

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 # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

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 #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

| | |
|--|---|
| Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____ | <input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum |
|--|---|

| CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used | | | | | | | |
|---|-------------------|---------------------------|-------------------|---------------|----------------|--------------|----------------------------|
| Report all strings set-conductor, surface, intermediate, production, etc. | | | | | | | |
| Purpose of String | Size Hole Drilled | Size Casing Set (In O.D.) | Weight Lbs. / Ft. | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| ADDITIONAL CEMENTING / SQUEEZE RECORD | | | | |
|--|------------------|----------------|--------------|----------------------------|
| Purpose: | Depth Top Bottom | Type of Cement | # Sacks Used | Type and Percent Additives |
| <input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone | | | | |
| | | | | |

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: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____ | | | |
| Estimated Production Per 24 Hours | Oil Bbls. | Gas Mcf | Water Bbls. | Gas-Oil Ratio Gravity |

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

| Shots Per Foot | Perforation Top | Perforation Bottom | Bridge Plug Type | Bridge Plug Set At | Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i> |
|----------------|-----------------|--------------------|------------------|--------------------|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| | | | | |
|----------------|-------|---------|------------|--|
| TUBING RECORD: | Size: | Set At: | Packer At: | |
|----------------|-------|---------|------------|--|

OPERATOR

Company: Summit Operating LLC
 Address: 2760 29th St, STE 2A
 Boulder, CO 80301

Contact Geologist: Lucas Kalisher
 Contact Phone Nbr: 720-985-9790
 Well Name: Younger #1-17
 Location: Sec. 17-16s-17w
 API: 15-165-22165-0000
 Pool: Wildcat
 State: Kansas

Field: Wildcat
 Country: USA

**SUMMIT SOURCE FUNDING**

Scale 1:240 Imperial

Well Name: Younger #1-17
 Surface Location: Sec. 17-16s-17w
 Bottom Location:
 API: 15-165-22165-0000
 License Number:
 Spud Date: 4/16/2019 Time: 11:36 AM
 Region: Rush Co.
 Drilling Completed: Time:
 Surface Coordinates: 831' FNL & 1460' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 2003.00ft
 K.B. Elevation: 2011.00ft
 Logged Interval: 2550.00ft To: 0.00ft
 Total Depth: 0.00ft
 Formation: Quarts
 Drilling Fluid Type:

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: 0
 Latitude: 0
 N/S Co-ord: 831' FNL
 E/W Co-ord: 1460' FWL

LOGGED BY

Company:
 Address: 1411 Washington Circle
 Hays, KS 67601
 Phone Nbr: 620-428-1356
 Logged By: Geologist Name: Marc Downing

CONTRACTOR

Contractor: Discovery Drilling
 Rig #: 4
 Rig Type: Rotary
 Spud Date: 4/16/2019 Time: 11:36 AM
 TD Date: Time:
 Rig Release: Time:

ELEVATIONS

K.B. Elevation: 2011.00ft Ground Elevation: 2003.00ft
 K.B. to Ground: 8.00ft

NOTES

Structural Comparison:

| | | |
|----------------|--------------|-----------------|
| | | Frontier |
| | | Hartman 'A' #1 |
| | | NW NW NW |
| | | Sec. 17-16s-17w |
| Top Anhydrite | 1119 (+892) | -1 |
| Base Anhydrite | 1160 (+851) | NA |
| Brownville | 2647 (-636) | -3 |
| Tarkio | 2755 (-744) | -5 |
| Elmont | 2804 (-793) | -5 |
| Topeka | 2985 (-974) | -4 |
| Heebner | 3216 (-1205) | -5 |
| Toronto | 3237 (-1226) | -5 |
| LKC | 3266 (-1255) | -2 |
| BKC | 3488 (-1477) | -1 |
| Quartz | 3504 (-1493) | -2 |

ROCK TYPES

| | | |
|-----------|------------|------|
| sdY lmst | shale, gry | Ss |
| Lmst fw7> | Carbon Sh | Igne |

ACCESSORIES**MINERAL**

▲ Chert, dark
 △ Chert White

STRINGER

— green shale
 — red shale

OTHER SYMBOLS**OIL SHOWS**

● Even Stn
 ● Spotted Stn 50 - 75 %
 ● Spotted Stn 25 - 50 %
 ○ Spotted Stn 1 - 25 %
 ○ Questionable Stn
 D Dead Oil Stn

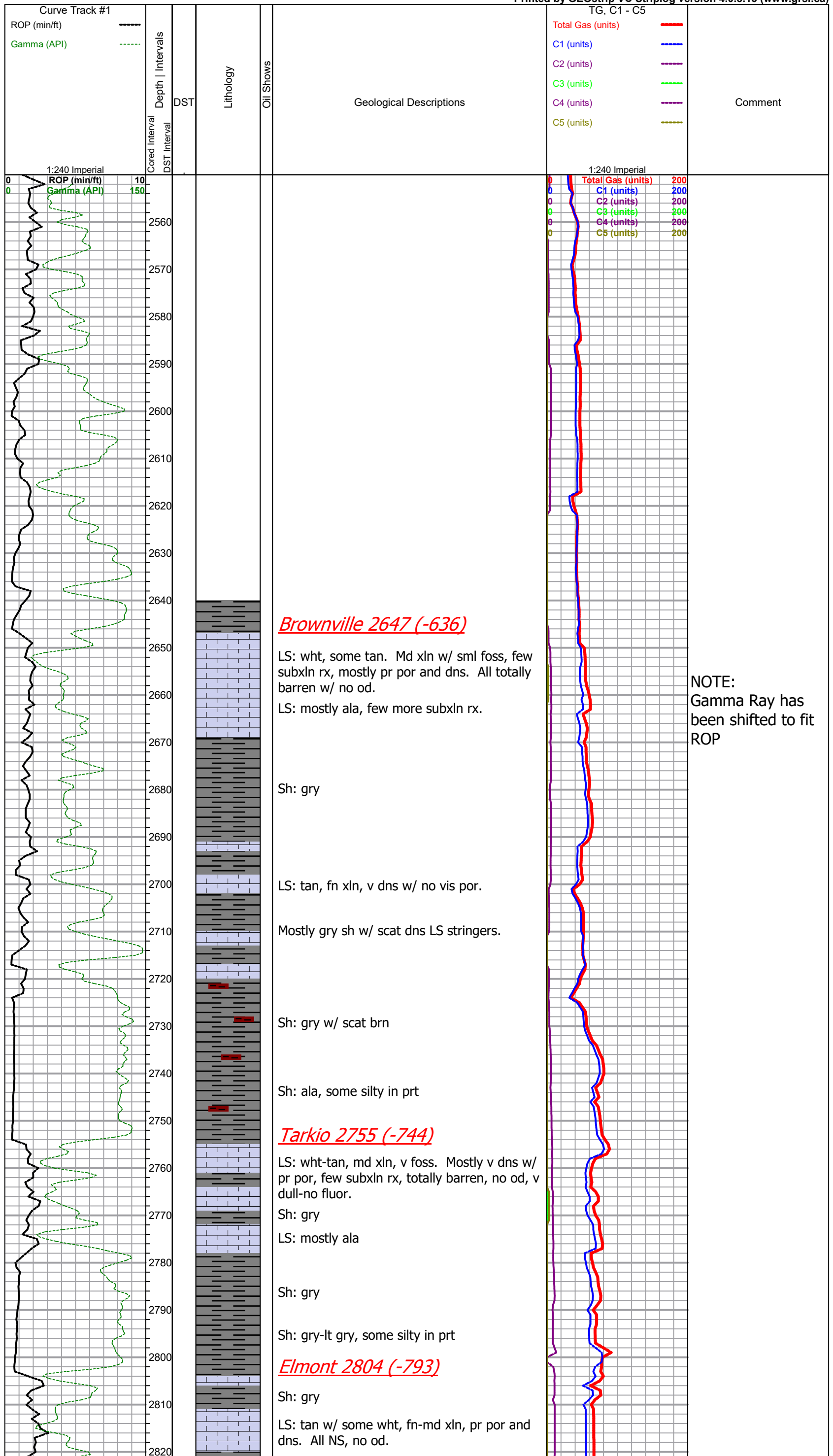
MISC

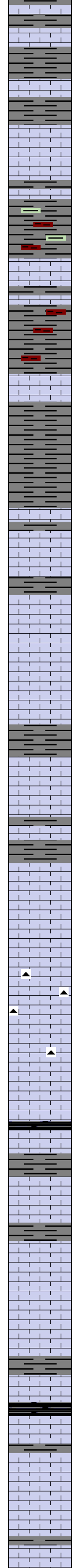
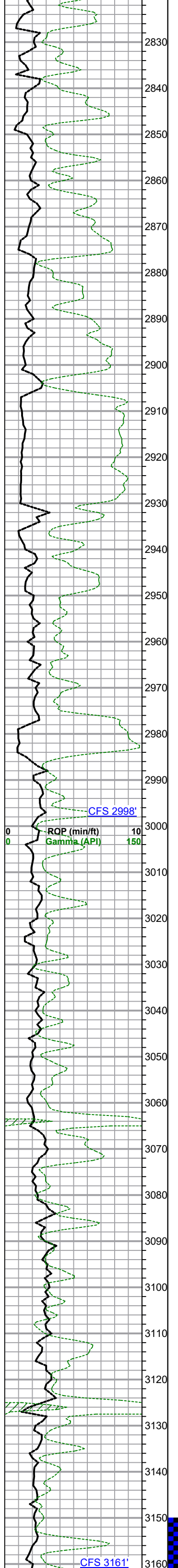
Daily Report
 Digital Photo
 Document

DST

DST Int
 DST alt
 Core
 tail pipe

- Fluorescence
- Folder
- Link
- Vertical Log File
- Horizontal Log File
- Core Log File
- Drill Cuttings Rpt





Sh: drk gry

Sh: gry

LS: tan, fn xln, dns

Sh: gry

LS: wht-tan, fn xln, chlky in prt. Few sml foss, trng mostly dns w/ pr por. All NS.

Sh: gry-lt gry w/ some lt grn and brn

LS: tan, fn-md xln, dns w/ pr por.

Sh: gry-lt gry, scat brn

LS: tan, md xln, pr por and dns

Sh: gry-lt gry, silty in prt

Sh: ala

Howard 2936 (-925)

LS: wht, fn-vfn xln, chlky. Trng dns and pr por, totally barren, no od.

Sh: gry

LS: tan-wht, fn-md xln. Mostly pr por and dns, scat subxln rx. All NS.

LS: much ala, trng fn xln w/ depth. Totally barren, no od.

Topeka 2985 (-974)

LS: wht, vfn-mic xln. Mostly pr por and tight, scat frac por. Fr grn fluor, NS, no od.

Sh: gry

LS: tan-brn, vfn-mic xln. V dns w/ no vis por, totally barren, no od.

LS: wht, md xln, subxln-chlky. Few sml foss, all NS.

LS: tan w/ some wht, md xln w/ scat lrg foss, mtd in prt. Gry shp cht.

LS: tan, trng more wht. Md xln, foss, mtd. Scat subxln rx, many dns w/ pr por. Totally barren, no od. Few pcs cht ala.

Sh: Black Carb

Sh: gry

LS: wht, vfn-mic xln, v dns w/ no vis por. Totally barren, no od.

Sh: gry

LS: some ala, vfn xln, v dns w/ no vis por and barren. Trng fn xln, some md xln, scat sml frag foss.

LS: ala, dns, NS.

Sh: lt gry

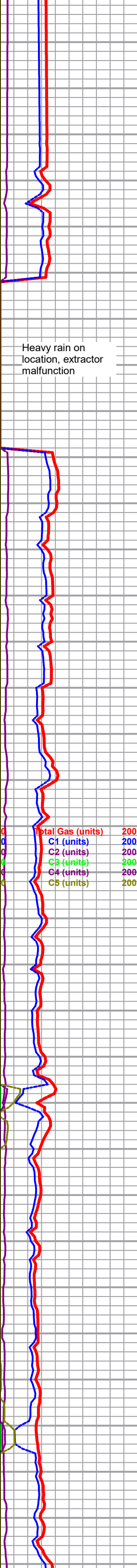
LS: tan, md xln, dns

Sh: Black Carb

LS: wht-tan, fn-md xln. Dns w/ pr por, NS.

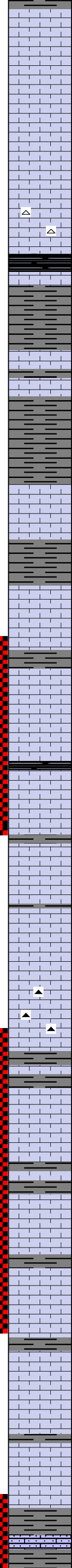
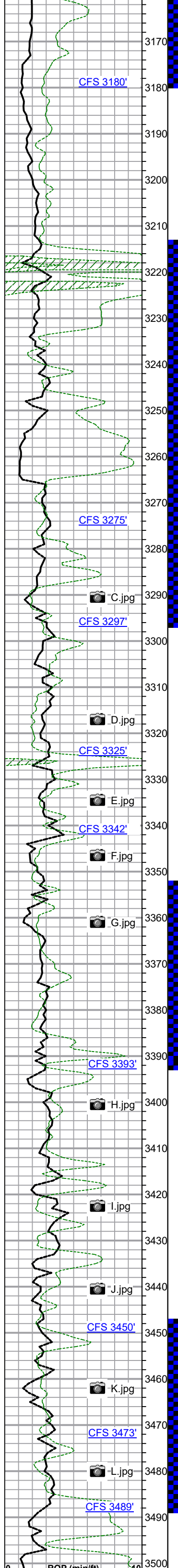
LS: tan-wht, md xln. Mostly dns w/ pr por, scat subxln rx w/ few sml foss. All NS, no od.

LS: wht, fn-md xln. Scat pp por w/ few frac rx, scat subxln rx. 1-2 rx w/ vpr stn, NSFO, vfnt-no od. Scat rx



Vis: 53 Wt: 8.8

DST #1
3150-3180
5-30-60-90



w/ gd yel fluor, uneven, no cut.

LS: wht-tan, md xln. Scat pp por, subxln in prt. 1-2 rx w/ lt stn and NSFO, fnt od. Scat gd yel fluor (frly uneven), no cut.

LS: wht-lt tan, fn-md xln. Fr-gd intxln and pp por, subxln in prt. 1-2 rx w/ lt stn and NSFO, fnt od. Scat gd yel fluor (more uniform than above), pr cut.

LS: wht, fn xln, trng mostly subxln-chlky. Scat intxln por, all NS, no od, w/ pr-fr grn-yel fluor.

LS: wht-lt tan, fn-md xln. Some ala w/ 2-3 rx fr intxln and pp por, lt sat stn w/ spttd SFO, gd yel fluor, fnt-lt od.

LS: trng fn-md xln and pr por foss in prt. Scat tan and wht shp cht.

Heebner 3216 (-1205)
Sh: Black Carb

Sh: lt gry

Toronto 3237 (-1226)
LS: wht, fn-v fn xln, suc in prt. Scat intxln por w/ few sml vugs, many subxln rx. 2-3 rx w/ uneven stn and rare lt SFO, fnt-no od, fr-gd grn-yel fluor, v slow cut.

Sh: lt gry w/ lt grn, silty in prt.

LKC 3266 (-1255)
LS: wht, fn xln. Mostly v dns w/ pr por. 2-3 rx w/ pr uneven stn, pr sptts SFO in pr intxln por. V fnt-no od, scat rx w/ fr-gd grn-yel fluor, many dull.

Sh: gry-lt gry

LS: wht, md xln, ool in prt. Some rx w/ fr ooc por, some pr-fr int ool por, scat fr-gd sml vugs. Fr lt brn sat stn w/ spttd SFO, gd yel fluor, slow stream cut. Scat pyt flakes.

Sh: gry

LS: wht, md xln, v foss, trng totally foss, frag in prt. Scat fr int foss and vug por, sltly tight, trng subxln in prt w/ depth. Fr-gd lt brn sat stn, fr SFO when broken, gd yel and grn fluor, slow streaming cut. Fr od trng gd od in CFS.

Sh: Black Carb

LS: wht-lt tan, md xln, few foss, dolomitic in prt. Few sml vugs, mostly tight, breaks on frac plain. Pr-fr uneven brn stn w/ spttd SFO, fr od, fr-gd grn-yel fluor.

Sh: gry

LS: tan-wht, md xln, dolomitic in prt. Scat gd vug por w/ fr-gd brn sat stn, spttd SFO. Trng wht, fn xln, fr vug por w/ dead blk stn. Pr-dull fluor, fnt od.

LS: wht, fn xln, scat sml vugs w/ few ooc rx, fr amt subxln rx. Fr-gd lt brn stn w/ lt SFO, gd yel fluor, fr stream cut, fnt od.

LS: wht, mostly fn xln, some md xln. Pr por and dns, totally barren, no od. Few pcs blk cht.

Sh: gry-drk gry

Sh: gry

LS: wht-tan, fn-md xln, foss in prt. Scat fr brn sat stn w/ spttd SFO in fr pp por, sml vugs. Some rx w/ hvy-dead black stn in fr-gd vug por. Pr-fr fluor, fr-gd od, slow-fr cut.

Sh: gry w/ some drk gry

LS: tan, fn xln, few foss. Mostly pr por and tight, scat pr-fr pp por w/ fr sat brn stn, spttd SFO, gd grn-yel fluor, slow stream cut gd od.

Sh: gry

LS: tan, md xln, foss. Fr vug and int foss por, some tight. Fr-gd brn sat stn w/ fr SFO. Fr-gd grn-yel fluor, slow stream cut, fr-gd od.

Sh: drk gry

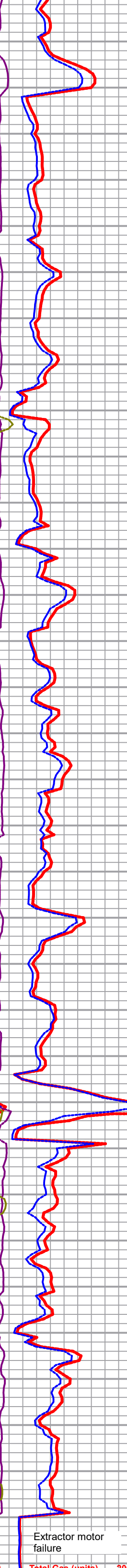
LS: wht, md xln, sltly dolomitic, many sml-md frag foss. Gd vug por w/ fr-gd lt brn sat stn, fr-gd SFO, gd od. Gd yel fluor w/ slow stream cut.

Sh: gry

LS: wht-tan, md xln, dolomitic. 3-4 rx w/ fr-gd vug por, gd lt brn stn w/ fr-gd SFO, fr-gd yel fluor, fr stream cut, lt od. Trng v ool w/ pr por and NS.

BKC 3488 (-1477)
Sh: gry

LS: tan, sndy in prt, pr por, v tight, NS.



I.F. - 2.5"
F.F. - 8"
IFP: 140-704
FFP: 62-454
SIP: 831-723
HP: 1519-1484
Rec:
105' mud
BHT: 101

DST #2
3213-3297
5-60-60-90
I.F. - BOB 5 min
F.F. - BOB 5 min
IFP: 38-39
FFP: 39-80
SIP: 285-276
HP: 1514-1484
Rec:
355' GIP
139' GM (10% g)
BHT: 100

DST #3
3299-3342
5-60-120-120
I.F. - BOB 2 min
F.F. - BOB 5 sec
IFP: 24-28
FFP: 33-49
SIP: 572-388
HP: 1619-1604
Rec:
620' GIP
62' mud
BHT: 103

DST #4
3352-3393
5-60-60-90
I.F. - 9"
F.F. - BOB 5 sec
IFP: 31-16
FFP: 9-14
SIP: 683-795
HP: 1602-1596
Rec:
175' GIP
5' mud
BHT: 100

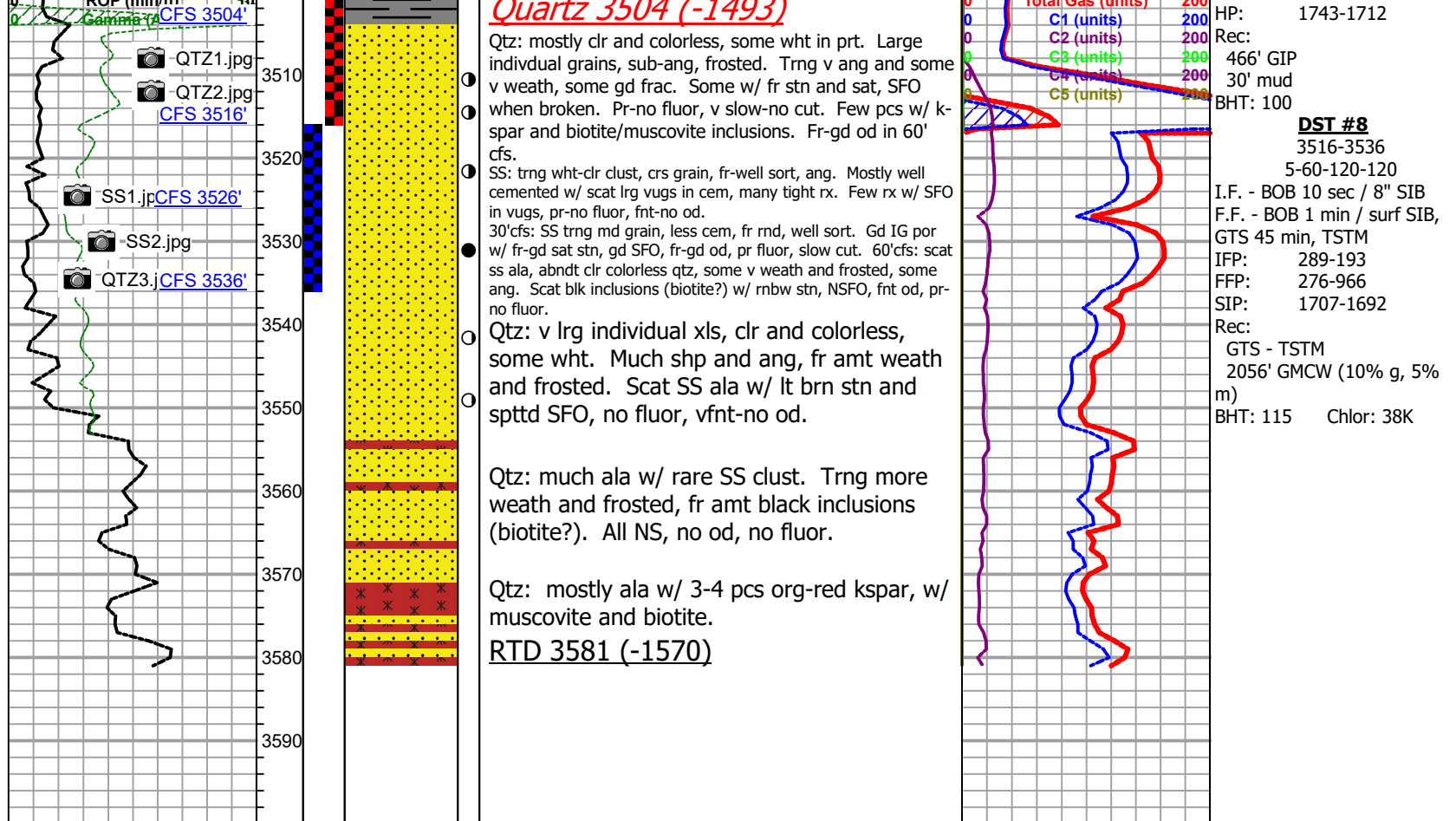
Vis: 56 Wt: 8.9

DST #5
3384-3450
5-30-30-60
I.F. - 2"
F.F. - 1/4"
IFP: 26-28
FFP: 29-31
SIP: 103-50
HP: 1631-1615
Rec:
30' mud
BHT: 95

DST #6
3477-3489
5-60-60-90
I.F. - BOB 1 min
F.F. - BOB at open
IFP: 20-19
FFP: 15-26
SIP: 556-527
HP: 1667-1648
Rec:
1040' GIP
15' OSM
BHT: 100

