

TR

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

API 47 - 103 - 02970 County Wetzel District Grant
Quad Pine Grove Pad Name PNG129 Field/Pool Name _____
Farm name COASTAL LUMBER COMPANY Well Number 514384
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 4,378,114 Easting 530,867
Landing Point of Curve Northing 4,377,815 Easting 530,278
Bottom Hole Northing 4,378,367 Easting 529,978

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 14.0 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 12/03/2013 Date drilling commenced 12/11/2013 Date drilling ceased 2/17/2014
Date completion activities began 9/16/2014 Date completion activities ceased 9/20/2014
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 683', 965', 1035', 1042', 1077' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by: _____

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API 47-103 - 02970 Farm name COASTAL LUMBER COMPANY Well number 514384

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"	950'	New	54.5#/ft	106', 226'	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	3400'	New	40#/ft	574', 954'	Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	10483'	New	20#/ft	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	790	15.6	1.19	940	0	8
Coal							
Intermediate 1	Class A	1191	15.6	1.18	1405.4	0	8
Intermediate 2							
Intermediate 3							
Production	Class A/Class H	880/305	15.2/15.6	1.08/1.86	1517.7	4505	8
Tubing							

Drillers TD (ft) 10,493' Loggers TD (ft) N/A
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 4505'

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', 623'
Intermediate-bow spring centralizers set at 3356', 2849', 2344', 1880', 1544', 1038', 532'
Production-composite centralizer ran on every joint from td up to 3334'

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	734	734
Sand / Shale	1	1	683	683
Coal	683	683	685	685
Sand / Shale	685	685	965	965
Coal	965	965	966	966
Sand / Shale	966	966	1,035.00	1,035.00
Coal	1,035.00	1,035.00	1,042.00	1,042.00
Sand / Shale	1,042.00	1,042.00	1,049.00	1,049.00
Coal	1,049.00	1,049.00	1,051.00	1,051.00
Sand / Shale	1,051.00	1,051.00	1,077.00	1,077.00
Coal	1,077.00	1,077.00	1,083.00	1,083.00
Sand / Shale	1,083.00	1,083.00	2,183.00	2,183.00
Maxton	2,183.00	2,183.00	2,419.00	2,419.00
Big Lime	2,419.00	2,419.00	2,658.00	2,657.90
Weir	2,658.00	2,657.90	2,856.00	2,855.90
Gantz	2,856.00	2,855.90	2,972.00	2,971.90
Fifty foot	2,972.00	2,971.90	3,045.00	3,044.90
Thirty foot	3,045.00	3,044.90	3,092.00	3,091.90
Gordon	3,092.00	3,091.90	3,212.00	3,211.90
Forth Sand	3,212.00	3,211.90	3,347.00	3,346.90
Bayard	3,347.00	3,346.90	3,763.00	3,762.90
Warren	3,763.00	3,762.90	3,889.00	3,888.90
Speechley	3,889.00	3,888.90	4,776.00	4,765.50
Riley	4,776.00	4,765.50	5,559.00	5,373.10
Benson	5,559.00	5,373.10	6,060.00	5,746.90
Alexander	6,060.00	5,746.90	7,790.00	7,043.40
Middlesex	7,790.00	7,043.40	7,847.00	7,082.20
Genesee	7,847.00	7,082.20	7,970.00	7,161.80
Geneseo	7,970.00	7,161.80	8,015.00	7,187.30
Tully	8,015.00	7,187.30	8,054.00	7,207.50
Hamilton	8,054.00	7,207.50	8,247.00	7,281.80
Marcellus	8,247.00	7,281.80	10,493.00	7,293.40

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514384 - 47-103-02970-0000 - Perforations

