10/09/2015

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



API 47-017-06412H6A	County Doddridge	Di	strict So	uthwest
Quad Oxford 7.5'	Pad Name OXFD11HS	Fi	eld/Pool Name Ox	ford
Farm Name MORRIS, I. L.		W	ell Number OXFD1	1DHS
Operator (as registered with the C	OOG) CNX Gas Company	LLC		
Address P.O. Box 1248	City Jane	Lew S	tate WV Zip	26378
As Drilled location NAD 83/ Top Hol Landing Point of Curv Bottom Hol	Northing 4,335,75 Northing 4,336,43	39.44 m Easting	ew, and deviation sur 520,428.00 m 520,464.08 m 519,844.53 m	rvey
Elevation (ft) 1340' GL	Type of Well	New □ Existing	Type of Report	■ Interim □ Final
Permit Type □ Deviated □ I	Horizontal Horizontal	6A □ Vertical	Depth Type	□ Deep ■ Shallow
Type of Operation □ Convert				
Well Type Brine Disposal				g □ Storage Other
Type of Completion □ Single				□ Oil Other
Drilled with □ Cable ■ Rotar				7-5:0 05:101
Drilled Media Surface hole	Air □ Mud ■ Fresh Wa	ater Interme	diate hole Air	□ Mud ■ Fresh Water □ Brine
Production hole □ Air ■ Mu			unate note 7th	= Mad = Fresh Water = Dime
Mud Type(s) and Additive(s)	id Tresh water DB	inc		
Mineral Oil Based Mud, Bacteric	ide, Polymers and Weightin	ng Agents.		
Deta Desseit Issued 02/12/20	14 D 1 1 202	95.53	5 120	
Date Permit Issued 02/12/20 Date completion activities began	Date drilling comm 04/19/2015		Date drilling ion activities ceased	A STATE OF LIFE AND ADDRESS OF THE PARTY OF
Verbal plugging (Y/N) N				05/03/2015 ted by N/A
verous plugging (1/14)	Date permission g	granted N/A	Gian	ned by N/A
Please note: Operator is required	to submit a plugging applic	cation within 5 days o	f verbal permission	of pluge CEIVED Gas
Freshwater depth(s) ft	50', 620'	Open mine(s) (Y/N)	depths	Office 27 2015
Salt water depth(s) ft	1,730'	Void(s) encountered	I (Y/N) depths N	Aug " ment of sion
Coal depth(s) ft	None Reported	Cavern(s) encounter	ed (Y/N) depths N	MV Departi Protection
Is coal being mined in area (Y/N)	N			AVG 2.7 Colo
				Reviewed by:
				Gorr Kevin

