

API 47-049 - 02452 Farm name Tonkery, Robert E. & Maxine P. Well number 515496

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"	26"	40'	NEW	A-500 85.6#	N/A	Y
Surface	17-1/2"	13-3/8"	423'	NEW	J-55 54.5#	N/A	Y
Coal							
Intermediate 1	12-3/8" & 12-1/4"	9-5/8"	3057'	NEW	A-500 40#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5 1/2"	11320	NEW	P-110 20#	N/A	N
Tubing							
Packer type and depth set							

Comment Details Production Cement job has calculated TOC of 5742' MD, which is greater than 500' TVD above the producing formation. No issues during cement job

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	CLASS A	49	15.6	1.18	57.82	0	8
Surface	CLASS A	515	15.6	1.20	618	0	8
Coal							
Intermediate 1	Class A	130/1282	15.6 / 16.2	1.20 / 1.10	1566.2	0	8
Intermediate 2							
Intermediate 3							
Production	Class H / Class H	200 / 420	15.2 / 15.6	1.16 / 2.10	1114	5742'	8
Tubing							

Drillers TD (ft) 11331' Loggers TD (ft) N/A  
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6852'

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 CONDUCTOR: NONE

SURFACE: ON SHOE TRACK AND EVERY 500' FEET TO SURFACE

INTERMEDIATE 1: ON SHOE TRACK AND EVERY 500' FEET TO SURFACE

PRODUCTION: ON SHOE TRACK AND EVERY JOINT TO 6457'

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WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_  
 WV Department of Environmental Protection

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_





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Drilling Contractor Decker Drilling  
Address 11565 State Route 676 City Vincent State OH Zip 45784

Logging Company \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Logging Company Scientific Drilling International, Inc.  
Address 124 Vista Drive City Charleroi State PA Zip 15022

Cementing Company BJ Services, LLC  
Address 4000 Town Center Blvd, Suite 210 City Cannonsburg State PA Zip 15317

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Well # 515496 Final Formations API# 47-049-02452-00-00				
Formation Name	Drill Top MD (ftKB)	Drill Top (TVD) (ftKB)	Drill Btm MD (ftKB)	Drill Btm (TVD) (ftKB)
SAND/SHALE	1	1	652	652
WASHINGTON	662	662	654	654
SAND/SHALE	664	664	808	808
WAYNESBURG	818	818	810	810
SAND/SHALE	820	820	1067	1067
SEWICKLEY	1077	1077	1070	1070
SAND/SHALE	1080	1080	1166	1166
PITTSBURGH	1176	1176	1173	1173
SAND/SHALE	1183	1183	2136	2131
MAXTON	2146	2141	2173	2168
SAND/SHALE	2183	2178	2283	2278
BIG LIME	2293	2288	2352	2347
SAND/SHALE	2362	2357	2447	2442
BIG INJUN	2457	2452	2602	2597
SAND/SHALE	2612	2607	2720	2715
WEIR	2730	2725	2740	2735
SAND/SHALE	2750	2745	2918	2913
GANTZ	2938	2933	3078	3073
SAND/SHALE	3088	3083	3088	3083
50F	3098	3093	3101	3096
SAND/SHALE	3111	3106	3178	3173
THIRTY FOOT	3188	3183	3211	3206
SAND/SHALE	3221	3216	3242	3237
GORDON	3252	3247	3291	3286
SAND/SHALE	3301	3296	3311	3306
FOURTH SAND	3321	3316	3343	3338
SAND/SHALE	3353	3348	3372	3367
BAYARD	3382	3377	3389	3384
SAND/SHALE	3399	3394	3854	3848
WARREN	3864	3858	3892	3886
SAND/SHALE	3902	3896	4075	4069
SPEECHLEY	4085	4079	4112	4106
SAND/SHALE	4122	4116	4436	4430
BALLTOWN A	4446	4440	4834	4828
SAND/SHALE	4844	4838	4959	4953
RILEY	4969	4963	5060	5054
SAND/SHALE	5070	5064	5518	5512
BENSON	5528	5522	5542	5536
SAND/SHALE	5552	5546	5904	5898
ALEXANDER	5914	5908	6000	5994
ELKS	6010	6004	7245	7217
SONYEA	7245	7217	7429	7376
MIDDLESEX	7429	7376	7498	7429
GENESSEE	7498	7429	7620	7517
GENESEO	7620	7517	7665	7548
TULLY	7665	7548	7704	7573
HAMILTON	7704	7573	7920	7672
MARCELLUS	7920	7672	11331	7847

