

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 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](mailto: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
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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
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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:	
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Form	ACO1 - Well Completion
Operator	K & N Petroleum, Inc.
Well Name	NORMAN KLEPPER A 1
Doc ID	1375591

All Electric Logs Run

Dual Induction
Sonic Log
Dual Comp Porosity
Microresistivity Log
Cement Bond Log

Form	ACO1 - Well Completion
Operator	K & N Petroleum, Inc.
Well Name	NORMAN KLEPPER A 1
Doc ID	1375591

Tops

Name	Top	Datum
Heebner	3095	-1256
Toronto	3111	-1272
Douglas	3132	-1293
Lansing	3252	-1413
BKC	3495	-1656
Viola	3522	-1683
Simpson SH	3531	-1692
Simpson SD	3537	-1698
Arbuckle	3576	-1737







**TREATMENT REPORT**

Acid Stage No. \_\_\_\_\_

Date 10/31/2017 District G.B. F.O. No. C45936  
 Company K&N Petroleum  
 Well Name & No. Norman Klepper A-1  
 Location \_\_\_\_\_ Field \_\_\_\_\_  
 County Stafford State KS

Type Treatment: Amt. Type Fluid Sand Size Pounds of Sand  
 Bkdown \_\_\_\_\_ Bbl./Gal. \_\_\_\_\_  
 \_\_\_\_\_ Bbl./Gal. \_\_\_\_\_  
 \_\_\_\_\_ Bbl./Gal. \_\_\_\_\_  
 \_\_\_\_\_ Bbl./Gal. \_\_\_\_\_  
 Flush \_\_\_\_\_ Bbl./Gal. \_\_\_\_\_

Casing: Size 5.5" Type & Wt. \_\_\_\_\_ Set at \_\_\_\_\_ ft.  
 Formation: \_\_\_\_\_ Perf. \_\_\_\_\_ to \_\_\_\_\_  
 Formation: \_\_\_\_\_ Perf. \_\_\_\_\_ to \_\_\_\_\_  
 Formation: \_\_\_\_\_ Perf. \_\_\_\_\_ to \_\_\_\_\_  
 Liner: Size \_\_\_\_\_ Type & Wt. \_\_\_\_\_ Top at \_\_\_\_\_ ft. Bottom at \_\_\_\_\_ ft.  
 Cemented:  Perforated from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 Tubing: Size & Wt. \_\_\_\_\_ Swung at \_\_\_\_\_ ft.  
 Perforated from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Treated from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. No. ft. 0  
 from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. No. ft. 0  
 from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. No. ft. 0

Actual Volume of Oil / Water to Load Hole: \_\_\_\_\_ Bbl./Gal.

Open Hole Size \_\_\_\_\_ T.D. \_\_\_\_\_ ft. P.B. to \_\_\_\_\_ ft.

Pump Trucks. No. Used: Std. 365 Sp. \_\_\_\_\_ Twin \_\_\_\_\_  
 Auxiliary Equipment 327  
 Personnel Nathan-Greg-Eddy  
 Auxiliary Tools \_\_\_\_\_  
 Plugging or Sealing Materials: Type \_\_\_\_\_ Gals. \_\_\_\_\_ lb.

Company Representative Ed N. Treater Nathan W.

TIME a.m./p.m.	PRESSURES		Total Fluid Pumped	REMARKS
	Tubing	Casing		
9:00		5.5"		On Location. Tally pipe and run float equipment.
				Pipe-3691.58' Centralizers-1,3,4,6,7,10
				Baffle-3674' Baskets-2,5
				Tag bottom with extra joint of pipe at 3700' Lay back down extra joint.
				Break circulation withn mud pump. Circulate for 1 hour.
				Pump 600gal Mud Flush.
				Plug Rat Hole with 30sk.
				Mix 120sk 60/40poz 2%gel 12%salt .75%C-37 .25%C-12 .75%C-41p
				Mix 150sk 60/40poz 2%gel 12%salt .75%C-37 .25%C-12 .75%C-41p
				5#/sk Gilsonite.
				Wash out pump and lines.
				Displace with 89.6bbls at 6.5bpm-900# Plug landed at 1250#
2:30				Released pressure. Float Held.



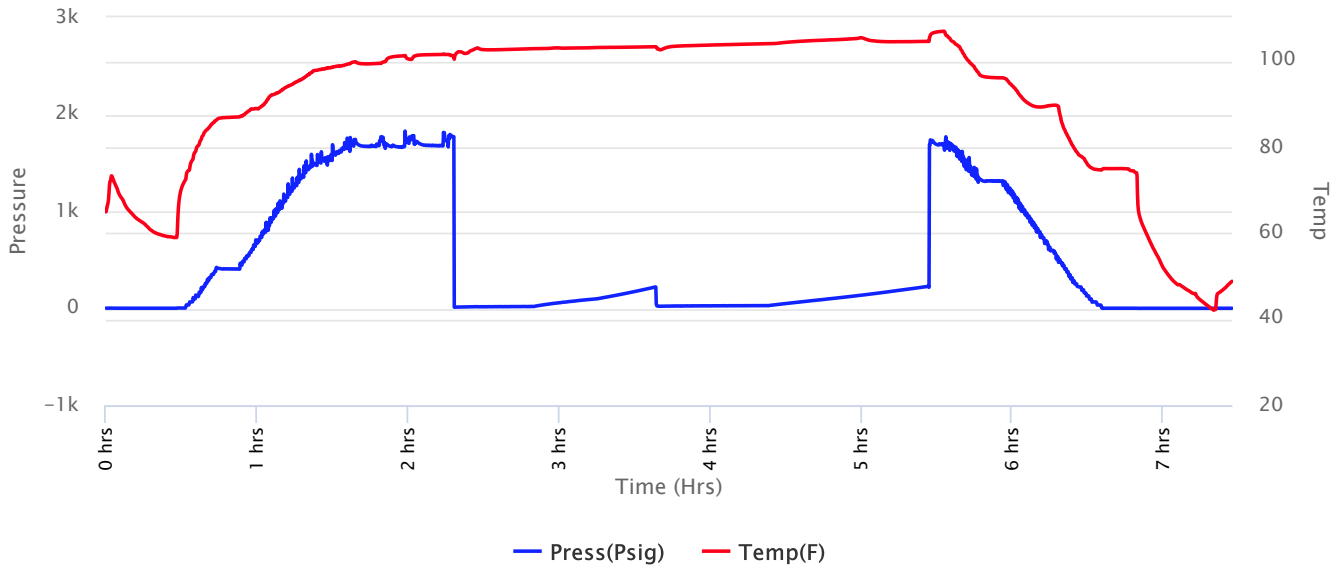
**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

**DATE**  
 October  
**28**  
 2017

**DST #1**      **Formation: Simpson/viola**      **Test Interval: 3477 - 3563'**      **Total Depth: 3563'**  
 Time On: 16:55 10/28      Time Off: 00:10 10/29  
 Time On Bottom: 19:09 10/28      Time Off Bottom: 22:09 10/29

Electronic Volume Estimate: 525'	<u>1st Open</u> Minutes: 30 7.5" at 30 min	<u>1st Close</u> Minutes: 45 4" at 45 min	<u>2nd Open</u> Minutes: 45 33.3" at 45 min	<u>2nd Close</u> Minutes: 60 15.7" at 60 min
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 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
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**DATE**  
 October  
**28**  
 2017

**DST #1**      **Formation: Simpson/viola**      **Test Interval: 3477 - 3563'**      **Total Depth: 3563'**  
 Time On: 16:55 10/28      Time Off: 00:10 10/29  
 Time On Bottom: 19:09 10/28      Time Off Bottom: 22:09 10/29

Recovered

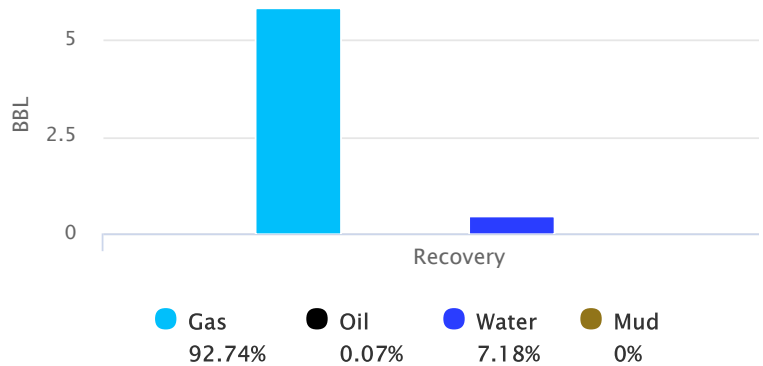
Foot	BBLS	Description of Fluid	Gas %	Oil %	Water %	Mud %
409	5.82007	G	100	0	0	0
32	0.45536	SLOCW	0	1	99	0

Total Recovered: 441 ft  
 Total Barrels Recovered: 6.27543

Reversed Out  
 NO

Initial Hydrostatic Pressure	1678	PSI
Initial Flow	11 to 21	PSI
<b>Initial Closed in Pressure</b>	<b>220</b>	<b>PSI</b>
Final Flow Pressure	27 to 30	PSI
<b>Final Closed in Pressure</b>	<b>227</b>	<b>PSI</b>
Final Hydrostatic Pressure	1685	PSI
Temperature	106	°F
Pressure Change Initial Close / Final Close	0.0	%

Recovery at a glance





**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
County: STAFFORD  
State: Kansas  
Drilling Contractor: Southwind Drilling,  
Inc - Rig 3  
Elevation: 1830 GL  
Field Name: Heyen  
Pool: Infield  
Job Number: 72

