west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

August 22, 2014

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-1706501, 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: 514085
Farm Name: HEASTER, CHARLES P. ET AL
API Well Number: 47-1706501
Permit Type: Horizontal 6A Well
Date Issued: 08/22/2014

08/22/2014

API Number: 4701706501

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

08/22/2014

WW - 6B
(9/13)

4701706501

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

	017	8	526
Operator ID	County	District	Quadrangle

2) Operator's Well Number: 514085 Well Pad Name: OXF156

3) Farm Name/Surface Owner : Charles P Heaster et al Public Road Access: 11/4

4) Elevation, current ground: 1,244.0 Elevation, proposed post-construction: 1,202.0

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 Geneseo at a depth of 6512' with the anticipated thickness to be 42 feet and anticipated target pressure of 4382 PSI

8) Proposed Total Vertical Depth: 6,512
9) Formation at Total Vertical Depth: Geneseo
10) Proposed Total Measured Depth 15,744
11) Proposed Horizontal Leg Length 8,260
12) Approximate Fresh Water Strata Depths: 163, 210, 314, 380, 456, 594, 1078
13) Method to Determine Fresh Water Depth: By offset wells
14) Approximate Saltwater Depths: 1382, 1450
15) Approximate Coal Seam Depths: 1266, 1306
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: _____

DCN 5-12-2014

08/22/2014

4701706501

WW - 6B
(3/13)

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	20	New	MC-50	81	40	40	38 C.T.S.
Fresh Water	13 3/8	New	MC-50	54	1,178	1,178	1,017 C.T.S.
Coal							
Intermediate	9 5/8	New	MC-50	40	5,267	5,267	2,063 C.T.S.
Production	5 1/2	New	P-110	20	15,744	15,744	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							

DCN 5-12-2014

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	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.

08/22/2014

WW - 6B

(3/13)

4701706501

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

Drill and complete a new horizontal well in the Geneseo Formation. The vertical drill to go down to an approximate depth of 5744'.

Then kick off the horizontal leg into the Geneseo 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 % Calcuim 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.

08/22/2014

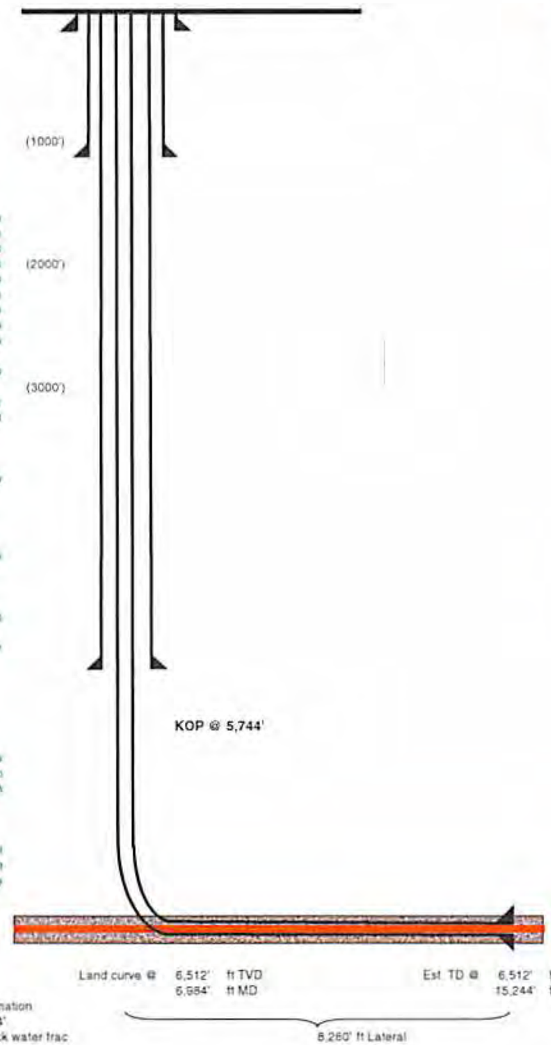
RECEIVED
Office of Oil and Gas
MAY 01 2014
WV Department of
Environmental Protection

