KOLAR Document ID: 1358578

Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1
January 2018
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 34434
Name: Edison Operating Company LLC
Address 1: 8100 E. 22ND ST. N., BLDG 1900
Address 2:
City: WICHITA State: KS Zip: 67226 + __ __ __ __
Contact Person: David Withrow
Phone: (316) 201-1744
CONTRACTOR: License # 33350
Name: Southwind Drilling, Inc.
Wellsite Geologist: Derek W. Patterson
Purchaser:

Designate Type of Completion:
☑ New Well ☐ Re-Entry ☐ Workover
☑ Oil ☐ WSW ☐ SWD
☐ Gas ☐ DH ☐ EOR
☐ OG ☐ GSW
☐ 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 EOR ☐ Conv. to SWD
☐ Plug Back ☐ Liner ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ EOR Permit #:
☐ GSW Permit #:

07/13/2017 Spud Date or Recompletion Date
07/20/2017 Date Reached TD
08/29/2017 Completion Date or Recompletion Date

API No.: 15-009-26176-00-00
Spot Description:
SW - NE - NW - NW Sec. 27 Twp. 19 S. R. 12 ☐ East ☑ West
470 Feet from ☑ North / ☐ South Line of Section
828 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: Barton
Lease Name: KNOP Well #: 1-27
Field Name:
Producing Formation: Arbuckle
Elevation: Ground: 1823 Kelly Bushing: 1832
Total Vertical Depth: 3520 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 401 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: 11000 ppm Fluid volume: 691 bbls
Dewatering method used: Evaporated
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: 08/30/2017
☑ **Confidential Release Date:** 08/30/2019
☑ **Wireline Log Received** ☑ **Drill Stem Tests Received**
☑ **Geologist Report / Mud Logs Received**
☐ **UIC Distribution**
ALT ☑ **I** ☐ **II** ☐ **III** **Approved by:** Karen Ritter **Date:** 09/05/2017

Operator Name: Edison Operating Company LLC Lease Name: KNOP Well #: 1-27

Sec. 27 Twp. 19 S. R. 12 ☐ East ☑ West County: Barton

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 *(Attach Additional Sheets)*	☑ Yes	☐ No
Samples Sent to Geological Survey	☐ Yes	☑ No
Cores Taken	☐ Yes	☑ No
Electric Log Run	☑ Yes	☐ No
Geologist Report / Mud Logs	☑ Yes	☐ No

List All E. Logs Run:
Attached

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

Name	Top	Datum
Heebner	3016	-1184
Lansing	3147	-1315
Arbuckle	3416	-1584
LTD	3520	-1688

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	12.25	8.625	23	401	3% cc 1/4 cell flake	270	60/40 Poz
Production	7.875	5.5	15.5	3505	AA-2	100	n/a

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	-			
	-			

1. Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☑ No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*
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)*

Date of first Production/Injection or Resumed Production/ Injection:	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:	METHOD OF COMPLETION:	PRODUCTION INTERVAL: Top	Bottom
☐ Vented ☐ Sold ☐ Used on Lease *(If vented, Submit ACO-18.)*	☐ Open Hole ☑ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*	3441	3443

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record *(Amount and Kind of Material Used)*
2	3441	3443			500 gals 15% MA, flush w/ 18 bbls 2% KCL H20

TUBING RECORD: Size: Set At: Packer At:

Mail to: KCC - Conservation Division, 266 N. Main, Suite 220, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Edison Operating Company LLC
Well Name	KNOP 1-27
Doc ID	1358578

All Electric Logs Run

Dual Induction
CDNL
Micro
Sonic

Form	ACO1 - Well Completion
Operator	Edison Operating Company LLC
Well Name	KNOP 1-27
Doc ID	1358578

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	12.25	8.625	23	401	3% cc 1/4 cell flake	270	60/40 Poz
Production	7.875	5.5	15.5	3505	AA-2	100	n/a

BASIC ENERGY SERVICES

PAGE	CUST NO	YARD #	INVOICE DATE
1 of 1	1007020	1718	07/27/2017

INVOICE NUMBER

92481671

Pratt (620) 672-1201

BILL TO
EDISON OPERATING COMPANY LLC
8100 E 22ND ST N
WICHITA
KS US 67226
ATTN: DAVID WITHROW

JOB SITE
LEASE NAME Knop 1-27
LOCATION
COUNTY Barton
STATE KS
JOB DESCRIPTION Cement-New Well Casing/Pi
JOB CONTACT

JOB #	EQUIPMENT #	PURCHASE ORDER NO.	TERMS	DUE DATE
41043428	27463		Net - 30 days	08/26/2017

For Service Dates: 07/14/2017 to 07/14/2017

0041043428

171815307A Cement-New Well Casing/Pi 07/14/2017
Cement Surface

	QTY	U of M	UNIT PRICE	INVOICE AMOUNT
60/40 POZ	270.00	EA	6.60	1,782.00
Calcium Chloride	699.00	EA	0.58	403.67
Celloflake	68.00	EA	2.04	138.38
"Wooden Cmt Plug, 8 5/8"""	1.00	EA	88.00	88.00
"Unit Mileage Chg (PU, cars one way)"	55.00	MI	2.47	136.12
Heavy Equipment Mileage	110.00	MI	4.13	453.75
641---"Propp & Bulk Del.Chrg per ton mil	1.00	EA	881.04	881.04
Blending & Mixing Service Charge	270.00	BAG	0.77	207.90
Plug Container Util. Chg.	1.00	EA	137.50	137.50
Depth Charge; 0-500'	1.00	EA	550.00	550.00
"Service Supervisor, first 8 hrs on loc.	1.00	EA	96.25	96.25

Cement for 8⅝" surf csg
9208 9-4

PLEASE REMIT TO:
BASIC ENERGY SERVICES,LP
PO BOX 841903
DALLAS,TX 75284-1903

SEND OTHER CORRESPONDENCE TO:
BASIC ENERGY SERVICES,LP
801 CHERRY ST, STE 2100
FORT WORTH, TX 76102

SUB TOTAL	4,874.61
TAX	0.00
INVOICE TOTAL	4,874.61

BASIC ENERGY SERVICES
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61
P.O. Box 8613
Pratt, Kansas 67124
Phone 620-672-1201

FIELD SERVICE TICKET
1718 15307 A

DATE TICKET NO.

DATE OF JOB 7-14-17 DISTRICT Pratt	NEW WELL ☒ OLD WELL ☐ PROD ☐ INJ ☐ WDW ☐ CUSTOMER ORDER NO.:
CUSTOMER Edison Operating Company	LEASE Knop WELL NO. 1-27
ADDRESS	COUNTY Barton STATE Ks
CITY STATE	SERVICE CREW Matial, McGraw, Clymer
AUTHORIZED BY	JOB TYPE: 2-1/2 8 5/8 Surface

EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS
27403	5				
21010	2.5				

	DATE		TIME
TRUCK CALLED	7-13-17	AM (PM)	1:00
ARRIVED AT JOB		AM PM	5:00
START OPERATION		AM PM	11:40
FINISH OPERATION	7-14	AM PM	12:40
RELEASED		AM PM	1:00
MILES FROM STATION TO WELL			55

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).
The undersigned is authorized to execute this contract as an agent of the customer. As such, the undersigned agrees and acknowledges that this contract for services, materials, products, and/or supplies includes all of and only those terms and conditions appearing on the front and back of this document. No additional or substitute terms and/or conditions shall become a part of this contract without the written consent of an officer of Basic Energy Services LP.

SIGNED: X Rusty Pyle
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	$ AMOUNT
CP103	60/40 POZ	SK	270		3,240 00
CC109	Calcium Chloride	lb	699		733 95
CC102	Cellophane	lb	68		251 60
CF153	Wood Plug 8 5/8	ea	1		160 00
E100	P.U. Mile	mi	55		247 50
E101	heavy eq. mile	mi	110		825 00
E113	Proppant & Bulk del	TM	641		1,601 88
CE200	depth charge 0-500 4hr	(ea)	1		1,000 00
CE240	blend & mix	SK	270		378 00
S003	Supervisor	ea	1		175 00
CE500	Plug cont.	JOB	1		250 00

SUB TOTAL	8862 23
SERVICE & EQUIPMENT %TAX ON $	
MATERIALS %TAX ON $	V
TOTAL	4,874 61

CHEMICAL / ACID DATA:			

SERVICE REPRESENTATIVE Mike Martin	THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY: X Rusty Pyle
	(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

FIELD SERVICE ORDER NO.

CLOUD LITHO - Abilene, TX

BASIC ENERGY SERVICES
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61
P.O. Box 8613
Pratt, Kansas 67124
Phone 620-672-1201

FIELD SERVICE TICKET

1718 15307 A

DATE TICKET NO.

DATE OF JOB 7-14-17 DISTRICT	NEW WELL ☑ OLD WELL ☐ PROD ☐ INJ ☐ WDW ☐ CUSTOMER ORDER NO.:
CUSTOMER	LEASE WELL NO.
ADDRESS	COUNTY STATE
CITY STATE	SERVICE CREW
AUTHORIZED BY	JOB TYPE:

EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS

	DATE	AM PM	TIME
TRUCK CALLED	7	AM PM	
ARRIVED AT JOB		AM PM	
START OPERATION		AM PM	
FINISH OPERATION		AM PM	
RELEASED		AM PM	
MILES FROM STATION TO WELL	47		

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).
The undersigned is authorized to execute this contract as an agent of the customer. As such, the undersigned agrees and acknowledges that this contract for services, materials, products, and/or supplies includes all of and only those terms and conditions appearing on the front and back of this document. No additional or substitute terms and/or conditions shall become a part of this contract without the written consent of an officer of Basic Energy Services LP.

SIGNED:
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	$ AMOUNT
					3,240 00
					733 95
					251 60
					160 00
					247 50
					825 00
					1,604 88
					378 00
					175 00
					250 00
				SUB TOTAL	8362 73

CHEMICAL / ACID DATA:

SERVICE & EQUIPMENT	%TAX ON $	
MATERIALS	%TAX ON $	
	TOTAL	487461

SERVICE REPRESENTATIVE	THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY:

(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

FIELD SERVICE ORDER NO.

CLOUD LITHO - Abilene, TX

BASIC energy services, L.P.

TREATMENT REPORT

Customer [illegible]	Lease No.	Date	7-14-17
Lease Knox	Well # 1-27		

Field Order # 15537	Station Plate	Casing 5½	Depth 402	County Barton	State KS	
Type Job 2 4½ SWS Swell		Formation		Legal Description 27-19S-12W		

PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size 5½	Tubing Size	Shots/Ft		Acid 270 sx	60/40 RATE	PRESS	ISIP
Depth 402	Depth	From	To	Pre Pad 32 sx 270 sx	Max		5 Min.
Volume 25.6	Volume	From	To	Pad 125 sx 270 sx	Min		10 Min.
Max Press 1200	Max Press	From	To	Frac	Avg		15 Min.
Well Connection	Annulus Vol.	From	To		HHP Used		Annulus Pressure
Plug Depth 382	Packer Depth	From	To	Flush 24.3	Gas Volume		Total Load

Customer Representative Ron Poff	Station Manager W [illegible]	Treater [illegible]	

Service Units	537		27963		19951	21014						
Driver Names	[illegible]		M. Graw		Clark							

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
9:00					On location / Safety meeting
10:15					Run 5½ casing
11:25					casing on bottom
11:35					hook to csng / circ with rig pump
11:40	150		3	3	pump 3 bbl wtr
11:42	15		18.2	3	mix 270 sx 60/40 poz
12:01	-		-	-	release plug
12:04			-	3	start displacement
12:10	200		29.3	3	plug down / shut in well
					10 BBL cmt to pit
					Job complete
					Thank You!
					Rig down /
					move to Hoke

Taylor Printing, Inc. 620-672-3656

BASIC ENERGY SERVICES

PAGE	CUST NO	YARD #	INVOICE DATE
1 of 1	1007020	1718	07/31/2017

INVOICE NUMBER

92485013

Pratt (620) 672-1201

BILL TO
EDISON OPERATING COMPANY LLC
8100 E 22ND ST N
WICHITA
KS US 67226
ATTN: DAVID WITHROW

JOB SITE
LEASE NAME Knop 1-27
LOCATION
COUNTY Barton
STATE KS
JOB DESCRIPTION Cement-New Well Casing/Pi
JOB CONTACT

JOB #	EQUIPMENT #	PURCHASE ORDER NO.	TERMS	DUE DATE
41044464	27463		Net - 30 days	08/30/2017

	QTY	U of M	UNIT PRICE	INVOICE AMOUNT
For Service Dates: 07/21/2017 to 07/21/2017				
0041044464				
171813097A Cement-New Well Casing/Pi 07/21/2017				
Cement Longstring				
AA2 Cement	100.00	EA	9.35	935.00
60/40 POZ	30.00	EA	6.60	198.00
FLA-322	47.00	EA	4.12	193.87
C-41P	24.00	EA	2.20	52.80
Gilsonite	501.00	EA	0.37	184.62
Salt	503.00	EA	0.27	138.32
"Auto Fill Float Shoe 5 1/2"" (Blue)"	1.00	EA	198.00	198.00
"Latch Down Plug & Baffle, 5 1/2"" (Blu	1.00	EA	220.00	220.00
"Turbolizer, 5 1/2"" (Blue)"	8.00	EA	60.50	484.00
Mud Flush	500.00	EA	0.83	412.50
Claymax KCL Substitute	5.00	EA	19.25	96.25
"Unit Mileage Chg (PU, cars one way)"	55.00	MI	2.47	136.12
Heavy Equipment Mileage	110.00	MI	4.13	453.75
"Proppant & Bulk Del. Chgs., per ton mil	330.00	EA	1.38	453.75
Blending & Mixing Service Charge	130.00	BAG	0.77	100.10
Plug Container Util. Chg.	1.00	EA	137.50	137.50
Depth Charge; 3001-4000'	1.00	EA	1,188.00	1,188.00
"Service Supervisor, first 8 hrs on loc.	1.00	EA	96.26	96.26

CEMENT FOR 5 1/2" CSG 9208

PLEASE REMIT TO:
BASIC ENERGY SERVICES,LP
PO BOX 841903
DALLAS,TX 75284-1903

SEND OTHER CORRESPONDENCE TO:
BASIC ENERGY SERVICES,LP
801 CHERRY ST, STE 2100
FORT WORTH, TX 76102

SUB TOTAL	5,678.84
TAX	0.00
INVOICE TOTAL	5,678.84

BASIC ENERGY SERVICES
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61
P.O. Box 8613
Pratt, Kansas 67124
Phone 620-672-1201

TMH36

FIELD SERVICE TICKET
1718 13097 A

DATE TICKET NO.

