

Ritchie Exploration, Inc.

Lowry 12A No.1

1645' FNL and 1960' FEL

5'N and 20'E of N2 SW NE

Sec 12 T6S R25W

Graham County, Kansas

Geological Report

by

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

Scale 1:240 Imperial

Well Name: Lowry 12A No. 1
 Surface Location: Sec 12 T6S R25W
 Bottom Location: 1645' FNL and 1960' FEL
 API: 15-065-23946
 License Number: 4767
 Spud Date: 6/14/2013 Time: 1:15 PM
 Region: Graham County, Kansas
 Drilling Completed: 6/20/2013 Time: 8:17 PM
 Surface Coordinates:
 Bottom Hole Coordinates:
 Ground Elevation: 2464.00ft
 K.B. Elevation: 2469.00ft
 Logged Interval: 3100.00ft To: 4045.00ft
 Total Depth: 4045.00ft
 Formation: Arbuckle
 Drilling Fluid Type: Chemical/Fresh Water Gel

OPERATOR

Company: Ritchie Exploration, Inc.
 Address: 8100 East 22nd Street North, No. 700
 Wichita, Kansas 67278

Contact Geologist: Pete Fiorini
 Contact Phone Nbr: 316-691-9500
 Well Name: Lowry 12A No. 1
 Location: Sec 12 T6S R25W API: 15-065-23946
 Pool: Oil Field: Wildcat
 State: Kansas Country: USA

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: 100° 03' 26.322" Latitude: 39° 32' 56.679"
 N/S Co-ord:
 E/W Co-ord:

CONTRACTOR

Contractor: WW Drilling
 Rig #: 6
 Rig Type: mud rotary Time: 1:15 PM
 Spud Date: 6/14/2013 Time: 8:17 PM
 TD Date: 6/20/2013 Time: 10:30 AM
 Rig Release: 6/21/2013

ELEVATIONS

K.B. Elevation: 2469.00ft Ground Elevation: 2464.00ft
 K.B. to Ground: 5.00ft

NOTES

Date	Depth at 7 am	Activity
6-14-13	MIRU	Spud at 1:15 pm
6-15-13	873	Drilling
6-16-13	2708	Drilling
6-17-13	3465	Drilling
6-18-13	3666	CFS
6-19-13	3700	OB with DST No. 4
6-20-13	3791	CFS
6-21-13	4045	P & A

Surface casing: 8 5/8" 23# at 221'
 Production Casing: None set

Deviation: 222° - 3/4°
 3624' - 1°
 4045' - 1 1/2°

Bit Record:	Make	Size	Type	Depth In	Depth Out	Hours
	SM	12 1/4"	Tooth Bit	222	222	1 1/4
	SM	7 7/8"	F271Y		4045	74 1/4

Drill Stem Tests:

DST No. 1 3582 to 3624 Formation: Toronto
 30-30-30-30
 Recovery: 5' Mud
 IHP 1729 FHP 1727
 IFP 16-19 FFP 65-25
 ISIP 103 FSIP 317
 Temp 107°

DST No. 2 3616 to 3666 Formation: Lansing A and C Zones
 30-45-45-60
 Recovery: 93' WM (40%W, 60%M)
 123' MW (30%M, 70%W)
 55' MW (20%M, 80%W - Chl 65,000 ppm)
 5' Mud
 IHP 1778 FHP 1766
 IFP 19-89 FFP 94-140
 ISIP 1157 FSIP 1148
 Temp 109°

DST No. 3 3664 to 3700 Misrun due to packer failure

DST No. 4 3659 to 3700 Formation: Lansing D, E, and F Zones
 30-45-45-60
 Recovery: 20' Free Oil
 102' OCWM (10%O, 10%W, 80%M)
 120' Oil Spotted MW (30%M, 70%W - Chl 63,000 ppm)
 IHP 1825 FHP 1781
 IFP 26-92 FFP 91-126
 ISIP 1184 FSIP 1177
 Temp 110°

DST No. 5 3720 to 3778 Formation: Lansing H, I, and J Zones
 30-45-45-60
 Recovery: 65' WM (30%W, 70%M)
 120' MW (50%M, 50%W - Chl 32,000 ppm)
 IHP 1830 FHP 1788
 IFP 17-78 FFP 85-104
 ISIP 1247 FSIP 1207
 Temp 110°

