



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

PERMIT MODIFICATION APPROVAL
Horizontal 6A / Horizontal 6A Well - 1

EQT PRODUCTION COMPANY
120 PROFESSIONAL PLACE
BUILDING II
BRIDGEPORT, WV 26330

Re: Permit Modification Approval for 514460
47-095-02257-00-00

Lengthen Lateral

EQT PRODUCTION COMPANY

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.



James A. Martin
Chief

Operator's Well Number: 514460
Farm Name: WELLS, VIVIAN J.
U.S. WELL NUMBER: 47-095-02257-00-00
Horizontal 6A / Horizontal 6A Well - 1
Date Issued: 4/27/2017

Promoting a healthy environment.

04/28/2017

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: EQT Production Company 306686 Tyler McElroy Shirley
Operator ID County District Quadrangle

2) Operator's Well Number: 514460 Well Pad Name: SHR60

3) Farm Name/Surface Owner: Vivian J. Wells Et al Public Road Access: 60/2

4) Elevation, current ground: 1011' Elevation, proposed post-construction: 1011'

5) Well Type (a) Gas Oil _____ Underground Storage _____
Other _____

(b) If Gas Shallow Deep _____
Horizontal _____

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 6596' TVD, 52' thick, 2747 PSI

8) Proposed Total Vertical Depth: 6596'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 21110'

11) Proposed Horizontal Leg Length: 14073'

12) Approximate Fresh Water Strata Depths: 83,133,570,906'

13) Method to Determine Fresh Water Depths: From offset wells

14) Approximate Saltwater Depths: 1198,1865'

15) Approximate Coal Seam Depths: 19, 420, 686, 875, 1315'

16) Approximate Depth to Possible Void (coal mine, karst, other): None reported

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes _____ No

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

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18)

CASING AND TUBING PROGRAM

TYPE	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	20	New	A-500	78.6	60	60	107 ft ³ / CTS
Fresh Water	13 3/8	New	J-55	54.5	997	997	1048 ft ³ / CTS
Coal							
Intermediate	9 5/8	New	A-500	40	2779	2779	1524 ft ³ / CTS
Production	5 1/2	New	P-110	20	2110	2110	500' above top producing zone
Tubing	2 3/8		J-55	4.7		May not be run, if run set 40' above top perf or 80° inclination	
Liners							

DmH
4-17-17

TYPE	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	20	26	.375	1378	25	Class A	1.18
Fresh Water	13 3/8	17 1/2	.38	2700	2160	See Variance 2014-17	1.2
Coal							
Intermediate	9 5/8	12 3/8	.395	3950	3160	See Variance 2014-17	1.25 / 1.18
Production	5 1/2	8 1/2	.361	12640	10112	Class H	1.123/2.098
Tubing	2 3/8	NA	.19	7700			
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill and complete a new horizontal well in the Marcellus Formation. Drill the vertical to an approximate depth of 6723'. Tag the Onondaga not more than 100', run logs, then plug back with solid cement plug to approximately 5135'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

DMH
4-17-17

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Hydraulic fracturing is completed in accordance with state regulations using water recycled from previously fractured wells and obtained from freshwater sources. This water is mixed with sand and a small percentage (less than 0.3%) of chemicals (including 15% Hydrochloric acid, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "slickwater" completion. Maximum anticipated internal casing pressure is expected to be approximately 10000 psi, maximum anticipated treating rates are expected to average approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 250,000 gallons of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 250,000 pounds of sand per stage.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): No additional

22) Area to be disturbed for well pad only, less access road (acres): No additional

23) Describe centralizer placement for each casing string:

- Surface: Bow spring centralizers – One centralizer at the shoe and one spaced every 500'.
- Intermediate: Bow spring centralizers– One centralizer at the shoe and one spaced every 500'.
- Production: One solid body centralizer spaced every joint from production casing shoe to KOP

24) Describe all cement additives associated with each cement type:

