



**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

February 09, 2015

**WELL WORK PERMIT**

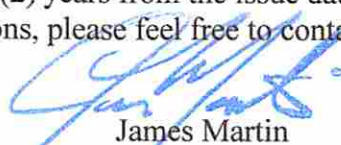
**Horizontal 6A Well**

This permit, API Well Number: 47-3305840, issued to XTO ENERGY, INC., 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: BOGGESS A NORTH UNIT 2H

Farm Name: XTO ENERGY, INC.

**API Well Number: 47-3305840**

**Permit Type: Horizontal 6A Well**

Date Issued: 02/09/2015

Promoting a healthy environment.

02/13/2015

## 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](mailto:DEPOOGNotify@wv.gov) within 30 days of commencement of drilling.

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

1) Well Operator: XTO Energy Inc.

494487940	Harrison	Eagle	Wallace
-----------	----------	-------	---------

  
Operator ID County District Quadrangle

2) Operator's Well Number: Bogges A North Unit 2H Well Pad Name: Bogges A Pad

3) Farm Name/Surface Owner: XTO Energy Inc. Public Road Access: Reese's Run (Harrison Co. Rt. 20/7)

4) Elevation, current ground: 1183' Elevation, proposed post-construction: 1183'

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 Thickness and Associated Pressure(s):  
Target Formation: Marcellus, Depth 7,089', Anticipated Thickness: 150', Associated pressure: 4,650 psi

8) Proposed Total Vertical Depth: 7,100'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 11,200'

11) Proposed Horizontal Leg Length: 4,120'

12) Approximate Fresh Water Strata Depths: 114', 125'

13) Method to Determine Fresh Water Depths: Offsetting Reports

14) Approximate Saltwater Depths: 1012'

15) Approximate Coal Seam Depths: Pittsburgh Coal was strip mined at this location

16) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated - Pittsburgh Coal was strip mined

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes  No

(a) If Yes, provide Mine Info: Name: \_\_\_\_\_  
Depth: \_\_\_\_\_  
Seam: \_\_\_\_\_  
Owner: \_\_\_\_\_

4 655

SDW  
9/30/2014

Received  
Office of Oil & Gas  
OCT 06 2014

WW-6B  
(9/13)

18) CASING AND TUBING PROGRAM

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	20"	New	H-40	94#	40'	40'	40 cuft - C.T.S
Fresh Water	13 3/8"	New	MS-50	48#	300'	300'	300 cuft - C.T.S.
Coal							
Intermediate	9 5/8"	New	J-55	36#	2,700'	2,700'	Lead 600/Tail 600' - C.T.S.
Production	5 1/2"	New	CYP-110	17#	11,200'	11,200'	2400 cuft
Tubing							
Liners							

SDW  
2/4/2015

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	24"	0.438"	960	Type 1	1.19
Fresh Water	13 3/8"	17.5"	0.33"	2,160	Type 1	1.19
Coal						
Intermediate	9 5/8"	12.25"	0.352"	3,520	Type 1	Lead 1.26/Tail 1.19
Production	5 1/2"	8.75" 8.5" 7.875"	0.304"	10,640	Type 1	1.32
Tubing						
Liners						

PACKERS

Kind:				
Sizes:				
Depths Set:				

Received  
Page 2 of 3

FEB - 4 2015

Office of Oil and Gas  
WV Dept. of Environmental Protection

02/13/2015



WW-6B  
(9/13)

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

Drill a new horizontal Marcellus well, utilizing synthetic mud and a closed loop system for both drilling and completion. Install new casing with centralizers.

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

1. Acid Stage - Typically 1500 gallons of 7.5% hydrochloric acid to clear the perforation path in the wellbore. 1500 gals 15% HCl acid. 2. Sand / Proppant Stages - Several stages of pumping water combined with sand at a targeted 80 bpm rate. The maximum pressure and rate used is 10,000 psig and 120 bpm. The sand size may vary from 100 mesh to 30/50 mesh size. 12,500 bbls slick water with 220,000 lbs 40/70, 270,000 lbs 100 mesh sands and 2,200 gals FR 133, 1,500 gals Bioplex 301 and 1,500 gals Bioplex 301 and 1,190 gals antiscale 30. 3. Flush Stage - Slickwater water stage to fill the wellbore to flush the sand from the wellbore. Depending on the water quality, a biocide, friction reducer, iron control, and scale inhibitor may be injected during the completion as well.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 6.78+/-

