

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47 - 049 - 02409 County Marion District Mannington
Quad Shinnston Pad Name Swearingen Pad Field/Pool Name Marcellus
Farm name Carder, Don E. Well Number Swearingen 3H
Operator (as registered with the OOG) XTO Energy Inc.
Address PO Box 1008 City Jane Lew State WV Zip 26378

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4368425 Easting 555567
Landing Point of Curve Northing 4368629.8 Easting 555595.6
Bottom Hole Northing 4370118 Easting 554849

Elevation (ft) 1372 GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)
Synthetic Oil Based Mud

APPROVED

NAME: Sam Ward

DATE: 8/23/17

Date permit issued 11/06/15 Date drilling commenced 11/21/15 Date drilling ceased 4/2/16
Date completion activities began 10/23/16 Date completion activities ceased 11/6/16
Verbal plugging (Y/N) _____ Date permission granted _____ Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft None Noted Open mine(s) (Y/N) depths _____
Salt water depth(s) ft None Noted Void(s) encountered (Y/N) depths _____
Coal depth(s) ft 581-588 Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) N

RECEIVED
Office of Oil and Gas
JAN 26 2017
588-591
WV Department of
Environmental Protection

Reviewed by: _____

09/15/2017

APPROVED

NAME: _____

DATE: _____

Secretary
Department of Environment
and Natural Resources

JAN 8 2017

Environmental Protection
Department of Environment
and Natural Resources

09/15/2017

API 47-049 - 02409 Farm name Carder, Don E. Well number Swearingen 3H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	28	24	40	New	94.62/PE&B		Grouted To Surface
Surface	17 1/2	13 3/8	647.1	New	48/H-40		N - Grouted To Surface
Coal							
Intermediate 1	12 3/8 / 12 1/4	9 5/8	3127.4	New	36/J-55		N - Perforated and Circulated to Surface
Intermediate 2							
Intermediate 3							
Production	8 3/4 / 8 1/2	5 1/2	13454	New	20/P-110		TOC - 5,367'
Tubing							
Packer type and depth set							

Comment Details Surface - 75 bbls on backside to cement to surface. Intermediate - 238.5 bbls - no cement to surface. Run bond log. Perforated 1335' - 1337'. Pumped 120 bbls - 12 bbls cement to surface.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Redi-Mix	5 yards				0	8
Surface	A	980	15.60	1.19	1166.2	0	8
Coal							
Intermediate 1	A	1705	15.60	1.18	2011.9	0	8
Intermediate 2							
Intermediate 3							
Production	50/50 POZ / H	385 / 1575	15.20 / 15.60	1.07 / 1.18	411.95 / 1858.5	3745	8
Tubing							

Drillers TD (ft) 13,495' Loggers TD (ft) 13,495'
 Deepest formation penetrated Marcellus Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) 5928

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____
 Surface - Every 3rd Joint
 Intermediate - Every 3rd Joint
 Production - Every other Joint (TD-TOC)

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

RECEIVED
 Office of Oil and Gas **01/15/2017**
JAN 26 2017
 WV Department of
 Environmental Protection

API 47- 049 - 02409 Farm name Carder, Don E. Well number Swearingen 3H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	See attached				

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
			See attached					

Please insert additional pages as applicable.

RECEIVED
 Office of Oil and Gas 09/15/2017
 JAN 26 2017
 WV Department of
 Environmental Protection

