



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

August 17, 2015

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-8510227, 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: 514475
Farm Name: MORTON, JERRY
API Well Number: 47-8510227
Permit Type: Horizontal 6A Well
Date Issued: 08/17/2015

Promoting a healthy environment.

PERMIT CONDITIONS

4708510227

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. Operator shall take additional measures with this permitted activity to avoid communication with offset wells. Such additional measures are described in the attached addendum. This addendum is part of the terms of the well work permit, and includes a description of depth and completed formations of offset wells. Also included is a description of monitoring activities that will take place during fracturing operations of the permitted well work.
1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACOE). Through this permit, you are hereby being advised to consult with USACOE 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.

API Number: _____

PERMIT CONDITIONS

4708510227

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. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

4708510227

API NO. 47 - 085 -
OPERATOR WELL NO. 514475
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
Operator ID: 306686 County: 085 District: 1 Quadrangle: 539

2) Operator's Well Number: 514475 Well Pad Name: PEN54

3) Farm Name/Surface Owner: Jerry Morton et al Public Road Access: Rt 50

4) Elevation, current ground: 1,016.0 Elevation, proposed post-construction: 1,016.0

5) Well Type: (a) Gas Oil Underground Storage
Other _____

(b) If Gas: Shallow Deep
Horizontal

3) Existing Pad? Yes or No: no

7) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
Target formation is Marcellus at a depth of 6297 with the anticipated thickness to be 49 feet and anticipated target pressure of 2190 PSI

8) Proposed Total Vertical Depth: 6297

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 18,474

11) Proposed Horizontal Leg Length: 11,000

12) Approximate Fresh Water Strata Depths: 99, 105, 302, 627, 729, 745, 770

13) Method to Determine Fresh Water Depth: By offset wells

14) Approximate Saltwater Depths: 1,350

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

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

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JUL 17 2015

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Environmental Protection

David A. ...
7-15-15

WW - 6B
(4/15)

4708510227

API NO. 47 - 85 - 10227
 OPERATOR WELL NO. 514475
 Well Pad Name: PEN54

CASING AND TUBING PROGRAM

18)

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.)
Conductor	20	New	MC-50	81	40	40	38 C.T.S.
Fresh Water	13 3/8	New	J-55	54.5	900	900	785 C.T.S.
Coal	-	-	-	-	-	-	-
Intermediate	9 5/8	New	A-500	40	5,176	5,176	2,037 C.T.S.
Production	5 1/2	New	P-110	20	18,195	18,195	See Note 1
Tubing	2 3/8		J-55	4.6			May not be run, if run will be set 100' less than TD
Liners							

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	24	0.375	-	18	Construction	1.18
Fresh Water	13 3/8	17 1/2	0.38	2,730	2184	* See Note 2	1.21
Coal							
Intermediate	9 5/8	12 3/8	0.395	3,950	3160	* See Note 2	1.21
Production	5 1/2	8 1/2	0.361	12,640	10112	-	1.27/1.86
Tubing							
Liners							

Packers

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

Note 1: EQT plans to bring the TOC on the production casing cement job 1,000' above kick off point, which is at least 500' above the shallowest production zone, to avoid communication.

Note 2: Reference Variance 2014-17. (Attached)

Page 2 of 3
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WW - 6B
(10/14)

4708510227

API NO. 47 - 85 - 10227
OPERATOR WELL NO. 514475
Well Pad Name: PEN54

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. The vertical drill to go down to an approximate depth of 5454 then kick off the horizontal leg into the marcellus using a slick water frac.

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 average approximately 8500 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.

21) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 52.03

22) Area to be disturbed for well pad only, less access road (acres): 21.5

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 cent at the shoe and one spaced every 500'.
- Production: One spaced every 1000' from KOP to Int csg shoe

24) Describe all cement additives associated with each cement type. Surface (Type 1 Cement): 0-3% Calcium Chloride

Used to speed the setting of cement slurries.

0.4% 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. 0.4% 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 1 Cement): 0.2-0.7% Lignosulfonate (Retarder). Lengthens thickening time.

0.3% CFR (dispersant). Makes cement easier to mix.

Tail (Type H Cement): 0.25-0.40% Lignosulfonate (Retarder). Lengthens thickening time.

0.2-0.3% CFR (dispersant). This is to make the cement easier to mix.

60 % Calcium Carbonate. Acid solubility.

0.4-0.6% Halad (fluid loss). Reduces amount of water lost to formation.

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25) Proposed borehole conditioning procedures. Surface: Circulate hole clean (Approximately 30-45 minutes) rotating & reciprocating

one full joint until cuttings diminish at surface. When cuttings returning to surface diminish, continue to circulate an additional 5

minutes. To ensure that there is no fill, short trip two stands with no circulation. If there is fill, bring compressors back on

and circulate hole clean. A constant rate of higher than expected cuttings volume likely indicates washouts that will not clean up.

Intermediate: Circulate hole clean (Approximately 30-45 minutes) rotating & reciprocating one full joint until cuttings diminish at

surface. When cuttings returning to surface diminish, continue to circulate an additional 5 minutes. If foam drilling, to enhance

hole cleaning use a soap sweep or increase injection rate & foam concentration.

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.

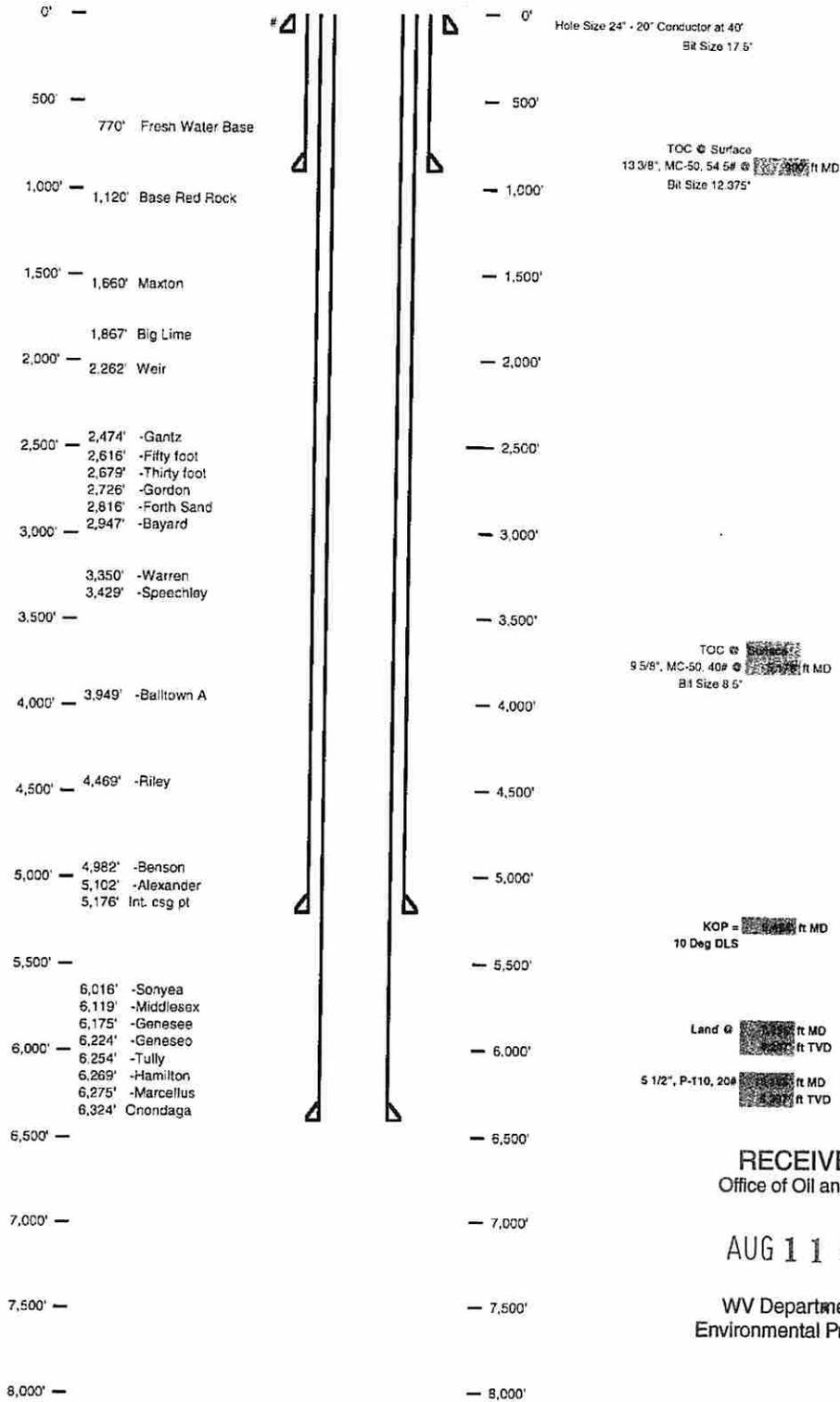
*Note: Attach additional sheets as needed.

