



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1215701
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: _____

1215701

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

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> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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**Ritchie Exploration, Inc.
Baker 31B No.1
2235' FNL and 1090' FWL
75'N & 100'E of SE SW NW
Sec 31 T15S R34W
Logan County, Kansas**

Geological Report
by

Macklin M. Armstrong, P.G.
License Number 743

Scale 1:240 Imperial

Well Name:	Baker 31B No. 1	
Surface Location:	Sec 31 T15 R34W	
Bottom Location:	2235' FNL and 1090' FWL	
API:	15-109-21273	
License Number:	4767	
Spud Date:	4/8/2014	Time: 2:00 PM
Region:	Logan County, Kansas	
Drilling Completed:	4/17/2014	Time: 9:52 AM
Surface Coordinates:		
Bottom Hole Coordinates:		
Ground Elevation:	3055.00ft	
K.B. Elevation:	3060.00ft	
Logged Interval:	3400.00ft	To: 4782.00ft
Total Depth:	4780.00ft	
Formation:	Mississippi	
Drilling Fluid Type:	Chemical/Fresh Water Gel	

OPERATOR

Company: Ritchie Exploration, Inc.
Address: 8100 East 22nd Street North, No. 700
Wichita, Kansas 67226

Contact Geologist:	Pete Fiorini	
Contact Phone Nbr:	316-691-9500	
Well Name:	Baker 31B No. 1	
Location:	Sec 31 T15 R34W	API: 15-109-21273
Pool:	Oil	Field: Wildcat
State:	Kansas	Country: USA

CONTRACTOR

Contractor: WW Drilling, LLC
 Rig #: 2
 Rig Type: mud rotary
 Spud Date: 4/8/2014
 TD Date: 4/17/2014
 Rig Release: 4/18/2014

Time: 2:00 PM
 Time: 9:52 AM
 Time: 10:00 AM

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: 101° 08' 49.046" Latitude: 38° 42' 33.178"
 N/S Co-ord:
 E/W Co-ord:

ELEVATIONS

K.B. Elevation: 3060.00ft Ground Elevation: 3055.00ft
 K.B. to Ground: 5.00ft

NOTES

Date	Depth at 7 am	Activity
4-08-14	MIRU	Spud at 2 pm
4-09-14	780	Drilling
4-10-14	2760	Drilling
4-11-14	3950	Drilling
4-12-14	4025	CTCH for DST No. 1
4-13-14	4150	TIH for DST No. 2
4-14-14	4380	Drilling
4-15-14	4490	Drilling
4-16-14	4630	CFS
4-17-14	4740	Drilling
4-18-14	4780	Set 5 1/2"

Surface Casing: 8 5/8" 23# at 253'
 Production Casing: 5 1/2" 15.5# at 4771'

Deviation: 253' - 3/4°
 4025' - 2 1/4°
 4384' - 1°
 4780' - 3/4°

Bit Record:	Make	Size	Type	Depth In	Depth Out	Hours
	SM	12 1/4"	RR	Surface	253	3 3/4
	SM	7 7/8"	F27	253	4780	108 1/2

Drill Stem Tests:

DST No. 1 3993 to 4025 Lansing E, F Zones
 30-45-45-60

Recovery: 75' WCM with oil spots (40%W, 60%M)

IHP 1952 FHP 1872

IFP 29-43 FFP 46-68

ISIP 1178 FSIP 1146

Temp 108°

DST No. 2 4068 to 4150 Lansing G, H, I Zones
 30-45-45-60

Recovery: 140' Mud with oil spots and 6" of oil on top

IHP 2001 FHP 1927

IFP 37-59 FFP 63-90

ISIP 1193 FSIP 1179

Temp 111°

DST No. 3 4170 to 4384 Lansing K, L Zones, Pleasanton, Marmaton, Altamont

30-45-30-60

30-45-30-60
 Recovery: 2600' SMCW (3%M, 97%W - Chl 47,000 ppm)
 IHP 2093 FHP 1988
 IFP 298-962 FFP 976-1203
 ISIP 1268 FSIP 1270
 Temp 117°

DST No. 4 4518 to 4544 Lower Cherokee Lime
 30-45-45-60

Recovery: 275' GIP
 45' GO (35%G, 65%O - 27 degree gravity corrected)
 100' GMCO (20%G, 40%M, 40%O)
 IHP 2307 FHP 2218
 IFP 31-52 FFP 60-73
 ISIP 1324 FSIP 1306
 Temp 116°

DST No. 5 4574 to 4656 Morrow Sand, Mississippi
 30-45-30-60

Recovery: 1120' SMCW with oil spots in tool (Chl 32,000 ppm)
 IHP 2351 FHP 2170
 IFP 114-419 FFP 440-610
 ISIP 997 FSIP 943
 Temp 125°

Formation	Sample	E-Log	Datum	Well 1	Well 2
Anhydrite	2379	2376	+684	+17	+9
B/Anhydrite	2397	2394	+666	+16	+8
Stotler	3498	3499	-439	+20	+14
Heebner	3861	3861	-801	+24	+18
Toronto	3878	3878	-818	+27	+19
Lansing	3910	3909	-849	+25	+18
Muncie Creek	4072	4074	-1014	+37	+29
Stark	4173	4172	-1112	+31	+24
Hushpuckney	4219	4219	-1159	+29	+23
Base/Kansas City	4261	4260	-1200	+26	+21
Marmaton	4285	4283	-1223	+29	+25
Altamont	4318	4316	-1256	+25	+20
Pawnee	4391	4390	-1330	+28	+23
Myrick Station	4428	4428	-1368	+31	+26
Fort Scott	4444	4445	-1385	+28	+24
Cherokee Shale	4470	4472	-1412	+29	+25
Johnson Zone	4550	4553	-1493	+23	+22
Base Penn Lime	4593	4594	-1534	+27	+31
Morrow	4598	4599	-1539	+30	+36
Mississippi	4626	4628	-1568	+61	+49
Total Depth	4780	4782	-1722		

Well 1: Russell Oil Company Edwards Trust A No. 1-32 780' FNL and 400' FWL Sec 32 T15S R34W
 Well 2: Russell Oil Company Edwards Trust B No. 1-32 2260' FSL and 1000' FWL Sec 32 T15S R34W

Pipe was set to further test the Lower Cherokee Lime.

