

*OK*

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

API 47-103-02876 County Wetzel District Grant  
Quad Pine Grove Pad Name PNG129 Field/Pool Name \_\_\_\_\_  
Farm name COASTAL LUMBER COMPANY Well Number 514379  
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 4,378,082 Easting 530,869  
Landing Point of Curve Northing 4,378,040 Easting 530,796  
Bottom Hole Northing 4,379,530 Easting 531,274

Elevation (ft) 1330 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 14.1 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 5/22/2013 Date drilling commenced 8/27/2013 Date drilling ceased 12/1/2013  
Date completion activities began 10/13/2014 Date completion activities ceased 10/17/2014  
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 734' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 2016', 2365' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 686', 968', 1038', 1052', 1080' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

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01/23/2015

API 47- 103 - 02876 Farm name COASTAL LUMBER COMPANY Well number 514379

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"	947'	New	54.5#/ft	269,543	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	3385'	New	40#/ft	1239, 1786	Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	11291'	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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	49	15.6	1.18	57.82	0	8
Surface	Class A	845	15.6	1.19	1005	0	8
Coal							
Intermediate 1	Class A	1515	15.6	1.18	1787.7	0	8
Intermediate 2							
Intermediate 3							
Production	Class A/Class H	765/525	15/15.6	1.21/1.83	1881	4032	8
Tubing							

Drillers TD (ft) 11,292' Loggers TD (ft) N/A  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 5524

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 910', 639', and 287'  
Intermediate-bow spring centralizers set at 3378, 2947, 2440, 1935, 1430, 926, 421  
Production-composite centralizer ran on every joint from td up to 4024'

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

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

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

WV Department of  
Environmental Protection

API 47- 103 - 02876 Farm name COASTAL LUMBER COMPANY Well number 514379

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
					See Attachment

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbbls)	Amount of Nitrogen/other (units)
								See Attachment

Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS	
Marcellus	7,293.40	TVD 7,594 MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 1,950 psi Bottom Hole NA psi DURATION OF TEST 87.5 hrs

OPEN FLOW Gas 5,759 mcfpd Oil 0 bpd NGL 6.48 bpd Water 441 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		

Please insert additional pages as applicable.

Drilling Contractor Savanna Drilling  
Address 2204 Timberloch Place Suite 230 City Woodlands State TX Zip 77380

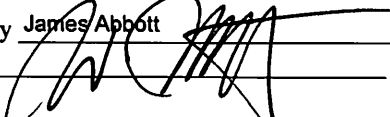
Logging Company Hoss Co. Services LLC  
Address 614 Trotters Lane City Charleston State WV Zip 25312

Cementing Company Halliburton Energy Services  
Address 121 Champion Way City Canonsburg State PA Zip 15317

Stimulating Company FTS International Services, LLC  
Address 301 East 18th Street City Cisco State TX Zip 76437

Please insert additional pages as applicable.

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Completed by James Abbott Telephone 412-553-5996 Signature  Title Director - Completions Operations Date 12/31/2014

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Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

WV Department of Environmental Protection

01/23/2015

Well Number: 514379  
 API #: 47-103-02876

Formation Name	Final Top MD (ftGL) (ft)	Final Btm MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm TVD (ft)
Fresh Water Zone	0	734	0	734
Sand / Shale	0	686	0	686
Coal	686	688	686	688
Sand / Shale	688	968	688	968
Coal	968	969	968	969
Sand / Shale	969	1,038.00	969	1,038.00
Coal	1,038.00	1,045.00	1,038.00	1,045.00
Sand / Shale	1,045.00	1,052.00	1,045.00	1,052.00
Coal	1,052.00	1,054.00	1,052.00	1,054.00
Sand / Shale	1,054.00	1,080.00	1,054.00	1,080.00
Coal	1,080.00	1,086.00	1,080.00	1,086.00
Sand / Shale	1,086.00	2,183.00	1,086.00	2,182.90
Maxton	2,183.00	2,419.00	2,182.90	2,418.90
Big Lime	2,419.00	2,658.00	2,418.90	2,657.90
Weir	2,658.00	2,856.00	2,657.90	2,855.80
Gantz	2,856.00	2,972.00	2,855.80	2,971.80
Fifty foot	2,972.00	3,045.00	2,971.80	3,044.80
Thirty foot	3,045.00	3,092.00	3,044.80	3,091.80
Gordon	3,092.00	3,212.00	3,091.80	3,211.80
Forth Sand	3,212.00	3,347.00	3,211.80	3,346.70
Bayard	3,347.00	3,763.00	3,346.70	3,762.70
Warren	3,763.00	3,889.00	3,762.70	3,888.70
Speechley	3,889.00	4,763.00	3,888.70	4,762.70
Riley	4,763.00	5,374.00	4,762.70	5,373.60
Benson	5,374.00	5,748.00	5,373.60	5,742.10
Alexander	5,748.00	7,228.00	5,742.10	7,044.50
Middlesex	7,228.00	7,274.00	7,044.50	7,084.50
Genesee	7,274.00	7,377.00	7,084.50	7,167.10
Geneseo	7,377.00	7,411.00	7,167.10	7,191.80
Tully	7,411.00	7,444.00	7,191.80	7,214.30
Hamilton	7,444.00	7,594.00	7,214.30	7,293.40
Marcellus	7,594.00	11,292.00	7,293.40	7,356.00

