



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

October 22, 2014

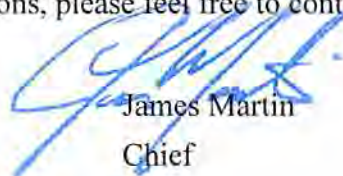
WELL WORK PERMIT
Horizontal 6A Well

This permit, API Well Number: 47-10303038, 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: 513983
Farm Name: SCYOC, SHARON ANN
API Well Number: 47-10303038
Permit Type: Horizontal 6A Well
Date Issued: 10/22/2014

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
9. 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.

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
W.VA. CODE §22-6A - WELL WORK PERMIT APPLICATION

1) Well Operator: EQT Production Company

	103	4	548
Operator ID	County	District	Quadrangle

2) Operator's Well Number: 513983 Well Pad Name: PNG103

3) Farm Name/Surface Owner: Sharon Ann Scyoc Public Road Access: 20

4) Elevation, current ground: 1,458.0 Elevation, proposed post-construction: 1,458.0

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

(b) If Gas: Shallow Deep
 Horizontal

6) Existing Pad? Yes or No: yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
 Target formation is Marcellus at a depth of 7470 with the anticipated thickness to be 50 feet and anticipated target pressure of 4724 PSI

- 8) Proposed Total Vertical Depth: 7470
- 9) Formation at Total Vertical Depth: Marcellus
- 10) Proposed Total Measured Depth: 13025
- 11) Proposed Horizontal Leg Length: 3,708
- 12) Approximate Fresh Water Strata Depths: 66, 141, 777
- 13) Method to Determine Fresh Water Depth: By offset wells
- 14) Approximate Saltwater Depths: 2187, 2487
- 15) Approximate Coal Seam Depths: 1054, 1161
- 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?

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

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CASING AND TUBING PROGRAM

18)

TYPE	Size	New or Used	Grade	Weight per ft.	FOOTAGE: for Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu.Ft.)
Conductor	26	New	MC-50	77	80	80	98 C.T.S.
Fresh Water	13 3/8	New	MC-50	54	1,299	1,299	1,118 C.T.S.
Coal	-	-	-	-	-	-	-
Intermediate	9 5/8	New	MC-50	40	3,367	3,367	1,307 C.T.S.
Production	5 1/2	New	P-110	20	13,025	13,025	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	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	26	30	0.312	-	Construction	1.18
Fresh Water	13 3/8	17 1/2	0.38	2,480	* See Note 2	1.21
Coal						
Intermediate	9 5/8	12 3/8	0.395	3,590	* See Note 2	1.21
Production	5 1/2	8 1/2	0.361	12,640	-	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)

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4710303038

August 12, 2014

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

Re: Casing on Well 513983 & 513984 (PNG103)

Dear Mr. Smith,

EQT is requesting the 13-3/8" surface casing be set at 1299' KB, 50' below the red rock base at 1249' without setting below elevation. The previous wells drilled on this pad set 13-3/8" casing at approximately 850' KB. This will cover up red rock formations that have given EQT drilling issues in the past. We will set the 9-5/8" intermediate string at 3367' KB, 50' below the base of the Gordon formation.

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

Sincerely,

Vicki Roark
Permitting Supervisor

|
Enc.

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(3/13)

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 4063

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 treating pressures are 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):

no additional disturbance

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

no additional disturbance

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.

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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5-3-14

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601 57th Street, SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
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March 18, 2014

Nabors Completion & Production Services Company
1380 Route 286 Hwy E #121
Indiana PA 15701

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

Promoting a healthy environment.

Received

Office of Oil and Gas
WV Dept of Environmental Protection
10/24/2014



4710303038

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. Huffinan, Cabinet Secretary
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**BEFORE THE OFFICE OF OIL AND GAS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE OF WEST VIRGINIA**

IN THE MATTER OF A VARIANCE FROM) ORDER NO. 2014 - 17
REGULATION 35 CSR § 4-11.4/11.5/14.1)
AND 35 CSR § 8-9.2.h. 4/5/6/8 OF THE)
THE OPERATIONAL)
REGULATIONS OF CEMENTING OIL)
AND GAS WELLS)

REPORT OF THE OFFICE

Nabors Completion & Production Services Co. requests approval of a different cement blend for use in cementing surface and coal protection casing of oil and gas wells.

