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



API <u>47-017-06413H6A</u>	County <u>Doddridge</u>	Di	istrict Sc	outhwest
Quad Oxford 7.5'	Pad Name OXFD11HS	Fi	eld/Pool Name On	xford
Farm Name MORRIS, I. L.		W	ell Number OXFD	11EHS
Operator (as registered with the O	OG) CNX Gas Company	LLC		
Address P.O. Box 1248	City Jane I	Lew S	tate WV Zip	26378
As Drilled location NAD 83/0 Top Hole Landing Point of Curv Bottom Hole Elevation (ft) 1340' GL Permit Type □ Deviated □ H Type of Operation □ Convert Well Type □ Brine Disposal □ Type of Completion □ Single □ Drilled with □ Cable ■ Rotar	Northing 4,335,76 Northing 4,336,06 Northing 4,338,24 Type of Well Type of Well Deepen Drill CBM Gas Oil Multiple Flui	68.66 m Easting 18.07 m Easting New Existing 6A Vertical Plug Back Red Secondary Recovery	520,432.00 m 520,853.80 m 520,010.07 m Type of Report Depth Type rilling □ Rework □ Solution Minin	■ Interim □ Final □ Deep ■ Shallow k ■ Stimulate
Drilled Media Surface hole ■ A Production hole □ Air ■ Mu Mud Type(s) and Additive(s) Mineral Oil Based Mud, Bacterici	d □ Fresh Water □ Bri	ine	diate hole ■ Air	□ Mud ■ Fresh Water □ Brine
Date Permit Issued 02/12/20	14 Date drilling comm	menced 07/15/20)14 Date drillir	ng ceased 10/17/2014
Date completion activities began	02/27/2015		tion activities cease	
Verhal plugging (Y/N) N	Date permission of	granted N/A	Gra	nted by N/A
Please note: Operator is required	to submit a plugging applic	cation within 5 days o	f verbal permission	toplige of On a 27 2015
Freshwater depth(s) ft	50', 620'	Open mine(s) (Y/N)		
Salt water depth(s) ft	1,645'	Void(s) encountered	d (Y/N) depths N	WV Departal Protection
Coal depth(s) ft	None Reported	Cavern(s) encounter	red (Y/N) depths N	Secretary Contraction of the Con
Is coal being mined in area (Y/N)	N			
				Reviewed by:
				Gorr Kevin

