

September 4th, 2014

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

API 47-097-03793WH6A County Upshur District Washington
Quad Alton 7.5' Pad Nam ALT8HS Field/Pool Name Alton
Farm Name WOODY, D.J., ET AL Well Number ALT8DHS Rework Drilling Deeper
Operator (as registered with the OOG) CNX Gas Company LLC
Address P.O. Box 1248 City Jane Lew State WV Zip 26378

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top Hole Northing 4,293,510.68m Easting 571,914.01m
Landing Point of Curve Northing 4,293,318.17m Easting 572,061.26m
Bottom Hole Northing 4,291,613.73m Easting 572,666.45m

Elevation (ft) 2459.5' 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

Drilled 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)
Waterbased Mud, Bactericide, Polymers and Weighting Agents.

Date Permit Issued 07/25/2013 Date drilling commenced 11/19/2011 Date drilling ceased 12/20/2013
Date completion activities began 04/03/2014 Date completion activities ceased 05/13/2014
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 plu

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Freshwater depth(s) ft 40', 130' Open mine(s) (Y/N) depths N
Salt water depth(s) ft None Reported Void(s) encountered (Y/N) depths N
Coal depth(s) ft None Reported Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

SEP 05 2014
WV Department of
Environmental Protection

Reviewed by:

10/03/2014

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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 to the right *
Conductor	24"	20"	40'	N	L.S. 84 / 40'	N/A	Y
Surface	17 1/2"	13 3/8"	667'	N	J-55 54.5 / 667'	81'/139'	Y
Coal	-	-	-	-	-	-	-
Intermediate 1	12 1/4"	9 5/8"	4453'	N	J-55 36 / 4453'	79'/141'	Y
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	8 3/4" & 8 1/2"	5 1/2"	15378'	N	P-110 20 / 15378'	N/A	Y
Tubing	8 3/4"	2 3/8"	7385'	N	N-80 4.7 / 7385'	N/A	N
Packer Type and Depth Set		None					

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	80	15.6	1.18	94	Surface	8
Surface	Class A	465	14.6	1.39	646	Surface	42
Coal	-	-	-	-	-	-	-
Intermediate 1	Class A (Lead) / Class A (Tail)	957.5 / 156.6	13.8 / 15	1.18	1130 / 185	Surface	8
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	Class A (Lead) / Class A (Tail)	441 / 2812	13.3 / 14.8	1.45 / 1.25	639 / 3515	4252'	12
Tubing	-	-	-	-	-	-	-

Drillers TD (ft) 7187' Loggers TD (ft) 7405'

Deepest formation penetrated: Marcellus Plug back to (ft) N/A

Plug back procedure: N/A

Kick Off Depth (ft) 4514'

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 _____

Conductor - No centralizers used.. Fresh Water - Bow spring centralizers on first joint then every fourth joint to 100 feet from surface.. Coal - Bow spring centralizers on first joint then every fourth joint to 100 feet from surface.. Intermediate - Bow spring centralizers one on the first two joints and every fourth joint until inside surface casing.. Production - Rigid bow spring centralizer on first joint then every 2 casing joints (free floating) through the lateral and the curve. (Note: cementing the 5 1/2" casing completely in open hole lateral and curve.)

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS Plug and Perforation Shot Hole

WAS WELL COMPLETED OPEN HOLE Yes No DETAILS _____

WERE TRACERS USE Yes No TYPES 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)
					See Attached

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Avg Pump Rate (BPM)	Avg Treatment Pressure (PSI)	Max Breakdown Perforations	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbbls)	Amount of Nitrogen / other (gals)
								See Attached

Please insert additional pages as applicable.

