



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 01, 2013

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-9101286, 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 514158
Farm Name: GREENWOOD LAND INC.
API Well Number: 47-9101286
Permit Type: Horizontal 6A Well
Date Issued: 10/01/2013

Promoting a healthy environment.

PERMIT CONDITIONS

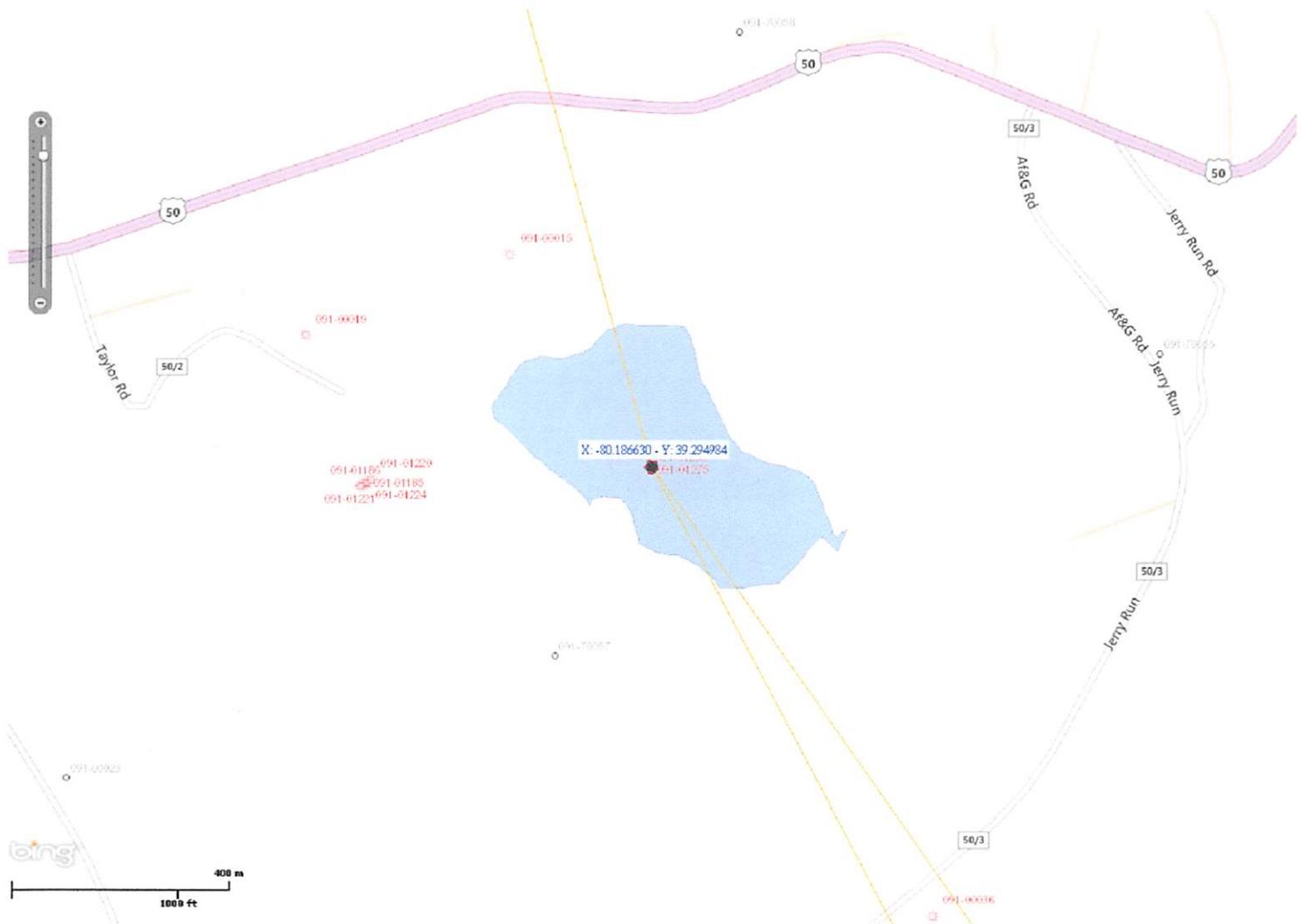
West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

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 fill material shall be within plus or minus 2% of the optimum moisture content as determined by the standard proctor density test, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. Each lift must meet 95 % compaction of the optimum density based on results from the standard proctor density test of the actual soils used in specific engineered fill sites. 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.

Map from a Flex Viewer application

Powered by ArcGIS



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In an underground mine -
possible void at 177'

-LKC

CASING AND TUBING PROGRAM

20)

TYPE	Size	New or Used	Grade	Weight per ft.	FOOTAGE: for Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu.Ft.)
Conductor	26	New	Varies	Varies	40	40	49
Fresh Water	13 3/8	New	MC-50	54#	1,074	1,074	930
Coal	20	New	MC-50	81#	235	235	297
Intermediate	9 5/8	New	MC-50	40#	2,649	2,649	1,030
Production	5 1/2	New	P-110	20#	15,856	15,856	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							

Dwight Hester 8-30-13

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield
Conductor	26	30	0.5	-	Construction	1.18
Fresh Water	13 3/8	17 1/2	0.38	2,480	1	1.21
Coal	20	24	0.635	1,640	1	1.2
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						
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.

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21) 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

22) 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 % Calcuim Carbonate. Acid solubility.

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

23) 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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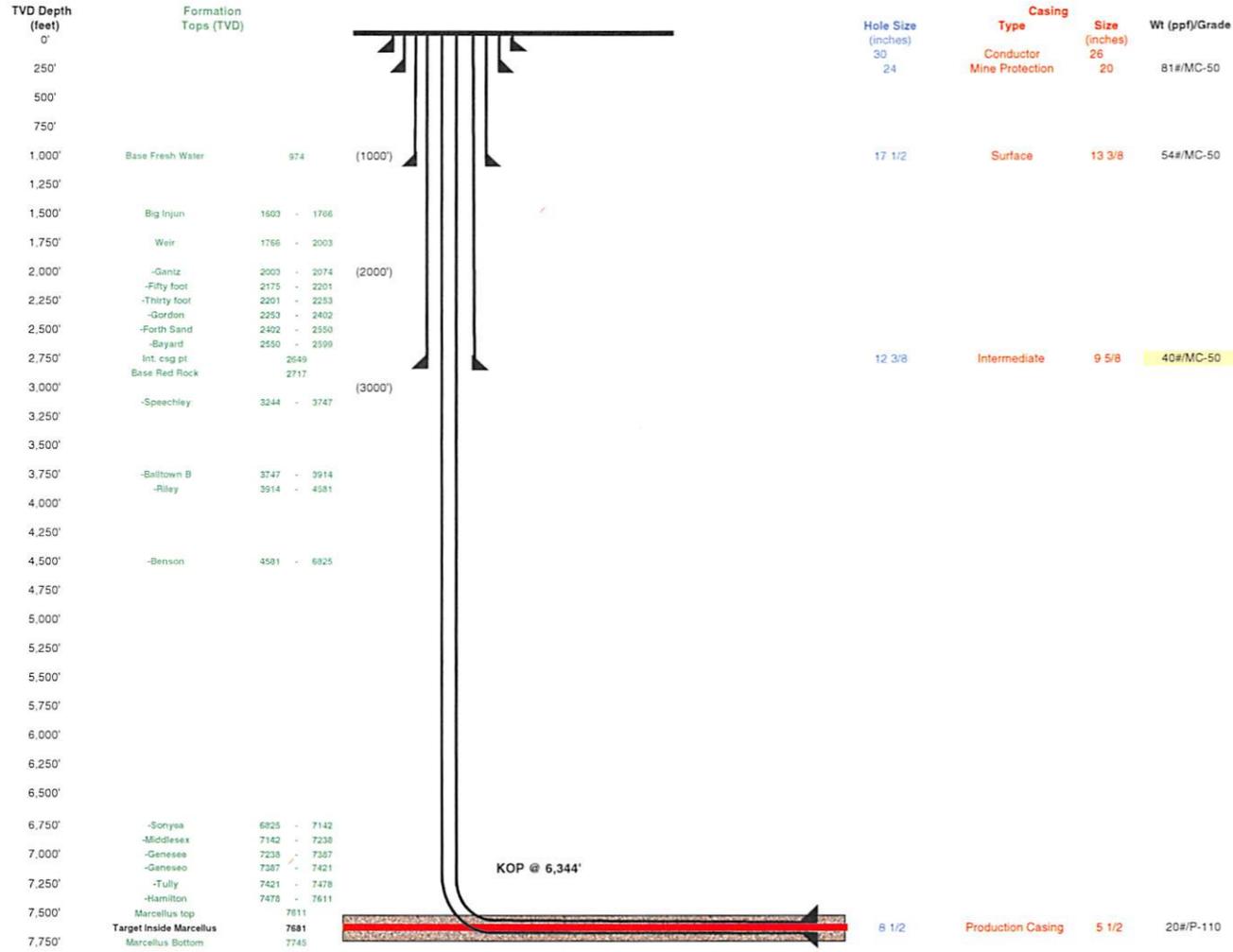
WV Department of
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91-01286

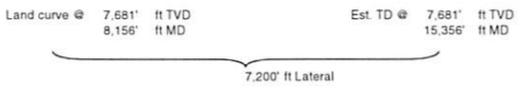
Well 514158 (RSM135H2)
 EQT Production
 Rosemont
 Taylor

West Virginia

Azimuth 155
 Vertical Section 7448



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 6344'.
 Then kick of the horizontal leg into the Marcellus using a slick water frac.



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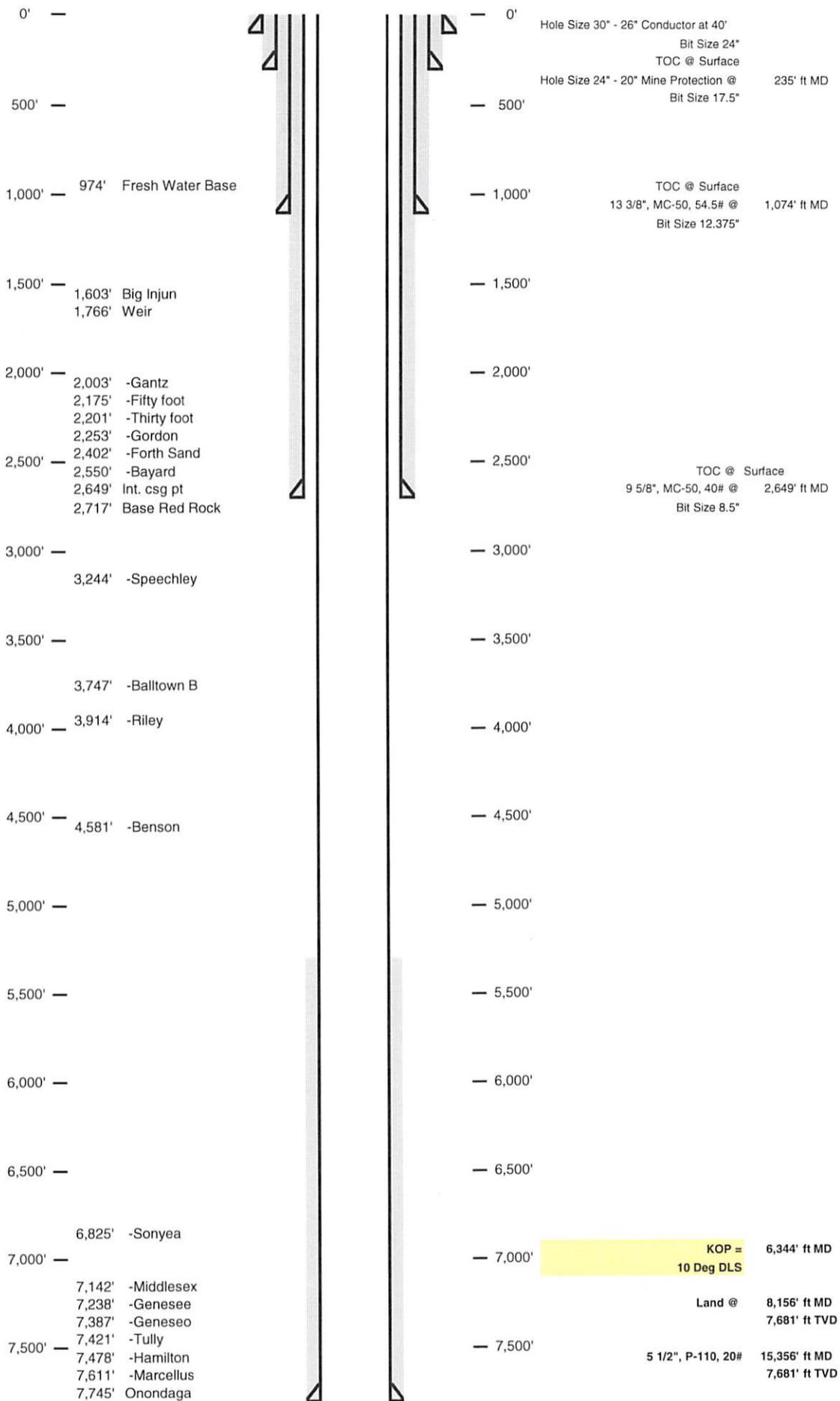
WV Department of
 Environmental Protection

Well Schematic
EQT Production

Well Name 514158 (RSM135H2)
County Taylor
State West Virginia

Elevation KB:
Target
Prospect
Azimuth
Vertical Section

1625
Marcellus
155
7448



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

Fluids/Cuttings Disposal & Reclamation Plan

Operator Name EQT Production Company OP Code _____

Watershed (HUC10) Tributary of Peddler Run Quadrangle ROSEMONT 7.5' 588

Elevation 1615.0 County Taylor 91 District Flemington 04

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 for drill cuttings: Yes: _____ No: X

If so please describe anticipated pit waste: _____ n/a

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

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

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, 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, Line, sawdust) n/a

Landfill or offsite name/permit number? See Attached List

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.

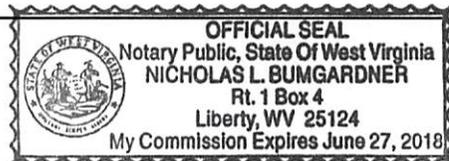
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is 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 18 day of JULY, 20 13

[Signature] Notary Public

My commission expires 6/27/2018



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WW-9

Operator's Well No. 514158

Proposed Revegetation Treatment: Acres Disturbed 31.23 +/- Prevegetation pH 6.2

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 1/3 lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre

Seed Mixtures

Area I		Area II	
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: Dwight Harris

Comments: _____

Title: Oil and Gas Inspector Date: 8-30-13
Field Reviewed? (X) Yes () No

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EQT Production Water plan Offsite disposals for Marcellus wells
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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- 01420

API/ID Number:

047-091-01286

Operator:

EQT Production Company

514158 (RSM135H2)

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 AUG 30 2013

Source Summary

WMP-01420

API Number:

047-091-01286

Operator:

EQT Production Company

514158 (RSM135H2)

Stream/River

● Source **Tygart River @ Kuhnes Withdrawal Site A** Taylor Owner: **Charlie & Peggy Kuhnes**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
11/1/2013	11/1/2014	11,500,000		39.35692	-80.05474

Regulated Stream? Tygart Valley Dam Ref. Gauge ID: 3057000 TYGART VALLEY RIVER AT COLFAX, WV

Max. Pump rate (gpm): **1,260** Min. Gauge Reading (cfs): **404.79** Min. Passby (cfs) **392.62**

DEP Comments:

Source Summary

WMP-01420

API Number:

047-091-01286

Operator:

EQT Production Company

514158 (RSM135H2)

Purchased Water

● Source **Mountain View Water Association** Barbour Owner: **Mountain View Water Association**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
11/1/2013	11/1/2014	11,500,000	300,000	-	-

Regulated Stream? Ref. Gauge ID: 3054500 TYGART VALLEY RIVER AT PHILIPPI, WV

Max. Pump rate (gpm): **0** Min. Gauge Reading (cfs): **352.81** Min. Passby (cfs)

DEP Comments:

● Source **Southwestern Water District** Barbour Owner: **Southwestern Water District**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
11/1/2013	11/1/2014	11,500,000	300,000	-	-

Regulated Stream? Ref. Gauge ID: 3054500 TYGART VALLEY RIVER AT PHILIPPI, WV

Max. Pump rate (gpm): **0** Min. Gauge Reading (cfs): **352.81** Min. Passby (cfs)

DEP Comments:

Source Detail

WMP-01420

API/ID Number: 047-091-01286

Operator: EQT Production Company

514158 (RSM135H2)

Source ID: 23718 Source Name: Mountain View Water Association Source Latitude: -
 Mountain View Water Association Source Longitude: -

HUC-8 Code: 5020001

Drainage Area (sq. mi.): 929.63 County: Barbour

Anticipated withdrawal start date: 11/1/2013

Anticipated withdrawal end date: 11/1/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 11,500,000

Trout Stream? Tier 3?

Max. Pump rate (gpm): 0

Regulated Stream?

Max. Simultaneous Trucks: -

Proximate PSD? Taylor County PSD

Max. Truck pump rate (gpm) -

Gauged Stream?

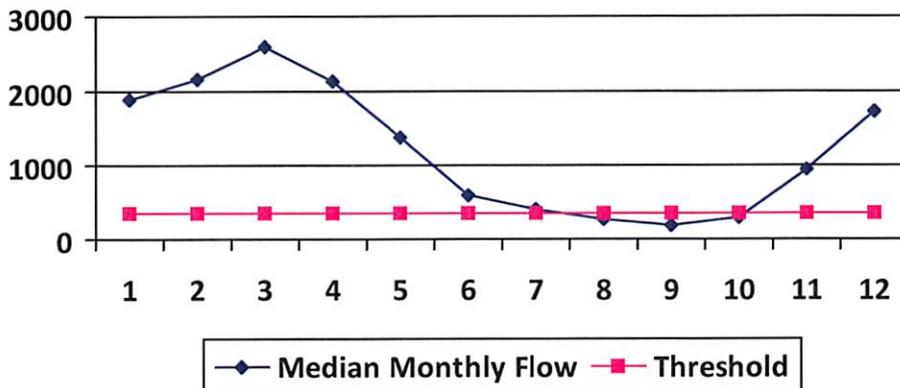
Reference Gaug: 3054500 TYGART VALLEY RIVER AT PHILIPPI, WV

Drainage Area (sq. mi.): 914.00

Gauge Threshold (cfs): 341

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	1,897.38	358.64	1,541.16
2	2,151.34	358.64	1,795.12
3	2,595.90	358.64	2,239.68
4	2,128.11	358.64	1,771.89
5	1,372.82	358.64	1,016.60
6	584.97	358.64	228.75
7	401.23	358.64	45.01
8	280.03	358.64	-76.19
9	177.08	358.64	-179.14
10	286.20	358.64	-70.02
11	949.06	358.64	592.84
12	1,734.98	358.64	1,378.76

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): 346.83

Upstream Demand (cfs): 11.81

Downstream Demand (cfs): 7.67

Pump rate (cfs): 0.00

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): 352.81

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.

Source Detail

WMP- 01420

API/ID Number: 047-091-01286

Operator: EQT Production Company

514158 (RSM135H2)

Source ID: 23719 Source Name: Southwestern Water District
Southwestern Water District

Source Latitude: -
Source Longitude: -

HUC-8 Code: 5020001

Drainage Area (sq. mi.): 929.63 County: Barbour

Anticipated withdrawal start date: 11/1/2013

Anticipated withdrawal end date: 11/1/2014

Endangered Species? Mussel Stream?

Trout Stream? Tier 3?

Total Volume from Source (gal): 11,500,000

Regulated Stream?

Max. Pump rate (gpm): 0

Proximate PSD? Taylor County PSD

Max. Simultaneous Trucks:

Gauged Stream?

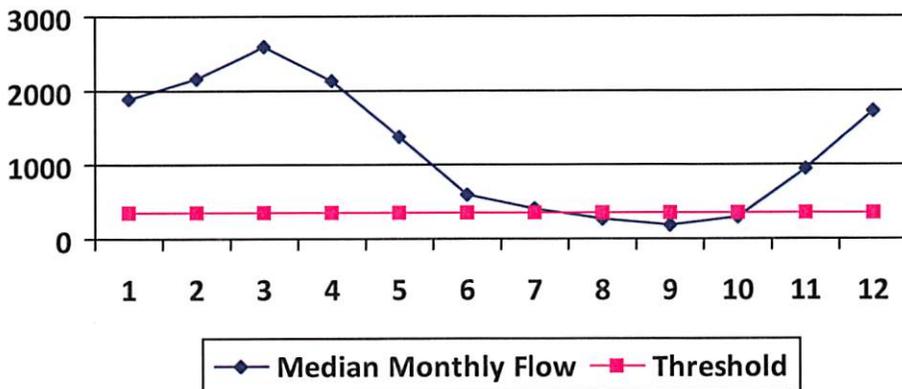
Max. Truck pump rate (gpm)

Reference Gaug: 3054500 TYGART VALLEY RIVER AT PHILIPPI, WV

Drainage Area (sq. mi.): 914.00 Gauge Threshold (cfs): 341

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	1,897.38	358.64	1,541.16
2	2,151.34	358.64	1,795.12
3	2,595.90	358.64	2,239.68
4	2,128.11	358.64	1,771.89
5	1,372.82	358.64	1,016.60
6	584.97	358.64	228.75
7	401.23	358.64	45.01
8	280.03	358.64	-76.19
9	177.08	358.64	-179.14
10	286.20	358.64	-70.02
11	949.06	358.64	592.84
12	1,734.98	358.64	1,378.76

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): 346.83

Upstream Demand (cfs): 11.81

Downstream Demand (cfs): 7.67

Pump rate (cfs): 0.00

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): 352.81

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.

Source Detail

WMP- 01420

API/ID Number: 047-091-01286

Operator: EQT Production Company

514158 (RSM135H2)

Source ID: 23717 Source Name Tygart River @ Kuhnes Withdrawal Site A Source Latitude: 39.35692
Charlie & Peggy Kuhnes Source Longitude: -80.05474

HUC-8 Code: 5020001

Drainage Area (sq. mi.): 1302.2 County: Taylor

Anticipated withdrawal start date: 11/1/2013

Anticipated withdrawal end date: 11/1/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 11,500,000

Trout Stream? Tier 3?

Max. Pump rate (gpm): 1,260

Regulated Stream? Tygart Valley Dam

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm) 0

Gauged Stream?

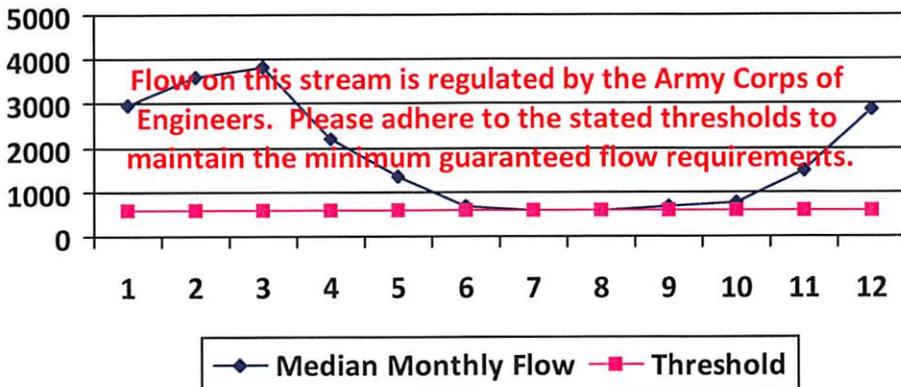
Reference Gaug 3057000 TYGART VALLEY RIVER AT COLFAX, WV

Drainage Area (sq. mi.) 1,363.00

Gauge Threshold (cfs): 624

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	2,968.50	-	-
2	3,584.04	-	-
3	3,829.89	-	-
4	2,188.80	-	-
5	1,373.55	-	-
6	695.24	-	-
7	584.64	-	-
8	593.45	-	-
9	661.90	-	-
10	755.75	-	-
11	1,477.45	-	-
12	2,905.01	-	-

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): -

Upstream Demand (cfs): 20.95

Downstream Demand (cfs): 11.59

Pump rate (cfs): 2.81

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.



Water Management Plan: Secondary Water Sources



WMP-01420	API/ID Number	047-091-01286	Operator:	EQT Production Company
		514158 (RSM135H2)		

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.

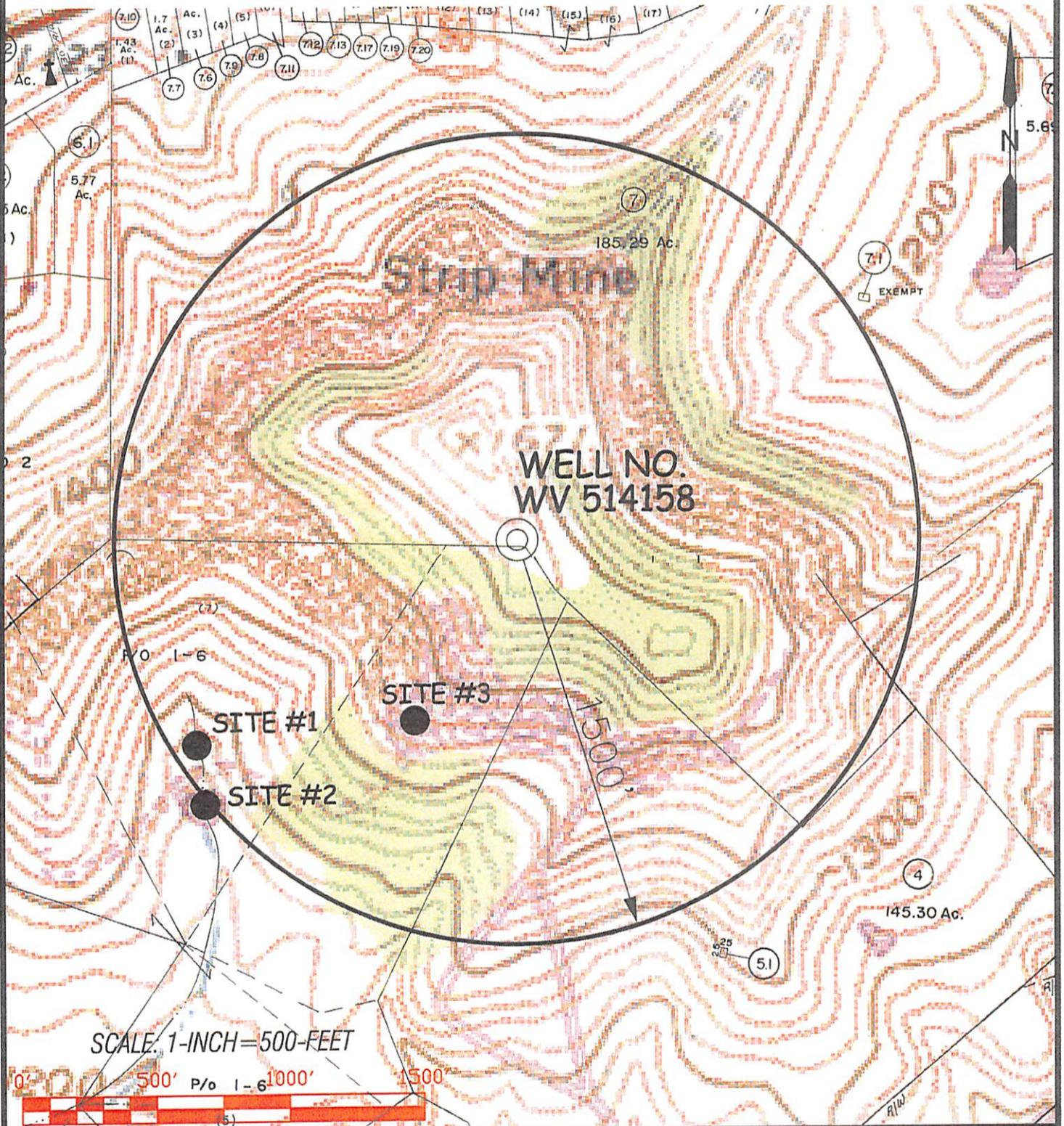
Recycled Frac Water

Source ID:	23720	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):		11,500,000	
DEP Comments:					

WATER SAMPLES

page of

TUCKER LEASE WELL NO. WV 514158



Professional Energy Consultants
A DIVISION OF BETHLEHEM SURVEYING

SLS
SURVEYORS PROJECT MGMT. ENGINEERS ENVIRONMENTAL

220 West Main St.
P.O. Box 100
Martinsburg, WV 26151
304.463.2668

5025 Oakwood Plaza
Martinsburg, WV 26151
304.571.9111

Honesty. Integrity. Quality.

DRAWN BY: K.D.W. FILE NO.: 7668 DATE: 04/19/13 CADD FILE: 7668WV514158STEMAP

TOPO SECTION OF:
ROSEMONT, WV 7.5' QUAD.

DISTRICT	COUNTY	TAX MAP-PARCEL NO.
FLEMINGTON	TAYLOR	01-07

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

RECEIVED
Office of Oil and Gas

JUL 26 2013

WV Department of
Environmental Protection

EQT PRODUCTION CO. TUCKER LEASE 396 ACRES± WELL NO. WV 514158

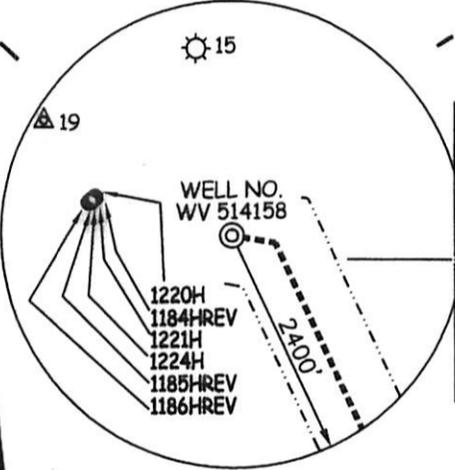
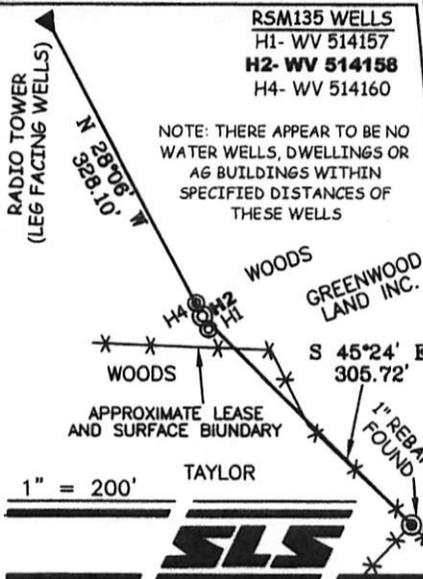
NOTES ON SURVEY

1. TIES TO WELLS, CORNERS AND REFERENCES ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD'27.
 2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOK 197 PAGE 690, DEED BOOK 294 PAGE 342, DEED BOOK 296 PAGE 130, DEED BOOK 161 PAGE 548, DEED BOOK 149 PAGE 155 & A WELL PLAT FOR A.P.I. #47-091-0044.
 3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF TAYLOR COUNTY IN JULY, 2011.
 4. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS (SURVEY GRADE).
 5. SLS RECOMMENDS ANY NECESSARY J.V.'S BE ACQUIRED BEFORE DRILLING COMMENCES.
 6. PLAT DATED 2/20/12 REVISED 4/19/12 TO REFLECT NEW BOTTOM HOLE COORDINATES, 06/24/13 TO SHOW UPDATES & 09/23/13 TO CONFORM WITH WV CODE R 35-8 ETC.
- LANDING POINT**
WELL NO. WV 514158
STATE PLANE COORDINATES
NORTH ZONE (NAD'27)
N. 290,203.5
E. 1,806,061.7
LAT=(N) 39.294750
LONG=(W) 80.185255
UTM (NAD'83)(METERS)
N. 4,349,812.7
E. 570,273.6

WELL NO. WV 514158
STATE PLANE COORDINATES
NORTH ZONE (NAD'27)
N. 290,259.1
E. 1,805,618.2
LAT=(N) 39.294893
LONG=(W) 80.186823
UTM (NAD'83)(METERS)
N. 4,349,827.4
E. 570,138.2

BOTTOM HOLE
WELL NO. WV 514158
STATE PLANE COORDINATES
NORTH ZONE (NAD'27)
N. 283,678.0
E. 1,809,104.5
LAT=(N) 39.276897
LONG=(W) 80.174331
UTM (NAD'83)(METERS)
N. 4,347,840.0
E. 571,233.7

REFERENCES



I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677
Gregory A. Smith



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE SEPTEMBER 23, 20 13
OPERATORS WELL NO. WV 514158
API WELL NO. 47-091-01286 **H6**
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 7668P514158R7 (390-02)
PROVEN SOURCE OF ELEVATION DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 1000'

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

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1,630' (GROUND) / 1,615' (PROPOSED) WATERSHED TRIBUTARY OF PEDDLER RUN
DISTRICT FLEMINGTON COUNTY TAYLOR QUADRANGLE ROSEMONT 7.5'

SURFACE OWNER GREENWOOD LAND INC. ACREAGE 141.86 ±
ROYALTY OWNER GREENWOOD LAND INC. ET AL (396 AC.±) / PENNY A. KNOTTS ET AL (756 AC.±) / JOHN SCHNAUTZ HRS ET AL (204 AC.±)

PROPOSED WORK: LEASE NO. 123804 / 123605 / J.V. (204 AC.±)
DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD
FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER
PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS
ESTIMATED DEPTH _____

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT REX C. RAY
ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330