

# Ritchie Exploration, Inc.

## Weber 13B No. 1

### 2150' FNL and 1530' FWL

### Sec 13 T13S R32W

### Logan County, Kansas

## Geological Report

### by

### Macklin M. Armstrong, P.G.

### License Number 743

Scale 1:240 Imperial

Well Name: Weber 13B No. 1	Time: 4:15 PM
Surface Location: Sec 13 T13S R32W	
Bottom Location: 2150' FNL and 1530' FWL	
API: 15-109-21142	
License Number: 4767	
Spud Date: 11/5/2012	
Region: Logan County, Kansas	
Completed: 11/16/2012	Time: 2:20 AM
Surface Coordinates:	
Bottom Hole Coordinates:	
Ground Elevation: 2967.00ft	
K.B. Elevation: 2975.00ft	
Logged Interval: 3600.00ft	To: 4748.00ft
Total Depth: 4747.00ft	
Formation: Mississippi	
Drilling Fluid Type: Chemical/Fresh Water Gel	

#### OPERATOR

Company: Ritchie Exploration, Inc.  
 Address: 800 East 22nd Street North, Building 700  
 Wichita, Kansas 67226

Contact Geologist: Pete Fiorini  
 Contact Phone Nbr: 316-691-9500  
 Well Name: Weber 13B No. 1  
 Location: Sec 13 T13S R32W API: 15-109-21142  
 Pool: Oil  
 State: Kansas Country: USA

#### SURFACE CO-ORDINATES

Well Type: Vertical  
 Longitude: 100° 49' 41.610" Latitude: 38° 55' 31.346"  
 N/S Co-ord:  
 E/W Co-ord:

#### CONTRACTOR

Contractor: Duke Drilling Company  
 Rig #: 2  
 Rig Type: mud rotary  
 Spud Date: 11/5/2012 Time: 4:15 PM  
 TD Date: 11/16/2012 Time: 2:20 AM  
 Rig Release: 11/16/2012 Time: 11:30 PM

#### ELEVATIONS

K.B. Elevation: 2975.00ft Ground Elevation: 2967.00ft  
 K.B. to Ground: 8.00ft

#### NOTES

Date	Depth at 7 am	Activity	Notes
11-05-12		MIRT	Spud at 4:15 pm
11-06-12	281	Drilling	
11-07-12	2023	Drilling	
11-08-12	3094	Drilling	
11-09-12	3912	Drilling	
11-10-12	3618	OB with DST No. 1	
11-11-12	4032	TOH after DST No. 2	
11-12-12	4194	TOH after DST No. 3	
11-13-12	4226	TOH after DST No. 4	
11-14-12	4369	Drilling	
11-15-12	4572	OB with DST No. 6	
11-16-12	4747	TOH for Log	
11-17-12	4747	Set 4 1/2"	

Surface Casing: 8 5/8" 23# at 222'  
 Production Casing: 4 1/2" 10.5# at 4743'

Deviation: 222' - 1°, 1500' - 1°, 2570' - 1°, 3451' - 1°, 3912' - 1°, 4194' - 3/4°, 4747' - 1°

Bit Record:	Make	Type	Depth In	Depth Out	Hours
	JZ	HA20Q	222	4750	113 1/4

Drill Stem Tests:

DST No. 1 3883 to 3912 Formation: Oread  
 30-45-45-60  
 Recovery: 245' FWP - (10%M, 90%W) - Chl 50,000 ppm  
 IHP 1910 FHP 1890  
 IFP 48-92 FFP 97-159  
 ISIP 1219 FSIP 1211  
 Temp 115°

DST No. 2 4012 to 4032 Formation: Lansing C Zone  
 30-45-45-60  
 Recovery: 150' Oil (44% gravity corrected)  
 120' OM (20%M, 80%M)  
 IHP 1975 FHP 1893  
 IFP 43-77 FFP 85-122  
 ISIP 1115 FSIP 1082  
 Temp 120°

