KOLAR Document ID: 1579153

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 # 4787
Name: TDI, Inc.
Address 1: 1310 BISON RD
Address 2:
City: HAYS State: KS Zip: 67601 + 9696
Contact Person: Tom Denning
Phone: (785) 628-2593
CONTRACTOR: License # 33350
Name: Southwind Drilling, Inc.
Wellsite Geologist: Herb Deines
Purchaser: Coffeyville Resources

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 #:

6/3/2021 Spud Date or Recompletion Date
06/08/2021 Date Reached TD
8/4/2021 Completion Date or Recompletion Date

API No.: 15-051-26997-00-00
Spot Description:
SE - NE - SE - SW Sec. 13 Twp. 13 S. R. 19 ☐ East ☑ West
975 Feet from ☐ North / ☑ South Line of Section
2365 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: Ellis
Lease Name: BRULL Well #: 1
Field Name: Gatschet
Producing Formation: Arbuckle
Elevation: Ground: 2065 Kelly Bushing: 2075
Total Vertical Depth: 3800 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 214 Feet
Multiple Stage Cementing Collar Used? ☑ Yes ☐ No
If yes, show depth set: 1360 Feet
If Alternate II completion, cement circulated from: 1360
feet depth to: 0 w/ 150 sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)
Chloride content: 39000 ppm Fluid volume: 650 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: 08/25/2021
☐ **Confidential Release Date:** 08/25/2023
☑ **Wireline Log Received** ☑ **Drill Stem Tests Received**
☑ **Geologist Report / Mud Logs Received**
☐ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** Karen Ritter **Date:** 08/25/2021

Page Two

Operator Name: TDI, Inc. Lease Name: BRULL Well #: 1

Sec. 13 Twp. 13 S. R. 19 ☐ East ☑ West County: Ellis

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:

Microresistivity Log
Dual Induction Log
Dual Compensated Porosity Log

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

Name	Top	Datum
Anhydrite	1365'	+710'
Topeka	3084'	-1009'
Heebner	3334'	-1259'
Lansing/Kansas City	3379'	-1304'
Base Kansas City	3608'	-1533'
Arbuckle	3674'	-1599'

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	20	214	80/20 Poz	150	3% cc, 2% gel
Production	7.875	5.5	14	3792	EA-2	150	None

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	0-1360	SMD	150	
	-			

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: 8/19/2021	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)*	3680	3695

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)*
4	3691	3695			450 gals 20% MA, 500 gals 20% NEFE, 500 gals 15% MA
4	3680	3684			

TUBING RECORD: Size: 2.875 Set At: 3737 Packer At:

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

Form	ACO1 - Well Completion
Operator	TDI, Inc.
Well Name	BRULL 1
Doc ID	1579153

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	20	214	80/20 Poz	150	3% cc, 2% gel
Production	7.875	5.5	14	3792	EA-2	150	None

OPERATOR

Company:	TDI, INC		
Address:	1310 BISON ROAD HAYS, KANSAS 67601-9696		
Contact Geologist:	TOM DENNING		
Contact Phone Nbr:	785-628-2593		
Well Name:	BRULL # 1		
Location:	SE NE SE SW, SEC,13-T13S-R19W		
API:	15-051-26,997-00-00		
Pool:		Field:	GATSCHET
State:	KANSAS	Country:	USA

TDI, Inc.

Scale 1:240 Imperial

Well Name:	BRULL # 1		
Surface Location:	SE NE SE SW, SEC,13-T13S-R19W		
Bottom Location:			
API:	15-051-26,997-00-00		
License Number:	4787		
Spud Date:	6/3/2021	Time:	5:45 PM
Region:	ELLIS COUNTY		
Drilling Completed:	6/8/2021	Time:	12:25 PM
Surface Coordinates:	975' FSL & 2365' FWL		
Bottom Hole Coordinates:			
Ground Elevation:	2065.00ft		
K.B. Elevation:	2075.00ft		
Logged Interval:	3000.00ft	To:	3800.00ft
Total Depth:	3800.00ft		
Formation:	ARBUCKLE		
Drilling Fluid Type:	CHEMICAL/FRESH WATER GEL		

SURFACE CO-ORDINATES

Well Type:	Vertical
Longitude:	-99.3826165
Latitude:	38.9170836
N/S Co-ord:	975' FSL
E/W Co-ord:	2365' FWL

LOGGED BY

SOLUTIONS CONSULTING

Company:	SOLUTIONS CONSULTING, INC.		
Address:	108 W 35TH HAYS, KS 67601		
Phone Nbr:	(785) 639-1337		
Logged By:	GEOLOGIST	Name:	HERB DEINES

CONTRACTOR

Contractor:	SOUTHWIND DRILLING INC.		
Rig #:	1		
Rig Type:	MUD ROTARY		
Spud Date:	6/3/2021	Time:	5:45 PM
TD Date:	6/8/2021	Time:	12:25 PM

Rig Release:	6/9/2021	Time:	7:30 AM

ELEVATIONS

K.B. Elevation:	2075.00ft	Ground Elevation:	2065.00ft
K.B. to Ground:	10.00ft		

NOTES

DECISION TO RUN PRODUCTION CASING BASED ON LOG ANALYSIS AND POSITIVE RESULTS OF DST # 1.

OPEN HOLE LOGGING BY MIDWEST WIRELINE: DUAL INDUCTION LOG, DUAL COMPENSATED POROSITY LOG, MICRORESISTIVITY LOG.

DRILL STEM TESTING BY TRILOBITE TESTING INC: ONE (1) CONVENTIONAL TEST.