<p><b>DATE</b> October <b>28</b> 2017</p>
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<b>DST #1</b>	<b>Formation:</b> Simpson/viola	<b>Test Interval: 3477 -</b> <b>3563'</b>	<b>Total Depth: 3563'</b>
	Time On: 16:55 10/28	Time Off: 00:10 10/29	
	Time On Bottom: 19:09 10/28	Time Off Bottom: 22:09 10/29	

**REMARKS:**

- 1O. WSB, Built to 7 1/4 inches
- 1C. 4 inch Blow Back
- 2O. 1" Blow, BOB in 3 Mins
- 2C BBBB

Tool Sample: 1 % O 99% M





**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
County: STAFFORD  
State: Kansas  
Drilling Contractor: Southwind Drilling,  
Inc - Rig 3  
Elevation: 1830 GL  
Field Name: Heyen  
Pool: Infield  
Job Number: 72

<p><b>DATE</b> October <b>28</b> 2017</p>
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**DST #1**      **Formation:**      **Test Interval: 3477 -**      **Total Depth: 3563'**  
**Simpson/viola**      **3563'**  
Time On: 16:55 10/28      Time Off: 00:10 10/29  
Time On Bottom: 19:09 10/28      Time Off Bottom: 22:09 10/29

**Mud Properties**

**Mud Type:** Chem      **Weight:** 9.2      **Viscosity:** 55      **Filtrate:** 8      **Chlorides:** 6000 ppm





**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

**DATE**  
 October  
**29**  
 2017

**DST #2**      **Formation:** Simpson/viola /arbuckle  
**Test Interval: 3475 - 3590'**      **Total Depth: 3590'**  
 Time On: 08:48 10/29      Time Off: 14:58 10/29  
 Time On Bottom: 10:20 10/29      Time Off Bottom: 13:20 10/29

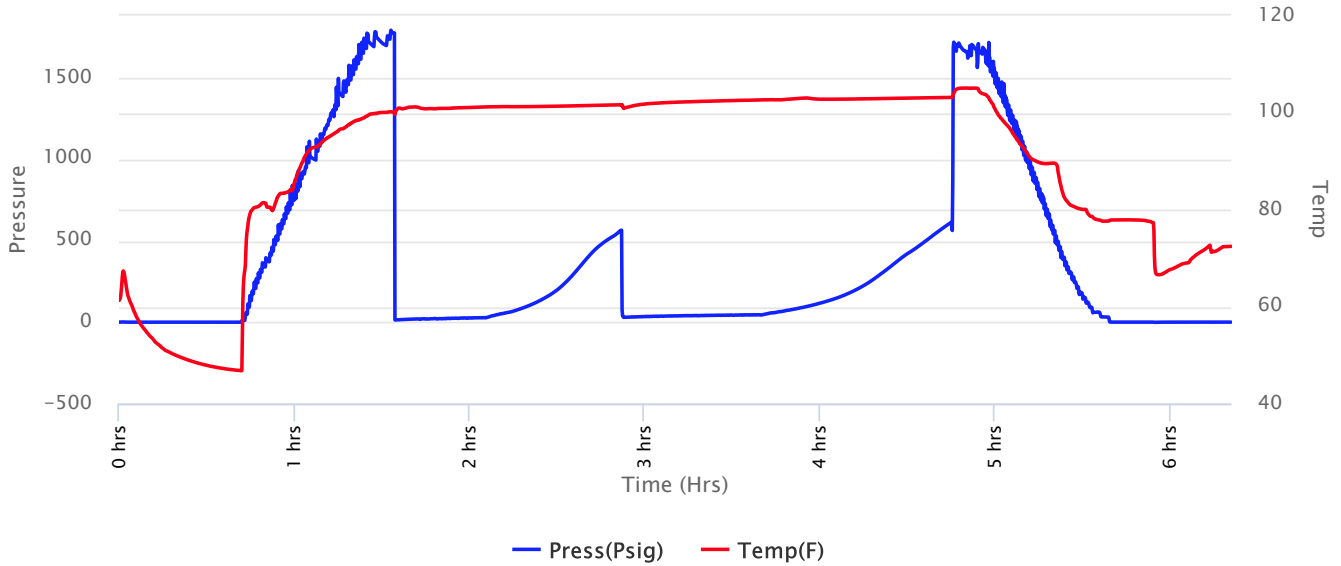
Electronic Volume Estimate:  
 322'

1st Open  
 Minutes: 30  
 8" at 30 min

1st Close  
 Minutes: 45  
 .7" at 45 min

2nd Open  
 Minutes: 45  
 27.3" at 45 min

2nd Close  
 Minutes: 60  
 0" at 60 min







**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
County: STAFFORD  
State: Kansas  
Drilling Contractor: Southwind Drilling,  
Inc - Rig 3  
Elevation: 1830 GL  
Field Name: Heyen  
Pool: Infield  
Job Number: 72

<b>DATE</b> October <b>29</b> 2017
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**DST #2**      **Formation:**  
**Simpson/viola**  
**/arbuckle**      **Test Interval: 3475 -**  
**3590'**      **Total Depth: 3590'**

Time On: 08:48 10/29      Time Off: 14:58 10/29  
Time On Bottom: 10:20 10/29      Time Off Bottom: 13:20 10/29

**REMARKS:**

- 10. WSB Built to 8 inches in 30 mins
- 1C. 3/4 BLOW Back
- 20. Bottom Of Bucket in 5 mins
- 2C. NO Blow Back

Tool Sample: 10% G 10% O 80 % M







**Company: K & N Petroleum, Inc**  
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County: STAFFORD  
State: Kansas  
Drilling Contractor: Southwind Drilling,  
Inc - Rig 3  
Elevation: 1830 GL  
Field Name: Heyen  
Pool: Infield  
Job Number: 72

<b>DATE</b> October <b>29</b> 2017
---

**DST #2**      **Formation:**  
**Simpson/viola**  
**/arbuckle**      **Test Interval: 3475 -**  
**3590'**      **Total Depth: 3590'**

Time On: 08:48 10/29      Time Off: 14:58 10/29  
Time On Bottom: 10:20 10/29      Time Off Bottom: 13:20 10/29

**Mud Properties**

**Mud Type:** Chem      **Weight:** 9.5      **Viscosity:** 70      **Filtrate:** 24      **Chlorides:** 22000 ppm



**Company: K & N Petroleum, Inc**  
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 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling,  
 Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

<p><b>DATE</b>          October  <b>29</b>          2017</p>
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**DST #2**      **Formation:**      **Test Interval: 3475 -**      **Total Depth: 3590'**  
                          **Simpson/viola**  
                          **/arbuckle**  
                          Time On: 08:48 10/29      Time Off: 14:58 10/29  
                          Time On Bottom: 10:20 10/29      Time Off Bottom: 13:20 10/29

**Gas Volume Report**

1st Open

2nd Open

Time	Orifice	PSI	MCF/D
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Time	Orifice	PSI	MCF/D
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**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

**DATE**  
 October  
**30**  
 2017

**DST #3 Formation: Arbuckle Test Interval: 3592 - 3604' Total Depth: 3604'**

Time On: 20:19 10/29 Time Off: 02:32 10/30  
 Time On Bottom: 21:53 10/29 Time Off Bottom: 00:27 10/30

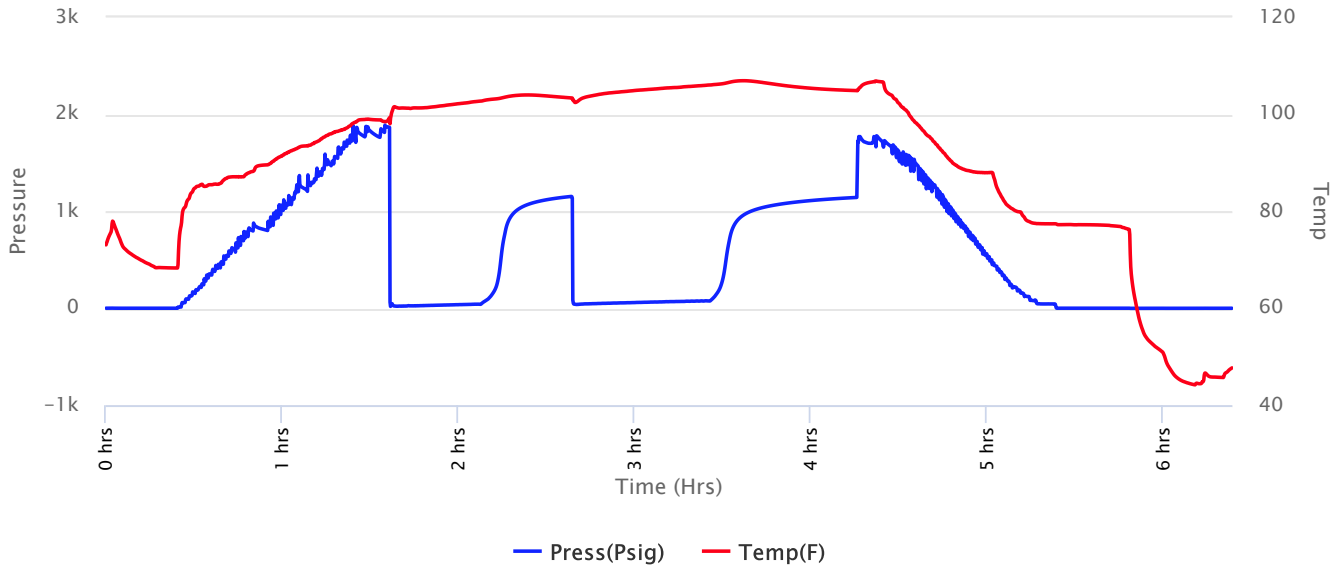
Electronic Volume Estimate:  
 2323'