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Well Schematic
EQT Production

Well Name
County
State

Elevation KB:
Target
Prospect
Azimuth
Vertical Section



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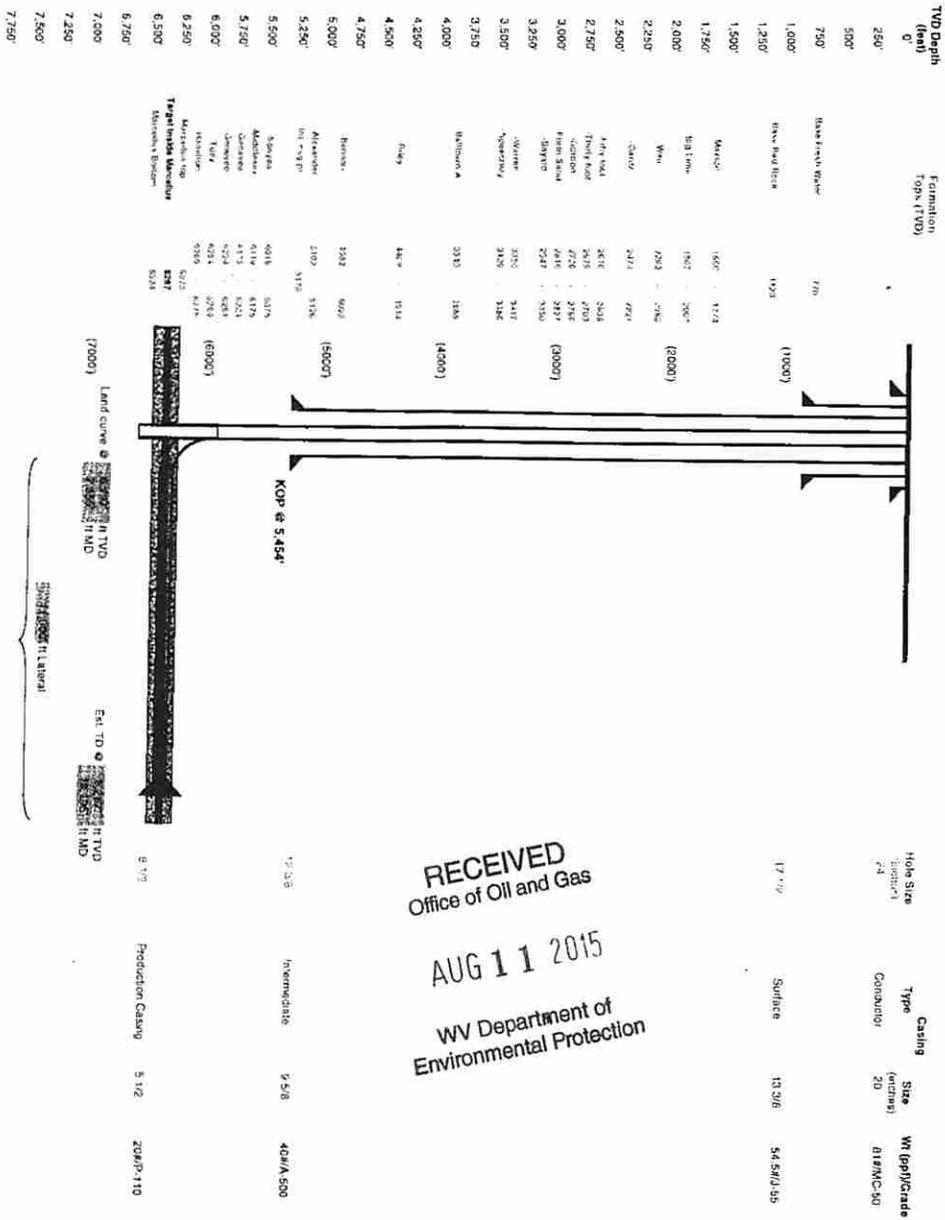
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EOT Production
EN54H2
West Virginia

Approved
Vertical Section



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Proposed Well Work
 The well and complete a new horizontal well in the Marcellus Formation.
 The well will be drilled to an approximate depth of 8,454'.
 The well will be drilled into the Marcellus using a slick water frac.



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0462 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

4708510227

Re: Cement Variance Request

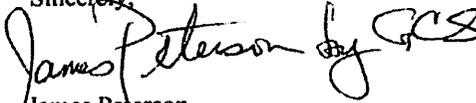
Dear Sir or Madam,

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

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

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

Sincerely,


James Peterson
Environmental Resources Specialist / Permitting

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Received
Office of Oil & Gas
JUL 08 2015



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
(304) 928-0450
(304) 928-0452 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**

**IN THE MATTER OF A VARIANCE FROM)
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)**

ORDER NO. 2014 - 17

4708510227

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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Office of Oil & Gas**

JUL 08 2015

CONCLUSIONS OF LAW

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

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

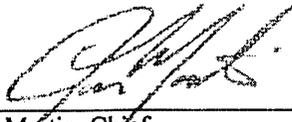
ORDER

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

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

IN THE NAME OF THE STATE OF WEST VIRGINIA

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



James Martin, Chief
Office of Oil and Gas

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WW-9
(2/15)

Page 1 of 2
API No. 47 - 085 - 10227
Operator's Well No. 514475

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 (HUC10) North Fork Hughes River Quadrangle Pennsboro 7.5

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

Will a pit be used? Yes: X No:

If so please describe anticipated pit waste: flowback water & residual solids

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

Proposed Disposal Method For Treated Pit Wastes:

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

Will closed loop system be used? 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.

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

- If oil based, what type? Synthetic, petroleum, etc Synthetic mud

Additives to be used in drilling medium? Air - biodegradable oil lubricant, detergent, defoaming, water. Water based mud - Berle, viscosifier, alkalinity control, lime, filtration control, defloculates, biodegradable oil lubricant, defoaming, walnut shell, salt, x-cide, carbonates.
Oil based mud - synthetic base oil, emulsifier, salt, lime, viscosifier, alkalinity control, filtration control, defloculates, biodegradable oil lubricant, defoaming, carbonates.

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 [Signature]
Company Official (Typed Name) Victoria J. Hoark
Company Official Title Permitting Supervisor

Subscribed and sworn before me this 11 day of August, 20 15

Rebecca J. Heater Notary Public

My commission expires 4-7-20

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4708510227

Form WW-9

Operator's Well No. 514475

Proposed Revegetation Treatment: Acres Disturbed 52.03 Prevegetation pH 6.2

Lime 3 Tons/acre or to correct to pH 6.5

Fertilize type Granular 10-20-20

Fertilizer Amount 13 lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre

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: Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

4708510227

Plan Approved by: *[Signature]*

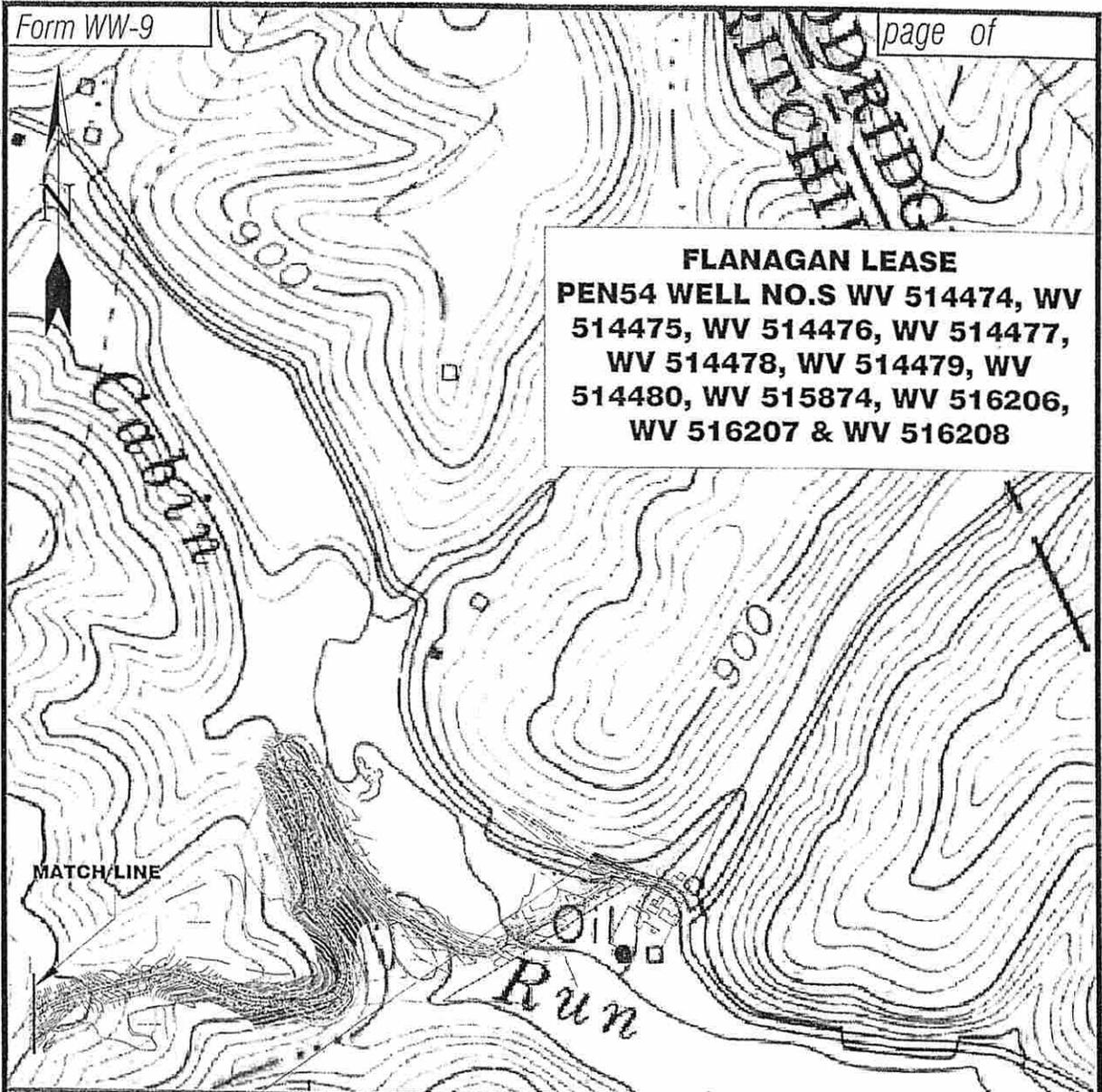
Comments: *resseed & mulch all dirt area no less than 2 tons per acre maintain all CR&S during operation*