	BRULL # 1 SE NE SE SW SEC.13-13S-19W KB 2075'	DREILING A # 1 SE SE SW SEC.13-13S-19W KB 2055'	JACOBS # 2 NW SE NW NE SEC.24-13S-19W KB 2062'
	LOG TOPS		
Anhydrite-top	1365 +710	+711	+722
Anhydrite-base	1402 +673	+677	+685
Topeka	3084-1009	-1009	-1008
Heebner Shale	3334-1259	-1261	-1250
Toronto	3353-1278	-1279	-1269
LKC	3379-1304	-1308	-1302
BKC	3608-1533	-1539	-1528
Arbuckle	3674-1599	-1609	-1609
RTD	3800-1725	-1665	-1625

6-03-21	Spud 5:45 PM. Drill 12 ¼" hole for surface casing.
6-04-21	214', Set 8 5/8" surface casing to 213.65' w 150 sks 80/20 pos 3%CC 2%gel, plug down 3:00 AM, slope 3/4 degree @214'. WOC 8 hours, drilled plug at 11:00 AM with PDC bit.
6-05-21	1715', drilling
6-06-21	2980', drilling, pulled PDC bit at 2980', displaced 3012'-3044'
6-07-21	3487', drilling, CFS 3650', short trip, drilling, CFS 3704' DST # 1 3679'-3704', slope 1 degree @ 3704'
6-08-21	3704', TIWB, drilling, RTD 3800' @ 12:28 PM, CCH, TOWB, logs, TIWB, LDDP, run production casing
6-09-21	3800', finish cementing bottom and top stages, release rig.

DRILL STEM TEST REPORT

TDI Inc.

1310 Bison RD
Hays, KS 67601-9696

ATTN: Herb Dienes

13-13s-19w

Brull #1

Job Ticket: 61766 **DST#: 1**

Test Start: 2021.06.07 @ 21:58:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 01:04:32
Time Test Ended: 05:54:02

Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Webster
Unit No: 72

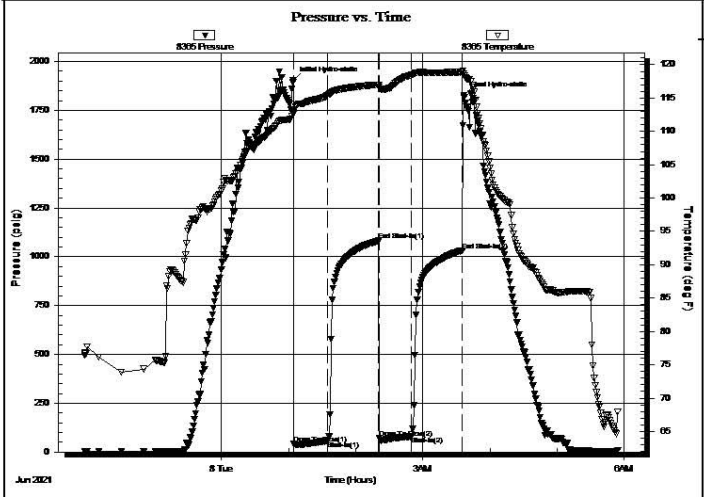
Interval: 3679.00 ft (KB) To 3704.00 ft (KB) (TVD)
Total Depth: 3704.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2076.00 ft (KB)
2068.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8365
Press@RunDepth: 79.27 psig @ 3680.00 ft (KB)
Start Date: 2021.06.07 End Date: 2021.06.08
Start Time: 21:58:01 End Time: 05:54:02

Capacity: psig
Last Calib.: 2021.06.08
Time On Btm: 2021.06.08 @ 01:04:17
Time Off Btm: 2021.06.08 @ 03:36:47

TEST COMMENT: IF-Surface blow built to bob in 24 min
ISI- No blow back
FF-built to 8 1/2"
FSI-no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1903.47	112.95	Initial Hydro-static
1	44.00	112.62	Open To Flow (1)
31	57.10	115.43	Shut-In(1)
77	1081.78	116.97	End Shut-In(1)
77	70.93	116.67	Open To Flow (2)
106	79.27	118.46	Shut-In(2)
151	1029.88	118.91	End Shut-In(2)
153	1828.37	118.66	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM 10% oil 90% mud	0.28
180.00	Gassy Oil 5% gas 95% oil	2.55
0.00	320' GIP 100% gas	0.00

Gas Rates

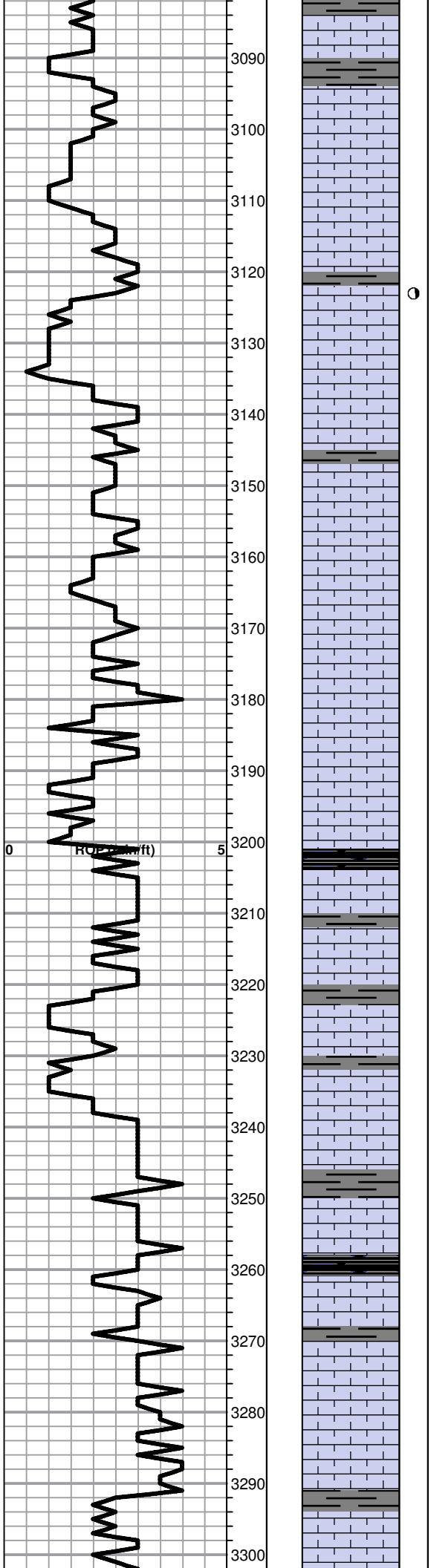
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