Perforation Record Swearingen 3H 47-049-02409

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	10/23/2016	13,137	13,307	60	Marcellus
2	10/24/2016	12,897	13,067	60	Marcellus
3	10/25/2016	12,657	12,827	60	Marcellus
4	10/25/2016	12,417	12,587	60	Marcellus
5	10/26/2016	12,179	12,347	60	Marcellus
6	10/27/2016	11,942	12,107	60	Marcellus
7	10/27/2016	11,697	11,867	60	Marcellus
8	10/28/2016	11,457	11,627	60	Marcellus
9	10/29/2016	11,217	11,387	60	Marcellus
10	10/29/2016	10,977	11,147	60	Marcellus
11	10/30/2016	10,737	10,907	60	Marcellus
12	10/31/2016	10,497	10,667	60	Marcellus
13	11/1/2016	10,257	10,427	60	Marcellus
14	11/1/2016	10,017	10,187	60	Marcellus
15	11/3/2016	9,777	9,947	60	Marcellus
16	11/4/2016	9,537	9,707	60	Marcellus
17	11/4/2016	9,297	9,467	60	Marcellus
18	11/5/2016	9,057	9,227	60	Marcellus
19	11/5/2016	8,817	8,987	60	Marcellus
20	11/5/2016	8,577	8,747	60	Marcellus
21	11/5/2016	8,337	8,507	60	Marcellus
22	11/6/2016	8,097	8,267	60	Marcellus
23	11/6/2016	7,857	8,027	60	Marcellus

RECEIVED
 Office of Oil and Gas
 09/15/2017
 JAN 26 2017
 WV Department of
 Environmental Protection

Stimulation Information Per Stage Swearingen 3H 47-049-02409

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amt. of Nitrogen / other (units)
1	10/24/2016	85	7,337	6,156	6,156	306,520	10,993	
2	10/25/2016	85	7,228	6,119	4,549	308,380	11,261	
3	10/25/2016	85	7,767	5,976	4,451	308,334	11,104	
4	10/26/2016	85	7,756	6,089	4,763	308,440	10,861	
5	10/27/2016	85	7,932	5,960	5,034	277,980	10,500	
6	10/27/2016	85	7,507	6,176	5,445	307,840	10,608	
7	10/28/2016	84	7,578	6,111	4,845	307,357	10,867	
8	10/29/2016	84	7,503	6,099	5,442	272,706	10,321	
9	10/29/2016	85	7,428	5,878	5,999	304,290	10,836	
10	10/30/2016	82	7,800	6,170	4,988	302,257	12,890	
11	10/31/2016	83	7,318	6,690	5,183	309,940	11,806	
12	10/31/2016	85	7,388	6,142	5,183	305,560	11,768	
13	11/1/2016	86	7,497	6,782	5,211	308,020	12,350	
14	11/3/2016	86	8,099	6,062	5,157	302,740	11,525	
15	11/4/2016	86	7,410	6,606	5,344	304,460	11,730	
16	11/4/2016	86	7,762	6,202	5,163	304,800	11,635	
17	11/5/2016	84	7,135	6,379	5,443	255,860	10,469	
18	11/5/2016	86	7,021	6,348	5,187	300,580	10,656	
19	11/5/2016	85	7,136	6,747	5,006	314,420	10,787	
20	11/5/2016	86	7,161	6,284	5,334	308,440	10,677	
21	11/6/2016	83	7,148	7,112	5,474	287,080	10,189	
22	11/6/2016	87	7,123	6,302	5,443	298,880	11,042	
23	11/6/2016	85	7,263	6,152	5,581	308,780	10,600	

RECEIVED
Office of Oil and Gas 09/15/2017

JAN 26 2017
WV Department of
Environmental Protection

API 47- 049 - 02409 Farm name Carder, Don E. Well number Swearingen 3H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>7620</u> TVD	<u>13495</u> MD
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1650 psi Bottom Hole 3300 psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 3960 mcfpd Oil 0 bpd NGL 0 bpd Water 600 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	<u>0</u>		<u>0</u>		
<u>See attached</u>					

Please insert additional pages as applicable.

Drilling Contractor Nomac Drilling
Address 3400 South Radio Road City El Reno State OK Zip 73036

Logging Company MS Energy Services
Address 7821 Will Rogers Blvd City Ft. Worth State TX Zip 76140

Cementing Company C&J Energy Services
Address 3990 Rogerdale Rd. City Houston State TX Zip 77042

Stimulating Company Keane Group
Address 120 Airstrip Dr. City Mill Hall State PA Zip 17751

Please insert additional pages as applicable.