DATE OF JOB 7-21-17 DISTRICT 1718	NEW WELL ☐ OLD WELL ☐ PROD ☐ INJ ☐ WDW ☐ CUSTOMER ORDER NO.:
CUSTOMER Edison Oper Comp	LEASE Knop 1-27 WELL NO.
ADDRESS	COUNTY Barton STATE KS
CITY STATE	SERVICE CREW 1718
AUTHORIZED BY	JOB TYPE: Longstring 2 42

EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS
27963 X	1				
84980-19862	1				

	DATE	AM PM	TIME
TRUCK CALLED	7 21	AM PM	1000
ARRIVED AT JOB		AM PM	1200
START OPERATION		AM PM	1430
FINISH OPERATION		AM PM	
RELEASED		AM PM	
MILES FROM STATION TO WELL			

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).
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SIGNED: Rocky Knopp
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	$ AMOUNT
CP105	AA-2 Cement		100 sk		1700 —
CP103	60-40 poz		30 sk		360 —
CC129	FLA-322		47 Lb		352 50
CC105	C-41		24 Lb		96 —
CC201	Gilsonite		501 Lb		335 67
CC111	Salt		503 Lb		251 50
CF1251	Auto Fill Shoe	5 1/2	1 EA		360 —
CF607	Latch Down Plug + Baffle	5 1/2	1 EA		400 —
CF1651	Turbolizers	5 1/2	8 EA		880 —
CC151	Mud Flush		500 gal		750 —
CC704	Claymax KCL Substitute		5 gal		175 —
E100	Pickup mileage 1 way	1 EA	55		247 50
E101	Truck mileage 1 way	2 EA	110		825 —
E113	Bulk Delv Charge		330 ton/mi		825 —
CE204	Pump Charge 3001-4000'	1 EA	4 hr		2160 —
CE240	Bulk Delv Charge		130 sk		182 —
SC03	Service Supv Charge	1 EA	8 hr		175 —
CE504	Plug Container Charge	1 EA	5 1/2		250 —

Book ~~Discounted~~ Price

CHEMICAL / ACID DATA:			

SUB TOTAL		10,325 19
SERVICE & EQUIPMENT	%TAX ON $	
MATERIALS	%TAX ON $	
TOTAL		5678 84

~~Book~~ Discounted Price

SERVICE REPRESENTATIVE D L Scott

THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY:
(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

FIELD SERVICE ORDER NO.

CLOUD LITHO - Abilene, TX

BASIC ENERGY SERVICES
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61
P.O. Box 8613
Pratt, Kansas 67124
Phone 620-672-1201

FIELD SERVICE TICKET

1718 13097 A

DATE TICKET NO.

DATE OF JOB 7-21-17 DISTRICT 1718	NEW WELL ☐ OLD WELL ☐ PROD ☐ INJ ☐ WDW ☐ CUSTOMER ORDER NO.:
CUSTOMER	LEASE Knop WELL NO. 1-24
ADDRESS	COUNTY Barton STATE KS
CITY STATE	SERVICE CREW 1718
AUTHORIZED BY	JOB TYPE: Longstring 2 42

EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS
27963	1				
19580 19562	1				

	DATE	AM PM	TIME
TRUCK CALLED	7-21-17	AM PM	1000
ARRIVED AT JOB		AM PM	1200
START OPERATION		AM PM	1430
FINISH OPERATION		AM PM	
RELEASED		AM PM	
MILES FROM STATION TO WELL			

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).
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SIGNED: _____
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	$ AMOUNT
CP105	AA-2 Cement		100sk		1700 —
CP103	60/40 Poz		30sk		360 —
CC129	FLA 322		44Lb		352 50
CC105	C-41		24Lb		96 —
CC201	Gilsonite		50Lb		335 67
CC111	Salt		503Lb		251 50
CE125	Aux Fill Shoe	5½	1ea		360 —
CE107	Latch Down Plug & Baffle	5½	1ea		400 —
CE165	Turbolizers	5½	8ea		880 —
CC151	Mud Flush		500gl		750 —
CC164	Clayfix II		5gal		125 —
E100	Pickup Mileage	1ea	55		247 50
E101	Truck mileage	2ea	110		825 —
E113	Bulk Del. Chg.		330tm		825 —
CE204	Pump Charge	1ea	4hr		2160 —
E240	Blending & Mixing		130sk		182 —
E313	Service Supervisor	1ea	3hr		195 —
CE504	Plug Container	1ea	1ea		250 —

SUB TOTAL 11,523 19

CHEMICAL / ACID DATA:

SERVICE & EQUIPMENT	%TAX ON $	
MATERIALS	%TAX ON $	
	TOTAL	5618 54

SERVICE REPRESENTATIVE DL Scott	THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY:

(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

FIELD SERVICE ORDER NO.

CLOUD LITHO - Abilene, TX

BASIC energy services, L.P.

TREATMENT REPORT

Customer Edison Oper Comp	Lease No.			Date 7-21-17	
Lease Knob	Well # 1-27				
Field Order # 13047	Station Pratt KS	Casing 5 1/2	Depth 3510	County Barton	State Ks
Type Job 5 1/2 Longstring	Formation		Legal Description		

PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size 5 1/2	Tubing Size	Shots/Ft		Acid 100sk AA-2	RATE	PRESS 1500	ISIP
Depth 3468	Depth PBTD	From	To	Pre Pad	Max		5 Min.
Volume 82.5	Volume	From	To	Pad	Min		10 Min.
Max Press 1500	Max Press	From	To	Frac	Avg		15 Min.
Well Connection	Annulus Vol.	From	To		HHP Used		Annulus Pressure
Plug Depth	Packer Depth	From	To	Flush 20bbl Mud Flush	Gas Volume		Total Load

Customer Representative	Rick Depp			Station Manager	J Westerman			Treater	D Scott			
Service Units	V	27463	84950	19812								
Driver Names	Scott	Marshall	M'Graw	B	Mayfield							

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
1000					Called Out
1230					On Loc W/ Tcks Safety mtg
					FS + L.D. Plug on SJ
					Cent 1-2-3-5-6-7-8-9
					Csg on Bottom Drop Ball Circ Hr
1815	300		24	6	St 2% KCL Flush
1819	300		12	6	St Mud Flush
1821	300		5	6	H2O Spacer
1823	400		25.6	6	Mix 100sk AA-2 @ 15.0 ppg
1828	0		15	6	Close In + Wash Pump + Line
					Release Plug
1830	100			6	St Disp W/ 2% KCL
1840	500		68	5	Lift Cmt 68 Bbls Disp Out
1845	1200		82.5	0	Plug Down + psi test Csg
1847	0				Release psi Float Held
					Good Circ Thru Job
1850			7	2	Plug RH W/ 30sk Poz
					Job Complete
					Thank you Scotty

10244 NE Hiway 61 • P.O. Box 8613 • Pratt, KS 67124-8613 • (620) 672-1201 • Fax (620) 672-5383

Taylor Printing, Inc. 620-672-3656

EDISON OPERATING COMPANY LLC

Scale 1:240 Imperial

Well Name:	Knop #1-27		
Surface Location:	Sec. 27 - T19S - R12W		
Bottom Location:			
API:	15-009-26176-0000		
License Number:	34434		
Spud Date:	7/13/2017	Time:	11:00 AM
Region:	Barton County		
Drilling Completed:	7/20/2017	Time:	10:30 PM
Surface Coordinates:	470' FNL & 828' FWL		
Bottom Hole Coordinates:			
Ground Elevation:	1823.00ft		
K.B. Elevation:	1832.00ft		
Logged Interval:	2650.00ft	To:	3520.00ft
Total Depth:	3520.00ft		
Formation:	Lansing-Kansas City		
Drilling Fluid Type:	Chemical/Fresh Water Gel		

OPERATOR

Company:	Edison Operating Company LLC		
Address:	8100 E. 22nd St. North Building 1900 Wichita, KS 67226		
Contact Geologist:	David Withrow		
Contact Phone Nbr:	316.613.1544		
Well Name:	Knop #1-27		
Location:	Sec. 27 - T19S - R12W		
API:	15-009-26176-0000		
Pool:		Field:	Unnamed
State:	Kansas	Country:	USA

LOGGED BY

EDISON OPERATING COMPANY LLC

Company:	Edison Operating Company LLC		
Address:	8100 E. 22nd St. North Building 1900 Wichita, KS 67226		
Phone Nbr:	316.655.3550		
Logged By:	Geologist	Name:	Derek W. Patterson

REMARKS

After review of the geologic log, DST results, and the open hole logs for the Knop #1-27, it was decided upon by operator to run 5 1/2" production casing for further evaluation of the Lansing-Kansas City and Arbuckle sections.

Respectfully Submitted,

Derek W. Patterson

GENERAL INFORMATION

Service Companies

Drilling Contractor: Southwind Drilling - Rig #9
Tool Pusher: Wes Pfaff
Daylight Driller: Louis Nolde
Evening Driller: Derek Petz
Morning Driller: Travis Epp

Gas Detector: Bluestem Environmental
Engineer: Keith Reavis
Unit: 5259
Operational By: 1800'

Drilling Fluid: Mud-Co/Service Mud Inc.
Engineers: Rick Hughes, Jason Whiting

Logging Company: Eli Wireline
Engineer: Jeff Luebbers
Logs Ran: DI, CDNL, Micro, Sonic

Testing Company: Eagle Testers
Tester: Gene Budig

Deviation Survey

Depth	Survey
402'	1/4°
3182'	1/4°
RTD - 3520'	1°

Pipe Strap

Depth	Pipe Strap
3182'	0.63' Long to Board

Bit Record

Bit #	Size	Make	Type	Serial Number	Depth In	Depth Out	Feet	Hours
1	12 1/4"	Smith	RT	RR	0'	402'	402'	6.5
2	7 7/8"	JZ	HA-20	1706855	402'	3520'	3118'	78

Surface Casing

7.13.2017	Ran 9 joints of new 23#, 8 5/8" surface casing, tallying 390.15', set @ 401' KB. Cemented with 270 sacks 60/40 Poz, 3% cc, 2% gel, 1/4 #/sx flocell. Cement did circulate. Plug down @ 0015 hrs 7.14.17. By Basic Energy Services.

Production Casing

7.21.2017	Ran 81 joints of used and tested 15.5#, 5 1/2" production casing, tallying 3496.16', set @ 3505' KB. Cemented with 100 sacks AA2. Plug rathole with 30 sacks. Cement did circulate. Plug down @ 1845 hrs 7.21.17. By Basic Energy Services.