FINDINGS OF FACT

- 1.) Nabors Completion & Production Services Co. proposes the following cement blend:
 - 2% Calcium Chloride (Accelerator)
 - 0.25 % Super Flake (Lost Circulation)
 - 94% Type "1" Cement
 - 5.20 % Water
- 2.) Laboratory testing results indicate that the blend listed in Fact No.1 will achieve a 500 psi compressive strength within 6 hours and a 2,435 psi compressive strength within 24 hours.

Promoting a healthy environment.

Received

Office of Oil and Gas
WV Dept. of Environmental Protection
10/24/2014

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CONCLUSIONS OF LAW

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

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

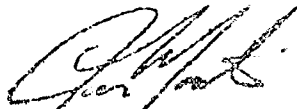
ORDER

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

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

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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Office of Oil and Gas
WV Dept. of Environmental Protection
10/24/2014

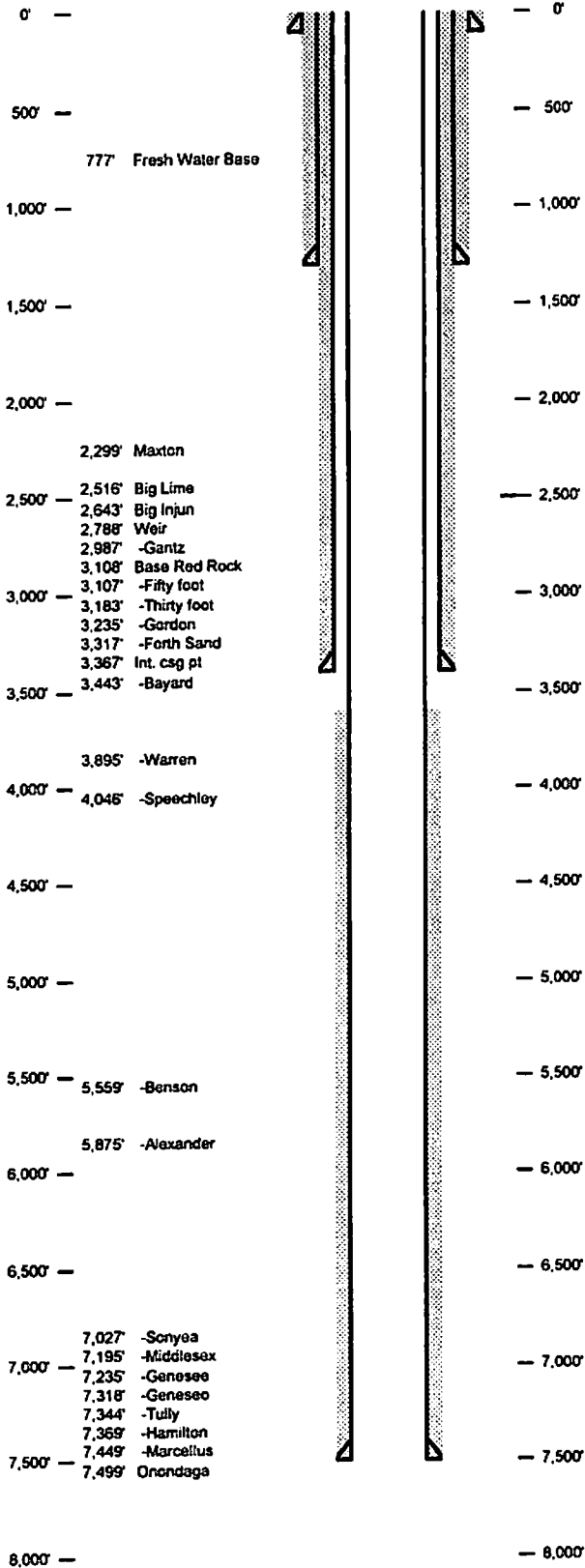
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Well Schematic
EQT Production