0.00	320 Gal 100% gas	0.00

ROCK TYPES

Clystcol
Chtcongl
Dolprim
Dolsec
Lmst fw7>
Lscongl
shale, gry
Carbon Sh
shale, red
Shcol

Curve Track #1 ROP (min/ft) 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 ROP (min/ft) 5	3000 3010 3020 3030 3040 3050 3060 3070 3080				BEGIN 1' DRILL TIME FROM 3000' TO RTD BEGIN 10' WET AND DRY SAMPLES FROM 3050' TO RTD **ANHYDRITE TOP 1365+710** **ANHYDRITE BASE 1402+673** Lime, med gray, fnxln Shale, lt-med gray, soft sticky to soft blocky Shale, lt-med gray, soft blocky	8 5/8" SURFACE CASING SET TO 213.65' CEMENTED WITH 150 SXS 80/20POS 2%GEL 3% CC, PLUG DOWN 3:00AM ON 6/4/2021 SLOPE SURVEY 3/4 DEGREE @ 214' BIT TRIP @ 2980' PDC BIT TO CONVENTIONAL BUTTON BIT



TOPEKA 3084-1009

Lime, white-crm, fnxln-granular, slightly fossiliferous

Lime, crm-lt brn, fnxln, fossiliferous in part

Lime, lt brn, fnxln, slightly fossiliferous

Lime, lt brn-med gray, fn-vfxln

Lime, lt brn, granular, chalky white wash, one chip with lt gassy show on crush, fine pin point porosity

Lime, lt-med brn-med gray, fn-vfxln

Lime, med gray, fnxln

Lime, med brn-med gray, fn-vfxln, slightly fossiliferous

Lime, lt-med brn, fn-vfxln

Lime, lt-med brn-med gray, fn-vfxln with scattered granular

Lime, lt-med brn, fnxln-granular, slight bedded chalk and chalky matrix in part

Lime, lt-med brn, fnxln-granular
Shale, black carbonaceous, fissile, blocky

Lime,lt gray, micro xln

Lime, lt gray, micro xln, lithographic

Lime,lt brn, fn-vfxln

Lime, lt brn, fnxln, slight bedded chalk

Lime, lt brn-lt grayish brn, fn-micro xln, scattered lt colored chert fragments

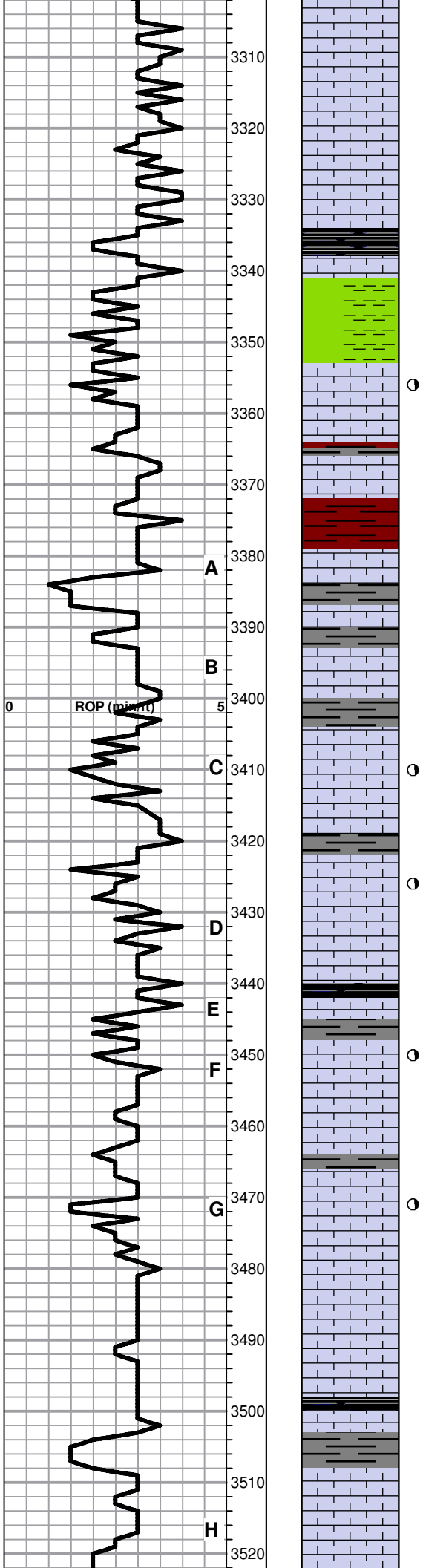
Lime,lt-med brn-med gray, fn-micro xln
Shale, black carbonaceous, fissile, blocky

Lime,lt brn, fn-vfxln, white chalk wash

Lime, lt brn-lt gray, fn-vfxln

Lime, lt-med brn, fn-vfxln

Lime,lt brn, fn-vfxln



Lime, lt-med brn, fn-vfxln

Lime, lt brn, fn-vfxln

Lime, lt-med brn, fn-vfxln

HEEBNER SHALE 3334-1259

Shale, black carbonaceous, fissile, blocky
Lime, lt gray, micro xln

Clay, dove gray-lime green, soft mud

TORONTO 3353-1278

Lime, crm, fn-vfxln, trace of dark stain, NFO or odor

Lime, white-crm, fn-vfxln with hard bedded chalk beds grading into lt gray shale near boundary
Shale, red, soft, blocky

