

02/15/2019

WR-35  
Rev. 8/23/13

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

API 47 - 049 - 02432 County Marion District Lincoln  
Quad Mannington Pad Name Worthington Field/Pool Name Marcellus  
Farm name Bower, Richard & Jocelyn Well Number Snider 15H  
Operator (as registered with the OOG) XTO Energy Inc.  
Address PO Box 1008 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 4372550.767 Easting 560571.762  
Landing Point of Curve Northing 4372974.145 Easting 561257.397  
Bottom Hole Northing 4372923.234 Easting 564459.636

Elevation (ft) 1,252' 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)  
SOBM

Date permit issued 2/28/2017 Date drilling commenced 3/4/18 Date drilling ceased 6/20/18  
Date completion activities began 8/12/18 Date completion activities ceased 9/1/18  
Verbal plugging (Y/N) \_\_\_\_\_ Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft None Seen Open mine(s) (Y/N) depths N  
Salt water depth(s) ft None Seen Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 135-140, 574-581 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:

*SDW 1/31/19*  
**Reviewed**

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API 47-049 - 02432 Farm name Bower, Richard & Jocelyn Well number Snider 15H

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	30"	24"	40'	New	PE&B		Y
Surface	17 1/2"	13 3/8"	639'	New	H-40		Y
Coal							
Intermediate 1	12 1/4"	9 5/8"	3,165.5'	New	J-55		Y
Intermediate 2							
Intermediate 3							
Production	8 1/2"	5 1/2"	19,253'	New	P-110		Y-Est TOC 948'
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	Redi-Mix	5 Yards				0	8
Surface	A	540	15.60	1.20	648	0	8
Coal							
Intermediate 1	A	1,060	15.60	1.21	1,282.6	0	8
Intermediate 2							
Intermediate 3							
Production	CJ916 & 35% CJ305	1215 / 1900	15.20 / 15.60	1.10 / 1.57	1336.5 / 2983	Est TOC 948'	8
Tubing							

Drillers TD (ft) 19,308' Loggers TD (ft) 19,308'

Deepest formation penetrated Marcellus Plug back to (ft) \_\_\_\_\_

Plug back procedure \_\_\_\_\_

Kick off depth (ft) 4,624'

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 \_\_\_\_\_

Surface - Every 3rd Joint

Intermediate - Every Joint

Production - Every Joint

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 Protechnics

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**Perforation Record Snider 15H 47-049-02432**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	8/12/2018	18,931.00	19,083.00	48	Marcellus
2	8/12/2018	18,729.00	18,881.00	48	Marcellus
3	8/13/2018	18,527.00	18,679.00	48	Marcellus
4	8/13/2018	18,325.00	18,477.00	48	Marcellus
5	8/13/2018	18,123.00	18,275.00	48	Marcellus
6	8/13/2018	17,921.00	18,073.00	48	Marcellus
7	8/14/2018	17,719.00	17,869.00	48	Marcellus
8	8/14/2018	17,517.00	17,669.00	48	Marcellus
9	8/14/2018	17,315.00	17,467.00	48	Marcellus
10	8/15/2018	17,113.00	17,265.00	48	Marcellus
11	8/15/2018	16,909.00	17,063.00	48	Marcellus
12	8/15/2018	16,709.00	16,861.00	48	Marcellus
13	8/15/2018	16,501.00	16,659.00	48	Marcellus
14	8/16/2018	16,305.00	16,457.00	48	Marcellus
15	8/16/2018	16,098.00	16,255.00	48	Marcellus
16	8/16/2018	15,901.00	16,053.00	48	Marcellus
17	8/16/2018	15,701.00	15,851.00	48	Marcellus
18	8/17/2018	15,497.00	15,646.00	48	Marcellus
19	8/17/2018	15,295.00	15,447.00	48	Marcellus
20	8/17/2018	15,093.00	15,245.00	48	Marcellus
21	8/17/2018	14,891.00	15,043.00	48	Marcellus
22	8/19/2018	14,689.00	14,841.00	48	Marcellus
23	8/19/2018	14,487.00	14,639.00	48	Marcellus
24	8/19/2018	14,285.00	14,439.00	48	Marcellus
25	8/20/2018	14,083.00	14,235.00	48	Marcellus
26	8/23/2018	13,881.00	14,033.00	48	Marcellus
27	8/23/2018	13,679.00	13,831.00	48	Marcellus
28	8/23/2018	13,477.00	13,629.00	48	Marcellus
29	8/24/2018	13,275.00	13,429.00	48	Marcellus
30	8/24/2018	13,073.00	13,225.00	48	Marcellus
31	8/24/2018	12,871.00	13,023.00	48	Marcellus
32	8/24/2018	12,669.00	12,821.00	48	Marcellus
33	8/25/2018	12,468.00	12,619.00	48	Marcellus
34	8/25/2018	12,265.00	12,417.00	48	Marcellus
35	8/25/2018	12,063.00	12,215.00	48	Marcellus
36	8/26/2018	11,861.00	12,013.00	48	Marcellus
37	8/26/2018	11,659.00	11,811.00	48	Marcellus
38	8/29/2018	11,457.00	11,609.00	48	Marcellus
39	8/29/2018	11,255.00	11,407.00	48	Marcellus
40	8/29/2018	11,052.00	11,205.00	48	Marcellus
41	8/29/2018	10,851.00	11,003.00	48	Marcellus
42	8/29/2018	10,655.00	10,801.00	48	Marcellus
43	8/30/2018	10,447.00	10,599.00	48	Marcellus
44	8/30/2018	10,250.00	10,397.00	48	Marcellus
45	8/30/2018	10,043.00	10,193.00	48	Marcellus
46	8/30/2018	9,841.00	9,993.00	48	Marcellus
47	8/31/2018	9,639.00	9,794.00	48	Marcellus
48	8/31/2018	9,437.00	9,589.00	48	Marcellus
49	8/31/2018	9,235.00	9,389.00	48	Marcellus
50	8/31/2018	9,033.00	9,185.00	48	Marcellus
51	9/1/2018	8,831.00	8,979.00	48	Marcellus

