



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1164030  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

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       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening       Re-perf.       Conv. to ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

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
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1164030

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

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				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR: \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Outlaw Well Service LLC
Well Name	JOHNSTON 1
Doc ID	1164030

All Electric Logs Run

DUAL INDUCTION LOG
DENSITY NEUTRON LOG
MICRO LOG
SONIC LOG

Form	ACO1 - Well Completion
Operator	Outlaw Well Service LLC
Well Name	JOHNSTON 1
Doc ID	1164030

Tops

Name	Top	Datum
ANHYDRITE	1485	+622
TOPEKA	3188	-1039
HEEBNER SHALE	3426	-1279
TORONTO	3447	-1300
LKC	3467	-1320
BKC	3719	-1572
MARMATON	3769	-1622
ARBUCKLE	3872	-1725



**OPERATOR**

Company: OUTLAW WELL SERVICE LLC  
 Address: 1408 WEST 42ND  
 HAYS, KANSAS 67601

Contact Geologist: PRESTON WOLF  
 Contact Phone Nbr: 785-650-2399  
 Well Name: JOHNSTON # 1  
 Location: SW NE NW SW Sec.24-13s-20w      API: 15-051-26,618-00-00  
 Pool: WILDCAT      Field: UNNAMED  
 State: KANSAS      Country: USA

## Scale 1:240 Imperial

Well Name: JOHNSTON # 1  
 Surface Location: SW NE NW SW Sec.24-13s-20w  
 Bottom Location:  
 API: 15-051-26,618-00-00  
 License Number: 34272  
 Spud Date: 10/8/2013      Time: 5:18 PM  
 Region: ELLIS COUNTY  
 Drilling Completed: 10/13/2013      Time: 5:25 AM  
 Surface Coordinates: 2245' FSL & 735' FWL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2139.00ft  
 K.B. Elevation: 2147.00ft  
 Logged Interval: 3100.00ft      To: 3870.00ft  
 Total Depth: 3874.00ft  
 Formation: ARBUCKLE  
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -99.4996635      Latitude: 38.905816  
 N/S Co-ord: 2245' FSL  
 E/W Co-ord: 735' FWL

**LOGGED BY**

Company: SOLUTIONS CONSULTING, INC.  
 Address: 108 W 35TH  
 HAYS, KS 67601

Phone Nbr: (785) 639-1337  
 Logged By: Geologist      Name: HERB DEINES

**CONTRACTOR**

Contractor: DISCOVERY DRILLING INC  
 Rig #: 1  
 Rig Type: MUD ROTARY  
 Spud Date: 10/8/2013      Time: 5:18 PM  
 TD Date: 10/13/2013      Time: 5:25 AM  
 Rig Release: 10/14/2013      Time: 10:00 AM

**ELEVATIONS**

K.B. Elevation: 2147.00ft      Ground Elevation: 2139.00ft  
 K.B. to Ground: 8.00ft

**NOTES**

RECOMMENDATION TO RUN PRODUCTION CASING BASED ON RESULTS OF DST # 1

OPEN HOLE LOGGING BY NABORS COMPLETION AND PRODUCTION SERVICES CO: DUAL INDUCTION LOG, COMPENSATED DENSITY/NEUTRON LOG, MICRO LOG, SONIC LOG

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

**FORMATION TOPS SUMMARY AND CHRONOLOGY OF DAILY ACTIVITY**

**JOHNSTON # 1**  
**SW NE NW SW**  
**Sec. 24-13s-20w**  
**2138' GL 2139' KB**

**BOSCHOWITZKY 1-24**  
**W2 SW SE**  
**Sec. 24-13s-20w**  
**Reference Well**

<u>FORMATION</u>	<u>SAMPLE TOPS</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>
Anhydrite	1484+ 663	1485+ 662	+ 679
B-Anhydrite	1527+ 620	1527+ 620	+ 632
Topeka	3186-1039	3188-1041	-1039
Heebner Shale	3424-1277	3426-1279	-1277
Toronto	3446-1299	3447-1300	-1300
LKC	3470-1323	3467-1320	-1322
BKC	3716-1569	3719-1572	-1566
Marmaton-Pawnee	3765-1618	3769-1622	-1610

<b>Conglomerate</b>		<b>3816-1669</b>	<b>-1686</b>
<b>Arbuckle</b>	3873-1726		<b>-1665</b>
<b>RTD</b>	3874-1727		
<b>LTD</b>		<b>3865-1718</b>	<b>-1665</b>

**SUMMARY OF DAILY ACTIVITY**

**10-08-13** RU, spud 2:00PM, set 8 5/8" to 265.34" w/ 150 sxs Common 2%Gel  
3%CC, plug down 8:15PM, WOC 8 hrs, slope 3/4 degree

**10-09-13** 454', drilling

**10-10-13** 2062', drilling

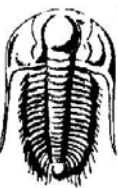
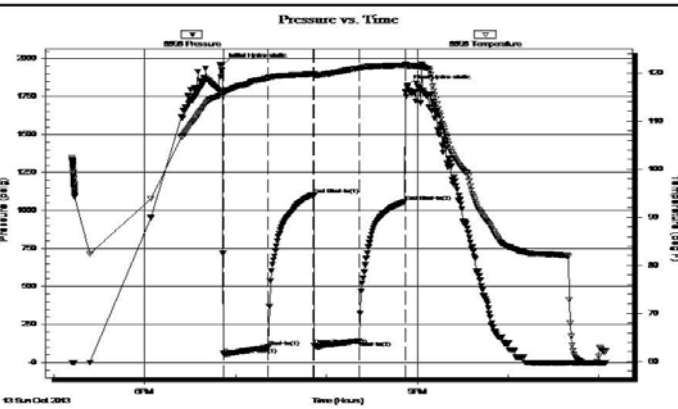
**10-11-13** 2845', drilling