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API <u>47-017-0</u>	6413H6A	Farm name	<u>MORRIS, I. L</u>	•	Well	number <u>OX</u>	FD11EHS		
CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft			d cement Circulaterovide details to the	
Conductor	24"	20"	100'	N	J-55 94# / 1	00, N	//A	Y	
Surface	17 1/2"	13 3/8"	1224'	N	J-55 54.5# / 1	224' N	I/A	Y	
Coal	-	-	-	-			-	-	,
Intermediate 1	12 1/4"	9 5/8"	2810'	N	J-55 36# / 28	310' N	/A	Y	
Intermediate 2	•	•	<u>-</u>	-	•		•	-	
Intermediate 3	•	-		 			-	•	
Production	8 3/4"	5 1/2"	15569'	N	P-110 20# / 1:	5569' N	/A	N	
Tubing	5 1/2"	2 3/8"	7383.1'	N	P-110 4.7# / 73	383.1' N	/A	N	
Packer Type an	d Denth Set	None			L				
Comment Detai	ls								
CEMENT DATA		/Type ement	Number of Sacks		Slurry wt (ppg)	Yield (ft 3/sks)	Volume (ft 3)	Cement Top (MD)	WO (hrs
Conductor	Cla	ss A	127		15.2	1.18	150	Surface	24
Surface	Cla	ss A	985		15.6	1.18	1162	Surface	8
Coal		-	-		•	•	-	-	-
Intermediate 1	Cla	ss A	933		15.6	1.2	1120	Surface	8
Intermediate 2		•	•		•	-	-	•	-
Intermediate 3		•	-	-	•	•	-	-	† -
Production	Class A (Lead)	/ Class A (Tail)	765 / 2170		14.2 / 14.8	1.24 / 1.25	948 / 2712	940'	8
Tubing		-	-		•	•	-	-	-
	(027)				I access TD	(A) (022)			
Orillers TD (ft)	6937				Loggers TD	· · —			<u>-</u>
Deepest formation	on penetrated:	Marcellus			Plug back to	(ft) N/A			
lug back proced	lure: N/A								
Cick Off Depth ((ft) 2900'								
Check all wirelin	e logs run	□ caliper	□ density ■	deviated/o	directional [induction			
		□ neutror	n □ resistivity	□ gamn	na ray 🗆 tem	perature 🗆 :	sonic		
Wall Cared III	Var m Na	□ Camus	mainmal	المسما		Word Cutting	ra Callastad	■ Yes □ No	
Vell Cored □	res = No	□ Conve	ntional Side	dewall		were Cutting	is Collected	- 165 140	
ESCRIBE THE	E CENTRALI	IZER PLACEME	ENT USED FOR	EACH CA	SING STRIN	ig			
								feet from surface	
ntermediate - Bo								Production - Rigid	
			sing joints (free fi						
	ch noic faicia	i and curve.					った(EIVED CO	<u> </u>
		C CHOT HOLE	■ Yes □ No	D	ETAILS <u>Pl</u>	ug and Perfor	ation Shot Ho	lenil and Ga	
ompletely in op	MPLETED A	42 2HOT HOLE							
pring centralize ompletely in op VAS WELL CO	MPLETED A						$-$ Ollice $_{\Omega}$		
ompletely in op	· · · · · · · · · · · · · · · · · · ·		□ Yes ■ No	D	ETAILS			CEIVED COII and Ga	
ompletely in op	· · · · · · · · · · · · · · · · · · ·			D	ETAILS				
ompletely in op	MPLETED (ETAILS			JG 27 2015 Department Innertial Prote	

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Farm name MORRIS, I. L.

Well number OXFD11EHS

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. **Amount of Amount of Amount of** Nitrogen / **Stimulations** Avg Pump Avg Treatment Max Breakdown Stage ISIP (PSI) Proppant (lbs) Water (bbls) other (gals) No. **Date** Rate (BPM) Pressure (PSI) Pressure (PSI) See Attached WY Department of Environmental Prote

Please insert additional pages as applicable.

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Well number OXFDITEHS

Farm name MORRIS, I. L.