Title: *oil & gas inspector* Date: *7-15-15*

Field Reviewed? () Yes () No

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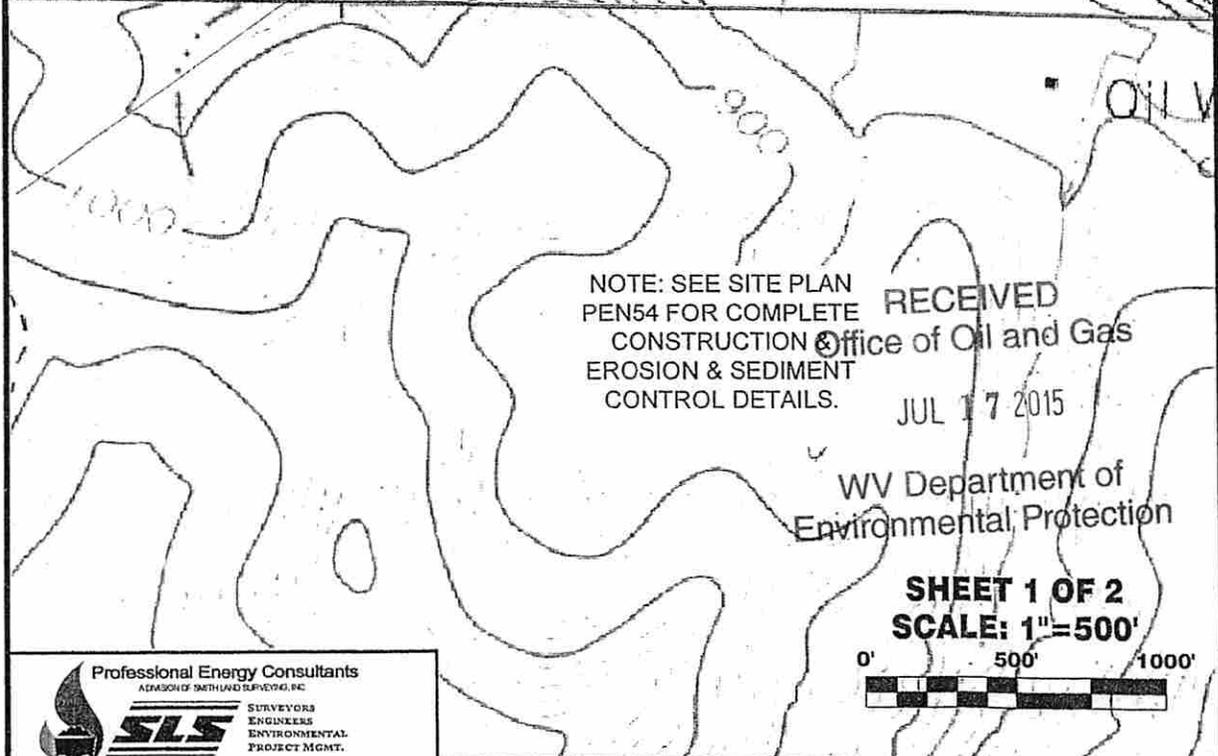
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FLANAGAN LEASE
PEN54 WELL NO.S WV 514474, WV
514475, WV 514476, WV 514477,
WV 514478, WV 514479, WV
514480, WV 515874, WV 516206,
WV 516207 & WV 516208

MATCH LINE

OIL
Run

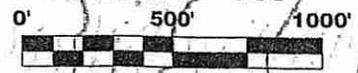


NOTE: SEE SITE PLAN
 PEN54 FOR COMPLETE
 CONSTRUCTION &
 EROSION & SEDIMENT
 CONTROL DETAILS.

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SHEET 1 OF 2
SCALE: 1"=500'



Professional Energy Consultants
 A DIVISION OF SMITHLAND SURVEYING, INC.
 SURVEYORS
 ENGINEERS
 ENVIRONMENTAL
 PROJECT MGMT.

DRAWN BY K.D.W.	FILE NO. 8083	DATE 06-25-15	CADD FILE: 8083PEN54REC.dwg
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TOPO SECTIONS OF PENNSBORO 7.5'
 TOPO QUADRANGLE

708510227

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



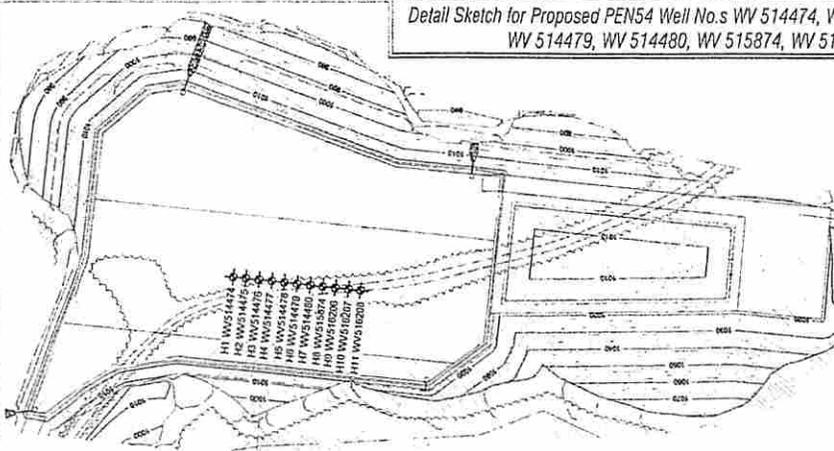
FLANAGAN LEASE
PEN54 WELL NO.S WV 514474, WV 514475, WV 514476, WV 514477, WV 514478, WV 514479, WV 514480, WV 515874, WV 516206, WV 516207 & WV 516208

SHEET 2 OF 2
SCALE: 1"=500'



MATCH LINE

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



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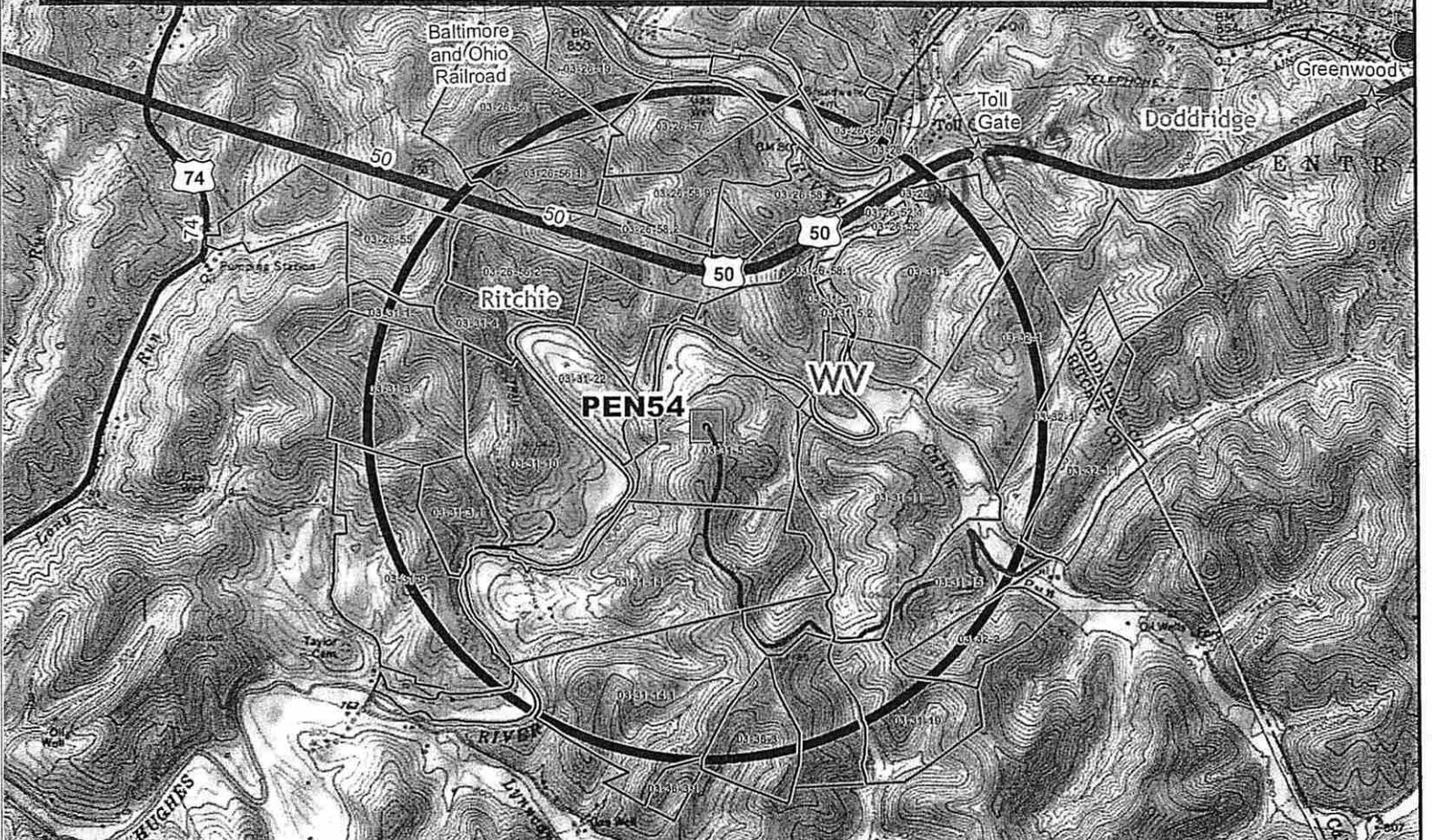
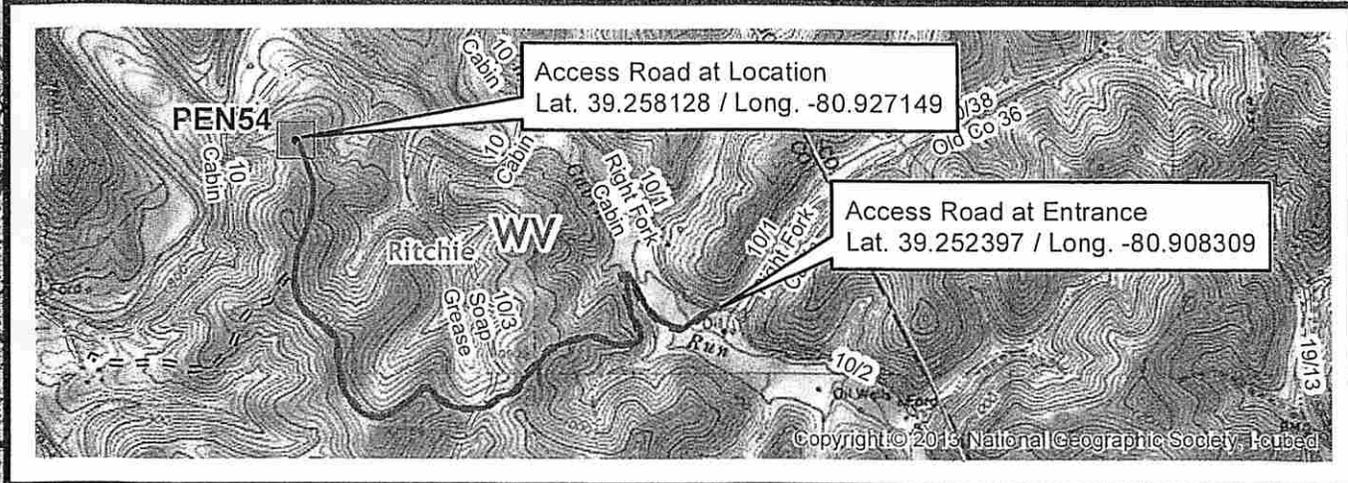
WV Department of Environmental Protection
Office of Oil and Gas
PEN54 FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.