Respectfully submitted,
 Macklin M. Armstrong

ROCK TYPES

 Lmst fw7>	 shale, gry	 Ss
 shale, grn	 Carbon Sh	

ACCESSORIES

MINERAL

- ▲ Chert, dark
- Sandy
- Silty

FOSSIL

- F Fossils < 20%
- Oolite
- ⊕ Oomoldic

STRINGER










- Shale
- green shale
- red shale

TEXTURE

- C Chalky

OTHER SYMBOLS

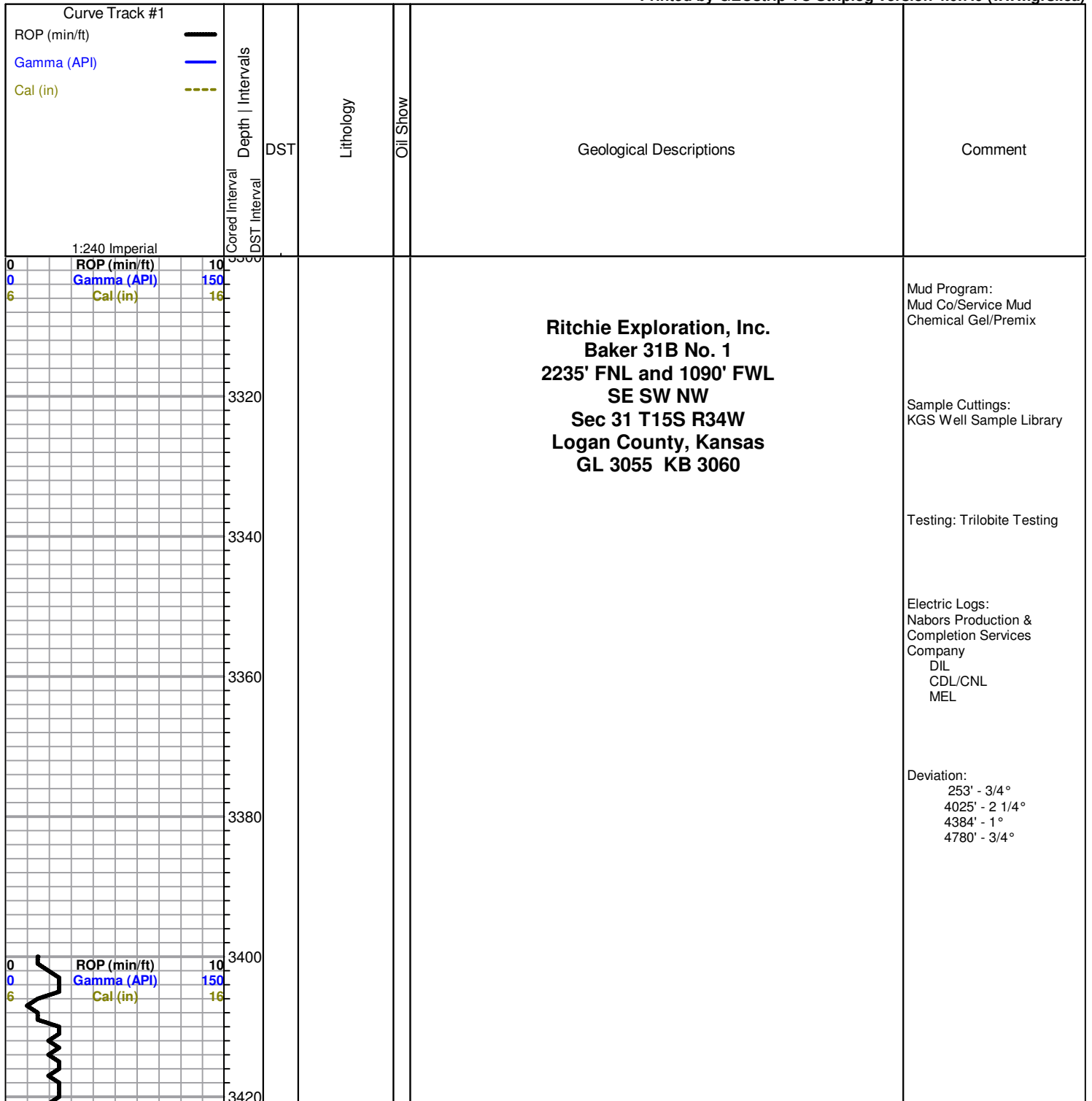
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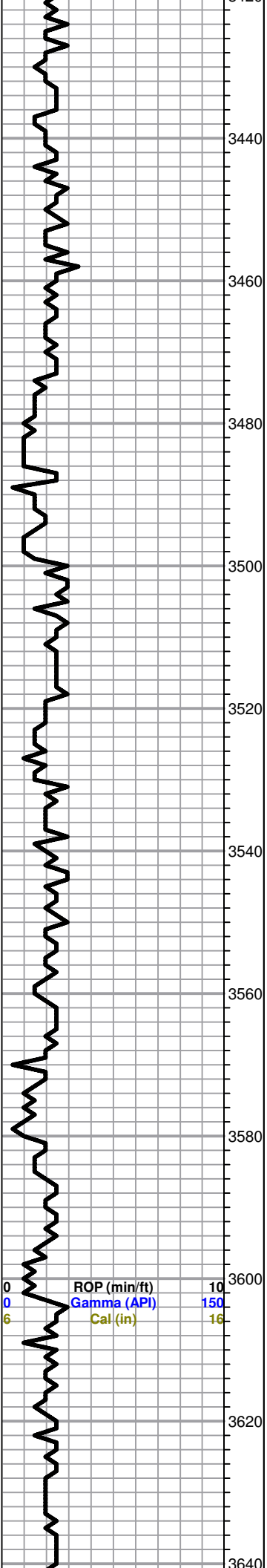
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-  Horizontal Log File
-  Core Log File
-  Drill Cuttings Rpt

DST

-  DST Int
-  DST alt
-  Core

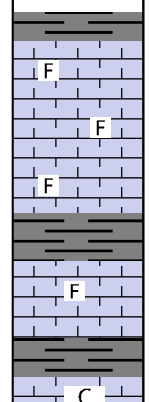
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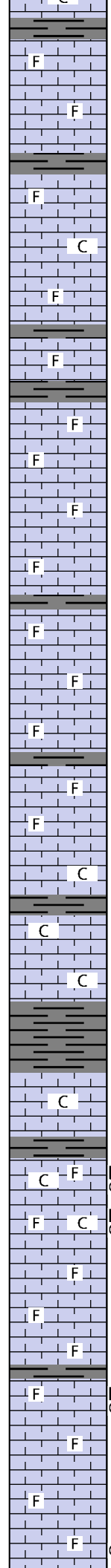
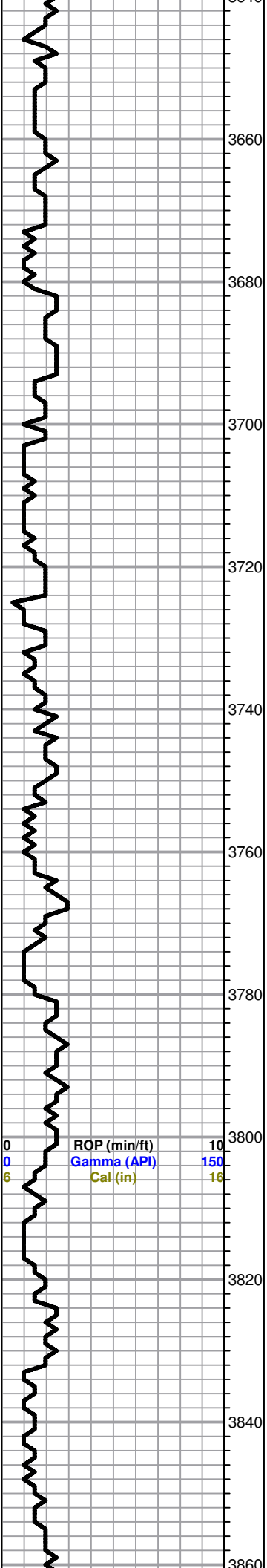
----- Stotler 3498 -438 -----

