

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

API 47 - 1030 - 2734 County Wetzel District Grant
Quad Big Run 7.5' Pad Name BIG190 Field/Pool Name _____
Farm name COASTAL LUMBER COMPANY Well Number 513925
Operator (as registered with the OOG) EQT Production Company
Address 625 Liberty Ave. EQT Plaza, Suite 1700 City Pittsburgh State PA Zip 15222

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4378134 Easting 533884
Landing Point of Curve Northing 4378470 Easting 534188
Bottom Hole Northing 4379883 Easting 533722

Elevation (ft) 1473 GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)
Water base Mud 14.0 ppg barium sulfate, sodium chloride, xanthan gum, polyanionic cellulose, modified starch, sodium hydroxide, phosphonates and alkyl phosphates, glutaraldehyde solution, calcium hydroxide, partially hydrolyzed polyacrylamide/polyacrylate, potassium chloride, sodium carbonate, ground walnut shells, alcohol and modified fatty acid, ferrochrome lignosulfonate, calcium carbonate, fibrous cellulose

Date permit issued 3/12/2012 Date drilling commenced 10/16/2013 Date drilling ceased 1/15/2014
Date completion activities began 4/28/2014 Date completion activities ceased 5/4/2014
Verbal plugging (Y/N) n/a Date permission granted n/a Granted by n/a

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 751' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2163' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 411, 1204, 1222 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by: _____

API 47-1030-2734 Farm name COASTAL LUMBER COMPANY Well number 513925

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	28"	26"	40'	New	82.6#/ft	n/a	Y
Surface	17-1/2"	13-3/8"	843'	New	54.5#/ft	96'	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	2797'	New	40#/ft	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	13241'	New	20#	N/A	N
Tubing							
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	49	15.6	1.18	57.82	0	8
Surface	Class A	775	15.6	1.19	923	0	8
Coal							
Intermediate 1	Class A	1010	15.6	1.19	1202	0	8
Intermediate 2							
Intermediate 3							
Production	Class A/Class H	830/710	15/15.6	1.21/1.83	2297	4349	8
Tubing							

Drillers TD (ft) 13,249' Loggers TD (ft) N/A
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5,760'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING Conductor-N/A
 Surface-bow spring centralizers set at 803', 605', 568', 448', 331', 213', basket at 98'
 Intermediate-bow spring centralizers set at 2753', 2287', 1780', 1274', 726', 2683'
 Production-composite centralizer ran on every joint from td up to 4,280'

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

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Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
Fresh Water Zone	1	1	751	751
Sand / Shale	1	1	411	411
Mapletown Coal	411	411	417	417
Sand / Shale	417	417	1,211.00	1,211.00
Pittsburgh Coal	1,211.00	1,211.00	1,218.00	1,218.00
Sand / Shale	1,218.00	1,218.00	1,229.00	1,229.00
Coal	1,229.00	1,229.00	1,235.00	1,235.00
Sand / Shale	1,235.00	1,235.00	2,269.00	2,269.00
Maxton	2,269.00	2,269.00	2,425.00	2,424.90
Big Lime	2,425.00	2,424.90	2,554.00	2,553.90
Big Injun	2,554.00	2,553.90	2,832.00	2,831.90
Weir	2,832.00	2,831.90	2,999.00	2,998.90
Gantz	2,999.00	2,998.90	3,034.00	3,033.90
Fifty foot	3,034.00	3,033.90	3,129.00	3,128.90
Thirty foot	3,129.00	3,128.90	3,274.00	3,273.90
Gordon	3,274.00	3,273.90	3,347.00	3,346.90
Forth Sand	3,347.00	3,346.90	3,504.00	3,503.80
Bayard	3,504.00	3,503.80	3,887.00	3,886.80
Warren	3,887.00	3,886.80	4,084.00	4,083.80
Speechley	4,084.00	4,083.80	4,455.00	4,454.80
Balltown A	4,455.00	4,454.80	4,912.00	4,911.80
Riley	4,912.00	4,911.80	5,556.00	5,555.80
Benson	5,556.00	5,555.80	5,930.00	5,928.20
Alexander	5,930.00	5,928.20	7,079.00	6,846.70
Rhinestreet	7,079.00	6,846.70	7,478.00	7,147.30
Sonyea	7,478.00	7,147.30	7,668.00	7,288.70
Middlesex	7,668.00	7,288.70	7,748.00	7,343.00
Genesee	7,748.00	7,343.00	7,872.00	7,421.60
Geneseo	7,872.00	7,421.60	7,905.00	7,440.40
Tully	7,905.00	7,440.40	7,943.00	7,461.40
Hamilton	7,943.00	7,461.40	8,179.00	7,548.60
Marcellus	8,179.00	7,548.60	13,249.00	7,524.40

