west virginia department of environmental protection

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

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

July 26, 2016

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-8510290, issued to EQT PRODUCTION COMPANY, 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 all 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 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.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-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) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: 514480
Farm Name: JERRY MORTON ET AL
API Well Number: 47-8510290
Permit Type: Horizontal 6A Well
Date Issued: 07/26/2016

Promoting a healthy environment.

API Number: _____

PERMIT CONDITIONS 4708510290

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.

CONDITIONS

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. 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.

8. 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.

9. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

WW-6B
(04/15)

API NO. 47-085-10290
OPERATOR WELL NO. 514480
Well Pad Name: PEN54

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 | Clay | Pennsboro
Operator ID | County | District | Quadrangle

2) Operator's Well Number: 514480 Well Pad Name: PEN54

3) Farm Name/Surface Owner: Jerry Morton et al Public Road Access: RT50

4) Elevation, current ground: 1,016 Elevation, proposed post-construction: 1,016

5) Well Type (a) Gas x Oil ____ Underground Storage ____
Other ____
(b)If Gas Shallow x Deep ____
Horizontal x

Michael Doff 5/20/16

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 6297', 49', 2190 PSI Top of Marcellus 6275

8) Proposed Total Vertical Depth: 6297

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 16186

11) Proposed Horizontal Leg Length: 7451

12) Approximate Fresh Water Strata Depths: 99, 105, 302, 627, 770

13) Method to Determine Fresh Water Depths: By Offset wells

14) Approximate Saltwater Depths: 1350

15) Approximate Coal Seam Depths: 326, 789, 867, 1078, 1182

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 x

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

WW-6B
(04/15)

API NO. 47-085 - 10290
OPERATOR WELL NO. 514480
Well Pad Name: PEN54

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^3 / CTS
Fresh Water	13 3/8	New	J-55	54.5	900	900	793 ft^3 / CTS
Coal							
Intermediate	9 5/8	New	P-110	40	5450	5450	2145 ft^3 / CTS
Production	5 1/2	New	P-110	20	16186	16186	500' above top producing zone
Tubing	2 3/8		J-55	4.7		May not be run, if run set 40' above top perf or 50° inclination	
Liners							

MAG
5/20/16

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 Variance	1.19
Coal							
Intermediate	9 5/8	12 3/8	.395	7900	6320	See Variance	1.19
Production	5 1/2	8 1/2	.361	12640	10112	Class H	1.07/1.86
Tubing	2 3/8	NA	.19	7700			
Liners							

4708510290

PACKERS

Kind:				
Sizes:				
Depths Set:				

WW-6B
(10/14)

API NO. 47-085-10290
OPERATOR WELL NO. 514480
Well Pad Name: PEN54

MDC
5/26/16

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 3502'. 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, gelling agent, gel breaker, 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 200,000 barrels of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 200,000 pounds of sand per stage.

4708510290

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

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

23) Describe centralizer placement for each casing string:

- Surface: Bow spring centralizers – One at the shoe and one spaced every 500'.
- Intermediate: Bow spring centralizers– One 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. .25% Flake Loss Circulation Material (LCM) is used to combat the loss of the cement slurry to a thief zone.
Intermediate (Type 1 Cement): 0-3% Calcium Chloride. Salt is used in shallow, low temperature formations to speed the setting of cement slurries. 0.25% flake. Loss Circulation Material (LCM) is used to combat the loss of whole drilling fluid or cement slurry (not filtrate) to a thief zone.
Production: Lead (Type H 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 (Type 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.

Well 514480(PEN54H7)

EQT Production

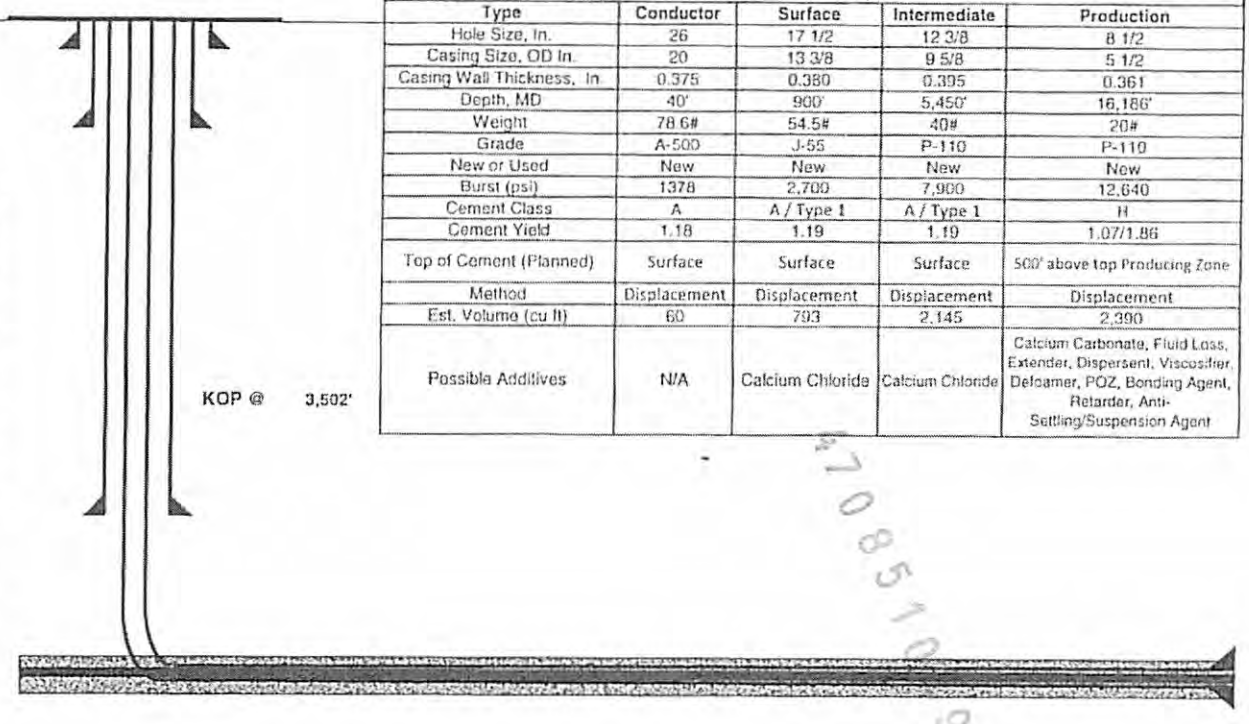
Pennsboro Quad Quad

Ritchie County, WV

Azimuth 341
Vertical Section 9462

Note: Diagram is not to scale

Formations	Top TVD	Base TVD
Conductor	40	
Base Fresh Water	770	
Surface Casing	900	
Base Red Rock	1163	
Maxton	1660	1774
Big Lime	1867	2007
Weir	2262	2366
Gantz	2474	2821
Fifty foot	2616	2636
Thirty foot	2679	2703
Gordon	2726	2766
Forth Sand	2816	2827
Bayard	2947	3350
Warren	3350	3417
Speechley	3429	3486
Balltown A	3949	3988
Riley	4469	4514
Benson	4982	5023
Alexander	5102	5126
Intermediate Casing	5176	
Sonyea	6016	6119
Middlesex	6119	6175
Genesee	6175	6224
Geneseo	6224	6254
Tully	6254	6269
Hamilton	6269	6275
Marcellus	6275	6324
Production Casing	16186	MD
Onondaga	6324	



Casing and Cementing	Deepest Fresh Water: 770'			
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'	900'	5,450'	16,186'
Weight	78.6#	54.5#	40#	20#
Grade	A-500	J-55	P-110	P-110
New or Used	New	New	New	New
Burst (psi)	1378	2,700	7,900	12,640
Cement Class	A	A / Type 1	A / Type 1	H
Cement Yield	1.18	1.19	1.19	1.07/1.86
Top of Cement (Planned)	Surface	Surface	Surface	500' above top Producing Zone
Method	Displacement	Displacement	Displacement	Displacement
Est. Volume (cu ft)	60	793	2,145	2,390
Possible Additives	N/A	Calcium Chloride	Calcium Chloride	Calcium Carbonate, Fluid Loss, Extender, Dispersent, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent

Land curve @ 6,297' TVD
8,735' MD

Est. TD @ 6,297' TVD
16,186' MD

7,451' Lateral

Proposed Well Work:
Drill and complete a new horizontal well in the Marcellus formation.
Drill the vertical to an approximate depth of 3502'
Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

MAG
3/24/16

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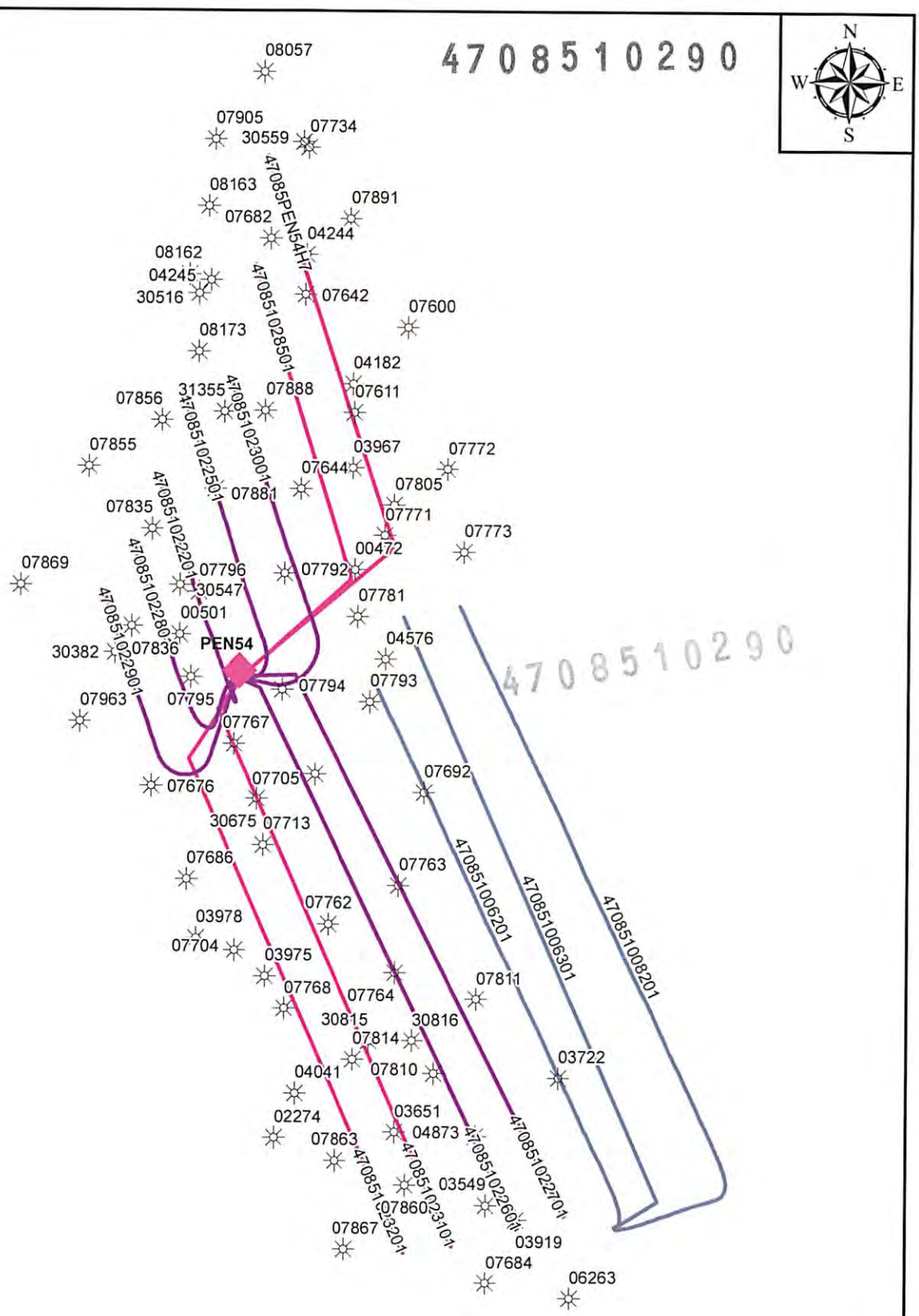


EQT

EQT Corporation
625 Liberty Avenue
Pittsburgh, PA 15222

PEN54 Offset Wells

Vertical Offsets and Foreign Laterals within 1500'

Legend

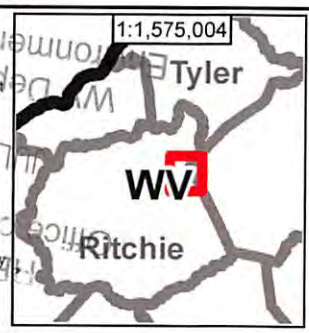
- PEN54 Offset Wells
- GENESEO Spud
- MARCELLUS Spud
- MIDDLESEX Spud
- UTICA Spud
- GENESEO Plat
- MARCELLUS Plat
- MIDDLESEX Plat
- POINT PLEASANT Plat
- UTICA Plat

2,600 1,300 0 2,600 Feet

1:33,243

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.