1st Open  
 Minutes: 30  
 117.5" at 30 min

1st Close  
 Minutes: .7  
 30" at .7 min

2nd Open  
 Minutes: 45  
 167.9" at 45 min

2nd Close  
 Minutes: 45  
 3.6" at 45 min





**Company: K & N Petroleum, Inc**  
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SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

**DATE**  
 October  
**30**  
 2017

**DST #3 Formation: Arbuckle Test Interval: 3592 - 3604' Total Depth: 3604'**

Time On: 20:19 10/29 Time Off: 02:32 10/30  
 Time On Bottom: 21:53 10/29 Time Off Bottom: 00:27 10/30

Recovered

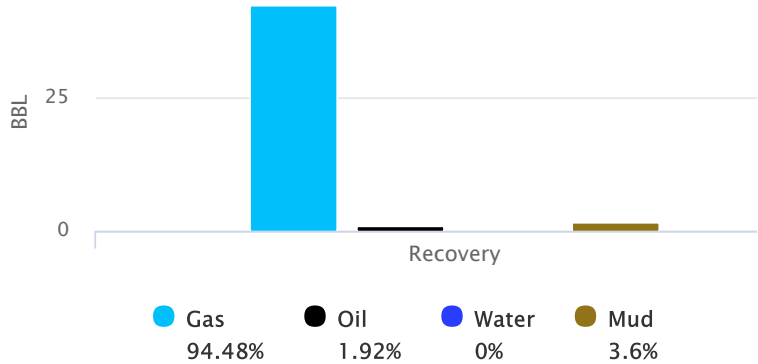
Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
2976	42.34848	G	100	0	0	0
48	0.68304	O	0	100	0	0
126	1.79298	SLOCHOM	0	10	0	90

Total Recovered: 3150 ft  
 Total Barrels Recovered: 44.8245

Reversed Out  
 NO

Initial Hydrostatic Pressure	1766	PSI
Initial Flow	20 to 41	PSI
<b>Initial Closed in Pressure</b>	<b>1152</b>	<b>PSI</b>
Final Flow Pressure	41 to 76	PSI
<b>Final Closed in Pressure</b>	<b>1143</b>	<b>PSI</b>
Final Hydrostatic Pressure	1767	PSI
Temperature	107	°F
Pressure Change Initial Close / Final Close	0.7	%

**Recovery at a glance**





**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
County: STAFFORD  
State: Kansas  
Drilling Contractor: Southwind Drilling,  
Inc - Rig 3  
Elevation: 1830 GL  
Field Name: Heyen  
Pool: Infield  
Job Number: 72

<b>DATE</b> October <b>30</b> 2017
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**DST #3      Formation: Arbuckle      Test Interval: 3592 -      Total Depth: 3604'**  
**3604'**

Time On: 20:19 10/29      Time Off: 02:32 10/30  
Time On Bottom: 21:53 10/29      Time Off Bottom: 00:27 10/30

**REMARKS:**

- 1O. 1/2 inch Blow. BOB in 2 1/4 mins
- 1C. 3/4 inch Blow Back
- 2O. 1 inch Blow. BOB in 1 mins
- 2C. 3 1/2 inch Blow Back

Tool Sample: 30% O 70% HOM

Gravity: 40 @ 60 degrees F



**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

<p><b>DATE</b>          October  <b>30</b>          2017</p>
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**DST #3    Formation: Arbuckle    Test Interval: 3592 - 3604'    Total Depth: 3604'**

Time On: 20:19 10/29                      Time Off: 02:32 10/30  
 Time On Bottom: 21:53 10/29    Time Off Bottom: 00:27 10/30

**Down Hole Makeup**

<b>Heads Up:</b> 20.64 FT	<b>Packer 1:</b> 3587 FT
<b>Drill Pipe:</b> 3587.48 FT <i>ID-3 1/2</i>	<b>Packer 2:</b> 3592 FT
<b>Weight Pipe:</b> 0 FT <i>ID-2 7/8</i>	<b>Top Recorder:</b> 3579 FT
<b>Collars:</b> 0 FT <i>ID-2 1/4</i>	<b>Bottom Recorder:</b> 3597 FT
<b>Test Tool:</b> 26.16 FT <i>ID-3 1/2-FH</i>	<b>Well Bore Size:</b> 7 7/8
<b>Total Anchor:</b> 12	<b>Surface Choke:</b> 1"
<b><u>Anchor Makeup</u></b>	<b>Bottom Choke:</b> 5/8"
<b>Packer Sub:</b> 1 FT	
<b>Perforations: (top):</b> 3 FT <i>4 1/2-FH</i>	
<b>Change Over:</b> 0 FT	
<b>Drill Pipe: (in anchor):</b> 0 FT <i>ID-3 1/2</i>	
<b>Change Over:</b> 0 FT	
<b>Perforations: (below):</b> 8 FT <i>4 1/2-FH</i>	



**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
County: STAFFORD  
State: Kansas  
Drilling Contractor: Southwind Drilling,  
Inc - Rig 3  
Elevation: 1830 GL  
Field Name: Heyen  
Pool: Infield  
Job Number: 72

<p><b>DATE</b> October <b>30</b> 2017</p>
---

**DST #3    Formation: Arbuckle    Test Interval: 3592 -    Total Depth: 3604'**  
**3604'**

Time On: 20:19 10/29                      Time Off: 02:32 10/30  
Time On Bottom: 21:53 10/29    Time Off Bottom: 00:27 10/30

**Mud Properties**

**Mud Type:** Chem                      **Weight:** 9.5                      **Viscosity:** 70                      **Filtrate:** 24                      **Chlorides:** 22000 ppm





**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling,  
 Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

<b>DATE</b>
October
<b>30</b>
2017

**DST #3    Formation: Arbuckle    Test Interval: 3592 -    Total Depth: 3604'**  
**3604'**

Time On: 20:19 10/29                      Time Off: 02:32 10/30  
 Time On Bottom: 21:53 10/29    Time Off Bottom: 00:27 10/30

**Gas Volume Report**

1st Open

2nd Open

Time	Orifice	PSI	MCF/D
------	---------	-----	-------

Time	Orifice	PSI	MCF/D
------	---------	-----	-------



**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

**DATE**  
 October  
**30**  
 2017

**DST #4 Formation: Arbuckle Test Interval: 3592 - 3615' Total Depth: 3615'**

Time On: 09:55 10/30 Time Off: 16:18 10/30  
 Time On Bottom: 11:16 10/30 Time Off Bottom: 13:46 10/30

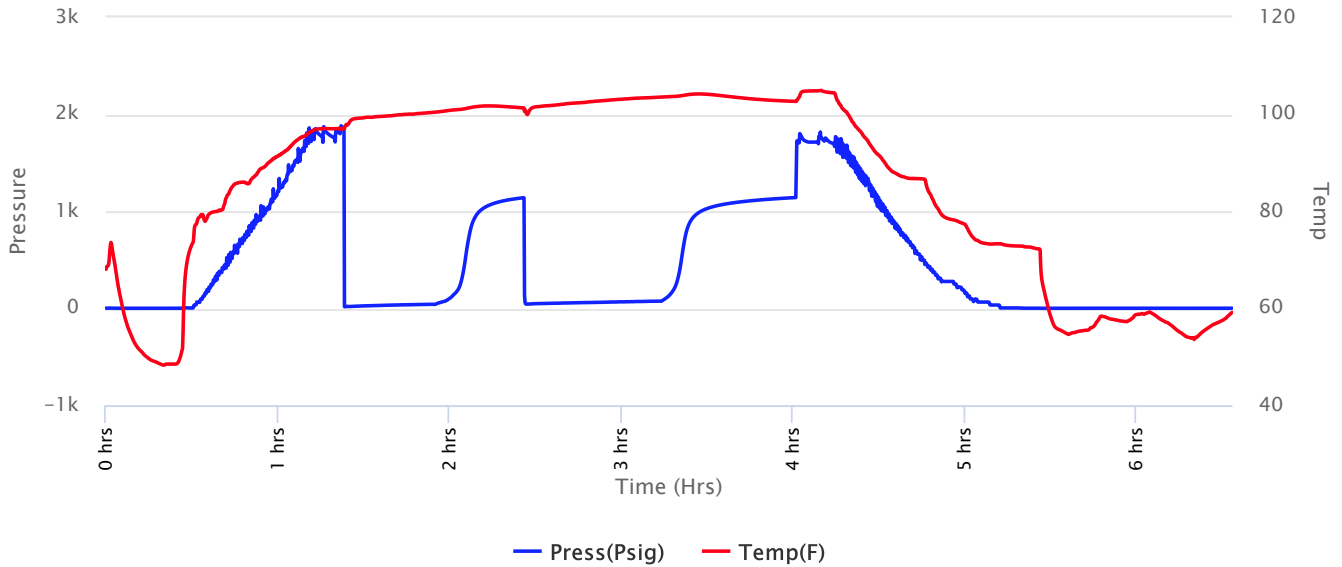
Electronic Volume Estimate:  
 1552'

1st Open  
 Minutes: 30  
 66.1" at 30 min

1st Close  
 Minutes: 30  
 1.9" at 30 min

2nd Open  
 Minutes: 45  
 114" at 45 min

2nd Close  
 Minutes: 45  
 5.5" at 45 min





**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

**DATE**  
 October  
**30**  
 2017

**DST #4 Formation: Arbuckle Test Interval: 3592 - 3615' Total Depth: 3615'**

Time On: 09:55 10/30 Time Off: 16:18 10/30  
 Time On Bottom: 11:16 10/30 Time Off Bottom: 13:46 10/30