DAILY DRILLING REPORT

Date	0700 Hrs Depth	Previous 24 Hours of Operations
7.17.2017	3045'	Drilling and connections upper Pennsylvanian beds. Displace mud system @ 2704'. Geologist Derek W. Patterson on location 1810 hrs 7.16.17. Reset Bloodhound and test system. Drilling and connections Topeka, Heebner, and into Toronto. Made 524' over past 24 hrs of operations. WOB: 30k RPM: 80 PP: 980 SPM: 60 DMC: $89.12 CMC: $5,319.62
7.18.2017	3196'	Drilling and connections Toronto, Douglas, and Brown Lime. Short trip @ 3134' 1050 hrs 7.17.17. Conduct 20 stand short trip, CTCH. Resume drilling following short trip 1305 hrs 7.17.17. Drilling and connections Brown Lime and into Lansing-Kansas City. CFS @ 3158' (LKC 'A'). Resume drilling and connections Lansing-Kansas City. CFS @ 3182' (LKC 'B'). Shows warrant test. CTCH, drop survey, strap out for DST #1 1820 hrs 7.17.17. TIH with tool, conduct DST #1, TOH with tool, test unsuccessful. TIH with bit, CTCH, resume drilling following DST #1 0610 hrs 7.18.17. Drilling and connections Lansing-Kansas City. Made 151' over past 24 hrs of operations. WOB: 30k RPM: 80 PP: 980 SPM: 58 DMC: $1,122.58 CMC: $6,442.20
7.19.2017	3330'	Drilling and connections Lansing-Kansas City. CFS @ 3217' (LKC 'D'/'F'). CFS @ 3240' (LKC 'G'), CFS @ 3330' (LKC 'J'). Shows in LKC 'I'/ 'J' warrant test. CTCH, TOH for DST #2 1710 hrs 7.18.17. Pulling tight coming out of hole, decision made to run short trip. Conduct short trip, CTCH, TOH for DST #2. TIH with tool, conduct DST #2, TOH with tool, test successful. TIH with bit, CTCH. Made 134' over past 24 hrs of operations. WOB: 32k RPM: 80 PP: 925 SPM: 58 DMC: $1,176.52 CMC: $6,618.72
7.20.2017	3429'	CTCH, resume drilling following DST #2 0915 hrs 7.19.17. Drilling and connections Lansing-Kansas City and Base Kansas City. CFS @ 3407' (BKC-Conglomerate). Drilling Base Kansas City. CFS @ 3415' (BKC-Conglomerate). Drilling Conglomerate and into Arbuckle. CFS @ 3419' (Arb), CFS @ 3422' (Arb). Shows warrant test. CTCH, TOH for DST #3 1935 hrs 7.19.17. TIH with tool, conduct DST #3, TOH with tool, test successful. TIH with bit, CTCH. Resume drilling following DST #3 0530 hrs 7.20.17. Drilling Arbuckle. CFS @ 3429' (Arb). Made 99' over past 24 hrs of operations. WOB: 32k RPM: 80 PP: 890 SPM: 58 DMC: $284.26 CMC: $6,902.98
7.21.2017	RTD - 3520' LTD - 3520'	CFS @ 3429' (Arb). Shows warrant test. CTCH, TOH for DST #4 0745 hrs 7.20.17. TIH with tool, conduct DST #2, TOH with tool, test successful. TIH with bit, CTCH. Resume drilling following DST #4 1700 hrs 7.20.17. Drilling Arbuckle. CFS @ 3440' (Arb). Resume drilling and connections Arbuckle ahead to RTD of 3520'. RTD reached 2230 hrs 7.20.17. CTCH, drop survey, TOH for open hole logging operations. Rig up loggers. Commence logging operations 0145 hrs 7.21.17. Logging operations complete 0630 hrs 7.21.17. Orders received to run 5 1/2" production casing for further evaluation of the Lansing-Kansas City and Arbuckle. Geologist Derek W. Patterson off location 0740 hrs 7.21.17. Made 91' over past 24 hrs of operations. WOB: 32k RPM: 80 PP: 1070 SPM: 58 DMC: $290.18 CMC: $7,193.16

WELL COMPARISON SHEET

	Drilling Well				Comparison Well				Comparison Well			
	Edison Operating - Knop #1-27 Sec. 27 - T19S - R12W 470' FNL & 828' FWL				Trans Era - Knop 'B' #1 Sec. 27 - T19S - R12W SW NW NW				B & R Drilling - Johnson 'A' #2 Sec. 27 - T19S - R12W SW SE SW			
	1823 GL 1832 KB				DHCA - LKC/Arb 1828 KB		Structural Relationship		Oil - Arbuckle 1816 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Topeka	2755	-923	2755	-923	2755	-927	4	4	2719	-903	-20	-20
King Hill	2844	-1012	2845	-1013	n/a	n/a	n/a	n/a	2810	-994	-18	-19
Queen Hill	2919	-1087	2919	-1087	n/a	n/a	n/a	n/a	2886	-1070	-17	-17
Heebner	3015	-1183	3016	-1184	3016	-1188	5	4	2982	-1166	-17	-18
Toronto	3033	-1201	3034	-1202	3034	-1206	5	4	3000	-1184	-17	-18
Douglas	3051	-1219	3051	-1219	3051	-1223	4	4	3018	-1202	-17	-17
Brown Lime	3131	-1299	3131	-1299	3131	-1303	4	4	3099	-1283	-16	-16
Lansing-Kansas City	3147	-1315	3147	-1315	3146	-1318	3	3	3114	-1298	-17	-17
LKC 'B'	3171	-1339	3171	-1339	3172	-1344	5	5	3138	-1322	-17	-17
LKC 'D'	3194	-1362	3193	-1361	3194	-1366	4	5	3164	-1348	-14	-13
LKC 'F'	3215	-1383	3214	-1382	3216	-1388	5	6	3186	-1370	-13	-12
LKC 'G'	3233	-1401	3233	-1401	3232	-1404	3	3	3203	-1387	-14	-14
Muncie Creek	3277	-1445	3277	-1445	3275	-1447	2	2	3244	-1428	-17	-17
LKC 'H'	3285	-1453	3285	-1453	3282	-1454	1	1	3251	-1435	-18	-18
LKC 'I'	3300	-1468	3300	-1468	3298	-1470	2	2	3266	-1450	-18	-18
LKC 'J'	3316	-1484	3316	-1484	3316	-1488	4	4	3282	-1466	-18	-18
Stark	3343	-1511	3340	-1508	3338	-1510	-1	2	3303	-1487	-24	-21
LKC 'K'	3345	-1513	3343	-1511	3342	-1514	1	3	3310	-1494	-19	-17
Hushpuckney	3373	-1541	3374	-1542	3370	-1542	1	0	3334	-1518	-23	-24
LKC 'L'	3376	-1544	3376	-1544	3375	-1547	3	3	3338	-1522	-22	-22
Base Kansas City	3387	-1555	3386	-1554	3384	-1556	1	2	3348	-1532	-23	-22
Arbuckle	3414	-1582	3416	-1584	3409	-1581	-1	-3	3362	-1546	-36	-38
Total Depth	3520	-1688	3520	-1688	3422	-1594	-94	-94	3379	-1563	-125	-125

ROCK TYPES

Chtcongl, DOL2, LMST1, LMST2, LMST3, LMST4, LMST5, Ss, SILTSTONE, SHALE CAR, SHALE GRN, SHALE GRA, SHALE RED

ACCESSORIES

MINERAL
- Silty
- Chert White

FOSSIL
- Bioclastic or Fragmental
- F Fossils < 20%
- Oolite
- Oomoldic

STRINGER
- Shale Green
- Shale Gray
- Shale Red

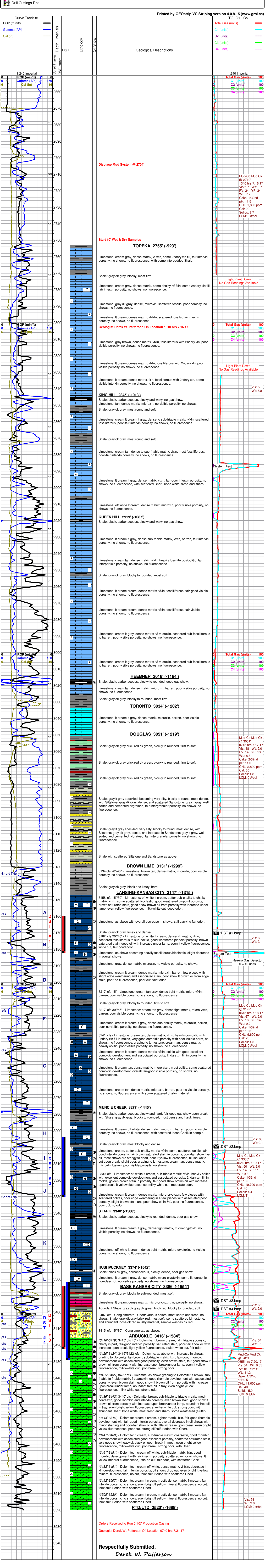
TEXTURE
- C Chalky
- CX Cryptocrystalline
- L Lithogr

OTHER SYMBOLS

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

DST
- DST1
- DST2
- DST3
- Core
- tail pipe

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



Respectfully Submitted,

Derek W. Patterson

DST #1.bmp

DRILL STEM TEST REPORT

Eagle Testers — Great Bend, Kansas

Edison Operating Company
8100 e.22nd St.bldg 1900
Wichita, Kansas 67226
ATTN: Derek Patterson

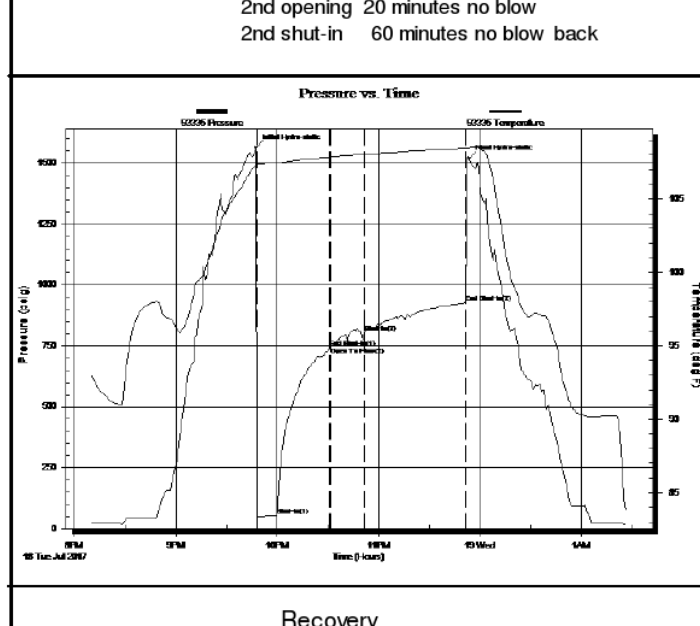
27-19s-12w Barton
Knop #1-27
Job Ticket: 01178 DST#: 1
Test Start: 2017.07.17 @ 08:10:00

GENERAL INFORMATION:

Formation: Kansas City "B"
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:48:00
Time Test Ended: 00:00:00
Interval: 3160.00 ft (KB) To 3182.00 ft (KB) (TVD)
Total Depth: 3182.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1
Reference Elevations: 1832.00 ft (KB); 1823.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 93335 Outside
Press@RunDepth: 925.61 psig @ 3177.00 ft (KB)
Start Date: 2017.07.18 End Date: 2017.07.19
Start Time: 20:10:00 End Time: 20:26:30
Capacity: 5000.00 psig
Last Calib.: 2017.07.18
Time On Btm: 2017.07.18 @ 21:47:30
Time Off Btm: 2017.07.18 @ 23:53:30

TEST COMMENT: 1st Opening 12 Minutes weak blow for 8 minutes and died
1st shut-in 30 minutes no blow back
2nd opening 20 minutes no blow
2nd shut-in 60 minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1563.57	107.31	Initial Hydro-static
1	50.32	107.38	Open To Flow (1)
12	52.69	107.44	Shut-In(1)
44	741.46	107.86	End Shut-In(1)
44	745.54	107.87	Open To Flow (2)
64	802.92	108.04	Shut-In(2)
124	925.61	108.47	End Shut-In(2)
126	1519.31	108.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Drilling mud	0.07

Gas Rates

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

Eagle Testers Ref. No: 01178 Printed: 2017.07.18 @ 01:48:24

DST #2.bmp

DRILL STEM TEST REPORT

Eagle Testers — Great Bend, Kansas

Edison Operating Company
8100 e.22nd St.bldg 1900
Wichita, Kansas 67226
ATTN: Derek Patterson

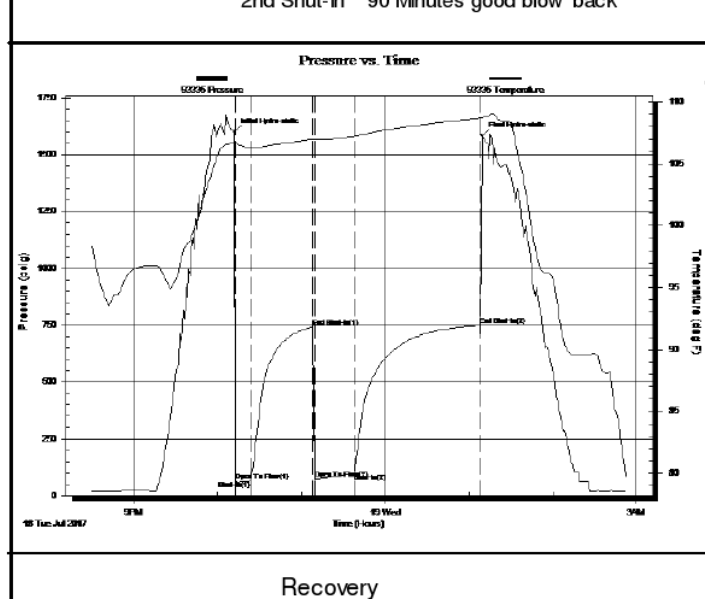
27-19s-12w Barton
Knop #1-27
Job Ticket: 01179 DST#: 2
Test Start: 2017.07.18 @ 08:30:00