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**515496 47-049-02452-0000 - Perforations**

<b>Stage Number</b>	<b>Perforation Date</b>	<b>Top Perf Depth (ftKB)</b>	<b>Bottom Perf Depth (ftKB)</b>	<b>Number of Shots</b>	<b>Formation</b>
<b>Initiation Sleeve</b>	8/20/2017	11,294	11,321	10	MARCELLUS
<b>1</b>	8/27/2017	11,133	11,255	32	MARCELLUS
<b>2</b>	8/28/2017	10,933	11,095	40	MARCELLUS
<b>3</b>	8/28/2017	10,733	10,895	40	MARCELLUS
<b>4</b>	8/29/2017	10,533	10,695	40	MARCELLUS
<b>5</b>	8/30/2017	10,333	10,495	40	MARCELLUS
<b>6</b>	8/31/2017	10,133	10,295	40	MARCELLUS
<b>7</b>	8/31/2017	9,933	10,095	40	MARCELLUS
<b>8</b>	9/3/2017	9,733	9,895	40	MARCELLUS
<b>9</b>	9/4/2017	9,533	9,695	40	MARCELLUS
<b>10</b>	9/5/2017	9,333	9,495	40	MARCELLUS
<b>11</b>	9/6/2017	9,133	9,295	40	MARCELLUS
<b>12</b>	9/7/2017	8,933	9,095	40	MARCELLUS
<b>13</b>	9/8/2017	8,733	8,895	40	MARCELLUS
<b>14</b>	9/10/2017	8,533	8,695	40	MARCELLUS
<b>15</b>	9/11/2017	8,333	8,495	40	MARCELLUS
<b>16</b>	9/13/2017	8,133	8,295	40	MARCELLUS
<b>17</b>	9/14/2017	7,933	8,095	40	MARCELLUS

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**515496 47-049-02452-0000 - Stimulated Stages**

<b>Stage Number</b>	<b>Stimulation Date</b>	<b>Ave Pump Rate (BPM)</b>	<b>Ave Treatment Pressure (PSI)</b>	<b>Max Breakdown Pressure (PSI)</b>	<b>ISIP (PSI)</b>	<b>Amount of Proppant (lbs)</b>	<b>Amount of Water (bbls)</b>	<b>Amount of Nitrogen/other (units)</b>
<b>Initiation Sleeve</b>	8/26/2017	22	6,504	8,023	5,542	0	1,262	0
<b>1</b>	8/27/2017	90	8,272	8,981	6,074	603998	14,523	0
<b>2</b>	8/28/2017	98	8,751	9,362	6,342	526260	9,847	0
<b>3</b>	8/29/2017	98	8,620	9,238	6,350	558242	9,586	0
<b>4</b>	8/29/2017	97	8,862	9,303	6,285	601162	9,397	0
<b>5</b>	8/31/2017	99	8,667	9,152	5,339	600163	10,428	0
<b>6</b>	8/31/2017	93	8,922	9,467	5,970	600651	11,833	0
<b>7</b>	9/3/2017	92	8,749	9,420	6,575	572899	10,681	0
<b>8</b>	9/4/2017	94	8,889	9,245	6,195	600280	10,549	0
<b>9</b>	9/5/2017	90	8,971	9,369	6,420	600094	10,873	0
<b>10</b>	9/6/2017	98	9,020	9,399	6,496	593786	9,659	0
<b>11</b>	9/7/2017	96	8,917	9,180	5,941	598584	9,741	0
<b>12</b>	9/8/2017	93	8,860	9,285	5,901	600451	10,662	0
<b>13</b>	9/10/2017	95	8,743	9,289	7,334	600070	12,331	0
<b>14</b>	9/11/2017	94	8,655	9,339	6,103	600500	10,646	0
<b>15</b>	9/13/2017	88	8,620	9,121	5,210	600282	12,696	0
<b>16</b>	9/14/2017	93	8,153	8,895	5,971	602284	9,831	0
<b>17</b>	9/15/2017	80	8,172	9,408	5,765	549920	10,648	0