*Correction JK*



01/23/2015

**514379 - 47-103-02876-0000 - Perforations**

<i>Stage Number</i>	<i>Perforation Date</i>	<i>Top Perf Depth (ftKB)</i>	<i>Bottom Perf Depth (ftKB)</i>	<i>Number of Shots</i>	<i>Formation</i>
<b>Initiation Sleeve</b>	10/13/2014	11,265.00	11,267.00	10	MARCELLUS
<b>1</b>	10/13/2014	11,084.00	11,219.00	32	MARCELLUS
<b>2</b>	10/13/2014	10,860.00	11,040.00	40	MARCELLUS
<b>3</b>	10/14/2014	10,635.00	10,815.00	40	MARCELLUS
<b>4</b>	10/14/2014	10,410.00	10,590.00	40	MARCELLUS
<b>5</b>	10/14/2014	10,185.00	10,365.00	40	MARCELLUS
<b>6</b>	10/15/2014	9,960.00	10,140.00	40	MARCELLUS
<b>7</b>	10/15/2014	9,735.00	9,915.00	40	MARCELLUS
<b>8</b>	10/15/2014	9,510.00	9,688.00	40	MARCELLUS
<b>9</b>	10/15/2014	9,285.00	9,465.00	40	MARCELLUS
<b>10</b>	10/16/2014	9,060.00	9,240.00	40	MARCELLUS
<b>11</b>	10/16/2014	8,835.00	9,015.00	40	MARCELLUS
<b>12</b>	10/16/2014	8,610.00	8,790.00	40	MARCELLUS
<b>13</b>	10/17/2014	8,385.00	8,565.00	40	MARCELLUS
<b>14</b>	10/17/2014	8,160.00	8,340.00	40	MARCELLUS
<b>15</b>	10/17/2014	7,935.00	8,115.00	40	MARCELLUS
<b>16</b>	10/17/2014	7,710.00	7,890.00	40	MARCELLUS

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**514379 - 47-103-02876-0000 - 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	10/13/2014	15.60	8,650.00	NA	4,771	0	134	0
1	10/13/2014	94.70	8,015.00	8,230.00	4,654	301,646	7,598	0
2	10/13/2014	98.80	8,083.00	8,395.00	5,232	300,910	7,780	0
3	10/14/2014	99.40	8,101.00	8,536.00	5,085	299,902	7,753	0
4	10/14/2014	98.20	8,290.00	8,903.00	4,509	299,264	7,367	0
5	10/15/2014	100.30	7,727.00	8,083.00	4,739	301,185	7,608	0
6	10/15/2014	99.70	7,978.00	8,158.00	4,561	301,110	7,582	0
7	10/15/2014	99.00	7,975.00	8,427.00	5,087	300,694	7,630	0
8	10/15/2014	99.90	7,787.00	8,255.00	4,970	301,451	7,737	0
9	10/16/2014	100.30	7,854.00	8,279.00	5,239	301,088	7,867	0
10	10/16/2014	100.20	7,803.00	8,080.00	5,065	301,258	7,643	0
11	10/16/2014	996.00	7,628.00	8,156.00	5,032	299,942	7,738	0
12	10/16/2014	96.00	7,921.00	9,031.00	5,180	298,346	7,732	0
13	10/17/2014	97.40	7,621.00	8,907.00	5,432	299,613	8,180	0
14	10/17/2014	95.20	8,105.00	8,674.00	5,284	299,571	7,691	0
15	10/17/2014	99.20	7,711.00	8,386.00	5,228	301,311	7,430	0
16	10/17/2014	99.80	7,644.00	8,828.00	4,748	296,918	8,002	0

