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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Wednesday, October 23, 2019  
WELL WORK PERMIT  
Horizontal 6A / New Drill

XTO ENERGY, INC.  
810 HOUSTON STREET  
FORT WORTH, TX 76102

Re: Permit approval for ICE SOUTH UNIT 1H  
47-033-05973-00-00

This well work permit 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 any additional specific 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 of 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.

Per 35 CSR 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- 0450.

James A. Martin  
Chief

Operator's Well Number: ICE SOUTH UNIT 1H  
Farm Name: XTO ENERGY INC  
U.S. WELL NUMBER: 47-033-05973-00-00  
Horizontal 6A New Drill  
Date Issued: 10/23/2019

# 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 one hundred (100) 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. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. 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.
10. 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.




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 (304) 926-0450  
 Fax: (304) 926-0152

Austin Caperton, Cabinet Secretary  
 dep.wv.gov

**ORDER  
 ISSUED UNDER  
 WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 6A**

TO: XTO Energy, Inc.  
 810 Houston Street  
 Fort Worth, TX 76102

DATE: May 15, 2018  
 ORDER NO.: 2018-W-1

**INTRODUCTION**

This Order (hereinafter "Order") is issued by the Office of Oil and Gas (hereinafter "OOG"), by and through its Chief, pursuant to the authority of W. Va. Code §§ 22-1-1, 22-6-1 and 22-6A-1 *et seq.* to XTO Energy, Inc. (hereinafter "XTO" or "Operator"), collectively the "Parties."

**FINDINGS OF THE CHIEF**

In support of this Order, the Chief hereby finds the following:

1. OOG, an office within the West Virginia Department of Environmental Protection, is the agency with the duty and authority to execute and enforce W. Va. Code §22-6-1 and §22-6A-1 *et seq.*, and the rules and regulations promulgated thereunder.
2. XTO is a "person" as defined by W. Va. Code §22-6-1(n), with a corporate address as 810 Houston Street, Fort Worth, Texas 76102
3. On May 19, 2017, XTO submitted a well work permit application identified as API# 47-033-05898. Then on November 1, 2017 and January 10, 2018, XTO Energy, Inc. also submitted well work permit applications identified as API#s 47-033-05913 and 47-033-05919. The three proposed wells are to be located on the Ice Pad in Clay District of Harrison County, West Virginia.
4. On May 19, 2017, XTO requested a waiver for Wetlands A and B outlined in Attachment 1, from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit applications identified as API#s 47-033-05898, 47-033-05913 and 47-033-05919.

## CONCLUSIONS OF LAW

1. West Virginia Code §22-1-6(d) requires, in part, that “in addition to other powers, duties and responsibilities granted and assigned to the secretary by this chapter, the secretary is authorized and empowered to... (3) Enter private lands to make surveys and inspections for environmental protection purposes; to investigate for violations of statutes or rules which the Office of Oil and Gas is charged with enforcing; to serve and execute warrants and processes; to make arrests; issue orders, which for the purposes of this chapter include consent agreements; and to otherwise enforce the statutes or rules which the Office of Oil and Gas is charged with enforcing.”
2. West Virginia Code §22-6A-2(a)(6) requires, in part, that “Concomitant with the broad powers to condition the issuance of well work permits, the secretary should also have broad authority to waive certain minimum requirements of this article when, in his or her discretion, such waiver is appropriate: *Provided*, That the secretary shall submit a written report of the number of waivers granted to the Legislature commencing January 1, 2013, and each year thereafter.”
3. West Virginia Code §22-6A-12(b) requires, in part, that “no well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the Office of Oil and Gas shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The Office of Oil and Gas may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary.”

## **ORDER**

West Virginia Code §22-6A-12(b) requires, in part, that “no well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland. The Office of Oil and Gas grants the request for a waiver for Wetlands A and B from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit applications identified as API#s 47-033-05898, 47-033-05913 and 47-033-05919. The Office of Oil and Gas hereby **ORDERS** that XTO shall meet the following site construction and operational requirements for the Ice Well Pad:

- a. A berm shall be constructed around the perimeter of the pad to contain any potential spills and storm water runoff. Berm is to be at least twenty-four inches (24”) in height;
- b. Erosion control blankets shall be installed on all slopes and down gradient locations of the pad as erosion and sediment controlling BMPs;
- c. Wetland A is not at risk sedimentation due to its location upslope of the well pad.
- d. Wetland B shall be protected by the berm constructed around the pad but due to its location across the slope from the pad it is unlikely to be at risk for sedimentation or impact. Extra care shall be provided during construction to ensure no impact to the wetland shall occur.
- e. Disturbed areas not used for operations shall be seeded and mulched per the seeding tables in the WVDEP-OOG Erosion and Sediment Control Manual;
- f. Drill cuttings and associated drilling mud shall be disposed of in a permitted landfill;
- g. Waste generated by the flowback treatment systems shall be sent to offsite disposal at a permitted landfill;
- h. Weekly site inspections shall be conducted to monitor and maintain the integrity of the BMP storm water controls;
- i. Weekly storm water and spill prevention inspections shall be conducted focusing on storm water and spill prevention BMPs and maintenance of these BMPs;
- j. Inspections of the storm water and spill prevention measures shall be conducted after any major storm event defined as a half inch (½”) rain within any twenty-four (24) hour period;
- k. Pad inspections shall be conducted no less than once a week to identify and mitigate potential deficiencies;
- l. All records from inspections shall be maintained on site for the life of the project and be available upon request.

Thus ORDERED, the 15th day of May, 2018.

IN THE NAME OF THE STATE OF WEST VIRGINIA:

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

By:   
JAMES A. MARTIN, CHIEF











4703305973

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: \_\_\_\_\_

Operator's Well Number: Ice South Unit 1H

Well Operator: XTO ENERGY, INC

Well Number: ICE SOUTH UNIT 1H

Well Pad Name: ICE PAD

County, District, Quadrangle of Well Location: Harrison County, Clay District, Shinnston Quadrangle

**Answer the questions below to request a waiver from West Virginia Department of Environmental Protection for any wetlands or perennial streams which lie within one hundred feet of proposed project Limit of Disturbance (LOD), which includes any erosion and sediment control devices to be used.**

**This waiver shall be requested pursuant to Chapter 22 Article 6A Section 12 of West Virginia Code, which states:**

§22-6A-12(b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows:

- (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir.
- (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake.
- (3) For a groundwater source, the distance shall be measured from the wellhead or spring.

The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary.

§22-6A-12(c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section.

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11/3/14

Wetland and Perennial Stream Waiver Request

API Number: \_\_\_\_\_

Operator's Well Number: Ice South Unit 1H

**Answer in the space provided, or use additional pages as necessary to fully answer the questions below:**

- 1. Describe the proposed project location, including unique identifying names of all wetlands, and the names of perennial streams for which the waiver is sought.**

The project is located at the site of an existing gravel drive off of County Route 8/6.

There are 2 wetlands located within the wetland delineation study area, both of which are located outside the limits of disturbance.

Wetland A could not be at risk of sedimentation or impact since it is located upslope of the well pad.

Wetland B would not be at risk due to existing terrain that would direct flow away from the wetland. The well pad is contained within an earthen berm and jersey barrier.

- 2. Justify the proposed activity by describing alternatives to this project that were considered.**

- a. Include a No-Action Alternative as to show "the future without the project"
- b. Location Alternatives must be shown
- c. Must demonstrate why a one hundred foot buffer cannot be maintained
- d. Describe how the proposed project is the least environmentally damaging practicable alternative

The proposed pad was placed at the flattest part of the site below the wetland A. The drive and well pad are located on a parcel purchased by XTO Energy, Inc. prior to the WVDEP 100' offset restrictions from wetlands and streams. There is no other viable design of the site within the property.

Due to the slopes surrounding the pad, the grading north of the well pad extends within the 100' buffer of the wetland. If the slope was pulled back to avoid the buffer areas, there would not be enough pad area for the safe completion of activities. Proposed slopes are 2:1 and will be protected with a combination of erosion control blanketing and compost filter sock until a permanent vegetated stabilization has been achieved. No streams or wetlands will be disturbed and they will be monitored to make sure the erosion and sedimentation controls are working as designed.

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11/3/14

Wetland and Perennial Stream Waiver Request

API Number: \_\_\_\_\_

Operator's Well Number: Ice South Unit 1H

- 3. Identify sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. This description should include all additional erosion and sediment control measures and devices that will be used.**

The well site was designed with containment to prevent any contaminated water from leaving the well pad. Best Management Practices including compost filter sock, erosion control blanketing, rock filters, diversion channels, riprap aprons, and temporary and permanent seeding has been designed to be implemented to prevent any sediment from leaving the site during construction. All BMPs will remain in place and maintained until the permanent seeding has reached 70% vegetated cover and is sufficient to prevent erosion.

- 4. Provide mapping, plans, specifications and design analysis for the preferred alternative to the project.**

- a. Specify in writing what additional controls, measures, devices, monitoring, etc. will be used to protect these wetlands and/or perennial streams for which the waiver is sought.

All erosion and sedimentation controls will be inspected weekly and after each storm event to ensure they are working properly. The surrounding streams and wetlands will be inspected visually for signs of sediment pollution. If any sediment pollution is observed, the source will be identified and additional BMPs will be installed to protect the resources.

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WW-6B  
(04/15)

API NO. 47- \_\_\_\_\_  
OPERATOR WELL NO. Ice South Unit 1H  
Well Pad Name: Ice Pad

**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      Clay      Shinnston  
Operator ID      County      District      Quadrangle

2) Operator's Well Number: Ice South Unit 1H      Well Pad Name: Ice Pad

3) Farm Name/Surface Owner: XTO Energy Inc.      Public Road Access: CR 8/6 (Nutter Run)

4) Elevation, current ground: 1,360'      Elevation, proposed post-construction: 1,360'

5) Well Type (a) Gas  Oil \_\_\_\_\_ Underground Storage \_\_\_\_\_  
Other \_\_\_\_\_

(b) If Gas Shallow  Deep \_\_\_\_\_  
Horizontal  \_\_\_\_\_

*SDW*  
*9/20/2019*

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Target Formation: Marcellus, Depth 7,413', Anticipated Thickness: 150', Associated pressure: 4,650 psi

8) Proposed Total Vertical Depth: 7,544'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 18,039'

11) Proposed Horizontal Leg Length: 9,439'

12) Approximate Fresh Water Strata Depths: 115' - 470'

13) Method to Determine Fresh Water Depths: Offsetting Reports & Local Stream Elevations. See additional page.

14) Approximate Saltwater Depths: 1,200'

15) Approximate Coal Seam Depths: 390', 490'

16) Approximate Depth to Possible Void (coal mine, karst, other): 480' - 490'

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

SEP 24 2019

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

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Environmental Protection

WW-6B  
(04/15)

API NO. 47- \_\_\_\_\_  
 OPERATOR WELL NO. Ice South Unit 1H  
 Well Pad Name: Ice Pad

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	24	New	A-252	95	20	20	46 / CTS
Fresh Water	13.375	New	H-40	48	540	540	488 / CTS
Coal							
Intermediate	9.625	New	J55	36	2,910	2,910	1,185 / CTS
Production	5.5	New	P110	20	18,039	18,039	3,329 / 6,861
Tubing							
Liners							

*SDW  
9/20/2019*

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	24	30	0.375	940	20	Class A	1.19
Fresh Water	13.375	17.5	0.33	1,730	440	Class A	1.19
Coal							
Intermediate	9.625	12.25	0.352	3,520	2,370	Class A	1.19
Production	5.5	8.5	0.361	14,360	6,120	Class A	1.1 / 1.57
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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SEP 24 2019

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Environmental Protection

4703305973

WW-6B  
(10/14)

API NO. 47- \_\_\_\_\_ - \_\_\_\_\_  
OPERATOR WELL NO. Ice South Unit 1H  
Well Pad Name: Ice Pad

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.  
2. Sand / Proppant Stages - Several stages of pumping water combined with sand at a targeted 80 bpm rate. The highest pressure and rate anticipated is 9,500 psig and 100 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 1,190 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): 10.4 +/-

22) Area to be disturbed for well pad only, less access road (acres): 6.6 +/-

23) Describe centralizer placement for each casing string:

Conductor: None  
Fresh Water: Every 3rd joint from shoe to surface  
Mine: Every 3rd joint from shoe to surface (if applicable)  
Intermediate: Every 3rd joint from shoe to surface  
Production: Every joint from shoe to TOC

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

Conductor: None  
Fresh Water: Calcium Chloride and super flake  
Mine: Calcium Chloride and super flake (if applicable)  
Intermediate: Calcium Chloride and super flake  
Production: Calcium Chloride, Bentonite, super flake, Air-Out, CR-1, FL-300, SEC10

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25) Proposed borehole conditioning procedures:

Conductor: Hole is auger drilled: No conditioning required.  
Fresh Water: Condition hole with air at TD until visibly clean, run casing, circulate and clear 1.5x pipe volume with fresh water before cementing.  
Mine: Condition hole with air at TD until visibly clean, run casing, circulate and clear 1.5x pipe volume with water before cementing (if applicable).  
Intermediate: Condition hole with air at TD until visibly clean, run casing, circulate and clear 1.5x pipe volume with water before cementing.  
Production: Circulate hole with synthetic based drilling fluid at TD (1 bottoms up for each 2,000' of lateral drilled). TOOH and circulate minimum of 1 bottoms up and until returns are minimal at the base of the curve. Run casing, circulate 1.5 x casing volume and ensure good returns before cementing.

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\*Note: Attach additional sheets as needed.