DST #7
3485-3516
5-30-60-90
I.F. - 9"
F.F. - BOB 5 sec
IFP: 17-22
FFP: 21-25
SIP: 194-427

Extractor motor failure



C.jpg



D.jpg



E.jpg



F.jpg



G.jpg



H.jpg



I.jpg



J.jpg



K.jpg



L.jpg



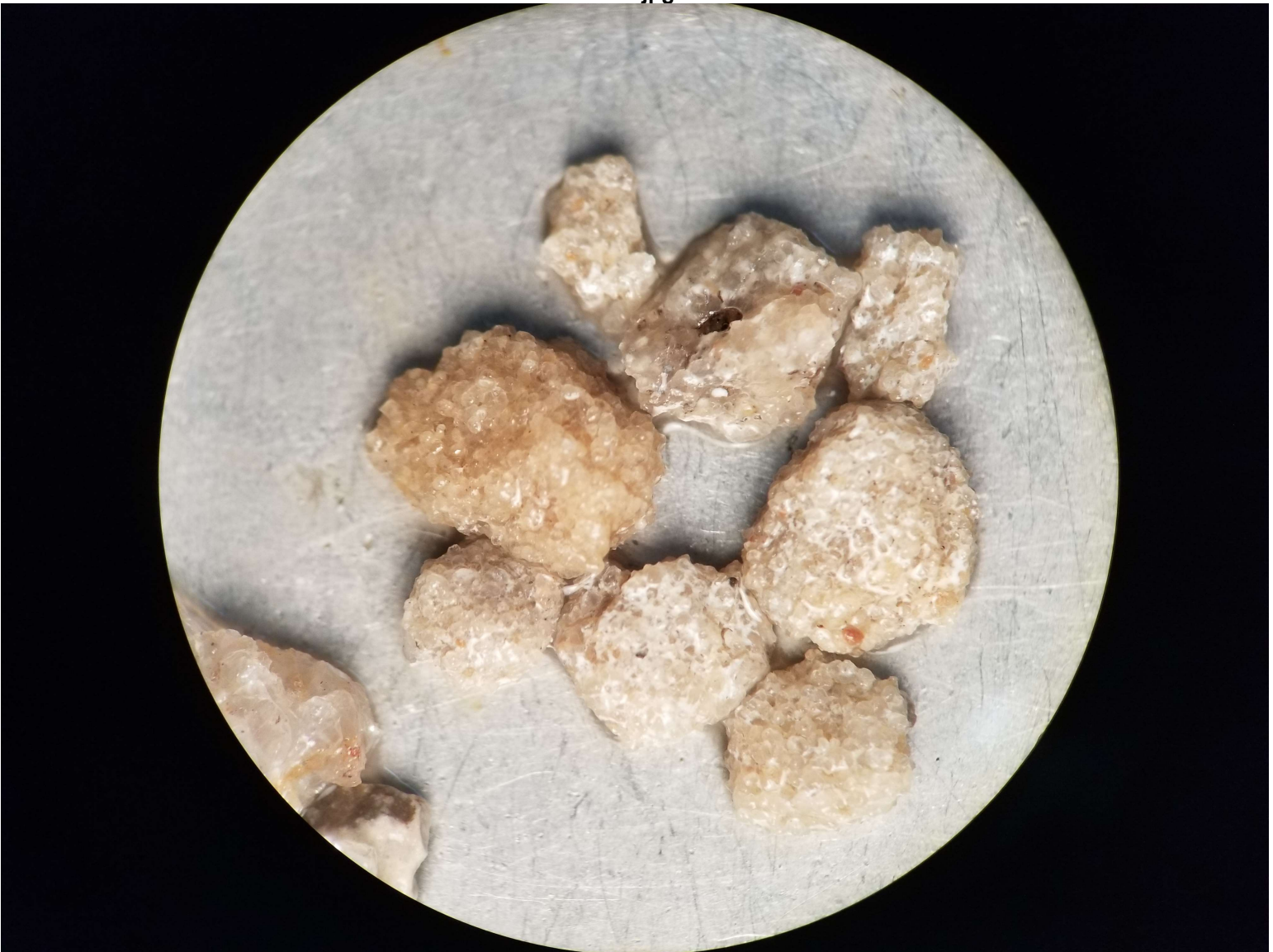
QTZ1.jpg



QTZ2.jpg



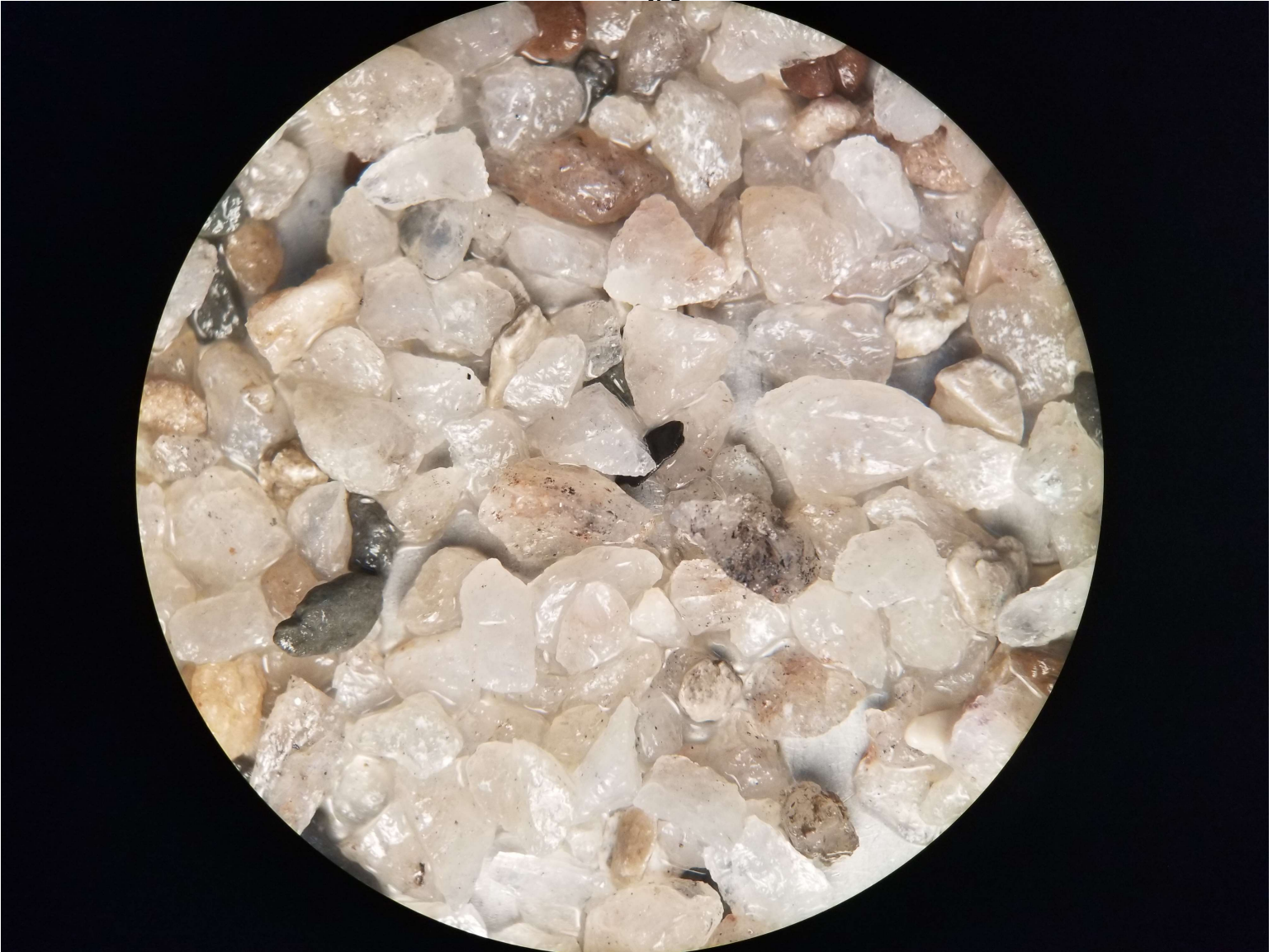
SS1.jpg



SS2.jpg



QTZ3.jpg



YOUNGER #1-17
831' FNL & 1460' FWL
Section 17-16S-17W
Rush County, Kansas

Elevation: Ground Level- 2003' KB- 2011'

DRILLING REPORT

- 5-14-19 Moved Discovery Drilling Rig #4 from Roth-Robben #2-21 to Younger #1-17 and rigged up. Spudded 12 1/4" Surface Hole at 2:00 PM. They contacted the KCC- Mike Meyer, that the were spudding.
- 5-15-19 Drilling 12 1/4" Surface Hole at 800' at 7:00 AM. 8 5/8" Casing should be on Location at 8:00 AM this morning. Ordered from Trident. Casing on location at 8:00 AM. Anhydrite Top 1119' (+882)- 5' high to estimated Top. Drilled to to 1123'. Set 28 joints- New 24#- 8 5/8" Casing- Tally 1112.75'. Set Casing at 1122' KB. Cemented with 475 sxs. 80/20 Poz, 2% Gel and 3% CC. Cement did circulate. Plug down at 8:15 PM.
- 5-16-19 Waiting On Cement at 7:00 AM. Began drilling 7 7/8" Hole at 8:15 AM.
- 5-17-19 7:00 AM- Drilling 7 7/8" Hole at 2320'. Went by Rig at 1:45 PM- Drilling at 2540'. Topeka Top- 2986' (-975). 15 Unit Gas Kick in Top of the Topeka. Decision made to drill ahead. Topeka Top is 5' low to Hartman "A" #1.
- 5-18-19 7:00 AM- Drilling at 3055'. Drilled down through the Plattsmouth Section. The upper part had a 20 unit gas kick. Decision was made to drill though the lower section. It had a 80 Unit gas kick. Decision was made to run DST #1 over these two section. Conditioned hole and made a short Trip. Conditioned hole and came out of hole for DST #1- 3150' to 3180'.

DST #1
3150' to 3180'- Topeka Plattsmouth
5-30-60-90
1st Opening- Blow built to 2.5"
2nd Opening- Built to 8"
IF- 140.28# to 704.43#
FF- 62.03# to 454.06#
ISIP- 831.08#
FSIP- 723.42#
Recovered- 105' Mud

Went back to drilling. Pip Strap .89' Short. Survey- 1 1/4 degree.

5-19-19 Drilling at 3235' at 7:00 AM. Heebner- 3216' (-1205), Toronto- 3237' (-1226), and Lansing-Kansas City 3266' (-1255). Small gas kick in the Toronto, "A" and the "C" Zones. Running about 4' low to the Hartman "A" #1 at the top of the L-KC. Decision made to run DST #2- 3213' to 3297'.

DST #2
3213' to 3297'
Toronto, "A" and "C" Zones
5-60-60-90
1st Opening- BOB 5Minutes
2nd Opening- BOB 5 minutes
Recovered- 355' GIP and 139' Gassy Mud
IF- 38-39#
FF- 40-81#
ISIP- 286# FSIP- 276#

Went back to bottom and began drilling.

5-20-19 7:00 AM- Running DST #3 over the "D" and "E" Zones with TD- 3342'. Had a gas Kick in both zones and good show of oil in "D". DST #3- 3300' to 3342'.

DST #3
3299' to 3342'
L-KC "D" and "E" Zones
5-60-120-120
1st Opening- BOB in 2 minutes
2nd Opening- BOB in 5 Seconds
Recovered- 620' GIP and 62' Mud
IF- 25-28#
FF-33-49#
ISIP- 573# FSIP- 388#

Went back to drilling and drilled to 3393' through the "G" Zone. Good gas kick. DST #3- 3352' to 3393'- "G" Zone.

DST #4
3352' to 3393'
L-KC "G" Zone
5-60-60-90
1st Opening- Built to 9"
2nd Opening- BOB in 5 minutes
Recovered- 175' GIP, 5' Mud
IF- 31-16#
FF- 10-14#
ISIP- 683# FSIP- 796#

5-21-19 7:00 AM- Running back in hole to drill after DST #4. Drilled to 3450'. Fair shows in the "H", "I", and "J". Decision made to test these zones. DST #5- 3384' to 3450'

DST #5
3384' to 3450'
L-KC "H" through "J" Zones
5-30-30-60
1st Opening- 2" Blow
2nd Opening- 1/4" Blow
Recovered- 30 Mud
IF- 26-28#
FF- 29-31#
ISIP- 103# FSIP- 50#

Went back to bottom after DST #5 and drilled through "K" and "L" Zones to 3489'. Fair to good shows of oil and Fluorescence. Decision made to test the "K" and "L" Zones. DST #6- 3447' to 3489. Base of Lansing-Kansas City 3488' (-1477) 2' low to the Hartman "A" #1.

5-22-19 7:00 AM- on bottom with DST #6.

DST #6
3447' to 3489'
L-KC- "K" and "L" Zones
5-60-60-90
1st Opening- BOB in 1 minute- went to 30"
2nd Opening- BOB in 1 minute- went to 90"
Recovered- 15' Oil Specked Mud, 1040' GIP
IF- 20-19# FF-15-26#
ISIP- 556# FSIP- 527#

Went back to bottom and began drilling. Drilled to 3516'. Quartz Top- 3504' (-1493). 2' Low to Hartman "A" #1. Good break from 3509' to 3516'. 277 Unit Gas Kick and Slight show of oil. Decision made to test. DST #7- 3486' to 3516'.

DST #7
Top of Quartz
5-30-60-90
1st Opening- Built to 9"
2nd Opening- BOB in 5 minute- Built to 42.5"
Recovered 466' GIP, 30 Mud
IF- 17-22# FF- 21-26#
ISIP- 195# FSIP- 427#

Went back to drilling.

5-23-19 7:00 AM- Circulating for samples at 3526'. We had a drilling break of 3 to 5' at 3522'. Circulating up really consolidated Sand. Tough to call the Top of the Sand but we think it is about 3523' (-1512). We had about a 160 Unit Gas Kick, but it looks really tight. I discussed this with Marc, and we decided to take it slow and look at samples closely. We are in uncharted territory. We thought about taking it down to a TD and Logging, but we need to know exactly what we have or we will be in the same place we are on the Old wells, not knowing where the gas came from, because you really can't tell where the gas is on the Log. Actually the Gas Kicks don't seem to be telling us much either. He is going to watch the drilling and take 5' to 10' looks, depending on how it drills, on the way down. I think this is probably the way to do it. Hopefully we can see a really good gas kick and this will tell us what we need to know. If not, maybe the samples will tell us what we need to know.

Drilled to 3536'. Had a Nice Break with Sand from 3530' to 3534'. Then Went into Quartz again. Nice gas kick. DST #8- 3516' to 3526'.

DST #8

Lower Sand Section

5-60-120-120

1st Opening- BOB in 10 Seconds

2nd Opening- BOB in 1 minute- Gas to Surface 45 Minutes

To Weak to Gauge- Gas will Burn

Recovered- 2056' Gassy Mud Cut Water

IF- 290-193# FF- 276-966#

ISIP- 1146# FSIP- 1139#

Went back to bottom and began drilling to RTD. Drilled to 3581'. Last 30' drilled 5 minutes per foot. Loggers trying to get to location. Went to Leibenthal and Road is closed. Will have to go around through Pfeifer. Rig got hit with tons of rain last night and had to shut down a couple of times because it was coming down so hard. Had to jet pits a couple of times.

5-24-19 7:00 AM-Conditioning hole waiting on Loggers. Loggers got shut down at Liebethal because of road closing. Will have to go back through Pfeifer to get to rig. Ran Neutron/Density, Dual Induction, and Micro Log. Had phone conference call and decision made to Plug and Abandon. Ran Drill Pipe back in hole. 1st plug- 3500' 50 sxs., 2nd plug- 1210' with 50 sxs., 3rd plug- 470' with 50 sxs., 4th plug- 60' with 20 sxs. 30 sxs. In the Rat Hole and 20 sxs. In the Mouse Hole. Total sxs.- 220 sx. 60/40 Poz, 4% Gel, 1/4# Flow Seal per sx. Job completed 10:30 PM. Quality Cementing did job. Rig released at 10:30 PM.

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

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

No. 1288

| | | | | | | | | | | | | | | | |
|--|---------|------|----|------|----|-------|----|--------|------|-------|----|-------------|--|--------|---------|
| Date | 5-15-19 | Sec. | 17 | Twp. | 16 | Range | 17 | County | Rush | State | Ks | On Location | | Finish | 8:15 PM |
| Location <i>Loretta - 3W, 1N, 1/4E, S/1 into</i> | | | | | | | | | | | | | | | |

| | | | | | |
|---------------------|---------------------|------------|---------------|--|--|
| Lease | <i>Younger</i> | Well No. | <i>1-17</i> | Owner | To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed. |
| Contractor | <i>Discovery #4</i> | | | | |
| Type Job | <i>Surface</i> | | | | |
| Hole Size | <i>12 1/4"</i> | T.D. | <i>1123'</i> | Charge To | <i>Summit Operating</i> |
| Csg. | <i>8 5/8"</i> | Depth | <i>1123'</i> | Street | |
| Tbg. Size | | Depth | | City | State |
| Tool | | Depth | | The above was done to satisfaction and supervision of owner agent or contractor. | |
| Cement Left in Csg. | <i>39.51'</i> | Shoe Joint | <i>39.51'</i> | Cement Amount Ordered <i>475 80/20 3% cc 2% Gel</i> | |
| Meas Line | | Displace | <i>69 BLS</i> | | |

EQUIPMENT

| | | | | | | | |
|---------|-------------|-----|--|----------|--------------|----------|------------|
| Pumptrk | <i>17</i> | No. | | Cementer | <i>David</i> | Common | <i>380</i> |
| | | | | Helper | | Poz. Mix | <i>95</i> |
| Bulktrk | <i>19</i> | No. | | Driver | <i>Tim</i> | Gel. | <i>9</i> |
| | | | | Driver | | Calcium | <i>17</i> |
| Bulktrk | <i>p.u.</i> | No. | | Driver | <i>Rick</i> | | |

JOB SERVICES & REMARKS

| | | | |
|--------------------|-----------------------------|-------------------------|------------|
| Remarks: | <i>Cement did Circulate</i> | Hulls | |
| Rat Hole | | Salt | |
| Mouse Hole | | Flowseal | |
| Centralizers | <i>1, 10, 21</i> | Kol-Seal | |
| Baskets | <i>2</i> | Mud CLR 48 | |
| D/V or Port Collar | | CFL-117 or CD110 CAF 38 | |
| | | Sand | |
| | | Handling | <i>501</i> |
| | | Mileage | |

FLOAT EQUIPMENT

| | |
|-------------|---------------------|
| Guide Shoe | <i>Baffle plate</i> |
| Centralizer | <i>3</i> |
| Baskets | <i>1</i> |
| AFU Inserts | <i>Rubber plug</i> |
| Float Shoe | |
| Latch Down | |

Thanks

Pumptrk Charge *Long Surface*
Mileage *25*

X Signature *John Casler*

Tax
Discount
Total Charge

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

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

No. 1290

| | | | | | | | | | | | | | | | |
|------|---------|------|----|------|----|-------|----|--------|------|-------|----|-------------|--|--------|----------|
| Date | 5-24-19 | Sec. | 17 | Twp. | 16 | Range | 17 | County | Rush | State | Ks | On Location | | Finish | 10:30 PM |
|------|---------|------|----|------|----|-------|----|--------|------|-------|----|-------------|--|--------|----------|

Location Loretta - 3W, IN, 1/4E, S1 Into

| | | | | | |
|---------------------|--------------------|------------|----------------|--|--|
| Lease | <u>Younger</u> | Well No. | <u>1-17</u> | Owner | To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed. |
| Contractor | <u>Discovery</u> | # | <u>4</u> | Charge To | <u>Summit Operating</u> |
| Type Job | <u>Plug</u> | Hole Size | <u>7 7/8"</u> | Csg. | |
| | | T.D. | <u>3581'</u> | Depth | |
| | | Depth | | Street | |
| Tbg. Size | <u>4 1/2" D.P.</u> | Depth | <u>3500'</u> | City | |
| Tool | | Depth | | State | |
| Cement Left in Csg. | | Shoe Joint | | The above was done to satisfaction and supervision of owner agent or contractor. | |
| Meas Line | | Displace | <u>H2O/mud</u> | Cement Amount Ordered | <u>220 60/40 4% Gel 1/4# Flowseal</u> |

EQUIPMENT

| | | | | | | |
|---------|-------------|-----|--|----------|----------------|----------|
| Pumptrk | <u>20</u> | No. | | Cementer | <u>Tony D.</u> | Common |
| | | | | Helper | | Poz. Mix |
| Bulktrk | <u>15</u> | No. | | Driver | <u>Jack</u> | Gel. |
| | | | | Driver | | Calcium |
| Bulktrk | <u>p.m.</u> | No. | | Driver | <u>Rick</u> | Hulls |
| | | | | Driver | | Salt |

JOB SERVICES & REMARKS

| | | |
|--------------------|-----------------------------|--|
| Remarks: | <u>3500' - 50 SX</u> | |
| Rat Hole | <u>1210' - 50 SX</u> | |
| Mouse Hole | <u>470' - 50 SX</u> | |
| Centralizers | <u>60' - 20 SX</u> | |
| Baskets | <u>Rathole w/ 30SX</u> | |
| D/V or Port Collar | <u>Mousehole w/ 20SX</u> | |
| | <u>Cement did Circulate</u> | |

FLOAT EQUIPMENT

| | |
|-------------|--|
| Guide Shoe | |
| Centralizer | |
| Baskets | |
| AFU Inserts | |
| Float Shoe | |
| Latch Down | |

| | |
|----------------|--|
| Pumptrk Charge | |
| Mileage | |
| Tax | |
| Discount | |
| Total Charge | |

X Signature John Smith



DRILL STEM TEST REPORT

Prepared For: **Summit Operating**

1005 Delarosa
Victoria, KS 67671

ATTN: Marc Downing

Younger #1-17

17-16s-17W Ellis,KS

Start Date: 2019.05.18 @ 20:01:00

End Date: 2019.05.19 @ 02:59:02

Job Ticket #: 65664 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.05.24 @ 16:59:25



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65664

DST#: 1

ATTN: Marc Downing

Test Start: 2019.05.18 @ 20:01:00

GENERAL INFORMATION:

Formation: **Plattsmouth**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:05:17

Time Test Ended: 02:59:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3150.00 ft (KB) To 3180.00 ft (KB) (TVD)

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3180.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8365

Inside

Press@RunDepth: 454.06 psig @ 3151.00 ft (KB)

Capacity: psig

Start Date: 2019.05.18

End Date:

2019.05.19

Last Calib.:

2019.05.19

Start Time: 20:01:01

End Time:

02:59:02

Time On Btm:

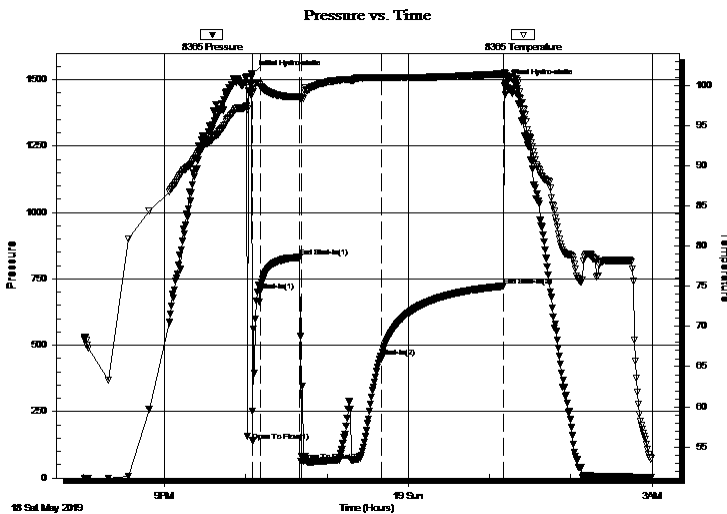
2019.05.18 @ 22:04:32

Time Off Btm:

2019.05.19 @ 01:12:02

TEST COMMENT: IF 5 Minutes Blow built to 2 1/2"
ISI 30 Minutes No blow back
FF 60 Minutes Blow built to 8"
FSI 90 Minutes No blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1519.85 | 98.80 | Initial Hydro-static |
| 1 | 140.28 | 99.17 | Open To Flow (1) |
| 7 | 704.43 | 99.89 | Shut-In(1) |
| 36 | 831.08 | 98.53 | End Shut-In(1) |
| 37 | 62.03 | 98.34 | Open To Flow (2) |
| 96 | 454.06 | 100.95 | Shut-In(2) |
| 186 | 723.42 | 101.44 | End Shut-In(2) |
| 188 | 1484.84 | 101.24 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 105.00 | Mud 100% | 1.20 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65664

DST#: 1

ATTN: Marc Downing

Test Start: 2019.05.18 @ 20:01:00

GENERAL INFORMATION:

Formation: **Plattsmouth**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:05:17

Time Test Ended: 02:59:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: **3150.00 ft (KB) To 3180.00 ft (KB) (TVD)**

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3180.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: **6755** Outside

Press@RunDepth: 720.89 psig @ 3152.00 ft (KB)

Capacity: psig

Start Date: 2019.05.18

End Date:

2019.05.19

Last Calib.:

2019.05.19

Start Time: 20:01:01

End Time:

02:59:02

Time On Btm:

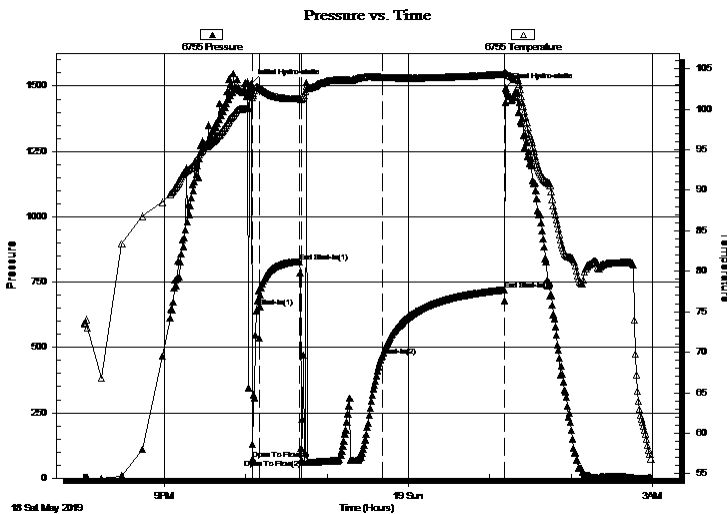
2019.05.18 @ 22:04:02

Time Off Btm:

2019.05.19 @ 01:11:47

TEST COMMENT: IF 5 Minutes Blow built to 2 1/2"
ISI 30 Minutes No blow back
FF 60 Minutes Blow built to 8"
FSI 90 Minutes No blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1510.26 | 101.91 | Initial Hydro-static |
| 2 | 72.83 | 101.66 | Open To Flow (1) |
| 7 | 656.75 | 102.53 | Shut-In(1) |
| 36 | 828.41 | 101.28 | End Shut-In(1) |
| 37 | 70.06 | 101.18 | Open To Flow (2) |
| 97 | 465.94 | 103.93 | Shut-In(2) |
| 187 | 720.89 | 104.35 | End Shut-In(2) |
| 188 | 1492.00 | 104.54 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 105.00 | Mud 100% | 1.20 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65664

DST#: 1

ATTN: Marc Downing

Test Start: 2019.05.18 @ 20:01:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3109.00 ft | Diameter: 3.80 inches | Volume: 43.61 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: 30.00 ft | Diameter: 2.25 inches | Volume: 0.15 bbl | Weight to Pull Loose: 75000.00 lb |
| | | | <u>Total Volume: 43.76 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 15.00 ft | | | String Weight: Initial 50000.00 lb |
| Depth to Top Packer: | 3150.00 ft | | | Final 50000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 30.00 ft | | | |
| Tool Length: | 56.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments: 18 foot fill pushed through before open

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|----------------|
|------------------|-------------|------------|----------|------------|----------------|

| | | | | | |
|---------------------------|--------------|------|---------|---------|----------------------------|
| Shut-In Tool | 5.00 | | | 3129.00 | |
| Hydraulic tool | 5.00 | | | 3134.00 | |
| EM Tool | 4.00 | | | 3138.00 | |
| Safety Joint | 2.00 | | | 3140.00 | |
| Top Packer | 5.00 | | | 3145.00 | |
| Packer | 5.00 | | | 3150.00 | 26.00 Bottom Of Top Packer |
| Recorder | 1.00 | 8365 | Inside | 3151.00 | |
| Recorder | 1.00 | 6755 | Outside | 3152.00 | |
| Anchor | 25.00 | | | 3177.00 | |
| Bullnose | 3.00 | | | 3180.00 | 30.00 Anchor Tool |
| Total Tool Length: | 56.00 | | | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Summit Operating

17-16s-17W Ellis,KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65664

DST#: 1

ATTN: Marc Downing

Test Start: 2019.05.18 @ 20:01:00

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.76 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------|---------------|
| 105.00 | Mud 100% | 1.200 |

Total Length: 105.00 ft Total Volume: 1.200 bbl

Num Fluid Samples: 0

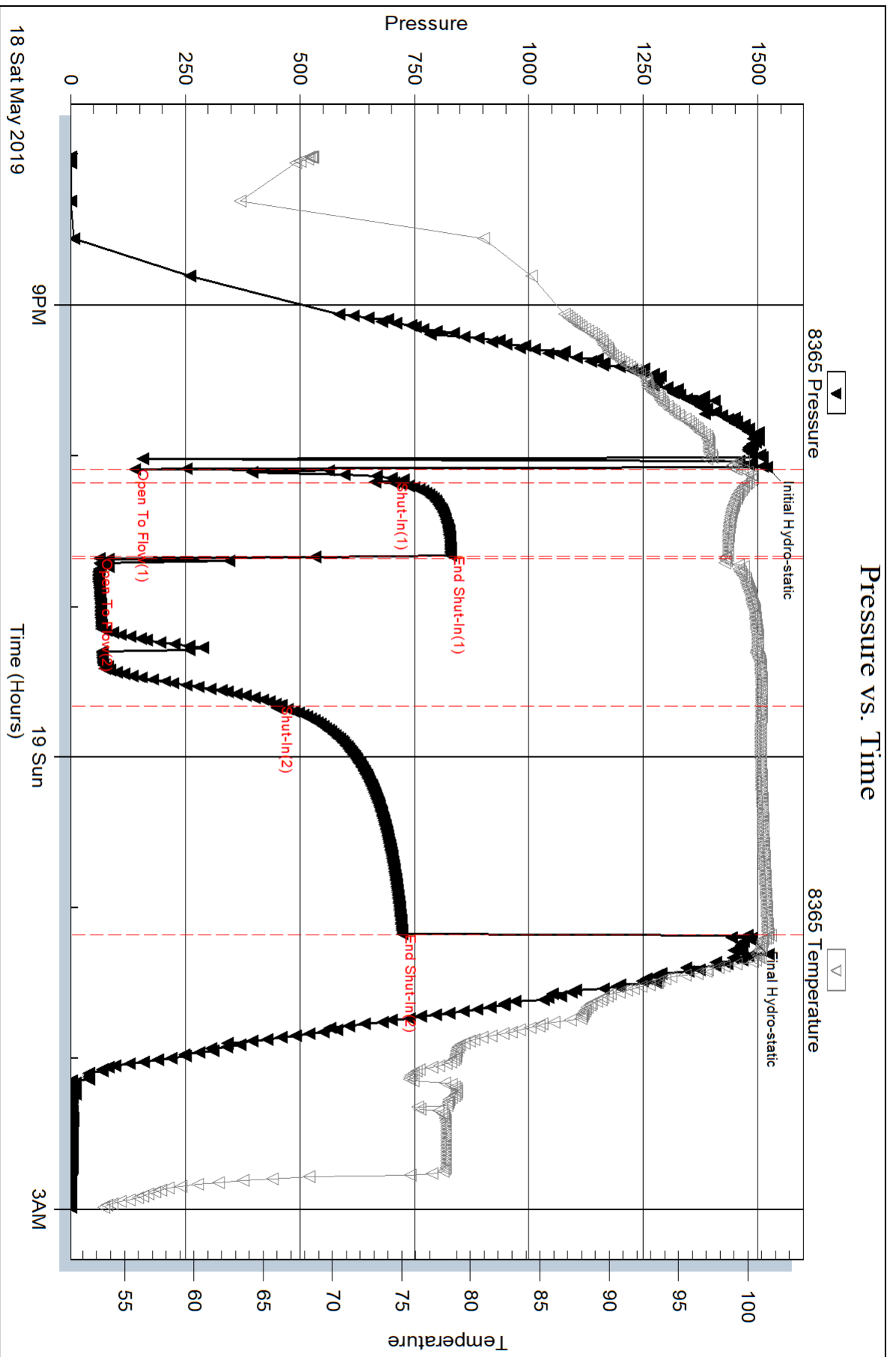
Num Gas Bombs: 0

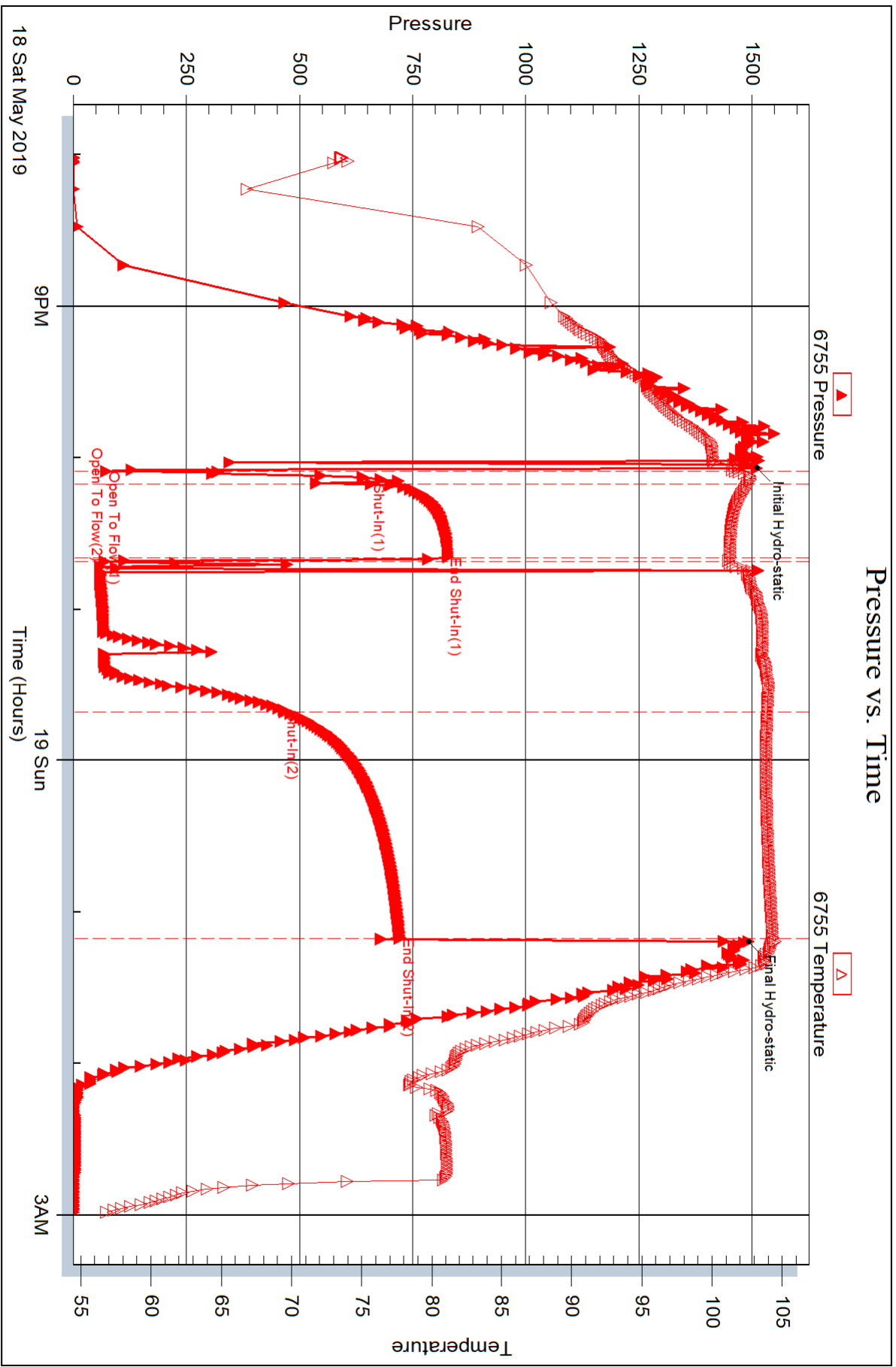
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Summit Operating**

1005 Delarosa
Victoria, KS 67671

ATTN: Marc Downing

Younger #1-17

17-16s-17W Ellis,KS

Start Date: 2019.05.19 @ 14:12:00

End Date: 2019.05.19 @ 21:06:02

Job Ticket #: 65665 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.05.24 @ 16:59:04



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65665

DST#: 2

ATTN: Marc Downing

Test Start: 2019.05.19 @ 14:12:00

GENERAL INFORMATION:

Formation: **Toronto - LKC C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:51:02

Time Test Ended: 21:06:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3213.00 ft (KB) To 3297.00 ft (KB) (TVD)

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3297.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8365

Inside

Press@RunDepth: 80.88 psig @ 3214.00 ft (KB)

Capacity: psig

Start Date: 2019.05.19

End Date:

2019.05.19

Last Calib.:

2019.05.19

Start Time: 14:12:01

End Time:

21:06:02

Time On Btm:

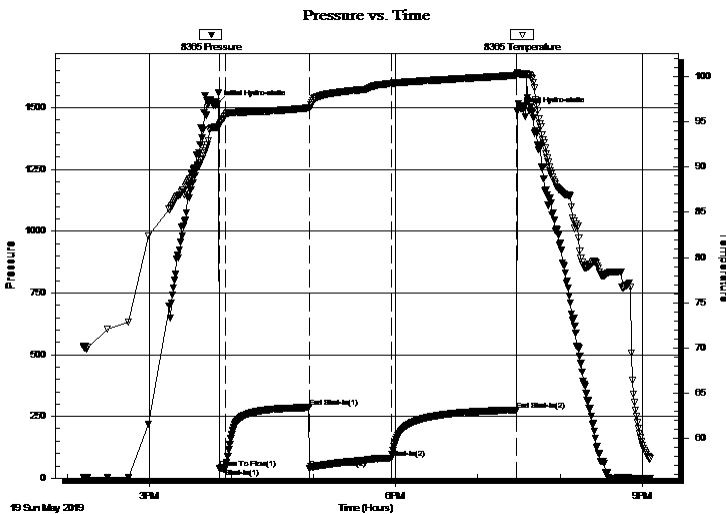
2019.05.19 @ 15:49:47

Time Off Btm:

2019.05.19 @ 19:28:47

TEST COMMENT: IF 5 Minutes/ Blow to BOB in 5 minutes
ISI 60 Minutes/ Brief light surface blow back
FF 60 Minutes/ Blow to BOB in 5 minutes/ Total build 53"
FSI 90 Mnutcs/ No blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1514.15 | 94.42 | Initial Hydro-static |
| 2 | 38.38 | 94.56 | Open To Flow (1) |
| 6 | 39.25 | 95.70 | Shut-In(1) |
| 67 | 285.66 | 96.56 | End Shut-In(1) |
| 68 | 39.89 | 96.59 | Open To Flow (2) |
| 127 | 80.88 | 99.22 | Shut-In(2) |
| 219 | 276.29 | 100.16 | End Shut-In(2) |
| 219 | 1484.41 | 100.45 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|------------------------|--------------|
| 139.00 | Gassy Mud/ G 10% M 90% | 1.68 |
| 0.00 | 355 feet GIP | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65665

DST#: 2

ATTN: Marc Downing

Test Start: 2019.05.19 @ 14:12:00

GENERAL INFORMATION:

Formation: **Toronto - LKC C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:51:02

Time Test Ended: 21:06:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3213.00 ft (KB) To 3297.00 ft (KB) (TVD)

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3297.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6755 Outside

Press@RunDepth: 274.69 psig @ 3215.00 ft (KB)

Capacity: psig

Start Date: 2019.05.19

End Date: 2019.05.19

Last Calib.: 2019.05.19

Start Time: 14:12:01

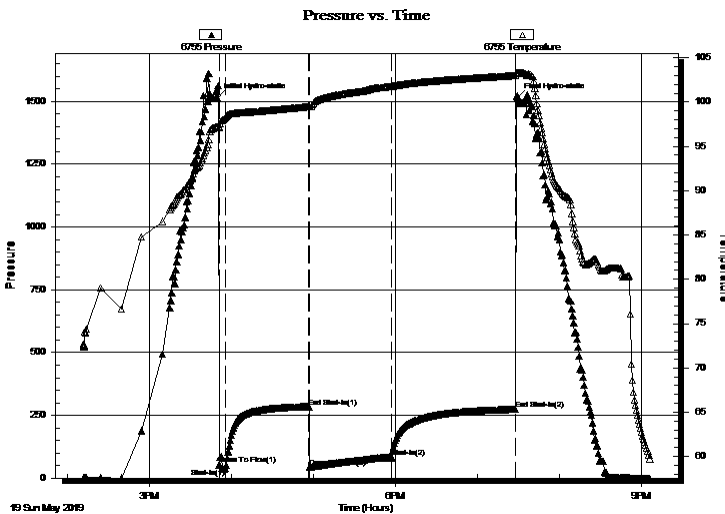
End Time: 21:06:02

Time On Btm: 2019.05.19 @ 15:49:47

Time Off Btm: 2019.05.19 @ 19:29:32

TEST COMMENT: IF 5 Minutes/ Blow to BOB in 5 minutes
 ISI 60 Minutes/ Brief light surface blow back
 FF 60 Minutes/ Blow to BOB in 5 minutes/ Total build 53"
 FSI 90 Mnutcs/ No blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1513.32 | 97.25 | Initial Hydro-static |
| 2 | 53.60 | 97.17 | Open To Flow (1) |
| 6 | 38.50 | 98.23 | Shut-In(1) |
| 67 | 284.14 | 99.48 | End Shut-In(1) |
| 68 | 43.41 | 99.49 | Open To Flow (2) |
| 127 | 81.09 | 101.77 | Shut-In(2) |
| 219 | 274.69 | 103.03 | End Shut-In(2) |
| 220 | 1513.78 | 103.33 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|------------------------|--------------|
| 139.00 | Gassy Mud/ G 10% M 90% | 1.68 |
| 0.00 | 355 feet GIP | 0.00 |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Summit Operating

17-16s-17W Ellis,KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65665

DST#: 2

ATTN: Marc Downing

Test Start: 2019.05.19 @ 14:12:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3175.00 ft | Diameter: 3.80 inches | Volume: 44.54 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: 30.00 ft | Diameter: 2.25 inches | Volume: 0.15 bbl | Weight to Pull Loose: 65000.00 lb |
| | | | <u>Total Volume: 44.69 bbl</u> | Tool Chased 5.00 ft |
| Drill Pipe Above KB: | 18.00 ft | | | String Weight: Initial 51000.00 lb |
| Depth to Top Packer: | 3213.00 ft | | | Final 51000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 84.40 ft | | | |
| Tool Length: | 110.40 ft | | | |
| Number of Packers: | 1 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|----------------------------|
| Shut-In Tool | 5.00 | | | 3192.00 | |
| Hydraulic tool | 5.00 | | | 3197.00 | |
| EM Tool | 4.00 | | | 3201.00 | |
| Safety Joint | 2.00 | | | 3203.00 | |
| Top Packer | 5.00 | | | 3208.00 | |
| Packer | 5.00 | | | 3213.00 | 26.00 Bottom Of Top Packer |
| Recorder | 1.00 | 8365 | Inside | 3214.00 | |
| Recorder | 1.00 | 6755 | Outside | 3215.00 | |
| Anchor | 10.00 | | | 3225.00 | |
| Change Over Sub | 1.00 | | | 3226.00 | |
| Drill Pipe | 63.40 | | | 3289.40 | |
| Change Over Sub | 1.00 | | | 3290.40 | |
| Perforations | 4.00 | | | 3294.40 | |
| Bullnose | 3.00 | | | 3297.40 | 84.40 Anchor Tool |

Total Tool Length: 110.40



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Summit Operating

17-16s-17W Ellis,KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65665

DST#: 2

ATTN: Marc Downing

Test Start: 2019.05.19 @ 14:12:00

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: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|------------------------|---------------|
| 139.00 | Gassy Mud/ G 10% M 90% | 1.677 |
| 0.00 | 355 feet GIP | 0.000 |