Rev. 8/23/13

API <u>47-017-06</u>	6412H6A	Farm name	MORRIS, I.	<u>L.</u>	Well n	umber <u>OX</u>	FD11DHS		
CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Bas Dep		d cement Circulate	` '
Conductor	24"	20"	100'	N N	J-55 94# / 10		/A	* Provide details to the right	
Surface	17 1/2"	13 3/8"	1223'	N	J-55 54.5# / 12	223' N	/A	Y	
Coal	•	-	-	-	-		•	-	
Intermediate 1	12 1/4"	9 5/8"	2818'	N	J-55 36# / 28	18' N	/A	Y	
Intermediate 2		-	<u> </u>						
Intermediate 3		-			- · · · · · · · · · · · · · · · · · · ·			-	
Production	8 3/4"	5 1/2"	14806'	N	P-110 20# / 14	806' N	/A	N	
Tubing	5 1/2"	2 3/8"	7213.5'	N	P-110 4.7# / 72		/A	N	
Packer Type an		None	1				<u>.</u>		
Comment Detail	 								
CEMENT	Class/		Number		Slurry	Yield	Volume	Cement	woc
DATA	of Cer		of Sacks	<u> </u>	wt (ppg)	(ft 3/sks)	(ft3)	Top (MD)	(hrs)
Conductor	Class		127		15.2	1.18	150	Surface	24
Surface	Class	5 A	1030		15.6	1.18	1224	Surface	8
Coal	-		-		-	-	-	-	
Intermediate 1	Class	5 A	935		15.6	1.18	1101	Surface	8
Intermediate 2	•		-		-	-	•	-	•
Intermediate 3	-		-		•	• - : : : : : : : : : : : : : : : : : : :	•	-	<u> </u>
Production	Class A (Lead) /	Class A (Tail)	767 / 1994	·	14.2 / 14.8	1.24 / 1.25	951 / 2493	1585.6'	8
Tubing	•		-		•	•	•	-	-
Drillers TD (ft)	6939'	-		_	Loggers TD	(ft) <u>6933'</u>			
Deepest formation	n penetrated:	Marcellus			Plug back to	(ft) N/A			
Plug back proced	lure: N/A			-					
Kick Off Depth (ft) 2909'								
•	-								
Check all wirelin	e logs run	•	□ density ■				•		
		□ neutror	n □ resistivity	y ⊔ gamn	na ray u tem	perature us	sonic		
Well Cored '	Yes ■ No		ntional 🗆 S	idewall	,	Were Cutting	s Collected	■ Yes □ No	
	entralizers use	d. Fresh Water	- Bow spring c	entralizers o	on first joint the	en every four		feet from surface	
Intermediate - Bo	ow spring cent	ralizers one on t	he first two join	nts and every	<u>y fourth joint u</u>	ntil inside sur	face casing.	Production Rigin	l bow
completely in op-	en hole lateral	and curve.)	sing joints (free	floating) thr	ough the latera	al and the cur	ve. (Notes be Office (menting the 5 1/2	casing
WAS WELL CO	MPLETED A	S SHOT HOLE	■ Yes □ N	o D	ETAILS <u>Plu</u>	g and Perfora	tion Shot Hol	eic 2 7 2015	
WAS WELL CO			· · · · · ·		· - - · ·		WV	Departmen Departmen	t 01- tection
			TYPES OF				ENVITO	Much	

WERE TRACERS USE ☐ Yes ■ No TYPES OF TRACER(S) USED

API <u>47-017-06412H6A</u>

Farm name MORRIS, I. L.

Well number OXFD11DHS

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 Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbis)	Amount of Nitrogen / other (gals
			.,					
								Coo Attacha
			-					See Attache
			_				FOENE	D
							RECE!	nd Gas
						Otti	ce or or	-015
							NIG 27	<i>ξθ1</i> 2———
	'				-		RECEIVE ce of Oil a AUG 27	ment of
						,	MA Debau	1 Protection
	ert additional pag			<u>-</u>			inollitied i	烈 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

API 47-017-06412H6A Farm name MORRIS, I. L.

Well number OXFD11DHS

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number Of Perforations	Formation(s)
1	4/19/2015	14747	14745	12	Marcellus
2	4/20/2015	14681	14540	40	Marcellus
3	4/20/2015	14508	14367	40	Marcellus
4	4/21/2015	14335	14194	40	Marcellus
5	4/21/2015	14162	14021	40	Marcellus
6	4/23/2015	13989	13852	40	Marcellus
7	4/23/2015	13816	13675	40	Marcellus
8	4/23/2015	13643	13502	40	Marcellus
9	4/24/2015	13470	13329	40	Marcellus
10	4/26/2015	13297	13156	40	Marcellus
11	4/26/2015	13124	12983	40	Marcellus
12	4/27/2015	12951	12810	40	Marcellus
13	4/27/2015	12778	12637	40	Marcellus
14	4/27/2015	12605	12464	40	Marcellus
15	4/28/2015	12432	12291	40	Marcellus
16	4/28/2015	12259	12118	40	Marcellus
17	4/28/2015	12086	11945	40	Marcellus
18	4/28/2015	11913	11773	40	Marcellus
19	4/29/2015	11741	11601	40	Marcellus
20	4/29/2015	11569	11429	40	Marcellus
21	4/29/2015	11397	11257	40	Marcellus
22	4/30/2015	11225	11085	40	Marcellus
23	4/30/2015	11053	10913	40	Marcellus
24	4/30/2015	10881	10741	40	Marcellus
25	4/30/2015	10709	10569	40	Marcellus
26	4/30/2015	10537	10397	40	Marcellus
27	5/1/2015	10365	10225	40	Marcellus
28	5/1/2015	10193	10053	40	Marcellus
29	5/1/2015	10021	9881	40	Marcellus
30	5/1/2015	9849	9709	40	Marcellus
31	5/1/2015	9677	9537	40	Marcellus
32	5/1/2015	9505	9365	40	Marcellus
33	5/2/2015	8955	8813	40	Marcellus
34	5/2/2015	8779	8637	40	Marcellus 2615
35	5/2/2015	8603	8461	40	Marcellus
36	5/2/2015	8427	8285	40	Marcellus
37	5/2/2015	8251	8109	40	Marcellus
38	5/2/2015	8075	7933	40	Marcellus
39	5/2/2015	7899	7757	40	Marcellu 10/09/2015