**10-12-13** 3472', drilling

**10-13-13** 3874', RTD 3874'@5:25AM, ST, CCH, TOWB, logs, DST # 1 3778'-  
3865' conglomerate, slope @3874 1 degree

**10-14-13** 3874', TIWB, LDDP, run production casing, RD

**DST # 1 TEST SUMMARY**

	<b>DRILL STEM TEST REPORT</b>																																						
	Outlaw Well Service 1408 W 42nd Hays, KS 67601 ATTN: Herb Deines		24-13s-20w Ellis, KS  <b>Johnston #1</b> Job Ticket: 55759 <b>DST#: 1</b> Test Start: 2013.10.13 @ 17:12:00																																				
<b>GENERAL INFORMATION:</b>																																							
Formation: <b>Cong.</b> Deviated: No Whipstock:                      ft (KB) Time Tool Opened: 18:52:00 Time Test Ended: 23:04:20		Test Type: Conventional Bottom Hole (Initial) Tester: Brannan L Unit No: 49																																					
Interval: <b>3778.00 ft (KB) To 3865.00 ft (KB) (TVD)</b> Total Depth: 3865.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Poor		Reference Elevations: 2147.00 ft (KB) 2139.00 ft (CF) KB to GR/CF: 8.00 ft																																					
<b>Serial #: 8898      Outside</b>																																							
Press@RunDepth: 144.13 psig @ 3797.00 ft (KB) Start Date: 2013.10.13      End Date: 2013.10.13 Start Time: 17:12:01      End Time: 23:04:20	Capacity: 8000.00 psig Last Calib.: 2013.10.13 Time On Btm: 2013.10.13 @ 18:51:30 Time Off Btm: 2013.10.13 @ 20:53:30																																						
<b>TEST COMMENT:</b> 30- IF- BOB 10mins 30- IS- Built to 1.5" 30- FF- BOB 19mins 30- FS- Built to 1"																																							
		<b>PRESSURE SUMMARY</b>																																					
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Trilobite Testing, Inc		Ref. No: 55759																																					
Printed: 2013.10.14 @ 03:39:26																																							

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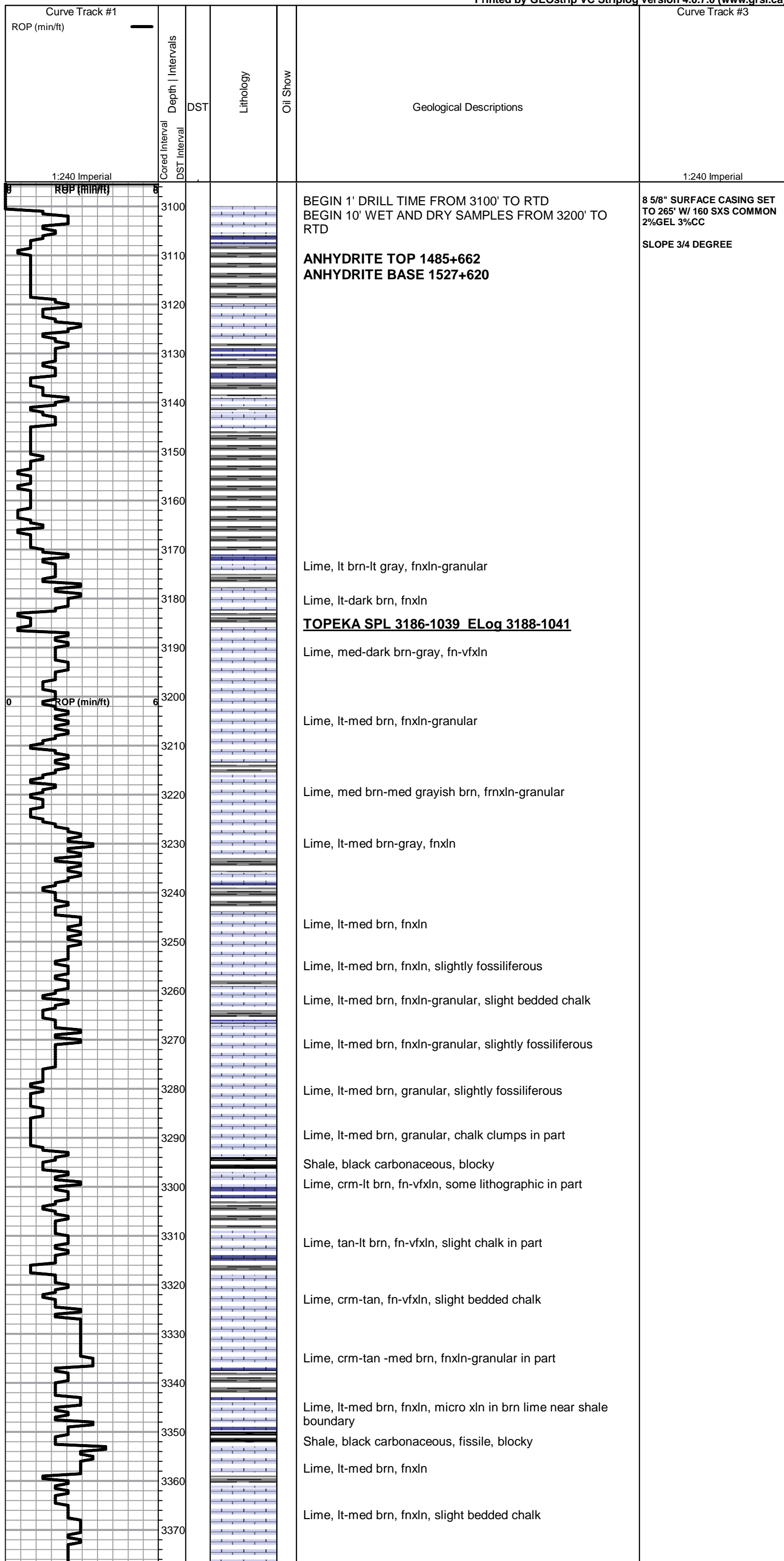
**ROCK TYPES**