Completed by Tim Sands Telephone 304-884-6000
Signature *Tim Sands* Title Regulatory Compliance Technician Date 1/24/17

Submittal of Hydraulic Fracturing Chemical Disclosure Information

Attach copy of FRACFOCUS Registry

RECEIVED
Office of Oil and Gas
JAN 26 2017
09/15/2017
WV Department of Environmental Protection

Lithology Swearingen 3H 47-049-02409

Lithology / Formation Name	Top Depth in FT TVD	Bottom Depth in FT TVD	Top	Bottom	Describe Rock Type and Record Quantity and Type of Fluid (Freshwater, Brine, Oil, Gas, H2S, ETC)
			Depth in FT MD	Depth in FT MD	
CONDUCTOR	0	40	0	40	
GRAY SANDSTONE	40	272	40	272	
GRAY SAND	272	388	272	388	
SAND/SHALE	388	504	388	504	
GRAY SHALE	504	586	504	581	
SOLID COAL	581	588	581	588	
OPEN	588	591	588	591	
SAND/SHALE	591	830	591	830	
GRAY SHALE	830	835	830	835	
GRAY SHALE/SAND	835	1383	835	1383	
GRAY SHALE	1383	1972	1383	1972	
WHITE SAND	1972	2502	1972	2502	
RED ROCK	2502	2607	2502	2607	
GRAY SAND	2607	2829	2607	2829	
GRAY SHALE	2829	3306	2829	3306	
GRAY SAND/SHALE	3306	3531	3306	3531	
GRAY SHALE	3531	3644	3531	3644	
GRAY SAND/SHALE	3644	4543	3644	4543	
GRAY/SHALE	4543	4850	4543	4850	
GRAY SAND/SHALE	4850	5000	4850	5000	
GRAY SHALE	5000	5500	5000	5550	
GRAY SILTSTONE/ SHALE			5550	6050	
GRAY SHALE			6050	7340	
BLACK SHALER			7340	7402	
LIMESTONE/ SHALE			7402	7480	
GRAY SHALE/LIMESTONE			7480	7600	
BLACK SHALE			7600	7871	
LIMESTONE/SHALE			7871	7890	
SHALE/MARL/LIMESTONE			7890	7930	
BLACK SHALE			7930	8170	
BLACK SHALE/LIMESTONE			8170	8240	
BLACK SHALE			8240	8510	
BLACK SHALE.MARL			8510	8600	
BLACK SHALE			8600	8690	
BLACK SHALE/MARL			8690	8960	
BLACK SHALE			8960	9050	
BLACK SHALE/MARL			9050	9140	
BLACK SHALE			9140	10910	
BLACK SHALE / LIMESTONE			10910	10940	
BLACK SHALE			10940	11120	
BLACK SHALE/LIMESTONE			11120	11210	
BLACK SHALE/MARL			11210	11390	
BLACK SHALE			11390	12020	
BLACK SHALE/MARL			12020	12110	
BLACK SHALE			12110	13270	
BLACK SHALE/MARL			13270	13450	
BLACK SHALE			13450	13495	

Geneseo Shale @ 7,328' MD / 7,225' TVD
 Burkett Shale @ 7,354' MD / 7,244' TVD
 Tully Limestone @ 7,400' MD / 7,274' TVD
 Hamilton Shale @ 7,481' MD / 7,324' TVD
 Upper Marcellus Shale @ 7,602' MD / 7,386' TVD
 Purcell Limestone @ 7,857' MD / 7,471' TVD
 Lower Marcellus Shale @ 7,890' MD / 7,478' TVD

RECEIVED
 Office of Oil and Gas 09/15/2017
 JAN 26 2017
 WV Department of
 Environmental Protection

5905'
(Scale: 1" = 2000')

Latitude: 39°30'00"