22) Area to be disturbed for well pad only, less access road (acres): 5.26+/-

23) Describe centralizer placement for each casing string:

Conductor: none  
Fresh Water: 1"-6" above float shoe, 1 at float collar, & 1 at every 4th joint to surface  
Intermediate: 1"-6" above float shoe, 1 at float collar, & 1 at every 4th joint to surface  
Production: 1 at every 4th joint from the kickoff point to 1000' above the kickoff point

24) Describe all cement additives associated with each cement type:

Conductor - Type 1 - no additives  
Fresh Water - Tail - Type 1 - 2% Calcium Chloride, Super Flake  
Intermediate - Lead - Type 1 - 2% Calcium Chloride, Super Flake  
Tail - Type 1 - 2% Calcium Chloride, Super Flake  
Production - Tail 50/50 POZ - Type 1 - Sodium Chloride, Bentonite, Super Flake, Air-Out, R-1, AG-350

Received  
Office of Oil & Gas  
OCT 06 2014

25) Proposed borehole conditioning procedures:

See attached sheet

\*Note: Attach additional sheets as needed.

Bogges A 2H Detailed Casing and Cementing Program													
Type	Hole Size (Inches)	Casing Design Program				Cementing Program							
		Log Size (In)	Length (ft)	Top Position of Bitlog	Grade	Weight (lbf)	Wall Thickness	Burst Pressure Rating	Cementizer Placement	Type	Yield (cu. ft./flask)	Yield (cu. ft./flask) (Net)	Estimated Volume (cu. ft.)
Conductor	24	20	61	07/43	H-40	84	0.432	000	none	Type 1	1.19	none	5.1
Casal									15" above float shoe				
Surface / Fresh Water	17.5	300	07/30	H5-50	46	0.35"	2100		1-1/2" above float shoe	Tal-Type 1	1.19	Calcium chloride, Super Flake	300
Intermediate	12.25	950	07/207	J-55	35	0.302"	3500		1-1/2" above float shoe	Lead-Type 1	1.20	Calcium Chloride, Super Flake	600
Production	6.75 / 6.5 / 7.075	512	07/112007	CYR-10	17	0.304	10040		1-1/2" above float shoe	Tal-5050 POZ-Type 1	1.19	Calcium chloride, Super Flake	100
Tubing Liners									1-1/2" above float shoe	Sodium Chloride, Bentonite Super Flake, Air-Out, R-1, AC-350	1.22		2400

Bogges A 2H Proposed Directional Data									
Hole Section	Hole Size	Drilling Fluid	Drilling	MUD	Condition Procedures				
					Reaction	Condition	Prior to Cementing	After Cementing	After Production
Conductor	24	AMV-100	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air
Conductor	20	AMV-100	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air
French Well	17.5	AMV-100	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air
Intermediate	12.25	AMV-100	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air
Production	6.75 / 6.5 / 7.075	AMV-100	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air	Hole will be drilled with high pressure air
Tubing Liners									

Bogges A 2H Proposed Directional Data

Other directional data  
KOP 6200  
LP 7080  
approx. TD 11200 (rounded up)