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# Hydraulic Fracturing Fluid Product Component Information Disclosure



103-02876

Job Start Date:	10/13/2014
Job End Date:	10/17/2014
State:	West Virginia
County:	Wetzel
API Number:	47-103-02876-00-00
Operator Name:	EQT Production
Well Name and Number:	PNG129 - 514379
Longitude:	-80.64070300
Latitude:	39.55186400
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,357
Total Base Water Volume (gal):	5,283,096
Total Base Non Water Volume:	235,813

## 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	FTSI	Carrier	Water	7732-18-5	100.00000	89.84154	
Sand	FTSI	Proppant	Crystalline Silica	14808-60-7	100.00000	9.80766	
Hydrochloric Acid 15%	FTSI	Acidizing	Hydrochloric Acid	7647-01-0	15.00000	0.03254	
FRW-600	FTSI	Friction Reducer	Hydrotreated light distillate	64742-47-8	30.00000	0.02293	
			Ammonium acetate	631-61-8	6.00000	0.00459	
HVG-4	FTSI	Gel	Petroleum Distillate	64742-47-8	55.00000	0.00454	
			Guar Gum	9000-30-0	50.00000	0.00413	
			Surfactant	68439-51-0	2.00000	0.00017	
			Clay	14808-60-7	2.00000	0.00017	