All formation tops on this geological log have been correlated back to the electric log



Sh-gry/dk gry
 Ls-crm/tan semi fos ns
 Ls-AA
 Sh-gry/dk gry
 Ls-crm/lt buff semi fos ns
 Sh-gry/dk gry
 Ls-crm/lt buff sl clkv ns

Mud Data at 3605'
 7:45 am on 4-11-14
 Wt 8.6 Vis 57 WL 6.4
 pH 11 Chl 4000 Sol 2
 YP 17 LCM 2#



Sh-gry/dk gry

Ls-crm/buff/gry sl fos ns

Ls-lt crm v fos fr por ns no odor

Ls-AA

Sh-gry/dk gry

Ls-crm/lt tan semi fos ns

Ls-wt/lt crm fxln clky pr por ns no odor

Ls-lt crm/lt tan semi fos ns

Sh-gry/dk gry

Ls-lt crm/lt tan semi fos ns

Sh-gry/dk gry

Ls-lt crm/lt tan semi fos fr por ns no odor

Ls-lt crm/buff semi fos pr/fr por ns no odor

Ls-lt crm semi fos pr/fr por ns

Ls-lt crm/lt buff fos pr/fr por ns no odor

Sh-gry/dk gry

Ls-lt crm/buff fos pr/fr por ns

Ls-lt crm/buff semi fos pr/fr por ns

Ls-lt crm/buff semi fos ns

Sh-gry/dk gry

Ls-lt crm/buff semi fos ns

Ls-crm/lt buff fos pr/fr por ns no odor

Ls-crm/buff prtly clky ns no odor

Sh-gry/dk gry

Ls-crm/buff prtly clky ns no odor

Ls-wt/lt crm fos sl clky pr por ns

Sh-gry/dk gry

Ls-lt crm semi fos sl clky ns no odor

Sh-gry/dk gry

Ls-wt/lt crm fos pr to fr fos por dr stn trc hvy fo v ft odor prtly clky

Ls-wt/lt crm fos pr to fr fos por with dk stn trc hvy fo v faint odor few pcs Ls with stn-AA tiny pp por dk hvy stn pty cky

Ls-lt crm/lt tan sli fos pr por ns no odor

Ls-AA

Sh-gry/dk gry

Ls-wt/crm semi fos fr por dk stn and hvy fo no odor

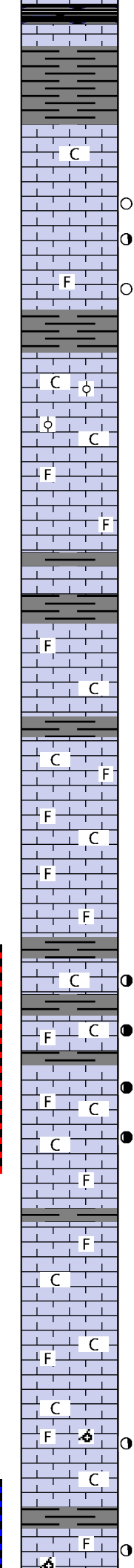
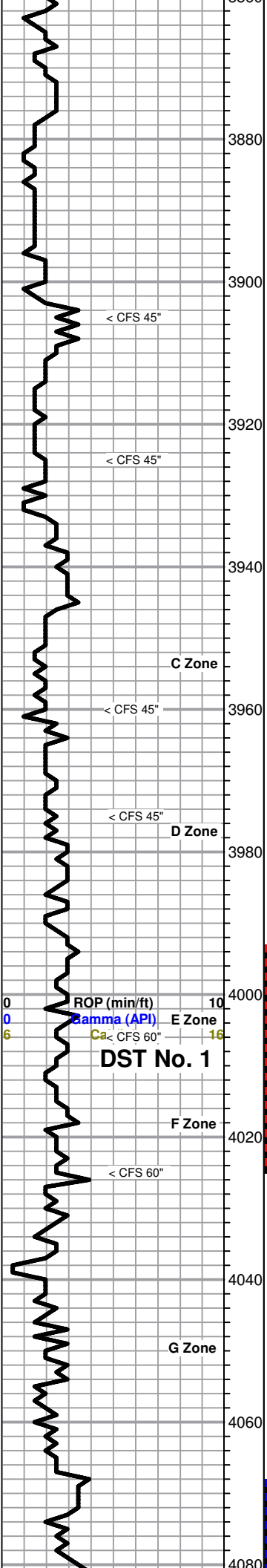
Ls-lt crm dns pr por ns no odor

Ls-lt crm fxln pr por ns

Ls-lt crm/buff fos fr por ns no odor

Ls-lt crm/sl fos pr fos por with sct lt stn no odor

Geologist M. Engelbrecht
on loc at 3785' at 1:30 pm
on 4-11-12



Heebner 3801 -801

Sh-blk carb
Ls-lt crm fxln por por

Sh-gry/dk gry

Sh-AA

----- Toronto 3878 -818 -----

Ls-crm/tan fxln soft sl clky trc inter xln por nsfo

Ls-crm fxln few pcs with pr por sct lt stn

Ls-wt/crm with small fos pr/fr por sct lt stn vssfo in 2 pcs
no odor no energy

Ls-wt/lt tan/crm sl fos with pr/fr por sct lt stn ns no odor

Sh-gry/dk gry

----- Lansing 3910 -850 -----

Ls-wt/crm semi ool pr por prtly clky ns no odor

Ls-lt crm semi ool pr/fr inter ool por prtly clky ns no odor

Ls-crm sl fos pr/fr por ns

Ls-lt crm semi fos pr/fr por ns no odor

Sh-gry/dk gry

Ls-lt tan fxln dolo pr por ns no odor

Sh-gry/dk gry

Ls-lt crm semi fos pr/fr por ns no odor

Ls-lt crm semi fos pr/fr por sl clky ns no odor

Sh-gry/dk gry

Ls-lt crm sli fos small vug por sl clky ns no odor

Ls-lt crm sli fos pr/fr small vug por ns no odor

Ls-wt/lt crm sl fos prtly clky pr por ns

Ls-wt/lt crm sl fos ns

Ls-wt/lt crm sl fos pr por ns no odor

Sh-gry/dk gry

Ls-lt crm sl fos tiny pp por with scat lt stn vssfo lt odor sl clky lt brn fo

Sh-gry/dk gry

Ls-lt crm small fos with pr to fr por ss lt brn gfo fr odor fr amt pcs sl clky

Sh-gry/dk gry

Ls-lt crm small fos with ss lt gfo fr odor sl clky

Ls-wt/lt crm small fos with ss lt brn gfo fr odor sl clky

Ls-crm/lt gry f/mxln mhd sl fos no por

Sh-gry/dk gry

Ls-crm/lt gry f/mxln mhd sl fos no por

Ls-crm/ltgry fxln mhd sl clky no por sm Ls-wt fxln soft clky

Ls-crm/lt tan fxln mhd sl clky no por

Ls-lt gry/tan f/mxln mhd sl fos no por

Ls-AA

Ls-crm fxln mhd sl clky no por with one piece Ls-crm f/mxln mhd fos
sl oom pr inter xln por lt brn stn vssfo on brk no odor

