



west virginia department of environmental protection

Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
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Jim Justice , Governor  
Austin Caperton , Cabinet Secretary  
www.dep.wv.gov

Tuesday, April 18, 2017  
WELL WORK PERMIT  
Horizontal 6A / New Drill

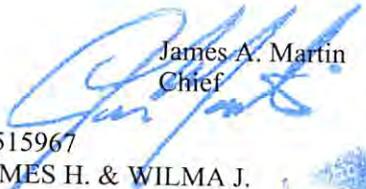
EQT PRODUCTION COMPANY (A)  
120 PROFESSIONAL PLACE  
BUILDING II  
BRIDGEPORT, WV 26330

Re: Permit approval for 515967  
47-085-10321-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless 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: 515967  
Farm Name: WILSON, JAMES H. & WILMA J.  
U.S. WELL NUMBER: 47-085-10321-00-00  
Horizontal 6A / New Drill  
Date Issued: 4/18/2017

Promoting a healthy environment.

04/21/2017

**PERMIT CONDITIONS** 4708510321

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

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**CONDITIONS**

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1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

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

1) Well Operator: EQT Production Company 306686 Ritchie Union Pullman  
Operator ID County District Quadrangle

2) Operator's Well Number: 515967 Well Pad Name: PUL96

3) Farm Name/Surface Owner: James H & Wilma J Wilson Public Road Access: Co Rt 7/4

4) Elevation, current ground: 1182.6 Elevation, proposed post-construction: 1182.6

5) Well Type (a) Gas  Oil  Underground Storage

Other \_\_\_\_\_

(b) If Gas Shallow  Deep

Horizontal

*Michael Hoff*  
*4/12/17*

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus, 6376', 54', 2190 PSI

8) Proposed Total Vertical Depth: 6376 *4700*

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 12335

11) Proposed Horizontal Leg Length: 5603

12) Approximate Fresh Water Strata Depths: 342,368,399,556

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

14) Approximate Saltwater Depths: None reported

15) Approximate Coal Seam Depths: None reported

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: \_\_\_\_\_

WW-6B  
(04/15)

API NO. 47-085  
OPERATOR WELL NO. 516957  
Well Pad Name: PUL96

18)

**CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20	New	A-500	78.6	40	40	60 ft <sup>3</sup> / CTS
Fresh Water	13 3/8	New	J-55	54.5	655	655	589 ft <sup>3</sup> / CTS
Coal							
Intermediate	9 5/8	New	A-500	40	2566	2566	1011 ft <sup>3</sup> / CTS
Production	5 1/2	New	P-110	20	12335	12335	600 above top producing zone
Tubing	2 3/8		J-55	4.7		May not be run if run out of above top perf or BOP instructions	
Liners							

MAG  
4/12/17

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20	26	.375	1378	1102	Class A	1.18
Fresh Water	13 3/8	17 1/2	.38	2700	2160	See Volume 2014-17	1.19
Coal							
Intermediate	9 5/8	12 3/8	.395	3950	3160	See Volume 2014-17	1.19
Production	5 1/2	8 1/2	.361	12640	10112	Class A/H	1.123/2.098
Tubing	2 3/8	NA	.19	7700			
Liners							

47000

**PACKERS**

Kind:				
Sizes:				
Depths Set:				

WW-6B  
(10/14)

470085-085

API NO. 47-085 -  
OPERATOR WELL NO. 515967  
Well Pad Name: PUL95

MAG  
4/12/17

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 5330'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

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 Disturbance

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

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 (Type 1 Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries  
Intermediate (Type 1 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 a gauge holes 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.

\*Note: Attach additional sheets as needed.

MDC  
4/12/17

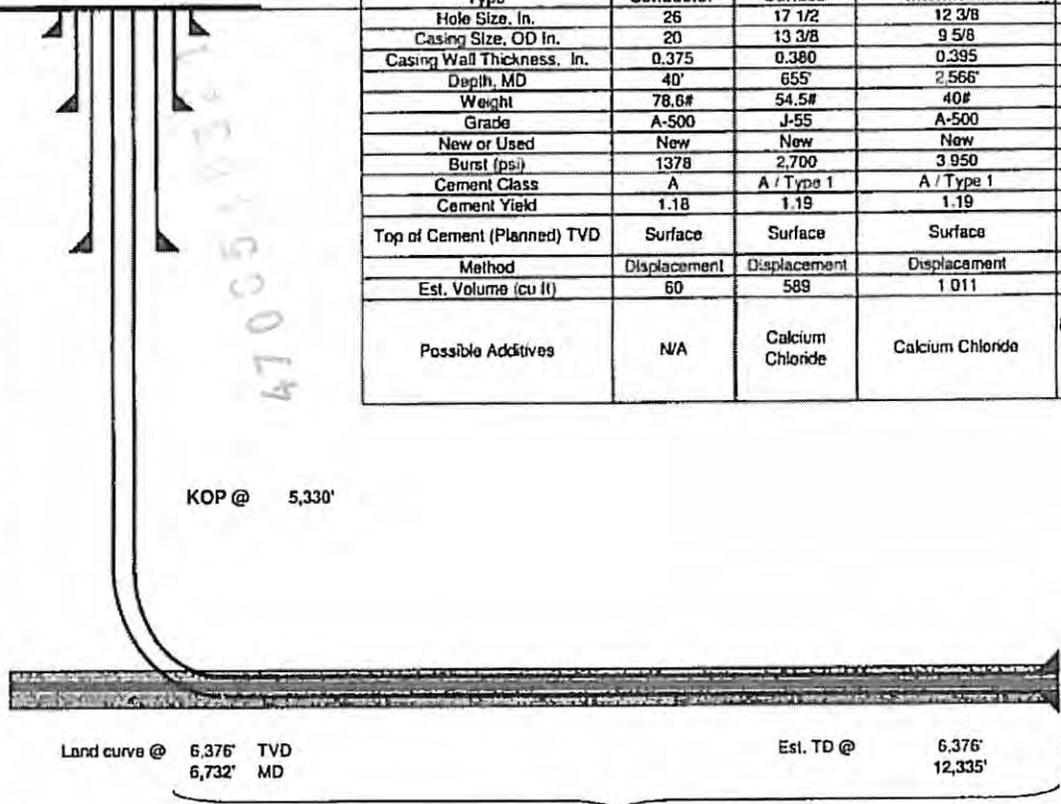
Well PUL96H8  
EQT Production  
Pullman Quad  
Ritchie County, WV

Azimuth 345  
Vertical Section 6061

Note: Diagram is not to scale

Formations	Top TVD	Base TVD
Conductor	40	
Base Fresh Water	556	
Surface Casing	655	
Base Red Rock	1208	
Maxton	1830 - 1870	
Big Lime	2050 - 2139	
Big Injun	2139 - 2204	
Weir	2447 - 2492	
Intermediate Casing	2566	
Gantz	2662 - 2685	
Fifty foot	2744 - 2778	
Thirty foot	2793 - 2814	
Gordon	2831 - 2891	
Forth Sand	2951 - 2959	
Bayard	3102 - 3133	
Warren	3503 - 3549	
Speechley	3613 - 3740	
Balltown A	3951 - 4002	
Riley	4598 - 4819	
Benson	4939 - 4979	
Alexander	5218 - 5243	
Sonyea	6099 - 6213	
Middlesex	6213 - 6285	
Genesee	6265 - 6313	
Genesee	6313 - 6340	
Tully	6340 - 6349	
Hamilton	6349 - 6352	
Marcellus	6352 - 6406	
Production Casing	12335 MD	
Onondaga	6406	

Casing and Cementing				Deepest Fresh Water: 556'
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	40'	655'	2,566'	12,335'
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) TVD	Surface	Surface	Surface	500' above top Producing Zone
Method	Displacement	Displacement	Displacement	Displacement
Est. Volume (cu ft)	60	589	1,011	2,350
Possible Additives	N/A	Calcium Chloride	Calcium Chloride	Calcium Carbonate, Fluid Loss Extender, Dispersant, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Setting/Suspension Agent



Land curve @ 6,376' TVD  
6,732' MD

Est. TD @ 6,376' TVD  
12,335' MD

5,603' Lateral

Proposed Well Work:  
Drill and complete a new horizontal well in the Marcellus formation.  
Drill the vertical to an approximate depth of 5330'.  
Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

**EQT Production**  
**Hydraulic Fracturing Monitoring Plan**  
**Pad ID: PUL96**  
**Ritchie County, WV**

**12/20/16**

47005-0321

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**Purpose**

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near EQT hydraulic fracturing in Ritchie County, WV prior to hydraulic fracturing at the following EQT wells on PUL96 pad: 515967.

Due to the requirements under 35CSR8 5.11, the permittee is required to review the area surrounding the proposed well pad so as to identify and evaluate potential conduits for unintended fracture propagation. A report is required to be submitted along with a well work permit application.

The plan is being implemented as an additional safety measure to be utilized in conjunction with existing best management practices and emergency action plans for the site. These additional measures include coordination with well operators of the timing and location of the hydraulic fracturing, establishment of measures well operators should implement, and assurance that the OOG is notified of the timeline, as well as any issues that may arise during fracturing.

**1. Communications with Well Operators**

EQT, using available data (WV Geological Survey, WVDEP website, and IHS data service), has identified all known wells and well operators within 1,500 feet of this pad and the lateral sections that are known or could reasonably be expected to be within range of the fracture propagation. A map showing these wells along with a list of the wells and operators is included in **Attachment A**.

EQT will notify these operators of the hydraulic fracturing schedule for these wells, and coordinate with them throughout the fracturing process.

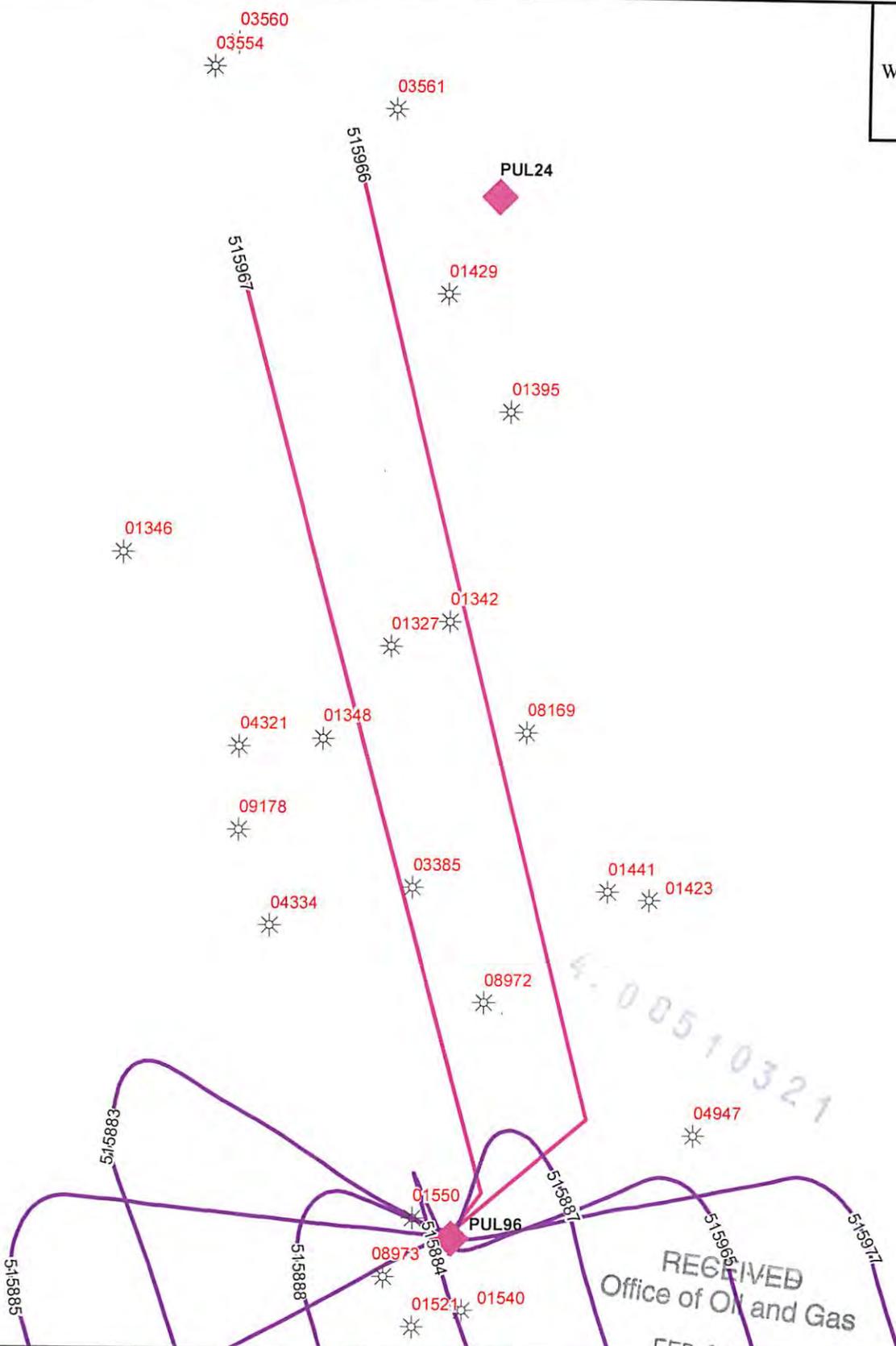
EQT will recommend to these operators at a minimum to:

1. Inspect their surface equipment prior to fracturing to establish integrity and establish pre-frac well conditions
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas or pressure
3. Inspect or install master valves or other necessary equipment for wellhead integrity capable of a pressure recommended by EQT
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified

**2. Reporting**

EQT will provide information relating to the hydraulic fracturing schedule, communication with other operators, and ongoing monitoring of the work upon request of OOG or immediately in the event of any noted abnormalities.