LKC 3379-1304

Lime, lt-med brn-med gray, fn-micro xln

Lime, lt-med brn-med gray, fn-micro xln

Lime, crm, mostly fnxln with scattered oomoldic chips with trace of spotty staining, NFO or odor

Lime, white-crm, fnxln with scattered oolitic chips with trace of spotty staining, NFO or odor

Lime, crm-lt brn, fn-micro xln

Shale, black carbonaceous

Lime, crm-lt brn, fnxln, fossiliferous and oolitic, trace of spotty staining, NFO or odor, scattered vugs with staining

Lime, lt-med brn, fn-micro xln

Lime, crm, fnxln with scattered oomoldic chips, spotty staining, NFO with very lt odor

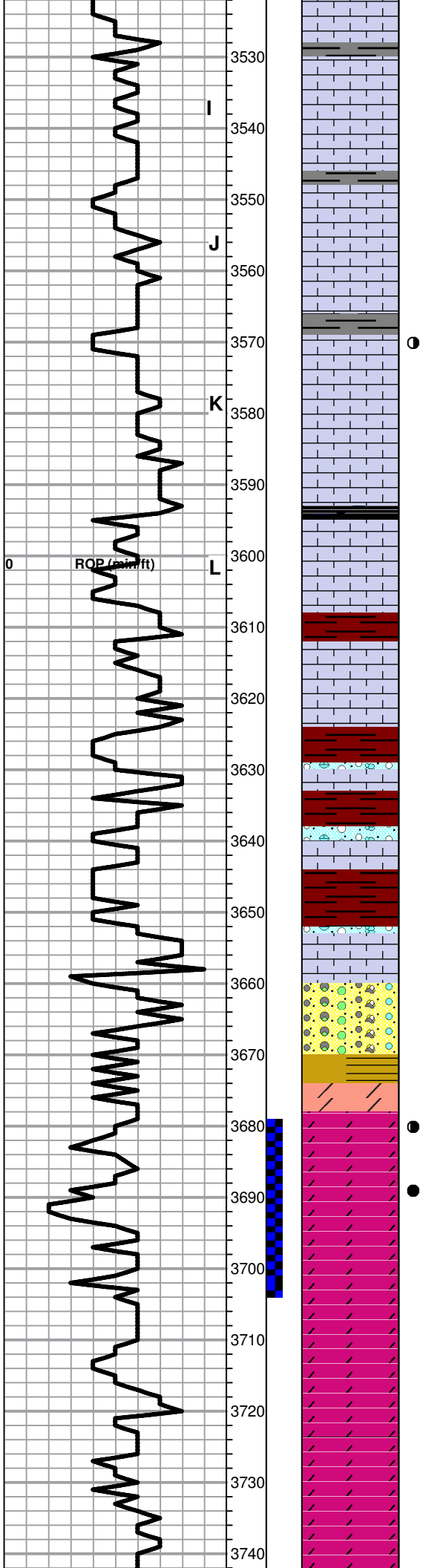
Lime, crm, fn-vfxln

Lime, crm, fn-vfxln

Shale, black carbonaceous
Lime, lt-med brn, fn-vfxln

Lime, lt-med brn, fn-vfxln, NS

REVIEW OF AREA WELLS POINTS TO POSSIBLE FRACTURE DEVELOPMENT IN THIS ZONE IN A FEW WELLS



Lime,lt-med brn, fn-vfxln

Lime, med brn, fn-vfxln , NS

Lime, lt-med brn-grayish brn, fn-vfxln

Lime, crm-lt brn, fn-vfxln

Lime, crm-lt brn, fn-micro xln

Lime, crm-lt brn, fn-vfxln, scattered oomoldic chips with lt scattered staining, few floating oil globules in tray, fair to good odor.

Lime, white-crm, fn-vfxln, white chalk wash

Shale, dark gray-black carbonaceous

Lime, lt brn-lt gray, fn-micro xln

BKC 3608-1533

Shale, red, soft blocky

Lime, white, fnxln, crumbly with thin bedded chalk and fossil beds, scattered green glauconite specks

Shale, red with red wash
Lime, clastic mix in part

Clastic lime and red shale mix, vari colored shales

CFS 3646', SHORT TRIP

Shale, red-brn, soft mud to soft blocky

Clastic mix with scattered vari colored chert fragments

Sticky red shale and chert fragment mix with scattered firm blocky blue green simpson shale

ARBUCKLE 3674-1599

Dolomite,tan-lt brn, fnxln-granular, lt odor with scattered to saturated staining and free floating oil globules, fine-coarse xln with inter xln porosity

Dolomite, tan, fnxln-granular, fine-coarse grained with scattered sucrosic, saturated dark staining with lt odor and fair show of free oil, inter xln porosity, increasing grain size and rhombic development with depth

DST # 1 3679'-3704' SEE HEADER FOR TEST SUMMARY

Dolomite, fnxln-granular, lt odor

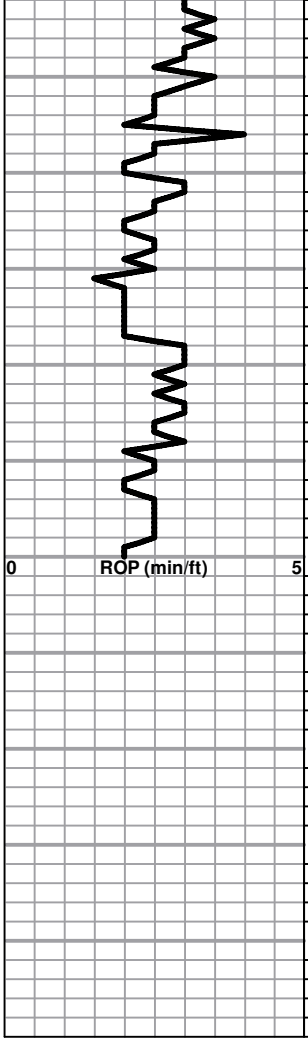
Dolomite, lt-med brn, fn-coarse xln, decreasing odor