Ls-crm/lt tan/lt gry fxln mhd sl clky no por

----- Muncie Creek 4072 -1012 -----

Sh-gry/dk gry

Ls-crm/lt tan/lt gry fxln mhd/dns no por with sm Ls-gry f/mxln mhd fos
sl oom no por and few pcs Ls-tan f/mxln mhd pr inter xln por vssfo

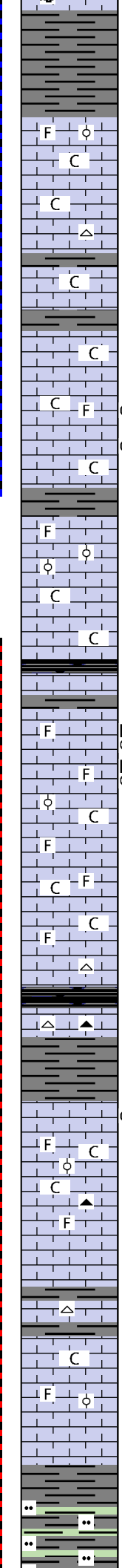
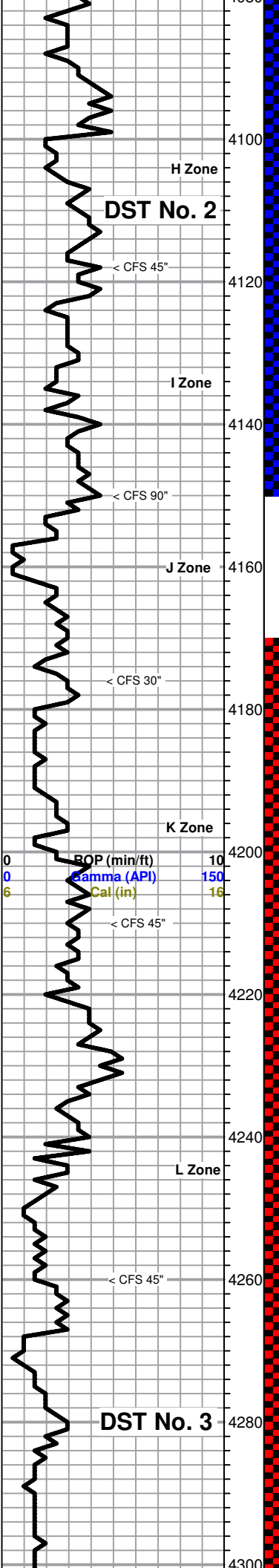
DST No. 1
3993 to 4025
30-45-45-60
1st Open: Weak 3/4" blow
2nd Open: Weak sur blow
Recovery: 75' WCM with
oil spots (40%W, 60%M)
IHP 1952 FHP 1872
IFP 29-43 FFP 46-68
ISIP 1778 FSIP 1146
Temp 108°

Pulled 27 stand short trip at
4025', then cir for test - 90"

Pipe Strap at 4025'
Long 0.25'

Mud Data at 4025'
5:45 am on 4-12-14
Wt 9.1 Vis 53 WL 7.2
pH 10.5 Chl 5000 Sol 5.3%
YP 18 LCM 1#

Geologist M. Armstrong
on loc at 4025' at 2:15 pm
on 4-12-14



Sh-gry/dk gry

Sh-AA

Ls-lt gry fxln mhd sub clkly with sm blk to gry ool no por and sm Ls-tan mxln mhd fos no por

Ls-crm/lt tan fxln mhd clkly no por

Ls-crm/lt gry/tan fxln mhd sl clkly no por sm Cht-wt fsh opa

and Ls-wt fxln soft clkly no por

Sh-gry/dk gry

Ls-crm/lt gry fxln dns sl clkly no por

Sh-gry/dk gry

Ls-crm/lt gry fxln mhd/dns sl clkly no por

Ls-crm/lt gry/tan fxln mhd clkly no por sm Ls-lt gry fxln mhd sl fos sl clkly tr inter xln por ssfo on brk

Ls-lt gry fxln mhd sl gils fr inter xln por fr cut fr fluor fsfo on brk

Ls-tan/gry fxln mhd sub clkly no por

Sh-gry/dk gry

Ls-tan/gry f/mxln dns sl fos no por

Ls-crm fxln mhd fos ool gd ooc por nsfo

Ls-crm/lt tan fxln mhd/dns sl clkly no por

Ls-AA

----- Stark 4173 -1113 -----

Ls-tan/gry f/mxln dns no por

Sh-gry/dk gry

Ls-gry/tan/brn f/mxln dns no por with sm Ls-lt gry (5 pcs) f/mxln mhd sl fos trc inter xln/vug por drk brn to blk dead oil stn vssfo on brk no odor

Ls-AA

Ls-gry f/xln mhd fos sl ool sub clkly no por and Ls-wt fxln soft clkly no por

Ls-tan/lt gry f/mxln dns sl fos no por and Ls-wt fxln soft clkly no por

Ls-crm/lt tan/lt gry fmxln dns sl clkly sl fos no por and Ls-wt fxln soft clkly no por

Ls-AA

Ls-crm/lt gry/tan fxln dns no por sm Cht-wt fsh opa

----- Hushpuckney 4219 -1159 -----

Sh-blk carb

Ls-tan/gry/brn fxln mhd/dns no por sm Cht-wt/gry fsh opa

Sh-gry/dk gry

Ls-tan/lt gry/gry fxln dns no por sm Ls-brn (3 pcs) fxln mhd fr/gd vug por dk brn spt stn gd cut fsfo on brk