Total Length: 139.00 ft Total Volume: 1.677 bbl

Num Fluid Samples: 0

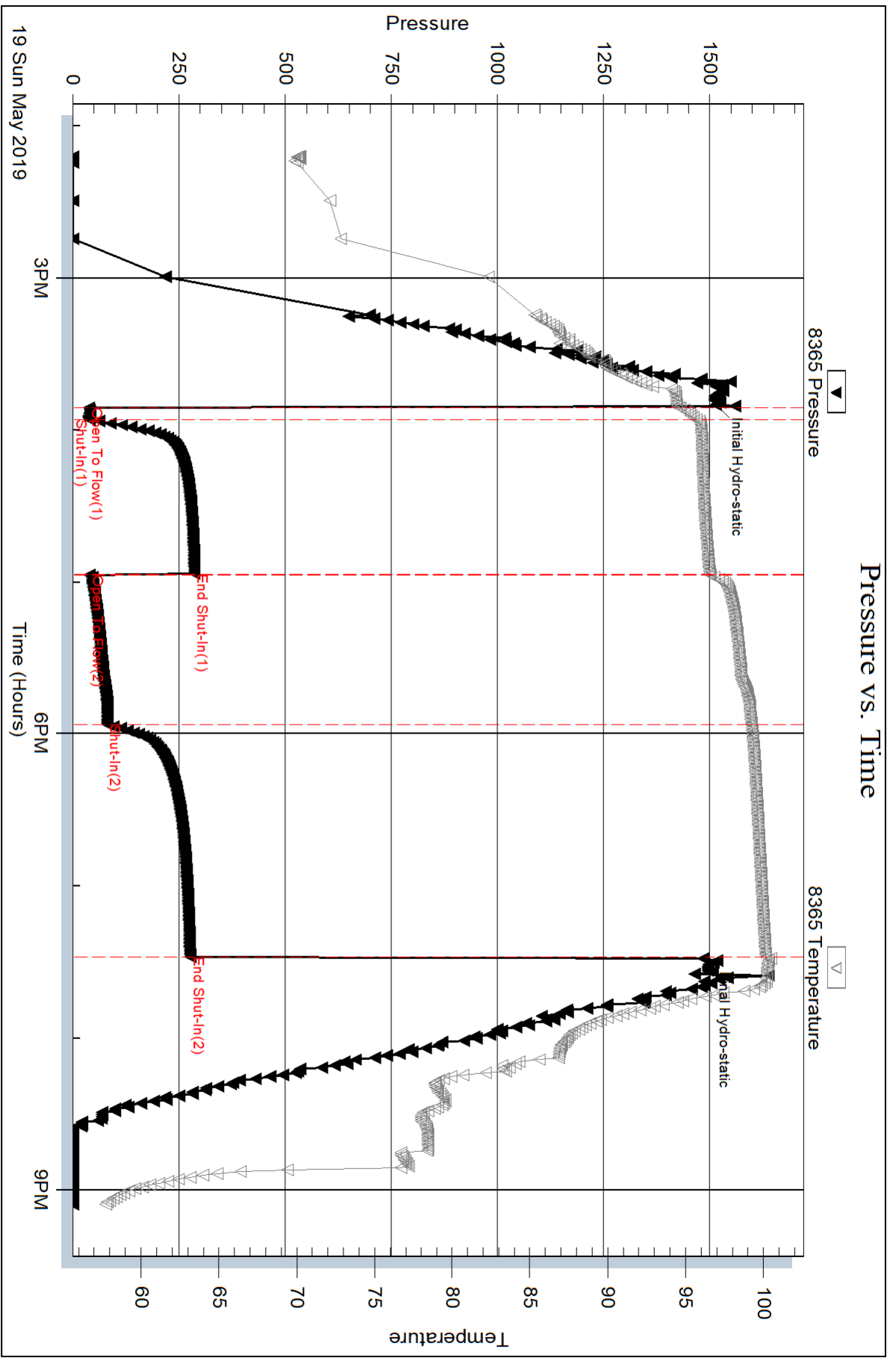
Num Gas Bombs: 0

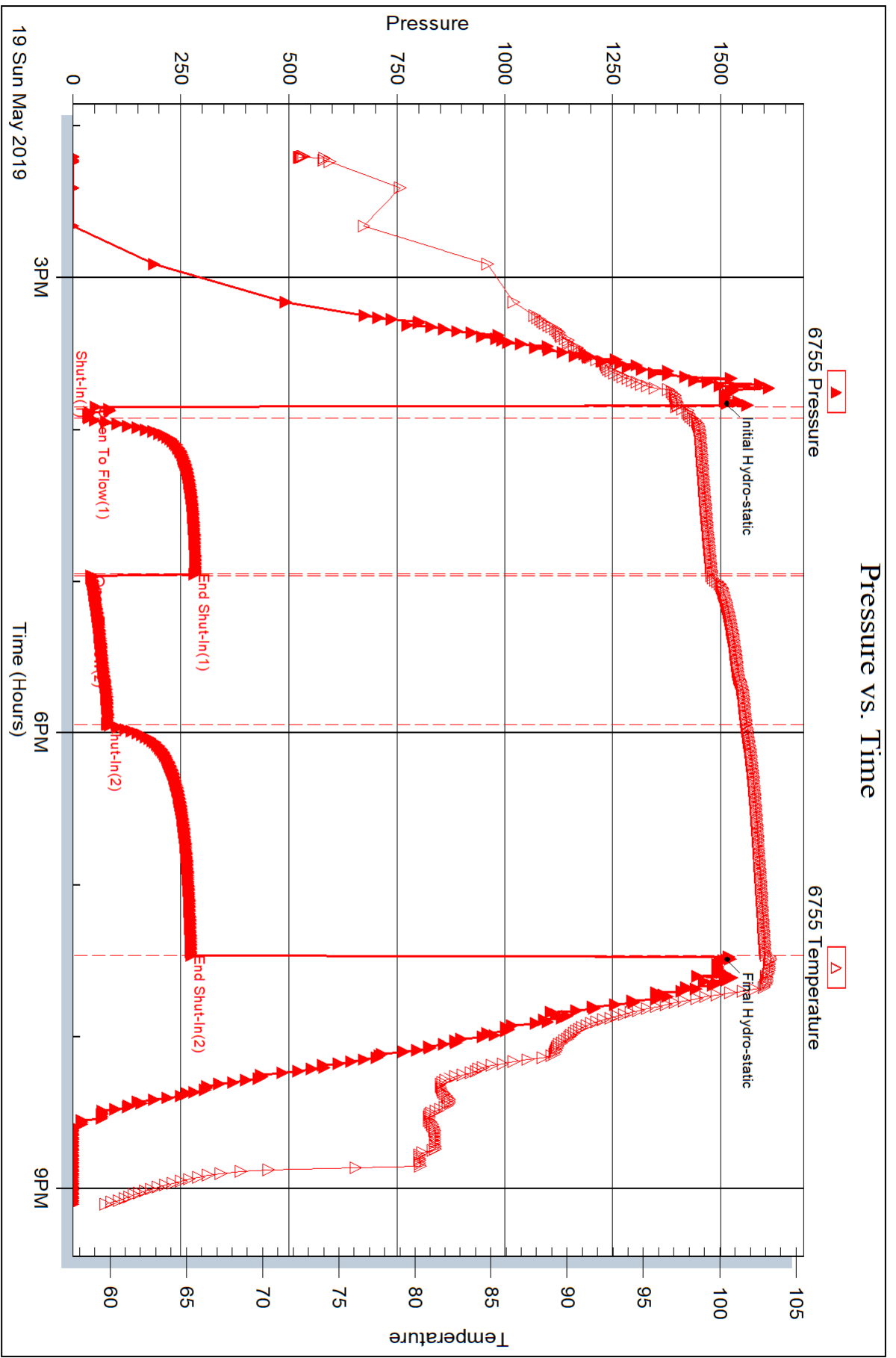
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Summit Operating**

1005 Delarosa
Victoria, KS 67671

ATTN: Marc Downing

Younger #1-17

17-16s-17W Ellis,KS

Start Date: 2019.05.20 @ 05:49:00

End Date: 2019.05.20 @ 14:19:02

Job Ticket #: 65666 DST #: 3

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.05.24 @ 16:58:23

Summit Operating
17-16s-17W Ellis,KS
Younger #1-17
DST # 3
LKC D - E
2019.05.20



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65666

DST#: 3

ATTN: Marc Downing

Test Start: 2019.05.20 @ 05:49:00

GENERAL INFORMATION:

Formation: **LKC D - E**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:28:17

Time Test Ended: 14:19:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: **3299.00 ft (KB) To 3342.00 ft (KB) (TVD)**

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3342.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: **8365**

Inside

Press@RunDepth: 49.39 psig @ 3300.00 ft (KB)

Capacity: psig

Start Date: 2019.05.20 End Date: 2019.05.20

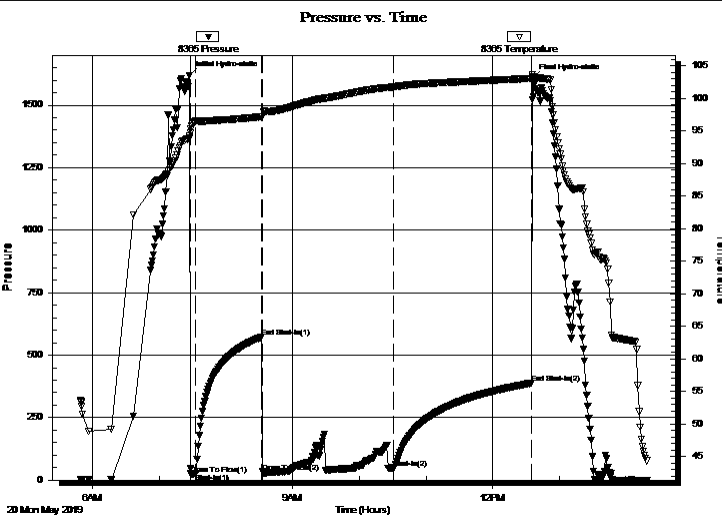
Last Calib.: 2019.05.20

Start Time: 05:49:01 End Time: 14:19:02

Time On Btm: 2019.05.20 @ 07:27:02

Time Off Btm: 2019.05.20 @ 12:36:17

TEST COMMENT: IF 5 Minutes/ Blow to BOB in 2 minutes/ total build 46"
ISI 60 Minutes/ No blow back
FF 120 Minutes/ Blow to BOB in 5 seconds/ total build 240"
FSI 120 Minutes/ No blow back



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1619.29 | 94.15 | Initial Hydro-static |
| 2 | 24.61 | 95.34 | Open To Flow (1) |
| 6 | 28.27 | 96.48 | Shut-In(1) |
| 65 | 572.61 | 97.17 | End Shut-In(1) |
| 66 | 33.45 | 97.17 | Open To Flow (2) |
| 184 | 49.39 | 101.72 | Shut-In(2) |
| 308 | 388.04 | 103.06 | End Shut-In(2) |
| 310 | 1604.35 | 103.25 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 62.00 | Mud 100% | 0.60 |
| 0.00 | 620 GIP | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65666

DST#: 3

ATTN: Marc Downing

Test Start: 2019.05.20 @ 05:49:00

GENERAL INFORMATION:

Formation: **LKC D - E**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:28:17

Time Test Ended: 14:19:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: **3299.00 ft (KB) To 3342.00 ft (KB) (TVD)**

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3342.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: **6755** Outside

Press@RunDepth: 386.60 psig @ 3301.00 ft (KB)

Capacity: psig

Start Date: 2019.05.20

End Date: 2019.05.20

Last Calib.: 2019.05.20

Start Time: 05:49:01

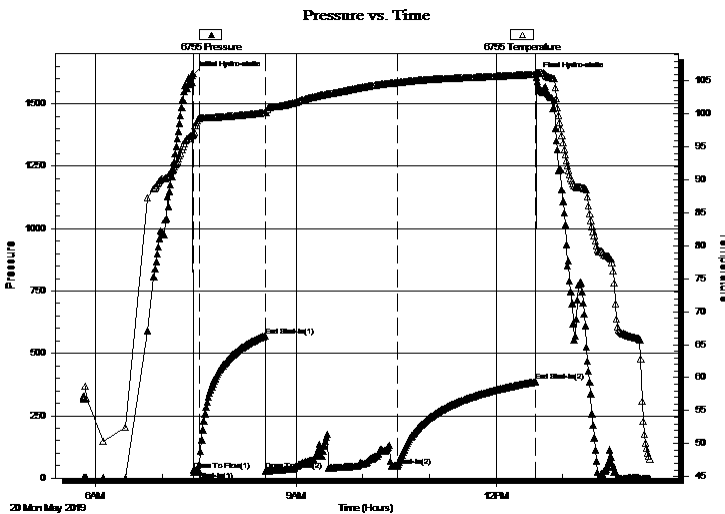
End Time: 14:19:02

Time On Btm: 2019.05.20 @ 07:27:02

Time Off Btm: 2019.05.20 @ 12:36:17

TEST COMMENT: IF 5 Minutes/ Blow to BOB in 2 minutes/ total build 46"
ISI 60 Minutes/ No blow back
FF 120 Minutes/ Blow to BOB in 5 seconds/ total build 240"
FSI 120 Minutes/ No blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1612.62 | 96.80 | Initial Hydro-static |
| 1 | 29.97 | 97.01 | Open To Flow (1) |
| 6 | 27.23 | 99.31 | Shut-In(1) |
| 66 | 570.20 | 100.21 | End Shut-In(1) |
| 66 | 29.77 | 100.18 | Open To Flow (2) |
| 185 | 48.44 | 104.77 | Shut-In(2) |
| 309 | 386.60 | 106.06 | End Shut-In(2) |
| 310 | 1607.07 | 106.28 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 62.00 | Mud 100% | 0.60 |
| 0.00 | 620 GIP | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65666

DST#: 3

ATTN: Marc Downing

Test Start: 2019.05.20 @ 05:49:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3266.00 ft | Diameter: 3.80 inches | Volume: 45.81 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: 30.00 ft | Diameter: 2.25 inches | Volume: 0.15 bbl | Weight to Pull Loose: 80000.00 lb |
| | | | <u>Total Volume: 45.96 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 23.00 ft | | | String Weight: Initial 51000.00 lb |
| Depth to Top Packer: | 3299.00 ft | | | Final 51000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 43.00 ft | | | |
| Tool Length: | 69.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|---------------------------|--------------|------------|----------|------------|----------------------------|
| Shut-In Tool | 5.00 | | | 3278.00 | |
| Hydraulic tool | 5.00 | | | 3283.00 | |
| EM Tool | 4.00 | | | 3287.00 | |
| Safety Joint | 2.00 | | | 3289.00 | |
| Top Packer | 5.00 | | | 3294.00 | |
| Packer | 5.00 | | | 3299.00 | 26.00 Bottom Of Top Packer |
| Recorder | 1.00 | 8365 | Inside | 3300.00 | |
| Recorder | 1.00 | 6755 | Outside | 3301.00 | |
| Anchor | 38.00 | | | 3339.00 | |
| Bullnose | 3.00 | | | 3342.00 | 43.00 Anchor Tool |
| Total Tool Length: | 69.00 | | | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Summit Operating

17-16s-17W Ellis,KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65666

DST#: 3

ATTN: Marc Downing

Test Start: 2019.05.20 @ 05:49:00

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: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------|---------------|
| 62.00 | Mud 100% | 0.596 |
| 0.00 | 620 GIP | 0.000 |

Total Length: 62.00 ft Total Volume: 0.596 bbl

Num Fluid Samples: 0

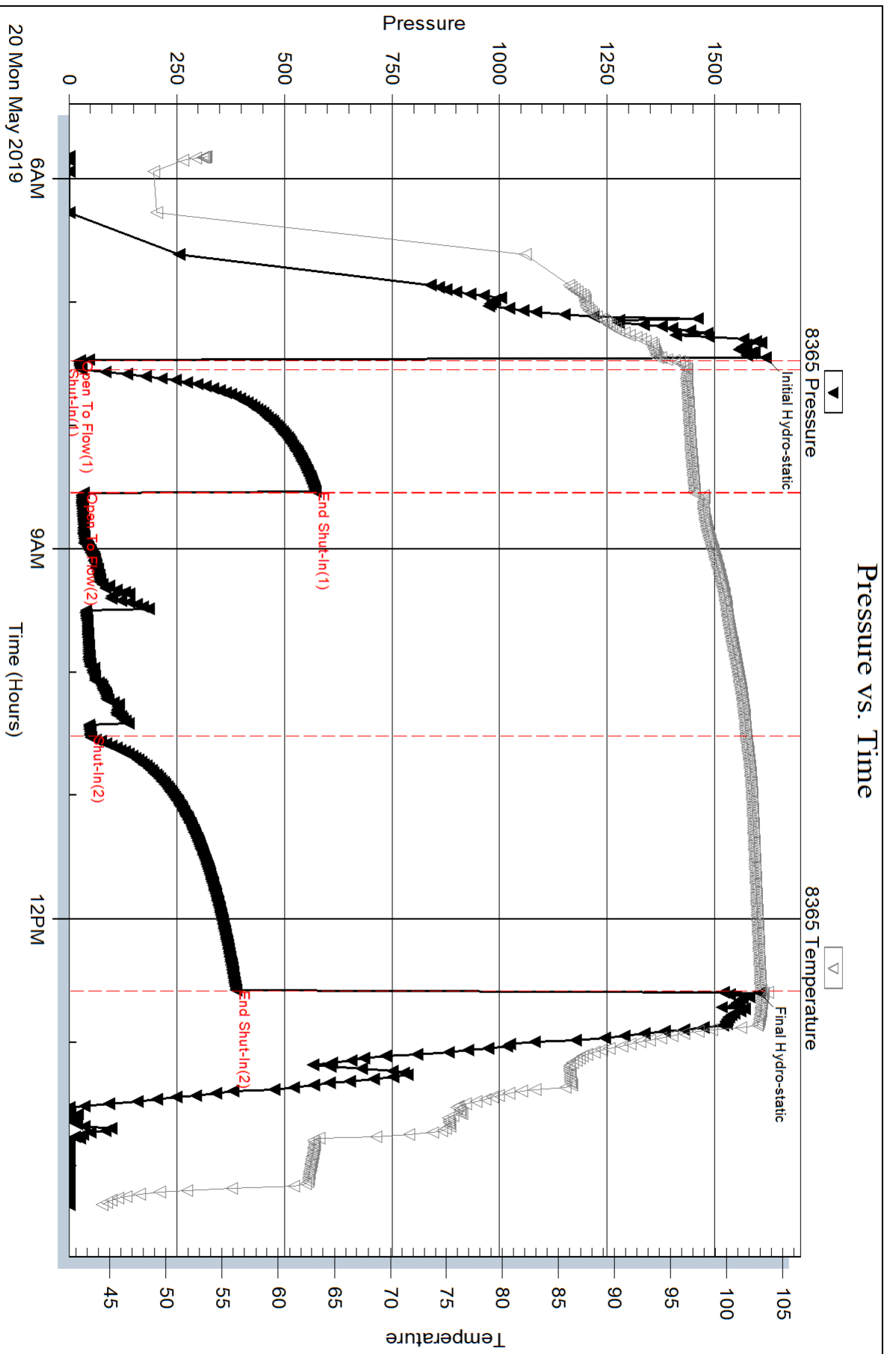
Num Gas Bombs: 0

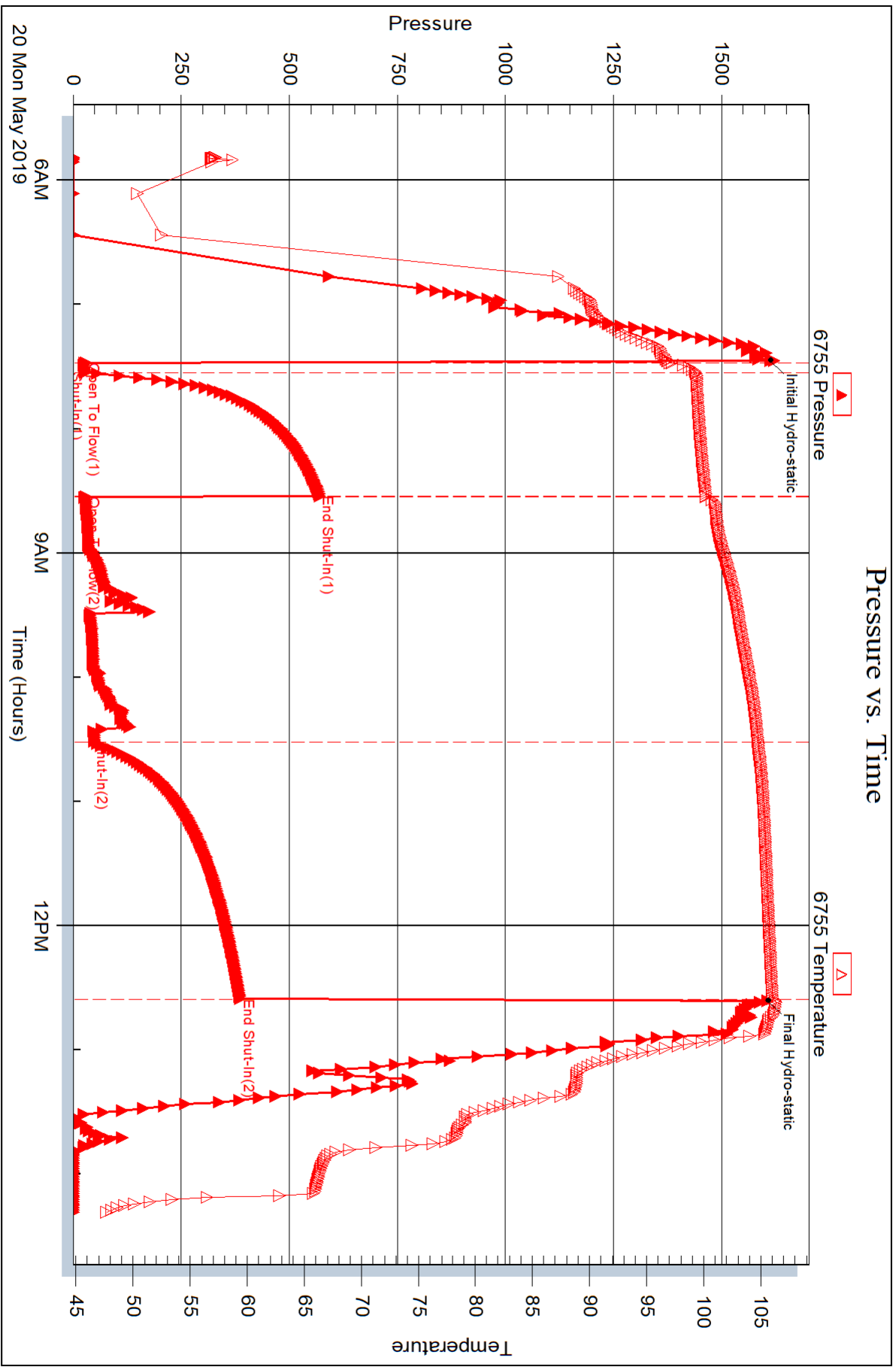
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Summit Operating**

1005 Delarosa
Victoria, KS 67671

ATTN: Marc Downing

Younger #1-17

17-16s-17W Ellis,KS

Start Date: 2019.05.20 @ 23:03:00

End Date: 2019.05.21 @ 05:47:02

Job Ticket #: 65667 DST #: 4

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.05.24 @ 16:58:02



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65667

DST#: 4

ATTN: Marc Downing

Test Start: 2019.05.20 @ 23:03:00

GENERAL INFORMATION:

Formation: **LKC G**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:36:17

Time Test Ended: 05:47:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: **3352.00 ft (KB) To 3393.00 ft (KB) (TVD)**

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3393.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8365

Inside

Press@RunDepth: 14.34 psig @ 3353.00 ft (KB)