Cht vari	Chtcong	Lmst fw<7	shale, grn	shale, red
Clystgy	Dolprim	Lmst fw>	shale, gry	Shcol
Congl	Dol Lime	Lscong	Carbon Sh	

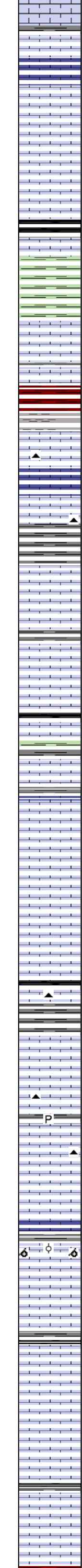
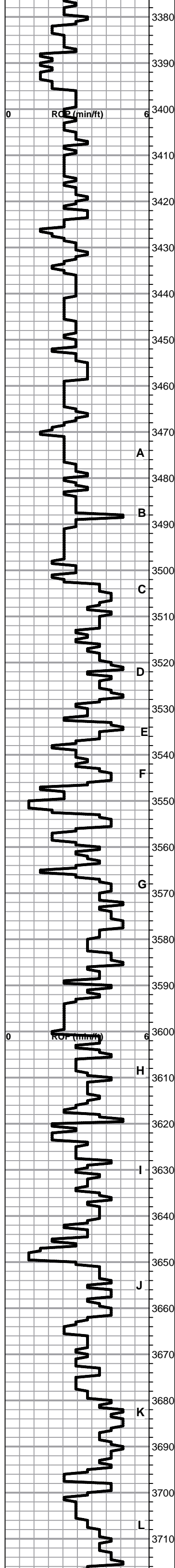
**ACCESSORIES**

**MINERAL**  
 ▲ Chert, dark  
 P Pyrite  
 ● Varicolored chert

**FOSSIL**  
 ○ Oolite  
 ⊕ Oomoldic







Lime, lt-med brn, fnxln, NS

Lime, lt brn-tan, fnxln-granular, increasing chalk content

Lime, lt brn, fnxln, lt bedded chalk, fusulinids

Lime, lt-med brn, fnxln

Lime, lt-med brn, fnxln

**HEEBNER SHALE SPL 3424-1277 ELog 3426-1279**

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

Shale, lt gray-lime green, soft mud

**TORONTO SPL 3446-1299 ELog 3447-1300**

Lime, crm, fnxln, bedded chalk, few chips with spotty stain in fine ppt porosity, NFO, no odor

Lime, crm-lt brn, fn-vfxln  
Shale, reddish brn, soft blocky forming soft mud in part

**LKC SPL 3470-1323 ELog 3467-1320**

Lime, lt-med brn, fnxln  
Chert, brn, fresh, sharp

Lime, lt-med brn, fnxln

Shale, med gray, soft blocky

Lime, crm, fnxln, lt spotty stain, v lt odor, NFO, appears poorly developed

Lime, crm-lt brn, fnxln, bedded chalk

Lime, crm-tan, fnxln

Shale, black carbonaceous  
Lime, very lt gray, fnxln

Lime, crm, fossiliferous-ooitic mix with spotty stain, NFO, No detectable odor

Lime, crm-tan, fnxln, bedded chalk, dark spotty stain, NFO, No odor.

