



STATE OF MISSOURI  
MISSOURI DEPARTMENT OF NATURAL RESOURCES  
GEOLOGICAL SURVEY PROGRAM

**APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK**

**RECEIVED**  
FEB 13 2009  
FEB 13 2009  
FORM OGC-3  
ENTERED MAR 30 2009  
Mo Oil & Gas Council

<input checked="" type="checkbox"/> APPLICATION TO DRILL		<input type="checkbox"/> DEEPEN		<input type="checkbox"/> PLUG BACK		<input checked="" type="checkbox"/> FOR AN OIL WELL		<input type="checkbox"/> OR GAS WELL	
NAME OF COMPANY OR OPERATOR <b>Osborn Energy, LLC</b>						DATE <b>2/11/2009</b>			
ADDRESS <b>24850 Farley</b>				CITY <b>Bucyrus</b>		STATE <b>KS</b>		ZIP CODE <b>66013</b>	
<b>DESCRIPTION OF WELL AND LEASE</b>									
NAME OF LEASE <b>Bagby</b>				WELL NUMBER <b>1-33</b>		ELEVATION (GROUND) <b>901</b>			
WELL LOCATION (GIVE FOOTAGE FROM SECTION LINES) <b>200</b> ft. from <input type="checkbox"/> North <input checked="" type="checkbox"/> South section line <b>1190</b> ft. from <input type="checkbox"/> East <input checked="" type="checkbox"/> West section line									
WELL LOCATION <b>Sec. 33 Township 42 North Range 32</b> <input type="checkbox"/> East <input checked="" type="checkbox"/> West				LATITUDE <b>38.34724</b> <b>38.2350.06</b>		LONGITUDE <b>-94.45949</b> <b>-94.2735.96</b>		COUNTY <b>Bates</b>	
NEAREST DISTANCE FROM PROPOSED LOCATION TO PROPERTY OR LEASE LINE <b>200</b> FEET									
DISTANCE FROM PROPOSED LOCATION TO NEAREST DRILLING, COMPLETED OR APPLIED - FOR WELL ON THE SAME LEASE <b>none</b> FEET									
PROPOSED DEPTH <b>650</b>		DRILLING CONTRACTOR, NAME AND ADDRESS <b>Osborn Energy, LLC 24850 Farley, Bucyrus, KS</b>				ROTARY OR CABLE TOOLS		APPROX. DATE WORK WILL START <b>2/13/2009</b>	
NUMBER OF ACRES IN LEASE <b>938.15</b>		NUMBER OF WELLS ON LEASE INCLUDING THIS WELL, COMPLETED IN OR DRILLING TO THIS RESERVOIR <b>0</b>							
		NUMBER OF ABANDONED WELLS ON LEASE <b>0</b>							
IF LEASE PURCHASED WITH ONE OR MORE WELLS DRILLED, FROM WHOM PURCHASED? NAME _____ ADDRESS _____						NO. OF WELLS		PRODUCING <b>0</b>	
								INJECTION <b>0</b>	
								INACTIVE <b>0</b>	
								ABANDONED <b>0</b>	
STATUS OF BOND		<input type="checkbox"/> SINGLE WELL AMOUNT \$ _____		<input checked="" type="checkbox"/> BLANKET BOND AMOUNT \$ <b>30000.00</b>		<input checked="" type="checkbox"/> ON FILE		<input type="checkbox"/> ATTACHED	
REMARKS: (IF THIS IS AN APPLICATION TO DEEPEN OR PLUG BACK, BRIEFLY DESCRIBE WORK TO BE DONE, GIVING PRESENT PRODUCING/INJECTION ZONE AND EXPECTED NEW INJECTION ZONE; USE BACK OF FORM IF NEEDED)									
<b>PROPOSED CASING PROGRAM</b>				<b>APPROVED CASING - TO BE FILLED IN BY STATE GEOLOGIST</b>					
AMOUNT	SIZE	WT/FT	CEMENT	AMOUNT	SIZE	WT/FT	CEMENT		
20'	7"		portland						
650'	2 7/8"		portland					<i>ok dg</i>	
I, the Undersigned, state that I am the <u>Agent</u> of the <u>OELLC</u> (Company), and that I am authorized by said company to make this report, and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct, and complete to the best of my knowledge.									
SIGNATURE <i>Crestin Hauken</i>						DATE <b>2-11-09</b>			
PERMIT NUMBER <b>20381</b>		APPROVED DATE <b>3-5-09</b>		APPROVED BY <i>Joseph A. [Signature]</i>		<input checked="" type="checkbox"/> DRILLER'S LOG REQUIRED		<input checked="" type="checkbox"/> E-LOGS REQUIRED IF RUN	
						<input checked="" type="checkbox"/> CORE ANALYSIS REQUIRED IF RUN		<input checked="" type="checkbox"/> DRILL SYSTEM TEST INFO REQUIRED IF RUN	
						<input checked="" type="checkbox"/> SAMPLES REQUIRED <i>10' cuttings</i>			
						<input type="checkbox"/> SAMPLES NOT REQUIRED			
						<input type="checkbox"/> WATER SAMPLES REQUIRED AT			
<b>NOTE</b> ▶ THIS PERMIT NOT TRANSFERABLE TO ANY OTHER PERSON OR TO ANY OTHER LOCATION.									
APPROVAL OF THIS PERMIT BY THE OIL AND GAS COUNCIL DOES NOT CONSTITUTE ENDORSEMENT OF THE GEOLOGIC MERITS OF THE PROPOSED WELL NOR ENDORSEMENT OF THE QUALIFICATIONS OF THE PERMITTEE									
I, _____ of the _____ (Company), confirm that an approved drilling permit has been obtained by the owner of this well. Council approval of this permit will be shown on this form by presence of a permit number and signature of authorized council representative.									
DRILLER'S SIGNATURE <i>Main City</i>						DATE			

