west virginia department of environmental protection

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

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

October 10, 2014

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-4902338, 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: FENN A 3H
Farm Name: XTO ENERGY, INC.
API Well Number: 47-4902338
Permit Type: Horizontal 6A Well
Date Issued: 10/10/2014

Promoting a healthy environment.

API Number: 49-02338

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.

49-02338

CK 7562166
$15200

WW-6B
(9/13)

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

		49	3	606
1) Well Operator: XTO Energy Inc.	494487940	Marion	Lincoln	Shinnston 7.5'
	Operator ID	County	District	Quadrangle

2) Operator's Well Number: Fenn A 3H Well Pad Name: Fenn Pad

3) Farm Name/Surface Owner: XTO Energy Inc. Public Road Access: Marion County Rt. 48

4) Elevation, current ground: 1252' Elevation, proposed post-construction: 1252'

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 7,350', Anticipated Thickness: 150', Associated pressure: 4,650 psi

8) Proposed Total Vertical Depth: 7,486'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 14,790'

11) Proposed Horizontal Leg Length: 6,790'

12) Approximate Fresh Water Strata Depths: 406'

13) Method to Determine Fresh Water Depths: Offsetting Reports

14) Approximate Saltwater Depths: None

15) Approximate Coal Seam Depths: 412' & 461'

16) Approximate Depth to Possible Void (coal mine, karst, other): 412' See void encounter attached -LKC

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: ____

WRH
7-15-14

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Fenn A 3H – Void Encounter

We will nipple up an annular preventer to be able to handle any flow should we encounter a void. We expect to encounter a void at ~412' GL where the Pittsburgh Coal seam has been removed. We plan to set 13 3/8" casing as a surface/coal protective string ~50' below the base of this void.

We will run a cement basket on the casing to be above the void.

We will cement the bottom of the casing in place as a balance job, then do a top out job on the annulus above the mine.

Once cemented in place, we will continue on with our normal casing design, which would be to set 9 5/8" intermediate casing at ~3000'.

Derek Sanderson

Drilling Engineer

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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	24"	New	B	95#	80'	80'	120 cuft - C.T.S
Fresh Water	13 3/8"	New	H-40	48#	460'	460'	500 cuft - C.T.S.
Coal							
Intermediate	9 5/8"	New	J-55	36#	3,000'	3,000'	Lead 700'/Tail 700' - C.T.S.
Production	5 1/2"	New	CYP-110	20#	14,790'	14,790'	Lead 1500'/Tail 1400'
Tubing							
Liners							

WRH
7-15-14

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	24"	28"	0.375"	960	Type 1	1.19
Fresh Water	13 3/8"	17.5"	0.33"	1,730	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" / 7.875"	0.361"	12,640	Ld 50:50 POZ/H/Tail Class H	Lead 1.11/Tail 1.19
Tubing						
Liners						

PACKERS

Kind:				
Sizes:				
Depths Set:				

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(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 to30/50 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): 12.34

22) Area to be disturbed for well pad only, less access road (acres): 4.78

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 2nd joint from TOC to TD

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 - Lead: 50/50 POZ/H -Tail Class H - R-3, FP-12L, CD-32, FL-52, ASA-301, SMS, FL-62, BA-10A

25) Proposed borehole conditioning procedures:

See attached sheet

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*Note: Attach additional sheets as needed.

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Fenn A 3H Detailed Casing and Cementing Program

Type	Hole Size (inches)	Casing Design/Program: Csg Size (in)	Length (ft)	Top/Bottom of String	Grade	Weight (ppf)	Wall Thickness	Burst Pressure Rating	Centralizer Placement	Cementing Program: Type	Yield (cu. ft/sk)	Additives (trade names are Baker Hughes)	Estimated Volume (cu. ft.)
Conductor	28	24	80	0' / 80	B	95	0.375	960	none	Type 1	1.19	none	120
Coal	22	18	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Surface / Fresh Water	17.5	13 3/8	460	0' / 460'	H-40	48	0.33"	1730	1-6" above float shoe 1-at float collar 1-every 4th jt to surface	Tail -Type 1	1.19	Calcium chloride, Super Flake	500
Intermediate	12.25	9 5/8	3000	0' / 3000'	J-55	36	0.352"	3520	1-6" above float shoe 1-at float collar 1-every 4th jt to surface	Lead-Type 1	1.26	Calcium Chloride, Super Flake	700
										Tail -Type 1	1.19	Calcium chloride, Super Flake	700
Production	8.75/ 7.875	5 1/2	14,790	0' / 14790'	CYP-110	20	0.361"	12640	every 2nd joint from TOC to TD	Lead: 50:50 POZ/H	1.11	R-3, FP-12L, CD-32, FL-52, ASA-301, SMS, FL-62, BA-10A	1500
										Tail: Class H	1.19	R-3, FP-12L, CD-32, FL-52, ASA-301, SMS, FL-62, BA-10A	1400
Tubing													
Liners													