Lime, tan, fn-vfxln, slightly fossiliferous, slight bedded chalk

Lime, tan, fn-vfxln, slight bedded chalk, slightly fossiliferous

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

Shale, black carbonaceous  
Lime, dark brn, micro xln

Shale, gray-black, calcareous

Lime, tan-lt brn, fn-micro xln, slight bedded chalk, NS

Lime, tan, med brn, fn-micro xln

Lime, lt-med brn, fn-micro xln, NS, no stain, very clean

Lime, lt-med brn, fn-micro xln, slight bedded chalk

Shale, gray, soft blocky

Lime tan-brn. oolitic-oomoldic, SFO on break, lt odor

Lime, tan-lt brn, fn-vfxln, slight chalk

Shale, gray-black, blocky

Lime, lt-med brn, fn-micro xln, slight bedded chalk

Lime, lt-med brn, fn-micro xln, slight bedded chalk

Lime lt brn, fnxln, increasing chalk content

Lime, tan-lt brn, fn-micro xln, chalky

Lime, crm, fn-micro xln, slight bedded chalk

**BKC SPL 3716-1569 ELog 3719-1572**

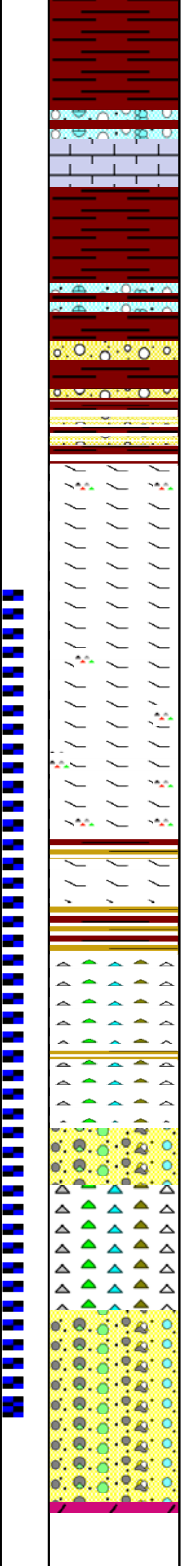
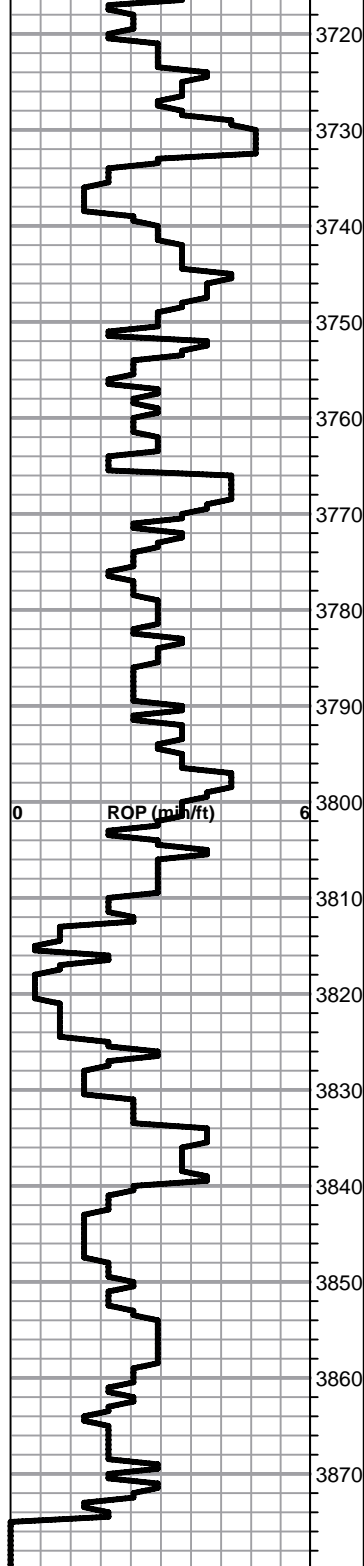
MICROLOG SHOWS ZONE FROM 3451-5 TO BE THIN AND POORLY DEVELOPED

MICROLOG SHOW ZONE FROM 3503-05 TO HAVE LIMITED PERMEABILITY AND SHOULD BE PERFORATED AND TESTED PRIOR TO ABANDONMENT OF WELL

MICROLOG SHOWS ZONE TO BE THIN AND POORLY DEVELOPED

MICROLOG SHOWS ZONE TO HAVE PERMEABILITY BUT DIL LOG SHOWS ZONE TO BE WET

MICROLOG INTERVAL 3649-52 SHOULD BE PERFORATED AND TESTED PRIOR TO ABANDONMENT OF WELL.



Shale, red, soft blocky with lt red wash grading into gritty firm shale

Lime, lt brn, fn-micro xln, hard on crush

Shale, red wash, soft mud with clastic mix of lime in part

Lime, clastic mix with red shale

Shales, vari colored, soft blocky with chert mix

**MARMATON SPL 3765-1618 ELog 3769-1622**

Lime, tan-lt brn, fnxn-fine granular,

Lime, crm-tan-lt brn, fnxn-granular, lt even stain in fine grained dolomitic lime, fair wet cut, NFO, No Odor

Lime, tan-lt brn, fnxn with increasing chert content, tan, fresh, sharp

Lime, offwhite-tan, fn-vfxln, chert, tan, fresh, sharp

Lime, fnxn-granular, red chert with red staining

**CONGLOMERATE ELog 3816-1669**

Chert, vari colored, rounded surfaces, spotted contact staining

Chert, vari color, rounded surfaces with sharp, fresh in part

Cherts, vari color with increasing red shale bedding

Cherts, vari colored

Chert, with some vari color shales,

Dolomite noted in 60" sample only  
**RTD 3874-1727 \*LTD 3865-1718**

**DST # 1 3778'-3865' NOTE:  
 9' OF FILL ON BOTTOM OF  
 HOLE. TOOL COMPRESSED  
 FILL DOWN ABOUT 4-5'.  
 SEE HEADER FOR TEST  
 SUMMARY**

**PAYZONE FROM 3816-34**

**SLOPE 1 DEGREE @3874'**

**\* HIGH LTD DUE TO FILL  
 FROM UNCONSOLIDATED  
 CHERT RUBBLE**



## DRILL STEM TEST REPORT

Prepared For: **Outlaw Well Service**

1408 W 42nd  
Hays, KS 67601

ATTN: Herb Deines

### **Johnston #1**

#### **24-13s-20w Ellis,KS**

Start Date: 2013.10.13 @ 17:12:00

End Date: 2013.10.13 @ 23:04:20

Job Ticket #: 55759                      DST #: 1

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

Printed: 2013.10.15 @ 14:56:21



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Outlaw Well Service  
 1408 W 42nd  
 Hays, KS 67601  
 ATTN: Herb Deines

**24-13s-20w Ellis, KS**  
**Johnston #1**  
 Job Ticket: 55759 **DST#: 1**  
 Test Start: 2013.10.13 @ 17:12:00

## GENERAL INFORMATION:

Formation: **Conglomerate**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 18:52:00  
 Time Test Ended: 23:04:20  
 Interval: **3778.00 ft (KB) To 3865.00 ft (KB) (TVD)**  
 Total Depth: 3865.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Poor  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Brannan L  
 Unit No: 49  
 Reference Elevations: 2147.00 ft (KB)  
 2139.00 ft (CF)  
 KB to GR/CF: 8.00 ft