4703305973

**Ice Pad - APIs Used for Estimating Water Depths**

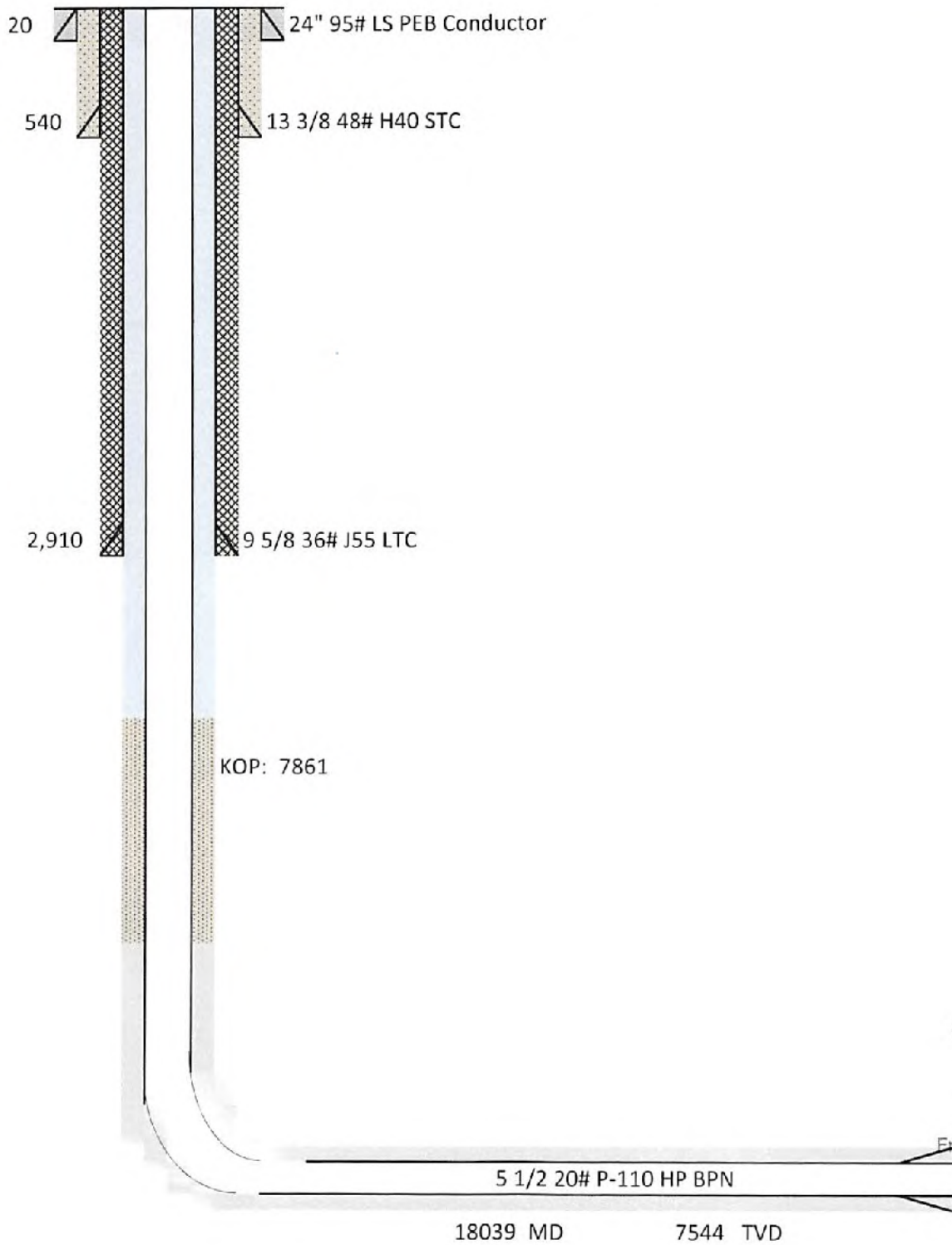
<b>API</b>	<b>Elevation</b>	<b>Fresh Water Depth</b>
4703304605	1300	217
4703304584	1125	208
4703304639	1258	140
4703301550	1366	180
4703300609	1102	60

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Ice South Unit 1H  
Harrison County, West Virginia



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## Ice South Unit 1H – Mine Void Encounter Plan

Per communications with the WV Geology and Economic Survey there is a possible mine void in the Pittsburgh Coal seam under the Ice Pad in Harrison County, WV. In preparation for drilling through a mine void, we will nipple up a diverter to be able to handle any flow should the void actually be encountered. We expect it to come in around 480-490' TVD from GL. We plan to set 13 3/8" casing as a surface/coal protective string ~50' below the base of this void.

A cement basket will be run as close as possible to the top of the void.

A cement balance job will be performed to cement the shoe and the annulus below the mine if circulation cannot be established. A grout cement job will be performed on the annulus to cement 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 ~2,910'.

Jim Bower  
Drilling Engineer  
XTO Appalachia  
Cell: 724-814-4410  
[James\\_bower@xtoenergy.com](mailto:James_bower@xtoenergy.com)

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## Ice South Unit 1H

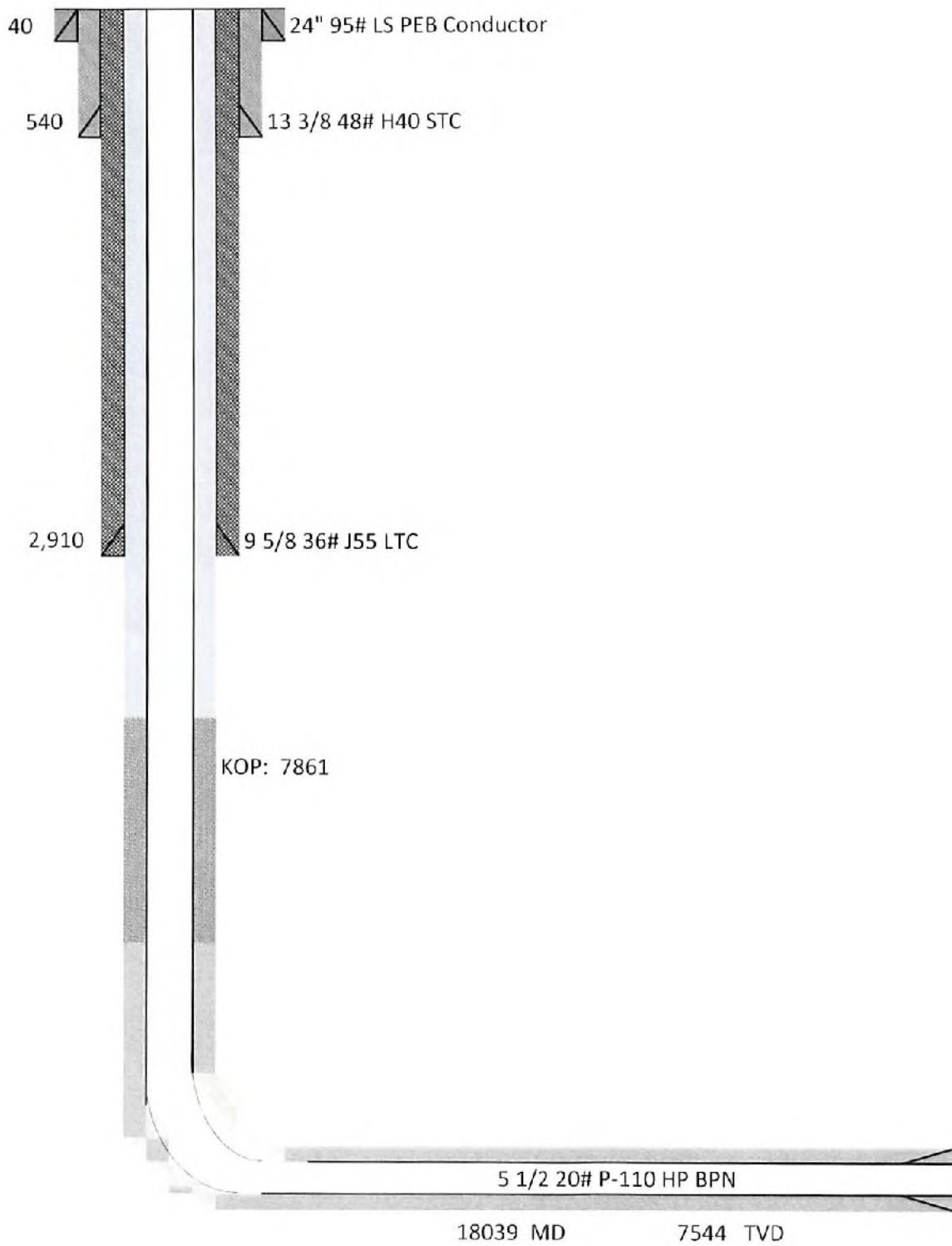
Operator	API	Elevation	Total Depth	Producing Zones	Perforated Depths	Producing Zone Depths	Producing Zones Not Perforated	Known or reasonably expected to penetrate a depth that could be within the range of the fracture propagation?
XTO Energy Inc.	4703305898	NA	NA	NA	NA	NA	NA	Not yet drilled
XTO Energy Inc.	4703305913	NA	NA	NA	NA	NA	NA	Not yet drilled
XTO Energy Inc.	4703305919	NA	NA	NA	NA	NA	NA	Not yet drilled
Richard Allen	4703302652	1304	2857	Fifth Sand	NA	2857	Fifth Sand	No
Howard, Lorna (dba/Gas Account)	4703300132	1420	2953	5th Sand	2794 - 2809	2794 - 2809	NA	No
Waco Oil & Gas Co Inc.	4703304671	1269	4322	TF, 5S, SL, BA, BF	2439 - 4210	2439 - 4210	NA	No
Waco Oil & Gas Co Inc.	4703305192	NA	NA	NA	NA	NA	NA	Never Drilled
Waco Oil & Gas Co Inc.	4703305110	1049	7355	Marcellus	7310-7330	7310-7330	NA	Yes - will coordinate with operator
Waco Oil & Gas Co Inc.	4703304657	NA	NA	NA	NA	NA	NA	Plugged
Waco Oil & Gas Co Inc.	4703304665	999	4022	BI, TF, FF, 4S, 5S, BA, BF	1520 - 3880	1520 - 3880	NA	No

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Ice South Unit 1H  
Harrison County, West Virginia



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### Mining Layers

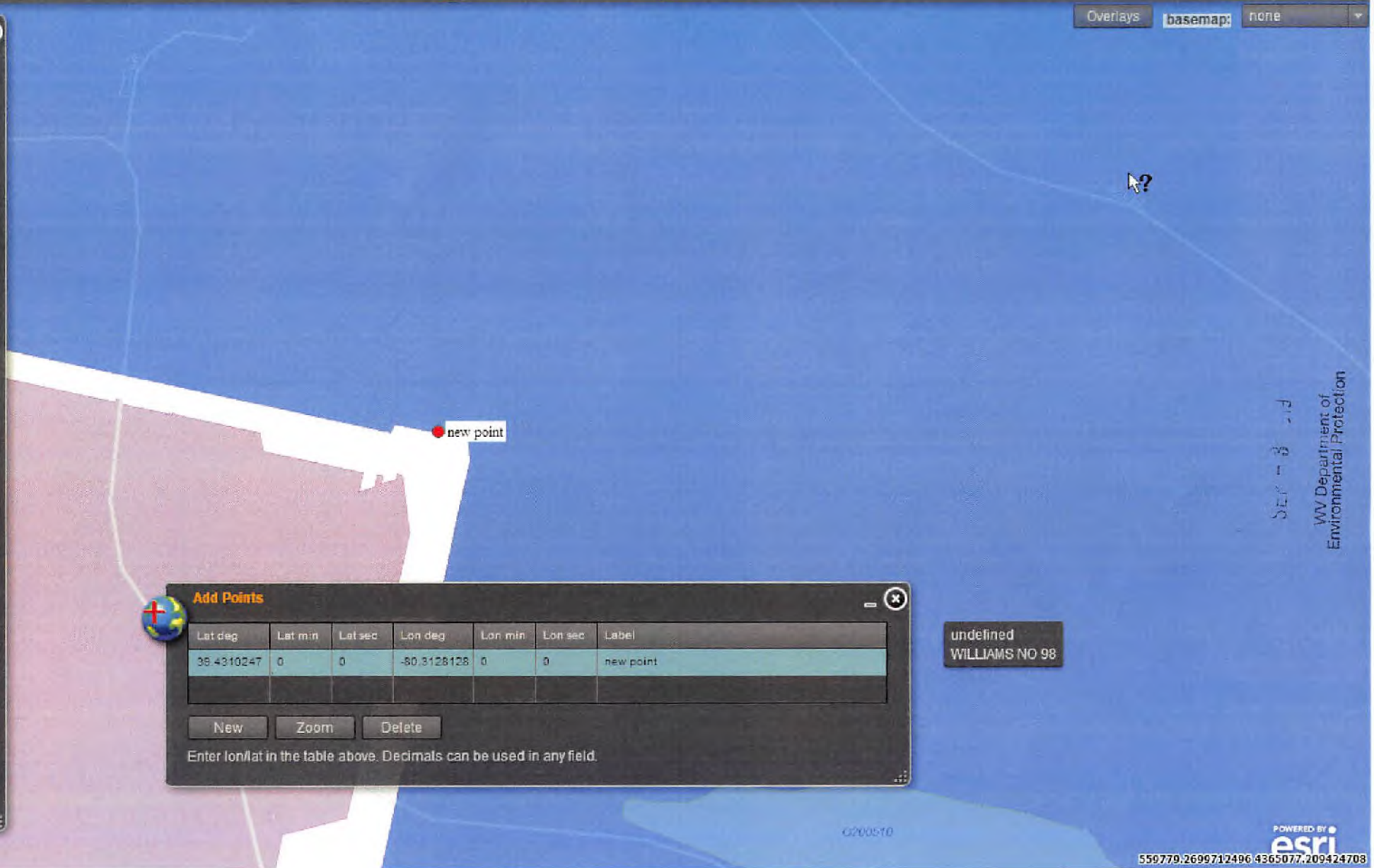
Permit Search Identify Layers

Layer	Permit Id	Name
underground min		WILLIAMS NO 98

Attribute	Value
mine_name	WILLIAMS NO 98
map_year	1979
source	0
wyges_comm	FINAL WILLIAMS MINE, N. ARROW
Shape_Length	58487.874251
mine_id	353473B
state_perm	
doc_id	353473
type	4
map_image	353/353473
st_length	73218.240378
Shape_Area	19940210.148241
Coal	PGH
company_na	CONSOLIDATION COAL
st_area_sh	32828901.8932

1 features selected. Get Details for undefined



### Add Points

Lat deg	Lat min	Lat sec	Lon deg	Lon min	Lon sec	Label
38.4310247	0	0	-80.3128128	0	0	new point

New Zoom Delete

Enter lon/lat in the table above. Decimals can be used in any field.