Conductor: Class A no additives
 Surface (Class A Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries
 Intermediate (Class A Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries.
 Production:
 Lead (Class A Cement): 0.2% CD-20 (dispersant makes cement easier to mix). .15% SuperFL-300 (fluid loss/lengthens thickening time) .15% SEC-10 (fluid loss) 50:50 POZ (extender)
 Tail (Class H Cement): 0.2% Super CR-1 (Retarder). Lengthens thickening time. .3% Super FL-200 (fluid loss) .2% SEC-10 (Fluid loss). .2% SuperFL-350 (fluid loss) Reduces amount of water lost to formation. 60 % Calcium Carbonate. Acid solubility.

25) Proposed borehole conditioning procedures:

Surface: Circulate hole clean while rotating & reciprocating the drill string until cuttings diminish at surface.
 Intermediate: Circulate hole clean while rotating & reciprocating the drill string until cuttings diminish at surface.
 Production: Pump marker sweep with nut plug to determine actual hole washout. Calculate gauge hole bottoms up volume. Perform a cleanup cycle by pumping 3-5 bottoms up or until the shakers are clean.
 Check volume of cuttings coming across the shakers every 15 minutes.

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*Note: Attach additional sheets as needed.

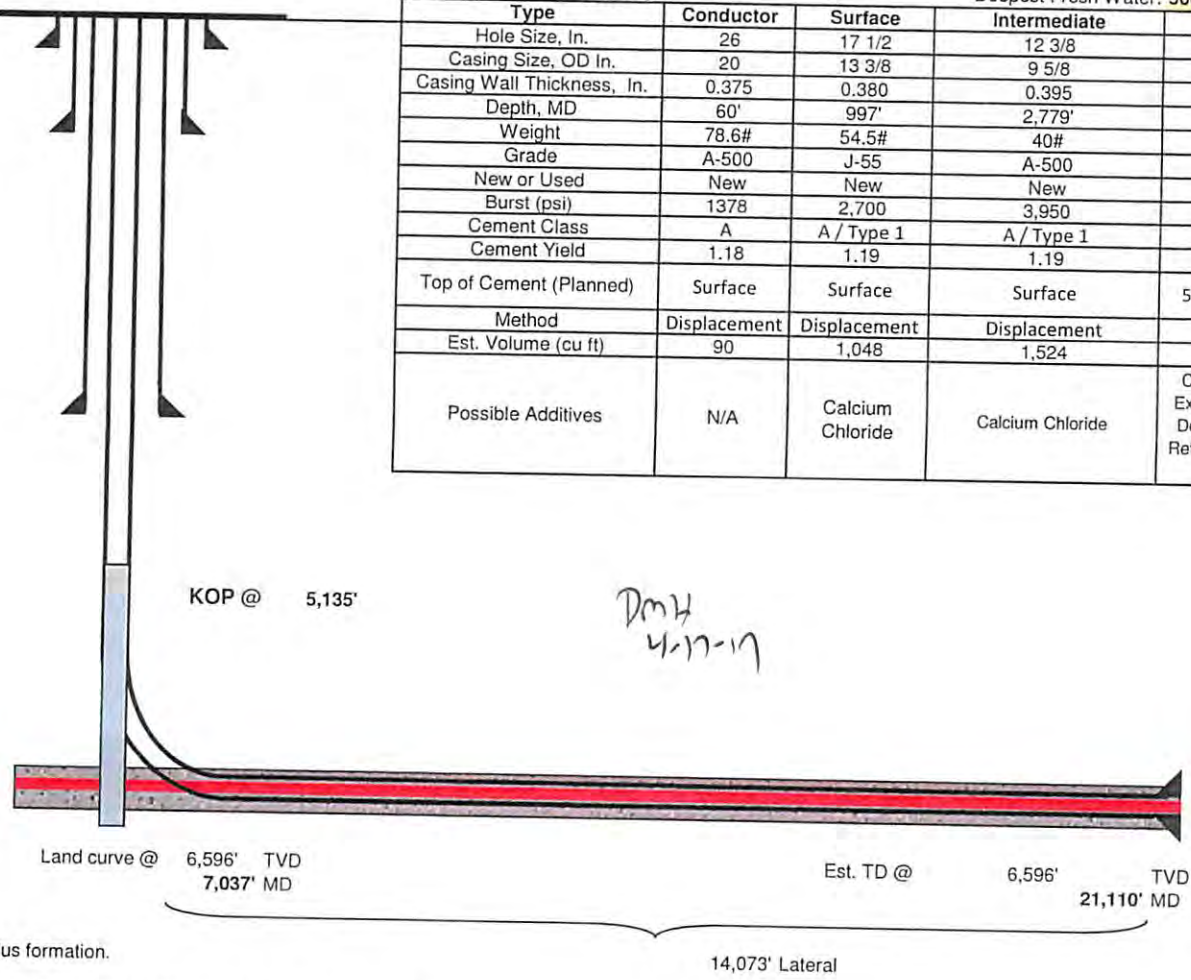
Well **SHR60H1**
EQT Production
 Shirley Quad
 Tyler County, WV