Fenn A 3H Proposed Wellbore Conditioning Procedures

Hole Section	Hole Size	Drilling Fluid	Condition Procedures: Drilling	At TD	Running Casing	Prior to Cementing
Conductor	28	Air/Water	Hole will be circulated with high pressure air	Hole will be blown clean with air prior to pulling out of hole to run casing	Hole will be filled with fluid and circulated to surface if conditions require	Casing will be filled with fluid and returns taken at surface prior to pumping cement
Coal	22	Air/Water	Hole will be circulated with high pressure air	Hole will be blown clean with air prior to pulling out of hole to run casing	Hole will be filled with fluid and circulated to surface if conditions require	Casing will be filled with fluid and returns taken at surface prior to pumping cement
Fresh Water	17 5	Air/Water	Hole will be circulated with high pressure air	Hole will be blown clean with air prior to pulling out of hole to run casing	Hole will be filled with fluid and circulated to surface if conditions require	Casing will be filled with fluid and returns taken at surface prior to pumping cement
Intermediate	12 25	Air/Water	Hole will be circulated with high pressure air	Hole will be blown clean with air prior to pulling out of hole to run casing	Hole will be filled with fluid and circulated to surface if conditions require	Casing will be filled with fluid and returns taken at surface prior to pumping cement
Production	8 75/7 875"	Air / Non-aqueous based mud	cuttings out of the hole, MW will be approximately 11 5ppg-14 0ppg for stability and overbalance As required, the hole will be circulated at high pump	The hole will be circulated at maximum possible pump rate and the drill string will be rotated at the maximum rpm	Hole will be circulated as necessary while running casing	Hole will be circulated at least one bottoms up prior to pumping cement
Tubing						
Liners						

Fenn A 3H Proposed Directional Data

	Measured Depth	Inclination Angle	Azimuth Direction	
Proposed Angle/Direction of Well		90	102	*Lateral*
Approx. Depth at which well deviates from vertical		5600		*KOP*
Angle and Direction of Non-vertical wellbore until target depth reached		31	239	*Curve/Throw*

Other directional data

KOP	5600
LP	8001
approx. TD	14790

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Fenn A 3H
Marion County, WV
New Drill Horizontal Well

XTO ENERGY

PROPOSED LOGGING	MUD SYSTEM		CASING AND CEMENT PROGRAM	HOLE SIZE
			cement to surface 24" 0.375" line pipe	24"
none	Air	approx. 80'	cement to surface 13 3/8" 48# H-40, STC	17.5"
none	Air	approx. 460'	cement to surface 9 5/8" 36# J-55 LTC	12.25"
	Water	min. 3000' KOP: @ 5600'	Top of Lead: 4500' MD	8.75"
no open hole wireline logs	@ mud up point displace hole with mud Mud: Escaid 110-synthetic based MW: 12.5 ppg +/- 0.1 ppg 6 rpm: 12-15 YP: 25-30 PV:20-25		Top of Tail:7900' Acid Soluble Cement 5.5" 20# CYP-110 CDC	7.875"

~14790'MD/7486'TVD

6790' lateral

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WW-9
(9/13)

API Number 47 - 49 - 02338
Operator's Well No. Fenn A 3H

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) West Fork River 0502000206 Quadrangle Shinnston 7.5'

Elevation 1252' County Marion District Lincoln

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 _____

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, S&S Landfill - #SWF 4902

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

Subscribed and sworn before me this 8th day of July, 20 14

_____ Notary Public

My commission expires 12/22/18

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OFFICIAL SEAL
NOTARY PUBLIC
State of West Virginia
TIMOTHY SANDS
XTO Energy Inc.
PO Box 1008
Jane Lew, WV 26378
My Commission Expires December 22, 2018

49-02338

Form WW-9

Operator's Well No. Fenn A 3H

XTO Energy Inc.

