



Musgrove

PETROLEUM CORPORATION
Clafin, Kansas

NOTES

Company: Grady Bolding Corporation

Lease: Grizzell #27

Field: Bloomer

Location: NW-SW-SE-NE (1996' FNL& 1131' FEL)

Sec: 31 Twsp: 17S Rge: 10W

County: Ellsworth State: Kansas

KB: 1798' GL: 1788'

API #: 15-053-21308-00-00

Contractor: Southwind Drilling Inc. (Rig #1)

Spud: 03/29/2014 Comp: 04/03/2014

RTD: 3312' LTD: 3310'

Mud Up: 2700' Type Mud: Chemical

Samples Saved From: 2700' to RTD
Drilling Time Kept From: 2700' to RTD
Samples Examined From: 2700' to RTD
Geological Supervision from: 2700' to RTD
Geologist on Well: Wyatt Urban

Surface Casing: 8 5/8@ 312'

Electronic Surveys: Logged by Nabors Completion Services CDL/CNL, MEL, DIL

Grady Bolding Corporation Well Comparison

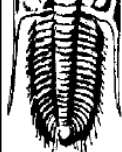
Formation	DRILLING WELL				COMPARISON WELL				COMPARISON WELL			
	Grady Bolding Corp-Grizzell				Grady Bolding Corp- #24 Grizzell				Gulf Oil Corp- #15-31 Grizzell			
	NW-SW-SE-NE 31-17S-10W				C-W/2-SW-NE 31-17S-10W				SW-NE-SW-NE 23-32S-37W			
	1798 KB				1803 KB				1807 KB			
Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log	
Heebner	2834	-1036	2836	-1038	2840	-1037	-1	-1	2847	-1040	4	2
Toronto	2848	-1050	2853	-1055	2859	-1056	-6	1	2864	-1057	7	2
Douglas	2860	-1062	2864	-1066	2866	-1063	1	-3				
Brown Lime	2945	-1147	2948	-1150	2955	-1152	5	2				
Lansing	2961	-1163	2964	-1166	2970	-1167	4	1	2976	-1169	6	3
BRC	3228	-1430	3230	-1432	3235	-1432	2	0	3240	-1433	3	1
Arbuckle	3245	-1447	3249	-1451	3242	-1439	-8	-12	3246	-1439	-8	-12
RTD	3312	-1514	3312	-1514	3248	-1445	-69	-69	3350	-1543	29	29
LTD	3310	-1512	3310	-1512								



DRILL STEM TEST REPORT

Grady Bolding Corporation

31-17S-10W, Ellsworth Co.



TESTING, INC

Grady Bolding Corporation
114 N Main St
Ellinw ood KS 67526
ATTN: Wyatt Urban

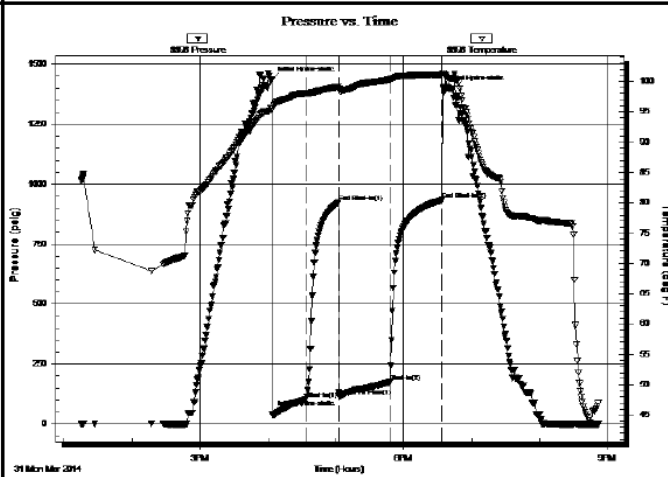
31-17s-10w- Ellsworth Co.
Grizzell #27
Job Ticket: 57552 **DST#: 1**
Test Start: 2014.03.31 @ 13:15:04

GENERAL INFORMATION:

Formation: **Lans. A-F**
Deviated: No Whipstock: ft (KB)
Test Type: Conventional Bottom Hole (Initial)
Time Tool Opened: 17:03:04
Tester: Tate Lang
Time Test Ended: 20:52:04
Unit No: 49
Interval: 2952.00 ft (KB) To 3050.00 ft (KB) (TVD)
Reference Elevations: 1798.00 ft (KB)
Total Depth: 3050.00 ft (KB) (TVD) 1788.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 10.00 ft

