

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

API 47-017-06023 County Doddridge District McClellan  
Quad Center Point 7.5' Pad Name Coffman Field/Pool Name \_\_\_\_\_  
Farm name Coffman, Christopher L. Well Number Coffman1HB  
Operator (as registered with the OOG) Jay-Bee Oil & Gas, Inc.  
Address 3570 Shields Hill Rd. City Cairo State WV Zip 26337

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,362,161 517 Easting 526,261 893  
Landing Point of Curve Northing N/A 4,361,446 Easting 526,703  
Bottom Hole Northing 4,361,517 161 Easting 526,893 261

Elevation (ft) 753' 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)  
EZ-MUD® (hydrotreated light petroleum distillate)

Date permit issued 6/16/2011 Date drilling commenced 12/3/2012 Date drilling ceased 11/9/2013  
Date completion activities began 11/20/2014 Date completion activities ceased 12/19/2013  
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 145' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1740'-1950' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 230'-238', 1350'-1380', 1440'-1470' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

**APPROVED**  
NAME: Jacqueline Hunter  
DATE: 6/6/16

Received  
Office of Oil & Gas  
MAR 27 2016

Reviewed by:  
AX WS 06/24/16  
**06/24/2016**

API 47- 017 - 06023 Farm name Coffman, Christopher L. Well number Coffman1HB

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	17"	16"	32'	New	20/32/24		Yes
Surface	15"	11 3/4"	312'	New	20/23/24	50'	Yes
Coal							
Intermediate 1	11"	8 5/8"	2,616.45'	New	20/17/24	1500'	Yes
Intermediate 2							
Intermediate 3							
Production	7 7/8"	5 1/2"	12,305'	New	20/24/24		Yes
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							
Surface	Class A	165	15.6	1.26	208	CTS	<del>8</del> 8
Coal							
Intermediate 1	Class A	504	12.5	1.31	660	CTS	<del>8</del> 8
Intermediate 2							
Intermediate 3							
Production	Class A	1,692	14.3	1.35	2,284	1000' from surface	<del>8</del> 8
Tubing							

Drillers TD (ft) 12,340' Loggers TD (ft) 12,340'  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6,038'

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 Spiral centralizer every joint from TD back to start of  
90 degree.  
90 - 70 degree every second joint.  
70 degree - KOP every third joint.  
KOP - Surface bow centralizer placed every 500'.

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 \_\_\_\_\_

**Received**  
**Office of Oil & Gas**  
**MAR 27 2016**

API 47- 017 - 06023

Farm name Coffman, Christopher L.

Well number Coffman1HB

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	11/20/2013	12121	12280	72	Marcellus
2	11/20/2013	11886	12086	72	Marcellus
3	11/20/2013	11653	11851	72	Marcellus
4	11/23/2013	11328	11618	72	Marcellus
5	11/23/2013	11046	11293	72	Marcellus
6	11/24/2013	10752	11011	72	Marcellus
7	11/24/2013	10490	10717	72	Marcellus
8	11/25/2013	10209	10455	72	Marcellus
9	11/26/2013	9920	10174	72	Marcellus
10	11/26/2013	9617	9885	72	Marcellus
11	12/1/2013	9396	9582	72	Marcellus
12	12/2/2013	9146	9361	72	Marcellus
13	12/2/2013	8833	9111	72	Marcellus
14	12/3/2013	8572	8798	72	Marcellus
15	12/3/2013	8296	8520	72	Marcellus
16	12/3/2013	8074	8261	72	Marcellus

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	11/20/13	70.0	7424	7495	4403	1946	8204	N/A
2	11/22/13	69.3	8015	8650	4651	1904	8178	N/A
3	11/23/13	69.9	7647	6421	5576	1794	8012	N/A
4	11/23/13	70.3	7113	7319	5102	1412	6070	N/A
5	11/24/13	69.9	7347	7798	5512	1865	7428	N/A
6	11/24/13	70.7	7129	7023	5157	1762	7096	N/A
7	11/25/13	68.7	7398	6965	6686	1488	8596	N/A
8	11/26/13	69.5	7291	6992	6167	1816	6953	N/A
9	11/26/13	70.5	6790	5973	5168	1436	7305	N/A
10	12/1/13	70.0	7199	6219	5176	1819	6755	N/A
11	12/2/13	70.6	7395	7675	6017	1670	7329	N/A
12	12/2/13	70.0	7063	7075	5155	1820	6748	N/A
13	12/3/13	69.5	6938	7055	4676	1844	5933	N/A
14	12/3/13	70.3	7071	6820	5783	1575	5798	N/A
15	12/4/13	70.6	7017	7276	5343	1864	6475	N/A
16	12/4/13	71.2	7250	6502	6549	1530	6300	N/A

Please insert additional pages as applicable.

