



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1308753  
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: \_\_\_\_\_

1308753

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  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				

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: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
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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	Sandlin Oil Corporation
Well Name	McRae-Werth 1
Doc ID	1308753

All Electric Logs Run

DUAL INDUCTION LOG
COMPENSATED DENSITY-NEUTRON LOG
MICRO LOG
SONIC LOG

Form	ACO1 - Well Completion
Operator	Sandlin Oil Corporation
Well Name	McRae-Werth 1
Doc ID	1308753

Tops

Name	Top	Datum
ANHYDRITE	1417	+748
TOPEKA	3133	-968
HEEBNER SHALE	3363	-1198
TORONTO	3386	-1221
LKC	3408	-1243
BKC	3644	-1479
ARBUCKLE	3668	-1503
LTD	3790	-1625



**OPERATOR**

Company: SANDLIN OIL CORPORATION  
 Address: 621 17TH STREET, STE. 2055  
 DENVER, CO 80293

Contact Geologist: GARY SANDLIN  
 Contact Phone Nbr: 303-292-3313  
 Well Name: MCRAE-WERTH # 1  
 Location: SE SE NE SW  
 API: 15-051-26,830-00-00  
 Pool: INFIELD  
 State: KANSAS

Field: BEMIS-SHUTTS  
 Country: USA

**Scale 1:240 Imperial**

Well Name: MCRAE-WERTH # 1  
 Surface Location: SE SE NE SW  
 Bottom Location:  
 API: 15-051-26,830-00-00  
 License Number: 6677  
 Spud Date: 6/1/2016 Time: 12:17 PM  
 Region: ELLIS COUNTY  
 Drilling Completed: 6/6/2016 Time: 1:53 AM  
 Surface Coordinates: 1390' FSL & 2545' FWL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2159.00ft  
 K.B. Elevation: 2165.00ft  
 Logged Interval: 3000.00ft To: 3790.00ft  
 Total Depth: 3790.00ft  
 Formation: ARBUCKLE  
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -99.3070584  
 Latitude: 38.9907719  
 N/S Co-ord: 1390' FSL  
 E/W Co-ord: 2545' 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: ROYAL DRILLING INC.  
 Rig #: 1  
 Rig Type: MUD ROTARY  
 Spud Date: 6/1/2016 Time: 12:17 PM  
 TD Date: 6/6/2016 Time: 1:53 AM  
 Rig Release: 6/7/2016 Time: 3:30 AM

**ELEVATIONS**

K.B. Elevation: 2165.00ft Ground Elevation: 2159.00ft  
 K.B. to Ground: 6.00ft

**NOTES**

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

ANALYSIS.

OPEN HOLE LOGGING BY CASEHOLE SOLUTIONS/ELI: DUAL INDUCTION LOG, COMPENSATED DENSITY/NEUTRON LOG, MICRO LOG, SONIC LOG

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

<b>MCRAE-WERTH #1</b>	<b>REEDER # 6</b>	<b>REEDER # 8</b>
<b>SE SE NE SW</b>	<b>S2 NE SW</b>	<b>NE SE SW</b>
<b>SEC.22-12S-18W</b>	<b>SEC.22-11-18W</b>	<b>SEC.22-11-18W</b>
<b>2159'GL 2165'KB</b>	<b>KB 2160'</b>	<b>KB 2163'</b>

<u>FORMATION</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>
Anhydrite	1417 +748	+ 741	+ 748
B-Anhydrite	1455 +710	+ 708	+ 713
Topeka	3133 -968	-965	-964
Heebner Sh.	3363-1198	-1193	-1195
Toronto	3386-1221	-1216	-1217
LKC	3408-1243	-1240	-1242
BKC	3644-1479	-1472	-1475
Arbuckle	3668-1503	-1496	-1505
RTD	3790-1625	-1508	-1508

#### SUMMARY OF DAILY ACTIVITY

6-01-16 Spud 3:00 PM, set 8 5/8" surface casing to 256' w/150 sxs 80/20  
POS 2%Gel 3%CC, slope 1/4 degree, plug down 11:00PM

6-02-16 256', drill plug 7:00 AM

6-03-16 1745', drilling

6-04-16 2722', drilling, displaced 3013' to 3036'

6-05-16 3355', drilling

6-06-16 3790', drilling, RTD 3790' @1:52AM, ST, CCH, TOWB, logs, Straddle  
DST # 1, 3640'-3686' Arbuckle, TIWB, LDDP, Run Production Casing

6-07-16 3790', finish running casing and cementing. Plug down 3:30AM, RD



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Sandlin Oil Corporation  
621 17th St Ste 2055  
Denver CO 80293-2001  
ATTN: Herb Deines

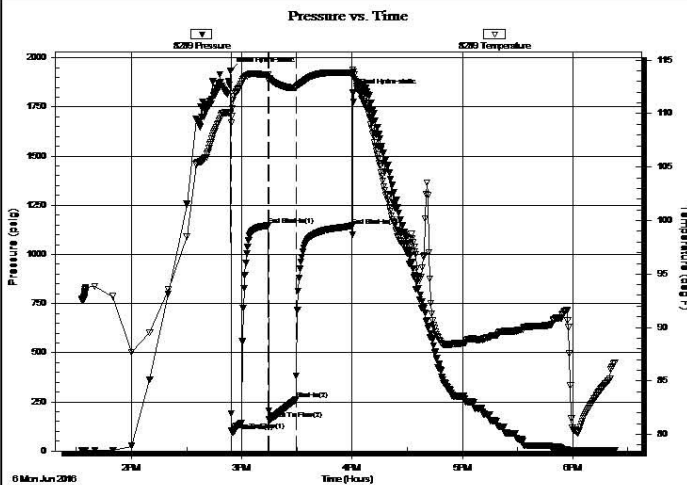
**22 12s 18w Ellis**  
**McRae- Werth #1**  
Job Ticket: 64928      **DST#: 1**  
Test Start: 2016.06.06 @ 13:33:00

