

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

API 47 - 051 - 02006 County Marshall District Franklin

Quad Powhatan Point 7.5' Pad Name Bryan Field/Pool Name _____

Farm name CNX Land Resources, Inc. Well Number Bryan S-10HM

Operator (as registered with the OOG) Tug Hill Operating, LLC

Address 380 Southpointe Boulevard, Plaza II, Suite 200 City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey

Top hole	Northing	<u>4,402,886.31</u>	Easting	<u>519,129.14</u>
Landing Point of Curve	Northing	<u>4,403,151.90</u>	Easting	<u>519,767.22</u>
Bottom Hole	Northing	<u>4,401,205.53</u>	Easting	<u>520,878.07</u>

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Elevation (ft) 1191.7' 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; Base oil, osmotic inhibitor, weighting agent, viscosifier, emulsifier, hardness buffer, fluid loss additive, LCM, Shale inhibitor, de-foamer, soaping agent, coagulant, flocculant; specific additives per WSSP and Permit.

Date permit issued 8/9/2018 Date drilling commenced 9/23/2018 Date drilling ceased 4/18/2019

Date completion activities began 1/11/2020 Date completion activities ceased 1/26/2020

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 831' Open mine(s) (Y/N) depths N

Salt water depth(s) ft 1595' Void(s) encountered (Y/N) depths N

Coal depth(s) ft 729-735', 824-830' Cavern(s) encountered (Y/N) depths N

Is coal being mined in area (Y/N) N

Reviewed by:

API 47-051 - 02006 Farm name CNX Land Resources, Inc. Well number Bryan S-10HM

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	36"	30"	120'	NEW	94.5#	N/A	Y
Surface	17 1/2"	13 3/8"	888'	NEW	54.5#	N/A	Y
Coal	17 1/2"	13 3/8"	888'	NEW	54.5#	N/A	Y
Intermediate 1	12 1/4"	9 5/8"	2,661'	NEW	36#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	14,855'	NEW	20#	N/A	Y
Tubing		2 3/8"	7,428'	NEW	4.7#	N/A	Y
Packer type and depth set							

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	A		15.6	1.19		0	8
Surface	A	1016	15.6	1.19	1216	0	8
Coal	A	1016	15.6	1.19	1216	0	8
Intermediate 1	A	1080	15.6	1.19	1269	0	8
Intermediate 2							
Intermediate 3							
Production	A	5084	14.5	1.17	5971	0	8
Tubing							

Drillers TD (ft) 14,867' Loggers TD (ft) n/a
 Deepest formation penetrated Marcellus Plug back to (ft) n/a
 Plug back procedure n/a

Kick off depth (ft) 6,477'

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 3 centralizers on surface casing at equal distance.
Intermediate - 1 centralizer every other joint.
 Production - one centralizer every other joint in lateral, one centralizer every joint through curve, one centralizer every other joint to surface.

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WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

API 47-051 - 02006 Farm name CNX Land Resources, Inc. Well number Bryan S-10HM

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	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)
	attached							

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Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>MARCELLUS</u>	<u>6523' - 6520'</u> TVD	<u>7457' - 14867'</u> MD
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1300 psi Bottom Hole _____ psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 0 mcfpd Oil 0 bpd NGL 0 bpd Water 600 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	
	<u>0</u>		<u>0</u>		
<u>see attached</u>					

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Please insert additional pages as applicable.

Drilling Contractor Precision
Address 10350 Richmond Avenue, Suite 700 City Houston State TX Zip 77042

Logging Company n/a
Address _____ City _____ State _____ Zip _____

Cementing Company BJ Cementing Services
Address 4000 Town Center Boulevard City Canonsburg State PA Zip 15317

Stimulating Company Halliburton Energy Services, Inc.
Address 121 Champion Way, Suite 200 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Amy L. Morris Telephone 304-376-0111
Signature *Amy L. Morris* Title Permitting Specialist Date 8-28-2020