WV Department of Environmental Protection

G200510





# WV Flood Tool

Remember: When In Doubt, It's Not Out!



Views

Layers

Search

Tools

Public Expert Risk MAP

Flood Reference Basemaps

Coordinate use COORDINATE window to search



### Coordinate Search

Decimal Degrees  Latitude   
 Longitude

DD/MM/SS  Latitude  °  '  "  
 Longitude  °  '  "

UTM Zone 17N  Easting   
 Northing

Locate the Coordinate



**Flood Hazard Area:** Location is NOT WITHIN any identified flood hazard area. Unmapped flood hazard areas may be present.

**Flood Zone:** Out of Flood Zone

**Stream:** N/A

**Watershed (HUC8):** West Fork (5020002)

---

**FEMA Issued Flood Map:** [54033C0062D](#) [Download](#) [NFHL](#)

**Map Effective Date:** 10/2/2012

**Contacts:** [Harrison](#)

**Community:** Harrison County  
 CID: 540053 CRS Class: 10

**Location (long, lat):** (-80.312824, 39.430905)  
**Location (UTM 17N):** (559142, 4364821)

**External Viewers:** [Google Earth](#) [ArcGIS](#) [Twitter](#) [Facebook](#)

**Elevation:** About 1354 ft (Source: SAMS 2003)

**Address:** N/A

**Parcel ID:**  : [17-05-0148-0027-0001](#) [Disclaimer](#)

**Flood Risk Information** [Related Resources](#)

Flood Risk Assessment [N/A](#)

3D Flood Visualization [N/A](#)

Scale 1:9,028  
x: -80.317952 y: 39.432363

@BING Hybrid Map



WW-9  
(4/16)

API Number 47 - \_\_\_\_\_  
Operator's Well No. Ice South Unit 1H

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) Lower West Fork River (0502000208) Quadrangle Shinnston

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.? NA

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number 4708509721, 4708505151, 3416729577, 3412124066, 3412123985 )
- Reuse (at API Number \_\_\_\_\_)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

*SDW  
6/27/2019*

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 vert-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

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

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 *Tim Sands*

Company Official (Typed Name) Tim Sands

Company Official Title Regulatory Coordinator

Subscribed and sworn before me this 30<sup>th</sup> day of August, 2019

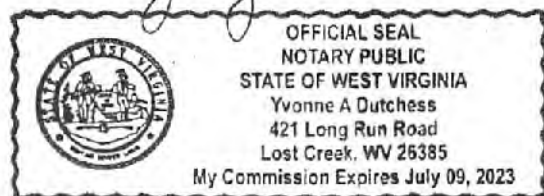
Yvonne A. Dutchess Notary Public

My commission expires July 9, 2023

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XTO Energy Inc.

Proposed Revegetation Treatment: Acres Disturbed 10.4 +/- Prevegetation pH \_\_\_\_\_

Lime 3 Tons/acre or to correct to pH \_\_\_\_\_

Fertilizer type 10-20-20

Fertilizer amount 1000 lbs/acre

Mulch 3 Tons/acre

Seed Mixtures

**Temporary**

**Permanent**

Seed Type lbs/acre

Seed Type lbs/acre

Per plans

**Attach:**

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: SED Warratt

Comments: Pre-seed/mulch all disturbed areas as soon as reasonably possible per regulation. Upgrade E&S as necessary per WV DEP E&S manual.

Title: BOG Inspector

Date: 6/27/2019

Field Reviewed? ( X ) Yes ( ) No

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**XTO Drilling Additives**

<b>Product Name</b>	<b>CAS#</b>
Anco Mul XL	8002-43-5
Kensol 48H	64742-47-8
ANCO BAR (Barite)	7727-43-7
ANCO Drill (A, N)	25083-02-03
Anco Mul Ow	68442-77-3
Anco Mul P	70321-73-2
Anco Mul S	71.36-3 & 64742-95-6
Anco Mul Thin	111-76-2
	112-34-5
	104-76-7
	84989-14-0
	57-55-6
ANCO Phalt S	NA
ANCO Trol	NA
Calcium Carbonate	14808-60-7
	1317-65-3
Calcium Chloride	10043-52-4
Cedar Fiber	11132-73-3
CI-300A	NA
Graphite	7782-42-5
	14808-60-7
GSX-602 Petrogel 100	14808-60-7
	67-63-0
Lime	1305-62-0
	1305-78-8
	7631-86-9
	1309-48-4
Mica (F,C)	12001-26-2
	14808-60-7
Oil Dry	12174-11-7
	14808-60-7
Potassium Chloride (KCl)	7447-40-7
Salt	7647-14-5
Synthetic Based Mud	
Thunder Plug	
Walnut ( F,M & C)	NA
Claytone II	

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## **Site Safety Plan Table of Contents**

### **For H6A Well Work Permits and Deep Well Work Permits**

*Please prepare a Site Safety Plan to accompany each applicable H6A and/or Deep well work permit, adhering to the following organizational and informational structure. Plans submitted must contain an index of the content entirety including page-number references.*

#### **1. Contacts, Schedules, and Meetings**

- A. Emergency point of contact for the well operator covering all phases of activities and including 24 hour contact information (35-8 5.7.b.4)
- B. List of telephone numbers for (35-8 5.6.4):
  - 1) Operator
  - 2) Contractors
  - 3) DEP office and oil/gas inspector
  - 4) Local emergency response units
  - 5) Local ER personnel
  - 6) All schools and public facilities within a one mile radius of proposed well site (35-8 5.7.b.5)
- C. Method of notification of public of H<sub>2</sub>S gas presence and how access will be controlled. (applicable horizontal wells include all residents and emergency response personnel who may be affected by an event. Such events may include the presence of H<sub>2</sub>S, blow-outs, and flaring) (35-8 5.7.f.1)
- D. Pre-spud meeting held prior to drilling operations, including (35-8 5.7.h):
  - 1) Attendance log, including personnel to be employed and involved in drilling operations
  - 2) Notification of County oil and gas inspector or other designated Office of Oil and Gas representative
- E. Describe schedule for conducting regular well site safety meetings. Log attendance at all meetings and also initiate check in check out during drilling, completion, and workover phases. (35-8 5.7.h)

#### **2. Maps and Diagrams**

- A. Plan view map of location, access road, pit(s), flare lines, nearby dwellings, note the north direction and the prevailing wind direction (35-8 5.7.b.1)
- B. Topographic map of well location, including
  - 1) 1 mile radius of well location
  - 2) UTM NAD 83 coordinates of well site entrance (35-8 5.7.b.2)
  - 3) UTM NAD 83 coordinates of the point the access road intersects the public route (35-8 5.7.b.2)
  - 4) Identify public route number and/or route name (35-8 5.7.b.2)
- C. Evacuation plan for the removal of personnel from the drilling location and residents in the surrounding area who have the potential to be affected by an emergency. (35-8 5.7.b.3)

#### **3. Well Work**

- A. Detailed written descriptions of well work and procedure to be used during the drilling, completion, and production phases, including schematic plan views of each (35-8 5.7.a)
- B. Statement detailing how a copy of the plan will be provided to the local emergency planning committee or county emergency services office within at least 7 days from land disturbance or well work. (35-8 5.7.a)

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6/27/2019

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#### 4. Chemical Inventory & MSDS

- A. Material Safety Data Sheets for all chemicals anticipated to be used in all aspects of the operation (can be provided on CD or USB drive) (35-8 5.7.a)
- B. Statement that all MSDS are to be readily available at the well site and their location indicated in the site safety plan including contact information for person(s) responsible maintaining them on site. (35-8 5.7.g)
- C. Inventory of all materials on site for mixing of mud including numbers and type of mixing units - mixed mud amount and weight, amount of weighting material and volume of mixing fluid. (35-8 5.7.d.1 & 5.7.d.2)

#### 5. BOP and Well Control

- A. BOP equipment and casing heads with types, sizes and ratings to be utilized and available during the drilling for both intermediate and lateral drilling phases (35-8 5.7.c.1 & 5.7.c.8)
- B. Procedure and schedule for testing the BOP stack for intermediate drilling phase the BOP tested upon initial set up and the annular tested to 70% of capacity and the ram preventers tested to 80%. Same testing % for bottom and horizontal phase except testing to be done upon initial installation, weekly and after each bit trip (35-8 5.7.c.2)
- C. BOP equipment and assembly installation schedule (35-8 5.7.c.3)
- D. List and names of all personnel with well control training (35-8 5.7.c.4)
- E. Description of system of maintaining detailed records of and for immediate notification to OOG inspector for all significant drilling issues, including but not limited to (35-8 5.7.c.5):
  - 1) Lost circulation
  - 2) Hydrogen sulfide gas
  - 3) Fluid entry
  - 4) Abnormal pressures
- F. Notification of the oil and gas inspector or designated representative as soon as possible of any unusual drilling events, hydrogen sulfide gas\* or large kicks that occur during drilling operations).  
\*(Mandatory immediate notification is required of any encounter of hydrogen sulfide gas - 22-6A wells >10ppm H<sub>2</sub>S Gasses!) (35-8 5.7.c.5)
- G. Schematic and detailed written description of the wellhead assembly to be placed on the well upon completion (35-8 5.7.c.6)
- H. Method and type of kill procedures as recognized by the IADC – Wild Well Control Kill Sheet. (35-8 5.7.d.3)

#### 6. Hydrogen Sulfide (H<sub>2</sub>S)

- A. Detection, monitoring and warning equipment including location of the monitoring detection equipment on the site (35-8 5.7.e.1)
- B. Statement of H<sub>2</sub>S personnel training provided (35-8 5.7.e.2)
- C. Method to notify the OOG of H<sub>2</sub>S presence (35-8 5.7.e.4)
- D. Establish and maintain Protection Zones. Describe detailed written general procedures proposed in drilling phases. (application horizontal wells must include the completion, work-over, and production phases) (35-8 5.7.f.2)
- E. List of personal protective equipment (PPE) and the amount of each piece of PPE that will be maintained and available on site. (35-8 5.7.e.3)

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#### 7. Flaring

- A. Proposed written description and plan including schematic of installation for duration of flaring activities. (35-8 5.7.f.1)

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## 8. Collision Avoidance Safeguards, Practices and Standards Plans

*Protocol and established safeguards designed to prevent underground collisions during any drilling on multi-well pads (35-8 5.7). Collision avoidance plans are measures in keeping wellbores separated and in preventing HSE risk. Such plans describe the survey accuracy and the survey maintenance by systematic management efforts throughout the drilling of the proposed wellbore. These plans submitted shall be well specific to the proposed wellbore and shall address all items within the components section as outlined below. The scope of these plans shall provide survey designs throughout the proposed wellbore including the QC / QA activities and the counter-actions necessary; minimum separation factors (SF), standards and thresholds apply as specified in the components section. These plans shall include proposed counter-actions necessary if a collision occurs or if surveys observe an imminent risk for a collision; all wellbore collisions shall be treated as high-risk events. Approved plans are conditions and terms of the well permit and any modifications are subject to approval by the Office of Oil and Gas (OOG).*

### A. Established definitions:

- 1) Proposed Wellbore – Involves sections of the vertical top-hole, the KOP, the lateral landing, and the lateral drilling to the total measured depth TMD.
- 2) Nudge – Technique generally used in the vertical top-hole section. The well path is nudged from vertical to pass areas of possible magnetic interferences and to reduce the risk of collision by maintaining separation with other wellbores.
- 3) KOP – Kick off Point. Diverting a well path from one trajectory to another.
- 4) MWD – Measurement While Drilling.
- 5) LWD – Logging While Drilling.
- 6) SF – Separation Factor or Clearance Factor:

$$SF* = CC \div [UR_{ref} + UR_{off}]$$

CC - well separation distance (center to center of wellbores)

UR<sub>ref</sub> - radius ellipse of uncertainty on reference well

UR<sub>off</sub> - radius ellipse of uncertainty on offset well

Note: ellipses are half-axes or radii.

\*Calculation options may be considered

- 7) TMD – Total Measured Depth.
- 8) Gyro – High accuracy well bore survey instrument unaffected by magnetic interference.
- 9) QC / QA – Quality Control and Quality Assurance.
- 10) HSE – Health Safety and the Environment.

### B. Established descriptions of risk:

- |                    |         |                          |
|--------------------|---------|--------------------------|
| 1) SF ≤ 1.0        | Level 1 | Extreme collision risk   |
| 2) SF = 1.0 to 1.5 | Level 2 | High collision risk      |
| 3) SF = 1.5 to 2.0 | Level 3 | Moderate collision risk  |
| 4) SF > 2.0        | Level 4 | Low to no collision risk |

### C. Plan components:

- 1) Describe the scope of work and the type of survey techniques by use of gyros, MWD, LWD, or others and include the following:
  - a) The survey intervals or frequencies proposed as adjustments to address each level of risk covering the vertical top-hole section of the proposed wellbore.