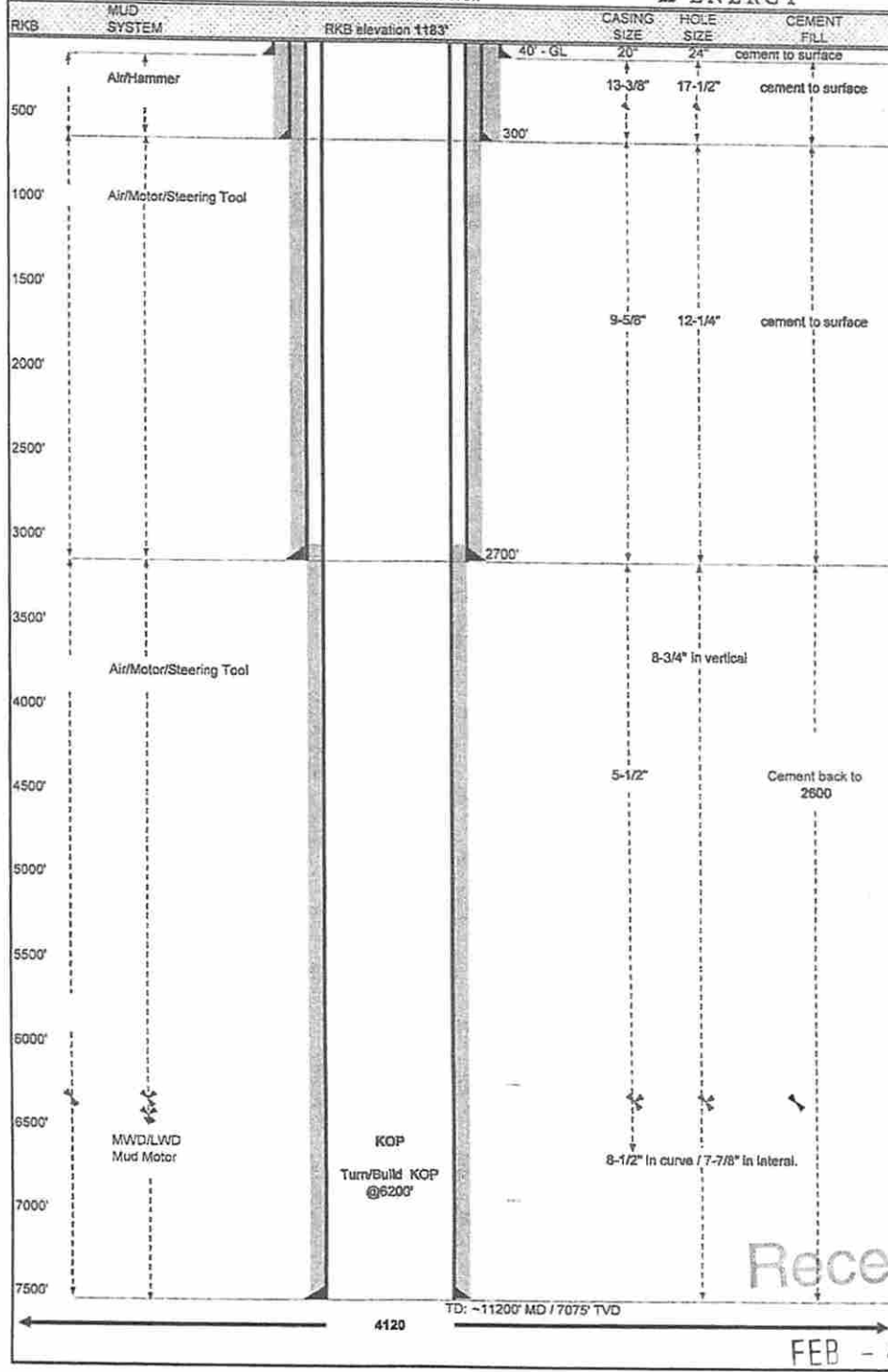
Received

FEB - 4 2015

Office of Oil and Gas  
WV Dept. of Environmental Protection

02/13/2015

Bogges A 2H  
 Harrison County, West Virginia  
 New Drill Horizontal Well



Received

FEB - 4 2015

BOP Equipment Specifications/Diagram/Testing Schedule

Type	Model	Size	Pressure Rating	Testing Schedule
Annular	Shafter Spherical	11"	5,000 psi	<ul style="list-style-type: none"> <li>-full pressure test to 100% of rating</li> <li>Vertical Hole</li> <li>Horizontal Hole</li> <li>upon installation</li> <li>every 30 days</li> <li>upon installation</li> <li>after each bit trip</li> <li>weekly</li> </ul>
Pipe Ram	Cameron Type U	11"	5,000 psi	<ul style="list-style-type: none"> <li>upon installation</li> <li>every 30 days</li> <li>upon installation</li> <li>after each bit trip</li> <li>weekly</li> </ul>
Blind Ram	Cameron Type U	5"	5,000 psi	<ul style="list-style-type: none"> <li>upon installation</li> <li>every 30 days</li> <li>upon installation</li> <li>after each bit trip</li> <li>weekly</li> </ul>
Mud Cross				
Wellhead		11"	5,000 psi	

Record & Gas  
Office of  
14





Memo to File

1/2/13

Re: Bogges Unit A Location Coal

On Wednesday January 2, 2013 I called Kenny Ashton with the WVGES and asked about potential coal seams and mining operations under our planned Bogges Unit A location. I provided him with the following NAD 83 coordinates: 39.376147, -80.385799.

