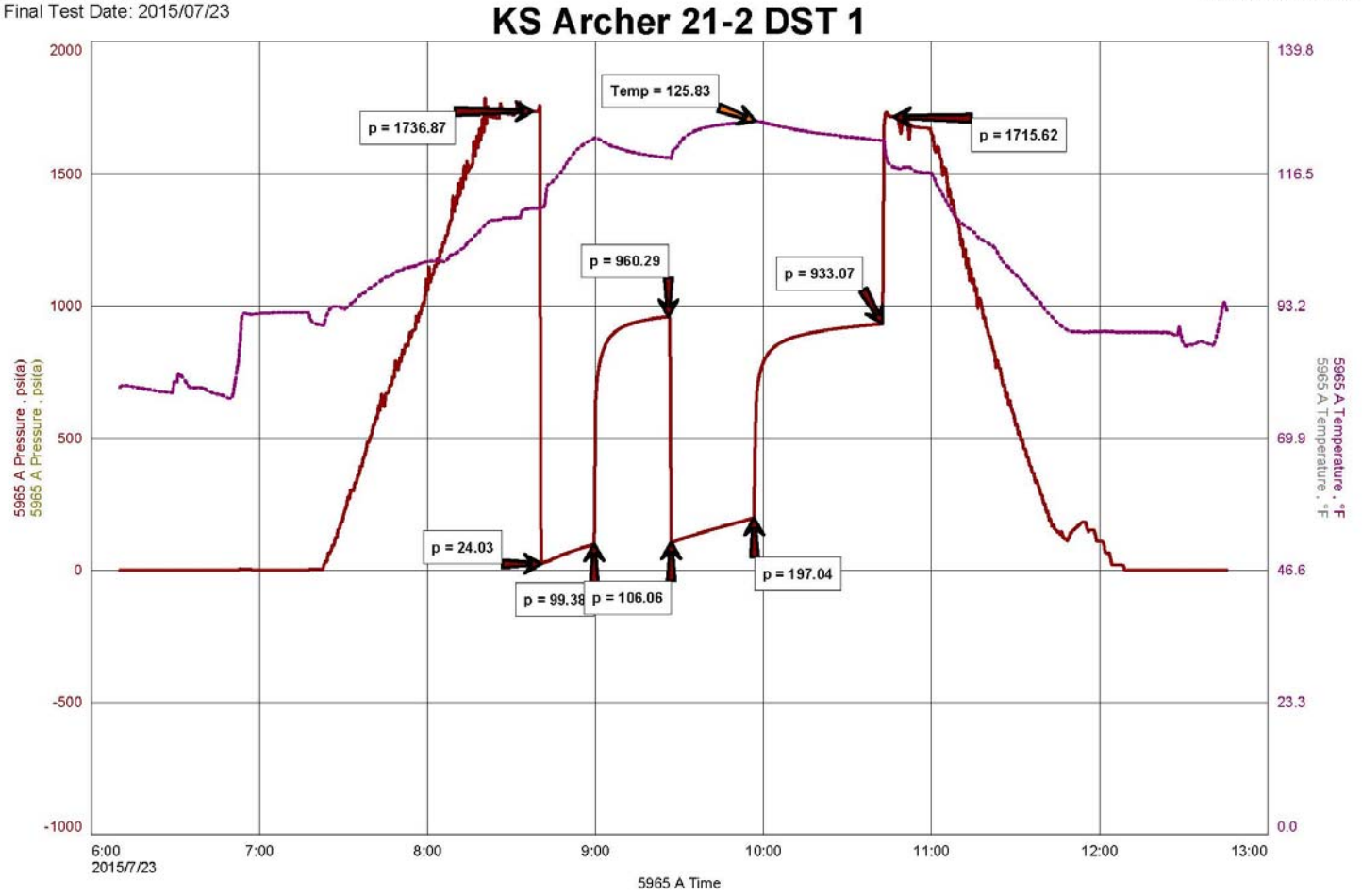
Gas Rates

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

DST #2 LKC E-F 3653' - 3682'

IA Operating
DST 1 LKC E0F 3653-3682
Start Test Date: 2015/07/23
Final Test Date: 2015/07/23

KS Archer 21-2
Formation: LKC E-F
Job Number: W198

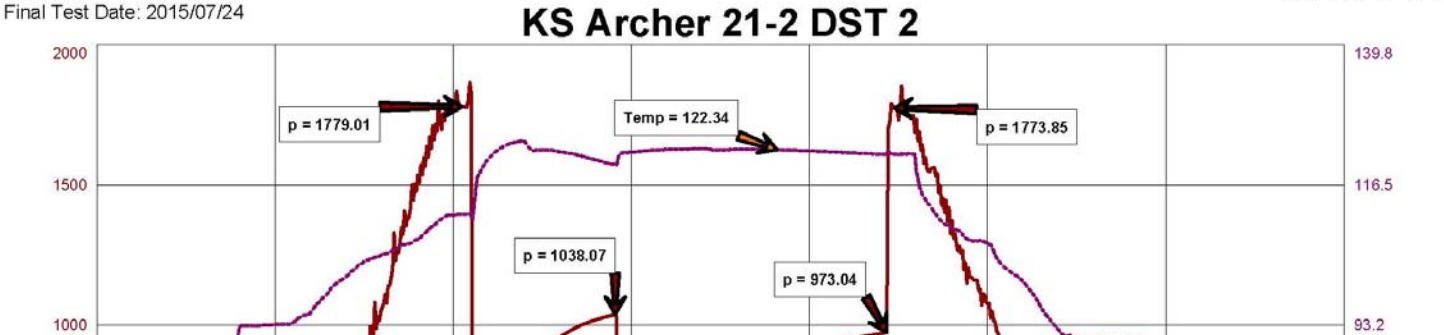


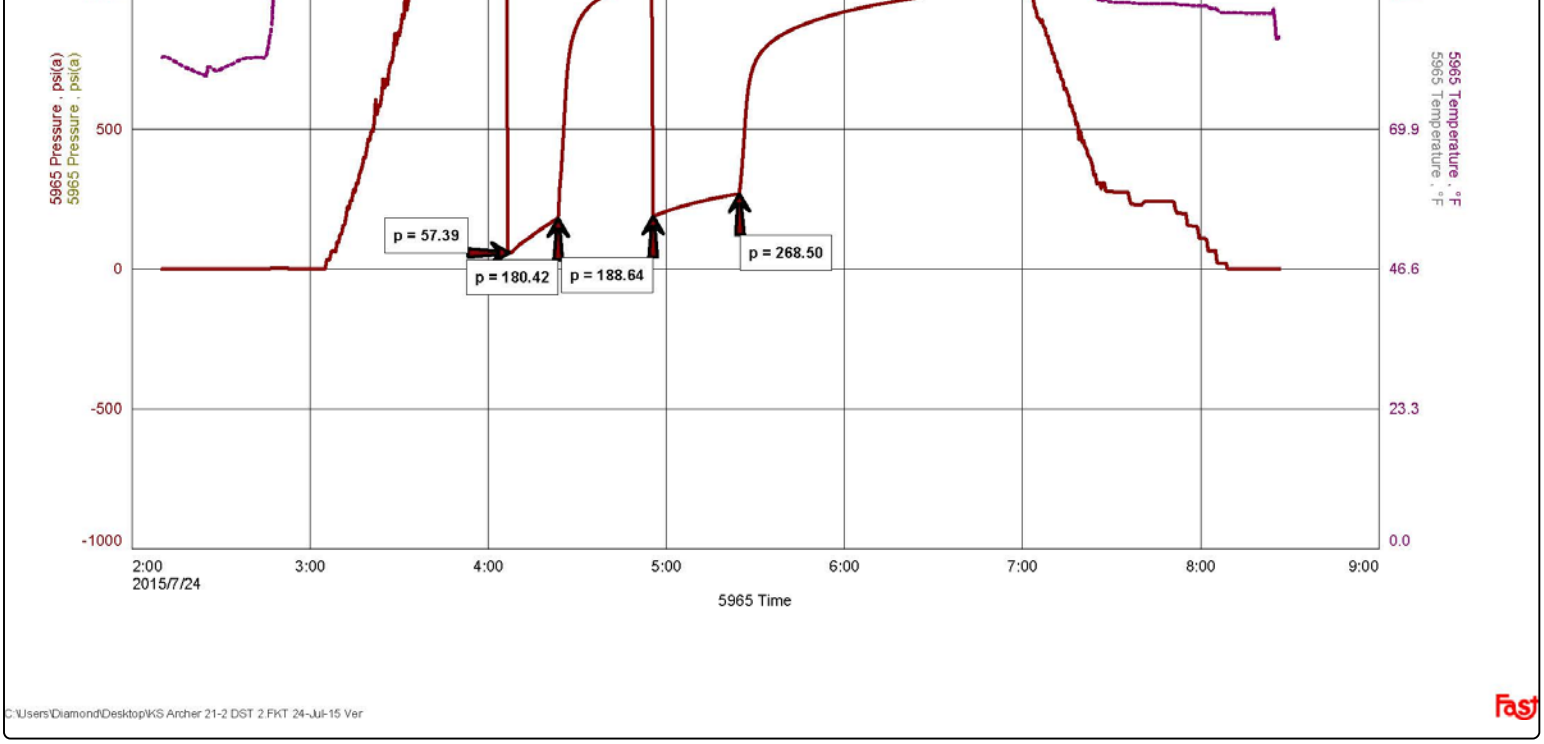
C:\Users\Diamond\Desktop\FAIRLEIGH O DST 1.FKT 23-Jul-15 Ver