Azimuth 157
 Vertical Section 14272

Note: Diagram is not to scale

Formations	Top TVD	Base TVD
Conductor	60	
Base Fresh Water	906	
Surface Casing	997	
Base Red Rock	1315	
Maxton	1534 - 1587	
Big Lime	1829 - 2111	
Weir	2251 - 2317	
Gantz	2368 - 2415	
Fifty foot	2461 - 1496	
Thirty foot	2595 - 2636	
Gordon	2686 - 2700	
Intermediate Casing	2779	
Bayard	3007 - 3067	
Warren	3339 - 3413	
Speechley	3433 - 3551	
Balltown A	3855 - 3925	
Riley	4548 - 4585	
Benson	4965 - 5002	
Alexander	5222 - 5294	
Sonyea	6212 - 6381	
Middlesex	6381 - 6425	
Genesee	6425 - 6501	
Geneseo	6501 - 6530	
Tully	6530 - 6554	
Hamilton	6554 - 6571	
Marcellus	6571 - 6623	
Production Casing	21110 MD	
Onondaga	6623	

Casing and Cementing		Deepest Fresh Water: 906'		
Type	Conductor	Surface	Intermediate	Production
Hole Size, In.	26	17 1/2	12 3/8	8 1/2
Casing Size, OD In.	20	13 3/8	9 5/8	5 1/2
Casing Wall Thickness, In.	0.375	0.380	0.395	0.361
Depth, MD	60'	997'	2,779'	21,110'
Weight	78.6#	54.5#	40#	20#
Grade	A-500	J-55	A-500	P-110
New or Used	New	New	New	New
Burst (psi)	1378	2,700	3,950	12,640
Cement Class	A	A / Type 1	A / Type 1	A / H
Cement Yield	1.18	1.19	1.19	1.123 / 2.098
Top of Cement (Planned)	Surface	Surface	Surface	500' above top Producing Zone
Method	Displacement	Displacement	Displacement	Displacement
Est. Volume (cu ft)	90	1,048	1,524	4,251
Possible Additives	N/A	Calcium Chloride	Calcium Chloride	Calcium Carbonate, Fluid Loss, Extender, Dispersent, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent



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Proposed Well Work:
 Drill and complete a new horizontal well in the Marcellus formation.
 Drill the vertical to an approximate depth of 6723'.
 Test the Onondaga not more than 100', run logs, then plug back with a solid cement plug to approximately 5135'.
 Kill off and drill curve. Drill lateral in the Marcellus. Cement casing.