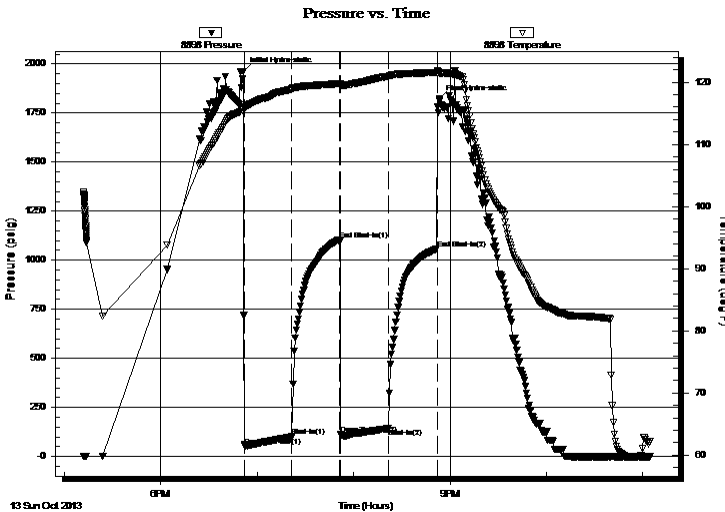
## Serial #: 8898

Outside

Press @ Run Depth: 144.13 psig @ 3797.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.10.13 End Date: 2013.10.13 Last Calib.: 2013.10.13  
 Start Time: 17:12:01 End Time: 23:04:20 Time On Btm: 2013.10.13 @ 18:51:30  
 Time Off Btm: 2013.10.13 @ 20:53:30

TEST COMMENT: 30- IF- BOB 10 mins  
 30- IS- Built to 1 1/2"  
 30- FF- BOB 19 mins  
 30- FSI- Built to 1"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1962.53	116.10	Initial Hydro-static
1	53.69	115.70	Open To Flow (1)
31	100.37	118.89	Shut-In(1)
60	1105.21	119.77	End Shut-In(1)
61	110.94	119.24	Open To Flow (2)
91	144.13	120.98	Shut-In(2)
121	1058.80	121.57	End Shut-In(2)
122	1820.62	121.47	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
110.00	GO, 10%G 90%O	1.24
190.00	MO, 50%M 50%O	2.60
0.00	80' GIP	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Outlaw Well Service  
1408 W 42nd  
Hays, KS 67601  
ATTN: Herb Deines

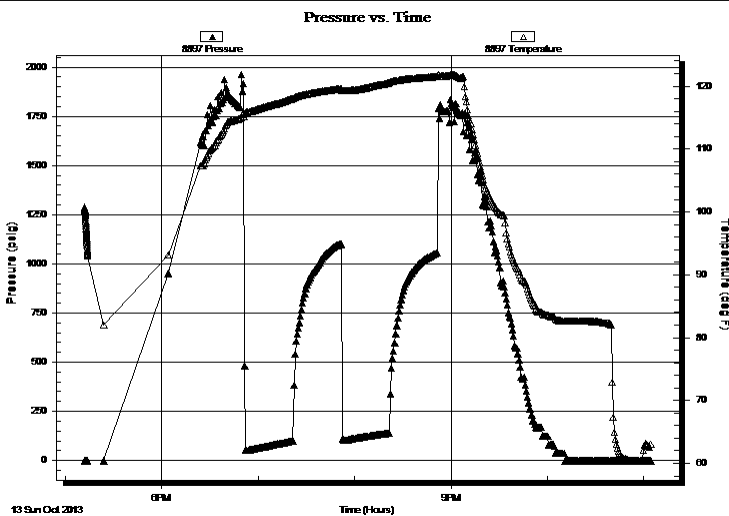
**24-13s-20w Ellis, KS**  
**Johnston #1**  
Job Ticket: 55759 **DST#: 1**  
Test Start: 2013.10.13 @ 17:12:00

## GENERAL INFORMATION:

Formation: **Conglomerate**  
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)  
Time Tool Opened: 18:52:00 Tester: Brannan L  
Time Test Ended: 23:04:20 Unit No: 49  
**Interval: 3778.00 ft (KB) To 3865.00 ft (KB) (TVD)** Reference Elevations: 2147.00 ft (KB)  
Total Depth: 3865.00 ft (KB) (TVD) 2139.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Poor KB to GR/CF: 8.00 ft

**Serial #: 8897 Inside**  
Press @ Run Depth: psig @ 3797.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2013.10.13 End Date: 2013.10.13 Last Calib.: 2013.10.13  
Start Time: 17:12:01 End Time: 23:04:20 Time On Btm:  
Time Off Btm:

TEST COMMENT: 30- IF- BOB 10 mins  
30- IS- Built to 1 1/2"  
30- FF- BOB 19 mins  
30- FS- Built to 1"



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
110.00	GO, 10%G 90%O	1.24
190.00	MO, 50%M 50%O	2.60
0.00	80' GIP	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Outlaw Well Service

**24-13s-20w Ellis,KS**

1408 W 42nd  
Hays, KS 67601

**Johnston #1**

Job Ticket: 55759

**DST#: 1**

ATTN: Herb Deines

Test Start: 2013.10.13 @ 17:12:00

## Tool Information

Drill Pipe:	Length: 3755.00 ft	Diameter: 3.75 inches	Volume: 51.30 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	34.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3778.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	87.00 ft			
Tool Length:	114.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3752.00	
Shut In Tool	5.00			3757.00	
Hydraulic tool	5.00			3762.00	
Jars	5.00			3767.00	
Safety Joint	2.00			3769.00	
Packer	5.00			3774.00	27.00 Bottom Of Top Packer
Packer	4.00			3778.00	
Stubb	1.00			3779.00	
Perforations	18.00			3797.00	
Recorder	0.00	8897	Inside	3797.00	
Recorder	0.00	8898	Outside	3797.00	
Change Over Sub	1.00			3798.00	
Drill Pipe	63.00			3861.00	
Change Over Sub	1.00			3862.00	
Bullnose	3.00			3865.00	87.00 Bottom Packers & Anchor

**Total Tool Length: 114.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Outlaw Well Service

**24-13s-20w Ellis,KS**

1408 W 42nd  
Hays, KS 67601

**Johnston #1**

Job Ticket: 55759

**DST#: 1**

ATTN: Herb Deines

Test Start: 2013.10.13 @ 17:12:00

## 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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3600.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
110.00	GO, 10%G 90%O	1.240
190.00	MO, 50%M 50%O	2.596
0.00	80' GIP	0.000