DST #3 LKC H-K 3707' - 3800'

IA Operating
DST 2 LKC H-K 3707-3800
Start Test Date: 2015/07/24
Final Test Date: 2015/07/24

KS Archer 21-2
Formation: LKC H-K
Job Number: W199





DST #4 LKC H (STRADDLE) 3707' - 3733'

ROCK TYPES

Lmst fw7> | shale, gry | Carbon Sh | shale, red

OTHER SYMBOLS

MISC

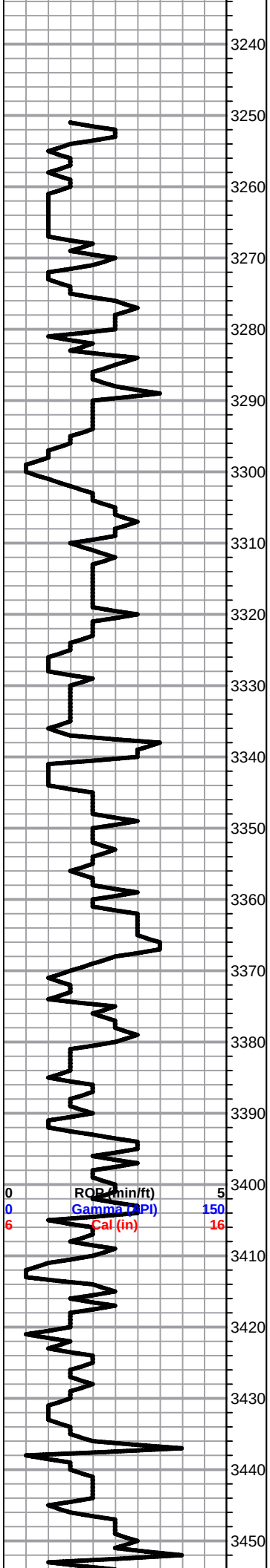
- Daily Report
- Digital Photo
- Document
- Folder
- Link
- Vertical Log File
- Horizontal Log File
- Core Log File
- Drill Cuttings Rpt

DST

- DST Int
- DST alt

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

Curve Track #1 ROP (min/ft) Gamma (API) Cal (in) 1:240 Imperial	Depth | Intervals Cored Interval DST Interval	DST	Lithology	Oil Show	Geological Descriptions	Curve Track #3 1:240 Imperial
0 ROP (min/ft) 5 0 Gamma (API) 150 6 Cal (in) 16	3210 3220 3230				**1' DRILL TIME THROUGH ANHYDRITE FROM 2040' - 2120'** **1' DRILL TIME FROM 3250' - RTD** **10' WET/DRY SAMPLES FROM 3300' - RTD** **GEOLOGICAL SUPERVISION BY JEFF LAWLER FROM 3250' - RTD** **8 5/8" SURFACE PIPE SET @ 240.64' SURVEY 1/2 degree** **ANHYDRITE TOP 2054' (+367) E-LOG 2054' (+367)** **ANHYDRITE BASE 2088' (+333) E-LOG 2088' (+333)**	



ANHYDRITE BASE 2088' (+333) E-LOG 2088' (+333)

Dol/Lm- Cream Off White, mix of VFXLN well cemented dolomite w/ consistent micro XLN porosity, w/ fsl & sl oolitic FXLN Ls, sctrd clear replacement cementation & reXLN, sctrd XLN & fn ppt porosity, all clean & barren, Sh- Brick Red Gray Lm Green, gritty & earthy, silty & calcareous

Lm- Cream Buff, A/A w/ less dolomite, influx of oolitic & fsl Ls, mod. dev. w/ sctrd fn ppt & ppt porosity, barren, few pcs of chalky mud supported matrix Ls w/ oolites

Sh- Gray Brick Red Purple Gray, arenaceous shale, several pcs of frosted Fn Grn, loosely cemented Ss, consolidated & well sorted, spkld w/ glauconite, barren

Sh- A/A Influx of dense & waxy Lm green shale

Sh- A/A w/ influx of dense & calcareous gray shale

Sh- A/A w/ influx of dense & waxy brick red, dense & calcareous purple shale

TOPEKA 3358' (-937) E-LOG 3353' (-932) Lm- Buff Cream, VF-FXLN, grainy & fsl, sl oolitic, poorly dev. w/ mostly consistent vry fn ppt inter fsl porosity, barren, few pcs of VFXLN dense dolomite w/ consistent micro XLN porosity

Lm- A/A, slightly arenaceous, barren

Lm- Cream Off White, FXLN, loosely cemented & sl chalky w/ VF qtz. inclusions, few pcs of fsl sl cherty Ls w/ sctrd clear replacement cementation & sctrd reXLN, XLN porosity, barren

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

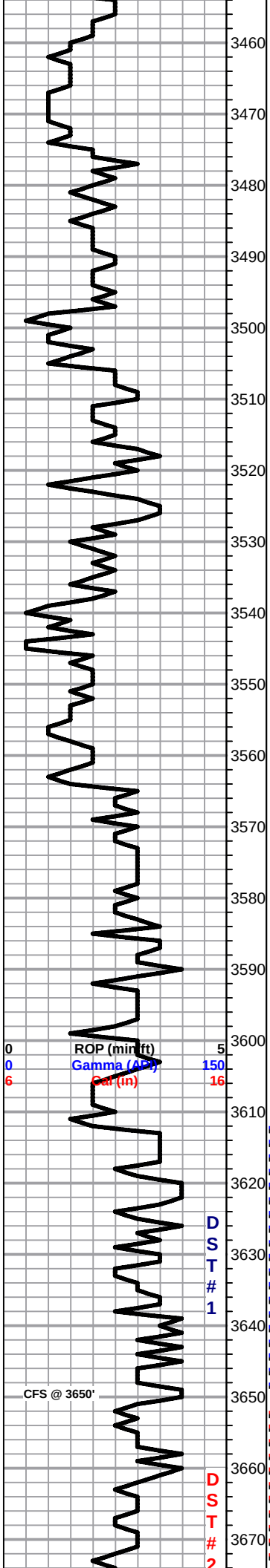
Sh- Gray, silty & sl arenaceous, micaceous

Lm- Cream Off White, VFXLN, dense, well cemented, sl fsl & oolitic, poorly dev. w/ sctrd micro XLN porosity, reXLN & clear replacement cementation, several pcs of VFXLN dolomite, dense & well cemented, consistent micro XLN porosity, all barren

Lm- Tan, VFXLN, densely packed oolitic biomicrite w/ clear replacement cementation, no vis. porosity, slick & porcelain like

Chert- White, massive fresh bedded sl fsl w/ fusulinids, gritty & sl dolomitic, mostly consistent vry fn ppt inter fsl porosity, barren, few vitreous pcs., some soft white chalk

Sh- Black Gray Brick Red Lm Green, fissile & carbonaceous, dense & waxy, silty &



calcareous

Sh/Ss- A/A w/ calcareous shaley Ss/sandy Sh, few frosted Fn Grn clusters spkld w/ glauconite, consolidated & well sorted, mature, barren

Lm- Cream Off White, loosely cemented & crumbly, arenaceous, sl chalky/limey

Sh- Gray Brown Brick Red, silty calcareous & micaceous, gritty & earthy

Lm- White, soft white mud supported matrix, chalky & loosely cemented

Sh- Black Gray Lm Green, fissile & carbonaceous, silty, dense & waxy

Lm- Cream Off White, VF-FXLN, fsl, poorly dev. w/ sctrd XLN porosity, some sctrd reXLN, barren

Lm- Tan Buff, VFXLN, dense, well cemented, mostly tight w/ sctrd XLN porosity

Lm- Cream Tan, VFXLN, dense, well cemented & tight

Lm- Lt Gray, massive, well cemented, fn grn qtz inclusions, no vis. porosity, some clear replacement cementation