Capacity: psig

Start Date: 2019.05.20 End Date: 2019.05.21

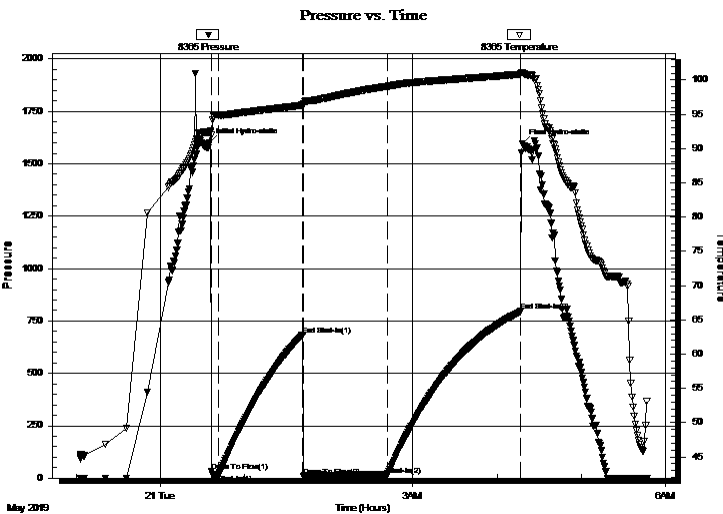
Last Calib.: 2019.05.21

Start Time: 23:03:01 End Time: 05:47:02

Time On Btm: 2019.05.21 @ 00:34:47

Time Off Btm: 2019.05.21 @ 04:18:17

TEST COMMENT: IF 5 Minutes/ Blow built to 9"
ISI 60 Minutes/ light surface blow back
FF 60 Minutes/ Blow to BOB in 5 seconds/ Total build 77"
FSI 90 Minutes/ No blow back



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1602.04 | 92.37 | Initial Hydro-static |
| 2 | 31.13 | 91.96 | Open To Flow (1) |
| 7 | 16.32 | 94.91 | Shut-In(1) |
| 67 | 683.00 | 96.35 | End Shut-In(1) |
| 68 | 9.94 | 96.34 | Open To Flow (2) |
| 127 | 14.34 | 99.08 | Shut-In(2) |
| 223 | 795.52 | 100.87 | End Shut-In(2) |
| 224 | 1596.09 | 101.08 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|--------------|--------------|
| 5.00 | Mud 100% | 0.02 |
| 0.00 | 175 feet GIP | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65667

DST#: 4

ATTN: Marc Downing

Test Start: 2019.05.20 @ 23:03:00

GENERAL INFORMATION:

Formation: **LKC G**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:36:17

Time Test Ended: 05:47:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3352.00 ft (KB) To 3393.00 ft (KB) (TVD)

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3393.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6755 Outside

Press@RunDepth: 793.06 psig @ 3354.00 ft (KB)

Capacity: psig

Start Date: 2019.05.20

End Date:

2019.05.21

Last Calib.:

2019.05.21

Start Time: 23:03:01

End Time:

05:45:02

Time On Btm:

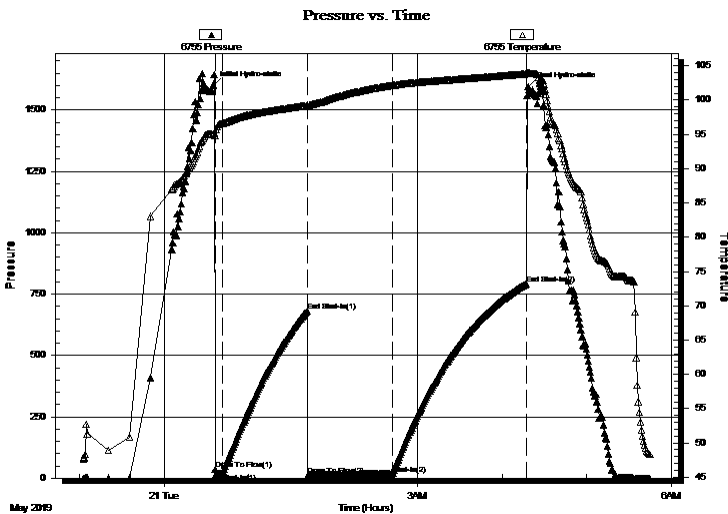
2019.05.21 @ 00:34:47

Time Off Btm:

2019.05.21 @ 04:18:17

TEST COMMENT: IF 5 Minutes/ Blow built to 9"
ISI 60 Minutes/ light surface blow back
FF 60 Minutes/ Blow to BOB in 5 seconds/ Total build 77"
FSI 90 Minutes/ No blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1601.48 | 95.10 | Initial Hydro-static |
| 2 | 35.47 | 94.76 | Open To Flow (1) |
| 7 | 17.62 | 96.62 | Shut-In(1) |
| 67 | 680.92 | 99.20 | End Shut-In(1) |
| 68 | 9.80 | 99.16 | Open To Flow (2) |
| 127 | 15.07 | 102.15 | Shut-In(2) |
| 223 | 793.06 | 103.86 | End Shut-In(2) |
| 224 | 1595.70 | 104.03 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|--------------|--------------|
| 5.00 | Mud 100% | 0.02 |
| 0.00 | 175 feet GIP | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65667

DST#: 4

ATTN: Marc Downing

Test Start: 2019.05.20 @ 23:03:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3301.00 ft | Diameter: 3.80 inches | Volume: 46.30 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: 30.00 ft | Diameter: 2.25 inches | Volume: 0.15 bbl | Weight to Pull Loose: 70000.00 lb |
| | | | <u>Total Volume: 46.45 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 5.00 ft | | | String Weight: Initial 51000.00 lb |
| Depth to Top Packer: | 3352.00 ft | | | Final 51000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 41.00 ft | | | |
| Tool Length: | 67.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|---------------------------|--------------|------------|----------|------------|----------------------------|
| Shut-In Tool | 5.00 | | | 3331.00 | |
| Hydraulic tool | 5.00 | | | 3336.00 | |
| EM Tool | 4.00 | | | 3340.00 | |
| Safety Joint | 2.00 | | | 3342.00 | |
| Top Packer | 5.00 | | | 3347.00 | |
| Packer | 5.00 | | | 3352.00 | 26.00 Bottom Of Top Packer |
| Recorder | 1.00 | 8365 | Inside | 3353.00 | |
| Recorder | 1.00 | 6755 | Outside | 3354.00 | |
| Anchor | 36.00 | | | 3390.00 | |
| Bullnose | 3.00 | | | 3393.00 | 41.00 Anchor Tool |
| Total Tool Length: | 67.00 | | | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Summit Operating

17-16s-17W Ellis,KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65667

DST#: 4

ATTN: Marc Downing

Test Start: 2019.05.20 @ 23:03:00

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: 43.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.57 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|--------------|---------------|
| 5.00 | Mud 100% | 0.025 |
| 0.00 | 175 feet GIP | 0.000 |

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

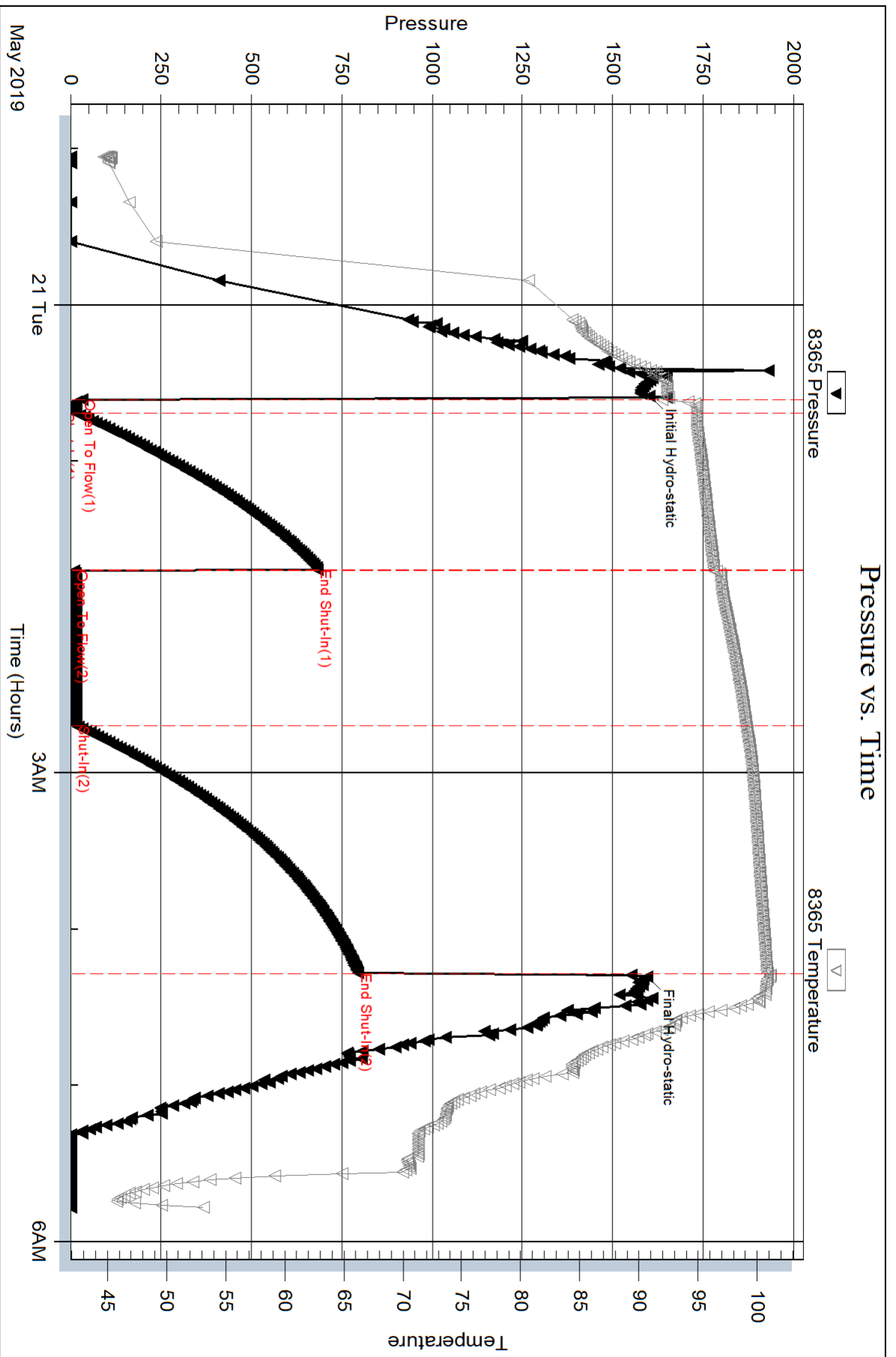
Num Gas Bombs: 0

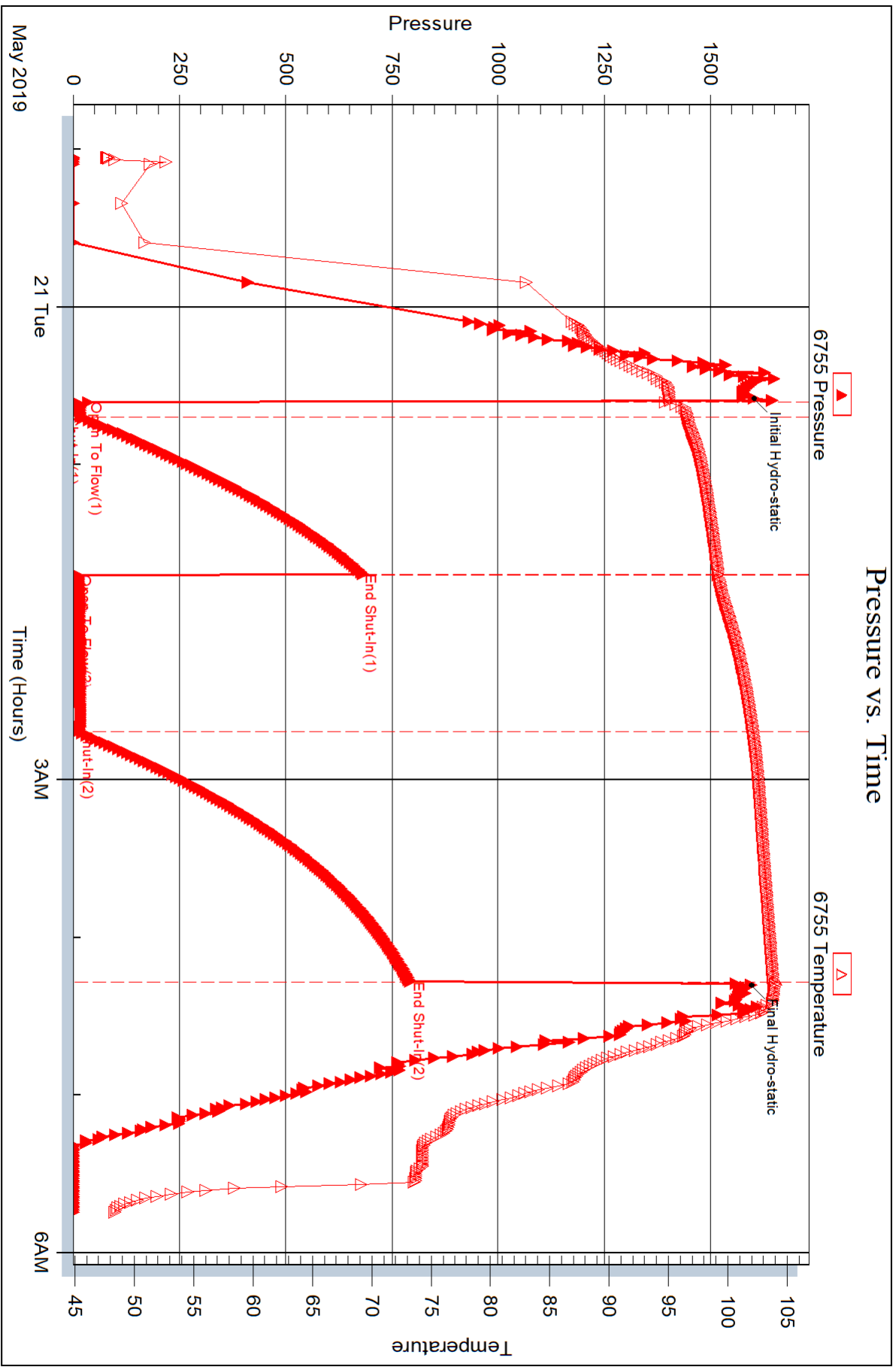
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Summit Operating**

1005 Delarosa
Victoria, KS 67671

ATTN: Marc Downing

Younger #1-17

17-16s-17W Ellis,KS

Start Date: 2019.05.21 @ 16:05:00

End Date: 2019.05.21 @ 21:43:02

Job Ticket #: 65668 DST #: 5

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.05.24 @ 16:50:02



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65668

DST#: 5

ATTN: Marc Downing

Test Start: 2019.05.21 @ 16:05:00

GENERAL INFORMATION:

Formation: **LKC H - J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:53:02

Time Test Ended: 21:43:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: **3384.00 ft (KB) To 3450.00 ft (KB) (TVD)**

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3450.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: **8365**

Inside

Press@RunDepth: 31.99 psig @ 3385.00 ft (KB)

Capacity: psig

Start Date: 2019.05.21

End Date:

2019.05.21

Last Calib.:

2019.05.21

Start Time: 16:05:01

End Time:

21:43:02

Time On Btm:

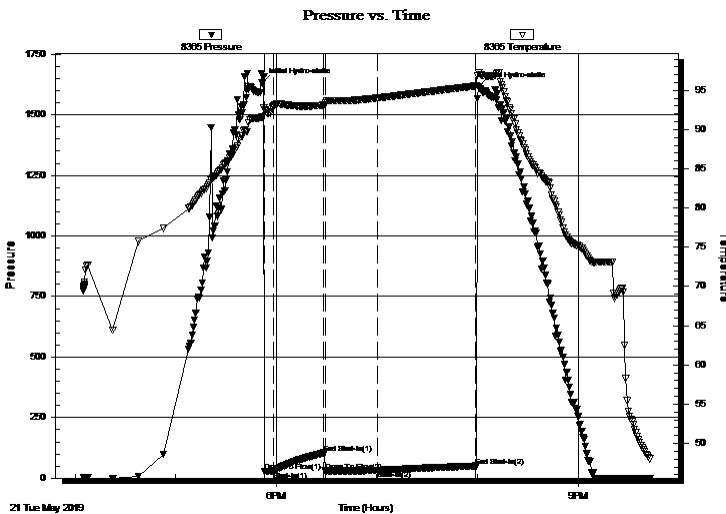
2019.05.21 @ 17:51:32

Time Off Btm:

2019.05.21 @ 20:00:47

TEST COMMENT: IF 5 Minutes/ Blow built to 2"
ISI 30 Minutes/ No blow back
FF 30 Minutes/ Blow built to 1/4"
FSI 60 Minutes/ No blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1631.02 | 91.60 | Initial Hydro-static |
| 2 | 26.97 | 92.47 | Open To Flow (1) |
| 7 | 28.05 | 92.92 | Shut-In(1) |
| 37 | 103.96 | 93.14 | End Shut-In(1) |
| 38 | 29.91 | 93.23 | Open To Flow (2) |
| 69 | 31.99 | 94.04 | Shut-In(2) |
| 128 | 50.31 | 95.59 | End Shut-In(2) |
| 130 | 1615.89 | 97.24 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 30.00 | Mud 100% | 0.15 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65668

DST#: 5

ATTN: Marc Downing

Test Start: 2019.05.21 @ 16:05:00

GENERAL INFORMATION:

Formation: **LKC H - J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:53:02

Time Test Ended: 21:43:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3384.00 ft (KB) To 3450.00 ft (KB) (TVD)

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3450.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6755 Outside

Press@RunDepth: 50.41 psig @ 3386.00 ft (KB)

Capacity: psig

Start Date: 2019.05.21

End Date:

2019.05.21

Last Calib.:

2019.05.21

Start Time: 16:05:01

End Time:

21:43:02

Time On Btm:

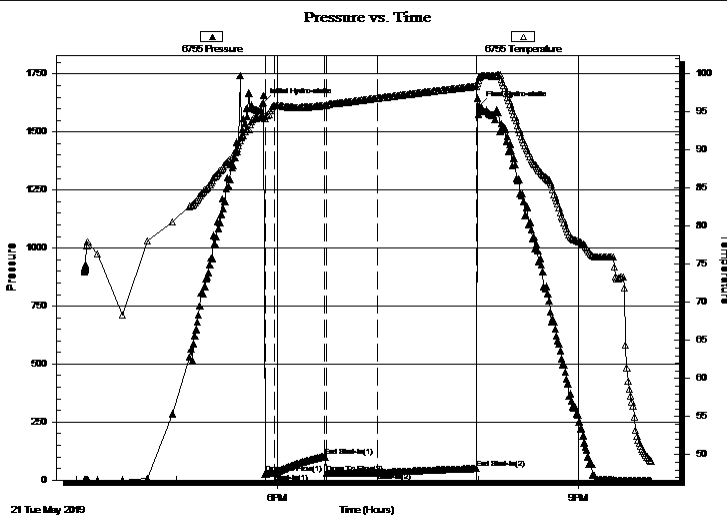
2019.05.21 @ 17:51:47

Time Off Btm:

2019.05.21 @ 20:00:47

TEST COMMENT: IF 5 Minutes/ Blow built to 2"
ISI 30 Minutes/ No blow back
FF 30 Minutes/ Blow built to 1/4"
FSI 60 Minutes/ No blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1626.82 | 94.32 | Initial Hydro-static |
| 1 | 27.38 | 94.14 | Open To Flow (1) |
| 7 | 28.65 | 95.82 | Shut-In(1) |
| 37 | 103.36 | 95.84 | End Shut-In(1) |
| 38 | 30.24 | 95.90 | Open To Flow (2) |
| 68 | 31.95 | 96.79 | Shut-In(2) |
| 128 | 50.41 | 98.38 | End Shut-In(2) |
| 129 | 1612.28 | 99.58 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 30.00 | Mud 100% | 0.15 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Summit Operating

17-16s-17W Ellis,KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65668

DST#: 5

ATTN: Marc Downing

Test Start: 2019.05.21 @ 16:05:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3331.00 ft | Diameter: 3.80 inches | Volume: 46.73 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: 30.00 ft | Diameter: 2.25 inches | Volume: 0.15 bbl | Weight to Pull Loose: 78000.00 lb |
| | | | <u>Total Volume: 46.88 bbl</u> | Tool Chased 2.00 ft |
| Drill Pipe Above KB: | 5.00 ft | | | String Weight: Initial 52000.00 lb |
| Depth to Top Packer: | 3384.00 ft | | | Final 52000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 65.76 ft | | | |
| Tool Length: | 93.76 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 | | | 3361.00 | |
| Hydraulic tool | 5.00 | | | 3366.00 | |
| Jars | 6.00 | | | 3372.00 | |
| Safety Joint | 2.00 | | | 3374.00 | |
| Top Packer | 5.00 | | | 3379.00 | |
| Packer | 5.00 | | | 3384.00 | 28.00 Bottom Of Top Packer |
| Recorder | 1.00 | 8365 | Inside | 3385.00 | |
| Recorder | 1.00 | 6755 | Outside | 3386.00 | |
| Anchor | 25.00 | | | 3411.00 | |
| Change Over Sub | 1.00 | | | 3412.00 | |
| Drill Pipe | 31.76 | | | 3443.76 | |
| Change Over Sub | 1.00 | | | 3444.76 | |
| Anchor | 2.00 | | | 3446.76 | |
| Bullnose | 3.00 | | | 3449.76 | 65.76 Anchor Tool |

Total Tool Length: 93.76



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Summit Operating

17-16s-17W Ellis,KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65668

DST#: 5

ATTN: Marc Downing

Test Start: 2019.05.21 @ 16:05:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.77 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------|---------------|
| 30.00 | Mud 100% | 0.148 |