Bryan S-10HM
PEFORATION RECORD

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	1/11/2020	14468	14621	48	Marcellus
2	1/12/2020	14292	14446	48	Marcellus
3	1/12/2020	14117	14270	48	Marcellus
4	1/12/2020	13942	14095	48	Marcellus
5	1/13/2020	13766	13920	48	Marcellus
6	1/13/2020	13591	13745	48	Marcellus
7	1/14/2020	13416	13569	48	Marcellus
8	1/14/2020	13241	13394	48	Marcellus
9	1/14/2020	13065	13219	48	Marcellus
10	1/15/2020	12890	13043	48	Marcellus
11	1/15/2020	12715	12868	48	Marcellus
12	1/15/2020	12539	12693	48	Marcellus
13	1/16/2020	12364	12517	48	Marcellus
14	1/16/2020	12189	12342	48	Marcellus
15	1/16/2020	12013	12167	48	Marcellus
16	1/16/2020	11838	11992	48	Marcellus
17	1/17/2020	11663	11816	48	Marcellus
18	1/17/2020	11488	11641	48	Marcellus
19	1/18/2020	11312	11466	48	Marcellus
20	1/18/2020	11137	11290	48	Marcellus
21	1/18/2020	10962	11115	48	Marcellus
22	1/19/2020	10786	10940	48	Marcellus
23	1/19/2020	10611	10764	48	Marcellus
24	1/19/2020	10436	10589	48	Marcellus
25	1/19/2020	10260	10414	48	Marcellus
26	1/20/2020	10085	10239	48	Marcellus
27	1/20/2020	9910	10063	48	Marcellus
28	1/20/2020	9735	9888	48	Marcellus
29	1/21/2020	9559	9713	48	Marcellus
30	1/21/2020	9384	9537	48	Marcellus
31	1/21/2020	9209	9362	48	Marcellus
32	1/22/2020	9033	9187	48	Marcellus
33	1/22/2020	8858	9011	48	Marcellus
34	1/23/2020	8683	8836	48	Marcellus
35	1/23/2020	8507	8661	48	Marcellus
36	1/23/2020	8332	8486	48	Marcellus
37	1/25/2020	8157	8310	48	Marcellus
38	1/26/2020	7982	8135	48	Marcellus
39	1/26/2020	7806	7960	48	Marcellus
40	1/26/2020	7631	7784	48	Marcellus
41	1/26/2020	7456	7609	48	Marcellus

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BRYAN S-10HM

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
Maxton	1935	2025	1935	2026	Sandstone
Big Lime	2025	2095	2026	2096	Limestone
Big Injun	2095	2379	2096	2381	Sandstone
Weir	2379	2574	2381	2577	Sandstone
Berea	2574	2919	2577	2923	Sandstone
Gordon	2919	2973	2923	2978	Sandstone
Fifty Foot	2973	3521	2978	3552	Sandstone
Speechley	3521	4943	3552	5243	Sandstone
Benson	4943	5318	5243	5699	Sandstone
Alexander	5318	5884	5699	6383	Siltstone
Rhinestreet	5884	6303	6383	6919	Black shale
Middlesex	6303	6378	6919	7036	Black shale
Geneseo/Burkett	6378	6404	7036	7081	Black shale
Tully	6404	6442	7081	7157	Limestone
Hamilton	6442	6490	7157	7295	Grey shale
Marcellus	6490	-	7295	-	Black shale

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BRYAN S-10HM
STIMULATION INFORMATION PER STAGE

Stage No.	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	87.3	7578	8111	3941	538270	10278	0
2	88.6	7319	7699	4398	528415	10582	0
3	88.3	7279	7943	4741	532815	10294	0
4	89.2	7715	8755	4877	523610	9795	0
5	88.2	7757	8485	4069	469700	9658	0
6	87	7666	9301	5041	528295	10348	0
7	89.3	7369	7551	4233	479680	10164	0
8	89.2	7064	7343	5042	482260	9463	0
9	88.4	7444	8766	4551	441140	9569	0
10	88.5	7380	7832	4811	451720	9592	0
11	89.5	7350	8407	4617	464160	9951	0
12	88.8	7324	7687	4482	478480	9796	0
13	89.6	7185	8320	4487	528870	10024	0
14	89.3	7131	8138	4946	479020	9774	0
15	89.6	7077	8138	5054	534605	9913	0
16	88.8	7020	8005	5032	483720	9006	0
17	88.6	7095	7950	4323	442400	9518	0
18	98.5	7584	8156	4477	475520	9676	0
19	98.4	7390	7720	4532	532600	10238	0
20	97.7	7370	8254	4317	523200	10388	0
21	88.1	7077	8459	5156	486860	9848	0
22	89.1	6963	7427	4311	533120	10049	0
23	88.9	7047	8382	4297	518120	9961	0
24	89.3	6960	8120	4090	519820	10090	0
25	89.4	6743	8013	4624	489310	9170	0
26	89.6	6877	8788	5068	520700	10135	0
27	89.4	6705	8500	4406	512410	9469	0
28	89.1	5441	7489	4739	529865	9669	0
29	89.2	6851	7225	4941	530370	9676	0
30	88.8	6724	8370	4924	528490	9929	0
31	89.4	6529	8263	4612	532385	9852	0
32	88.7	6607	8196	5300	515665	9659	0