SWEARINGEN

3H

State Plane Coord.
West Virginia North
NAD27

Top Hole Loc
(N) 352082.586
(E) 1758819.772

L1 = N 61°34'37" E 387.7'
AZ 61°34'37"

LEGEND	
LEASE BOUNDARY	---
SURFACE BOUNDARY	----
CREEK / STREAM	~ ~ ~ ~
ROADS	====
PERMITTED LATERAL	----
AS-DRILLED LATERAL	----
500' LATERAL OFFSET	----
EXISTING GAS WELL	★
GROUNDWATER SOURCE / WATER SUPPLY	⊕



SCALE: 1" = 2400'

NOTES ON SURVEY:

- TWO DWELLINGS WITHIN 625' WERE FOUND.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
- TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV NORTH ZONE NAD '83.
- WELL ELEVATION ESTABLISHED BY DIRECT GPS NAVD83.
- BOUNDARIES SHOWN ARE TAKEN FROM TAX MAPS, DEEDS, AND FIELD SURVEY. THIS DRAWING IS NOT REPRESENTATIVE OF A FULL BOUNDARY SURVEY.
- SURFACE OWNER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF MARION COUNTY WV. IN JUNE OF 2015. LEASE OWNERS AND BOUNDARIES PROVIDED BY XTO ENERGY, INC.
- WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.
- DWELLING A-1 IS 517' FROM CENTER OF PAD.
- DWELLING B-1 IS 552' FROM CENTER OF PAD.

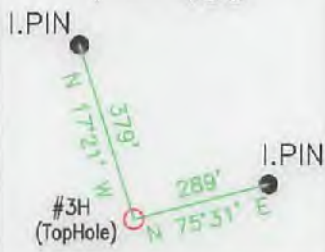
PAGE 1 of 2

MAGNETIC NORTH
08°47' W

SPCS GRID NORTH
W. VA. NORTH ZONE
NAD 1983

REFERENCES

1" = 400'



TRI-COUNTY ENGINEERING, LLC

319 PAINTERSVILLE RD.
HUNKER, PA 15639
TCE@TRICOUNTYENG.COM
(724) 635-0210

FILE # XTO-OG57
DRAWING # OG57-10-3H
SCALE: 1" = 1000'
MINIMUM DEGREE
OF ACCURACY: 1:2500
PROVEN SOURCE
OF ELEVATION: DIRECT 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 REGULATIONS ISSUED AND PRESCRIBED BY
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: Donald R. Hixson Jr.

R.P.E.: 17818

L.L.S.:



(+) DENOTES LOCATION OF AS-DRILLED
WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTOWN, WV 25304



DATE: 6/28/2016

PLACE SEAL HERE

OPERATOR'S WELL#: SWEARINGEN 3H

API WELL #: 47 49 02409
STATE COUNTY PERMIT

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

WATERSHED: BINGAMON CREEK WATERSHED ELEVATION: 1372'
COUNTY/DISTRICT: MARION/MANNINGTON QUADRANGLE SHINNSTON 7.5'
SURFACE OWNER DON E CARDER ACREAGE 207.16
OIL & GAS ROYALTY OWNER: DON E CARDER ACREAGE 468.76

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 ACTUAL DEPTH: 13,495'
WELL OPERATOR XTO ENERGY INC. DESIGNATED AGENT JANE BEALL
Address 810 HOUSTON STREET Address P.O. BOX 1008
City FORT WORTH State TX Zip Code 76102 City JANE LEW State WV Zip Code 26378

RECEIVED
Office of Oil and Gas
JAN 26 2017
WV Department of
Environmental Protection

Longitude: 80°20'00"

(Scale: 1" = 2000')

13285'

City FORT WORTH State TX Zip Code 76102
 WELL OPERATOR XTO ENERGY INC.
 Address 810 HOUSTON STREET
 Designated Agency Beall
 City JANE LEW State WV Zip Code 26378
 Address P.O. BOX 1008
 Environmental Protection
 TMD: 13,495