Formation	Sample	E-Log	Datum	Well 1	Well 2	Well 3
Anhydrite	2103	2100	+369	-4	-26	-12
B/Anhydrite	2135	2134	+335	-6	-26	-12
Topeka	3384	3383	-914	+1	-36	-4
King Hill	3475	3475	-1006	+2	-36	-2
Queen Hill	3535	3535	-1066	+3	-34	0
Heebner	3586	3585	-1116	+3	-32	-3
Toronto	3609	3608	-1139	+7	-33	-3
Lansing	3624	3624	-1155	+5	-34	-2
Muncie Creek	3721	3720	-1251	+6	-31	+3
Stark	3772	3773	-1304	+6	-32	-1
Hushpuckney	3791	3792	-1323	+4	-31	-3
B/Kansas City	3808	3810	-1341	+5	-33	-5
Marmaton	3830	3832	-1363	+8	-32	+2
Altamont	3848	3850	-1381	+4	+4	+7
Pawnee	3872	3874	-1405	+8	+8	+4
Fort Scott	3896	3898	-1429	+6	+6	+9
Cherokee	3904	3904	-1435	+7	+7	+17
Conglomerate	3980	3982	-1513	+1	0	0
Arbuckle	4022	4024	-1555	+10	+29	+29
Total Depth	4045	4045	-1576			

Well 1: Murlin Drilling Company Schoen No. 1 C NE SE Sec 1 T6S R25W
 Well 2: Blueridge Petroleum Company Slipke N1-10-2250' FSL and 1602' FEL Sec 10 T6S R25W
 Well 3: A & A Production Schoen No. 1 1710' FSL and 1660' FEL Sec 14 T6S R25W

Due to the results of the Drill Stem Tests and the electric log calculations, it was decided to plug this test well.

Respectfully submitted,
Macklin M. Armstrong

ROCK TYPES

	Cht vari		Dolprim		Shale, grn		Shale, gr		Shcol
	Congl		Lmst fw7		Carbon, Sh		Shale, red		
	Chtcong1								

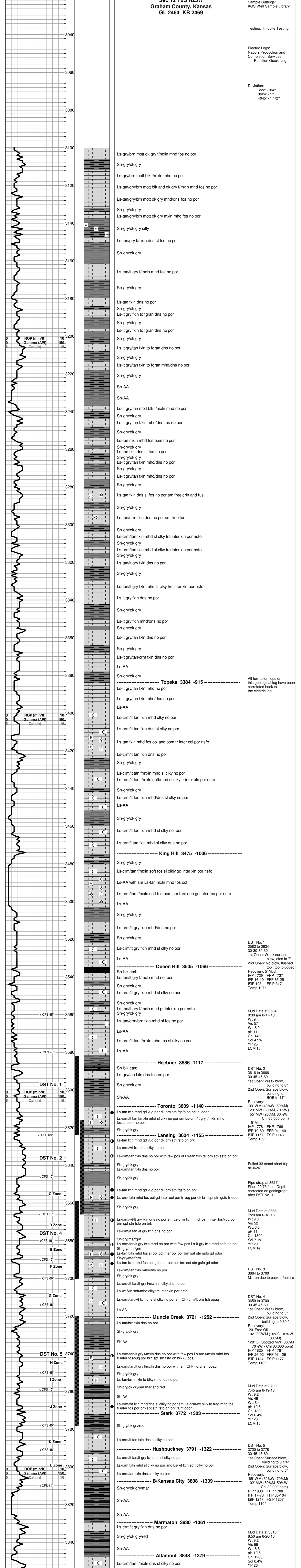
ACCESSORIES

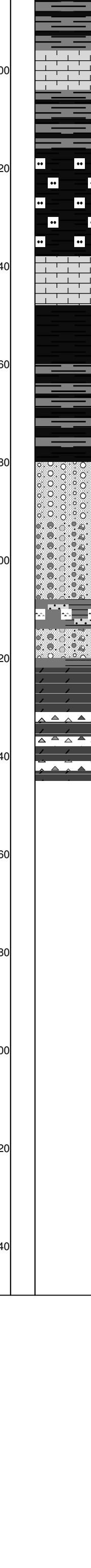
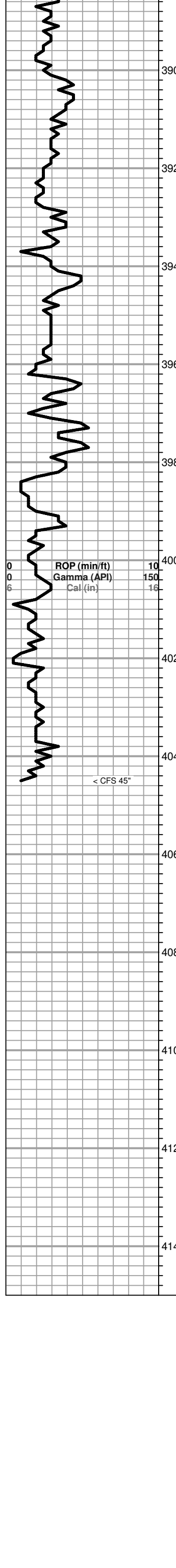
	Silty		Sandstone		Chalky
	Varicolored chert		Stranger		
	Crinoids		Fossils < 20%		
	Coliite				
	Comoldic				
	Fussilind				