- b) Provide TOOL ALIGNMENT and MULESHOE procedures\*\* when drilling in critical areas covering the vertical top-hole section of the proposed wellbore. These procedures are visual verification for alignment and orientation QC/QA purposes. Provide the responsible personnel (minimum two representatives) and their titles of those involved for QC/QA purposes during the drilling activities.  
\*\*Provide other orientations or survey methods and procedures if utilized.
  - c) Description of any nudge activity proposed in the vertical top-hole section.
  - d) The survey tools to be utilized from the KOP to the lateral landing and the lateral section to the TMD.
  - e) Description of any software utilized for the directional and anti-collision planning proposed.
- 2) The following shall be addressed in the plan for the proposed wellbore:
- a) Vertical top-hole section beginning at the surface and to the lateral landing -
    - i) Minimum SF standards (thresholds) required -  
SF  $\geq$  1.5 shall be obtained early as practical and maintained.  
(Indicate the frequency of survey intervals proposed)
    - ii) Minimum SF standards (thresholds) required -  
SF  $\geq$  2.0\*\*\* applies when in proximity to any fractured or any producing well that exists on the well pad.  
(Indicate the frequency of survey intervals proposed)  
\*\*\*Risk management and technological mitigations, i.e. downhole plugs, are critical and should be considered along with other safety measures necessary. The OOG may require additional safety measures of a specific well application for permitting as deemed necessary.
  - b) Lateral section beginning at the lateral landing and to the TMD -
    - i) Provide a general protocol to declination, grid correction, and magnetic interference correction during the drilling of the proposed lateral. Also provide the responsible personnel (minimum two representatives) and their titles of those involved for QC/QA purposes during the drilling activities.
    - ii) For any existing horizontal or vertical wells found adjacent to this lateral section, provide the protocols for separation safeguards and the spacing planned during the drilling of this section. A reconnaissance review is required for each proposed lateral; OOG may establish a minimum footage for review as deemed necessary.
- 3) Provide a well pad surface diagram depicting the wellhead arrangement (API labeled) of all existing wells adjacent to the proposed wellbore. Indicate the surface footage separation between wellheads and each wellbore status.
- 4) Describe the gyro surveying or other type surveying conducted within each existing wellbore located on the pad.
- 5) Provide descriptive actions if a collision should occur or if surveys should observe imminent risk for a collision.
- 6) Provide method to notify the OOG Oil and Gas Inspector immediately of any underground collision or if the SF Level 1 is determined within the extreme collision risk zone (ellipses of uncertainty overlap).
- 7) Provide other supportive resources or proposed safety measures as needed.

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## 9. Deep Well Additional Requirements

- A. List of anticipated freshwater, saltwater, oil and gas, hydrogen sulfide, thief zones, high pressure and volume zones and their expected depths.

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Revised (3/15)

- B. Detailed casing and cementing program that employs a minimum of three strings of casing which are sufficient weight and quality for the anticipated conditions.
- C. Flaring activities: Size, construction and length of flare line-anchor method and choke assembly description, Flare lighting system and back up igniters, Notify local fire department (if possible) prior to igniting flares, Minimum clearing distance beyond end of flare.
- D. List of names, addresses, and telephone numbers of all residents, businesses, churches, schools and emergency facilities within 1 mile radius that may be affected by specific events during the drilling process. Such events may include presence of hydrogen sulfide, and flaring, etc.

**10. Deep Vertical Well Requirements per Policy Statement (Deep Well Drilling Procedures and Site Safety Plan Requirements)**

The following selections are needed from the above contents:

- 1. A - E (E. drilling phase only)
- 2. A - C
- 3. A (drilling phase only)
- 4. B - C
- 5. A - H
- 6. A - E
- 9. A - D.

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Request full version  
with WVDEP  
304-926-0499 ext. 1653

**XTO Energy Inc.**  
**Well Site Safety Plan**

**Well: Ice South Unit 1H**

**Pad: Ice Pad**  
**1284 Odells Knob Road**  
**Shinnston, WV 26431**

**NAD 83 Coordinates**  
**39.430986**  
**-80.312863**

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**Environmental Protection**

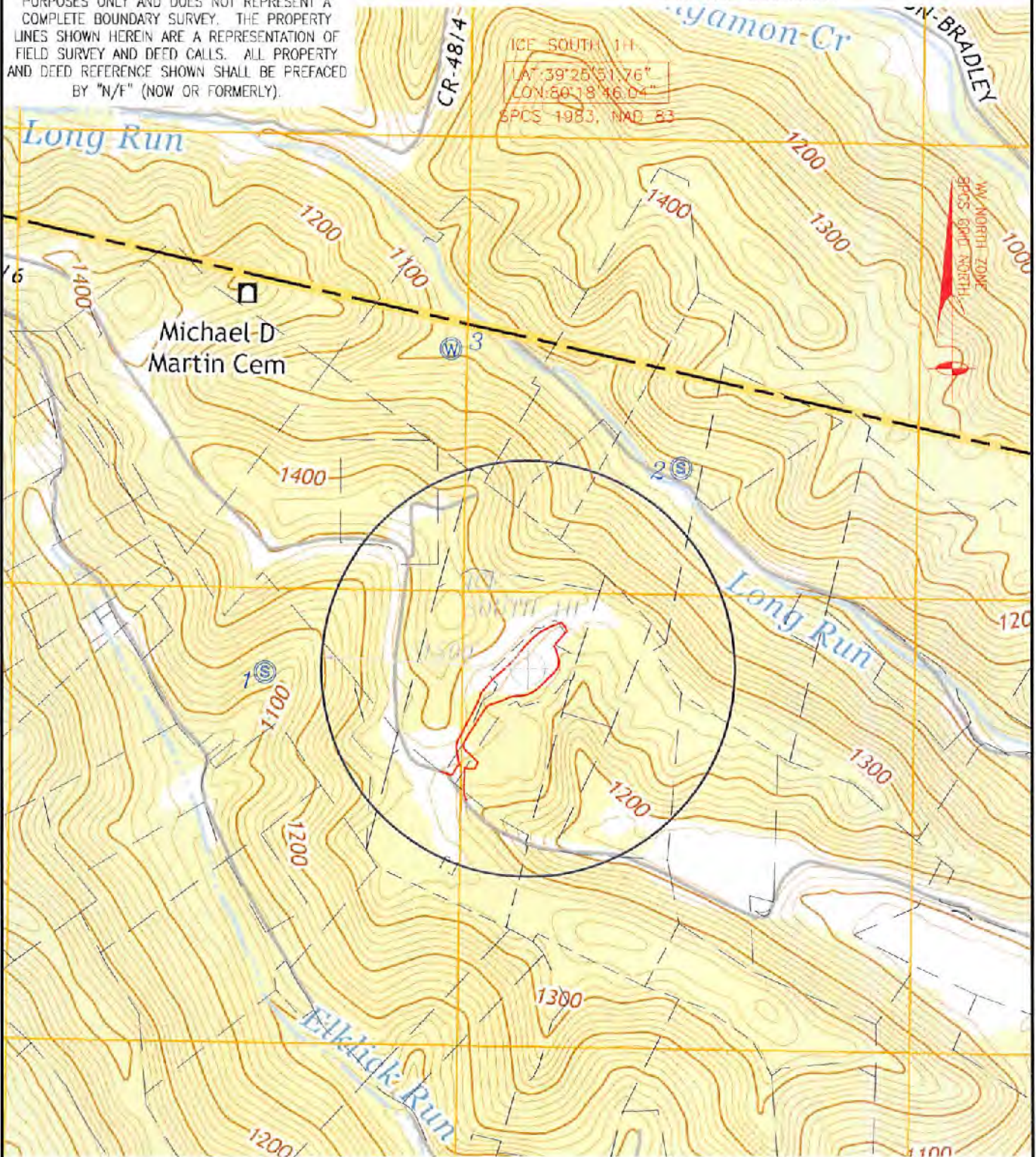


FORM W-9

NOTE: THIS PLAT IS FOR WELL LOCATION PURPOSES ONLY AND DOES NOT REPRESENT A COMPLETE BOUNDARY SURVEY. THE PROPERTY LINES SHOWN HEREIN ARE A REPRESENTATION OF FIELD SURVEY AND DEED CALLS. ALL PROPERTY AND DEED REFERENCE SHOWN SHALL BE PREFACED BY "N/F" (NOW OR FORMERLY).

**LEGEND**

-  WATER WELL
-  SPRING/POND/STREAM
-  SURFACE BOUNDARY



POINT	NAME	ADDRESS	CITY	STATE	ZIP CODE	DISTANCE	BEARING	PARCEL I.D.
1	Michael & Cynthia Nosack	712 Bices Run Road	Shinnston	WV	26431	1907'	S 89°22'02" W	Tax Map 5-147, Parcel 87
2	Faris W. & Margaret J. Coffindafer	24 Glenview Drive	Bridgeport	WV	26330	1826'	N 37°31'20" E	Tax Map 5-148, Parcel 4
3	Tina M. Veltri	48 White Oak Drive	Bridgeport	WV	26330	2371'	N 13°31'45" W	Tax Map 11-58, Parcel 37

ICE SOUTH UNIT 1H WATER OVERALL

CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA    6/21/2019    JC2018-85    SHEET 1 OF 2



2402 PENNSYLVANIA 66  
DELMONT, PA 15626  
(724) 757 - 2417  
www.jonesconsultant.com

Shinnston Quad (2014)  
Marion County, WV  
Scale: 1" = 1000'



190 THORN HILL ROAD  
WARRENDALE, PA 15086



BOTTOM HOLE ← 9272' TOP HOLE | 5966'

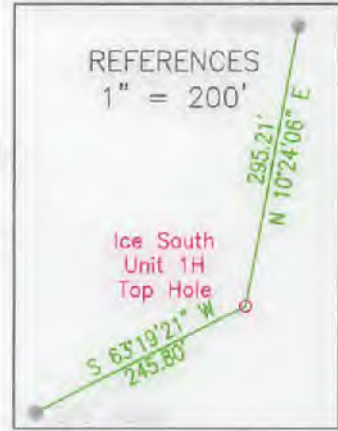
SCALE: 1" = 2400' ICE SOUTH UNIT 1H

LATITUDE: 39°27'30" SCALE: 1" = 2000' (TOP HOLE)  
 LATITUDE: 39°25'00" SCALE: 1" = 2000' (BOTTOM HOLE)

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 83.
4. WELL ELEVATION ESTABLISHED BY RTK GPS NAVD 88.
5. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF HARRISON COUNTY IN MARCH 2019 AND FILES PROVIDED BY XTO ENERGY INC.
6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP AND SURVEYED LOCATIONS OF WELLS WITHIN 500' OF WELL BORE.

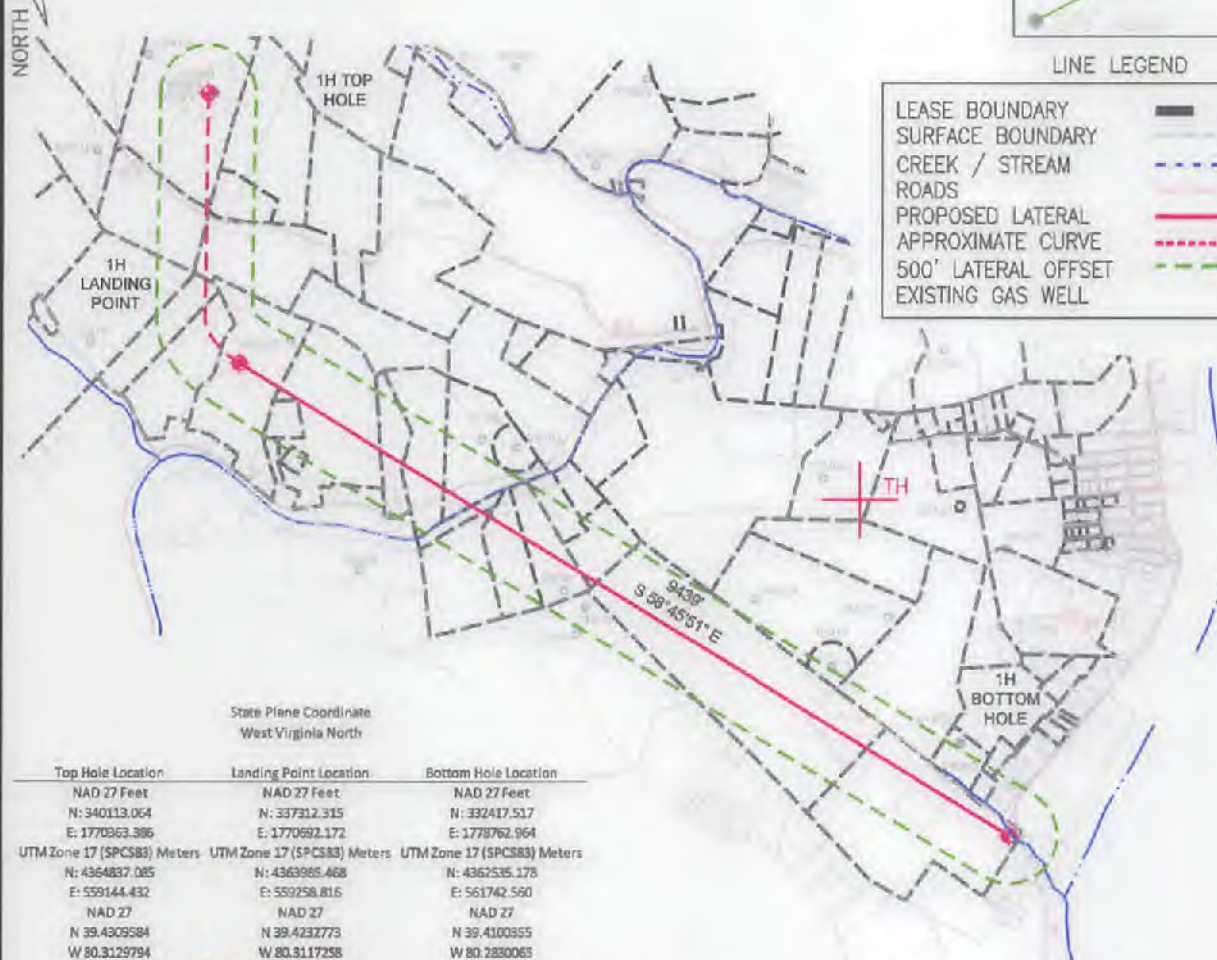
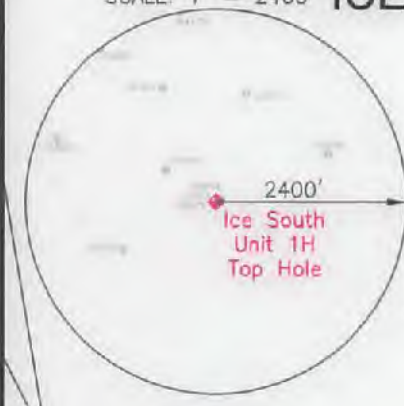
REFERENCES  
1" = 200'



LINE LEGEND

LEASE BOUNDARY	---
SURFACE BOUNDARY	- - - - -
CREEK / STREAM	~ ~ ~ ~ ~
ROADS	— — — — —
PROPOSED LATERAL	— — — — —
APPROXIMATE CURVE	- · - · -
500' LATERAL OFFSET	- · - · -
EXISTING GAS WELL	○

2384'  
9940'  
1" = 2000' LONGITUDE: 80°17'30" (TOP HOLE)  
1" = 2000' LONGITUDE: 80°15'00" (BOTTOM HOLE)  
SCALE: 1" = 2000'



State Plane Coordinate  
West Virginia North

Top Hole Location	Landing Point Location	Bottom Hole Location
NAD 27 Feet	NAD 27 Feet	NAD 27 Feet
N: 340113.064	N: 337312.315	N: 332417.517
E: 1770363.386	E: 1770592.172	E: 1778762.964
UTM Zone 17 (SPCS83) Meters	UTM Zone 17 (SPCS83) Meters	UTM Zone 17 (SPCS83) Meters
N: 4364837.085	N: 4363985.468	N: 4362535.175
E: 559144.432	E: 559258.816	E: 561742.560
NAD 27	NAD 27	NAD 27
N 39.4309584	N 39.4232773	N 39.4100355
W 80.3129794	W 80.3117258	W 80.2830065



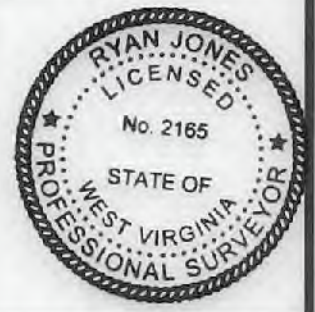
2402 PENNSYLVANIA 66 DELMONT, PA 15626  
(724) 757 - 2417 www.jonesconsultant.com

SHEET 1 OF 2

FILE #: JC2018-85  
 DRAWING #: ICE SOUTH UNIT 1H  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1:2500  
 PROVEN SOURCE OF ELEVATION: RTK GPS

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.