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MAR 04 2009

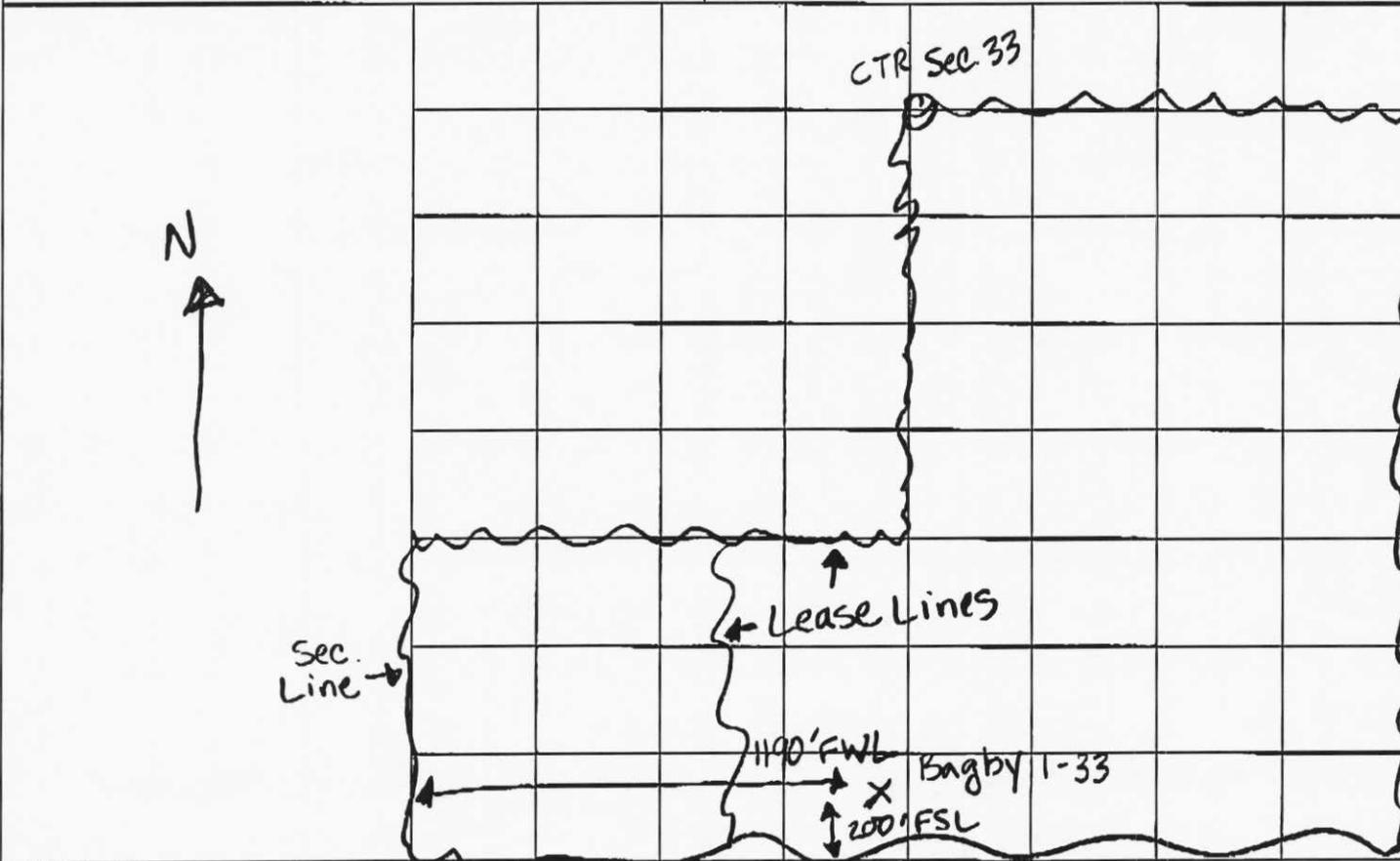
FORM OGC-4



STATE OF MISSOURI  
MISSOURI DEPARTMENT OF NATURAL RESOURCES  
GEOLOGICAL SURVEY PROGRAM  
WELL LOCATION PLAT

Mo Oil & Gas Council

OWNER'S NAME <b>Osborn Energy, LLC</b>	
LEASE NAME <b>Bagby 1-33</b>	COUNTY <b>Bates</b>
WELL LOCATION (GIVE FOOTAGE FROM SECTION LINES) 200 ft. from <input type="checkbox"/> North <input checked="" type="checkbox"/> South from section line 1190 ft. from <input type="checkbox"/> East <input checked="" type="checkbox"/> West from section line	
WELL LOCATION Sec. 33 Township 42 North Range 32 <input type="checkbox"/> East <input checked="" type="checkbox"/> West <i>Main City Q</i>	
LATITUDE	LONGITUDE



REMARKS

Sec. Line

**INSTRUCTIONS**

On the above plat, show distance of the proposed well from the two nearest section lines, the nearest lease line, and from the nearest well on the same lease completed in or drilling to the same reservoir. Do not confuse survey lines with lease lines. See rule 10 CSR 50-2.030 for survey requirements. Lease lines must be marked.