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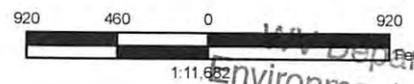
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**EQT**  
EQT Corporation  
625 Liberty Avenue  
Pittsburgh, PA 15222  
Pul96-515967

### Vertical Offsets and Foreign Laterals within 1500'

- Legend
- PUL96 515967 Vertical Offsets
  - Genesee Spud
  - Marcellus Spud
  - Middlesex Spud
  - Utica Spud
  - GENESE
  - MARCELLUS
  - MIDDLESEX
  - POINT PLEASANT
  - UTICA



**Disclaimer:**

This map is confidential and is to be used only for the express informational purposes for which it was created. Unauthorized use, copying, or dissemination is strictly prohibited. EQT does not warrant the accuracy of the location of any items shown on this map, including, but not limited to, any structures, well or pipeline facilities, property boundaries, topography, roadways, or waterways. The items shown on the map may not have been placed on the map using survey lines or GPS coordinates. The specific location of any of the map items should be determined by a field survey performed by a licensed surveyor upon consultation with EQT.



UWI	ABAND_DATE	COMP_DATE	CURR_OPER	ELEVATION	ELEV_RE_CD	FNL_STAT	IC_NUM	LATITUDE	LONGITUDE	OPER_NAME	PERMIT_DT	PROJ_FM_NM	PROJ_TO	SPUD_DATE	TD_FORM_NM	TOT_DEPTH	Permit#
47085013460000		10/1/1950	RICHARDS CONNARD W & JAMES E	849 GR	D&A		39.2229	-80.9834	RICHARDS CONNARD W & JAMES E	8/17/1950	0	0	9/1/1950	SQUAW /SD/	1840	01346	
47085013480000		11/1/1950	RICHARDS CONNARD W & JAMES E	874 GR	GAS		39.2197	-80.9849	RICHARDS CONNARD W & JAMES E	9/17/1950	0	0	10/7/1950	SQUAW /SD/	1879	01348	
47085013550000	2/5/1951	5/1/1952	APPLIED MECHANICS	1211 GR	GAS		39.2253	-80.9863	MOSSOR OIL & GAS	9/10/1952	0	0	4/1/1952	KEENER /SD/	2039	01395	
47085014270000		10/18/1952	EQT PRODUCTION COMPANY	1087 GR	GAS		39.2171	-80.9826	BURGY P O	2/15/1953	0	0	9/25/1952	POCONO	2086	01429	
47085014410000		4/1/1953	APPLIED MECHANICS	1180 GR	GAS		39.2095	-80.9869	RICHARDS CONNARD W & JAMES E	4/17/1954	0	0	3/2/1953	BIG INIUM /SD/	2181	01441	
47085033600000		6/17/1954	EQT PRODUCTION COMPANY	1066 GR	GAS		39.2316	-80.9910	BLAUSER WELL SERVICE	9/21/1974	2000	2000	10/1/1974	MISSISSIPPIAN	2114	03560	
47085033610000		12/2/1974	LUCAS WELL SERVICE INCORPORATED	988 GR	GAS		39.2305	-80.9875	BLAUSER WELL SERVICE	9/12/1974	2000	2000	9/22/1974	MISSISSIPPIAN	2026	03561	
47085049470000		1/6/1975	LUCAS WELL SERVICE INCORPORATED	996 GR	GAS		39.2195	-80.9808	HAUGHT G L & SONS	7/15/1979	1950	1950	7/25/1979	MISSISSIPPIAN	1990	04371	
47085013420000		8/27/1979	DEEM J F OIL & GAS LLC	848 GR	GAS		39.2164	-80.9901	HAUGHT G L & SONS	8/28/1979	2260	2260	9/7/1979	MISSISSIPPIAN	2575	04334	
47085014230000		11/7/1980	ABARTA OIL & GAS COMPANY INCORPORATED	1163 GR	GAS		39.2128	-80.9807	CHASE PETROLEUM COMPANY	10/14/1980	5550	5550	10/24/1980	DEVONIAN /SH/	5459	04947	
47085013270000		9/1/1952	ELDER H H & SON	932 GR	GAS		39.2217	-80.9862	MOSSOR OIL & GAS	7/18/1950	0	0	8/2/1950		1948	01342	
47085035540000		11/1/1974	LUCAS WELL SERVICE INCORPORATED	1190 GR	GAS		39.2169	-80.9917	HECK & WOODFORD	7/18/1952	1850	1850	8/2/1952	BIG INIUM /SD/	2220	01423	
47085015400000		7/1/1950	APPLIED MECHANICS	824 GR	OIL		39.2313	-80.9916	BLAUSER WELL SERVICE	8/22/1974	1850	1850	9/1/1974	MISSISSIPPIAN	1878	03554	
47085033850000		10/1/1954	APPLIED MECHANICS	1155 GR	GAS		39.2098	-80.9875	GOOSE RUN GAS	5/17/1950	0	0	6/1/1950	MAXTON	1588	03554	
47085081690000		12/1/1954	EQT PRODUCTION COMPANY	1151 GR	GAS		39.2114	-80.9869	RICHARDS OIL & GAS	8/17/1954	0	0	9/1/1954	KEENER /SD/	2090	01540	
47085087200000		2/1/1971	DREEM J F OIL & GAS LLC	920 GR	GAS		39.2171	-80.9870	FERRELL WILLARD E	10/17/1954	0	0	11/1/1954		2089	01540	
47085089730000		10/1/1993	ENERGY CORPORATION OF AMERICA INC	1159 KB	GAS		39.2198	-80.9844	EASTERN AMERICAN ENERGY CORPORATION	7/29/1970	5400	5400	8/4/1970	SQUAW /SD/	1925	03385	
47085097200000		1/21/2004	STALMAKER ENERGY CORPORATION	1009 KB	GAS		39.2151	-80.9854	STALMAKER ENERGY CORPORATION	9/4/1993	5600	5600	9/14/1993	DEVONIAN /SH/	5434	08169	
47085097200000		1/9/2004	STALMAKER ENERGY CORPORATION	1178 KB	GAS		39.2104	-80.9875	STALMAKER ENERGY CORPORATION	8/26/2003	5600	5600	1/9/2004	DEVONIAN /SH/	5164	08972	
47085091780000		8/5/2005	STALMAKER ENERGY CORPORATION	1103 KB	GAS		39.2181	-80.9908	STALMAKER ENERGY CORPORATION	9/27/2003	5300	5300	12/17/2003	DEVONIAN /SH/	5353	08973	
										5/31/2005	5300	5300	7/20/2005	DEVONIAN	5337	09178	

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UWI	Name	Depth Top	Base Depth
47085049470000	BIG LIME	2002	2030
47085049470000	RILEY /SD/	4482	4552
47085049470000	BENSON /SD/	4834	4902
47085049470000	ALEXANDER	5158	5194
47085033850000	BIG LIME	1738	1806
47085033850000	BIG INJUN /SD/	1828	1878
47085033850000	SQUAW /SD/	1878	1905
47085081690000	BIG LIME	2077	2094
47085081690000	BIG INJUN /SD/	2094	2166
47085081690000	WEIR /SD/	2406	2488
47085081690000	WARREN /SD/	3476	3538
47085081690000	RILEY /SD/	4580	4614
47085081690000	RILEY 3	4760	4786
47085081690000	BENSON /SD/	4927	4964
47085081690000	ALEXANDER	5163	5228
47085091780000	BIG LIME	1946	
47085091780000	BIG INJUN	1992	
47085091780000	WEIR /SD/	2351	
47085091780000	WARREN /SD/	3404	
47085091780000	BALLTOWN	3871	
47085091780000	RILEY /SD/	4479	
47085091780000	BENSON /SD/	4850	
47085091780000	ALEXANDER	5090	
47085035540000	BIG LIME	1700	1748
47085035540000	BIG INJUN /SD/	1748	1852
47085089720000	BIG LIME	1846	1922
47085089720000	BIG INJUN	1922	2006
47085089720000	WEIR /SD/	2239	2327
47085089720000	WARREN /SD/	3291	3378
47085089720000	BALLTOWN	3566	4263
47085089720000	RILEY /SD/	4382	4450
47085089720000	BENSON /SD/	4758	4766
47085089720000	ALEXANDER	4990	5060
47085035610000	BIG LIME	1830	1870
47085035610000	BIG INJUN /SD/	1870	1990
47085035600000	BIG LIME	1910	1930
47085035600000	BIG INJUN /SD/	1930	2100
47085043210000	BIG LIME	1721	1785
47085043210000	BIG INJUN /SD/	1785	1870
47085043340000	BIG LIME	2030	2114
47085043340000	BIG INJUN /SD/	2114	2206
47085043340000	WEIR /SD/	2420	2495
47085089730000	BIG LIME	2024	
47085089730000	BIG INJUN	2064	
47085089730000	WEIR /SD/	2392	
47085089730000	WARREN /SD/	3456	

\*Perforated Formations

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04/21/2017

47085089730000	SPEECHLEY	3568
47085089730000	BALLTOWN	3923
47085089730000	RILEY /SD/	4551
47085089730000	RILEY 3	4821
47085089730000	BENSON /SD/	4924
47085089730000	ALEXANDER	5158

470850321

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Environmental Protection

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west virginia department of environmental protection

Office of Oil and Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
(304) 926-0450  
(304) 926-0452 fax

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
dep.wv.gov

March 18, 2014

Nabors Completion & Production Services Company  
1380 Route 286 Hwy E #121  
Indiana PA 15701

4708510321

Re: Cement Variance Request

Dear Sir or Madam,

This agency is approving a variance request for the cement blend listed below to be used on surface and coal protection strings for the drilling of oil and gas wells in the state of West Virginia. The variance cannot be used without requesting its use on a permit application and approval by this agency:

- Type 1 (2% Calcium Chloride-Accelerator, 0.25% Super Flake-Lost Circulation, 5.2% Water, 94% Type "1" Cement)

If you have any questions regarding this matter feel free to contact me at 304-926-0499, ext. 1653.

Sincerely,

James Peterson  
Environmental Resources Specialist / Permitting

Promoting a healthy environment.

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west virginia department of environmental protection

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Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
dep.wv.gov

**BEFORE THE OFFICE OF OIL AND GAS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
STATE OF WEST VIRGINIA**

**IN THE MATTER OF A VARIANCE FROM ) ORDER NO. 2014 - 17**  
**REGULATION 35 CSR § 4-11.4/11.5/14.1 )**  
**AND 35 CSR § 8-9.2.h. 4/5/6/8 OF THE )**  
**THE OPERATIONAL )**  
**REGULATIONS OF CEMENTING OIL )**  
**AND GAS WELLS )**

**REPORT OF THE OFFICE**

4708510321

Nabors Completion & Production Services Co. requests approval of a different cement blend for use in cementing surface and coal protection casing of oil and gas wells.

**FINDINGS OF FACT**

1.) Nabors Completion & Production Services Co. proposes the following cement blend:

- 2% Calcium Chloride (Accelerator)
- 0.25 % Super Flake (Lost Circulation)
- 94% Type "1" Cement
- 5.20 % Water

2.) Laboratory testing results indicate that the blend listed in Fact No.1 will achieve a 500 psi compressive strength within 6 hours and a 2,435 psi compressive strength within 24 hours.

Promoting a healthy environment.

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WV DEPARTMENT OF ENVIRONMENTAL PROTECTION

04/21/2017

47085  
**CONCLUSIONS OF LAW**

Pursuant to Articles 6 and 6A, Chapter 22 of the Code of West Virginia, the Office of Oil and Gas has jurisdiction over the subject matter embraced in said notice, and the persons interested therein, and jurisdiction to promulgate the hereinafter prescribed Order.

Pursuant to 35 CSR § 4-11.5 and 35 CSR § 8-9.2.h.8 the Chief of the Office of Oil and Gas may approve different cement blends upon the well operator providing satisfactory proof that different cement types are adequate.

**ORDER**

It is ordered that Nabors Completion & Production Services Co. may use the cement blend listed in Findings of Fact No.1 for the cementing of surface and coal protection casing of oil and gas wells in the State as may be requested by oil and gas operators. The waiting time on the cement blend shall be 8 hours. The cement blend shall be mixed in strict accordance with the specifications for each blend and weight measurements made on-site to assure the cement slurries meet the minimum weight specifications. A sample shall be collected and, if after 8 hours the cement is not set up, additional time will be required. Nabors Completion & Production Services Co. shall keep a record of cement blend jobs in which the cement blend approved under this order is to be used and made available to the Office of Oil and Gas upon request.

Dated this, the 18th day of March, 2014.

IN THE NAME OF THE STATE OF WEST VIRGINIA

OFFICE OF OIL AND GAS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OF THE STATE OF WEST VIRGINIA

  
\_\_\_\_\_  
James Martin, Chief  
Office of Oil and Gas

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FEB 02 2017  
WV Department of  
Environmental Protection

04/21/2017

WW-9  
(2/15)

API Number 47 - 085 - \_\_\_\_\_  
Operator's Well No. 515967

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

4700510321

Operator Name EQT Production Company OP Code 308686

Watershed (HUC 10) Goose Run of Rockcamp Run Quadrangle Pulman

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: Flowback water and residual solids

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? 60

MAG  
4/12/17

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number 0014, 8462, 4037 )
- Reuse (at API Number Various )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

Will closed loop system be used? If so, describe: Yes. The closed loop system will remove drill cuttings from the drilling fluid. The drill cuttings are then prepared for transportation to an off-site disposal facility. \_\_\_\_\_

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. See Attached

-If oil based, what type? Synthetic, petroleum, etc. Synthetic Mud

Additives to be used in drilling medium? See Attached

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? See Attached List

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature \_\_\_\_\_

Company Official (Typed Name) Victoria J. Roark

Company Official Title Permitting Supervisor

Subscribed and sworn before me this 25 day of January, 20 17

Rebecca L. Wainstreet Notary Public

My commission expires 4-7-2020



04/21/2017

**EQT Production Company**

Proposed Revegetation Treatment: Acres Disturbed no additional Prevegetation pH 6.5

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type Granular 10-20-20

Fertilizer amount 1/3 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

4700010001

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY-31	40	Orchard Grass	15
Alsike Clover	5	Alsike Clover	5
Annual Rye	15		

Attach:  
Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Michael Hoff

Comments: Presseed & mulch any disturbed areas per WVDEP regulations. Maintain & upgrade F-r-s as necessary.