HEEBNER 3562' (-1141) E-LOG 3559' (-1138) Sh- Black, fissile & carbonaceous

Sh- Gray Brown, silty & calcareous, dense & waxy

TORONTO 3582' (-1161) E-LOG 3581' (-1160) Lm- Cream Off White, VFXLN, dense, well cemented, mostly tight w/ sctrd micro XLN porosity, barren, grainy

Sh- Gray, silty & calcareous

LKC 3597' (-1176) E-LOG 3596' (-1175) Lm- Cream Off White, FXLN, fsl & oolitic, mod. dev. w/ sctrd XLN porosity, some sctrd reXLN, barren, some soft white chalk

Lm- Cream Off White, FXLN, fsl, poorly dev. w/ dense reXLN, XLN porosity, barren

Sh- Gray Brick Red, silty & arenaceous, gritty & earthy, some frosted consolidated fn grn Ss, mod. cementattion, barren

Lm- Cream Off White, FXLN, fsl & oolitic, mod. well dev. w/ mostly consistent fn ppt inter oolite & XLN porosity, few sub-oolite clusters, SCTRD DRK STN, OILY SHEEN, TR-FR FO UPON CRUSH, TR GSY BUBBLES UPON CRUSH, FR ODR

Sh- Maroon, gummy wash

Lm- Off White, VF-FXLN, dense, mostly tight & poorly dev. w/ sctrd XLN porosity, some soft white chalk, barre & clean

Lm- Cream Off, VFXLN, dense, well cemented, mostly tight w/ min. vis., barren

Lm- Cream Buff, FXLN, dense, well cemented, sl fsl, poorly dev. w/ sctrd XLN porosity, some sl chalky in part, barren

SHORT TRIP
STRAP -0.15'
SURVEY 1/2 dgr.

DST #1 LKC C-D
3613' - 3650
30-45-30-45

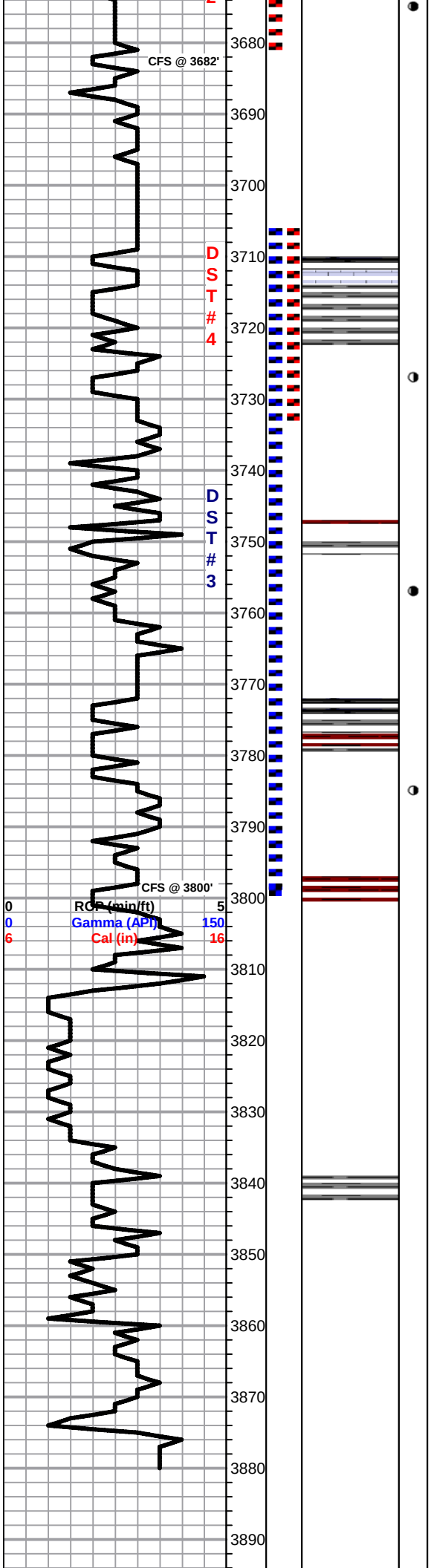
310' TOTAL FLUID
62' OSPMW
(55%W, 45%M)
248' MCW
(95%W, 5%M)

IFP: 30-9+5#
FFP: 103-159#
SIP: 1044-1011#
BHT: 121 dgr.
CHLOR: 90,000

C.jpg

DST #2 LKC E-F
3653' - 3682'
15-30-30-45
400' MCW
(25%M, 75%W)

IFP: 99-24#
FFP: 106-197#
SIP: 960-933#
BHT: 126 dgr.
CHLOR: 88,000



Lm- Cream Tan, FXLN, fsl & oolitic, mod. well dev. w/ sctrd to consistent fn ppt inter oolite porosity, LT SCTRD STN, NSFO, WK ODR, some sctrd reXLN w/in porosity

E_F.jpg

Lm- White Off White, VF-FXLN, dense, mostly well cemented & poorly dev. w/ sctrd micro XLN & XLN porosity, vry clean & barren

DST #4 LKC H (STRADDLE) 3707' - 3733'

Lm/Chert- Cream Off White White, A/A w/ fresh bedded sl fsl vitreous chert w/ vis porosity, some chalky mud supported matrix Ls & soft white chalk, all vry clean

Sh- Black Gray, fissile & carbonaceous, silty & calcareous

Lm- Cream Off White, VF-FXLN, fsl & oolitic, mod. dev. w/ sctrd ppt inter oolite & XLN porosity, LT STN, NSFO, DEAD OIL??, NO ODR, some sctrd reXLN w/in porosity

H.jpg

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

Lm- Tan, VF-FXLN, dense, well cemented, sl fsl, poor vis. porosity

Lm- Cream Off White, FXLN, fsl. & sl oolitic well dev. w/ consistent fn ppt inter oolite porosity throughout, LT BRWN STN, TR FO, WK ODR

J.jpg

Lm- Cream Off White, VF-FXLN, dense, well cemented, poorly dev. w/ sctrd XLN porosity, barren

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

Lm- Tan, VF-FXLN, densely packed oolitic biomicrite w/ clear replacement cementation, rare sctrd ppt inter oolite porosity, SCTRD DRK STN, SL OILY SHEEN, 1-2 PCS W/ TR FO, WK ODR, FEW PCS W/ EDGE STN

K.jpg

Lm- Cream Tan, VF-FXLN, dense, well cemented, poorly dev. w/ sctrd XLN porosity, barren

DST #3 LKC H-K
3707' - 3800'
15-30-30-60

970' TOTAL FLUID
400' GIP
120' FREE OIL
(GR: 39 API)
850' OMCW
(5%O,20%M, 75%W)
IFP: 57-180#
FFP: 189-269#
SIP: 1038-973#
CHLOR: 80,000

Lm- Off White, VF-FXLN, fsl & sl oolitic, poorly dev. w/ sctrd XLN porosity, some soft white chalk, barren

BKC 3813' (-1392) E-LOG 3807' (-1386) Sh- Maroon Gray, gritty & earthy, few argillaceous clumps, silty & calcareous

Sh- Maroon, A/A/ w/ influx of argillaceous clumps & arenaceous maroon shale

Lm- Tan Cream, VF-FXLN, fsl & oolitic, poorly dev. w/ dense XLN porosity, some sl unconsolidated, all barren

Lm- White Off White, loosely cemented mud supported matrix, pebbley & unconsolidated, chalky w/ poor vis. porosity, several pcs of detritial salmon colored chert

Lm- Buff Cream, VF-FXLN, dense, well cemented, sl fsl & poorly dev., some w/ dense XLN porosity, most w/ sctrd XLN porosity, barren

Lm- A/A loosely cemented, sl arenaceous & chalky

LTD 3880' (-1459) RTD 3880' (-1459) @ 15:49 7/24/2015

CFS 20"-40'-60'
SURVEY
TOH FOR LOG

C.jpg

C ZONE X 25

E_F.jpg

E/F ZONE X20

H.jpg

H ZONE X 30

J.jpg


A004 1280x1024 2015/07/23 22:47:52 Unit: mm Magnification: 116.2 x 1
0.2 mm
J ZONE X 30

K.jpg


A005 1280x1024 2015/07/23 22:56:58 Unit: mm Magnification: 116.2 x 1
0.2 mm
K ZONE X 30

SWIFT Services, Inc.