Total Length: 300.00 ft      Total Volume: 3.836 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

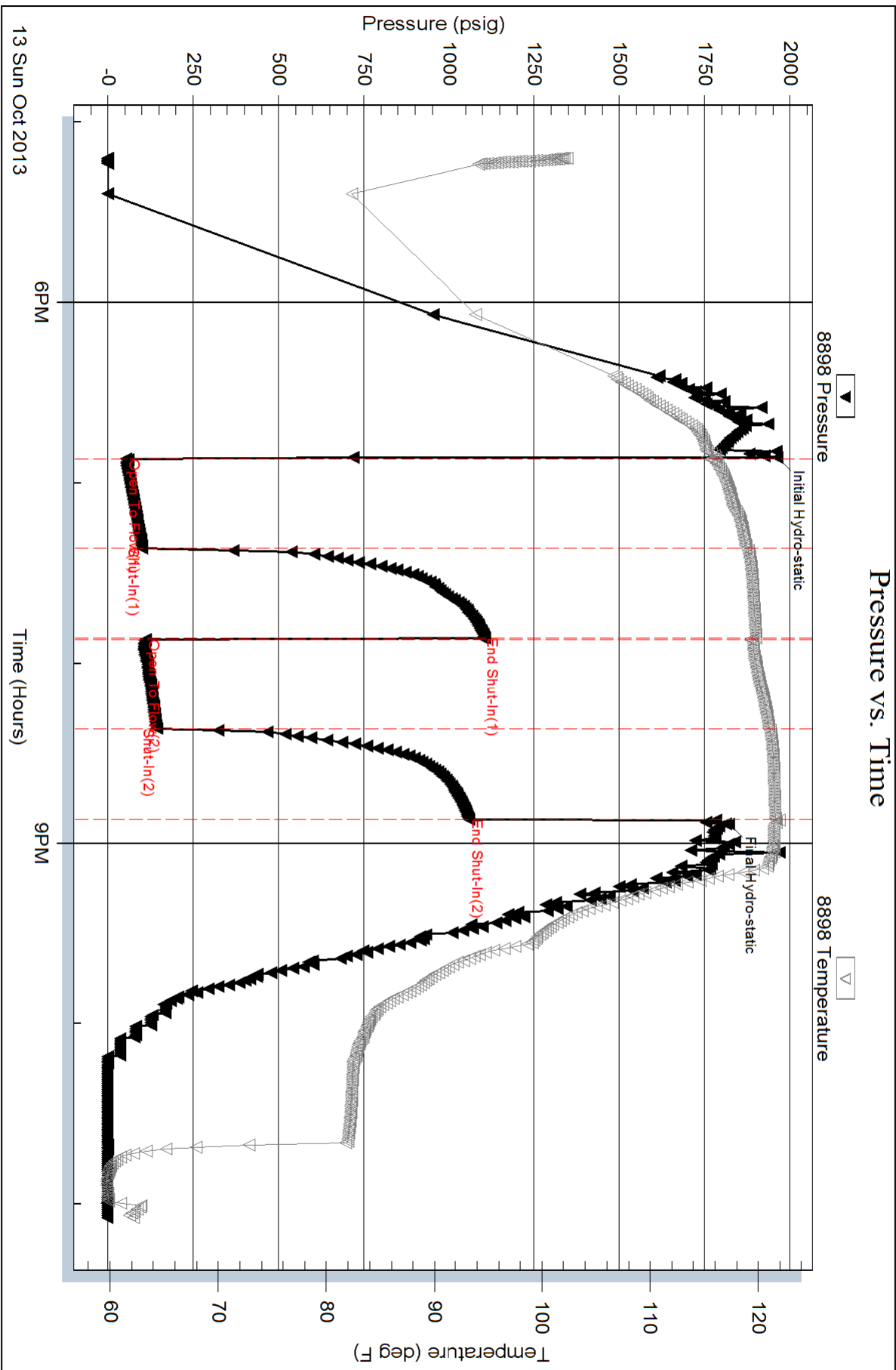
Recovery Comments:

Serial #: 8898

Outside Outlaw Well Service

Johnston #1

DST Test Number: 1





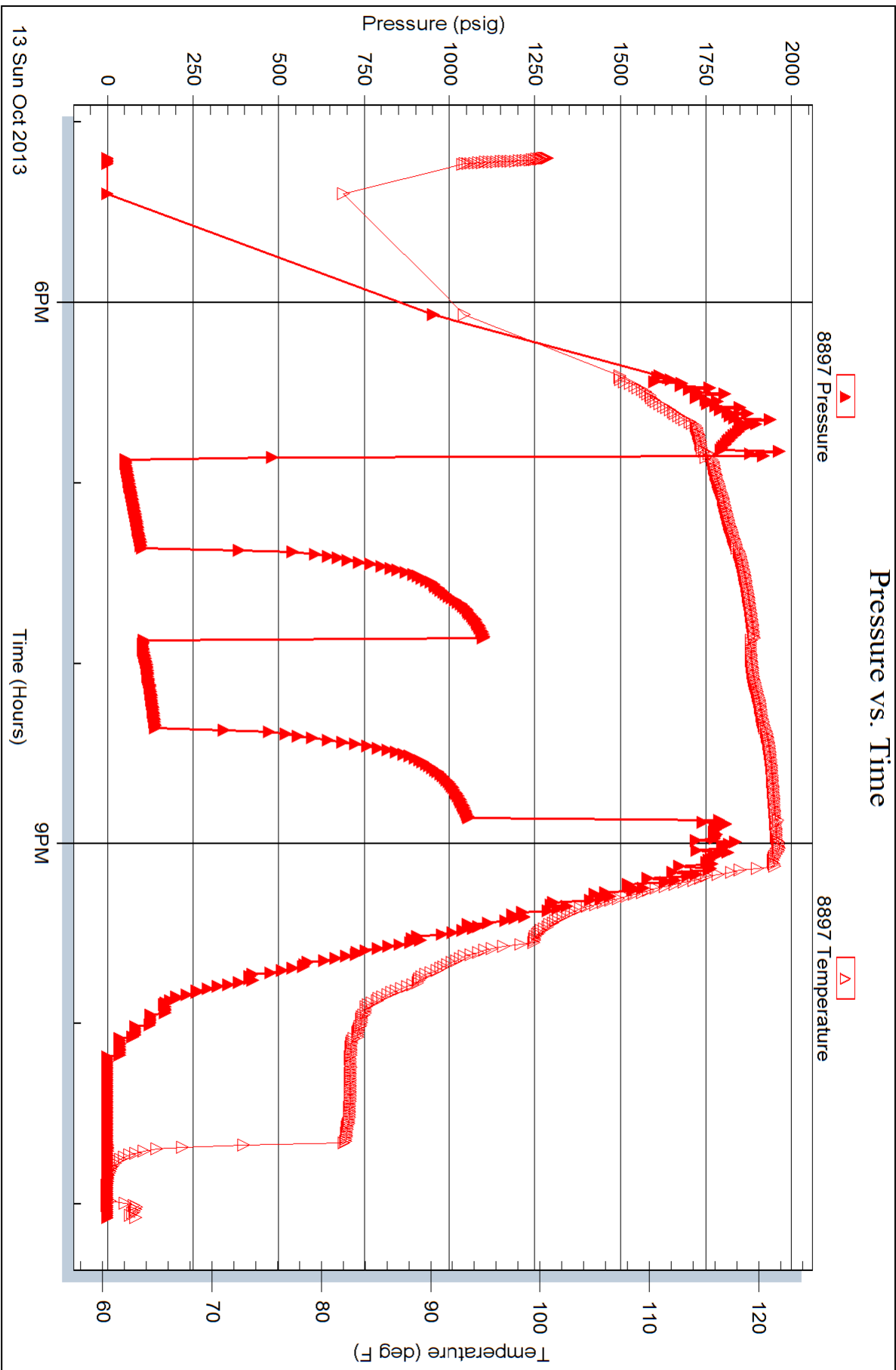
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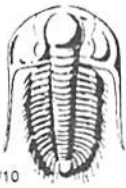
Inside

Outlaw Well Service

Johnston #1

DST Test Number: 1





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 55759

Well Name & No. Johnston #1 Test No. 1 Date 10/13/13  
 Company Outlaw Well Service Elevation 2147 KB 2139 GL  
 Address 1408 W. 42<sup>nd</sup> Hays, KS 67601  
 Co. Rep / Geo. Herb Daines Rig Discovery #4  
 Location: Sec. 24 Twp. 13S Rge. 20W Co. Ellis State KS

Interval Tested 3778-3865 Zone Tested Cong  
 Anchor Length 87' Drill Pipe Run 3755 Mud Wt. 9.2  
 Top Packer Depth 3773 Drill Collars Run 30 Vis 54  
 Bottom Packer Depth 3778 Wt. Pipe Run \_\_\_\_\_ WL 7.6  
 Total Depth 3865 Chlorides 3600 ppm System LCM 1#

Blow Description IF-BOB 10mins  
ISI-Built to 1.5"  
FF-BOB 19mins  
FSI-Built to 1"

Rec	Feet of	%gas	%oil	%water	%mud
110	60	10	90		
190	MO		50		50
80	GIP	100			

Rec Total 300' BHT 122° Gravity 30 API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>1963</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>1524</u>
(B) First Initial Flow <u>54</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1712</u>
(C) First Final Flow <u>100</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1852</u>
(D) Initial Shut-In <u>1105</u>	<input type="checkbox"/> Circ Sub <u>_____</u>	T-Pulled <u>2052</u>
(E) Second Initial Flow <u>111</u>	<input type="checkbox"/> Hourly Standby <u>_____</u>	T-Out <u>2305</u>
(F) Second Final Flow <u>144</u>	<input checked="" type="checkbox"/> Mileage <u>38 RT</u> 58.90	Comments <u>_____</u>
(G) Final Shut-In <u>1059</u>	<input type="checkbox"/> Sampler <u>_____</u>	
(H) Final Hydrostatic <u>1821</u>	<input type="checkbox"/> Straddle <u>_____</u>	

Initial Open 30  
 Initial Shut-In 30  
 Final Flow 30  
 Final Shut-In 30

Ruined Shale Packer  
 Ruined Packer  
 Extra Copies  
 Sub Total 0  
 Total 1533.90  
 MP/DST Disc't \_\_\_\_\_  
 Sub Total 1533.90

Approved By \_\_\_\_\_ Our Representative Brannan L

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.

# 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. 7790

Date	10-8-13	Sec.	24	Twp.	13	Range	20	County	Ellis	State	Ks	On Location		Finish	8:15 PM	
Lease	Johnston							Well No.	1	Location Ellis, Ks SE on Hwy 40 to 150 <sup>th</sup> Ave						
Contractor	Discovery #4							Owner	145, E/Ints							
Type Job	Surface							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.								
Hole Size	12 1/4"			T.D.	265'			Charge To	Outlaw well Service							
Csg.	8 5/8"			Depth	265'			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.	15'			Shoe Joint	15'			Cement Amount Ordered	160 sx Common 3% CC							
Meas Line				Displace	15 3/4 BLS			2% Gel								
<b>EQUIPMENT</b>								Common	160							
Pumptrk	16	No.		Cementer	Billy			Helper								
Bulktrk	1	No.		Driver	Lonnie M.			Poz. Mix								
Bulktrk	p.w.	No.		Driver	Rick			Gel.	3							
				Driver				Calcium	5							
<b>JOB SERVICES &amp; REMARKS</b>								Hulls								
Remarks	Cement did Circulate.							Salt								
Rat Hole								Flowseal								
Mouse Hole								Kol-Seal								
Centralizers								Mud CLR 48								
Baskets								CFL-117 or CD110 CAF 38								
D/V or Port Collar								Sand								
								Handling	168							
								Mileage								
								<b>FLOAT EQUIPMENT</b>								
								Guide Shoe								
								Centralizer								
								Baskets								
								AFU Inserts								
								Float Shoe								
								Latch Down								
								Pumptrk Charge	Surface							
								Mileage	14							
								Tax								
								Discount								
								Total Charge								
Signature	Mike Haschen															