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09122014

Stimulation Notes:
Additional Injection test performed prior to stage 13

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WV Dept. of Environmental Protection**

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513925 - Perforations

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	4/28/2014	13,214.00	13,217.00	10	MARCELLUS
1	4/28/2014	13,033.00	13,181.00	32	MARCELLUS
2	4/28/2014	12,809.00	12,991.00	40	MARCELLUS
3	4/29/2014	12,584.00	12,766.00	40	MARCELLUS
4	4/29/2014	12,359.00	12,541.00	40	MARCELLUS
5	4/29/2014	12,134.00	12,316.00	40	MARCELLUS
6	4/29/2014	11,909.00	12,091.00	40	MARCELLUS
7	4/30/2014	11,684.00	11,866.00	40	MARCELLUS
8	4/30/2014	11,459.00	11,636.00	40	MARCELLUS
9	4/30/2014	11,234.00	11,416.00	40	MARCELLUS
10	4/30/2014	11,009.00	11,191.00	40	MARCELLUS
11	5/1/2014	10,784.00	10,966.00	40	MARCELLUS
12	5/1/2014	10,559.00	10,741.00	40	MARCELLUS
13	5/1/2014	10,334.00	10,516.00	40	MARCELLUS
14	5/2/2014	10,109.00	10,291.00	40	MARCELLUS
15	5/3/2014	9,884.00	10,066.00	40	MARCELLUS
16	5/3/2014	9,659.00	9,841.00	40	MARCELLUS
17	5/3/2014	9,433.00	9,618.00	40	MARCELLUS
18	5/3/2014	9,209.00	9,391.00	40	MARCELLUS
19	5/4/2014	8,984.00	9,166.00	40	MARCELLUS
20	5/4/2014	8,759.00	8,941.00	40	MARCELLUS
21	5/4/2014	8,534.00	8,716.00	40	MARCELLUS
22	5/4/2014	8,309.00	8,491.00	40	MARCELLUS
23	5/4/2014	8,084.00	8,266.00	40	MARCELLUS

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513925 - Stimulated Stages

Stage Number	Stimulation Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
Initiation Sleeve:	4/28/2014	13.33	8,069.00	NA	5,039	NA	1,238	0
1	4/28/2014	93.50	8,875.00	6,473.00	4,242	298,700	7,789	0
2	4/29/2014	98.40	8,631.00	6,188.00	5,424	301,000	9,488	0
3	4/29/2014	100.08	8,746.00	6,872.00	4,690	299,500	7,445	0
4	4/29/2014	100.10	8,487.00	6,754.00	5,462	299,000	9,861	0
5	4/29/2014	99.70	8,483.00	5,313.00	4,978	303,300	7,565	0
6	4/30/2014	100.50	8,556.00	6,348.00	4,994	307,200	7,665	0
7	4/30/2014	98.06	8,596.00	6,477.00	5,338	299,300	7,486	0
8	4/30/2014	98.33	8,705.00	6,067.00	4,492	299,400	7,652	0
9	4/30/2014	97.90	8,806.00	6,271.00	5,087	300,900	7,540	0
10	5/1/2014	100.30	8,646.00	6,468.00	4,506	300,600	7,928	0
11	5/1/2014	99.47	8,655.00	6,601.00	4,676	299,300	7,615	0
12	5/1/2014	97.67	8,627.00	6,025.00	4,521	299,300	8,338	0
Injection Test	5/1/2014	12.10	5,010.00	NA	5,437	NA	1,382	0
13	5/2/2014	98.90	8,649.00	5,761.00	5,193	269,800	7,339	0
14	5/3/2014	91.70	8,786.00	6,038.00	4,738	228,900	6,838	0
15	5/3/2014	93.64	8,537.00	5,884.00	5,167	300,600	7,302	0
16	5/3/2014	95.58	8,694.00	6,825.00	4,796	300,000	6,963	0
17	5/3/2014	100.34	8,139.00	6,724.00	4,519	300,700	7,051	0
18	5/3/2014	98.30	8,592.00	7,256.00	4,790	301,800	7,573	0
19	5/4/2014	99.90	8,335.00	6,401.00	4,730	302,200	7,613	0
20	5/4/2014	97.40	8,658.00	7,201.00	5,054	299,800	7,063	0
21	5/4/2014	86.91	7,913.00	6,029.00	4,498	300,200	6,977	0
22	5/4/2014	93.53	7,574.00	6,017.00	4,864	300,100	7,052	0
23	5/4/2014	100.30	7,758.00	7,184.00	4,068	302,000	8,352	0