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
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see attached

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: EQT Production Company
 By: Victoria J Roark
 Its: Permitting Supervisor

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Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>126101</u>	<u>George Birklein, et al (current royalty owner)</u>		**	
	WM. Blaine Underwood Et ux et al (original lessor)	Equitable Gas Co.		DB186/86
	Equitrans Gas Co.	Equitrans, Inc.		DB274/471
	Equitrans, Inc./Equitable Gas Company/Equitable Resr	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company		DB396/640
5-18-7	Ok Nan Keys	EQT Production Company		508/179
	5-18-7.1	Brenda J. Ashley, et al	EQT Production Company	508/181
	5-18-7.1	Patricia A. Keys	EQT Production Company	514/375
	5-18-9	Billy Joe Rayburn a/k/a William Joe Rayburn, et al	EQT Production Company	508/175
	5-18-9	Lawrence Rayburn, et al	EQT Production Company	508/177
<u>126162</u>	<u>Berdina Rose, et al (current royalty owner)</u>		**	
	Savannah Pratt, et al (original lessor)	Equitable Gas Co.		DB192/425
	Equitable Gas Co.	Equitrans, Inc.		DB274/471
	Equitrans, Inc./Equitable Gas Company/Equitable Resr	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company		DB396/640
<u>126161</u>	<u>John A. Dillon, et al (current royalty owner)</u>		**	
	John M. Pierpoint, et al (original lessor)	Equitable Gas Co.		DB192/368
	Equitable Gas Co.	Equitrans, Inc.		DB274/471
	Equitrans, Inc./Equitable Gas Company/Equitable Resr	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company		DB396/640
<u>126211</u>	<u>Below the Fifth Sand</u>		**	
	<u>John A. Dillon, et al (current royalty owner)</u>		**	
	Mary E. Underwood, et vtr (original lessor)	Hope Natural Gas Co.		DB70/477
	Hope Natural Gas Co.	Consolidated Gas Supply Corp.		DB169/26
	Consolidated Gas Supply Corp.	Consolidated Gas Transmission Corp.		DB249/287
	Consolidated Gas Transmission Corp.	CNG Development Co.		DB253/57
	CNG Development Co.	Dominion Appalachian Development, Inc.		DB337/340
	Dominion Appalachian Development, Inc.	Consol Gas Appalachian Development, LLC		CB9/131
	Consol Gas Appalachian Development, LLC	CNX Gas Co., LLC		CB9/206
	CNX Gas Co., LLC	EQT Production Co.		DB479/55
	CNX Gas Co., LLC/Noble Energy, Inc	EQT Production Co.		AB505/222
<u>190034</u>	<u>Paul Weekley (current royalty owner)</u>		**	
	Paul Weekley, et al (original lessor)	EQT Production Co.		DB548/119
<u>126186</u>	<u>Bruce L. Stoneking, et al (current royalty owner)</u>		**	
	Addie Keys & Paul Weekley (original lessor)	Equitable Gas Company		DB195/372
	Equitable Gas Co.	Equitrans, Inc.		DB274/471
	Equitrans, Inc./Equitable Gas Company/Equitable Resr	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company		DB396/640
<u>126137</u>	<u>S.A. Smith and C. Burke Morris Trust, et al (current royalty owner)</u>		**	
	Carl C. Weekley, et al (original lessor)	Equitable Gas Co.		DB191/536
	Equitable Gas Co.	Equitrans, Inc.		DB274/471
	Equitrans, Inc./Equitable Gas Company/Equitable Resr	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	Equitable Production Company		DB396/640
<u>126152</u>	<u>Linda Sue Lamb, et al (current royalty owner)</u>		**	
	Carl C. Weekley, et al (original lessor)	Equitable Gas Co.		DB191/489
	Equitable Gas Co.	Equitrans, Inc.		DB274/471
	Equitrans, Inc./Equitable Gas Company/Equitable Resr	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company		DB396/640
<u>126133</u>	<u>Dorothy H. Bode (current royalty owner)</u>		**	
	Mollie Scott (original lessor)	Equitable Gas Company		DB191/417
	Equitable Gas Co.	Equitrans, Inc.		DB274/471
	Equitrans, Inc./Equitable Gas Company/Equitable Reso	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company		DB396/640
<u>105456</u>	<u>Kimberly Wilcox (current royalty owner)</u>		**	
	Olive I. Stewart, et vir (original lessor)	J L Newman		LB69/42
	J. L. Newman	The Philadelphia Company of West Virginia		OG455/390
	The Philadelphia Company of West Virginia	Pittsburgh and West Virginia Gas Company		DB101/36
	Pittsburgh and West Virginia Gas Company	Equitable Gas Co.		132/414
	Equitable Gas Co.	Equitrans, Inc.		DB274/471
	Equitrans, Inc./Equitable Gas Company/Equitable Reso	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company		DB396/640
<u>126177</u>	<u>Regina M. Buck, et al (current royalty owner)</u>		**	
	J.S. Buck, et ux (original lessor)	Equitable Gas Company		DB97/533
	Equitable Gas Company	Equitrans, Inc.		154/475
	Equitrans, Inc.	Equitrans, L.P.		329/645
	Equitrans, L.P.	EQT Production Company		DB396/640