OTHER SYMBOLS

	DST Int
	DST alt
	Core

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)





Sh-AA

----- **Fort Scott 3896 -1427** -----

Ls-lt gry/lt red brn fxin to sl gran mhd no por

----- **Cherokee 3904 -1435** -----

Sh-gry/dk gry/red

Sh-AA

Sh-red/red brn sl silty

Sh-AA

Sh-AA

Ls-tan mott gry and brn blkly to frag mhd no por

Sh-gry/red brn gummy

Sh-AA

Sh-gry/dk gry/red brn

Sh-AA

----- **Conglomerate 3980 -1511** -----

Ls-lt gry/brn f/mxn mhd sl shly no por sm Ss-clr/lt red brn m/cgm sub ang to sub rnd fri nsfo and Sh-red/red brn

Sh-gry/dn gry/red/sm yel and Ls-AA

Sh-AA with Cht-dk org/crm/tan/gry fsh opac and Ls-gry/brn blkly mhd no por

Sh and Cht-AA

Sh-gry/dk gry/red/yel with some Cht-org/tan/crm/wt fsh opaq and Ss-red brn cgm sub ang lite cement

Sh and Cht-AA with sm Ss

----- **Arbuckle 4022 -1553** -----

Dolo-lt gry tln to fsuc mhd/dns no por

Dolo-lt gry fsuc to suc mhd/dns chty no por and Cht-tan/lt org crm fsh opaq

Dolo and Cht-AA

----- **RTD 4045 -1576** -----

Finished Drilling at 8:17 pm on 6-20-13. Pulled 12 stand short trip, then Cir for Log 90"

Finished Logging at 3:30 am on 6-21-13



Sh-AA

----- **Fort Scott 3896 -1427** -----

Ls-lt gry/lt red brn fxin to sl gran mhd no por

----- **Cherokee 3904 -1435** -----

Sh-gry/dk gry/red

Sh-AA

Sh-red/red brn sl silty

Sh-AA

Sh-AA

Ls-tan mott gry and brn blkly to frag mhd no por

Sh-gry/red brn gummy

Sh-AA

Sh-gry/dk gry/red brn

Sh-AA

----- **Conglomerate 3980 -1511** -----

Ls-lt gry/brn f/mxn mhd sl shly no por sm Ss-clr/lt red brn m/cgm sub ang to sub rnd fri nsfo and Sh-red/red brn

Sh-gry/dn gry/red/sm yel and Ls-AA

Sh-AA with Cht-dk org/crm/tan/gry fsh opac and Ls-gry/brn blkly mhd no por

Sh and Cht-AA

Sh-gry/dk gry/red/yel with some Cht-org/tan/crm/wt fsh opaq and Ss-red brn cgm sub ang lite cement

Sh and Cht-AA with sm Ss

----- **Arbuckle 4022 -1553** -----

Dolo-lt gry tln to fsuc mhd/dns no por

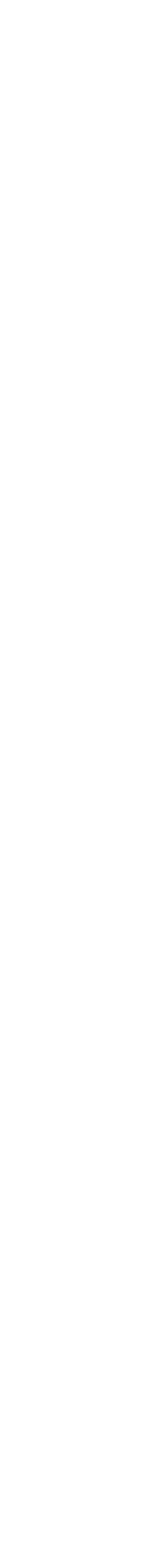
Dolo-lt gry fsuc to suc mhd/dns chty no por and Cht-tan/lt org crm fsh opaq

Dolo and Cht-AA

----- **RTD 4045 -1576** -----

Finished Drilling at 8:17 pm on 6-20-13. Pulled 12 stand short trip, then Cir for Log 90"

Finished Logging at 3:30 am on 6-21-13



Sh-AA

----- **Fort Scott 3896 -1427** -----

Ls-lt gry/lt red brn fxin to sl gran mhd no por

----- **Cherokee 3904 -1435** -----

Sh-gry/dk gry/red

Sh-AA

Sh-red/red brn sl silty

Sh-AA

Sh-AA

Ls-tan mott gry and brn blkly to frag mhd no por

Sh-gry/red brn gummy

Sh-AA

Sh-gry/dk gry/red brn

Sh-AA

----- **Conglomerate 3980 -1511** -----

Ls-lt gry/brn f/mxn mhd sl shly no por sm Ss-clr/lt red brn m/cgm sub ang to sub rnd fri nsfo and Sh-red/red brn

Sh-gry/dn gry/red/sm yel and Ls-AA

Sh-AA with Cht-dk org/crm/tan/gry fsh opac and Ls-gry/brn blkly mhd no por

Sh and Cht-AA

Sh-gry/dk gry/red/yel with some Cht-org/tan/crm/wt fsh opaq and Ss-red brn cgm sub ang lite cement

Sh and Cht-AA with sm Ss

----- **Arbuckle 4022 -1553** -----

Dolo-lt gry tln to fsuc mhd/dns no por

Dolo-lt gry fsuc to suc mhd/dns chty no por and Cht-tan/lt org crm fsh opaq

Dolo and Cht-AA

----- **RTD 4045 -1576** -----

Finished Drilling at 8:17 pm on 6-20-13. Pulled 12 stand short trip, then Cir for Log 90"

Finished Logging at 3:30 am on 6-21-13



Sh-AA

----- **Fort Scott 3896 -1427** -----

Ls-lt gry/lt red brn fxin to sl gran mhd no por

----- **Cherokee 3904 -1435** -----

Sh-gry/dk gry/red

Sh-AA

Sh-red/red brn sl silty

Sh-AA

Sh-AA

Ls-tan mott gry and brn blkly to frag mhd no por

Sh-gry/red brn gummy

Sh-AA

Sh-gry/dk gry/red brn

Sh-AA

----- **Conglomerate 3980 -1511** -----

Ls-lt gry/brn f/mxn mhd sl shly no por sm Ss-clr/lt red brn m/cgm sub ang to sub rnd fri nsfo and Sh-red/red brn

Sh-gry/dn gry/red/sm yel and Ls-AA

Sh-AA with Cht-dk org/crm/tan/gry fsh opac and Ls-gry/brn blkly mhd no por

Sh and Cht-AA

Sh-gry/dk gry/red/yel with some Cht-org/tan/crm/wt fsh opaq and Ss-red brn cgm sub ang lite cement

Sh and Cht-AA with sm Ss

----- **Arbuckle 4022 -1553** -----

Dolo-lt gry tln to fsuc mhd/dns no por

Dolo-lt gry fsuc to suc mhd/dns chty no por and Cht-tan/lt org crm fsh opaq

Dolo and Cht-AA

----- **RTD 4045 -1576** -----

Finished Drilling at 8:17 pm on 6-20-13. Pulled 12 stand short trip, then Cir for Log 90"

Finished Logging at 3:30 am on 6-21-13



Sh-AA

----- **Fort Scott 3896 -1427** -----

Ls-lt gry/lt red brn fxin to sl gran mhd no por

----- **Cherokee 3904 -1435** -----

Sh-gry/dk gry/red

Sh-AA

Sh-red/red brn sl silty

Sh-AA

Sh-AA

Ls-tan mott gry and brn blkly to frag mhd no por

Sh-gry/red brn gummy

Sh-AA

Sh-gry/dk gry/red brn

Sh-AA

----- **Conglomerate 3980 -1511** -----

Ls-lt gry/brn f/mxn mhd sl shly no por sm Ss-clr/lt red brn m/cgm sub ang to sub rnd fri nsfo and Sh-red/red brn

Sh-gry/dn gry/red/sm yel and Ls-AA

Sh-AA with Cht-dk org/crm/tan/gry fsh opac and Ls-gry/brn blkly mhd no por

Sh and Cht-AA

Sh-gry/dk gry/red/yel with some Cht-org/tan/crm/wt fsh opaq and Ss-red brn cgm sub ang lite cement

Sh and Cht-AA with sm Ss

----- **Arbuckle 4022 -1553** -----

Dolo-lt gry tln to fsuc mhd/dns no por

Dolo-lt gry fsuc to suc mhd/dns chty no por and Cht-tan/lt org crm fsh opaq

Dolo and Cht-AA

----- **RTD 4045 -1576** -----

Finished Drilling at 8:17 pm on 6-20-13. Pulled 12 stand short trip, then Cir for Log 90"

Finished Logging at 3:30 am on 6-21-13