Later that day Mr. Ashton called back and said that the Pittsburgh coal at this location had been stripped. He also said that we are in no danger of hitting the nearby O & R mine because our surface location is at the same elevation of the mine.

Tim Sands

A handwritten signature in black ink, appearing to be 'Tim Sands', written over a horizontal line.

Regulatory Compliance Technician

RECEIVED  
Office of Oil and Gas

Received  
JUL 19 2013  
Office of Oil & Gas  
WV Department of  
Environmental Protection  
JUL 19 2013

02/13/2015

WW-9  
(9/13)

API Number 47 - \_\_\_\_\_ - \_\_\_\_\_  
Operator's Well No. Bogges A North Unit 2H

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name XTO Energy Inc. OP Code 494487940

Watershed (HUC 10) Tenmile Creek Quadrangle Wallace

Elevation 1183' County Harrison District Eagle

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: \_\_\_\_\_

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number 4707302523, 4705500319, 4708505151, 4708509721, 3416729577, 3412124037, 3405320968 )
- Reuse (at API Number \_\_\_\_\_ )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

*SOW  
9/30/2014*

Will closed loop system be used? If so, describe: Depending on brand, system would entail 2 centrifuges & another cutting drying method: grinder, drying shakers or verti-g mud.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air/water to 7100', then switch to synthetic

-If oil based, what type? Synthetic, petroleum, etc. Synthetic

Additives to be used in drilling medium? See additional page

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) NA

-Landfill or offsite name/permit number? Meadowbrook Landfill - #SWF 1032

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) Gary Beall

Company Official Title Production Superintendent

Received  
Office of Oil & Gas

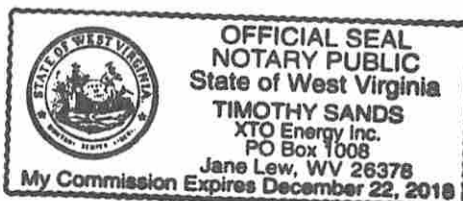
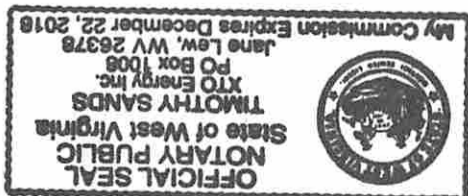
OCT 06 2014

Subscribed and sworn before me this 28<sup>th</sup> day of September, 2014

 Notary Public

My commission expires 12/22/18

02/13/2015



**XTO Energy Inc.**

Proposed Revegetation Treatment: Acres Disturbed 6.78 +/- (already re-vegetated) Prevegetation pH \_\_\_\_\_

Lime 2-6 Tons/acre or to correct to pH \_\_\_\_\_

Fertilizer type 10-20-20

Fertilizer amount 678 - 1000 lbs/acre

Mulch 3 Tons/acre

**Seed Mixtures**

**Temporary**

**Permanent**

Seed Type	lbs/acre	Seed Type	lbs/acre
Timothy	50	Tall Fescue	40
		Birdsfoot Trefoil	10

**Attach:**

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: Pre-seed/mulch as soon as reasonably possible per regulation. Upgrade ETS as needed per WV DEP ETS manual.

Title: Oil & Gas Inspector

Date: 9/30/2014

Field Reviewed? (  ) Yes (  ) No

**Received**  
**Office of Oil & Gas**

**OCT 06 2014**

**02/13/2015**

### XTO Drilling Additives

Product Name	CAS #	Approximate Amount on Location (lbs)
Bentone 910	14808-60-7	2500
Cedar Fiber	n/a	5000
CyberDrill	93762-80-2	20000
Calcium Chloride	10043-52-4	20000
	111-40-0	
	26952-14-7	
CyberCoat	62442-97-7	3000
CyberMul	70321-73-2	3000
CyberPlus	71-36-3	3000
Lime	1305-62-0	15000
New Carb	1317-65-3	3000
Walnut Shells	n/a	2500
	7727-43-7	
	1332-58-7	
	14808-60-7	
New Bar	471-34-1	200000
OptiThin	68442-97-7	8000
	12174-11-7	
	14808-60-7	
Oil Dry	01309-48-4	600
	9016-45-9	
	68131-71-5	
	1310-73-2	
	27176-87-0	
	1300-72-7	
OptiClean	7758-29-4	1800
OptiG	12002-43-6	5000
SynDril 470	64741-86-2	81000