Ls-tan/lt gry fxln mhd sl fos sl clkly no por sm Ls-crm fxln mhd ool no por

Ls-tan fxln mhd sl clkly no por sm Cht-lt gry fsh opa

Ls-tan/gry f/mxln mhd sl fos no por

Ls-tan/lt gry fxln dns no por

----- Base/Kansas City 4261 -1201 -----

Ls-tan/lt gry fxln dns no por sm Cht-crm fsh opa

Sh-gry/dk gry

Ls-wt fxln soft clkly pr inter xln por nsfo

Ls-tan fxln mhd no por sm Ls-lt gry fxln mhd fos ool no por

Ls-tan fxln mhd/dns no por

----- Marmaton 4285 -1225 -----

Sh-gry/dk gry

Sh-gry/dk gry/gry grn sl slity

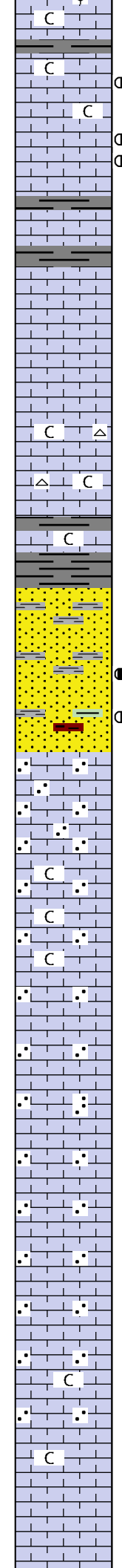
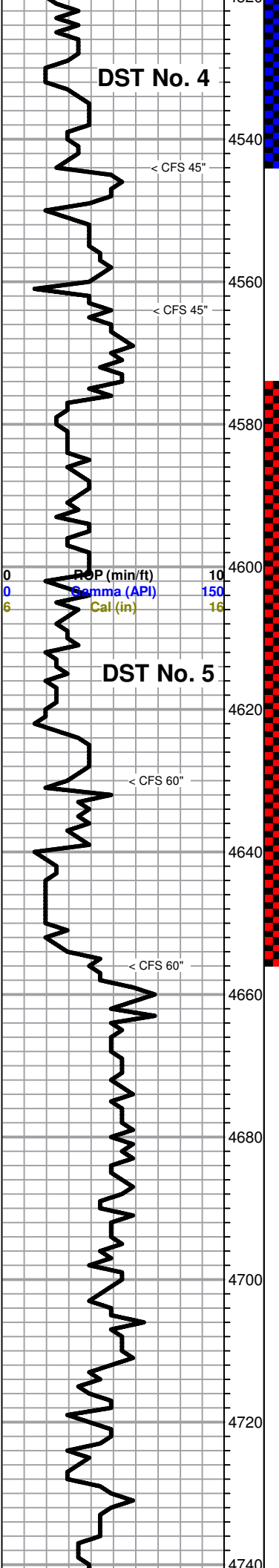
Sh-AA

DST No. 2
 4068 to 4150
 30-45-45-60
 1st Open: Weak 2" blow
 2nd Open: Weak 1" blow
 Recovery: 140' Mud with oil spots and 6" of oil on top
 IHP 2001 FHP 1927
 IFP 37-59 FFP 63-90
 ISIP 1193 FSIP 1179
 Temp 111°

Pulled 10 stand short trip at 4150', then cir for test - 90"

Mud Data at 4150'
 7:30 am on 4-13-14
 Wt 9.3 Vis 52 WL 8
 pH 10.5 Chl 6500 Sol 6.9%
 YP 19 LCM 2#

DST No. 3
 4170 to 4384
 30-45-30-60
 1st Open: BOB in 20 sec
 2nd Open: BOB in 1 min
 Recovery: 2600 SMCW
 (3%M, 97%W
 Chl 47,000 ppm)
 IHP 2093 FHP 1988
 IFP 298-962 FFP 976-1203
 ISIP 1268 FSIP 1270
 Temp 117°



mhd sub clkly fos sl ool no por

Sh-gry/dk gry

Ls-lt gry/crm fxln dns sl clkly no por

Ls-crm fxln mhd pr inter xln/vug por brn spt stn fr cut ssfo on brk no odor

Ls-crm/lt gry fxln dns sl clkly no por

Ls-lt gy fxln mhd pr inter xln por brn spt stn sl cut ssfo on brk no odor

Ls-AA

Ls-lt gry/tan fxln dns no por

----- **Johnson Zone 4550 -1490** -----

Ls-tan/gry fxln mhd/dns no por

Sh-gry/dk gry

Ls-tan/gry fxln mhd no por

Ls-tan/gry fxln dns no por

Ls-AA

Ls-tan/lt gry f/mxln mhd sub clkly no por sm Cht-wt fsh opa

Ls-AA sm Cht-wt fsh opa

----- **Base Penn Lime 4593 -1533** -----

Ls-tan/lt gry/crm fxln mhd sl clkly no por

----- **Morrow 4598 -1538** -----

Sh-gry/dk gry

Ss-wt fgrn sub ang well sorted tite cement nsfo with one piece Ss-lt gry f/mgrn sub ang tite cement sl gils fr cut fsfo on brk sm Sh-gry/djk gry

Ss-wt fgrn sub ang well sorted tite cement nsfo with sm Ss-lt gry f/mgrn well sorted tite cement nsfo and one piece Ss-lt gry fgrn sub ang sl gils fr cut ssfo

Ss-wt/lt grn fgrn sub ang well sorted tite cement nsfo and two pieces Ss-lt gry fgrn sub ang tite cement gsfo on brk gd cut fr odor sm Sh-gry/dk gry

Ss-wt/lt gry fgrn sub ang well sorted tite cement nsfo with one piece Ss-lt gry fgrn sub ang well sorted sl gils fsfo on brk sm Sh-gry/grn/mar

----- **Mississippi 4626 -1566** -----

Ls-wt fxln dns sdy no por

Ls-AA

Ls-crm/tan fxln to sl gran mhd sl clkly no por

Ls-AA

Ls-AA

Ls-tan f/mxln to sl gran dns no por

Ls-wt/crm gran dns no por

Ls-AA

Ls-wt gran dns no por

Ls-AA

Ls-wt gran dns no por

Ls-AA

Ls-wt/lt gry fgran mhd/dns no por sm Ls-wt fgran mhd clkly no por

Ls-AA

Ls-crm/tan fxln to fgran dns no por

Ls-crm/tan fxln to sl gran mhd/dns no por

IHP 2307 FHP 2218 40%O)

IFP 31-52 FFP 60-73

ISIP 1324 FSIP 1306

Temp 116°

Pulled 10 stand short trip at 4544', then cir for test - 90"

Mud Data at 4544'

11:55 am on 4-15-14

Wt 9.3 Vis 57 WL 9.6

pH 10.5 Chl 7200 Sol 6.5%

YP 18 LCM 1#

DST No. 5

4574 to 4656

30-45-30-60

1st Open: BOB in 4"

2nd Open: BOB in 5"

Recovery: 1120' SMCW with oil spots in tool

Chl 32,000 ppm

IHP 2351 FHP 2170

IFP 114-419 FFP 440-610

ISIP 997 FSIP 943

Temp 125°

Pulled 10 stand short trip at 4656', then cir for test - 90"