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4708510290

WellID	WellStatus	Comp Date	FmatTD	Permit	Operator
4708500472	GAS	9/10/1936		00472	GLEN MCBURNEY
4708500501	GAS	11/19/1936		00501	GLEN MCBURNEY
4708502274	GAS	1/22/1961	LOWER HURON SHALE	02274	T F HODGE
4708503549	GAS	7/10/1974		03549	MURVIN OIL
4708503651	GAS	11/29/1976		03651	MURVIN OIL
4708503722	GAS	12/17/1977		03722	HAUGHT
4708503919	GAS-P	7/11/1916		03919	EPC
4708503967	GAS-P	9/28/1915		03967	EPC
4708503975	GAS	1/8/1918		03975	EPC
4708503978	GAS	1/31/1918		03978	EPC
4708504041	GAS	10/5/1978		04041	MURVIN OIL
4708504182	GAS	2/20/1979		04182	HAUGHT
4708504244	UNK	6/1/1914		04244	EPC
4708504245	GAS-P	6/28/1915		04245	EPC
4708504576	UNK	9/12/1911		04576	PERKINS
4708504873	O&G	9/16/1980	SONYEA	04873	EPC
4708506263	GAS		ALEXANDER	06263	PETRO-AM CORP
4708507600	GAS	2/9/1987		07600	UNION
4708507611	GAS	3/9/1987		07611	KEY OIL
4708507642	GAS	3/24/1987		07642	KEY OIL
4708507644	GAS	4/1/1987		07644	KEY OIL
4708507676	GAS	11/15/1988		07676	E A E
4708507682	GAS	9/30/1987		07682	KEY OIL
4708507684	GAS	11/20/1988		07684	ECA
4708507686	GAS	10/22/1987		07686	ECA
4708507692	GAS	10/6/1987		07692	E A E
4708507704	GAS	10/27/1987		07704	ECA
4708507705	GAS	5/27/1988		07705	ECA
4708507713	GAS	6/3/1988		07713	ECA
4708507734	GAS	3/17/1988		07734	KEY OIL
4708507762	GAS	6/17/1988		07762	E A E
4708507763	GAS	5/20/1988		07763	ECA
4708507764	GAS	6/17/1988		07764	ECA
4708507767	GAS	6/10/1988		07767	ECA
4708507768	GAS	6/12/1988		07768	ECA
4708507771	GAS	6/30/1988		07771	ECA
4708507772	GAS	7/8/1988		07772	ECA
4708507773	GAS	7/1/1988		07773	ECA
4708507781	GAS	7/17/1988		07781	ECA
4708507792	GAS	10/13/1988		07792	ECA
4708507793	GAS	8/11/1988		07793	ECA
4708507794	GAS	8/17/1988		07794	E A E
4708507795	GAS	9/2/1988		07795	E A E
4708507796	GAS	11/3/1988		07796	E A E
4708507805	GAS	9/23/1988		07805	PERKINS
4708507810	GAS	10/21/1988		07810	ECA

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4708507811	GAS	10/29/1988	07811	ECA
4708507814	GAS	10/22/1988	07814	E A E
4708507835	GAS	6/14/1989	07835	E A E
4708507836	GAS	6/9/1989	07836	ECA
4708507855	GAS	8/4/1989	07855	ECA
4708507856	GAS	8/12/1989	07856	ECA
4708507860	GAS	9/15/1989	07860	ECA
4708507863	GAS	9/8/1989	07863	ECA
4708507867	GAS	10/14/1989	07867	ECA
4708507869	GAS	9/14/1989	07869	E A E
4708507881	GAS	10/16/1989	07881	ECA
4708507888	GAS	10/27/1989	07888	ECA
4708507891	GAS	11/3/1989	07891	ECA
4708507905	GAS	8/15/1990	07905	ECA
4708507963	GAS	9/7/1990	07963	ECA
4708508057	GAS	7/7/1991	08057	KEY OIL
4708508162	GAS	8/25/1993	08162	KEY OIL
4708508163	GAS	8/31/1993	08163	KEY OIL
4708508173	GAS	10/27/1993	08173	KEY OIL
4708530382	GAS	9/4/1917	30382	I H BEREN
4708530516	GAS	6/8/1941	30516	HOPE NAT GAS
4708530547	GAS	12/2/1915	30547	PGH & WV GAS
4708530559	GAS	12/29/1915	30559	PGH & WV GAS
4708530675	GAS	10/23/1926	30675	PGH & WV GAS
4708530815	UNK		30815	F S DEEM
4708530816	GAS		30816	F S DEEM
4708531355	GAS	10/10/1915	31355	EPC

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Longitude	Latitude	Target Fm	Datum Eleva	SS Depth	Total Depth
-80.9199	39.2630		704.0000	-1092.0000	1796.0000
-80.9311	39.2598		763.0000	-1014.0000	1777.0000
-80.9249	39.2349		872.0000	-1532.0000	2404.0000
-80.9113	39.2316		1107.0000	-1427.0000	2534.0000
-80.9172	39.2352		880.0000	-1100.0000	1980.0000
-80.9067	39.2379		1181.0000	-1094.0000	2275.0000
-80.9094	39.2309		1020.0000	-1059.0000	2079.0000
-80.9201	39.2681		784.0000	-980.0000	1764.0000
-80.9255	39.2429		0.0000	-1924.0000	1924.0000
-80.9300	39.2448		0.0000	-1845.0000	1845.0000
-80.9236	39.2371		950.0000	-1556.0000	2506.0000
-80.9201	39.2722		917.0000	-1493.0000	2410.0000
-80.9231	39.2786		0.0000	-2017.0000	2017.0000
-80.9292	39.2773		801.0000	-931.0000	1732.0000
-80.9179	39.2586		780.0000	-1755.0000	2535.0000
-80.9120	39.2350		902.0000	-5088.0000	5990.0000
-80.9059	39.2270			5450.0000	5450.0000
-80.9166	39.2750		895.0000	-4343.0000	5238.0000
-80.9200	39.2708		885.0000	-4328.0000	5213.0000
-80.9232	39.2766		1005.0000	-4295.0000	5300.0000
-80.9234	39.2670		1085.0000	-4290.0000	5375.0000
-80.9329	39.2523		944.0000	-3562.0000	4506.0000
-80.9254	39.2794		795.0000	-4328.0000	5123.0000
-80.9113	39.2277		1104.0000	-4285.0000	5389.0000
-80.9306	39.2477		1012.0000	-3930.0000	4942.0000
-80.9154	39.2520		989.0000	-4219.0000	5208.0000
-80.9275	39.2442		1059.0000	-3929.0000	4988.0000
-80.9224	39.2529		1046.0000	-3907.0000	4953.0000
-80.9257	39.2494		1128.0000	-3550.0000	4678.0000
-80.9230	39.2839		913.0000	-4307.0000	5220.0000
-80.9215	39.2455		1138.0000	-3635.0000	4773.0000
-80.9170	39.2474		996.0000	-4017.0000	5013.0000
-80.9172	39.2431		869.0000	-3652.0000	4521.0000
-80.9276	39.2544		1097.0000	-3581.0000	4678.0000
-80.9243	39.2413		1042.0000	-3562.0000	4604.0000
-80.9180	39.2647		1000.0000	-4286.0000	5286.0000
-80.9140	39.2680		994.0000	-4271.0000	5265.0000
-80.9129	39.2639		1011.0000	-4254.0000	5265.0000
-80.9197	39.2607		807.0000	-4239.0000	5046.0000
-80.9244	39.2628		896.0000	-4252.0000	5148.0000
-80.9189	39.2565		1041.0000	-4222.0000	5263.0000
-80.9245	39.2571		909.0000	-4251.0000	5160.0000
-80.9304	39.2577		989.0000	-4232.0000	5221.0000
-80.9299	39.2619		792.0000	-4235.0000	5027.0000
-80.9174	39.2662		992.0000	-1283.0000	2275.0000
-80.9147	39.2381		1166.0000	-4290.0000	5456.0000

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-80.9120	39.2418	1184.0000	-3633.0000	4817.0000
-80.9199	39.2388	858.0000	-3594.0000	4452.0000
-80.9329	39.2650	1053.0000	-4278.0000	5331.0000
-80.9342	39.2602	860.0000	-4215.0000	5075.0000
-80.9370	39.2681	1021.0000	-4344.0000	5365.0000
-80.9323	39.2704	984.0000	-4330.0000	5314.0000
-80.9165	39.2326	818.0000	-3628.0000	4446.0000
-80.9210	39.2338	922.0000	-3612.0000	4534.0000
-80.9204	39.2294	879.0000	-4317.0000	5196.0000
-80.9413	39.2622	1139.0000	-4241.0000	5380.0000
-80.9289	39.2670	1021.0000	-4251.0000	5272.0000
-80.9257	39.2709	985.0000	-4295.0000	5280.0000
-80.9203	39.2804	1093.0000	-4278.0000	5371.0000
-80.9290	39.2843	914.0000	-4232.0000	5146.0000
-80.9375	39.2555	938.0000	-4234.0000	5172.0000
-80.9259	39.2876	960.0000	-4266.0000	5226.0000
-80.9306	39.2776	898.0000	-4242.0000	5140.0000
-80.9294	39.2810	840.0000	-4250.0000	5090.0000
-80.9300	39.2738	782.0000	-4209.0000	4991.0000
-80.9353	39.2589	829.0000	-1031.0000	1860.0000
-80.9300	39.2767	785.0000	-948.0000	1733.0000
-80.9311	39.2622	829.0000	-994.0000	1823.0000
-80.9233	39.2842	817.0000	-1020.0000	1837.0000
-80.9261	39.2517	1040.0000	-1001.0000	2041.0000
-80.9189	39.2397	824.0000	-869.0000	1693.0000
-80.9161	39.2397	878.0000	-99999.0000	100877.0000
-80.9283	39.2708	1.0000	-1999.0000	2000.0000

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WELL ID	FORMATION
4708503549	BIG LIME
4708503549	BIG INJUN /SD/
4708503549	BEREA
4708503549	DEVONIAN /SD/
4708503651	BIG LIME
4708503651	BIG INJUN /SD/
4708503722	BIG LIME
4708503722	BIG INJUN /SD/
4708504041	BLUE MONDAY /SD/
4708504041	BIG INJUN /SD/
4708504041	WEIR /SD/
4708504182	LITTLE LIME
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4708504182	BIG LIME
4708504182	BIG INJUN /SD/
4708504182	WEIR /SD/
4708504182	BEREA
4708504873	WARREN /SD/
4708504873	SPEECHLEY
4708504873	BALLTOWN /SD/
4708504873	BRADFORD /SD/
4708504873	RILEY /SD/
4708504873	BENSON /SD/
4708504873	ALEXANDER
4708506263	BIG LIME
4708506263	BIG INJUN /SD/
4708506263	BEREA
4708506263	DEVONIAN /SH/
4708507600	BLUE MONDAY /SD/
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4708507600	RILEY /SD/
4708507600	BENSON /SD/
4708507600	ALEXANDER
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4708507611	BEREA
4708507611	RILEY /SD/
4708507611	BENSON /SD/
4708507611	ALEXANDER
4708507642	MAXTON
4708507642	LITTLE LIME
4708507642	BIG LIME
4708507642	BIG INJUN /SD/
4708507642	BEREA
4708507642	RILEY /SD/
4708507642	BENSON /SD/

PERFORATED FORMATION

NON-PERFORATED POTENTIAL FORMATION

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4708507642	ALEXANDER
4708507644	BIG LIME
4708507644	BIG INJUN /SD/
4708507644	BEREA
4708507644	RILEY /SD/
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4708507644	ALEXANDER
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4708507676	WEIR /SD/
4708507676	WARREN /SD/
4708507676	RILEY /SD/
4708507682	MAXTON
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4708507682	BEREA
4708507682	BALLTOWN /SD/
4708507682	BENSON /SD/
4708507682	ALEXANDER
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4708507684	BENSON /SD/
4708507684	ALEXANDER
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4708507686	WARREN /SD/
4708507686	RILEY /SD/
4708507686	BENSON /SD/
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4708507704	RILEY /SD/
4708507704	BENSON /SD/

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4708507705	BIG LIME
4708507705	BIG INJUN /SD/
4708507705	BEREA
4708507705	WARREN /SD/
4708507705	SPEECHLEY
4708507705	RILEY /SD/
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4708507713	SPEECHLEY
4708507713	RILEY /SD/
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4708507734	BIG INJUN /SD/
4708507734	BEREA
4708507734	RILEY /SD/
4708507734	BENSON /SD/
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4708507762	RILEY /SD/
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4708507767	BEREA
4708507767	WARREN /SD/
4708507767	RILEY /SD/
4708507768	LITTLE LIME
4708507768	BIG LIME
4708507768	WARREN /SD/
4708507768	SPEECHLEY

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JUL 21 2016
WV Department of
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4708507768	RILEY /SD/
4708507771	BLUE MONDAY /SD/
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4708507794	WARREN /SD/

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4708507794	RILEY /SD/
4708507794	BENSON /SD/
4708507794	ALEXANDER
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4708507795	RILEY /SD/
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4708507796	RILEY /SD/
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4708507805	DEVONIAN /SH/
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4708507810	WEIR /SD/
4708507810	WARREN /SD/
4708507810	RILEY /SD/
4708507810	BENSON /SD/
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4708507811	BIG INJUN /SD/
4708507811	WEIR /SD/
4708507811	WARREN /SD/
4708507811	BALLTOWN /SD/
4708507811	RILEY /SD/
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4708507814	BIG INJUN /SD/
4708507814	WEIR /SD/
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4708507814	RILEY /SD/
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4708507835	WEIR /SD/
4708507835	WARREN /SD/
4708507835	RILEY /SD/
4708507835	BENSON /SD/

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4708507835	ALEXANDER
4708507836	BIG LIME
4708507836	WEIR /SD/
4708507836	WARREN /SD/
4708507836	RILEY /SD/
4708507836	BENSON /SD/
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4708507855	RILEY /SD/
4708507855	BENSON /SD/
4708507855	ALEXANDER
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4708507856	WEIR /SD/
4708507856	WARREN /SD/
4708507856	RILEY /SD/
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4708507860	BEREA
4708507860	WARREN /SD/
4708507860	RILEY /SD/
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4708507863	WEIR /SD/
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4708507863	RILEY /SD/
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4708507867	BEREA
4708507867	WARREN /SD/
4708507867	RILEY /SD/
4708507867	BENSON /SD/
4708507867	ALEXANDER
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4708507869	BIG LIME
4708507869	WEIR /SD/
4708507869	WARREN /SD/
4708507869	RILEY /SD/
4708507869	BENSON /SD/
4708507869	ALEXANDER
4708507881	LITTLE LIME

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4708507881	BIG LIME
4708507881	WEIR /SD/
4708507881	BEREA
4708507881	WARREN /SD/
4708507881	RILEY /SD/
4708507881	BENSON /SD/
4708507881	ALEXANDER
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4708507888	RILEY /SD/
4708507888	BENSON /SD/
4708507888	ALEXANDER
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4708507891	RILEY /SD/
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4708507905	BENSON /SD/
4708507905	ALEXANDER
4708507963	BIG LIME
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4708507963	WEIR /SD/
4708507963	BEREA
4708507963	WARREN /SD/
4708507963	RILEY /SD/
4708507963	BENSON /SD/
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4708508057	GORDON /SD/
4708508057	RILEY /SD/
4708508057	BENSON /SD/
4708508057	ALEXANDER
4708508162	MAXTON
4708508162	LITTLE LIME
4708508162	BIG LIME

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4708508162	BIG INJUN /SD/
4708508162	WARREN /SD/
4708508162	RILEY /SD/
4708508162	RILEY 3
4708508162	BENSON /SD/
4708508162	ALEXANDER
4708508163	MAXTON
4708508163	LITTLE LIME
4708508163	BIG LIME
4708508163	BIG INJUN /SD/
4708508163	WARREN /SD/
4708508163	RILEY /SD/
4708508163	RILEY 3
4708508163	BENSON /SD/
4708508163	ALEXANDER
4708508173	BIG INJUN /SD/
4708508173	WARREN /SD/
4708508173	RILEY /SD/
4708508173	RILEY 3
4708508173	BENSON /SD/
4708508173	ALEXANDER

4708510290

Office of Oil and Gas
JUL 21 2016
WV Department of
Environmental Protection

July 28, 2015

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

Re: Casing on Wells (PEN54)

Dear Mr. Smith,

EQT is requesting the 13-3/8" surface casing be set at 900' KB, 130' below the deepest fresh water and 33' below top of coal at 867' KB. We will set the 9-5/8" intermediate string at 5176' KB, 50' below the porosity zone in the Alexander formation.