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/26/2017
Job End Date:	9/15/2017
State:	West Virginia
County:	Marion
API Number:	47-049-02452-00-00
Operator Name:	EQT Production
Well Name and Number:	515496
Latitude:	39.56400330
Longitude:	-80.48973830
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,672
Total Base Water Volume (gal):	7,778,106
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	FTS International	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	86.32519	None
CI-150	FTS International	Acid corrosion inhibitor					
				Listed Below			

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			Quaternary ammonium compound	Proprietary	10.00000	0.00002	None
			Dimethylformamide	68-12-2	10.00000	0.00002	None

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

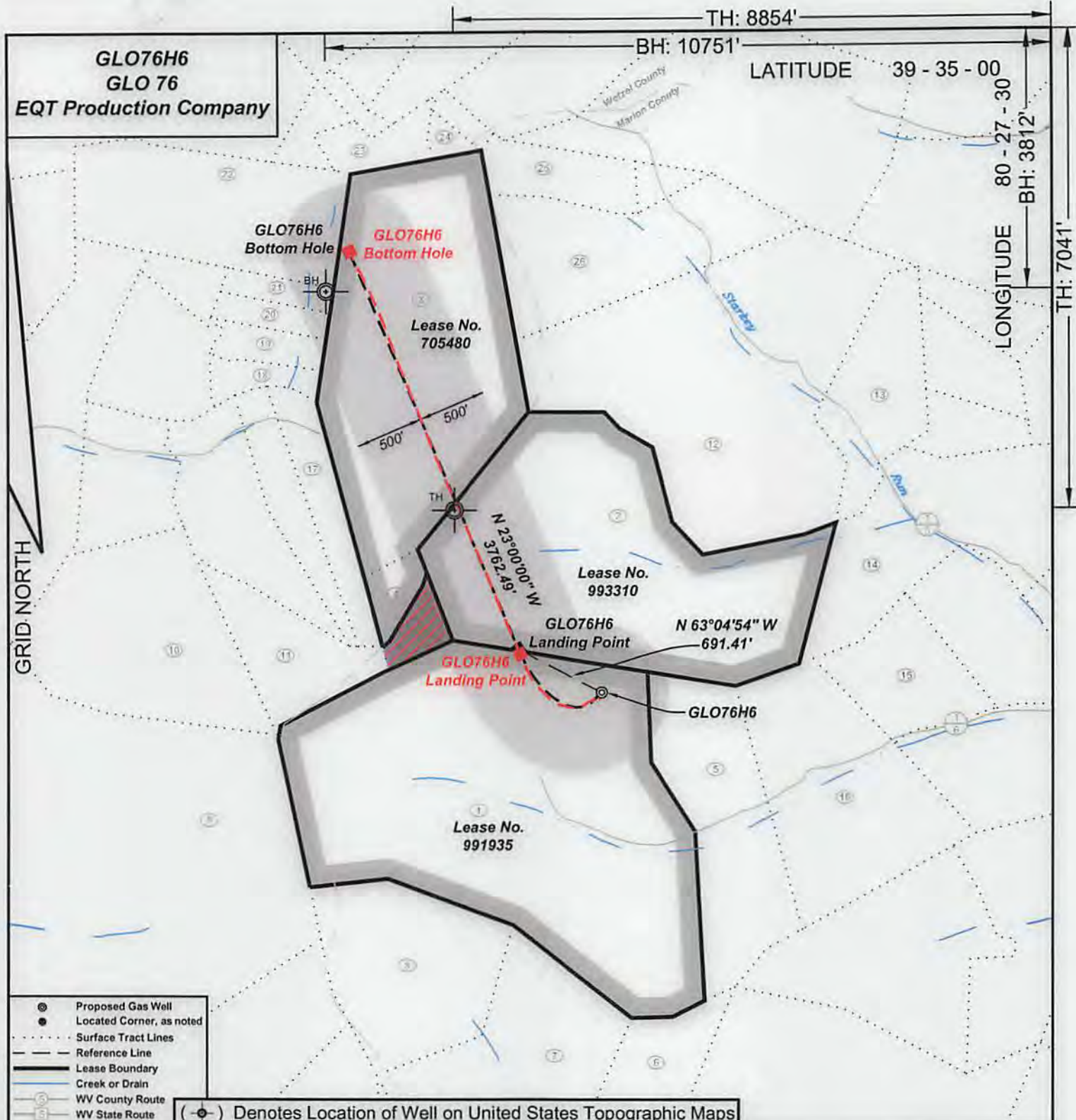
\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