Title: Oil & Gas Inspector Date: 4/12/2017

Field Reviewed?  Yes  No

WW-9 Attachment

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.

- Air is used to drill the top-hole sections of the wellbore (surface, intermediate, and pilot). Water based mud may be necessary depending on hole conditions to stabilize and drill the intermediate section. The pilot hole, curve, and lateral sections will be drilled with either air, water based mud, or oil based mud.

Additives to be used in drilling medium?

- Air - biodegradable oil lubricant, detergent, defoaming, water. Water based mud – Barite, viscosifer, alkalinity control, lime, filtration control, deflocculates, biodegradable oil lubricant, defoaming, walnut shell, salt, x-cide, carbonates. Oil based mud – synthetic base oil, emulsifier, salt, lime, viscosifer, alkalinity control, filtration control, deflocculates, biodegradable oil lubricant, defoaming, carbonates.

47006

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Environmental Protection

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**EQT Production Water plan**  
**Offsite disposals for Marcellus wells**

**CWS TRUCKING INC.**

P.O. Box 391  
Williamstown, WV 26187  
740-516-3586  
Noble County/Noble Township  
Permit # 3390

**BROAD STREET ENERGY LLC**

37 West Broad Street  
Suite 1100  
Columbus, Ohio 43215  
740-516-5381  
Washington County/Belpre Twp.  
Permit # 8462

**LAD LIQUID ASSETS DISPOSAL INC.**

226 Rankin Road  
Washington, PA 15301  
724-350-2760  
724-222-6080  
724-229-7034 fax  
Ohio County/Wheeling  
Permit # USEPA WV 0014

**TRIAD ENERGY**

P.O. Box 430  
Reno, OH 45773  
740-516-6021 Well  
740-374-2940 Reno Office Jennifer  
Nobel County/Jackson Township  
Permit # 4037

**TRI COUNTY WASTE WATER MANAGEMENT, INC.**

1487 Toms Run Road  
Holbrook, PA 15341  
724-627-7178 Plant  
724-499-5647 Office  
Greene County/Waynesburg  
Permit # TC-1009

**KING EXCAVATING CO.**

Advanced Waste Services  
101 River Park Drive  
New Castle, Pa. 16101  
Facility Permit# PAR000029132

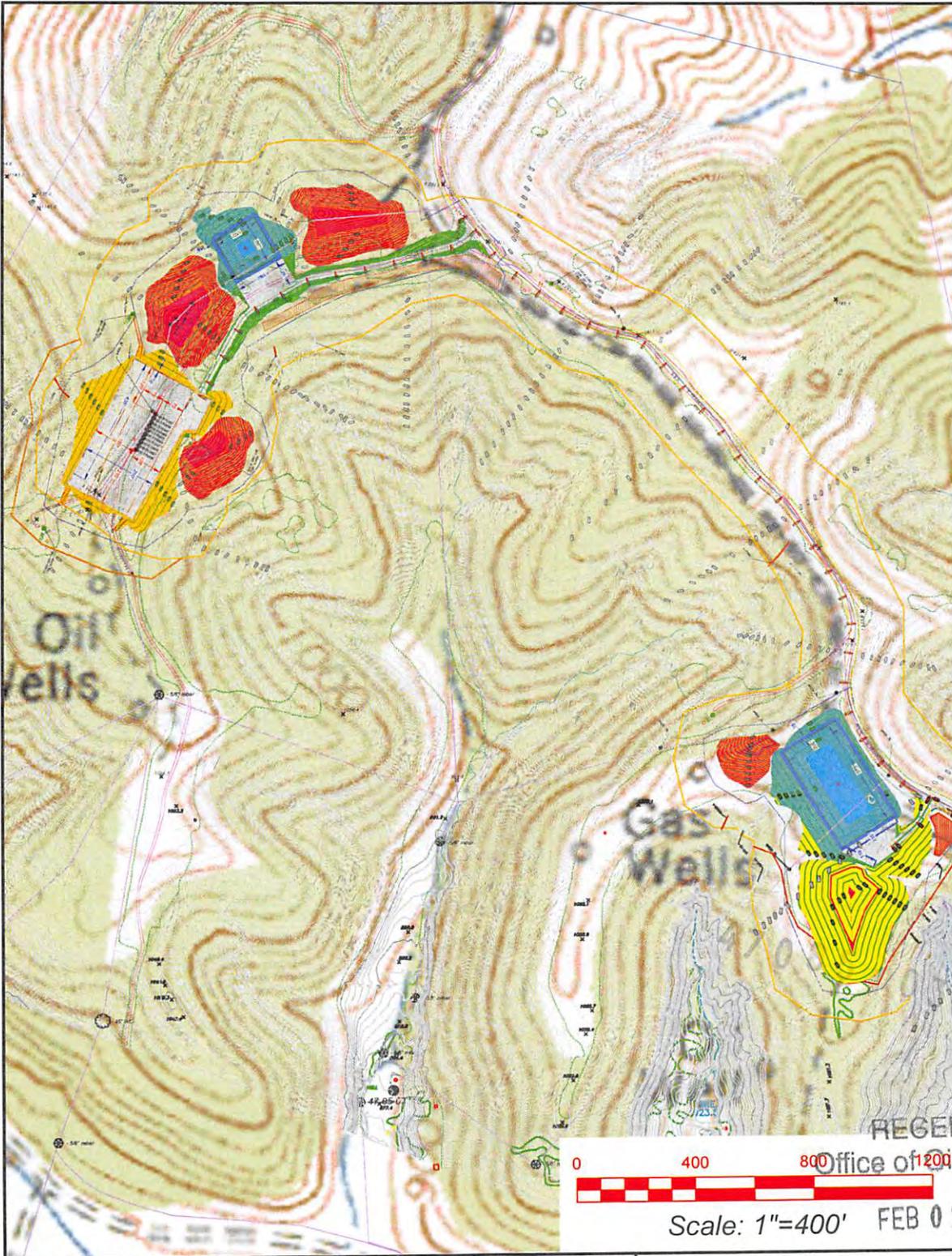
**Waste Management - Meadowfill Landfill**

Rt. 2, Box 68 Dawson Drive  
Bridgeport, WV 26330  
304-326-6027  
Permit #SWF-1032-98  
Approval #100785WV

47005-1050

**Waste Management - Northwestern Landfill**

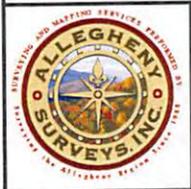
512 E. Dry Road  
Parkersburg, WV 26104  
304-428-0602  
Permit #SWF-1025 WV-0109400  
Approval #100833WV



Pullman 7.5' USGS QUADRANGLE		Proposed Disturbance Area	
Projected culvert inventory. (for bid purposes only)		Well Site Location	See Site Plan
15" minimum diameter culverts	See Site Plan	Proposed Access Road	See Site Plan
24" minimum diameter culverts	See Site Plan	Approximate Total Disturbance	See Site Plan
DRAWN BY: Dwayne A. Hall, PS	DATE: April 11, 2016	FILE NO: 243-14	DRAWING FILE NO: 243-14 Rec Plan

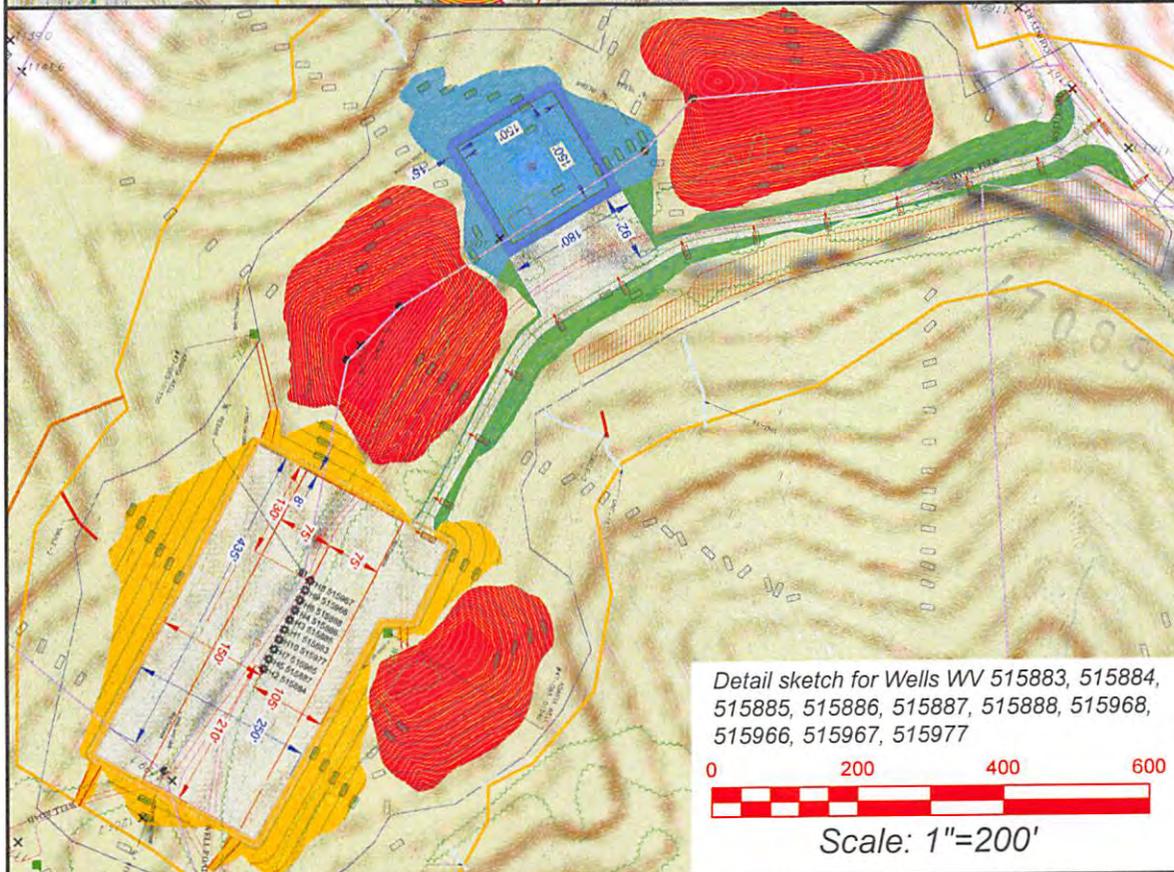
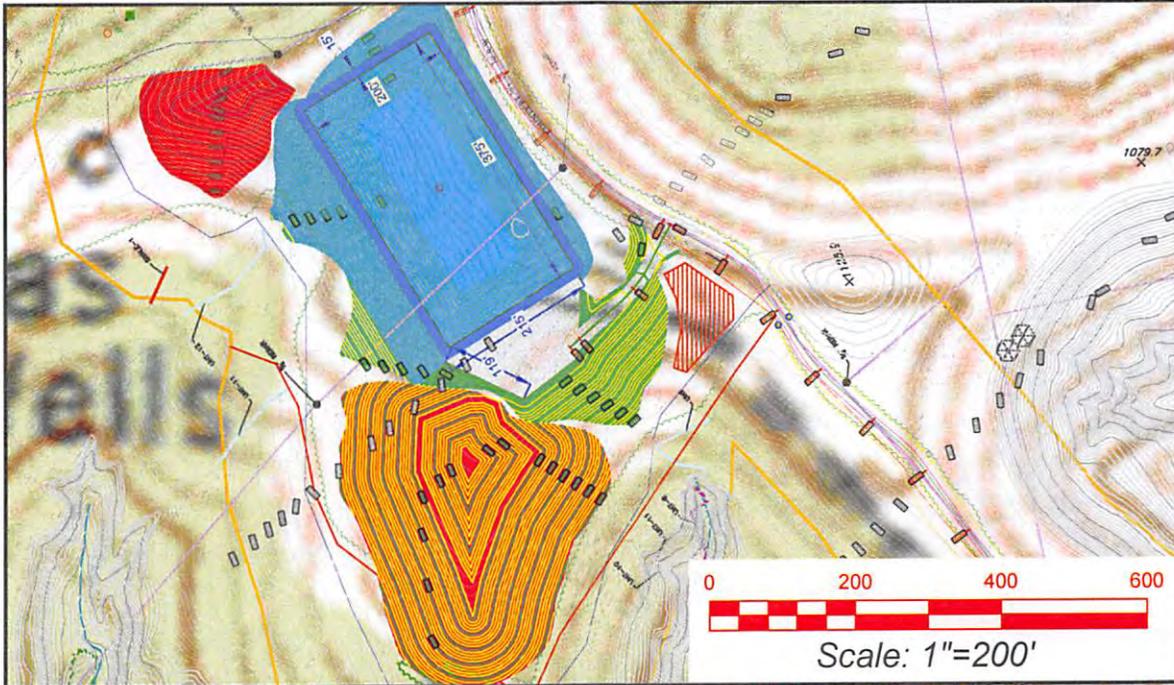
Note: SEE SITE PLAN OF PULLMAN 96 FOR COMPLETE GRADING, DRAINAGE CONSTRUCTION INCLUDING EROSION & SEDIMENT CONTROL DETAILS, ETC.