Signed:   
 R.P.E.: \_\_\_\_\_ P.S.: 2165



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
**WVDEP**  
**OFFICE OF OIL & GAS**  
 601 57TH STREET  
 CHARLESTON, WV 25304



DATE: 7/2/2019  
 OPERATOR'S WELL #: ICE SOUTH UNIT 1H  
 API WELL #: 47 033 05973 H4A  
 STATE COUNTY PERMIT

Well Type:  Oil  Waste Disposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow

WATERSHED: LOWER WEST FORK RIVER (0502000206) ELEVATION: 1,360' (EXISTING FINISH GRADE)  
 COUNTY/DISTRICT: HARRISON / CLAY QUADRANGLE: SHINNSTON 7.5'  
 SURFACE OWNER: XTO ENERGY INC ACREAGE: 7.23±  
 OIL & GAS ROYALTY OWNER: JANICE M. BRENNAN TRUST A, ET AL ACREAGE: 414.2±

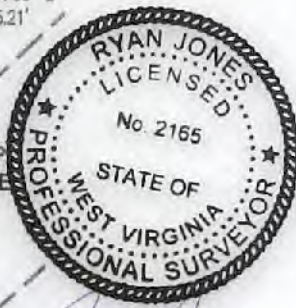
DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
 PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
 CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY): \_\_\_\_\_

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,544' (TVD), 18,039' (TMD)

WELL OPERATOR: XTO ENERGY INC. DESIGNATED AGENT: GARY BEALL  
 Address: 190 THORN HILL ROAD Address: P.O. BOX 1008  
 City: WARRENDALE State: PA Zip Code: 15086 City: JANE LEW State: WV Zip Code: 26378

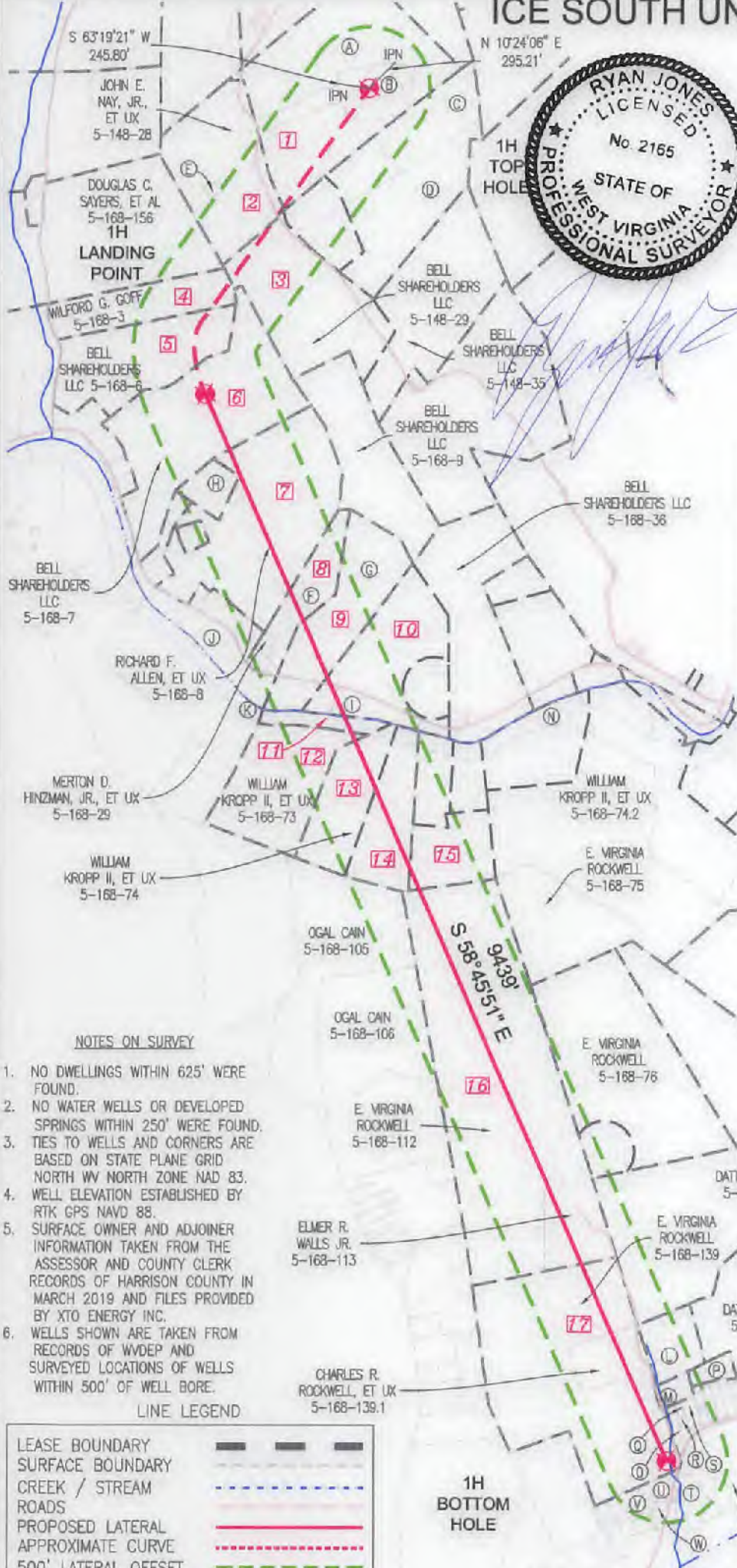


# ICE SOUTH UNIT 1H



	SURFACE OWNER	TAX PARCEL
A	XTO ENERGY INC	5-148-27
B	XTO ENERGY INC	5-148-27.1
C	BELL SHAREHOLDERS LLC	5-148-32
D	BELL SHAREHOLDERS LLC	5-148-33
E	EQUITABLE GAS CO	5-148-28.1
F	MERTON D. HINZMAN, JR., ET UX	5-168-30
G	BELL SHAREHOLDERS LLC	5-168-31
H	RONALD D. LYCANS, ET AL	5-168-8.3
I	BRIAN T. PAYTON, ET UX	5-168-26.1
J	ERNEST MARTIN	5-168-26
K	WESTERN MARYLAND RAILROAD	5-168-159
L	E. VIRGINIA ROCKWELL	5-168-115
M	WILLIAM S. KETTERMAN, ET UX	5-168-116
N	ABANDONED RAILROAD	
O	WILLIAM S. KETTERMAN	5-908-1
P	ERICA L. MANNO	5-168-117
Q	WILLIAM S. KETTERMAN	5-908-3
R	DONALD P. HALPENNY, II	5-908-2
S	HAROLD S. CROWL	5-908-6
T	SLADE W. NEER, ET UX	5-168-144.1
U	LESLIE E. TICHENOR, ET AL	5-919-5
V	CHARLES M. DARWAY	5-919-3
W	JAMES K. HALPENNY, ET UX	5-919-21

ICE SOUTH UNIT 1H		
LEASE	LESSOR	MINERAL ACREAGE
1)	JANICE M. BRENNAN TRUST A, ET AL	59.50
2)	HOWARD FORTNEY, ET AL	21.00
3)	MARGARET ANNE WICKLAND, TRUSTEE UNDER THE REVOCABLE TRUST AGREEMENT DATED AUGUST 23, 1985, AS AMENDED	25.50
4)	MADONNA LEE MATHENY, ET AL	10.00
5)	XTO ENERGY INC., ET AL	18.32112948
6)	XTO ENERGY INC.	35.50
7)	RICHARD F. ALLEN, ET UX	40.80
8)	JIMMY AKERS, ET AL	12.50
9)	SANDRA GRIFFIN, ET AL	18.50
10)	WACO OIL & GAS CO. INC.	21.32
11)	MARK J. TETRICK	2.69
12)	MARK J. TETRICK	17.03
13)	XTO ENERGY INC.	10.00
14)	XTO ENERGY INC.	10.00
15)	GEORGE W. HULLDERMAN	9.5000
16)	E. VIRGINIA ROCKWELL, ET AL	73.00
17)	WILLIAM P. HAYNES, ET AL	49.07



**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 83.
4. WELL ELEVATION ESTABLISHED BY RTK GPS NAVD 88.
5. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF HARRISON COUNTY IN MARCH 2019 AND FILES PROVIDED BY XTO ENERGY INC.
6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WDPEP AND SURVEYED LOCATIONS OF WELLS WITHIN 500' OF WELL BORE.

**LINE LEGEND**

LEASE BOUNDARY	---
SURFACE BOUNDARY	----
CREEK / STREAM	~~~~~
ROADS	=====
PROPOSED LATERAL	—————
APPROXIMATE CURVE	.....
500' LATERAL OFFSET	-----

State Plane Coordinates	
West Virginia North	
Top Hole Location	
NAD 27 Feet	
N: 340113.064	
E: 1770363.386	
UTM Zone 17 (SPCS83) Meters	
N: 4364837.085	
E: 559144.432	
NAD 27	
N 39.4309584	
W 80.3129794	
Landing Point Location	
NAD 27 Feet	
N: 337312.315	
E: 1770692.172	
UTM Zone 17 (SPCS83) Meters	
N: 4363985.468	
E: 559258.816	
NAD 27	
N 39.4232773	
W 80.3117258	
Bottom Hole Location	
NAD 27 Feet	
N: 332417.517	
E: 1778762.964	
UTM Zone 17 (SPCS83) Meters	
N: 4362535.178	
E: 561742.560	
NAD 27	
N 39.4100355	
W 80.2830065	

## JONES CONSULTANTS, LLC

SURVEYING • MAPPING • LAND • GAS WELL • PIPELINE  
 2402 PENNSYLVANIA 66 DELMONT, PA 15626  
 (724) 757 - 2417 www.jonesconsultant.com

**SUPPLEMENTAL SURFACE AND LESSOR EXHIBIT**

**ICE SOUTH UNIT 1H**

Drawn By:	Date:	CLAY DISTRICT	
JRV	7/22/19	HARRISON COUNTY, WEST VIRGINIA	
Scale:	1" = 1200'	Sheet:	File No.:
APP. #	DD.2009.03670	SHEET 2 OF 2	JC2018-85



190 THORN HILL ROAD  
 WARRENDALE, PA 15086





4703305973

WW-6A1  
(5/13)

Operator's Well No. Ice South Unit 1H

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
----------------------	-----------------------	-----------------------	---------	-----------

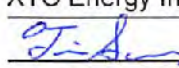
See attached

**Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: XTO Energy Inc.  
 By:   
 Its: Regulatory Coordinator

Page 1 of \_\_\_\_

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Ice South Unit 1H Lease Ref.	Original Lessor	Current Lessee	Book/Page #	Royalty
1	Janice M. Brennan Trust A by Edward Patrick Brennan, a/k/a Edward P. Brennan and John Frank Brennan, a/k/a John F. Brennan Trustees.	XTO Energy, Inc.	1515-123	1/8 or greater ✓
1	Janice M. Brennan and John E. Brennan, husband	Jackson L. Smith Enterprises, dba WV Energies. Jackson L. Smith Enterprises, dba WV Energies to Sheldon & Assoc. - All Depths DB 1219-564. Sheldon & Assoc to Diversified Resources - Name Change DB 54-987. Diversified Resources to Bluestone Energy Partners - 350' Above top of Onondaga Limestone to Basement DB 1429-148. Bluestone to Antero - Merger DB 35-1236. Antero to XTO Energy - 100' above top of Rhinestreet to 100' below base Marcellus DB 1497-765	1219-475	1/8 or greater
1	Anita Lynn Beasley and Bryan Keith Beasley, husband	XTO Energy, Inc.	1517-89	1/8 or greater
1	Richard Allen Harris	XTO Energy, Inc.	1517-736	1/8 or greater
1	Dustin Scott Harris	XTO Energy, Inc.	1517-730	1/8 or greater
1	Jason Paul Lee	XTO Energy, Inc.	1533-1113	1/8 or greater
1	Joyce L. Harris	Jackson L. Smith Enterprises, dba WV Energies. Jackson L. Smith Enterprises, dba WV Energies to Sheldon & Assoc. - All Depths DB 1220-528 Sheldon & Assoc to Diversified Resources - Name Change DB 54-987 Diversified Resources to M&R Investments - All Depths DB 1391-1166 M&R Investments to Bluestone Energy Partners - 350' Above top of Onondaga Limestone to Basement DB 1429-148 Bluestone to Antero - Merger DB 35-1236 Antero to XTO Energy - 100' above top of Rhinestreet to 100' below base Marcellus DB 1497-765	1219-979	1/8 or greater
1	Deborah C. Ryan f/k/a Deborah C. Rainey	XTO Energy, Inc.	1514-761	1/8 or greater
1	Deborah C. Rainey, single	Jackson L. Smith Enterprises, dba WV Energies. Jackson L. Smith Enterprises, dba WV Energies to Sheldon & Assoc. - All Depths DB 1220-528. Sheldon & Assoc to Diversified Resources - Name Change DB 54-987. Diversified Resources to M&R Investments - All Depths DB 1391-1166. M&R Investments to Bluestone Energy Partners - 350' Above top of Onondaga Limestone to Basement DB 1429-148. Bluestone to Antero - Merger DB 35-1236. Antero to XTO Energy - 100' above top of Rhinestreet to 100' below base Marcellus DB 1497-765.	1220-392	1/8 or greater
1	Pamela A. and Richard L. Brooks	XTO Energy, Inc.	1514-753	1/8 or greater
1	David J. and Melanie S. Decker	XTO Energy, Inc.	1514-757	1/8 or greater
1	Mark E. and Julie A. Decker	XTO Energy, Inc.	1514-745	1/8 or greater
1	Kristie L. and Eric S. Stinespring	XTO Energy, Inc.	1514-749	1/8 or greater