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**Stimulation Information Per Stage Snider 15H 47-049-02432**

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)	Amt. of Nitrogen / other (units)
1	8/12/2018	83.2	7,803.0	4,585.2	4,151	406,140	10,251	
2	8/12/2018	85.4	7,762.9	5,006.2	4,468	410,020	10,308	
3	8/12/2018	85.2	7,695.8	5,029.1	4,165	401,920	10,278	
4	8/13/2018	85.7	7,702.9	5,208.2	4,534	402,940	10,117	
5	8/13/2018	85.0	7,487.4	5,564.4	4,723	399,960	9,988	
6	8/13/2018	85.9	7,396.2	5,069.4	4,681	404,140	10,274	
7	8/14/2018	85.2	7,423.5	5,226.4	4,809	403,780	10,526	
8	8/14/2018	86.1	7,643.3	5,144.1	4,731	402,040	10,154	
9	8/14/2018	85.3	7,387.7	5,080.8	4,697	404,700	9,976	
10	8/14/2018	85.5	7,285.0	5,003.5	4,637	403,220	10,406	
11	8/15/2018	86.0	7,336.6	4,806.5	4,793	402,120	10,358	
12	8/15/2018	85.7	7,499.7	5,135.0	4,620	407,560	9,539	
13	8/15/2018	85.6	7,211.4	5,514.5	4,508	406,380	10,208	
14	8/15/2018	85.5	7,111.1	5,093.5	4,553	396,660	10,060	
15	8/16/2018	85.4	7,192.8	4,959.5	4,533	403,440	10,717	
16	8/16/2018	85.5	7,181.1	4,896.7	4,511	403,260	10,298	
17	8/16/2018	84.0	7,029.1	5,211.0	4,463	412,240	10,584	
18	8/17/2018	85.3	7,406.2	5,298.4	4,623	402,780	10,285	
19	8/17/2018	85.6	7,226.6	5,071.7	4,718	400,280	10,907	
20	8/17/2018	85.5	7,369.3	5,092.4	4,636	403,620	10,951	
21	8/19/2018	85.3	7,082.1	5,418.1	4,390	402,640	10,781	
22	8/19/2018	85.6	7,631.0	5,399.8	4,633	407,360	10,263	
23	8/19/2018	85.4	7,569.2	5,833.3	4,508	403,460	10,147	
24	8/19/2018	85.9	7,055.9	5,269.4	4,489	399,860	10,319	
25	8/20/2018	85.7	6,956.0	5,431.8	4,633	408,360	10,324	
26	8/23/2018	85.9	7,440.8	5,303.9	4,513	403,780	10,352	
27	8/23/2018	85.2	7,785.6	5,453.9	4,828	405,430	10,220	
28	8/23/2018	85.9	7,721.6	5,252.0	4,951	404,420	10,232	
29	8/24/2018	84.6	7,286.4	5,596.0	4,867	406,700	10,385	
30	8/24/2018	85.3	7,714.1	5,713.2	4,844	398,920	10,765	
31	8/24/2018	85.7	7,592.4	6,010.5	4,844	404,220	10,301	
32	8/24/2018	86.9	7,002.4	5,402.6	4,724	405,740	10,403	
33	8/25/2018	85.4	7,046.3	5,862.4	4,834	399,500	10,485	
34	8/25/2018	85.5	7,255.0	5,823.5	4,703	406,060	10,242	
35	8/25/2018	85.2	7,361.9	6,316.5	4,848	408,860	10,653	
36	8/25/2018	85.6	7,236.9	6,402.9	5,071	400,280	10,335	
37	8/26/2018	85.5	8,003.4	7,449.4	4,970	242,260	11,439	
38	8/28/2018	85.9	7,810.1	6,297.2	5,183	400,220	10,154	
39	8/29/2018	85.3	7,121.1	5,977.3	4,905	288,950	8,431	
40	8/29/2018	85.3	7,024.0	6,251.2	4,485	333,800	9,235	
41	8/29/2018	85.8	6,918.6	5,156.9	4,785	405,340	10,268	
42	8/29/2018	86.4	7,128.0	5,399.4	4,752	394,850	10,159	
43	8/30/2018	85.8	6,969.9	5,935.8	4,729	404,480	10,242	
44	8/30/2018	85.9	6,784.8	5,939.4	4,670	403,740	10,584	
45	8/30/2018	86.2	6,911.9	5,891.7	4,887	397,200	10,655	
46	8/30/2018	86.0	7,014.2	5,364.8	5,030	401,680	9,621	
47	8/31/2018	85.9	6,935.9	5,684.7	4,792	403,760	10,228	
48	8/31/2018	85.4	6,876.3	6,585.4	4,850	405,500	10,474	
49	8/31/2018	85.2	7,051.6	5,895.0	4,938	396,700	10,965	
50	8/31/2018	86.0	7,036.8	6,245.2	5,074	403,400	9,626	
51	9/1/2018	85.9	7,066.1	5,578.5	5,169	405,880	10,075	