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	9/16/2014	10,458.00	10,461.00	10	MARCELLUS
1	9/16/2014	10,277.00	10,414.00	32	MARCELLUS
1.1 (Re-Perf)	9/16/2014	10,241.00	10,271.00	32	MARCELLUS
2	9/16/2014	10,017.00	10,197.00	40	MARCELLUS
3	9/17/2014	9,792.00	9,976.00	40	MARCELLUS
3.1 (Re-Perf)	9/17/2014	9,792.00	9,976.00	24	MARCELLUS
4	9/17/2014	9,567.00	9,749.00	40	MARCELLUS
5	9/18/2014	9,342.00	9,524.00	40	MARCELLUS
6	9/18/2014	9,117.00	9,299.00	40	MARCELLUS
7	9/18/2014	8,892.00	9,074.00	40	MARCELLUS
8	9/19/2014	8,667.00	8,849.00	40	MARCELLUS
9	9/19/2014	8,442.00	8,622.00	40	MARCELLUS
10	9/20/2014	8,353.00	8,433.00	40	MARCELLUS

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514384 - 47-103-02970-0000 - 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	9/16/2014	31.50	9,200.00	9,660.00	5,259	0	548	0
1	9/16/2014	99.20	7,639.00	8,385.00	4,317	749,631	22,931	0
1.1 (Re-Perf)								
2								
3	9/17/2014	99.10	7,989.00	8,842.00	4,612	376,572	11,488	0
3.1 (Re-Perf)								
4	9/17/2014	84.20	8,279.00	9,175.00	4,812	371,523	15,152	0
5	9/17/2014	99.70	7,921.00	8,229.00	4,372	371,227	9,419	0
6	9/18/2014	100.00	7,384.00	7,770.00	5,059	373,255	8,733	0
7	9/18/2014	99.90	7,717.00	8,333.00	4,630	362,535	8,863	0
Inj Test	9/19/2014	35.00	6,100.00	6,290.00	5,235	0	1,988	0
8	9/19/2014	100.90	7,494.00	8,155.00	4,954	372,151	9,548	0
9	9/20/2014	94.30	8,281.00	9,361.00	6,801	373,087	10,206	0
10	9/20/2014	97.70	8,009.00	9,140.00	4,436	374,547	10,131	0

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	9/16/2014
Job End Date:	9/20/2014
State:	West Virginia
County:	Wetzel
API Number:	47-103-02970-00-00
Operator Name:	EQT Production
Well Name and Number:	PNG129 - 514384
Longitude:	-80.64072500
Latitude:	39.55215300
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,309
Total Base Water Volume (gal):	4,548,117
Total Base Non Water Volume:	187,489

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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	90.66246	
Sand	FTSI	Proppant	Crystalline Silica	14808-60-7	100.00000	8.91296	
Hydrochloric Acid 15%	FTSI	Acidizing	Hydrochloric Acid	7647-01-0	15.00000	0.04161	
FRW-600	FTSI	Friction Reducer	Hydrotreated light distillate	64742-47-8	30.00000	0.02663	
			Ammonium acetate	631-61-8	6.00000	0.00533	
HVG-1	FTSI	Gel	Petroleum Distillate	64742-47-8	55.00000	0.00431	
			Guar Gum	9000-30-0	50.00000	0.00392	
			Surfactant	68439-51-0	2.00000	0.00016	
			Clay	14808-60-7	2.00000	0.00016	
B-10	FTSI	Buffer Agent	Potassium carbonate	584-08-7	48.00000	0.00531	
			Potassium hydroxide	1310-58-3	20.00000	0.00221	
ICI-3240	FTSI	Biocide					

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			Dazomet (Tetrahydro-3, 5-dimethyl-2H-1, 3, 5-thiadiazine-2-thione	533-74-4	24.00000	0.00275
			Sodium Hydroxide	1310-73-2	4.00000	0.00046
CS-500-SI	FTSI	Scale Inhibitor				
			Ethylene Glycol	107-21-1	10.00000	0.00256
CIO2	Neptune	Biocide				
			Chlorine Dioxide	10049-04-4	100.00000	0.00071
CI-150	FTSI	Corrosion Inhibitor				
			Ethylene Glycol	107-21-1	30.00000	0.00014
			Isopropanol	67-63-0	30.00000	0.00014
			Organic amine resin salt	Proprietary	30.00000	0.00014
			Quaternary ammonium compound	Proprietary	10.00000	0.00005
			Aromatic aldehyde	Proprietary	10.00000	0.00005
			Dimethylformamide	68-12-2	10.00000	0.00005
FE-100L	FTSI	Iron Control				
			Citric Acid	77-92-9	55.00000	0.00050
APB-1	FTSI	Gel Breaker				
			Ammonium Persulfate	7727-54-0	95.00000	0.00009
NE-100	FTSI	Non-Emulsifier				
			2-Propanol	67-63-0	10.00000	0.00003
			2-Butoxyethanol	111-76-2	10.00000	0.00003
			Dodecylbenzenesulfonic acid	27176-87-0	5.00000	0.00001

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.