4701706501

Well 514085 (OXF156H7)
EQT Production
Oxford
Doddridge West Virgina

Azimuth 335
Vertical Section 8951

TVD Depth (feet)	Formation Tops (TVD)		
0'			
250'			
500'			
750'			
1,000'	Base Fresh Water	1078	(1000')
	Base Red Rock	1154	
1,250'			
1,500'			
	Maxton	1634 - 1723	
1,750'	Big Lime	1835 - 1885	
	Big Injun	1950 - 1972	
2,000'	Weir	2119 - 2236	(2000')
	-Gantz	2334 - 2354	
2,250'	-Fifty foot	2429 - 2476	
	-Thirty foot	2528 - 2574	
2,500'	-Gordon	2574 - 2674	
	-Forth Sand	2674 - 2765	
2,750'			
	-Bayard	2848 - 2910	
3,000'			(3000')
	-Warren	3211 - 3281	
3,250'	-Speechley	3281 - 3792	
3,500'			
3,750'	-Balltown A	3792 - 4423	
4,000'			
4,250'			
	-Riley	4423 - 4859	
4,500'			
4,750'			
	-Benson	4859 - 5112	
5,000'			
	-Alexander	5112 - 5217	
5,250'	Int. csg pt	5267	
5,500'			
5,750'			
6,000'	-Sonyea	6217 - 6379	
	-Middlesex	6379 - 6430	
6,250'	-Genesee	6430 - 6458	
	Geneseo top	6458	
6,500'	**Target Inside Geneseo**	**6512**	
	Geneseo Bottom	6540	
6,750'	-Tully	6540 - 6565	
	-Hamilton	6565 - 6583	
7,000'	-Marcellus	6583 - 6637	
	Onondaga	6637	
7,250'			
7,500'			



Hole Size (inches)	Casing Type	Size (inches)	Wt (ppf)/Grade
24	Conductor	20	
17 1/2	Surface	13 3/8	54#/MC-50
12 3/8	Intermediate	9 5/8	40#/MC-50
8 1/2	Production Casing	5 1/2	20#/P-110

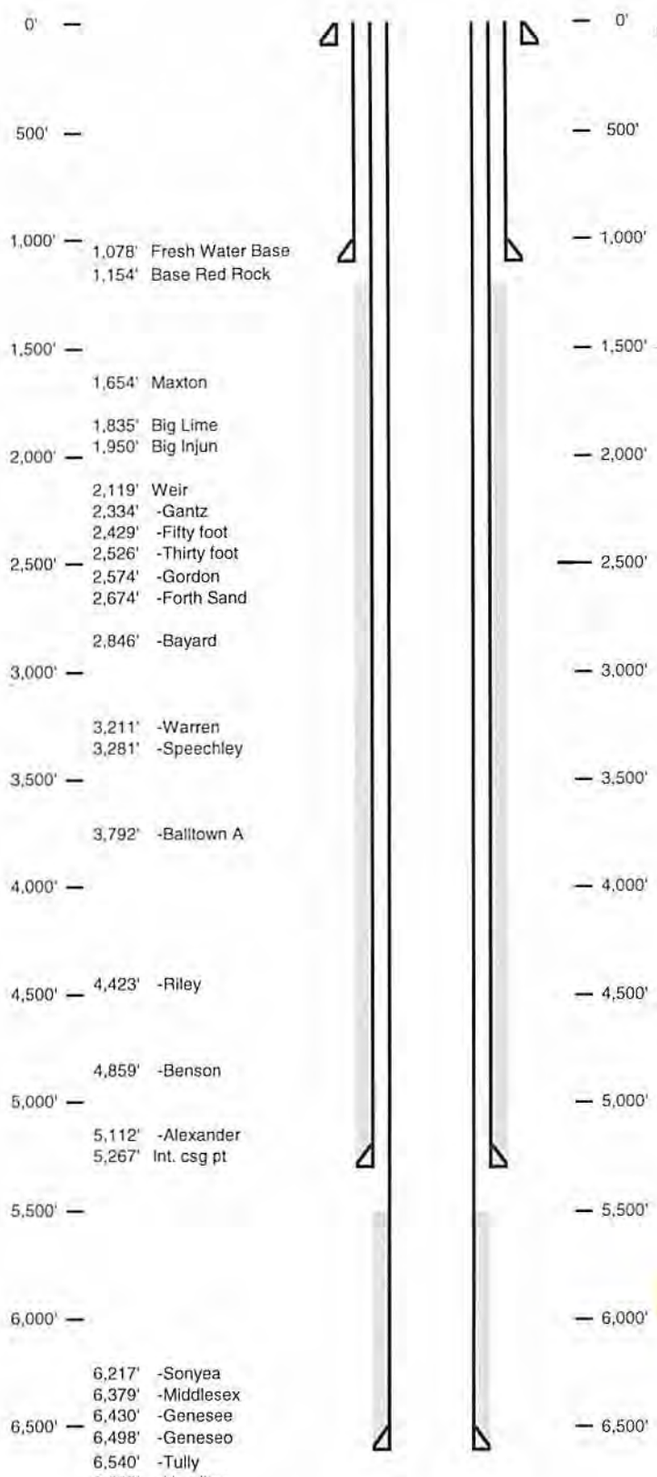
Proposed Well Work:
Drill and complete a new horizontal well in the Geneseo formation
The vertical drill to go down to an approximate depth of 5744'
Then kick off the horizontal leg into the Geneseo using a slick water frac