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

Sincerely,

Vicki Roark
Permitting Supervisor

4708510290

Enc.

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EQT Production 115 Professional Place I P.O. Box 280 I Bridgeport, WV 26330
T 304.848.0000 I F 304.848.0040 I www.eqt.com

west virginia department of environmental protection

Office of Oil and Gas
601 57th 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

4708510200

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 by GCS

James Peterson
Environmental Resources Specialist / Permitting

Promoting a healthy environment.

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WV Department of
Environmental Protection

west virginia department of environmental protection

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

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 4708510209

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

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.

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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.

4708510250

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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WW-9
(4/16)

API Number 47 - 85 - _____
Operator's Well No. 514480

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name EQT Production Company OP Code 306686

Watershed (HUC 10) North Fork Hughes River Quadrangle Pennsboro

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

Proposed Disposal Method For Treated Pit Wastes:

MAG 5/26/16

- ____ 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

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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 17 day of May, 20 16

_____ Notary Public

My commission expires 7/27/2018

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Nicholas L. Bumgardner
Rt. 1, Box 4
Liberty, WV 25124
My Commission Expires July 27, 2018

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.

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Form WW-9

4708510290

Operator's Well No. 514480

EQT Production Company

Proposed Revegetation Treatment: Acres Disturbed No Additional Prevegetation pH 6.2

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

4708510290

Seed Mixtures

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:
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Michael Daff

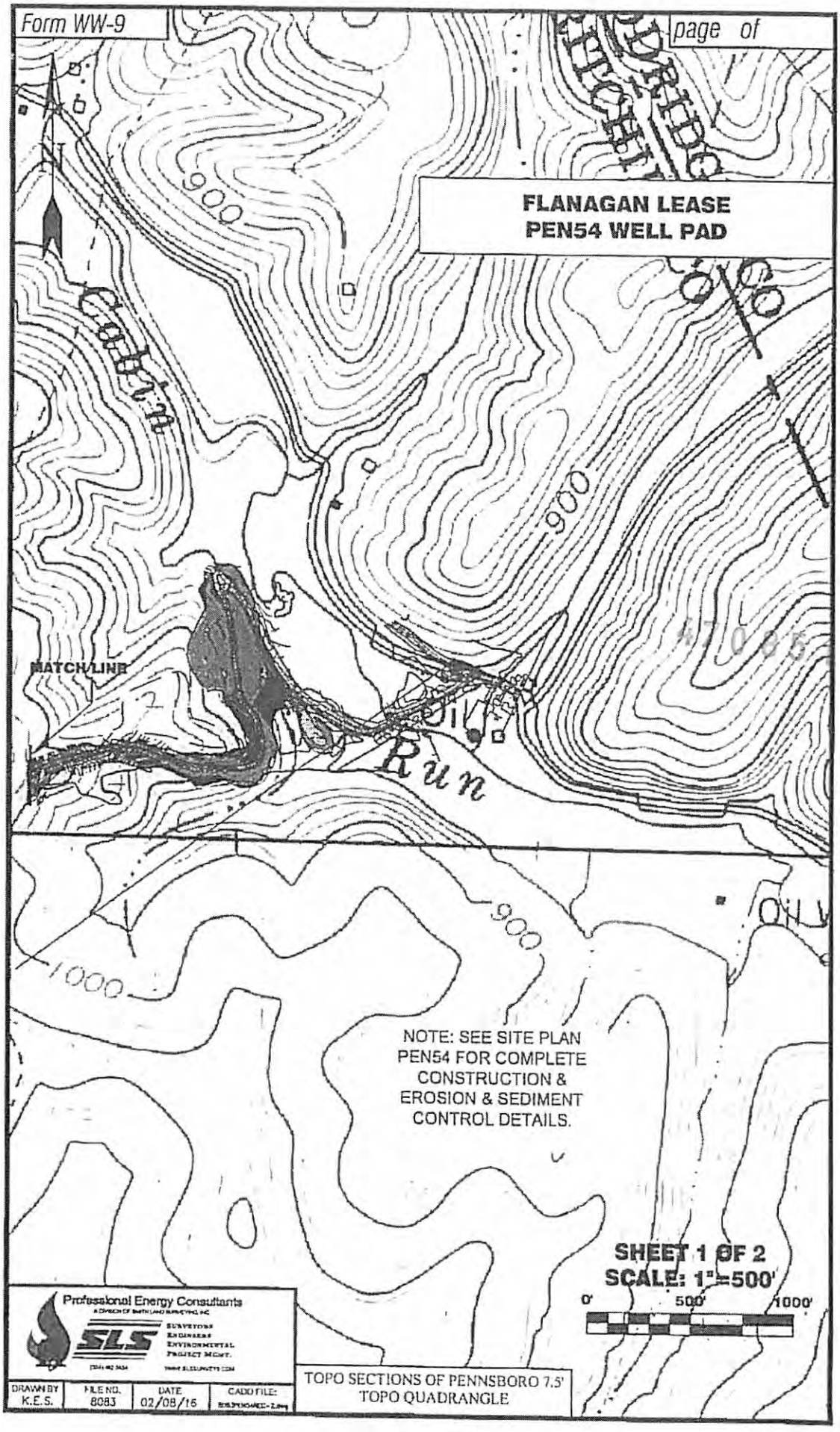
Comments: Preseed & mulch any disturbed areas per WVDEP regulations Maintain & Upgrade E&S as necessary.

Title: Oil & Gas Inspector Date: 5/26/16

Field Reviewed? (✓) Yes ( ) No

Form WW-9

page of



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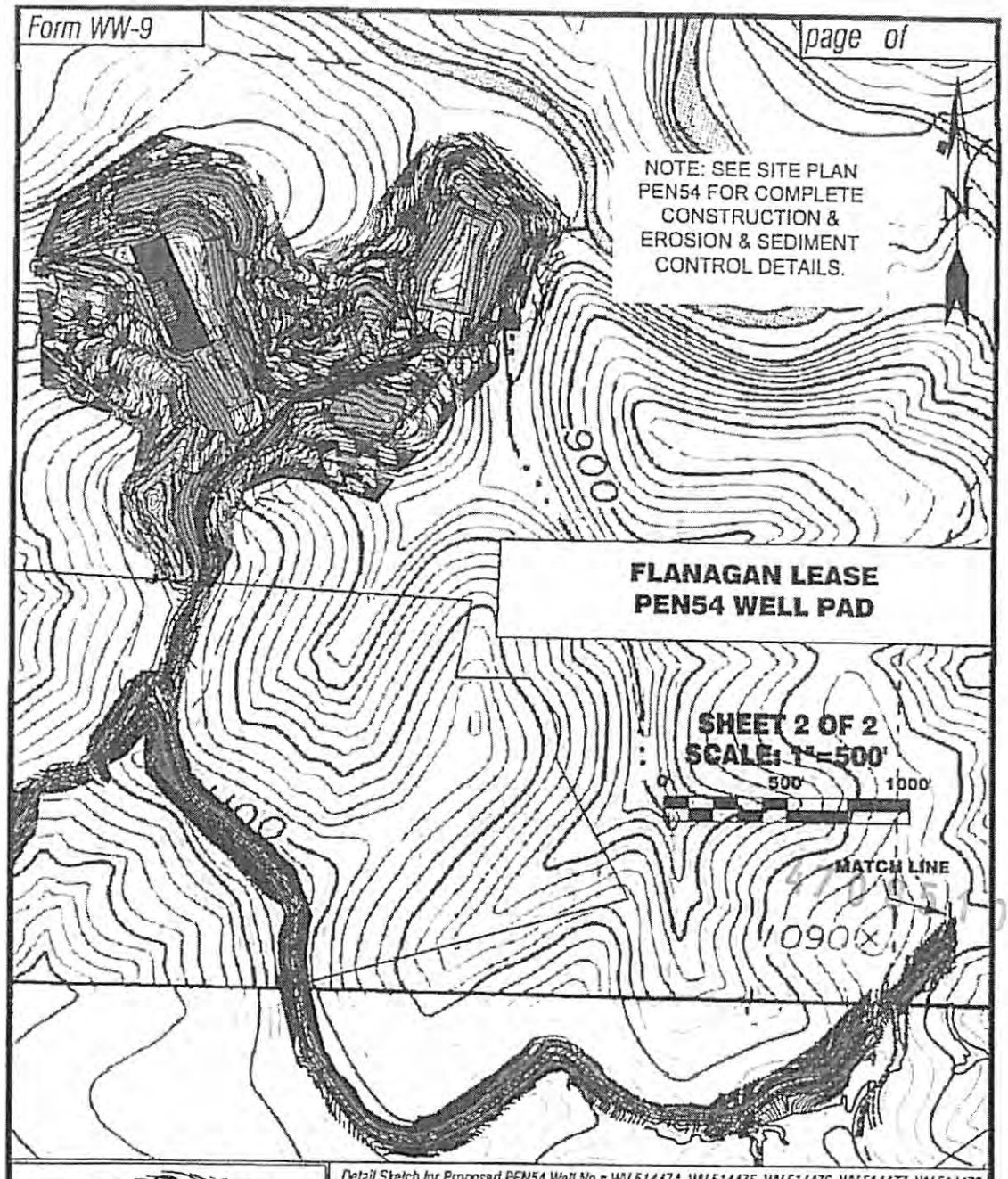
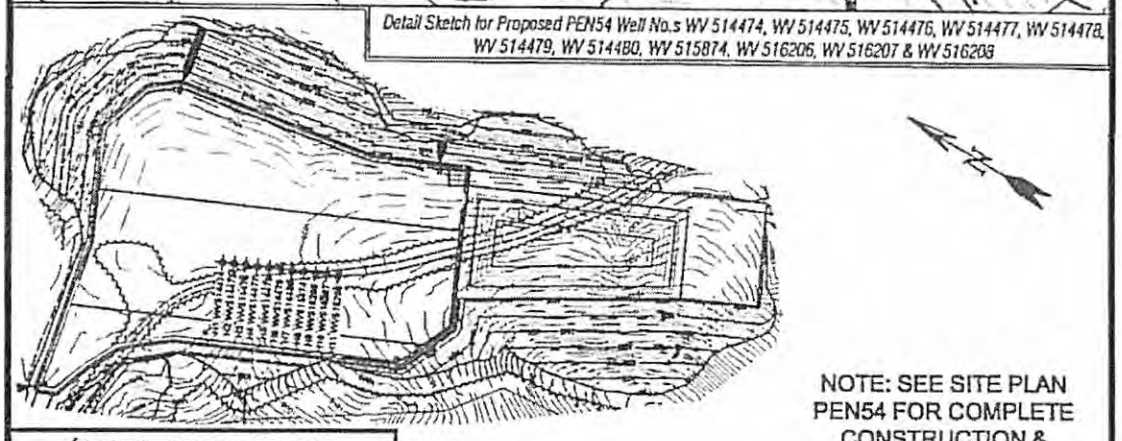


Detail Sketch for Proposed PEN54 Well No.s WV 514474, WV 514475, WV 514476, WV 514477, WV 514478, WV 514479, WV 514480, WV 515874, WV 516206, WV 516207 & WV 516208



NOTE: SEE SITE PLAN PEN54 FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.

Professional Energy Consultants

SLS Surveyors Engineers Environmental Project Mgmt.