### GENERAL INFORMATION:

Formation: **Arbuckle**  
Deviated: No    Whipstock:                      ft (KB)  
Time Tool Opened: 14:54:30  
Time Test Ended: 18:23:00  
Interval: **3640.00 ft (KB) To 3686.00 ft (KB) (TVD)**  
Total Depth: 3790.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches    Hole Condition: Fair  
Test Type: Conventional Straddle (Initial)  
Tester: Jim Svaty  
Unit No: 76  
Reference Elevations: 2165.00 ft (KB)  
2159.00 ft (CF)  
KB to GR/CF: 6.00 ft

**Serial #: 8289      Outside**  
Press@RunDepth: 261.35 psig @ 3645.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2016.06.06      End Date: 2016.06.06      Last Calib.: 2016.06.06  
Start Time: 13:33:02      End Time: 18:23:00      Time On Btm: 2016.06.06 @ 14:54:00  
Time Off Btm: 2016.06.06 @ 16:00:30

TEST COMMENT: 5-IFP- BOB IN 2min.  
15-ISIP- No Blow  
15-FFP- BOB in 2 1/2min.  
30-FSIP- Surface Blow Died in 12min.



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1935.54	110.01	Initial Hydro-static
1	104.16	109.73	Open To Flow (1)
6	141.15	112.78	Shut-In(1)
21	1147.00	113.62	End Shut-In(1)
21	163.20	113.28	Open To Flow (2)
36	261.35	112.44	Shut-In(2)
66	1145.49	113.79	End Shut-In(2)
67	1821.94	114.11	Final Hydro-static

### Recovery











Length (ft)	Description	Volume (bbl)
380.00	CO 100%	5.33
166.00	MCO 20% m 80%o	2.33
0.00	GIP 145	0.00

### Gas Rates

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




**ROCK TYPES**

 Clystcol	 Lmst fw<7	 shale, gry	 Shcol
 Chtcongl	 Lmst fw7>	 Carbon Sh	
 Dolprim	 shale, grn	 shale, red	