\*\*\* 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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*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 regulations issued and prescribed by the Department of Environmental Protection.*

P.S. 2092



SEAL

FILE NO: 341-14  
DRAWING NO: 341-14 GLO 76 H6  
SCALE: 1" = 1000'  
MINIMUM DEGREE OF ACCURACY: 1:2500  
PROVEN SOURCE OF ELEVATION: NGS CORS Station

**STATE OF WEST VIRGINIA**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**OIL AND GAS DIVISION**

DATE: September 7 20 17  
OPERATOR'S WELL NO.: GLO76H6  
API WELL NO  
47 - 049 - 02452  
STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
(IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
LOCATION: ELEVATION: 1424' (As-built) WATERSHED Starkey Run and Wiley Fork QUADRANGLE: Glover Gap  
DISTRICT: Mannington COUNTY: Marion  
SURFACE OWNER: Robert E. & Maxine P. Tonkery ACREAGE: 111.0  
ROYALTY OWNER: Lynn Ann Brower, et al. LEASE NO: 991935 ACREAGE: 111.0  
PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 7,708'

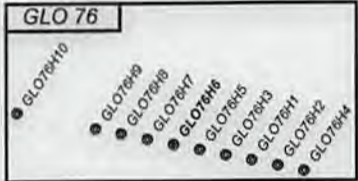
03/02/2018

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray  
ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280  
Bridgeport, WV 26330 Bridgeport, WV 26330

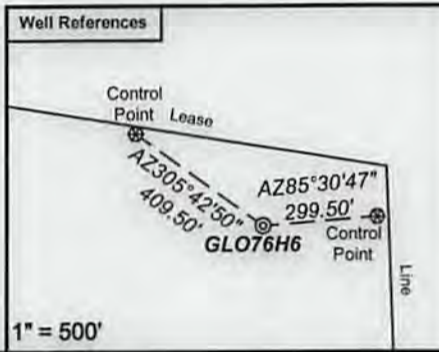
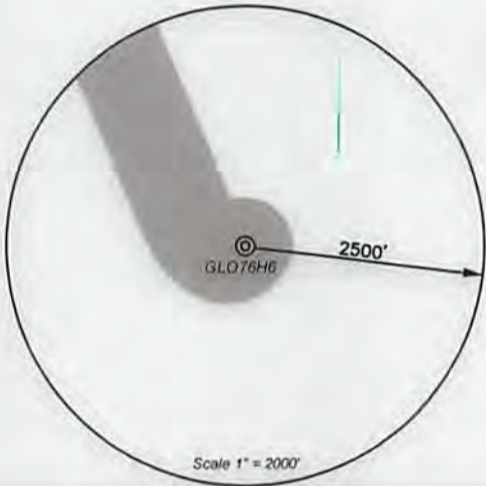
**GLO76H6  
GLO 76  
EQT Production Company**