DRAWN BY	FILE NO.	DATE	CADD FILE:
K.E.S.	8083	02/08/16	

TOPO SECTIONS OF PENNSBORO 7.5' TOPO QUADRANGLE

Not To Scale

4708510290

MAC 5/26/16

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

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

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

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

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

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

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

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

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Environmental Protection

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EQT

Where energy meets innovation.™

Site Specific Safety Plan

EQT PEN 54 Pad

Pennsboro Quardrant

Toll Gate
Ritchie County, WV

For Wells:

514480

4708510290

Date Prepared: February 3, 2016

EQT Production

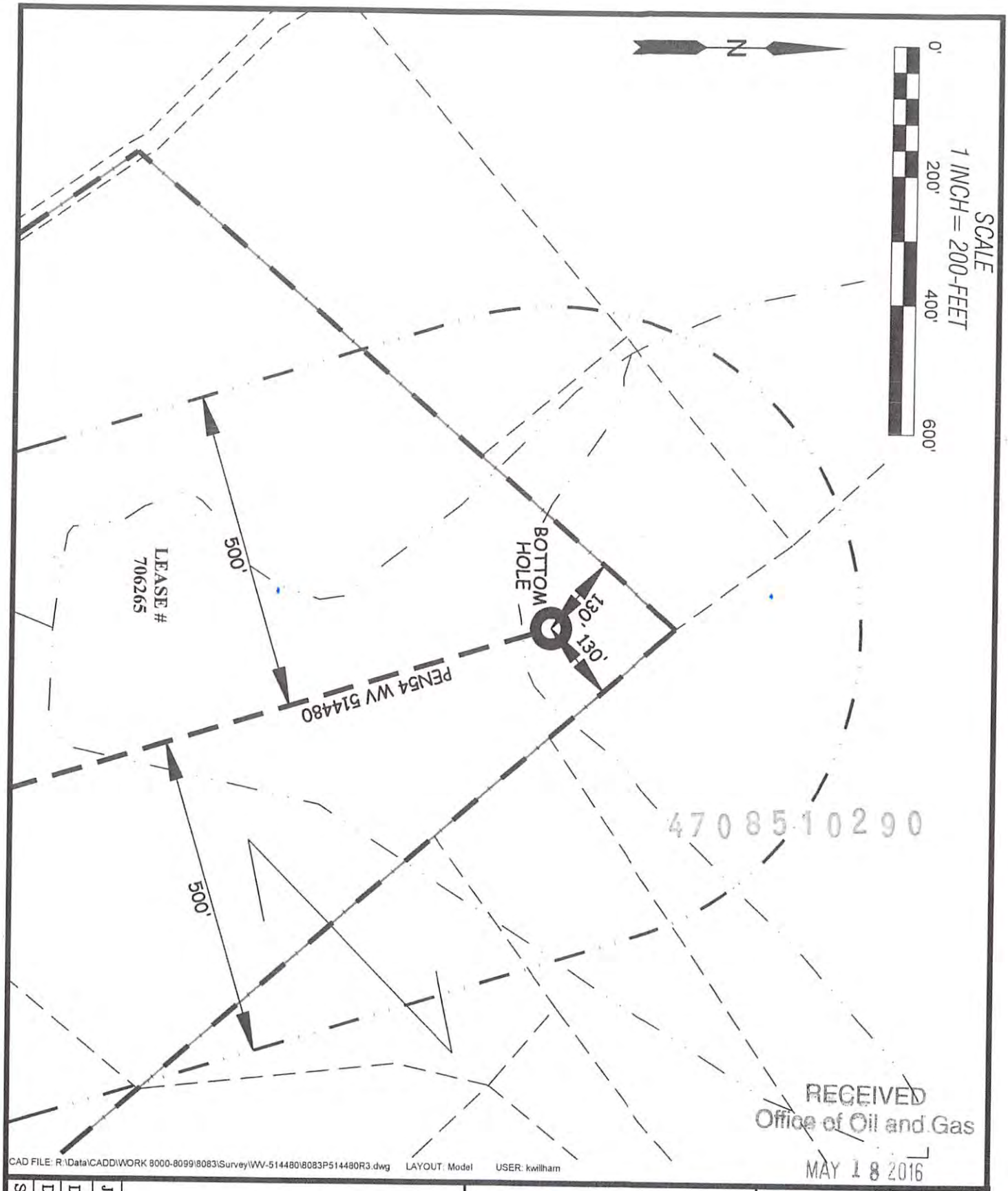
Permitting Supervisor
Title

5/17/16
Date

Michael Daff
WV Oil and Gas Inspector

Title

5/20/16
Date



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CAD FILE: R:\Data\CADD\WORK 8000-8099\8083\Survey\WV-514480\8083P514480R3.dwg LAYOUT: Model USER: kwilliam

EXHIBIT MAP

SHOWING BLOWUP OF PEN54
H7 BOTTOM HOLE
IN RELATION TO LEASE LINES

JOB #: 8083
DRAWN BY: K.D.W.
DATE: 05-12-16
SCALE: 1" = 200'

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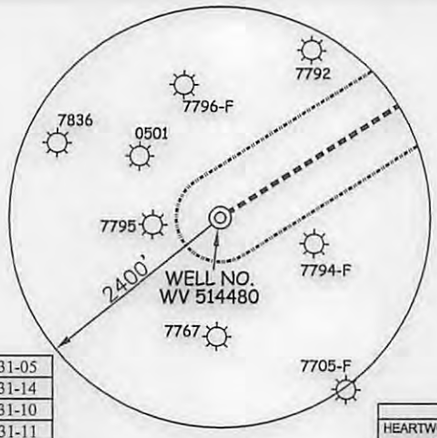
WV 514480
EQT PRODUCTION COMPANY



TOP HOLE ← 3,047' →

BOTTOM HOLE ← 2,537' →

LATITUDE 39°17'30" — 2,970'

BH — LONGITUDE 80°55'00" — BOTTOM HOLE

12,419'

TOP HOLE

NOTES ON SURVEY

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
2. WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'

A	JERRY MORTON ET AL	243.50 ACRES±	TM C-31-05
B	HEARTWOOD FORESTLAND FUND IV LP	185.3 ACRES±	TM C-31-14
C	DONALD & BARBARA DEEM	133.07 ACRES±	TM C-31-10
D	HEARTWOOD FORESTLAND FUND IV LP	196.90 ACRES±	TM C-31-11
E	ROGER SATTERFIELD	3 ACRES±	TM C-31-5.2
F	JOSEPH FLANAGAN ET AL	2.5 ACRES±	TM C-31-5.3
G	ANTERO TREATMENT LLC	175.85 ACRES±	TM C-31-6
H	JUDITH & JO ANN ROBINSON	106.265 ACRES±	TM C-31-22
I	VIRGINIA COTTRILL	25.5 ACRES±	TM C-31-04
J	VIRGINIA COTTRILL	55.73 ACRES±	TM C-26-56.2
K	VIRGINIA COTTRILL	57.63 ACRES±	TM C-26-56.1
L	VIRGINIA COTTRILL	84.35 ACRES±	TM C-26-56
M	WV RAILROAD MAINTENANCE AUTHORITY	48.14 ACRES±	TM C-26-19
N	WV RAILROAD MAINTENANCE AUTHORITY	P/O 1141.03 ACRES±	TM C-26-X
O	ROY & LINDA HAMMOND	77.088 ACRES±	TM C-26-57
P	JANICE WILLIAMS	111.876 ACRES±	TM C-26-58.9
Q	EQT PRODUCTION COMPANY	46.63 ACRES±	TM C-26-58
R	JANICE WILLIAMS	1.715 ACRES±	TM C-26-58.2
S	EUSTACE LAMM ET AL	2.28 ACRES±	TM C-26-20.1
T	EARL DAUGHERTY	1.80 ACRES±	TM C-26-52.1
U	JEAN & KRISTINE KNUTSEN	5.34 ACRES±	TM C-26-58.3
V	KATRINA DOTSON	1.01 ACRES±	TM C-26-58.4
W	KEVIN & MICHELE ESTEP	2.912 ACRES±	TM C-26-57.1
X	BRIAN & JULIE RICHEY	7.69 ACRES±	TM C-26-58.8
Y	FERYL & MAHLON HARRIS	8.38 ACRES±	TM C-26-58.1
Z	FERYL & MAHLON HARRIS	16.62 ACRES±	TM C-26-58.6
AA	WILLIAM & JANET BROADWATER	37.565 ACRES±	TM C-26-12
BB	CITY OF PENNSBORO	25.246 ACRES±	TM C-26-12.1
CC	CITY OF PENNSBORO	4.778 ACRES±	TM C-26-5.1
DD	MOUNTVIEW CONFERENCE CHURCH	10.41 ACRES±	TM C-26-58.5
EE	TODD G. GILLENWATER	65 ACRES±	TM C-26-11
FF	TERRY & JANET HALL	5.71 ACRES±	TM C-26-4.4
GG	CITY OF PENNSBORO	2.625 ACRES±	TM C-26-4.3
HH	P.M. MANAGEMENT COMPANY	83.022 ACRES±	TM C-26-05
II	WILLIAM & JANET BROADWATER	8.203 ACRES±	TM C-26-4.1
JJ	WILLIAM & JANET BROADWATER	50 ACRES±	TM C-26-4.2
KK	CAROL COGAR ET AL	172.44 ACRES±	TM C-32-01
LL	TODD G. GILLENWATER	10.18 ACRES±	TM C-26-11.1

SUBSURFACE EASEMENT		
HEARTWOOD FORESTLAND FUND IV LP	196.90 AC.±	TAX MAP 31 PARCEL 11

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'27 S.P.C.(FT) N. 279,133.71 E. 1,595,813.09
NAD'27 GEO. LAT-(N) 39.257571 LONG-(W) 80.927426
NAD'83 UTM (M) N. 4,345,371.64 E. 506,276.12

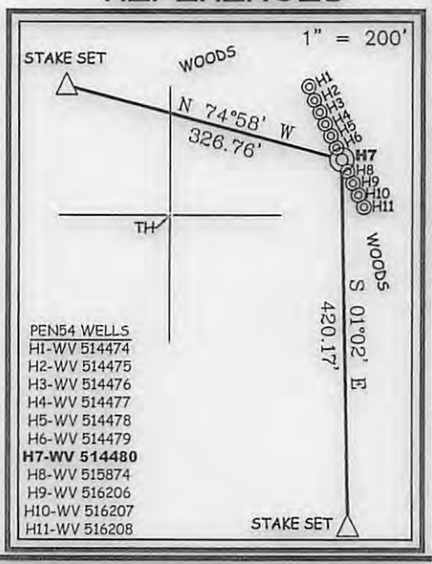
LANDING POINT

NAD'27 S.P.C.(FT) N. 281,464.74 E. 1,598,703.09
NAD'27 GEO. LAT-(N) 39.264096 LONG-(W) 80.917351
NAD'83 UTM (M) N. 4,346,096.50 E. 507,144.70

BOTTOM HOLE

NAD'27 S.P.C.(FT) N. 288,572.95 E. 1,596,472.05
NAD'27 GEO. LAT-(N) 39.283513 LONG-(W) 80.925628
NAD'83 UTM (M) N. 4,348,250.65 E. 506,428.87

REFERENCES



ROYALTY OWNERS		
GUY FLANNAGAN ET AL	126 AC.±	LEASE NO. 1005912
JOYCE FOWLER WILSON ET AL	122.408 AC.±	LEASE NO. 1005914
MARY LEE AZELVANDRE ET AL	500 AC.±	LEASE NO. 114193
CAROL A. MARSH	72 AC.±	LEASE NO. 706265
WEST VIRGINIA RAIL AUTHORITY	24.30 AC.±	LEASE NO. 1012475

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www.slssurveys.com

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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 849 C. Victor Moyers

C. VICTOR MOYERS LICENSED No. 849 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

DATE JUNE 24 , 20 15

REVISED 05/12/16 & 07/13/16

OPERATORS WELL NO. WV 514480

API WELL NO. 47 — 085 — 10290HLA
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8083P514480R4.dwg

HORIZONTAL & VERTICAL SCALE SEE NOTE 2

CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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

WELL TYPE: OIL ___ GAS X INJECTION ___ DISPOSAL ___ IF "GAS" PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X

LOCATION :

PAD ELEVATION 1,016' WATERSHED NORTH FORK HUGHES RIVER

DISTRICT CLAY COUNTY RITCHIE QUADRANGLE PENNSBORO 7.5'

SURFACE OWNER JERRY MORTON ET AL ACREAGE 243.50±

ROYALTY OWNER ELLEN S. FRANCAVIGLIA ET AL ACREAGE 268±

PROPOSED WORK : LEASE NO. 105403

DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ OTHER ___

PHYSICAL CHANGE IN WELL (SPECIFY) ___ TARGET FORMATION MARCELLUS

ESTIMATED DEPTH 6,275'

COUNTY NAME

PERMIT

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT REX C. RAY

ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280

BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330

SLS
124568

PEN54
WV 514480
EQT PRODUCTION COMPANY

TOP HOLE 3,047'
BOTTOM HOLE 2,537'
LATITUDE 39°17'30"
LONGITUDE 80°55'00"
BOTTOM HOLE 2,970'
12,419'
TOP HOLE

WELL TIES		
ID	BEARING	DISTANCE
L1	N 22°10' W	1974.21'
L2	N 05°17' E	3801.35'