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

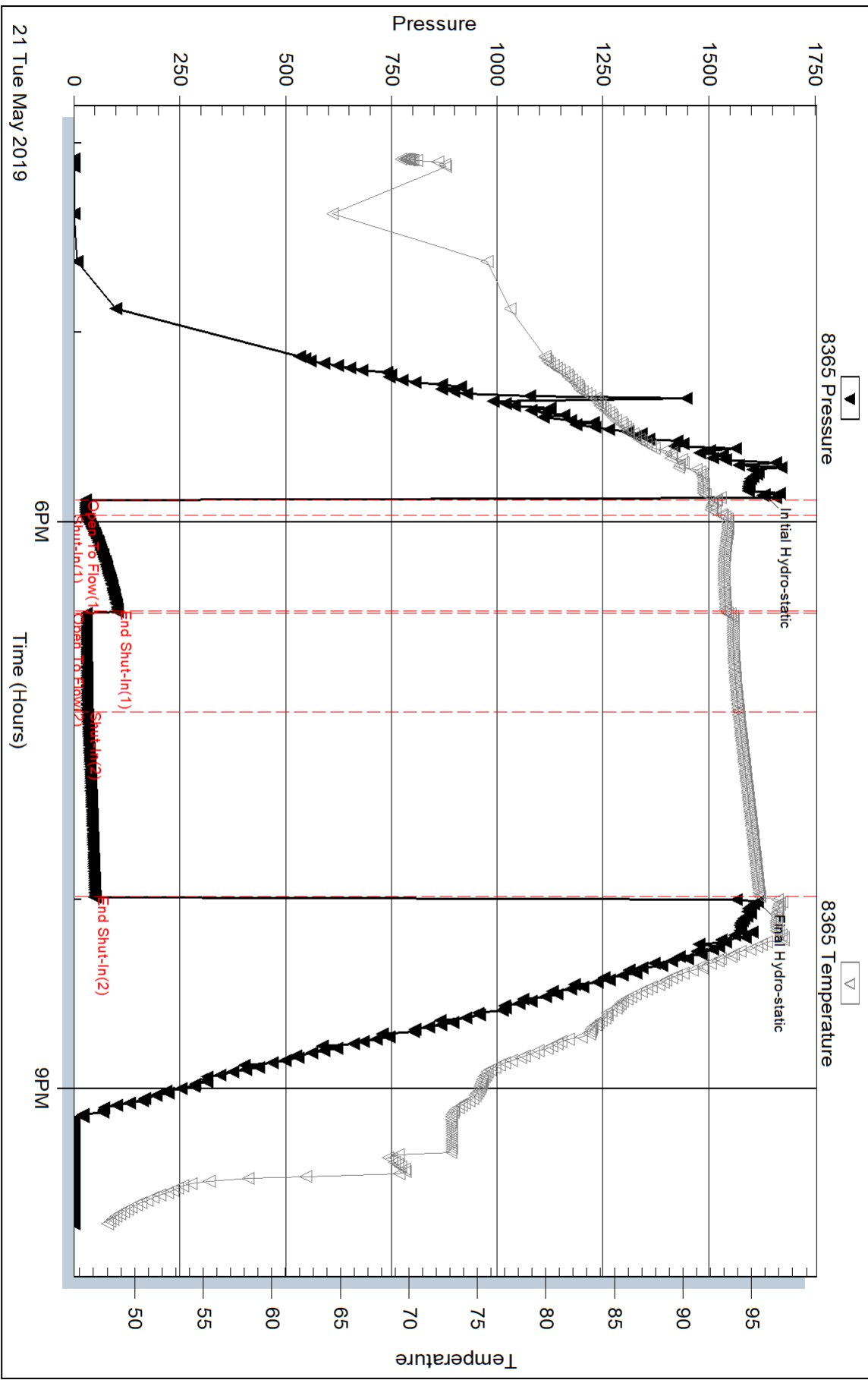
Serial #:

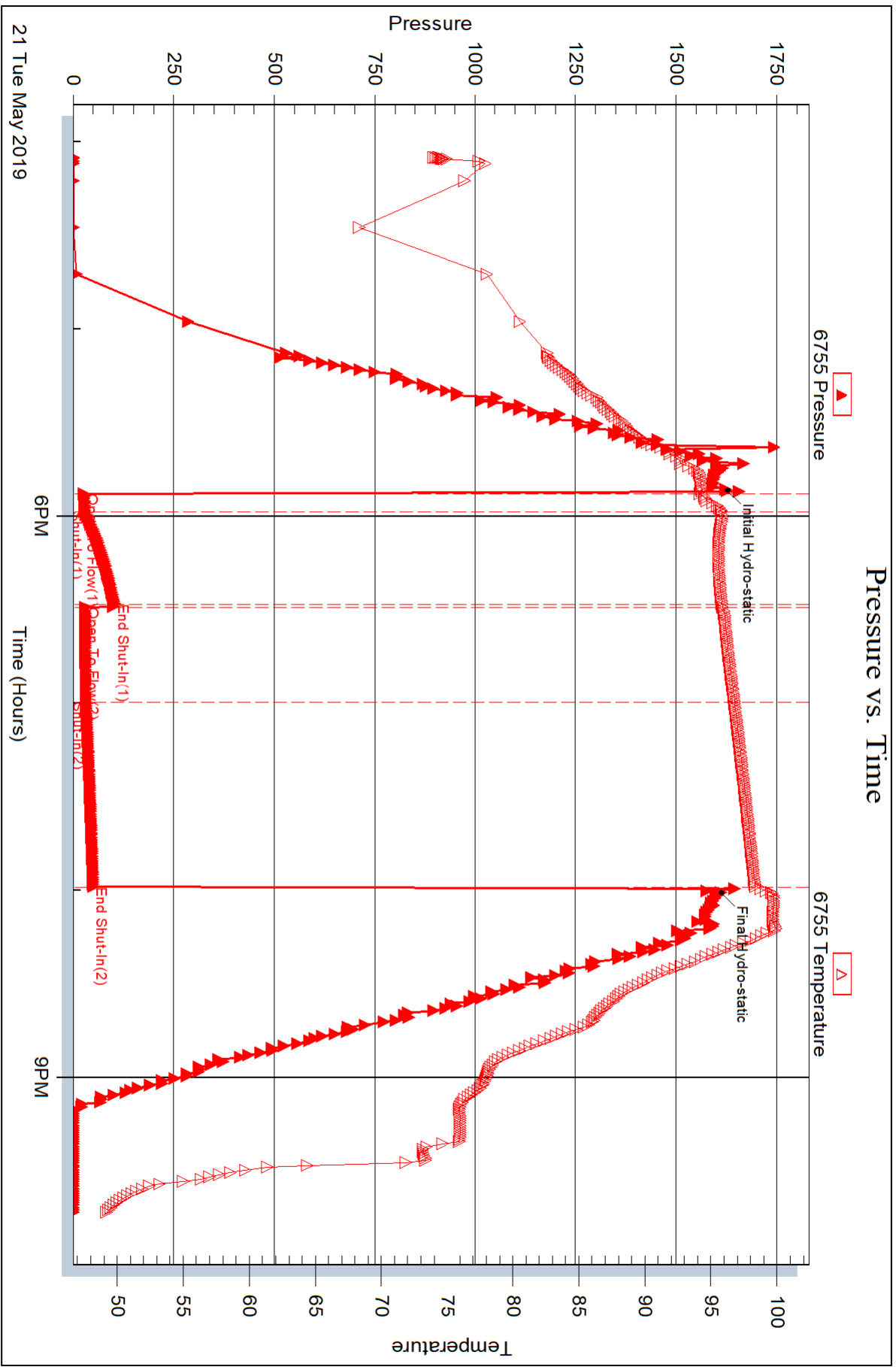
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Summit Operating**

1005 Delarosa
Victoria, KS 67671

ATTN: Marc Downing

Younger #1-17

17-16s-17W Ellis,KS

Start Date: 2019.05.22 @ 06:41:00

End Date: 2019.05.22 @ 13:25:02

Job Ticket #: 65669 DST #: 6

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.05.24 @ 16:49:31

Summit Operating

17-16s-17W Ellis,KS

Younger #1-17

DST # 6

Lansing/Kansas City

2019.05.22



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65669

DST#: 6

ATTN: Marc Downing

Test Start: 2019.05.22 @ 06:41:00

GENERAL INFORMATION:

Formation: **Lansing/Kansas City**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:25:17

Time Test Ended: 13:25:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72 Hays/56

Interval: 3447.00 ft (KB) To 3489.00 ft (KB) (TVD)

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3489.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8365

Inside

Press@RunDepth: 26.29 psig @ 3448.00 ft (KB)

Capacity: psig

Start Date: 2019.05.22

End Date: 2019.05.22

Last Calib.: 2019.05.22

Start Time: 06:41:01

End Time: 13:25:02

Time On Btm: 2019.05.22 @ 08:24:02

Time Off Btm: 2019.05.22 @ 12:02:02

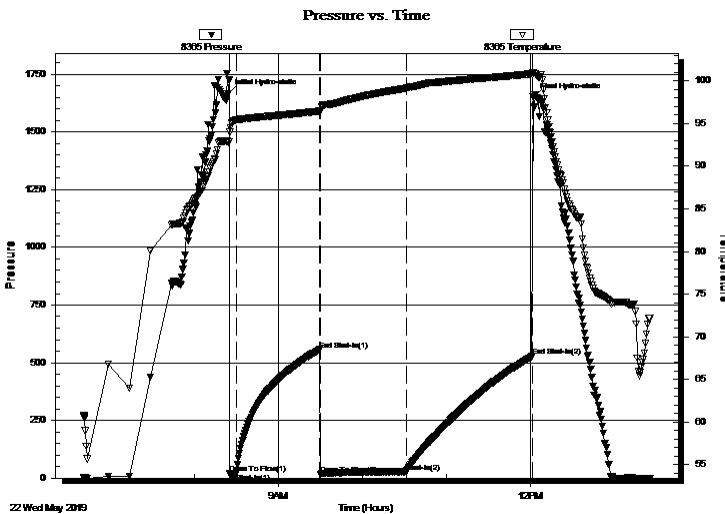
TEST COMMENT: IF 5 Minutes/ Blow built to BOB in 1 minute/ Total build 30"

ISI 60 Minutes/ No blow back

FF 60 Minutes/ Blow at BOB at open/ Total build 98"

FSI 90 Minutes/ No blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1667.16 | 92.81 | Initial Hydro-static |
| 2 | 20.30 | 93.97 | Open To Flow (1) |
| 6 | 19.68 | 95.41 | Shut-In(1) |
| 66 | 556.46 | 96.48 | End Shut-In(1) |
| 66 | 15.04 | 96.36 | Open To Flow (2) |
| 127 | 26.29 | 99.14 | Shut-In(2) |
| 217 | 527.98 | 100.84 | End Shut-In(2) |
| 218 | 1648.03 | 100.90 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|---------------|--------------|
| 15.00 | OSW M 100% | 0.07 |
| 0.00 | 1040 feet GIP | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65669

DST#: 6

ATTN: Marc Downing

Test Start: 2019.05.22 @ 06:41:00

GENERAL INFORMATION:

Formation: **Lansing/Kansas City**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:25:17

Time Test Ended: 13:25:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72 Hays/56

Interval: **3447.00 ft (KB) To 3489.00 ft (KB) (TVD)**

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3489.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6755

Outside

Press@RunDepth: 525.61 psig @ 3449.00 ft (KB)

Capacity: psig

Start Date: 2019.05.22

End Date:

2019.05.22

Last Calib.:

2019.05.22

Start Time: 06:41:01

End Time:

13:25:02

Time On Btm:

2019.05.22 @ 08:24:02

Time Off Btm:

2019.05.22 @ 12:02:02

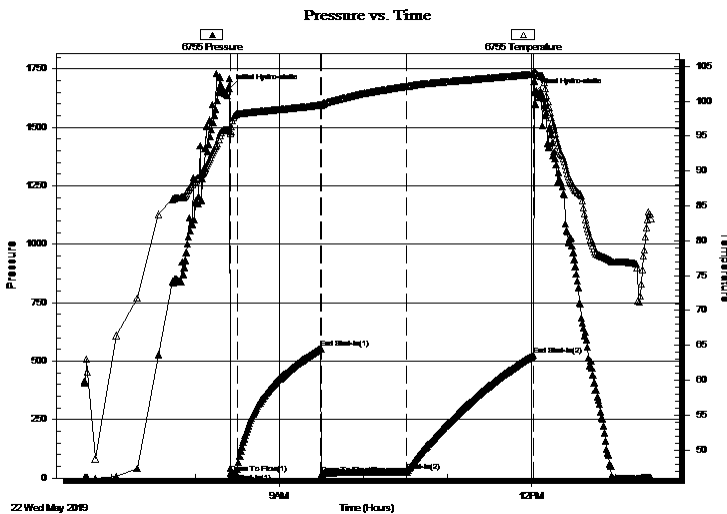
TEST COMMENT: IF 5 Minutes/ Blow built to BOB in 1 minute/ Total build 30"

ISI 60 Minutes/ No blow back

FF 60 Minutes/ Blow at BOB at open/ Total build 98"

FSI 90 Minutes/ No blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1666.36 | 95.81 | Initial Hydro-static |
| 2 | 20.59 | 95.64 | Open To Flow (1) |
| 6 | 20.05 | 98.17 | Shut-In(1) |
| 66 | 553.97 | 99.46 | End Shut-In(1) |
| 66 | 16.60 | 99.40 | Open To Flow (2) |
| 127 | 29.13 | 102.14 | Shut-In(2) |
| 217 | 525.61 | 103.91 | End Shut-In(2) |
| 218 | 1649.02 | 104.11 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|---------------|--------------|
| 15.00 | OSW M 100% | 0.07 |
| 0.00 | 1040 feet GIP | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Summit Operating

17-16s-17W Ellis,KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65669

DST#: 6

ATTN: Marc Downing

Test Start: 2019.05.22 @ 06:41:00

Tool Information

| | | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe: | Length: 3396.00 ft | Diameter: 3.80 inches | Volume: 47.64 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: 30.00 ft | Diameter: 2.25 inches | Volume: 0.15 bbl | Weight to Pull Loose: | 80000.00 lb |
| | | | <u>Total Volume: 47.79 bbl</u> | Tool Chased | 0.00 ft |
| Drill Pipe Above KB: | 5.00 ft | | | String Weight: Initial | 52000.00 lb |
| Depth to Top Packer: | 3447.00 ft | | | Final | 52000.00 lb |
| Depth to Bottom Packer: | ft | | | | |
| Interval between Packers: | 42.00 ft | | | | |
| Tool Length: | 68.00 ft | | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|---------------------------|--------------|------------|----------|------------|----------------------------|
| Shut-In Tool | 5.00 | | | 3426.00 | |
| Hydraulic tool | 5.00 | | | 3431.00 | |
| EM Tool | 4.00 | | | 3435.00 | |
| Safety Joint | 2.00 | | | 3437.00 | |
| Top Packer | 5.00 | | | 3442.00 | |
| Packer | 5.00 | | | 3447.00 | 26.00 Bottom Of Top Packer |
| Recorder | 1.00 | 8365 | Inside | 3448.00 | |
| Recorder | 1.00 | 6755 | Outside | 3449.00 | |
| Anchor | 37.00 | | | 3486.00 | |
| Bullnose | 3.00 | | | 3489.00 | 42.00 Anchor Tool |
| Total Tool Length: | 68.00 | | | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Summit Operating

17-16s-17W Ellis,KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65669

DST#: 6

ATTN: Marc Downing

Test Start: 2019.05.22 @ 06:41:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|---------------|---------------|
| 15.00 | OSM M 100% | 0.074 |
| 0.00 | 1040 feet GIP | 0.000 |

Total Length: 15.00 ft Total Volume: 0.074 bbl

Num Fluid Samples: 0

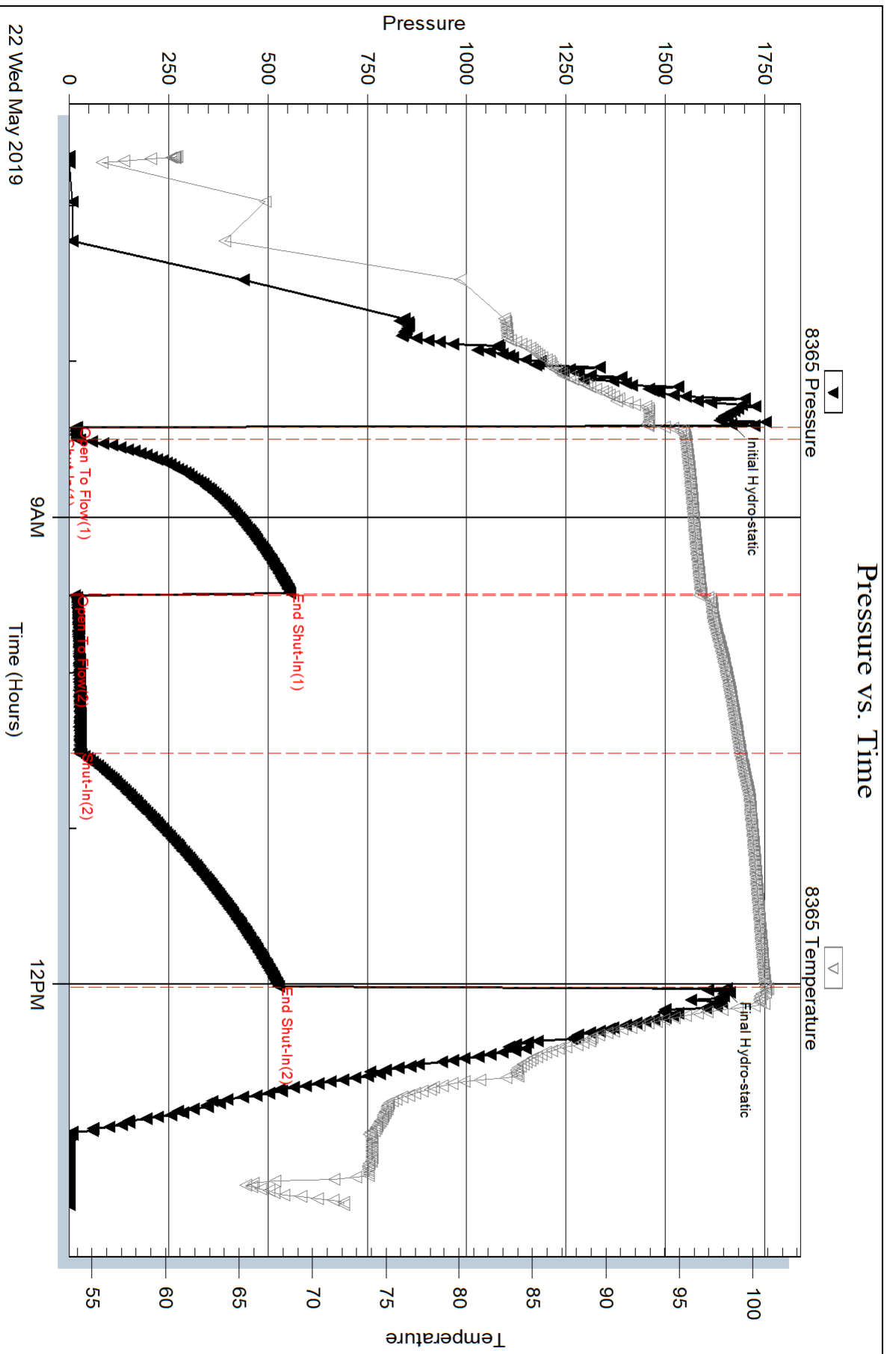
Num Gas Bombs: 0

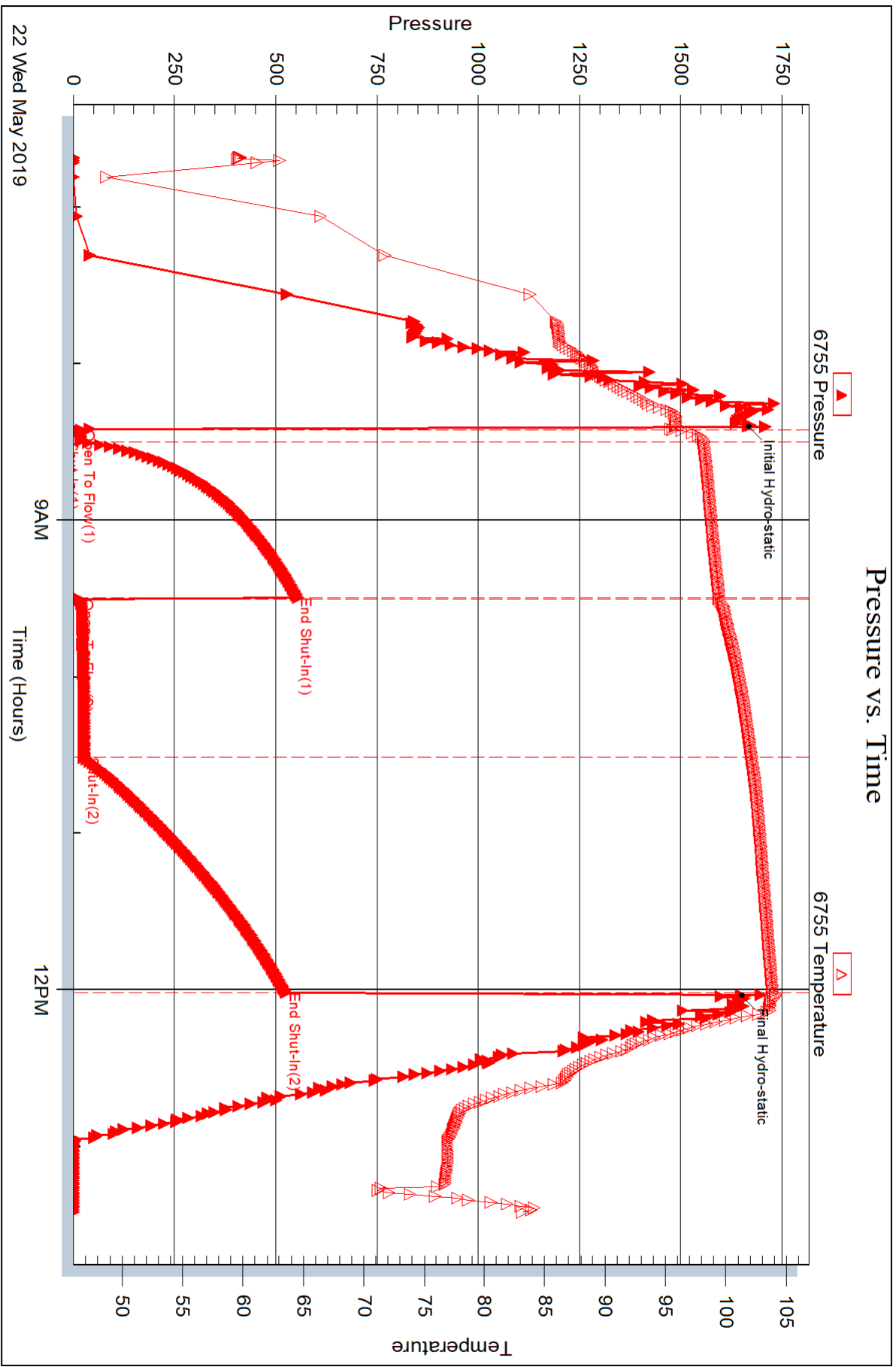
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Summit Operating**

1005 Delarosa
Victoria, KS 67671

ATTN: Marc Downing

Younger #1-17

17-16s-17W Ellis,KS

Start Date: 2019.05.22 @ 20:58:00

End Date: 2019.05.23 @ 02:54:02

Job Ticket #: 65670 DST #: 7

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.05.24 @ 16:49:09



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis,KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65670

DST#: 7

ATTN: Marc Downing

Test Start: 2019.05.22 @ 20:58:00

GENERAL INFORMATION:

Formation: **Quartz**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:30:47

Time Test Ended: 02:54:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3485.00 ft (KB) To 3516.00 ft (KB) (TVD)

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3516.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8365

Inside

Press@RunDepth: 25.50 psig @ 3486.00 ft (KB)

Capacity: psig

Start Date: 2019.05.22

End Date: 2019.05.23

Last Calib.: 2019.05.23

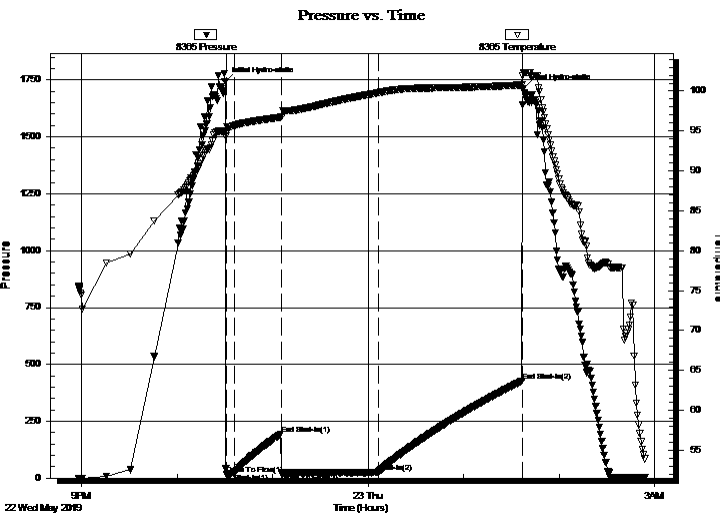
Start Time: 20:58:01

End Time: 02:54:02

Time On Btm: 2019.05.22 @ 22:30:02

Time Off Btm: 2019.05.23 @ 01:37:32

TEST COMMENT: IF 5 Minutes/ Blow built to 9"
ISI 30 Minutes/ No blow back
FF 60 Minutes/ Blow to BOB in 5 seconds/ Total build 42 1/2"
FSI 90 Minutes/ No blow back