DRAWN BY: K.D.W. FILE NO.: 8083 DATE: 06-25-15 CADD FILE: 8083PEN54REC.dwg

TOPO SECTIONS OF PENNSBORO 7.5' TOPO QUADRANGLE

Not To Scale



Legend

Horizontal PUD Locations	Access Routes	Railroads	College	Law Enforcement
Safety Buffer	Highways	Counties	Fire Department	Church
LANDMARKS	Interstates	Major Roads	Hospital	School
Access Route	Streets			

EQT
 EQT Production
 White Oaks Office
 120 Professional Place
 Bridgeport, WV 26330

Site Safety Plan

PEN54
One Mile Safety Buffer
Ritchie County, WV

Created By: E2emma
 Printed By: emmas on 9/17/2015
 Map Date: East Land GIS - White Oak Office

4708510227

DISCLAIMER:
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 JUL 17 2015
 WV Department of Environmental Protection

Dull

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

4708510227

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

Received
Office of Oil & Gas
JUL 08 2015



4708510227

Where energy meets innovation.™

Site Specific Safety Plan

EQT PEN 54 Pad

Toll Gate

Ritchie County, WV

4708510227

For Wells:

514475

[Signature]
EQT Production

Permitting Supervisor
Title

7/2/15
Date

Date Prepared:

November 17, 2014

[Signature]
WV Oil and Gas Inspector

oil & gas inspector
Title

7-15-15
Date

RECEIVED
Office of Oil and Gas

JUL 17 2015

WV Department of
Environmental Protection

4708510227

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



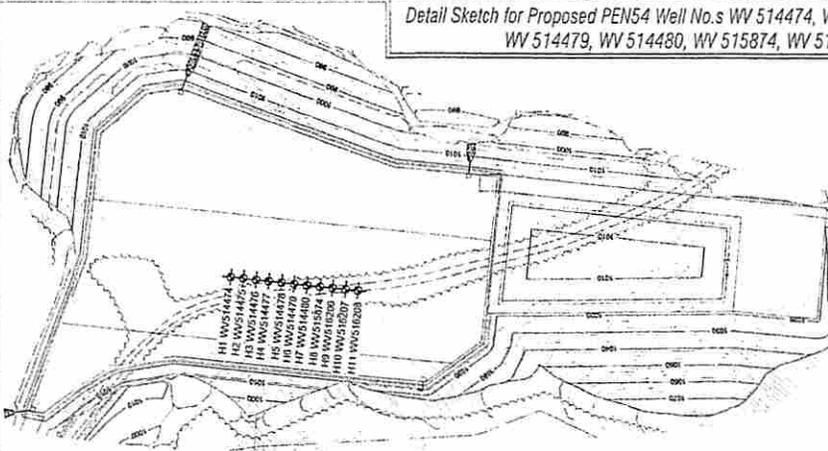
FLANAGAN LEASE
PEN54 WELL NO.S WV 514474, WV 514475, WV 514476, WV 514477, WV 514478, WV 514479, WV 514480, WV 515874, WV 516206, WV 516207 & WV 516208

SHEET 2 OF 2
SCALE: 1"=500'



MATCH LINE

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



RECEIVED
Office of Oil and Gas
NOTE: SEE SITE PLAN PEN54 FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.
Department of Environmental Protection
[Signature]
Not To Scale



DRAWN BY: K.D.W. FILE NO.: 8083 DATE: 06-25-15 CADD FILE: 8083PEN54REC.dwg

TOPO SECTIONS OF PENNSBORO 7.5' TOPO QUADRANGLE

4708510227

EQT Production
Hydraulic Fracturing Monitoring Plan
Pad ID: PEN54
Ritchie County, WV

6/17/15

Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near EQT hydraulic fracturing in Ritchie County, WV prior to hydraulic fracturing at the following EQT wells on the PUL96 pad: 514474, 514475, 514476, 514477, 514478, 514479, 514480, 515874, 516206, 516207, 516208, 516209, and 516210.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 6,400' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability Alexander formation (approximately 5,200' TVD).

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

1. Communications with Conventional Well Operators

EQT, using available data (WV Geological Survey, WVDEP website, and IHS data service), has identified all known conventional wells and well operators within 1,500 feet of this pad and the lateral sections. A map showing these wells along with a list of the wells and operators is included in **Attachment A**.

Upon approval of this plan, EQT will notify these operators, via letter, of the hydraulic fracturing schedule for these wells. A copy of this letter is included in **Attachment B**.

The letter provides recommendations to these conventional operators to 1) increase their monitoring of their wells during that time period, 2) ensure that their well head equipment is sound, and 3) provide immediate notification to EQT and the OOG in the event of any changes in their well conditions.

Specifically, the letter recommends that conventional well operators conduct the following activities during and after fracturing operations:

1. Inspect their surface equipment prior to fracturing to establish integrity and establish pre-frac well conditions
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas or pressure
3. Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified

2. Reporting

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

Received
Office of Oil & Gas
JUL 08 2015

Well ID	Prior Operator on Record	Operator-Dep*	Status	Latitude	Longitude	Vertical TD	Closest Distance from PEN54 Lateral Map View	PEN54 Horizontal T/D minus Vertical T/D	Hypotenuse Distance	Producing Formation	Notes
4708500472	McBurey, Glen F	OPERATOR UNKNOWN	Abandoned Well	39.2498	-80.9199	1796	113	7106	7106	8984093 Big Injun	
4708500501	Hodges, T.F.	MOUNTAIN STATE OIL COMPANY LLC	Abandoned Well	39.2398	-80.9249	1777	265	7087	7091	952764 Big Injun	
4708503549	Muhlin Oil Corp.	MOUNTAIN STATE OIL COMPANY LLC	GAS - Active	39.2316	-80.9113	2404	1319	7174	7825	954063 Big Injun, Big Injun, Berea, U. Dev	
4708503651	Muhlin Oil Corp.	MOUNTAIN STATE OIL COMPANY LLC	GAS - Active	39.2316	-80.9113	2334	184	7844	7846	157786 Berea	
4708503919	Carnegie Natural Gas Co	MOUNTAIN STATE OIL COMPANY LLC	GAS - Active	39.2308	-80.9172	1980	213	7290	7293	658958 Big Injun	
4708503967	Carnegie Natural Gas Co	EPC	Plugged	39.2308	-80.9094	2079	7389	7391	760616		
4708503975	Carnegie Natural Gas Co	EPC	Plugged	39.268067	-80.920055	1764	239	7074	7078	0362329	
4708503978	Muhlin Oil Corp.	EPC	Abandoned Well	39.24291	-80.92554	1924	180	7224	7240	342879 Big Injun	
4708504182	Haught, Glen L and Sons	MOUNTAIN STATE OIL COMPANY LLC	GAS - Active	39.24479	-80.92999	1845	1177	7135	7251	162252 Big Injun	
4708504223	Haught, Glen L and Sons	KEY OIL COMPANY	GAS - Active	39.23711	-80.9201	2410	235	7710	7723	5759221 Big Injun, Weir	
4708504248	Carnegie Natural Gas Co	G HAUGHT & SONS	New/Drilled	39.26472	-80.93333	1051	949	10656	10638	91428 Big Injun, Weir	
4708504248	Carnegie Natural Gas Co	EPC	Abandoned Well	39.27289	-80.92312	2017	180	7327	7329	210667	
4708504248	Carnegie Natural Gas Co	EPC	Abandoned Well	39.277328	-80.929227	1732	1020	7042	7115	487615	
4708504576	Perkins Oil and Gas Co	PERKINS OIL & GAS INC	GAS - Active	39.27328	-80.929227	1732	1020	7042	7115	487615	
4708504873	Carnegie Natural Gas Co	KEY OIL COMPANY	GAS - Active	39.2586	-80.9172	2535	135	11300	11300	80639 Bradford, Riley, Benson, Alexander	
4708507611	Haddad & Brooks, Inc.	KEY OIL COMPANY	GAS - Active	39.2385	-80.9192	5990	1459	10523	10523	44706 Riley, Benson, Alexander	
4708507642	Haddad & Brooks, Inc.	KEY OIL COMPANY	GAS - Active	39.2708	-80.92	5213	135	11300	11300	80639 Bradford, Riley, Benson, Alexander	
4708507644	Haddad & Brooks, Inc.	KEY OIL COMPANY	GAS - Active	39.2766	-80.9232	5300	75	7979	7979	517905 Big Injun	
4708507678	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.267	-80.9234	5305	351	10685	10690	765958 Riley, Benson, Alexander	
4708507682	Eastern American Energy Corp	KEY OIL COMPANY	GAS - Active	39.2523	-80.9329	4506	822	9816	9850	357954 Maxton, Big Injun, Warren, Riley	
4708507684	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2277	-80.9254	5123	333	10433	10438	51299 Riley, Benson, Alexander	
4708507686	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2477	-80.9113	5389	967	10699	10742	51095 Warren, Riley	
4708507704	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2647	-80.9306	4942	906	10252	10291	95511 Warren, Riley	
4708507706	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2442	-80.9275	4988	620	10238	10316	64694 Warren, Bradford	
4708507706	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2529	-80.9224	4933	84	10263	10263	34375 Big Injun, Warren, Speckley, Riley	
4708507713	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2494	-80.9275	4678	336	9988	9993	649984 Warren, Speckley, Riley	
4708507734	Eastern American Energy Corp	KEY OIL COMPANY	GAS - Active	39.2839	-80.923	5220	899	10580	10563	3767 Riley, Benson, Alexander	
4708507763	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2455	-80.9215	4713	174	10083	10084	50123 Maxton, Keener, Warren, Riley	
4708507764	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2474	-80.917	5073	670	10232	10244	17986 Maxton, Keener, Warren, Riley	
4708507764	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2431	-80.9172	4521	15	9831	9831	011443 Big Injun, Warren, Bradford	
4708507767	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2544	-80.9276	4678	90	9988	9988	40547 Warren, Riley	
4708507768	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2454	-80.924	4604	219	9914	9916	41857 Maxton, Big Injun, Warren, Speckley, Riley	
4708507771	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2628	-80.924	4604	219	9914	9916	41857 Maxton, Big Injun, Warren, Speckley, Riley	
4708507772	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2647	-80.918	5266	86	10595	10596	34899 Warren, Riley, Benson	
4708507773	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2687	-80.914	5285	1373	10653	10663	75891 Warren, Riley, Benson, Alexander	
4708507781	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2639	-80.9129	5265	1288	10575	10653	14831 Warren, Speckley, Riley, Benson	
4708507781	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2639	-80.9129	5265	1288	10575	10653	14831 Warren, Speckley, Riley, Benson	
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4708507781	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2639	-80.9129	5265	1288	10575	10653	14831 Warren, Speckley, Riley, Benson	
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4708507781	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active</								