**ACCESSORIES**

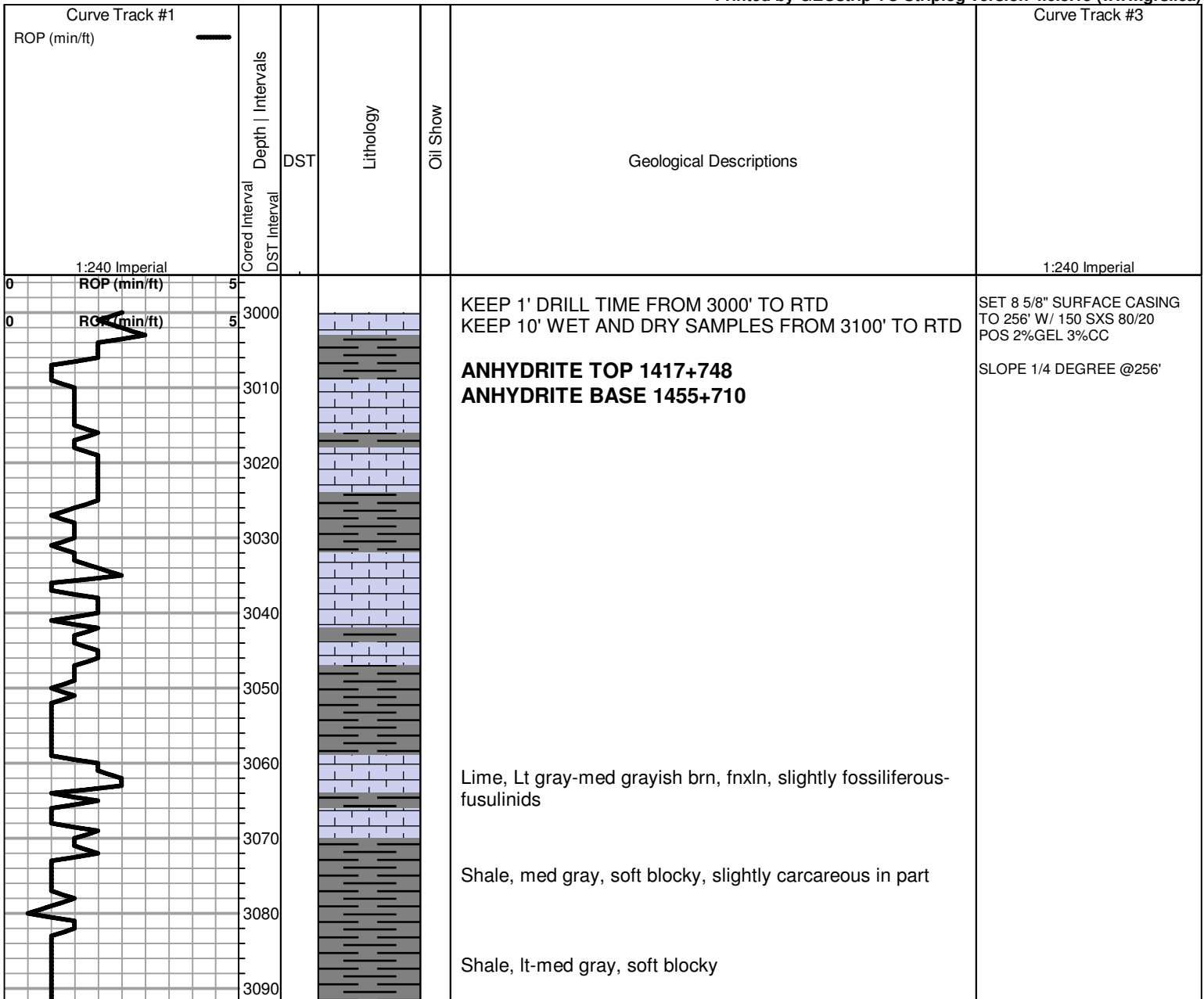
**MINERAL**

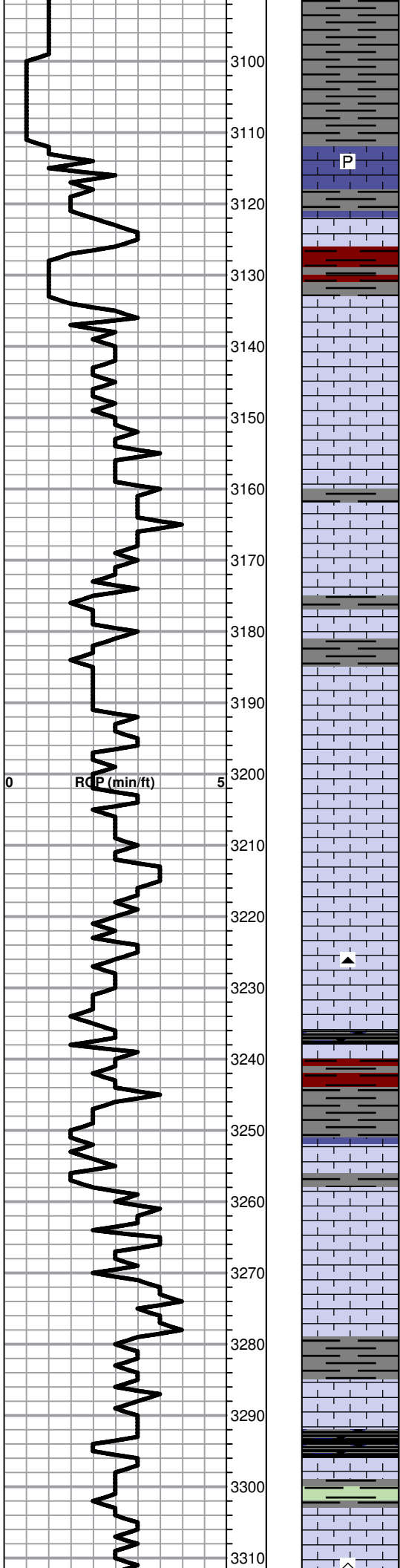
- ▲ Chert, dark
- P Pyrite
- △ Chert White

**FOSSIL**

- 🦠 Oomoldic

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





Shale, lt-med gray, soft blocky with soft sticky mud clumps in part

Lime, med grayish brn, fnxln, fossiliferous-fusulinids well cemented

Lime, crm, fnxln  
Shale, reddish brn, soft blocky

**TOPEKA 3133-968**

Lime, lt gray with scattered mottling, fnxln

Lime, lt brn-lt gray, fn-vfxln

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

Lime, lt-med brn, fn-micro xln

Lime, lt-med brn, fn-vfxln

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

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

Lime, lt brn-lt gray, fnxln to slightly granular in part NS

Lime, lt brn-lt gray, fnxln w/ soft chalky matrix in part

Lime, lt brn-lt gray, fnxln

Shale, black carbonaceous, blocky, soft

Sale, reddish brn-med gray, soft to firm blocky

Lime, crm-lt brn, fnxln, soft on crush, NS

Lime, crm-lt brn, fn-micro xln

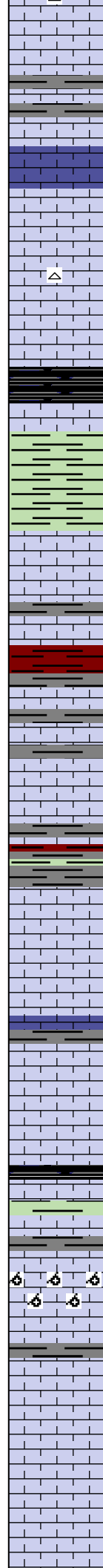
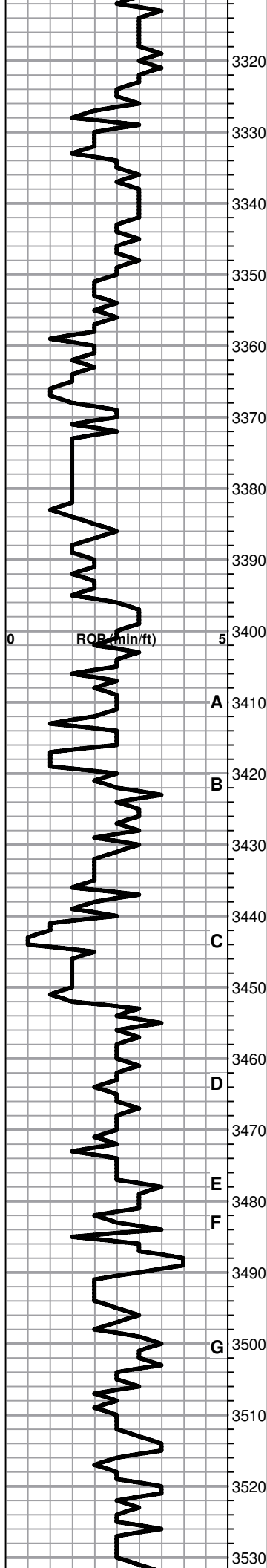
Lime, crm, fn-micro xln, bedded chalk in part

Lime, crm-lt brn, fn-micro xln

Lime, crm-lt brn, fn-vfxln

Shale, black carbonaceous, fissile, blocky  
Lime, lt gray, fn-vfxln  
Shale, lt grayish green, soft blocky

Lime, crm-lt brn, fn-vfxln



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

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

Lime, crm-lt brn, fn-vfxln

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

Lime, lt brn, fnxln

**HEEBNER SHALE 3363-1198**

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

Shale, med grayish green, soft-firm blocky

**TORONTO 3386-1221**

Lime, crm-lt brn, fnxln NS

Lime, crm-lt brn, fn-vfxln  
shale, reddish brn, soft blocky

**LKC 3408-1243**

Lime, crm-lt brn, fnxln

Lime, lt-med brn, fn-vfxln

Lime, crm-lt brn, fn-micro xln  
Shale, red-lt gray-lime green, soft blocky to sticky in part