This is to certify that I have executed a survey to accurately locate oil and gas wells in accordance with 10 CSR 50-2.030 and that the results are correctly shown on the above plat.

REMIT TWO (2) COPIES TO: GEOLOGICAL SURVEY PROGRAM PO BOX 250, ROLLA, MO 65402-0250 (573) 368-2143 ONE (1) COPY WILL BE RETURNED	REGISTERED LAND SURVEYOR	NUMBER
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Bagby leases

permints_with_id	permints2007_u	Well_Logs	Well_Certified	IMOP	Pub_Wells	NPDES_Outfall	Springs	Geologic_Structural	County_Names	TDS_Aquifers	Top_Rock_Elev
<ul style="list-style-type: none"> <li>● PENSE BROTHERS DRILLING</li> <li>● PENSE BROTHERS DRILLING</li> <li>● PENSE BROTHERS DRILLING</li> <li>● PENSE BROTHERS DRILLING</li> </ul>	WALKER, C. H.	T-42NR82WS29									
<ul style="list-style-type: none"> <li>● Drexel</li> </ul>	EDDINGTON, J. W.	T-42NR32WS28	2-32 X								
T-42NR33WS36	T-42NR32WS31	T-42NR32WS32	1-32 X								
	ROXANNA MISSOURI OIL CO. ● X	ROXANNA MISSOURI OIL CO. ●									
	ESTES, HAND, GEORGE ●										
T-41NR33WS12	T-41NR32WS7	HYDE ●									
STATE HWY CC	T-41NR32WS6										
	STATE HWY 18										
	T-41NR32WS4	T-41NR32WS3	016331 ●								
	T-42NR32WS22	T-42NR32WS27									
	T-42NR32WS34	T-41NR32WS9									
	COUNTY RD										