Well Name 513983(PNG103H14)
County Wetzel
State West Virginia

Elevation KB:
Target
Prospect
Azimuth
Vertical Section

1488
Marcellus
188.5
5147



DAH
9-7-14

WV Department of
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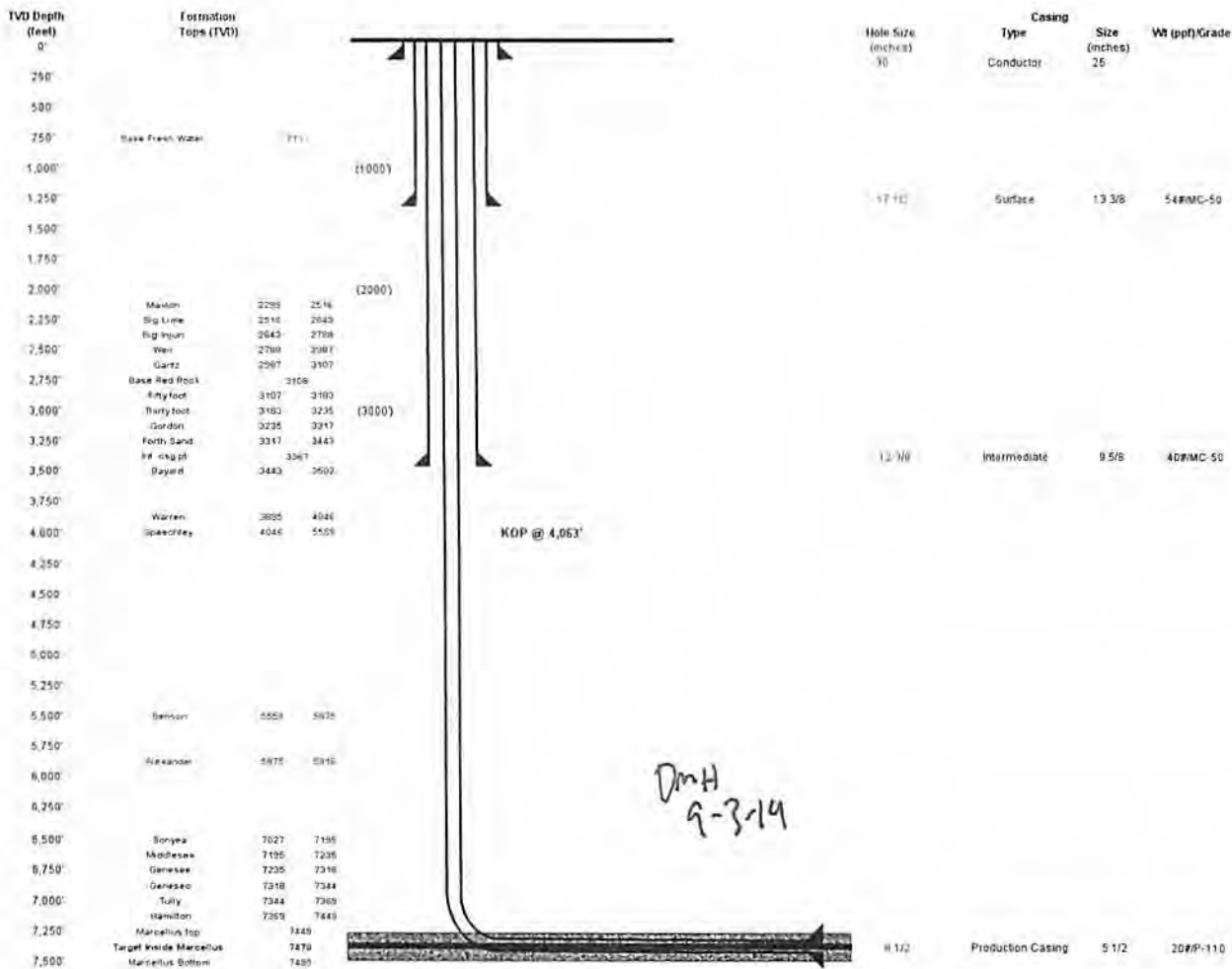
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Well 513983(PNG103H14)
 EQT Production
 Pine Grove
 Wetzel West Virginia