Serial #: 8898 Outside
Press@RunDepth: 173.43 psig @ 2953.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.03.31 End Date: 2014.03.31 Last Calib.: 2014.03.31
Start Time: 13:15:05 End Time: 20:52:04 Time On Btm: 2014.03.31 @ 16:03:14
Time Off Btm: 2014.03.31 @ 18:34:13

TEST COMMENT: B.O.B. in 2 mins
Fair blow back built to 4 in died back to 3 in
B.O.B. in 2 mins
Weak blow back built to 3 in



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1434.93	95.63	Initial Hydro-static
1	40.10	95.26	Initial Hydro-static
31	102.34	98.02	Shut-in(1)
60	923.11	99.09	End Shut-in(1)
60	115.35	98.72	Open To Flow (1)
105	173.43	100.31	Shut-in(2)
151	933.33	101.11	End Shut-in(2)
151	1399.82	101.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	50%G 40%O 5%W 5%M	1.68
180.00	50%G 10%O 40%M	2.52
60.00	5%G 5%O 90%M	0.84
0.00	1080 GP	0.00

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Grady Bolding Corporation
114 N Main St
Ellinw ood KS 67526
ATTN: Wyatt Urban

31-17s-10w- Ellsworth Co.
Grizzell #27
Job Ticket: 57553 **DST#: 2**
Test Start: 2014.04.01 @ 15:03:14

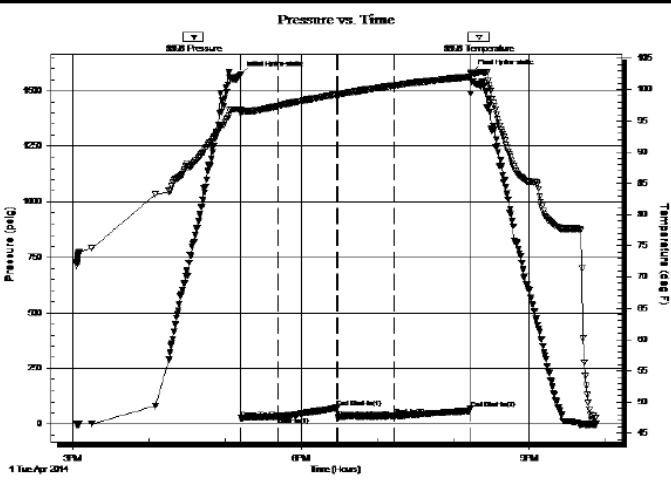
GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 17:12:44
Tester: Tate Lang
Time Test Ended: 21:53:14
Unit No: 49
Interval: 3190.00 ft (KB) To 3235.00 ft (KB) (TVD)
Reference Elevations: 1798.00 ft (KB)

Total Depth: 3235.00 ft (KB) (TVD) 1788.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 10.00 ft

Serial #: 8898 Outside
 Press@RunDepth: 36.40 psig @ 3191.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.01 End Date: 2014.04.01 Last Calib.: 2014.04.01
 Start Time: 15:03:15 End Time: 21:53:14 Time On Btm: 2014.04.01 @ 17:12:24
 Time Off Btm: 2014.04.01 @ 20:14:34

TEST COMMENT: Fair blow built to 6 in
 Dead no blow back
 Weak surface blow built to 1 3/4 in
 Dead no blow back



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1571.61	96.89	Initial Hydro-static
1	26.53	96.50	Open To Flow (1)
30	33.16	97.38	Shut-in(1)
77	72.89	99.24	End Shut-in(1)
77	29.35	99.25	Open To Flow (2)
121	36.40	100.63	Shut-in(2)
182	69.47	102.06	End Shut-in(2)
183	1580.28	102.52	Final Hydro-static

Length (ft)	Description	Volume (bbl)
40.00	10%G 10%O 80%M	0.56
0.00	20 GP	0.00

* Recovery from multiple tests

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Grady Bolding Corporation 31-17s-10w- Ellsworth Co.
 114 N Main St Grizzell #27
 Ellinwood KS 67526 Job Ticket: 57554 DST#: 3
 ATTN: Wyatt Urban Test Start: 2014.04.02 @ 06:10:46