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

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

No. 7533

Cell 785-324-1041

Date	Sec.	Twp.	Range	County	State	On Location	Finish
10-14-13	24	13	20	Ellis	KS		10:30

Lease <u>Johston</u>		Well No. <u>#1</u>	Owner
Contractor <u>Discovery #4</u>		To Quality Oilwell Cementing, Inc.	

Type Job <u>Bottom Stage</u>	You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.		
------------------------------	--	--	--

Hole Size <u>7 7/8</u>	T.D. <u>3874'</u>	Charge To <u>Outlaw Well Service</u>
------------------------	-------------------	--------------------------------------

Csg. <u>5 1/2</u>	Depth <u>3871'</u>	Street
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Tbg. Size	Depth	City	State
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Tool	Depth	The above was done to satisfaction and supervision of owner agent or contractor.	
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Cement Left in Csg. <u>19.58</u>	Shoe Joint <u>19.58</u>	Cement Amount Ordered <u>170 10% Salt 5% Gilschite</u>
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Meas Line	Displace <u>9 1/2 bbl</u>	
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**EQUIPMENT**

Pumptrk <u>17</u> No. <u>Cementer Helper <u>Cody</u></u>	Common <u>170</u>
--	-------------------

Bulktrk <u>1</u> No. <u>Driver <u>Doug</u> <u>Chad</u></u>	Poz. Mix
--	----------

Bulktrk <u>P4</u> No. <u>Driver <u>Brett</u></u>	Gel.
--	------

**JOB SERVICES & REMARKS**

Remarks:	Hulls
----------	-------

Rat Hole	Salt <u>15</u>
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Mouse Hole	Flowseal
------------	----------

Centralizers <u>- 1, 4, 6, 8, 10, 59 + 60</u>	Kol-Seal <u>850#</u>
---	----------------------

Baskets <u>- 6 + 60</u>	Mud CLR 48 - <u>500 gal</u>
-------------------------	-----------------------------

DV <del>60</del> <u>#60 @ 1484'</u>	CFL-117 or CD110 CAF 38
-------------------------------------	-------------------------

	Sand
--	------

	Handling <u>183</u>
--	---------------------

	Mileage
--	---------

<u>Ran 500 Gal Mud flush</u>	<u>5 1/2</u> <b>FLOAT EQUIPMENT</b>
------------------------------	-------------------------------------

<u>Mixed 170 com 10% salt 5% Gilschite</u>	Guide Shoe
--	------------

<u>Displaced 9 1/2 bbl</u>	Centralizer - <del>6</del> <u>6</u>
----------------------------	-------------------------------------

	Baskets - <u>2</u>
--	--------------------

	AFU Inserts
--	-------------

	Float Shoe - <u>1</u>
--	-----------------------

	Latch Down - <u>1</u>
--	-----------------------

	DV Tool - <u>1</u>
--	--------------------

	Pumptrk Charge <u>Lead Long String</u>	<u>Bottom Stage</u>
--	--	---------------------

	Mileage <u>14</u>	
--	-------------------	--

		Tax
--	--	-----

		Discount
--	--	----------

		Total Charge
--	--	--------------

X Signature Mike [Signature]

# 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. 7534

Date	Sec.	Twp.	Range	County	State	On Location	Finish
10-14-13	24	13	20	Ellis	KS		12:00 PM

Location *Yocemento w to 150 25*

Lease <i>Johnston</i>	Well No. <i>#1</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>Top Stage</i>		
Hole Size <i>7 1/8</i>	T.D. <i>3874'</i>	Charge To <i>Outlaw Well Service</i>
Csg. <i>5 1/2</i>	Depth <i>1484'</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.	Shoe Joint	Cement Amount Ordered <i>300 QMDC 1/4 flow</i>

Meas Line Displace *36 bbl*

EQUIPMENT		Common <i>300</i>
Pumptrk <i>17</i>	No. Cementer Helper <i>Cody</i>	Poz. Mix
Bulktrk <i>12</i>	No. Driver <i>Chad Doug</i>	Gel.
Bulktrk <i>PU</i>	No. Driver <i>Brett</i>	Calcium

JOB SERVICES & REMARKS		Hulls
Remarks:		Salt
Rat Hole <i>30sx</i>		Flowseal <i>75#</i>
Mouse Hole <i>15sx</i>		Kol-Seal
Centralizers		Mud CLR 48
Baskets		CFL-117 or CD110 CAF 38
D/V <del>30sx</del> <i>@1484'</i>		Sand
		Handling <i>300</i>

<i>Dropped Dart &amp; Opened DV Tool</i>	Mileage
<i>Circulated with Mud</i>	FLOAT EQUIPMENT
<i>Plugged Rat hole 30sx</i>	Guide Shoe
<i>Plugged Mouse hole 15 sx</i>	Centralizer
<i>Mixed 255 QMDC down 5 1/2</i>	Baskets
<i>Displaced 36 bbl</i>	AFU Inserts
<i>Landed Plug</i>	Float Shoe
<i>Cement circulated</i>	Latch Down

	Pumptrk Charge <i>prod Long String</i>	<i>Top Stage</i>
	Mileage <i>14</i>	
	Tax	
	Discount	
X Signature <i>Mike Laska</i>	Total Charge	