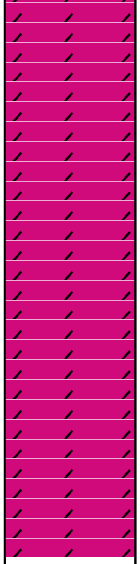
Dolomite, lt-med brn, fnxln-granular

Dolomite, lt-med brn, fnxln with scattered granular

SET 5 1/2" PRODUCTION CASING TO 3792' W/ 150 SACKS EA2, DV AT 1360' WITH 150 SACKS SMD, PLUG DOWN 7:15 AM,

Dolomite, lt-med brn, fn-vfxln, hard on crush, white chert fragments in part





fragments in part	
Dolomite, tan-salmon, fn-coarse xln, oolitic chert in part	
Dolomite,lt-med brn, fnxln-granular in part	
Dolomite, lt-med brn-salmon, fn-vfxln, very hard on crush	
Dolomite, lt-med brn, fn-vfxln	
Dolomite, lt brn-lt gray, fn-vfxln	
Dolomite, lt gray, fn-vfxln	
RTD 3800-1725	

6/9/21. RATHOLE WITH 30 SACKS, MOUSEHOLE WITH 20 SACKS, SWIFT TICKET # 33548

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071 **Home Office P.O. Box 32 Russell, KS 67665** **No.** 1792
Cell 785-324-1041

Date	Sec.	Twp.	Range	County	State	On Location	Finish
6-4-21	13	13	19	Ellis	Ks		3:00 Am

Location I W HAYS, KS

Lease BROll	Well No. 1	Owner	
Contractor Southwind		To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.	
Type Job Surface			
Hole Size 12¼	T.D. 214	Charge To TDI	
Csg. 8⅝	Depth 213	Street	
Tbg. Size	Depth	City HAYS	State KS
Tool	Depth	The above was done to satisfaction and supervision of owner agent or contractor.	
Cement Left in Csg. 15	Shoe Joint	Cement Amount Ordered 150sx 80/20 3+2	
Meas Line	Displace 12.6		

EQUIPMENT			
Pumptrk 5	No.	Cementer	Bill
		Helper	Craig
Bulktrk 19	No.	Driver	Doug
		Driver	
Bulktrk	No.	Driver	
		Driver	

JOB SERVICES & REMARKS

Remarks:	Common 120
Rat Hole	Poz. Mix 30
Mouse Hole	Gel. 3
Centralizers	Calcium 6
Baskets	Hulls
D/V or Port Collar	Salt
	Flowseal
	Kol-Seal
	Mud CLR 48
	CFL-117 or CD110 CAF 38
	Sand
	Handling 159
	Mileage

Run 5 Jts of 8⅝ csg
Cemt w/ 150sx
Pump Plug w/ 12.6 bbls water
Cemt did circ

thanks

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	Surface
Mileage	15 min
Tax	
Discount	
Total Charge	

X
Signature [signature]

Thanks

JOB LOG

SWIFT Services, Inc.

DATE: 9 Jun 21 | PAGE NO.: 1

CUSTOMER: TDI | WELL NO.: #1 | LEASE: Brull | JOB TYPE: cement long string 2 stage | TICKET NO.: 33548

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
								150sk EA-2 cement - 1st stage
								200sk SMD cmt - 2nd stage
								5½ x 14# casing 90 joints TD - 3800
								total pipe - 3793' DV tool @ 57 1360' shoe jt 42.57
								Centralizers 1, 3, 5, 7, 9, 92, 12, 14 Basket 4, 5 T
	0100							on loc TRK 111
	~~0200~~							start 5½ x 14# casing in well
	0425							Drop ball - circulate
	0530		32					Pump 500 gal mud flush + 20 bbl KCL flush
	0545	4	36				200	mix EA-2 cement, 150sk @ 15.3 ppg
								Drop 1st stage plug
	~~0623~~							wash pump & lines
	0558	6					200	Displace plug
							800	
	065		92				1500	Land plug - Release pressure to truck / dried up
								Drop bomb
			7					Plug RH - MH 30sk - 20sk
	0623						800	open DV tool
	0635	4½	44				200	mix SMD cmt, 50sk @ 11.2 ppg
								Drop 2nd stage plug
	0710		5				200	Displace plug
	~~0710~~							→ cement to surface ← 25sk to pit
							600	
	0715		32				1800	Land plug / close DV
								Release pressure to truck - dried up
	0725							wash truck
								Rack up
	0755							job complete
								Thanks
								Zack, Blaine, & ISAAC

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison Rd
Hays, KS 67601-9696

ATTN: Herb Dienes

Brull #1

13-13s-19w Ellis,KS

Start Date: 2021.06.07 @ 21:58:00
End Date: 2021.06.08 @ 05:54:02
Job Ticket #: 61766 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2021.06.08 @ 16:17:13

DRILL STEM TEST REPORT

TDI Inc.