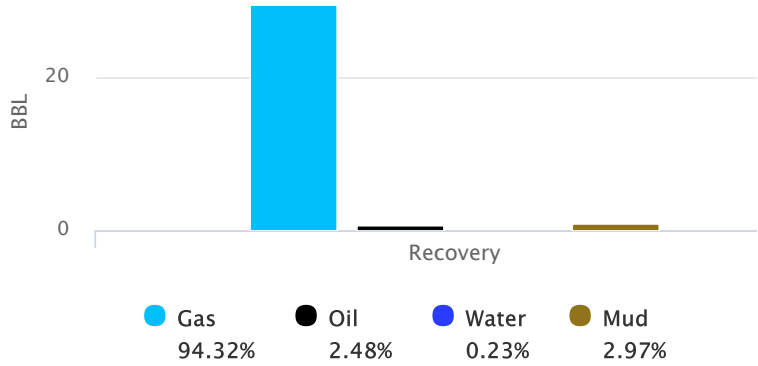
Recovered

Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
2042	29.05766	G	100	0	0	0
37	0.52651	O	0	100	0	0
63	0.89649	SLWCOCMCG	45	25	3	27
63	0.89649	SLOC SLWC SLGCM	15	3	5	77

Total Recovered: 2205 ft  
 Total Barrels Recovered: 31.37715

Reversed Out  
 NO

**Recovery at a glance**



Initial Hydrostatic Pressure	1757	PSI
Initial Flow	16 to 41	PSI
<b>Initial Closed in Pressure</b>	<b>1139</b>	<b>PSI</b>
Final Flow Pressure	46 to 74	PSI
<b>Final Closed in Pressure</b>	<b>1142</b>	<b>PSI</b>
Final Hydrostatic Pressure	1756	PSI
Temperature	105	°F
Pressure Change Initial Close / Final Close	0.0	%



**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
County: STAFFORD  
State: Kansas  
Drilling Contractor: Southwind Drilling,  
Inc - Rig 3  
Elevation: 1830 GL  
Field Name: Heyen  
Pool: Infield  
Job Number: 72

<p><b>DATE</b> October <b>30</b> 2017</p>
---

**DST #4      Formation: Arbuckle      Test Interval: 3592 -      Total Depth: 3615'**  
**3615'**

Time On: 09:55 10/30      Time Off: 16:18 10/30  
Time On Bottom: 11:16 10/30      Time Off Bottom: 13:46 10/30

**REMARKS:**

- 1O. 3/4" Blow. BOB in 5 1/2 mins
- 1C. 1 3/4 inch Blow Back
- 2O. 1 1/2" Blow. BOB in 1 1/2 mins
- 2C. 5 1/2" Blow Back

Tool Sample: 10% O 5% W 85 HMO

Gravity: 40 @ 60 degrees F



**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

<p><b>DATE</b>          October  <b>30</b>          2017</p>
--

**DST #4    Formation: Arbuckle    Test Interval: 3592 - 3615'    Total Depth: 3615'**

Time On: 09:55 10/30                      Time Off: 16:18 10/30  
 Time On Bottom: 11:16 10/30    Time Off Bottom: 13:46 10/30

**Down Hole Makeup**

<b>Heads Up:</b> 20.64 FT	<b>Packer 1:</b> 3587 FT
<b>Drill Pipe:</b> 3587.48 FT <i>ID-3 1/2</i>	<b>Packer 2:</b> 3592 FT
<b>Weight Pipe:</b> 0 FT <i>ID-2 7/8</i>	<b>Top Recorder:</b> 3579 FT
<b>Collars:</b> 0 FT <i>ID-2 1/4</i>	<b>Bottom Recorder:</b> 3597 FT
<b>Test Tool:</b> 26.16 FT <i>ID-3 1/2-FH</i>	<b>Well Bore Size:</b> 7 7/8
<b>Total Anchor:</b> 23	<b>Surface Choke:</b> 1"
<u><b>Anchor Makeup</b></u>	<b>Bottom Choke:</b> 5/8"
<b>Packer Sub:</b> 1 FT	
<b>Perforations: (top):</b> 3 FT <i>4 1/2-FH</i>	
<b>Change Over:</b> 0 FT	
<b>Drill Pipe: (in anchor):</b> 0 FT <i>ID-3 1/2</i>	
<b>Change Over:</b> 0 FT	
<b>Perforations: (below):</b> 19 FT <i>4 1/2-FH</i>	



**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
County: STAFFORD  
State: Kansas  
Drilling Contractor: Southwind Drilling,  
Inc - Rig 3  
Elevation: 1830 GL  
Field Name: Heyen  
Pool: Infield  
Job Number: 72

<b>DATE</b> October <b>30</b> 2017
---

**DST #4      Formation: Arbuckle      Test Interval: 3592 -      Total Depth: 3615'**  
**3615'**

Time On: 09:55 10/30      Time Off: 16:18 10/30  
Time On Bottom: 11:16 10/30      Time Off Bottom: 13:46 10/30

**Mud Properties**

**Mud Type:** Chem      **Weight:** 9.5      **Viscosity:** 49      **Filtrate:** 14.4      **Chlorides:** 12000 ppm



**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

SEC: 17 TWN: 22S RNG: 11W  
County: STAFFORD  
State: Kansas  
Drilling Contractor: Southwind Drilling,  
Inc - Rig 3  
Elevation: 1830 GL  
Field Name: Heyen  
Pool: Infield  
Job Number: 72

<b>DATE</b> October <b>30</b> 2017
---

**DST #4    Formation: Arbuckle    Test Interval: 3592 -    Total Depth: 3615'**  
**3615'**

Time On: 09:55 10/30                      Time Off: 16:18 10/30  
Time On Bottom: 11:16 10/30    Time Off Bottom: 13:46 10/30

**Gas Volume Report**

1st Open

2nd Open

Time	Orifice	PSI	MCF/D
------	---------	-----	-------

Time	Orifice	PSI	MCF/D
------	---------	-----	-------



# Musgrove

Petroleum Geology  
212 Main Street, Claflin KS

### NOTES

Company: K&N Petroleum, Inc.

Lease: Norman Klepper A #1

Field: Unknown

Location: NE-SW-SE-SW ( 475'FSL & 1801' FWL)

Sec: 17 Twsp: 22S Rge: 11W

County: Stafford State: Kansas

GL: 1830' KB: 1839'

Contractor: Southwind Drilling, Inc. (Rig #9)

Spud: 10/25/2017 Comp: 10/31/2017

RTD: 3700' LTD: 3696'

Mud Up: 2800' Type Mud: Chemical

API #: 15-185-24000-00-00

Surface Casing: 8 5/8" @371'

Production Casing: 3695'

Electronic Surveys by: Pioneer Energy Services

Formation Testing: Trilobite Testing

Samples Saved From: 3000' to RTD

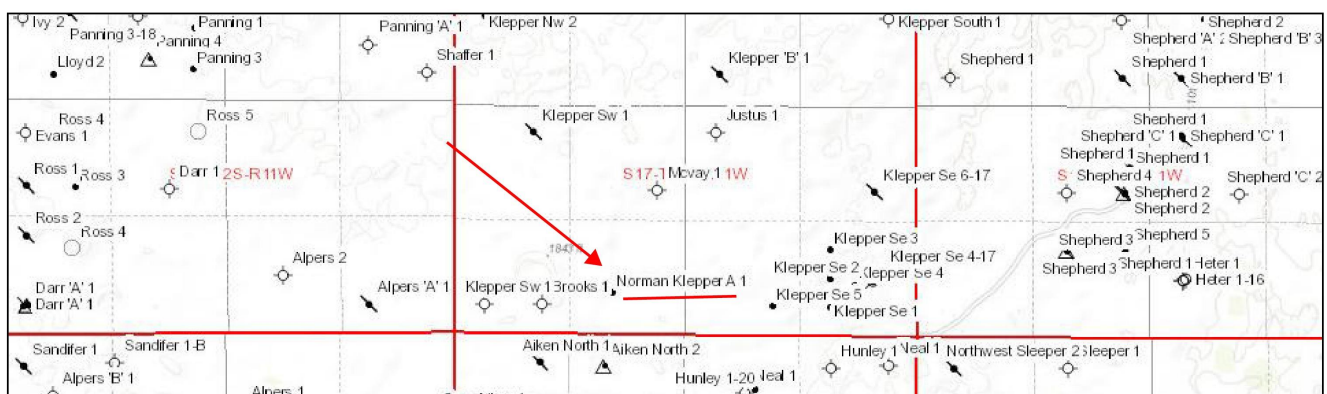
Drilling Time Kept From: 3000' to RTD

Samples Examined From: 3000' to RTD

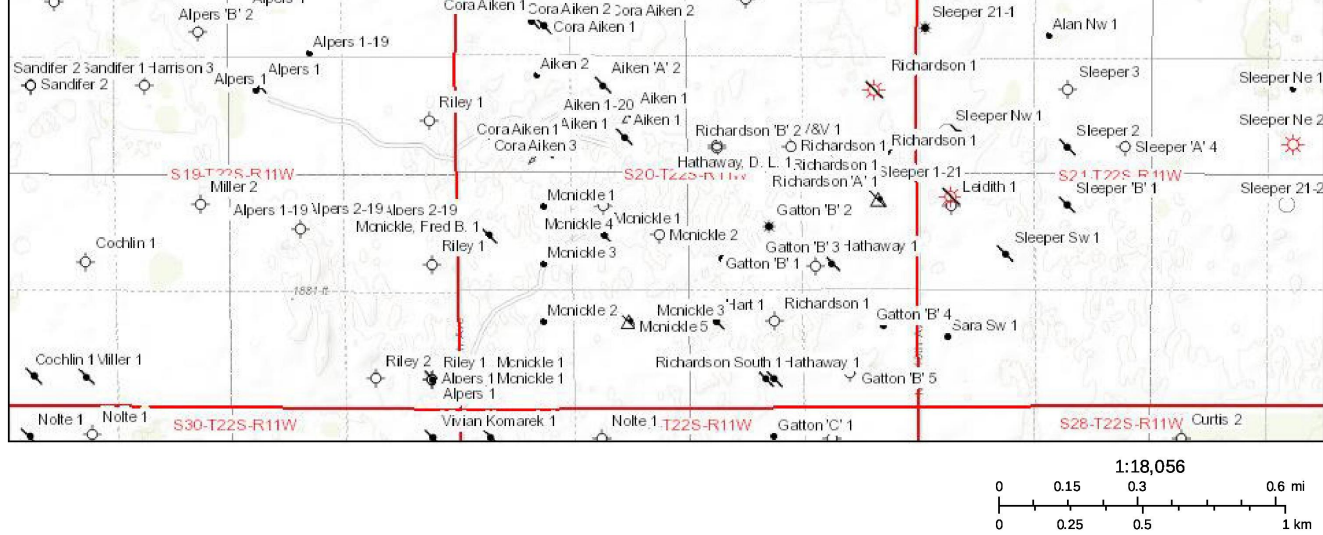
Geological Supervision from: 3000' to RTD