GENERAL INFORMATION:

Formation: Kansas City "I&J"
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:13:00
Time Test Ended: 03:03:00
Interval: 3294.00 ft (KB) To 3330.00 ft (KB) (TVD)
Total Depth: 3330.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1
Reference Elevations: 1832.00 ft (KB); 1823.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 93335 Outside
Press@RunDepth: 749.26 psig @ 3325.00 ft (KB)
Start Date: 2017.07.18 End Date: 2017.07.19
Start Time: 20:30:00 End Time: 02:52:59
Capacity: 5000.00 psig
Last Calib.: 2017.07.19
Time On Btm: 2017.07.18 @ 22:12:29
Time Off Btm: 2017.07.19 @ 01:09:30

TEST COMMENT: 1st Opening 10 Minutes good blow built to the bottom of a 5 gallon bucket in 2 1/2 minutes
1st Shut-In 45 Minutes no blow back
2nd opening 30 Minutes good blow built to the bottom of a 5 gallon bucket in 1 minute
2nd Shut-In 90 Minutes good blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1600.19	106.70	Initial Hydro-static
1	67.56	106.71	Open To Flow (1)
12	64.22	106.34	Shut-In(1)
57	742.78	106.98	End Shut-In(1)
58	73.86	106.99	Open To Flow (2)
86	97.10	107.23	Shut-In(2)
176	749.26	108.69	End Shut-In(2)
178	1583.81	108.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	1200 feet of gas in the pipe	0.00
80.00	mud and water cut gassy oil	1.12
0.00	10%Gas 60%Oil 15%Mud 15%Water	0.00
30.00	Oil ans gas cut muddy water	0.42
0.00	5%Gas 15%oil 5% Mud 75% Water	0.00
0.00	Chlorides 58000	0.00

Gas Rates

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

Eagle Testers Ref. No: 01179 Printed: 2017.07.19 @ 03:19:00

DST #3.bmp

DRILL STEM TEST REPORT

Eagle Testers — Great Bend, Kansas

Edison Operating Company
8100 e.22nd St.bldg 1900
Wichita, Kansas 67226
ATTN: Derek Patterson

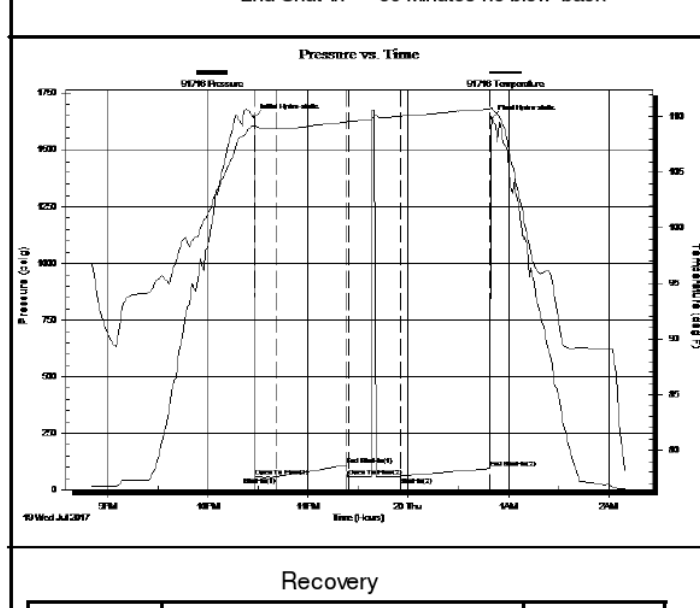
27-19s-12w Barton
Knop #1-27
Job Ticket: 01180 DST#: 3
Test Start: 2017.07.19 @ 20:20:00

GENERAL INFORMATION:

Formation: Arbuckle
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 22:54:00
Time Test Ended: 02:26:00
Interval: 3384.00 ft (KB) To 3422.00 ft (KB) (TVD)
Total Depth: 3422.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1
Reference Elevations: 1832.00 ft (KB); 1823.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 91716 Inside
Press@RunDepth: 94.33 psig @ 3417.00 ft (KB)
Start Date: 2017.07.19 End Date: 2017.07.20
Start Time: 20:50:00 End Time: 02:10:30
Capacity: 5000.00 psig
Last Calib.: 2017.07.20
Time On Btm: 2017.07.19 @ 22:27:30
Time Off Btm: 2017.07.20 @ 00:50:00

TEST COMMENT: 1st Opening 10 Minutes weak blow for 4 minutes and died
1st Shut-In 45 Minutes no blow back
2nd Opening 30 Minutes no blow -Flushed tool-Good surge-No help
2nd Shut-In 60 Minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1644.42	109.20	Initial Hydro-static
1	56.61	109.16	Open To Flow (1)
13	56.76	108.92	Shut-In(1)
56	108.84	109.55	End Shut-In(1)
57	56.84	109.57	Open To Flow (2)
88	58.65	110.05	Shut-In(2)
142	94.33	110.71	End Shut-In(2)
143	1639.83	110.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Drilling Mud	0.07

Gas Rates

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

Eagle Testers Ref. No: 01180 Printed: 2017.07.20 @ 02:39:07

DST #4.bmp

DRILL STEM TEST REPORT

Eagle Testers — Great Bend, Kansas

Edison Operating Company
8100 e.22nd St.bldg 1900
Wichita, Kansas 67226
ATTN: Derek Patterson

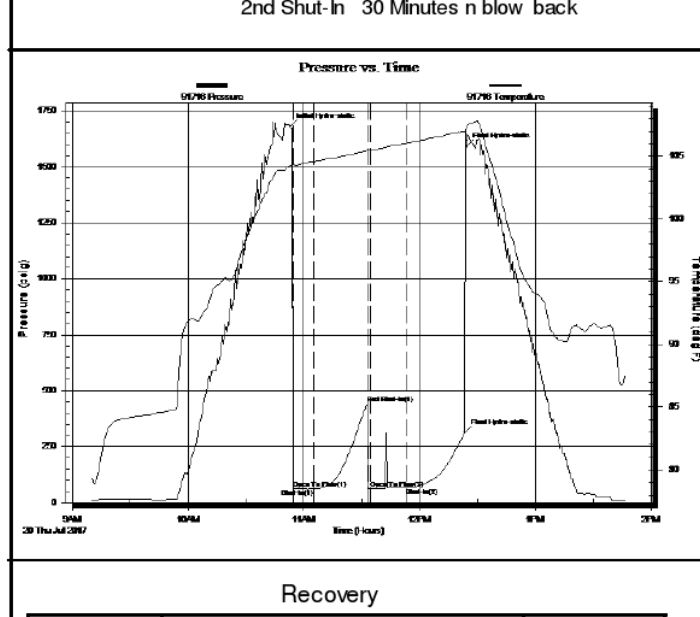
27-19s-12w Barton
Knop #1-27
Job Ticket: 01181 DST#: 4
Test Start: 2017.07.20 @ 09:10:00

GENERAL INFORMATION:

Formation: Arbuckle
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:54:00
Time Test Ended: 01:48:00
Interval: 3382.00 ft (KB) To 3429.00 ft (KB) (TVD)
Total Depth: 3429.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1
Reference Elevations: 1832.00 ft (KB); 1823.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 91716 Inside
Press@RunDepth: 443.50 psig @ 3423.92 ft (KB)
Start Date: 2017.07.20 End Date: 2017.07.20
Start Time: 09:10:00 End Time: 13:47:00
Capacity: 5000.00 psig
Last Calib.: 2017.07.20
Time On Btm: 2017.07.20 @ 10:53:00
Time Off Btm: 2017.07.20 @ 12:23:30

TEST COMMENT: 1st Opening 10 Minutes weak blow for 7 minutes and died
1st Shut-In 30 Minutes no blow back
2nd Opening 20 Minutes weak blow 1 minute died flushed tool weak blow 2 minutes and died
2nd Shut-In 30 Minutes n blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1680.22	104.27	Initial Hydro-static
2	61.98	104.38	Open To Flow (1)
12	60.82	104.61	Shut-In(1)
40	443.50	105.48	End Shut-In(1)
42	62.90	105.48	Open To Flow (2)
60	65.12	106.03	Shut-In(2)
91	312.00	107.02	Final Hydro-static
92	1590.67	107.24	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Drilling Mud	0.21

Gas Rates

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

Eagle Testers Ref. No: 01181 Printed: 2017.07.20 @ 13:59:31

DRILL STEM TEST REPORT

Prepared For: **Edison Operating Company**

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

Knop #1-27

27-19s-12w Barton

Start Date: 2017.07.17 @ 08:10:00

End Date: 2017.07.18 @ 00:00:00

Job Ticket #: 01178 DST #: 1

Eagle Testers

1309 Patton Road Great Bend, Kansas 67530

620-791-7394

Printed: 2017.07.18 @ 01:48:23

DRILL STEM TEST REPORT

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01178 **DST#: 1**

Test Start: 2017.07.17 @ 08:10:00

GENERAL INFORMATION:

Formation: **Kansas City "B"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:48:00
Time Test Ended: 00:00:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1

Interval: 3160.00 ft (KB) To 3182.00 ft (KB) (TVD)
Total Depth: 3182.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

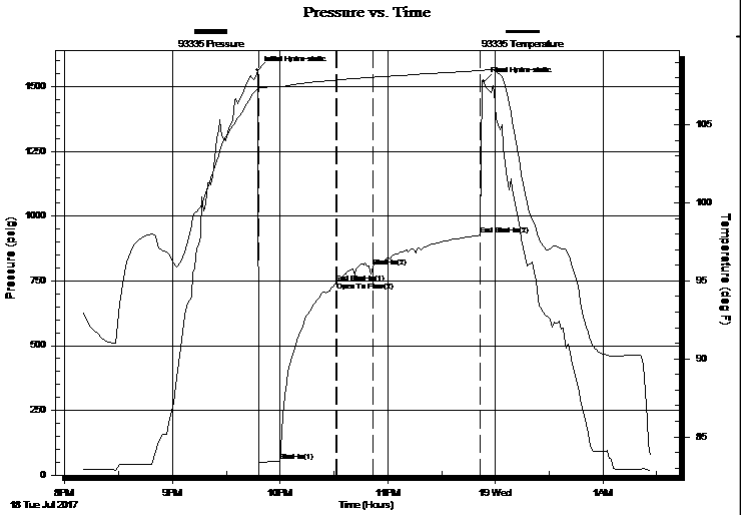
Reference Elevations: 1832.00 ft (KB)
1823.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 93335 **Outside**

Press@RunDepth: 925.61 psig @ 3177.00 ft (KB)
Start Date: 2017.07.18 End Date: 2017.07.19
Start Time: 20:10:00 End Time: 20:26:30

Capacity: 5000.00 psig
Last Calib.: 2017.07.18
Time On Btm: 2017.07.18 @ 21:47:30
Time Off Btm: 2017.07.18 @ 23:53:30

TEST COMMENT: 1st Opening 12 Minutes w eak blow for 8 minutes and died
1st shut-in 30 minutes no blow back
2nd opening 20 minutes no blow
2nd shut-in 60 minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1563.57	107.31	Initial Hydro-static
1	50.32	107.38	Open To Flow (1)
12	52.69	107.44	Shut-In(1)
44	741.46	107.86	End Shut-In(1)
44	745.54	107.87	Open To Flow (2)
64	802.92	108.04	Shut-In(2)
124	925.61	108.47	End Shut-In(2)
126	1519.31	108.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Drilling mud	0.07

Gas Rates

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

DRILL STEM TEST REPORT

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01178 **DST#: 1**

Test Start: 2017.07.17 @ 08:10:00

GENERAL INFORMATION:

Formation: **Kansas City "B"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:48:00
Time Test Ended: 00:00:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1

Interval: 3160.00 ft (KB) To 3182.00 ft (KB) (TVD)
Total Depth: 3182.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