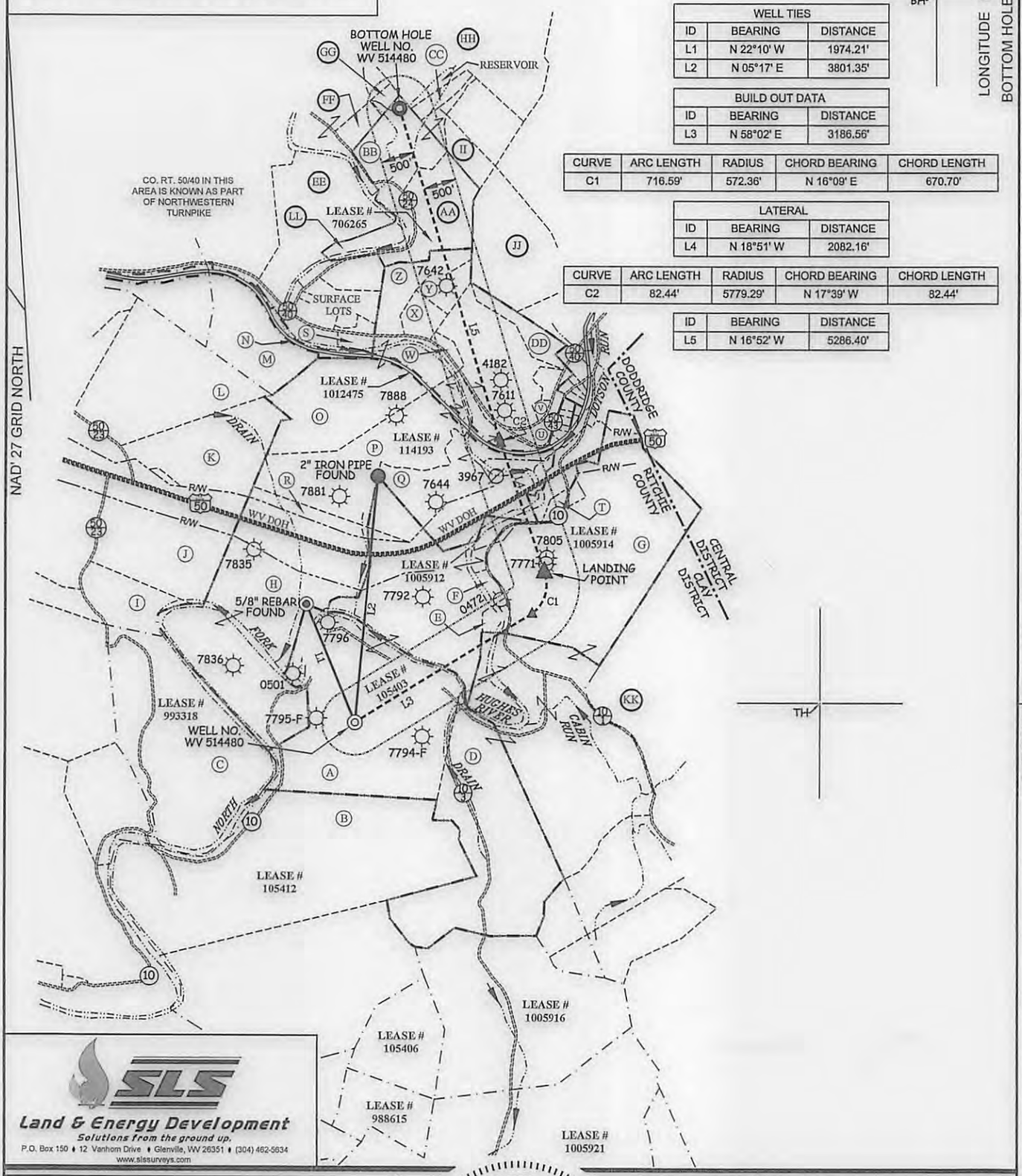
BUILD OUT DATA		
ID	BEARING	DISTANCE
L3	N 58°02' E	3186.56'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	716.59'	572.36'	N 16°09' E	670.70'

LATERAL		
ID	BEARING	DISTANCE
L4	N 18°51' W	2082.16'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C2	82.44'	5779.29'	N 17°39' W	82.44'

ID	BEARING	DISTANCE
L5	N 16°52' W	5286.40'



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www.slssurveys.com

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'27 S.P.C.(FT)	N. 279,133.71	E. 1,595,813.09
NAD'27 GEO.	LAT-(N) 39.257571	LONG-(W) 80.927426
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BOTTOM HOLE		
NAD'27 S.P.C.(FT)	N. 288,572.95	E. 1,596,472.05
NAD'27 GEO.	LAT-(N) 39.283513	LONG-(W) 80.925628
NAD'83 UTM (M)	N. 4,348,250.65	E. 506,428.87

C. VICTOR MOYERS
LICENSED
No. 849
STATE OF
WEST VIRGINIA
PROFESSIONAL SURVEYOR
C.V.M.
7-13-16

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

LEGEND

LEASE LINE
SURFACE LINE
WELL LATERAL
OFFSET LINE
TIE LINE
CREEK
ROAD
RAIL ROAD
COUNTY ROUTE
STATE ROUTE
PROPOSED WELL
EXISTING WELL
PERMITTED WELL
CLAY DISTRICT TAX MAP–PARCEL C–00–00

COUNTY NAME
PERMIT

SCALE 1" = 2000' FILE NO. 8083P514480R4
DATE JUNE 24, 20 15
REVISED 05/12/16 & 07/13/16
OPERATORS WELL NO. WV 514480
API WELL NO. 47 — 085 — 10290 HGA
STATE COUNTY PERMIT

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

WELL OPERATOR EQT PRODUCTION COMPANY
ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280
BRIDGEPORT, WV 26330

DESIGNATED AGENT REX C. RAY
ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280
BRIDGEPORT, WV 26330

SLS
124568

WW-6A1
(5/13)

Operator's Well No. 514480

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				

4708510290

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

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

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

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

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

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WV Department of
Environmental Protection

WW-6A1 attachment Operator's Well No. 514480

Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
105403	Ellen S. Francaviglia, et al (current royalty owner)		***	
	W.A. Flanagan, et al (original lessor)	The Philadelphia Company of West Virginia		LB63/295
	The Philadelphia Company of West Virginia	Pittsburgh and West Virginia Gas Company		DB55/362
	Pittsburgh and West Virginia Gas Company	Equitable Gas Company		DB 126/473
	Equitable Gas Company	Equitrans, Inc.		LB 201/253
	Equitrans,Inc.	Equitrans,LP.		AB269/182
	Equitrans,LP	Equitable Production/Eastern States, Inc.		DB234/830
	Equitable Production/Eastern States, Inc.	Equitable Production Company		CB557/56
	Equitable Production Company	EQT Production Company		DB 281/346 Doddridge
3-31-11	The Heartwood Forestland Fund IV, L.P.	EQT Production Company	n/a	342/294 Subsurface
	Marcellus Rights			
1005912	Guy M. Flanagan, et al (current royalty owner)		***	
	Gregory L. Flanagan (original lessor)	Energy Corporation of America		LB201/110
	Energy Corporation of America	Antero Resources Corportation		257/377
	Antero Resources Corportation	EQT Production Company		DB277/1037
	Marcellus Rights			
1005914	Joyce Fowler Wilson, et al (current royalty owner)		***	
	Eileen Sherrer, et al (original lessor)	Carl Perkins		LB102/529
	Carl Perkins	Perkins Oil & Gas, Inc		131/680
	Perkins Oil & Gas, Inc	Antero Resources Corportation		264/1045
	Antero Resources Corportation	EQT Production Company		DB277/1045
114193	Mary Lee Azelvandre, et al (current royalty owner)		***	
	Harry L. Broadwater and Sadie E. Broadwater, et al	W.J. Rowland		LB33/533
	W.J. Rowland	The Philadelphia Company of West Virginia		DB126/418
	The Philadelphia Company of West Virginia	Pittsburgh and West Virginia Gas Company		LB55/362
	Pittsburgh and West Virginia Gas Company	Equitable Gas Company		DB126/473
	Equitable Gas Company	Equitrans, Inc.		LB201/253
	Equitrans,Inc.	Equitrans,LP.		AB269/182
	Equitrans,LP	Equitable Production/Eastern States, Inc.		DB234/830
	Equitable Production/Eastern States, Inc.	EQT Production Company		CB557/56
	Equitable Production/Eastern States, Inc.	EQT Production Company		DB281/346 Doddridge
706265	Carol A Marsh (current royalty owner)		***	
	Sherman Marsh, et ux (original lessor)	Carnegie Natural Gas Company		LB32/55
	Carnegie Natural Gas Company	Carnegie Production Company		LB 228/859
	Carnegie Production Company	Equitable Production-Eastern States, Inc.		see attached
	Equitable Production-Eastern States, Inc.	Equitable Production Company		see attached
	Equitable Production Company	EQT Production Company		CB6/443
1012475	West Virginia State Rail Authority (current royalty owner)		min pd 1/8th	
	West Virginia State Rail Authority (original lessor)	EQT Production Company		LB295/860

*** We will pay 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.

4708510200

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WV Department of
Environmental Protection

EQT Production Company
2400 Zenith Ridge Rd.
Suite 200
Canonsburg, PA 15317
www.eqt.com

Todd Klaner
Manager, Permitting
tklaner@eqt.com

Via E-Mail

March 1, 2016

WV DEP Reviewer

RE: EQT Production Company
PAD ID – PEN54
Well# - 514480
Ritchie County

Dear Reviewer,

This well indicated by this permit application contains a Subsurface Easement Agreement for non-productive portions of the well bore. Attached is a Memorandum of Subsurface Use Agreement which gives EQT the right to drill below the surface of the tracts 31/11 shown on the well plat.

EQT Production understands that the WVDEP will issue the permit in the normal process subject to the completeness of the requirements of the Office of Oil and Gas and does not take a position with regards to the property rights under this agreement.

EQT Production agrees that the WVDEP's issuance of the permit is in no way an affirmance or validation of EQT Production's claimed rights.

47085

Regards,

Todd Klaner
Manager, Permitting
EQT Production Company

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MAY 18 2016
WV Department of
Environmental Protection

Cross Reference

DEED 283-542

SUBSURFACE RIGHT-OF-WAY AND EASEMENT AGREEMENT

This SUBSURFACE RIGHT-OF-WAY AND EASEMENT AGREEMENT ("Agreement") is made the 11 day of ~~November, 2015~~ January, 2016, between **THE HEARTWOOD FORESTLAND FUND IV, L.P**, (hereinafter "Grantor" whether one or more), whose address is 1512 East Franklin Street, Suite 104, Chapel Hill, NC. 27514-2816 and **EQT PRODUCTION COMPANY**, (hereinafter "EQT"), whose corporate headquarters are located at 625 Liberty Avenue, Suite 1700, Pittsburgh, PA, 15222.

Property. Grantor owns that certain tract of land located in Clay District, Ritchie County, West Virginia containing 196.90 acres, more or less, and conveyed to Grantor in Deed Book 283, at page 542.

1. **Subsurface**. For purposes of this Agreement, the subsurface shall be limited to the subsurface region and underground lying below the deepest economically mineable and merchantable coal seam.

2. **Grant**. In consideration of Ten Dollars and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Grantor grants to EQT a non-exclusive, perpetual right of way and subsurface easement within and underlying the Land for the purpose of locating and maintaining a total of two wellbores (PEN 54) for the production of hydrocarbons by EQT from EQT's adjacent mineral tracts and leases. This right of way and easement shall run with the land and shall remain in force and effect until released and relinquished by EQT back to the Grantor, in writing.

3. **Wellbores**. Upon completion of any wellbore within the subsurface underlying the Land (the "Subsurface Land"), the subsurface easement in the area of the wellbore and the one hundred (100') feet on each side of the wellbore that parallels it shall become an *exclusive* right of way and easement in that area. The wellbore locations are generally described in the plat(s) filed with the West Virginia Department of Environmental Protection (the "DEP") for well(s): If an as-built plat is not available from the DEP for a wellbore located within the Subsurface Land, any third-party with the right to operate within the Subsurface Land may contact EQT's land department for a copy of such as-built plat. After the date of this Agreement, EQT shall provide notice of additional wellbores located within the remaining Subsurface Land by filing an amendment, affidavit or other appropriate document.

4. **No Surface Operations**. This Agreement does not grant EQT the right to conduct any operations on the surface of the Land. No surface operations shall be conducted on the Land by EQT unless the parties enter into a separate agreement.

5. **Miscellaneous Provisions**
   (a) This instrument may be executed in one or more counterparts, each of which will be deemed to be an original copy of this instrument and all of which will be deemed to comprise one single instrument.

   (b) The parties agree that this Agreement shall be filed of record together with all exhibits thereto.

   (c) For no additional consideration, Grantor shall execute such further documents as may be reasonably requested by EQT from time to time to effectuate the intent of this Agreement.

IN WITNESS WHEREOF, effective as of the date first above written. This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors, assigns, heirs and administers and executors.

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Tracie D. Mc Donald
RITCHIE County 01:38:41 PM
Instrument 201600001721
Date Recorded 02/03/2016
Document Type ROWE
Pages Recorded 4
Book-Page 342-294
Recording Fee $5.00
Additional $0.00

WITNESS the following signatures:

HEARTWOOD FORESTLAND FUND IV, L.P.

By: Heartwood Forestland Advisors IV, LLC

Its: General Partners

By: The Forestland Group LLC

Its: Manager

By: Michael A. Hincher

Its: Vice President of Forestland Operations

EQT PRODUCTION COMPANY

By: John W. Damato

Its: Attorney in Fact

4708510200

COMMONWEALTH OF VIRGINIA;
COUNTY OF WASHINGTON:

Before me, Tammy R. McKinnon, a Notary Public, on this day personally appeared Michael A. Hincher, known to me to be the Vice President of Forestland Operation of **The Forestland Group, LLC**, subscribed to the foregoing instrument, and acknowledged to me that he executed the instrument for the purposes and consideration therein expressed as his/her free act and deed. Given under my hand and seal of office this 11 day of ~~November, 2015~~ January, 2016.

My Commission expires: May 31, 2018.

[SEAL] TAMMY R. McKINNON
NOTARY PUBLIC
Commonwealth of Virginia
Reg. #168556

Tammy R. McKinnon
Notary Public

STATE OF WEST VIRGINIA;
COUNTY OF HARRISON:

Before me, Tina Maxwell, a Notary Public, on this day personally appeared John W. Damato, known to me to be the Attorney in Fact of **EQT PRODUCTION COMPANY**, subscribed to the foregoing instrument, and acknowledged to me that he executed the instrument for the purposes and consideration therein expressed as his/her free act and deed. Given under my hand and seal of office this 25th day of ~~November~~ January, 2016.

My Commission expires: August 29, 2019.

[SEAL] OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
TINA MAXWELL
EQT PRODUCTION COMPANY
115 PROFESSIONAL PLACE
BRIDGEPORT WV 26330
My Commission Expires August 29, 2019

Tina Maxwell
Notary Public

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MAY 18 2016
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Environmental Protection

Prepared by: EQT Production Company, 625 Liberty Avenue, Suite 1700, Pittsburgh, PA 15222

PENNSYLVANIA DEPARTMENT OF STATE
CORPORATION BUREAU
ROOM 308 NORTH OFFICE BUILDING
P.O. BOX 8722
HARRISBURG, PA 17105-8722

CARNEGIE PRODUCTION COMPANY

THE CORPORATION BUREAU IS HAPPY TO SEND YOU YOUR FILED DOCUMENT. PLEASE NOTE THE FILE DATE AND THE SIGNATURE OF THE SECRETARY OF THE COMMONWEALTH. THE CORPORATION BUREAU IS HERE TO SERVE YOU AND WANTS TO THANK YOU FOR DOING BUSINESS IN PENNSYLVANIA. IF YOU HAVE ANY QUESTIONS PERTAINING TO THE CORPORATION BUREAU, CALL (717) 787-1057.