TARGET FORMATION MARCELLUS
 ACTUAL (SPECIFY):
 CLEAN OUT & REPLUG OTHER CHANGE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 DRILL CONVERT DRILL DEEPER REDUCE FRACTURE OR STIMULATE
 OIL & GAS ROYALTY OWNER: DON E CARDER SURFACE OWNER DON E CARDER
 COUNTY/DISTRICT: MARION/MANNINGTON WATERSHED: BINGAMON CREEK WATERSHED
 Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTOWN, WV 25304
 (+) DENOTES LOCATION OF AS-DRILLED WELL ON UNITED STATES TOPOGRAPHIC MAPS
 DATE: 6/28/2016
 OPERATOR'S WELL#: SWEARINGEN 3H
 STATE COUNTY PERMIT 47 49 02409
 API WELL #: 47

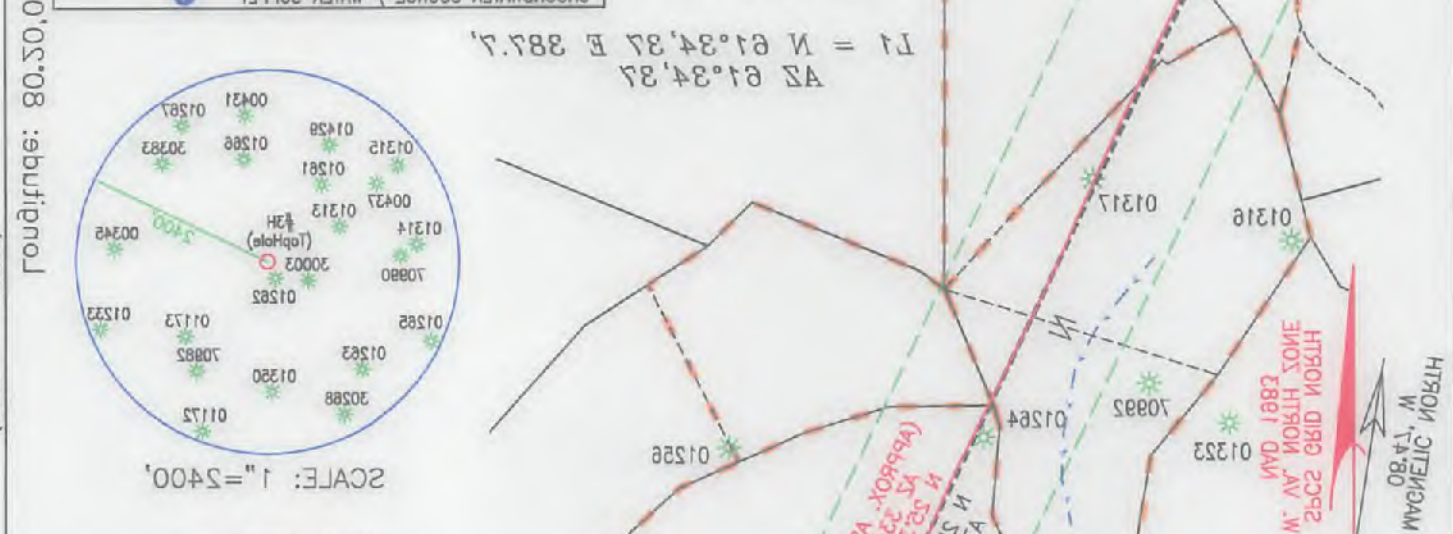
FILE # XTO-0657
 DRAWING # 0657-10-3H
 SCALE: 1" = 1000'
 MINIMUM DEGREE OF ACCURACY: 1:2500
 PROVEN SOURCE OF ELEVATION: DIRECT GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
 Signed: _____
 R.P.E.: 17818 L.S.: _____
 DONALD R. HIXSON JR.
 REGISTERED PROFESSIONAL ENGINEER
 WEST VIRGINIA
 17818