CHARGE TO: I.A. Operating
ADDRESS
CITY, STATE, ZIP CODE

TICKET 28876

Inv: 28876

PAGE 1 OF 1

SERVICE LOCATIONS	WELL/PROJECT NO.	LEASE	COUNTY/PARISH	STATE	CITY	DATE	OWNER
1. Ness City KS	21-2	Archer	Scheridan	KS	Studley	7-15-15	Same

TICKET TYPE	CONTRACTOR	RIG NAME/NO.	SHIPPED VIA	DELIVERED TO	ORDER NO.
☑ SERVICE ☐ SALES	Discovery Drilling	#4	CT	Location	

WELL TYPE	WELL CATEGORY	JOB PURPOSE	WELL PERMIT NO.	WELL LOCATION
Oil	Development	Cement 8 5/8 surface pipe		

REFERRAL LOCATION
INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING LOC	ACCT	DF	DESCRIPTION	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT
575		1			MILEAGE Trk # 112			80	mi	5 00	400 00
576S		1			Pump Charge - Shallow Surface	1	job			800 00	800 00
325		1			Standard Cement			175	sks	12 25	2143 75
278		1			Calcium Chloride	3	%	8	sks	40 00	320 00
279		1			Bentonite Gel	2	%	3	sks	25 00	75 00
290		1			D-Air			2	gal	42 00	84 00
581		1			Service Charge Cement			175	sks	1 50	262 50
583		1			Drayage	17150	lbs	650.	mi	0 75	514 50

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT, RELEASE, INDEMNITY,** and **LIMITED WARRANTY** provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

X Mike Lauche

DATE SIGNED 7-15-15 TIME SIGNED 1800 ☒ P.M.

REMIT PAYMENT TO:

SWIFT SERVICES, INC.
P.O. BOX 466
NESS CITY, KS 67560
785-798-2300

SURVEY	AGREE	UN-DECIDED	DIS-AGREE
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?			
WE UNDERSTOOD AND MET YOUR NEEDS?			
OUR SERVICE WAS PERFORMED WITHOUT DELAY?			
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?			

ARE YOU SATISFIED WITH OUR SERVICE? ☐ YES ☐ NO

☐ CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL	4599 75
Sheridan TAX 8.5%	222 93
TOTAL	4822 68

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.

SWIFT OPERATOR David Kruehn

APPROVAL

Thank You!

SWIFT Services, Inc.

CHARGE TO: IA Operating, Inc
ADDRESS:
CITY, STATE, ZIP CODE:

TICKET 28715

Inv: 28715

PAGE 1 OF 1

SERVICE LOCATIONS	WELL/PROJECT NO.	LEASE	COUNTY/PARISH	STATE	CITY	DATE	OWNER
1. Hays Ks	# 21-2	Archer	Sheridan	Ks		7-25-15	
2. Ness City Ks	TICKET TYPE ☐ SERVICE ☐ SALES	CONTRACTOR	RIG NAME/NO.	SHIPPED VIA	DELIVERED TO	ORDER NO.	
3.		Discovery Drilling	Rig # 4		Location		
4.	WELL TYPE	WELL CATEGORY	JOB PURPOSE		WELL PERMIT NO.	WELL LOCATION	
REFERRAL LOCATION	Oil	Development	Rotary PTA				
	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING LOC	ACCT	DF	DESCRIPTION	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT
575		1			MILEAGE # 111	80	Mi			5 00	400 00
576P		1			Pump Charge - PTA	1	EA			800 00	800 00
290		1			D-Air	4	Gal			42 00	168 00
410		1			Top Plug 8 5/8	1	EA			120 00	120 00
328-4		2			60/40 Pozmix (4% Gel)	255	SKS			10 25	2613 75
276		2			Flocele	50	lbs			2 25	112 50
581		2			Service Charge Cement	255	SKS			1 50	382 50
583		2			Drayage	823	TM			75	617 25

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT**, **RELEASE**, **INDEMNITY**, and **LIMITED WARRANTY** provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

X

DATE SIGNED | TIME SIGNED | ☐ A.M. ☐ P.M.

REMIT PAYMENT TO:

SWIFT SERVICES, INC.
P.O. BOX 466
NESS CITY, KS 67560
785-798-2300

SURVEY	AGREE	UN-DECIDED	DIS-AGREE
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?			
WE UNDERSTOOD AND MET YOUR NEEDS?			
OUR SERVICE WAS PERFORMED WITHOUT DELAY?			
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?			

ARE YOU SATISFIED WITH OUR SERVICE? ☐ YES ☐ NO

☐ CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL	5214 00
Sheridan TAX 6.5%	256 21
TOTAL	5470 21

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.

SWIFT OPERATOR: David Edgerton

APPROVAL

Thank You!

DRILL STEM TEST REPORT

IA Operating Inc

9915 W 21st St Ste B
Wichita KS 67205

ATTN: Jeff Lawler

21 8s 26w Sheridan

Archer # 21-2

Job Ticket: 62393 **DST#: 1**

Test Start: 2015.07.22 @ 11:11:00

GENERAL INFORMATION:

Formation: **LKC " C & D "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:04:15
Time Test Ended: 17:24:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Jim Svaty
Unit No: 76

Interval: 3613.00 ft (KB) To 3650.00 ft (KB) (TVD)
Total Depth: 3650.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

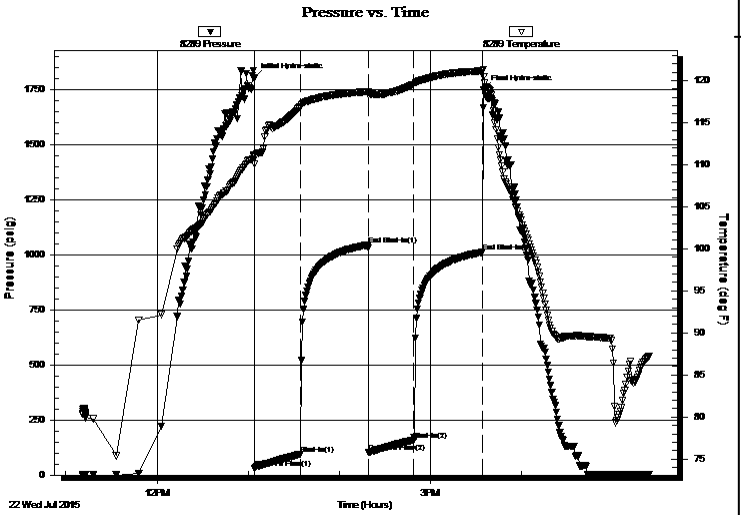
Reference Elevations: 2421.00 ft (KB)
2413.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8289 **Outside**

Press@RunDepth: 159.29 psig @ 3618.00 ft (KB)
Start Date: 2015.07.22 End Date: 2015.07.22
Start Time: 11:11:02 End Time: 17:24:15

Capacity: 8000.00 psig
Last Calib.: 2015.07.22
Time On Btm: 2015.07.22 @ 13:04:00
Time Off Btm: 2015.07.22 @ 15:35:15

TEST COMMENT: 30-IF- BOB in 17min.
45-ISI- No Blow
30-FF- BOB in 22min.
45-FSI- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1800.48	111.20	Initial Hydro-static
1	30.05	110.05	Open To Flow (1)
31	95.38	116.88	Shut-In(1)
75	1044.32	118.66	End Shut-In(1)
76	103.77	118.34	Open To Flow (2)
105	159.29	119.54	Shut-In(2)
151	1011.35	121.13	End Shut-In(2)
152	1749.26	120.45	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	Oil Specked MCW 45%m 55%w	0.59
248.00	MCW %5m 95%w	3.48

Gas Rates

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

DRILL STEM TEST REPORT

IA Operating Inc

9915 W 21st St Ste B
Wichita KS 67205

ATTN: Jeff Lawler

21 8s 26w Sheridan

Archer # 21-2

Job Ticket: 62393 **DST#: 1**

Test Start: 2015.07.22 @ 11:11:00

GENERAL INFORMATION:

Formation: **LKC " C & D "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:04:15
Time Test Ended: 17:24:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Jim Svaty
Unit No: 76

Interval: 3613.00 ft (KB) To 3650.00 ft (KB) (TVD)
Total Depth: 3650.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

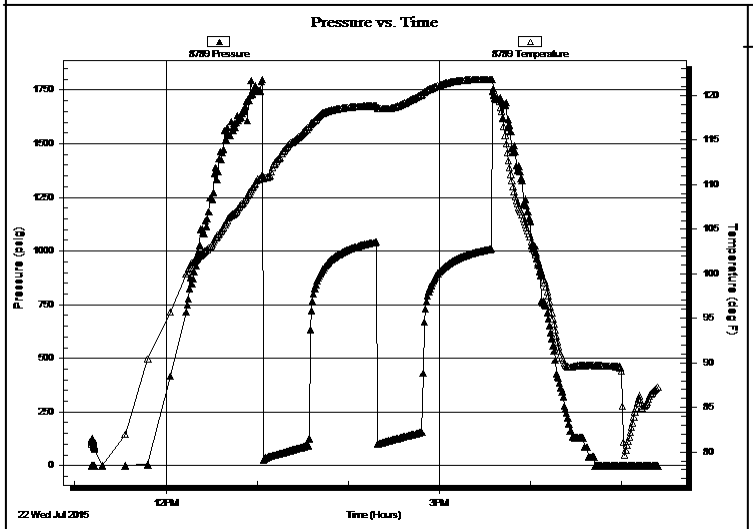
Reference Elevations: 2421.00 ft (KB)
2413.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8789 **Inside**