WV Department of Oil and Gas  
Environmental Protection



SURVEYING AND MAPPING SERVICES PERFORMED BY:  
**ALLEGHENY SURVEYS, INC.**  
1-800-482-8606  
Birch River Office  
Phone: (304) 649-8606  
Fax: (304) 649-8608  
237 Birch River Road  
P.O. Box 438  
Birch River, WV 26610

04/21/2017



Detail sketch for Wells WV 515883, 515884, 515885, 515886, 515887, 515888, 515968, 515966, 515967, 515977

Pullman 7.5' USGS QUADRANGLE		Proposed Disturbance Area	
Projected culvert inventory (for bid purposes only)		Well Site Location	See Site Plan
15" minimum diameter culverts	See Site Plan	Proposed Access Road	See Site Plan
24" minimum diameter culverts	See Site Plan	Approximate Total Disturbance	See Site Plan
DRAWN BY: Dwayne A. Hall, PS	DATE: April 11, 2016	FILE NO: 243-14	DRAWING FILE NO: 243-14 Rec Plan

Note: SEE SITE PLAN OF PULLMAN 96 FOR COMPLETE GRADING & DRAINAGE CONSTRUCTION INCLUDING EROSION & SEDIMENT CONTROL DETAILS, ETC.



SURVEYING AND MAPPING SERVICES PERFORMED BY:  
**ALLEGHENY SURVEYS, INC.**  
 1-800-482-8606  
 Birch River Office 237 Birch River Road  
 Phone: (304) 649-8606 P.O. Box 438  
 Fax: (304) 649-8608 Birch River, WV 26610

04/21/2017



Where energy meets innovation.™

# Site Specific Safety Plan

EQT PUL96 Pad

4708510321

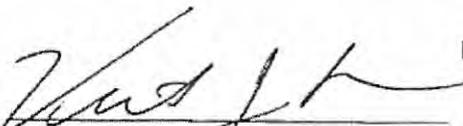
Pullman  
Ritchie County, WV

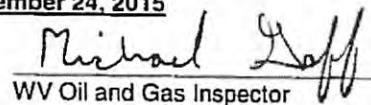
For Wells:

515967

Date Prepared:

November 24, 2015

  
EQT Production

  
WV Oil and Gas Inspector

Permitting Supervisor  
Title

Title

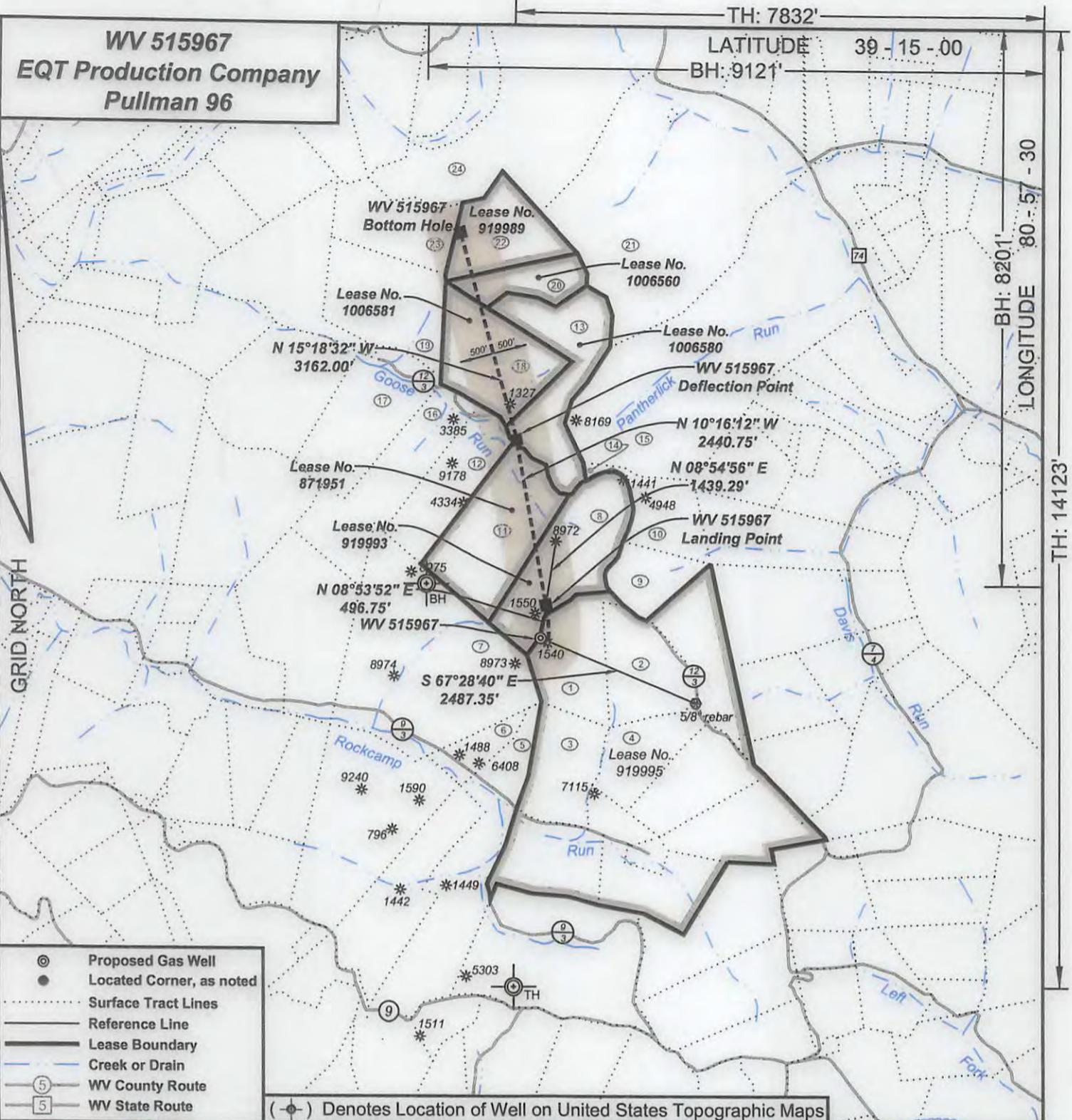
1-25-17  
Date

4/12/17  
Date

**WV 515967**  
**EQT Production Company**  
**Pullman 96**

TH: 7832'  
 LATITUDE 39 - 15 - 00  
 BH: 9121'

BH: 8201'  
 LONGITUDE 80 - 57 - 30  
 TH: 14123'



- ⊙ Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Reference Line
- Lease Boundary
- Creek or Drain
- ⑤ WV County Route
- 5 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.*

*Dwayne A. Hall*  
 P.S. 2089SU



FILE NO: 243-14  
 DRAWING NO: 243-14 Pullman 96 H8.dwg  
 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**

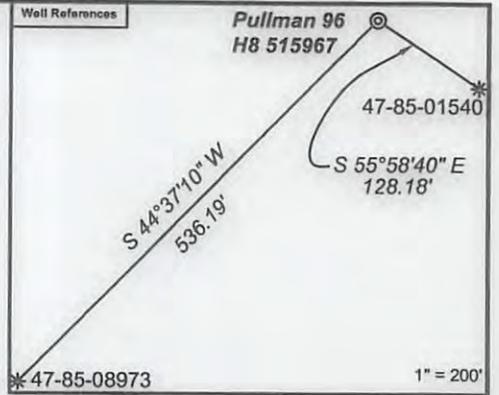
DATE: December 21 20 16  
 OPERATOR'S WELL NO. 515967  
 API WELL NO  
 47 - 85 - 10321 H6A  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: As-Built 1182.6' WATERSHED Goose Run of Rockcamp Run QUADRANGLE: Pullman  
 DISTRICT: Union COUNTY: Ritchie  
 SURFACE OWNER: James H. & Wilma J. Wilson ACREAGE: 46.089  
 ROYALTY OWNER: Laurie Ann Haddox, et al LEASE NO: 919995 ACREAGE: 360  
 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: 6,376  
 WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray  
 ADDRESS: PO Box 280 / 115 Professional Place ADDRESS: PO Box 280 / 115 Professional Place  
 Bridgeport, WV 26330 Bridgeport, WV 26330

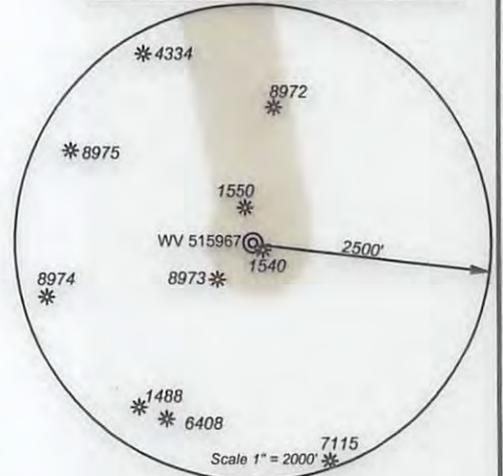
04/21/2017

**WV 515967**  
**EQT Production Company**  
**Pullman 96**

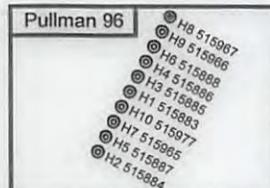
Tract I.D.	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	7	8.4	Ritchie	Union	Wilma J. Wilson	40.09
2	7	8.3	Ritchie	Union	James D. Wilson	39.87
3	7	8.5	Ritchie	Union	Robert & Oleta Jane Wilson	37.23
4	7	8.2	Ritchie	Union	Ian David Wilson	30.10
5	7	11.0	Ritchie	Union	Arnold K. Richards (Life)	43.84
6	7	6.0	Ritchie	Union	Eva L. Riffle	14.75
7	7	5.0	Ritchie	Union	Jean W. Moore	134.70
8	7	4.0	Ritchie	Union	James D. Wilson, et al.	63.00
9	39	10.0	Ritchie	Clay	Charlie Ray & Lori Ann Amos	24.64
10	39	10.1	Ritchie	Clay	Pierce Okla & Suzanne Denise Amos	25.36
11	7	3.0	Ritchie	Union	Earl Wilson Jr., et al.	61.00
12	7	2.1	Ritchie	Union	Michael W. Elder	46.20
13	35	39.0	Ritchie	Clay	Chester D. Riddle, et al.	49.50
14	7	17.0	Ritchie	Union	Max D. & Laura B. Dodd	1.00
15	35	40.0	Ritchie	Clay	Max D. & Laura B. Dodd	211.60
16	7	2.0	Ritchie	Union	Michael W. Elder	66.00
17	7	1.0	Ritchie	Union	Randall K. Woods	55.20
18	35	39.1	Ritchie	Clay	Chester D. Riddle, et al.	47.50
19	35	38.0	Ritchie	Clay	James L. Crouse, et al.	50.00
20	35	39.2	Ritchie	Clay	Howard E. Todd	22.50
21	35	31.0	Ritchie	Clay	Max D. & Laura B. Dodd	93.33
22	35	30.0	Ritchie	Clay	Hothem Family Properties LP	38.75
23	35	29.0	Ritchie	Clay	James L. Crouse, et al.	38.50
24	35	14.0	Ritchie	Clay	Earl Wilson Jr., et al.	293.36



**Notes:**  
WV 515967 coordinates are  
NAD 27 N: 262,524.85 E: 1,578,957.28  
NAD 27 Lat: 39.211225 Long: -80.985973  
NAD 83 UTM N: 4,340,225.95 E: 501,225.56  
WV 515967 Landing Point coordinates are  
NAD 27 N: 263,015.63 E: 1,579,034.11  
NAD 27 Lat: 39.212576 Long: -80.985730  
NAD 83 UTM N: 4,340,375.85 E: 501,246.47  
WV 515967 Deflection Point coordinates are  
NAD 27 N: 265,417.28 E: 1,578,598.96  
NAD 27 Lat: 39.219149 Long: -80.987406  
NAD 83 UTM N: 4,341,105.28 E: 501,101.68  
WV 515967 Bottom Hole coordinates are  
NAD 27 N: 268,467.08 E: 1,577,764.12  
NAD 27 Lat: 39.227483 Long: -80.990531  
NAD 83 UTM N: 4,342,030.14 E: 500,831.83  
West Virginia Coordinate system of 1927 (North Zone).  
Geographic coordinates are NAD27.  
UTM coordinates are NAD83, Zone 17, Meters.  
Plat orientation, corner and well ties are based upon the grid north meridian.  
Well location references are based upon the grid north meridian.