B-10	FTSI	Buffer Agent	Potassium carbonate	584-08-7	48.00000	0.00594	
			Potassium hydroxide	1310-58-3	20.00000	0.00248	
CI-3240	FTSI	Biocide					

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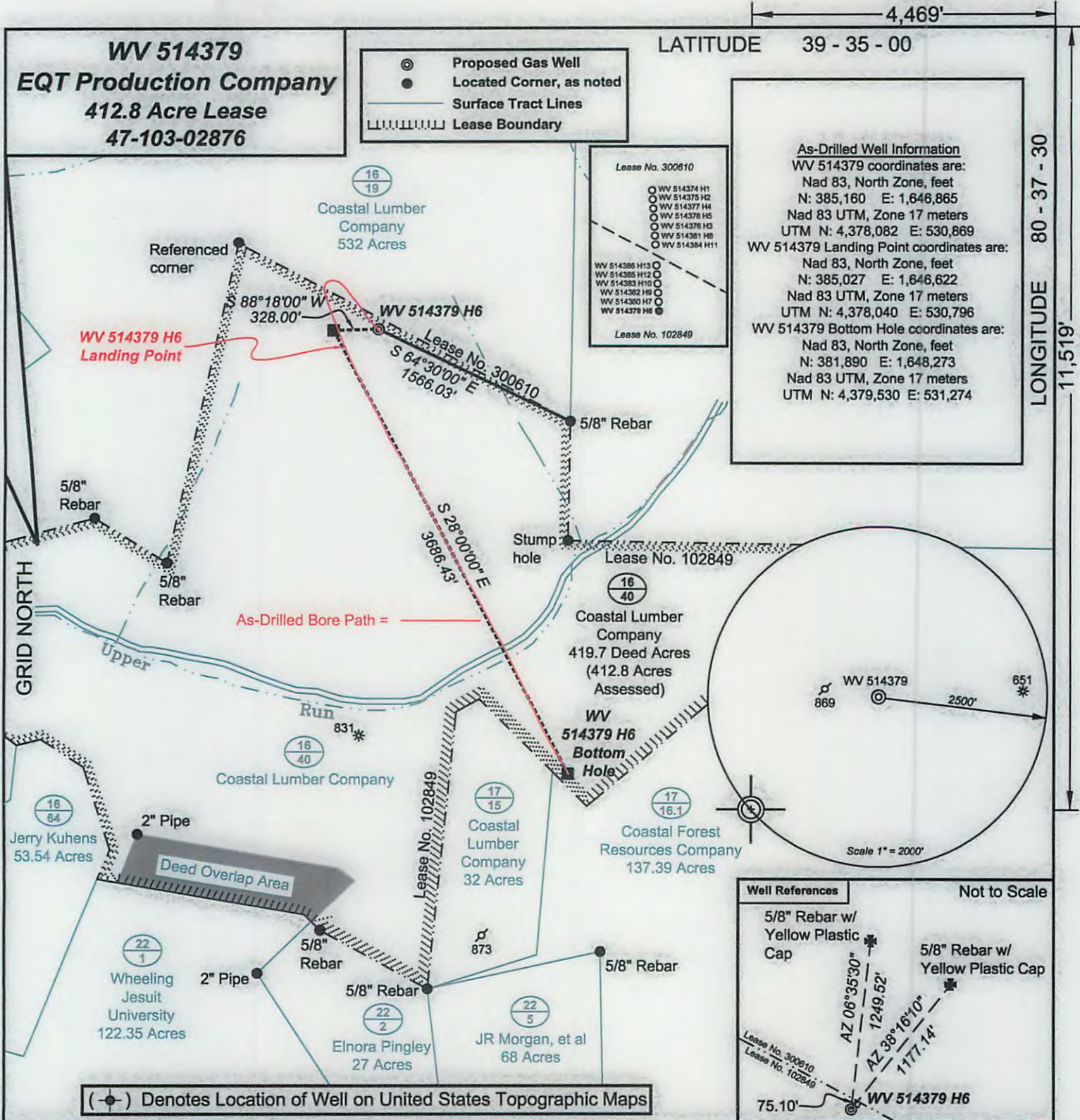
			Dazomet (Tetrahydro-3, 5-dimethyl-2H-1, 3, 5-thiadiazine-2-thione	533-74-4	24.00000	0.00237
CS-500-SI	FTSI	Scale Inhibitor	Sodium Hydroxide	1310-73-2	4.00000	0.00040
			Ethylene Glycol	107-21-1	10.00000	0.00248
ClO2	Neptune	Biocide	Chlorine Dioxide	10049-04-4	100.00000	0.00051
Cl-150	FTSI	Corrosion Inhibitor	Ethylene Glycol	107-21-1	30.00000	0.00011
			Isopropanol	67-63-0	30.00000	0.00011
			Organic amine resin salt	Proprietary	30.00000	0.00011
			Quaternary ammonium compound	Proprietary	10.00000	0.00004
			Aromatic aldehyde	Proprietary	10.00000	0.00004
FE-100L	FTSI	Iron Control	Dimethylformamide	68-12-2	10.00000	0.00004
			Citric Acid	77-92-9	55.00000	0.00043
ARB-1	FTSI	Gel Breaker	Ammonium Persulfate	7727-54-0	95.00000	0.00011
NE-100	FTSI	Non-Emulsifier	2-Butoxyethanol	111-76-2	10.00000	0.00003
			2-Propanol	67-63-0	10.00000	0.00003
			Dodecylbenzenesulfonic acid	27176-87-0	5.00000	0.00002