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Stage No.	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)
33	89	6797	7997	4939	496925	9348	0
34	89.2	6671	7028	4879	480000	9335	0
35	89.4	6482	8372	4996	531060	10050	0
36	89.6	6292	8243	5029	531835	9828	0
37	89.5	6542	6777	4565	529170	9446	0
38	89.2	6553	6826	4799	525510	9492	0
39	88.4	6616	7127	4354	531725	10150	0
40	89.7	6353	8144	4646	533150	9615	0
41	89.4	6491	8280	4060	529260	9614	0

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TUG HILL
OPERATING

Well: Bryan S-10HM (slot J)
Site: Bryan Pad
Project: Marshall County, West Virginia.
Design: rev4
Rig: Precision 110

Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD83 West Virginia - HARN
Ellipsoid: GRS 1980
Zone: Zone 17N (84 W to 78 W)

System Datum: Mean Sea Level
Depth Reference: RKB=1191+28 @ 1219.00usft (Precision 110)
Surface location
Northing Easting Latitude Longitude
14445136.25 1703176.30 39.77569893 -80.77652846

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.83°



Azimuths to Grid North
True North: -0.14°
Magnetic North: -8.83°

Magnetic Field
Strength: 51969.7nT
Dip Angle: 86.81°
Date: 4/1/2019
Model: IGRF2015