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Farm name MORRIS, I. L.

Well number OXFD11DHS

PERFORATION RECORD

Stage		Perforated from	Perforated to	Number Of	
No.	Perforation date	MD ft.	MD ft.	Perforations	Formation(s)
40	5/2/2015	7723	7581	40	Marcellus
41	5/3/2015	7547	7405	40	Marcellus
42	5/3/2015	7371	7229	40	Marcellus

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API 47-017-06412H6A Farm name MORRIS, I. L.

Well number OXFD11DHS

STIMULATION INFORMATION PER STAGE

Stage No.	Stimulations Date	Avg Pump Rate (BPM)	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen / other (gals)
1	4/19/2015	61.2	8187	8195	4416	100100	5103	3437
2	4/20/2015	80.2	8331	6597	5290	233850	6777	3577
3	4/20/2015	73.1	8068	7520	5687	234100	7712	3521
4	4/21/2015	74.4	8200	7052	5643	233550	6608	3486
5	4/21/2015	78.3	8201	7072	5625	234000	6004	3530
6	4/23/2015	68	8079	7226	5531	234000	5892	1905
7	4/23/2015	74	8250	6351	5699	234150	6047	1543
8	4/23/2015	76.1	8121	6366	5559	234250	6041	3493
9	4/24/2015	48.4	8840	6959	8449	213100	9480	3855
10	4/26/2015	75.4	8270	6644	5406	233050	6369	3593
11	4/26/2015	70	8013	6489	5516	233750	6121	3427
12	4/27/2015	75.9	8062	6780	5473	233550	6138	3408
13	4/27/2015	74.7	8294	6218	5785	233550	6598	3625
14	4/27/2015	78.4	8229	6583	5657	233750	6296	3430
15	4/28/2015	82.7	8498	6670	6472	234400	6219	3569
16	4/28/2015	83.2	8460	6748	6263	233100	6012	3562
17	4/28/2015	82.3	8251	6767	5590	233900	5854	3403
18	4/28/2015	88.9	8290	6779	5704	233650	6018	3405
19	4/29/2015	80.3	7956	6435	5727	233800	5938	3362
20	4/29/2015	85	8471	7234	5610	233750	6166	3470
21	4/29/2015	78.9	8135	6093	5777	233800	7732	3516
22	4/30/2015	79.8	8042	6202	5623	234700	5269	3312
23	4/30/2015	82.6	8232	6451	6555	233050	5249	3338
24	4/30/2015	75.5	7960	6716	6922	233850	5225	3324
25	4/30/2015	78.7	7984	6836	5603	233650	5107	3330
26	4/30/2015	78.9	7993	7076	5591	233850	5158	3326
27	5/1/2015	79.8	7933	6720	5863	233950	4972	3320
28	5/1/2015	78.5	7944	6498	6457	234550	5464	3349
29	5/1/2015	84.8	7886	6966	6300	233400	5143	3329
30	5/1/2015	86.2	7937	6498	6627	234400	5209	3338
31	5/1/2015	84	7940	6860	5518	234000	4981	3323
32	5/1/2015	76.9	7978	7161	5533	234100	4986	3354
33	5/2/2015	82.5	7795	7320	5335	233750	4948 ED	Ga3319
34	5/2/2015	82	7734	6799	5605	234450	4880	3314
35	5/2/2015	87.9	7905	6555	6491	233800	5046	15 3331
36	5/2/2015	85.2	7809	7033	6670	234150	A/5983	3393
37	5/2/2015	85.4	7796	6724	6390	233400	5897	181 3382 OF
38	5/2/2015	84.1	7814	6724	5821	233250	5889	3397
39	5/2/2015	84.9	7635	6331	5515	235000	5738 10	0/09/27015