4708530659
4708530675
4708530815
4708530816
4708531355

PGH & WYV GAS
PGH & WYV GAS
F S DEEM
F S DEEM
EPC

GAS - Active
GAS - Active
Unknown
Unknown
Unknown

39,28417 -80,92333
39,25167 -80,92611
39,23972 -80,91889
39,23972 -80,91611
39,27083 -80,92833

1837
2041
1693
1087
1999

784
107
2
232
310

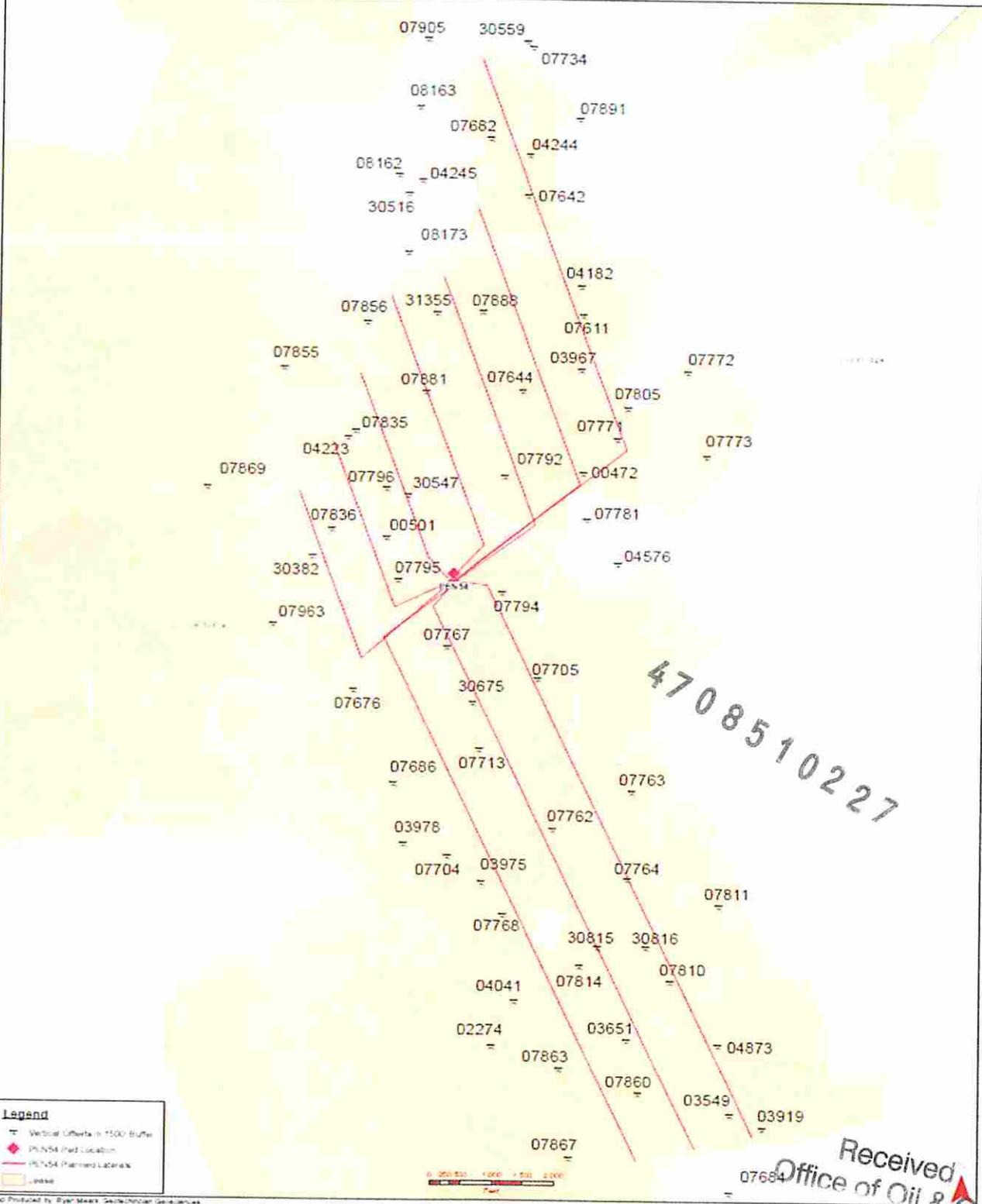
7147 7189,872391 Maxton
7351 7351,778666 Maxton, Big Injun
8003 7003,000286 Unknown
1088 10620,53428 Unknown
7309 7315,571133 Maxton, Big Injun

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Received
Office of Oil & Gas
JUL 08 2015

1577-1595
1750-1994
Unknown
Unknown
1767-994

All in at A-7-



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Received
Office of Oil & Gas
JUL 08 2015

Attachment A-3



(date)

[Conventional Well Operator]
[address]
[state]

RE: Ritchie County Hydraulic Fracturing Notice

Dear Sir/Madam,

EQT has developed a Marcellus pad (Pennsboro 54 pad) located in Ritchie County, WV. As an owner or operator of conventional natural gas wells in this area, we are requesting your assistance in this matter.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 6,400' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability, Alexander formation (approximately 5,200' TVD).

EQT anticipates conducting hydraulic fracturing at the Pennsboro 54 pad during the second quarter of 2015. We have identified conventional natural gas wells operated by your company within 1,500' (lateral distance) of our new/planned laterals. Plats for each well on this pad are attached.

We recommend that conventional well operators conduct the following activities before, during, and after fracturing operations:

1. Inspect surface equipment, prior to fracturing, to establish integrity and establish well conditions.
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas, or pressure.
3. Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity.
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified.

Please feel free to contact me at 412-395-3305 with any questions or comments. You may also contact the West Virginia Office of Oil and Gas at 304-926-0440.

Sincerely,
EQT Production

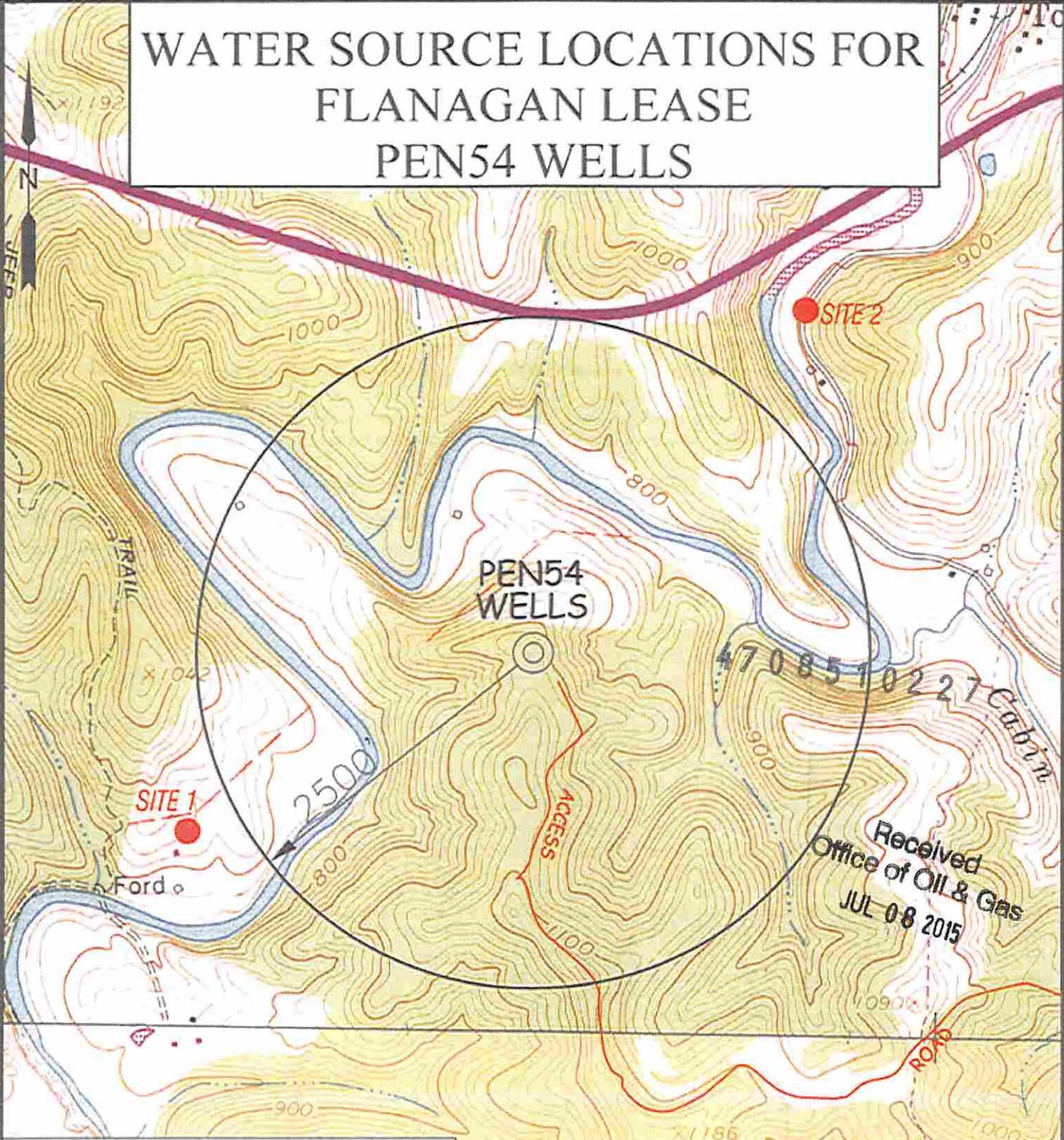
John Centofanti
Corporate Director, Environmental Affairs

cc: James Martin, WV Office of Oil and Gas

Received
Office of Oil & Gas
JUL 08 2015

Attachment B

WATER SOURCE LOCATIONS FOR FLANAGAN LEASE PEN54 WELLS



SCALE: 1-INCH = 1000-FEET



LEGEND
● WATER WELL

Professional Energy Consultants
A DIVISION OF METHUEN CONSULTING, INC.



SLS SURVEYORS
ENGINEERS
ENVIRONMENTAL
PROJECT MANAGERS

DRAWN BY: K.D.W. FILE NO.: 8083 DATE: 06/02/15 CADD FILE: 8083WSP084.dwg

TOPO SECTION OF:
PENNSBORO, WV 7.5' QUAD

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

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

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.