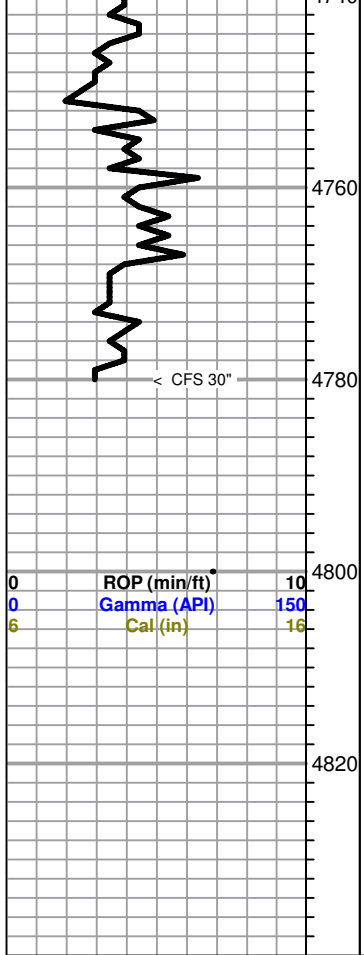
Mud Data at 4656'

11:00 am on 4-16-14

Wt 9.3 Vis 64 WL 10.4

pH 10 Chl 7500 Sol 6.4%

YP 22 LCM 2#



Ls-AA

Ls-crm/tan f/mxln mhd/dns no por sm Ls-wt fgran mhd no por

Ls-AA






Ls-AA

Ls-crm/tan f/mxln mhd/dns no por

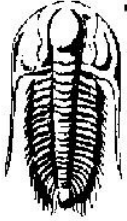
----- RTD 4780 -1720 -----

Finished Drilling at 9:52 am on 4-17-14. Pulled 10 stand short trip, then Cir for Log - 90"

Finished Logging at 7:15 pm on 4-17-14

-  Ritchie Baker 1 31B dst 1-1.jpg
-  Ritchie_1 Baker 31B dst 2-1.jpg
-  Ritchie_1 Baker 31B dst 3_2-1.jpg
-  Ritchie Baker 31B 1 dst 4 (1)-2.jpg
-  Ritchie_1 Baker 31B dst 5_2-1.jpg

0 ROP (min/ft) 10
 0 Gamma (API) 150
 6 Cal (in) 16

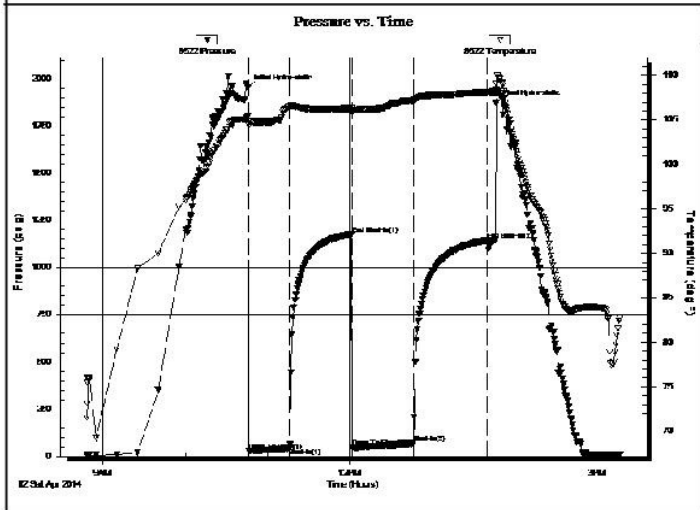
 <p style="font-size: 2em; font-weight: bold; margin: 0;">TRILOBITE TESTING, INC.</p>	<h2 style="margin: 0;">DRILL STEM TEST REPORT</h2>
Ritchie Exploration 8100 E 22nd St N #700 Wichita, Ks 67278-3188 ATTN: Mac Armstrong	31 15s 34w Logan, Ks #1 Baker 31B Job Ticket: 57632 DST#:1 Test Start: 2014.04.12 @ 08:48:00

GENERAL INFORMATION:

Formation: LKC - E & F	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock: 0.00 ft (KB)	Tester: Bradley Walter
Time Tool Opened: 10:46:00	Unit No: 69
Time Test Ended: 15:17:30	Reference Elevations: 3060.00 ft (KB)
Interval: 3993.00 ft (KB) To 4025.00 ft (KB) (TVD)	3055.00 ft (CF)
Total Depth: 4025.00 ft (KB) (TVD)	KB to GR/CF: 5.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Good

Serial #: 8522	Outside
Press@RunDepth: 68.00 psig @ 3994.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2014.04.12	End Date: 2014.04.12
Start Time: 08:48:05	End Time: 15:17:29
	Last Calib.: 2014.04.12
	Time On Btm: 2014.04.12 @ 10:45:45
	Time Off Btm: 2014.04.12 @ 13:46:45

TEST COMMENT: IF: 3/4" in blow.
 IS: No return.
 FF: Surface blow.
 FS: No return.



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1952.02	105.39	Initial Hydro-static
1	28.56	104.35	Open To Flow (1)
30	43.16	106.49	Shut-In(1)
76	1177.84	106.28	End Shut-In(1)
76	46.41	105.83	Open To Flow (2)
121	68.00	107.17	Shut-In(2)
174	1145.52	108.11	End Shut-In(2)
181	1871.59	108.44	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
75.00	w cm 60m 40w w /oil spots	0.37

Gas Rates			
	Chole (inches)	Pressure (psig)	Gas Rate (Mcf/d)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration
 8100 E 22nd St N #700
 Wichita, Ks
 67278-3188
 ATTN: Mac Armstrong

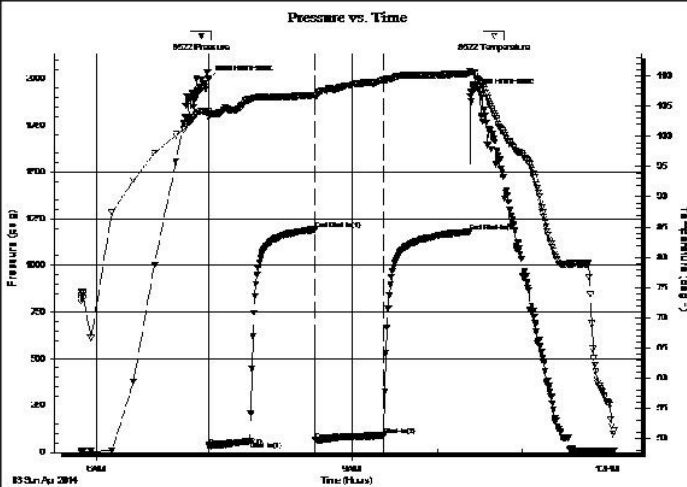
31 15s 34w Logan, Ks
#1 Baker 31B
 Job Ticket: 57633 **DST#:2**
 Test Start: 2014.04.13 @ 05:49:00