Received  
Office of Oil & Gas

MAR 27 2016

06/24/2016

API 47- 017 - 06023 Farm name Coffman, Christopher L. Well number Coffman1HB

**PERFORATION RECORD**

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	12/4/2013	7782	8039	72	Marcellus
18	12/5/2013	7438	7747	72	Marcellus
19	12/5/2013	7102	7403	96	Marcellus

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)
17	12/4/13	69.3	6867	7505	5776	1798	6451	N/A
18	12/5/13	71.3	6951	7182	5601	1751	6683	N/A
19	12/5/13	68.9	6892	7987	5845	1266	4802	N/A

Received  
Office of Oil & Gas  
MAR 27 2016

Please insert additional pages as applicable.

API 47- 017 - 06023 Farm name Coffman, Christopher L. Well number Coffman1HB

PRODUCING FORMATION(S)	DEPTHS	
Marcellus	8,074'	TVD 12,340' MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 2900 psi Bottom Hole n/a psi DURATION OF TEST 18 hrs

OPEN FLOW Gas 5000 mcfpd Oil 20 bpd NGL - bpd Water - 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 <sub>2</sub> S, ETC)
See Attached.	0		0		

Received  
Office of Oil & Gas  
MAR 27 2016

Please insert additional pages as applicable.

Drilling Contractor HWD  
Address 7350 Coal Hill Rd. City Luthersburg State PA Zip 15848

Logging Company Precise Well Analysis  
Address 1426 Barth Rd. City Belpre State OH Zip 45714

Cementing Company Nabors Completion & Production  
Address PO Box 975682 City Dallas State TX Zip 75397

Stimulating Company Nabors Completion & Production  
Address PO Box 975682 City Dallas State TX Zip 75397

Please insert additional pages as applicable.

Completed by Shane Dowell Telephone 304-628-3111  
Signature  Title Office Manager Date 3-24-2016 (updated)

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

12/13/2012	<b>Coffman Pad</b>	
	PERMIT #	47-017-06022
		47-017-06023
	ELEVATION	753
<b>FORMATION</b>	<b>TOP</b>	<b>BOTTOM</b>
MISC. RED ROCK & SHALES	0	1806
LIME	1806	1906
INJUN	1906	2023
SHALE	2023	2370
GORDON STRAY	2370	2390
SHALE	2390	2586
GORDON	2586	2616
SHALE	2616	2895
BAYARD	2895	2904
SHALE	2904	3233
WARREN	3233	3331
SHALE	3331	3567
BALLTOWN	3567	3730
SHALE	3730	4168
2ND RILEY	4168	4276
SHALE	4276	4427
3RD RILEY	4427	4468
SHALE	4468	4525
BENSON	4525	4528
SHALE	4528	4770
ALEXANDER	4770	4941
SHALE	4941	5186
ELK	5186	5234
SHALE	5234	5930
HAMILTON	5930	6104
SHALE	6104	6661
UPPER Marcellus	6661	6688
PARCELL LME	6688	6714
SHALE	6714	6766
LOWER MARCELLUS	6766	

Received  
Office of Oil & Gas  
MAR 27 2016

RECEIVED  
Office of Oil and Gas  
MAY 23 2014

WV Department of  
Environmental Protection  
06/24/2016

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/19/2013
Job End Date:	12/5/2013
State:	West Virginia
County:	Doddridge
API Number:	47-017-06023-00-00
Operator Name:	Jay-Bee Oil & Gas, Inc.
Well Name and Number:	Coffman 1H-B
Longitude:	-80.68765400
Latitude:	39.40285700
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,000
Total Base Water Volume (gal):	4,970,952
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	JAY BEE OIL & GAS INC	Water	Water	7732-18-5	100.00000	91.64050	
Sand	C&J Well Services	Sand - Bulk - West Virginia	Crystalline Silica, quartz	14808-60-7	99.90000	3.28808	
			Aluminum Oxide	1344-28-1	1.10000	0.03621	
			Iron Oxide	1309-37-1	0.10000	0.00329	
			Titanium Oxide	13463-67-7	0.10000	0.00329	
Sand	C&J Well Services	Sand - Bulk - West Virginia	Crystalline Silica, quartz	14808-60-7	99.90000	3.27350	
			Aluminum Oxide	1344-28-1	1.10000	0.03605	
			Iron Oxide	1309-37-1	0.10000	0.00328	
			Titanium Oxide	13463-67-7	0.10000	0.00328	
Sand	C&J Well Services	Sand - Bulk - West Virginia	Crystalline Silica, quartz	14808-60-7	99.90000	0.84730	
			Aluminum Oxide	1344-28-1	1.10000	0.00933	
			Titanium Oxide	13463-67-7	0.10000	0.00085	
			Iron Oxide	1309-37-1	0.10000	0.00085	