- ⊙ Proposed Gas Well
- Located Corner, as noted
- ..... Surface Tract Lines
- Reference Line
- Lease Boundary
- Creek or Drain
- ⑤ WV County Route
- ⑤ WV State Route

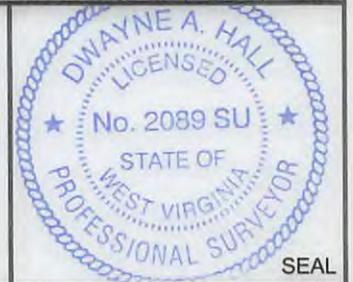


Lease No.	Name	Acres
919993	Ian David Wilson, et al.	63
1006580	Eagle Ridge L.P., et al.	49.5
1006581	Eagle Ridge L.P., et al.	47.5
1006560	E. Howard Todd	22.5
919989	Sandra Kay Reed, et al.	38
871951	Leslie Randall Elder, et al.	61



*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.*

*Dwayne A. Hall*  
**P.S. 2089SU**



FILE NO: 243-14  
DRAWING NO: 243-14 Pullman 96 H8.dwg  
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: December 21 20 16  
OPERATOR'S WELL NO. 515967  
API WELL NO  
47 - 85 - 10321  
STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
(IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
LOCATION: ELEVATION: As-Built 1182.6' WATERSHED Goose Run of Rockcamp Run QUADRANGLE: Pullman  
DISTRICT: Union COUNTY: Ritchie  
SURFACE OWNER: James H. & Wilma J. Wilson ACREAGE: 40.089  
ROYALTY OWNER: Laurie Ann Haddox, et al LEASE NO: 919995 ACREAGE: 360  
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: 6,376

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

04/21/2017

**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
----------------------	-----------------------	-----------------------	---------	-----------

See Attached

*Faint handwritten text or stamp, possibly "515967"*

**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

**RECEIVED  
Office of Oil and Gas**

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 affirmations needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

**FEB 02 2017  
WV Department of  
Environmental Protection**

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

Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>919995</u>	<u>Laurie Ann Haddox, et al (royalty owner)</u>		**	
	James A. Wilson, et ux (original lessor)	R. W. Richards		LB79/542
	R. W. Richards	J. E. Richards and C. W. Richards		LB80/78
	J. E. Richards and C. W. Richards	Bolyard Oil & Gas, LTD		LB169/136
	Bolyard Oil & Gas, LTD	Sheffield Exploration Co.		LB189/521
	Sheffield Exploration Co.	M. S. Oil Co. (69.513% of working interest) and Applied Mechanics Corp. (30.487% of working interest)		LB208/268
	M. S. Oil Co. (69.513%)	Applied Mechanics, et al		LB222/836
	Applied Mechanics, et al	FS Limited Partnership		AB274/80
	FS Limited Partnership	EQT Production Co.		AB274/102
<u>919993</u>	<u>Ian David Wilson, et al (royalty owner)</u>		**	
	Effie E. Wilson and James Wilson (original lessor)	J.E. Richards		LB79/346
	J.E. Richards	J. E. Richards and C.W. Richards		LB79/407
	J.E. Richards and C.W. Richards	P.O. Burgy, B.S. Marshall, L.B. Burgy & Rollo Riggs		LB81/279
	P.O. Burgy, B.S. Marshall, L.B. Burgy & Rollo Riggs	J. E. Richards and C.W. Richards		LB123/303
	J. E. Richards and C.W. Richards	Applied Mechanics, et al		LB206/8
	Applied Mechanics, et al	FS Limited Partnership		AB274/80
	FS Limited Partnership	EQT Production Co.		AB274/102
<u>871951</u>	<u>Leslie Randall Elder, et al. (current royalty owner)</u>		**	
	Penn Resources, Inc.	Seco Oil & Gas, Inc.		LB138/378
	Seco Oil & Gas, Inc.	Walter C. Crane & Carroll W. Thompson, d/b/a North Hills Investment Company		LB 208/296
	Walter C. Crane & Carroll W. Thompson, d/b/a North Hills Investment Company	Ronald D. Six & Barbara J. Six		LB 208/761
	Ronald D. Six & Barbara J. Six	Apple Corporation		LB 209/763
	Apple Corporation	Trans Energy, Inc.		LB 224/575
	Trans Energy, Inc.	EQT Corporation		see attached
<u>1006580</u>	Eagle Ridge L.P., et al.	EQT Production Company	**	LB285/155
<u>1006581</u>	Eagle Ridge L.P., et al.	EQT Production Company	**	LB285/157
<u>1006560</u>	E. Howard Todd	EQT Production Company	**	LB283/945
<u>919989</u>	<u>Sandra Kay Reed, et al (current royalty owner)</u>		**	
	Barr Wilson, et al (original lessor)	W. H. Mossor		LB 81/120
	W.H. Mossor	Term Energy Corporation		LB132/314
	Term Energy Corporation	Sun Pantry Enterprises, Inc		158/831
	Sun Pantry Enterprises, Inc	Applied Mechanics Corporation, et al		222/830
	Applied Mechanics Corporation, et al	FS Limited Partnership		274/80
	FS Limited Partnership	EQT Production Company		LB274/102

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\*\* We will pay a minimum one-eighth of the total amount paid to or received by or allowed to the owner of the working interest at the wellhead for the oil or gas so extracted, produced, or marketed before deducting the amount to be paid to or set aside for the owner of the oil or gas in place, on all such oil or gas to be extracted, produced, or marketed from the well.

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**AGREEMENT AND PLAN OF MERGER**

by and among

TRANS ENERGY, INC.

EQT CORPORATION

and

WV MERGER SUB, INC.

Dated as of October 24, 2016

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## AGREEMENT AND PLAN OF MERGER

This AGREEMENT AND PLAN OF MERGER (this "Agreement"), dated as of October 24, 2016, is by and among Trans Energy, Inc., a Nevada corporation (the "Company"), EQT Corporation, a Pennsylvania corporation ("Parent"), and WV Merger Sub, Inc., a Nevada corporation and a wholly owned subsidiary of Parent ("Purchaser").

### RECITALS

WHEREAS, subject to the terms hereof, the respective Boards of Directors of the Company, Parent and Purchaser have approved the acquisition of the Company by Parent on the terms and subject to the conditions set forth in this Agreement;

WHEREAS, Parent shall cause Purchaser to make a tender offer (as it may be amended from time to time as permitted under this Agreement, the "Offer") to purchase all of the outstanding shares of common stock, par value \$0.001 per share, of the Company (the "Company Common Stock"), at a price per Share (as defined in Section 1.1) of \$3.58 (such amount, or any other amount per share paid pursuant to the Offer and this Agreement, the "Offer Price"), net to the stockholders in cash, on the terms and subject to the conditions set forth herein;

WHEREAS, the Company Board (as defined in Section 1.1) has resolved to recommend that the holders of the Shares accept the Offer and tender their Shares pursuant to the Offer and that they vote in favor of the adoption of this Agreement at any meeting of the stockholders of the Company held for such purpose (or any actions of stockholders by written consent in lieu of any such meeting), subject to the terms and conditions of this Agreement;

WHEREAS, the respective Boards of Directors of the Company, Parent and Purchaser have determined that it is advisable and in the best interests of their respective stockholders for Parent to acquire the Company by means of the Offer, followed by a merger of Purchaser with and into the Company (the "Merger"), on the terms and subject to the conditions set forth in this Agreement;

WHEREAS, the respective Boards of Directors of the Company, Parent and Purchaser have approved and declared advisable this Agreement, including all the terms and conditions set forth herein, and all the Transactions (as defined in Section 1.1), including the Offer and the Merger;

WHEREAS, it is a condition to the consummation of the Offer, prior to or contemporaneously with such consummation, Parent or an Affiliate (as defined in Section 1.1) of Parent completes its acquisition of certain properties from Republic Energy Ventures, LLC, Republic Partners VI, LP, Republic Partners VII, LLC, Republic Partners VIII, LLC and Republic Energy Operating, LLC (collectively "Republic") pursuant to that certain Purchase and Sale Agreement dated as of October 24, 2016 (the "Republic Transactions");

WHEREAS, simultaneously with the execution and delivery of this Agreement, and as a condition and material inducement to Parent's willingness to enter into this Agreement, (i) certain stockholders of the Company have entered into a tender and support agreement,

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IN WITNESS WHEREOF, the Company, Parent and Purchaser have caused this Agreement to be signed by their respective officers thereunto duly authorized as of the date first written above.

TRANS ENERGY, INC.

By: \_\_\_\_\_  
Name: John G. Corp  
Title: President

EQT CORPORATION

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

WV MERGER SUB, INC.

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

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IN WITNESS WHEREOF, the Company, Parent and Purchaser have caused this Agreement to be signed by their respective officers thereunto duly authorized as of the date first written above.

TRANS ENERGY, INC.

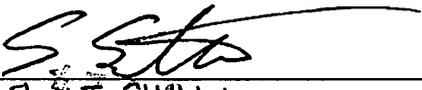
By: \_\_\_\_\_  
Name:  
Title:

EQT CORPORATION

*TMM  
Legal*

By:   
Name: Steven T. Schlottbach  
Title: President

WV MERGER SUB, INC.

By:   
Name: Steven T. Schlottbach  
Title: President

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January 3, 2017

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

Re: PUL96H8  
Union District, Ritchie County

Dear Mr. Martin,

EQT Production Company is submitting an application for a new well work permit for the above well number. Upon information and belief, Operator's lease and/ or other real property rights permit it to conduct drilling operations for the subject well in the location shown on the plat, including under any public roads that the well lateral crosses.

Sincerely,

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

Vicki Roark  
Permitting Supervisor-WV

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**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE CERTIFICATION**

Date of Notice Certification: 1/31/17

API No. 47- 085 - \_\_\_\_\_  
Operator's Well No. 515967 \_\_\_\_\_  
Well Pad Name: PUL96 \_\_\_\_\_

**Notice has been given:**

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: <u>WV</u>	UTM NAD 83	Easting: <u>501,225.56</u>
County: <u>Ritchie</u>		Northing: <u>4,340,225.95</u>
District: <u>Union</u>	Public Road Access: <u>Co Rt 7/4</u>	
Quadrangle: <u>Pullman</u>	Generally used farm name: <u>James H &amp; Wilma J Wilson</u>	
Watershed: <u>Goose Run of Rockcamp Run</u>		

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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**Required Attachments:**

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Personal Service. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been notified as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

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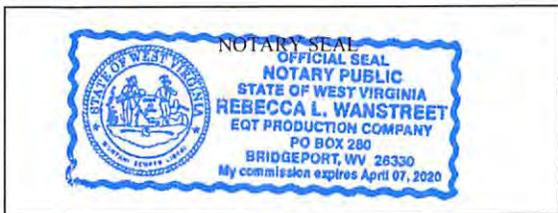
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**Certification of Notice is hereby given:**

THEREFORE, I Victoria Roark, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: EQT Production Company  
By: Victoria Roark  
Its: Permitting Supervisor  
Telephone: 304-848-0076

Address: 115 Professional Place PO Box 280  
Bridgeport WV 26330  
Facsimile: 304-848-0041  
Email: vroark@eqt.com



Subscribed and sworn before me this 25 day of January 2017.  
Rebecca L. Wanstreet Notary Public  
My Commission Expires 4-7-2020

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF APPLICATION**

**Notice Time Requirement:** notice shall be provided no later than the **filing date of permit application.**

**Date of Notice:** 2/1/2017 **Date Permit Application Filed:** 2/1/2017

**Notice of:**

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

**Delivery method pursuant to West Virginia Code § 22-6A-10(b)**

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice  WSSP Notice  E&S Plan Notice  Well Plat Notice is hereby provided to:

SURFACE OWNER(s)

Name: See Attached  
Address: \_\_\_\_\_

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: See Attached  
Address: \_\_\_\_\_

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Impoundments or Pits)

Name: See Attached  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE

Name: See Attached  
Address: \_\_\_\_\_

COAL OPERATOR

Name: \_\_\_\_\_  
Address: 47005, 67

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

\*Please attach additional forms if necessary

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**Surface Owner**

Wilma J. Wilson  
214 N. Church St.  
Harrisville, WV 26362

James Douglas Wilson  
214 N. Church Street  
Harrisville, WV 26362

Robert Brian Wilson  
665 Nicolette, Rd.  
Parkersburg, WV 26104

James Bradley Wilson  
665 Nicolette Rd.  
Parkersburg, WV 26104

Ian David Wilson  
4850 Pullman Road  
Harrisville, WV 26362

David R. Wilson and Judy Wilson  
42 School Street  
Harrisville, WV 26362

Jean W. Moore  
1590 Rock Camp Road  
Harrisville, WV 26362



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**Surface Owner (Road and/or Other Disturbance)**

Wilma J. Wilson  
214 N. Church St.  
Harrisville, WV 26362

James Douglas Wilson  
214 N. Church Street  
Harrisville, WV 26362

Robert Brian Wilson  
665 Nicolette, Rd.  
Parkersburg, WV 26104

James Bradley Wilson  
665 Nicolette Rd.  
Parkersburg, WV 26104

Ian David Wilson  
4850 Pullman Road  
Harrisville, WV 26362

David R. Wilson and Judy Wilson  
42 School Street  
Harrisville, WV 26362

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**Surface Owner (Impoundments or Pits)**

Wilma J. Wilson  
214 N. Church St.  
Harrisville, WV 26362

James Douglas Wilson  
214 N. Church Street  
Harrisville, WV 26362

Robert Brian Wilson  
665 Nicolette, Rd.  
Parkersburg, WV 26104

James Bradley Wilson  
665 Nicolette Rd.  
Parkersburg, WV 26104

Ian David Wilson  
4850 Pullman Road  
Harrisville, WV 26362

David R. Wilson and Judy Wilson  
42 School Street  
Harrisville, WV 26362

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Coal Owners

Ritchie Petroleum Corporation  
P.O. Box 545  
Pennsboro, WV 26415-0545

J.F. Deem Oil & Gas  
4541 Emerson Avenue  
Parkersburg, WV 26104-1213

Nancy C. Ruth, Trustee  
Cottrill Family Trust  
328 E. Spring Street  
Marietta, OH 45750-2438

Jay A. Cottrill, Trustee  
Cottrill Family Trust  
328 E. Spring Street  
Marietta, OH 45750-2438

Joseph D. Cottrill, Trustee  
Cottrill Family Trust  
1748 Mills Ave  
Cincinnati, OH 45212-2826

Christopher Cottrill, Trustee  
Cottrill Family Trust  
1108 E. 2700 S Apt 14  
Salt Lake City, UT 84106

Theresa Ann Wilson  
1026 King Street  
Lancaster, OH 43130

Leslie Randall Elder  
1432 Wedgewood Drive  
Anaheim, CA 92801

James Russell Clovis  
19801 Eagle Nest Rd.  
Cutler Bay, FL 33157

Claudia G. Elder  
2119 Tremont Avenue  
Simi Valley, CA 93063

Richard Wesley Elder  
1931 Whitehall Court  
Simi Valley, CA 93065

Geneva E. Snodgrass  
510 Harrisoin St.  
Harrisville, WV 26362

William Harold Moore  
3307 Smith St.  
Parkersburg, WV 26104

Pamela Donohoe  
524 SE 42nd Street  
Ocala, FL 34480

Carol Robinson  
524 SE 42nd Street  
Ocala, FL 34480

Deborah Lesh  
524 SE 42nd Street  
Ocala, FL 34480

Earl Wilson Jr.  
10593 Pullman Rd.  
Pennsboro, WV 26415

Annabel Wilson Day  
4101 County Rd 282  
Auxvasse, MO 65231

Julia Staggers  
3052 Valley Avenue #100  
Winchester, VA 22601

Sandra Staggers  
1604 Rose Hill Drive  
Charlottesville, VA 22903

Susan Cafferty  
3855 105th Street SE  
Kandiyohi, MN 56251

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Mira White  
3244 Homerood Ave  
North Port, FL 34286

Ian David Wilson  
1025 E. South Street  
Harrisville, WV 26362

James Douglas Wilson  
214 S. Church Street  
Harrisville, WV 26362

James Bradley Wilson  
665 Nicolette Rd.  
Parkersburg, WV 26104

Robert Brian Wilson  
665 Nicolette Rd.  
Parkersburg, WV 26104



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**04/21/2017**

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

**This Notice Shall Include:**

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Well Location Restrictions**

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

**Water Well Testing:**

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

**Water Testing Laboratories:**

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

**Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:**

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

**Written Comment:**

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

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Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.