Geologist on Well: Wyatt Urban

### K&N Petroleum, Inc. - Norman Klepper #A-1







# K&N PETROLEUM, INC.

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
K&N- Norman Klepper #A-1					Hutchison Oil-Hunley #1-20				Bill Chew-Aiken North #1			
NE-SW-SE-SW 17-22S-11W					SW-NE-NW-NE 17-22S-11W				NE-NW-NW 17-22S-11W			
oil 1839 KB					oil 1831 KB				oil 1838 KB			
					Structural Relationship				Structural Relationship			
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Heebner	3095	-1256	3089	-1250	3091	-1260	4	10				
Toronto	3111	-1272	3107	-1268	3114	-1283	11	15				
Douglas	3132	-1293	3124	-1285	3123	-1292	-1	7				
Brown Lime	3230	-1391	3224	-1385	3227	-1396	5	11	3229	-1391	0	6
Lansing	3252	-1413	3248	-1409	3252	-1421	8	12	3254	-1416	3	7
BKC	3495	-1656	3495	-1656	3490	-1659	3	3				
Viola	3522	-1683	3522	-1683	3520	-1689	6	6	3504	-1666	-17	-17
Simpson	3531	-1692	3530	-1691	3530	-1699	7	8				
Simpson Sd.	3537	-1698	3537	-1698								
Arbuckle	3576	-1737	3578	-1739	3584	-1753	16	14	3583	-1745	8	6
RTD	3700	-1861	3700	-1861	3672	-1841	-20	-20	3662	-1824	-37	-37
LTD	3696	-1857	3696	-1857	3670	-1839	-18	-18				

### DRILLSTEM TESTS

No	Interval	Formation
1	3477-3563	Viola- Simpson
2	3475-3590	Arbuckle
3	3592-3604	Arbuckle
4	3592-3615	Arbuckle



**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

Tester: Ricky Ray  
 On-Site Contact: Musgrove Petroleum

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

**DATE**  
 October  
**28**  
 2017

**DST #1**  
**Formation:**  
 Simpson/Viola  
 Time On: 16:55 10/28  
 Time On Bottom: 19:09 10/28

**Test Interval: 3477 - 3563'**    **Total Depth: 3563'**  
 Time Off: 00:10 10/29  
 Time Off Bottom: 22:09 10/29

Mud Properties    Down Hole Makeup  
 Tester Communication

**Gas To Surface: NO**

**Well Flow: NO**

**Default View**

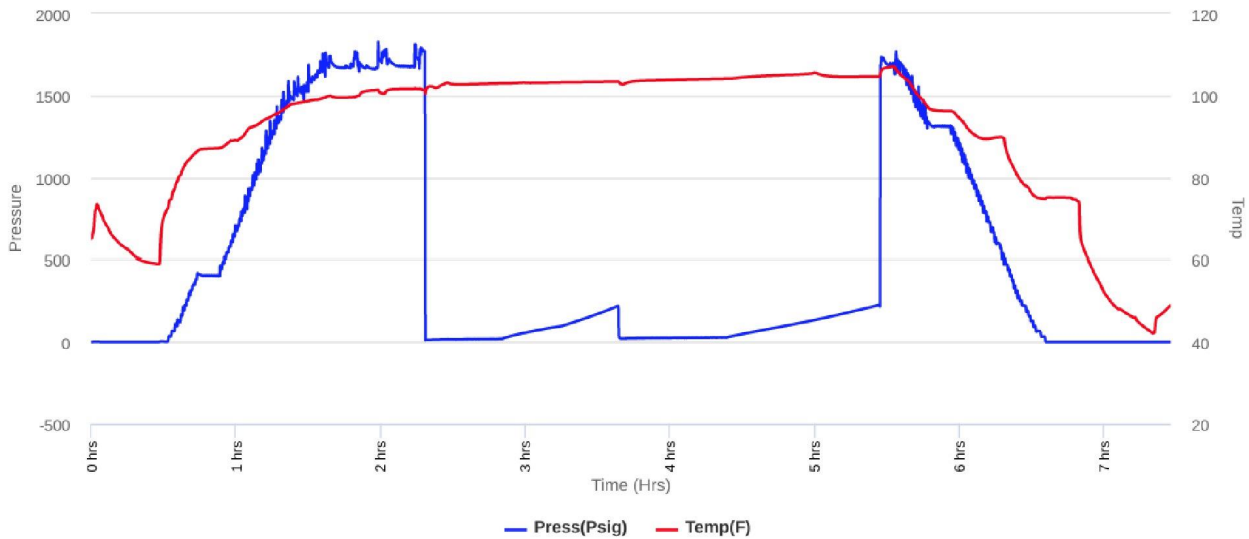
Electronic Volume Estimate:  
 525'

1st Open  
 Minutes: 30  
 7.5" at 30 min

1st Close  
 Minutes: 45  
 4" at 45 min

2nd Open  
 Minutes: 45  
 33.3" at 45 min

2nd Close  
 Minutes: 60  
 15.7" at 60 min



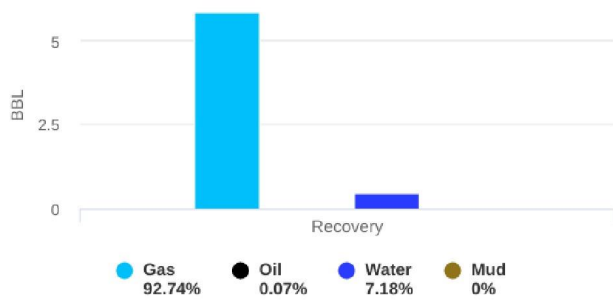
Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
409	5.82007	G	100	0	0	0
32	0.45536	SLOCW	0	1	99	0

Total Recovered: 441 ft  
 Total Barrels Recovered: 6.27543

Reversed Out  
NO

**Recovery at a glance**

Exclude Gas



Initial Hydrostatic Pressure	1678	PSI
Initial Flow	11 to 21	PSI
<b>Initial Closed in Pressure</b>	<b>220</b>	<b>PSI</b>
Final Flow Pressure	27 to 30	PSI
<b>Final Closed in Pressure</b>	<b>227</b>	<b>PSI</b>
Final Hydrostatic Pressure	1685	PSI
Temperature	106	°F
Pressure Change Initial Close / Final Close	0.0	%

Estimated Daily Production

**REMARKS:**

Initial Flow: Weak, surface blow increasing to 7 1/4 ins.  
 Initial Shut-in: 4 in. blow back.  
 Final Flow: 1 in. blow. BOB in 3 mins.  
 Final Shut-in: BOB blow back.

Tool Sample: 1% oil, 99% mud



**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

Tester: Ricky Ray  
 On-Site Contact: Musgrove Petroleum

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

**DATE**  
 October  
**29**  
 2017

**DST #2**      **Formation: Simpson/Viola/Arbuckle**      **Test Interval: 3475 - 3590'**      **Total Depth: 3590'**  
 Time On: 08:48 10/29      Time Off: 14:58 10/29  
 Time On Bottom: 10:20 10/29      Time Off Bottom: 13:20 10/29

Mud Properties

Down Hole Makeup

Gas To Surface: NO

Tester Communication

Well Flow: NO

Default View

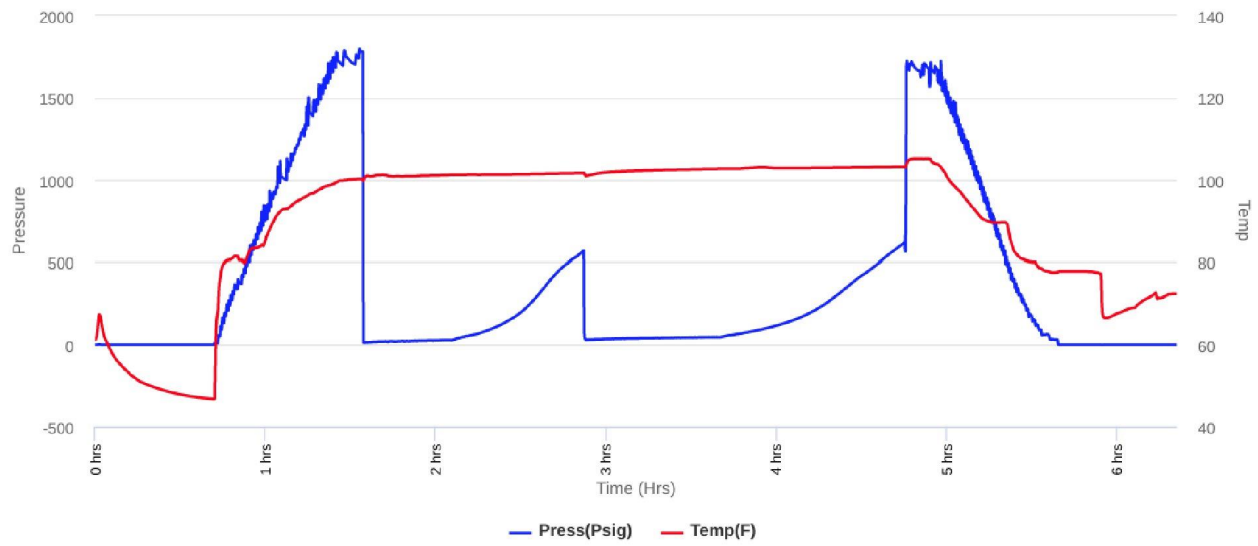
Electronic Volume Estimate:  
 322'