Press@RunDepth: psig @ 3618.00 ft (KB)
Start Date: 2015.07.22 End Date: 2015.07.22
Start Time: 11:11:02 End Time: 17:23:45

Capacity: 8000.00 psig
Last Calib.: 2015.07.22
Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IF- BOB in 17min.
45-ISI- No Blow
30-FF- BOB in 22min.
45-FSI- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
62.00	Oil Specked MCW 45%m 55%w	0.59
248.00	MCW %5m 95%w	3.48

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

IA Operating Inc

9915 W 21st St Ste B
Wichita KS 67205

ATTN: Jeff Lawler

21 8s 26w Sheridan

Archer # 21-2

Job Ticket: 62393 **DST#: 1**

Test Start: 2015.07.22 @ 11:11:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	90000 ppm
Viscosity:	60.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.20 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	800.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	Oil Specked MCW 45%m 55%w	0.587
248.00	MCW %5m 95%w	3.479

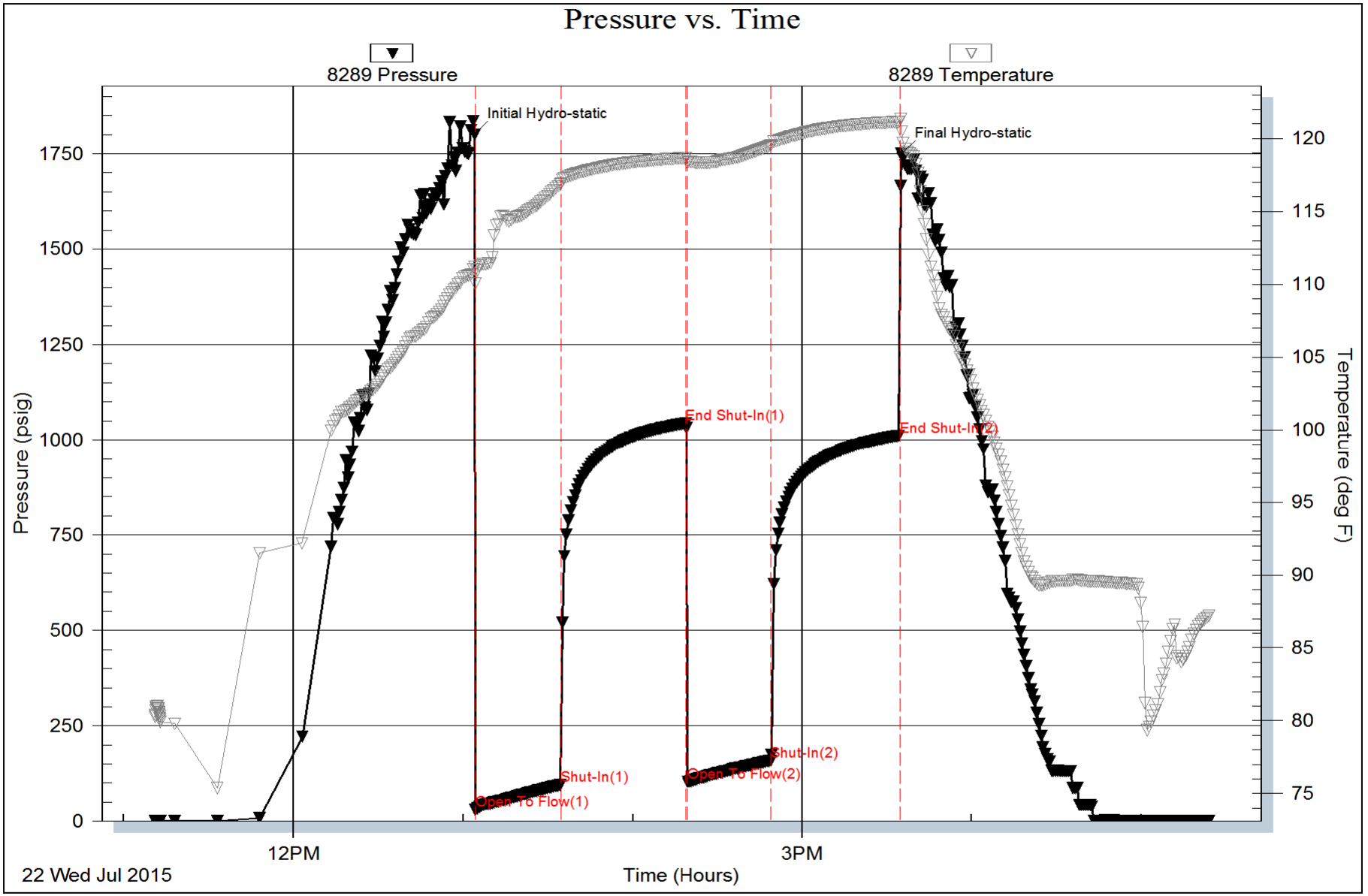
Total Length: 310.00 ft Total Volume: 4.066 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

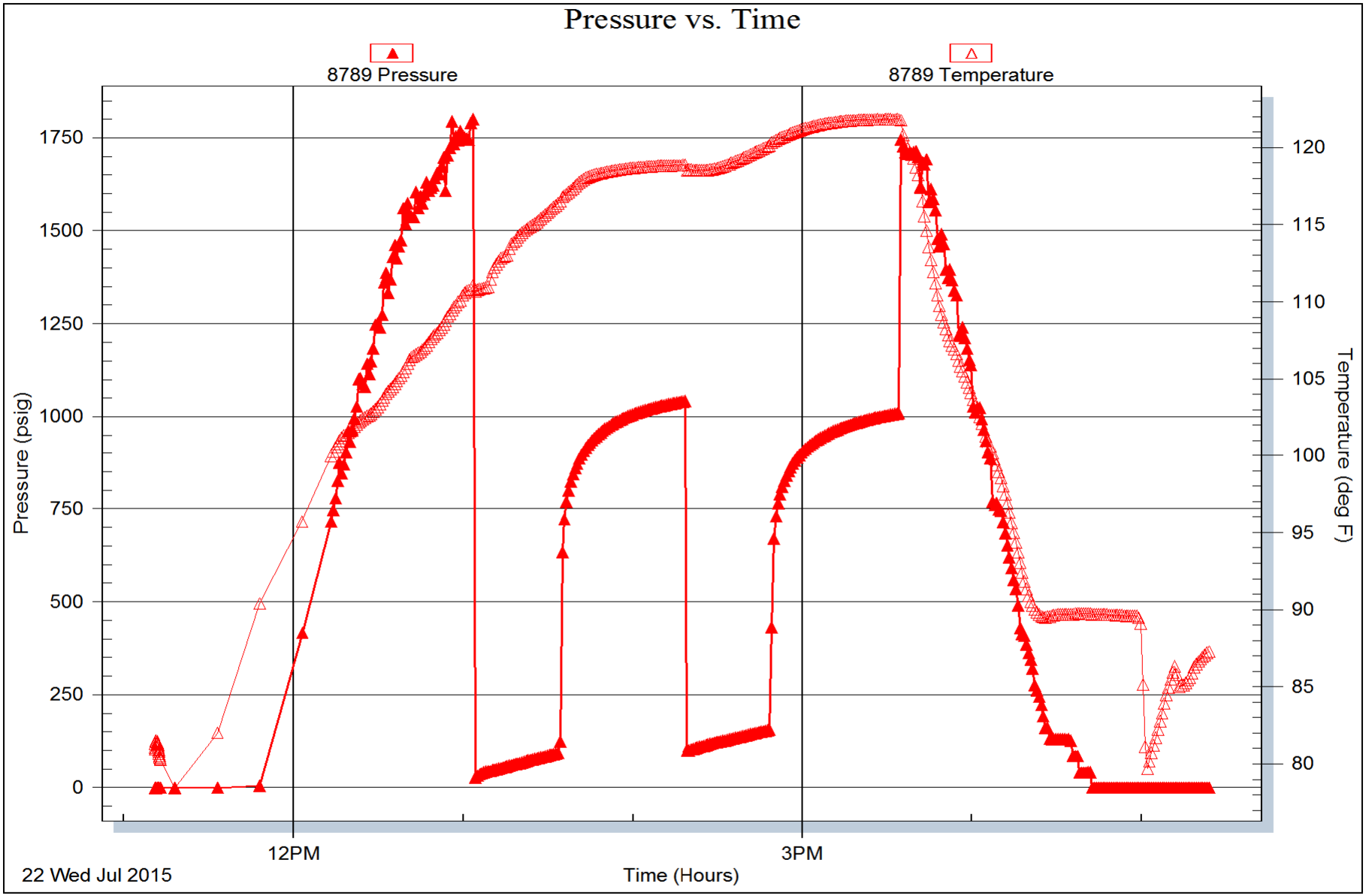
Recovery Comments: .069 @ 90

Serial #: 8289 **Outside** I A Operating Inc Archer # 21-2 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 62393 Printed: 2015.07.22 @ 19:46:25