1" = 2660'



24850 Farley, Bucyrus, KS 66013  
Phone 913.533.9900 Fax 913.533.9955

7/17/2009

Geological Survey Program  
P.O. Box 250  
Rolla, MO 65402

Dear Commissioners,

Osborn Energy, LLC, having its principal place of business at 24850 Farley, Bucyrus, KS 66013 is requesting that the Geological Survey Program keep the information for the following well confidential for the maximum amount of time allowed.

LEASE NAME: Bagby WELL #: 1-33

Permit #: 20381

Sec	Twn	Rng
<u>33</u>	<u>42N</u>	<u>32W</u>

Sincerely,

A handwritten signature in cursive script that reads 'Curstin Hamblin'.

Curstin Hamblin  
Geologist  
Osborn Energy, LLC.

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FORM OGC-7

JUL 21 2010



STATE OF MISSOURI  
MISSOURI DEPARTMENT OF NATURAL RESOURCES  
GEOLOGICAL SURVEY PROGRAM  
**PLUGGING RECORD**

OWNER'S NAME <b>Osborn Energy, LLC</b>		ADDRESS <b>Mo Oil &amp; Gas Council 24850 Farley, Bucyrus, KS 66013</b>	
NAME OF LEASE <b>Bagby</b>		WELL NUMBER <b>1-33</b>	PERMIT NUMBER (OGC-3 OR OGC-31 NUMBER) <b>20381</b>
LOCATION OF WELL SEC TWN RNG OR BLOCK AND SURVEY <b>Sec. 33 Township 42 North Range 32 <input type="checkbox"/> East <input checked="" type="checkbox"/> West</b>		LATITUDE	LONGITUDE
		COUNTY <b>Bates</b>	
APPLICATION TO DRILL THIS WELL WAS FILED IN NAME OF: <b>Osborn Energy, LLC</b>		HAS THIS WELL EVER PRODUCED OIL OR GAS? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	CHARACTER OF WELL AT COMPLETION (INITIAL PRODUCTION) OIL (BBLS/DAY)      GAS (MCF/DAY)
DATE OF ABANDONMENT <b>6/23/2010</b>		TOTAL DEPTH <b>860</b>	DRY? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		AMOUNT WELL PRODUCING PRIOR TO ABANDONMENT OIL (BBLS/DAY)      GAS (MCF/DAY)	WATER (BBLS/DAY)

Name of each formation containing oil or gas. Indicate which formation open to well bore at time of abandonment	Fluid content of each formation	Depth interval of each formation	Size, kind, and depth of plugs used, giving amount of cement.
			10 sacks at td, 10 sacks at 500,
			57 sacks at 350 to surface. Used
			50/50 poz and gel spacers

SIZE PIPE	PUT IN WELL (FT)	PULLED OUT (FT)	LEFT IN WELL (FT)	GIVE DEPTH AND METHOD OF PARTING CASING (SHOT, RIPPED, ETC.)	PACKERS AND SHOES
7"	21'		21'		
2 7/8"	852.19	852.19	0		

WAS WELL FILLED WITH MUD-LADEN FLUID? <input type="checkbox"/> Yes <input type="checkbox"/> No	INDICATE DEEPEST FORMATION CONTAINING FRESH WATER <b>BKC</b>
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NAME AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE		
NAME	ADDRESS	DIRECTION FROM THIS WELL

METHOD OF DISPOSAL OF MUD PIT CONTENTS	<b>Drilled with air and water, no mud. Let water evaporate, then filled pit with a backhoe</b>
--	--