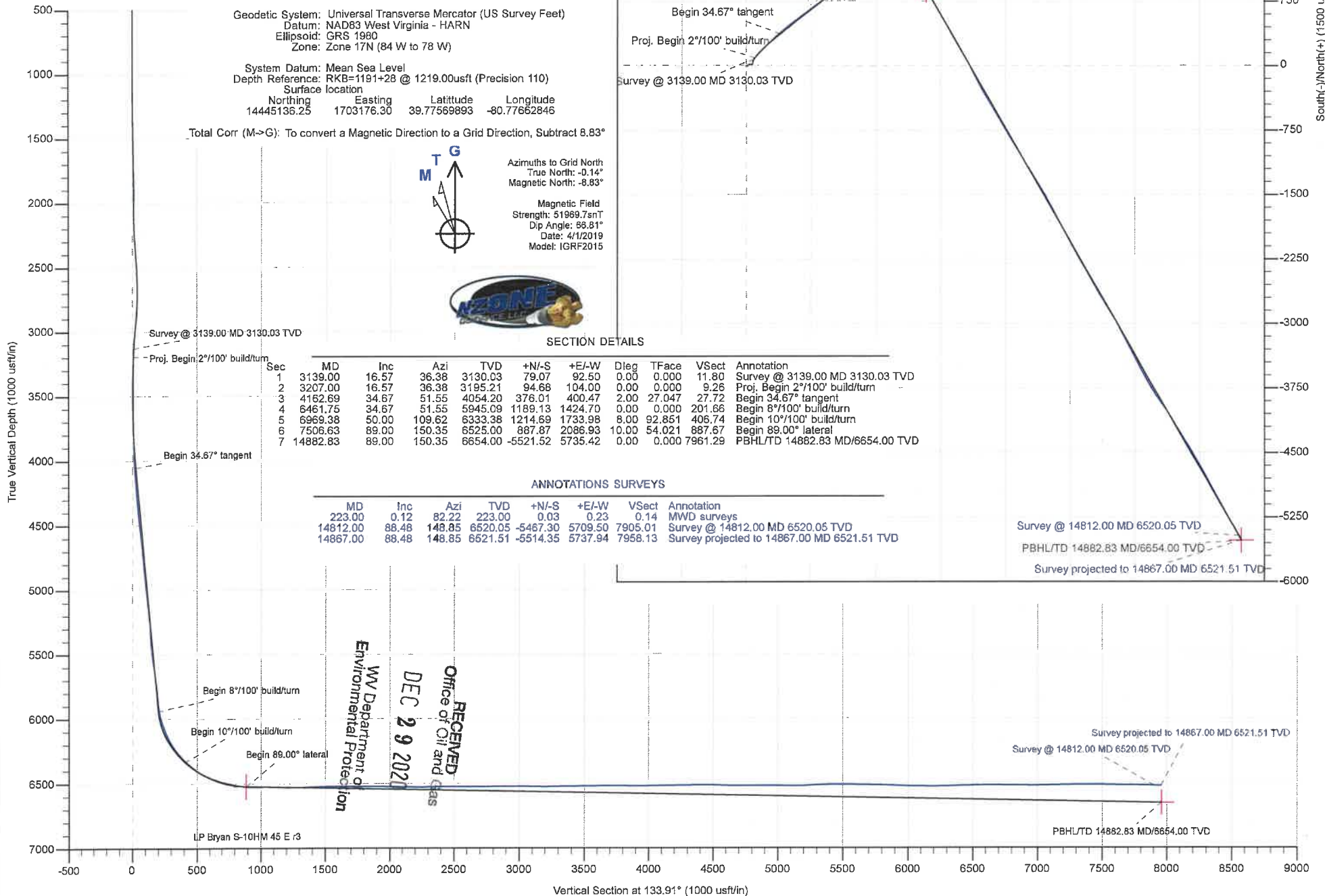


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Annotation
1	3139.00	16.57	36.38	3130.03	79.07	92.50	0.00	0.000	11.80	Survey @ 3139.00 MD 3130.03 TVD
2	3207.00	16.57	36.38	3195.21	94.68	104.00	0.00	0.000	9.26	Proj. Begin 2°/100' build/turn
3	4162.69	34.67	51.55	4054.20	376.01	400.47	2.00	27.047	27.72	Begin 34.67° tangent
4	6461.75	34.67	51.55	5945.09	1189.13	1424.70	0.00	0.000	201.66	Begin 8°/100' build/turn
5	6969.38	50.00	109.62	6333.38	1214.69	1733.98	8.00	92.851	406.74	Begin 10°/100' build/turn
6	7506.63	89.00	150.35	6525.00	887.87	2086.93	10.00	54.021	887.67	Begin 89.00° lateral
7	14882.83	89.00	150.35	6654.00	-5521.52	5735.42	0.00	0.000	7981.29	PBHL/TD 14882.83 MD/6654.00 TVD

ANNOTATIONS SURVEYS

MD	Inc	Azi	TVD	+N-S	+E-W	Vsect	Annotation
223.00	0.12	82.22	223.00	0.03	0.23	0.14	MWD surveys
14812.00	88.48	148.85	6520.05	-5467.30	5709.50	7905.01	Survey @ 14812.00 MD 6520.05 TVD
14867.00	88.48	148.85	6521.51	-5514.35	5737.94	7958.13	Survey projected to 14867.00 MD 6521.51 TVD



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Vertical Section at 133.91° (1000 usft/in)

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/11/2020
Job End Date:	1/26/2020
State:	West Virginia
County:	Marshall
API Number:	47-051-02006-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Bryan S 10HM
Latitude:	39.77560000
Longitude:	-80.77660000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,530
Total Base Water Volume (gal):	17,292,203
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
Fresh Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	87.16533	Density = 8.34
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.17237	

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HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
OilPerm A	Halliburton	Non-ionic Surfactant					
				Listed Below			
LD-2950	MultiChem	Friction Reducer					
				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
LEGEND(TM) LD-7750W	MultiChem	Scale Control					
				Listed Below			
Sand-Premium White-30/50	Halliburton	Proppant					
				Listed Below			
MC MX 8-4743	MultiChem	Additive					
				Listed Below			
FDP-S1296-17	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			
Sand-Premium White-40/70	Halliburton	Proppant					