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Lithology Snider 15H 47-049-02432

Lithology / Formation Name	Top		Bottom		Describe Rock Type and Record Quantity and Type of Fluid (Freshwater, Brine, Oil, Gas, H2S, ETC)
	Top Depth in FT TVD	Bottom Depth in FT TVD	Depth in FT MD	Depth In FT MD	
SHALE	40	135	40	135	
COAL	135	140	135	140	
SHALE	140	360	140	360	
SAND	360	400	360	400	
SAND/SHALE	400	450	400	450	
SHALE	450	475	450	475	
SAND/SHALE	475	500	475	500	
SAND / SHALE	500	550	500	550	
SANDY SHALE	550	574	550	574	
COAL	574	581	574	581	
SAND/SHALE	581	830	581	830	
RED ROCK	830	930	830	930	
SAND	930	960	930	960	
SHALE	960	1050	960	1050	
SAND	1050	1150	1050	1150	
SAND/SHALE	1150	1225	1150	1225	
SAND	1225	1250	1225	1250	
SAND/SHALE	1250	1400	1250	1400	
SHALE	1400	2370	1400	2370	
SAND	2370	2730	2370	2730	
RED SHALE	2730	2750	2730	2750	
SAND/SHALE	2750	2820	2750	2820	
SAND	2820	2860	2820	2860	
SHALE	2860	3200	2860	3200	
SAND/SHALE	3200	3350	3200	3350	
SHALE	3350	3450	3350	3450	
SAND/SHALE	3450	3550	3450	3550	
SAND	3550	3650	3550	3650	
SHALE	3650	7403	3650	8144	
BURKETT	7403	7449	8144	8210	
TULLY	7449	7487	8210	8274	
HAMILTON	7487	7545	8274	8395	
UPPER MARCELLUS	7545	7637	8395	8649	
LOWER MARCELLUS	7637	7702	8649	19308	