TRI-COUNTY ENGINEERING, LLC
 316 PAINTERVILLE RD.
 HUNTER, PA 15839
 (724) 632-0210
 TGEORTRICOUNTYENG.COM

NOTES ON SURVEY:
 1. TWO DWELLINGS WITHIN 825' 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 W/ NORTH ZONE AND '83.
 4. WELL ELEVATION ESTABLISHED BY DIRECT GPS HANDS.
 5. BOUNDARIES SHOWN ARE TAKEN FROM TAX MAPS, DEEDS, AND FIELD SURVEY. THIS DRAWING IS NOT REPRESENTATIVE OF A FULL BOUNDARY SURVEY.
 6. SURFACE OWNER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF MARION COUNTY WV IN JUNE OF 2015. LEASE OWNERS AND BOUNDARIES PROVIDED BY XTO ENERGY, INC.
 7. WELLS SHOWN ARE TAKEN FROM RECORDS OF WDEP.
 8. DWELLING A-1 IS 517' FROM CENTER OF PAD.
 9. DWELLING B-1 IS 523' FROM CENTER OF PAD.
 SCALE: 1" = 400'
 REFERENCES
 I.PIN N 115.1° E 219.1'
 #3H (Top Hole) N 15.31° E 280.1'
 I.PIN

BEARINGS:
 N 52.28° E 13.21' M
 N 32.4° E 02.1' M
 (APPROX. AS-DRILLED)
 N 33.4° E 50.48' M
 N 52.28° E 13.21' M



State Plane Coord.
 West Virginia North
 NAD27
 Top Hole Loc
 (N) 325082.586
 (E) 1758819.772
 3H
 SWEARINGEN
 LEGEND
 GROUNDWATER SOURCE / WATER SUPPLY
 EXISTING GAS WELL
 500' LATERAL OFFSET
 AS-DRILLED LATERAL
 PERMITTED LATERAL
 ROADS
 CREEK / STREAM
 SURFACE BOUNDARY
 LEASE BOUNDARY
 Latitude: 39°30'00"
 Longitude: 80°50'00"
 SCALE: 1" = 2400'
 (Scale: 1" = 5000.0')
 135882.1

8150'
(Scale: 1" = 2000')

Latitude: 39°30'00"

Longitude: 80°20'00"

(Scale: 1" = 2000')