Well Schematic
EQT Production

4701706501

Well Name	514085 (OXF156H7)
County	Doddridge
State	West Virgina

Elevation KB:	1212
Target	Geneseo
Prospect	
Azimuth	335
Vertical Section	8901



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

TOC @ Surface
13 3/8", MC-50, 54.5# @ 1,178' ft MD
Bit Size 12.375"

TOC @ Surface
9 5/8", MC-50, 40# @ 5,267' ft MD
Bit Size 8.5"

KOP = 5,744' ft MD
10 Deg DLS

Land @ 6,984' ft MD
6,512' ft TVD

5 1/2", P-110, 20# 15,244' ft MD
6,512' ft TVD

08/22/2014

4701706501

WW-9
(5/13)

Page _____ of _____
API No. 47 - 017 - 0
Operator's Well No. 514085

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

Fluids/Cuttings Disposal & Reclamation Plan

Operator Name OXF156 OP Code _____

Watershed (HUC10) Left Fork Arnolds Creek Quadrangle Oxford 7.5

Elevation 1202.0 County Doddridge District West Union

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, 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 _____
Company Official (Typed Name) Victoria J. Roark
Company Official Title Permitting Supervisor

Subscribed and sworn before me this 28 day of April, 20 14

_____ Notary Public

My commission expires 8-24-22

08/22/2014

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

WW-9

4701706501

Operator's Well No. 514085

Proposed Revegetation Treatment: Acres Disturbed no additional disturbance Prevegetation pH 6.6

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: Douglas Newlon

Comments: Maintain E+S to WV Dep regulations

Title: Oil + Gas inspector Date: 5-12-2014

Field Reviewed? (✓) Yes ( ) No

08/22/2014

4701706501

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

4701706501

EQT

Where energy meets innovation.™

Site Specific Safety Plan

EQT OXF156 Pad

Oxford

Doddridge County, WV

For Wells:

__513143__ __514085__ __514086__ _____ _____ _____ _____

_____ _____ _____ _____ _____ _____ _____

_____ _____ _____ _____ _____ _____ _____

Date Prepared: April 11, 2014

Kirt Ford
EQT Production

Permitting Supervisor
Title

4-24-14
Date

Douglas Newlon
WV Oil and Gas Inspector

Title

5-12-2014
Date

08/22/2014

Section V: BOP and Well Control

4701706501

BOP equipment and assembly installation schedule:

BOP Equipment

Size (in)	Operation	Hole Section	Type	Pressure Class	Test Pressure (psi)	Testing Frequency
13-5/8"	Drilling	Intermediate	Annular	3M	2100	Initial
13-5/8"	Drilling	Pilot	Annular	3M	2100	Initial, Weekly, Trip
13-5/8"	Drilling	Production	Annular	5M	3500	Initial,Weekly, Trip
13-5/8"	Drilling	Production	Blind	5M	4000	Initial,Weekly, Trip
13-5/8"	Drilling	Production	Pipe	5M	4000	Initial,Weekly, Trip
7-1/16"	Completions	Production	Cameron U's	5M	5000	Initial
13-5/8"	Drilling	Pilot (Onondaga Tag)	Annular	5M	4000	Initial,Weekly, Trip

Wellhead Detail

Size (in)	Type	M.A.W.P. (psi)
13-3/8" SOW x 13-5/8" 5M	Multi-bowl Well Head	5,000
13-5/8" 5M x 7-1/16 10M	Tubing Head	10,000
2-1/16" 5M	Christmas Tree	5,000

Well Control Trained Personnel:

- Drilling
  - EQT On-Site Specialist – 2 on rotating hitches.
  - Contract Group's – Tool Pusher & Drillers
- Completions & Production
  - EQT On-Site Specialist

DCW
5-12-2014

Notification Procedure

Significant Event Notifications

- A detailed record of significant drilling events will be recorded in the EQT Production Well Log Book.
- In addition to the record above, the local inspector of the WV DEP Office of Oil and Gas and Supervisor of EH&S will be notified by the EQT On-Site Specialist for the following events:
  - Lost Circulation
  - Encounter of Hydrogen Sulfide Gas
    - *Immediate notification is required of any reading of Hydrogen Sulfide Gas greater than 10ppm*
  - Fluid Entry
  - Abnormal Pressures
  - Blow-outs
  - Significant kicks
- Contact information can be found in Section II

Emergency Notifications

- In the event emergency response personnel and residents surrounding the work site are affected by specific events during the operation they must be notified as soon as possible by the On-site Specialist or their designee.

Flaring Notifications

- The local fire department(s) and/or county dispatch centers must be notified immediately prior to the ignition of a flare.

08/22/2014

Form WW-9

page of

4701706501

EQT PRODUCTION COMPANY
LEWIS MAXWELL LEASE
WELL NO. WV 514085

PROPOSED GAS WELL NO. WV 514085

Gas Well

Gas Well

Gas Wells

STOCK PILE AREA

STOCK PILE AREA

STOCK PILE AREA

STOCK PILE AREA

STOCK PILE AREA

EXISTING

ACCESS

3920' ± @ 0-10% GRADE±

MANIFOLD PAD AND TRUCK TURNAROUND AREA

ASSOCIATED PIT

410' ± @ 0-5% GRADE±

370' ± @ 10-15% GRADE±

60' ± @ 0-5% GRADE±

270' ± @ 0-5% GRADE±

400' ± @ 5-10% GRADE±

200' ± @ 10-15% GRADE±

340' ± @ 0-5% GRADE±

1310' ± @ 15-20% GRADE±

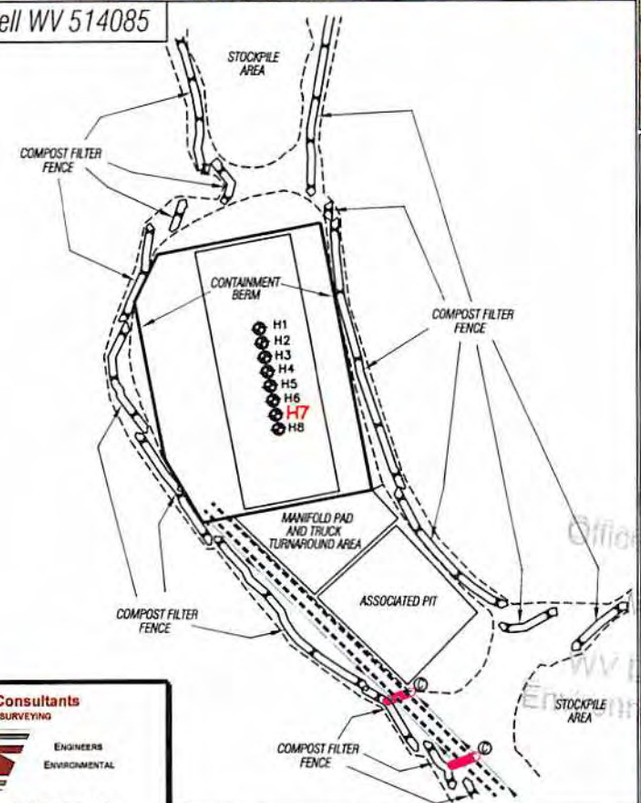
EXISTING CULVERT TO BE REMOVED

N

SCALE: 1"=500'

0' 500' 1000'

Detail Sketch for Proposed Well WV 514085



OXF156 WELLS
H1-WV 513138
H2-WV 513139
H3-WV 513140
H4-WV 513141
H5-WV 513142
H6-WV 513143
H7-WV 514085
H8-WV 514086

Not To Scale

ALL ROADS SHOWN HEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH WV D.E.P. OIL AND GAS BMP MANUAL ENTRANCES AT COUNTY/STATE ROADS SHALL BE MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATION. SEPARATE PERMITS MAY BE REQUIRED BY THE D.O.T.

SEDIMENT BASINS (TRAPS) AND APPROPRIATE EROSION CONTROL BARRIERS ARE TO BE CONSTRUCTED AT ALL CULVERT AND CROSS DRAIN INLETS AND OUTLETS AS REQUIRED IN THE WV D.E.P. OIL AND GAS BMP MANUAL. FIELD CONDITIONS (ROCK OUTCROPS AND BEDROCK) MAY PROHIBIT INLET TRAPS BEING INSTALLED. WHEN THESE CONDITIONS EXIST ADDITIONAL EROSION CONTROL MEASURES SHALL BE EVALUATED AND UTILIZED AS NEEDED.

EARTHWORK CONTRACTORS ARE RESPONSIBLE FOR NOTIFICATION TO THE OPERATOR AND INSPECTOR PRIOR TO ANY DEVIATION FROM THIS PLAN

TEMPORARY SEED & MULCH ALL SLOPES AFTER CONSTRUCTION OF LOCATION

CUT & STACK ALL MARKETABLE TIMBER.

STACKED BRUSH MAY BE USED FOR SEDIMENT CONTROL

APPLICATIONS FOR SEPARATE PLC PERMITS ON THE ACCESS ROAD STREAM CROSSINGS HAVE BEEN PREPARED (IF APPLIES).

RECEIVED
Office of Oil and Gas
MAY 01 2014
WV Department of Environmental Protection

08/22/2014

EXISTING CULVERT

© = PROPOSED CULVERT 12" MIN UNLESS OTHERWISE NOTED

X = PROPOSED STREAM CROSSING

= APPROXIMATE LIMITS OF DISTURBANCE

TOPO SECTION OF OXFORD 7.5' USGS TOPO QUADRANGLE

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING
SURVEYORS PROJECT MGMT. SLS ENGINEERS ENVIRONMENTAL
P.O. Box 150 Glenville, WV 26351 (304) 462-5634
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HONESTY, INTEGRITY, QUALITY

DRAWN BY	FILE NO.	DATE	CADD FILE:
K.D.W.	6980	02/17/14	6980REC514085.dwg

FORM WW 6

10,647'

LATITUDE 39°15'00"

LONGITUDE 80°45'00"

7,917'

NAD' 27 GRID NORTH

EQT PRODUCTION COMPANY
LEWIS MAXWELL LEASE
2,654 ACRES±
WELL NO. WV 514085

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

NAD'27 S.P.C.(FT)	N. 267,862.1	E. 1,635,254.4
NAD'27 GEO.	LAT-(N) 39.228263	LONG-(W) 80.787584
NAD'83 UTM (M)	N. 4,342,138.6	E. 518,349.1
LANDING POINT		
NAD'27 S.P.C.(FT)	N. 268,619.6	E. 1,635,388.9
NAD'27 GEO.	LAT-(N) 39.230348	LONG-(W) 80.787148
NAD'83 UTM (M)	N. 4,342,370.0	E. 518,366.2
BOTTOM HOLE		
NAD'27 S.P.C.(FT)	N. 276,105.7	E. 1,631,898.0
NAD'27 GEO.	LAT-(N) 39.250762	LONG-(W) 80.799852
NAD'83 UTM (M)	N. 4,344,632.9	E. 517,284.7

BOTTOM HOLE WELL NO. WV 514085

INSET

1/2" REBAR FOUND

FREDDIE CLAY ET AL 30 ACRES±

N 25°00' W 6260.00'

47-017-2837

500'

500'

DRAIN

MARY FARR SECRIST 829.75 ACRES± TM 20-14

LEASE# 080616

ZOE K. WALTERS 361.25 ACRES±

47-017-4027

47-017-4234

47-017-5769 (ACTUAL)

3/4" REBAR FOUND

N 31°19' W 5812.60'

SURFACE LOTS

DRAIN

NOTES ON SURVEY

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ.FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.

47-017-4189-C

JUSTIN L. HENDERSON 1602.9 ACRES±

ACCESS ROAD

47-017-3732

CHARLES P HEASTER 5.0 ACRES±

47-017-2143-P

47-017-0033

ACCESS

47-017-3734

N 24°28' W 7926.25'

47-017-5793

47-017-0036

MICHAEL P HEASTER ET UX 5.0 ACRES± TM 23-16

ROAD

47-017-5770

FORK

47-017-0125-P

ACCESS ROAD

DRAIN

CHARLES P HEASTER ET AL 901.72 ACRES± TM 23-01

47-017-3733

47-017-2134

ACCESS

LEFT

47-017-6064

ROAD

47-017-4214

LANDING POINT

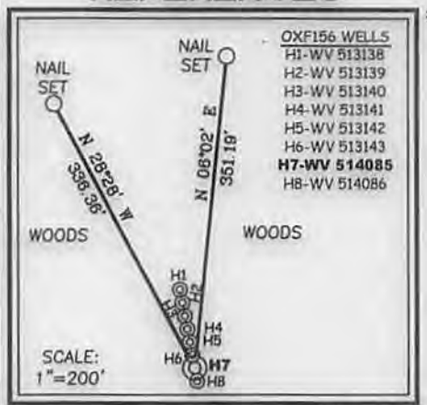
GAS WELL

47-017-4207

N 10°04' E 769.28'

WELL NO. WV 514085

REFERENCES



OXF156 WELLS
H1-WV 513138
H2-WV 513139
H3-WV 513140
H4-WV 513141
H5-WV 513142
H6-WV 513143
H7-WV 514085
H8-WV 514086

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SLS SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.
(304) 462-8834 WWW.SLSSURVEYS.COM

GREGORY A. SMITH LICENSED No. 677 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

(+) 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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 Gregory A. Smith

DATE JANUARY 29 , 20 14

REVISED , 20

OPERATORS WELL NO. WV 514085

API WELL NO. 47 — 17 — 06501/H6A

STATE — COUNTY — PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200

FILE NO. 6980P514085

SCALE 1" = 1000'

HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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

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

LOCATION :

ELEVATION 1,244'(GROUND) 1,202'(PROPOSED) WATERSHED LEFT FORK ARNOLDS CREEK

DISTRICT WEST UNION COUNTY DODDRIDGE QUADRANGLE OXFORD 7.5'

SURFACE OWNER CHARLES P. HEASTER ET AL ACREAGE 901.72 ±

ROYALTY OWNER LEWIS MAXWELL HRS ACREAGE 2654 ± 08/22/2014

PROPOSED WORK : LEASE NO. 080616

DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ OTHER ___

PHYSICAL CHANGE IN WELL (SPECIFY) ___ TARGET FORMATION GENESEO

ESTIMATED DEPTH 6498

COUNTY NAME

PERMIT

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