4700851029 0

ENTITY NUMBER: 2645671

MICROFILM NUMBER: 2000096

0308-0311

X
X

200096 - 308

DEC 2 7 2000

Microfilm Number_____

Filed with the Department of State on _____

Entity Number 2719730

_____
Secretary of the Commonwealth

ARTICLES OF MERGER-DOMESTIC BUSINESS CORPORATION

DSCB:15-1926 (Rev 90)

In compliance with the requirements of 15 Pa.C.S. § 1926 (relating to articles of merger or consolidation), the undersigned business corporations, desiring to effect a merger, hereby state that:

1. The name of the corporation surviving the merger is: EQUITABLE PRODUCTION - EASTERN STATES, INC.

2. (Check and complete one of the following):

___The surviving corporation is a domestic business corporation and the (a) address of its current registered office in this Commonwealth or (b) name of its commercial registered office provider and the county of venue is (the Department is hereby authorized to correct the following information to conform to the records of the Department):

(a) _____
Number and Street City State Zip County

(b) c/o: _____
Name of Commercial Registered Office Provider County

For a corporation represented by a commercial registered office provider, the county in (b) shall be deemed the county in which the corporation is located for venue and official publication purposes.

x The surviving corporation is a qualified foreign business corporation incorporated under the laws of _____ and the (a) address of its current registered office in this Commonwealth or (b) name of its commercial registered office provider and the county of venue is (the Department is hereby authorized to correct the following information to conform to the records of the Department):

(a) _____
Number and Street City State Zip County

(b) c/o: CT Corporation System ALLEGHENY
Name of Commercial Registered Office Provider County

For a corporation represented by a commercial registered office provider, the county in (b) shall be deemed the county in which the corporation is located for venue and official publication purposes.

___The surviving corporation is a nonqualified foreign business corporation incorporated under the laws of _____ and the address of its principal office under the laws of such domiciliary jurisdiction is:

_____
Number and Street City State Zip

3. The name and the address of the registered office in this Commonwealth or name of its commercial registered office provider and the county of venue of each other domestic business corporation and qualified foreign business corporation which is a party to the plan of merger are as follows:

Name of Corporation	Address of Registered Office or Name of Commercial Registered Office Provider	County
Carnegie Production Company	One Oxford Centre, Suite 3300, Pittsburgh, PA 15219-6401	Allegheny

PA025 - 10/14/99 C T System Online

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WV Department of
Environmental Protection

PA. DEPT. OF STATE

2000 DEC 29 PM 4:06

DSCB:15-1926 (Rev 90)-2

4. **(Check, and if appropriate complete, one of the following):**

___The plan of merger shall be effective upon filing these Articles of Merger in the Department of State.

_X_The plan of merger shall be effective on: December 31, 2000 (Date) at 12:1[illegible] a.m. (Hour)

5. The manner in which the plan of merger was adopted by each domestic corporation is as follows:

Name of Corporation	Manner of Adoption
Carnegie Production Company	Adopted by action of the board of directors of the corporation
	pursuant to 15 PA. C. S. Section 1924(b)(2)

6. **(Strike out this paragraph if no foreign corporation is a party to the merger).** The plan was authorized, adopted or approved, as the case may be, by the foreign business corporation (or each of the foreign business corporations) party to the plan in accordance with the laws of the jurisdiction in which it is incorporated.

7. **(Check, and if appropriate complete, one of the following):**

_X_The plan of merger is set forth in full in Exhibit A attached hereto and made a part hereof.

___Pursuant to 15 Pa.C.S. § 1901 (relating to omission of certain provisions from filed plans) the provisions, if any, of the plan of merger that amend or constitute the operative Articles of Incorporation of the surviving corporation as in effect subsequent to the effective date of the plan are set forth in full in Exhibit A attached hereto and made a part hereof. The full text of the plan of merger is on file at the principal place of business of the surviving corporation, the address of which is:

Number and Street	City	State	Zip	County

IN TESTIMONY WHEREOF, the undersigned corporation or each undersigned corporation has caused these Articles of Merger to be signed by a duly authorized officer thereof this 29th day of December, 2000.

Equitable Production - Eastern States, Inc.
(Name of Corporation)

BY: Johanna B O'Loughlin
(Signature)

TITLE: VP and Corporate Secretary

Carnegie Production Company
(Name of Corporation)

BY: [illegible]
(Signature)

TITLE: VP

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State of Delaware

Office of the Secretary of State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF MERGER, WHICH MERGES:

"EQUITABLE PRODUCTION - EASTERN STATES, INC.", A DELAWARE CORPORATION,

WITH AND INTO "EQUITABLE PRODUCTION COMPANY" UNDER THE NAME OF "EQUITABLE PRODUCTION COMPANY", A CORPORATION ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF PENNSYLVANIA, AS RECEIVED AND FILED IN THIS OFFICE THE THIRTIETH DAY OF APRIL, A.D. 2001, AT 12 O'CLOCK P.M.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.

4708510290

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WV Department of
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Harriet Smith Windsor

Harriet Smith Windsor, Secretary of State

3386289 8100M

010206565

AUTHENTICATION: 4009924

DATE: 05-01-01

CERTIFICATE OF MERGER
OF
EQUITABLE PRODUCTION – EASTERN STATES, INC.
INTO
EQUITABLE PRODUCTION COMPANY

The undersigned corporation DOES HEREBY CERTIFY:

FIRST: That the names and states of incorporation of each of the constituent corporations of the merger are as follows:

NAME	STATE OF INCORPORATION
Equitable Production – Eastern States, Inc.	Delaware
Equitable Production Company	Pennsylvania

SECOND: That an Agreement of Merger between the parties to the merger has been approved, adopted, certified, executed and acknowledged by each of the constituent corporations in accordance with the requirements of Section 252 of the General Corporation Law of Delaware.

THIRD: That the Articles of Incorporation of Equitable Production Company, a Pennsylvania corporation, which is the surviving corporation, shall continue in full force and effect as the Certificate of Incorporation of the surviving corporation.

FOURTH: That the executed Agreement of Merger is on file at an office of the surviving corporation, the address of which is 301 Grant Street, Suite 3300, Oxford Centre, Pittsburgh, Pennsylvania 15219.

FIFTH: That a copy of the Agreement of Merger will be furnished, on request and without cost, to any stockholder of any constituent corporation.

SIXTH: That Equitable Production Company survives the merger and may be served with process in the State of Delaware in any proceeding for enforcement of any obligation of any constituent Delaware corporation as well as for enforcement of any obligation of the surviving corporation arising from the merger, including any suit or other proceeding to enforce the right of any stockholder, as determined in appraisal proceedings pursuant to the provisions of Section 262 of the General Corporation Law of Delaware, and it does hereby irrevocably appoint the Secretary of State of Delaware as its agent to accept service of process in any such suit or other proceeding. The address to which a copy of such process shall be mailed by the Secretary of State of Delaware is 301 Grant Street, Suite 3300, Oxford Centre, Pittsburgh, PA 15219 until the surviving corporation shall have hereafter designated in writing to the said Secretary of State a different address for such purpose.

SEVENTH: That this Certificate of Merger shall be effective on April 30, 2001.

Dated: April 26, 2001

EQUITABLE PRODUCTION COMPANY

By: Henry E. Reich, Jr., Vice President

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STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 12:00 PM 04/30/2001
010206565 – 2075827

APR-30-2001 11:34 CT CORPORATION SYSTEM 412 281 5212 P.02/02

February 22, 2016

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

Re: PEN54 well pad, well numbers 514480
Clay 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,

Vicki Roark
Permitting Supervisor-WV

4708510290

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MAY 18 2016
WV Department of
Environmental Protection

EQT Production 115 Professional Place I P.O. Box 280 I Bridgeport, WV 26330
T 304.848.0000 I F 304.848.0040 I www.eqt.com

WW-6AC
(1/12)

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

Date of Notice Certification: 5/17/16

API No. 47- 85 -
Operator's Well No. 514480
Well Pad Name: PEN54

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:	WV	UTM NAD 83	Easting:	506,276.12
County:	Ritchie		Northing:	4,345,371.64
District:	Clay	Public Road Access:		RT50
Quadrangle:	Pennsboro	Generally used farm name:		Jerry Morton et al
Watershed:	North Fork Hughes River			

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.

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: *PLEASE CHECK ALL THAT APPLY	OOG OFFICE USE ONLY
☐ 1. NOTICE OF SEISMIC ACTIVITY or ☒ NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED	☐ RECEIVED/ NOT REQUIRED
☐ 2. NOTICE OF ENTRY FOR PLAT SURVEY or ☒ NO PLAT SURVEY WAS CONDUCTED	☐ RECEIVED
☒ 3. NOTICE OF INTENT TO DRILL or ☐ NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or ☐ WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)	☐ RECEIVED/ NOT REQUIRED
☒ 4. NOTICE OF PLANNED OPERATION	☐ RECEIVED
☒ 5. PUBLIC NOTICE	☐ RECEIVED
☒ 6. NOTICE OF APPLICATION	☐ RECEIVED

47 085 10298

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 Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed 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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WV Department of
Environmental Protection

WW-6AC
(1/12)

Certification of Notice is hereby given:

THEREFORE, I _____, 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	Address:	115 Professional Place PO Box 280
By:			Bridgeport WV 26330
Its:	Permitting Supervisor	Facsimile:	304-848-0041
Telephone:	304-848-0076	Email:	vroark@eqt.com

NOTARY SEAL
OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Nicholas L. Bumgardner
Rt. 1, Box 4
Liberty, WV 25124
My Commission Expires July 27, 2018

Subscribed and sworn before me this 17 day of MAY, 2016.

_____ Notary Public

My Commission Expires 7/27/2018

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.

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MAY 18 2016
WV Department of
Environmental Protection

WW-6A
(9-13)

API NO. 47- 85 -
OPERATOR WELL NO. 514480
Well Pad Name: PEN54

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: 5/17/16 **Date Permit Application Filed:** 5/17/16

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 well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any 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:

☐ 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 Owners:

Jerry Morton
406 Cabin Run
Pennsboro, WV 26415

Randy Collins, Natalie Collins, Kate Collins
5368 Muscovy RD
Middleburg, FL 32068

4708510200

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Surface Owners: Access Road & Other Disturbance

Jerry Morton
406 Cabin Run
Pennsboro, WV 26415

Randy Collins, Natalie Collins, Kate Collins
5368 Muscovy RD
Middleburg, FL 32068

Heartwood Forestland Fund IV, L.P.
1512 East Franklin Street, Suite 104,
Chapel Hill NC. 27514-2816

Coastal Forest Resources
dba Coastal Timberlands Company
PO Box 709
Buckhannon, WV 26201

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Surface Owners: Pits or Impoundments

Jerry Morton
406 Cabin Run
Pennsboro, WV 26415

Randy Collins, Natalie Collins, Kate Collins
5368 Muscovy RD
Middleburg, FL 32068

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Coal Owner(s)

Phyllis A Rymer
21166 State Rt 676
Marietta OH 45750

Mollie Harrington, Charles W. Morrison,
Claire Leugers
Trustees of Joan N Morrison Residuary Trust
102 NE Cypress Trail
Jensen Beach FL 34957

Braden M Nida
150 Seneca Dr.
Marietta OH 45750

Carolyn W Wilson
3731 Buffalo Lane
Montrose CO 81401

Anita W Gass
2033 Butterfly Ln.
Naperville IL 60563

Marsha Spenst
1111 Maxwell Ave
Boulder CO 80304

Byron Whealen
678 N 38th Ave
Deerfield Beach FL 33442

Rebecca Pearson
1812 W Mountain
Ft Collins CO 80521

Robert Singleton
1561 Connell Rd
Charleston WV 25314

Monica Singleton
2504 22nd Ave
Parkersburg WV 26101

Deborah K Latham
Trustee of the Deborah K Latham Living Trust
1810 10th Pike
Vero Beach FL 32960

Dewey W Jones
PO Box 172
Griffithsville WV 25521

Patricia A Zinn
315 South 4th St
Douglas WY 82633

James P Rogers Jr
400 E. Pinal Street
Catalina AZ 87539

Virginia R Terry
8868 State RT. 555
Cutler OH 45724

Samuel C Rogers
204 Eleanor St
Pennsboro WV 26415

Joyce L Wilson
FKA Joyce L Fowler
150 County Rd 4603
Bogata TX 75417

James R. Coffield
1842 Tonawanda Ave
Akron OH 44305

Linda J Chambers
47 Weber St
Richwood WV 26261

Stephen Ward
2610 New York Ave
Parkersburg WV 26101

First National Bank of Oregon
Trustee for Lathan Flanagan
31033 Foxridge Ln
Eugene OR 97405

Appalachian Royalty Co
3049 Robert C Byrd Dr
Beckley WV 25801

Linda Sue Hill
626 Thorn Grove Pike Rd
Strawberry Plains TN 37871

Warren R & Lena G Haught
12864 Staunton Turnpike
Smithville WV 26178

Nelva Jean Ford
8805 Mid Haven Circle
Granbury TX 76048

Barry D Haught , Ira Haught,
Robin J Cook
Trustees for the Haught Family Trust
210 E Main St
Harrisville WV 26362

47085 10290

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Coal Owners Continued:

Holmes & Vada J Lemon
1295 South Spring St
Harriville WV 26362

Karen Louise Plants
PO box 7304
Glen Rose TX 76043

Betty Lou Fankhauser
753 Cedarcrest Dr
Bound Brook NJ 08805

Patricia L Moore
170 Birdhouse Land
Bridgeport WV 26330

Philip Latham Sherror
203 SW Bridge St #124
Grants Pass OR 97526

Ann S Batta
FKA Ann Sherror Killen
PO Box 27570
San Deigo CA 92198

Ellen Sherror Francaviglia
3117 Lakeview Dr.
Salem OR 97304

Joseph Flanagan
PO Box 2
Smithville WV 26178

Gregory Flanagan
34 Willow St
Pennsboro WV 26415

4708510230

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MAY 18 2016
WV Department of
Environmental Protection

WW-6A
(8-13)

API NO. 47- 85 -
OPERATOR WELL NO. 514480
Well Pad Name: PEN54

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

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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 amendment to address the items

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API NO. 47- 85 -
OPERATOR WELL NO. 514480
Well Pad Name: PEN54

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 57th 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.**

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(8-13)

API NO. 47- 85 -
OPERATOR WELL NO. 514480
Well Pad Name: PEN54

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- 85 -
OPERATOR WELL NO. 514480
Well Pad Name: PEN54

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.