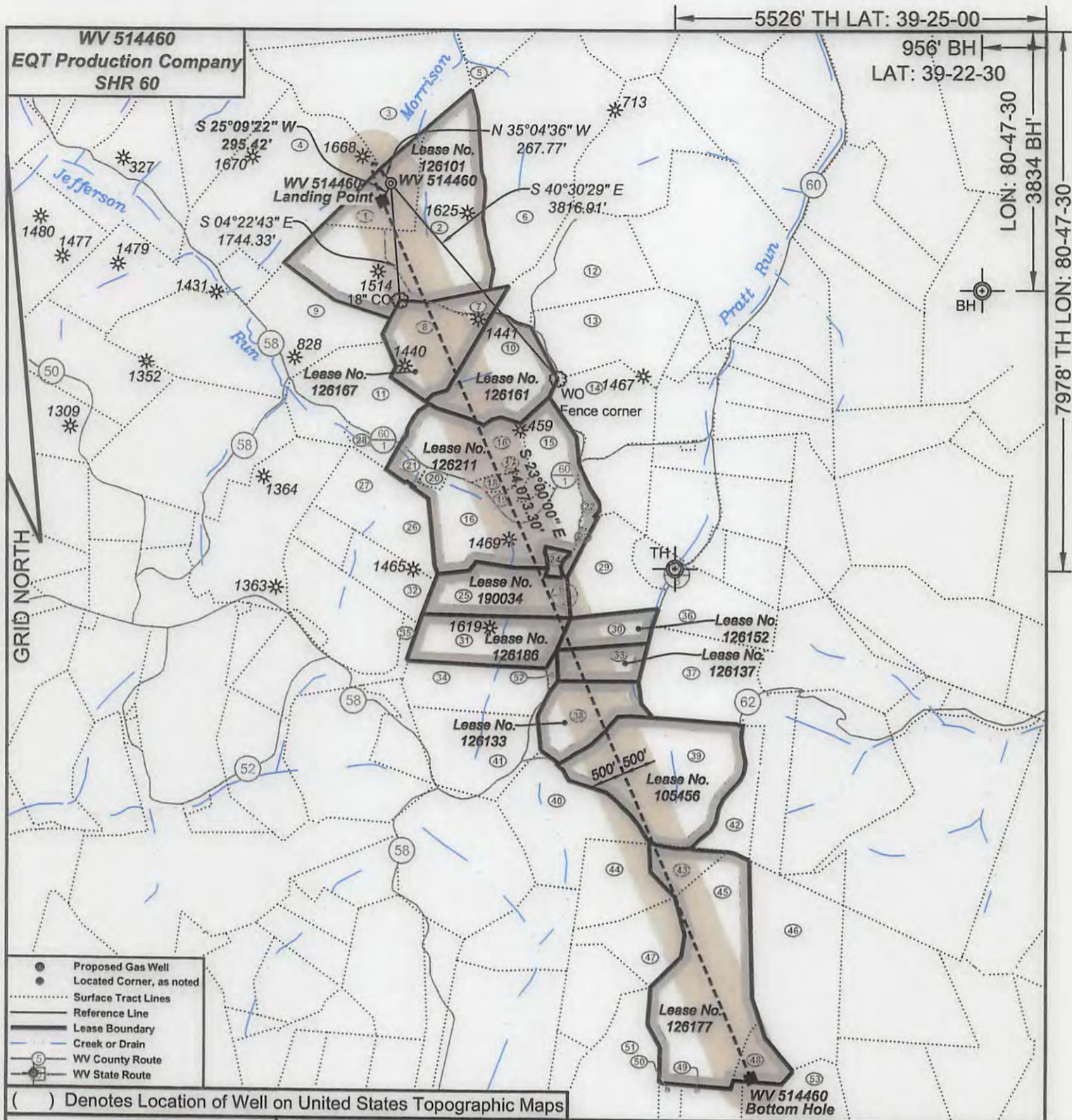
** Per West Virginia Code Section 22-6-8.