Accuracy 100.0
 Vertical Section 0147



KOP @ 4,063'

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9-3-14

Land curve @ 7,470' # TVD
 8,816' # MD
 Est TD @ 7,470' # TVD
 12,525' # MD

Proposed Well Work:
 Drill and complete a new horizontal well in the Marcellus formation
 The vertical drill to go down to an approximate depth of 4063'
 Then kick off the horizontal leg into the Marcellus using a slick water frac: 3,708' # Lateral

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WW-9
(5/13)

Page _____ of _____
API No. 47 - 103 - 0
Operator's Well No. 513983

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

Fluids/Cuttings Disposal & Reclamation Plan

Operator Name EQT Production Co. OP Code _____

Watershed (HUC10) Upper Run Quadrangle Pine Grove

Elevation 1458.0 County Wetzel District Grant

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: _____ No: X

If so please describe anticipated pit waste: _____

Will a synthetic liner be used in the pit? Yes _____ No X 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 _____)
- _____ 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? Air, freshwater, oil based, etc. Air is used to drill the top-hole sections of the wellbore, Surface, Intermediate, and Pilot hole sections, water based mud is used to drill the curve and lateral.

If oil based, what type? Synthetic, petroleum, etc _____

Additives to be used in drilling medium? MILBAR, Viscosifer, Alkalinity Control, Lime, Chloride Salts, Rate Filtration Control, Deflocculant, Lubricant, Detergent, Defoaming, Walnut Shell, X-Cide, SOLTEX Terra. Of the listed chemicals the following are generally used when drilling on air: lubricant, detergent, defoaming. Water based fluids use the following chemicals: MILBAR, viscosifer, alkalinity control, lime, chloride salts, rate filtration control, deflocculant, lubricant, detergent, defoaming, walnut shell, x-cide, SOLTEX terra

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

*DWH
8-3-14*

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 *Victoria J. Beark*
Company Official (Typed Name) Victoria J. Beark
Company Official Title Permitting Supervisor

Subscribed and sworn before me this 26 day of August, 2014
[Signature] Notary Public

My commission expires 8.24.22

SEP 09 2014

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Pamela Sykes
EQT Production
PO Box 280
Bridgeport, WV 26330
My Commission Expires 8/24/2022

Proposed Revegetation Treatment: Acres Disturbed no additional disturbance Prevegetation pH 6.5

Lime 3 Tons/acre or to correct to pH 6.5

Fertilize type _____

Fertilizer Amount 1/3 lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY-31	<u>40</u>	Orchard Grass	<u>15</u>
Alsike Clover	<u>5</u>	Alsike Clover	<u>5</u>
Annual Rye	<u>15</u>		

Attach:
Drawing(s) of road, location, pit and proposed area for land application.
Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: _____

Title: Oil & Gas Inspector Date: 9-3-14

Field Reviewed? (/) Yes (_____) No

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EQT Production Water plan
Offsite disposals for Marcellus wells

CWS TRUCKING INC.

P.O. Box 391
 Williamstown, WV 26187
 740-516-3586
 Noble County/Noble Township
 Permit # 3390

LAD LIQUID ASSETS DISPOSAL INC.

226 Rankin Road
 Washington, PA 15301
 724-350-2760
 724-222-6080
 724-229-7034 fax
 Ohio County/Wheeling
 Permit # USEPA WV 0014

TRI COUNTY WASTE WATER MANAGEMENT, INC.

1487 Toms Run Road
 Holbrook, PA 15341
 724-627-7178 Plant
 724-499-5647 Office
 Greene County/Waynesburg
 Permit # TC-1009

Waste Management - Meadowfill Landfill

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

Waste Management - Northwestern Landfill

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

BROAD STREET ENERGY LLC

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

TRIAD ENERGY

P.O. Box 430
 Reno, OH 45773
 740-516-6021 Well
 740-374-2940 Reno Office Jennifer
 Nobel County/Jackson Township
 Permit # 4037

KING EXCAVATING CO.