Lime crm-lt brn, fnxln, thin zone of oomoldic, v lt odor, small chips with saturated staining, NFO

Lime, crm-lt brn, fn-micro xln

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

Shale, black carbonaceous, blocky  
Lime, lt brn-lt gray, fnxln

Lime, crm, fine fossil fragments with spotty lt stain, NFO, very lt odor

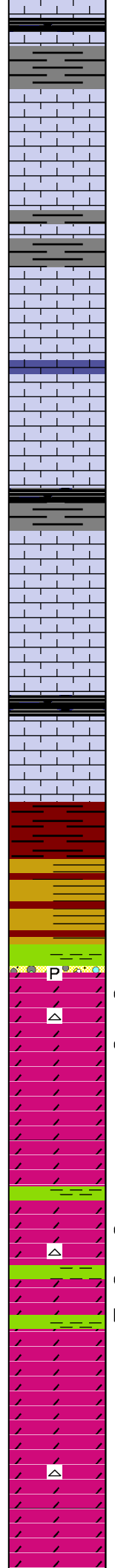
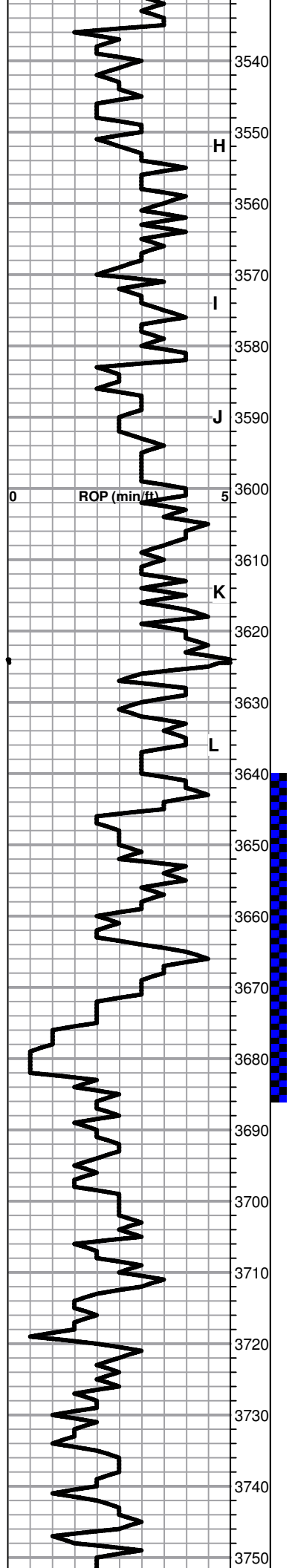
Lime, crm, fnxln-oomoldic, scattered to small sat chips, F NFO, No Odor

Lime, crm-lt brn, fn-vfxln

Lime, white-crm, fn-vfxln

Lime, crm-lt brn, fn-micro xln

Lime, lt brn, fn-vfxln



Shale, gray-black carbonaceous

Lime, crm-lt brn, fn-micro xln, some cemented oolitic chips, no visible porosity development

Lime, white-lt brn, fn-micro xln

Lime, whtie-lt brn, fn-micro xln

Lime, lt brn, fn-micro xln

Lime, crm-lt brn, fnxln

Shale, gray-black carbonaceous, blocky

Lime, crm-lt brn,fn-micro xln

Lime, lt-med brn, fn-micro xln

Shale, gray-black carbonaceous

Lime, crm-lt brn, fn-vfxln

**BKC 3644-1479**

Shale, mix of reddish brn with vari colored shales, soft blocky

**ARBUCKLE 3668-1503**

○ Dolomite, lt brn, fnxln-granular,, very lt odor with scattered staining

● Dolomite,lt-med brn, granular, strong odor, oily sheen with free floating oil in tray, saturated staining

Dolomite, lt-med brn, fnxln-granular, interxln porosity, good odor and staining, somce cxln with rhomic xls

Dolomite, crm-lt-med brn, fnxln-granular

● Dolomite, fnxln-granular with med to coarse granular chips, oily sheen with free floating oil, good odor and staining

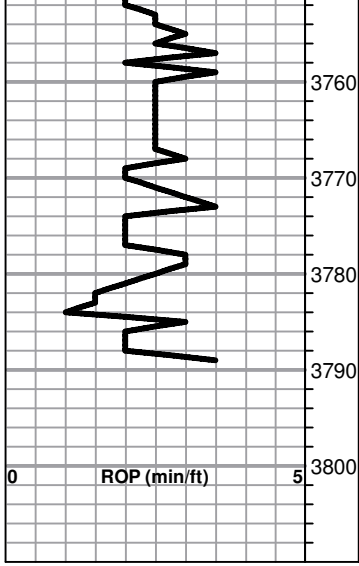
○ Dolomite, crm-lt brn, fnxln with decreasing odor and staining with increasing flaky gilsonite

Dolomite, buff-crm-lt brn, fnxln-granular  
Chert white, fresh, sharp

Dolomite,crm-lt brn, fnxln-granular

Dolomite, crm-lt brn, fnxln-granular

STRADDLE DST # 1 3640' TO 3686' SEE HEADER FOR TEST SUMMARY



Dolomite, crm-lt brn, mostly fnxln

Dolomite, lt salmon-crm-lt brn, fnxln-granular

Dolomite, white, crm-lt brn, fnxln-granular  
 Chert, white opaque, bone white, fresh, sharp

Dolomite, crm-lt brn, fnxln-granular

**RTD 3790-1625 LTD 3790-1625**

SET 5 1/2" PRODUCTION  
 CASING TO 3784' W/ 150 SXS  
 COMMON 10% SALT

SLOPE 1 DEGREE @3790'