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.

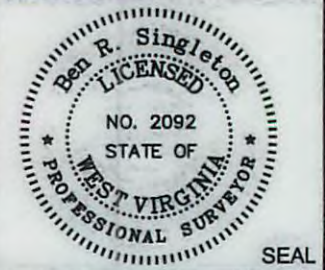
\* Total Water Volume sources may include fresh water, produced water, and/or recycled water  
 \*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

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.*



P.S. 2092

FILE NO: 204-34-G-12  
 DRAWING NO: 204-12 PNG 129 H6 As Drilled  
 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: June 23 20 13  
 OPERATOR'S WELL NO. WV 514379  
 API WELL NO  
 47 - 103 - 02876  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: Ground 1,357' Proposed 1,329.5' WATERSHED Upper Run of South Fork of Fishing Creek QUADRANGLE: Pine Grove  
 DISTRICT: Grant COUNTY: Wetzel  
 SURFACE OWNER: Coastal Lumber Company ACREAGE: 412.8  
 ROYALTY OWNER: Shiben Estates LEASE NO: 102849 ACREAGE: 419.7  
 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 7,700' MD 12,700'

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

**WV 514379**  
**EQT Production Company**  
**412.8 Acre Lease**  
**47-103-02876**

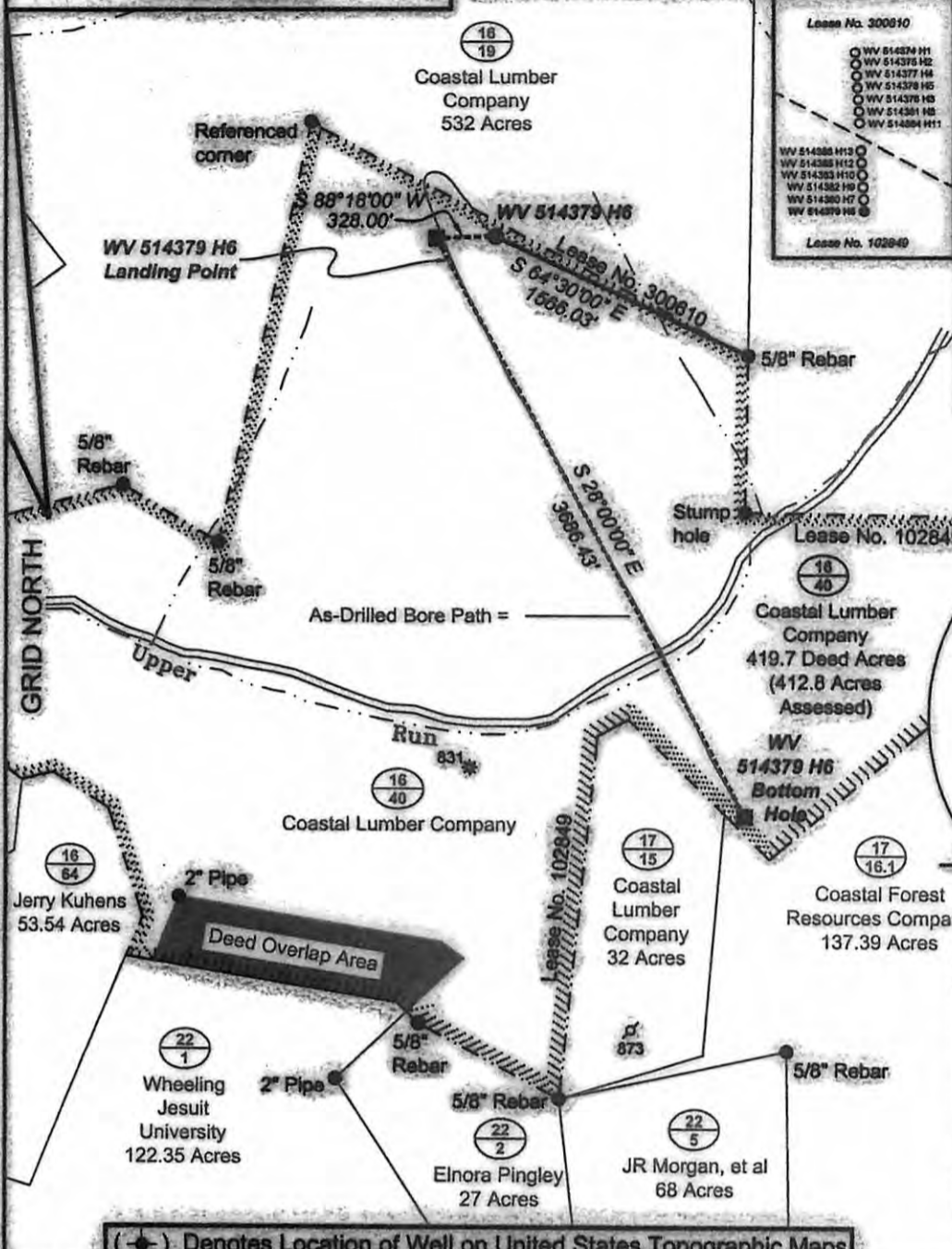
LATITUDE 39 - 35 - 00

4,469

LONGITUDE 80 - 37 - 30  
 11,519

- Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Lease Boundary

**As-Drilled Well Information**  
 WV 514379 coordinates are:  
 Nad 83, North Zone, feet  
 N: 385,160 E: 1,646,865  
 Nad 83 UTM, Zone 17 meters  
 UTM N: 4,378,062 E: 530,869  
 WV 514379 Landing Point coordinates are:  
 Nad 83, North Zone, feet  
 N: 385,027 E: 1,646,622  
 Nad 83 UTM, Zone 17 meters  
 UTM N: 4,378,040 E: 530,796  
 WV 514379 Bottom Hole coordinates are:  
 Nad 83, North Zone, feet  
 N: 381,890 E: 1,648,273  
 Nad 83 UTM, Zone 17 meters  
 UTM N: 4,379,530 E: 531,274



(●) Denotes Location of Well on United States Topographic Maps



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

*[Signature]*  
 P.S. 2092



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 ADDRESS: 115 Professional Place P.O. Box 280 ADDRESS: 115 Professional Place P.O. Box 280  
Bridgeport, WV 26330 Bridgeport, WV 26330

01/23/2015

Well Operator's Report of Well Work



Where energy meets innovation.

Well Number: 514379

API: 47 - 103 - 02876

Submission:  Initial  Amended

Notes:

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