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Nicholas L. Bumgardner
Rt. 1, Box 4
Liberty, WV 25124
My Commission Expires July 27, 2018

Subscribed and sworn before me this 17 day of MAY, 2016.

Notary Public

My Commission Expires 7/27/2018

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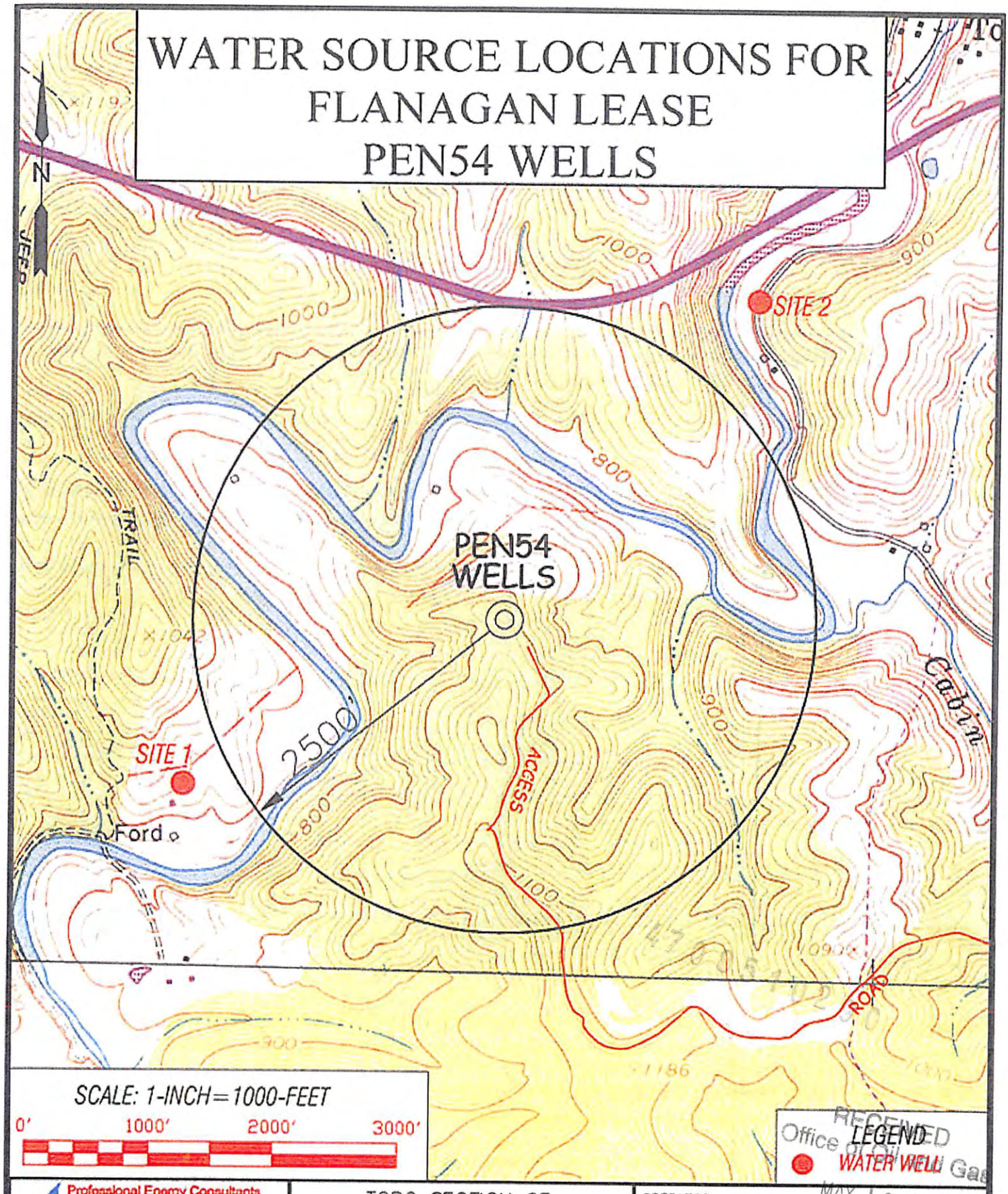
WATER SOURCE LOCATIONS FOR FLANAGAN LEASE PEN54 WELLS



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Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING INC.
SLS SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.

DRAWN BY	FILE NO.	DATE	CADD FILE:
K.D.W.	8083	06/02/15	8083WSPEN54.dwg

TOPO SECTION OF:
PENNSBORO, WV 7.5' QUAD

DISTRICT	COUNTY	TAX MAP-PARCEL NO.
CLAY	RITCHIE	31-09

OPERATOR:
EQT PRODUCTION COMPANY
115 PROFESIONAL PLACE
P.O. BOX 280
BRIDGEPORT, WV 26330

WW-6A4
(1/12)

Operator Well No. 514480

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: 04/28/2016 **Date Permit Application Filed:** 05/08/2016

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

☐ HAND DELIVERY ☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED

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: See Attached
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: WV
County: Ritchie
District: Clay
Quadrangle: Pennsboro
Watershed: North Fork Hughes River

UTM NAD 83 Easting: 506,276.12
Northing: 4,345,371.64
Public Road Access: RT50
Generally used farm name: Jerry Morton et al

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting 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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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Environmental Protection

Surface Owners:

Jerry Morton
406 Cabin Run
Pennsboro, WV 26415

Randy Collins, Natalie Collins, Kate Collins
5368 Muscovy RD
Middleburg, FL 32068

7016 0340 0000 8668 4014

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- ☐ Return Receipt (hardcopy) $
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- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

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APR 27 2016

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Jerry Morton
406 Cabin Run Rd.
Pennsboro, WV 26415
PEN54 514480 Notice of Intent

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Randy Collins, Natalie Collins,
Kate Collins
5368 Muscovy RD
Middleburg, FL 32068
PEN54 514480 Notice of Intent

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Surface Owners: Access Road & Other Disturbance

Jerry Morton
406 Cabin Run
Pennsboro, WV 26415

Randy Collins, Natalie Collins, Kate Collins
5368 Muscovy RD
Middleburg, FL 32068

Heartwood Forestland Fund IV, L.P.
1512 East Franklin Street, Suite 104,
Chapel Hill NC. 27514-2816

Coastal Forest Resources
dba Coastal Timberlands Company
PO Box 709
Buckhannon, WV 26201

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Jerry Morton
406 Cabin Run Rd.
Pennsboro, WV 26415
PEN54 514480 Notice of Intent
PS Form 3800, August 2006 See Reverse for Instructions

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APR 27 2016
Randy Collins, Natalie Collins,
Kate Collins
5368 Muscovy RD
Middleburg, FL 32068
PEN54 514480 Notice of Intent
PS Form 3800, August 2006 See Reverse for Instructions

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☐ Return Receipt (electronic) $
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APR 27 2016
Heartwood Forestland Fund IV, L.P.
1512 East Franklin Street, Suite 104,
Chapel Hill NC. 27514-2816
PEN54 514480 Notice of Intent
PS Form 3800, August 2006 See Reverse for Instructions

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☐ Return Receipt (electronic) $
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WV Department of
Environmental Protection
Coastal Forest Resources
dba Coastal Timberlands Company
PO Box 709
Buckhannon, WV 26201
PEN54 514480 Notice of Intent
PS Form 3800, August 2006 See Reverse for Instructions

Surface Owners: Pits or Impoundments

Jerry Morton
406 Cabin Run
Pennsboro, WV 26415

Randy Collins, Natalie Collins, Kate Collins
5368 Muscovy RD
Middleburg, FL 32068

4708510290

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Randy Collins, Natalie Collins
Kate Collins
5368 Muscovy RD
Middleburg, FL 32068
PEN54 514480 Notice of Intent

PS F ... structions

WW-6A5
(1/12)

Operator Well No. 514480

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: 5/17/16 **Date Permit Application Filed:** 5/17/16

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

☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED ☐ HAND 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: See Attached
Address:

Name: See Attached
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: WV
County: Ritchie
District: Clay
Quadrangle: Pennsboro
Watershed: North Fork Hughes River

UTM NAD 83 Easting: 506,276.12
Northing: 4,345,371.64
Public Road Access: RT50
Generally used farm name: Jerry Morton et al

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

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

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Surface Owners:

Jerry Morton
406 Cabin Run
Pennsboro, WV 26415

Randy Collins, Natalie Collins, Kate Collins
5368 Muscovy RD
Middleburg, FL 32068

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Surface Owners: Access Road & Other Disturbance

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406 Cabin Run
Pennsboro, WV 26415

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Surface Owners: Pits or Impoundments

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Middleburg, FL 32068

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Environmental Protection

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 May 16, 2016

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

Subject: DOH Permit for the PEN 54 Pad Site, Ritchie County

514474 PEN54H1	514475 PEN54H2	514476 PEN54H3
514477 PEN54H4	514478 PEN54H5	514479 PEN54H6
514480 PEN54H7	515874 PEN54H8	516206 PEN54H9
516207 PEN54H10	516208 PEN54H11	516209 PEN54H12
516210 PEN54H13		

Dear Mr. Martin,

This well site will be accessed from Permit #03-2015-0161 issued to EQT Production Company for access to the State Road. The well site is located off of Ritchie County Route 10/1 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

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

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

RECEIVED
Office of Oil and Gas
MAY 18 2016
WV Department of
Environmental Protection

Anticipated Frac Additives
Chemical Names and CAS numbers

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

4700510200

RECEIVED
Office of Oil and Gas
MAY 18 2016
WV Department of
Environmental Protection

EQT PEN 54 SITE PLAN
EQT PRODUCTION COMPANY

PROPOSED WELL NO. H1 WV514474, H2 WV514475, H3 WV 514476, H4 WV514477, H5 WV514478, H6 WV514479, H7 WV514480, H8 WV515874, H9 WV516206, H10 WV516207, H11 WV516208

SITUATE ON THE WATERS OF NORTH FORK HUGHES RIVER IN CLAY DISTRICT, RITCHIE COUNTY, WV

APPROVED
WVDEP OOG
8/14/2015

4708510290

PROJECT INFORMATION

PROJECT NAME: EQT PEN 54

SURFACE OWNER

1. RANDY, NATALIE & KATE COLLINS
   CLAY DISTRICT, RITCHIE COUNTY, WV
   TAX MAP 31-06 (1/2 INTEREST)
   TOTAL PROPERTY AREA 243.50 +/- ACRES
   TOTAL DISTURBANCE AREA 32.67 +/- ACRES
2. JERRY MORTON
   CLAY DISTRICT, RITCHIE COUNTY, WV
   TAX MAP 31-45 (1/2 INTEREST)
   TOTAL PROPERTY AREA 243.50 +/- ACRES
   TOTAL DISTURBANCE AREA 32.67 +/- ACRES
3. HEARTWOOD FORESTLAND FUND IV LLC
   CLAY DISTRICT, RITCHIE COUNTY, WV
   TAX MAP 31-11, 31-14, 31-19
   TOTAL PROPERTY AREA 590.19 +/- ACRES
   TOTAL DISTURBANCE AREA 16.83 +/- ACRES
4. COASTAL FOREST RESOURCES DBA COASTAL TIMBERLANDS COM
   CLAY DISTRICT, RITCHIE COUNTY, WV
   TAX MAP 32-07
   TOTAL PROPERTY AREA 42.51 +/- ACRES
   TOTAL DISTURBANCE AREA 0.13 +/- ACRES

OIL AND GAS ROYALTY OWNER
W. FLANAGAN HRS. ET AL (100 +/- ACRES)
CLAY DISTRICT
RITCHIE COUNTY, WV

SITE LOCATION
THE EQT PEN 54 WELL PAD IS LOCATED 1.9 MILES +/- SOUTHEAST OF THE JUNCTION OF US ROUTE 50 AND WV 74

LOCATION COORDINATES

EQT PEN 54 WELL PAD CENTER
LATITUDE: 39.257910 LONGITUDE: 80.927333 (NAD 83)
EQT PEN 54 FLOWBACK PIT CENTER
LATITUDE: 39.256471 LONGITUDE: 80.926494 (NAD 83)
EQT PEN 54 COMPLETION PIT CENTER
LATITUDE: 39.256129 LONGITUDE: 80.925194 (NAD 83)

GENERAL DESCRIPTION

THE WELL PAD, FLOWBACK PIT, ACCESS ROAD, AND COMPLETION PIT ARE BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS

SITE DISTURBANCE COMPUTATIONS

WELL PAD/FLOWBACK PIT AREA = 14.88 +/- ACRES
ACCESS ROAD AREA = 30.55 +/- ACRES
COMPLETION PIT AREA = 4.84 +/- ACRES
TOTAL SITE DISTURBANCE AREA = 32.67 +/- ACRES