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

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4710303038

Where energy meets innovation.™

Site Specific Safety Plan

EQT PNG103 Pad

Pine Grove

Wetzel County, WV

For Wells:

513983 513984 _____

Date Prepared:

August 22, 2014

EQT Production

WV Oil and Gas Inspector

Title

Title

Date

Date

Oil + Gas Inspector

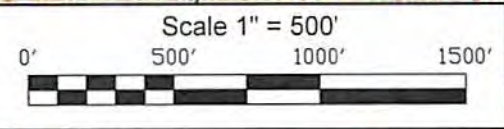
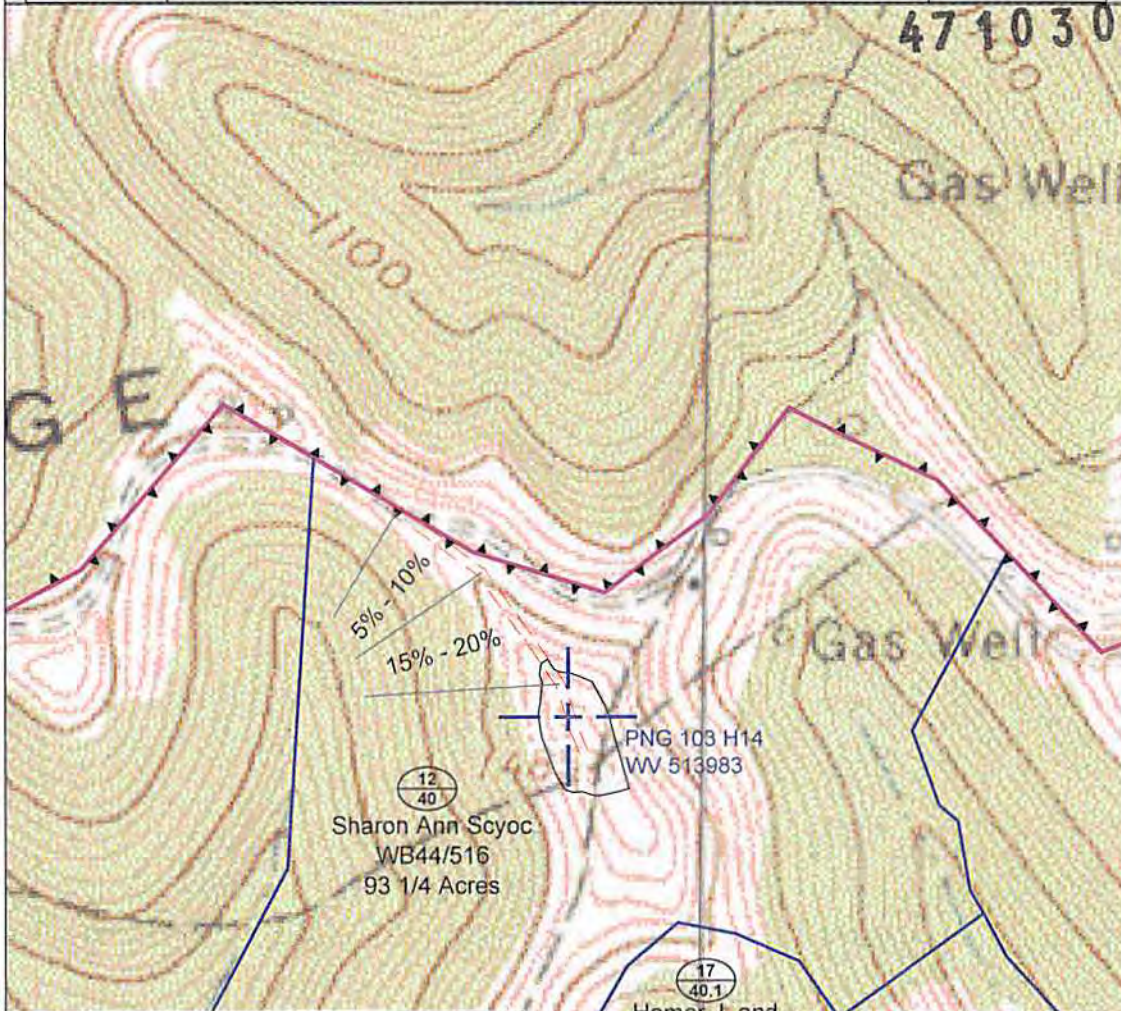
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Well # WV 513983 Location Detail PNG 103 H14