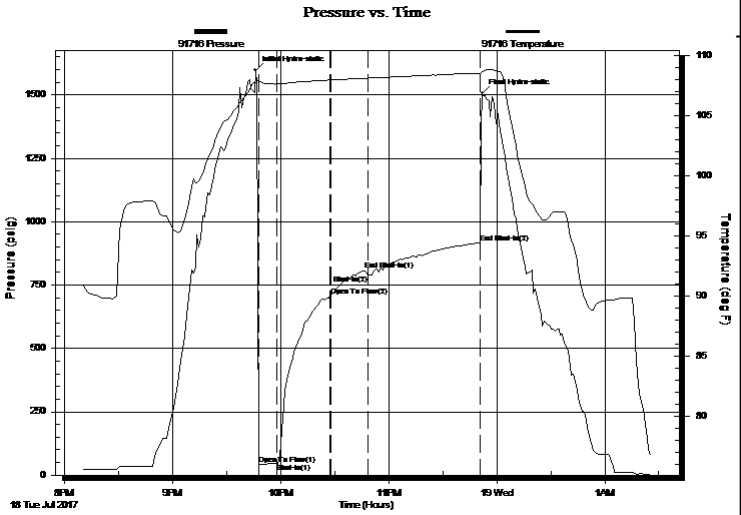
Reference Elevations: 1832.00 ft (KB)
1823.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 91716 **Inside**

Press@RunDepth: 916.23 psig @ 3177.00 ft (KB)
Start Date: 2017.07.18 End Date: 2017.07.19
Start Time: 20:10:00 End Time: 01:26:00

Capacity: 5000.00 psig
Last Calib.: 2017.07.18
Time On Btm: 2017.07.18 @ 21:46:00
Time Off Btm: 2017.07.18 @ 23:52:00

TEST COMMENT: 1st Opening 12 Minutes w eak blow for 8 minutes and died
1st shut-in 30 minutes no blow back
2nd opening 20 minutes no blow
2nd shut-in 60 minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1597.25	107.74	Initial Hydro-static
2	44.05	107.92	Open To Flow (1)
12	45.85	107.63	Shut-In(1)
42	709.07	107.96	End Shut-In(1)
42	705.43	107.97	Open To Flow (2)
63	791.41	108.12	Shut-In(2)
125	916.23	108.53	End Shut-In(2)
126	1505.55	108.64	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Drilling mud	0.07

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01178 **DST#: 1**

Test Start: 2017.07.17 @ 08:10:00

Tool Information

Drill Pipe:	Length:	3141.00 ft	Diameter:	3.80 inches	Volume:	44.06 bbl	Tool Weight:		2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:		20000.00 lb
Drill Collar:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight to Pull Loose:		48000.00 lb
					Total Volume:	44.06 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		8.00 ft					String Weight:	Initial	38000.00 lb
Depth to Top Packer:		3160.00 ft						Final	38000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		22.00 ft							
Tool Length:		49.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			3138.00		
Hydraulic tool	5.00			3143.00		
Jars	5.00			3148.00		
Safety Joint	2.00			3150.00		
Top Packer	5.00			3155.00		
Packer	5.00			3160.00	27.00	Bottom Of Top Packer
Anchor	17.00			3177.00		
Recorder	0.00	91716	Inside	3177.00		
Recorder	0.00	93335	Outside	3177.00		
Bullnose	5.00			3182.00	22.00	Anchor Tool
Total Tool Length:	**49.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01178 **DST#: 1**

Test Start: 2017.07.17 @ 08:10:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	48.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.80 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2800.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

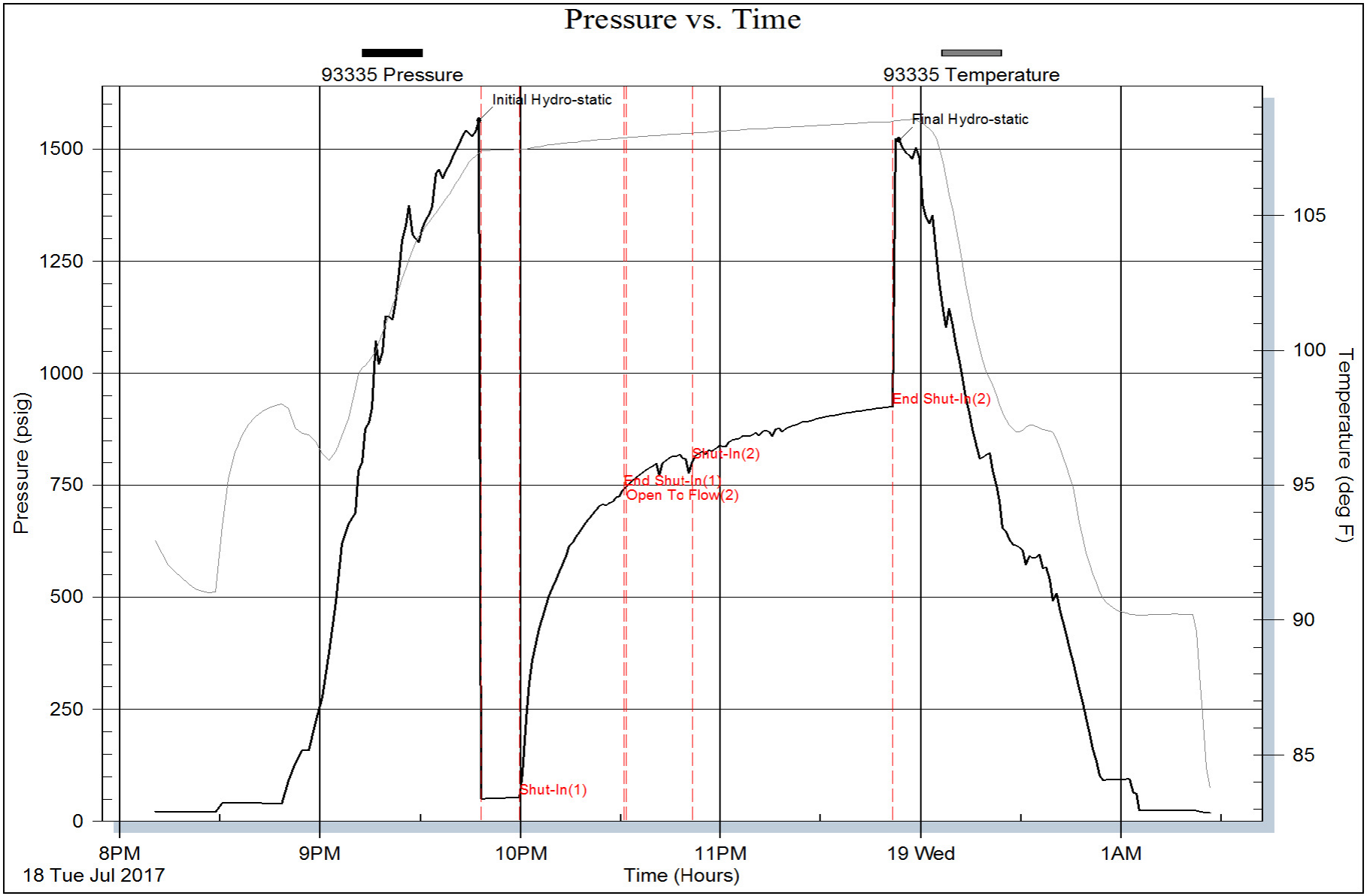
Recovery Table

Length ft	Description	Volume bbl
5.00	Drilling mud	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

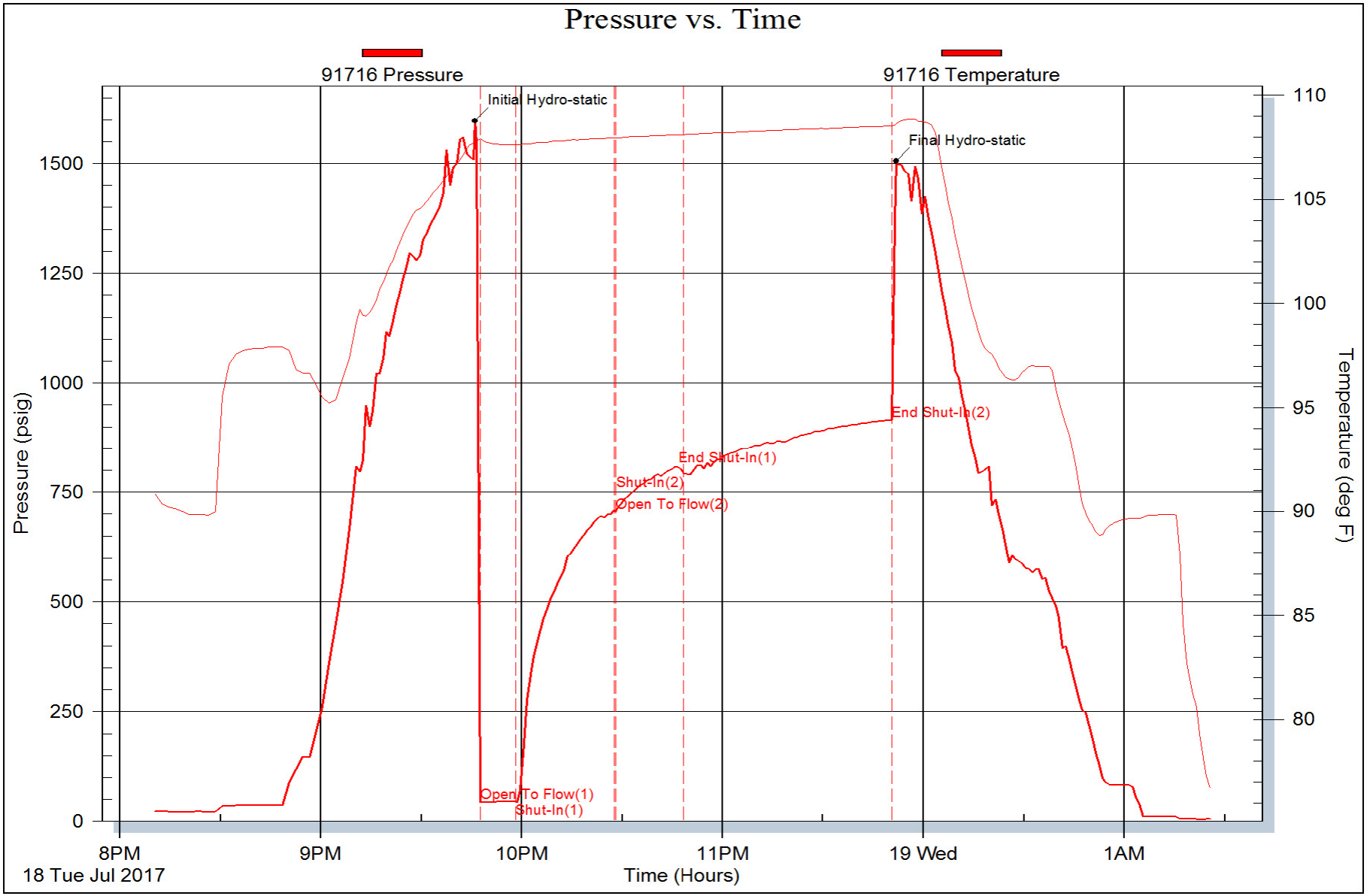
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 93335 **Outside** Edison Operating Company Knop #1-27 DST Test Number: 1



Eagle Testers Ref. No: 01178 Printed: 2017.07.18 @ 01:48:25

Serial #: 91716 **Inside** Edison Operating Company Knop #1-27 DST Test Number: 1



Eagle Testers Ref. No: 01178 Printed: 2017.07.18 @ 01:48:25

DRILL STEM TEST REPORT

Prepared For: **Edison Operating Company**

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

Knop #1-27

27-19s-12w Barton

Start Date: 2017.07.18 @ 08:30:00

End Date: 2017.07.19 @ 03:03:00

Job Ticket #: 01179 DST #: 2

Eagle Testers

1309 Patton Road Great Bend, Kansas 67530

620-791-7394

Printed: 2017.07.19 @ 03:19:00

DRILL STEM TEST REPORT

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01179 **DST#: 2**

Test Start: 2017.07.18 @ 08:30:00

GENERAL INFORMATION:

Formation: **Kansas City "I&J"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:13:00
Time Test Ended: 03:03:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1

Interval: 3294.00 ft (KB) To 3330.00 ft (KB) (TVD)
Total Depth: 3330.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

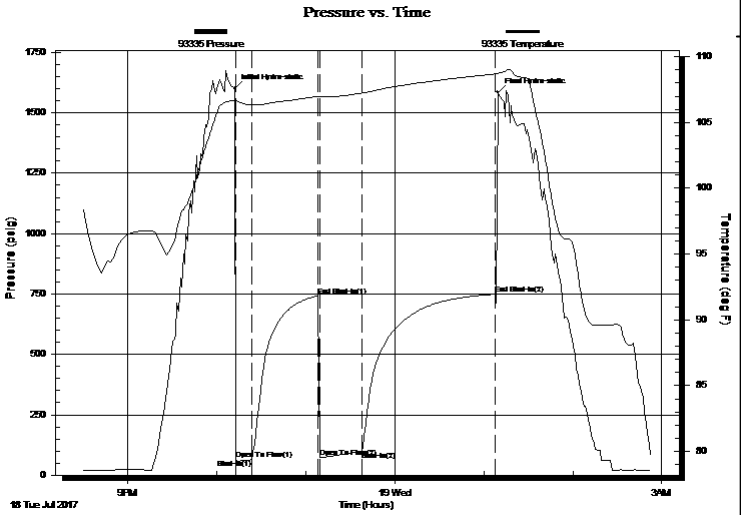
Reference Elevations: 1832.00 ft (KB)
1823.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 93335 **Outside**