**Time Limits and Methods for Filing Comments.**

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

**Comment Requirements**

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

**Permit Denial or Condition**

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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WW-6A  
(8-13)

API NO. 47- 085 - \_\_\_\_\_  
OPERATOR WELL NO. 515967 \_\_\_\_\_  
Well Pad Name: PUL96 \_\_\_\_\_

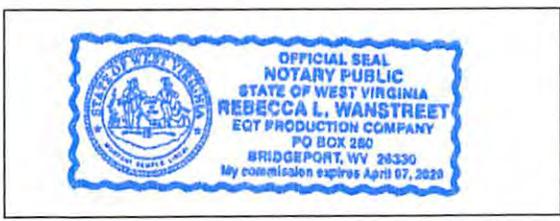
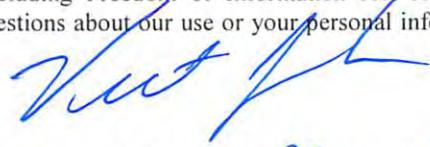
**Notice is hereby given by:**

Well Operator: EQT Production Company  
Telephone: 304-848-0076  
Email: vroark@eqt.com

Address: 115 Professional Place PO Box 280  
Bridgeport WV 26330  
Facsimile: 304-848-0041

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



Subscribed and sworn before me this 25 day of January 2017

Rebecca L. Wanstreet Notary Public

My Commission Expires 4-7-2020

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WV Department of  
Environmental Protection

04/21/2017

Topo Quad: Pullman 7.5'

Scale: 1" = 1000'

County: Ritchie

Date: January 30, 2017

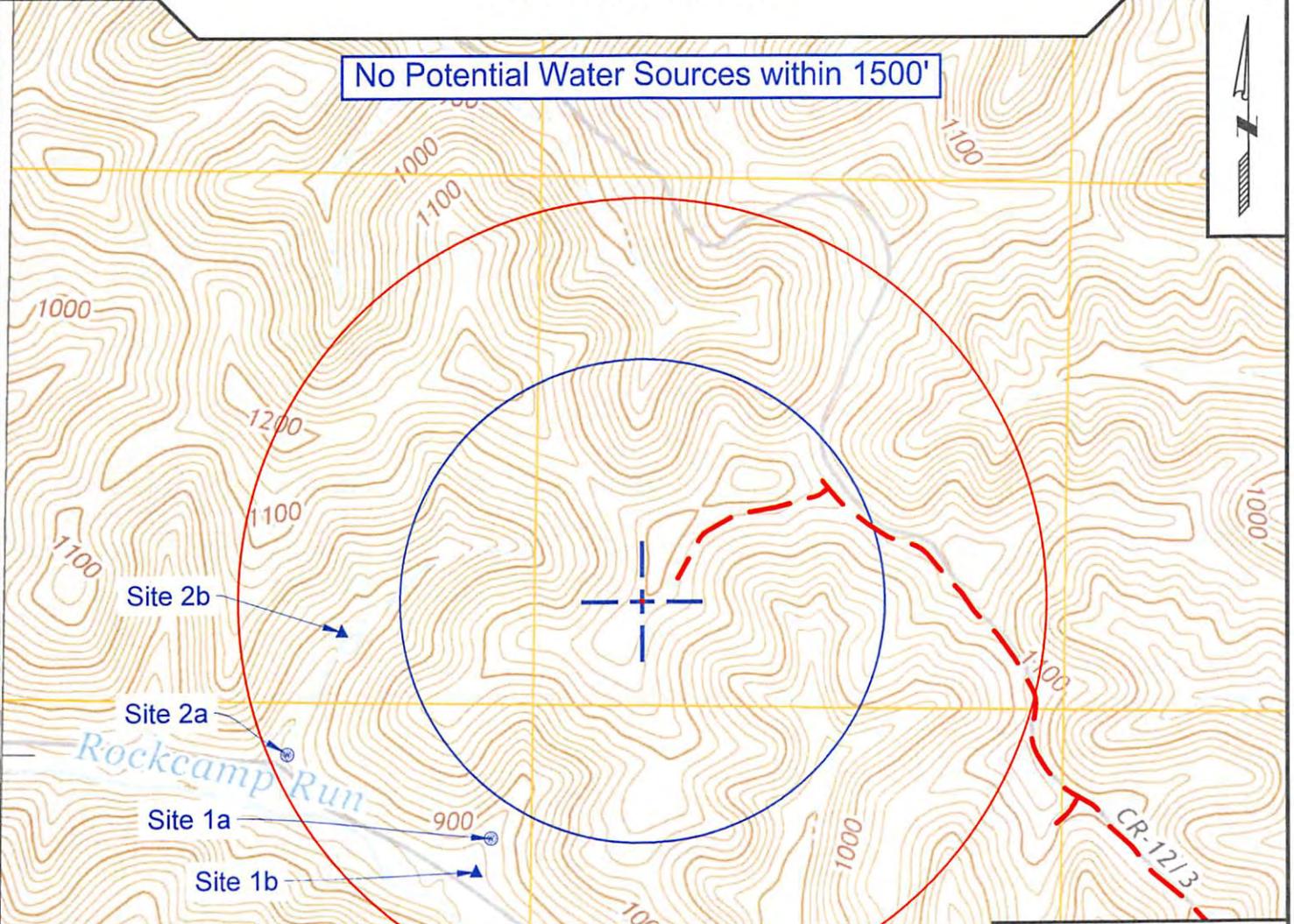
District: Union

Project No: 243-38-U-14

Water

# Pullman 96 Pad

No Potential Water Sources within 1500'



### LEGEND

Red Symbol - Declined Sampling  
 Blue Symbol - Requested Sampling  
 / Unable to Contact

- Well
- Spring
- Pond
- Building

NAD 27, North Zone  
 N: 262442.52  
 E: 1578884.09

WGS 84  
 LAT: 39.211077  
 LONG: -80.986058  
 ELEV: 1128.00

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SURVEYING AND MAPPING SERVICES PERFORMED BY:

## ALLEGHENY SURVEYS, INC.

1-800-482-8606  
 237 Birch River Road  
 Birch River, WV 26610  
 PH: (304) 649-8606  
 FAX: (304) 649-8608

PREPARED FOR FEB 02 2017

**EQT Production Company**  
 WV Department of Environmental Protection  
 P.O. Box 280  
 Bridgeport, WV 26330

04/21/2017

**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF INTENT TO DRILL**

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

**Notice Time Requirement:** Notice shall be provided at least **TEN (10)** days prior to filing a permit application.

**Date of Notice:** 12/28/2016      **Date Permit Application Filed:** 01/07/2017

**Delivery method pursuant to West Virginia Code § 22-6A-16(b)**

- HAND DELIVERY       CERTIFIED MAIL RETURN RECEIPT REQUESTED

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Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

**Notice is hereby provided to the SURFACE OWNER(s):**

Name: See attached  
Address: \_\_\_\_\_  
\_\_\_\_\_

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: <u>WV</u>	UTM NAD 83	Easting: <u>501,225.56</u>
County: <u>Ritchie</u>		Northing: <u>4,340,225.95</u>
District: <u>Union</u>	Public Road Access: <u>Co Rt 7/4</u>	
Quadrangle: <u>Pullman</u>	Generally used farm name: <u>James H &amp; Wilma J Wilson</u>	
Watershed: <u>Goose Run of Rockcamp Run</u>		

**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: EQT Production Company  
Address: 115 Professional Place PO Box 280  
Bridgeport WV 26330  
Telephone: 304-848-0076  
Email: vroark@eqt.com  
Facsimile: 304-848-0041

Authorized Representative: Victoria Roark  
Address: 115 Professional Place PO Box 280  
Bridgeport WV 26330  
Telephone: 304-848-0076  
Email: vroark@eqt.com  
Facsimile: 304-848-0041

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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**Surface Owner**

Wilma J. Wilson  
214 N. Church St.  
Harrisville, WV 26362

James Douglas Wilson  
214 N. Church Street  
Harrisville, WV 26362

Robert Brian Wilson  
665 Nicolette, Rd.  
Parkersburg, WV 26104

James Bradley Wilson  
665 Nicolette Rd.  
Parkersburg, WV 26104

Ian David Wilson  
4850 Pullman Road  
Harrisville, WV 26362

David R. Wilson and Judy Wilson  
42 School Street  
Harrisville, WV 26362

Jean W. Moore  
1590 Rock Camp Road  
Harrisville, WV 26362

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**Surface Owner (Road and/or Other Disturbance)**

Wilma J. Wilson  
214 N. Church St.  
Harrisville, WV 26362

James Douglas Wilson  
214 N. Church Street  
Harrisville, WV 26362

Robert Brian Wilson  
665 Nicolette, Rd.  
Parkersburg, WV 26104

James Bradley Wilson  
665 Nicolette Rd.  
Parkersburg, WV 26104

Ian David Wilson  
4850 Pullman Road  
Harrisville, WV 26362

David R. Wilson and Judy Wilson  
42 School Street  
Harrisville, WV 26362

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**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF PLANNED OPERATION**

**Notice Time Requirement:** notice shall be provided no later than the **filing date of permit application.**

**Date of Notice:** 2/1/17      **Date Permit Application Filed:** 2/1/17

**Delivery method pursuant to West Virginia Code § 22-6A-16(c)**

- |                                                    |                               |
|----------------------------------------------------|-------------------------------|
| <input checked="" type="checkbox"/> CERTIFIED MAIL | <input type="checkbox"/> HAND |
| RETURN RECEIPT REQUESTED                           | DELIVERY                      |

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

**Notice is hereby provided to the SURFACE OWNER(s)**  
(at the address listed in the records of the sheriff at the time of notice):

Name: <u>See Attached</u>	Name: <u>See Attached</u>
Address: _____	Address: _____

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: <u>WV</u>	UTM NAD 83 Easting: <u>501,225.56</u>
County: <u>Ritchie</u>	Northing: <u>4,340,225.95</u>
District: <u>Union</u>	Public Road Access: <u>Co Rt 7/4</u>
Quadrangle: <u>Pullman</u>	Generally used farm name: <u>James H &amp; Wilma J Wilson</u>
Watershed: <u>Goose Run of Rockcamp Run</u>	

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**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: <u>EQT Production Company</u>	Address: <u>115 Professional Place PO Box 280</u>
Telephone: <u>304-848-0076</u>	<u>Bridgeport WV 26330</u>
Email: <u>vroark@eqt.com</u>	Facsimile: <u>304-848-0041</u>

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

**Surface Owner**

Wilma J. Wilson  
214 N. Church St.  
Harrisville, WV 26362

James Douglas Wilson  
214 N. Church Street  
Harrisville, WV 26362

Robert Brian Wilson  
665 Nicolette, Rd.  
Parkersburg, WV 26104

James Bradley Wilson  
665 Nicolette Rd.  
Parkersburg, WV 26104

Ian David Wilson  
4850 Pullman Road  
Harrisville, WV 26362

David R. Wilson and Judy Wilson  
42 School Street  
Harrisville, WV 26362

Jean W. Moore  
1590 Rock Camp Road  
Harrisville, WV 26362

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**Surface Owner (Road and/or Other Disturbance)**

Wilma J. Wilson  
214 N. Church St.  
Harrisville, WV 26362

James Douglas Wilson  
214 N. Church Street  
Harrisville, WV 26362

Robert Brian Wilson  
665 Nicolette, Rd.  
Parkersburg, WV 26104

James Bradley Wilson  
665 Nicolette Rd.  
Parkersburg, WV 26104

Ian David Wilson  
4850 Pullman Road  
Harrisville, WV 26362

David R. Wilson and Judy Wilson  
42 School Street  
Harrisville, WV 26362



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**Surface Owner (Impoundments or Pits)**

Wilma J. Wilson  
214 N. Church St.  
Harrisville, WV 26362

James Douglas Wilson  
214 N. Church Street  
Harrisville, WV 26362

Robert Brian Wilson  
665 Nicolette, Rd.  
Parkersburg, WV 26104

James Bradley Wilson  
665 Nicolette Rd.  
Parkersburg, WV 26104

Ian David Wilson  
4850 Pullman Road  
Harrisville, WV 26362

David R. Wilson and Judy Wilson  
42 School Street  
Harrisville, WV 26362

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110  
Charleston, West Virginia 25305-0430 • (304) 558-3505

Earl Ray Tomblin  
Governor

Paul A. Mattox, Jr., P. E.  
Secretary of Transportation/  
Commissioner of Highways

Reissued December 23, 2016

James A. Martin, Chief  
Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304

Subject: DOH Permit for the PUL 96 Pad Site, Ritchie County

515883 PUL96H1	515884 PUL96H2	515885 PUL96H3
515886 PUL96H4	515887 PUL96H5	515888 PUL96H6
515965 PUL96H7	515967 PUL96H8	515966 PUL96H9
515977 PUL96H10		

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Dear Mr. Martin,

This well site will be accessed from Permit #03-2015-0122 applied for by EQT Production Company for access to the State Road. The well site is located off of Ritchie County Route 12/3 SLS. Approved permit must be received before the start of construction.

The operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton, P.E.  
Regional Maintenance Engineer  
Central Office O&G Coordinator

Cc: Nick Bumgardner  
EQT Production Company  
CH, OM, D-3, File

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**Anticipated Frac Additives**  
**Chemical Names and CAS numbers**

<u>Material</u>	<u>Ingredient</u>	<u>CAS Number</u>
Water		
Sand	Hydrotreated light petroleum distillate	14808-60-7
	Tributyl tetradecyl phosphonium chloride	64742-47-8
Friction Reducer	Ammonium chloride	81741-28-8
Biocide	Hydrochloric Acid	12125-02-9
Scale Inhibitor	Propargyl Alcohol	7647-01-0
15% Hydrochloric Acid	Methanol	107-19-7
Corrosion Inhibitor	Guar Gum	67-56-1
Corrosion Inhibitor	Sodium Persulfate	9000-30-0
Gelling Agent	Potassium Carbonate	7775-27-1
Oxidizing Breaker		584-08-7
Buffering Agent		

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West Virginia Department of  
Environmental Protection  
Office of Oil & Gas  
601 57th Street SE  
Charleston, WV 25304-2345

DEP Office Use only	
Date Received by Oil & Gas:	
Assigned Impoundment ID #:	085-WPA 00022

## Permit Associated Impoundment / Pit Registration

**Instruction:** This form is to be used to register impoundments or waste pits, greater than 5,000 bbls, that are associated with a WVDEP, Office of Oil and Gas, well drilling permit. An **associated impoundment or pit** means it has been designed and included in the well drilling permit application, will follow the reclamation time frame of well work permit, and will be approved in conjunction with the well work permit. An impoundment ID number will be assigned by WVDEP, Office of Oil and Gas, to all impoundments and pits. This impoundment ID number will be sent to the applicant following receipt of this form by WVDEP. Please reference this impoundment ID number with all future correspondence and reference to this impoundment. Conditions as described in W.Va. State Rule §35-4-21 will be followed as it relates to impoundments and pits.

### Section 1 – Operator Information

Operator Name: <u>EQT Production Company</u>	
Operator ID: <u>306686</u>	
Address: Street <u>115 Professional Place</u>	
City: <u>Bridgeport</u>	State: <u>WV</u> Zip: <u>26330</u>
Contact Name: <u>Ron Furby</u>	Contact Title: <u>Sr. Mgr. Water Operations</u>
Contact Phone: <u>412-395-7052</u>	Contact Email: <u>rfurby@eqt.com</u>

### Section 2 – Engineering / Design Contractor Information

Design will be contracted <input checked="" type="checkbox"/> Designed in-house <input type="checkbox"/>	
Company Name: <u>Honor Brothers Engineers</u>	
Address: Street <u>P.O. Box 386</u>	
City: <u>Clarksburg</u>	State: <u>WV</u> Zip: <u>26302</u>
Contact Name: <u>Thomas D. Corathers</u>	Contact Title: <u>PE, PS</u>
Contact Phone: <u>304-624-6445</u>	Contact Email: <u>tom@hbe1902.com</u>
Certifying Professional Engineer: <u>Thomas D. Corathers</u>	
Professional Engineer Registration Number: <u>14161</u>	

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## Section 3 - Impoundment / Pit Information

Type of Structure. <u>Check one of two choices below:</u>		
<input type="checkbox"/> Freshwater Impoundment	<input checked="" type="checkbox"/> Waste Pit	
Note: <u>Any</u> waste in a pit will make it a waste pit.		
Name of Structure (Company Name): <u>EQT-PUL 96 Flowback Pit</u>		
County: <u>Ritchie</u>	District: <u>Clay and Union</u>	
USGS 7.5' Quad Map Name: <u>PULLMAN</u>		
Farm Name: _____		
Pad Name: <u>PUL 96</u>		
Surface Owner Name: <u>James H. &amp; Wilma J. Wilson and James Douglas Wilson</u>		
Physical Description of Location: <u>From Pullman, WV, travel northwest on County Rte 9 for 1.55 mi. turn onto Co. Rte 7/4 travel North 0.7 mi. continue North on Co. Rte 12/3 for 0.95 mi. turn SW onto pit access, travel 700' to pit on right.</u>		
(Note: Give general location, example: 2 miles south of Smalltown, WV on Rt. 22, left on Buffalo Creek)		
Watershed (nearest perennial): <u>Goose Run</u>		
Distance (Drainage Distance) to nearest perennial stream: <u>approximately 1400 feet</u>		
Location Coordinates (NAD83, Decimal Degrees (xx.xxxx, -xx.xxxx))		
Latitude: <u>39.212855</u>	Longitude (Use negative sign): <u>-80.984758</u>	
UTM Coordinates: <u>1644733.691657</u>	<u>E</u>	<u>14240121.883713</u> <u>N</u>
Access Road Coordinates (junction of state highway access)		
Latitude: <u>39.213031</u>	Longitude (Use negative sign): <u>-80.982046</u>	
UTM Coordinates: <u>1645502.686969</u>	<u>E</u>	<u>14240186.967354</u> <u>N</u>
Approximate Dimensions		
Length: <u>150'</u>	Width: <u>150'</u>	Height: <u>17'</u>
Note: If irregularly shaped, give approximate dimensions of long axis.		
Total Capacity – Provide all units of measure below:		
Barrels: <u>24,969</u>	Gallons: <u>1,048,780</u>	Acre-Feet: <u>3219</u> <span style="float: right;">+</span>
Capacity with 2' Freeboard – Provide all units of measure below:		
Barrels: <u>32,368</u>	Gallons: <u>1,359,550</u>	Acre-Feet: <u>4.172</u>
Incised volume:		
Barrels: <u>13,608</u>	Gallons: <u>571,585</u>	Acre-Feet: <u>1.754</u>
Net impounded volume: (Total volume less incised volume.)		
Barrels: <u>11,088</u>	Gallons: <u>477,195</u>	Acre-Feet: <u>1.465</u>
Anticipated Construction Start Date (estimation, non-binding): _____		
Note: No construction may begin on Associated impoundment until WVDEP issues the drilling permit. At least 7 calendar days prior to confirmed construction start date, notify the Office of Oil & Gas, and the local Oil and Gas inspector of construction start date. Use form IMP-2, "Notification of Impoundment / Pit Construction."		

Office of Oil and Gas

FEB 02 2017 of 4

 WV Department of  
 Environmental Protection  
 04/21/2017



Office of Oil and Gas

**Section 4 - Associated Well Numbers and API Numbers.** List associated well numbers and API number. API numbers may not be assigned at time of registering this impoundment, if so list as pending.

Well Number(s):	API Number(s) – If issued:
PUL 96 H1 515883 PUL 96 H2 515884	
PUL 96 H3 515885 PUL 96 H4 515886	
PUL 96 H5 515887 PUL 96 H6 515888	
PUL 96 H7 515889 PUL 96 H8 515890	
PUL 96 H9 515891 PUL 96 H10 515892	

**Section 5 - Required Information Checklist To Register Permit Associated Impoundments or Pits.** Include the following information and plans with application.

- Engineered Construction Plans, certified by WV Registered P.E.
- Erosion and Sediment Control Plan, certified by WV Registered P.E.
- Reclamation Plan, certified by WV Registered P.E.

**Section 6 – Dam Standard Qualifying Evaluation**

- The design of this structure has been evaluated by the applicant to determine it does NOT qualify to be defined as a dam, under W.Va Rule §47-34. If the design of this structure qualifies it to be defined as a dam, all permits regulating dams will be required prior to registering the structure with the Office of Oil and Gas. The dam standard, from the WVDEP, Div. Of Water and Waste, is available for review at: <http://www.dep.wv.gov/WWE/ee/ds/Pages/default.aspx>

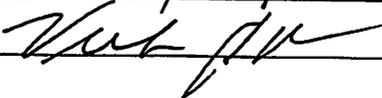
**Section 7 –Comments – Provide any additional comments concerning this project**

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 Office of Oil and Gas  
 Page 3 of 4  
 FEB 02 2017

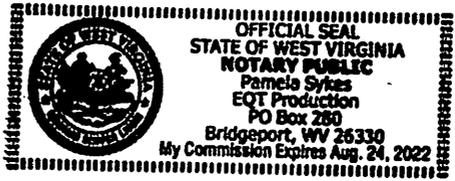
WV Department of  
 Environment      02/21/2017

**Section 8 - Application Certification**

I hereby certify that the information listed above is true and accurate. I understand that this pit/impoundment is to be constructed only in a location appropriate for the storage of water, including wastewater, and will be constructed in accordance with plans designed and certified by a West Virginia registered professional engineer. I further recognize that all required plans have been submitted to the Office of Oil and Gas. I understand that after construction, and prior to any fluid being placed in the pit/impoundment, it shall be inspected by a West Virginia registered professional engineer to ensure compliance with the certified design and construction plan, and that the professional engineer shall certify that this structure was constructed in accordance with design and construction plans. I understand that such certification shall be in writing to the Chief and that no fluids may be placed in the pit/impoundment until the certification has been filed with the chief. I agree that this pit/impoundment shall be constructed, maintained, operated and closed in accordance with all applicable laws and rules, including the requirements of W. Va. Code R § 35-4-2 .

Name: Victoria J Roark  
 Title: Permitting Supervisor  
 Signature: 

Taken, subscribed and sworn to before me this, 11 Day of Feb 20 15  
 Notary Public:   
 My commission expires: 8-24-22  
 Notary Seal:



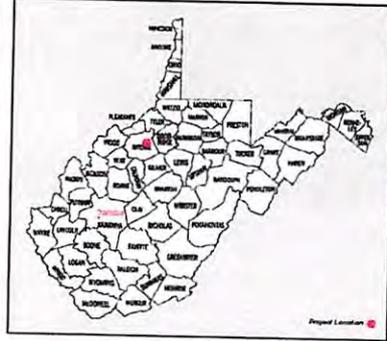
**Section 9. Submittal Instructions**

Submit original paper copy of application to:  
 West Virginia Department of Environmental Protection  
 Office of Oil and Gas  
 Impoundment Registration  
 601 57<sup>th</sup> Street, SE  
 Charleston WV 25304

Email PDF file format of this application and all related engineering Plans to :  
[Depimpoundments@wv.gov](mailto:Depimpoundments@wv.gov)

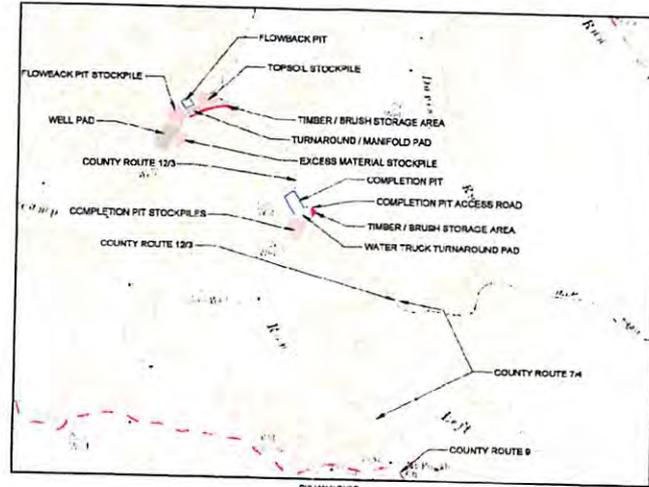
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 Page 4 of 4  
 FEB 02 2017  
 WV Department of  
 Environmental Protection  
 04/21/2017

# PUL 96 AS BUILT COVER SHEET / LOCATION MAP



FLOODPLAIN CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN:	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR:	NO
HFC-RAS STUDY COMPLETED:	N/A
FLOODPLAIN SHOWN ON DRAWINGS:	N/A
FIRM MAP NUMBER(S) FOR SITE:	54103CD185C
AREAS OF CONSTRUCTION IN FLOODPLAIN:	N/A

NO WETLANDS OR STREAMS ARE IMPACTED



**AFFECTED PROPERTIES**  
CLAY & UNION DISTRICTS - RITCHIE COUNTY, WV

**TM 7, PUL 6**  
JOHN DOUGLAS WILSON  
08 278 PG 157  
80 PTA ACRES  
SITE DISTURBANCE  
FLOWBACK PIT = 170 ACRES  
FLOWBACK STOCKPILE = 1 ACRES  
WELL PAD = 2 ACRES  
TOPSOIL STOCKPILE = 1 ACRES  
TOTAL DISTURBANCE = 174 ACRES  
TIMBER REMOVAL = 177 ACRES

**TM 7, PUL 8**  
JOHN DOUGLAS WILSON  
08 278 PG 158  
80 PTA ACRES  
SITE DISTURBANCE  
WELL PAD ACCESS ROAD = 100 ACRES  
TIMBER & BRUSH STORAGE = 10 ACRES  
TOTAL DISTURBANCE = 110 ACRES  
TIMBER REMOVAL = 110 ACRES