Received  
Office of Oil & Gas  
OCT 06 2014

02/13/2015



XTO Energy Inc.  
Well Site Safety Plan

Bogges A Pad  
1103 Reeses Run Road  
Lumberport, WV 26386

Received

FEB - 4 2015

Office of Oil and Gas  
WV Dept. of Environmental Protection

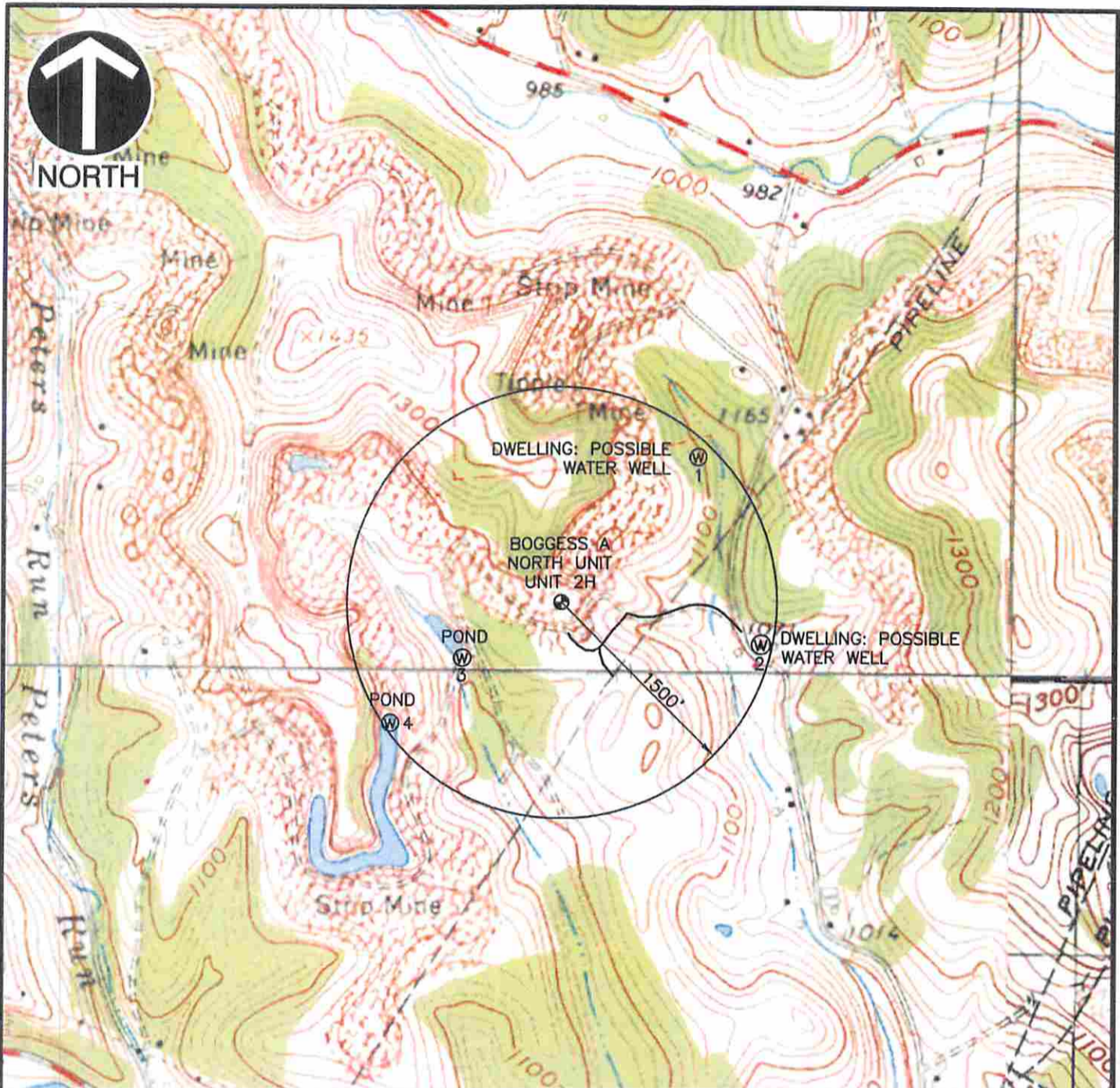
SDW  
9/30/2014

SDW  
2/4/2015  
Changes to Collision Avoidance

02/13/2015



NORTH



**REFERENCE**

1. TOPOGRAPHIC INFORMATION BASED UPON BOGCESS UNIT. SURVEY CONDUCTED BY ADAMS LAND SURVEYING, PLLC IN SEPT. 07, 2012 AND UPDATED BY CIVIL AND ENVIRONMENTAL CONSULTANTS, INC. ON SEPT 03, 2014.
2. U.S.G.S. 7.5' TOPOGRAPHIC MAP, WALLACE QUADRANGLE, WV. DATED: 1960, PHOTOREVISED: 1978

SCALE IN FEET



**Civil & Environmental Consultants, Inc.**

99 Cambridge Place - Bridgeport, WV 26330  
Ph: 304.933.3119 · Fax: 304.933.3327  