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	Jackson L. Smith Enterprises, dba WV Energies. Jackson L. Smith Enterprises, dba WV Energies to Sheldon & Assoc. - All Depths DB 1220-528. Sheldon & Assoc to Diversified Resources - Name Change DB 54-987. Diversified Resources to M&R Investments - All Depths DB 1391-1166. M&R Investments to Bluestone Energy Partners - 350' Above top of Onondaga Limestone to Basement DB 1429-148. Bluestone to Antero - Merger DB 35-1236. Antero to XTO Energy - 100' above top of Rhinestreet to 100' below base Marcellus DB 1497-765.	1219-1240	1/8 or greater
	Jackson L. Smith Enterprises, dba WV Energies. Jackson L. Smith Enterprises, dba WV Energies to Sheldon & Assoc. - All Depths DB 1220-528. Sheldon & Assoc to Diversified Resources - Name Change DB 54-987. Diversified Resources to M&R Investments - All Depths DB 1391-1166. M&R Investments to Bluestone Energy Partners - 350' Above top of Onondaga Limestone to Basement DB 1429-148. Bluestone to Antero - Merger DB 35-1236. Antero to XTO Energy - 100' above top of Rhinestreet to 100' below base Marcellus DB 1497-765.	1220-430	1/8 or greater
in Fortney;	Hope Natural Gas Co. Hope Natural Gas Co to Consolidated Gas Supply - All Depths DB 903-179. Consolidated Gas Supply to Consolidated Gas Transmission - All Depths DB 1136-250. Consolidated Gas Transmission to CNG Transmission Corp - Name Change DB 51-795. CNG Transmission Corp to Eastern States O&G - All Depths DB 1276-1187. Eastern States O&G to EQT Production Company - Merger DB 59-854. EQT to XTO - 300 feet above the top of the Tully Formation to 100 feet below the top of the Onondaga Formation DB 1513-98.	210-338	1/8 or greater
	XTO Energy, Inc.	1488-494	1/8 or greater
	XTO Energy, Inc.	1488-490	1/8 or greater
istee under The Revocable Trust Agreement dated August 23, 1985, as	XTO Energy Inc.	1622-353	1/8 or greater
a West Virginia Corporation	XTO Energy Inc.	1622-363	1/8 or greater
dow	XTO Energy Inc.	1494-72	1/8 or greater
David Matheny, acting as Executor	XTO Energy Inc.	1494-985	1/8 or greater
ian	XTO Energy Inc.	1626-167	1/8 or greater
hillip Sage Jr., wife and husband	XTO Energy Inc.	1625-441	1/8 or greater
Lee	XTO Energy Inc.	1627-357	1/8 or greater
inis Bozeman, wife and husband	XTO Energy Inc.	1626-542	1/8 or greater
death not having since remarried	XTO Energy Inc.	1622-370	1/8 or greater
ngle man	XTO Energy Inc.	1623-1337	1/8 or greater
chard Oran Love, wife and husband	XTO Energy Inc.	1623-1348	1/8 or greater
Martha Louise Paulson, husband and wife	XTO Energy Inc.	1623-1334	1/8 or greater
death not having since remarried	XTO Energy Inc.	1623-1340	1/8 or greater
man	XTO Energy Inc.	1624-1	1/8 or greater

Environmental Protection

	1476-142	1/8 or greater
	1626-167	1/8 or greater
	1625-441	1/8 or greater
	1627-357	1/8 or greater
	1626-542	1/8 or greater
	1622-370	1/8 or greater
	1623-1337	1/8 or greater
	1623-1348	1/8 or greater
	1623-1334	1/8 or greater
	1623-1340	1/8 or greater
	1624-1	1/8 or greater
	1378-1081	1/8 or greater
	1622-366	1/8 or greater
	1518-602	1/8 or greater
	1627-384	1/8 or greater
	1621-1171	1/8 or greater
	1621-1185	1/8 or greater
	1621-1174	1/8 or greater
	1621-1177	1/8 or greater
	1621-1180	1/8 or greater
	1374-1264	1/8 or greater
	1409-603	1/8 or greater
	1526-395	1/8 or greater
	1637-1341	1/8 or greater
	1637-1341	1/8 or greater
	1476-142	1/8 or greater
	1476-142	1/8 or greater
	219-225	1/8 or greater
	1624-4	1/8 or greater
	1626-189	1/8 or greater
	1626-559	1/8 or greater
	1626-186	1/8 or greater
	1626-183	1/8 or greater
	1371-922	1/8 or greater

17	Melissa Tarleton	XTO Energy Inc.	1371-1218	1/8 or greater
17	Juliana Swanson	XTO Energy Inc.	1371-302	1/8 or greater
17	Edra Fiocca	XTO Energy Inc.	1314-77	1/8 or greater
17	William D. Gorby	XTO Energy Inc.	1371-267	1/8 or greater
17	Edwin R. Gorby	XTO Energy Inc.	1371-80	1/8 or greater
17	Donald L. Gorby	XTO Energy Inc.	1371-484	1/8 or greater
17	Claudia Goodwin Morgan	XTO Energy Inc.	1371-486	1/8 or greater

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WV Department of  
Environmental Protection



**XTO Energy, Inc.**  
22777 Springwoods  
Village Pkwy  
Spring, TX 77389-1425

---

June 6, 2019

Office of Oil & Gas  
WVDEP  
601 57<sup>th</sup> Street  
Charleston, WV 25304

Re: Rights to Drill under Roads – Ice South Unit 1H

To Whom It May Concern:

Based on research by XTO Energy's Land Department, our contractor's and 3<sup>rd</sup> party title attorneys, we have all necessary mineral rights under Harrison County routes 8/6 & 8, in the location of our planned well-bore for the Ice South Unit 1H.

Sincerely,

A handwritten signature in blue ink that reads 'Kaitlyn Lee'.

Kaitlyn Lee  
Landman  
22777 Springwoods Village Pkwy.  
Spring, TX 77389-1425

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

Date of Notice Certification: 8/30/19

API No. 47- \_\_\_\_\_  
Operator's Well No. Ice South Unit 1H  
Well Pad Name: Ice Pad

**Notice has been given:**

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>559144.432</u>
County:	<u>Harrison</u>		Northing:	<u>4364837.085</u>
District:	<u>Clay</u>	Public Road Access:	<u>CR 8/6 (Nutter Run)</u>	
Quadrangle:	<u>Shinnston</u>	Generally used farm name:	<u>XTO Energy Inc.</u>	
Watershed:	<u>Lower West Fork River (0502000206)</u>			

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 40px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
---	---

**Required Attachments:**

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

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SEP - 3 2019

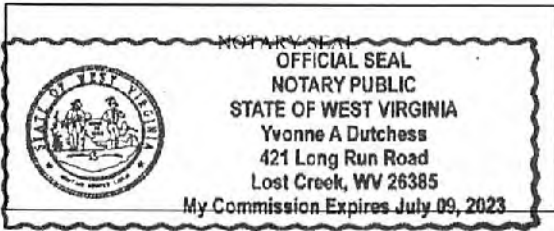
WV Department of  
Environmental Protection



**Certification of Notice is hereby given:**

THEREFORE, I Tim Sands, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, 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 and imprisonment.

Well Operator: <u>XTO Energy Inc.</u>	Address: <u>PO Box 1008</u>
By: <u><i>Tim Sands</i></u>	<u>Jane Lew, WV 26378</u>
Its: <u>Regulatory Coordinator</u>	Facsimile: <u>304-884-6809</u>
Telephone: <u>304-884-6000</u>	Email: _____



Subscribed and sworn before me this 30<sup>th</sup> day of August 2019.

*Yvonne A. Dutches* Notary Public

My Commission Expires July 09, 2023

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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WV Department of  
Environmental Protection

4703305973

WW-6A  
(9-13)

API NO. 47- \_\_\_\_\_ - \_\_\_\_\_  
OPERATOR WELL NO. Ice South Unit 1H  
Well Pad Name: Ice Pad

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

**Notice Time Requirement:** notice shall be provided no later than the filing date of permit application.

**Date of Notice:** 8/30/19 **Date Permit Application Filed:** 8/30/19

**Notice of:**

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

**Delivery method pursuant to West Virginia Code § 22-6A-10(b)**

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice  WSSP Notice  E&S Plan Notice  Well Plat Notice is hereby provided to:

SURFACE OWNER(s)  
Name: XTO Energy Inc  
Address: PO Box 1008  
Jane Lew, WV 26378  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Road and/or Other Disturbance)  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Impoundments or Pits)  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
Name: Consol Mining Company, LLC  
Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317

COAL OPERATOR  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)  
Name: None within 1500'  
Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

\*Please attach additional forms if necessary



WW-6A  
(8-13)

API NO. 47- \_\_\_\_\_  
OPERATOR WELL NO. Ice South Unit 1H  
Well Pad Name: Ice Pad

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

**This Notice Shall Include:**

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Well Location Restrictions**

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

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(8-13)

API NO. 47- \_\_\_\_\_ - \_\_\_\_\_  
OPERATOR WELL NO. Ice South Unit 1H  
Well Pad Name: Ice Pad

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

**Water Well Testing:**

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

**Water Testing Laboratories:**

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

**Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:**

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

**Written Comment:**

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

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**Time Limits and Methods for Filing Comments.**

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

**Comment Requirements**

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

**Permit Denial or Condition**

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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WW-6A  
(8-13)

API NO. 47-\_\_\_\_\_-\_\_\_\_\_  
OPERATOR WELL NO. Ice South Unit 1H  
Well Pad Name: Ice Pad

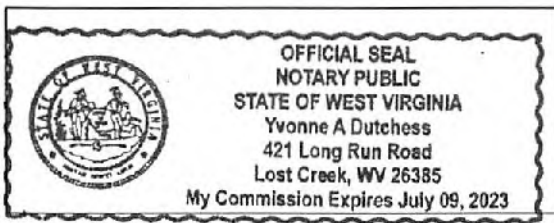
**Notice is hereby given by:**

Well Operator: XTO Energy, Inc  
Telephone: 304-884-6000  
Email: \_\_\_\_\_

Address: PO Box 1008  
Jane Lew, WV 26378  
Facsimile: 304-884-6609

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



Subscribed and sworn before me this 30<sup>th</sup> day of August 2019.  
Yvonne A. Dutchess Notary Public  
My Commission Expires July 09, 2023

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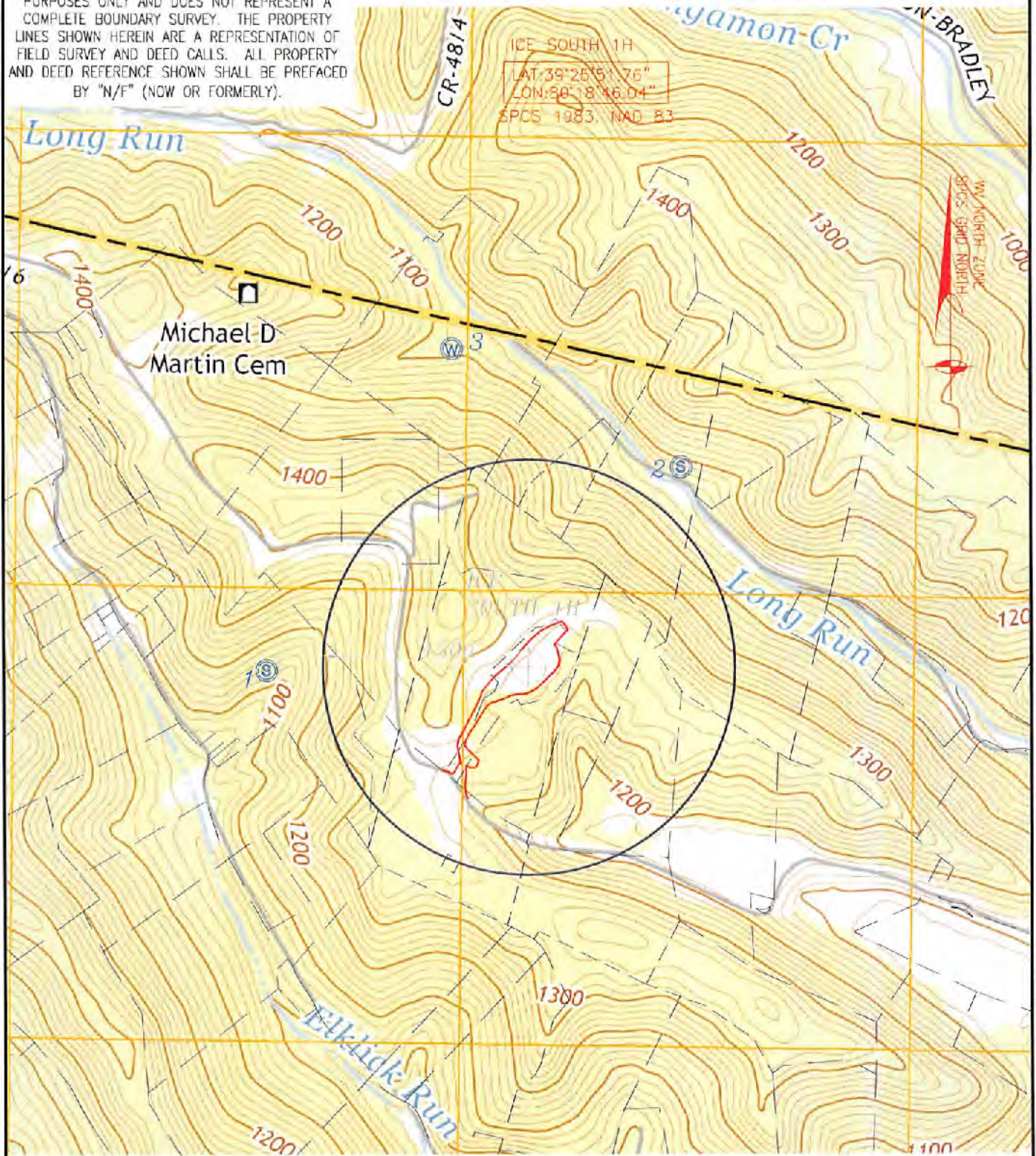


FORM W-9

NOTE: THIS PLAT IS FOR WELL LOCATION PURPOSES ONLY AND DOES NOT REPRESENT A COMPLETE BOUNDARY SURVEY. THE PROPERTY LINES SHOWN HEREIN ARE A REPRESENTATION OF FIELD SURVEY AND DEED CALLS. ALL PROPERTY AND DEED REFERENCE SHOWN SHALL BE PREFACED BY "N/F" (NOW OR FORMERLY).