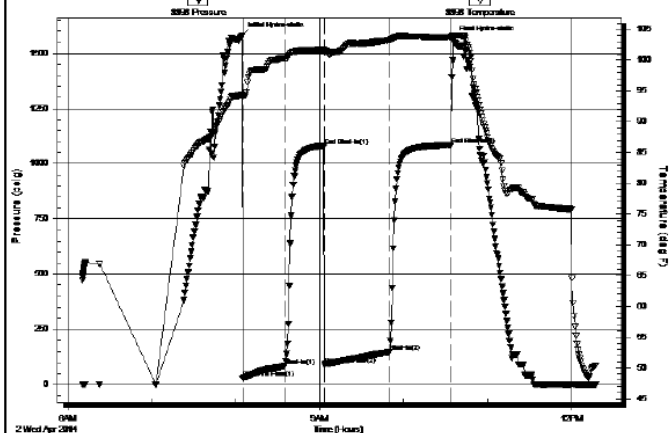
GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 08:04:56 Tester: Tate Lang
 Time Test Ended: 12:17:36 Unit No: 49
 Interval: 3190.00 ft (KB) To 3252.00 ft (KB) (TVD) Reference Elevations: 1798.00 ft (KB)
 Total Depth: 3247.00 ft (KB) (TVD) 1788.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 10.00 ft

Serial #: 8898 Outside
 Press@RunDepth: 147.35 psig @ 3196.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.02 End Date: 2014.04.02 Last Calib.: 2014.04.02
 Start Time: 06:10:47 End Time: 12:17:36 Time On Btm: 2014.04.02 @ 08:04:36
 Time Off Btm: 2014.04.02 @ 10:35:25

TEST COMMENT: B.O.B. in 12 mins
 Weak surface blow back
 B.O.B. in 11 mins
 Weak surface blow built to 2 in

Pressure vs. Time



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1581.56	94.44	Initial Hydro-static
1	28.93	94.14	Open To Flow (1)
31	83.63	100.36	Shut-h(1)
59	1081.55	101.76	End Shut-h(1)
60	89.04	101.48	Open To Flow (2)
106	147.35	103.34	Shut-h(2)
150	1084.98	103.73	End Shut-h(2)
151	1562.56	104.01	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	10%G 10%O 5%W 75%M	0.84
120.00	45%G 30%O 5%W 20%M	1.68
60.00	30%G 35%O 35%M	0.84
40.00	10%G 30%O 60%M	0.56
0.00	440 GIP	0.00

* Recovery from multiple tests

Gas Rates

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

ROCK TYPES

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

ACCESSORIES

MINERAL • Sandy	FOSSIL ○ Oolite ⊕ Oomoldic	STRINGER ▨ Dolomite	TEXTURE C Chalky FX Finexln
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OTHER SYMBOLS

Oil Show ● Good Show ● Fair Show ● Poor Show ○ Spotted or Trace ○ Questionable Stn D Dead Oil Stn ■ Fluorescence * Gas	DST ■ DST Int ■ DST alt ■ Core tail pipe
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Curve Track #1	Depth Intervals	DST	Lithology	Oil Show	Geological Descriptions	TG, C1 - C5
ROP (min/ft) — Gamma (API) — Cal (in) - - -	Cored Interval DST Interval					Total Gas (units) — C1 (units) — C2 (units) — C3 (units) — C4 (units) —
1:240 Imperial ROP (min/ft) Gamma (API) Cal (in)	2800 2820					1:240 Imperial 0 Total Gas (units) 100 0 C1 (units) 100 0 C2 (units) 100 0 C3 (units) 100 0 C4 (units) 100
					LS, cream to white, chalky, few foss, poor scattered porosity, no shows, trc. maroon sh	

2840
2860
2880
2900
2920
2940
2960
2980
3000
3020
3040

Heebner 2834 (-1036)

Black carb shale

Gray silty sh.

Toronto 2848 (-1050)

LS, tan to gray, FXL, cherty, dense, no visible porosity, no shows

Douglas 2860 (-1062)

Sh. gray, black, maroon,

Sh. A/A, trc. SD. gray, F.Grain, well sorted, Lt. flor. cut, no shows, no odor

Sd. gray, F.grain, well sorted, sub angular, no shows,

Sh. gray, maroon (brick red) silty, soft

Sh. gray, greenish, maroon, soft

Brown Lime 2945 (-1147)

LS, tan to brown, FXL, cherty, no visible porosity, NSFO

Lansing 2961 (-1163)

LS, tan, ool, poorly developed, poor visible porosity, SFO, Lt. odor, Lt. black stain

LS, cream to white, chalky, few ool, poor oom porosity, SFO, odor, Lt. golden brown stain

LS, cream to tan, FXL, V. chalky, poor visible porosity, Lt. black stain, Trc. SFO, odor

LS, tan to gray, FLX, foss, poor visible porosity, SFO, odor???