1310 Bison Rd
Hays, KS 67601-9696

ATTN: Herb Dienes

13-13s-19w Ellis,KS

Brull #1

Job Ticket: 61766 **DST#: 1**

Test Start: 2021.06.07 @ 21:58:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 01:04:32
Time Test Ended: 05:54:02

Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Webster
Unit No: 72

Interval: 3679.00 ft (KB) To 3704.00 ft (KB) (TVD)
Total Depth: 3704.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

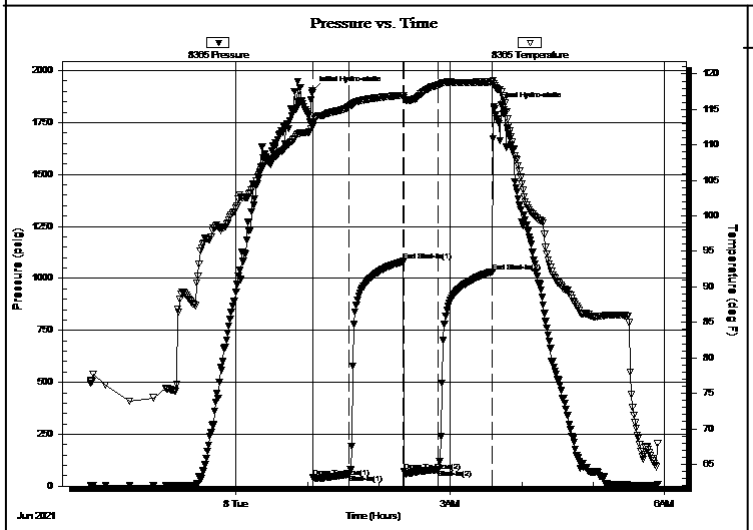
Reference Elevations: 2076.00 ft (KB)
2068.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8365 **Inside**

Press@RunDepth: 79.27 psig @ 3680.00 ft (KB)
Start Date: 2021.06.07 End Date: 2021.06.08
Start Time: 21:58:01 End Time: 05:54:02

Capacity: psig
Last Calib.: 2021.06.08
Time On Btm: 2021.06.08 @ 01:04:17
Time Off Btm: 2021.06.08 @ 03:36:47

TEST COMMENT: IF-Surface blow built to BOB in 24 min
ISI- No blow back
FF-Blow built to 8 1/2"
FSI-No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1903.47	112.95	Initial Hydro-static
1	44.00	112.62	Open To Flow (1)
31	57.10	115.43	Shut-In(1)
77	1081.78	116.97	End Shut-In(1)
77	70.93	116.67	Open To Flow (2)
106	79.27	118.46	Shut-In(2)
151	1029.88	118.91	End Shut-In(2)
153	1828.37	118.66	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM 10% oil 90% mud	0.28
180.00	Gassy Oil 5% gas 95% oil	2.55
0.00	320' GIP 100% gas	0.00

Gas Rates

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

DRILL STEM TEST REPORT

TDI Inc.

1310 Bison Rd
Hays, KS 67601-9696

ATTN: Herb Dienes

13-13s-19w Ellis,KS

Brull #1

Job Ticket: 61766 **DST#: 1**

Test Start: 2021.06.07 @ 21:58:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 01:04:32
Time Test Ended: 05:54:02

Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Webster
Unit No: 72

Interval: 3679.00 ft (KB) To 3704.00 ft (KB) (TVD)
Total Depth: 3704.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

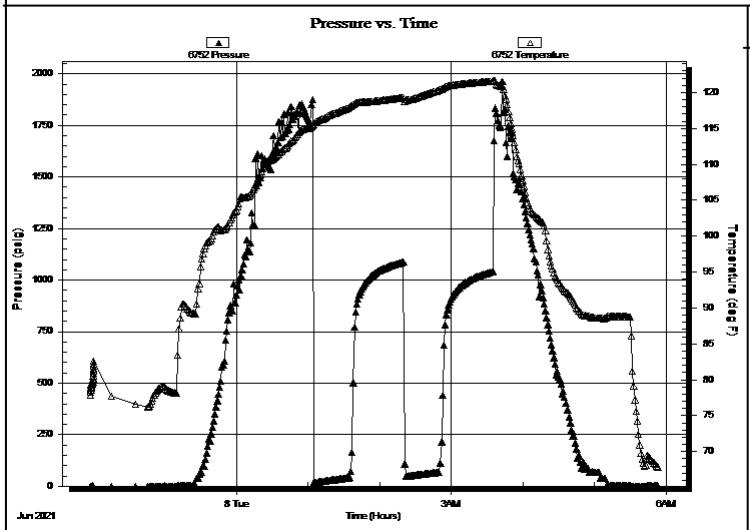
Reference Elevations: 2076.00 ft (KB)
2068.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6752 **Inside**

Press@RunDepth: psig @ 3680.00 ft (KB)
Start Date: 2021.06.07 End Date: 2021.06.08
Start Time: 21:58:01 End Time: 05:53:02

Capacity: psig
Last Calib.: 2021.06.08
Time On Btm:
Time Off Btm:

TEST COMMENT: IF-Surface blow built to BOB in 24 min
ISI- No blow back
FF-Blow built to 8 1/2"
FSI-No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM 10% oil 90% mud	0.28
180.00	Gassy Oil 5% gas 95% oil	2.55
0.00	320' GIP 100% gas	0.00

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI Inc.

1310 Bison Rd
Hays, KS 67601-9696

ATTN: Herb Dienes

13-13s-19w Ellis,KS

Brull #1

Job Ticket: 61766 **DST#: 1**

Test Start: 2021.06.07 @ 21:58:00

Tool Information

Drill Pipe:	Length:	3672.00 ft	Diameter:	3.82	inches	Volume:	52.05	bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.75	inches	Volume:	0.00	bbl	
Drill Collar:	Length:	0.00 ft	Diameter:	2.25	inches	Volume:	0.00	bbl	
						Total Volume:	52.05	bbl	

Drill Pipe Above KB:	12.00 ft
Depth to Top Packer:	3679.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	25.00 ft
Tool Length:	44.00 ft
Number of Packers:	1 Diameter: inches

Tool Weight:		2000.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		52000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	48000.00 lb
	Final	50000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			3665.00		
Hydraulic tool	5.00			3670.00		
Packer	5.00			3675.00	19.00	Bottom Of Top Packer
Packer	4.00			3679.00		
Stubb	1.00			3680.00		
Recorder	0.00	8365	Inside	3680.00		
Recorder	0.00	6752	Inside	3680.00		
Perforations	21.00			3701.00		
Bullnose	3.00			3704.00	25.00	Bottom Packers & Anchor
Total Tool Length:	**44.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Inc.