1st Open  
 Minutes: 30  
 8" at 30 min

1st Close  
 Minutes: 45  
 .7" at 45 min

2nd Open  
 Minutes: 45  
 27.3" at 45 min

2nd Close  
 Minutes: 60  
 0" at 60 min



<u>Recovered</u>		<u>Description of Fluid</u>	<u>Gas %</u>	<u>Oil %</u>	<u>Water %</u>	<u>Mud %</u>
<u>Foot</u>	<u>BBLs</u>					
431	6.13313	G	100	0	0	0
73	1.03879	SLOCHGCM	40	5	0	55

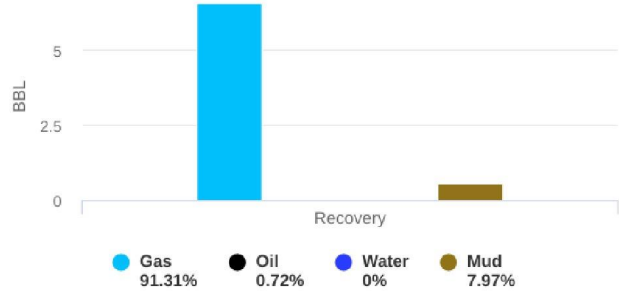
Total Recovered: 504 ft  
Total Barrels Recovered: 7.17192

**Reversed Out  
NO**

**Recovery at a glance**

Exclude Gas

Initial Hydrostatic Pressure	1702	PSI
Initial Flow	14 to 30	PSI
<b>Initial Closed in Pressure</b>	<b>567</b>	<b>PSI</b>
Final Flow Pressure	32 to 46	PSI
<b>Final Closed in Pressure</b>	<b>613</b>	<b>PSI</b>
Final Hydrostatic Pressure	1693	PSI
Temperature	104	°F
Pressure Change Initial Close / Final Close	0.0	%



Estimated Daily Production

**REMARKS:**

Initial Flow: Weak, surface blow increasing to 8 ins. in 30 mins.  
Initial Shut-in: 3/4 in. blow back.  
Final Flow: BOB in 5 mins.  
Final Shut-in: No blow back.

Tool Sample: 10% gas, 10% oil, 80% mud



**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

Tester: Ricky Ray  
On-Site Contact: Musgrove Petroleum

SEC: 17 TWN: 22S RNG: 11W  
County: STAFFORD  
State: Kansas  
Drilling Contractor: Southwind Drilling, Inc - Rig 3  
Elevation: 1830 GL  
Field Name: Heyen  
Pool: Infield  
Job Number: 72

**DATE**  
October  
**29**  
2017

**DST #3**      **Formation: Arbuckle**      **Test Interval: 3592 - 3604'**      **Total Depth: 3604'**  
Time On: 20:19 10/29      Time Off: 02:32 10/30  
Time On Bottom: 21:53 10/29      Time Off Bottom: 00:27 10/30

Mud Properties

Down Hole Makeup

Gas To Surface: NO

Tester Communication

Well Flow: NO

Default View

Electronic Volume Estimate:  
2323'

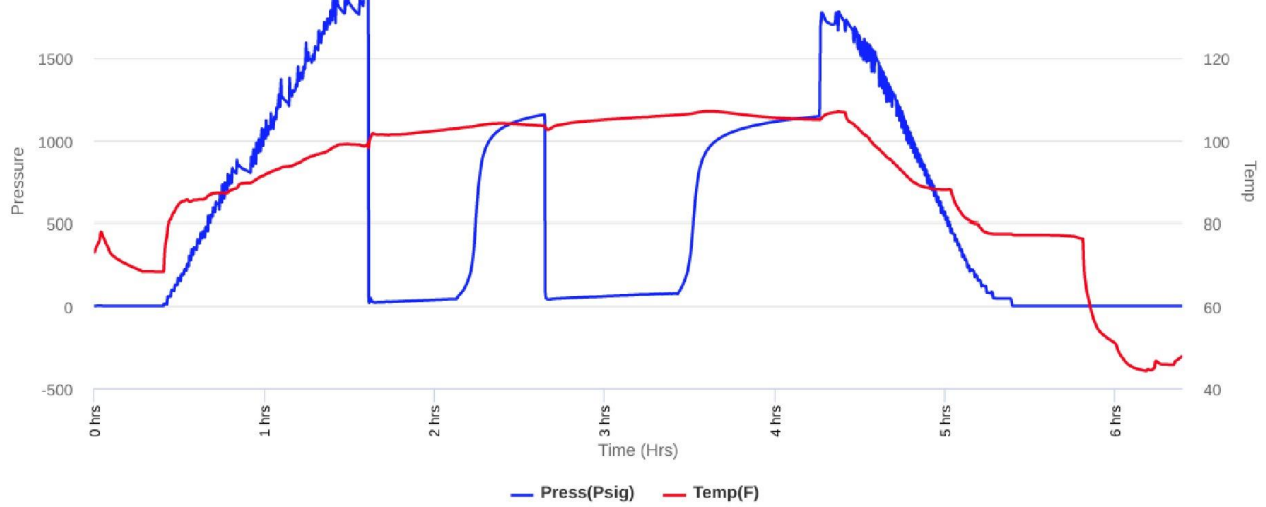
**1st Open**  
Minutes: 30  
117.5" at 30 min

**1st Close**  
Minutes: .7  
30" at .7 min

**2nd Open**  
Minutes: 45  
167.9" at 45 min

**2nd Close**  
Minutes: 45  
3.6" at 45 min

[Download Recorder File](#)



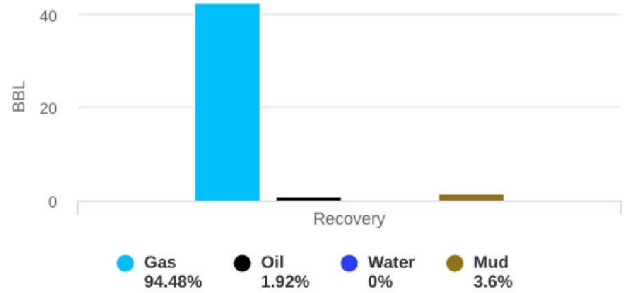
Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
2976	42.34848	G	100	0	0	0
48	0.68304	O	0	100	0	0
126	1.79298	SLOCM	0	10	0	90

Total Recovered: 3150 ft  
 Total Barrels Recovered: 44.8245

Reversed Out  
 NO

### Recovery at a glance

Exclude Gas



Initial Hydrostatic Pressure	1766	PSI
Initial Flow	20 to 41	PSI
<b>Initial Closed in Pressure</b>	<b>1152</b>	<b>PSI</b>
Final Flow Pressure	41 to 76	PSI
<b>Final Closed in Pressure</b>	<b>1143</b>	<b>PSI</b>
Final Hydrostatic Pressure	1767	PSI
Temperature	107	°F
Pressure Change Initial Close / Final Close	0.7	%

Estimated Daily Production

#### REMARKS:

Initial Flow: 1/2 in. blow. BOB in 2 1/4 mins.  
 Initial Shut-in: 3/4 in. blow back.  
 Final Flow: 1 in. blow. BOB in 1 min.  
 Final Shut-in: 3 1/2 in. blow back.

Tool Sample: 30% oil, 70% mud

Gravity: 40 @ 60 degrees F



**Company: K & N Petroleum, Inc**  
**Lease: Norman Klepper "A" #1**

Tester: Ricky Ray  
 On-Site Contact: Musgrove Petroleum

SEC: 17 TWN: 22S RNG: 11W  
 County: STAFFORD  
 State: Kansas  
 Drilling Contractor: Southwind Drilling, Inc - Rig 3  
 Elevation: 1830 GL  
 Field Name: Heyen  
 Pool: Infield  
 Job Number: 72