GENERAL INFORMATION:

Formation: **LKC - G-I**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 07:19:15
 Time Test Ended: 12:05:00
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Bradley Walter
 Unit No: 69
Interval: 4008.00 ft (KB) To 4150.00 ft (KB) (TVD)
 Total Depth: 4150.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Reference Elevations: 3060.00 ft (KB)
 3055.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8522 Outside
 Press@RunDepth: 90.15 psig @ 4009.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.13 End Date: 2014.04.13 Last Calib.: 2014.04.13
 Start Time: 05:49:05 End Time: 12:04:59 Time On Btm: 2014.04.13 @ 07:19:00
 Time Off Btm: 2014.04.13 @ 10:23:45

TEST COMMENT: IF: 2" blow.
 IS: No return.
 FF: 1" blow.
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2001.09	104.23	Initial Hydro-static
1	36.53	103.11	Open To Flow (1)
30	59.15	106.09	Shut-In(1)
75	1192.89	106.85	End Shut-In(1)
76	62.71	106.40	Open To Flow (2)
124	90.15	109.27	Shut-In(2)
184	1178.89	110.40	End Shut-In(2)
185	1926.66	110.64	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
140.00	mud 100m (oil spots) 6" oil on top	0.84

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration
 8100 E 22nd St N #700
 Wichita, Ks
 67278-3188
 ATTN: Mac Armstrong

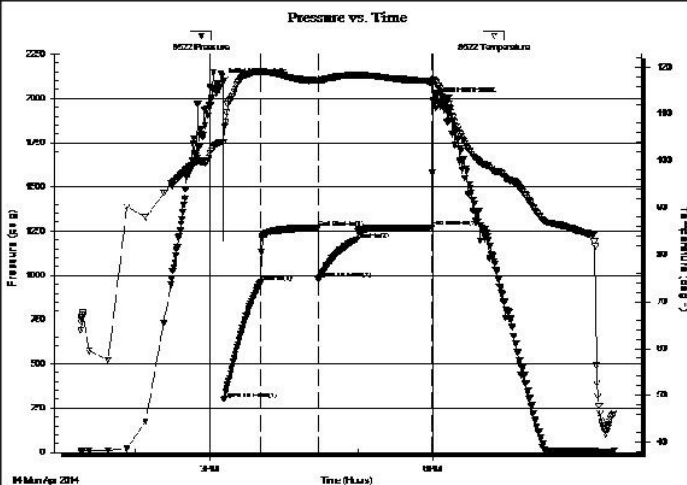
31 15s 34w Logan, Ks
#1 Baker 31B
 Job Ticket: 57634 **DST#:3**
 Test Start: 2014.04.14 @ 13:16:00

GENERAL INFORMATION:

Formation: **LKC -K through Alta**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 15:11:15
 Time Test Ended: 20:26:00
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Bradley Walter
 Unit No: 69
Interval: 4170.00 ft (KB) To 4384.00 ft (KB) (TVD)
 Total Depth: 4384.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Reference Elevations: 3060.00 ft (KB)
 3055.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8522 Outside
 Press@RunDepth: 1203.13 psig @ 4171.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.14 End Date: 2014.04.14 Last Calib.: 2014.04.14
 Start Time: 13:16:05 End Time: 20:25:59 Time On Btm: 2014.04.14 @ 15:10:45
 Time Off Btm: 2014.04.14 @ 17:59:45

TEST COMMENT: IF: BOB @ 20 sec.
 IS: No return.
 FF: BOB @ 1 min.
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2092.91	104.04	Initial Hydro-static
1	298.29	103.87	Open To Flow (1)
31	961.77	119.07	Shut-In(1)
77	1267.53	117.11	End Shut-In(1)
77	976.10	116.90	Open To Flow (2)
108	1203.13	118.25	Shut-In(2)
168	1270.28	116.81	End Shut-In(2)
169	1988.29	117.08	Final Hydro-static


Recovery

Length (ft)	Description	Volume (bbl)
2600.00	mcw 3m 97w	35.35

Gas Rates

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

* Recovery from multiple tests

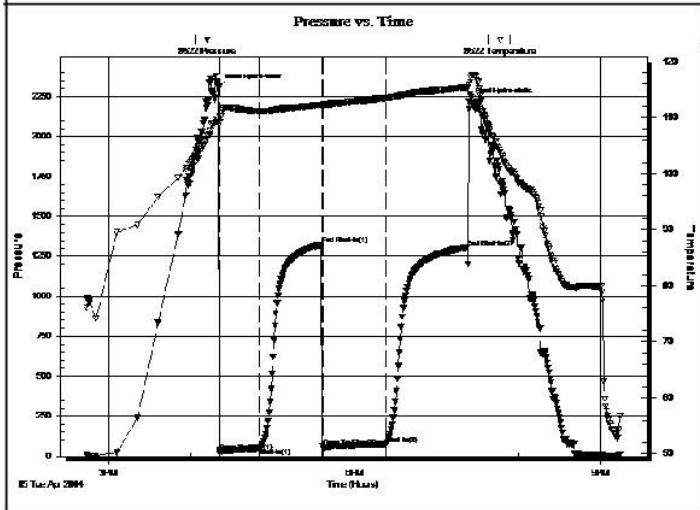
 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT	
	Ritchie Exploration 8100 E 22nd St N #700 Wichita, KS 67278-3188 ATTN: Mac Armstrong	31 15s 34w Logan,KS Baker 31B #1 Job Ticket: 57635 DST#: 4 Test Start: 2014.04.15 @ 14:44:00

GENERAL INFORMATION:

Formation: Cherokee Lime Deviated: No Whipstock: ft (KB) Time Tool Opened: 16:20:45 Time Test Ended: 21:14:00	Test Type: Conventional Bottom Hole (Reset) Tester: Bradley Walter Unit No: 69
Interval: 4518.00 ft (KB) To 4544.00 ft (KB) (TVD) Total Depth: 4544.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Good	Reference Elevations: 3060.00 ft (KB) 3055.00 ft (CF) KB to GR/CF: 5.00 ft

Serial #: 8522	Outside				
Press@RunDepth:	73.46 psig @	4519.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2014.04.15	End Date:	2014.04.15	Last Calib.:	2014.04.15
Start Time:	14:44:05	End Time:	21:13:59	Time On Btm:	2014.04.15 @ 16:20:30
				Time Off Btm:	2014.04.15 @ 19:23:15

TEST COMMENT: IF: BOB @ 28 min.
 IS: No return
 FF BOB @ 25 min.
 FS: 1/2" return.