Serial #: 8789 **Inside** I A Operating Inc Archer # 21-2 DST Test Number: 1

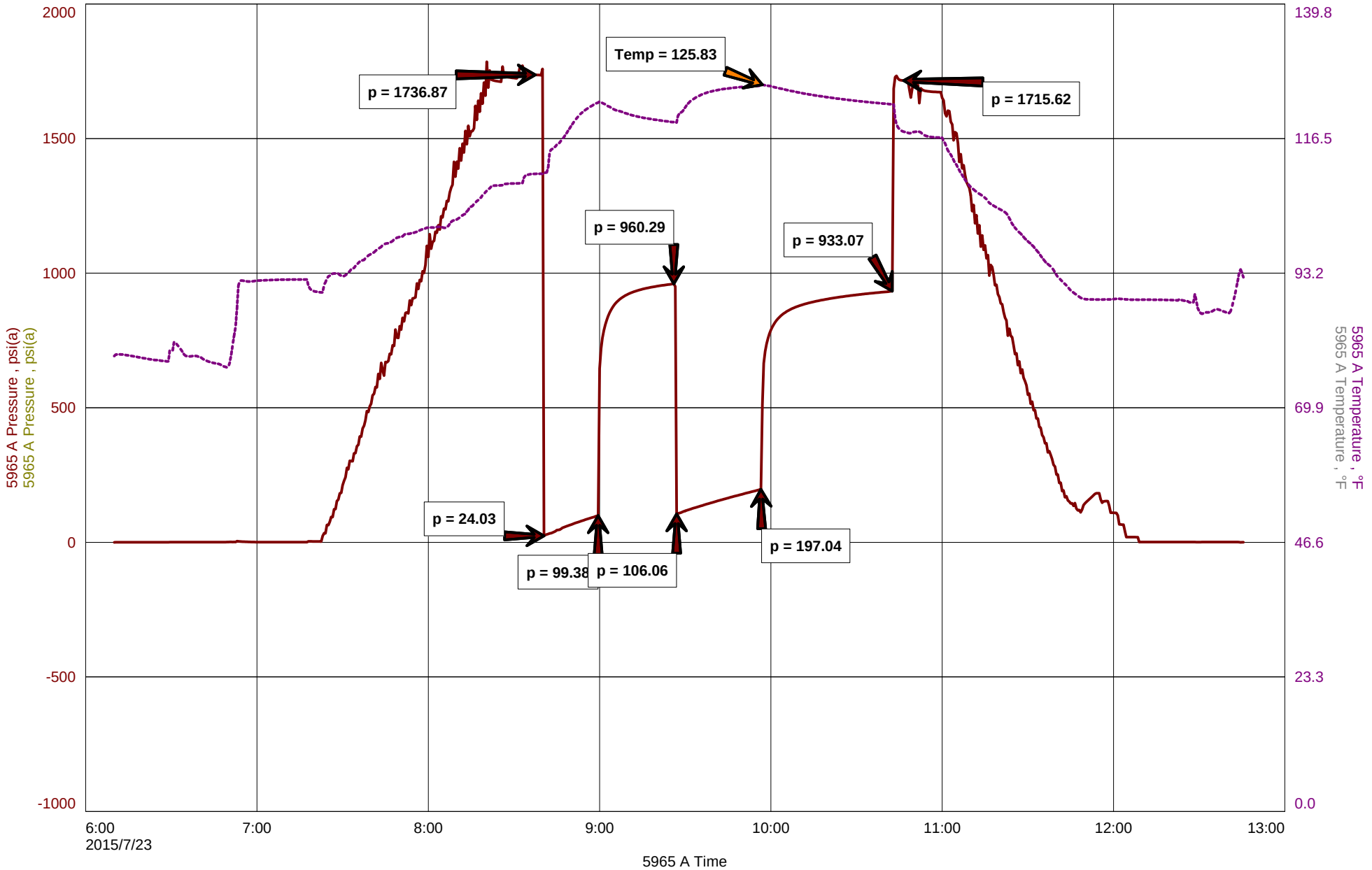


Trilobite Testing, Inc Ref. No: 62393 Printed: 2015.07.22 @ 19:46:25

IA Operating
DST 1 LKC E0F 3653-3682
Start Test Date: 2015/07/23
Final Test Date: 2015/07/23

KS Archer 21-2
Formation: LKC E-F
Job Number: W198

KS Archer 21-2 DST 1



Diamond Testing General Report

Wilbur Steinbeck
TESTER
CELL: 620-282-1573

General Information

Company Name IA Operating

Contact	Jeff Lawler	**Job Number**	W198
Well Name	KS Archer 21-2	**Representative**	Wilbur Steinbeck
Unique Well ID	DST 1 LKC E0F 3653-3682	**Well Operator**	Discovery 4
Surface Location	21-8s-26w Sheridan/Kan	**Report Date**	2015/07/23
Field	Wildcat	**Prepared By**	Wilbur Steinbeck
		Qualified By	Jeff Lawler

Test Information

Test Type	Conventional
Formation	LKC E-F
Well Fluid Type	01 Oil
Test Purpose (AEUB)	Initial Test

Start Test Date	2015/07/23	**Start Test Time**	06:10:00
Final Test Date	2015/07/23	**Final Test Time**	12:45:00

Test Recovery

Recovery 400 MCW 25%M 25%W
400 Total Fluid

Tool Sample=MCW 10%M 90%W

RW=88000ppm

DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313

DRILL-STEM TEST TICKET

FILE: KS Archer 21-2 DST 1

TIME ON: 6:10

TIME OFF: 12:45

Company IA Operating — Lease & Well No. KS Archer 21-2

Contractor Discovery 4 — Charge to IA Operating

Elevation 2421 KB — Formation LKC E-F — Effective Pay ____ Ft. — Ticket No. W198

Date 7-23-15 — Sec. 21 — Twp. 8 S — Range 26 W — County Sheridan/Kan — State KANSAS

Test Approved By Jeff Lawler — Diamond Representative Wilbur Steinbeck

Formation Test No. 1 — Interval Tested from 3653 ft. to 3682 ft. — Total Depth 3682 ft.

Packer Depth 3648 ft. — Size 6 3/4 in. — Packer depth ____ ft. — Size 6 3/4 in.

Packer Depth 3653 ft. — Size 6 3/4 in. — Packer depth ____ ft. — Size 6 3/4 in.

Depth of Selective Zone Set ____

Top Recorder Depth (Inside) 3639 ft. — Recorder Number 5965 — Cap. 5000 P.S.I.

Bottom Recorder Depth (Outside) 3654 ft. — Recorder Number 5587 — Cap. 5,000 P.S.I.

Below Straddle Recorder Depth ____ ft. — Recorder Number ____ — Cap. ____ P.S.I.

Mud Type Chem — Viscosity 60 — Drill Collar Length 30 ft. — I.D. 2 1/4 in.

Weight 9.2 — Water Loss 7.2 cc. — Weight Pipe Length 0 ft. — I.D. 2 7/8 in

Chlorides 800 P.P.M. — Drill Pipe Length 3598 ft. — I.D. 3 1/2 in

Jars: Make STERLING — Serial Number 7 — Test Tool Length 25 ft. — Tool Size 3 1/2-IF in

Did Well Flow? NO — Reversed Out NO — Anchor Length 29 ft. — Size 4 1/2-FH in

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

Blow: 1st Open: Surge blow died in 10 min — No Return

2nd Open: Surface Blow built to 1" — No Return

Recovered 400 ft. of MCW 25%M 75%W

Recovered 400 ft. of Total Fluid

Recovered ____ ft. of ____

Recovered ____ ft. of ____

Recovered ____ ft. of 80 Miles RT

Recovered ____ ft. of ____

Remarks:

Tool Sample=MCW 10%M 90%W

RW=88000ppm

Price Job	
Other Charges	
Insurance	
Total	

Time Set Packer(s) 8:40 A.M. P.M. — Time Started Off Bottom 10:40 A.M. P.M. — Maximum Temperature 126

Initial Hydrostatic Pressure ..... (A) 1737 P.S.I.

