

CB

JR

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

ORIGINAL

API 47-15-02896 County CLAY District UNION
Quad ELKHURST 7.5' Pad Name _____ Field/Pool Name _____
Farm name CHESSIE CONNER, ET AL Well Number J.S. COCHRAN #5H
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 3/19/2014 Date drilling commenced 3/25/2014 Date drilling ceased 5/22/2014
Date completion activities began ~~6/20/15~~ NONE ~~6/21/14~~ Date completion activities ceased NONE ~~6/22/14~~
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: _____
01/23/2015

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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 3/8"	30'	NEW	LS - 43.6	NONE	YES - CEMENTED BY RIG
Surface	12 1/4"	9 5/8"	337'	NEW	LS - 26 LBS	80'	YES
Coal							
Intermediate 1	8 3/4"	7"	1952'	NEW	J-55 - 20LBS	350'	YES
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	5070'	NEW	N-80 - 11.6		YES
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 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	1.40	420	GROUND LEVEL	8
Intermediate 2							
Intermediate 3							
Production	CLASS I	480	14.4	1.29	619.2	GROUND LEVEL	8
Tubing							

Drillers TD (ft) 5070' TOTAL MTD Loggers TD (ft) 5070'
 Deepest formation penetrated INJUN Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) 1496'

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	6/21/2014	5098'	4996'	36	INJUN
2	6/21/2014	4892'	4790'	36	INJUN
3	6/21/2014	4686'	4584'	36	INJUN
4	6/21/2014	4480'	4378'	36	INJUN
5	6/21/2014	4274'	4172'	36	INJUN
6	6/22/2014	4068'	3966'	36	INJUN
7	6/22/2014	3862'	3760'	36	INJUN
8	6/22/2014	3656'	3554'	36	INJUN
9	6/22/2014	3450'	3348'	36	INJUN
10	6/22/2014	3244'	3142'	36	INJUN
11	6/22/2014	3028'	2936'	36	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	6/21/14	41	2699	3618	1340	14,900	409.2	0
2	6/21/14	40	2552	2409	1684	30,721	412.6	0
3	6/21/14	40	1500	1800	1157	15,828	322.6	0
4	6/21/14	41	2399	2611	1358	13,156	339.9	0
5	6/21/14	39	2148	2705	1157	7,200	337	0
6	6/22/14	41	3357	3813	1294	18,151	346.5	0
7	6/22/14	40	3380	3490	1362	15,804	325.6	0
8	6/22/14	40	2918	3233	1678	12,850	391	0
9	6/22/14	40	2617	2848	1406	12,509	335.9	0
10	6/22/14	40.5	2866	3013	1629	11,092	354.6	0
11	6/22/14	40.3	2739	2959	1487	13,092	354.6	0

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
	TVD		MD
INJUN	2936	5098	

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 90,000 mcfpd Oil 85 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 ₂ 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 NABORS COMPLETION & PRODUCTION
Address 1650 HACKERS CREEK ROAD City JANE LEW State WV Zip 26378

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