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Sandlin Oil Corporation

**22 12s 18w Ellis**

621 17th St Ste 2055  
Denver CO 80293-2001

**McRae- Werth #1**

ATTN: Herb Deines

Job Ticket: 64928

**DST#: 1**

Test Start: 2016.06.06 @ 13:33:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:54:30

Time Test Ended: 18:23:00

Test Type: Conventional Straddle (Initial)

Tester: Jim Svaty

Unit No: 76

**Interval: 3640.00 ft (KB) To 3686.00 ft (KB) (TVD)**

Reference Elevations: 2165.00 ft (KB)

Total Depth: 3790.00 ft (KB) (TVD)

2159.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 6.00 ft

**Serial #: 8289 Outside**

Press@RunDepth: 261.35 psig @ 3645.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.06.06

End Date:

2016.06.06

Last Calib.:

2016.06.06

Start Time: 13:33:02

End Time:

18:23:00

Time On Btm:

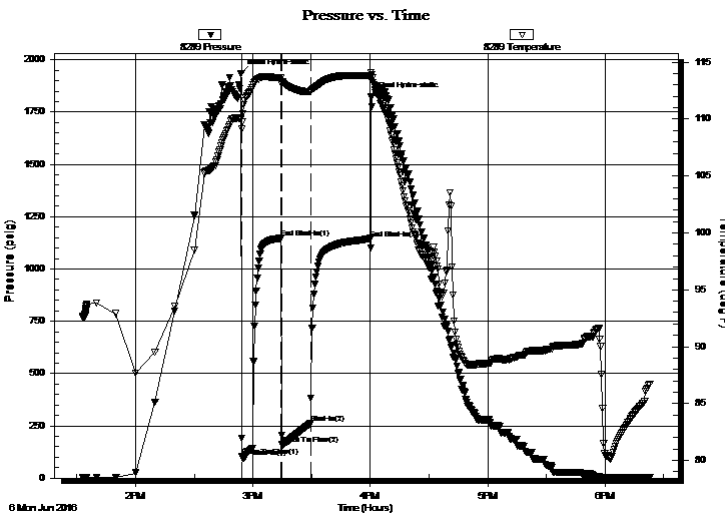
2016.06.06 @ 14:54:00

Time Off Btm:

2016.06.06 @ 16:00:30

**TEST COMMENT:** 5-IFP- BOB IN 2min.  
15-ISIP- No Blow  
15-FFP- BOB in 2 1/2min.  
30-FSIP- Surface Blow Died in 12min.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1935.54	110.01	Initial Hydro-static
1	104.16	109.73	Open To Flow (1)
6	141.15	112.78	Shut-In(1)
21	1147.00	113.62	End Shut-In(1)
21	163.20	113.28	Open To Flow (2)
36	261.35	112.44	Shut-In(2)
66	1145.49	113.79	End Shut-In(2)
67	1821.94	114.11	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
380.00	CO 100%	5.33
166.00	MCO 20% m 80%o	2.33
0.00	GIP 145	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

Sandlin Oil Corporation  
621 17th St Ste 2055  
Denver CO 80293-2001  
ATTN: Herb Deines

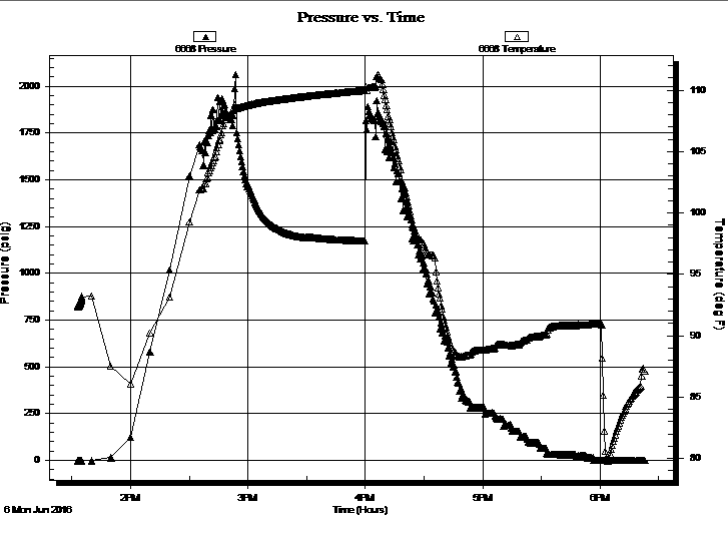
**22 12s 18w Ellis**  
**McRae- Werth #1**  
Job Ticket: 64928      **DST#: 1**  
Test Start: 2016.06.06 @ 13:33:00

**GENERAL INFORMATION:**

Formation:      **Arbuckle**  
Deviated:      No      Whipstock:           ft (KB)      Test Type:      Conventional Straddle (Initial)  
Time Tool Opened: 14:54:30      Tester:      Jim Svaty  
Time Test Ended: 18:23:00      Unit No:      76  
**Interval:      3640.00 ft (KB) To      3686.00 ft (KB) (TVD)**      Reference Elevations:      2165.00 ft (KB)  
Total Depth:      3790.00 ft (KB) (TVD)      2159.00 ft (CF)  
Hole Diameter:      7.88 inches      Hole Condition:      Fair      KB to GR/CF:      6.00 ft

**Serial #: 6668      Below (Straddle)**  
Press@RunDepth:           psig @      3690.00 ft (KB)      Capacity:      8000.00 psig  
Start Date:      2016.06.06      End Date:      2016.06.06      Last Calib.:      2016.06.06  
Start Time:      13:33:02      End Time:      18:22:45      Time On Btm:       
Time Off Btm:     

**TEST COMMENT:** 5-IFP- BOB IN 2min.  
15-ISIP- No Blow  
15-FFP- BOB in 2 1/2min.  
30-FSIP- Surface Blow Died in 12min.