NOTE FILE THIS FORM IN DUPLICATE WITH: (USE REVERSE SIDE FOR ADDITIONAL DETAIL)

**CERTIFICATE** I, the undersigned, state that I am the Agent of the OELLC (Company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

SIGNATURE <i>Curtis Haubert</i>	DATE <b>7-19-10</b>
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STATE OF MISSOURI  
MISSOURI DEPARTMENT OF NATURAL RESOURCES  
GEOLOGICAL SURVEY PROGRAM  
**NOTICE OF INTENTION TO ABANDON WELL**

FORM OGC-6

NAME OF LEASE Bagby 1-33 # 20381		DATE 6/22/2010	
WELL NUMBER 1-33	LOCATION 200 ft from <input type="checkbox"/> North <input checked="" type="checkbox"/> South Section Line and 1190 ft from <input type="checkbox"/> East <input checked="" type="checkbox"/> West Section Line		
SECTION 33	TOWNSHIP 42 North	RANGE 32 <input type="checkbox"/> East <input checked="" type="checkbox"/> West	COUNTY Bates
THE ELEVATION OF THE GROUND AT WELL SITE IS 910 FEET ABOVE SEA LEVEL		PERMIT NUMBER (OGC-3 OR OGC-31 NUMBER) 20381	
NAME OF CONTRACTOR OR COMPANY THAT WILL DO WORK IS: Consolidated Oil Well Services			
ADDRESS 1322 S. Grant PO Box 884		CITY Chanute	STATE KS
			ZIP 66720
DETAILS OF WORK (INDICATE SIZE, KIND, AND DEPTH OF PLUGS, WHERE CASING WILL BE PULLED, OTHER PERTINENT DETAILS) pump 10 sx of 50/50 poz at TD, pump 10 sx at 500' and pump cement from 350' to surface with gel in between. 7" surface casing set at 20'. 2 7/8" tubing set at 852.19 will be pulled for cement.  Plug to be completed 6.23.10			
<p><b>RECEIVED</b> JUN 22 2010 Mo Oil &amp; Gas Council</p>			
<p><b>CERTIFICATE:</b> I, the Undersigned, state that I am the agent of the OELLC (Company), and that I am authorized to make this report; and that this report was prepared under my supervision and direction and that the facts stated herein are true, correct and complete to the best of my knowledge.</p>			
SIGNATURE Cusari Hausen		DATE 6.22.10	

## Drillers Log

### Bagby # 1-33

200 FSL, 1190 FWL

**Section:** 33-T42N-R32W

Bates County, Missouri

**Permit#:** 20381

**Elevation:** 910' GL

**Drilling Contractor:** Osborn Energy, L.L.C (Lic. # 32294)

**Spud:** 6/12/2009

**Production Bore Hole:** 6 1/4"

**Rotary Total Depth:** 860 on 6/23/2009

**Drilling Fluid:** air

**Surface Csg.:** 7"

**Production Csg.:** 2 1/5" set at 860

**Geologist:** Curstin Hamblin

**Driller:** Brian Schwab

<u>Formation</u>	<u>Driller Log Tops</u>	<u>E-Log</u>	<u>Datum</u>
Stark Shale	No Call-shallow		
Hushpuckney Shale	No Call-shallow		
Base Kansas City	No Call-started drilling below		
Knobtown Sand	No call-		
Carbonaceous Zone in Tacket Fm.	No call		
"Big Lake" Sand	No call		
South Mound Zone	123'	122	788
Hepler (Wayside) Sand	141'		769
"Upper" Mulberry Zone	No call		
Mulberry Zone	219'	217	693
Weiser Sand	No call		
Myrick Station	256-259'	253	657
Anna Shale (Lexington Coal Zone)	259-261'	257	653
Peru Sand	No call		
Summit Shale Zone	307-310'	307	603
Mulky Coal/Shale Zone	328-329'	326	584
Squirrel Sand	337'		573
Bevier Zone	No Call		
Croweburg Zone	425-428'	422	488
Fleming Zone	445-446'	444	466
Mineral Zone	No call		
Cattleman Sand	None		
Scammon Zone	No call	462	448