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number Of Perforations	Formation(s)
1	4/3/2014	15368	15264	4	Marcellus
2	4/4/2014	15234	15112	5	Marcellus
3	4/5/2014	15084	14962	5	Marcellus
4	4/6/2014	14934	14812	5	Marcellus
5	4/6/2014	14784	14662	5	Marcellus
6	4/9/2014	14634	14512	5	Marcellus
7	4/9/2014	14484	14362	5	Marcellus
8	4/11/2014	14334	14212	5	Marcellus
9	4/12/2014	14184	14062	5	Marcellus
10	4/13/2014	14034	13912	5	Marcellus
11	4/13/2014	13884	13762	5	Marcellus
12	4/14/2014	13734	13612	5	Marcellus
13	4/16/2014	13584	13462	5	Marcellus
14	4/17/2014	13434	13312	5	Marcellus
15	4/18/2014	13284	13162	5	Marcellus
16	4/19/2014	13134	13012	5	Marcellus
17	4/19/2014	12984	12862	5	Marcellus
18	4/20/2014	12834	12712	5	Marcellus
19	4/23/2014	12684	12562	5	Marcellus
20	4/23/2014	12534	12412	5	Marcellus
21	4/24/2014	12384	12262	5	Marcellus
22	4/25/2014	12234	12112	5	Marcellus
23	4/26/2014	12084	11962	5	Marcellus
24	4/26/2014	11934	11812	5	Marcellus
25	4/27/2014	11784	11662	5	Marcellus
26	4/27/2014	11634	11512	5	Marcellus
27	4/28/2014	11484	11362	5	Marcellus
28	4/28/2014	11334	11212	5	Marcellus
29	4/29/2014	11184	11062	5	Marcellus
30	4/30/2014	11034	10912	5	Marcellus
31	5/1/2014	10884	10762	5	Marcellus
32	5/2/2014	10734	10612	5	Marcellus
33	5/2/2014	10584	10462	5	Marcellus
34	5/3/2014	10434	10312	5	Marcellus
35	5/4/2014	10285	10171	5	Marcellus
36	5/5/2014	9526	9412	5	Marcellus
37	5/5/2014	9385	9263	5	Marcellus
38	5/6/2014	9235	9113	5	Marcellus
39	5/6/2014	9085	8963	5	Marcellus

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number Of Perforations	Formation(s)
40	5/7/2014	8935	8813	5	Marcellus
41	5/8/2014	8785	8663	5	Marcellus
42	5/9/2014	8635	8513	5	Marcellus
43	5/9/2014	8485	8363	5	Marcellus
44	5/10/2014	8335	8213	5	Marcellus
45	5/11/2014	8185	8063	5	Marcellus
46	5/11/2014	8036	7918	5	Marcellus
47	5/12/2014	7891	7773	5	Marcellus
48	5/13/2014	7746	7632	5	Marcellus
49	5/13/2014	7607	7497	5	Marcellus

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STIMULATION INFORMATION PER STAGE

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1	4/3/2014	68	8712	8466	6072	250600	10072	6847
2	4/4/2014	64.8	8853	6755	6328	250500	6623	6660
3	4/5/2014	59.1	8664	7289	6490	226200	7533	6862
4	4/6/2014	65	8564	7320	6424	250200	6393	6842
5	4/6/2014	68.7	8527	6732	6007	250150	6059	6731
6	4/9/2014	71	8650	6381	5561	250450	6552	6697
7	4/9/2014	78	8516	6509	5653	227550	5267	6552
8	4/11/2014	86.6	8569	6286	5855	250150	5783	6519
9	4/12/2014	85.5	8530	6143	5607	249750	6586	6632
10	4/13/2014	81.9	8467	6207	5292	252140	5687	6376
11	4/13/2014	76.9	8534	6222	5230	249750	5829	6363
12	4/14/2014	73.7	8200	6031	4510	250680	7861	6609
13	4/16/2014	82.5	8229	6087	4698	226700	7125	6548
14	4/17/2014	86	8529	6016	4564	251750	5895	6446
15	4/18/2014	84.6	8156	6215	4789	237700	7181	6803
16	4/19/2014	87	8584	6310	4566	254000	6851	6578
17	4/19/2014	89	8671	5628	4438	251850	6890	6546
18	4/20/2014	92	8650	6339	0	252300	7333	6521
19	4/23/2014	77.1	8329	6071	4155	233050	7053	6596
20	4/23/2014	84	8429	5788	4454	251200	6953	4560
21	4/24/2014	93.4	8379	5944	4906	250900	5597	6309
22	4/25/2014	89	8262	6595	4969	251550	5931	6286
23	4/26/2014	80	7880	6011	4339	252350	8033	6533
24	4/26/2014	91.5	8591	5928	4643	216000	6051	6391
25	4/27/2014	90	8520	6720	4387	231400	8917	6685
26	4/27/2014	89.4	8380	6675	4243	250000	7118	6451
27	4/28/2014	87	8562	6905	3978	251650	7231	6486
28	4/28/2014	88	8477	6525	4645	250900	7685	6650
29	4/29/2014	87	8694	6134	4478	250200	8944	6953
30	4/30/2014	94	8543	6119	4847	249400	7264	6593
31	5/1/2014	96.1	8611	6445	4520	250800	7568	6564
32	5/2/2014	97.6	8354	5745	4635	251700	6874	6428
33	5/2/2014	89	8220	5697	5014	242400	5367	3257
34	5/3/2014	94.2	8372	5793	5131	245700	6612	6419
35	5/4/2014	88	8397	6302	5871	251000	5522	3269
36	5/5/2014	92.6	8373	6079	4800	250000	6535	6447
37	5/5/2014	94.7	7828	5490	4474	246200	7365	3490
38	5/6/2014	90.1	7527	5379	4914	250450	5477	6439
39	5/6/2014	95	7984	5793	4972	230600	6802	6633