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
380.00	CO 100%	5.33
166.00	MCO 20% m 80%o	2.33
0.00	GIP 145	0.00

**Gas Rates**

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Sandlin Oil Corporation

**22 12s 18w Ellis**

621 17th St Ste 2055  
Denver CO 80293-2001

**McRae- Werth #1**

Job Ticket: 64928

**DST#: 1**

ATTN: Herb Deines

Test Start: 2016.06.06 @ 13:33:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

20 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 3.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
380.00	CO 100%	5.330
166.00	MCO 20% <sub>m</sub> 80% <sub>o</sub>	2.329
0.00	GIP 145	0.000

Total Length: 546.00 ft

Total Volume: 7.659 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

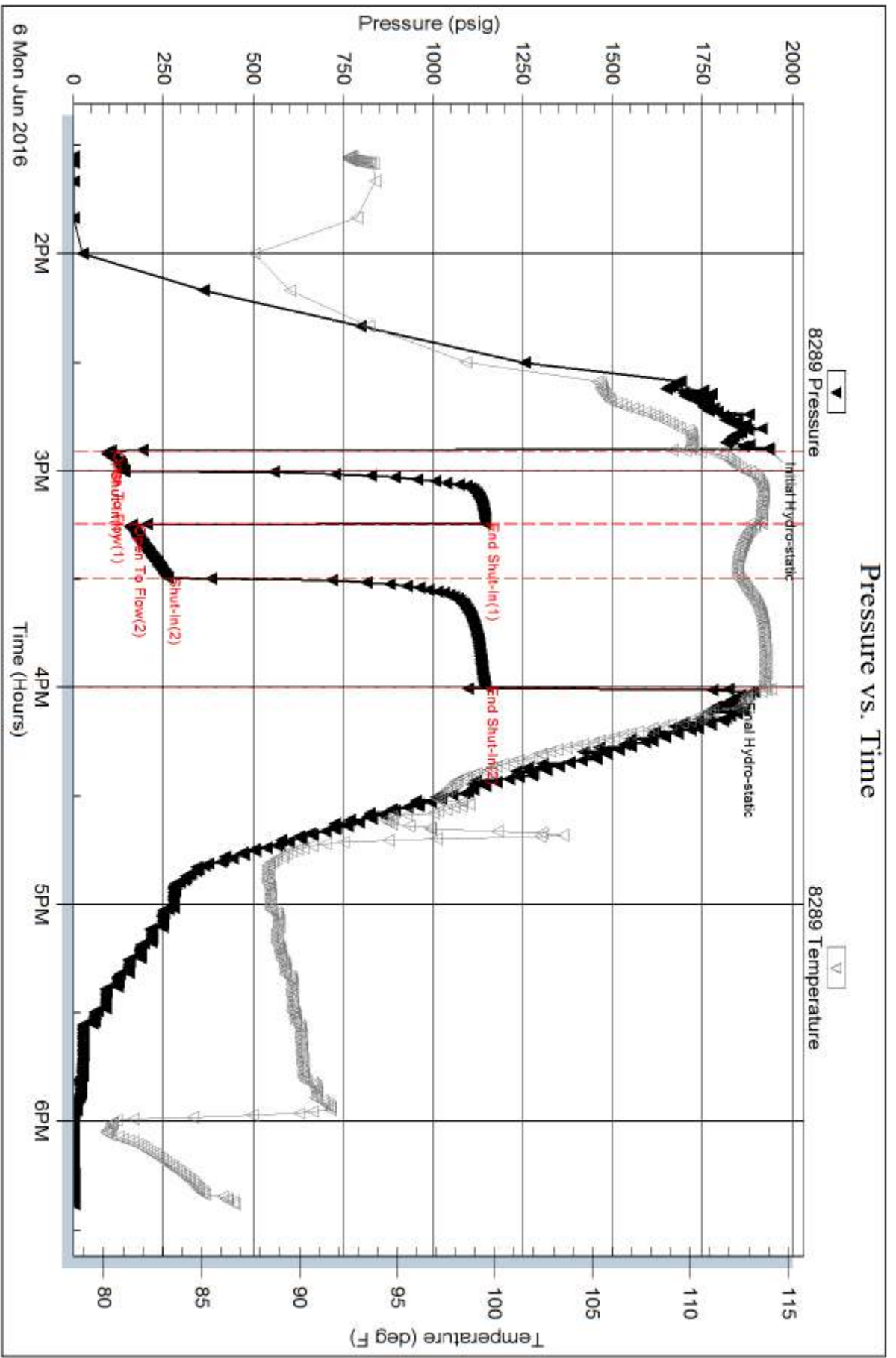


Serial #: 8289

Outside Sandlin Oil Corporation

McRae-Werth #1

DST Test Number: 1

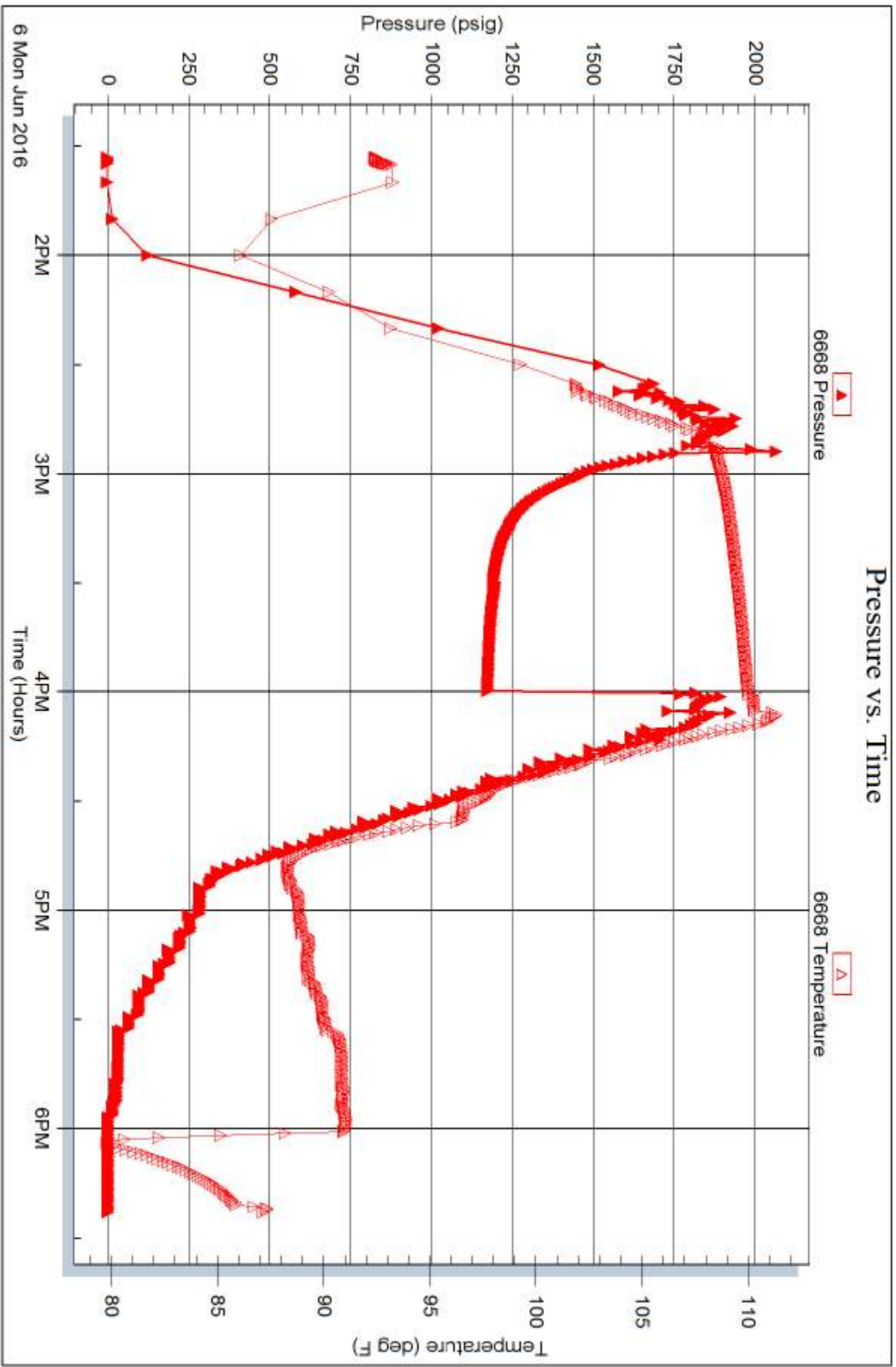


Serial #: 6668

Below (Stratton) Oil Corporation

McRae- Werth #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 64928

Printed: 2016.06.06 @ 18:41:30

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