LATITUDE 39°17'30"

EQT PRODUCTION COMPANY
FLANAGAN LEASE
268 ACRES±
WELL NO. WV 514475

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

NAD'27 S.P.C.(FT) N. 279,201.67 E. 1,595,781.38
NAD'27 GEO. LAT-(N) 39.257756 LONG-(W) 80.927542
NAD'83 UTM (M) N. 4,345,392.18 E. 506,266.12

LANDING POINT

NAD'27 S.P.C.(FT) N. 279,410.97 E. 1,596,974.49
NAD'27 GEO. LAT-(N) 39.258382 LONG-(W) 80.923340
NAD'83 UTM (M) N. 4,345,462.02 E. 506,628.53

BOTTOM HOLE

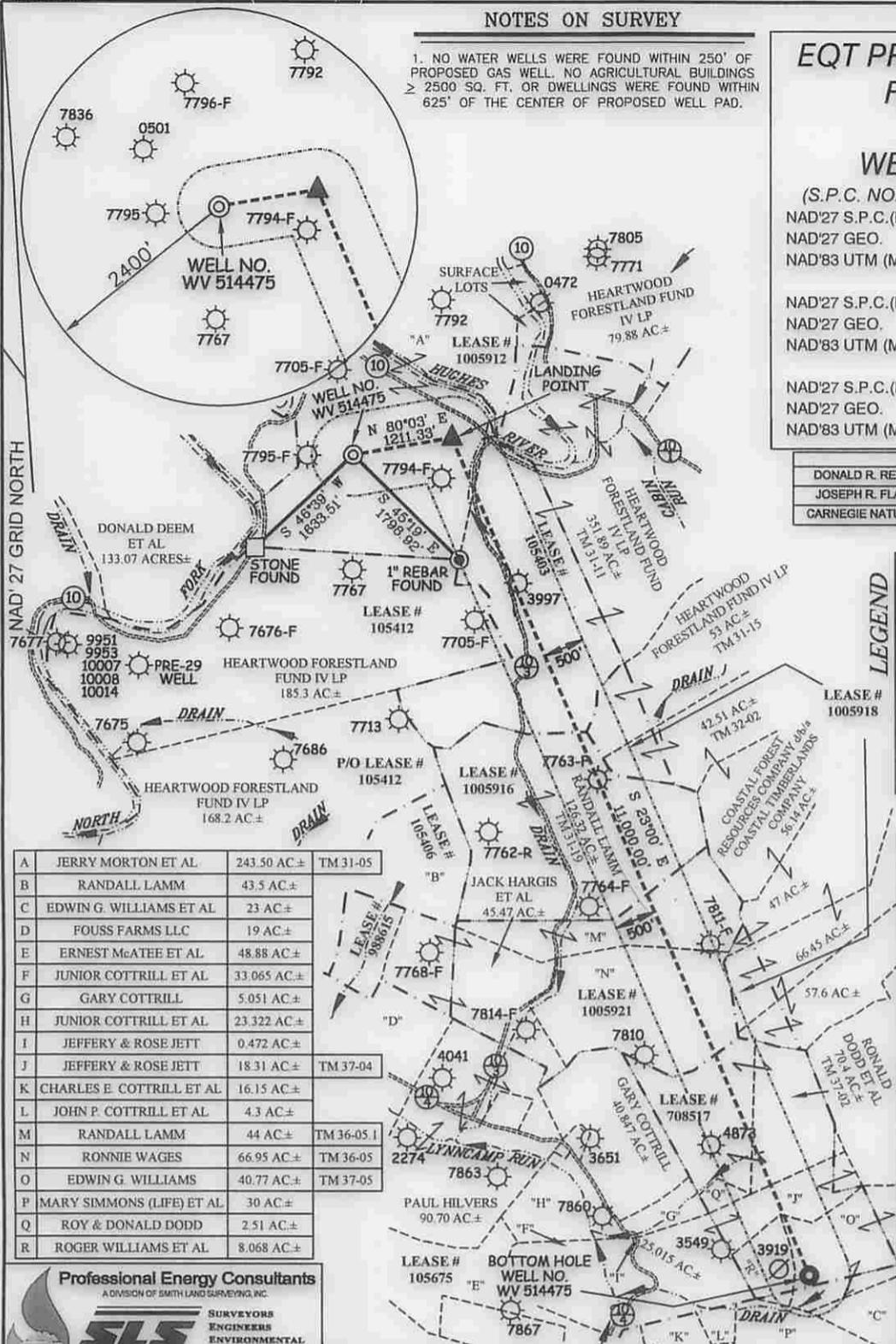
NAD'27 S.P.C.(FT) N. 269,285.41 E. 1,601,272.53
NAD'27 GEO. LAT-(N) 39.230771 LONG-(W) 80.907603
NAD'83 UTM (M) N. 4,342,399.19 E. 507,989.41

ROYALTY OWNERS

Table with 3 columns: Name, Acreage, Lease No. Includes Donald R. Reynolds et al, Joseph R. Flanagan et al, Carnegie Natural Gas et al.

NAD' 27 GRID NORTH

LONGITUDE 80°55'00"



LEGEND: LEASE LINE, SURFACE LINE, WELL LATERAL, OFFSET LINE, TIE LINE, CREEK, ROAD, COUNTY ROUTE, STATE ROUTE, PROPOSED WELL, EXISTING WELL, PERMITTED WELL, TAX MAP-PARCEL. REFERENCES: STAKE SET, WOODS, N 86°37' W 284.35', S 04°36' E 489.65', PEN54 WELLS H1-H11.

Table with 4 columns: Letter, Name, Acreage, TM. Lists various landowners and their respective acreages.

Professional Energy Consultants logo and contact information.



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

Form with fields for DATE (JUNE 25), REVISED (JULY 01), OPERATORS WELL NO. (WV 514475), API WELL NO. (47), STATE (085), COUNTY (10227), PERMIT (H6A).

Form with fields for MINIMUM DEGREE OF ACCURACY (1/200), FILE NO. (8083P514475R), SCALE (1" = 2000').

STATE OF WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS logo and name.

Form with fields for WELL TYPE (OIL, GAS, INJECTION), LOCATION (GROUND, PROPOSED), ELEVATION (1,016'), DISTRICT (CLAY), COUNTY (RITCHIE), QUADRANGLE (PENNSBORO 7.5'), SURFACE OWNER (JERRY MORTON ET AL), ROYALTY OWNER (ELLEN S. FRANCAVIGLIA ET AL), PROPOSED WORK (DRILL, CONVERT, etc.), PHYSICAL CHANGE IN WELL (SPECIFY), TARGET FORMATION (MARCELLUS), ESTIMATED DEPTH (TVD 6,275').

Form with fields for WELL OPERATOR (EQT PRODUCTION COMPANY), ADDRESS (115 PROFESSIONAL PLACE, BRIDGEPORT, WV 26330), DESIGNATED AGENT (REX C. RAY).

**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
<u>105403</u>			Min 1/8 pd	
	W.A. Flanagan, et al	The Philadelphia Company of West Virginia		LB63/295
	The Philadelphia Company of West Virginia	Pittsburgh and West Virginia Gas Company	4708510227	DB57362
	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 Co.		DB 281/346
				Doddridge
<u>1005916</u>			Min 1/8 pd	
	Mary E. Sorrells	Eastern American Energy Corporation		LB197/229
	Eastern American Energy Corporation	Energy Corporation of American (Merger)		CB6/450
	Energy Corporation of American	Antero Resources Corporation		LB257/377
	Antero Resources Corporation	EQT Production Company		LB277/1037
				Doddridge
<u>1005921</u>			Min 1/8 pd	
	Robert F. Johnson, et al	Eastern American Energy Corporation		LB197/229
	Eastern American Energy Corporation	Energy Corporation of American (Merger)		CB6/450
	Energy Corporation of American	Antero Resources Corporation		LB257/377
	Antero Resources Corporation	EQT Production Company		LB277/1037
<u>708517</u>			Min 1/8 pd	
	Matilda and Gainer Donoho	Carnegie Natural Gas Company		LB35/455
	Carnegie Natural Gas Company	Carnegie Production Company		DB228/789
	Carnegie Production Company/USX	Equitable Resources Inc.		See attached
	Equitable Resources Inc.	Equitable Production Company		DB274/471
	Equitable Production Company	EQT Production Company		DB281/346
				Doddridge

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.

**Received
Office of Oil & Gas
JUL 08 2015**

**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

Page 1 of 1 4708510227

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JUL 08 2015

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

Date of Notice Certification: 7-6-15

API No. 47 - 085 - 0
Operator's Well No. 514475
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: <u>WV</u>	UTM NAD 83 Easting: <u>506,266.12</u>
County: <u>Ritchie</u>	UTM NAD 83 Northing: <u>4,345,392.18</u>
District: <u>Clay</u>	Public Road Access: <u>Rt 50</u>
Quadrangle: <u>Pennsboro 7.5</u>	Generally used farm name: <u>Jerry Morton et al</u>
Watershed: <u>North Fork Hughes River</u>	

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

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

- NOTICE OF SEISMIC ACTIVITY or NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED
- NOTICE OF ENTRY FOR PLAT SURVEY or NO PLAT SURVEY WAS CONDUCTED
- 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)
- NOTICE OF PLANNED OPERATION
- PUBLIC NOTICE
- NOTICE OF APPLICATION

OOG OFFICE USE ONLY

- RECEIVED/NOT REQUIRED
- RECEIVED
- RECEIVED/NOT REQUIRED
- RECEIVED
- RECEIVED
- RECEIVED

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JUL 08 2015

Required Attachments:

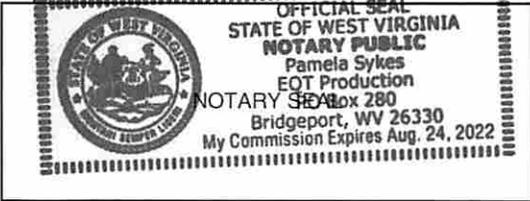
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication 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.