Proposed Revegetation Treatment: Acres Disturbed .11 new, 12.34 total Prevegetation pH _____

Lime 2-3 Tons/acre or to correct to pH _____

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Flexterra Hydroseed per E&S plans		Flexterra Hydroseed per E&S plans	

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: _____

Title: Eviromental Inspector Date: 7-15-14

Field Reviewed? (✓) Yes ( ) No

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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
CyberCoat	111-40-0 26952-14-7 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
New Bar	7727-43-7 1332-58-7 14808-60-7 471-34-1	200000
OptiThin	68442-97-7	8000
Oil Dry	12174-11-7 14808-60-7 01309-48-4	600
OptiClean	9016-45-9 68131-71-5 1310-73-2 27176-87-0 1300-72-7 7758-29-4	1800
OptiG	12002-43-6	5000
SynDril 470	64741-86-2	81000

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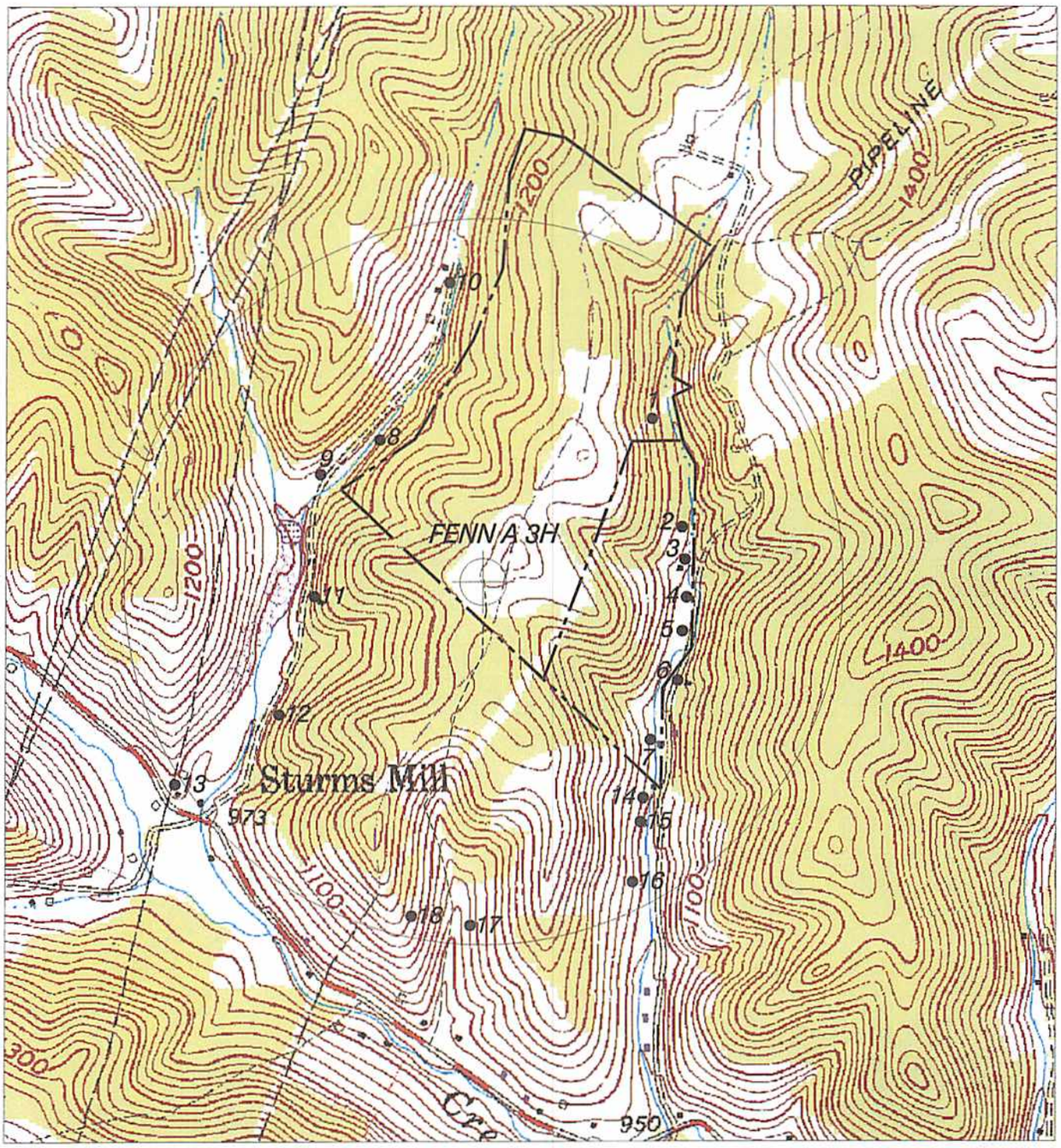
Form W-9