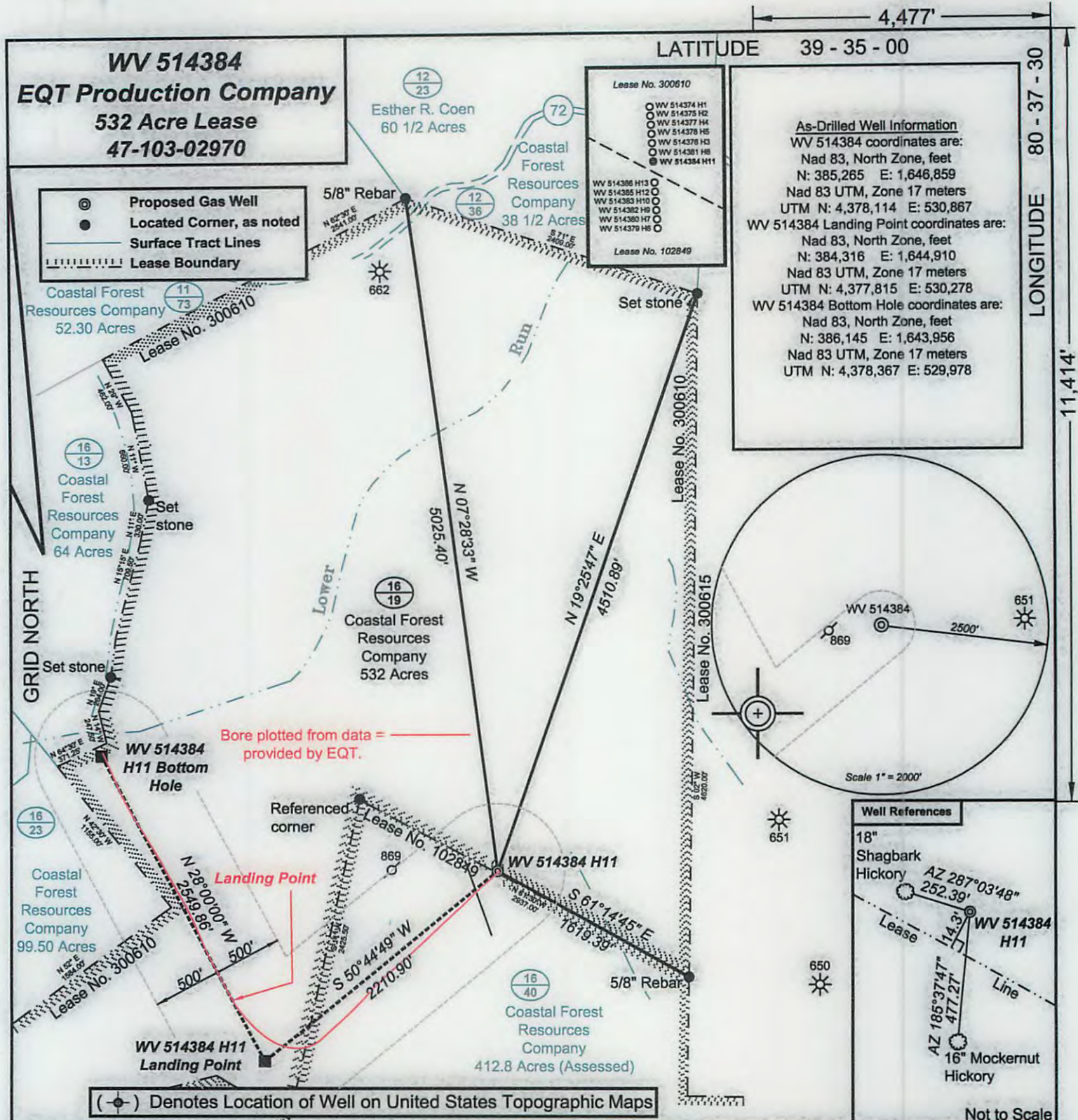
* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** 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.