Certification of Notice is hereby given:

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

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

Address: P.O. Box 280
Bridgeport, WV 26330
Facsimile: 304-848-0040
Email: vroark@eqt.com



Subscribed and sworn before me this 6 day of July, 2015
[Signature] Notary Public

My Commission Expires 8-24-22

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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Office of Oil & Gas
JUL 08 2015

WW-6A
(9-13)

API NO. 47 - 085 - 0
OPERATOR WELL NO. 514475
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: 7-6-15 Date Permit Application Filed: 7-6-15

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 the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of 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; 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 disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) 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 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 construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field 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 in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be 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 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 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: Jerry Morton
Address: RR 1 Box 581
Pennsboro WV 26415

COAL OWNER OR LESSEE
Name: Phyllis A Rymer
Address: 21166 State Rt 676
Marietta OH 45750

Name: Randy Collins, Natalie Collins, Kate Collins
Address: 5368 Muscovy Road
Middleburg FL 32068

COAL OPERATOR
Name: 4708510227
Address: _____

SURFACE OWNERS(s) (Road and/or Other Disturbance)
Name: Jerry Morton
Address: RR 1 Box 581
Pennsboro WV 26415

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: _____
Address: _____

Name: Randy Collins, Natalie Collins, Kate Collins
Address: 5368 Muscovy Road
Middleburg FL 32068
See Attached

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SURFACE OWNER(s) (Impoundments/Pits)
Name: Jerry Morton
Address: RR 1 Box 581
Pennsboro WV 26415
See Attached

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____

*Please attach additional forms if necessary

WW6-A

Additional Surface Owners: Access Road

Heartwood Forestland Fund IV, LP
1212 East Franklin St
Suite 104
Chapel Hill NC 27514

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

Additional Surface Owners: Pits/Impoundments

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

Additional Coal Owners

Braden M Nida
150 Seneca Dr
Marietta OH 45750

Anita W Gass
2033 Butterfly Lane
Apt 222
Naperville IL 60563

Byron Whealen
678 N 38th Ave
Deerfield Beach FL 33442

Robert Singleton
1561 Connell Rd
Charleston WV 25314

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

Carolyn W Wilson
3731 Buffalo Lane
Montrose CO 81401

Marsha Spent
11133 N Eagle Crest Dr
Oro Valley AZ 85737

Rebecca Pearson
1812 W Mountain
Ft Collins CO 80521

Gene C Singleton
2504 22nd Ave
Parkersburg WV 26101

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Additional Coal Owners

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

Patricia A Zinn ✓
315 South 4th St
Douglas WY 82633

Virginia R Terry ✓
8868 State Rt 555
Cutler OH 45724

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

Linda J Chambers ✓
47 Weber St
Richwood WV 26261

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

Linda Sue Hill ✓
626 Thorn Grove Pike Rd
Starwberry Plains TN 37871

Nelva Jean Ford ✓
8805 Mid Haven Circle
Granbury TX 76048

Holmes & Vada J Lemon ✓
1295 South Spring St
Harrisville WV 26362

Dewey W Jones ✓
PO Box 172
Griffithville WV 25521

James P Rogers Jr ✓
4000 Pinal
Catalina AZ 85739

Samuel C Rogers ✓
204 Elanor St ✓
Penssboro WV 26415

Wilma J Coffield ✓
1842 Tonawanda Ave
Akron OH 44305

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Additional Coal Owners

Stephen Ward ✓
2610 New York Ave
Parkersburg WV 26101

Appalachian Royalty Co ✓
3049 Robert C Byrd Dr
Beckley WV 25801

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

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

Karen Louise Plants ✓
PO box 7304
Glen Rose TX 76043

Betty Lou Fankhauser ✓
753 Cedarcrest Dr
Bound Brook NJ 08805

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

Ellen Sherror Francaviglia ✓
3117 Lakeview Dr
Salem OR 97304

Gregory Flanagan ✓
202 Willow St
Pennsboro WV 26415

Antero Resources Appalachian Corp ✓
1625 17th St
Denver CO 80202

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

Patricia L Moore ✓
170 Birdhouse Lane
Bridgeport WV 26330

Joseph Flanagan ✓
PO Box 2
Smithville WV 26178

4708510227

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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.

Well Location Restrictions

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

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Office of Oil & Gas
11/08/2015

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

Received
Office of Oil & Gas
JUL 08 2015

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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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.

Received
Office of Oil & Gas
JUL 08 2015

Notice is hereby given by:

Well Operator: EQT Production Company
Telephone: 304-848-0082
Email: Vroark@eqt.com

Address: 115 Professional Place P.O. 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.

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, 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.

Victoria Roark

By: Victoria Roark

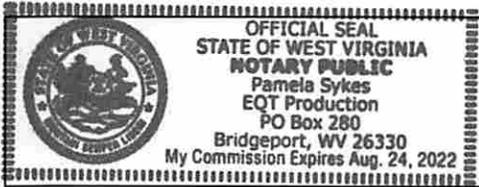
Its: Permitting Supervisor

Subscribed and sworn before on 6 day of July, 2015

Pamela Sykes

Notary Public

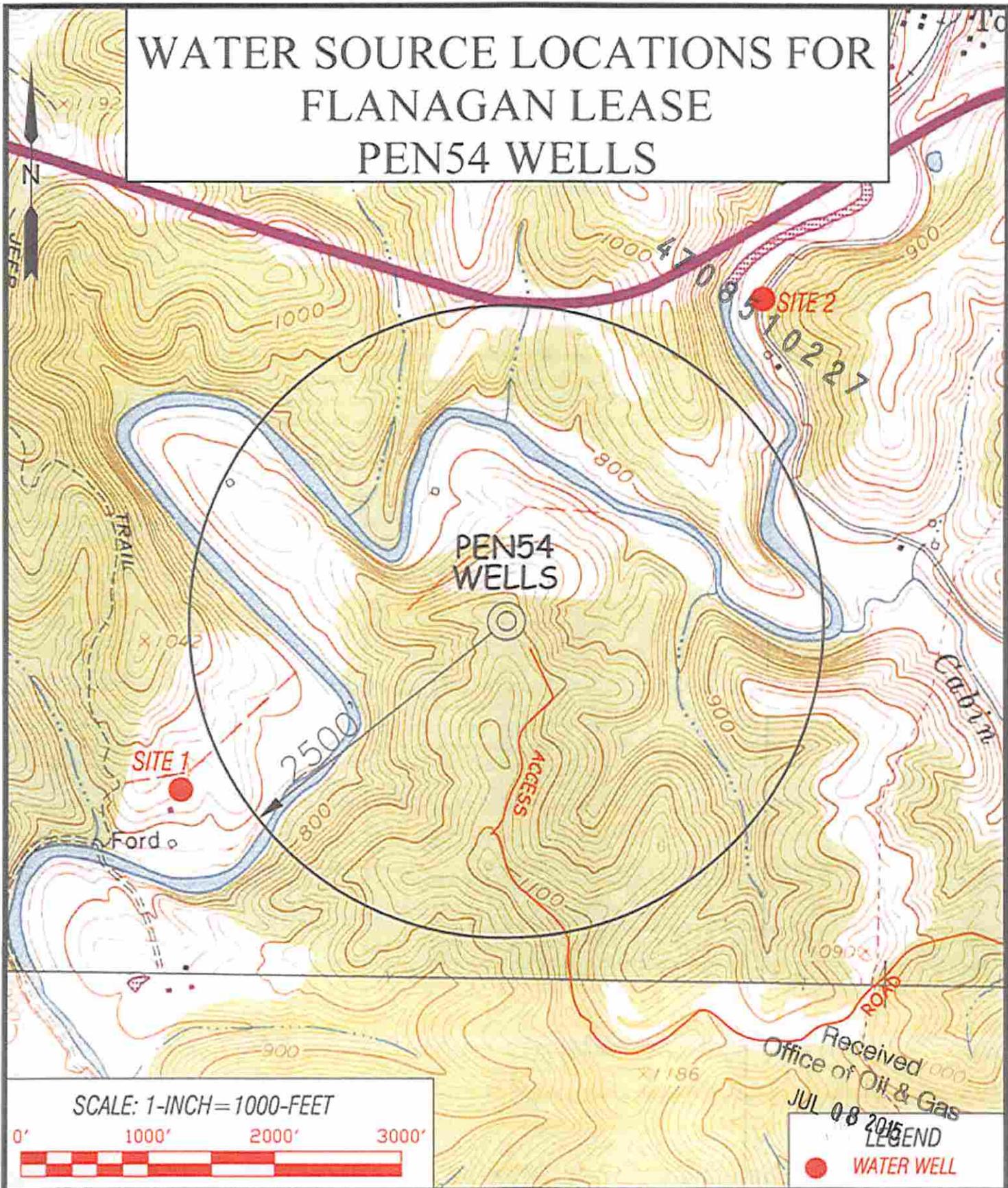
My Commission Expires 8-24-22



4708510227

Received
Office of Oil & Gas
JUL 08 2015

WATER SOURCE LOCATIONS FOR FLANAGAN LEASE PEN54 WELLS



Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.



SLS
SURVEYORS
ENGINEERS
ENVIRONMENTAL
PROJECT MGMT.

DRAWN BY: K.D.W. | FILE NO.: 8083 | DATE: 06/02/15 | CADD FILE: 8083PEN54.dwg

TOPO SECTION OF:
PENNSBORO, WV 7.5' QUAD

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

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

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF ENTRY FOR PLAT SURVEY

Notice Time Requirement: Notice shall be provided at least SEVEN (7) days but no more than FORTY-FIVE (45) days prior to entry.

Date of Notice: April 9, 2014

Date of Planned Entry: April 16, 2014

Delivery method pursuant to West Virginia Code § 22-6A-10(a):

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

Pursuant to West Virginia Code § 22-6A-10(a), prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

Notice is hereby provided to:

SURFACE OWNER(S)

Name: Randy Collins, Natalie Collins & Kate Collins

5368 Muscovy Rd.

Address: Middlebourg, FL 32068-3531 1/2 Interest

Name: _____

Address: _____

Name: _____

Address: _____

COAL OWNER OR LESSEE

Coal Declaration pursuant to §22-6A-10 and §22-6-36
Name: Not of Record

Address: _____

MINERAL OWNER(S)

Name: _____

Address: _____

Name: _____

Address: _____

*Please attach additional forms if necessary

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: West Virginia

County: Ritchie

District: Clay Map 31 Parcel 5 243.50 acres

Quadrangle: Pennsboro

Approx. Latitude & Longitude: 39.25555 / -80.92743

Public Road Access: Cabin Road

Watershed: North Fork Hughes River

Generally Used Farm Name: _____

Copies of the state Erosion and Sediment Control Manual and the statues and rules related to oil and gas exploration and production 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). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: EQT Production Company

Telephone: 304-848-0094

Facsimile: 304-848-0040

Email: EQTLandEntryNotice@eqt.com

Address: 115 Professional Place, Bridgeport, WV 26330

EQT Representative: Jim Mencer

Signature: *Jim Mencer*

Received
Office of Oil & Gas
JUL 08 2015

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such a name, address and telephone number, as part of 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.