XTO ENERGY INC.
FENN A 3H WATER



NORTH

HUPP Surveying & Mapping P.O. BOX 647 GRANTSVILLE, WV 26147 PH:(304)354-7035 E-MAIL: hupp@frontiernet.net	1" = 1000' Shinnston Quad	XTO ENERGY INC. 810 HOUSTON STREET FORT WORTH, TX 76102

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FORM WW 6

LONG. 80°19'04.2" — 7,360'

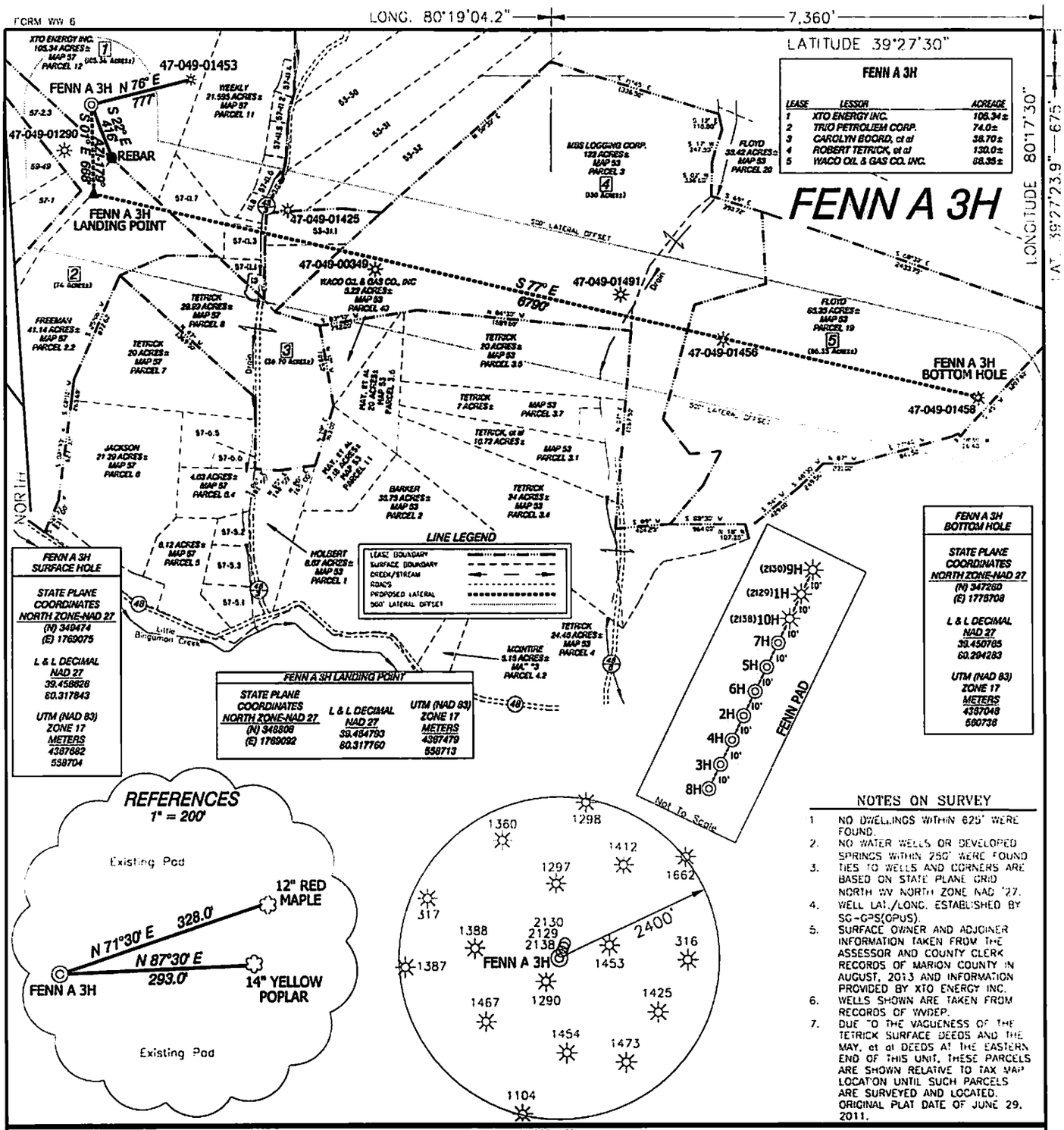
LATITUDE 39°27'30"