**DATE**  
 October  
**30**  
 2017

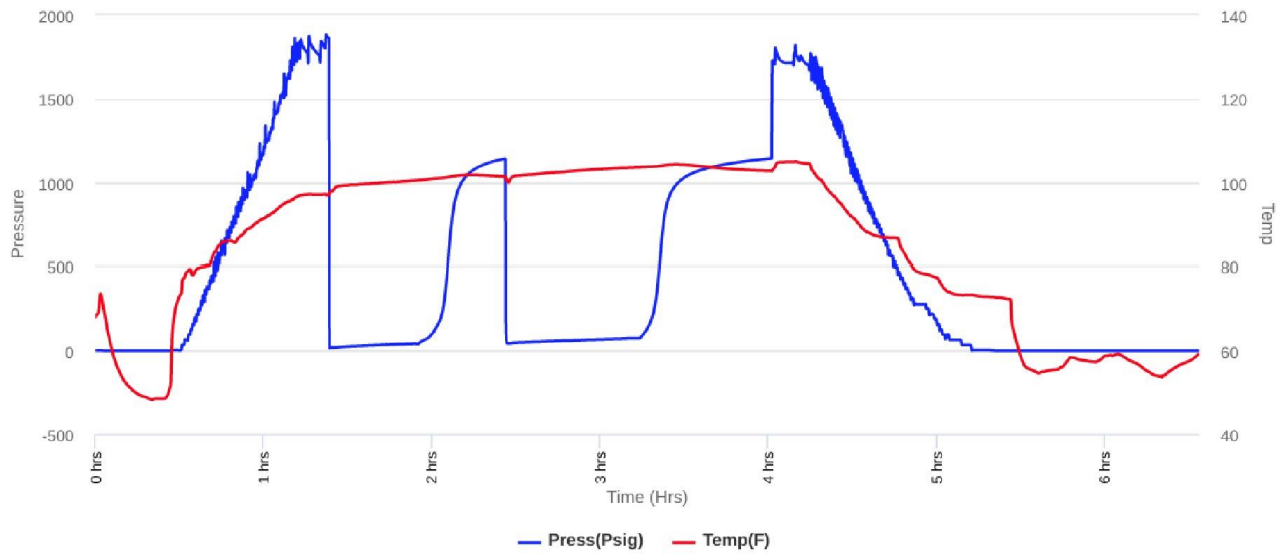
**DST #4 Formation: Arbuckle Test Interval: 3592 - 3615' Total Depth: 3615'**

Time On: 09:55 10/30 Time Off: 16:18 10/30  
 Time On Bottom: 11:16 10/30 Time Off Bottom: 13:46 10/30

Mud Properties	Down Hole Makeup	Gas To Surface: NO
	Tester Communication	Well Flow: NO
		Default View

Electronic Volume Estimate: 1552'	<u>1st Open</u> Minutes: 30 66.1" at 30 min	<u>1st Close</u> Minutes: 30 1.9" at 30 min	<u>2nd Open</u> Minutes: 45 114" at 45 min	<u>2nd Close</u> Minutes: 45 5.5" at 45 min
--------------------------------------	---	---	--	---





Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLS					
2042	29.05766	G	100	0	0	0
37	0.52651	O	0	100	0	0
63	0.89649	SLWCOCMCG	45	25	3	27
63	0.89649	SLOCSLWCSLGCM	15	3	5	77

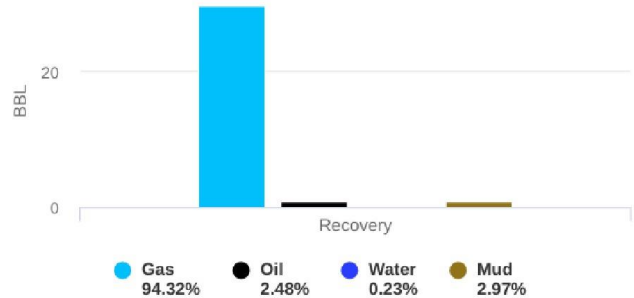
Total Recovered: 2205 ft  
 Total Barrels Recovered: 31.37715

**Reversed Out  
NO**

### Recovery at a glance

Exclude Gas

Initial Hydrostatic Pressure	1757	PSI
Initial Flow	16 to 41	PSI
<b>Initial Closed in Pressure</b>	<b>1139</b>	<b>PSI</b>
Final Flow Pressure	46 to 74	PSI
<b>Final Closed in Pressure</b>	<b>1142</b>	<b>PSI</b>
Final Hydrostatic Pressure	1756	PSI
Temperature	105	°F
 Pressure Change Initial Close / Final Close	 0.0	 %



Estimated Daily Production

#### REMARKS:

Initial Flow: 3/4 in. blow. BOB in 5 1/2 mins.  
 Initial Shut-in: 1 3/4 in. blow back.  
 Final Flow: 1 1/2 in. blow. BOB in 1 1/2 mins.  
 Final Shut-in: 5 1/2 in. blow back.

Tool Sample: 10% oil, 5% water, 85% mud

Gravity: 40 @ 60 degrees F

#### ROCK TYPES

Cht	Lmst fw<7	shale, gry	shale, red
Dolprim	shale, grn	Carbon Sh	Ss

#### OTHER SYMBOLS

##### Oil Show

- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- D Dead Oil Stn
- Fluorescence
- \* Gas

##### DST

- DST Int
- DST alt
- Core
- tail pipe

Depth | Intervals  
Cored Interval  
DST Interval

DST

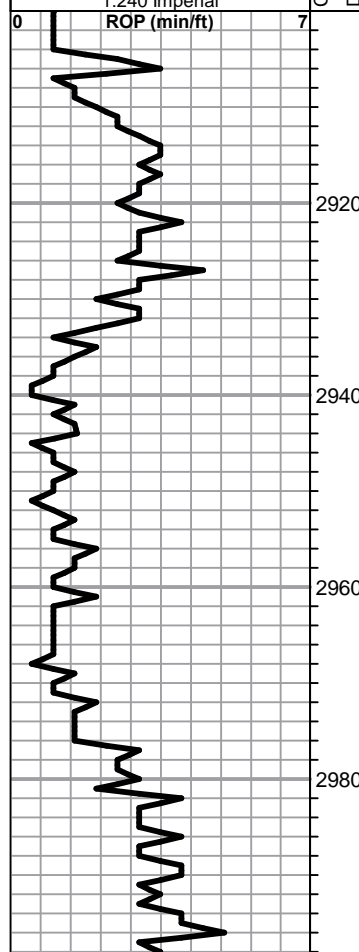
Lithology

Oil Show

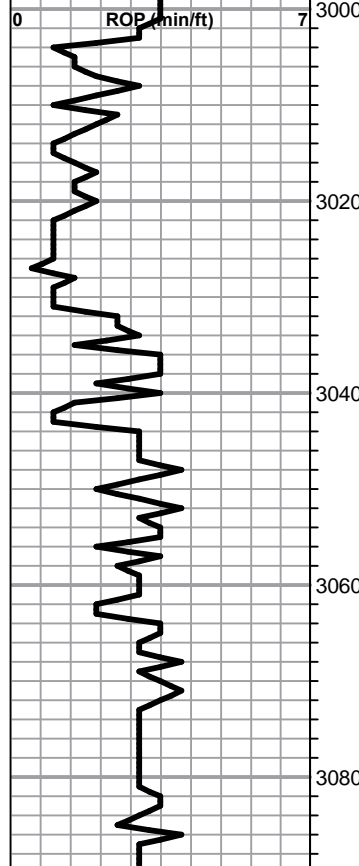
Geological Descriptions

C1 (units) —  
C2 (units) —  
C3 (units) —  
C4 (units) —

1:240 Imperial  
ROP (min/ft)



ROP (min/ft)



1:240 Imperial

Total Gas (units) 100  
C1 (units) 100  
C2 (units) 100  
C3 (units) 100  
C4 (units) 100

Total Gas (units) 100  
C1 (units) 100  
C2 (units) 100  
C3 (units) 100  
C4 (units) 100

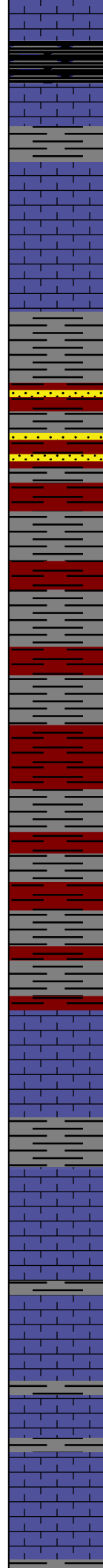
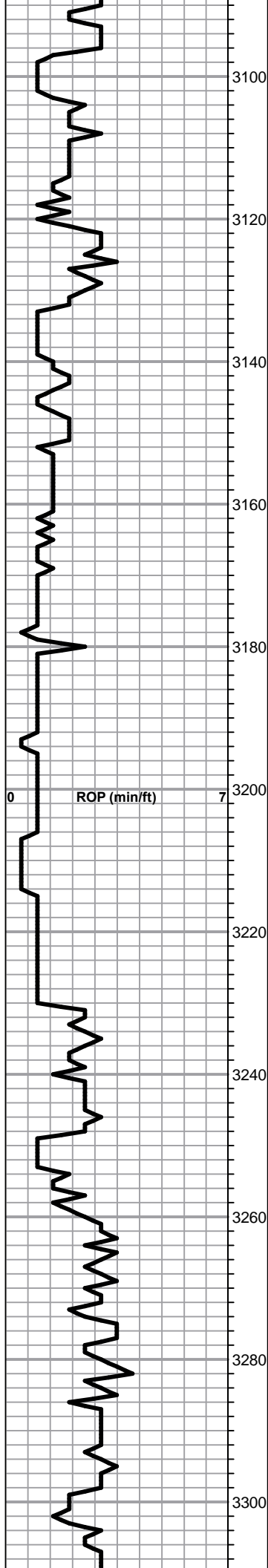
LS, white, tan, fxl, foss, poor visible porosity, chalky in pts, + abund. white chalk

LS, tan, fxl, dense, poor scattered p.p. porosity, chalky in pts, no shows

LS, tan, a/a, few scattered p.p porosity, no shows

LS, white, cream, fxl, gran. poor visible porosity, chalky, (abund. white chalk)

LS, tan, buff, scattered p.p. porosity, few ool, in pts, no shows, no odor



**Heebner 3095.0 (-1256.0)**

Sh, black carb  
 LS, tan, brn, fxl, dense, cherty, no shows

Sh, gry, soft, silty

**Toronto 3111.0 (-1272.0)**

○ LS, tan, buff, scattered vuggy type porosity, chalky, tr. brn sppty stain, nsfo, no odor

**Douglas 3132.0 (-1293.0)**

Sh, maroon, gry, greenish, mica

Sh, maroon, greenish, black, gry, silty, tr. sd. gry, f.grain, poorly developed, mica, nsfo, no odor

Sh, maroon, greenish, gry, mica.