OFFICE OF OIL & GAS  
 MAR 27 2014  
 RECEIVED

HCl Acid (12.5%-18.0%)	C&J Well Services	Bulk Acid					
			20° Baume Hydrochloric Acid	7647-01-0	100.00000	0.37635	
HCl Acid (12.5%-18.0%)	C&J Well Services	Bulk Acid					
			Water	7732-18-5	100.00000	0.36890	
WFR-3B	C&J Well Services	Friction Reducer					
			Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8	30.00000	0.03102	
			Ethoxylated alcohols	68002-97-1	15.00000	0.01551	
			Ethoxylated oleylamine	26635-93-8	5.00000	0.00517	
Super TSC-LT	C&J Well Services	Paraffin & Scale Additives					
			100% Non-Hazardous Mixture	Proprietary	100.00000	0.02832	
KR-153SL	C&J Well Services	Biocides					
			Polyethylene-Glycol	25322-68-3	50.00000	0.01501	
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00600	
LSG-100L	C&J Well Services	Gelling Agents					
			Petroleum Distillates	64742-47-8	70.00000	0.01479	
Super GREEN SOLV	C&J Well Services	Paraffin & Scale Additives					
			BTEX Free Aliphatic Hydrocarbon	64742-96-7	100.00000	0.00757	
Super MAX II	C&J Well Services	Surfactants & Foamers					
			Propylene Glycol	57-55-6	30.00000	0.00168	
			Oxirane, methyl-, polymer with oxirane, mono(2-ethylhexyl) ether	64366-70-7	13.00000	0.00073	
			Isopropyl Alcohol	67-63-0	5.00000	0.00028	
			Propylene Glycol n-butyl ether	5131-66-8	5.00000	0.00028	
			Orange Sweet Oil	8028-48-6	5.00000	0.00028	
			1-Octanol	111-87-5	2.50000	0.00014	
			1-Decanol	112-30-1	2.50000	0.00014	
Acid Inhibitor 2 (AI-2)	C&J Well Services	Acid Corrosion Inhibitors					
			2-Butoxyethanol	111-76-2	20.00000	0.00028	
			Isopropyl Alcohol	67-63-0	20.00000	0.00028	
			Propargyl Alcohol	107-19-7	20.00000	0.00028	
			Proprietary	Proprietary	15.00000	0.00021	
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	10.00000	0.00014	
OB-2 LT	C&J Well Services	Gel Breakers					
			Ammonium Persulfate	7727-54-0	85.00000	0.00043	
			Proprietary	Proprietary	10.00000	0.00005	
			Hydrated magnesium silicate	14807-96-6	1.00000	0.00001	
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.							
Other Ingredients	C&J Well Services	Other Ingredients					
			Anionic Polyacrylamide	910644-97-2	40.00000	0.04136	



			Water	7732-18-5	40.00000	0.04136
			Water	7732-18-5	60.00000	0.01699
			Water	7732-18-5	55.00000	0.01651
			Propylene glycol	57-55-6	15.00000	0.01551
			Proprietary	Proprietary	50.00000	0.01416
			guar gum	9000-30-0	50.00000	0.01056
			Proprietary	Proprietary	15.00000	0.00425
			Proprietary	Proprietary	15.00000	0.00425
			Proprietary	Proprietary	15.00000	0.00425
			Water	7732-18-5	50.00000	0.00280
			Organophylic Clay	68953-58-2	10.00000	0.00211
			Proprietary	Proprietary	2.00000	0.00207
			Proprietary	Proprietary	100.00000	0.00112
			Water	7732-18-5	48.00000	0.00068
			Glycol Ethers	111-46-6	40.00000	0.00056
			Surfactant	68439-51-0	2.00000	0.00042
			Crystalline Silica (in the form of quartz)	14808-60-7	2.00000	0.00042
			Proprietary	Proprietary	10.00000	0.00005
			Proprietary	Proprietary	0.99000	0.00001
			Proprietary	Proprietary	0.20000	0.00001
			Proprietary	Proprietary	0.02000	

\* 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)

Received  
 Office of Oil & Gas  
 7/2015