API 47-017-06412H6A

Farm name MORRIS, I. L.

Well number OXFD11DHS

STIMULATION INFORMATION PER STAGE

Stage No.	Stimulations Date	Avg Pump Rate (BPM)	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen / other (gals)
40	5/2/2015	85	7835	7340	5920	235250	5625	3380
41	5/3/2015	86	7669	6615	5537	232800	5605	3388
42	5/3/2015	84.5	7832	7678	6874	259990	5996	3396

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API <u>47-017-06412H</u>	6A Farm na	me <u>MORRIS.</u>	<u>I. L.</u>	Well numl	ber <u>OXFD11DHS</u>	
PRODUCING FORMA	TION(S)	DEPTHS	· · · · · ·			
Please insert additional pages as applicable. GAS TEST □ Build up □ Drawdown ■ C SHUT-IN PRESSURE Surface N/A ps OPEN FLOW Gas Oil	<u>6899'- 6933</u>	g' TVD	7210'- 7920'	MD		
					_	
					_	
Please insert additional	pages as applicable	·				
			w OII	TFST □ Flow 1	□ Pumn	
	•	· ·			URATION OF TEST_	N/A hrs
OPEN FLOW Gas	Oil	NO	_	Water N/A bpd	GAS MEASURED	
LITHOLOGY / FORMATION	TOP DEPTH IN FT TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN I MD	BOTTOM FT DEPTH IN FT MD	TYP	PE AND RECORD QUANTITY E OF FLUID .,BRINE,GAS,H2S, ETC)
					SEE A	ATTACHED
, , , , , , , , , , , , , , , , , , , ,						
			-			
Please insert additional p	Dages as applicable		1			
Drilling Contractor P	atterson UTI					
Address 207 Carlton	Drive		City E	Eighty Four	State PA	Zip <u>15330</u>
	Iorizon					
	Yale, Suite 414		_ City 1	<u> Tulsa</u>	State OK	Zip <u>74136-6378</u>
Cementing Company C			City S		State PA	7in 15479
Address 2001 Summi Stimulating Company C			City s	<u>Smithfield</u>	State FA	Zip <u>15478</u>
Address 2001 Summi		City S	Smithfield	State PARECT	Zipi 15478	
Please insert additional p	pages as applicable	•	-		Office of	51/1 87101 15478
Completed by <u>CNX Ga</u>	a WW Onarctions	Component II C	Drilling and	Completions	TalanhAUG	27 2015 304-884-2000
Signature <u>Sture</u>	Systle			Completions Manage		Date: 1787////>

API 47-017-06412H6A

Farm name MORRIS, I. L.

