



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

December 19, 2013

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-10302972, 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: WV 514386
Farm Name: COASTAL FOREST RESOURCES
API Well Number: 47-10302972
Permit Type: Horizontal 6A Well
Date Issued: 12/19/2013

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 (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 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.

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

Well Operator: EQT Production Company
Operator ID: 103 County: 4 District: 548 Quadrangle

Operator's Well Number: 514386 Well Pad Name: PNG129

Farm Name/Surface Owner: Lacock Public Road Access: Lowman Ridge Road

Elevation, current ground: 1,328.0 Elevation, proposed post-construction: 1,328.0

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

(b) If Gas: Shallow Deep
Horizontal

Existing Pad? Yes or No: yes

Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
Target formation is Geneseeo at a depth of 7173' with the anticipated thickness to be 14 feet and anticipated target pressure of 4606 PSI

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10-28-13

Proposed Total Vertical Depth: 7,173

Formation at Total Vertical Depth: Geneseeo

Proposed Total Measured Depth: 11,762

Proposed Horizontal Leg Length: 3,294

Approximate Fresh Water Strata Depths: 620, 656, 680, 731

Method to Determine Fresh Water Depth: By offset wells

Approximate Saltwater Depths: 2013, 2362

Approximate Coal Seam Depths: 683, 965, 1035, 1049, 1077

Approximate Depth to Possible Void (coal mine, karst, other): None reported

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

8)

TYPE	Size	New or Used	Grade	Weight per ft.	FOOTAGE: for Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu.Ft.)
Conductor	20	New	MC-50	81	40	40	38 CTS
Fresh Water	13 3/8	New	MC-50	54	831	831	727 CTS
Isol							
Intermediate	9 5/8	New	MC-50	40	3,385	3,385	1,330 CTS
Production	5 1/2	New	P-110	20	11,762	11,762	See Note 1
Tubing	2 3/8		J-55	4.6			May not be run, if run will be set 100' less than TD
Runners							

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TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	20	24	0.375	-	Construction	1.18
Fresh Water	13 3/8	17 1/2	0.38	2,480	1	1.21
Isol						
Intermediate	9 5/8	12 3/8	0.395	3,590	1	1.21
Production	5 1/2	8 1/2	0.361	12,640	-	1.27/1.86
Tubing						
Runners						

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.

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill and complete a new horizontal well in the Geneseeo formation. The vertical drill to go down to an approximate depth of 4805' then kick off the horizontal leg into the Geneseeo 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.

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Production: Head (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. 10% 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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Well 514386 (PNG129H13)
 EOT Production
 Pine Grove
 Weibel West Virginia

Asimuth 152
 Vertical Section 2807

TVD Depth (feet)	Formation Tops (TVD)	Formation	Hole Size (inches)	Casing Type	Casing Size (inches)	WT (ppl)/Grade
0			24	Conductor	20	
250						
500						
750	Base Rock	Base Rock	17 1/2	Surface	13 3/8	54#MC-50
1,000						
1,250						
1,500						
1,750						
2,000						
2,250		Mazon				
2,500		Big Lime				
2,750		Wade				
3,000		Clair				
3,250		Ferry Ford				
3,500		Turkey Foot				
		Carbon				
		Bayard				
		Richmond				
		Int. v. g. pt.				
3,750		Whitew	12 3/4	Intermediate	9 5/8	40#MC-50
4,000		Spencer				
4,250						
4,500						
4,750		Hick				
5,000						
5,250		Benton				
5,500						
5,750		Alexander				
6,000						
6,250						
6,500						
6,750						
7,000						
7,250						
7,500						
7,750						

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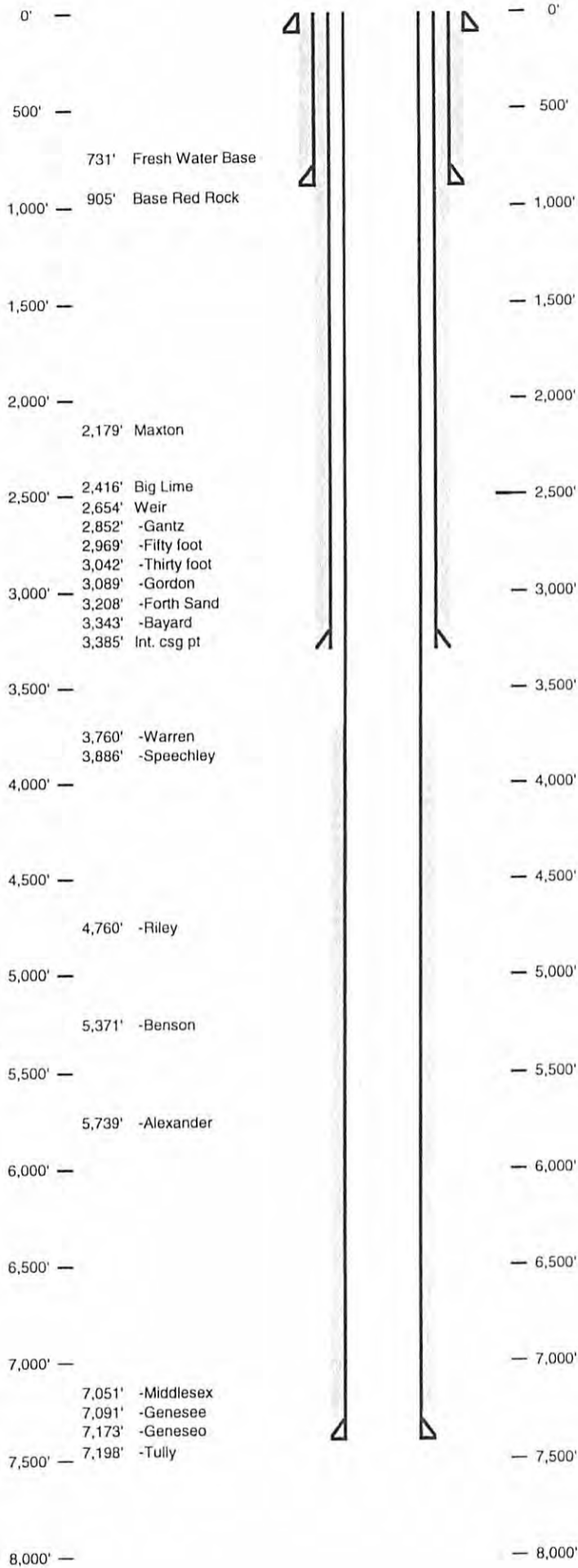
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Well Schematic
EQT Production

Well Name: 514386 (PNG129H13)
County: Welzel
State: West Virginia

Elevation KB: 1343
Target: Genesee
Prospect: 152
Azimuth: 2907
Vertical Section:



Hole Size 24" - 20" Conductor at 40'
Bit Size 17.5"

TOC @ Surface
13 3/8", MC-50, 54.5# @ 831 ft MD
Bit Size 12.375"

TOC @ Surface
9 5/8", MC-50, 40# @ 3,385 ft MD
Bit Size 8.5"

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KOP = 4,805 ft MD
10 Deg DLS

Land @ 7,968 ft MD
7,173 ft TVD

5 1/2", P-110, 20# 11,262 ft MD
7,173 ft TVD

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Anticipated Frac Additives
Chemical Names and CAS numbers

103

08072

<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

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WW-9
(5/13)

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API No. 47 - 103 - 0
Operator's Well No. 514386

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

Fluids/Cuttings Disposal & Reclamation Plan

Operator Name PNG129 OP Code _____

Watershed (HUC10) Upper Run of South Fork of Fishing Creek Quadrangle Pine Grove

Elevation 1328.0 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 and water based mud

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

Additives to be used in drilling medium? MILBAR; Viscosifier, 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

DH
10-28-17

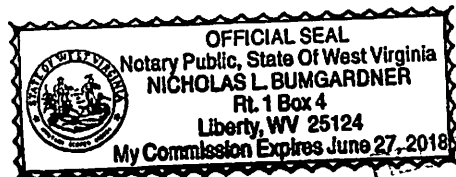
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations 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. Roark*
Company Official (Typed Name) Victoria J. Roark
Company Official Title Permitting Supervisor

Subscribed and sworn before me this 22 day of OCTOBER, 20 13

[Signature] Notary Public
My commission expires 6/27/2018



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Proposed Revegetation Treatment: Acres Disturbed no additional disturbance Prevegetation pH 6.4

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	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.

Plan Approved by: [Signature]

Comments: _____

Title: D.1 + 651 Inspection Date: 10-28-17

Field Reviewed? (✓) Yes (_____) No

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4710302972

**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

BROAD STREET ENERGY LLC

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

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

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

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

KING EXCAVATING CO.

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

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

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Water Management Plan: Primary Water Sources



WMP- 01592

API/ID Number: 047-103-02972

Operator:

EQT Production Company

514386

Important:

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov.

APPROVED NOV 21 2013

12/20/2013

Source Summary

WMP-01592

API Number:

047-103-02972

Operator:

EQT Production Company

514386

Stream/River

● Source	Ohio River at Hannibal, OH		Wetzel	Owner:	Richard Potts/Rich Merryman	
Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:	
11/1/2013	11/1/2014	5,500,000		39.655883	-80.86678	
<input checked="" type="checkbox"/> Regulated Stream?	Ohio River Min. Flow	Ref. Gauge ID:	9999999	Ohio River Station: Willow Island Lock & Dam		
Max. Pump rate (gpm):	1,500	Min. Gauge Reading (cfs):	6,468.00	Min. Passby (cfs)		
DEP Comments:	Refer to the specified station on the National Weather Service's Ohio River forecast website: http://www.erh.noaa.gov/ohrfc//flows.shtml					

● Source	S. Fork of Fishing Creek @ Hastings Truck Pad		Wetzel	Owner:	Dominion Transmission	
Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:	
11/1/2013	11/1/2014	5,500,000		39.553	-80.669	
<input type="checkbox"/> Regulated Stream?		Ref. Gauge ID:	3114500	MIDDLE ISLAND CREEK AT LITTLE, WV		
Max. Pump rate (gpm):	1,260	Min. Gauge Reading (cfs):	78.05	Min. Passby (cfs) 10.32		
DEP Comments:						

● Source	S. Fork of Fishing Creek @ Jacksonburg Truck Pad		Wetzel	Owner:	Ronald Anderson	
Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:	
11/1/2013	11/1/2014	5,500,000		39.52609	-80.6338	
<input type="checkbox"/> Regulated Stream?		Ref. Gauge ID:	3114500	MIDDLE ISLAND CREEK AT LITTLE, WV		
Max. Pump rate (gpm):	1,260	Min. Gauge Reading (cfs):	73.12	Min. Passby (cfs) 8.86		
DEP Comments:						

12/20/2013

● Source **N. Fork of Fishing Creek @ Pine Grove Truck Pad** Wetzol Owner: **Town of Pine Grove**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
11/1/2013	11/1/2014	5,500,000		39.571562	-80.677848

Regulated Stream? Ref. Gauge ID: **3114500** MIDDLE ISLAND CREEK AT LITTLE, WV

Max. Pump rate (gpm): 2,520 **Min. Gauge Reading (cfs): 85.35** **Min. Passby (cfs) 6.22**

DEP Comments:

● Source **N. Fork of Fishing Creek @ Edgell Property** Wetzol Owner: **Cathy Edgell**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
11/1/2013	11/1/2014	5,500,000		39.58191	-80.622839

Regulated Stream? Ref. Gauge ID: **3114500** MIDDLE ISLAND CREEK AT LITTLE, WV

Max. Pump rate (gpm): 1,260 **Min. Gauge Reading (cfs): 78.74** **Min. Passby (cfs) 5.76**

DEP Comments:

● Source **N. Fork of Fishing Creek @ Lydick Property** Wetzol Owner: **Les Lydick**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
11/1/2013	11/1/2014	5,500,000		39.57795	-80.59221

Regulated Stream? Ref. Gauge ID: **3114500** MIDDLE ISLAND CREEK AT LITTLE, WV

Max. Pump rate (gpm): 1,260 **Min. Gauge Reading (cfs): 75.93** **Min. Passby (cfs) 3.28**

DEP Comments:

12/20/2013

● Source	N. Fork of Fishing Creek @ BIG176 Pad		Wetzel	Owner:	John W. Kilcoyne
Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
11/1/2013	11/1/2014	5,500,000		39.560283	-80.560763
<input type="checkbox"/> Regulated Stream?		Ref. Gauge ID:	3114500	MIDDLE ISLAND CREEK AT LITTLE, WV	
Max. Pump rate (gpm):	1,260	Min. Gauge Reading (cfs):	73.12	Min. Passby (cfs)	2.19
DEP Comments:					

● Source	N. Fork of Fishing Creek @ Big 57 Pad		Wetzel	Owner:	EQT Corporation
Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
11/1/2013	11/1/2014	5,500,000		39.55316	-80.53064
<input type="checkbox"/> Regulated Stream?		Ref. Gauge ID:	3114500	MIDDLE ISLAND CREEK AT LITTLE, WV	
Max. Pump rate (gpm):	1,260	Min. Gauge Reading (cfs):	70.31	Min. Passby (cfs)	1.71
DEP Comments:					

Source Summary

WMP-01592	API Number:	047-103-02972	Operator:	EQT Production Company
		514386		

Purchased Water

● Source	HG Energy Water Supply Well		Wetzel	Owner:	HG Energy LLC
Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
11/1/2013	11/1/2014	5,500,000	1,050,000	39.61861	-80.87972
<input checked="" type="checkbox"/> Regulated Stream?	Ohio River Min. Flow	Ref. Gauge ID:	9999999	Ohio River Station: Willow Island Lock & Dam	
Max. Pump rate (gpm):		Min. Gauge Reading (cfs):	6,468.00	Min. Passby (cfs)	
DEP Comments:					

12/20/2013

Source Detail

WMP- 01592

API/ID Number: 047-103-02972

Operator: EQT Production Company

514386

Source ID: 30147 Source Name HG Energy Water Supply Well
HG Energy LLC

Source Latitude: 39.61861
Source Longitude: -80.87972

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 County: Wetzel

Anticipated withdrawal start date: 11/1/2013

Anticipated withdrawal end date: 11/1/2014

- Endangered Species? Mussel Stream?
- Trout Stream? Tier 3?
- Regulated Stream? Ohio River Min. Flow
- Proximate PSD?
- Gauged Stream?

Total Volume from Source (gal): 5,500,000

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

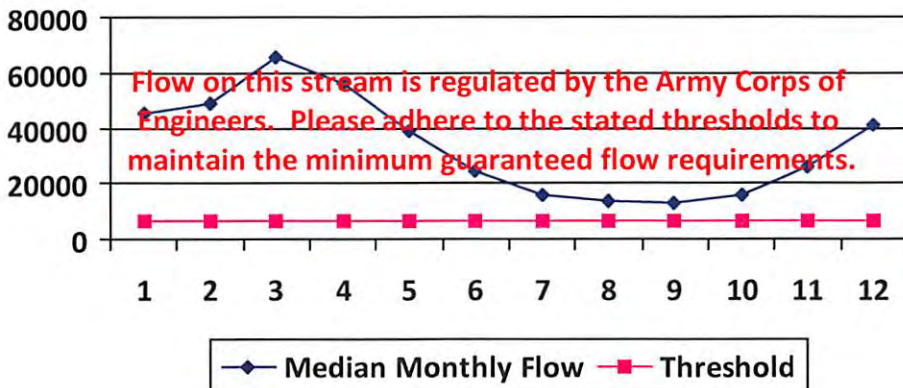
Reference Gaug 9999999 Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.) 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	0.00
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00

Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

12/20/2013

Source Detail

WMP- 01592

API/ID Number: 047-103-02972

Operator: EQT Production Company

514386

Source ID: 30137 Source Name: Ohio River at Hannibal, OH
Richard Potts/Rich Merryman

Source Latitude: 39.655883

Source Longitude: -80.86678

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 County: Wetzel

Anticipated withdrawal start date: 11/1/2013

Anticipated withdrawal end date: 11/1/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,500,000

Trout Stream? Tier 3?

Max. Pump rate (gpm): 1,500

Regulated Stream? Ohio River Min. Flow

Max. Simultaneous Trucks: 0

Proximate PSD? New Martinsville

Max. Truck pump rate (gpm): 0

Gauged Stream?

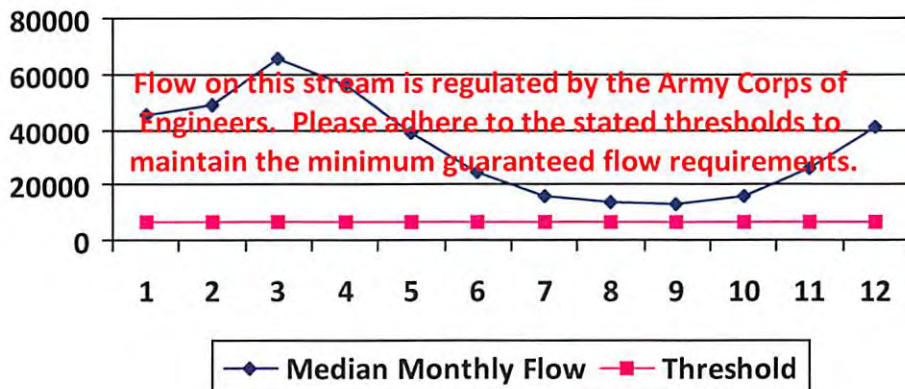
Reference Gaug: 9999999 Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	3.34
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

12/20/2013

Source Detail

WMP- 01592

API/ID Number: 047-103-02972

Operator: EQT Production Company

514386

Source ID: 30138 Source Name: S. Fork of Fishing Creek @ Hastings Truck Pad
 Dominion Transmission

Source Latitude: 39.553
 Source Longitude: -80.669

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 70.02 County: Wetzel

Anticipated withdrawal start date: 11/1/2013

Anticipated withdrawal end date: 11/1/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,500,000

Trout Stream? Tier 3?

Max. Pump rate (gpm): 1,260

Regulated Stream?

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm): 0

Gauged Stream?

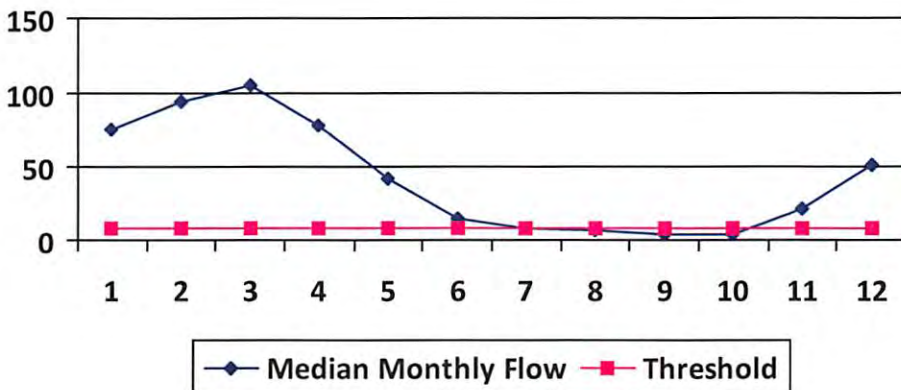
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	75.09	20.87	54.35
2	94.45	20.87	73.72
3	105.69	20.87	84.95
4	78.48	20.87	57.75
5	41.40	20.87	20.66
6	14.46	20.87	-6.28
7	8.18	20.87	-12.56
8	6.74	20.87	-14.00
9	3.45	20.87	-17.29
10	4.33	20.87	-16.40
11	21.17	20.87	0.43
12	51.72	20.87	30.99

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	6.88
Upstream Demand (cfs):	7.74
Downstream Demand (cfs):	0.00
Pump rate (cfs):	2.81
Headwater Safety (cfs):	1.72
Ungauged Stream Safety (cfs):	1.72
Min. Gauge Reading (cfs):	78.05
Passby at Location (cfs):	10.32

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

12/20/2013

Source Detail

WMP- 01592

API/ID Number: 047-103-02972

Operator: EQT Production Company

514386

Source ID: 30139 Source Name S. Fork of Fishing Creek @ Jacksonburg Truck Pad
Ronald Anderson

Source Latitude: 39.52609
Source Longitude: -80.6338

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 45.72 County: Wetzel

Anticipated withdrawal start date: 11/1/2013

Anticipated withdrawal end date: 11/1/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,500,000

Trout Stream? Tier 3?

Max. Pump rate (gpm): 1,260

Regulated Stream?

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm) 0

Gauged Stream?

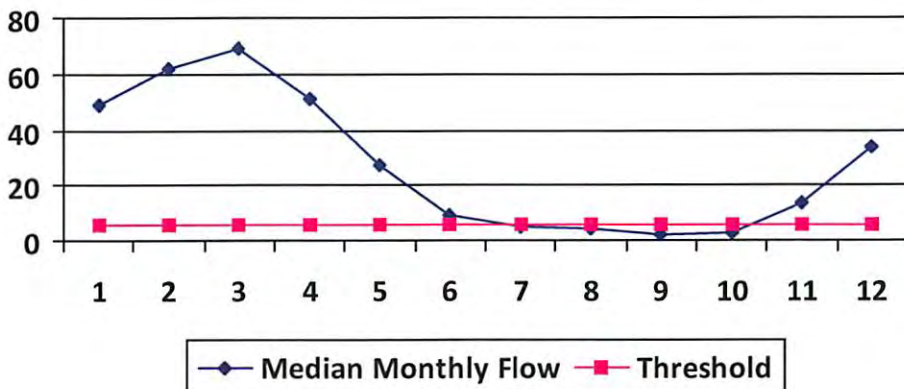
Reference Gaug 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.) 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	49.03	12.36	37.12
2	61.67	12.36	49.76
3	69.01	12.36	57.10
4	51.25	12.36	39.33
5	27.03	12.36	15.12
6	9.44	12.36	-2.47
7	5.34	12.36	-6.57
8	4.40	12.36	-7.51
9	2.25	12.36	-9.66
10	2.83	12.36	-9.08
11	13.82	12.36	1.91
12	33.77	12.36	21.86

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	4.49
Upstream Demand (cfs):	2.81
Downstream Demand (cfs):	2.12
Pump rate (cfs):	2.81
Headwater Safety (cfs):	1.12
Ungauged Stream Safety (cfs):	1.12
Min. Gauge Reading (cfs):	73.12
Passby at Location (cfs):	8.86

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

12/20/2013

Source Detail

WMP- 01592

API/ID Number: 047-103-02972

Operator: EQT Production Company

514386

Source ID: 30140 Source Name: N. Fork of Fishing Creek @ Pine Grove Truck Pad
Town of Pine Grove

Source Latitude: 39.571562

Source Longitude: -80.677848

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 42.17 County: Wetzel

Anticipated withdrawal start date: 11/1/2013

Anticipated withdrawal end date: 11/1/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,500,000

Trout Stream? Tier 3?

Max. Pump rate (gpm): 2,520

Regulated Stream?

Proximate PSD? Pine Grove

Max. Simultaneous Trucks: 0

Gauged Stream?

Max. Truck pump rate (gpm) 0

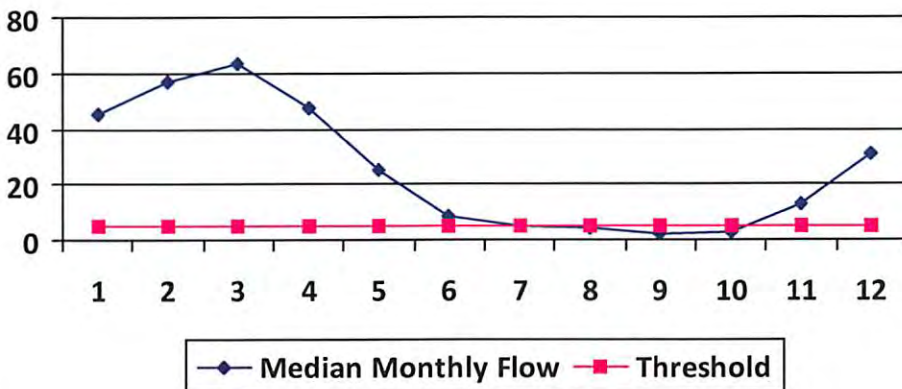
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	45.22	24.07	21.25
2	56.89	24.07	32.91
3	63.65	24.07	39.68
4	47.27	24.07	23.29
5	24.93	24.07	0.96
6	8.71	24.07	-15.27
7	4.93	24.07	-19.05
8	4.06	24.07	-19.92
9	2.08	24.07	-21.90
10	2.61	24.07	-21.37
11	12.75	24.07	-11.23
12	31.15	24.07	7.17

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	4.14
Upstream Demand (cfs):	12.24
Downstream Demand (cfs):	0.00
Pump rate (cfs):	5.61
Headwater Safety (cfs):	1.04
Ungauged Stream Safety (cfs):	1.04
Min. Gauge Reading (cfs):	85.35
Passby at Location (cfs):	6.22

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP- 01592

API/ID Number: 047-103-02972

Operator: EQT Production Company

514386

Source ID: 30141 Source Name: N. Fork of Fishing Creek @ Edgell Property
Cathy Edgell

Source Latitude: 39.58191
Source Longitude: -80.622839

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 32.23 County: Wetzel

Anticipated withdrawal start date: 11/1/2013

Anticipated withdrawal end date: 11/1/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,500,000

Trout Stream? Tier 3?

Max. Pump rate (gpm): 1,260

Regulated Stream?

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm) 0

Gauged Stream?

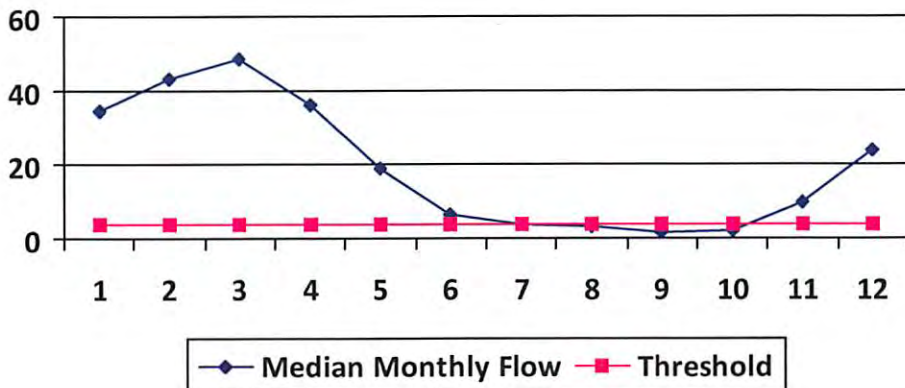
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	34.56	15.99	18.59
2	43.48	15.99	27.51
3	48.65	15.99	32.68
4	36.13	15.99	20.16
5	19.06	15.99	3.09
6	6.65	15.99	-9.32
7	3.77	15.99	-12.20
8	3.10	15.99	-12.87
9	1.59	15.99	-14.38
10	2.00	15.99	-13.98
11	9.74	15.99	-6.23
12	23.81	15.99	7.84

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	3.17
Upstream Demand (cfs):	8.43
Downstream Demand (cfs):	1.00
Pump rate (cfs):	2.81
Headwater Safety (cfs):	0.79
Ungauged Stream Safety (cfs):	0.79
Min. Gauge Reading (cfs):	78.74
Passby at Location (cfs):	5.75

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

12/20/2013

Source Detail

WMP- 01592

API/ID Number: 047-103-02972

Operator: EQT Production Company

514386

Source ID: 30142 Source Name: N. Fork of Fishing Creek @ Lydick Property
Les Lydick

Source Latitude: 39.57795
Source Longitude: -80.59221

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 15.46 County: Wetzel

Anticipated withdrawal start date: 11/1/2013

Anticipated withdrawal end date: 11/1/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,500,000

Trout Stream? Tier 3?

Max. Pump rate (gpm): 1,260

Regulated Stream?

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm) 0

Gauged Stream?

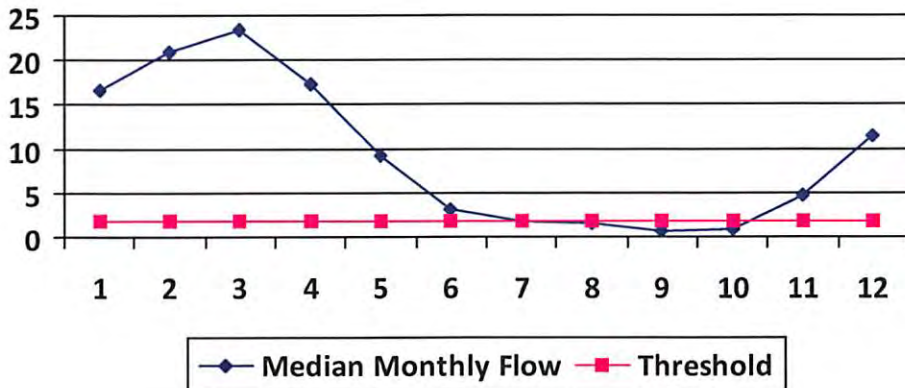
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	16.58	10.71	6.04
2	20.86	10.71	10.32
3	23.34	10.71	12.80
4	17.33	10.71	6.79
5	9.14	10.71	-1.40
6	3.19	10.71	-7.34
7	1.81	10.71	-8.73
8	1.49	10.71	-9.05
9	0.76	10.71	-9.78
10	0.96	10.71	-9.58
11	4.67	10.71	-5.86
12	11.42	10.71	0.88

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	1.52
Upstream Demand (cfs):	5.62
Downstream Demand (cfs):	1.00
Pump rate (cfs):	2.81
Headwater Safety (cfs):	0.38
Ungauged Stream Safety (cfs):	0.38
Min. Gauge Reading (cfs):	75.93
Passby at Location (cfs):	3.28

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

12/20/2013

Source Detail

WMP- 01592

API/ID Number: 047-103-02972

Operator: EQT Production Company

514386

Source ID: 30143 Source Name: N. Fork of Fishing Creek @ BIG176 Pad
John W. Kilcoyne

Source Latitude: 39.560283
Source Longitude: -80.560763

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 8.09 County: Wetzel

Anticipated withdrawal start date: 11/1/2013

Anticipated withdrawal end date: 11/1/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,500,000

Trout Stream? Tier 3?

Max. Pump rate (gpm): 1,260

Regulated Stream?

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm): 0

Gauged Stream?

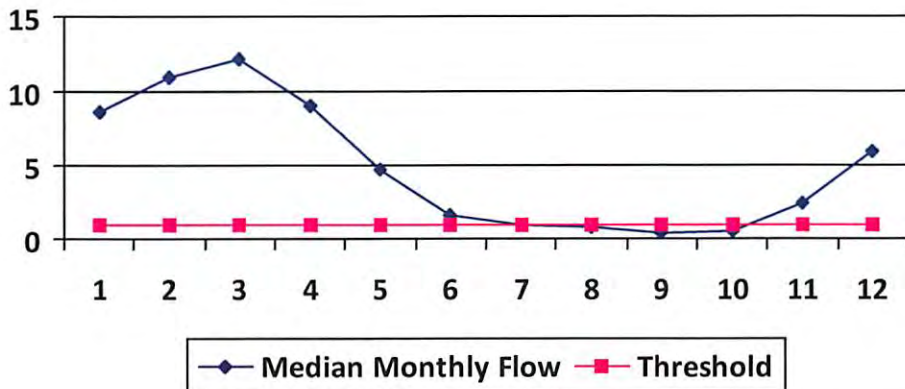
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	8.68	6.81	2.21
2	10.91	6.81	4.45
3	12.21	6.81	5.75
4	9.07	6.81	2.60
5	4.78	6.81	-1.68
6	1.67	6.81	-4.79
7	0.95	6.81	-5.52
8	0.78	6.81	-5.69
9	0.40	6.81	-6.07
10	0.50	6.81	-5.96
11	2.45	6.81	-4.02
12	5.98	6.81	-0.49

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	0.79
Upstream Demand (cfs):	2.81
Downstream Demand (cfs):	1.00
Pump rate (cfs):	2.81
Headwater Safety (cfs):	0.20
Ungauged Stream Safety (cfs):	0.20
Min. Gauge Reading (cfs):	73.12
Passby at Location (cfs):	2.19

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

12/20/2013

Source Detail

WMP- 01592

API/ID Number: 047-103-02972

Operator: EQT Production Company

514386

Source ID: 30144 Source Name: N. Fork of Fishing Creek @ Big 57 Pad
EQT Corporation

Source Latitude: 39.55316
Source Longitude: -80.53064

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 4.77 County: Wetzel

Anticipated withdrawal start date: 11/1/2013

Anticipated withdrawal end date: 11/1/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,500,000

Trout Stream? Tier 3?

Max. Pump rate (gpm): 1,260

Regulated Stream?

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm) 0

Gauged Stream?

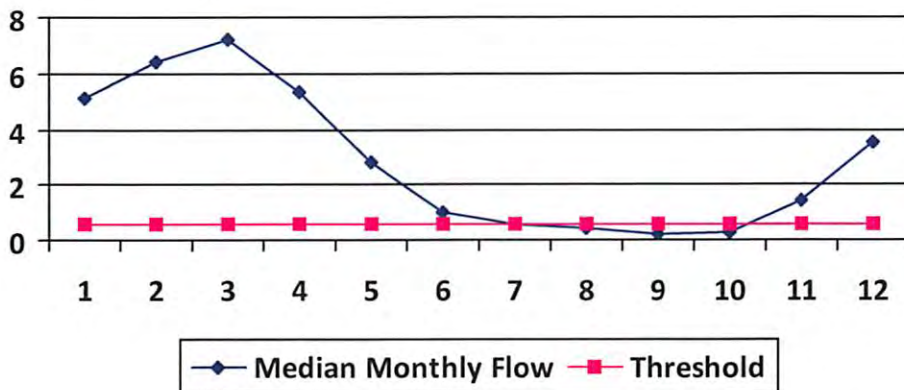
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	5.12	3.51	1.62
2	6.43	3.51	2.94
3	7.20	3.51	3.71
4	5.35	3.51	1.85
5	2.82	3.51	-0.67
6	0.98	3.51	-2.51
7	0.56	3.51	-2.93
8	0.46	3.51	-3.03
9	0.24	3.51	-3.26
10	0.30	3.51	-3.20
11	1.44	3.51	-2.05
12	3.52	3.51	0.03

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	0.47
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	1.00
Pump rate (cfs):	2.81
Headwater Safety (cfs):	0.12
Ungauged Stream Safety (cfs):	0.12
Min. Gauge Reading (cfs):	70.31
Passby at Location (cfs):	1.70

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.



Water Management Plan: Secondary Water Sources



WMP- 01592

API/ID Number: 047-103-02972

Operator: EQT Production Company

514386

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Ground Water

Source ID: 30145	Source Name	Groundwater Well TW#1	Source start date:	11/1/2013	
			Source end date:	11/1/2014	
Source Lat:	39.56059	Source Long:	-80.56027	County	Wetzel
Max. Daily Purchase (gal)		Total Volume from Source (gal):		5,500,000	

DEP Comments:

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID:	30146	Source Name	Groundwater Well TW#5	Source start date:	11/1/2013	
				Source end date:	11/1/2014	
	Source Lat:	39.553434	Source Long:	-80.528871	County	Wetzel
	Max. Daily Purchase (gal)		Total Volume from Source (gal):	5,500,000		

DEP Comments:

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Multi-site impoundment

Source ID:	30148	Source Name	YOHO Centralized Freshwater Impoundment		Source start date:	11/1/2013	
					Source end date:	11/1/2014	
		Source Lat:	39.56092	Source Long:	-80.61432	County	Wetzel
		Max. Daily Purchase (gal)		Total Volume from Source (gal):		5,500,000	
DEP Comments:	103-FWC-00001						

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-1068

Source ID:	30149	Source Name	Carlin Centralized Freshwater Impoundment		Source start date:	11/1/2013	
					Source end date:	11/1/2014	
		Source Lat:	39.51168	Source Long:	-80.598605	County	Wetzel
		Max. Daily Purchase (gal)		Total Volume from Source (gal):		5,500,000	
DEP Comments:	103-FWC-00002						

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-1321

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID:	30150	Source Name	BIG176 Centralized Freshwater Impoundment		Source start date:	11/1/2013	
					Source end date:	11/1/2014	
		Source Lat:	39.561403	Source Long:	-80.561554	County	Wetzel
		Max. Daily Purchase (gal)		Total Volume from Source (gal):		5,500,000	
DEP Comments:	103-FWC-00003						

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-1322

Source ID:	30151	Source Name	Sycoc Centralized Freshwater Impoundment		Source start date:	11/1/2013	
					Source end date:	11/1/2014	
		Source Lat:	39.56436	Source Long:	-80.625644	County	Wetzel
		Max. Daily Purchase (gal)		Total Volume from Source (gal):		5,500,000	
DEP Comments:	103-FWC-00004						

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-1222

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID:	30152	Source Name	Mobley Centralized Freshwater Impoundment		Source start date:	11/1/2013	
					Source end date:	11/1/2014	
		Source Lat:	39.553653	Source Long:	-80.52971	County	Wetzel
		Max. Daily Purchase (gal)		Total Volume from Source (gal):		5,500,000	
DEP Comments:	103-FWC-00006						

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-1534

Source ID:	30153	Source Name	Richwood Centralized Freshwater Impoundment		Source start date:	11/1/2013	
					Source end date:	11/1/2014	
		Source Lat:	39.551137	Source Long:	-80.605342	County	Wetzel
		Max. Daily Purchase (gal)		Total Volume from Source (gal):		5,500,000	
DEP Comments:	103-FWC-00007						

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-1535

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Recycled Frac Water

Source ID: 30154 Source Name Various

Source start date: 11/1/2013

Source end date: 11/1/2014

Source Lat:

Source Long:

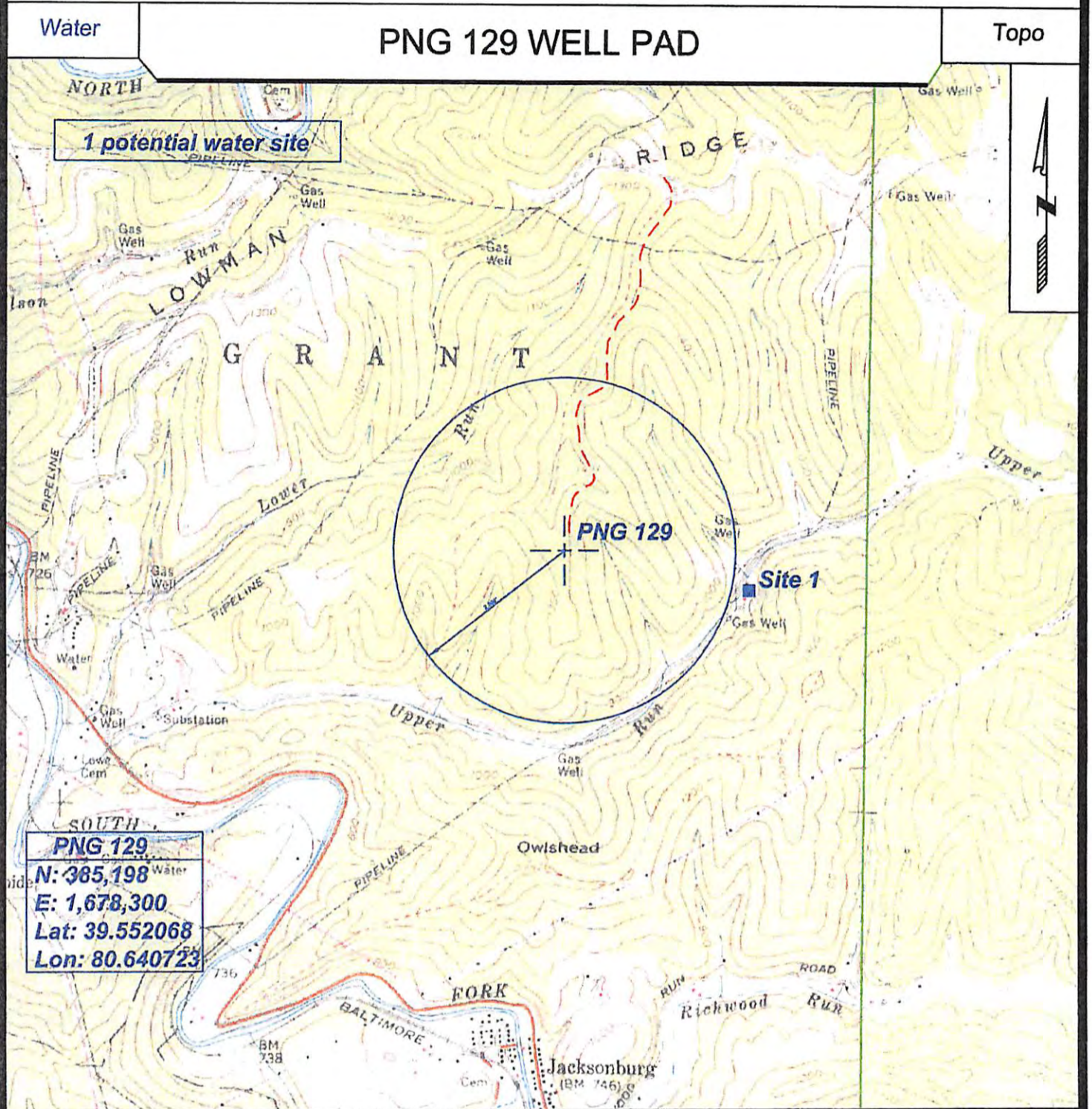
County

Max. Daily Purchase (gal)

Total Volume from Source (gal): 5,500,000

DEP Comments:

Topo Quad: Pine Grove 7.5' Scale: 1" = 2000'
 County: Wetzel Date: October 9, 2013
 District: Grant Project No: 212-34-G-10



SURVEYING AND MAPPING SERVICES PERFORMED BY:
ALLEGHENY SURVEYS, INC.
 1-800-482-8606
 P.O. BOX 438
 BIRCH RIVER, WV 26610
 PH: (304) 649-8606
 FAX: (304) 649-8608

PREPARED FOR:
EQT Production Co. Inc.
 P.O. BOX 280
 BRIDGEPORT, WV 26330

103 02972

12/20/2013

RECEIVED
Office of Oil and Gas

OCT 28 2013

WV Department of
Environmental Protection

WV 514386
EQT Production Company
412.8 Acre Lease

LATITUDE 39 - 35 - 00

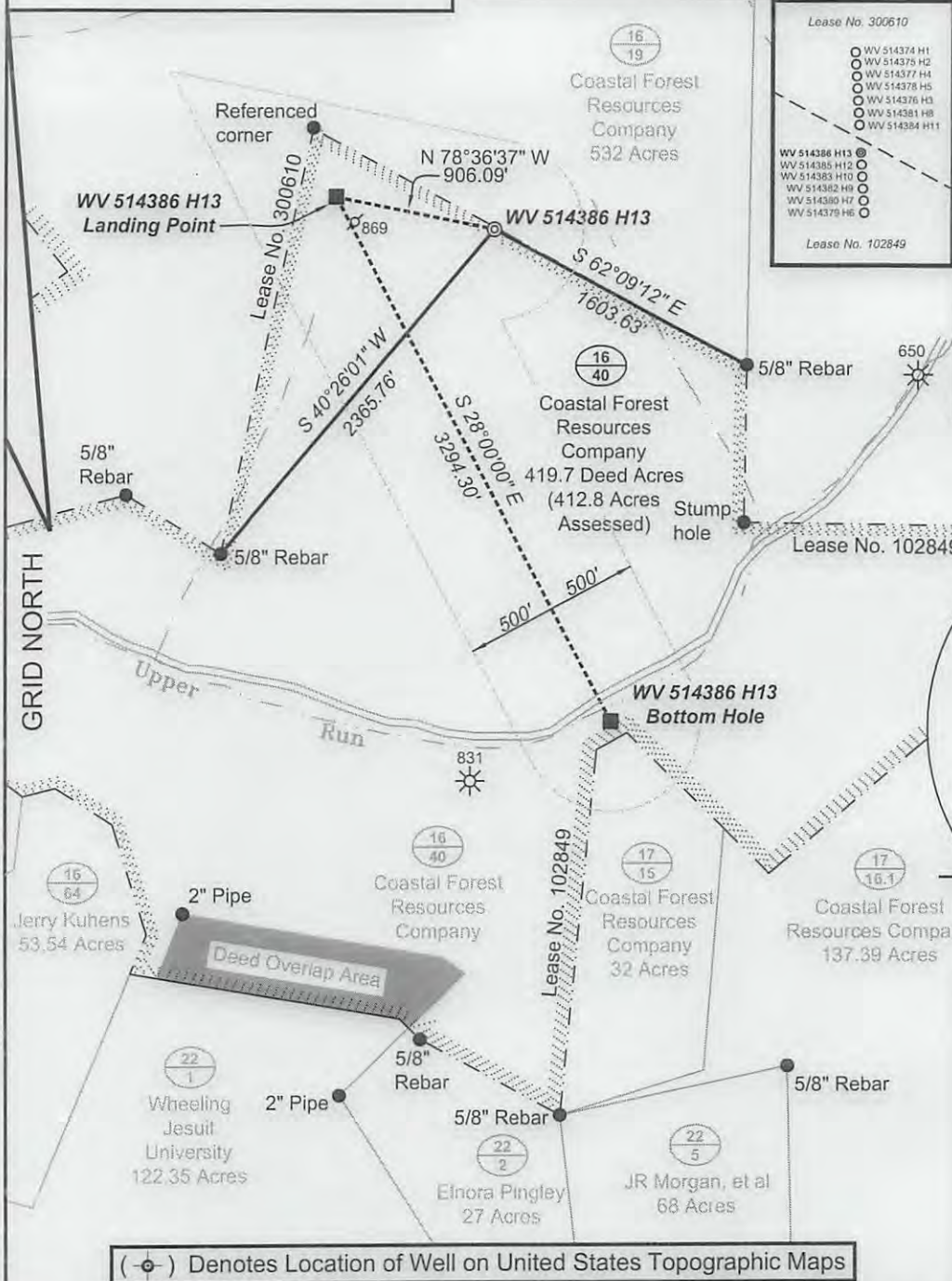
- ⊙ Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- ▤ Lease Boundary

Notes:
WV 514386 coordinates are:
N: 385,198 Lat: 39.552068
E: 1,678,300 Long: -80.640723
UTM N: 4,378,105 E: 530,867
WV 514386 Landing Point coordinates are:
N: 385,377 Lat: 39.552528
E: 1,677,412 Long: -80.643881
UTM N: 4,378,155 E: 530,596
WV 514386 Bottom Hole coordinates are:
N: 382,469 Lat: 39.544597
E: 1,678,959 Long: -80.638266
UTM N: 4,377,276 E: 531,082

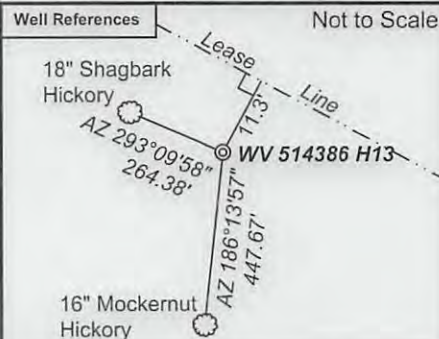
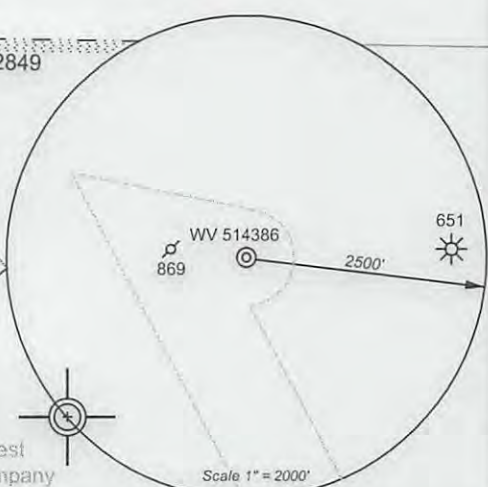
West Virginia Coordinate System of 1927 (North Zone).
Geographic coordinates are WGS84.
UTM coordinates are NAD83, Zone 17, Meters.

Plat orientation, corner and well ties are based upon the grid north meridian.
Well location references are based upon the grid north meridian.

LONGITUDE 80 - 37 - 30
11,445'



- Lease No. 300610**
- WV 514374 H1
 - WV 514375 H2
 - WV 514377 H4
 - WV 514378 H5
 - WV 514376 H3
 - WV 514381 H8
 - WV 514384 H11
- Lease No. 102849**
- WV 514386 H13
 - WV 514385 H12
 - WV 514382 H9
 - WV 514383 H10
 - WV 514380 H7
 - WV 514379 H6

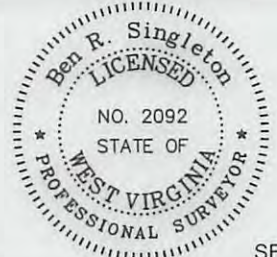


(⊙) Denotes Location of Well on United States Topographic Maps



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

Ben R. Singleton
P.S. 2092



FILE NO: 204-34-G-12
DRAWING NO: 204-12 PNG 129 H13
SCALE: 1" = 1000'
MINIMUM DEGREE OF ACCURACY: 1:2500
PROVEN SOURCE OF ELEVATION: NGS CORS Station

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

DATE: October 10 20 13
OPERATOR'S WELL NO. WV 514386
API WELL NO **H6A**
47 - 103 - **02972**
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: 1328' WATERSHED Upper Run of South Fork of Fishing Creek QUADRANGLE: Pine Grove
DISTRICT: Grant COUNTY: Wetzel
SURFACE OWNER: Coastal Forest Resources Company F.K.A. Coastal Lumber Company ACREAGE: 412.8
ROYALTY OWNER: Shibeen Estates LEASE NO: 102849 ACREAGE: 419.7
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Genessee ESTIMATED DEPTH: TVD 7,600' MD 12,800'

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