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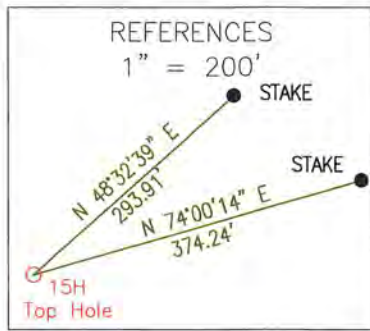
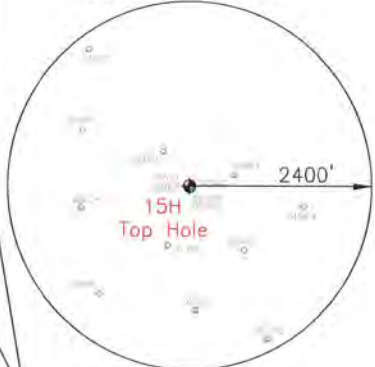
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# SNIDER 15H

LATITUDE: 39°32'30"  
SCALE 1" = 2000'

SCALE: 1" = 2400'



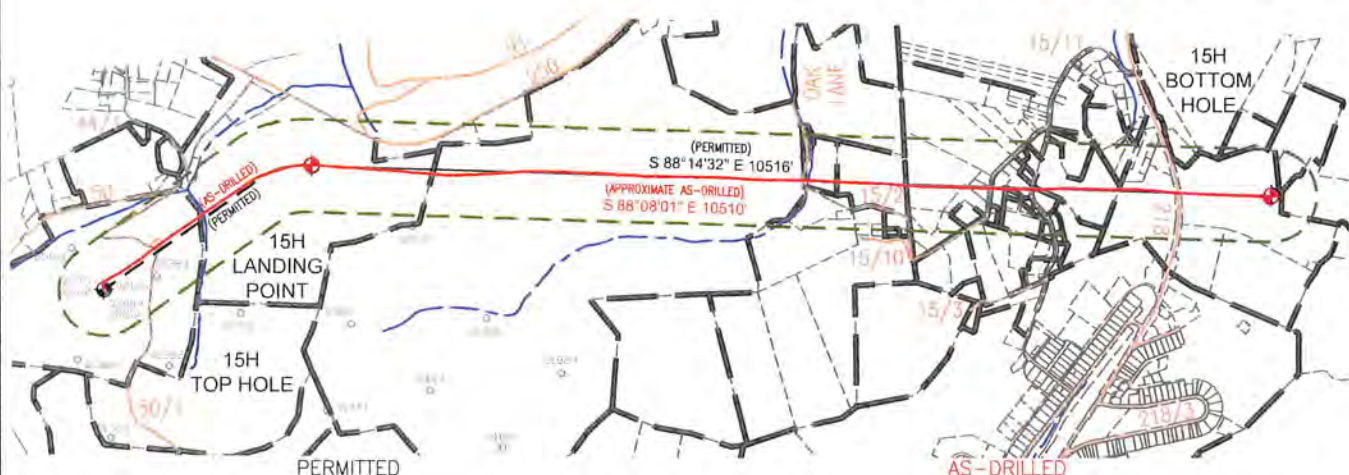
LINE LEGEND

LEASE BOUNDARY	— — — — —
SURFACE BOUNDARY	- - - - -
CREEK / STREAM	~~~~~
ROADS	— · — · — ·
PROPOSED LATERAL	— — — — —
APPROXIMATE CURVE	- - - - -
AS-DRILLED LATERAL	- · - · - ·
500' LATERAL OFFSET	- · - · - ·
EXISTING GAS WELL	☉

02/15/2019

NOTES ON SURVEY

1. NO DWELLINGS WITHIN 625' WERE FOUND.
2. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
3. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV NORTH ZONE NAD 83.
4. WELL ELEVATION ESTABLISHED BY RTK GPS NAVD 88.
5. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF MARION COUNTY IN MAY 2016 AND FILES PROVIDED BY XTO ENERGY, INC.
6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.