Sh, a/a, tr. sd. gry, fxl, dense, nsfo, no odor

Sh, a/a, tr. pyrite

**Brown Lime 3230.0 (-1391.0)**

LS, brn, fxl, dense, cherty, poor visible porosity, no shows, no odor

Sh, gry, silty, soft

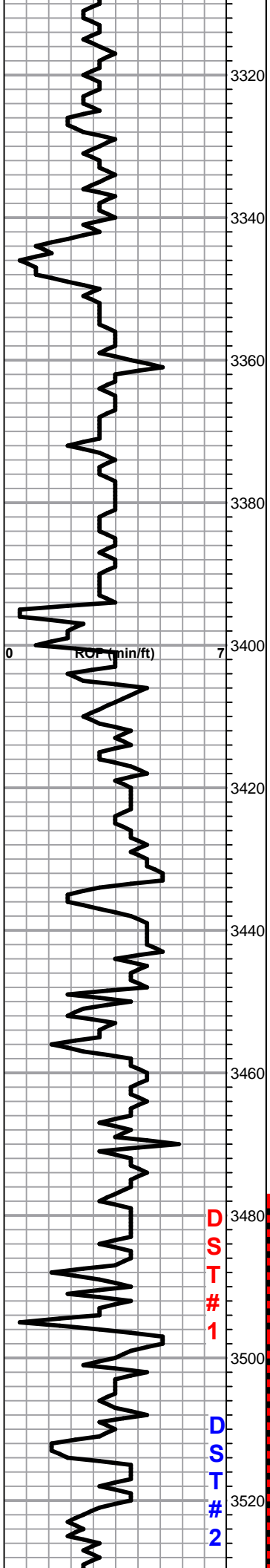
**Lansing 3252.0 (-1413.0)**

LS, tan, cream, fxl, few foss, poor visible porosity, poor inxln porosity, chalky, nsfo, no odor

○ LS, tan, buff, fxl, foss, poor scattered porosity, lt. brn stain, nsfo, no odor

○ LS, tan, gry, med-fine xln, scattered vuggy porosity, lt. black / grn stain, tr. sfo, (most dead, black flakes), odor

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100



LS, tan, buff, fxl, dense, poor scattered visible porosity, no shows

3320

LS, tan, foss, scattered p.p./ vuggy type porosity, chalky in pts. lt. trc. black stain, tr. sfo, ft. odor, no flur.

3340

LS, tan, cream, ool, scattered vuggy oom porosity, chalky, lt. brn stain, lt. sfo (few spty), ??? odor

3360

LS, tan, fxl, dense, poor visible porosity, no shows,

3380

LS, tan, ool, poor scattered oom p.p. porosity, (dense)

LS, cream, white, fxl, dense, cherty, tr. black stain, + opaque, white, tan cherts

3400

Black carb sh

LS, tan, oom, good scattered vuggy porosity, tr. black stain, tr. sfo, no odor

3420

LS, tan, cream, fxl, few foss, dense, poor visible porosity, tr. brn stain, nsfo

3440

Sh, gry, maroon, greenish, tr. cherts, tan, white, opaque

LS, tan, buff, fxl, dense, few foss, poor visible porosity, tr. brn stain

3460

LS, a/a, no shows, no odor

3480

Sh, black carb

LS, tan, buff, fxl, dense, poor scattered porosity, nsfo,

**BKC 3495.0 (-1656.0)**

Sh, gry, maroon, greenish, tr. pyrite

3500

LS, tan, fxl, dense, poor visible porosity, nsfo

LS, white, tan, foss, poor scattered porosity, tr. brn stain, nsfo

**Viola 3522.0 (-1683.0)**

V.C. Cherts, tan, opaque, scattered. vuggy porosity, lt. spty sfo, odor

**Simpson Sh. 3524.0 (-1688.0)**

**DST # 1 3477-3563**  
30-45-45-60

1st Open:  
Weak Surface Blow

1st Shut in:  
4" Blow back

2nd Open:  
BOB 3 mins

2nd Shut in:  
BBBB

Recovery:  
409' GIP

32' SLOCW  
(1%O, 99%W)

Pressures:  
ISIP 220 psi  
FSIP 227 psi  
IFP 11-21 psi  
FFP 27-30 psi  
HSH 1678-1685 psi

**DST#2 3475-3590**  
30-30-45-45

1st Open:  
Weak surface blow

1st Shut in:  
3/4" blow back

2nd Open:  
BOB in 5 mins.

2nd Shut in:  
No return

Recovery:  
431' GIP

73' SLOCHGCM  
(40%G, 5%O, 55% M)

Pressures:  
ISIP 567 psi



**Simpson Sh. 3531.0 (-1692.0)**

**Simpson Sd. 3537.0 (-1698.0)**

**Arbuckle 3576.0 (-1737.0)**

**RTD 3700.0 (-1861.0)**

**LTD 3694.0 (-1855.0)**

FSIP 613 psi  
IFP 14-30 psi  
FFP 32-46 psi  
HSH 1702-1639 psi

**DST#3 3592-3604**  
30-30-45-45

1st Open:  
BOB 2.5 mins

2nd Open:  
BOB 1 mins

Recovery:  
2976' GIP

48' Clean Oil

126' SLOCHOM  
(10%O, 90%M)

Pressures:  
ISIP 1152 psi  
FSIP 1143 psi  
IFP 20-41 psi  
FFP 41-76 psi  
HSH 1766-1767 psi

**DST# 4 3592-3615**  
30-30-45-45

1st Open:  
BOB 5.5 mins

1st Shut in:  
3/4" blow back

2nd Open:  
BOB 1.5 mins.

2nd Shut in:  
5.5" blow back

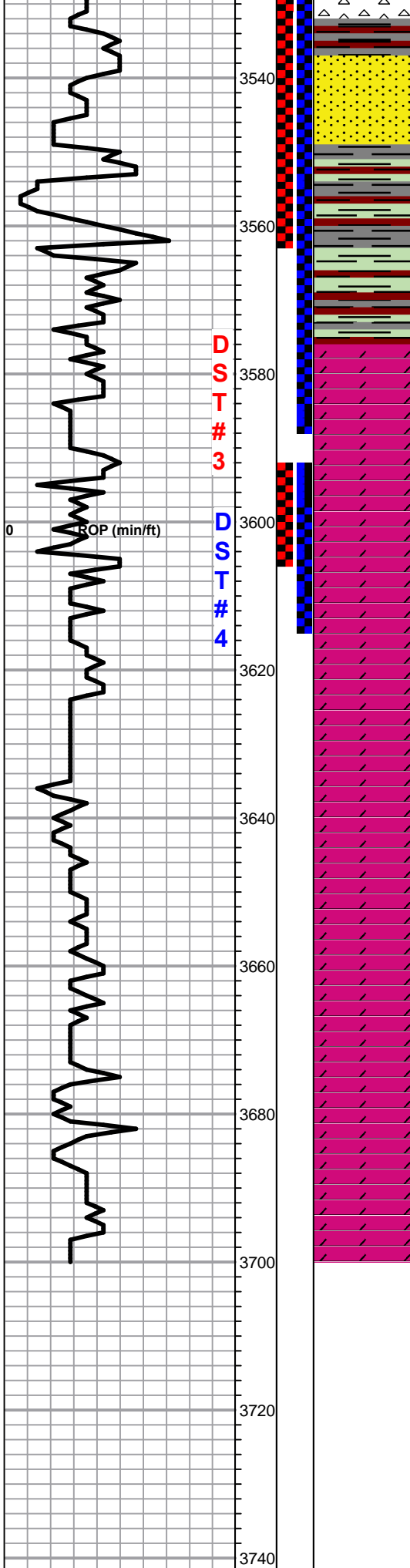
Recovery:

2042' GIP

37' Clean Oil

63' SLOCGM  
(45%G, 25%O, 3%  
W, 27%M)

63' SLOCWM  
(15%G, 3%O, 5%  
W, 77%M)



Sh, gry, maroon, greenish  
Sd. tan, clear, med, grain, sub rounded, well sorted, lt. brn stain, sfo, lt. flur. strong odor  
Sh, gry, silty, few greenish, tr. sd. clear, m-fine grain, black stain, nsfo, no odor  
Sh, a/a, slug of soft, aqua green, sdy shale  
Dol. tan, f-xln, (dense), poor inxln porosity, tr. brn stain on few, nsfo, strong odor  
Dol. tan, suc. scattered vuggy porosity, dk brn stain, sfo, strong odor, good flur. cut, visible gas bubbles  
Dol. tan, f- med xln, scattered vuggy porosity, golden brn stain, strong odor  
Dol. tan, brn, med xln, suc. good inxln porosity, sfo, lt. brn stain, good odor  
Dol. cream, white, med xln, suc. good inxln porosity, lt. brn stain, lt. sfo, fair odor  
Dol. white, med xln, a/a, black stain, tr. sfo, odor  
Dol. a/a, tr. white, opaque, tan, cherts, no shows, strong odor  
Dol. white, med xln, suc. nsfo, odor, v. c. cherts, odor  
Dol. white, med xln, suc. nsfo, odor, v. c. cherts, odor  
Dol. white, cream, fxl, dense, cherty, nsfo, white, tan, cherts, odor

3760

3780

Pressures:  
ISIP 1139 psi  
FSIP 1142 psi  
IFP 16-41 psi  
FFP 46-74 psi  
HSH 1757-1756 psi