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				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Crystalline silica, quartz	14808-60-7	100.00000	12.58625	
			Complex Amine Compound	Proprietary	60.00000	0.06089	
			Hydrochloric acid	7647-01-0	30.00000	0.03151	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.03044	
			Sodium nitrate	7631-99-4	60.00000	0.02081	
			Methanol	67-56-1	100.00000	0.00502	
			Adipic acid	124-04-9	1.00000	0.00101	
			Ethoxylated alcohols	Proprietary	1.00000	0.00101	
			Poly(oxy-1,2-ethanediyl), alpha-tridecyl-omega-hydroxy-, branched	69011-36-5	1.00000	0.00101	
			Phosphoric Acid Salt	Proprietary	5.00000	0.00039	
			Sodium chloride	7647-14-5	5.00000	0.00039	
			Ethanol	64-17-5	60.00000	0.00024	
			Oxyalkylated nonyl phenolic resin	Proprietary	30.00000	0.00012	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00012	
			Modified thiourea polymer	Proprietary	30.00000	0.00011	
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00011	
			Oxyalkylated phenolic resin	Proprietary	10.00000	0.00004	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00002	
			Naphthalene	91-20-3	5.00000	0.00002	
			Ethoxylated alcohols	Proprietary	5.00000	0.00002	

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			Propargyl alcohol	107-19-7	5.00000	0.00002	
			Hexadecene	629-73-2	5.00000	0.00002	
			Formaldehyde	50-00-0	0.10000	0.00001	
			1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00000	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

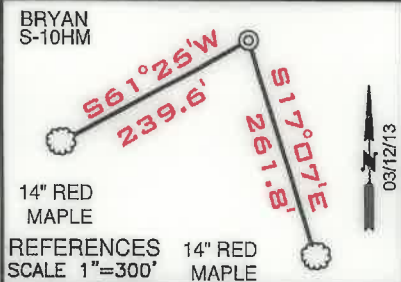
*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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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**BRYAN LEASE
WELL S-10HM
471.0556± ACRES**



TOP HOLE LATITUDE: 39°47'30"
BOTTOM HOLE LATITUDE: 39°47'30"
S-11HM (051-02022)
S-8HM (051-01979)
S-9HM (051-01980)
S-10HM (051-02006)
N-4HM (051-02076)
1H (051-01340)
N-2HM (051-01999)
N-3HM (051-02000)
N-7HM (051-01978)
N-6HM (051-01977)
N-5HM (051-02077)
N-14HM (051-02031)
N-13HM (051-02030)
N-12HM (051-02029)

