

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

API 47-15-02900 County CLAY District UNION  
Quad ELKHURST 7.5' Pad Name \_\_\_\_\_ Field/Pool Name \_\_\_\_\_  
Farm name CHESSIE CONNER, ET. AL. Well Number J.S. COCHRAN 9H  
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 8/04/2014 Date drilling commenced 8/31/2014 Date drilling ceased 9/23/2015  
Date completion activities began 12/10/2014 Date completion activities ceased 12/31/2014  
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 RECEIVED Office of Oil and Gas  
Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

SEP 02 2016

WV Department of  
Environmental Protection

Reviewed by: 

03/31/2017

AX-RBOMS 3/30/17

API 47- 15 - 02900 Farm name CHESSIE CONNER, ET. AL. Well number J.S. COCHRAN 9H

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"	408'	NEW	LS - 26 LBS	90'	YES
Coal							
Intermediate 1	8 3/4"	7"	2058'	NEW	J-55 - 20 LBS	350'	YES
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	5,132'	NEW	N-80 - 11.65 LBS	950'	
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	150	15.6	1.20	180	GROUND LEVEL	8
Coal							
Intermediate 1	CLASS I	300	14.6	1.38	414	GROUND LEVEL	8
Intermediate 2							
Intermediate 3							
Production							
Tubing							

Drillers TD (ft) 5132' MD Loggers TD (ft) 5132' MD  
 Deepest formation penetrated INJUN Plug back to (ft) \_\_\_\_\_  
 Plug back procedure \_\_\_\_\_

Kick off depth (ft) 800'

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 8 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	9/23/14		5006	PACKER	INJUN
2	9/23/14		4835	PACKER	INJUN
3	9/23/14		4709	PACKER	INJUN
4	9/23/14		4582	PACKER	INJUN
5	9/23/14		4455	PACKER	INJUN
6	9/23/14		4329	PACKER	INJUN
7	9/23/14		4202	PACKER	INJUN
8	9/23/14		4075	PACKER	INJUN
9	9/23/14		3949	PACKER	INJUN
10	9/23/14		3822	PACKER	INJUN
11	9/23/14		3695	PACKER	INJUN
12	9/23/14		3569	PACKER	INJUN
13	9/23/14		3442	PACKER	INJUN
14	9/23/14		3315	PACKER	INJUN
15	9/23/14		3188	PACKER	INJUN
16	9/23/14		3062	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	12/13/14	34	2641	3807		19,800	394	0
2	12/13/14	34.4	2262	3415		19,868	302	0
3	12/13/14	35	2596	3030		20,300	296	0
4	12/13/14	35.2	2445	3051		19,600	288	0
5	12/13/14	35.2	2352	3310		19,765	276	0
6	12/13/14	35.3	2133	3926		19,520	301	0
7	12/13/14	35	2405	2991		20,500	259	0
8	12/13/14	34.1	2163	2984		20,100	292	0
9	12/13/14	33.6	2224	3031		20,155	278	0
10	12/13/14	33.7	2235	3298		20,155	306	0
11	12/13/14	34.5	1937	2973		20,320	335	0
12	12/13/14	35	1921	2787		19,590	262	0
13	12/13/14	33.8	2147	3246	1885	20,675	283	0
14	12/13/14	33.6	1865	3204		20,600	249	0
15	12/13/14	31.9	1830	3039	1801	19,800	324	0
16	12/13/14	32.6	1965	2926	1625	20,320	339	0

Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>
<u>INJUN</u>	<u>1950' - 2400'</u> MD
<u>INJUN</u>	<u>3300' - 5134'</u>

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 200 psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST 12 hrs

OPEN FLOW Gas 40 mcfpd Oil 25 bpd NGL 0 bpd Water 7 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP		BOTTOM		DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
SAND/SHALE	<u>0</u>		<u>0</u>	<u>1550'</u>	
SALT SAND			<u>1550'</u>	<u>1700'</u>	
SILT STONE			<u>1700'</u>	<u>1900'</u>	
LITTLE LIME			<u>1900'</u>	<u>1920'</u>	
PENCIL CAVE			<u>1920'</u>	<u>1935'</u>	
BIG LIME			<u>1935'</u>	<u>1950'</u>	
INJUN			<u>1950'</u>	<u>2400'</u>	
SILT STONE			<u>2400'</u>	<u>3300'</u>	
INJUN			<u>3300'</u>	<u>5134'</u>	

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 26201

Please insert additional pages as applicable.

Completed by DANIELLE N. BOGGS Telephone 304-344-9291  
Signature Danielle N. Boggs Title OPERATIONS MANAGER Date 9/2/2016

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