LEGEND

- WATER WELL
- SPRING/FOND/STREAM
- SURFACE BOUNDARY



POINT	NAME	ADDRESS	CITY	STATE	ZIP CODE	DISTANCE	BEARING	PARCEL I.D.
1	Michael & Cynthia Nosack	712 Bices Run Road	Shinnston	WV	26431	1907'	S 89°22'02" W	Tax Map 5-147, Parcel 87
2	Faris W. & Margaret J. Coffindafer	24 Glenview Drive	Bridgeport	WV	26330	1826'	N 37°31'20" E	Tax Map 5-148, Parcel 4
3	Tina M. Veltri	48 White Oak Drive	Bridgeport	WV	26330	2371'	N 13°31'45" W	Tax Map 11-58, Parcel 37

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ICE SOUTH UNIT 1H WATER OVERALL

WV Department of Environmental Protection

CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA 6/21/2019 JC2018-85 SHEET 1 OF 2



2402 PENNSYLVANIA 66  
DELMONT, PA 15626  
(724) 757 - 2417  
www.jonesconsultant.com

Shinnston Quad (2014)  
Marion County, WV  
Scale: 1" = 1000'



190 THORN HILL ROAD  
WARRENDALE, PA 15086



**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF ENTRY FOR PLAT SURVEY**

**Notice Time Requirement:** Notice shall be provided at least SEVEN (7) days but no more than FORTY-FIVE (45) days prior to entry

**Date of Notice:** 7/11/2018      **Date of Planned Entry:** 7/25/18

**Delivery method pursuant to West Virginia Code § 22-6A-10a**

- PERSONAL SERVICE     
 REGISTERED MAIL     
 METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

**Notice is hereby provided to:**

SURFACE OWNER(s)

Name: XTO Energy Inc.

Address: PO Box 1008  
Jane Lew, WV 26376

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

COAL OWNER OR LESSEE

Name: See attached

Address: \_\_\_\_\_

MINERAL OWNER(s)

Name: See attached

Address: \_\_\_\_\_

\*please attach additional forms if necessary

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.431022, -80.312663</u>
County: <u>Harrison</u>	Public Road Access: <u>CR 6/6 (Nutter Run)</u>
District: <u>Clay</u>	Watershed: <u>Lower West Fork River</u>
Quadrangle: <u>Shinnston</u>	Generally used farm name: <u>XTO Energy Inc</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: <u>XTO Energy Inc.</u>	Address: <u>PO Box 1008</u>
Telephone: <u>304-884-6000</u>	<u>Jane Lew, WV 26376</u>
Email: _____	Facsimile: <u>304-884-6809</u>

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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**Surface Owner**

XTO Energy Inc.  
PO Box 1008  
Jane Lew, WV 26378

**Coal Owner or Lessee**

Consol Mining Company, LLC  
1000 Consol Energy Drive  
Canonsburg, PA 15317

**Mineral Owners**

Janice M. Brennan Trust  
PO Box 98  
Shinnston, WV 26431

Helen M. Burton  
8086 Powell Avenue  
Stonewood, WV 26301

Deborah C. Ryan  
5 Debbie Lane  
Conway, AR 72032

Dickie Harris  
3 Debbie Lane  
Conway, AR 72032

David J. & Melanie S. Decker  
181 Randolph Lane  
Steubenville, OH 43952

Anita L. Beasley  
22 Bradley Drive  
Cabot, AR 72023

Mark E. & Julie A. Decker  
856 Township Road 375  
Toronto, OH 43964

Richard A. Harris  
83 Highway 319  
Vilonia, AR 72173

Richard L. & Pamela A. Brooks  
2876 State Route 213  
Steubenville, OH 43952

Dustin S. Harris  
704 5th St.  
Conway, AR 72032

Eric S. & Kristie L. Stinespring  
2888 State Rout 213  
Steubenville, OH 43952

Jason P. Lee  
17 Thorn Cemetary Road  
Greenbrier, AR 72058

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WW-6A5  
(1/12)

Operator Well No. Ice South Unit 1H

**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF PLANNED OPERATION**

**Notice Time Requirement:** notice shall be provided no later than the filing date of permit application.

**Date of Notice:** 8/30/19      **Date Permit Application Filed:** 8/30/19

**Delivery method pursuant to West Virginia Code § 22-6A-16(c)**

- CERTIFIED MAIL                                       HAND  
RETURN RECEIPT REQUESTED                                      DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

**Notice is hereby provided to the SURFACE OWNER(s)**  
(at the address listed in the records of the sheriff at the time of notice):

Name: <u>XTO Energy Inc.</u>	Name: _____
Address: <u>PO Box 1008</u>	Address: _____
<small>Jane Lew, WV 26378</small>	_____

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>559144 432</u>
County: <u>Harrison</u>		Northing: <u>4384837 085</u>
District: <u>Clay</u>	Public Road Access: <u>CR 8/6 (Nutter Run)</u>	
Quadrangle: <u>Shinnston</u>	Generally used farm name: <u>XTO Energy Inc.</u>	
Watershed: <u>Lower West Fork River (0502000206)</u>		

**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by W. Va. Code § 22-6A-10(b) to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: <u>XTO Energy Inc.</u>	Address: <u>PO Box 1008</u>
Telephone: <u>304-884-8000</u>	<u>Jane Lew, WV 26378</u>
Email: _____	Facsimile: <u>304-884-8809</u>

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION  
**Division of Highways**

1900 Kanawha Boulevard East • Building Five • Room 110  
Charleston, West Virginia 25305-0430 • (304) 558-3505

Thomas J. Smith, P. E.  
Secretary of Transportation/  
Commissioner of Highways

November 28, 2018

Jill M. Newman  
Deputy Commissioner

James A. Martin, Chief  
Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304

Subject: DOH Permit for the Ice Well Pad, Harrison County  
Ice South Unit 1H

Dear Mr. Martin,

This well site will be accessed from Permit #04-2017-0076 issued to XTO Energy, Inc. for access to the State Road for a well site located off of Harrison County Route 8/6 SLS.

The operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018.

Very Truly Yours,

A handwritten signature in blue ink that reads "Gary K. Clayton".

Gary K. Clayton, P.E.  
Regional Maintenance Engineer  
Central Office O&G Coordinator

Cc: Tim Sands  
XTO Energy, Inc.  
CH, OM, D-4  
File

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Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	XTO Energy/ExxonMobil	Carrier Fluid	Water	7732-18-5	100	90.3211	
FR-16	C&J Energy Services	Friction Reducer		Listed Below			
Sand	C&J Energy Services	Sand - Bulk - Penns		Listed Below			
CI-3	C&J Energy Services	Acid Corrosion Inhibitors		Listed Below			
BIO-CLEAR 2000	C&J Energy Services	Biocides		Listed Below			
HC-7.5	C&J Energy Services	Bulk Acid		Listed Below			
Sand	C&J Energy Services	Sand - Bulk - Penns		Listed Below			
SI-6	C&J Energy Services	Paraffin & Scale Additives		Listed Below			

Items above are Trade Names with the exception of Base Water. Items below are the individual ingredients.

			Crystalline Silica, quartz	14808-60-7	99.9	7.93235	
			Crystalline Silica, quartz	14808-60-7	99.9	0.96377	
			Water	7732-18-5	92.5	0.61264	
			Aluminum Oxide	1344-28-1	1.1	0.08734	
			Hydrochloric Acid	7647-01-0	7.5	0.04967	
			Water	7732-18-5	96	0.02312	
			Distillates (Petroleum), Hydrotreated Light	64742-47-8	35	0.0181	
			Water	7732-18-5	30	0.01637	
			2-Propenoic acid, polymer with 2- propanamide, sodium salt	25987-30-8	30	0.01637	
			Polyethylene glycol	25322-68-3	50	0.01586	
			Aluminum Oxide	1344-28-1	1.1	0.01081	
			2,2-Dibromo-3-nitrilo- propionamide (DBNPA)	10222-01-2	30	0.00952	
			Water	7732-18-5	28.5	0.00904	
			Titanium Oxide	13463-67-7	0.1	0.00794	
			Iron Oxide	1309-37-1	0.1	0.00794	
			Ethylene Glycol	107-21-1	5	0.00273	
			Sodium Acetate	127-09-3	3	0.00164	
			Phosphonic Acid Salt	Proprietary	6	0.00145	
			Poly(oxy-1,2-ethandiyl), alpha-isodecyl-omega- hydroxy-phosphate	106818-68-8	2	0.00109	
			Sorbitan Monooleate	1338-43-8	2	0.00109	
			Alcohols, C12-15- branched and linear, ethoxylated propoxylated	120313-48-6	2	0.00109	
			Iron Oxide	1309-37-1	0.1	0.00097	
			Titanium Oxide	13463-67-7	0.1	0.00097	
			Ethoxylated Sorbitan	9005-65-6	1	0.00055	
			Ammonium Chloride	12125-02-9	2	0.00048	
			Monoethanolamine hydrochloride	2002-24-6	2	0.00048	
			Ethylene Glycol	107-21-1	40	0.00048	
			Water	7732-18-5	30	0.00036	
			Methanol	67-56-1	1	0.00024	
			Dimethylformamide	68-12-2	20	0.00024	
			Tar bases, quinoline derivs, benzyl chloride- quaternized	72480-70-7	15	0.00018	
			Cinnamaldehyde	104-55-2	15	0.00018	
			2-Butoxyethanol	111-75-2	15	0.00018	
			1-DECANOL	112-30-1	5	0.00006	
			Poly(oxy-1,2- ethandiyl),alpha-(4- nonylphenyl)-omega hydroxy-, branched	127087-87-0	5	0.00006	
			2-Propenamide as residual	79-06-1	0.1	0.00006	
			1-OCTANOL	111-87-5	2.5	0.00003	
			Isopropanol	67-63-0	2.5	0.00003	
			Triethyl Phosphate	78-40-0	2.5	0.00003	
			Tar Bases, Quinoline	58513-87-1	1	0.00001	

4703305973

# ICE PAD AS-BUILT

CR 8/6, CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA

**OFFICE RECEIVED**  
 Office of Energy, Oil & Gas  
**SEP - 3 2019**  
 WV Department of Environmental Protection

**SITE INFO**

**SITE DESCRIPTION:**

LOCATED SOUTHWEST OF COUNTY ROUTE 44/DRAYS RUN ROAD  
 TOTAL AREA OF SITE - 10.44 ACRES  
 AREA OF ACCESS ROAD - 0.54 ACRES  
 AREA OF PAD - 3.41 ACRES  
 AREA OF SITE TO UNDER GO EXCAVATION - 8.43 ACRES  
 AREA OF DISTURBANCE PER PARCEL:  
 XTO ENERGY - 10.44 ACRES

PRE-CONSTRUCTION RUNOFF VOLUME - 38,103 CF  
 POST-CONSTRUCTION RUNOFF VOLUME - 33,989 CF  
 SCHEDULE OF MAJOR CONSTRUCTION  
 COMMENCEMENT - SUMMER 2017  
 COMPLETION - SUMMER 2019  
 RECEIVING STREAM & SURFACE WATER  
 (EXISTING DRAINAGE FLOWS TO DIRT TO BRIDGEMAN CREEK)



SHEET NO.	TITLE
1	TITLE SHEET
2	AS-BUILT DRAWING - PLAN
3	AS-BUILT DRAWING - PROFILE

REVISION NO.	DATE	DESCRIPTION

DESIGNED BY: SSP	REVISION NO.: 09100E
REVIEWED BY: AWK	
DRAWN BY: SSP	
DATE: 5/16/2019	
PROJ. NO.: 1637	
DRAWING NO.: 9XTOICE	

SCALE:  
N/A

**MA**  
**Morris Knowles & Associates, Inc.**  
*Consulting Engineers and Land Surveyors*  
 443 Athena Drive  
 Delmont, PA 15626  
 Telephone: (724) 468-1622  
 Fax: (724) 468-8940

PREPARED FOR:

**XTO ENERGY, INC.**  
 480 INDUSTRIAL PARK ROAD  
 JANE LEW, WV 26378  
 TELEPHONE: (304) 884-6042

PREPARED BY:

**Morris Knowles & Associates, Inc.**  
*Consulting Engineers & Land Surveyors*  
 443 ATHENA DRIVE DELMONT, PA 15626  
 TELEPHONE: (724) 468-1622 FAX: (724) 468-8940

*Charles F. Hammontree*  
 CHARLES F. HAMMONTREE, REGISTERED PROFESSIONAL ENGINEER DATE: 8/2/2019

- NOTES:**
- MORRIS KNOWLES & ASSOCIATES, INC. EXPRESSLY RESERVES ITS COMMON LAW COPYRIGHT AND OTHER RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR MANIPULATED IN ANY FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT PERMISSION AND CONSENT OF MORRIS KNOWLES & ASSOCIATES, INC.
  - THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ANY CHANGES IN DESIGN PLANS UNLESS WRITTEN CONSENT IS GIVEN BY THE ENGINEER. THE CONTRACTOR AND/OR THE OWNER WILL BE HELD RESPONSIBLE FOR ANY FIELD MODIFICATIONS MADE WITHOUT THE WRITTEN CONSENT OF THE ENGINEER AND NECESSARY APPROVALS BY PERMITTING AGENCIES.
  - THE LOCATION OF EXISTING UTILITIES WERE TAKEN FROM RECORDS AND MARKING PROVIDED BY OTHERS AND OBSERVED EVIDENCE. THE LOCATIONS SHOWN MAY BE APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS, SIZES AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL EXERCISE CARE TO AVOID DAMAGE TO ALL EXISTING UTILITIES.