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40	5/7/2014	90.2	7326	5442	4815	250350	8481	6597
41	5/8/2014	92	7724	5933	5357	251100	6670	6337
42	5/9/2014	97.9	7900	5649	5212	251600	6078	6525
43	5/9/2014	99.8	7551	5490	4784	250950	6185	6364
44	5/10/2014	98	7546	6539	4265	250900	6666	6318
45	5/11/2014	99.4	7798	6063	4353	255850	6061	6320
46	5/11/2014	97.9	7445	6270	4507	249950	6012	6365
47	5/12/2014	99	7699	6547	4763	254250	6697	6310
48	5/13/2014	99	7862	6366	4849	250950	6032	6461
49	5/13/2014	98.4	7543	6318	4867	250850	5463	6383

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PRODUCING FORMATION(S) _____ DEPTHS _____
UPPER MARCELLUS 7110'- 7405' TVD _____ MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump
 SHUT-IN PRESSURE Surface 885 psi Bottom Hole 3737 psi DURATION OF TEST 500 hrs
 OPEN FLOW Gas 3441 mcfpd Oil 0 bpd NGL 0 bpd Water 737 bpd GAS MEASURED BY
 Estimated Orifice Pilot

LITHOLOGY / FORMATION	TOP DEPTH IN FT TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY TYPE OF FLUID (FRESHWATER,BRINE,GAS,H2S, ETC)

Please insert additional pages as applicable.

Drilling Contractor Patterson UTI
 Address 450 Gears Road Suite 500 City Houston State TX Zip 77067
 Logging Company Diversified Mud Logging
 Address 440 Route 519 City Eighty Four State PA Zip 15330
 Cementing Company CalFrac
 Address 2001 Summit View Rd City Smithfield State PA Zip 15478
 Stimulating Company CalFrac
 Address 2001 Summit View Rd City Smithfield State PA Zip 15478

Please insert additional pages as applicable.

Completed by CNX Gas WV Operations Company, LLC - Drilling and Completions Telephone 304-884-2000
 Signature Steve Spittle Title Steve Spittle - Completions Manager-Gas WV Date 8/29/14

API 47-097-03793WH6A Farm name WOODY, D.J., ET AL Well number ALT8DHS Rework Drilling Deeper