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
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Notice is hereby provided to:

SURFACE OWNER(S)

Name: Jerry Morton 1/2 Interest
Address: RR1 Box 581
Pennsboro, WV 26415-9611

Name: _____
Address: _____
Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: Coal Declaration pursuant to §22-6A-10 and §22-6-36
Not of Record

Address: _____

MINERAL OWNER(S)

Name: _____
Address: _____
Name: _____
Address: _____

4708510227

*Please attach additional forms if necessary

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: West Virginia
County: Ritchie
District: Clay Map 31 Parcel 5 243.50 acres
Quadrangle: Pennsboro

Approx. Latitude & Longitude: 39.25555 / -80.92743
Public Road Access: Cabin Road
Watershed: North Fork Hughes River
Generally Used Farm Name: _____

Copies of the state Erosion and Sediment Control Manual and the statues and rules related to oil and gas exploration and production 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). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: EQT Production Company
Telephone: 304-848-0094
Facsimile: 304-848-0040
Email: EQTLandEntryNotice@eqt.com

Address: 115 Professional Place, Bridgeport, WV 26330
EQT Representative: Jim Mencer
Signature: [Signature]
Stamp: Office of Oil & Gas
JUL 08 2015

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The Office of Oil and Gas processes your personal information, such a name, address and telephone number, as part of 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.

WW-6A5
(1/12)

Operator Well No. 514475

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: 7-6-15 Date Permit Application Filed: 7-6-15

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

CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

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

Notice is hereby provided to the SURFACE OWNER(s)

(at the address listed in the records of the sheriff at the time of notice):

Name: Jerry Morton
Address: RR 1 Box 581
Pennsboro WV 26415

4708510227
Name: Randy Collins, Natalie Collins, Kate Collins
Address: 5368 Muscovy Road
Middleburg FL 32068

Notice is hereby given:

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

State:	<u>WV</u>	UTM NAD 83	Easting:	<u>506,266.120000</u>
County:	<u>Ritchie</u>		Northing:	<u>4,345,392.180000</u>
District:	<u>Clay</u>	Public Road Access:		<u>Rt 50</u>
Quadrangle:	<u>Pennsboro 7.5</u>	Generally used farm name:		<u>Jerry Morton et al</u>
Watershed:	<u>North Fork Hughes River</u>			

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: 304-848-0082
Email: vroark@eqt.com

Address: 115 Professional Place, P.O. Box 280
Bridgeport, WV 26330
Facsimile: 304-848-0040

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.

Received
Office of Oil & Gas
JUL 08 2015

WW-6A5
(1/12)

Operator Well No. 514475

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: 7-6-15 Date Permit Application Filed: 7-6-15

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: Heartwood Forestland Fund IV LP
Address: 1512 East Franklin St
Suite 104
Chapel Hill NC 27514

Name: Coastal Forest Resources
Address: dba Coastal Timberlands Co
PO Box 709
Buckhannon WV 26201

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 UTM NAD 83 Easting: 470851052 506,266.120000
County: Ritchie Northing: 4345392.180000
District: Clay Public Road Access: Rt 50
Quadrangle: Pennsboro 7.5 Generally used farm name: Jerry Morton et al
Watershed: North Fork Hughes River

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: 304-848-0082
Email: vroark@eqt.com

Address: 115 Professional Place, P.O. Box 280
Bridgeport, WV 26330
Facsimile: 304-848-0040

Received
Office of Oil & Gas
JUL 08 2015

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Earl Ray Tomblin
Governor

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

4708510227

May 15, 2015

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

Received
Office of Oil & Gas
JUL 08 2015

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

Anticipated Frac Additives
Chemical Names and CAS numbers

<u>Material</u>	<u>Ingredient</u>	<u>CAS Number</u>
Water		
Sand	Hydrotreated light petroleum distillate	14808-60-7
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

4708510227

APPROVED
WVDEP OOG
8/14/2015

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

- API# 8510222
- API# 8510225
- API# 8510236
- API# 8510227
- API# 8510228
- API# 8510229
- API# 8510230
- API# 8510231
- API# 8510232

PROJECT INFORMATION

PROJECT NAME: EQT PEN 54
SURFACE OWNER: RANDY, NAYVALLA & KATE COLLINS
1. FARMHOUSE, 10000 WYOMING, WV
TAX MAP 3126.100 (INTEREST)
TOTAL PROPERTY AREA: 24,530 +/- ACRES
TOTAL DISTURBANCE AREA: 32.87 +/- ACRES

2. JERRY WORTON, RITCHIE COUNTY, WV
TAX MAP 3126.100 (INTEREST)
TOTAL PROPERTY AREA: 24,530 +/- ACRES
TOTAL DISTURBANCE AREA: 32.87 +/- ACRES

3. HEARTWOOD FORESTLAND FUND IV LLC
CLAY DISTRICT, RITCHIE COUNTY, WV
TAX MAP 3126.100 (INTEREST)
TOTAL PROPERTY AREA: 16.83 +/- ACRES
TOTAL DISTURBANCE AREA: 16.83 +/- ACRES

4. COASTAL FOREST RESOURCES, DBA COASTAL TIMBERLANDS.COM
CLAY DISTRICT, RITCHIE COUNTY, WV
TAX MAP 3126.100 (INTEREST)
TOTAL PROPERTY AREA: 17.1 +/- ACRES
TOTAL DISTURBANCE AREA: 17.1 +/- ACRES

OR, AND GAS USUALLY OWNERS:

CLAY DISTRICT
RITCHIE COUNTY, WV

SITE LOCATION

THE EQT PEN 54 WELL PAD IS LOCATED 1.9 MILES N-E CORNER OF THE JUNCTION OF US ROUTE 59 AND RT 74.

LOCATION COORDINATES

EQT PEN 54 WELL PAD CENTER
EQT PEN 54 FLOWBACK PIT CENTER
EQT PEN 54 COMPLETION PIT CENTER
EQT PEN 54 WELL PAD CENTER
EQT PEN 54 COMPLETION PIT CENTER

GENERAL DESCRIPTION

THE WELL PAD, FLOWBACK PIT, ACCESS ROAD, AND COMPLETION PIT ARE LOCATED WITHIN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

SITE DISTURBANCE COMPUTATIONS

WELL PAD FLOWBACK PIT AREA = 18.00 +/- ACRES
ACCESS ROAD AREA = 30.33 +/- ACRES
TOTAL SITE DISTURBANCE AREA = 48.33 +/- ACRES

ENTRANCE PERMIT

EQT PRODUCTION COMPANY WILL OBTAIN AN ENTRANCE PERMIT FROM MARSHALL COUNTY TO TRAVEL ALONG STATE ROUTE 59 TO THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

MISS UTILITY STATEMENT

MISS UTILITY OF WEST VIRGINIA WAS NOTIFIED FOR THE LOCATING OF UTILITIES PRIOR TO THIS PROJECT DESIGN TICKET #14324212. IN ADDITION, MISS UTILITY WILL BE CONTACTED PRIOR TO START OF THE PROJECT.

ENVIRONMENTAL NOTES

A WETLAND DELINEATION WAS PERFORMED BY POTESTA & ASSOCIATES ON 06/20/13, 09/20/13, 09/20/14, 09/20/14, AND 11/20/14 TO REVIEW THE SITE FOR WATERS OF THE UNITED STATES. THE RESULTS OF THE DELINEATION ARE SHOWN ON THE ENVIRONMENTAL PROTECTION (WDEP) REPORT FOR EQT PEN 54 PREPARED BY POTESTA & ASSOCIATES, INC. SUMMARY OF THE RESULTS OF THE FIELD SURVEY AND DELINEATION OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WDEP. IT IS STRONGLY RECOMMENDED THAT THE APPROPRIATE AGENCIES BE CONTACTED PRIOR TO ANY CONSTRUCTION OF THE PROJECT. THE DEVELOPER SHALL OBTAIN THE NECESSARY PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES AND STREAM CROSSINGS.

GEOTECHNICAL NOTES

A SUBSURFACE INVESTIGATION HAS NOT BEEN PERFORMED AS OF 02/17/2015. THE DEVELOPER SHALL OBTAIN A GEOTECHNICAL REPORT FROM A REGISTERED PROFESSIONAL ENGINEER 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 INTERRUPTED STREAMS, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE PROJECT LOD. THERE ARE WETLANDS WITHIN 100 FEET OF THE LOD AND A WATERS FROM THE WYDEP WILL BE APPLIED FOR THROUGHOUT THE PROJECT. THE WATERS ARE SHOWN ON THE PLAN WITHIN 100 FEET OF THE PAD AND LOD.

2. THERE ARE NO NATURAL OR CULTURAL TRIBUTARY STREAMS WITHIN 100 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 200 FEET OF THE WELLS, BEING DEVELOPED SPRINGS DISCOVERED DURING CONSTRUCTION. THE DEVELOPER SHALL BE RESPONSIBLE FOR ANY EXISTING WATER WELLS ON THE PROPERTY.

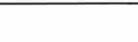
5. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 659 FEET OF THE CENTER OF THE PAD.

6. THERE ARE NO AGRICULTURAL BUILDINGS LAARGER THAN 2,500 SQUARE FEET WITHIN 659 FEET OF THE CENTER OF THE PAD.

LIST OF DRAWINGS

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GRID NORTH AND ELEVATIONS SHOWN HEREON WERE ESTABLISHED BY SURVEY GRADE GPS.



MISS LINE OF West Virginia (1:50,000) (Scale 1:50,000) (Zone 18Q UTM) (Datum: NAD 83) (Projection: UTM) (Units: Meter) (Datum: NAD 83) (Projection: UTM) (Units: Meter) (Datum: NAD 83) (Projection: UTM) (Units: Meter)

7.5 MINUTE SERIES
2007



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WEST VIRGINIA

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CHARLOTTE, NC 28203

EQT PEN 54
CLAY DISTRICT
RITCHIE COUNTY, WV

TITLE SHEET

DATE: 08/20/15
SCALE AS SHOWN
DESIGNED BY: JPA
FILE NO.: 14324212
SHEET 1 OF 31
REV: 08/20/15

OPERATOR
EQT PRODUCTION COMPANY
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