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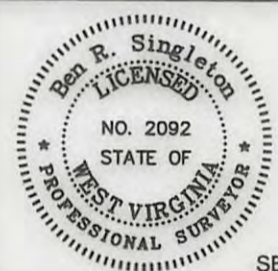
- Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Reference Line
- Lease Boundary
- Creek or Drain
- WV County Route
- WV State Route

() Denotes Location of Well on United States Topographic Maps



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.

Ben R. Singleton
P.S. 2092



SEAL

FILE NO: 208-13
DRAWING NO: 208-13 SHR 60 H1
SCALE: 1" = 2000'
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: April 10 20 17
OPERATOR'S WELL NO.: WV 514460
API WELL NO
47 - 95 - 02257
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: As-Built 1,011' WATERSHED Morrison Run of McElroy Creek QUADRANGLE: Shirley
DISTRICT: McElroy COUNTY: Tyler
SURFACE OWNER: Vivian J. Wells, et al. ACREAGE: 35.38
ROYALTY OWNER: George Birklein, et al. LEASE NO: 126101 ACREAGE: 240
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: 6596

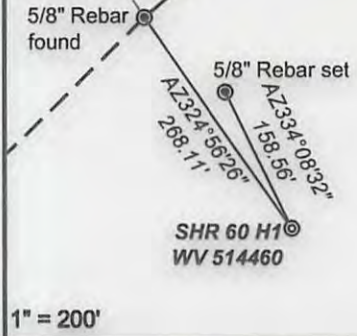
04/28/2017

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

WV 514460
EQT Production Company
SHR 60

Tract I.D.	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	18	12	Tyler	McElroy	Hanna A. Underwood Estate	35.00
2	18	13	Tyler	McElroy	Blaine Underwood Estate, et al.	104.73
3	18	9	Tyler	McElroy	Lawrence Rayburn, et al.	100.00
4	18	7.1	Tyler	McElroy	Patricia A. Keys, et al.	102.31
5	18	10	Tyler	McElroy	Susan Spencer	2.92
6	18	11	Tyler	McElroy	Susan Spencer	132.00
7	18	15	Tyler	McElroy	Susan Spencer	8.00
8	18	16	Tyler	McElroy	Donald E. Bible Sr.	35.50
9	18	23	Tyler	McElroy	Clyde Seckman Estate	111.75
10	18	17	Tyler	McElroy	Allen Dale Fornash, et al.	43.00
11	18	22	Tyler	McElroy	Donald E. Bible Sr.	39.26
12	18	14	Tyler	McElroy	Terry J. Cumberledge, et al.	54.81
13	18	18	Tyler	McElroy	Terry J. Cumberledge, et al.	49.87
14	18	19	Tyler	McElroy	John Paul Davis	35.00
15	18	20.2	Tyler	McElroy	Richard E. Hansen	19.96
16	18	20	Tyler	McElroy	Clarence G. Dillon, et al.	113.42
