

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-059-01888 County MINGO District MAGNOLIA
Quad MATEWAN Pad Name _____ Field/Pool Name _____
Farm name MARCUM, JEROME Well Number 1730
Operator (as registered with the OOG) QUALITY NATURAL GAS, LLC
Address P.O. BOX 480 City ALLEN State KY Zip 41601

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing _____ Easting _____
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 1132 GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
N/A

Date permit issued 12/20/2007 Date drilling commenced 9/28/2009 Date drilling ceased 10/03/2009
Date completion activities began 8/25/2015 Date completion activities ceased 8/26/2015
Verbal plugging (Y/N) N Date permission granted _____ Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 444' Open mine(s) (Y/N) depths _____
Salt water depth(s) ft None Encountered Void(s) encountered (Y/N) depths N
Coal depth(s) ft 206-208' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) _____

APPROVED

NAME: _____
DATE: 5-31-2016

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Reviewed by: _____
07/15/2016
4x 07/15/14

API 47-059 - 01888 Farm name MARCUM, JEROME Well number 1730

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	17 1/2"	13 3/8"	32'	New	LS		
Surface	12 1/4"	9 5/8"	755'	New	LS	754', 450', 28'	Y - 4bbl
Coal							
Intermediate 1	8 7/8"	7"	2358'	New	LS	None	Y - 10.1 bbl
Intermediate 2							
Intermediate 3							
Production	6 3/8"	4 1/2"	5020'	New	L-65	None	No - 500' up in 7"
Tubing							
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A						
Surface	Class A	260	15.5	1.18	306.8	Surface	8
Coal							
Intermediate 1	Class A	100, 210	15.6, 12.3	1.18, 1.84	118, 386.4	Surface	8
Intermediate 2							
Intermediate 3							
Production	Class A	165	13.6	1.90	313.5	500' up in 7"	8
Tubing							

Drillers TD (ft) ⁵⁰⁴² _____ Loggers TD (ft) ⁵⁰²² _____
 Deepest formation penetrated HARRELL SHALE Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) _____

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No
For drilling purposes only.

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING 5020', 4853', 4686', 4519',
4352', 4185', 4018', 3851', 3584', 3417', 3250' and 3083'

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	8/25/2015	4266	4477	37	SHALE
2	8/26/2015	3318	3326	20	BEREA
3	8/26/2015	2494	2626	50	LIME

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	8/26/15	95	2844	2915	1333	NONE	NONE	803mscf N2/12 bbl 15% HCl
2	8/26/15	98	2817	2827	1255	NONE	NONE	800mscf N2/12 bbl 15% HCl
3	8/26/15	14	1232	1494	1367	NONE	NONE	253mscf N2/119 bbl 15% HCl

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Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
BIG LIME	2412 - 2650'	TVD	MD
BEREA	3305 - 3371'		
BROWN SHALE	3371 - 4483'		

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 700 psi Bottom Hole _____ psi DURATION OF TEST 192 hrs

OPEN FLOW Gas 605 mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
SEE ATTACHED	0		0		

Please insert additional pages as applicable.


Drilling Contractor MOUNTAIN RIDGE
Address 72 OLD 25 E City BARBOURVILLE State KY Zip 40906

Logging Company WEATHERFORD
Address _____ City LONDON State KY Zip 40741

Cementing Company C & J ENERGY SERVICES
Address 580 HAWTHORN DR City NORTON State VA Zip 24273

Stimulating Company C & J ENERGY SERVICES
Address 580 HAWTHORN DR City NORTON State VA Zip 24273

Please insert additional pages as applicable.

Completed by Darrell Fluharty Telephone 606-874-8041 Cell 606-548-1915
Signature  Title Field Supervisor Date 3-7-2016

WELL #1730

API#47-5901888

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H2S, ETC)
SURFACE	0	29			
SAND	29	50			
SAND/SLATE	50	144			
SAND	144	206			
COAL	206	208			
SAND	208	270			
SAND/SLATE	270	416			
SAND	416	478			
SLATE	478	512			
SAND/SLATE	512	631			
SAND	631	818			
SAND/SLATE	818	824			
SAND	824	947			
SLATE	947	991			
SAND/SLATE	991	1010			
SAND	1010	1150			
SLATE	1150	1205			
SAND	1205	1217			
SAND/SLATE	1217	1293			
SAND	1293	1750			
SLATE/SAND	1750	1800			
SLATE/RED ROCK	1800	1850			
RED ROCK	1850	1900			
SAND/SLATE	1900	1930			
RED ROCK	1930	1990			
SAND/SLATE	1990	2110			
SAND	2110	2200			
SAND/SLATE	2200	2230			
SAND	2230	2300			
SAND/SLATE	2300	2340			
DARK LIME	2340	2412			

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WELL #1730

API#47-5901888

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H2S, ETC)
BIG LIME	2412	2656			
INJUN	2656	2716			
WEIR	2716	2930			
SHALE	2930	3228			
COFFEE SHALE	3228	3290			
BEREA	3290	3390			
SHALE	3390	5042			

07/15/2016