Press@RunDepth: 749.26 psig @ 3325.00 ft (KB)
Start Date: 2017.07.18 End Date: 2017.07.19
Start Time: 20:30:00 End Time: 02:52:59

Capacity: 5000.00 psig
Last Calib.: 2017.07.19
Time On Btm: 2017.07.18 @ 22:12:29
Time Off Btm: 2017.07.19 @ 01:09:30

TEST COMMENT:
1st Opening 10 Minutes good blow built to the bottom of a 5 gallon bucket in 2 1/2 minutes
1st Shut-In 45 Minutes no blow back
2nd opening 30 Minutes good blow built to the bottom of a 5 gallon bucket in 1 minute
2nd Shut-In 90 Minutes good blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1600.19	106.70	Initial Hydro-static
1	67.56	106.71	Open To Flow (1)
12	64.22	106.34	Shut-In(1)
57	742.78	106.98	End Shut-In(1)
58	73.86	106.99	Open To Flow (2)
86	97.10	107.23	Shut-In(2)
176	749.26	108.69	End Shut-In(2)
178	1583.81	108.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	1200 feet of gas in the pipe	0.00
80.00	mud and w ater cut gassy oil	1.12
0.00	10%Gas 60%Oil 15%Mud 15%Water	0.00
30.00	Oil ans gas cut muddy w ater	0.42
0.00	5%Gas 15%oil 5% Mud 75% Water	0.00
0.00	Chlorides 58000	0.00

Gas Rates

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

DRILL STEM TEST REPORT

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01179 **DST#: 2**

Test Start: 2017.07.18 @ 08:30:00

GENERAL INFORMATION:

Formation: **Kansas City "I&J"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:13:00
Time Test Ended: 03:03:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1

Interval: 3294.00 ft (KB) To 3330.00 ft (KB) (TVD)
Total Depth: 3330.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

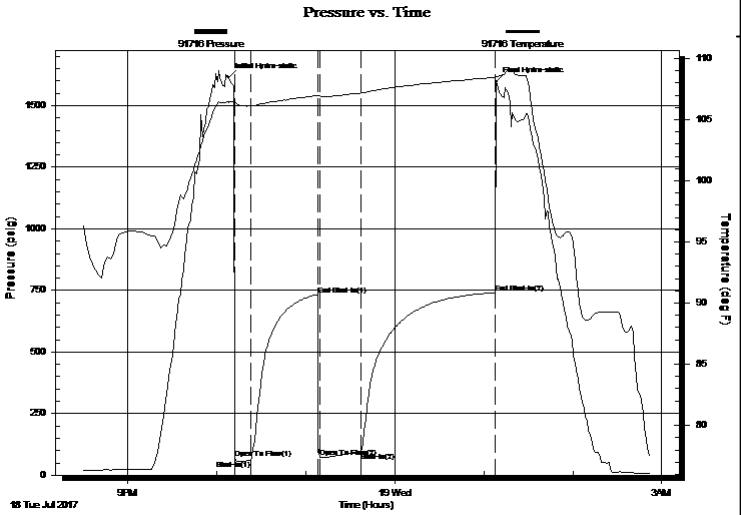
Reference Elevations: 1832.00 ft (KB)
1823.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 91716 **Inside**

Press@RunDepth: 741.16 psig @ 3325.00 ft (KB)
Start Date: 2017.07.18 End Date: 2017.07.19
Start Time: 20:30:00 End Time: 02:52:30

Capacity: 5000.00 psig
Last Calib.: 1899.12.30
Time On Btm: 2017.07.18 @ 22:08:00
Time Off Btm: 2017.07.19 @ 01:08:30

TEST COMMENT: 1st Opening 10 Minutes good blow built to the bottom of a 5 gallon bucket in 2 1/2 minutes
1st Shut-In 45 Minutes no blow back
2nd opening 30 Minutes good blow built to the bottom of a 5 gallon bucket in 1 minute
2nd Shut-In 90 Minutes good blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1615.09	106.42	Initial Hydro-static
5	68.54	106.47	Open To Flow (1)
15	60.21	106.12	Shut-In(1)
60	733.38	106.98	End Shut-In(1)
62	71.53	106.92	Open To Flow (2)
90	93.39	107.18	Shut-In(2)
180	741.16	108.46	End Shut-In(2)
181	1596.82	108.48	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	1200 feet of gas in the pipe	0.00
80.00	mud and w ater cut gassy oil	1.12
0.00	10%Gas 60%Oil 15%Mud 15%Water	0.00
30.00	Oil ans gas cut muddy w ater	0.42
0.00	5%Gas 15%oil 5% Mud 75% Water	0.00
0.00	Chlorides 58000	0.00

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01179 **DST#: 2**

Test Start: 2017.07.18 @ 08:30:00

Tool Information

Drill Pipe:	Length:	3298.00 ft	Diameter:	3.80 inches	Volume:	46.26 bbl	Tool Weight:		2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:		20000.00 lb
Drill Collar:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight to Pull Loose:		48000.00 lb
					Total Volume:	46.26 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		31.00 ft					String Weight:	Initial	40000.00 lb
Depth to Top Packer:		3294.00 ft						Final	42000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		36.00 ft							
Tool Length:		63.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			3272.00		
Hydraulic tool	5.00			3277.00		
Jars	5.00			3282.00		
Safety Joint	2.00			3284.00		
Top Packer	5.00			3289.00		
Packer	5.00			3294.00	27.00	Bottom Of Top Packer
Anchor	31.00			3325.00		
Recorder	0.00	91716	Inside	3325.00		
Recorder	0.00	093335	Outside	3325.00		
Bullnose	5.00			3330.00	36.00	Anchor Tool
Total Tool Length:	**63.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01179 **DST#: 2**

Test Start: 2017.07.18 @ 08:30:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	67.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	9.20 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	9600.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	1200 feet of gas in the pipe	0.000
80.00	mud and w ater cut gassy oil	1.122
0.00	10%Gas 60%Oil 15%Mud 15%Water	0.000
30.00	Oil ans gas cut muddy w ater	0.421
0.00	5%Gas 15%oil 5% Mud 75% Water	0.000
0.00	Chlorides 58000	0.000

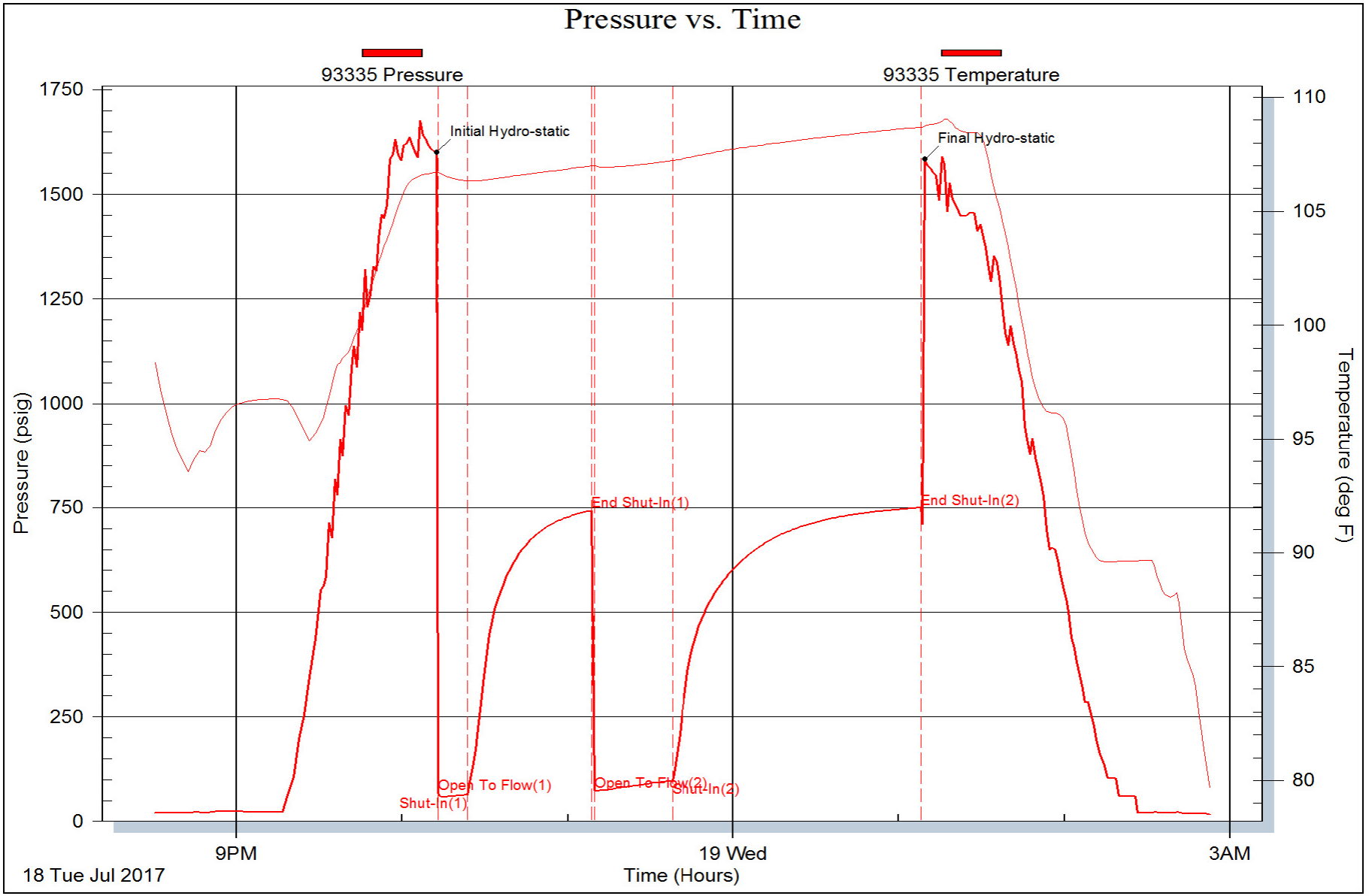
Total Length: 110.00 ft Total Volume: 1.543 bbl

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

Laboratory Name: Laboratory Location:

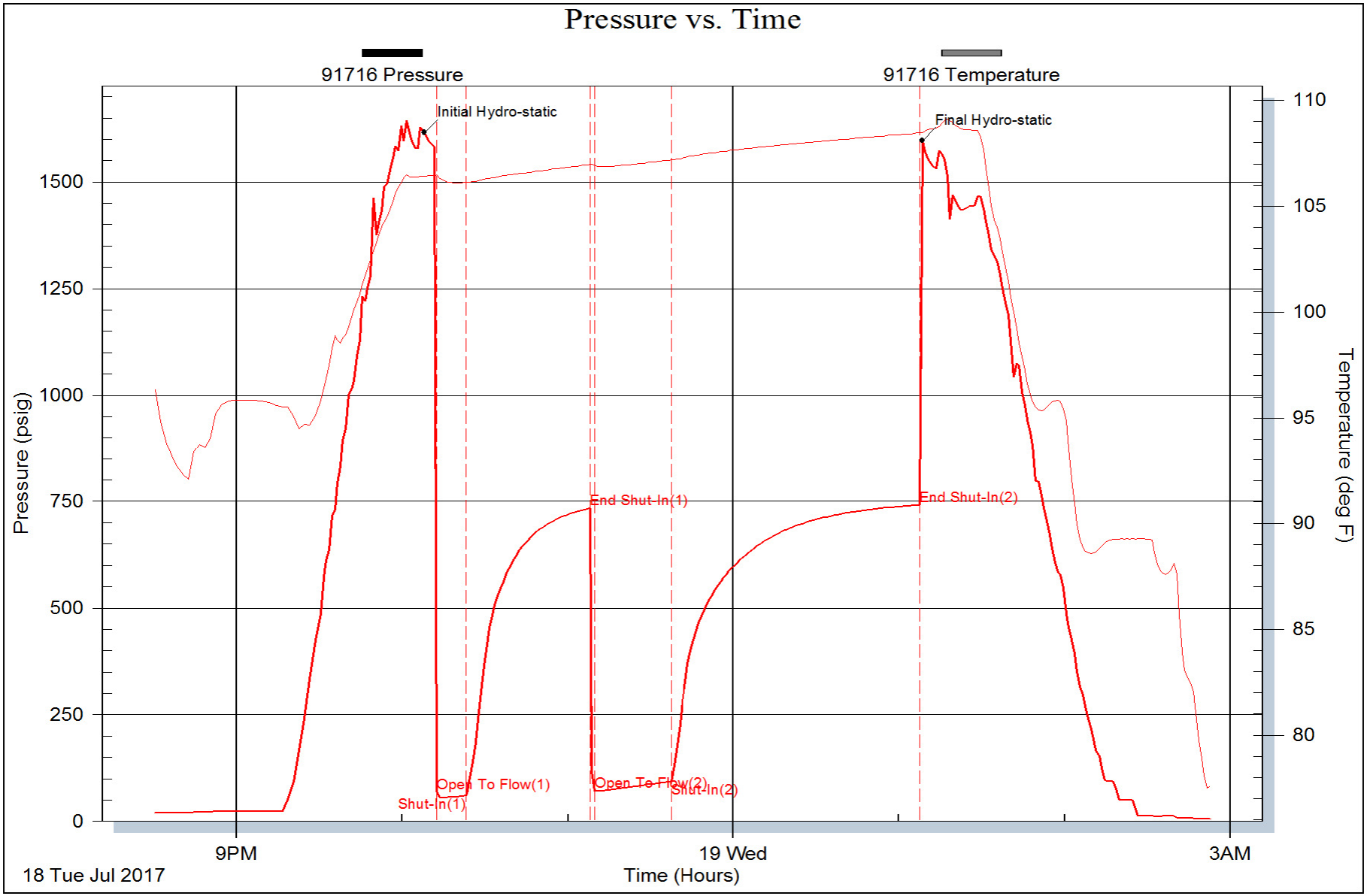
Recovery Comments:

Serial #: 93335 **Outside** Edison Operating Company Knop #1-27 DST Test Number: 2



Eagle Testers Ref. No: 01179 Printed: 2017.07.19 @ 03:19:02

Serial #: 91716 **Inside** Edison Operating Company Knop #1-27 DST Test Number: 2



Eagle Testers Ref. No: 01179 Printed: 2017.07.19 @ 03:19:02

DRILL STEM TEST REPORT

Prepared For: **Edison Operating Company**

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

Knop #1-27

27-19s-12w Barton

Start Date: 2017.07.19 @ 20:20:00

End Date: 2017.07.20 @ 02:26:00

Job Ticket #: 01180 DST #: 3

Eagle Testers

1309 Patton Road Great Bend, Kansas 67530

620-791-7394

Printed: 2017.07.20 @ 02:39:07

DRILL STEM TEST REPORT

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01180 **DST#: 3**

Test Start: 2017.07.19 @ 20:20:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 22:54:00
Time Test Ended: 02:26:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1

Interval: 3384.00 ft (KB) To 3422.00 ft (KB) (TVD)
Total Depth: 3422.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

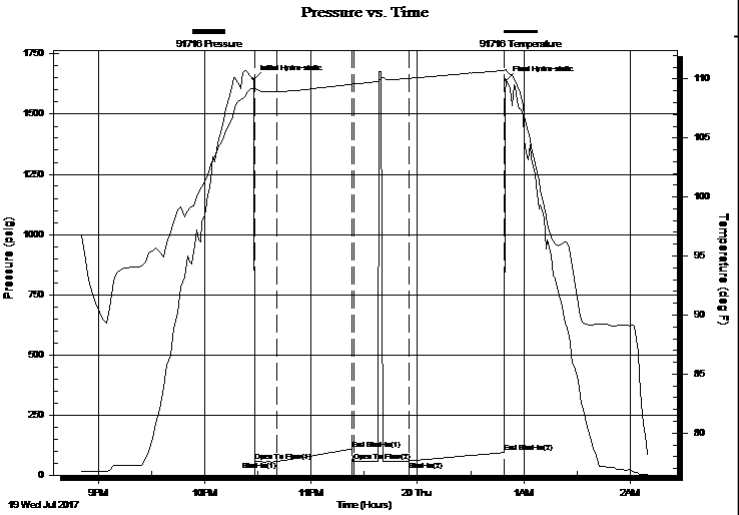
Reference Elevations: 1832.00 ft (KB)
1823.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 91716 **Inside**

Press@RunDepth: 94.33 psig @ 3417.00 ft (KB)
Start Date: 2017.07.19 End Date: 2017.07.20
Start Time: 20:50:00 End Time: 02:10:30

Capacity: 5000.00 psig
Last Calib.: 2017.07.20
Time On Btm: 2017.07.19 @ 22:27:30
Time Off Btm: 2017.07.20 @ 00:50:00

TEST COMMENT:
1st Opening 10 Minutes w eak blow for 4 minutes and died
1st Shut-In 45 Minutes no blow back
2nd Opening 30 Minutes no blow -Flushed tool-Good surge-No help
2nd Shut-In 60 Minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1644.42	109.20	Initial Hydro-static
1	56.61	109.16	Open To Flow (1)
13	56.76	108.92	Shut-In(1)
56	108.84	109.55	End Shut-In(1)
57	56.84	109.57	Open To Flow (2)
88	58.65	110.05	Shut-In(2)
142	94.33	110.71	End Shut-In(2)
143	1639.83	110.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Drilling Mud	0.07

Gas Rates

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

DRILL STEM TEST REPORT

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01180 **DST#: 3**

Test Start: 2017.07.19 @ 20:20:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 22:54:00
Time Test Ended: 02:26:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1

Interval: 3384.00 ft (KB) To 3422.00 ft (KB) (TVD)
Total Depth: 3422.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

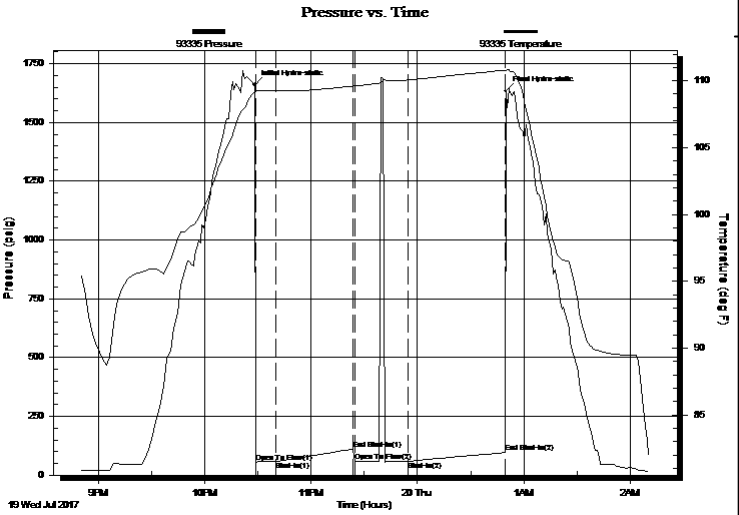
Reference Elevations: 1832.00 ft (KB)
1823.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 93335 **Outside**

Press@RunDepth: 95.90 psig @ 3417.00 ft (KB)
Start Date: 2017.07.19 End Date: 2017.07.20
Start Time: 20:50:00 End Time: 02:11:00

Capacity: 5000.00 psig
Last Calib.: 2017.07.20
Time On Btm: 2017.07.19 @ 22:28:00
Time Off Btm: 2017.07.20 @ 00:50:00

TEST COMMENT:
1st Opening 10 Minutes w eak blow for 4 minutes and died
1st Shut-In 45 Minutes no blow back
2nd Opening 30 Minutes no blow -Flushed tool-Good surge-No help
2nd Shut-In 60 Minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1659.28	109.17	Initial Hydro-static
1	55.84	109.27	Open To Flow (1)
12	57.38	109.26	Shut-In(1)
56	111.33	109.60	End Shut-In(1)
57	56.96	109.62	Open To Flow (2)
87	58.34	110.06	Shut-In(2)
142	95.90	110.79	End Shut-In(2)
142	1634.50	110.80	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Drilling Mud	0.07

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01180 **DST#: 3**

Test Start: 2017.07.19 @ 20:20:00

Tool Information

Drill Pipe:	Length:	3371.00 ft	Diameter:	3.80 inches	Volume:	47.29 bbl	Tool Weight:	2000.00 lb	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	20000.00 lb	
Drill Collar:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight to Pull Loose:	52000.00 lb	
					Total Volume:	47.29 bbl	Tool Chased	0.00 ft	
Drill Pipe Above KB:		7.00 ft					String Weight: Initial	40000.00 lb	
Depth to Top Packer:		3384.00 ft					Final	40000.00 lb	
Depth to Bottom Packer:		ft							
Interval betw een Packers:		38.00 ft							
Tool Length:		58.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			3369.00		
Hydraulic tool	5.00			3374.00		
Top Packer	5.00			3379.00		
Packer	5.00			3384.00	20.00	Bottom Of Top Packer
Anchor	33.00			3417.00		
Recorder	0.00	91716	Inside	3417.00		
Recorder	0.00	93335	Outside	3417.00		
Bullnose	5.00			3422.00	38.00	Anchor Tool
Total Tool Length:	**58.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01180 **DST#: 3**

Test Start: 2017.07.19 @ 20:20:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	50.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	9.59 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	10700.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

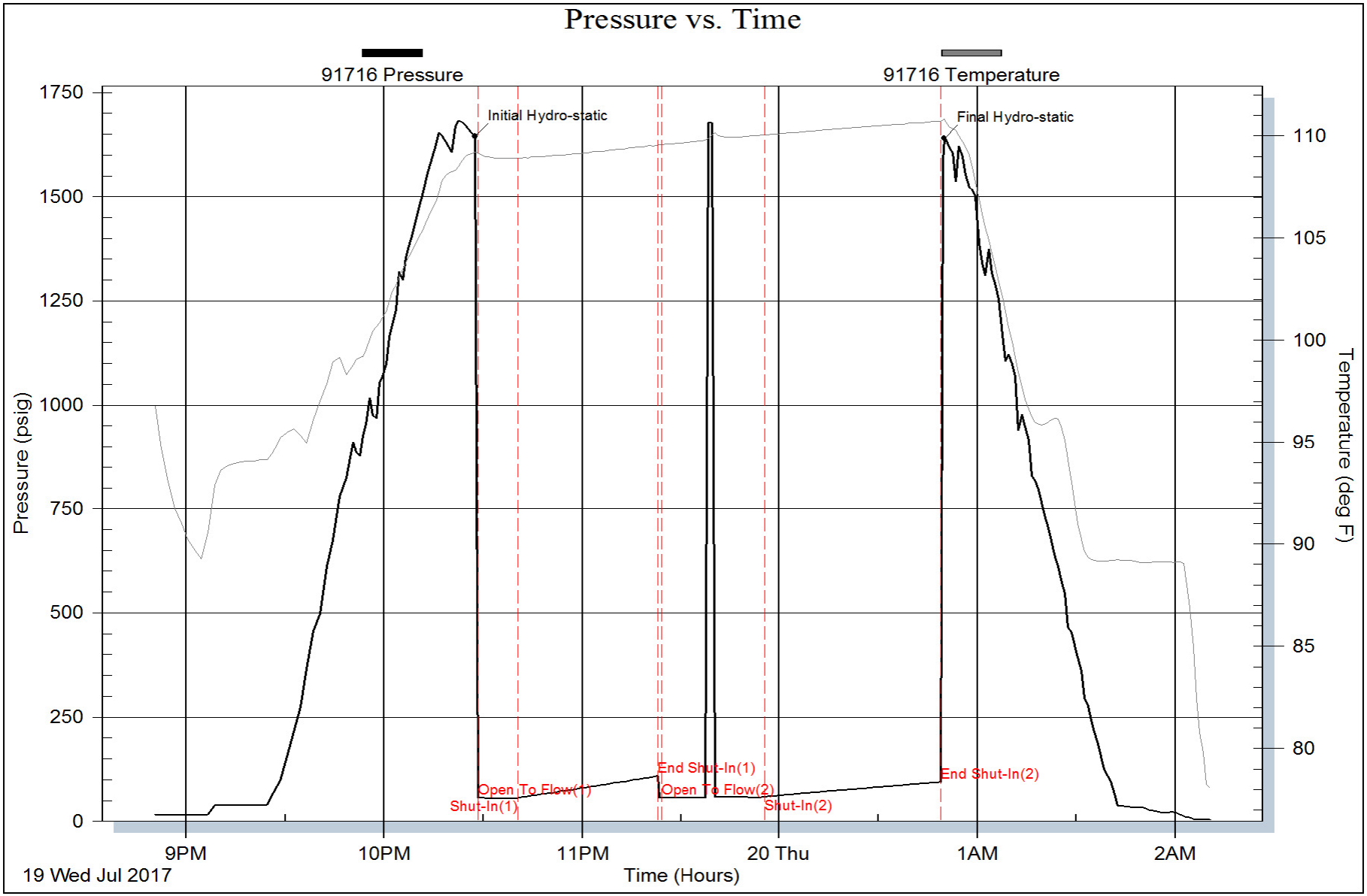
Recovery Table

Length ft	Description	Volume bbl
5.00	Drilling Mud	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