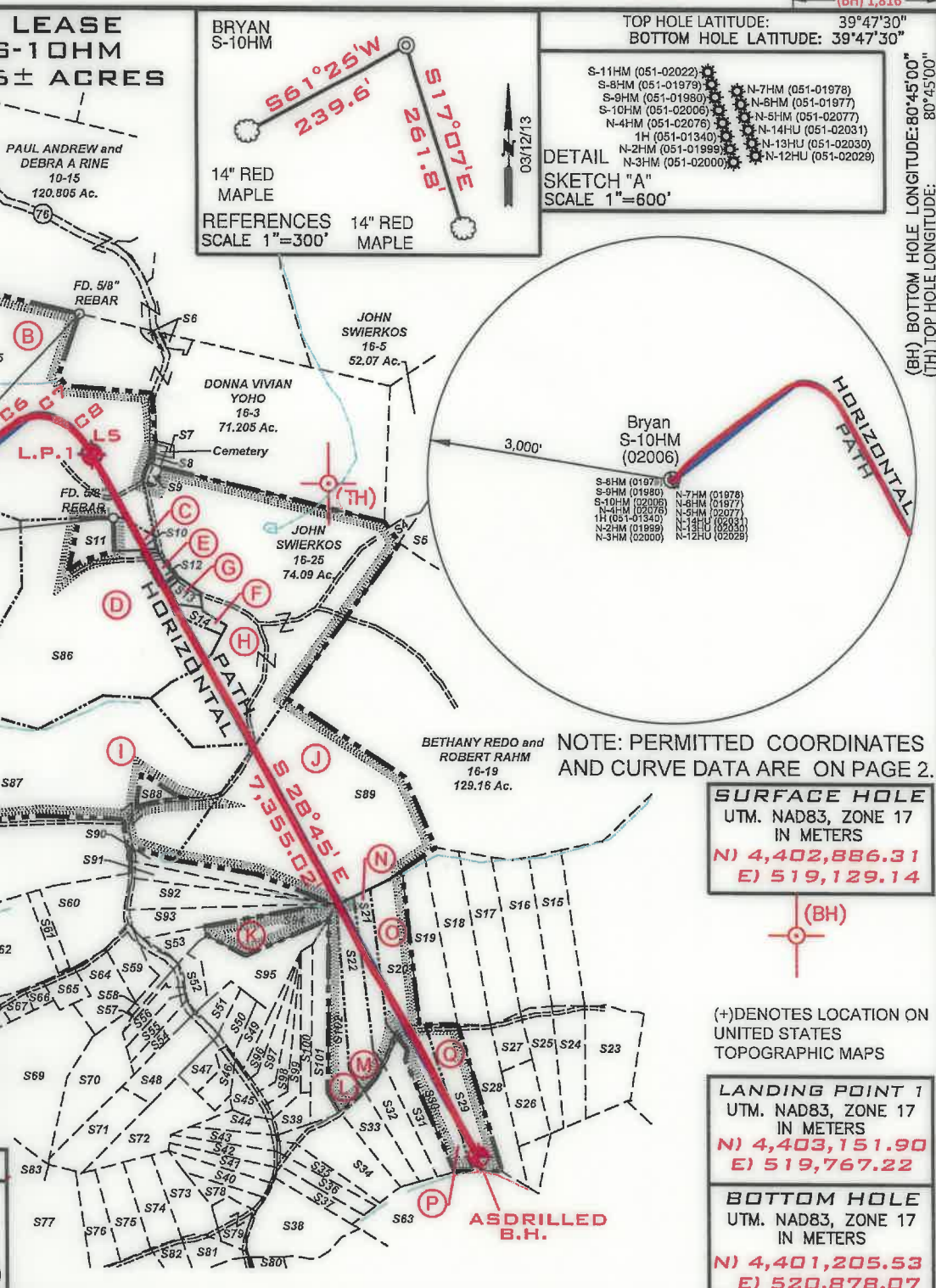
DETAIL SKETCH "A"
SCALE 1"=600'

- NOTES**
1. BORE PATH BASED ON GRID NORTH.
 2. NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
 3. OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MARCH, 2017. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
 4. WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.

LINE	BEARING	DISTANCE
L1	N 42°55' E	2930.82'
L2	N 82°42' E	2001.76'
L3	N 50°30' E	288.62'
L4	N 53°20' E	674.01'
L5	S 30°31' E	128.44'

LEGEND

- LEASED TRACTS
- SURFACE TRACTS
- UNIT BOUNDARY
- (A) LEASE # (SEE 6A1 FORM)



SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,402,886.31
E) 519,129.14

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,403,151.90
E) 519,767.22

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,401,205.53
E) 520,878.07

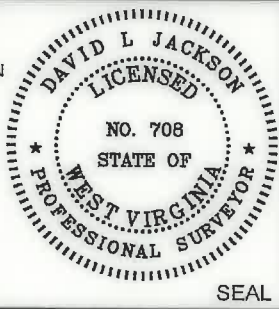
FILE NUMBER _____
DRAWING NUMBER **BRYAN_WP_S-10HM**
SCALE **1" = 1500'**
MINIMUM DEGREE OF ACCURACY **1/200**
PROVEN SOURCE OF ELEVATION **SUBMETER MAPPING GRADE GPS**

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

P.S. 708
David L Jackson



JACKSON SURVEYING INC.
P.O. Box 1460
Clarksburg, WV 26302
304-623-5851



WVDEP
OFFICE OF OIL & GAS
601 57TH STREET, SE
CHARLESTON, WV 25304

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW

LOCATION ELEVATION **1191.7'** WATERSHED (HUC 10) **Fish Creek**
DISTRICT **Franklin** COUNTY **Marshall**
QUADRANGLE **Powhatan Point 7.5'** LEASE NUMBER **SEE WW-6A1 Form**