(C) Denotes to install 12" minimum culvert **(X)** Denotes a proposed stream crossing (if applies) *see table for culvert detail*

Unless otherwise noted, all roads shown hereon are existing and shall be maintained in accordance with WV D.E.P., Office of Oil and Gas Erosion and Sediment Control Field Manual as revised 2/98

Entrances upon county/state roads shall be maintained in accordance with WV D.O.T. regulations, however, separate permits may be required by the WV D.O.T.

Sediment basins (traps) and appropriate erosion control barriers are to be constructed at all culverts and cross-drains as required in the aforementioned Erosion and Sediment Control Field Manual. Where field conditions dictate, alternative erosion control measures shall be enacted as required.

Earthwork contractors are responsible for notification to the operator and inspector prior to any deviation from this plan.

Temporary seed and mulch all slopes after construction of location.

Cut and stack all marketable timber.

Stacked brush may be used for sediment control

Applications for separate Public Land Corporation Permits on the access roads stream crossings have been prepared (if applies)

Additional culverts and/or other drainage structures and sediment control devices may be required by the WV D.E.P. Oil & Gas Inspector.

Operator is responsible for the coordination with contractor and Allegheny Surveys regarding any changes or additions the state may require

SECTION OF THE Pine Grove 7.5' USGS QUADRANGLE	
Projected culvert inventory (for bid purposes only)	
12" minimum diameter culverts	0 Culverts
15" minimum diameter culverts	0 Culverts

DRAWN BY: Dale Tomlin PS DATE: August 21, 2014 FILE NO: 212-34-G-10 DRAWING FILE NO: 212-10 PNG103 H14 Rec Plan