**WVDEP OOG**  
**ACCEPTED AS-BUILT**  
 8/8/2019

**ICE PAD**  
 XTO ENERGY, INC.  
 CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA  
**TITLE SHEET**

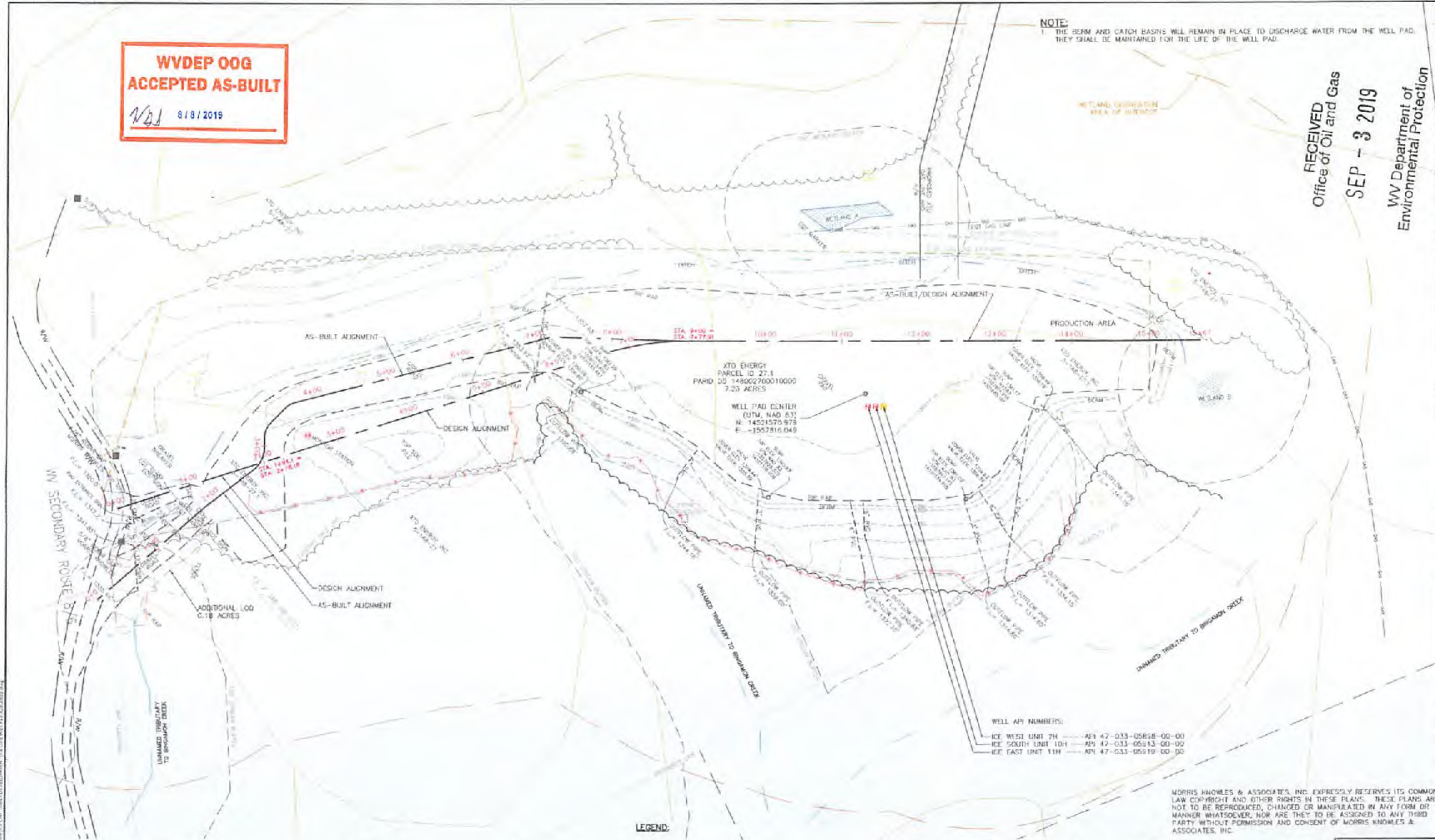
DRAWING NO. 9XTOICE
SHEET NO. 1



**WVDEP OOG  
ACCEPTED AS-BUILT**  
VBJ 8/8/2019

**NOTE:**  
THE BERM AND CATCH BASINS WILL REMAIN IN PLACE TO DISCHARGE WATER FROM THE WELL PAD. THEY SHALL BE MAINTAINED FOR THE LIFE OF THE WELL PAD.

RECEIVED  
Office of Oil and Gas  
SEP - 3 2019  
WV Department of  
Environmental Protection



REVISION BY:	DATE:	DESCRIPTION:

DESIGNED BY: SRP  
REVIEWED BY: MMV  
DRAWN BY: SRP  
DATE: 8/8/2019  
PROJECT NO.: 1637  
DRAWING NO.: 9XTOICE

SCALE:  
AS NOTED

**MA** Morris Knowles & Associates, Inc.  
Surveying, Engineering and Land Planning  
1200 West Virginia Turnpike, Suite 100  
Martinsburg, WV 26158  
Tel: (304) 263-9142

**ICE PAD**  
Prepared for:  
XTO ENERGY, INC.  
relocated

CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA  
**AS-BUILT DRAWING - PLAN**

CALL BEFORE YOU DIG  
IN WEST VIRGINIA  
1-800-245-4848

THE GENERAL CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES INVOLVED IN THE SITE NO MORE THAN 10 DAYS AND NO LESS THAN 48 HOURS IN ADVANCE OF EXCAVATION (WV CHAPTER 24C-1-5, UNDERGROUND FACILITY DAMAGE PREVENTION ACT).

WV STATE LAW REQUIRES  
2 WORKING DAYS NOTICE



Know what's below  
Call before you dig



**LEGEND:**

- |   |                  |                |
|---|------------------|----------------|
| EXISTING CONTOUR LINES                            | GRAVEL PAVEMENT  | ORIGINAL LDC   |
| SOIL TYPE LINE                                    | EXISTING STREAM  | ADDITIONAL LDC |
| EASEMENT LINE                                     | SETBACK LINE     |                |
| PROPERTY LINE                                     | EXISTING TRENCH  |                |
| WETLAND DELINEATION STUDY AREA / AREA OF INTEREST | EXISTING WETLAND |                |

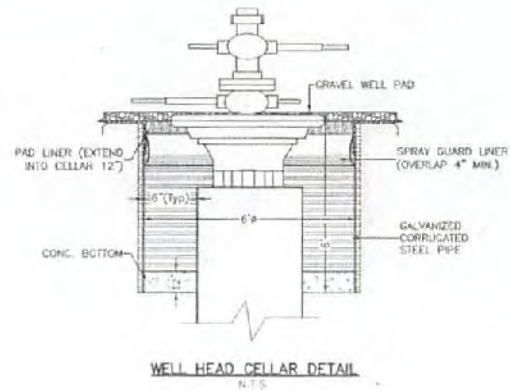
THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ANY CHANGES IN DESIGN PLANS UNLESS WRITTEN CONSENT IS GIVEN BY THE ENGINEER. THE CONTRACTOR AND/OR THE OWNER WILL BE HELD RESPONSIBLE FOR ANY FIELD MODIFICATIONS MADE WITHOUT THE WRITTEN CONSENT OF THE ENGINEER AND NECESSARY APPROVALS BY PERMITTING AGENCIES.

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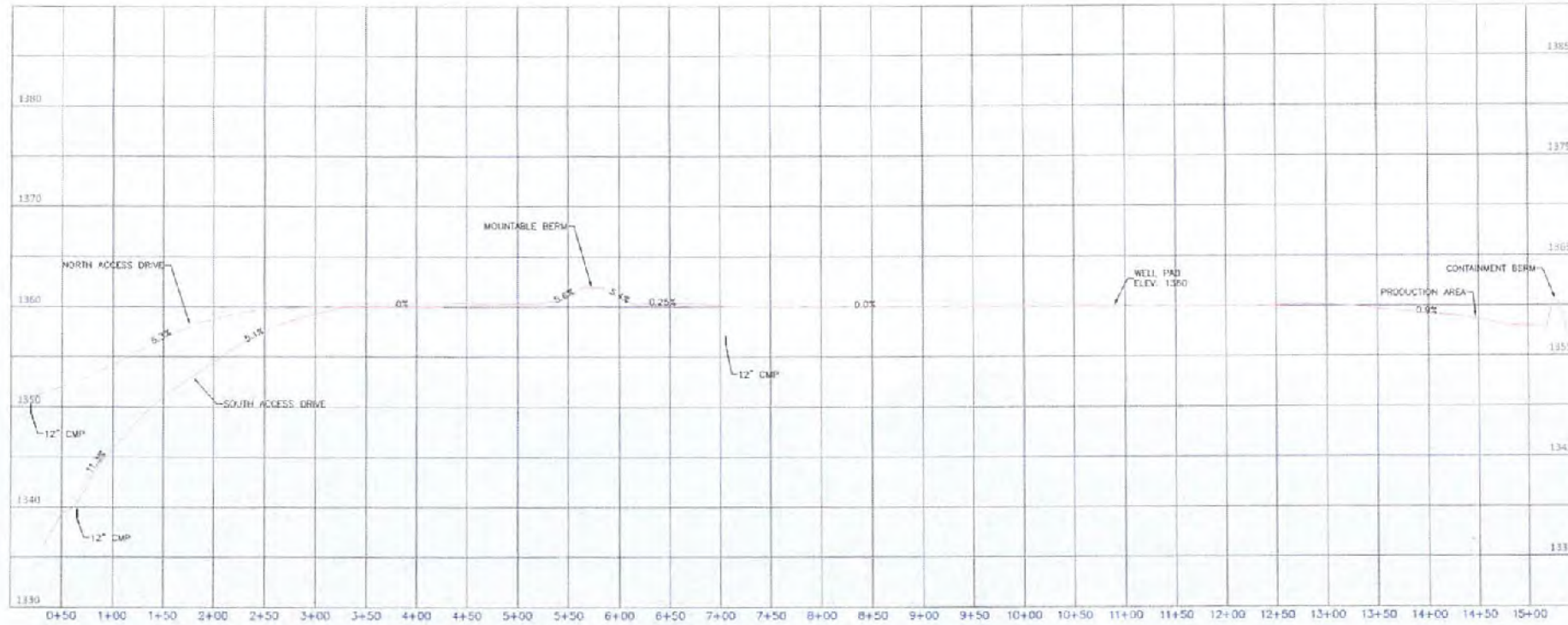
DRAWING NO.  
9XTOICE  
SHEET NO.  
2





**WVDEP OOG**  
**ACCEPTED AS-BUILT**  
*WJ* 8/8/2019

RECEIVED  
 Office of Oil and Gas  
**SEP - 3 2019**  
 WV Department of  
 Environmental Protection



**As-Built Drive Alignment**  
 SCALE HORIZ. 1" = 50'  
 SCALE VERT. 1" = 8'

DESIGNED BY: SPP	DATE: 8/6/2019	DRAWING NO.: 9XT0ICE			
CHECKED BY: MAY	DATE: 8/6/2019	PROJ. NO.: 1437	DATE: 8/6/2019	DATE: 8/6/2019	DATE: 8/6/2019
REVISED BY: SPP	DATE: 8/6/2019	DRAWING NO.: 9XT0ICE	DATE: 8/6/2019	DATE: 8/6/2019	DATE: 8/6/2019
REVISED BY: SPP	DATE: 8/6/2019	DRAWING NO.: 9XT0ICE	DATE: 8/6/2019	DATE: 8/6/2019	DATE: 8/6/2019
REVISED BY: SPP	DATE: 8/6/2019	DRAWING NO.: 9XT0ICE	DATE: 8/6/2019	DATE: 8/6/2019	DATE: 8/6/2019
REVISED BY: SPP	DATE: 8/6/2019	DRAWING NO.: 9XT0ICE	DATE: 8/6/2019	DATE: 8/6/2019	DATE: 8/6/2019
REVISED BY: SPP	DATE: 8/6/2019	DRAWING NO.: 9XT0ICE	DATE: 8/6/2019	DATE: 8/6/2019	DATE: 8/6/2019
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REVISED BY: SPP	DATE: 8/6/2019	DRAWING NO.: 9XT0ICE	DATE: 8/6/2019	DATE: 8/6/2019	DATE: 8/6/2019
REVISED BY: SPP	DATE: 8/6/2019	DRAWING NO.: 9XT0ICE	DATE: 8/6/2019	DATE: 8/6/2019	DATE: 8/6/2019

**MKA**  
**Morris Knowles**  
 Associates, Inc.  
 444 West Virginia Ave.  
 Charleston, WV 25301  
 Tel: (304) 426-4422  
 Fax: (304) 426-8100

**ICE PAD**  
 prepared for  
**XTO ENERGY, INC.**  
 CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA  
**AS-BUILT DRAWING - PROFILE**



DRAWING NO.  
**9XT0ICE**  
 SHEET NO.  
**3**