V9HEI+90-LIO-LF IdV

РЕКРОВАТІОИ ВЕСОВО

En Marcellus	07	6778	۷988	3/28/2015	68
Marcellus	01⁄2	1068	01/06	3/28/2015	88
Marcellus Mayore	07	£Z06	9213	3/28/2015	75
Marcellus Office	07	9245	1856	3/27/2015	98
Marcellus 2015	07	8176	7956	3/27/2015	32
Marcellus Chilosophiae Chilosop	07	1656	2576	3/26/2015	34
Marcellus d Gas	07	†9 26	9066	3/26/2015	33
Marcellus	01⁄2	ZE66	8400T	3/52/5015	32
Marcellus	017	97707	10251	3/22/2012	31
Marcellus	04	10283	10424	3/52/5015	30
Marcellus	07	70 1 26	10297	3/54/5012	67
Marcellus	07	9E90T	10770	3/54/5012	87
Marcellus	07	10802	10943	3/54/5015	72
Marcellus	07	\$260T	91111	3/53/5015	97
Marcellus	017	11148	11289	3/23/2012	57
Marcellus	07	11321	79717	3/22/2015	74
Marcellus	017	11494	11635	3/22/2015	23
Marcellus	179	29911	11808	3/21/2012	77
Marcellus	Ot	11840	18611	3/20/2015	17
Marcellus	07	12013	12260	3/18/2012	07
Marcellus	07	12186	12327	3/18/2012	61
Marcellus	07	17329	TS200	3/18/2012	81
Marcellus	08	12533	12788	3/11/2012	41
Marcellus	07	12822	S96ZT	3/7/2015	91
Marcellus	07	12999	13142	3/6/2015	ST
Marcellus	07	9/151	13319	3/4/5012	זל
Marcellus	07	13324	96751	3/4/5012	ET
Marcellus	07	13230	£49£T	3/3/5012	71
Marcellus	07	13707	13820	3/3/5012	TI
Marcellus	07	13884	14027	3/3/5012	OT
Marcellus	07	T907T	14204	3/5/5012	6
Marcellus	07	14238	14381	3/5/5012	8
Marcellus	07	14412	14228	3/1/2012	4
Marcellus	07	7657	14735	3/1/2012	9
Marcellus	07	6947	71671	\$\1/5012	S
Marcellus	07	97671	12089	2/28/2015	
Marcellus					7
	07	12153	12566	2/28/2015	8
Marcellus	0t	12300	12443	2/28/2015	7
Formation(s) Marcellus	Perforations 12	15508 TS508	TP2T0 WD (f.	Perforation date 2/27/2015	.oN
(-):40000-3	Number Of	Perforated to	Perforated from	atela aniteantand	eget

API 47-017-06413H6A

Farm name MORRIS, I. L.

Well number OXFD11EHS

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number Of Perforations	Formation(s)
40	3/28/2015	8697	8557	40	Marcellus
41	3/29/2015	8525	8385	40	Marcellus
42	3/29/2015	8353	8213	40	Marcellus
43	3/29/2015	8181	8041	40	Marcellus
44	3/29/2015	8036	7894	40	Marcellus
45	3/29/2015	7837	7697	40	Marcellus
46	3/30/2015	7665	7525	40	Marcellus

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Environmental Protection

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Well number OXFD11EHS

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	2/27/2015	57.9	7924	6865	4198	101250	3422	3152
2	2/28/2015	68.4	8427	6955	4808	231700	8940	3499
3	2/28/2015	68.8	8182	6525	5777	234750	6828	3255
4	2/28/2015	78.9	8323	6656	5767	234850	6576	3250
5	3/1/2015	65.2	7852	6491	5810	233900	7513	3817
6	3/1/2015	73	8155	6470	5413	234700	6694	3296
7	3/1/2015	76.2	8493	6247	5827	235650	6227	3236
8	3/2/2015	74	8311	6215	5410	234700	6066	3223
9	3/2/2015	71.9	8348	6456	5801	232500	6593	3229
10	3/3/2015	73	8049	6347	5518	233800	6948	3234
11	3/3/2015	73.1	8095	6051	5577	234450	6680	3240
12	3/3/2015	72.1	8195	6939	5916	234650	6263	3188
13	3/4/2015	72.3	8112	6452	5987	234200	6345	3187
14	3/4/2015	74	8306	6525	5854	233700	6335	3254
15	3/6/2015	72	8381	6830	4887	231950	6662	3193
16	3/7/2015	73.2	8283	7439	5200	214300	8697	6254
17	3/11/2015	76	8586	0	5888	234150	9179	6413
18	3/18/2015	77.4	8571	5881	5636	232700	6612	3233
19	3/18/2015	71.8	8540	7005	5642	224000	7827	3347
20	3/18/2015	76.5	8473	6817	6353	227650	7188	3421
21	3/20/2015	83.5	8440	7347	5742	234100	8994	3417
22	3/21/2015	60.8	8557	6720	5441	102400	11226	9329
23	3/22/2015	88.7	8468	7158	5643	218950	7219	3545
24	3/22/2015	86	8290	6598	5565	235350	7162	3569
25	3/23/2015	85.2	8299	6624	5665	236600	7026	3567
26	3/23/2015	86	8445	6857	5186	234950	6762	3700
27	3/24/2015	92	8260	6653	5426	235150	7294	3537
28	3/24/2015	85.4	8521	6673	5472	223150	6813	3524
29	3/24/2015	90.6	8250	6576	5615	236700	7621	3524
30	3/25/2015	90.6	8257	6308	5728	234850	6600	3380
31	3/25/2015	92.6	8358	6483	5328	234350	6373	3481
32	3/25/2015	66.2	7994	6257	5107	177900		D 3405
33	3/26/2015	91.6	8417	6808	5630	234700	6459	nd 3457
34	3/26/2015	96.5	8286	6569	5286	234050	6561	3506
35	3/27/2015	91.9	8227	6722	5130	233250	6641 27	²⁰¹³ 3459
36	3/27/2015	98.6	8531	7031	4750	233300	6224	3400
37	3/28/2015	89.3	8153	6532	4957	234600	681480	
38	3/28/2015	90.2	8267	7409	5265	235000	6249	3337
39	3/28/2015	93	8281	6822	5403	233700	PA HA	/09 320 15