Tebo Zone	None	486	424
Bartlesville A Sand	None	512	398
Un Named Zone	None		
Bartlesville B Sand	None		
Dry Wood Zone	None		
Bartlesville C Sand	None		
Sand	None		
Sand	None		
Upper Neutral Zone	None		
Lower Neutral Zone	None		
Neutral Shale Zone	None		
Mississippian-BK	851		59
Rotary Total Depth	860'		

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Geological Report

Mo Oil & Gas Council

**Bagby # 1-33**

200 FSL, 1190 FWL

**Section:** 33-T42N-R32W

Bates County, Missouri

**Permit#:** 20381

**Elevation:** 910' GL

**Drilling Contractor:** Osborn Energy, L.L.C (Lic. # 32294)

**Spud:** 6/12/2009

**Production Bore Hole:** 6 ¼"

**Rotary Total Depth:** 860 on 6/23/2009

**Drilling Fluid:** air

**Surface Csg.:** 7" in 9 ¼" hole

**Production Csg.:** 2 7/8" set at 852.19

**Geologist:** Curstin Hamblin

**Driller:** Brian Schwab

<u>Formation</u>	<u>Driller Log Tops</u>	<u>E-Log</u>	<u>Datum</u>
Stark Shale	No Call-shallow		
Hushpuckney Shale	No Call-shallow		
Base Kansas City	No Call-started drilling below		
Knobtown Sand	No call-		
Carbonaceous Zone in Tacket Fm.	No call		
"Big Lake" Sand	No call		
South Mound Zone	123'	122	788
Hepler (Wayside) Sand	141'		769
"Upper" Mulberry Zone	No call		
Mulberry Zone	219'	217	693
Weiser Sand	No call		
Myrick Station	256-259'	253	657
Anna Shale (Lexington Coal Zone)	259-261'	257	653
Peru Sand	No call		
Summit Shale Zone	307-310'	307	603
Mulky Coal/Shale Zone	328-329'	326	584
Squirrel Sand	337'		573
Bevier Zone	No Call		
Croweburg Zone	425-428'	422	488
Fleming Zone	445-446'	444	466
Mineral Zone	No call		
Cattleman Sand	None		
Scammon Zone	No call	462	448

Tebo Zone	None	486	424
Bartlesville A Sand	None	512	398
Un Named Zone	None		
Bartlesville B Sand	None		
Dry Wood Zone	None		
Bartlesville C Sand	None		
Sand	None		
Sand	None		
Upper Neutral Zone	None		
Lower Neutral Zone	None		
Neutral Shale Zone	None		
Mississippian-BK	851		59

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Rotary Total Depth 860'

Drilling at 81' in the Kansas City on 6/19/2009 at 8:00am  
Background Gas (BG) 9.5 units

81-90: Siltstone: Grey, fine grained, Pyrite, SH: black: 1%  
91-100: SS: light grey, small grained, SH: black 1%  
101-110: SH: grey, gummy  
111-120: SH: grey, gummy  
121-130: SH: grey, gummy, some black

**SOUTH MOUND ZONE** Geologist called @123', gas kick of 4 units over BG

**\*\*GAS TEST @160', 0 MCF Total\*\***

123: SH: dk grey and black, no gas in samples  
Gas kick of 4 units over bg

131-140: SH: grey, some green, silty  
141-150: SS: grey, fine grained, SH: black 1%  
151-160: SS: grey, small to medium grained  
158-159: small oil show and odor

161-170: SS: grey small to medium grained, gummy  
171-180: SS: grey/tan, small to medium grained

Heavy oil smell still present. Drilling with air, no noticeable oil in pit but the sand samples are tan and damp.

**HEPLER SAND FORMATION** driller called @ 181'

**\*\*GAS TEST @No Test', MCF Total\*\***

CG: kick of 40 units over back ground

181-190: SS: large and small grained, some pyrite

181: more oil shows. Enough oil that we have started drilling with water. The oil is viscous and tan

Samples are very small and very little of them because the sand is breaking up before it can be caught.