[Signature]

P.S. 2092



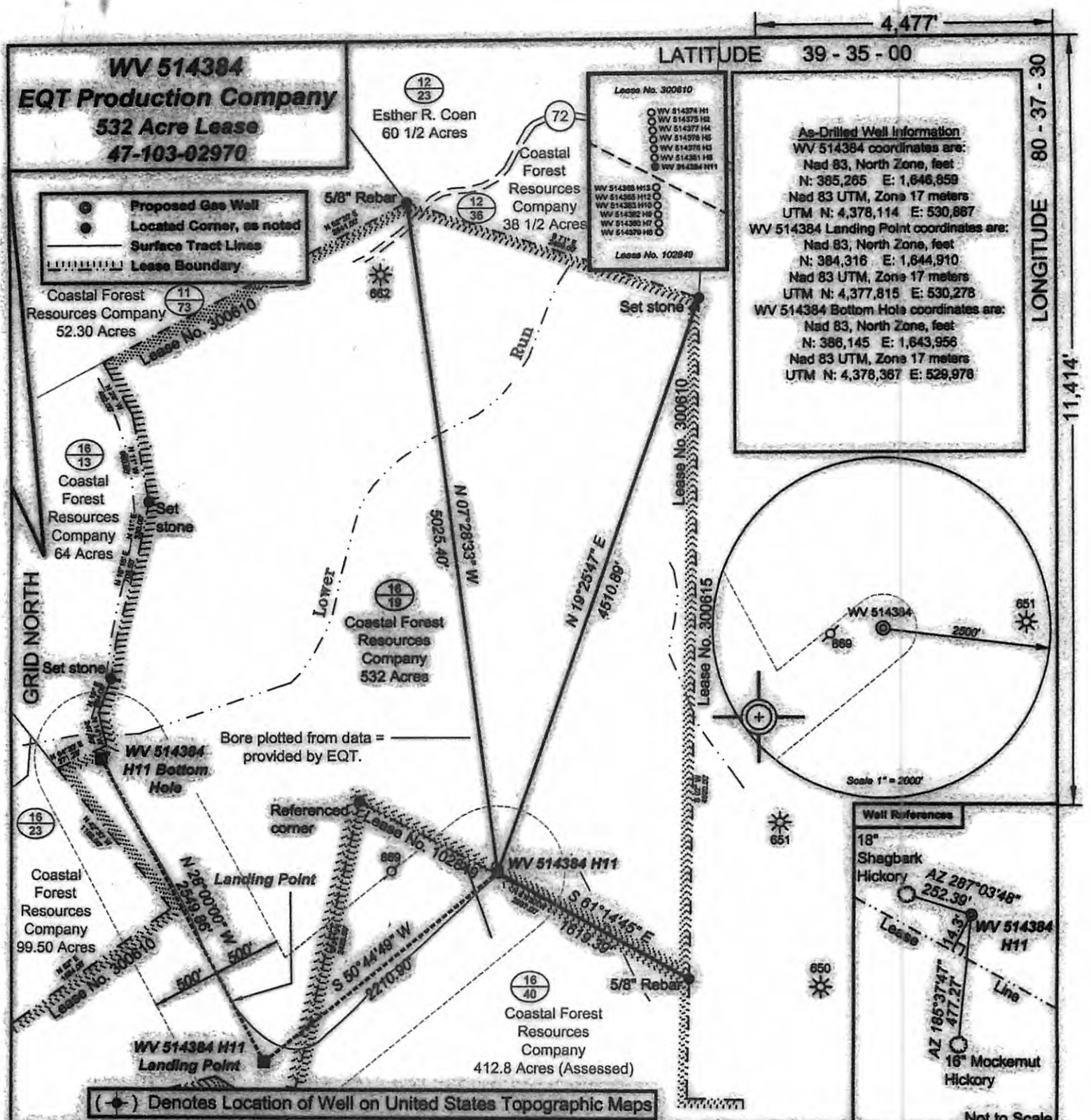
FILE NO: 204-34-G-12 EQT PNG 129
 DRAWING NO: 204-12 PNG 129 H11
 SCALE: 1" = 1000'
 MINIMUM DEGREE OF ACCURACY: 1:2500
 PROVEN SOURCE OF ELEVATION: NGS CORS Station