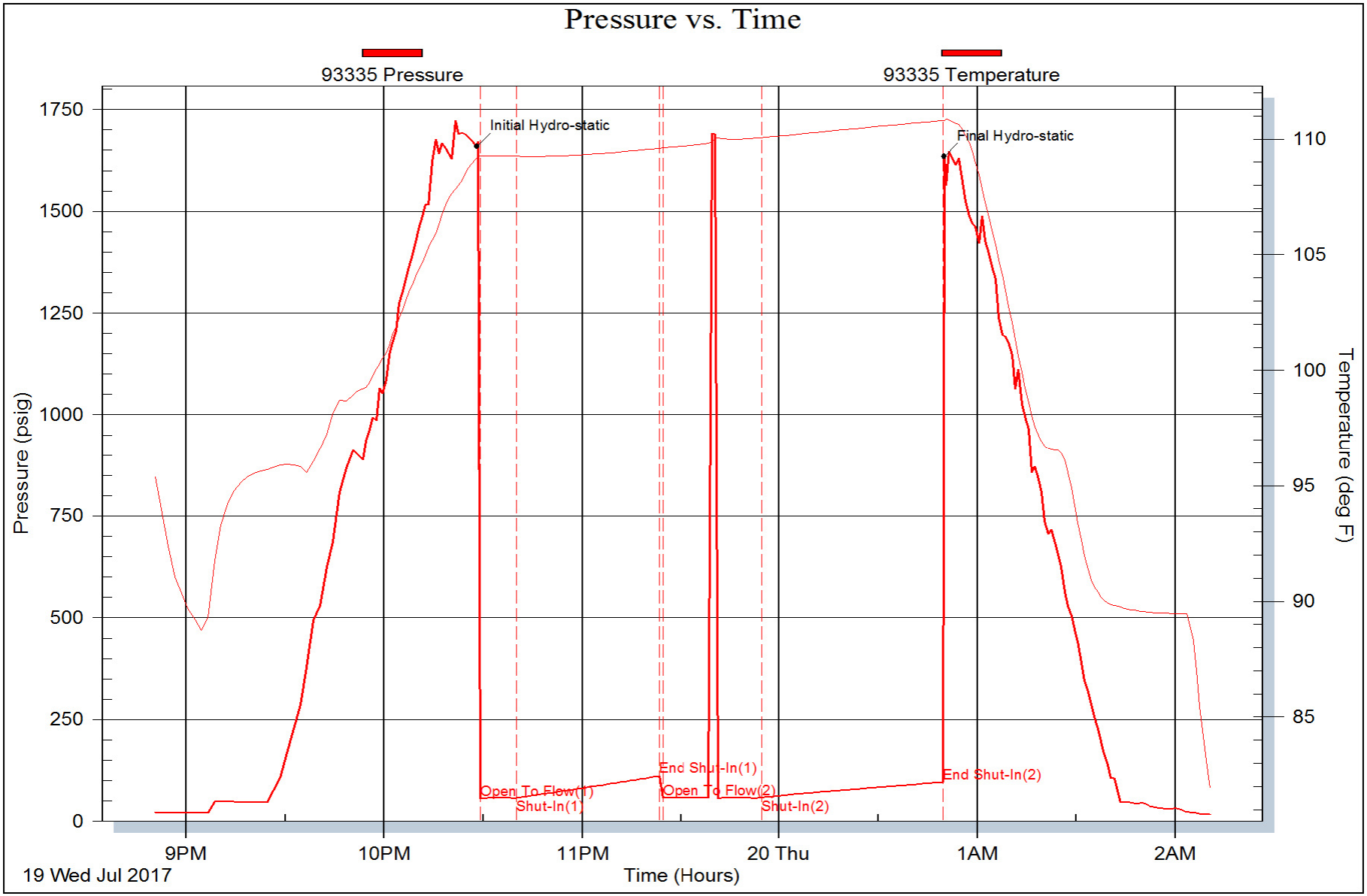
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 91716 **Inside** Edison Operating Company Knop #1-27 DST Test Number: 3



Eagle Testers Ref. No: 01180 Printed: 2017.07.20 @ 02:39:09

Serial #: 93335 **Outside** Edison Operating Company Knop #1-27 DST Test Number: 3



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DRILL STEM TEST REPORT

Prepared For: **Edison Operating Company**

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

Knop #1-27

27-19s-12w Barton

Start Date: 2017.07.20 @ 09:10:00

End Date: 2017.07.20 @ 01:48:00

Job Ticket #: 01181 DST #: 4

Eagle Testers

1309 Patton Road Great Bend, Kansas 67530

620-791-7394

Printed: 2017.07.20 @ 13:59:31

DRILL STEM TEST REPORT

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01181 **DST#: 4**

Test Start: 2017.07.20 @ 09:10:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:54:00
Time Test Ended: 01:48:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1

Interval: 3382.00 ft (KB) To 3429.00 ft (KB) (TVD)
Total Depth: 3429.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

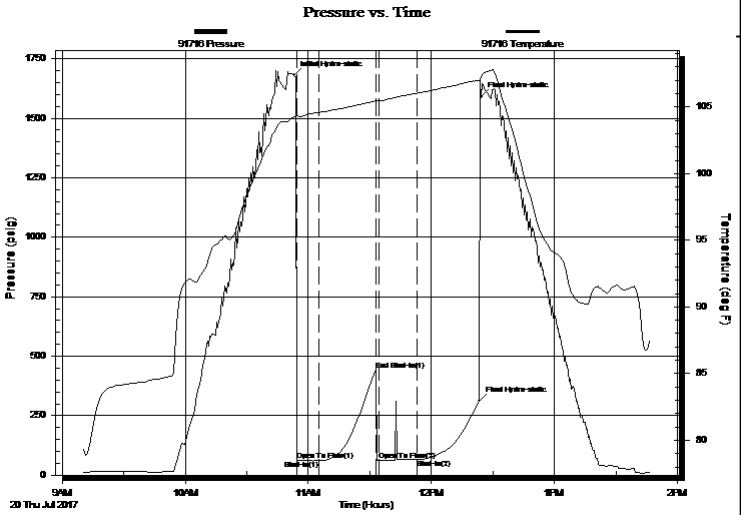
Reference Elevations: 1832.00 ft (KB)
1823.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 91716 **Inside**

Press@RunDepth: 443.50 psig @ 3423.92 ft (KB)
Start Date: 2017.07.20 End Date: 2017.07.20
Start Time: 09:10:00 End Time: 13:47:00

Capacity: 5000.00 psig
Last Calib.: 2017.07.20
Time On Btm: 2017.07.20 @ 10:53:00
Time Off Btm: 2017.07.20 @ 12:23:30

TEST COMMENT: 1st Opening 10 Minutes w eak blow for 7 minutes and died
1st Shut-In 30 Minutes no blow back
2nd Opening 20 Minutes w eak blow 1 minute died flushed tool w eak blow 2 minutes and died
2nd Shut-In 30 Minutes n blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1680.22	104.27	Initial Hydro-static
2	61.98	104.38	Open To Flow (1)
12	60.82	104.61	Shut-In(1)
40	443.50	105.48	End Shut-In(1)
42	62.90	105.48	Open To Flow (2)
60	65.12	106.03	Shut-In(2)
91	312.00	107.02	Final Hydro-static
92	1590.67	107.24	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Drilling Mud	0.21

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01181 **DST#: 4**

Test Start: 2017.07.20 @ 09:10:00

Tool Information

Drill Pipe:	Length:	3364.00 ft	Diameter:	3.80 inches	Volume:	47.19 bbl	Tool Weight:	2000.00 lb	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	20000.00 lb	
Drill Collar:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight to Pull Loose:	64000.00 lb	
					Total Volume:	47.19 bbl	Tool Chased	0.00 ft	
Drill Pipe Above KB:		9.00 ft					String Weight: Initial	40000.00 lb	
Depth to Top Packer:		3382.00 ft					Final	40000.00 lb	
Depth to Bottom Packer:		ft							
Interval betw een Packers:		46.92 ft							
Tool Length:		73.92 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			3360.00		
Hydraulic tool	5.00			3365.00		
Jars	5.00			3370.00		
Safety Joint	2.00			3372.00		
Top Packer	5.00			3377.00		
Packer	5.00			3382.00	27.00	Bottom Of Top Packer
Anchor	0.00			3382.00		
Change Over Sub	0.75			3382.75		
Drill Pipe	31.42			3414.17		
Change Over Sub	0.75			3414.92		
Anchor	9.00			3423.92		
Recorder	0.00	91716	Inside	3423.92		
Recorder	0.00	93335	Outside	3423.92		
Bullnose	5.00			3428.92	46.92	Anchor Tool
Total Tool Length:	**73.92**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Edison Operating Company

8100 e.22nd St.bldg 1900
Wiochita, Kansas 67226

ATTN: Derek Patterson

27-19s-12w Barton

Knop #1-27

Job Ticket: 01181 **DST#: 4**

Test Start: 2017.07.20 @ 09:10:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	54.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	11.20 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	11000.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

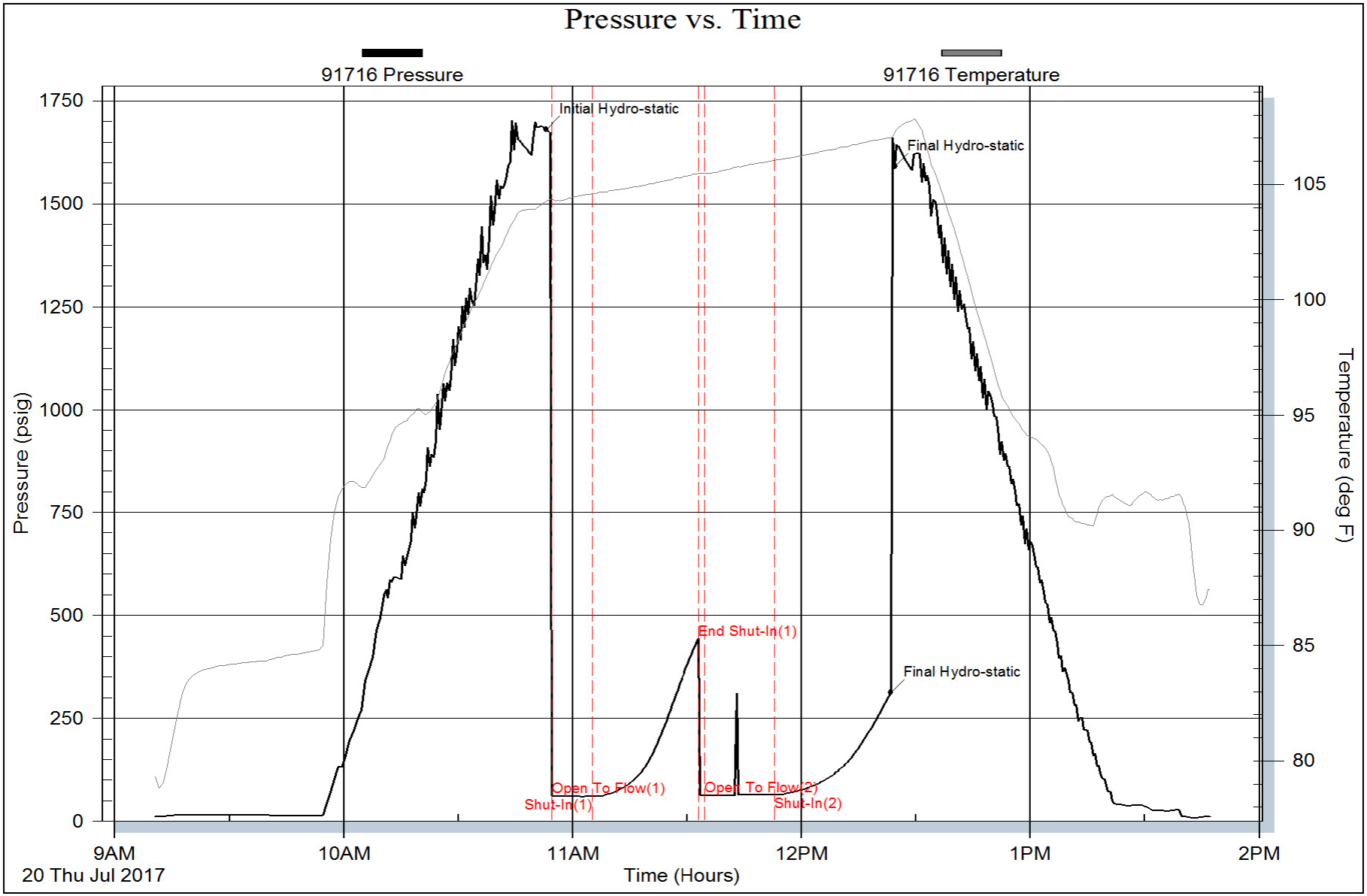
Recovery Table

Length ft	Description	Volume bbl
15.00	Drilling Mud	0.210

Total Length: 15.00 ft Total Volume: 0.210 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 91716 **Inside** Edison Operating Company Knop #1-27 DST Test Number: 4



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