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1743.49 | 94.88 | Initial Hydro-static |
| 1 | 17.44 | 94.80 | Open To Flow (1) |
| 6 | 22.31 | 95.68 | Shut-In(1) |
| 36 | 194.59 | 96.75 | End Shut-In(1) |
| 36 | 21.16 | 96.79 | Open To Flow (2) |
| 97 | 25.50 | 99.79 | Shut-In(2) |
| 187 | 427.14 | 100.81 | End Shut-In(2) |
| 188 | 1712.68 | 102.33 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|--------------|--------------|
| 30.00 | Mud 100% | 0.15 |
| 0.00 | 466 feet GIP | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65670

DST#: 7

ATTN: Marc Downing

Test Start: 2019.05.22 @ 20:58:00

GENERAL INFORMATION:

Formation: **Quartz**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:30:47

Time Test Ended: 02:54:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: **3485.00 ft (KB) To 3516.00 ft (KB) (TVD)**

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3516.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: **6755** Outside

Press@RunDepth: 426.10 psig @ 3487.00 ft (KB)

Capacity: psig

Start Date: 2019.05.22

End Date: 2019.05.23

Last Calib.: 2019.05.23

Start Time: 20:58:01

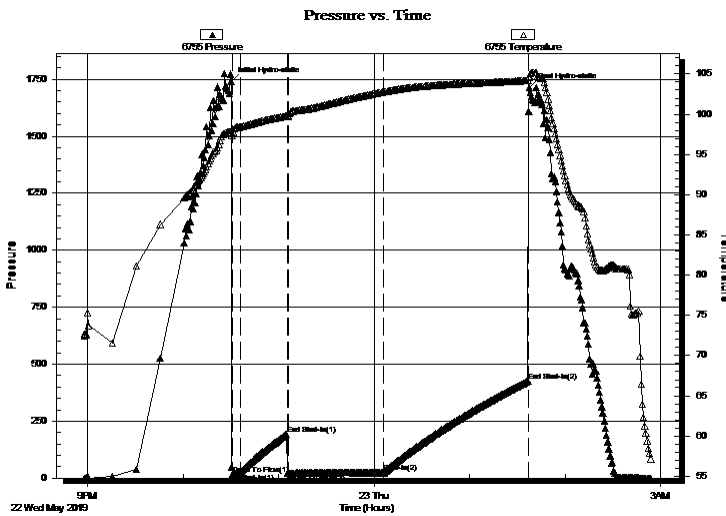
End Time: 02:54:02

Time On Btm: 2019.05.22 @ 22:30:02

Time Off Btm: 2019.05.23 @ 01:37:32

TEST COMMENT: IF 5 Minutes/ Blow built to 9"
ISI 30 Minutes/ No blow back
FF 60 Minutes/ Blow to BOB in 5 seconds/ Total build 42 1/2"
FSI 90 Minutes/ No blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1741.52 | 97.74 | Initial Hydro-static |
| 1 | 17.68 | 97.54 | Open To Flow (1) |
| 6 | 22.35 | 98.42 | Shut-In(1) |
| 36 | 194.43 | 99.78 | End Shut-In(1) |
| 36 | 19.80 | 99.83 | Open To Flow (2) |
| 96 | 23.51 | 102.77 | Shut-In(2) |
| 187 | 426.10 | 104.21 | End Shut-In(2) |
| 188 | 1713.41 | 104.75 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|--------------|--------------|
| 30.00 | Mud 100% | 0.15 |
| 0.00 | 466 feet GIP | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65670

DST#: 7

ATTN: Marc Downing

Test Start: 2019.05.22 @ 20:58:00

Tool Information

| | | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe: | Length: 3457.00 ft | Diameter: 3.80 inches | Volume: 48.49 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: 30.00 ft | Diameter: 2.25 inches | Volume: 0.15 bbl | Weight to Pull Loose: | 68000.00 lb |
| | | | <u>Total Volume: 48.64 bbl</u> | Tool Chased | 0.00 ft |
| Drill Pipe Above KB: | 28.00 ft | | | String Weight: Initial | 52000.00 lb |
| Depth to Top Packer: | 3485.00 ft | | | Final | 52000.00 lb |
| Depth to Bottom Packer: | ft | | | | |
| Interval between Packers: | 31.00 ft | | | | |
| Tool Length: | 57.00 ft | | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | | |
| Tool Comments: | | | | | |

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|---------------------------|--------------|------------|----------|------------|----------------------------|
| Shut-In Tool | 5.00 | | | 3464.00 | |
| Hydraulic tool | 5.00 | | | 3469.00 | |
| EM Tool | 4.00 | | | 3473.00 | |
| Safety Joint | 2.00 | | | 3475.00 | |
| Top Packer | 5.00 | | | 3480.00 | |
| Packer | 5.00 | | | 3485.00 | 26.00 Bottom Of Top Packer |
| Recorder | 1.00 | 8365 | Inside | 3486.00 | |
| Recorder | 1.00 | 6755 | Outside | 3487.00 | |
| Anchor | 26.00 | | | 3513.00 | |
| Bullnose | 3.00 | | | 3516.00 | 31.00 Anchor Tool |
| Total Tool Length: | 57.00 | | | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Summit Operating

17-16s-17W Ellis,KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65670

DST#: 7

ATTN: Marc Downing

Test Start: 2019.05.22 @ 20:58:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|--------------|---------------|
| 30.00 | Mud 100% | 0.148 |
| 0.00 | 466 feet GIP | 0.000 |

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8365

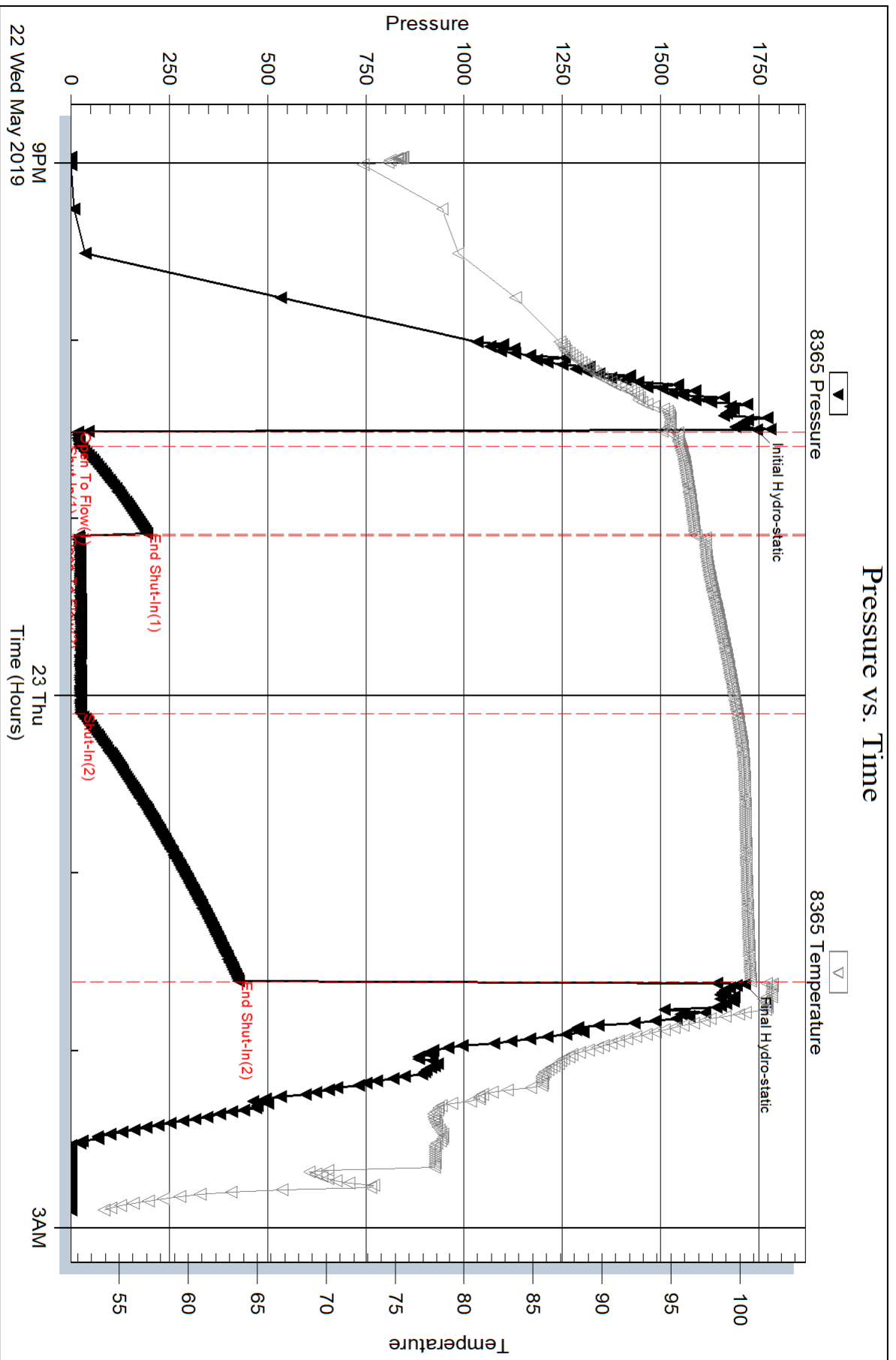
Inside

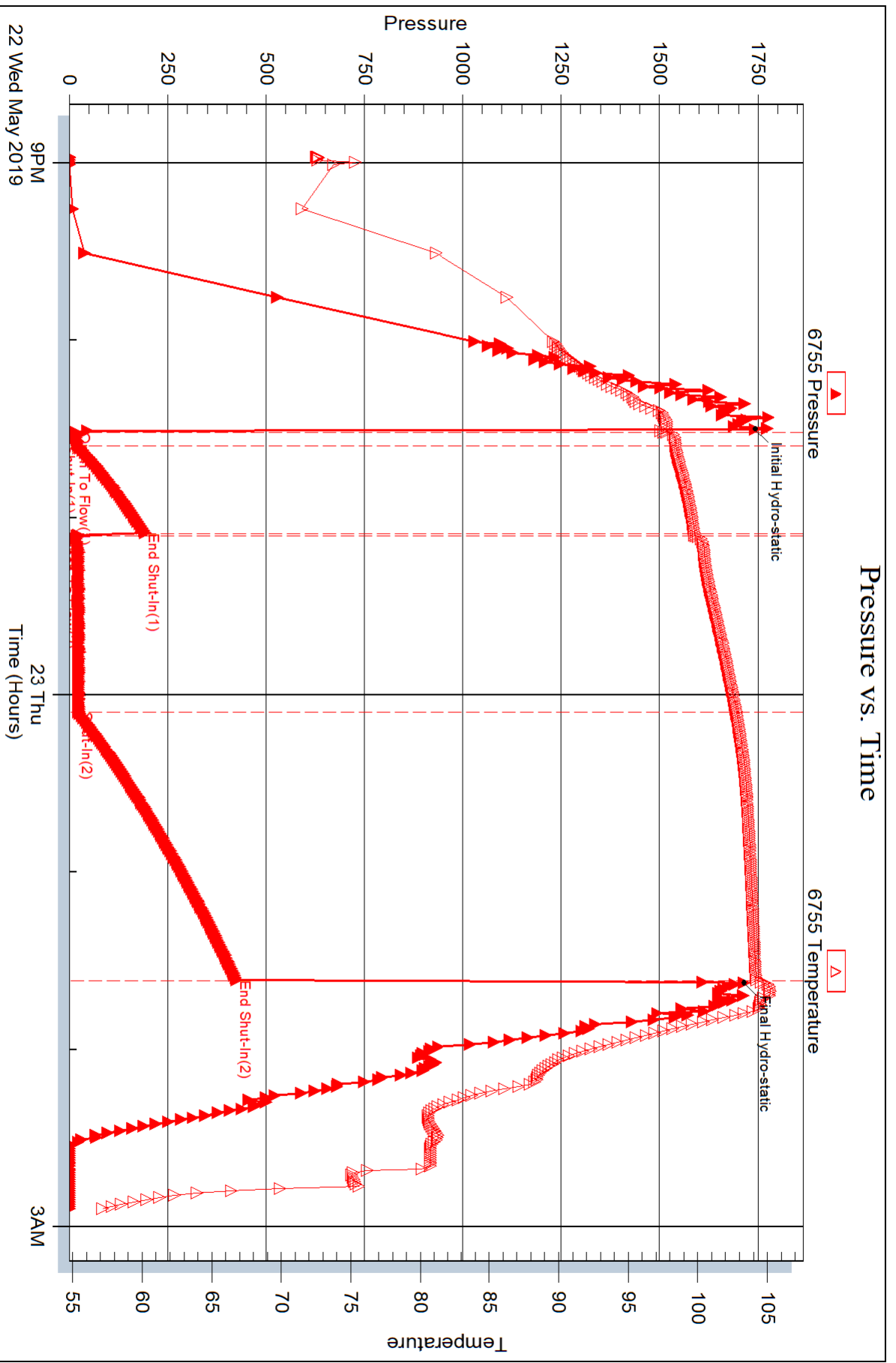
Summit Operating

Younger #1-17

DST Test Number: 7

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Summit Operating**

1005 Delarosa
Victoria, KS 67671

ATTN: Marc Downing

Younger #1-17

17-16s-17W Ellis,KS

Start Date: 2019.05.23 @ 09:53:00

End Date: 2019.05.23 @ 19:50:47

Job Ticket #: 65671 DST #: 8

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.05.24 @ 15:57:48



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65671

DST#: 8

ATTN: Marc Downing

Test Start: 2019.05.23 @ 09:53:00

GENERAL INFORMATION:

Formation: **Quartz**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:39:47

Time Test Ended: 19:50:47

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: **3516.00 ft (KB) To 3526.00 ft (KB) (TVD)**

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3526.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8365

Inside

Press@RunDepth: 966.14 psig @ 3517.00 ft (KB)

Capacity: psig

Start Date: 2019.05.23

End Date:

2019.05.23

Last Calib.:

2019.05.23

Start Time:

09:53:01

End Time:

19:50:47

Time On Btm:

2019.05.23 @ 11:38:17

Time Off Btm:

2019.05.23 @ 16:46:32

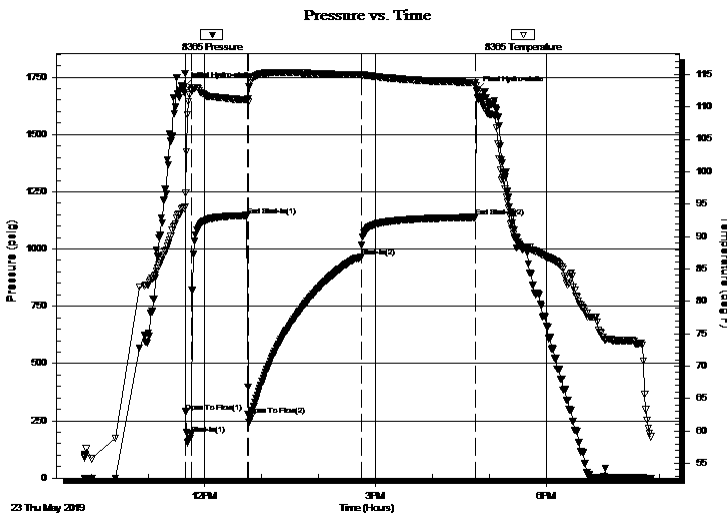
TEST COMMENT: IF 5 Minutes/ Blow to BOB in 10 seconds

ISI 60 Minutes/ 8" blow back

FF 120 Minutes/ Blow to BOB in 1 minute/ gas to surface 45 minutes/ to weak to guage

FSI 120 Minutes/ Light surface blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1707.93 | 94.34 | Initial Hydro-static |
| 2 | 289.60 | 96.77 | Open To Flow (1) |
| 8 | 193.41 | 112.60 | Shut-In(1) |
| 67 | 1146.34 | 111.13 | End Shut-In(1) |
| 68 | 276.16 | 111.22 | Open To Flow (2) |
| 187 | 966.14 | 114.97 | Shut-In(2) |
| 308 | 1138.79 | 113.71 | End Shut-In(2) |
| 309 | 1692.18 | 113.27 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|------------------------|--------------|
| 2056.00 | GMCW/ G 10% M 5% W 85% | 28.57 |
| 0.00 | GTS | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65671

DST#: 8

ATTN: Marc Downing

Test Start: 2019.05.23 @ 09:53:00

GENERAL INFORMATION:

Formation: **Quartz**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:39:47

Time Test Ended: 19:50:47

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: **3516.00 ft (KB) To 3526.00 ft (KB) (TVD)**

Reference Elevations: 2006.00 ft (KB)

Total Depth: 3526.00 ft (KB) (TVD)

2001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: **6755** Outside

Press@RunDepth: 1137.26 psig @ 3518.00 ft (KB)

Capacity: psig

Start Date: 2019.05.23

End Date:

2019.05.23

Last Calib.:

2019.05.23

Start Time: 09:53:01

End Time:

19:50:47

Time On Btm:

2019.05.23 @ 11:38:32

Time Off Btm:

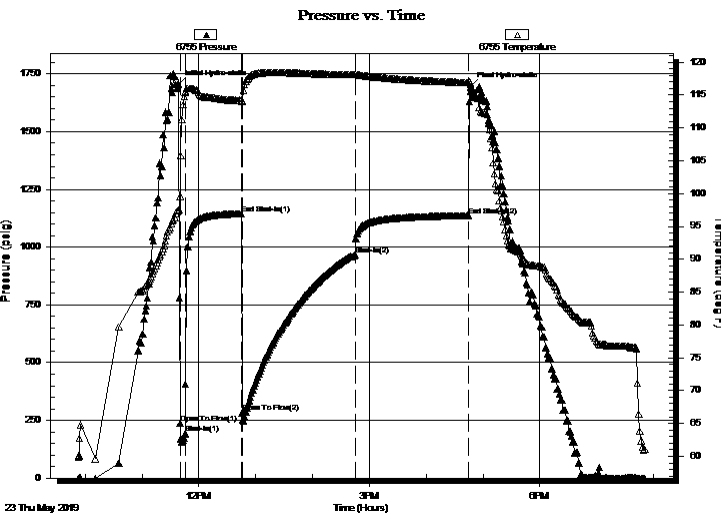
2019.05.23 @ 16:46:32

TEST COMMENT: IF 5 Minutes/ Blow to BOB in 10 seconds

ISI 60 Minutes/ 8" blow back

FF 120 Minutes/ Blow to BOB in 1 minute/ gas to surface 45 minutes/ to weak to guage

FSI 120 Minutes/ Light surface blow back



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1702.70 | 97.43 | Initial Hydro-static |
| 2 | 238.14 | 99.59 | Open To Flow (1) |
| 7 | 192.60 | 115.37 | Shut-In(1) |
| 67 | 1144.54 | 114.20 | End Shut-In(1) |
| 67 | 283.54 | 114.01 | Open To Flow (2) |
| 187 | 965.53 | 118.12 | Shut-In(2) |
| 307 | 1137.26 | 116.91 | End Shut-In(2) |
| 308 | 1692.68 | 116.82 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|------------------------|--------------|
| 2056.00 | GMCW/ G 10% M 5% W 85% | 28.57 |
| 0.00 | GTS | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Summit Operating

17-16s-17W Ellis, KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65671

DST#: 8

ATTN: Marc Downing

Test Start: 2019.05.23 @ 09:53:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3491.00 ft | Diameter: 3.80 inches | Volume: 48.97 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: 30.00 ft | Diameter: 2.25 inches | Volume: 0.15 bbl | Weight to Pull Loose: 75000.00 lb |
| | | | <u>Total Volume: 49.12 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 31.00 ft | | | String Weight: Initial 54000.00 lb |
| Depth to Top Packer: | 3516.00 ft | | | Final 64000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 20.00 ft | | | |
| Tool Length: | 46.00 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 | | | 3495.00 | |
| Hydraulic tool | 5.00 | | | 3500.00 | |
| EM Tool | 4.00 | | | 3504.00 | |
| Safety Joint | 2.00 | | | 3506.00 | |
| Top Packer | 5.00 | | | 3511.00 | |
| Packer | 5.00 | | | 3516.00 | 26.00 Bottom Of Top Packer |
| Recorder | 1.00 | 8365 | Inside | 3517.00 | |
| Recorder | 1.00 | 6755 | Outside | 3518.00 | |
| Anchor | 15.00 | | | 3533.00 | |
| Bullnose | 3.00 | | | 3536.00 | 20.00 Anchor Tool |
| Total Tool Length: | 46.00 | | | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Summit Operating

17-16s-17W Ellis,KS

1005 Delarosa
Victoria, KS 67671

Younger #1-17

Job Ticket: 65671

DST#: 8

ATTN: Marc Downing

Test Start: 2019.05.23 @ 09:53:00

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:

38000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|------------------------|---------------|
| 2056.00 | GMCW/ G 10% M 5% W 85% | 28.567 |
| 0.00 | GTS | 0.000 |

