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**west virginia** department of environmental protection

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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

April 18, 2014

**WELL WORK PERMIT**

**Horizontal 6A Well**

This permit, API Well Number: 47-1706463, 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: 513149  
Farm Name: HENDERSON, JUSTIN L. ET AL  
**API Well Number: 47-1706463**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 04/18/2014

**Promoting a healthy environment.**

**04/18/2014**

## PERMIT CONDITIONS

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

### CONDITIONS

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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.



**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	110	110	106 C.T.S.
Fresh Water	13 3/8	New	MC-50	54	925	925	806 C.T.S.
Coal	-	-	-	-	-	-	-
Intermediate	9 5/8	New	MC-50	40	5,020	5,020	1974 C.T.S.
Production	5 1/2	New	P-110	20	11,963	11,963	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  
3-18-2014  
MAG*

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

Drill and complete a new horizontal well in the Marcellus Formation. The vertical drill to go down to an approximate depth of 5278'.

Then kick off the horizontal leg into the Marcellus using a slick water frac.

## 20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Hydraulic fracturing is completed in accordance with state regulations using water recycled from previously fractured wells and obtained from freshwater sources. This water is mixed with sand and a small percentage (less than 0.3%) of chemicals (including 15% Hydrochloric acid, gelling agent, gel breaker, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "slickwater" completion. Maximum anticipated treating pressures are expected to average approximately 8500 psi, maximum anticipated treating rates are expected to average approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 200,000 barrels of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 200,000 pounds of sand per stage.

21) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 37.3±

22) Area to be disturbed for well pad only, less access road (acres): 5.6±

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 at the shoe and one spaced every 500'.

• Production: One spaced every 1000' from KOP to Int csg shoe

24) Describe all cement additives associated with each cement type. Surface (Type 1 Cement): 0.3% Calcium Chloride

Used to speed the setting of cement slurries.

0.4% flake. Loss Circulation Material (LCM) is used to combat the loss of the cement slurry to a thief zone.

Intermediate (Type 1 Cement): 0.3% Calcium Chloride. Salt is used in shallow, low temperature formations to speed the setting of cement slurries. 0.4% flake. Loss Circulation Material (LCM) is used to combat the loss of whole drilling fluid or cement slurry (not filtrate) to a thief zone.

Production:

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

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

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

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

60 % Calcium Carbonate. Acid solubility.

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

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

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

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

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

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

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

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

Production: Pump marker sweep with nut plug to determine actual hole washout. Calculate a gauge holes bottoms up volume.

Perform a cleanup cycle by pumping 3-5 bottoms up or until the shakers are clean. Check volume of cuttings coming across

the shakers every 15 minutes.

\*Note: Attach additional sheets as needed.

DCN  
3-14-2014  
MAG



4701706463

March 10, 2014

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

Re: Casing change on OXF157(47-017-06458, 06459, 06460, 06461, 06462, 06463)

Dear Mr. Smith,

EQT is requesting the 13 3/8" surface casing to be set 20' below the deepest red rock show to cover potential red rock issues. The proposed casing set depth is above ground elevation. The reason for this is the red rock swells during drilling of the intermediate section causing many drilling problems such as but not limited to lost drilling assemblies and casing running issues.

EQT is reviewing the OXF157, we would like to request to set the surface casing deeper on each well. The 13 3/8" casing will be set at a depth of approximately 925' KB (20' below the anticipated red rock show).

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

Sincerely,

Vicki Roark  
Permitting Supervisor-WV

Enc.

EQT Production 115 Professional Place | P.O. Box 280 | Bridgeport, WV 26330  
T 304.848.0000 | F 304.848.0040 | www.eqt.com

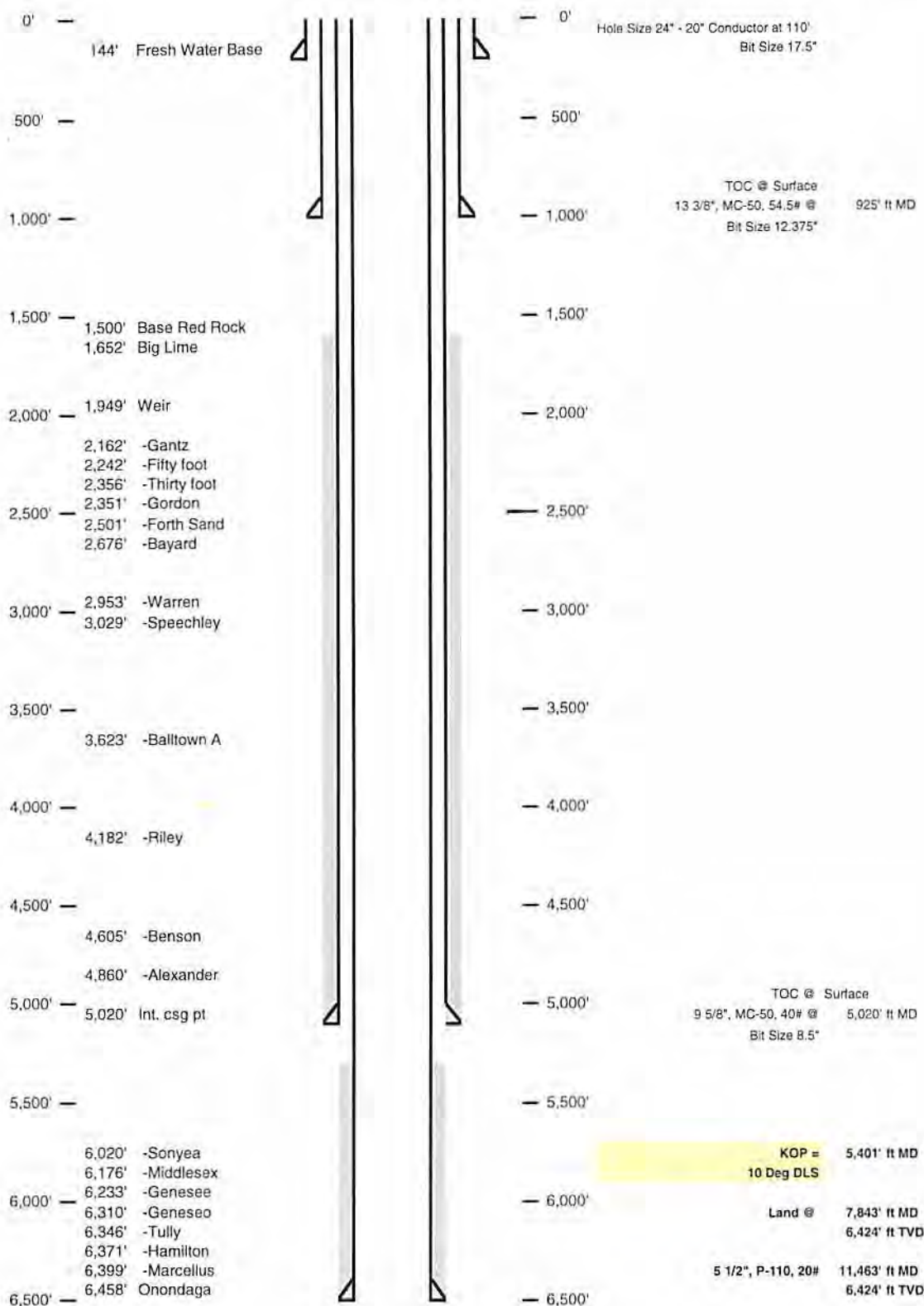
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Well Schematic  
EQT Production

Well Name 513149 (OXF157H6)  
County Doddridge  
State West Virginia

Elevation KB:  
Target  
Prospect  
Azimuth  
Vertical Section

981
Marcellus
155
4434

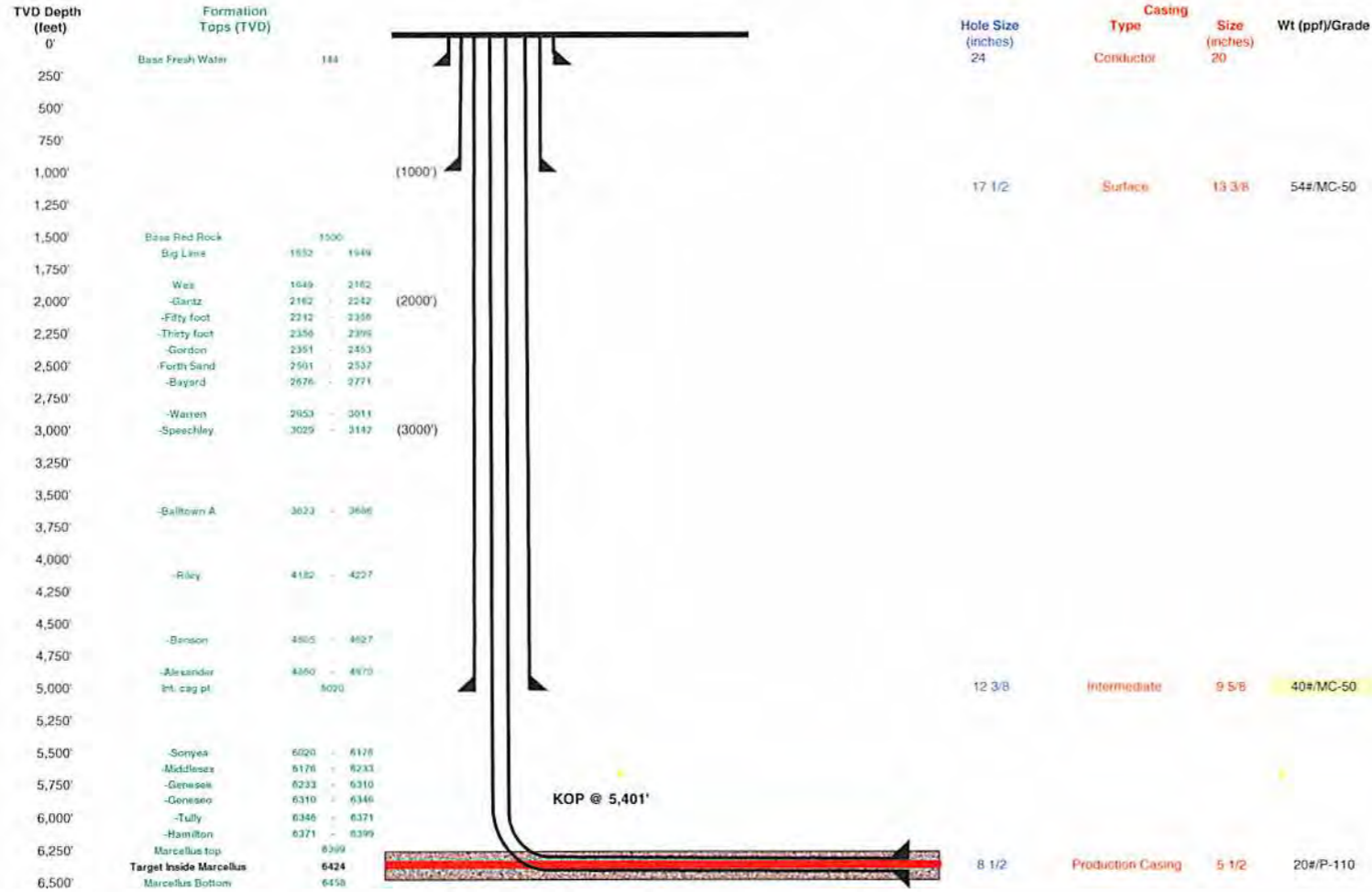


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4701706463

Well 513149 (OXF157H6)  
 EQT Production  
 Oxford  
 Doddridge West Virginia

Azimuth 155  
 Vertical Section 4434



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 5401'.  
 Then kick off the horizontal leg into the Marcellus using a slick water frac.

Land curve @ 6,424' ft TVD / 7,843' ft MD  
 Est. TD @ 6,424' ft TVD / 11,463' ft MD  
 3,620' ft Lateral

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

Fluids/Cuttings Disposal & Reclamation Plan

Operator Name OXF157 OP Code \_\_\_\_\_

Watershed (HUC10) Bluestone Creek Quadrangle Oxford 7.5'

Elevation 968' 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, Lime, 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.

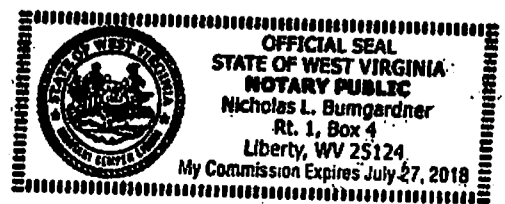
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is 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. Park  
Company Official Title Permitting Supervisor

Subscribed and sworn before me this 23 day of JANUARY, 20 14

\_\_\_\_\_  
My commission expires 6/27/2018 Notary Public

04/18/2014



Proposed Revegetation Treatment: Acres Disturbed 37.3 Prevegetation pH 6.3  
 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 Newton Michael Hoff  
 Comments: Preseed & Mulch install E+S to WV  
Dep regulations

Title: Pit & Gas inspector Date: 3-19-2014  
 Field Reviewed? (  ) Yes (  ) No

04/18/2014

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Environmental Protection

4701706463

**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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4701706463

**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  
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**TRI COUNTY WASTE WATER MANAGEMENT, INC.**  
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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

04/18/2014  
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JAN 30 2014

Office of Oil and Gas  
WV Dept. of Environmental Protection



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# Site Specific Safety and Environmental Plan For

## EQT OXF 157 Pad

### Oxford

## Doddridge County, WV

For Wells:

513144 513145 513146 513147 513148 513149 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date Prepared:

January 13, 2014

*[Signature]*  
EQT Production  
Permitting Supervisor  
Title  
1-23-14  
Date

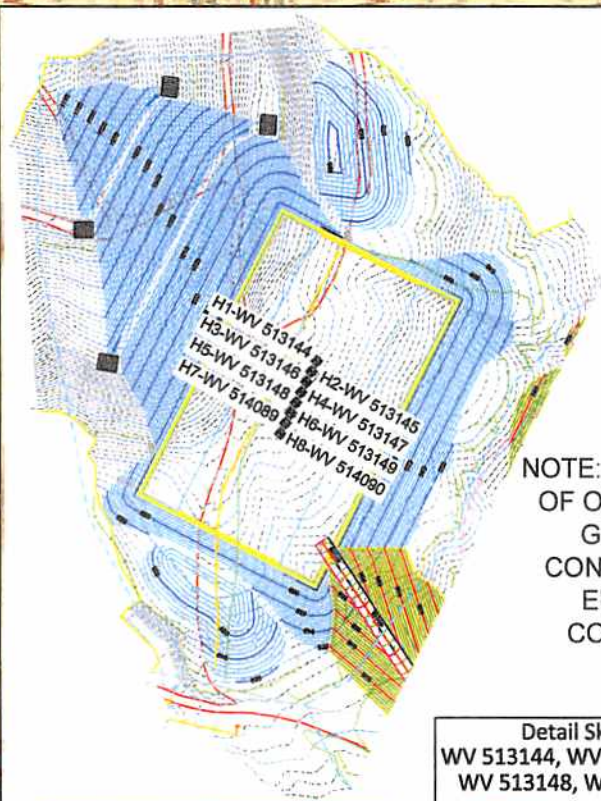
*[Signature]* *[Signature]*  
WV Oil and Gas Inspector  
Title  
3-19-2014  
Date

04/18/2014

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Environmental Protection

**LEEMAN LEASE**  
**WELL NO.S WV 513144, WV 513145,**  
**WV 513146, WV 513147, WV 513148,**  
**WV 513149, WV 514089 & WV 514090**

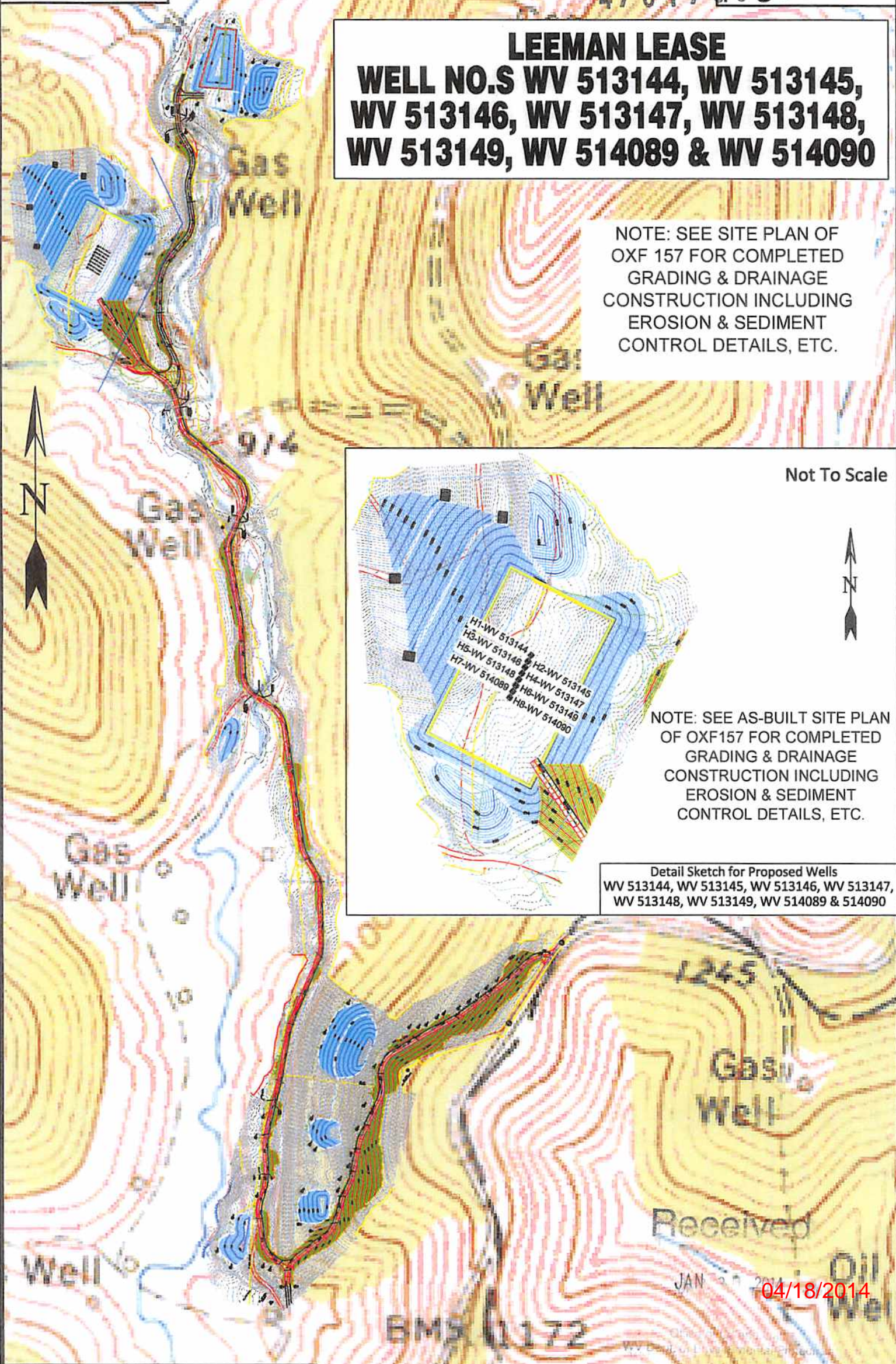
NOTE: SEE SITE PLAN OF OXF 157 FOR COMPLETED GRADING & DRAINAGE CONSTRUCTION INCLUDING EROSION & SEDIMENT CONTROL DETAILS, ETC.



Not To Scale

NOTE: SEE AS-BUILT SITE PLAN OF OXF157 FOR COMPLETED GRADING & DRAINAGE CONSTRUCTION INCLUDING EROSION & SEDIMENT CONTROL DETAILS, ETC.

Detail Sketch for Proposed Wells  
 WV 513144, WV 513145, WV 513146, WV 513147,  
 WV 513148, WV 513149, WV 514089 & 514090



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**Professional Energy Consultants**  
 A DIVISION OF SMITH LAND SURVEYING

SURVEYORS PROJECT MGMT. **SLS** ENGINEERS ENVIRONMENTAL

228 West Main St. P.O. Box 119 Stoneville, WV 26351 (204) 462-2634

86065 Dulles, Burkum Road Sharpsville, OH 42927 (740) 671-9911

HONESTY. INTEGRITY. QUALITY.

DRAWN BY K.D.W.	FILE NO. 7889	DATE 12-20-13	CADD FILE: 7889REC.PLANOXF157.dwg
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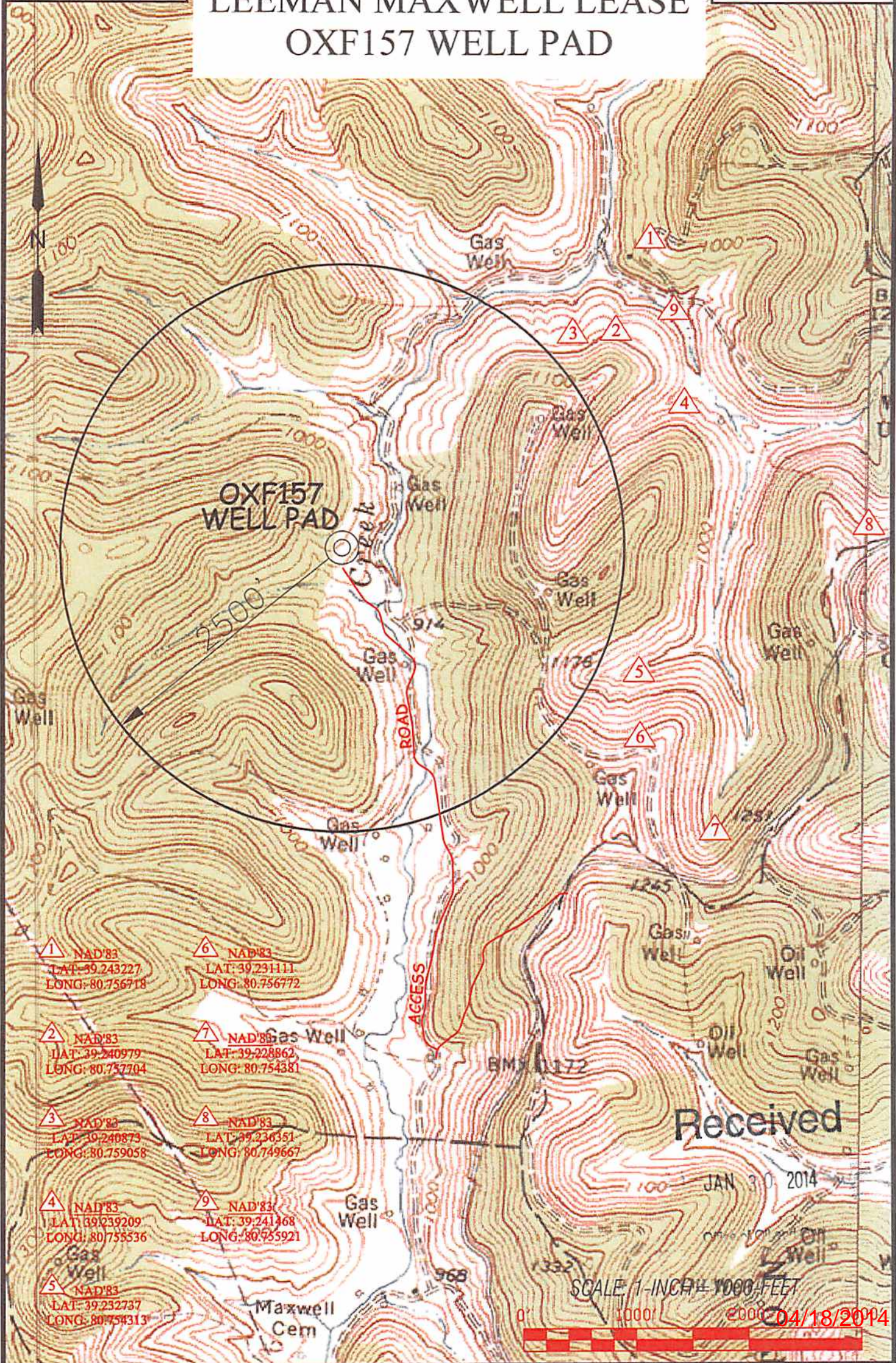
TOPO SECTION OF OXFORD 7.5'  
 USGS TOPO QUADRANGLE

SCALE: 1"=500'



WATER SAMPLES

# LEEMAN MAXWELL LEASE OXF157 WELL PAD



1	NAD'83 LAT: 39.243227 LONG: 80.756718	6	NAD'83 LAT: 39.231111 LONG: 80.756772
2	NAD'83 LAT: 39.240979 LONG: 80.757704	7	NAD'83 LAT: 39.228862 LONG: 80.754381
3	NAD'83 LAT: 39.240873 LONG: 80.759058	8	NAD'83 LAT: 39.236351 LONG: 80.749667
4	NAD'83 LAT: 39.239209 LONG: 80.755536	9	NAD'83 LAT: 39.241468 LONG: 80.755921
5	NAD'83 LAT: 39.232737 LONG: 80.754313		

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SCALE: 1-INCH = 1000 FEET



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A DIVISION OF EARTH LAND SURVEYING, INC.

**SLS**  
SURVEYORS  
ENGINEERS  
ENVIRONMENTAL  
PROJECT MGMT.

WWW.SLSURVEYS.COM

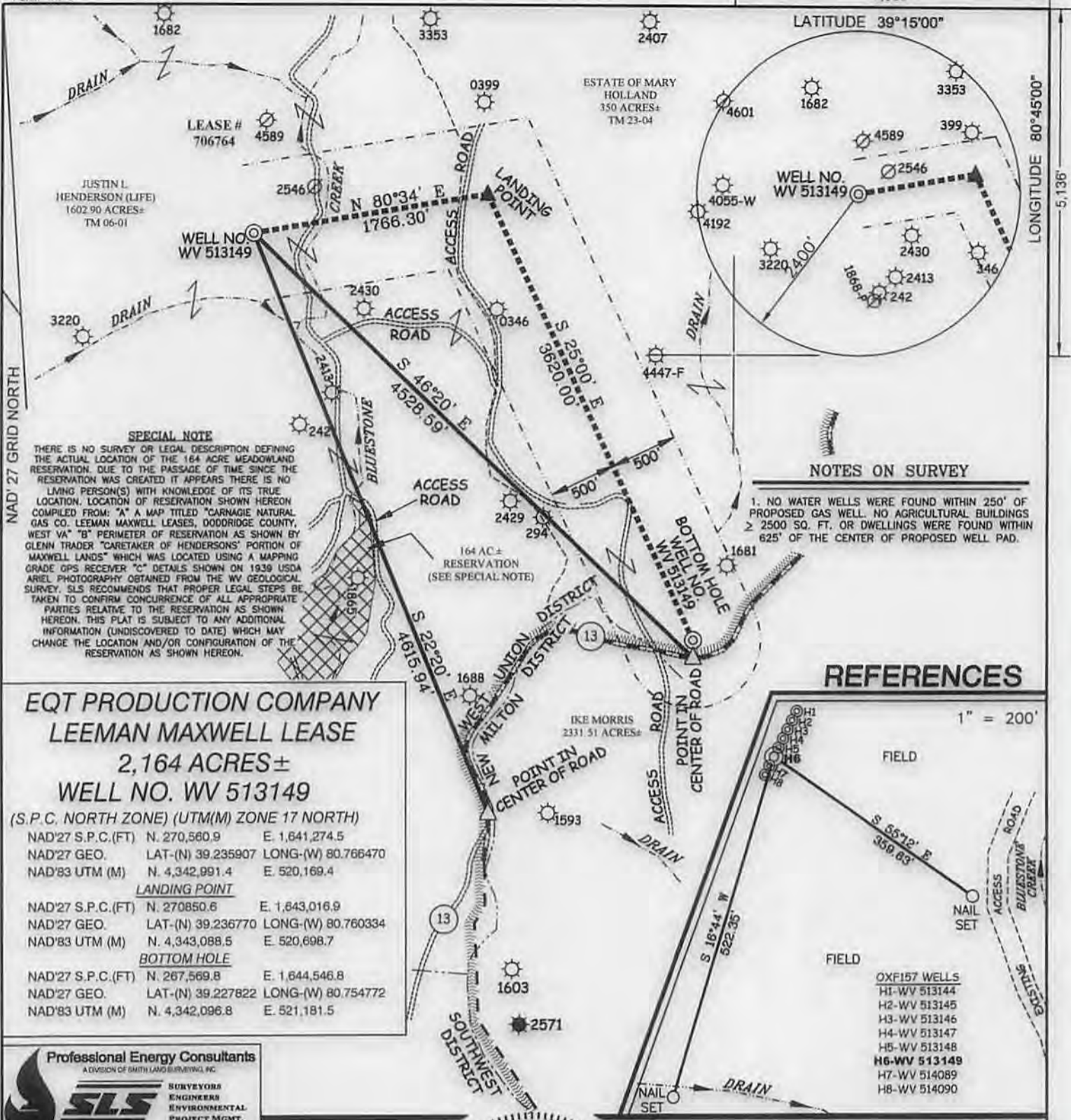
DRAWN BY: K.D.W. FILE NO: 7889 DATE: 01/03/14 CADD FILE: 7889WSOXF157

TOPO SECTION OF:  
OXFORD, WV 7.5' QUAD.

DISTRICT	COUNTY	TAX MAP-PARCEL NO.
WEST UNION	DODDRIDGE	23-02

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

04/18/2014



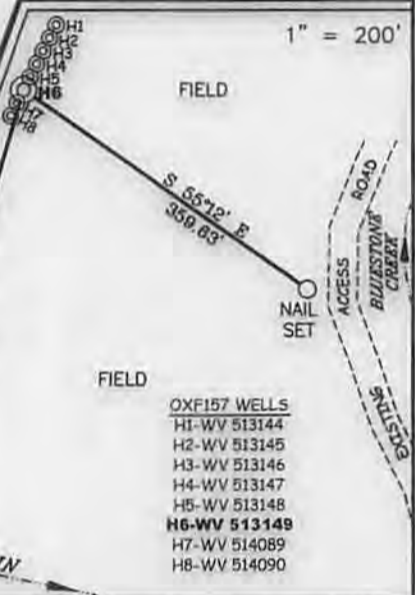
**SPECIAL NOTE**

THERE IS NO SURVEY OR LEGAL DESCRIPTION DEFINING THE ACTUAL LOCATION OF THE 164 ACRE MEADOWLAND RESERVATION. DUE TO THE PASSAGE OF TIME SINCE THE RESERVATION WAS CREATED IT APPEARS THERE IS NO LIVING PERSON(S) WITH KNOWLEDGE OF ITS TRUE LOCATION. LOCATION OF RESERVATION SHOWN HEREON COMPILED FROM: "A" A MAP TITLED "CARNAGIE NATURAL GAS CO. LEEMAN MAXWELL LEASES, DODDRIDGE COUNTY, WEST VA" "B" PERIMETER OF RESERVATION AS SHOWN BY GLENN TRADER "CARETAKER OF HENDERSONS" PORTION OF MAXWELL LANDS" WHICH WAS LOCATED USING A MAPPING GRADE GPS RECEIVER "C" DETAILS SHOWN ON 1939 USDA AERIAL PHOTOGRAPHY OBTAINED FROM THE WV GEOLOGICAL SURVEY. SLS RECOMMENDS THAT PROPER LEGAL STEPS BE TAKEN TO CONFIRM CONCURRENCE OF ALL APPROPRIATE PARTIES RELATIVE TO THE RESERVATION AS SHOWN HEREON. THIS PLAN IS SUBJECT TO ANY ADDITIONAL INFORMATION (UNDISCOVERED TO DATE) WHICH MAY CHANGE THE LOCATION AND/OR CONFIGURATION OF THE RESERVATION AS SHOWN HEREON.

**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.

**REFERENCES**



**EQT PRODUCTION COMPANY  
LEEMAN MAXWELL LEASE  
2,164 ACRES±  
WELL NO. WV 513149**

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

NAD'27 S.P.C.(FT)	N. 270,560.9	E. 1,641,274.5
NAD'27 GEO.	LAT-(N) 39.235907	LONG-(W) 80.766470
NAD'83 UTM (M)	N. 4,342,991.4	E. 520,169.4
<b>LANDING POINT</b>		
NAD'27 S.P.C.(FT)	N. 270850.6	E. 1,643,016.9
NAD'27 GEO.	LAT-(N) 39.236770	LONG-(W) 80.760334
NAD'83 UTM (M)	N. 4,343,088.5	E. 520,698.7
<b>BOTTOM HOLE</b>		
NAD'27 S.P.C.(FT)	N. 267,569.8	E. 1,644,546.8
NAD'27 GEO.	LAT-(N) 39.227822	LONG-(W) 80.754772
NAD'83 UTM (M)	N. 4,342,096.8	E. 521,181.5



I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN 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	DECEMBER 06	20	13
REVISED	MARCH 06	20	14
OPERATORS WELL NO.	WV 513149		
API WELL NO.	47	017	06463
	STATE	COUNTY	PERMIT

MINIMUM DEGREE OF ACCURACY	1 / 200	FILE NO.	7889P513149R
HORIZONTAL & VERTICAL CONTROL DETERMINED BY	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	<input checked="" type="checkbox"/> LIQUID INJECTION	WASTE DISPOSAL	IF "GAS" PRODUCTION	<input checked="" type="checkbox"/> STORAGE	DEEP	SHALLOW	<input checked="" type="checkbox"/>						
LOCATION:	ELEVATION 967'(GROUND) 968'(PROPOSED) WATERSHED BLUESTONE CREEK														
	DISTRICT WEST UNION		COUNTY DODDRIDGE		QUADRANGLE OXFORD 7.5'										
SURFACE OWNER	JUSTIN L. HENDERSON (LIFE)				ACREAGE		1,602.90±								
ROYALTY OWNER	LEEMAN MAXWELL HRS				ACREAGE		2,164±								
PROPOSED WORK:	LEASE NO. 706764														
DRILL	<input checked="" type="checkbox"/>	CONVERT	<input type="checkbox"/>	DRILL DEEPER	<input type="checkbox"/>	REDRILL	<input type="checkbox"/>	FRACTURE OR STIMULATE	<input checked="" type="checkbox"/>	PLUG OFF OLD FORMATION	<input type="checkbox"/>	CLEAN OUT AND REPLUG	<input type="checkbox"/>	OTHER	<input type="checkbox"/>
PHYSICAL CHANGE IN WELL (SPECIFY)					TARGET FORMATION		MARCELLUS								
					ESTIMATED DEPTH		6399'								

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

COUNTY NAME PERMIT

04/18/2014