LONGITUDE 80°17'30"

LAT. 39°27'23.9" — 675'

FENN A 3H

FENN A 3H		
LEASE	LESSOR	ACREAGE
1	XTO ENERGY INC.	105.34±
2	TRIO PETROLIEM CORP.	74.0±
3	CAROLYN BOORD, et al	38.70±
4	ROBERT TETRICK, et al	130.0±
5	WACO OIL & GAS CO. INC.	68.35±



FENN A 3H SURFACE HOLE	
STATE PLANE COORDINATES NORTH ZONE-NAD 27	
(N) 349474	
(E) 1769075	
L & L DECIMAL NAD 27	
39.456826	
80.317843	
UTM (NAD 83) ZONE 17 METERS	
4367682	
558704	

FENN A 3H LANDING POINT		
STATE PLANE COORDINATES NORTH ZONE-NAD 27	L & L DECIMAL NAD 27	UTM (NAD 83) ZONE 17 METERS
(N) 348808	39.454793	4367479
(E) 1769092	80.317760	558713

FENN A 3H BOTTOM HOLE	
STATE PLANE COORDINATES NORTH ZONE-NAD 27	
(N) 347260	
(E) 1778708	
L & L DECIMAL NAD 27	
39.450785	
80.294283	
UTM (NAD 83) ZONE 17 METERS	
4367049	
560736	

NOTES ON SURVEY

1. NO DWELLINGS WITHIN 625' WERE FOUND.
2. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND
3. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV NORTH ZONE NAD '27.
4. WELL LAT./LONG. ESTABLISHED BY SG-GPS(OPUS).
5. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF MARION COUNTY IN AUGUST, 2013 AND INFORMATION PROVIDED BY XTO ENERGY INC.
6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.
7. DUE TO THE VAGUENESS OF THE TETRICK SURFACE DEEDS AND THE MAY, et al DEEDS AT THE EASTERN END OF THIS UNIT, THESE PARCELS ARE SHOWN RELATIVE TO TAX MAP LOCATION UNTIL SUCH PARCELS ARE SURVEYED AND LOCATED. ORIGINAL PLAT DATE OF JUNE 29, 2011.

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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 834

HUPP Surveying & Mapping
P.O. Box 647 Grantsville, WV 26147
(304) 354-7035 EMAIL: hupp@frontiernet.net

DOYLE HUPP JR. LICENSED No. 834 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

DATE JULY 1, 20 14

OPERATORS WELL NO. FENN A 3H

API WELL NO. 47 - 049 - 02338 H6A
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W1982 (BK45-35)

PROVEN SOURCE OF ELEVATION SG-GPS (OPUS) SCALE 1" = 1000'

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 X SHALLOW

LOCATION :

ELEVATION 1252' WATERSHED TRIBUTARY OF LITTLE BINGAMON CREEK

DISTRICT LINCOLN COUNTY MARION QUADRANGLE SHINNSTON 7.5'

SURFACE OWNER XTO ENERGY INC. ACREAGE 105.34±

ROYALTY OWNER XTO ENERGY INC., et al LEASE ACREAGE 432.39±

PROPOSED WORK : LEASE NO. ___

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 TVD - 7500' MD - 15,500'

WELL OPERATOR XTO ENERGY INC. DESIGNATED AGENT GARY BEALL

ADDRESS 810 HOUSTON STREET FORT WORTH, TX 76102 ADDRESS P.O. BOX 1008 JANE LEW, WV 26378

COUNTY NAME

PERMIT

RECEIVED Office of Oil & Gas