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Farm name MORRIS, I. L.

Well number OXFD11EHS

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	3/28/2015	89.5	8104	6660	5422	233650	6330	3404
41	3/29/2015	90.2	8159	6704	5421	233950	6002	3288
42	3/29/2015	92	8497	7048	5165	234000	6157	3330
43	3/29/2015	97.7	8495	6649	5159	234500	6234	3338
44	3/29/2015	94.7	8285	6783	5273	233900	6416	3430
45	3/29/2015	0	0	6687	5205	234450	6565	3416
46	3/30/2015	95.6	8207	6418	4884	234550	6690	3395

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Well number OXFD11EHS

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API <u>47-017-06413H6A</u> Farm name <u>MORRIS, I. L.</u>

PRODUCING FORMAT	CION(S)	DEPTHS 6918'- 6923'	TVD	7524'- 7552'	MD	
Please insert additional p GAS TEST □ Build up SHUT-IN PRESSURE OPEN FLOW GasN/A	p 🗆 Drawdowr	n ■ Open Flow	om Hole <u>N/A</u> L W		□ Pump JRATION OF TEST_ GAS MEASURED : □ Estimated ■	
LITHOLOGY / FORMATION	TOP DEPTH IN FT TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	TYP	PE AND RECORD QUANTITY E OF FLUID ,BRINE,GAS,H2S, ETC)
					SEE A	ATTACHED
Please insert additional particular Please Drilling Contractor Particular Planck	ages as applicable.			<u></u> <u></u> .		
Address <u>207 Carlton I</u>	•		City Eight	y Four	State PA	Zip <u>15330</u>
	orizon Yale, Suite 414		City Tulsa		State OK	Zip <u>74136-6378</u>
Address 2001 Summit			City Smitl	nfield	State PA	Zip <u>15478</u>
Stimulating Company <u>Ca</u> Address <u>2001 Summit</u>	View Rd		City Smith	nfield	State PA	EN 20 15478
Please insert additional partice. Completed by <u>CNX Gas</u>			Drilling and Com	pletions	Celephone	EN Z D 15478 Oil and Gas 304,8442000
// -	South			pletions Manage	- C 1171 //	\\]Data 6/11/153
Submittal of Hydraulic Fr	racturing Chemical	Disclosure Infor	mation		Attach copy of FI	AGEOCI SAGESTRY 10/09/2015