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/28/2014
Job End Date:	5/4/2014
State:	West Virginia
County:	Wetzel
API Number:	47-103-02734-00-00
Operator Name:	EQT Production
Well Name and Number:	BIG190 - 513925
Longitude:	-80.60558900
Latitude:	39.55238200
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,575
Total Base Water Volume (gal):	7,697,508
Total Base Non Water Volume:	340,121

WV Dept. of Oil and Gas
Office of Environmental Protection



Hydraulic Fracturing Fluid Composition:

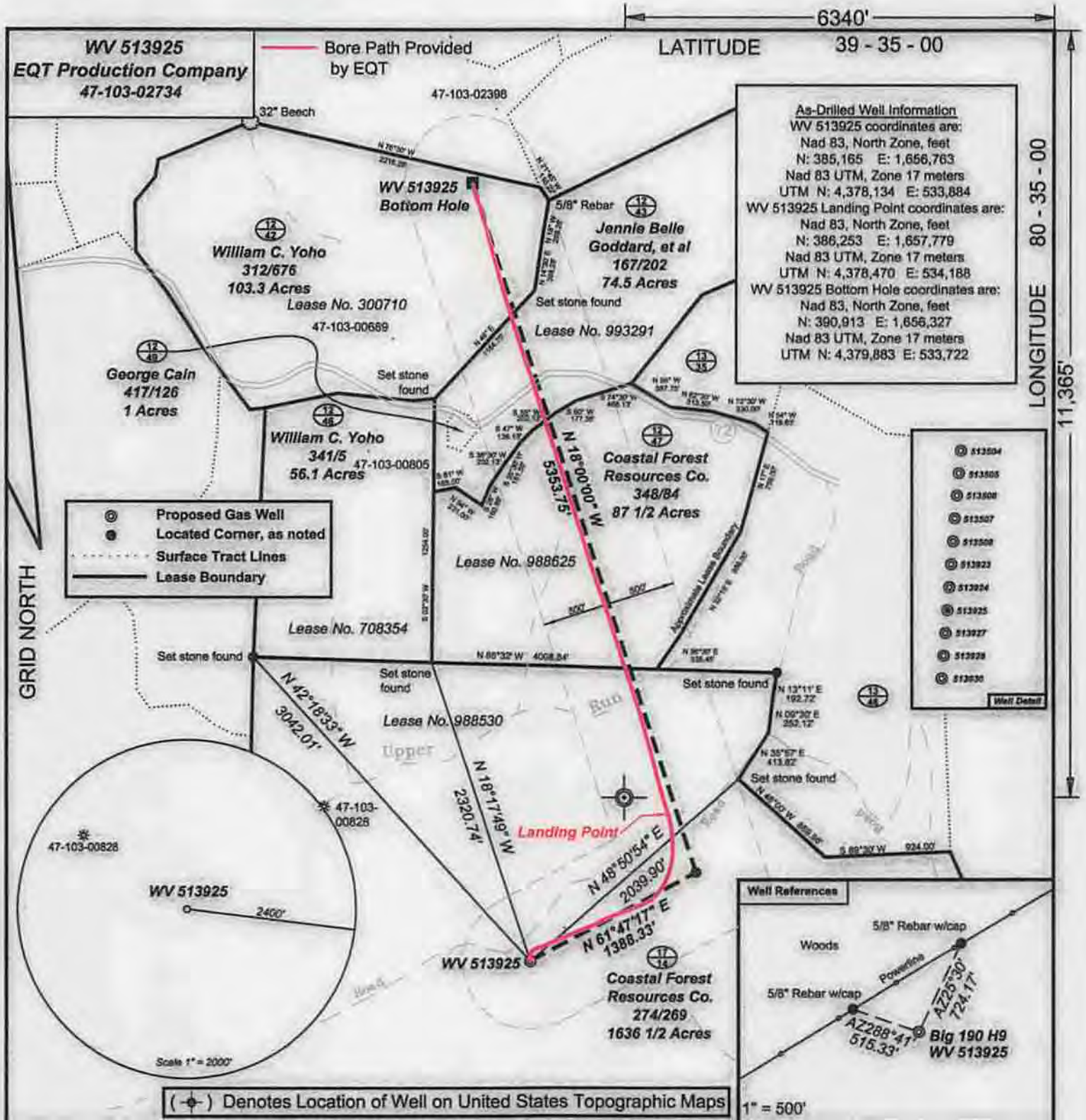
Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Nabors	Carrier	Water	7732-18-5	100.00000	89.99468	
Sand	Nabors	Proppant	Crystalline Silica	14808-60-7	100.00000	9.56309	
MX-5	Halliburton	Biocide	Sodium Nitrate	7631-99-4	60.00000	0.05864	
WFR-3B	Nabors	Friction Reducer	Hydrotreated Light Distillates (Petroleum)	64742-47-8	50.00000	0.02952	
			Ethoxylated Alcohols	68551-12-2	15.00000	0.00885	
			Ethoxylated Oleylamine	26635-93-8	5.00000	0.00295	
Hydrochloric Acid 15%	Nabors	Acidizing	Hydrochloric Acid	7647-01-0	15.00000	0.03356	
MX-8	Halliburton	Biocide	Bacteria Culture	000-00-0	100.00000	0.01000	
LSG-100L	Nabors	Adds viscosity to fluid	Solvent Naptha, petroleum, heavy aliph	64742-47-8	65.00000	0.00574	
AI-2	Nabors	Corrosion Inhibitor	Glycol Ethers	111-76-2	40.00000	0.00015	