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2306.53	109.63	Initial Hydro-static
1	30.99	108.94	Open To Flow (1)
30	51.75	111.14	Shut-In(1)
76	1324.49	112.23	End Shut-In(1)
76	59.87	112.18	Open To Flow (2)
122	73.46	113.47	Shut-In(2)
182	1306.23	115.38	End Shut-In(2)
183	2218.21	115.68	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
100.00	gmco 20g 40m 40o	0.49
45.00	go 35g 65o	0.42
0.00	275' GIP	0.00

* Recovery from multiple tests

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration
 8100 E 22nd St N #700
 Wichita, Ks
 67278-3188
 ATTN: Mac Armstrong

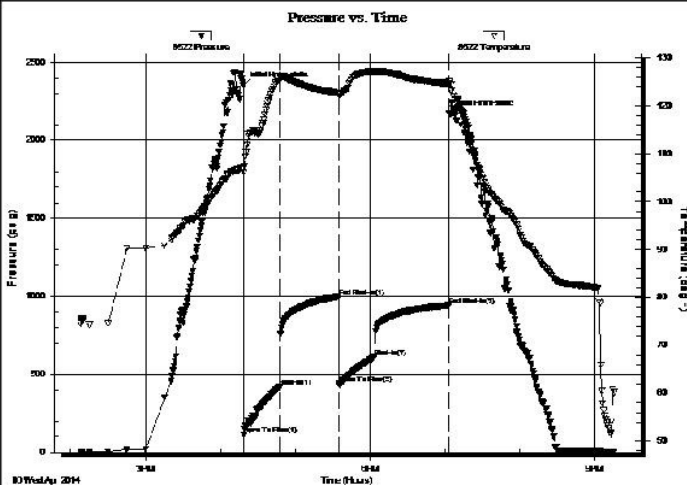
31 15s 34w Logan, Ks
#1 Baker 31B
 Job Ticket: 57636 **DST#:5**
 Test Start: 2014.04.16 @ 14:08:00

GENERAL INFORMATION:

Formation: **4656**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 16:18:45
 Time Test Ended: 21:15:30
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Bradley Walter
 Unit No: 69
Interval: 4574.00 ft (KB) To 4656.00 ft (KB) (TVD)
 Total Depth: 4656.00 ft (KB) (TVD)
 Reference Elevations: 3060.00 ft (KB)
 3055.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good
 KB to GR/CF: 5.00 ft

Serial #: 8522 Outside
 Press@RunDepth: 610.30 psig @ 4575.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.16 End Date: 2014.04.16 Last Calib.: 2014.04.16
 Start Time: 14:08:05 End Time: 21:15:29 Time On Btm: 2014.04.16 @ 16:18:30
 Time Off Btm: 2014.04.16 @ 19:03:45

TEST COMMENT: IF: BOB @ 4 min.
 IS: No return
 FF: BOB @ 5 min.
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2351.00	106.90	Initial Hydro-static
1	114.01	106.18	Open To Flow (1)
29	418.90	125.22	Shut-In(1)
77	996.59	122.56	End Shut-In(1)
77	439.65	122.32	Open To Flow (2)
105	610.30	127.15	Shut-In(2)
165	943.02	124.61	End Shut-In(2)
166	2169.84	124.91	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1120.00	smcw 3m 97w (oil spots in tool)	14.59

Gas Rates

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

* Recovery from multiple tests



#1 Baker 31B

2235' FNL & 1090' FWL

75' N & 100' E of SE SW NW Section 31-15S-34W

Logan County, Kansas

API# 15-109-21273-0000

Elevation: 3055' GL, 3060' KB

Sample Tops			Ref. Well
Anhydrite	2379'	+681	+14
B/Anhydrite	2397'	+663	+13
Stotler	3498'	-438	+21
Heebner	3861'	-801	+24
Lansing	3910'	-850	+24
Muncie Shale	4081'	-1021	+30
Stark Shale	4173'	-1113	+30
Hush	4219'	-1159	+29
BKC	4255'	-1195	+31
Marmaton	4282'	-1222	+30
Altamont	4312'	-1252	+29
Pawnee	4390'	-1330	+28
Myrick	4434'	-1374	+29
Fort Scott	4444'	-1384	+29
Cherokee	4470'	-1410	+31
Johnson	4542'	-1482	+34
Morrow	4601'	-1541	+28
Mississippian	4642'	-1582	+47
RTD	4780'	-1720	



CONSOLIDATED
Oil Well Services, LLC

267502

TICKET NUMBER 44424
LOCATION Ottawa KS
FOREMAN ~~James~~ Miles

FIELD TICKET & TREATMENT REPORT
CEMENT

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
4-18-14	7173	Baker 31-B	31	15S	34W	Logan
CUSTOMER Ritche Exploration			TRUCK #	DRIVER	TRUCK #	DRIVER
MAILING ADDRESS			528-118	Jeremy R		
CITY			379	Jake H		
STATE						
ZIP CODE						

JOB TYPE Production HOLE SIZE 77/8 HOLE DEPTH 4793 CASING SIZE & WEIGHT 5 1/2 15.5
CASING DEPTH 4770 DRILL PIPE _____ TUBING _____ OTHER P. collar 2354
SLURRY WEIGHT 14.2 SLURRY VOL 1.42 WATER gal/sk _____ CEMENT LEFT in CASING 21'
DISPLACEMENT 113 DISPLACEMENT PSI 1200 MIX PSI 1800 RATE _____

REMARKS: Safety meeting on well #2. Turbolizers 1-4-6-7-9-13-57-59
Baker 31-B 37, 75, 95, 103, P. collar top at 58 @ 2364'. Rig up and
circulate 45 min. Pump 500 gal water, 500 gal mud flush, 500 gal water. 20 sks
Mud - 300 sks RM Mix 200 sks over with 5th Mal Seal. 14th CDF 26 + CAF 38
Down casing shut down. Cleared pumps + lines. Released plug. Dropped 114th
bbls with DeepSift plug landed and held @ 1800 PSI. Shut in

Thanks Miles & Crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5401C	1	PUMP CHARGE	3175.00	3175.00
5406	45	MILEAGE	5.25	236.25
5407A	11.8 ton	Ton mileage delivery	1.25	929.25
1126	250 sks	OWC	23.20	5925.00
1137	59 #	CDF-26	10.20	601.80
1146	35 #	CAF 38 - delivered	10.20	357.00
1110*	1250 #	Roll-seal	1.56	700.00
1146G	500 gal	Mud flush	1.00	500.00
4159	1	5 1/2" API Flow shop	433.75	433.75
4454	1	5 1/2" handle down Assy	567.00	567.00
4136	8	5 1/2" Turbolizers	75.75	606.00
4104	4	5 1/2" Baker's	290.00	1160.00
4285	1	5 1/2" P-collar	2075.00	2075.00
				17266.00
				1726.61
				15539.44
			SALES TAX	889.93
			ESTIMATED TOTAL	16429.37

completed

Rev'n 3737

AUTHORIZATION

[Signature]

TITLE

DATE

4-18-14

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.

