

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

CB

  


API 47-15-02901 County CLAY District UNION  
Quad ELKHURST 7.5' Pad Name \_\_\_\_\_ Field/Pool Name \_\_\_\_\_  
Farm name CUNNINGHAM ENERGY, LLC Well Number J.S. COCHRAN #6H-A  
Operator (as registered with the OOG) CUNNINGHAM ENERGY, LLC  
Address 3230 PENNSYLVANIA AVENUE City CHARLESTON State WV Zip 25302

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) 1,215' 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)  
SOAP

Date permit issued 7/16/2014 Date drilling commenced 6/9/2014 Date drilling ceased 10/5/2014  
Date completion activities began NONE 11/8/14 Date completion activities ceased NONE 11/9/14  
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 200' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1475' - 1525' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft NO COAL LISTED ON TITLE Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

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Reviewed by: \_\_\_\_\_

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CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	14 1/4"	13 3/8"	30'	NEW	LS - 43.6	NONE	YES - CEMENTED BY RIG
Surface	12 1/4"	9 5/8"	346'	NEW	LS - 26 LBS	80'	YES
Coal							
Intermediate 1	8 3/4"	7"	1992'	NEW	J-55 - 20LBS	350'	YES
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	5113'	NEW	N-80 - 11.6		YES
Tubing							
Packer type and depth set		PEAK PACKER SYSTEM SET FROM 4982 - 2380					

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	CLASS I	10 - CEMENTED BY RIG				GROUND LEVEL	8
Surface	CLASS I	130	15.6	1.18	153.4	GROUND LEVEL	8
Coal							
Intermediate 1	CLASS I	300	14.8	1.38		GROUND LEVEL	8
Intermediate 2							
Intermediate 3							
Production							
Tubing							

Drillers TD (ft) 5145' TOTAL MTD Loggers TD (ft) 5145'

Deepest formation penetrated INJUN Plug back to (ft) \_\_\_\_\_

Plug back procedure \_\_\_\_\_

Kick off depth (ft) 1,002'

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

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING 9 5/8" - 3rd joint; 7" - 3rd joint

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS N/A

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	11/8/2014		5113' - PLUG	PACKER	INJUN
2	11/8/2014		4982'	PACKER	INJUN
3	11/8/2014		4805'	PACKER	INJUN
4	11/8/2014		4628'	PACKER	INJUN
5	11/8/2014		4410'	PACKER	INJUN
6	11/8/2014		4233'	PACKER	INJUN
7	11/8/2014		4056'	PACKER	INJUN
8	11/8/2014		3879'	PACKER	INJUN
9	11/8/2014		3701'	PACKER	INJUN
10	11/8/2014		3524'	PACKER	INJUN
11	11/8/2014		3307'	PACKER	INJUN
12	11/8/2014		3129'	PACKER	INJUN
13	11/8/2014		2952'	PACKER	INJUN
14	11/9/2014		2775'	PACKER	INJUN
15	11/9/2014		2598'	PACKER	INJUN
16	11/9/2014		2380'	PACKER	INJUN

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	11/8/14	38.4	2640	2775	1223	25,200	540	0
2	11/8/14	37.4	2639	3885	1275	24,100	435	0
3	11/8/14	30.4	2389	2634	1235	25,000	357	0
4	11/8/14	33.6	2120	2608	1100	25,000	310	0
5	11/8/14	32.3	2416	2536	1190	25,000	325	0
6	11/8/14	31.9	2097	2272	1125	25,000	310	0
7	11/8/14	36.3	2007	2195	1075	25,000	285	0
8	11/8/14	37.8	2267	2422	1045	25,000	278	0
9	11/8/14	38.17	2062	2115	1020	25,000	273	0
10	11/8/14	37.7	1980	2098	1130	25,000	298	0
11	11/8/14	37	2195	2401	1290	25,000	348	0
12	11/8/14	33.8	2032	2107	1135	25,000	295	0
13	11/8/14	32.8	1633	1935	1130	25,000	278	0
14	11/9/14	24.5	1531	1693	1020	25,000	272	0
15	11/9/14	24.6	1603	1797	1013	25,000	290	0

Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
INJUN	2380'	5113'
	TVD	MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 300 psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST 12 hrs

OPEN FLOW Gas 65,000 mcfpd Oil 95 bpd NGL \_\_\_\_\_ bpd Water 15 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 <sub>2</sub> S, ETC)
SAND/SHALE	0	333'	0		
SAND	333'	525'			
SAND/SHALE	528'	1253'			
SALT	1253'	1738'			
SHALE	1738'	1883'			
MAXTON	1883'	1938'			
LITTLE LIME	1938'	1943'			
BIG LIME	1943'	2003'			
BIG INJUN	2003'	2103'	2003'	5098'	

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Drilling Contractor CUNNINGHAM ENERGY, LLC  
Address 3230 PENNSYLVANIA AVENUE City CHARLESTON State WV Zip 25302

Logging Company PRECISE WELL ANALYSIS  
Address 1426 BARTH ROAD City BELPRE State OH Zip 45714

Cementing Company UNIVERSAL WELL SERVICES  
Address 5 HALL RUN ROAD City BUCKHANNON State WV Zip 25201

Stimulating Company UNIVERSAL WELL SERVICE  
Address 5 HALL RUN ROAD City BUCKHANNON State WV Zip 25201

Please insert additional pages as applicable.

Completed by Danielle N. Boggs Telephone 304-344-9291  
Signature *Danielle N. Boggs* Title Operations Manager Date 1/9/2015

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

01/23/2015