www.cecinc.com

XTO ENERGY INC.  
BOGCESS A UNIT  
EAGLE DISTRICT  
HARRISON COUNTY, WV

WATERSHED: REESE'S RUN, A TRIBUTARY OF  
TENMILE CREEK

DRAWN BY: DAM	CHECKED BY: REA	APPROVED BY: DEM	FIGURE NO: 142-355
DATE: SEPT. 3, 2014	DWG SCALE: 1"=1000'	PROJECT NO: 142-355	142-355

OCT 06 2014

02/13/2015

P:\2014\142-355\CADD\DWG\142355-SRV-WELL PLAT 2H-WATER TOPO.dwg[2H WATER TOPO] LS:(9/4/2014 - dmartinez) - LP: 9/5/2014 1:31 PM

Boggess A Unit

Possible water wells or sources:

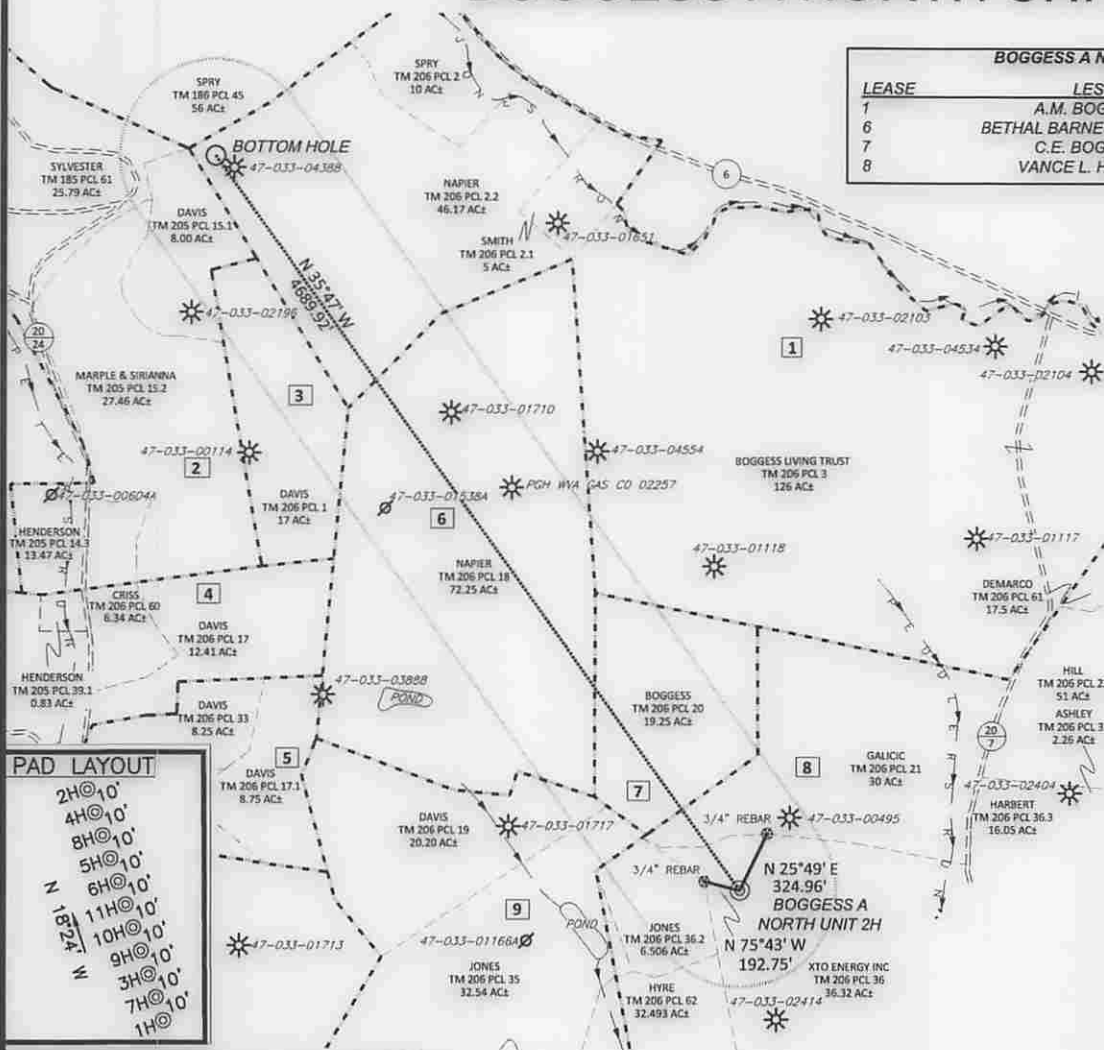
- 1) Ethan D. and Brandy L. Galicic; 1175 Reese's Run Rd., Lumberport, WV 26386
- 2) Melisha A. Harbert, 1004 Reese's Run Rd., Lumberport, WV 26386
- 3) Richard B. Jones 230 Candle Light Dr., Clarksburg, WV 26301
- 4) Richard B. Jones 230 Candle Light Dr., Clarksburg, WV 26301