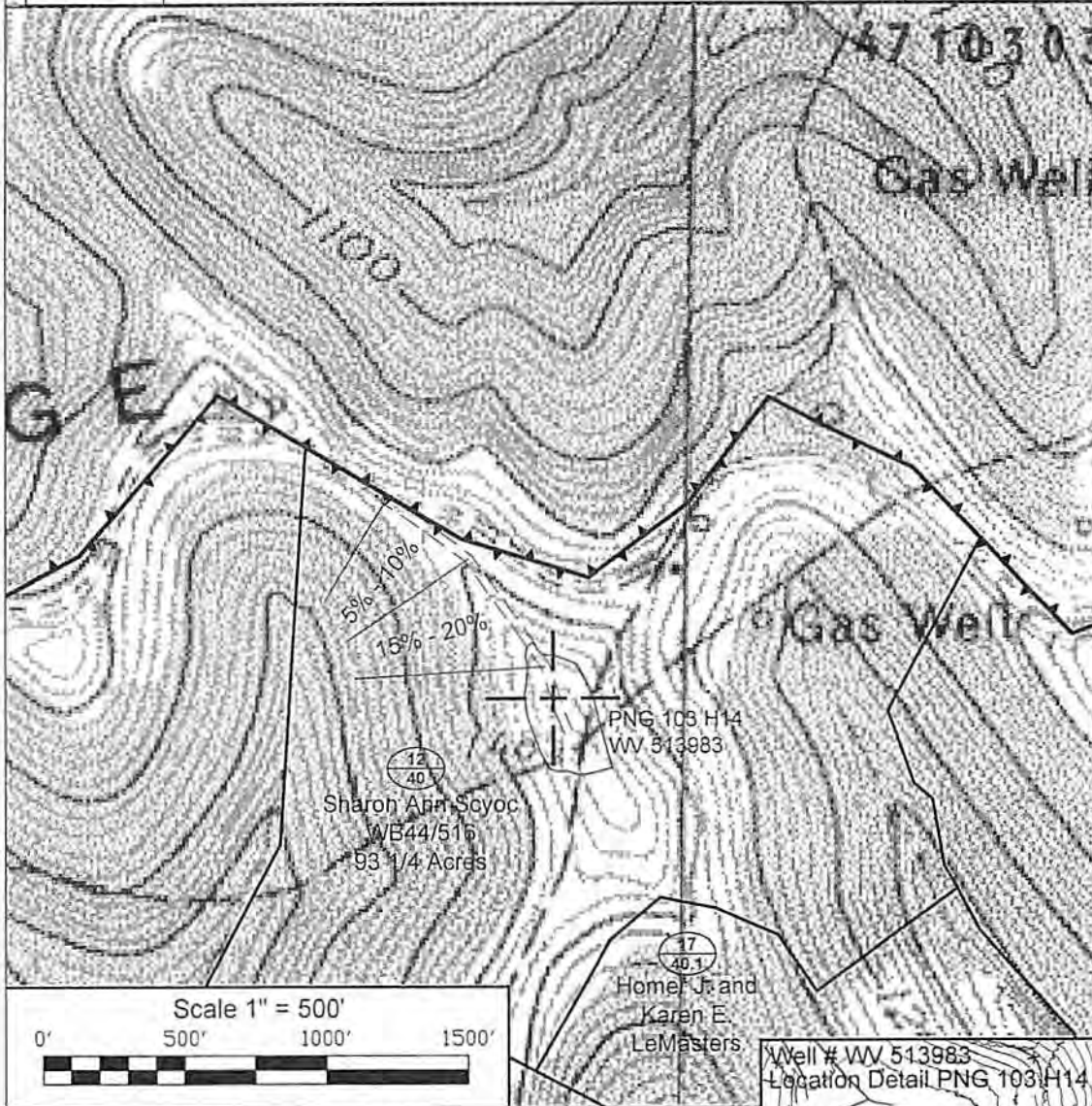
SURVEYING AND MAPPING SERVICES PERFORMED BY:
ALLEGHENY SURVEYS, INC.
 1-800-482-8606
 Birch River Office 237 Birch River Road
 Phone: (304) 649-8606 P.O. Box 438
 Fax: (304) 649-8608 Birch River, WV 26610

- LEASE BOUNDARY
- PROPERTY BOUNDARY
- BORE PATH
- ROAD
- DITCH
- SILT FENCE
- PROPOSED WELL LOCATION
- BROAD BASED DIP
- EXISTING GATE
- EXISTING CULVERT
- PROPOSED CULVERT
- CROSS DRAIN
- PIT-CUT WALLS
- PIT-COMPACTED WALLS
- AREA OF LAND APPLICATION OF PIT WASTE

Received

10/24/2014

47 10303038



⊙ Denotes to install 12" minimum culvert ⊗ Denotes a proposed stream crossing (if applies)
 see table for culvert detail

Unless otherwise noted, all roads shown hereon are existing and shall be maintained in accordance with WV D.E.P., Office of Oil and Gas Erosion and Sediment Control Field Manual as revised 2/98

Entrances upon county/state roads shall be maintained in accordance with WV D.O.T. regulations, however, separate permits may be required by the WV D.O.T.

Sediment basins (traps) and appropriate erosion control barriers are to be constructed at all culverts and cross-drains as required in the aforementioned Erosion and Sediment Control Field Manual. Where field conditions dictate, alternative erosion control measures shall be enacted as required.

Earthwork contractors are responsible for notification to the operator and inspector prior to any deviation from this plan.

Temporary seed and mulch all slopes after construction of location.

Cut and stack all marketable timber.

Stacked brush may be used for sediment control.

Applications for separate Public Land Corporation Permits on the access roads stream crossings have been prepared (if applies).

Additional culverts and/or other drainage structures and sediment control devices may be required by the WV D.E.P. Oil & Gas Inspector.