No. 1912

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

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

Date	6-1-16	Sec.	22	Twp.	12	Range	18	County	Ellis	State	KS	On Location		Finish	11:00pm
Location								Hays 13 Rockwell Rd 15 units							

Lease	McGraw-Worth	Well No.	1	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	Royal			Charge To	Surface Oil
Type Job	Surface	T.D.	212	Street	
Hole Size	12 1/4	Depth	211	City	
Csg.	8 5/8	Depth		State	
Tbg. Size		Depth		The above was done to satisfaction and supervision of owner agent or contractor.	
Tool		Depth		Cement Amount Ordered 150 8/20 3/12 2/10	
Cement Left in Csg.	15'	Shoe Joint			
Meas Line		Displace	12 1/2 BCL		

**EQUIPMENT**

Pumptrk	5	No.	Cementor	raig
			Helper	
Bulktrk		No.	Driver	BAT
			Driver	
Bulktrk	14	No.	Driver	Doug
			Driver	

Common	120
Poz. Mix	30
Gel.	3
Calcium	5

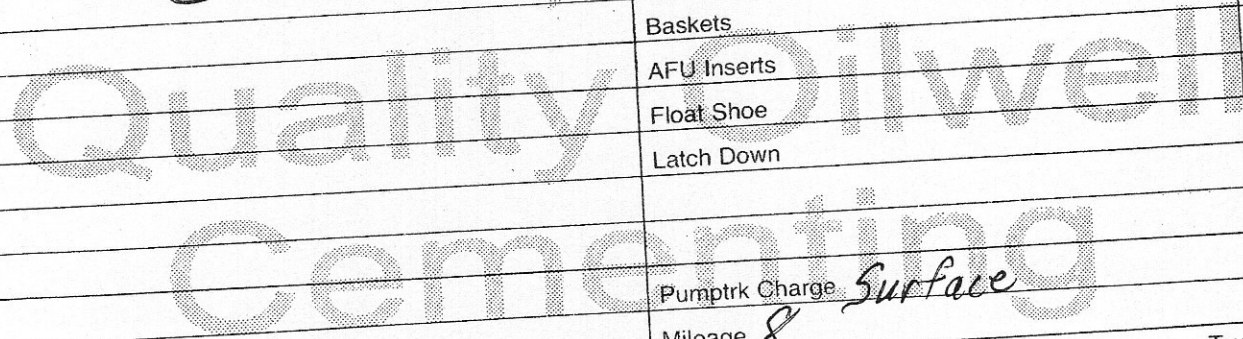
**JOB SERVICES & REMARKS**

Remarks:  
Rat Hole  
Mouse Hole  
Centralizers  
Baskets  
D/V or Port Collar  
8 5/8 subbottom Bst Circulation  
MIX 1500K + Displace  
Cement Circulated!