Top Hole Location	Landing Point Location	Bottom Hole Location	Top Hole Location	Landing Point Location	Bottom Hole Location
NAD 27 Feet N: 365346.581 E: 1775468.693	NAD 27 Feet N: 366692.503 E: 1777747.131	NAD 27 Feet N: 366369.986 E: 1788258.513	NAD 27 Feet N: 365346.581 E: 1775468.693	NAD 27 Feet N: 366698.323 E: 1777741.611	NAD 27 Feet N: 366356.065 E: 1788246.423
UTM Zone 17 (SPCS83) Meters N: 4372550.767 E: 560571.762	UTM Zone 17 (SPCS83) Meters N: 4372972.400 E: 561259.108	UTM Zone 17 (SPCS83) Meters N: 4372927.537 E: 564463.249	UTM Zone 17 (SPCS83) Meters N: 4372550.767 E: 560571.762	UTM Zone 17 (SPCS83) Meters N: 4372974.145 E: 561257.397	UTM Zone 17 (SPCS83) Meters N: 4372973.234 E: 564459.636
NAD 27 N 39.5003610 W 080.2956973	NAD 27 N 39.5041113 W 080.2876652	NAD 27 N 39.5034729 W 080.2504050	NAD 27 N 39.5003610 W 080.2956973	NAD 27 N 39.5041272 W 080.2876849	NAD 27 N 39.5034344 W 080.2504474



2402 PENNSYLVANIA 66 DELMONT, PA 15626  
(724) 757 - 2417 www.jonesconsultant.com

SHEET 1 OF 2

FILE #: JC2016-41  
DRAWING #: SNIDER 15H WELL  
SCALE: 1" = 2000'  
MINIMUM DEGREE OF ACCURACY: 1:2500  
PROVEN SOURCE OF ELEVATION: RTK GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: *Ryan Jones*  
R.P.E.: \_\_\_\_\_ P.S.: 2165



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP  
OFFICE OF OIL & GAS  
601 57TH STREET  
CHARLESTON, WV 25304



DATE: 08/07/2018  
OPERATOR'S WELL #: SNIDER 15H  
API WELL #: 47 049 02432  
STATE COUNTY PERMIT

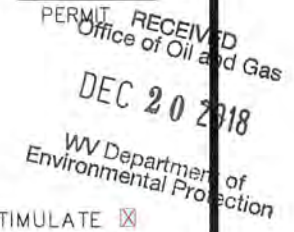
Well Type:  Oil  Waste Disposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow

WATERSHED: BUFFALO CREEK 0502000301  
COUNTY/DISTRICT: MARION / LINCOLN  
SURFACE OWNER: RICHARD & JOCELYN BOWER  
OIL & GAS ROYALTY OWNER: JOHN E. BRENNAN, ET AL

ELEVATION: 1,252' FINISHED GRADE  
QUADRANGLE: MANNINGTON 7.5'  
ACREAGE: 94.5±  
ACREAGE: 727±

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY): \_\_\_\_\_

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,702' (TVD) 19,308' (TMD)  
WELL OPERATOR: XTO ENERGY INC.  
Address: 190 THORN HILL ROAD  
City: WARRENDALE State: PA Zip Code: 15086  
DESIGNATED AGENT: GARY BEALL  
Address: P.O. BOX 1008  
City: JANE LEW State: WV Zip Code: 26378





# SNIDER 15H

## AS-DRILLED

State Plane Coordinate  
West Virginia North

Top Hole Location	Landing Point Location	Bottom Hole Location
NAD 27 Feet	NAD 27 Feet	NAD 27 Feet
N: 365346.581	N: 366898.323	N: 366356.069
E: 1775468.693	E: 1777741.611	E: 1788246.423
UTM Zone 17 (SPCS83) Meters	UTM Zone 17 (SPCS83) Meters	UTM Zone 17 (SPCS83) Meters
N: 4372550.767	N: 4372974.145	N: 4372923.236
E: 580571.762	E: 561257.397	E: 564459.636
NAD 27	NAD 27	NAD 27
N 39.5003610	N 39.5041272	N 39.5034344
W 080.2956973	W 080.2876849	W 080.2504474

02/15/2019

## PERMITTED

State Plane Coordinate  
West Virginia North

Top Hole Location	Landing Point Location	Bottom Hole Location
NAD 27 Feet	NAD 27 Feet	NAD 27 Feet
N: 365346.581	N: 366692.503	N: 366369.986
E: 1775468.693	E: 1777747.131	E: 1788258.513
UTM Zone 17 (SPCS83) Meters	UTM Zone 17 (SPCS83) Meters	UTM Zone 17 (SPCS83) Meters
N: 4372550.767	N: 4372972.400	N: 4372927.537
E: 560571.762	E: 561259.108	E: 564463.249
NAD 27	NAD 27	NAD 27
N 39.5003610	N 39.5041113	N 39.5034729
W 080.2956973	W 080.2876652	W 080.2504050

### NOTES ON SURVEY

1. NO DWELLINGS WITHIN 625' WERE FOUND.
2. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
3. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV NORTH ZONE NAD 83.
4. WELL ELEVATION ESTABLISHED BY RTK GPS NAVD 88.
5. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF MARION COUNTY IN MAY 2016 AND FILES PROVIDED BY XTO ENERGY, INC.
6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.