Q-r		7557		£Z69	MIDDLE MARCELLUS
	7227	7524	£Z69	8169	UPPER MARCELLUS
	7524	907/	8169	T689	NOTJIMAH
	907/	7334	T689	9989	TULLY
	7334	7272	9989	T#89	ВИВКЕТТ
	6719	2400	ZS8S	0615	SAND\ SILTSTONE
	2400	2300	06TS	OTTS	SHALE
	2300	2500	OTTS	OTOS	SS/ SHALE/ SILTSTONE
	2500	4700	OTOS	4265	SHALE
	00ZÞ	0097	5957	04470	SHALE/ SILTSTONE
	0097	4420	04470	4332	SS/ SHALE/ SILTSTONE
	0577	4300	4332	4500	SILTSONE/ SHALE
	4300	4250	4200	SPTP	SS
	4250	0007	4145	3930	SHALE/ SS
	000t	3800	3930	3740	RED SHALE SILTSTONE GREY SH
	3800	9160	3740	2515	SILTSTONE/ SHALE
	3160	7272	ZSTE	5252	SHALE
	2525	2430	2525	2430	SS
	2430	2200	7430	2200	SILTSTONE
	2200	2100	2200	2700	SS
	2100	1770	2100	0/47	SS/ SHALE
	1770	OZST	1770	OZST	SS/ SHALE/ SILTSTONE
	OZST	1470	OZST	1470	SS
	1470	1270	1470	1270	SS/ SHALE/ COAL
	1270	1030	1270	1030	SS
	1030	008	1030	008	дек знаге
	008	730	008	730	rime/ ss
	730	280	730	280	GREY SHALE
	280	055	280	055	FIME/ SS
	055	200	220	700	вервоск/знаге
	200	00T	700	тоо	GRAVEL
	00T	0	00T	0	EIFF
(гяезнуратев, вяіме, баз, нгз, етс)	MD	aw	αντ	αντ	
TYPE OF FLUID	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	NOITAMЯОЯ
DESCRIBE ROCK TYPE AND RECORD QUANTITY	MOTTOA	qOT	MOTTOA	qOT	/ гітногобт

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V9HE1+90-L10-L+ IdV

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	2/27/2015
Job End Date:	3/30/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06413-00-00
Operator Name:	CONSOL Energy Inc.
Well Name and Number:	OXFD 11 EHS
Longitude:	-80.76363890
Latitude:	39.17075000
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,937
Total Base Water Volume (gal):	13,148,256
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
Vater	Customer & CWS	Base Fluid & Mix Water					
		Trato.	Water	7732-18-5	100.00000	90.88756	
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	8.56538	
			Hydrochloric acid	7647-01-0	35.00000	0.38400	
			Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.04496	
			2-Propenoic acid, polymer with 2 propenamide, sodium salt	25987-30-8	40.00000	0.03375	
			Guar gum	9000-30-0	60.00000	0.01965	
			Calcite	471-34-1	1.00000	0.01117	
			Illite	12173-60-3	1.00000	0.00888	
			Goethite	1310-14-1	0.10000	0.00488	
			Methanol	67-56-1	15.00000	0.00436	
			Sorbitan monooleate	1338-43-8	5.00000	0.00422	
			Poly(oxyethylene)nonylphenol ether	9016-45-9	5.00000	0.00422	
			Biotite	1302-27-8	0.10000	0.00382	

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Apatite	64476-38-6	0.10000	0.00382	· 10
Ilmenite	98072-94-7	0.10000	0.00329	
Isopropanol	67-63-0	40.00000	0.00286	2
Dimethylcocoamine, bis (chloroethyl) ether, diquaternary ammonium salt	68607-28-3	40.00000	0.00286	F. 0
Fatty acids, tall-oil	61790-12-3	0.10000	0.00165	49
Modified thiourea polymer	68527-49-1	0.10000	0.00165	0
Alcohols, C14-15, ethoxylated	68951-67-7	0.10000	0.00165	e e
Alkenes, C>10 a-	64743-02-8	0.10000	0.00165	
Quaternary ammonium compounds, bis(hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00164	\
Propargyl Alcohol	107-19-7	0.10000	0.00055	
Ammonium Persulfate	7727-54-0	100.00000	0.00054	
Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1,50000	0.00049	
Diallyldimethylammonium chloride	7398-69-8	5.00000	0.00036	
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%