1310 Bison Rd
Hays, KS 67601-9696

ATTN: Herb Dienes

13-13s-19w Ellis,KS

Brull #1

Job Ticket: 61766 **DST#: 1**

Test Start: 2021.06.07 @ 21:58:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	29 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	47.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	5.80 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	4100.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	OCM 10% oil 90% mud	0.284
180.00	Gassy Oil 5% gas 95% oil	2.552
0.00	320' GIP 100% gas	0.000

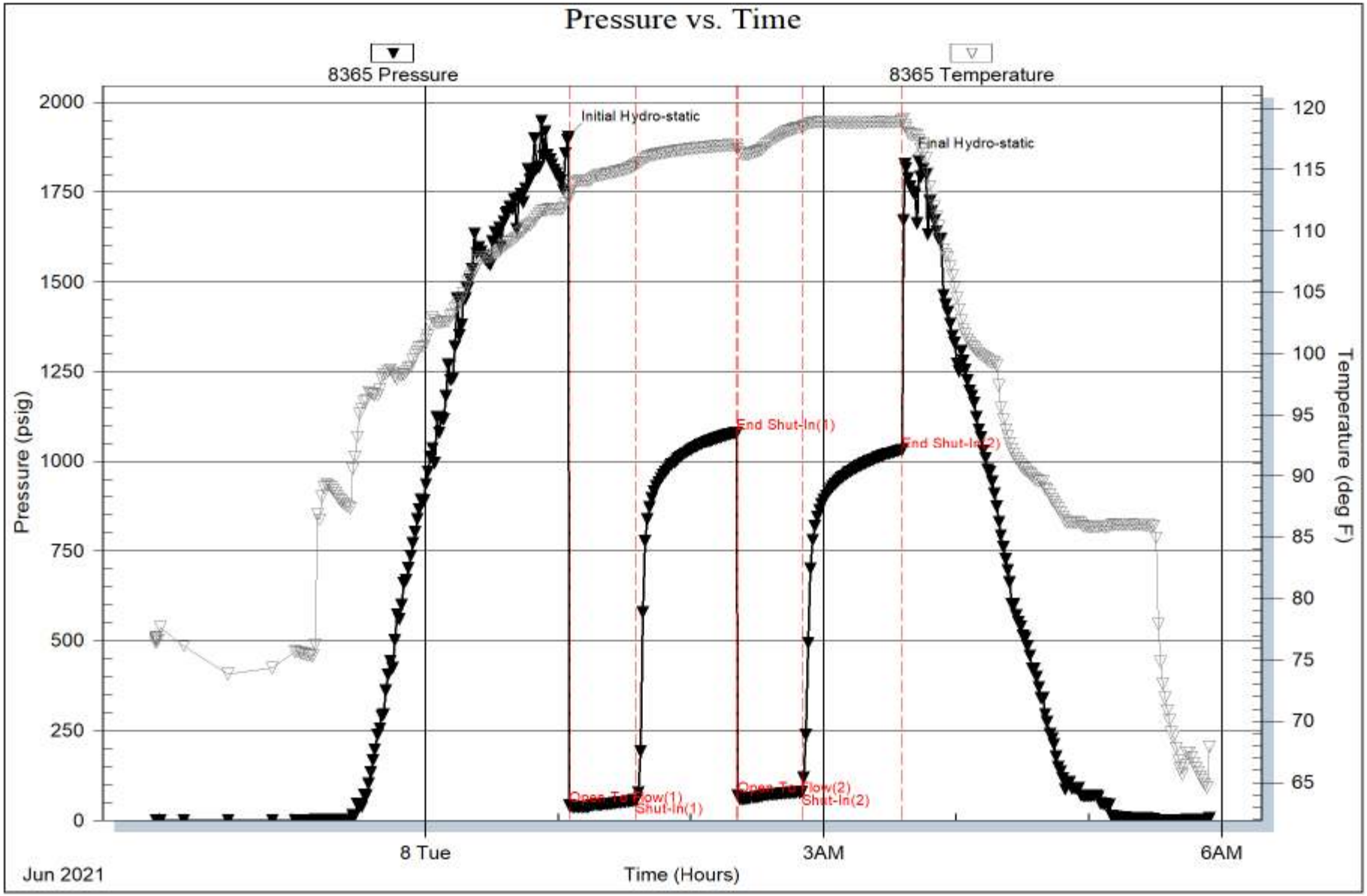
Total Length: 200.00 ft Total Volume: bbl

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

Laboratory Name: Laboratory Location:

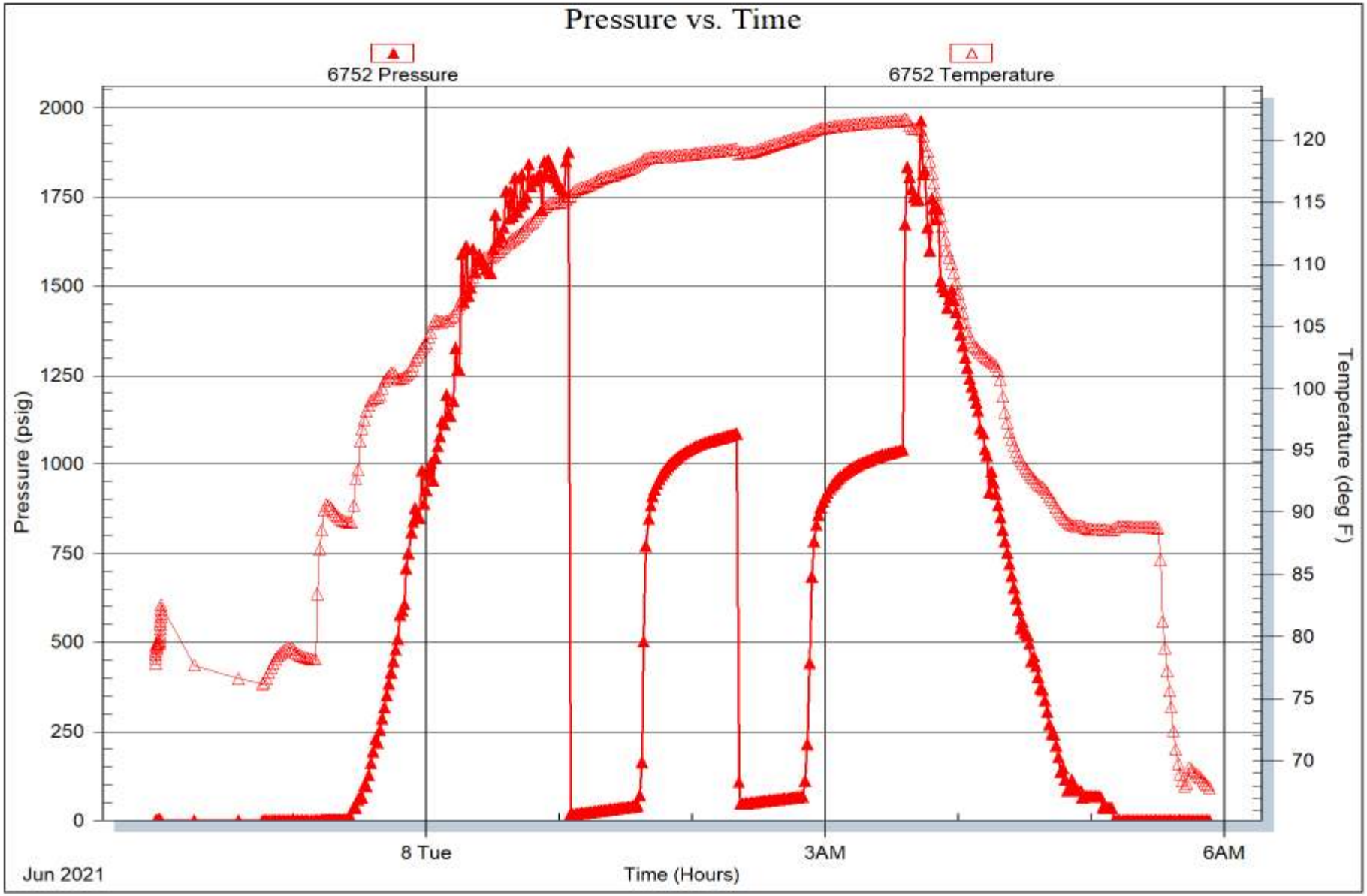
Recovery Comments: 2# LCM

Serial #: 8365 **Inside** TDI Inc. Brull #1 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 61766 Printed: 2021.06.08 @ 16:17:15

Serial #: 6752 **Inside** TDI Inc. Brull #1 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 61766 Printed: 2021.06.08 @ 16:17:16

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 61766

Well Name & No. Brull #1 Test No. 1 Date 6/7/21

Company TDI Inc. Elevation 2076 KB 2068 GL

Address 1310 Bison Rd Hays, KS 67601-9696

Co. Rep / Geo. Herb Dieres Rig Southland #1

Location: Sec. 13 Twp. 13S Rge. 19W Co. Ellis State KS

Interval Tested 3679 - 3704 Zone Tested Arbuckle

Anchor Length 25' Drill Pipe Run 3672 Mud Wt. 9.0

Top Packer Depth ~~3679~~ 3674 Drill Collars Run — Vis 47

Bottom Packer Depth 3679 Wt. Pipe Run — WL 5.8

Total Depth 3704 Chlorides 4,100 ppm System LCM 2

Blow Description IF- Surface blow built to BOB in 24min

ISI- No blow back

FI- Built to 8"

FSI- 1/4" blow back

Rec 620	Feet of Oil cut Mud	%gas	10 %oil	%water 90	%mud		
Rec 180	Feet of Gassy Oil	5 %gas	95 %oil	%water	%mud		
Rec	Feet of 320' GIP	100 %gas	%oil	%water	%mud		
Rec	Feet of	%gas	%oil	%water	%mud		
Rec	Feet of	%gas	%oil	%water	%mud		

Rec Total BHT 119 Gravity 29 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 1903	☒ Test 1200	T-On Location 21:00	
(B) First Initial Flow 44	☐ Jars	T-Started @ 21:58	
(C) First Final Flow 57	☐ Safety Joint	T-Open 01:05	
(D) Initial Shut-In 1081	☐ Circ Sub	T-Pulled 03:35	
(E) Second Initial Flow 70	☐ Hourly Standby	T-Out	
(F) Second Final Flow 79	☒ Mileage ~~1277~~ 15	Comments	
(G) Final Shut-In 1029	☐ Sampler		
(H) Final Hydrostatic 1828	☐ Straddle	☐ Ruined Shale Packer	
	☐ Shale Packer	☐ Ruined Packer	
Initial Open 30	☐ Extra Packer	☐ Extra Copies	
Initial Shut-In 45	☐ Extra Recorder	Sub Total 0	
Final Flow 30	☐ Day Standby	Total 1215	
Final Shut-In 45	☐ Accessibility	MP/DST Disc't	
	Sub Total 1215	Spencer Stone b	

Approved By Our Representative Kevin Webster