Received 02/13/2015  
Office of Oil & Gas  
OCT 06 2014



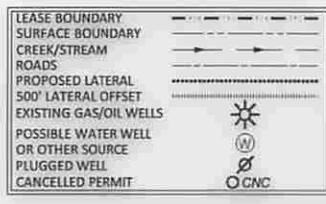
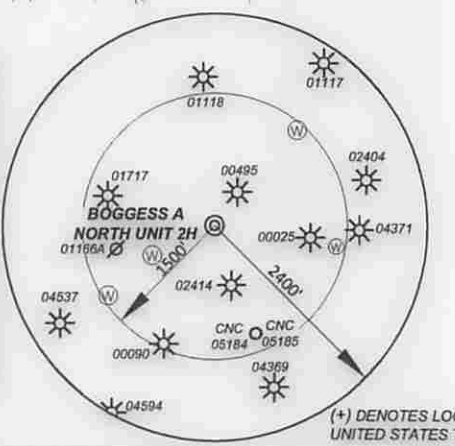
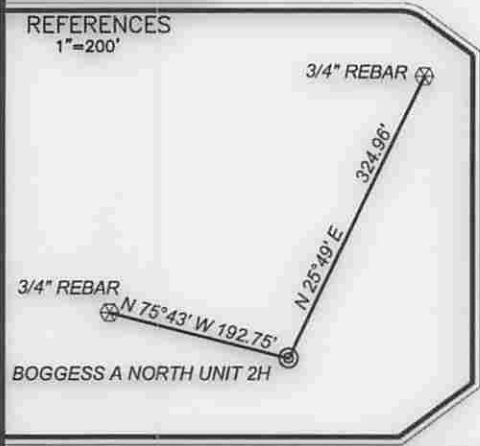
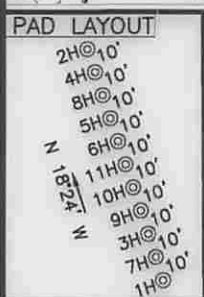
# BOGGESS A NORTH UNIT 2H

LEASE	LESSOR	ACREAGE
1	A.M. BOGGESS et al	180.75±
6	BETHAL BARNES HELDRETH et al	72±
7	C.E. BOGGESS et al	20±
8	VANCE L. HORNOR et al	186.5±