Well number OXFD11DHS

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)
FILL	0	100	0	100	
SS/GRAVEL/SHALE	100	200	100	200	
REDROCK/SS/SHALE	200	370	200	370	
SS/REDROCK/SHALE	370	500	370	500	
SHALE/REDROCK	500	850	500	850	
REDROCK/ SHALE	850	975	850	975	
SS/ REDROCK/SHALE	975	1030	975	1030	
SHALE/SILTSTONE/SS	1030	1105	1030	1105	
REDROCK/ SILTSTONE/SHALE	1105	1286	1105	1286	
REDSILT/SHALE	1286	1360	1286	1360	
SILTSTONE/ SHALE/ SS	1360	1395	1360	1395	
SS	1395	1425	1395	1425	
SHALE	1425	1520	1425	1520	
SS/SHALE	1520	1585	1520	1585	
SS	1585	1620	1585	1620	
SHALE/SS	1620	1830	1620	1830	
SS	1830	1950	1830	1950	
SHALE/SS	1950	2160	1950	2160	
LS	2160	2190	2160	2190	
SS/SHALE	2190	3000	2190	3000	
SHALE	3000	3330	3000	3350	
SHALE/ SILTSTONE	3330	3729	3350	3750	
SHALE	3729	3890	3750	3820	
SILTSTONE	3890	3935	3820	3950	
SHALE/ SILTSTONE	3935	4935	3950	5000	
SAND/ SHALE	4935	5925	5000	6026	
BURKETT	6828	6852	7042	7090	
TULLY	6852	6872	7090	7134	
HAMILTON	6872	6899	7134	7210	
UPPER MARCELLUS	6899	6905	7210	7231	
MIDDLE MARCELLUS	6905	6931	7231	7470	
CHERRY VALLEY	6931	6933	7470	7920	RECEIVED Office of Oil and Gas
LOWER MARCELLUS	6933		7920		owing of Oil and

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Hydraulic Fracturing Fluid Product Component Information Disclosure

4/19/2015	Job Start Date:
5/3/2015	Job End Date:
West Virginia	State:
Doddridge	County:
47-017-06412-00-00	API Number:
CONSOL Energy Inc.	Operator Name:
OXFD 11 DHS	Well Name and Number:
-80.76369440	Longitude:
39.17069440	Latitude:
NAD83	Datum:
NO	Federal/Tribal Well:
6,937	True Vertical Depth:
10,217,445	Total Base Water Volume (gal):
0	Total Base Non Water Volume:







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
Vater	Customer & CWS	Base Fluid & Mix Water					
			Water	7732-18-5	100.00000	89.28025	
Sand (Proppant), DWP-111, DWP-614, DWP-901, DWP-NE1	cws	Propping Agent, Gel Slurry, Viscosifier, Breaker, Non- Emulsifier					
			Crystalline silica (Quartz)	14808-60-7	100.00000	10.10673	
			Hydrochloric acid	7647-01-0	35.00000	0.38001	
			Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.07597	
			Guar gum	9000-30-0	60.00000	0.06155	
			2-Propenoic acid, polymer with 2 -propenamide, sodium salt	25987-30-8	40.00000	0.01922	
			Calcite	471-34-1	1.00000	0.01348	
			Illite	12173-60-3	1.00000	0.01009	
			Goethite	1310-14-1	0.10000	0.00566	
			Quaternary ammonium compounds, bis(hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00513	
			Methanol	67-56-1	15.00000	0.00483	
			Biotite	1302-27-8	0.10000	0.00438	

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Apatite	64476-38-6	0.10000	0.00438	(1)	あし
Isopropanol	67-63-0	40.00000	0.00419	0	1 9
Dimethylcocoamine, bis (chloroethyl) ether, diquaternary ammonium salt	68607-28-3	40.00000	0.00419	1 5	36.0
Ilmenite	98072-94-7	0.10000	0.00374	TO E	7
Poly(oxyethylene)nonylphenol ether	9016-45-9	5.00000	0.00240	G 4	
Sorbitan monooleate	1338-43-8	5.00000	0.00240	10 3	
Ammonium Persulfate	7727-54-0	100.00000	0.00213		
Modified thiourea polymer	68527-49-1	0.10000	0.00163	Lion Lion	>
Alkenes, C>10 a-	64743-02-8	0.10000	0.00163	0	
Fatty acids, tall-oil	61790-12-3	0.10000	0.00163		
Alcohols, C14-15, ethoxylated	68951-67-7	0.10000	0.00163		
Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1.50000	0.00154		
Propargyl Alcohol	107-19-7	0.10000	0.00054		
Diallyldimethylammonium chloride	7398-69-8	5.00000	0.00052		
Formaldehyde	50-00-0	0.10000	0.00011		
Sodium chloride	7647-14-5	0.10000	0.00005		

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)

^{*} 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%