**TM 7, PUL 11**  
DAVID R & ADY WILSON  
08 278 PG 160  
80 PTA ACRES  
SITE DISTURBANCE  
COMPLETION PIT = 10 ACRES  
COMPLETION PIT ACCESS ROAD = 10 ACRES  
TIMBER & BRUSH STORAGE = 10 ACRES  
TOTAL DISTURBANCE = 30 ACRES  
TIMBER REMOVAL = 30 ACRES

**TM 7, PUL 12**  
JOHN DOUGLAS WILSON  
08 278 PG 161  
80 PTA ACRES  
SITE DISTURBANCE  
COMPLETION PIT = 10 ACRES  
COMPLETION PIT ACCESS ROAD = 10 ACRES  
TIMBER & BRUSH STORAGE = 10 ACRES  
TOTAL DISTURBANCE = 30 ACRES  
TIMBER REMOVAL = 30 ACRES

**TM 7, PUL 13**  
JOHN DOUGLAS WILSON  
08 278 PG 162  
80 PTA ACRES  
SITE DISTURBANCE  
WELL PAD ACCESS ROAD = 100 ACRES  
TIMBER & BRUSH STORAGE = 10 ACRES  
TOTAL DISTURBANCE = 110 ACRES  
TIMBER REMOVAL = 110 ACRES

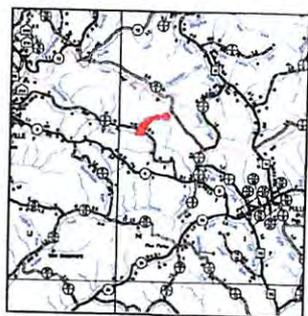
**TM 7, PUL 14**  
JOHN DOUGLAS WILSON  
08 278 PG 163  
80 PTA ACRES  
SITE DISTURBANCE  
WELL PAD ACCESS ROAD = 100 ACRES  
TIMBER & BRUSH STORAGE = 10 ACRES  
TOTAL DISTURBANCE = 110 ACRES  
TIMBER REMOVAL = 110 ACRES

**TM 7, PUL 15**  
JOHN DOUGLAS WILSON  
08 278 PG 164  
80 PTA ACRES  
SITE DISTURBANCE  
WELL PAD ACCESS ROAD = 100 ACRES  
TIMBER & BRUSH STORAGE = 10 ACRES  
TOTAL DISTURBANCE = 110 ACRES  
TIMBER REMOVAL = 110 ACRES

**WVDEP OOG  
ACCEPTED AS-BUILT**  
*[Signature]*  
**7-26-2016**

DISCUSSION	GRADING VOLUMES			AS-BUILT GRADING VOLUMES			TOE KEY EXCAVATION			
	CUT (CY)	FILL (CY)	NET (CY)	CUT (CY)	FILL (CY)	NET (CY)	Design vs Asphalt	CUT (CY)	FILL (CY)	NET (CY)
WELL PAD ACCESS ROAD	4,891	1,917	976	4,493	3,721	773	205	3,659	0	3,659
WELL PAD	38,128	28,363	13,965	19,163	28,919	10,717	3,713	5,342	0	5,342
COMPLETION PIT	68,447	15,823	52,624	67,677	15,580	51,997	427	2,017	0	2,017
FLOWBACK PIT	24,880	2,857	21,023	26,557	3,411	23,142	-1,119	1,405	0	1,405
COMPLETION PIT ACCESS / WTTA	479	17,842	17,363	1,566	17,285	-15,719	-1,644	1,075	0	1,075
FLOWBACK PIT ACCESS / MANFOLD	4,549	1,619	2,100	2,191	264	2,127	578	0	0	0
COMP / WTTA STOCKPILE	0	41,202	43,220	15	40,919	-40,904	-7,316	3,881	0	3,881
EXCESS MATERIAL STOCKPILE	0	27,585	23,585	0	-7,381	-17,381	-5,204	-1,271	0	-1,271
TOPSOIL STOCKPILE	12,850	0	12,850	-12,814	0	17,914	5,95	3,894	0	3,894
<b>TOTAL</b>	<b>114,234</b>	<b>141,386</b>	<b>128,50</b>	<b>150,163</b>	<b>140,677</b>	<b>5,486</b>	<b>3,364</b>	<b>20,316</b>	<b>0</b>	<b>20,316</b>

SITE LOCATIONS		MAD #3	
DESCRIPTION	LATITUDE	LONGITUDE	
Beginning of Completion Pit Access Road	39.20707	-80.97548	
Center of Completion Pit	39.20723	-80.97706	
Beginning of Well Pad Access Road	39.21260	-80.98797	
Center of Flowback Pit	39.21267	-80.98796	
Center of Well Pad	39.21304	-80.98578	



- WELL LEGEND**
- H8 515967 - LAT: 39.211306 / LONG: -80.985804
  - H9 515965 - LAT: 39.211269 / LONG: -80.985829
  - H6 515888 - LAT: 39.211233 / LONG: -80.985853 (API# 47-085-10218)
  - H4 515886 - LAT: 39.211196 / LONG: -80.985878 (API# 47-085-10217)
  - H3 515885 - LAT: 39.211160 / LONG: -80.985902 (API# 47-085-10220)
  - H1 515883 - LAT: 39.211123 / LONG: -80.985927 (API# 47-085-10219)
  - H10 515977 - LAT: 39.211087 / LONG: -80.985951 (API# 47-085-10210)
  - H7 515965 - LAT: 39.211050 / LONG: -80.985976 (API# 47-085-10209)
  - H5 515887 - LAT: 39.211014 / LONG: -80.986000 (API# 47-085-10211)
  - H2 515884 - LAT: 39.210977 / LONG: -80.986025 (API# 47-085-10207)

AS-BUILT MATERIAL QUANTITIES			
ITEM DESCRIPTION	DESIGN QTY	UNIT	AS-BUILT QTY
Clearing and Grubbing	28.93	AC	28.93
24" 6in Soil	6,710	LF	6,794
Straw Wattle	6,080	LF	3,659
Access Roads, Well Pad, & WTTA's 8" Minus Crusher Run Aggregate (8")	4,857	CY	4,974
Access Roads, Well Pad, & WTTA's 2 1/2" Minus Crusher Run Aggregate (2")	1,124	CY	1,143
1.5" Dia. HDPE Culvert Pipe	241	LF	0
18" Dia. HDPE Culvert Pipe	0	LF	0
Erosion Control Matting	41,390	SQ	N/A
Access Roads, Well Pad, & WTTA's Geotextile Fabric (Terra Tex HXG 37)	6,508	SQ	6,540
Fencing Fence Replacement/Relocation	0	LF	N/A

**Notes:**  
Quantities are based upon comparisons of design data to as-built field surveyed or scanned data and do not account for overlap, actual truck volumes or tonnage as required for proper installation or waste.

Discrepancies in E & S device quantities may be due to items not being completely installed at time of field survey or scan.

MISS Liability of West Virginia  
§ 20-2-5-18 (b)  
West Virginia State Law  
(Section XIV, Chapter 24-C)  
Requires that you call two business days before you dig in the state of West Virginia  
**IT'S THE LAW!**

**811**  
Know what's below.  
Call before you dig.

**Project Contacts:**  
EQT  
Chris Metzger - EQT Production Company  
304-849-0075 DR  
Billy Miller - Landman Off-Offing EQT Production Company  
304-827-0367 Mobile  
304-848-0039 Office  
Surveyor & Engineer  
Don Singleton - PS - Allegheny Surveys Inc  
304-649-8608 CR  
Thomas D. Coverters - PE, PS - Honor Brothers Engineers  
304-624-6443 Office

**SHEET INDEX**

COVER SHEET / LOCATION MAP	1
AS-BUILT GRADING	2-0
AS-BUILT ROUTES IMPROVEMENTS PROFILE	10
AS-BUILT MAIN ACCESS & COMPLETION PIT ROAD PROFILE	11

DATE	REVISIONS	DATE
1.31.16	ADD AIR NUMBERS, UPDATE HW & SW	10/28/2015
		11/16/2016
		1/14/2017
		1/14/2017



Allegheny Surveys Inc.  
P.O. Box 438  
237 Birch River Road  
Birch River, WV 26610  
304-649-8605

Honor Bros. Engineers  
Civil, Environmental and  
Construction Engineers  
1000 Main Street, Suite 100  
Martinsburg, WV 26150  
304-263-1111



THIS DOCUMENT  
PREPARED FOR  
EQT PRODUCTION  
COMPANY

AS-BUILT COVER SHEET  
PUL 96  
WELL PAD SITE  
CLAY & UNION DISTRICTS  
RITCHIE COUNTY, WV

RECEIVED  
Office of Oil and Gas

WV Department of Environmental Protection

# PUL 96

## FINAL SITE DESIGN, CONSTRUCTION PLANS, & EROSION & SEDIMENT CONTROL PLANS EQT PRODUCTION COMPANY



FLOODPLAIN CONDITIONS	
DOES SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR	NO
HEC/RAS STUDY COMPLETED	NA
FLOODPLAIN SHOWN ON DRAYINGS	NA
FIRM MAP NUMBER(S) FOR SITE	3412001190
ACREAGE OF CONSTRUCTION IN FLOODPLAIN	NA

NO WETLANDS OR STREAMS ARE IMPACTED

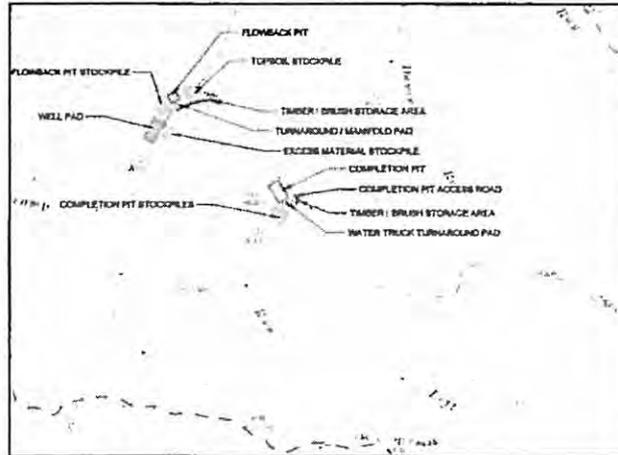
### PROPOSED WELL LEGEND

H9	515967	- LAT 39 211306 / LONG -80 985804
H8	515966	- LAT 39 211269 / LONG -80 985829
H6	515888	- LAT 39 211233 / LONG -80 985853
H4	515886	- LAT 39 211196 / LONG -80 985878
H3	515885	- LAT 39 211160 / LONG -80 985902
H1	515883	- LAT 39 211123 / LONG -80 985927
H10	515977	- LAT 39 211087 / LONG -80 985951
H7	515968	- LAT 39 211050 / LONG -80 985976
H5	515887	- LAT 39 211014 / LONG -80 986000
H2	515884	- LAT 39 210977 / LONG -80 986025

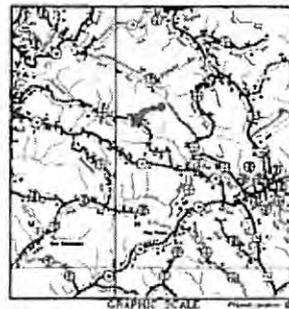
MISS Utility of West Virginia  
1-800-245-4848  
West Virginia State Law  
(Section XIV Chapter 24-C)  
Requires that you call two business  
days before you dig in the state of  
West Virginia.  
**IT'S THE LAW!!**



**Know what's below.  
Call before you dig.**



DESCRIPTION	AREA (SQ FT)	VOLUME (CU YD)
Flowback Pit	1,171,000	1,171,000
Flowback Pit Stockpile	1,171,000	1,171,000
Topsoil Stockpile	1,171,000	1,171,000
Completion Pit	1,171,000	1,171,000
Completion Pit Stockpile	1,171,000	1,171,000
Excess Material Stockpile	1,171,000	1,171,000
Turbowash/Mainfield Pad	1,171,000	1,171,000
Water Truck Turbowash Pad	1,171,000	1,171,000



West Virginia Coordinate System of 1982  
State Plane East Zone  
Elevation: NA 11508  
Established by Survey Grade GPS

AFFECTED PROPERTIES CLAY & UNION DISTRICTS PUTNAM COUNTY, WV	
<p>NO. 1, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 2, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 3, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 4, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 5, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 6, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 7, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 8, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 9, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 10, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p>	<p>NO. 1, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 2, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 3, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 4, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 5, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 6, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 7, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 8, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 9, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p> <p>NO. 10, PUL 1 JAMES BROWN &amp; SONS 20 200 000 SQ 00 00 00 00 00 00 00 00 00 00 00 00</p>

**APPROVED**  
**WVDEP OOG**  
4/21/2015

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EASTING CONDITIONS PLAN	2
SCHEDULE OF QUANTITIES	3
CONSTRUCTION GENERAL AND E&S NOTES	4
FINAL DESIGN PLANS	5-7
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COMPLETION PIT PROFILE & CROSS SECTIONS	10-11
FLOWBACK PIT PROFILE & CROSS SECTIONS	12
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COMPLETION PIT ACCESS PROFILE & CROSS SECTIONS	15
CONSTRUCTION DETAILS	16-18
REGULATION PLANS	19-21

DATE	REVISIONS	DATE
		1-15-2015
		Scale: N/A
		Prepared by: [Name]
		Checked by: [Name]
		Drawn by: [Name]

4708510321

Aggregrity Surveys Inc.  
P.O. Box 438  
237 Birch River Road  
Birch River, WV 26810  
304-549-9926

Horner  
James H. Horner, P.E.  
Civil, Structural, and  
Mechanical Engineering

**EQT**  
EQT PRODUCTION  
CORPORATION

PUL 96  
WELL PAD SITE  
CLAY & UNION DISTRICTS  
PUTNAM COUNTY, WV

*Michael Wolf*  
4/12/17