Initial Flow Period ..... Minutes 15 (B) 99 P.S.I. to (C) 24 P.S.I.

Initial Closed In Period ..... Minutes 30 (D) 960 P.S.I.

Final Flow Period ..... Minutes 30 (E) 106 P.S.I. to (F) 197 P.S.I.

Final Closed In Period ..... Minutes 45 (G) 933 P.S.I.

Final Hydrostatic Pressure ..... (H) 1716 P.S.I.

DIAMOND TESTING, LLC
P.O. Box 157
HOISINGTON, KANSAS 67544
(620) 653-7550 • (800) 542-7313
Archer21-2DST2

Company IA Operating, Inc. Lease & Well No. Archer No. 21-2

Elevation 2421 KB Formation Lansing/Kansas City "E" & "F" Effective Pay -- Ft. Ticket No. W198

Date 7-23-15 Sec. 21 Twp. 8S Range 26W County Sheridan State Kansas

Test Approved By Jeff Lawler Diamond Representative Wilbur Steinbeck

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Formation Test No. 2 Interval Tested from 3,653 ft. to 3,682 ft. Total Depth 3,682 ft

Packer Depth 3,648 ft. Size 6 3/4 in. Packer Depth -- ft. Size -- in.

Packer Depth 3,653 ft. Size 6 3/4 in. Packer Depth -- ft. Size -- in.

Depth of Selective Zone Set ft.

Top Recorder Depth (Inside) 3,639 ft. Recorder Number 5965 Cap. 5,000 psi.

Bottom Recorder Depth (Outside) 3,654 ft. Recorder Number 5587 Cap. 5,000 psi.

Below Straddle Recorder Depth ft. Recorder Number Cap. psi.

Drilling Contractor Discovery Drilling Company, Inc. - Rig 4

Mud Type Chemical Viscosity 60

Weight 9.2 Water Loss 7.2 cc.

Chlorides 800 P.P.M.

Jars: Make Sterling Serial Number 7

Did Well Flow? No Reversed Out No

Drill Collar Length 30 ft I.D. 2 1/4 in.

Weight Pipe Length -- ft I.D. -- in.

Drill Pipe Length 3,598 ft I.D. 3 1/2 in.

Test Tool Length 25 ft Tool Size 3 1/2-IF in.

Anchor Length 29 ft. Size 4 1/2-FH in.

Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2-XH in.

Blow: 1st Open: Surge blow. Died in 10 mins. No blow back during shut-in.

2nd Open: Surface blow increasing to 1 in. No blow back during shut-in.

Recovered 400 ft. of mud cut water = 5.412700 bbls. (Grind out: 75%-water; 25%-mud)

Recovered ft. of

Recovered ft. of

Recovered ft. of

Recovered ft. of

Recovered ft. of

Remarks Tool Sample Grind Out: 90%-water; 10%-mud (Chlorides: 88,000 Ppm)

Time Set Packer(s) 8:40 A.M. Time Started off Bottom 10:40 A.M. Maximum Temperature 126°

Initial Hydrostatic Pressure.....(A) 1737 P.S.I.

Initial Flow Period.....Minutes 15 (B) 24 P.S.I. to (C) 99 P.S.I.

Initial Closed In Period.....Minutes 30 (D) 960 P.S.I.

Final Flow Period.....Minutes 30 (E) 106 P.S.I to (F) 197 P.S.I.

Final Closed In Period.....Minutes 45 (G) 933 P.S.I.

Final Hydrostatic Pressure.....(H) 1716 P.S.I.

Diamond Testing General Report

Wilbur Steinbeck
TESTER
CELL: 620-282-1573

General Information

Company Name	IA Operating, Inc		
Contact	Julie Burrows	Job Number	W198
Well Name	Archer #21-2	Representative	Wilbur Steinbeck
Unique Well ID	DST 2 LKC "E-F" 3653-3682	Well Operator	IA Operating, Inc
Surface Location	21-8s-26w Sheridan/Kan	Report Date	2015/07/23
Field	Studley West	Prepared By	Wilbur Steinbeck
		Qualified By	Jeff Lawler

Test Information

Test Type	Conventional
Formation	LKC "E-F"
Well Fluid Type	01 Oil
Test Purpose (AEUB)	Initial Test

Start Test Date	2015/07/23	Start Test Time	06:10:00
Final Test Date	2015/07/23	Final Test Time	12:45:00

Test Recovery

Recovery: 400' MCW 75% W 25% M

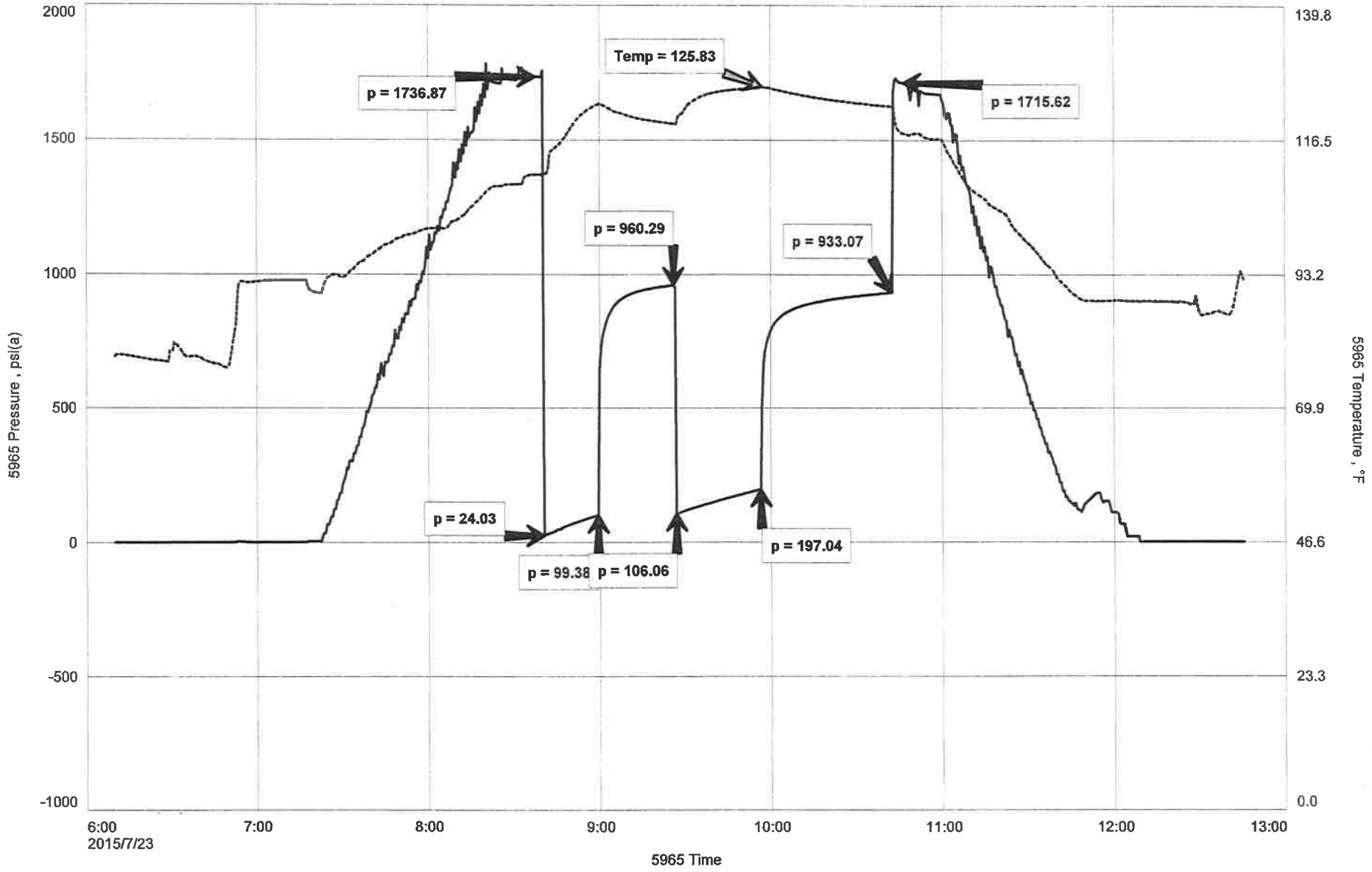
Tool Sample: MCW 90% W 10% M

Chlorides: 88,000 ppm

IA Operating, Inc
DST 2 LKC "E-F" 3653-3682
Start Test Date: 2015/07/23
Final Test Date: 2015/07/23