17	18	20.6	Tyler	McElroy	Clarence G. Dillon Jr.	0.71
18	18	20.5	Tyler	McElroy	Clarence G. Dillon Jr.	2.94
19	18	20	Tyler	McElroy	Clarence G. Dillon, et al.	113.42
20	18	20.4	Tyler	McElroy	John A. Dillon	2.04
21	18	20.3	Tyler	McElroy	Peter H. Mueller	4.69
22	18	20.1	Tyler	McElroy	William R. Doll Jr, et al.	3.06
23	21	44	Tyler	McElroy	William R. Doll Jr, et al.	2.43
24	21	45	Tyler	McElroy	Clarence G. Dillon, et al.	2.43
25	21	15	Tyler	McElroy	Paul Weekley	36.00
26	21	14	Tyler	McElroy	Donnie N. & Kim M. Wilmoth	73.39
27	21	14	Tyler	McElroy	Donnie N. & Kim M. Wilmoth	73.39
28	18	21	Tyler	McElroy	Barbara Willier	5.90
29	22	20	Tyler	McElroy	James B. Scott	30.00
30	21	18	Tyler	McElroy	Richard E. & Barbara A. Mullins	20.00
31	21	16	Tyler	McElroy	Paul Weekley	36.00
32	21	14	Tyler	McElroy	Donnie N. & Kim M. Wilmoth	73.39
33	21	19	Tyler	McElroy	Richard E. & Barbara A. Mullins	20.00
34	21	17	Tyler	McElroy	Paul Weekley	32.95
35	21	27	Tyler	McElroy	Donnie N. & Kim M. Wilmoth	7.50
36	21	21	Tyler	McElroy	James B. Scott	30.00
37	22	19	Tyler	McElroy	Berdina Rose, et al.	55.00
38	21	21	Tyler	McElroy	James B. Scott	30.00
39	22	18	Tyler	McElroy	Bruce W. Boland	86.75
40	21	33	Tyler	McElroy	Bruce W. Boland	52.46
41	21	23	Tyler	McElroy	Peggy A. White	45.88
42	22	18.1	Tyler	McElroy	Bruce W. Boland	18.91
43	22	17	Tyler	McElroy	David R. & Elizabeth A. Beveridge	12.00
44	22	16	Tyler	McElroy	Leah Weekley	29.00
45	2	18	Doddridge	West Union	David R. & Elizabeth A. Beveridge	125.00
46	2	1	Doddridge	West Union	James M. Petrovich, et al.	70.00
47	22	15	Tyler	McElroy	Isaiah Weekley	25.00
48	2	5.4	Doddridge	West Union	David R. & Elizabeth A. Beveridge	11.90
49	2	5.1	Doddridge	West Union	David R. & Elizabeth A. Beveridge	20.88
50	2	4.1	Doddridge	West Union	Robert B. & Marry E. Simpson	20.00
51	2	4	Doddridge	West Union	Robert B. & Marry E. Simpson	38.50
52	22	20	Tyler	McElroy	James B. Scott	30.00
53	2	9	Doddridge	West Union	Charles C. Hittel III	115.75