**As-Drilled Well Information:**  
**GLO76H6 coordinates are**  
 NAD 27 N: 389,069.61 E: 1,720,971.25  
 NAD 83 UTM N: 4,379,501.43 E: 543,847.96  
**GLO76H6 Landing Point coordinates are**  
 NAD 27 N: 389,348.56 E: 1,720,366.77  
 NAD 83 UTM N: 4,379,583.34 E: 543,662.38  
**GLO76H6 Bottom Hole coordinates are**  
 NAD 27 N: 392,319.36 E: 1,719,109.29  
 NAD 83 UTM N: 4,380,482.05 E: 543,264.20  
 West Virginia Coordinate system of 1927 (North Zone)  
 based upon Differential GPS Measurements.  
 Plat orientation, corner and well ties are based upon  
 the grid north meridian.  
 Well location references are based upon the grid north  
 meridian.  
 UTM coordinates are NAD83, Zone 17, Meters.

Tract I.D.	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	43	11	Marion	Mannington	Robert E. & Maxine P. Tonkery	111.00
2	43	22	Marion	Mannington	Paul Able Trustee, et al.	83.00
3	15	26	Wetzel	Grant	William Jack Barr, et al.	76.22
4	15	36	Wetzel	Grant	Barry L. Long	7.00
5	43	10	Marion	Mannington	Robert S. & Gloria L. Thorn	25.33
6	45	28	Marion	Mannington	Delbert C. Teagarden, Jr.	40.80
7	45	29	Marion	Mannington	Raymond C. Teagarden	61.02
8	43	11.1	Marion	Mannington	David A. & Diane E. Floyd	30.00
9	20	1	Wetzel	Grant	Alan D. & Diana L. Barr	13.00
10	15	34	Wetzel	Grant	Karen R. Dennison, et al.	111.40
11	15	35	Wetzel	Grant	Thomas E. Wyatt, et al.	174.68
12	43	21	Marion	Mannington	Raymond & Lois E. Joy	66.50
13	43	20	Marion	Mannington	Raymond & Lois E. Joy	23.50
14	43	15	Marion	Mannington	Thomas W. Neer	46.75
15	43	12	Marion	Mannington	Thomas A. & Betty L. Heldreth	16.75
16	43	9	Marion	Mannington	Robert S. & Gloria L. Thorn	46.79
17	15	33	Wetzel	Grant	William Jack Barr, et al.	10.75
18	15	25	Wetzel	Grant	William Jack Barr, et al.	4.20
19	15	24	Wetzel	Grant	William Jack Barr, et al.	4.75
20	15	23	Wetzel	Grant	William Jack Barr, et al.	3.88
21	15	22	Wetzel	Grant	Donald W. & Dianna White	3.63
22	15	13	Wetzel	Grant	Donald W. & Dianna White	40.00
23	15	7.1	Wetzel	Grant	Donald W. & Dianna White	7.80
24	15	37	Wetzel	Grant	Coastal Forest Resources Co.	1.45
25	43	28	Marion	Mannington	Ernest W. & Nancy A. Michael	15.38
26	43	25	Marion	Mannington	Ernest W. & Nancy A. Michael	40.14



Lease No.	Acres	Owner
993310	83	ET Blue Grass LLC, et al.
705480	83.22	Jeffrey Scott Cozart, et al.



- Proposed Gas Well
- Located Corner, as noted
- ..... Surface Tract Lines
- Reference Line
- Lease Boundary
- Creek or Drain
- WV County Route
- WV State Route



*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 regulations issued and prescribed by the Department of Environmental Protection.*

\_\_\_\_\_  
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