Operator is responsible for the coordination with contractor and Allegheny Surveys regarding any changes or additions the state may require.



SECTION OF THE Pine Grove 7.5' USGS QUADRANGLE	
Projected culvert inventory (for bid purposes only)	
12" minimum diameter culverts	0 Culverts
15" minimum diameter culverts	0 Culverts

DRAWN BY: Dale Tomlin PS	DATE: August 21, 2014	FILE NO: 212-34-G-10	DRAWING FILE NO: 212-10 PNG103 H14 Rec Plan
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SURVEYING AND MAPPING SERVICES PERFORMED BY:
ALLEGHENY SURVEYS, INC.

Birch River Office
 Phone: (304) 649-8606
 Fax: (304) 649-8608

1-800-482-8606

237 Birch River Road
 P.O. Box 438
 Birch River, WV 26610

- LEASE BOUNDARY
- PROPERTY BOUNDARY
- BORE PATH
- ROAD
- DITCH
- SILT FENCE
- PROPOSED WELL
- LOCATED WELL
- BROAD BASED SIP
- EXISTING GATE
- EXISTING CULVERT
- PROPOSED CULVERT
- CROSS DRAIN
- PIT-CUT WALLS
- PIT-COMPACTED WALLS
- AREA OF LAND APPLICATION OF PIT WASTE

DNH
 9-3-14

RECEIVED
 Office of Oil and Gas
 SEP 09 2014
 WV Department of Environmental Protection

10/24/2014

460'

WV 513983

EQT Production Company
Shiben Estates, Inc.
1104 acres

LATITUDE 39 - 35 - 00

ADJOINER TABLE	
TAX MAP PARCEL NO.	ADJOINER
17 2.1	Goldie Leak
17 2.2	Homer J. and Karen E. LeMasters
17 9	John A. Spencer
17 40.1	Homer J. and Karen E. LeMasters

LONGITUDE 80 - 37 - 30
6,545'

Well References



1" = 200'

Notes:

WV 513983 coordinates are
NAD 27 N: 390,042 E: 1,682,376
NAD 27 Lat: 39.565508 Long: 80.626483
NAD 83 UTM N: 4,379,601 E: 532,084

WV 513983 Landing Point coordinates are
NAD 27 N: 390,080 E: 1,685,220
NAD 27 Lat: 39.565708 Long: 80.616400
NAD 83 UTM N: 4,379,627 E: 532,951

WV 513983 Bottom Hole coordinates are
NAD 27 N: 386,474 E: 1,686,085
NAD 27 Lat: 39.555839 Long: 80.613172
NAD 83 UTM N: 4,378,533 E: 533,233

West Virginia Coordinate system of 1927 (North Zone).
Geographic coordinates are NAD27.
UTM coordinates are NAD83, Zone 17, Meters.
Plat orientation, corner and well ties are based upon the grid north meridian.
Well location references are based upon the grid north meridian.

GRID NORTH



Scale 1" = 2000'

(-o-) Denotes Location of Well on United States Topographic Maps

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



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

Ben R. Singleton
P.S. 2092



SEAL

FILE NO: 212-34-G-10
DRAWING NO: 212-10 PNG 103 H14.dwg
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1:2500
PROVEN SOURCE OF ELEVATION: NGS CORS Station

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

DATE: August 25 20 14
OPERATOR'S WELL NO. WV 513983
API WELL NO
47 - 103 - 03038 H&A
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: 1458' WATERSHED Upper Run QUADRANGLE: Pine Grove
DISTRICT: Grant COUNTY: Wetzel
SURFACE OWNER: Sharon Ann Scyoc ACREAGE: 93 1/4
ROYALTY OWNER: Shiben Estates, Inc. LEASE NO: 300615 ACREAGE: 1,104
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: TVD 7,450 MD 15,100

10/24/2014

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray
ADDRESS: PO Box 280 / 115 Professional Place ADDRESS: PO Box 280 / 115 Professional Place
Bridgeport, WV 26330 Bridgeport, WV 26330