				Isopropyl Alcohol	87-63-0	40.00000	0.00015
				Propargyl Alcohol	107-19-7	40.00000	0.00015
				Ethoxylated Nonyphenol	58412-54-4	13.00000	0.00005
				Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	10.00000	0.00004
OB-2	Nabors	Reduces viscosity of the fluid		Ammonium Persulfate	7727-54-0	100.00000	0.00011
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Super TSC LT	Nabors	Scale Inhibitor		Amine Salts	NA		Non-Hazardous
EXP-F1111-13	Nabors	Friction Reducer		Anionic Water-Soluble Polymer	NA		Non Hazardous

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
 ** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Department of Environmental Protection.

Ben R. Singleton
 P.S. 2092



FILE NO: 196-34-G-10
 DRAWING NO: 195-10 Big 190 H9 Plat As Drilled.dwg
 SCALE: 1" = 1000'
 MINIMUM DEGREE OF ACCURACY: 1:2500
 PROVEN SOURCE OF ELEVATION: NGS CORS Station

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

DATE: July 10, 2014
 OPERATOR'S WELL NO: WV 513925
 API WELL NO: 47-103-02734
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: 1473.5' (As-built) WATERSHED: Upper Run and North Fork QUADRANGLE: Big Run
 DISTRICT: Grant COUNTY: Wetzel
 SURFACE OWNER: Coastal Forest Resources Co. f/w/a Coastal Lumber Company ACREAGE: 1,636.5
 ROYALTY OWNER: Mills-Wetzel Land, Inc., Piney Holdings Inc. et. al., Barbara Ann Rocha et. al., James Douglas White et. al. LEASE NO: 988530, 988625, 993291, 300710 ACREAGE: 659, 87.5, 74.5, 103.3
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: TVD=7,800 MD=15,500

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