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

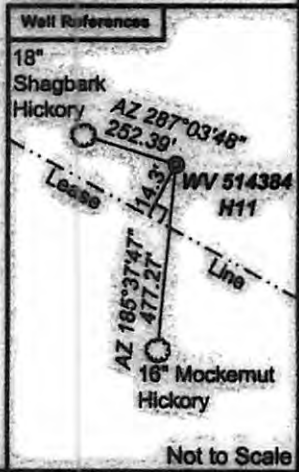
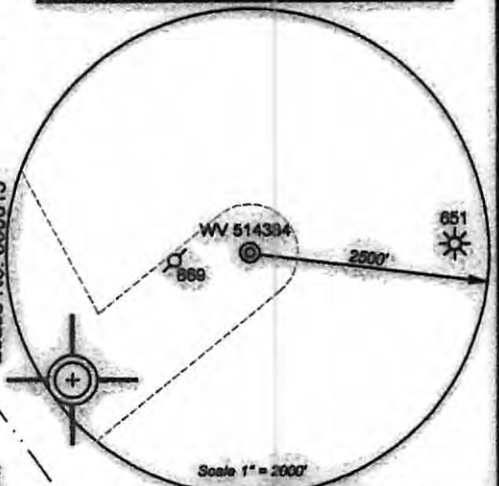
DATE: July 10 20 14
 OPERATOR'S WELL NO. WV 514384
API WELL NO
 47 - 103 - 02970
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: 1328' WATERSHED Upper Run of South Fork of Fishing Creek QUADRANGLE: Pine Grove
 DISTRICT: Grant COUNTY: Weitzel
 SURFACE OWNER: Coastal Forest Resources Company F.K.A. Coastal Lumber Company ACREAGE: 532
 ROYALTY OWNER: Waco Oil & Gas Co., Inc. LEASE NO: 300610 ACREAGE: 532
 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 13,500'

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



As-Drilled Well Information
 WV 514384 coordinates are:
 Nad 83, North Zone, feet
 N: 385,265 E: 1,646,859
 Nad 83 UTM, Zone 17 meters
 UTM N: 4,378,114 E: 530,867
 WV 514384 Landing Point coordinates are:
 Nad 83, North Zone, feet
 N: 384,316 E: 1,644,910
 Nad 83 UTM, Zone 17 meters
 UTM N: 4,377,815 E: 530,278
 WV 514384 Bottom Hole coordinates are:
 Nad 83, North Zone, feet
 N: 386,145 E: 1,643,956
 Nad 83 UTM, Zone 17 meters
 UTM N: 4,378,367 E: 529,978



WV 514384
EQT Production Company
532 Acre Lease
47-103-02970

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

Coastal Forest Resources Company
 52.30 Acres

Coastal Forest Resources Company
 64 Acres

Coastal Forest Resources Company
 99.50 Acres

Esther R. Coen
 60 1/2 Acres

Coastal Forest Resources Company
 38 1/2 Acres

Coastal Forest Resources Company
 532 Acres

Coastal Forest Resources Company
 412.8 Acres (Assessed)

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.

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FILE NO: 204-34-G-12 EQT PNG 129
 DRAWING NO: 204-12 PNG 129 H11
 SCALE: 1" = 1000'
 MINIMUM DEGREE OF ACCURACY: 1:2500
 PROVEN SOURCE OF ELEVATION: NGS CORS Station

STATE OF WEST VIRGINIA
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OIL AND GAS DIVISION

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 47 - 103 - 02970
 STATE COUNTY PERMIT

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 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
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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

Well Operator's Report of Well Work



Where energy meets innovation.

Well Number: 514384

API: 47 - 103 - 02970

Submission: Initial Amended

Notes: Stimulation Notes:

Re-Perforated Stages: 1 (1.1), 3 (3.1)

Combined Stages: [1, 1.1, 2]

Performed additional injection test
prior to stage 8

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