LITHOLOGY / FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY TYPE OF FLUID (FRESHWATER,BRINE,GAS,H2S, ETC)
	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	
	TVD	TVD	MD	MD	
FILL	0	40			
SURFACE ROCK	40	110			
SAND&SHALE	110	155			
SAND	155	368			
SHALE	368	405			
SAND/SHALE	405	521			
SAND/SHALE	521	546			
SAND/SHALE	546	740			
SHALE	740	810			
SAND&SHALE	810	1000			
REDROCK SHALE	1000	1055			
SAND/SHALE	1055	1160			
REDROCK/SHALE	1160	1180			
REDROCK/SHALE/SAND	1180	1350			
SAND	1350	1500			
REDROCK	1500	1570			
SAND&SHALE	1570	1680			
SAND	1680	1810			
SAND&SHALE	1810	2580			
SHALE	2580	2740			
SAND&SHALE	2740	2860			
SAND	2860	2920			
SHALE	2920	3410			
SHALE&SAND	3410	3625			
SHALE	3625	3790			
SAND&SHALE	3790	3908			
SAND/SHALE	3908	4130			
SAND/SHALE	4130	4352			
SAND/SHALE	4352	4670			
SHALE	4670	4920			
SHALE	4920	5500			
SHALE	5500	6300			
SYCAMORE	6300	6320			
HAMILTON SHALE	6320	7070			
BURKETT	7070	7110			
UPPER MARCELLUS	7110	7405			

47-097-03793 JH64

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/3/2014
Job End Date:	5/13/2014
State:	West Virginia
County:	Upshur
API Number:	47-097-03793-00-00
Operator Name:	CONSOL Energy Inc.
Well Name and Number:	ALT8DHS
Longitude:	-80.17223000
Latitude:	38.78725300
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,345
Total Base Water Volume (gal):	13,599,684
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Customer & CWS	Base Fluid & Mix Water	Water	7732-18-5	100.00000	89.60498	
Sand (Proppant), DAP-903, DWP-111, DWP-614, DWP-901, BioClear 2000, DWP-NE1	CWS	Propping Agent, Scale Inhibitor, Gel Slurry, Viscosifier, Breaker, Biocide, Non-Emulsifier	Crystalline silica (Quartz)	14808-60-7	100.00000	9.51290	
			Hydrochloric acid	7647-01-0	35.00000	0.66018	
			Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.05036	
			2-Propenoic acid, polymer with 2-propenamide, sodium salt	25987-30-8	40.00000	0.03262	
			Guar gum	9000-30-0	60.00000	0.02590	
			Calcite	471-34-1	1.00000	0.01512	
			Polyethylene glycol mixture	25322-68-3	70.00000	0.01283	
			2,2-Dibromo-3-Nitrilopropionamide	10222-01-2	20.00000	0.01283	
			Methanol	67-56-1	15.00000	0.00807	
			2-Propenoic acid, polymer with sodium phosphonate	71050-62-9	60.00000	0.00677	
			Isopropanol	67-63-0	40.00000	0.00642	

ALT8DHS Breaker
Drilling Deaer

47-097-03793 NH6A

			Dimethylcocoamine, bis (chloroethyl) ether, diquatary ammonium salt	68607-28-3	40.00000	0.00642
			Illite	12173-60-3	1.00000	0.00635
			Goethite	1310-14-1	0.10000	0.00451
			Poly(oxyethylene)nonylphenol ether	9016-45-9	5.00000	0.00408
			Sorbitan monooleate	1338-43-8	5.00000	0.00408
			Biotite	1302-27-8	0.10000	0.00307
			Apatite	64476-38-6	0.10000	0.00307
			Fatty acids, tall-oil	61790-12-3	0.10000	0.00283
			Alkenes, C>10 a-	64743-02-8	0.10000	0.00283
			Modified thiourea polymer	68527-49-1	0.10000	0.00283
			Alcohols, C14-15, ethoxylated	68951-67-7	0.10000	0.00283
			Ilmenite	98072-94-7	0.10000	0.00235
			Quaternary ammonium compounds, bis(hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00216
			Propargyl Alcohol	107-19-7	0.10000	0.00094
			Ammonium Persulfate	7727-54-0	100.00000	0.00093
			Diallyldimethylammonium chloride	7398-69-8	5.00000	0.00080
			Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1.50000	0.00065
			Formaldehyde	50-00-0	0.10000	0.00019
			Sodium chloride	7647-14-5	0.10000	0.00009

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

- * Total Water Volume sources may include fresh water, produced water, and/or recycled water
- ** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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RTBDHS BULKER
DELIVING DEBAR