Sh. gray, silty, trc. pyrite

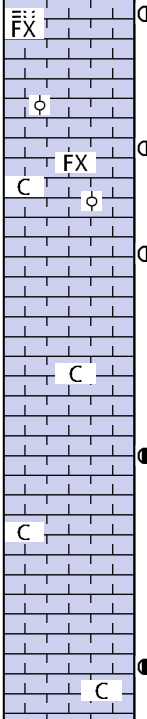
LS, cream to white, ool, poor to fair oom porosity, SFO, Lt. golden brown stain, fair odor

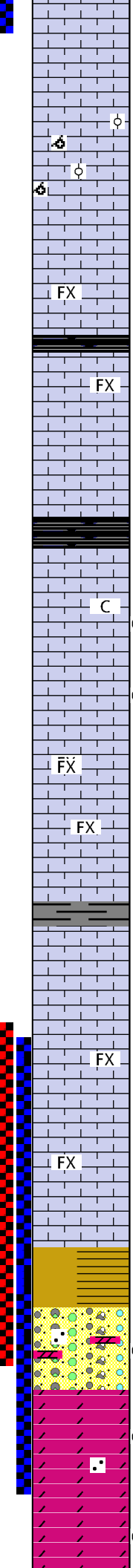
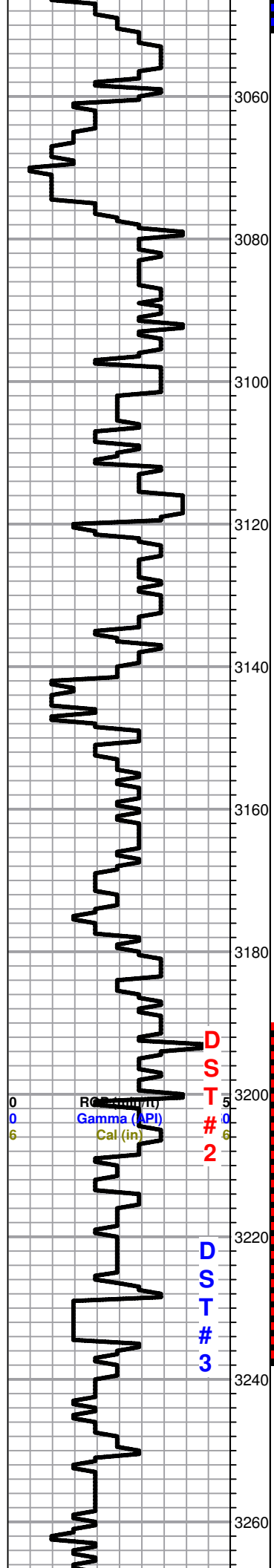
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1

ROP (min/ft) 5
Gamma (API) 150
GR (in) 16

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





LS, tan to brown, FXL, ool, poor scattered proosity, NSFO, no odor

LS, white to cream, oom, good vuggy porosity, barren

LS, cream to gray, FXL< dense, poor visible porosity, foss, no shows, trace black carb sh.

LS, cream to gry, FXL, dns, few foss, chalky in parts, poor visible porosity, no shows

LS, cream to white, chalky, poor scattered porosity, no shows

Black carb SH.

LS, cream to white, ool, foss, chalky, poor scattered porosity, dense, trc. SFO, odor???, trc. blk stain

LS, tan, ool, fair oom porosity, chalky, trc. Lt. spty SFO, odor, SH. greenish, maroon, black,

LS, cream to white, chalky, poor visible porosity no shows

LS, tan ool, FXL, poor visible porosity, dense, no shows

LS, gray, FXL, dense, few foss, no visible porosity, cherty, trc. Sh. gray, maroon soft

BASE OF KANSAS CITY 3228 (-1430)

Sh. maroon, blue greenish, soft, greenish trc. white ool, chert
V.C. cherts, white, orange, cream, opaque
60 min. sample strong odor, few dol, cream to tan, F. grained, sandy, Lt. SFO in fresh broken sample,

Arbuckle 3245 (-1447)

Dol. white, gray, P-MXLN, poor to fair scattered porosity SFO, strong odor, golden brown stain, trc. pyrite

Dol, white to gray, MXLN, fair scattered porosity, SFO, strong odor, golden brown stain

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

CFS 20-40-60
CFS 20-40-60
CFS 20-40-60
CFS 20-40-60

strong odor, golden brown stain

3280

Dol, white, M-FXLN, fair scattered porosity, Lt. SFO, faint odor, Lt. brown stain

FX

3300

Dol. white, FXLN dense, poor to none visible porosity, no shows,

FX

3320

Dol, white, FXLN, dense, poor visible porosity, no shows, odor???

3340

CFS 20-40-60

RTD 3312'