Archer #21-2
Formation: LKC "E-F"
Pool: Studley West
Job Number: W198

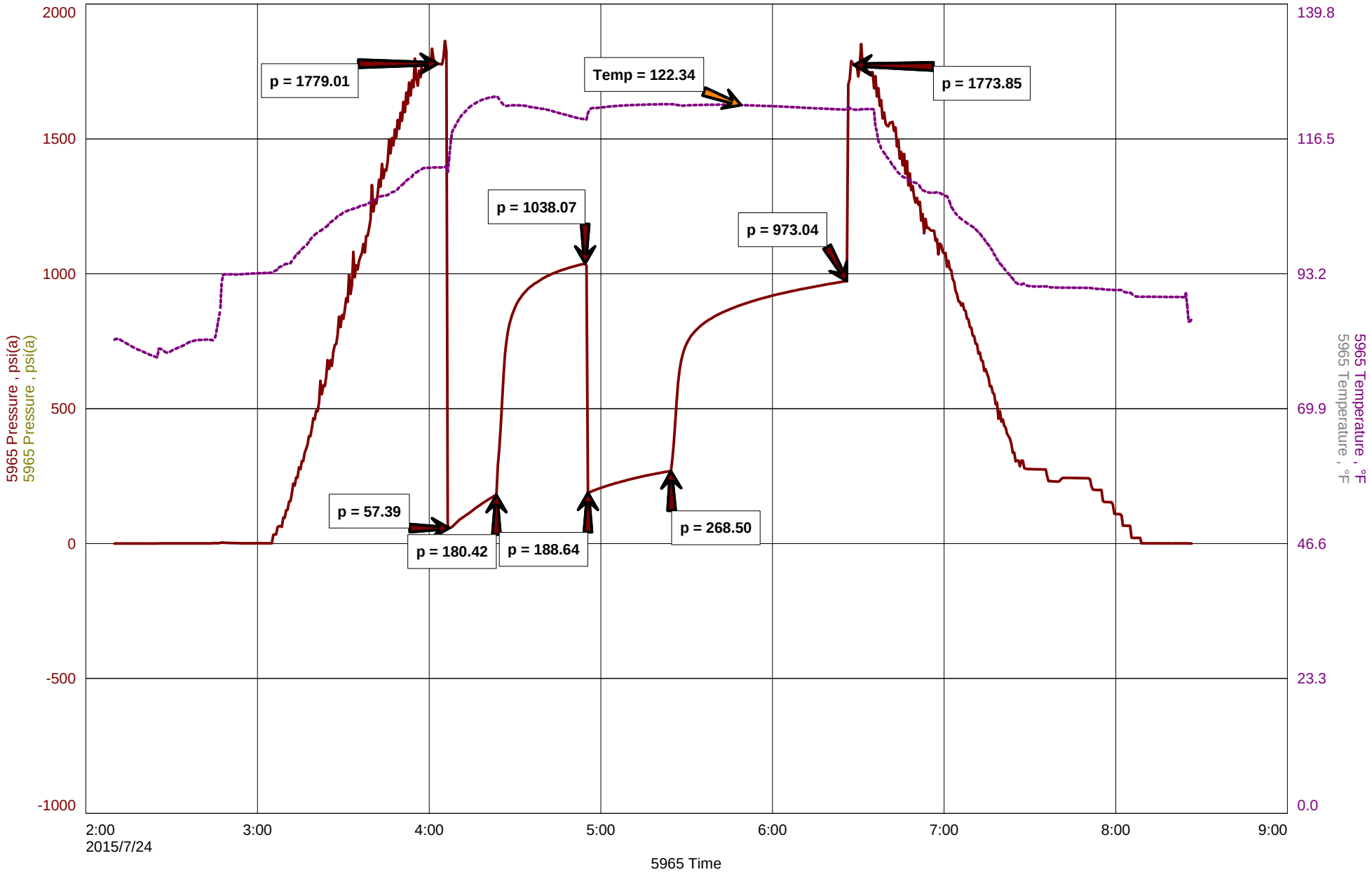
Archer #21-2



IA Operating
DST 2 LKC H-K 3707-3800
Start Test Date: 2015/07/24
Final Test Date: 2015/07/24

KS Archer 21-2
Formation: LKC H-K
Job Number: W199

KS Archer 21-2 DST 2



Diamond Testing General Report

Wilbur Steinbeck
TESTER
CELL: 620-282-1573

General Information

Company Name IA Operating

Contact	Jeff Lawler	**Job Number**	W199
Well Name	KS Archer 21-2	**Representative**	Wilbur Steinbeck
Unique Well ID	DST 2 LKC H-K 3707-3800	**Well Operator**	Discovery 4
Surface Location	21-8s-26w Sheridan/Kan	**Report Date**	2015/07/24
Field	Wildcat	**Prepared By**	Wilbur Steinbeck
		Qualified By	Jeff Lawler

Test Information

Test Type	Conventional
Formation	LKC H-K
Well Fluid Type	01 Oil
Test Purpose (AEUB)	Initial Test

Start Test Date	2015/07/24	**Start Test Time**	02:10:00
Final Test Date	2015/07/24	**Final Test Time**	08:25:00

Test Recovery

Recovery 120 Gassy Free Oil
850 OMCW 5%O 20%M 25%W
970 Total Fluid

Tool Sample=OMCW 5%O 40%M 55%W

RW=80000ppm

Corrected Gravity=39

DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313

DRILL-STEM TEST TICKET

FILE: KS Archer 21-2 DST 2

TIME ON: 2:10

TIME OFF: 8:25

Company IA Operating — Lease & Well No. KS Archer 21-2

Contractor Discovery 4 — Charge to IA Operating

Elevation 2421 KB — Formation LKC H-K — Effective Pay ____ Ft. — Ticket No. W199

Date 7-24-15 — Sec. 21 — Twp. 8 S — Range 26 W — County Sheridan/Kan — State KANSAS

Test Approved By Jeff Lawler — Diamond Representative Wilbur Steinbeck

Formation Test No. 2 — Interval Tested from 3707 ft. to 3800 ft. — Total Depth 3800 ft.

Packer Depth 3702 ft. — Size 6 3/4 in. — Packer depth ____ ft. — Size 6 3/4 in.

Packer Depth 3707 ft. — Size 6 3/4 in. — Packer depth ____ ft. — Size 6 3/4 in.

Depth of Selective Zone Set ____

Top Recorder Depth (Inside) 3693 ft. — Recorder Number 5965 — Cap. 5000 P.S.I.

Bottom Recorder Depth (Outside) 3708 ft. — Recorder Number 5587 — Cap. 5,000 P.S.I.

Below Straddle Recorder Depth ____ ft. — Recorder Number ____ — Cap. ____ P.S.I.

Mud Type Chem — Viscosity 56 — Drill Collar Length 30 ft. — I.D. 2 1/4 in.

Weight 9.0 — Water Loss 7.2 cc. — Weight Pipe Length 0 ft. — I.D. 2 7/8 in

Chlorides 500 P.P.M. — Drill Pipe Length 3652 ft. — I.D. 3 1/2 in

Jars: Make STERLING — Serial Number 7 — Test Tool Length 25 ft. — Tool Size 3 1/2-IF in

Did Well Flow? NO — Reversed Out NO — Anchor Length 93 ft. — Size 4 1/2-FH in

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

Blow: 1st Open: BOB in 3 min — Built to 2"

2nd Open: BOB in 10 min — BOB in 42 min

Recovered 120 ft. of Free Oil

Recovered 850 ft. of OMCW 5%O 20%M 75%W

Recovered 970 ft. of Total Fluid

Recovered 400 ft. of GIP

Recovered ____ ft. of 80 Miles RT — Price Job

Recovered ____ ft. of ____ — Other Charges

Remarks: Tool Sample=OMCW 5%O 40%M 55%W — Insurance

RW=80000ppm

Corrected Gravity=39 — Total

Time Set Packer(s) 4:08 A.M. P.M. — Time Started Off Bottom 6:23 A.M. P.M. — Maximum Temperature 122

Initial Hydrostatic Pressure ..... (A) 1779 P.S.I.

Initial Flow Period ..... Minutes 15 (B) 57 P.S.I. to (C) 180 P.S.I.

Initial Closed In Period ..... Minutes 30 (D) 1038 P.S.I.

Final Flow Period ..... Minutes 30 (E) 189 P.S.I. to (F) 269 P.S.I.

Final Closed In Period ..... Minutes 60 (G) 973 P.S.I.

Final Hydrostatic Pressure ..... (H) 1774 P.S.I.