Total Length: 2056.00 ft Total Volume: 28.567 bbl

Num Fluid Samples: 0

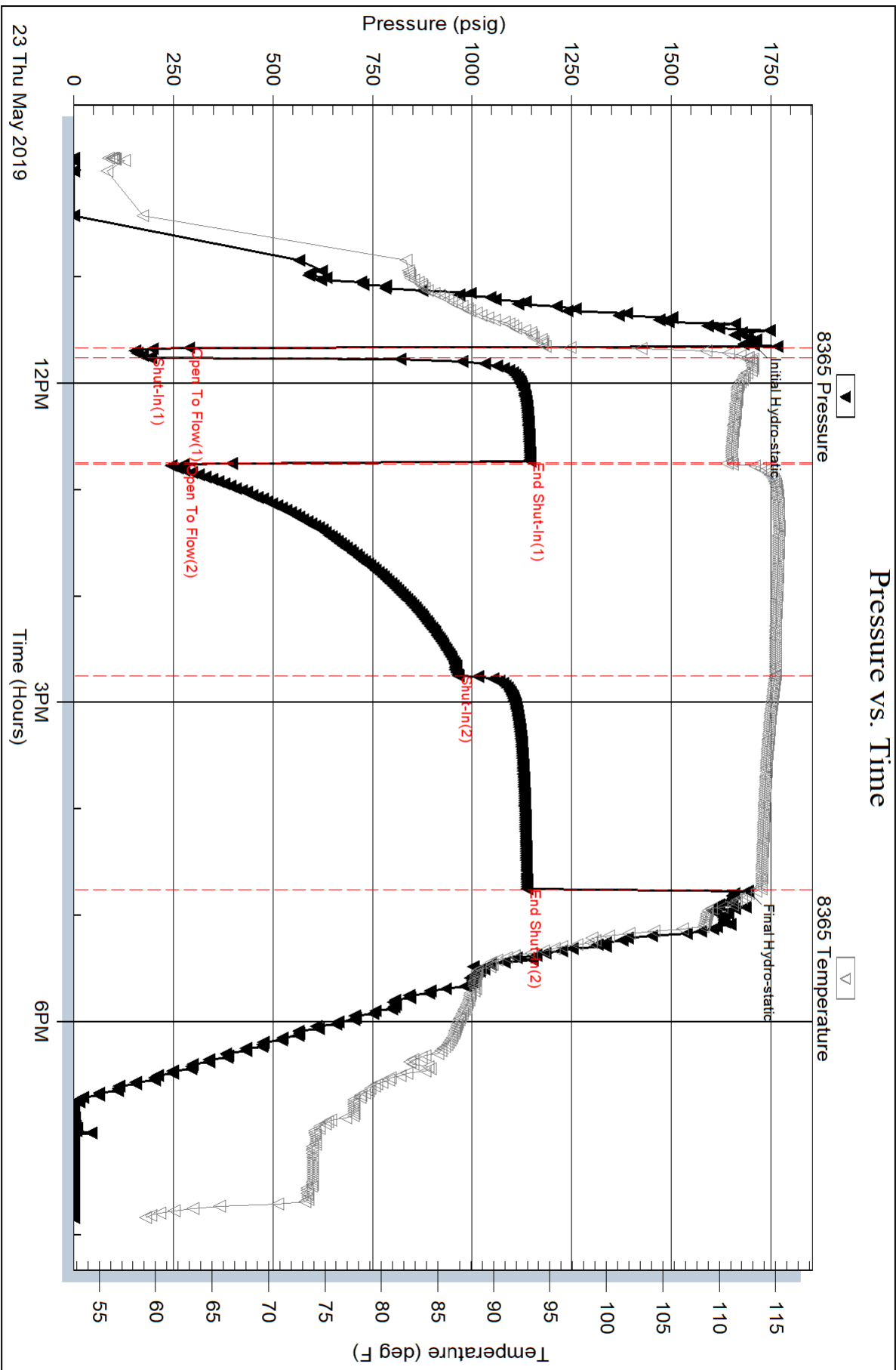
Num Gas Bombs: 0

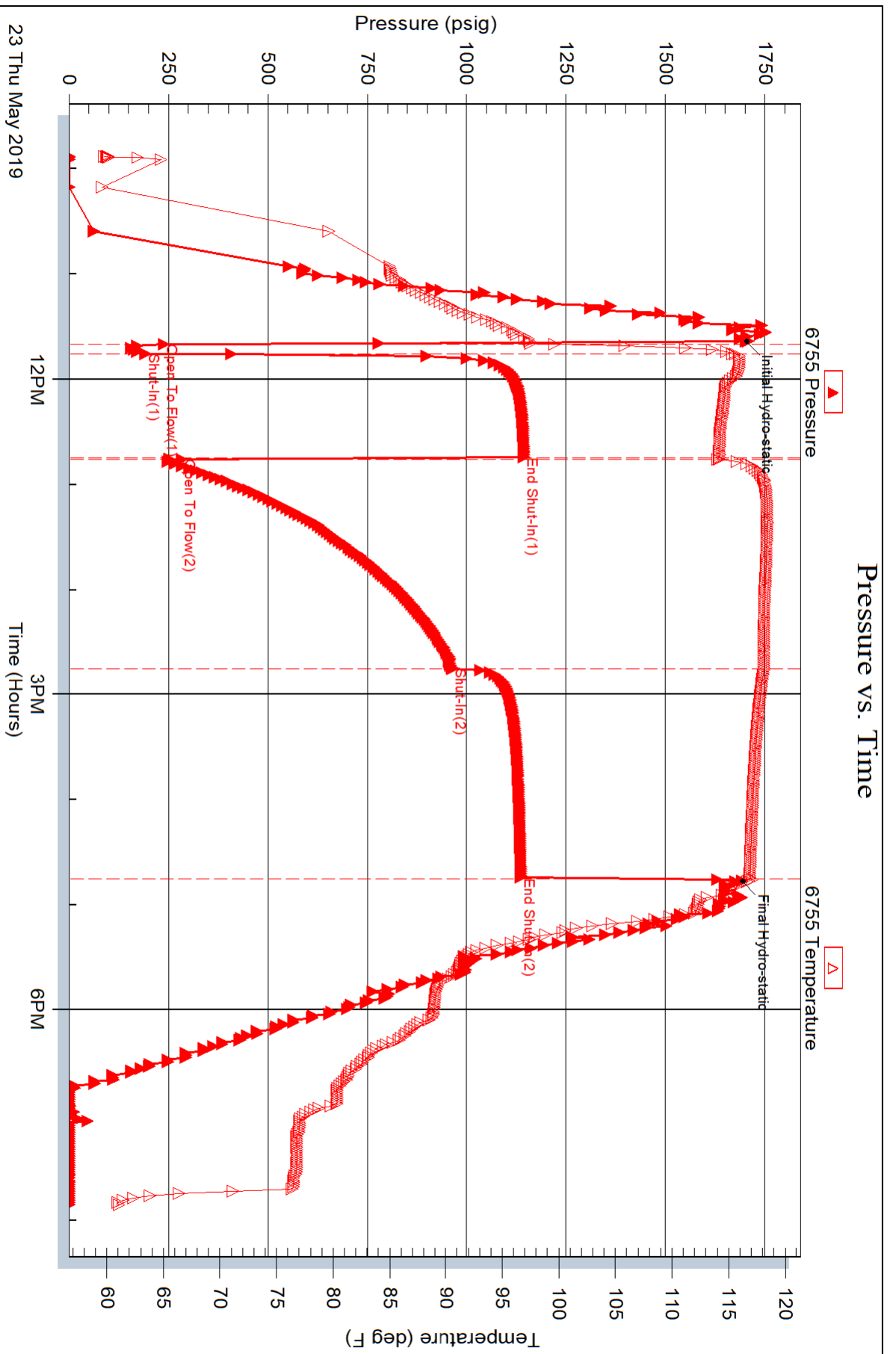
Serial #:

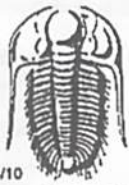
Laboratory Name:

Laboratory Location:

Recovery Comments: Recovery Resistivity .191 ohms @ 66 deg







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65664

Well Name & No. Younger #1-17 Test No. 1 Date 18 MAY 19
 Company Summitt Operating LLC Elevation 2006 KB 2001 GL
 Address 1005 Dalarosa Victoria Kansas 67671
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 4
 Location: Sec. 17 Twp 16S Rge. 17W Co. Rush State KS

Interval Tested 3150-3180 Zone Tested Plattsmouth
 Anchor Length 30 Drill Pipe Run 3109 Mud Wt. 8.8
 Top Packer Depth 3145 Drill Collars Run 30 Vis 53
 Bottom Packer Depth 3150 Wt. Pipe Run — WL 8.8
 Total Depth 3180 Chlorides 1500 ppm System LCM 2H

Blow Description IF Blow built to 2 1/2 inches
ISF No blow back
FF Blow built to 8 inches
FSF No blow back

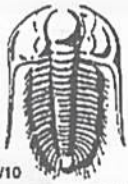
| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|------------|------|------|--------|-------------|
| <u>105</u> | <u>mud</u> | | | | <u>100%</u> |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |

Rec Total 105 BHT 101 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

| | | |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>1519</u> | <input checked="" type="checkbox"/> Test <u>1200</u> | T-On Location <u>6:12 pm</u> |
| (B) First Initial Flow <u>140</u> | <input type="checkbox"/> Jars _____ | T-Started <u>8:01 pm</u> |
| (C) First Final Flow <u>704</u> | <input type="checkbox"/> Safety Joint _____ | T-Open <u>10:04 pm</u> |
| (D) Initial Shut-In <u>831</u> | <input type="checkbox"/> Circ Sub _____ | T-Pulled <u>1:09 am</u> |
| (E) Second Initial Flow <u>62</u> | <input type="checkbox"/> Hourly Standby _____ | T-Out <u>2:59 am</u> |
| (F) Second Final Flow <u>454</u> | <input checked="" type="checkbox"/> Mileage <u>52</u> | Comments _____ |
| (G) Final Shut-In <u>723</u> | <input type="checkbox"/> Sampler _____ | <input type="checkbox"/> EM Tool <u>350</u> |
| (H) Final Hydrostatic <u>1484</u> | <input type="checkbox"/> Straddle _____ | <input type="checkbox"/> Ruined Shale Packer _____ |
| Initial Open <u>5</u> | <input type="checkbox"/> Shale Packer _____ | <input type="checkbox"/> Ruined Packer _____ |
| Initial Shut-In <u>30</u> | <input type="checkbox"/> Extra Packer _____ | <input type="checkbox"/> Extra Copies _____ |
| Final Flow <u>60</u> | <input type="checkbox"/> Extra Recorder _____ | Sub Total <u>350</u> |
| Final Shut-In <u>90</u> | <input type="checkbox"/> Day Standby _____ | Total <u>1602</u> |
| | <input type="checkbox"/> Accessibility _____ | MP/DST Disc't _____ |
| | Sub Total <u>1252</u> | |

Approved By _____ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65665**

410

Well Name & No. Younger #1-17 Test No. 2 Date 19 MAY 19
 Company Summit Operating LLC Elevation 2006 KB 2001 GL
 Address 1005 Delarosa Victoria Kansas 67671
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 4
 Location: Sec. 17 Twp 16S Rge. 17W Co. Rush State KS

Interval Tested 3213-3297 Zone Tested Toronto - UK 'C
 Anchor Length 84 Drill Pipe Run 31.75 Mud Wt. 8.8
 Top Packer Depth 3208 Drill Collars Run 30 Vis 51
 Bottom Packer Depth 3213 Wt. Pipe Run — WL 8.0
 Total Depth 3297 Chlorides 3000 ppm System LCM 2#

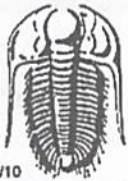
Blow Description IF Blow to BOB 5 minutes
ISI Brief light surface blow back
FF BOB in 5 minutes / Total build 53 inches
FSI No blow back

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|------------------|------------|------|--------|-----------|
| <u>139</u> | <u>Gassy Mud</u> | <u>10</u> | | | <u>70</u> |
| <u>355</u> | <u>GIP</u> | <u>100</u> | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Rec Total 139 BHT 100 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1514 Test 1200 T-On Location 1:45 pm
 (B) First Initial Flow 38 Jars _____ T-Started 2:12 pm
 (C) First Final Flow 39 Safety Joint _____ T-Open 3:50 pm
 (D) Initial Shut-In 285 Circ Sub _____ T-Pulled 7:25 pm
 (E) Second Initial Flow 39 Hourly Standby _____ T-Out 9:07 pm
 (F) Second Final Flow 80 Mileage 52 52 Comments _____
 (G) Final Shut-In 276 Sampler _____
 (H) Final Hydrostatic 1484 Straddle _____ EM Tool 350
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Initial Open 5 Day Standby _____ Sub Total 0
 Initial Shut-In 60 Accessibility _____ Total 1252
 Final Flow 60 Sub Total 1252 MP/DST Disc't _____
 Final Shut-In 90

Approved By _____ Our Representative _____
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65666

Well Name & No. Younger #1-17 Test No. 3 Date 20 MAY 19
 Company Summit operating LLC Elevation 2006 KB 2001 GL
 Address 1005 Delaware Victoria Kansas 67671
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 4
 Location: Sec. 17 Twp 16S Rge. 17W Co. Rush State KS

Interval Tested 3299-3342 Zone Tested Lansing/Kansas City zones D+E
 Anchor Length 43 Drill Pipe Run _____ Mud Wt. 8.8
 Top Packer Depth 3294 Drill Collars Run 30 Vis 51
 Bottom Packer Depth 3299 Wt. Pipe Run - WL 8.0
 Total Depth 3342 Chlorides 3000 ppm System LCM 2#

Blow Description IF Blow to BOB in 2 minutes/Total build 46 inches
ISF No blow back
FF Blow to BOB 5 seconds/Total build 240 inches
FSI No blow back

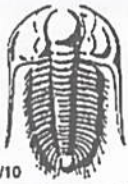
| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|------------|------------|------|------------|------------|
| <u>67</u> | <u>mud</u> | | | <u>100</u> | <u>mud</u> |
| <u>670</u> | <u>GFP</u> | <u>100</u> | | | <u>mud</u> |
| ____ | ____ | %gas | %oil | %water | %mud |
| ____ | ____ | %gas | %oil | %water | %mud |
| ____ | ____ | %gas | %oil | %water | %mud |

Rec Total _____ BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1619 Test 1200 T-On Location 5:11 am
 (B) First Initial Flow 27 Jars _____ T-Started 5:49 am
 (C) First Final Flow 28 Safety Joint _____ T-Open 7:27 am
 (D) Initial Shut-In 572 Circ Sub _____ T-Pulled 12:32 pm
 (E) Second Initial Flow 33 Hourly Standby _____ T-Out 2:20 pm
 (F) Second Final Flow 49 Mileage 52 52 Comments _____
 (G) Final Shut-In 388 Sampler _____
 (H) Final Hydrostatic 1604 Straddle _____ EM Tool 350
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1252
 Sub Total 1252 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65667**

4/10

Well Name & No. Younger 1-17 Test No. 4 Date 20 MAY 19
 Company Summit Operating LLC Elevation 2006 KB 2001 GL
 Address 1605 Delarosa Victoria KS 67671
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 4
 Location: Sec. 17 Twp 16S Rge. 17W Co. Rush State KS

Interval Tested 3352-3393 Zone Tested Lansing G
 Anchor Length 41 Drill Pipe Run 3301 Mud Wt. 8.8
 Top Packer Depth 3377 Drill Collars Run 30 Vis 43
 Bottom Packer Depth 3352 Wt. Pipe Run - WL 9.6
 Total Depth 3393 Chlorides 3000 ppm System LCM 2#

Blow Description IF Blow built to 9 inches
BSI slight surface blow back
FF Blow to BOB 5 sec. Total build 77 inches
FSI No blow back

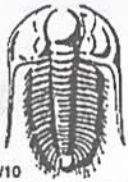
| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|------------|-------------|------|--------|-------------|
| <u>5</u> | <u>Mud</u> | | | | <u>100%</u> |
| <u>175</u> | <u>GIP</u> | <u>100%</u> | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Rec Total _____ BHT 100 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1602 Test 1200 T-On Location 10:25 pm
 (B) First Initial Flow 31 Jars _____ T-Started 11:03 pm
 (C) First Final Flow 16 Safety Joint _____ T-Open 12:36 am
 (D) Initial Shut-In 683 Circ Sub _____ T-Pulled 4:11 am
 (E) Second Initial Flow 9 Hourly Standby _____ T-Out 5:46 am
 (F) Second Final Flow 14 Mileage 52 52 Comments _____
 (G) Final Shut-In 795 Sampler _____
 (H) Final Hydrostatic 1596 Straddle _____ EM Tool 350
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1602
 Sub Total 1252 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

Tribolite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65668

Well Name & No. Younger 1-17 Test No. 5 Date 21 MAY 19
 Company Summit operating LLC Elevation 2006 KB 2001 GL
 Address 1005 Delarosa Victoria KS 67671
 Co. Rep/Geo. Marc Downing Rig Discovery Rig 4
 Location: Sec. 17 Twp 16S Rge. 17W Co. Rush State KS

Interval Tested 3384-3450 Zone Tested Lansing/Kansas City zones H,I,J
 Anchor Length 66 Drill Pipe Run 3331 Mud Wt. 8.9
 Top Packer Depth 3379 Drill Collars Run 30 Vis 56
 Bottom Packer Depth 3384 Wt. Pipe Run - WL 8.8
 Total Depth 3450 Chlorides 4500ppm System LCM 2#

Blow Description IF Blow built to 2 inch
FSI No blow back
FF Blow built to 1/4 inch
FSI No blow back

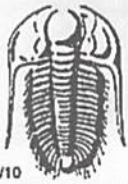
| Rec | Feet of | %gas | %oil | %water | %mud |
|-----------|------------|------|------|------------|------|
| <u>30</u> | <u>Mud</u> | | | <u>100</u> | |
| | | | | | |
| | | | | | |
| | | | | | |

Rec Total 30 BHT 95 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1631 Test 1200 T-On Location 3:42 pm
 (B) First Initial Flow 26 Jars _____ T-Started 4:05 pm
 (C) First Final Flow 28 Safety Joint _____ T-Open 5:52 pm
 (D) Initial Shut-In 103 Circ Sub _____ T-Pulled 7:57 pm
 (E) Second Initial Flow 29 Hourly Standby _____ T-Out 9:44 pm
 (F) Second Final Flow 31 Mileage 52 52 Comments _____
 (G) Final Shut-In 50 Sampler _____
 (H) Final Hydrostatic 1615 Straddle _____ EM Tool 350
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 350
 Accessibility _____ Total 1602
 Sub Total 1252 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65669**

4/10

Well Name & No. Younger 1-17 Test No. 6 Date 22 MAY
 Company Summit Operating Elevation 2008 KB 2001 GL
 Address 1005 Delcora Victoria KS 67671
 Co. Rep/Geo. Marc Downing Rig Discovery Rig 4
 Location: Sec. 17 Twp 16S Rge. 17 Co. Rush State KS

Interval Tested 3447-3489 Zone Tested Lansing/Kansas City zones K4L
 Anchor Length 42 Drill Pipe Run 3396 Mud Wt. 8.9
 Top Packer Depth 3442 Drill Collars Run 30 Vis 56
 Bottom Packer Depth 3447 Wt. Pipe Run - WL 8.8
 Total Depth 3489 Chlorides 4500 ppm System LCM 2#

Blow Description IF Blow to BOB in 1 minute / Total build 30 inches
ESI No blow back

FF Blow to BOB at open / Total build 98 inches
ESI No blow back

| Rec | Feet of | %gas | %oil | %water | %mud |
|-------------|------------|------------|------|--------|------|
| <u>15</u> | | | | | |
| <u>1040</u> | <u>6IP</u> | <u>100</u> | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Rec Total BHT 100 Gravity API RW @ ° F Chlorides ppm

(A) Initial Hydrostatic 1667 Test 1200 T-On Location 5:44 am
 (B) First Initial Flow 20 Jars T-Started 6:41 am
 (C) First Final Flow 19 Safety Joint T-Open 8:25 am
 (D) Initial Shut-In 556 Circ Sub T-Pulled 12:00 pm
 (E) Second Initial Flow 15 Hourly Standby T-Out 1:26 pm
 (F) Second Final Flow 26 Mileage 52 52 Comments
 (G) Final Shut-In 527 Sampler
 (H) Final Hydrostatic 1648 Straddle EM Tool 350
 Shale Packer Ruined Shale Packer
 Extra Packer Ruined Packer
 Extra Recorder Extra Copies

Initial Open 5
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90
 Sub Total 1252 Sub Total 350 Total 1602
 MP/DST Disc't

Approved By _____ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65670

Well Name & No. Younger 1-17 Test No. 7 Date 22 MAY 19
 Company Summit operating Elevation 2008 KB 2001 GL
 Address 1805 Delarosa Victoria Kansas 67671
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 4
 Location: Sec. 17 Twp 16S Rge. 17W Co. Rush State KS

Interval Tested 3485-3516 Zone Tested Quartz
 Anchor Length 31 Drill Pipe Run 3457 Mud Wt. 8.9
 Top Packer Depth 3480 Drill Collars Run 30 Vis 56
 Bottom Packer Depth 3485 Wt. Pipe Run - WL 8.8
 Total Depth 3516 Chlorides 4500 ppm System LCM 2#

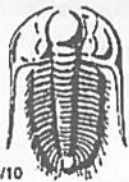
Blow Description FF Blow built to 9 inches
ISI No blow back
FF Blow to BOB 5 seconds / Total build 4 1/2 inches
ISI No blow back

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|------------|------------|------|--------|------------|
| <u>30</u> | <u>Mud</u> | | | | <u>100</u> |
| <u>466</u> | <u>GIP</u> | <u>100</u> | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Rec Total BHT 100 Gravity API RW @ ° F Chlorides ppm
 (A) Initial Hydrostatic 1743 Test 1200 T-On Location 8:25 pm
 (B) First Initial Flow 17 Jars - T-Started 8:58 pm
 (C) First Final Flow 22 Safety Joint - T-Open 10:30 pm
 (D) Initial Shut-In 194 Circ Sub - T-Pulled 1:30 am
 (E) Second Initial Flow 21 Hourly Standby - T-Out 2:54
 (F) Second Final Flow 25 Mileage 52 52 Comments -
 (G) Final Shut-In 427 Sampler -
 (H) Final Hydrostatic 1712 Straddle - EM Tool 350
 Initial Open 5 Shale Packer - Ruined Shale Packer -
 Initial Shut-In 30 Extra Packer - Ruined Packer -
 Final Flow 60 Extra Recorder - Extra Copies -
 Final Shut-In 90 Day Standby - Sub Total 350
 Accessibility - Total 1602
 Sub Total 1252 MP/DST Disc't -

Approved By _____ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65671**

Well Name & No. Younger 1-17 Test No. 8 Date 23 MAY 19
 Company Summit Operating Elevation 2008 KB 2001 GL
 Address 1005 Delarosa Victoria KS 67671
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 4
 Location: Sec. 17 Twp 16S Rge. 17W Co. Rush State KS

Interval Tested 3516-3536 Zone Tested Quartz
 Anchor Length 20 Drill Pipe Run 3491 Mud Wt. 8.9
 Top Packer Depth 3511 Drill Collars Run 30 Vis 5-6
 Bottom Packer Depth 3576 Wt. Pipe Run - WL 8.8
 Total Depth 3536 Chlorides 4500 ppm System LCM 2#

Blow Description FF Blow to BOB 10 seconds
ISI 8 inch blow back

FF Blow to BOB 1 min / Gas surface 45 min to light to gauge
FSI Light surface blow back

| Rec | Feet of | %gas | %oil | %water | %mud |
|-------------|--------------|-----------|------|-----------|----------|
| <u>2056</u> | <u>GMCLD</u> | <u>10</u> | | <u>85</u> | <u>5</u> |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |

Rec Total 2056 BHT 115 Gravity _____ API RW .191 @ 66° F Chlorides 38000 ppm

(A) Initial Hydrostatic 1707 Test 1200 T-On Location 9:20 am
 (B) First Initial Flow 289 Jars _____ T-Started 9:53 am
 (C) First Final Flow 193 Safety Joint _____ T-Open 11:40 am
 (D) Initial Shut-In 1146 Circ Sub _____ T-Pulled 4:45 pm
 (E) Second Initial Flow 276 Hourly Standby _____ T-Out 7:52 pm
 (F) Second Final Flow 966 Mileage 52 52 Comments _____
 (G) Final Shut-In 1138 Sampler _____
 (H) Final Hydrostatic 1692 Straddle _____ EM Tool 350

Initial Open 5 Shale Packer _____ Ruined Shale Packer _____
 Initial Shut-In 60 Extra Packer _____ Ruined Packer _____
 Final Flow 120 Extra Recorder _____ Extra Copies _____
 Final Shut-In 120 Day Standby _____ Sub Total 350
 Accessibility _____ Total 1602
 Sub Total 1252 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.