BOGGESS A NORTH UNIT 2H SURFACE HOLE		BOGGESS A NORTH UNIT 2H BOTTOM HOLE	
<b>STATE PLANE COORDINATES NORTH ZONE-NAD 27</b>		<b>STATE PLANE COORDINATES NORTH ZONE-NAD 27</b>	
(N) 320409	(N) 324213	(N) 324213	(N) 324213
(E) 1749513	(E) 1746771	(E) 1746771	(E) 1746771
<b>L &amp; L DECIMAL NAD 27</b>		<b>L &amp; L DECIMAL NAD 27</b>	
39.3763194	39.3866897	39.3866897	39.3866897
80.3861020	80.3959372	80.3959372	80.3959372
<b>UTM (NAD 83) ZONE 17 METERS</b>		<b>UTM (NAD 83) ZONE 17 METERS</b>	
(N) 4358728	(N) 4359673	(N) 4359673	(N) 4359673
(E) 552882	(E) 552037	(E) 552037	(E) 552037

- NOTES ON SURVEY**
- NO OCCUPIED DWELLINGS OR BUILDINGS 2500 SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY WITHIN 625' OF THE CENTER OF THE WELL PAD WERE OBSERVED.
  - NO WATER WELLS OR DEVELOPED SPRINGS USED FOR HUMAN OR DOMESTIC ANIMAL CONSUMPTION WERE FOUND WITHIN 250'.
  - SURFACE OWNERSHIP TAKEN FROM THE HARRISON COUNTY TAX ASSESSOR AND COUNTY CLERK OFFICES IN JULY, 2014.
  - WELL LATITUDE AND LONGITUDE FROM SURVEY GRADE (OPUS SOLUTION).
  - TIES TO CORNERS AND REFERENCES BASED ON WV STATE PLANE COORDINATE SYSTEM, NAD 27 NORTH ZONE.
  - LEASE INFORMATION PROVIDED BY XTO ENERGY, INC.



99 Cambridge Place Bridgeport, WV 26330  
 Toll Free 855-488-9539  
 Fax 304-933-3327



**Civil & Environmental Consultants, Inc.**

DATE JAN. 26, 2015

SCALE 1" = 1000' ACCURACY 1/2500

OPERATORS WELL No. BOGGESS A NORTH UNIT 2H

47 - 033 - 05840 H6A  
API No.

TYPE OF WELL:

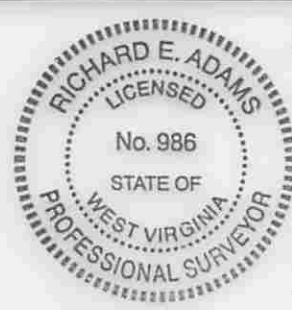
GAS:  
 Production  Storage  \*Deep  \*Shallow

PROPOSED WORK ON LOCATION:

Drill  Drill Deeper  Redrill  Convert   
 Fracture/ Stimulate  \*Plug off to Formation   
 Perforate New Formation  Plug and Abandon   
 Clean/ Replug  Other Than Above   
 If "Other" Please see Details below—  
 DETAILS OF PROPOSED WORK \_\_\_\_\_

\*TARGET FORMATION MARCELLUS  
 ESTIMATED DEPTH TVD: 7,100', TMD: 11,200'

WELL OPERATOR XTO ENERGY INC.  
 ADDRESS 810 HOUSTON STREET  
FORT WORTH, TEXAS 76102



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

*Richard E. Adams*

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



WELL AREA & LOCATION INFORMATION:

ELEVATION SOURCE GPS (OPUS)  
 ELEVATION 1183'  
 WATERSHED REESES RUN  
 COUNTY HARRISON TOPO QUAD WALLACE  
 SURFACE OWNER XTO ENERGY INC.  
 ACREAGE 36.32 ±  
 ROYALTY OWNER VANCE L. HORNOR, G.P. HORNOR, J.H. HORNOR, M.L. HORNOR, V.L. HORNOR INVESTMENT COMPANY, et al  
 LEASE ACREAGE 459.25 ±

DESIGNATED AGENT GARY BEALL  
 ADDRESS P.O. BOX 1008  
JANE LEW, WV 26385

RECEIVED DISTRICT OFFICE OF OIL AND GAS  
 02/13/2015  
 JAN 29 2015  
 Environmental Protection

SURVEYED LATITUDE 39°22'34.8"