ENTRANCE PERMIT

EQT PRODUCTION COMPANY WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES

MISS UTILITY STATEMENT

MISS UTILITY OF WEST VIRGINIA WAS NOTIFIED FOR THE LOCATION OF UTILITIES PRIOR TO THIS PROJECT DESIGN. TICKET #140302810. IN ADDITION, MISS UTILITY WILL BE CONTACTED PRIOR TO START OF THE PROJECT

ENVIRONMENTAL NOTES

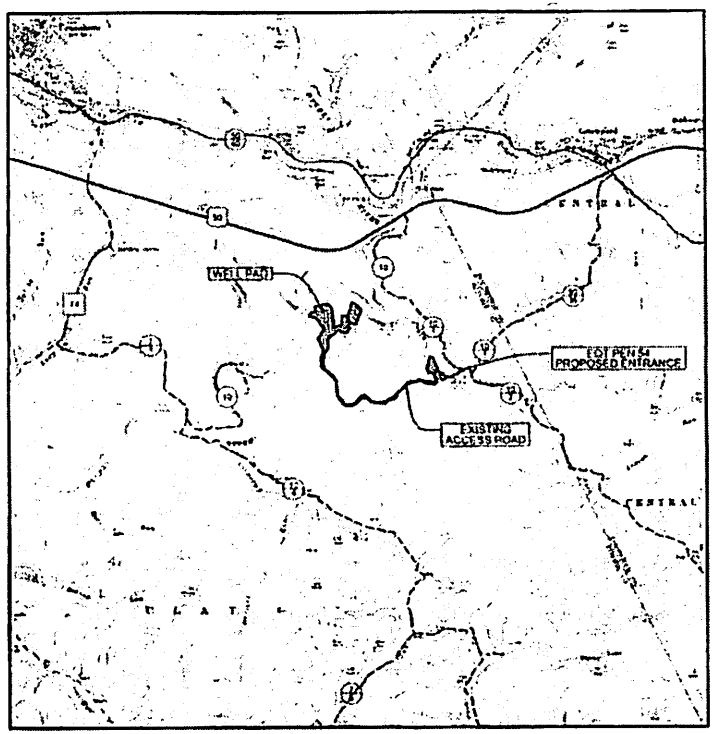
A WETLAND DELINEATION WAS PERFORMED BY POTESTA & ASSOCIATES ON 8/6/2013, 9/12/2013, 9/13/2013, 12/14/2014, 10/15/2014 AND 1/15/2015 TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE 10/22/2013 AND 2/5/2015 REPORT FOR EQT PEN 54 PREPARED BY POTESTA & ASSOCIATES, INC. SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE REPORT DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP. IT IS STRONGLY RECOMMENDED THAT THE AS-CONTENTIONED AGENCIES BE CONSULTED IN AN EFFORT TO GAIN WRITTEN CONFIRMATION OF THE DELINEATION DESCRIBED BY THIS REPORT PRIOR TO ENGAGING CONSTRUCTION ON THE PROPERTY DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATERS OF THE U.S., INCLUDING WETLAND FILLS AND STREAM CROSSINGS

GEOTECHNICAL NOTES

A SUBSURFACE INVESTIGATION HAS NOT BEEN PERFORMED AS OF 6/21/2015. THE ENGINEER AND SURVEYOR ARE NOT RESPONSIBLE FOR UNFORSEEN SUBSURFACE IRREGULARITIES CAUSING ADDITIONAL WORK OR ADDITIONAL CONSTRUCTION MEASURES REQUIRED BEYOND THOSE STANDARD PRACTICES SHOWN ON THIS PLAN AS A RESULT OF ANY OTHER GEOTECHNICAL COMPLICATIONS ENCOUNTERED DURING CONSTRUCTION

RESTRICTIONS NOTES

1. THERE ARE INTERMITTENT STREAMS, LAKES, PONDS OR RESERVOIRS WITHIN 100 FEET OF THE PROJECT LOD. THERE ARE WETLANDS WITHIN 100 FEET OF THE LOD, AND A WAIVER FROM THE WVDEP WILL BE APPLIED FOR THROUGH THE ARMY CORPS OF ENGINEERS BY EQT PRODUCTION COMPANY
2. THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE PAD AND LOD
3. THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE PAD AND LOD
4. THERE ARE NO KNOWN EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL(S) BEING DRILLED. STANTEC AND SMITH LAND SURVEYING ARE NOT RESPONSIBLE FOR ANY EXISTING WATER WELL OR DEVELOPED SPRING DISCOVERED DURING CONSTRUCTION
5. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE PAD
6. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE PAD



PENNSBORO QUADRANGLE
WEST VIRGINIA
7.5 MINUTE SERIES
2000 0 2000

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

GRID NORTH AND ELEVATIONS SHOWN HEREON ARE BASED ON NAD83 GARMIN GPS

LIST OF DRAWINGS

SHEET NO	DESCRIPTION
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LEGEND

EX. INDEX CONTOUR	PROP. INDEX CONTOUR
EX. INTERMEDIATE CONTOUR	PROP. INTERMEDIATE CONTOUR
EX. BOUNDARY LINE	PROP. CUT LINE
EX. EDGE OF ROAD PAVEMENT	PROP. FILL LINE
EX. GUARDRAIL	PROP. LIMITS OF DISTURBANCE
EX. FENCE LINE	ENVIRONMENTAL ASSESSMENT AREA OF DELINEATION
EX. GATE	PROP. WELL HEAD
EX. OVERHEAD UTILITY	PROP. CONTAINMENT BERM
EX. OVERHEAD UTILITY R/W	PROP. ROAD CENTERLINE
EX. UTILITY POLE	PROP. FLAT BOTTOM DITCH WITH CHECK DAMS
EX. GUY WIRE	PROP. V DITCH WITH CHECK DAMS
EX. TELEPHONE LINE	PROP. CULVERT
EX. GASLINE	PROP. RIP-RAP OUTLET PROTECTION
EX. GASLINE R/W	PROP. RIP-RAP INLET PROTECTION
EX. WATERLINE	PROP. COMPOST FILTER SOCK
EX. WATER WELL	PROP. TREELINE
EX. GAS WELL	PROP. INLOCH CONSTRUCTION ENTRANCE
EX. TREELINE	X SECTION GRID INDEX
EX. REFERENCE TREE	X SECTION GRID INTERMEDIATE
EX. DELINEATED STREAM	X SECTION PROPOSED GRADE
EX. DELINEATED WETLAND	X SECTION EXISTING GRADE
EX. BUILDING	

OPERATOR
EQT PRODUCTION COMPANY
OPERATOR ID: 306686
P.O. BOX 280
BRIDGEPORT, WV 26330
PHONE: (304) 848-3879

ENGINEER
STANTEC CONSULTING INC
111 ELKINS STREET
FAIRMONT, WV 26554
PHONE: (304) 367-8481

SURVEYOR
SMITH LAND SURVEYING INC
12 VANHORN DRIVE
PO BOX 150
GLENVILLE, WV 26351
PHONE: (304) 462-7438

Stantec

Professional Energy Consultants

TITLE SHEET
EQT PEN 54
CLAY DISTRICT
RITCHIE COUNTY, WV

DATE: 6/24/2015
SCALE: AS SHOWN
DESIGNED: CP, RJH
PROJECT: 193-2001
SHEET: 1 OF 53
REV: 6/24/2015

EQT PEN 54 WELL PAD SITE PLAN

PROPOSED WELL NO. H1 WV514474, H2 WV514475, H3 WV514476, H4 WV514477, H5 WV514478, H6 WV514479, H7 WV514480, H8 WV515874, H9 WV516206, H10 WV516207, H11 WV516208

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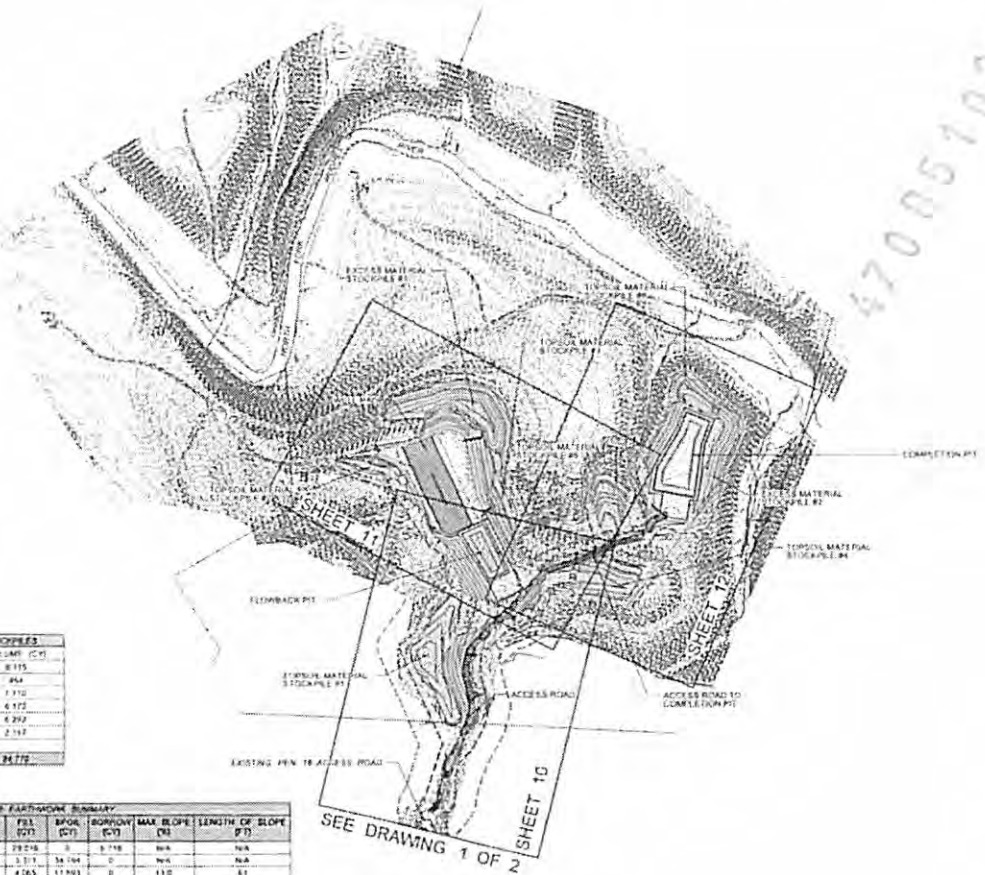

LIMIT OF DISTURBANCE
5.03 AC

EXCESS MATERIAL STOCKPILES	
NAME	VOLUME (CY)
1	38,189
2	3,580
TOTALS	41,769

TOPSOIL STOCKPILES	
NAME	VOLUME (CY)
1	8,115
2	864
3	1,110
4	6,173
5	6,292
6	2,147
TOTALS	24,779

EQT PEN 54 WELL SITE EARTHWORK SUMMARY						
DESCRIPTION	CUT (CY)	FILL (CY)	SPOIL (CY)	BORROW (CY)	MAX. SLOPE (%)	LENGTH OF SLOPE (FT)
WELL PAD	22,298	29,016	0	6,718	N/A	N/A
FLOWBACK PIT	38,105	3,311	34,794	0	N/A	N/A
MAIN ACCESS ROAD	15,758	4,065	11,693	0	11.0	61
COMPLETION PIT	20,736	17,755	2,981	0	N/A	N/A
ACCESS ROAD TO COMPLETION PIT	2,784	5,706	0	2,922	15.5	235
STRIPPED TOPSOIL (1)	20,577	0	20,577	0		
TOTALS	120,258	59,853	70,045	9,640		
TOTAL REQUIRED STOCKPILE VOLUME*	71,212		(SEE NOTE 3)			
TOTAL AVAILABLE STOCKPILE VOLUME*	73,516					
EXCESS MATERIAL	0					

* INCLUDES TOPSOIL

NOTES:
1. ESTIMATED TOPSOIL DEPTH 1 FOOT
2. THE EARTHWORK QUANTITIES PROVIDED ARE AN ESTIMATE FOR CONSIDERATION. THE QUANTITIES SHOWN ARE CALCULATED USING A 1:1 CUT/SWELL AND FILL/SHRINK FACTOR. THE QUANTITIES SHOWN MAY BE GREATER OR LESSER THAN ACTUALLY EXCAVATED. THE ENGINEER IS NOT RESPONSIBLE FOR VARIANCES FROM THE ESTIMATED QUANTITIES AND DOES NOT CERTIFY TO THEIR ACCURACY.
3. REQUIRED STOCKPILE VOLUME INCLUDES 20% SWELL FACTOR.

OVERALL PLAN SHEET INDEX
DRAWING 2 OF 2

0 250 500 750
HORIZONTAL SCALE

FLOWBACK PIT CUMULATIVE STORAGE VOLUME SUMMARY			
ELEVATION	BARRELS	GALLONS	ACRE-FT
1005.5	0	0	0
1006.5	840	35,723	0.09598
1008.5	2,870	120,915	0.37107
1010.5	5,100	216,185	0.79630
1012.5	10,420	437,850	1.34373
1014.5	15,958	670,332	2.05686
1016.5 (STORAGE)	22,801	957,638	2.93893
1018.5	31,058	1,304,438	4.00317

COMPLETION PIT CUMULATIVE STORAGE VOLUME SUMMARY			
ELEVATION	BARRELS	GALLONS	ACRE-FT
865.0	0	0	0
866.0	3,513	148,214	0.45492
867.0	7,567	317,774	0.97554
868.0	16,676	700,373	2.14936
871.0	27,604	1,159,361	3.55794
873.0	40,395	1,696,574	5.20639
875.0	53,751	2,258,335	7.10896
877.0	71,878	3,022,575	9.27716
879.0 (STORAGE)	90,973	3,820,632	11.72565
881.0	112,344	4,718,248	14.48743

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OVERALL PLAN SHEET INDEX
EQT PEN 54
CLAY DISTRICT
RITCHIE COUNTY, WV

DATE: 02/04/2013
SCALE: AS SHOWN
DESIGNED BY: RJH
FILE NO.: 3.0.4.0.1
SHEET: 4 OF 12
REV: 08/23/2013