

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

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Office of Oil and Gas

SEP 01 2016

WV Department of  
Environmental Protection

API 47 - 15 - 02899 County CLAY District UNION  
Quad ELKHURST 7.5' Pad Name \_\_\_\_\_ Field/Pool Name \_\_\_\_\_  
Farm name CHESSIE CONNER, ET. AL. Well Number J.S. COCHRAN 8H  
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

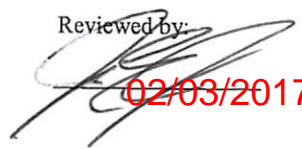
Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s)  
SOAP

Date permit issued 8/01/2014 Date drilling commenced 9/22/2014 Date drilling ceased 10/11/2014  
Date completion activities began 2/26/2015 Date completion activities ceased 3/12/2015  
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

AX/RBDMs  
2/01/17

Reviewed by:   
02/03/2017

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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	14 1/4"	13"	30'	NEW	LS - 43.6LBS	NONE	YES - CEMENTED BY RIG
Surface	12 1/4"	9 5/8"	410'	NEW	LS - 26 LBS	90'	YES
Coal							
Intermediate 1	8 3/4"	7"	2030'	NEW	J-55 - 20 LBS	350'	YES
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	5,135'	NEW	N-80 - 11.65 LBS	950'	YES
Tubing							
Packer type and depth set							

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	125	14.8	1.38	172.5	GROUND LEVEL	8
Coal							
Intermediate 1	CLASS I	300	14.8	1.38	414	GROUND LEVEL	8
Intermediate 2							
Intermediate 3							
Production							
Tubing							

Drillers TD (ft) 5135' MD      Loggers TD (ft) 5135' MD      **RECEIVED**  
 Deepest formation penetrated INJUN      Plug back to (ft) \_\_\_\_\_      **Office of Oil and Gas**  
 Plug back procedure \_\_\_\_\_      **SEP 01 2016**

Kick off depth (ft) 950'      **WV Department of Environmental Protection**

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" - 1ST JOINT; BASKET WAS 2 JOINTS DOWN HOLE. 7" - 2 JOINTS FROM TOP

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	10/10/14		5070'	PLUG	INJUN
2	10/10/14		5027'	PACKER	INJUN
3	10/10/14		4850'	PACKER	INJUN
4	10/10/14		4673'	PACKER	INJUN
5	10/10/14		4455'	PACKER	INJUN
6	10/10/14		4278'	PACKER	INJUN
7	10/10/14		4101'	PACKER	INJUN
8	10/10/14		3924'	PACKER	INJUN
9	10/10/14		3747'	PACKER	INJUN
10	10/10/14		3570'	PACKER	INJUN
11	10/10/14		3353'	PACKER	INJUN
12	10/10/14		3176'	PACKER	INJUN
13	10/10/14		2999'	PACKER	INJUN
14	10/10/14		2822'	PACKER	INJUN
15	10/10/14		2645'	PACKER	INJUN
16	10/10/14		2468'	PACKER	INJUNRECEIVED

Please insert additional pages as applicable.

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STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

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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	2/26/15	39.2	3825	4021		4173	299	ACID/250GAL.
2	2/26/15	39.5	3386	4256		7060	301	0
3	2/26/15	---	---	---		---	92	NO PORT
4	2/26/15	34.5	2875	3305		29,982	325	ACID/250GAL.
5	2/26/15	33.1	2,745	40		30,051	303	ACID/250GAL.
6	2/26/15	40	3040	3170		29,924	299	0
7	2/26/15	39.7	3187	3329		30,010	302	0
8	2/26/15	34.7	2952	3123		30,013	301	0
9	2/26/15	---	---	---		---	---	NO PORT
10	2/26/15	40	3195	3458		30,051	301	0
11	2/26/15	40.7	2747	2933		30,007	298	ACID/250GAL.
12	2/26/15	40	2632	2916		30,172	302	ACID/250GAL.
13	2/26/15	40	2712	3102		45,074	298	ACID/250GAL.
14	2/26/15	40	2773	3297		40,065	302	0
15	2/26/15	40	2855	3382		45,320	299	ACID/250GAL.
16	2/26/15	38.7	3290	4230		40,072	301	ACID/250GAL.

Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>INJUN</u>	<u>4815' - 2663'</u>	<u>TVD</u> _____ <u>MD</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump  
 SHUT-IN PRESSURE Surface 150 psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST 12 hrs  
 OPEN FLOW Gas 35 mcfpd Oil 55 bpd NGL 0 bpd Water 5 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		0	1675'	
SILT STONE			1675'	1900'	
LITTLE LIME			1900'	2000'	
PENCIL CAVE			2010'	2020'	
BIG LIME			2020'	2450'	
INJUN			2450'	2470'	
SILT STONE			2470'	3000'	
INJUN			3000'	5135'	
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Please insert additional pages as applicable.

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 SERVICE  
 Address 5 HALL ROAD City BUCKHANNON State WV Zip 26201

Stimulating Company UNIVERSAL WELL SERVICE  
 Address 5 HALL 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 MGR. Date 9/1/2016