SNIDER 15H		
LEASE	LESSOR	MINERAL ACREAGE
1)	JOHN E. BRENNAN	94.5000
2)	E.T. WOOD, ET AL	110
3)	ROBERT F. HORNER, ET AL	361.59
4)	JULIA CINALLI, ET AL	4.51
5)	ROBERT F. HORNER, ET AL	361.59
6)	PAULA A. WILLIAMS, ET AL	39.82
7)	PAUL KORSH, ET AL	3.26
8)	RONALD J. MERRILL, ET UX	1.0875
9)	KAREN JOHNSON, ET AL	36.125
10)	YVONNE GIBBONS, ET AL	75.75

LETTER	SURFACE OWNER	TAX PARCEL
A	GARY L. KING, ET AL	11-31-16
B	NORMA L. DAVIS	11-31-17
C	NORMA L. DAVIS	11-31-23
D	THOMAS R. BURGESS, ET UX	11-31-22
E	GEORGE W. TENNANT, SR., ET UX	11-31-22.1
F	PAUL KORSH, ET UX	11-30-41
G	PAUL KORSH, ET UX	11-30-41.1
H	RICHARD A. WADDELL, ET AL	11-30-37
I	PETER J. ALASKY, III., ET UX	11-44-42.2
J	ANTHONY P. BURNSIDE, ET AL	11-44-42.4
K	THREE A'S INC	11-44-25
L	JOHN JONES	11-44-48
M	DONALD G. MORGAN, ET UX	11-44-46
N	PRIMEACRE LAND CORPORATION	11-44-21
O	RONALD J. MERRILL, ET UX	11-44-43

### LINE LEGEND

LEASE BOUNDARY	— — — — —
SURFACE BOUNDARY	- - - - -
CREEK / STREAM	~~~~~
ROADS	— — — — —
PROPOSED LATERAL	— — — — —
APPROXIMATE CURVE	.....
AS-DRILLED LATERAL	- . - . - .
500' LATERAL OFFSET	- - - - -
EXISTING GAS WELL	⊙

## JONES CONSULTANTS, LLC

SURVEYING • MAPPING • LAND • GAS WELL • PIPELINE  
2402 PENNSYLVANIA 66 DELMONT, PA 15626  
(724) 757 - 2417 www.jonesconsultant.com

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### SUPPLEMENTAL SURFACE AND LESSOR EXHIBIT

### SNIDER 15H

Drawn By:	Date:	LINCOLN DISTRICT
JRV	08/07/18	MARION COUNTY, WEST VIRGINIA
Scale: SCALE 1" = 1500'	Sheet:	File No.:
AFE # 808945	SHEET 2 OF 2	JC2016-41



WV NORTH ZONE  
SPCS GRID NORTH

**XTO ENERGY**  
190 THORN HILL ROAD  
WARRENDALE, PA 15086

0' 1500'





02/15/2019

**Hydraulic Fracturing Fluid Product Component Information Disclosure**

Job Start Date:	8/12/2018
Job End Date:	9/1/2018
State:	West Virginia
County:	Marion
API Number:	47-049-02432-00-00
Operator Name:	XTO Energy/ExxonMobil
Well Name and Number:	Snider 15H
Latitude:	39.50036100
Longitude:	-80.29569700
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7.657
Total Base Water Volume (gal):	22,643,922
Total Base Non Water Volume:	0

XTO Energy/ExxonMobil

47-049-02432-00-00

Marion

West Virginia

9/1/2018

8/12/2018



**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	XTO Energy/ExxonMobil	Carrier Fluid	Water	7732-18-5	100.00000	89.54839	
Sand	C&J Energy Services	Sand - Bulk - Pennsylvania		Listed Below			