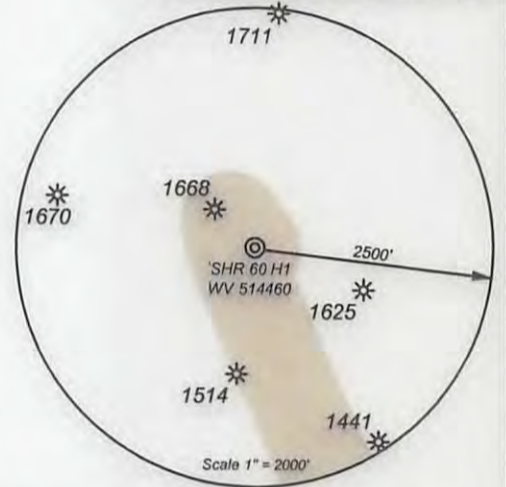
Well References



- SHR 60**
- H1, 514460
 - H2, 514461
 - H3, 514462
 - H4, 514463
 - H5, 514464
 - H6, 514465
 - H7, 514466
 - H8, 515434
 - H9, 515435
 - H10, 515436
 - H11, 515437
 - H12, 515438

Notes:
 WV 514460 coordinates are
 NAD 27 N: 328,582.21 E: 1,629,438.62
 NAD 27 Lat: 39.394727 Long: -80.811240
 NAD 83 UTM N: 4,360,607.42 E: 516,268.70
 WV 514460 Landing Point coordinates are
 NAD 27 N: 328,314.5 E: 1,629,313.18
 NAD 27 Lat: 39.393988 Long: -80.811670
 NAD 83 UTM N: 4,360,525.23 E: 516,231.84
 WV 514460 Bottom Hole coordinates are
 NAD 27 N: 315,359.95 E: 1,634,812.04
 NAD 27 Lat: 39.358642 Long: -80.791556
 NAD 83 UTM N: 4,356,606.58 E: 517,972.93

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.



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

Sub Surface Easements

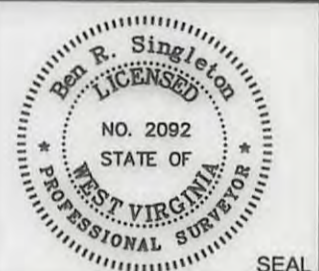
Parcel No.	Acres	Owner
05-18-9	100	Billy Joe Rayburn, et ux.
05-18-9	100	Lawrence Rayburn, et ux.
05-18-7.1	102.31	Brenda J. Ashley, et vir.
05-18-7.1	102.31	Patricia A. Keys

Lease No.	Acres	Owner
126167	43	Berdina Rose, et al.
126161	43	John A. Dillon, et al.
126211	145	John A. Dillon, et al.
190034	36	Paul Weekley
126186	36	Bruce L. Stoneking, et al.
126137	20	S.A. Smith & C. Burke Morris Trust, et al.
126152	20	Linda Sue Lamb, et al.
126133	40	Dorothy H. Bode
105456	96	Kimberly Wilcox
126177	138	Regina M. Buck, et al.



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.

Ben R. Singleton
 P.S. 2092



FILE NO: 208-13
 DRAWING NO: 208-13 SHR 60 H1
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1:2500
 PROVEN SOURCE OF ELEVATION: NGS CORS Station



DATE: April 10 20 17
 OPERATOR'S WELL NO.: WV 514460
 API WELL NO
 47 - 95 - 02257
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: As-Built 1,011' WATERSHED Morrison Run of McElroy Creek QUADRANGLE: Shirley
 DISTRICT: McElroy COUNTY: Tyler
 SURFACE OWNER: Vivian J. Wells, et al. ACREAGE: 35.38
 ROYALTY OWNER: George Birklein, et al. LEASE NO: 126101 ACREAGE: 240
 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: 6596

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

04/28/2017



April 11, 2017

Mr. Gene Smith
West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304

Re: Modification of API 47-09502264, 02256, 02257

Dear Mr. Smith,

Enclosed are forms WW6B, schematic, Mylar plat, and WW6A1 for the above API number. EQT would like to lengthen the lateral.

If you have any questions, please do not hesitate to contact me at (304) 848-0076.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Vicki Roark'.

Vicki Roark
Permitting Supervisor-WV

Enc.

RECEIVED
Office of Oil and Gas
APR 24 2017
WV Department of
Environmental Protection