DST No. 3 4126 to 4194 Formation: Lansing H and I Zones  
 30-45-30-60  
 Recovery: 400' WM (20%M, 80%M)  
 2000' MW (5%M, 95%W) - Chl 60,000 ppm  
 IHP 2065 FHP 2015  
 IFP 250-946 FFP 969-1199  
 ISIP 1296 FSIP 1303  
 Temp 116°

DST No. 4 4200 to 4226 Formation: Lansing J Zone  
 30-45-45-60  
 Recovery: 5' Oil  
 45' MW (20%M, 80%W - Chl 65,000 ppm)  
 IHP 2090 FHP 1980  
 IFP 42-49 FFP 50-63  
 ISIP 1109 FSIP 999  
 Temp 115°

DST No. 5 4218 to 4256 Formation: Lansing K Zone  
 30-45-45-60  
 Recovery: 40' OMW (1%O, 9%M, 90%W)  
 300' MW (5%M, 95%W - Chl 70,000 ppm)  
 IHP 2085 FHP 2027  
 IFP 55-120 FFP 132-206  
 ISIP 1157 FSIP 1142  
 Temp 114°

DST No. 6 4522 to 4572 Formation: Johnson Zone  
 30-45-45-60  
 Recovery: 30' OM (15%, 85%M)  
 IHP 2273 FHP 2113  
 IFP 54-57 FFP 59-64  
 ISIP 1048 FSIP 1015  
 Temp 123°

Formation	Sample	E-Log	Datum	Well 1	Well 2	Well 3
Anhydrite	2463	2464	+511	+7	+2	+8
B/Anhydrite	2467	2467	+498	+6	+3	+4
King Hill	3830	3833	358	+11	+4	+22
Queen Hill	3886	3888	-913	+12	+4	+22
Heebner	3945	3947	-972	+12	+7	+22
Toronto	3972	3974	-999	+10	+5	+19
Lansing	3986	3988	-1013	+12	+8	+22
Muncie Creek	4133	4135	-1160	+10	+14	+23
Stark	4221	4224	-1249	+7	+8	+21
Hushpuckney	4259	4260	-1285	+6	+7	+19
B/Kansas City	4292	4292	-1317	+9	+12	+23
Marmaton	4296	4296	-1321	+8	+14	+31
Altamont	4330	4330	-1355	+10	+7	+23
Pawnee	4422	4422	-1447	+11	+7	+23
Myrick Station	4458	4458	-1483	+11	+7	+23
Fort Scott	4474	4474	-1499	+12	+7	+21
Cherokee Shale	4503	4503	-1528	+11	+4	+18
Johnson Zone	4547	4547	-1572	+13	+5	+19
Morrow	4570	4570	-1595	+19	+11	+36
Mississippi	4592	4592	-1617	+15	+16	+27
Total Depth	4747	4748	-1773			

Well 1: Ritchie Exploration, Inc. Eaton 13CD No. 1 1450' FSL and 1880' FWL Sec 13 T13S R32W  
 Well 2: Ritchie Exploration, Inc. Eaton 13CD No. 2 775' FSL and 775' FEL Sec 13 T13S R32W  
 Well 3: Ritchie Exploration, Inc. Phillips Trust 18C No. 1 2215' FSL and 780' FWL Sec 18 T13S R31W

Pipe was set to further test the Lansing and Johnson Zones.

Respectfully submitted,  
 Macklin M. Armstrong

#### ROCK TYPES

Dolomite	shale, grn shale, gry	Carbon Sh shale, red	Shool Ss
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#### ACCESSORIES

<b>MINERAL</b> Chert, dark Pyrite Chert White Mica	<b>FOSSIL</b> Cinroids Fossils 20% Oolite Omicoid	<b>STRINGER</b> Sandstone Siltstone	<b>TEXTURE</b> Chalky Microcr
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#### OTHER SYMBOLS

DST Int	DST alt	Core
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