191-200: SS: grey/white large grained, some pyrite-still oil

CG kick of 36 units

Sand ended at 205. 206-209: Shale, 210: LS

201-210: SS: white, large grained, no noticeable oil bleeding from the sand LS: tan/grey, SH: grey, gummy.

211-220: SH: lt grey, LS: lt grey, Coal

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MULBERRY COAL FORMATION driller called @ 219', gas kick of 5 units over BG

**\*\*GAS TEST @220', 0 MCF\*\***

219: Coal, gas kick of 5 units over bg: several floaters, poor to fair show of free gas

**\*\*GAS TEST @220', 0 MCF \*\***

228: the rig won't hold back. Shut down at 10:30am on 6/19/2009. Could not fix the rig, so Ventura will be coming tomorrow to work on it.

6/19/2009: rig is fixed. Started drilling at 11:45am at 228

221-228: LS: white/ lt grey, SH: grey, LS: 227

229-240: LS: off white/lt grey, several inclusions, SH: 239: grey, limey, sandy

240-251: SH: grey, gummy, sandy, pyrite

LEXINGTON COAL ZONE Geologist called @259-261', gas kick of 37 units over BG

**\*\*GAS TEST @260', 0 MCF Total\*\***

259: SH: dk grey/black, no gas in samples

252-260: SH: dk grey, black, LS: brown, SS: yellow

CG: kick of 600 units over BG

261-270: SH: dk grey, some shale is banded with coal SS: grey, medium grained

271-280: SH: lt grey, gummy, sandy, SH: dk grey, limey

CG: kick of 230 units

281-290: SH: grey/green, gummy, sandy

291-300: LS: white/lt grey, quartzite crystal clusters-all 10' LS

CG: 230 units over BG

SUMMIT SHALE ZONE Geologist called @307-310', gas kick of 0 units over BG

**\*\*GAS TEST @320', 0 MCF Total \*\***

308: SH: dk grey/black, no gas in samples

301-310: LS: lt grey, SH: dk grey/black, SH: grey/green, mushy

311-320: SH: grey, limey

CG: 360 units over BG

MULKY COAL/SHALE ZONE Geologist called @328-329', gas kick of 0 units over BG

**\*\*GAS TEST @No test', MCF Total \*\***

321-330: SH: grey, limey, some coal, several grey shale inclusions, SH: grey, gummy

CG: 125 units over bg

SQUIRREL SAND Geologist called @337'

**\*\*GAS TEST @ No Test', MCF Total \*\***

331-340: SS: grey, small grained, SH: lt grey, sandy, gummy

341-350: SS: grey, small grading to medium grained, greasy, but no oil bleeding, no oil bleeding into pit, some pyrite

351-360: SS: dk grey, small grained, no oil, pyrite

CG: 110 units over BG

361-370: SH: grey, gummy, lots of pyrite

371-380: SS: dk grey, small grained, SS: lt grey, medium grained, no oil

bleeding, there is a slight greasy film on the samples. Lots of Crinoid fossils

CG: 100 unit kick over BG

381-390: SS: dk grey, small to medium grained, more noticeable oil, but still not very much. There is no oil bleeding from the sand

391-400: SS: dk grey, small grained, limey

CG: 110 units over BG

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401-410: SS: dk grey, small grained, SH: grey, gummy

**BEVIER ZONE** - Geologist called at 412', gas kick of 4 units over bg JUL 21 2010

412: Coal, very good gas in samples

411-420: Coal, LS: white

CG: 95 units over BG

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**CROWEBURG ZONE** Geologist called at 425-428', gas kick of 0 units over bg

**\*\*GAS TEST @ 440', 0 MCF, MCF open flow\*\***

421-430: SH: dk grey, black, grey, SH: lt grey, limey

431-440: SH: grey, gummy, Coal, Pyrite

**FLEMING ZONE** Geologist called at 445-446', gas kick of 4 units over bg

445: Coal: very good gas in samples

441-450: SH: lt blue, Coal, LS: brown, Pyrite

**WEIR ZONE** Geologist called at 456-469', gas kick of 0 units over bg

**\*\*GAS TEST @460', 0 MCF\*\***

460: SH: dk grey, no gas in samples, Pyrite

451-460: SH: black, dk grey, SH: dk grey, sandy

CG: 160 units over bg

461-470: SH: dk grey, Coal

471-480: SH: grey, dk grey, silty, pyrite, SS: lt grey, small grained

CG: 100 units over BG

481-490: SH: dk grey, limey, pyrite

Jeff Taylor took over the well at 4:30pm on 6/19/2009. His notes are as follows:

491-500: Gas at 15 units, CG: 110

491-492: SH: Black, block occ. Fissil with very slight gas break out along planes. Pyrite

493-498: SH: grey, silty

499-500: SS: limey grey/lt grey-no shows

501-510: Gas at 16 units

SH: grey, SS: grey, SH: dk grey- no shows

510-520: SH: grey, SS: limey- no shows

CG: 121 units total

521-530: Gas at 17 units

SH: grey, silty, grainy, SH: dk grey, silty, siltstone with pyrite, SS: some laminated with pyrite, LS: occ, grey- no shows

531-540: Gas at 16 units

SH: dk grey, carbonate inclusions, pyrite: laminated, SH: silty, grey-brown siltstone, laminated

CG: 79 units total

540-550: Gas at 16 units

SH: grey

551-560: Gas at 16 units

SH: limey, silty, siltstone: grey, occ. Carb

CG: 98 units total

561-570: Gas at 16 units

SH: dk grey to black, very carbonaceous, V. Silty, Siltstone: grey, carb

571-580:

SH: dk grey, black, V. carb, V. silty, grading to SS: carb, grey and brown

CG: 97 units total

581-590: gas at 16 units  
 SH: grey, silty, carb, Siltstone: grey, carb, SS: occ. Brown, carb  
 plafer on surface  
 591-600: gas at 16 units  
 SH: grey, dk grey, carb, silty, Siltstone: grey, some carb, some mica-no  
 shows  
 601-610: gas at 16 units  
 Sh: grey  
 611-620:  
 615: gas kick to 27 units, 11 above BG- Coal: black, brittle, floaters, no gas  
 (614-616) 3' total  
 SH: grey  
**\*\*GAS TEST @ 620', 0 MCF\*\***  
 CG: 214 units, bg: 19 units  
 621-630: SS: brown, grey, mica, carb, poorly sorted, V. frac to medium grain,  
 soft, poorly cemented, silty  
 631-640: bg at 16 units  
 SH: grey, dk grey, silty, carb, Siltstone: grey, carb  
 641-650: gas at 16 units  
 SH: grey, dk grey, silty  
 651-660: SH: grey, dk grey, silty  
 659: SS: grey, fine grained, v. frac, grey, mica, rounded to sub rounded, carb,  
 silty, firm, w. cemented  
 661-670: gas at 15 units  
 SH: grey, dk grey  
 671-680: SH:  
 681-690: SH: grey  
 691-700: SH: grey  
 CG: 672 units total  
 701-710: gas at 20 units  
 SH: grey, dk grey  
 711-720: gas at 15 units  
 SH: grey, dk grey  
 721-730: SH: grey  
 731-740: SH: grey  
 741-750: SH: grey, firm, fissil  
 751-760: SH: grey, firm, silty  
 761-770: SH: grey  
 771-780: gas at 14 units  
 SH: grey, limey, SS: toward bottom  
 781-790: SH: siltstone, grading to siltstone and silty Limestone  
 791-800: Siltstone: silty, grey, dk grey  
 Finished drilling at 9:30pm on 6/19/2009

Started drilling at 6:45am on 6/23/2009-Curstin Hamblin

801-810: SS: grey, small grained, Siltstone: dk grey, banded  
 811-820: SS: grey, small grained, Siltstone: dk grey, fine grained, SH:  
 green/grey  
 CG: 30 units  
 821-830: Siltstone: dk grey  
 831-840: SS: lt grey, fine to medium grained, Siltstone: dk grey  
 CG: 100 units over bg  
 841-850: Siltstone: dk grey, Pyrite  
 851-860: LS: white, quartz, cherty, LS: tan, crystal blocks, Pyrite growth,  
 Pyrite