SURFACE OWNER **CNX LAND RESOURCES, INC.** ACREAGE **81.98**
OIL & GAS ROYALTY OWNER **MICHAEL R. BRYAN - SEE WW 6A1** LEASE ACREAGE **81.98**
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___
PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE (SPECIFY) **ASDRILLED**
TARGET FORMATION **Marcellus** ESTIMATED DEPTH **TVD: 6,522' TMD: 14,867'**
WELL OPERATOR **TUG HILL OPERATING, LLC** DESIGNATED AGENT **DIANNA STAMPER CT CORPORATION SYSTEM**
ADDRESS **1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107** ADDRESS **5400 D BIG TYLER ROAD CHARLESTON, WV 25313**

COUNTY NAME
PERMIT

**BRYAN LEASE
WELL S-10HM
471.0556± ACRES**

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,402,886.33
E) 519,129.18

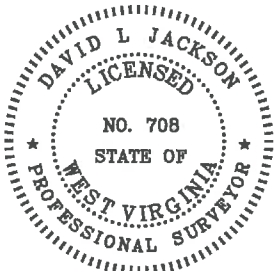
LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,403,156.96
E) 519,765.26

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,401,203.37
E) 520,877.34

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 85°49' E	16.37'	10.85'	18.55'
C2	N 72°10' E	48.79'	32.43'	55.22'
C3	N 43°10' E	22.32'	14.74'	25.32'
C4	N 16°24' E	50.07'	72.73'	51.11'
C5	N 44°51' E	309.87'	1545.07'	310.39'
C6	N 53°56' E	466.18'	4059.15'	466.44'
C7	S 84°47' E	406.63'	407.63'	425.72'
C8	S 46°56' E	254.10'	583.46'	256.15'