Hulls	
Salt	
Flowseal	
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	158
Mileage	

**FLOAT EQUIPMENT**

Guide Shoe	8 5/8 Surge
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	



Pumptrk Charge Surface  
Mileage 8

Tax  
Discount  
Total Charge

X Signature Doug Buss

# GLOBAL CEMENTING, L.L.C.

2651

REMIT TO 1958 E. Highway 40  
Russell, KS 67665

SERVICE POINT: Russell KS

DATE <u>6-6-16</u>	SEC. <u>22</u>	TWP. <u>12 S</u>	RANGE <u>18 W</u>	CALLED OUT	ON LOCATION	JOB START	JOB FINISH
LEASE <u>MC RAE</u>	WELL # <u>#1</u>	LOCATION <u>HAY'S ON 1/2 E 1/4 N</u>	COUNTY <u>Ellis</u>	STATE <u>KANSAS</u>			<u>6-7-2016</u> <u>3:00 AM</u>
OLD OR <u>(NEW)</u> (CIRCLE ONE)							

CONTRACTOR Royal DRUG-Rig #1 'Doug' OWNER

TYPE OF JOB PRODUCTION STAIRING

HOLE SIZE 7 7/8 T.D. 3790

CASING SIZE 5 1/2 NEW DEPTH 3784

TUBING SIZE 14# CSG. DEPTH

DRILL PIPE 55 DEPTH

TOOL PORT COLLAR #56 DEPTH 1458

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG.

PERFS

DISPLACEMENT 9 1/2 BBL

EQUIPMENT Bill L.

PUMP TRUCK CEMENTER Glenn G.

# P-2 HELPER Cody H.

BULK TRUCK

# B-5 DRIVER Jason M.

BULK TRUCK

# DRIVER

CEMENT AMOUNT ORDERED 150 sx Com 10% SALT  
2% GEL

COMMON @

POZMIX @

GEL @

CHLORIDE @

ASC @

HANDLING @

MILEAGE @

TOTAL

REMARKS:

Ran 90 TOTAL JOINTS OF 14# CSG.

Set @ 3784, Received CIRCULATION

DROP AFU BALL CIRC. 1 HR

PUMP MUD FLUSH, Cement Rat-Hole

MIXED DOWN Hole Cement OFF WATER-TRUCK

Clear-Line, Release LATCH DN. Plug

HAD 700# LIET #, LAND Plug @ 1500#

THANKS

CHARGE TO: SANDLIN OIL CORP.

STREET

CITY STATE ZIP

Global Cementing, L.L.C.,  
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME

SIGNATURE Fred Barber

SERVICE

DEPTH OF JOB

PUMP TRUCK CHARGE @

EXTRA FOOTAGE @

MILEAGE @

MANIFOLD @

TOTAL

PLUG & FLOAT EQUIPMENT

1-AFU FLOAT Shoe @

5-CENTRALIZERS @

1-BASKET @

~~1-SPARK BASKET~~ @

1-LATCH DN. Plug @

1-LATCH DN BARRIER @

TOTAL

SALES TAX (If Any)

TOTAL CHARGES

DISCOUNT

IF PAID IN 30 DAYS

# GLOBAL CEMENTING, L.L.C.

2652

REMIT TO 1958 E. Highway 40  
Russell, KS 67665

SERVICE POINT: Russell, KS

DATE <u>6-10-16</u>	SEC. <u>13</u>	TWP. <u>15 S</u>	RANGE <u>20 W</u>	CALLED OUT	ON LOCATION	JOB START	JOB FINISH
LEASE <u>McAfee WEATH</u>	WELL #. <u>A-1</u>		LOCATION <u>Hay's 6W 3E 1/4 N T120</u>			COUNTY <u>Ellis</u>	STATE <u>KANSAS</u>
OLD OR <input checked="" type="radio"/> NEW (CIRCLE ONE)							

CONTRACTOR <u>Express Well Service, "LACHO"</u> TYPE OF JOB <u>OPEN PORT COLLAR (C/O.C. Cement)</u> HOLE SIZE _____ TD. _____ CASING SIZE <u>5 1/2</u> DEPTH _____ TUBING SIZE <u>2 3/8</u> DEPTH _____ DRILL PIPE _____ DEPTH _____ TOOL <u>Port Collar @</u> DEPTH <u>1462</u> PRES. MAX. <u>800#</u> MINIMUM _____ MEAS. LINE _____ SHOE JOINT _____ CEMENT LEFT IN CSG. <u>0</u> PERFS _____ DISPLACEMENT _____ EQUIPMENT <u>T-5.65/-4.65</u> <u>Bill L.</u>	OWNER _____ CEMENT AMOUNT ORDERED <u>300 SX 60 40 6% gel</u> <u>1/4# Flt Seal</u> COMMON _____ @ _____ POZMIX _____ @ _____ GEL _____ @ _____ CHLORIDE _____ @ _____ ASC _____ @ _____ _____ @ _____ _____ @ _____ _____ @ _____ HANDLING _____ @ _____ MILEAGE _____ @ _____ TOTAL _____
---	--

REMARKS:  
Found PC @ 1462' TEST TO 800# (HOLD)  
OPEN & RECEIVED CIRCULATION. MIXED  
300 SX 60 40 6% GEL 1/4 PRO SOLID CEMENT  
CIRCULATED TO SURFACE, DISPLACED  
A TOTAL OF 4 1/2 BBL. CLOSED  
PORT COLLAR, & CHECK TO 800# (HOLD)  
RAY 5 JTS 2 3/8 & WASHED CLEAN.  
CAME OUT OF HOLE W/ OPENING TOOL.  
THANKS

CHARGE TO: SANDLIN OIL CO. CO.  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

Global Cementing, L.L.C.,  
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME Fred Farber  
 SIGNATURE Fred Farber

SERVICE

DEPTH OF JOB	_____
PUMP TRUCK CHARGE	_____
EXTRA FOOTAGE	@ _____
MILEAGE	@ _____
MANIFOLD	@ _____
_____	@ _____
_____	@ _____
TOTAL	_____

PLUG & FLOAT EQUIPMENT

_____	@ _____
_____	@ _____
_____	@ _____
_____	@ _____
_____	@ _____
TOTAL	_____

SALES TAX (If Any) \_\_\_\_\_  
 TOTAL CHARGES \_\_\_\_\_  
 DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAYS