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

April 18, 2014

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-1706462, 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: 513148
Farm Name: HENDERSON, JUSTIN L. ET AL
API Well Number: 47-1706462
Permit Type: Horizontal 6A Well
Date Issued: 04/18/2014

04/18/2014

API Number: 47 01706462

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.

04/18/2014

4701706462

WW - 6B
(9/13)

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: 513148 Well Pad Name: OXF157

3) Farm Name/Surface Owner : Henderson et al Public Road Access: CR-13

4) Elevation, current ground: 970' Elevation, proposed post-construction: 968'

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

Other _____

(b) If Gas: Shallow • Deep _____

Horizontal • _____

DCN
3-14-2014
MAG

6) Existing Pad? Yes or No: No

7) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
Target formation is Marcellus at a depth of 6424' with the anticipated thickness to be 60 feet and anticipated target pressure of 4327 PSI

8) Proposed Total Vertical Depth: 6,424'
9) Formation at Total Vertical Depth: Marcellus
10) Proposed Total Measured Depth 10,567'
11) Proposed Horizontal Leg Length 3,010
12) Approximate Fresh Water Strata Depths: 25, 59, 144
13) Method to Determine Fresh Water Depth: By offset wells
14) Approximate Saltwater Depths: None Reported
15) Approximate Coal Seam Depths: 337'
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: _____

WW'- 6B
(3/13)

4701706462

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	10,567'	10,567'	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 3-19-2014 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.

WW.- 6B

(3/13)

4701706462

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 5020'.

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 cent at the shoe and one spaced every 500'.
- Production: One spaced every 1000' from KOP to Int csg shoe

DCN 3-19-2014 MAG

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.

4701706462

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 I P.O. Box 280 I Bridgeport, WV 26330
T 304.848.0000 I F 304.848.0040 I www.eqt.com

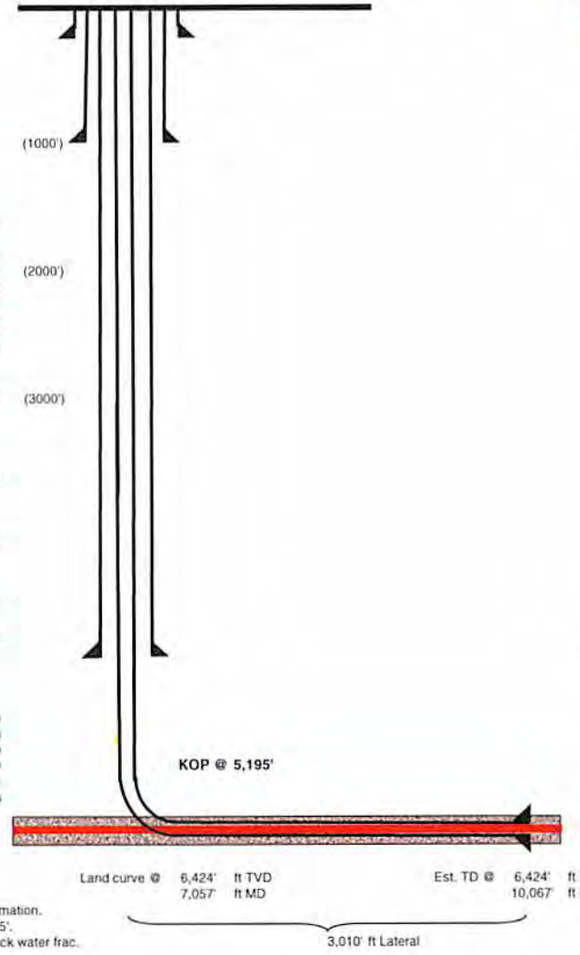
04/18/2014

4701706462

Well 513148 (OXF157H5)
EQT Production
Oxford
Doddridge **West Virgina**

Azimuth 155
Vertical Section 3586

TVD Depth (feet)	Formation Tops (TVD)			
0'				
	Base Fresh Water	144		
250'				
500'				
750'				
1,000'				(1000')
1,250'				
1,500'	Base Red Rock	1500		
	Big Lime	1852	1949	
1,750'				
	Weir	1949	2162	
2,000'	Gantz	2162	2242	(2000')
	Fifty foot	2242	2356	
2,250'	Thirty foot	2356	2398	
	Gordon	2351	2453	
2,500'	Forth Sand	2501	2537	
	Bayard	2676	2771	
2,750'				
	Warren	2953	3011	
3,000'	Speechley	3029	3142	(3000')
3,250'				
3,500'				
	Balltown A	3623	3686	
3,750'				
4,000'				
	Riley	4192	4227	
4,250'				
4,500'				
	Benson	4605	4627	
4,750'				
	Alexander	4850	4970	
5,000'	Int. csg pt	5026		
5,250'				
5,500'	Sonyea	6020	6176	
	Middlesex	6176	6233	
5,750'	Genesee	6233	6310	
	Geneseo	6310	6346	
6,000'	Tully	6346	6371	
	Hamilton	6371	6399	
6,250'	Marcellus top	6399		
	Target Inside Marcellus	**6424**		
6,500'	Marcellus Bottom	6458		



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

Land curve @ 6,424' ft TVD 7,057' ft MD

Est. TD @ 6,424' ft TVD 10,067' ft MD

3,010' ft Lateral

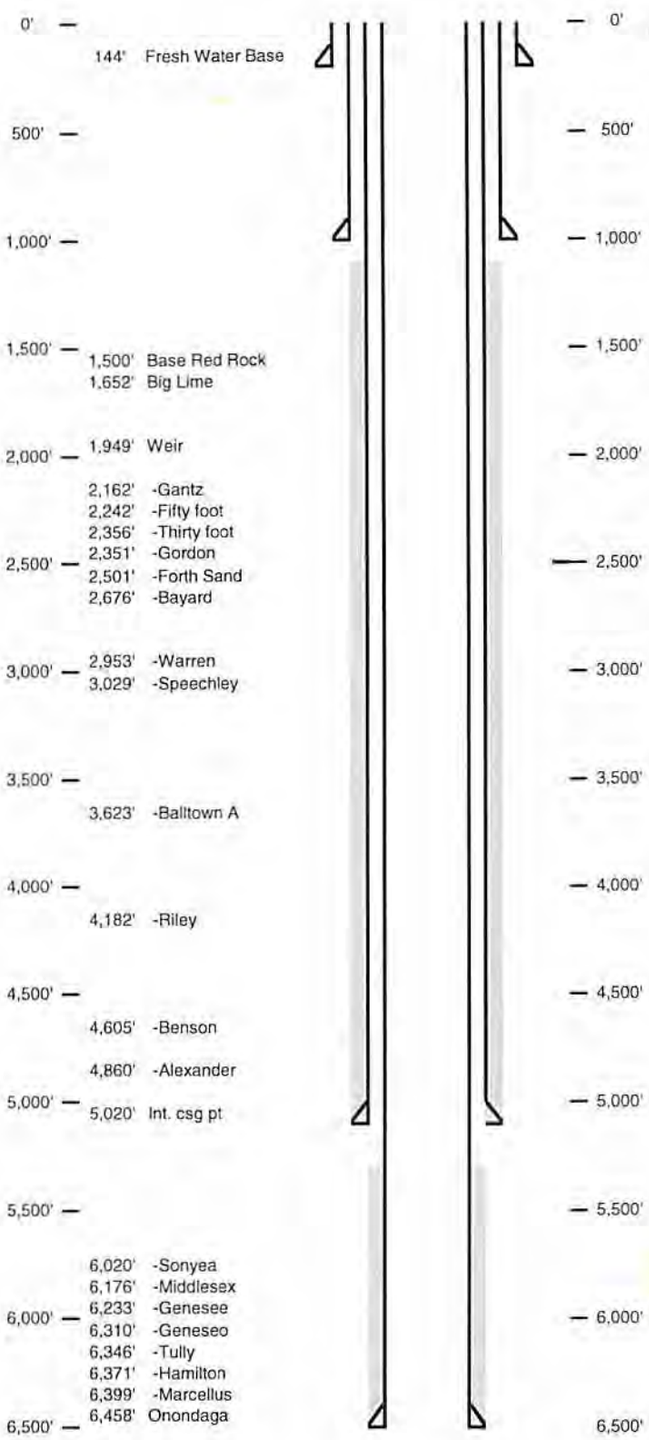
Proposed Well Work:
Drill and complete a new horizontal well in the Marcellus formation.
The vertical drill to go down to an approximate depth of 5195'.
Then kick off the horizontal leg into the Marcellus using a slick water frac.

Well Schematic
EQT Production

4701706462

Well Name	513148 (OXF157H5)
County	Doddridge
State	West Virgina

Elevation KB:	981
Target	Marcellus
Prospect	
Azimuth	155
Vertical Section	3586



Hole Size 24" - 20" Conductor at 110'
Bit Size 17.5"

TOC @ Surface
13 3/8", MC-50, 54.5# @ 925' ft MD
Bit Size 12.375"

TOC @ Surface
9 5/8", MC-50, 40# @ 5,020' ft MD
Bit Size 8.5"

KOP = 5,195' ft MD
10 Deg DLS

Land @ 7,057' ft MD
6,424' ft TVD

5 1/2", P-110, 20# 10,067' ft MD
6,424' ft TVD

4701706462

Page ____ of ____

WW-9
(5/13)

API No. 47 - 017 - 0
Operator's Well No. 513148

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 ___

DLN 3-19-2014 MAG

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. Roark
Company Official Title Permitting Supervisor

Subscribed and sworn before me this 23 day of January, 20 15

Notary Public ____

My commission expires 6/27/2018

RECEIVED
Office of Oil and Gas
MAR 31 2014
04/18/2014
WV Department of Environmental Protection

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Nicholas L. Bumgardner
Rt. 1, Box 4
Liberty, WV 25124
My Commission Expires July 27, 2018

WW-9

4701706462

Operator's Well No. 513148

Proposed Revegetation Treatment: Acres Disturbed _____ 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 Newlon Michael Duff

Comments: Prevent Mulch Install E+S To WV Dep regulations

Title: Oil & Gas inspector Date: 3-19-2014

Field Reviewed? (✓) Yes (_____) No

04/18/2014

EQT Production Water plan
Offsite disposals for Marcellus wells

4701706462

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

Received
04/18/2014

JAN 3 2014

Office of Oil and Gas
WV Dept. of Environmental Protection

4701706462

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
Green County/Waynesburg
Permit # TC-1009

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

4701706462

EQT

Where energy meets innovation.sm

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

EQT Production

Permitting Supervisor
Title

1-23-14
Date

Douglas Newlon
WV Oil and Gas Inspector

Title

3-19-2014
Date

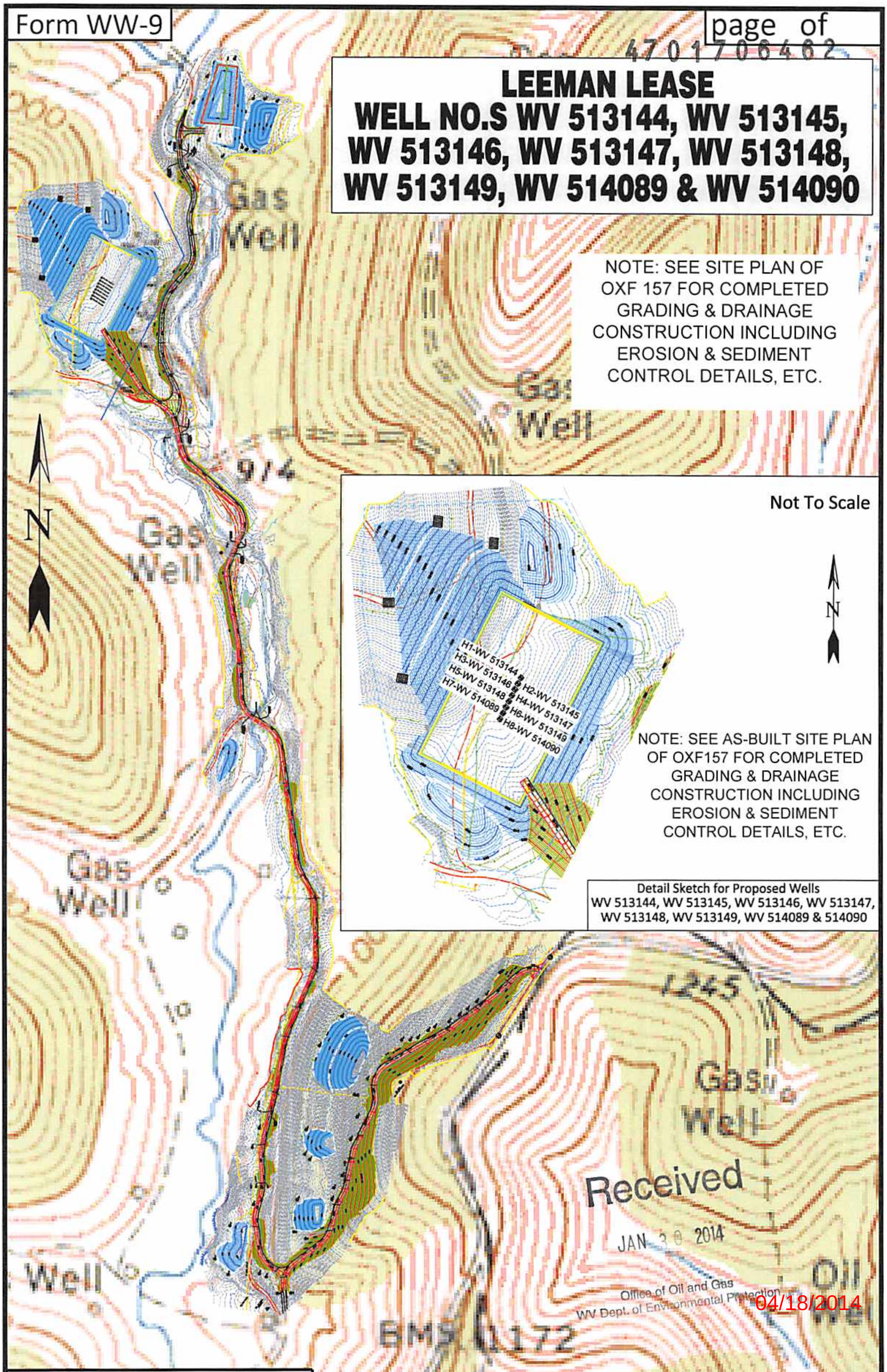
04/18/2014

Form WW-9

4701706462

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.



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

Received
JAN 30 2014
Office of Oil and Gas
WV Dept. of Environmental Protection

04/18/2014

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING

SURVEYORS
PROJECT MGMT.
ENGINEERS
ENVIRONMENTAL

226 West Main St.
P.O. Box 150
Glenville, WV 26351
(304) 462-5634

56065 Dilles Bottom Road
Shadyside, OH 43947
(740) 671-9911

HONESTY, INTEGRITY, QUALITY

DRAWN BY	FILE NO.	DATE	CADD FILE:
K.D.W.	7889	12-20-13	7889REC.PLANOXF157.dwg

TOPO SECTION OF OXFFORD 7.5'
USGS TOPO QUADRANGLE

SCALE: 1"=500'

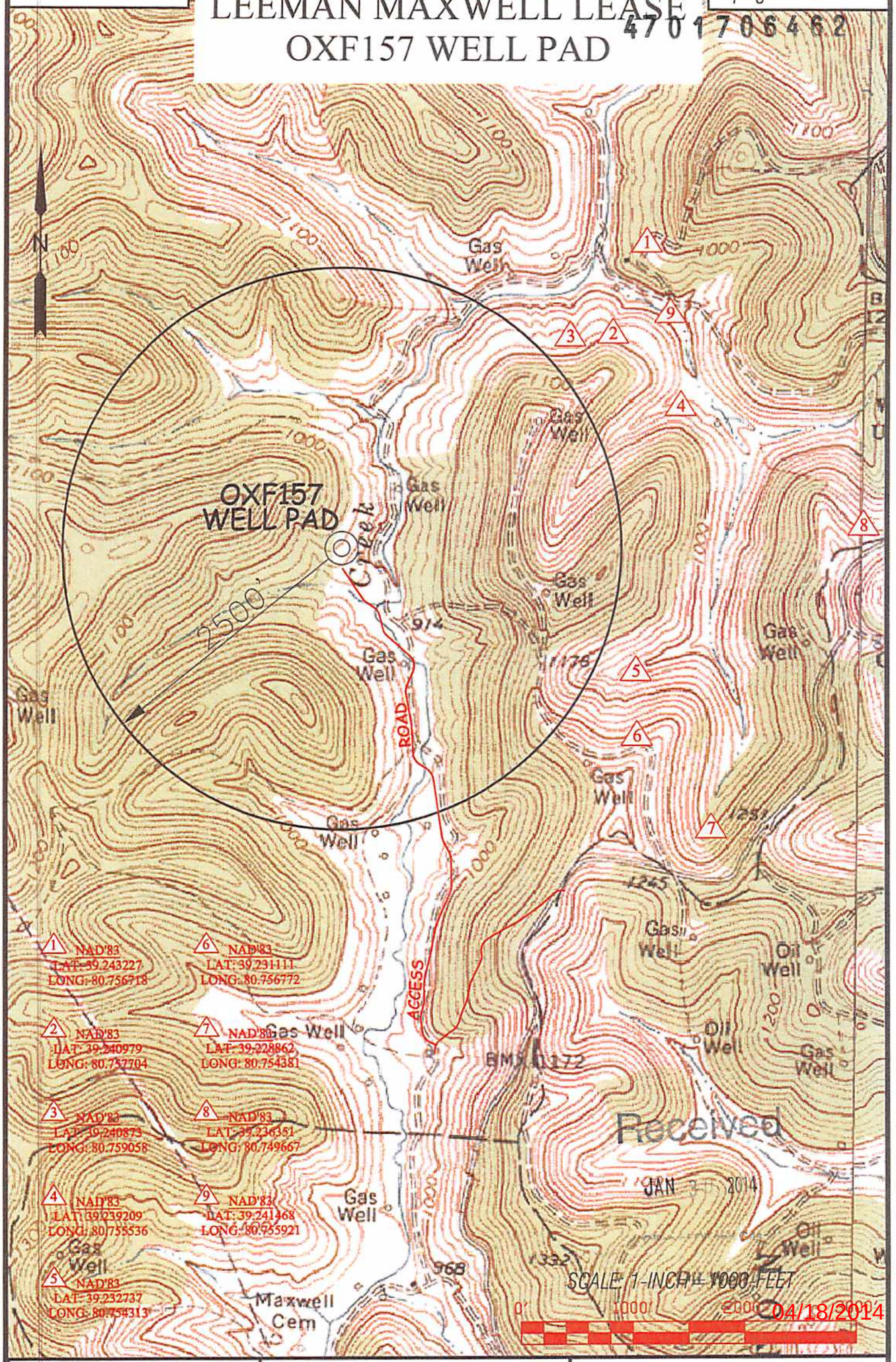
0' 500' 1000'

WATER SAMPLES

LEEMAN MAXWELL LEASE
OXF157 WELL PAD

4701706462

page of



Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.
SLS SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.
(304) 462-5634 WWW.SLSSURVEYS.COM

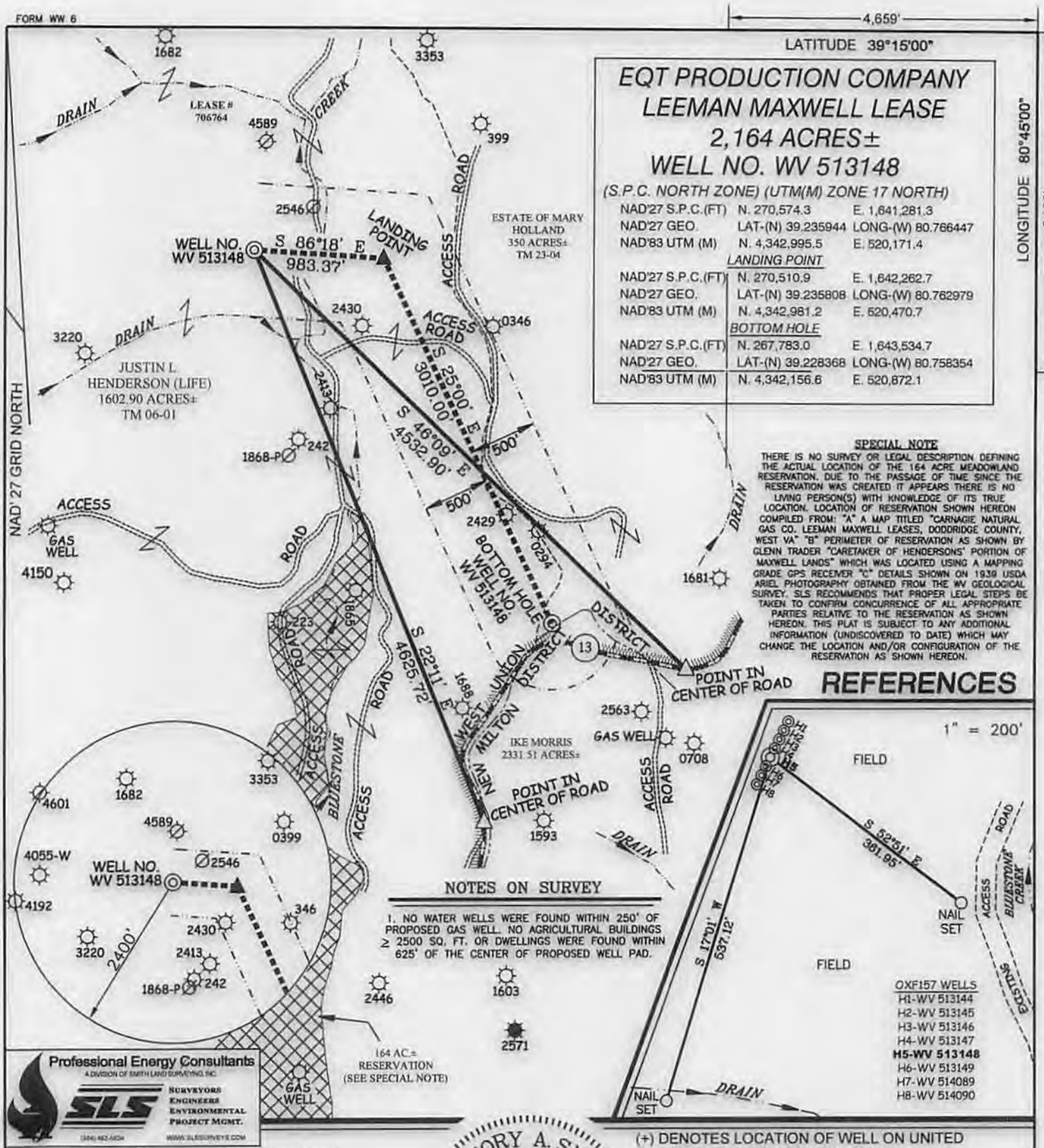
DRAWN BY	FILE NO.	DATE	CADD FILE:
K.D.W.	7889	01/03/14	7889WSOXF157

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

FORM WW-6



Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.
SLS SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.
(304) 462-8634 WWW.SLSSURVEYS.COM

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

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

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

DATE DECEMBER 06 , 20 13

REVISED MARCH 06 , 20 14

OPERATORS WELL NO. WV 513148

API WELL NO. 47 — 017 — 06462
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200

FILE NO. 7889P513148R

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 968'(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± 04/18/2014

LEASE NO. 706764

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 MARCELLUS

ESTIMATED DEPTH 6399'

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

COUNTY NAME

PERMIT

SLS 134808