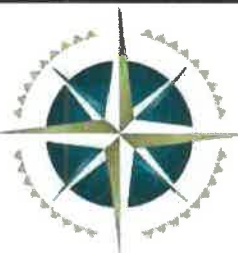
GRID NORTH

Number	TAX MAP -PARCEL	ADJOINER OWNER	ACRES	S52	18-49	Tanner Butler	2.023
S1	15-13	CNX Land Resources Inc.	11.0	S53	18-50	Steven Berisford	2.170
S2	15-6.1	Joseph J. Kramer Et Ux	39.40	S54	18-45	Michael Fincham & Kezia Winters	2.07
S3	15-7	Terry D. Rose Et Ux	4.5	S55	18-46	Dale W. & Patricia Gardner	2.030
S4	16-4	John Swierkos	0.96	S56	18-47	Robert Pelley II & Susan Briggs	2.010
S5	16-6	John Swierkos	134.05	S57	18-13.5	Wesley Bryan	1.023
S6	16-3.2	Jimmy Ostrander Sr. Et Ux	1.435	S58	18-36	Ruth Mulligan Est.	2.030
S7	16-3.1	Dennis Jackson Et Ux	0.27	S59	18-15.2	Edward Burge	4.171
S8	16-2	Fredonia Christian Church	0.19	S60	18-11	Benjamin Robinson	1.023
S9	16-1	Fredonia Christian Church	0.50	S61	18-11.2	Edward Lee Burge Jr.	2.0
S10	16-23.1	Ray E. Minor Et Ux	2.0	S62	18-11.1	Edward Lee Burge Jr.	18.0
S11	16-23.4	Michael R. & Brenda K. Bryan	3.0	S63	17-02	Phyllis Flouhouse Trust & Belle Yoho	104.08
S12	16-23.3	Greg & Christina Riddle	1.0	S64	18-15.1	Jason Blair	5.948
S13	16-24	Alan M. Beyser Et Ux	1.083	S65	18-12	William Wayne Et Ux	2.27
S14	16-23.2	Alan M. Beyser Et Ux	1.726	S66	18-10	David & Nancy Anderson	0.907
S15	17-16	Glen A. Gunto	9.702	S67	18-10.2	David Anderson Et Ux	1.377
S16	16-15.1	Glen A. Gunto	10.17	S68	18-10.1	David Anderson Et Ux	1.65
S17	17-15	Glen A. Gunto	10.22	S69	18-15.5	Darrell & Teresa Boley	23.547
S18	18-13	Southern Country Farms Inc.	11.415	S70	18-13.3	Robert Closterman	9.813
S19	18-13.9	Roy & Renee Butler	9.603	S71	18-17	Michael S. Fincham & Kezia M. Winters	6.555
S20	18-13.4	Renee D. Streight	9.938	S72	18-13.1	Betty Tagg Est.	9.248
S21	18-13.12	Charles A. & Mary Nice	5.969	S73	18-13.7	Victor W. Woods Jr. & Jessica L. Woods	5.255
S22	18-13	Southern Country Farms Inc.	8.037	S74	18-13.6	Glenn Eugene Whisler Et Ux	5.384
S23	17-3.1	Wilbur L. Riddle Et Ux	10.148	S75	18-13.13	Glenn E. & Sandra K. Whisler	5.59
S24	17-1.6	Lola M. Slaughter	6.347	S76	18-34	Jodi A. & Gary A. Hall	5.002
S25	17-1.5	Donnie R. & Lola M. Slaughter	5.607	S77	18-13	Southern Country Farms Inc.	24.724
S26	17-1.3	Jody & Michelle Anderson	5.0	S78	18-57	Marvin D. Roberts	2.228
S27	17-1.2	Donnie R. & Lola M. Slaughter	5.073	S79	18-18	Linda Coen	3.0
S28	17-1.1	Donnie R. & Lola M. Slaughter	8.078	S80	17-10.4	Ron Murrin Et Al	2.01
S29	17-1.4	Donnie R. & Lola M. Slaughter	8.844	S81	18-48	Marvin Dean Roberts Et Al	2.920
S30	17-14	Southern Country Farms Inc.	7.314	S82	18-13.14	Glenn & Sandra Whisler	2.116
S31	17-13	Roy E. & Renee Butler	5.433	S83	18-16	Charles Yeater	17.768
S32	17-1.7	Roy E. & Renee Butler	5.22	S84	15-09	CNX Land Resources Inc.	81.98
S33	17-1	Southern Country Farms Inc.	5.030	S85	15-08	Terry D. Rose et ux	77.11
S34	18-13	Southern Country Farms Inc.	8.743	S86	16-23	CNX Land Resources Inc.	60.138
S35	18-58	Kevin W. Roberts	2.435	S87	16-22	James M. Ruckman et ux	54.605
S36	18-35	Mary Anderson	2.635	S88	16-22.1	Heather A. Burgy	1.465
S37	18-42	Roger Howard Hall	2.383	S89	16-21	James M. Ruckman et ux	60.75
S38	18-19	Roger Howard Hall Jr.	10.0	S90	18-56	William O'Hara	3.965
S39	18-53	Christopher M. Previtera	2.0	S91	18-55	William O'Hara	3.202
S40	18-61	Roger White Jr.	2.984	S92	18-28	Dotson Harrison	6.36
S41	18-52	Roger Hall	2.536	S93	18-28.1	Carol Helmick	5.696
S42	18-51	Roger Hall	2.505	S94	18-13.2	Steven Berisford	6.023
S43	18-43	Roy E. & Renee Butler	2.532	S95	18-13	Southern Country Farms, Inc.	11.054
S44	18-44	Renee Streight Butler	2.133	S96	18-27.1	Marlon R. Conner	2.003
S45	18-25	Charles & Maria Rayl	2.133	S97	18-27.2	Linda L. Moore	3.009
S46	18-41	Cory A. Holt	2.308	S98	18-27	Linda L. Moore	2.447
S47	18-40	Cory A. Holt	2.237	S99	18-26	Linda L. Moore	2.624
S48	18-14	Michael Fincham & Kezia Winters	6.386	S100	18-13.11	Linda L. Moore	3.156
S49	18-39	Marlon R. Conner	2.001	S101	18-53.1	Christopher M. Previtera	6.283
S50	18-38	Marlon R. Conner	2.231	S102	18-60	Christopher M. Previtera	6.297
S51	18-37	John W. Wetzel	2.064				



P.S. 708

David L Jackson



**TUG HILL
OPERATING**

OPERATOR'S
WELL #: Bryan S-10HM
API# 47-051-02006
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV

WELL PLAT
PAGE 2 OF 2
DATE: 08/28/2020