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BIO-CLEAR 2000	C&J Energy Services	Biocides		Listed Below				
HC-15	C&J Energy Services	Bulk Acid		Listed Below				
BR-11	C&J Energy Services	Gel Breakers		Listed Below				
HC-7.5	C&J Energy Services	Bulk Acid		Listed Below				
GA-7F	C&J Energy Services	Gelling Agents		Listed Below				
SI-6	C&J Energy Services	Paraffin & Scale Additives		Listed Below				
CI-3	C&J Energy Services	Acid Corrosion Inhibitors		Listed Below				
FR-16	C&J Energy Services	Friction Reducer		Listed Below				
Sand	C&J Energy Services	Sand - Bulk - Pennsylvania						

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Items above are Trade Names with the exception of Base Water		Items below are the individual ingredients		Listed Below					
			Crystalline Silica, quartz	14808-60-7	99.90000	8.27338			
			Crystalline Silica, quartz	14808-60-7	99.90000	1.30743			
			Water	7732-18-5	92.50000	0.67037			
			Aluminum Oxide	1344-28-1	1.10000	0.09110			
			Hydrochloric Acid	7647-01-0	7.50000	0.05435			
			Distillates (Petroleum), Hydrotreated Light	64742-47-8	35.00000	0.02255			
			Water	7732-18-5	30.00000	0.01933			
			2-Propenoic acid, polymer with 2-propenamides, sodium salt	25987-30-8	30.00000	0.01933			
			Water	7732-18-5	96.00000	0.01832			
			Aluminum Oxide	1344-28-1	1.10000	0.01440			
			Water	7732-18-5	85.00000	0.01160			
			Polyethylene glycol	25322-68-3	50.00000	0.01064			
			Guar Gum	9000-30-0	60.00000	0.00991			
			Distillates (Petroleum), Hydrotreated Light	64742-47-8	60.00000	0.00991			
			Titanium Oxide	13463-67-7	0.10000	0.00828			
			Iron Oxide	1309-37-1	0.10000	0.00828			
			2,2-Dibromo-3-nitropropionamide (DBNPA)	10222-01-2	30.00000	0.00639			
			Water	7732-18-5	28.50000	0.00607			
			Ethylene Glycol	107-21-1	5.00000	0.00322			
			Hydrochloric Acid	7647-01-0	15.00000	0.00205			
			Sodium Acetate Anhydrous	127-09-3	3.00000	0.00193			
			Iron Oxide	1309-37-1	0.10000	0.00131			
			Titanium Oxide	13463-67-7	0.10000	0.00131			
			Sorbitan Monooleate	1338-43-8	2.00000	0.00129			

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				Alcohols, C12-15- branched and linear, ethoxylated propoxylated	120313-48-6	2.00000	0.00129	
				Poly(oxy-1,2-ethandiyl), alpha-isodecyl-omega- hydroxy-phosphate	108818-88-8	2.00000	0.00129	
				Phosphonic Acid Salt	Proprietary	6.00000	0.00115	
				Bentonite	1302-78-9	5.00000	0.00083	
				Ethoxylated Sorbitan Monoleate	9005-65-6	1.00000	0.00064	
				Ethylene Glycol	107-21-1	40.00000	0.00054	
				Alcohols, C9-11-iso-, C10-rich, ethoxylated propoxylated	68802-97-1	3.00000	0.00050	
				Water	7732-18-5	30.00000	0.00040	
				Ammonium Chloride	12125-02-9	2.00000	0.00038	
				Monoethanolamine hydrochloride	2002-24-6	2.00000	0.00038	
				Dimethylformamide	68-12-2	20.00000	0.00027	
				Cinnamaldehyde	104-55-2	15.00000	0.00020	
				Tar bases, quinoline derivs, benzyl chloride- quaternized	72480-70-7	15.00000	0.00020	
				2-Butoxyethanol	111-76-2	15.00000	0.00020	
				Methanol	67-56-1	1.00000	0.00019	
				Ammonium Persulfate	7727-54-0	100.00000	0.00018	
				Poly(oxy-1,2- ethanediyl),alpha-(4- nonylphenyl)-omega hydroxy-, branched	127087-87-0	5.00000	0.00007	
				1-DECANOL	112-30-1	5.00000	0.00007	
				2-Propanamide as residual	79-06-1	0.10000	0.00006	
				Triethyl Phosphate	78-40-0	2.50000	0.00003	
				Isopropanol	67-63-0	2.50000	0.00003	
				1-OCTANOL	111-87-5	2.50000	0.00003	
				Cured Resin	25038-72-6	10.00000	0.00002	

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