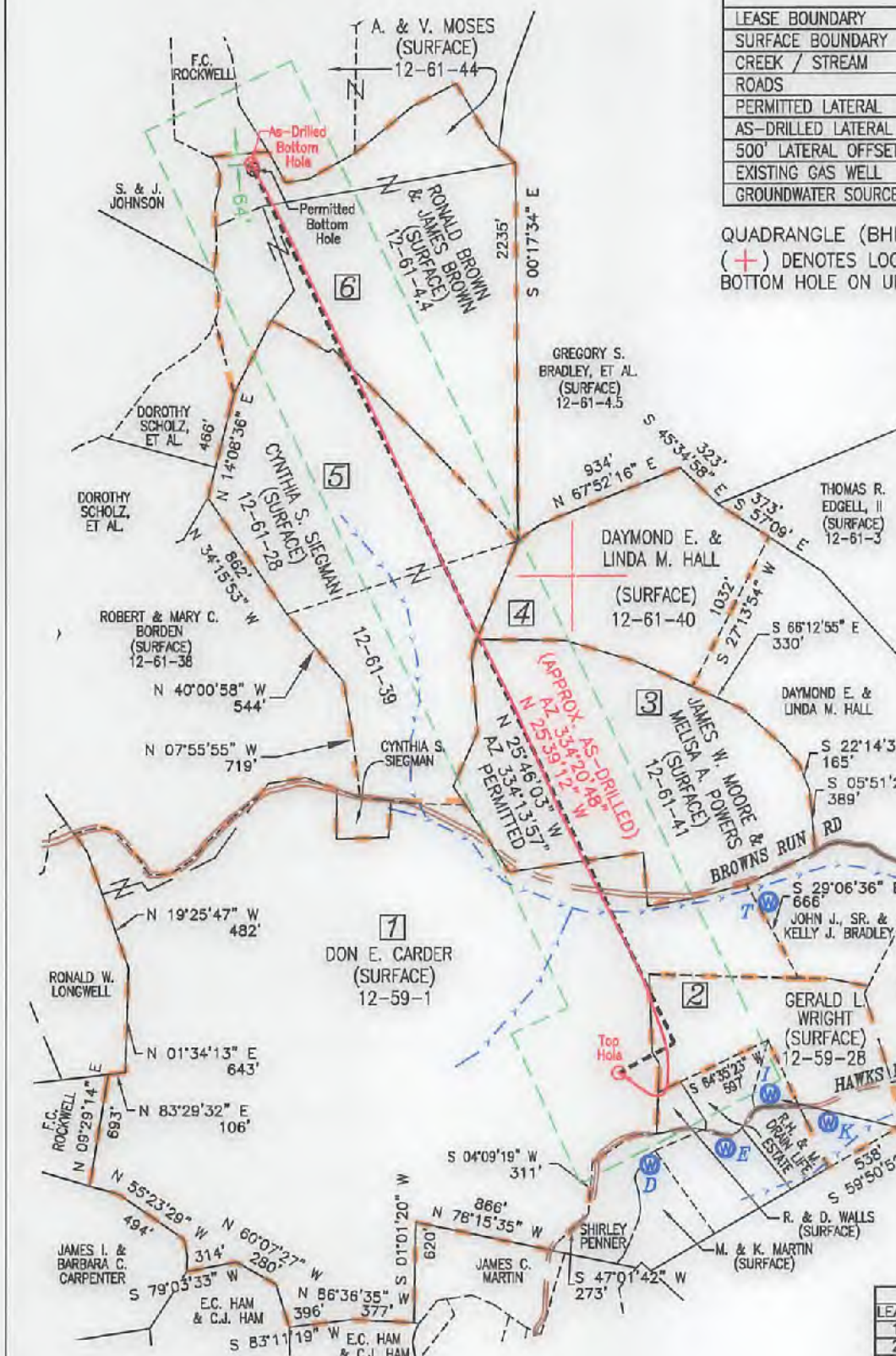
LEGEND	
LEASE BOUNDARY	— — — — —
SURFACE BOUNDARY	— — — — —
CREEK / STREAM	— — — — —
ROADS	— — — — —
PERMITTED LATERAL	— — — — —
AS-DRILLED LATERAL	— — — — —
500' LATERAL OFFSET	— — — — —
EXISTING GAS WELL	⊙
GROUNDWATER SOURCE / WATER SUPPLY	⊙

QUADRANGLE (BHL) SHINNSTON 7.5'
(+) DENOTES LOCATION OF AS-DRILLED WELL
BOTTOM HOLE ON UNITED STATES TOPOGRAPHIC MAPS

SWEARINGEN 3H

State Plane Coord.
West Virginia North
NAD27

Top Hole Loc
(N) 352082.586
(E) 1758819.772

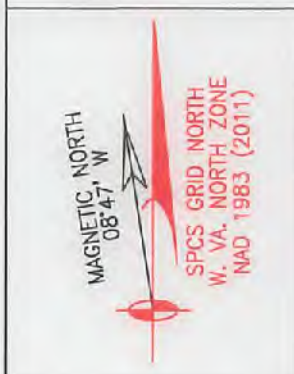


- NOTES ON SURVEY:**
- TWO DWELLINGS WITHIN 625' WERE FOUND.
 - NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
 - TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH W/ NORTH ZONE NAD '83.
 - WELL ELEVATION ESTABLISHED BY DIRECT GPS NAVD88.
 - BOUNDARIES SHOWN ARE TAKEN FROM TAX MAPS, DEEDS, AND FIELD SURVEY. THIS DRAWING IS NOT REPRESENTATIVE OF A FULL BOUNDARY SURVEY.
 - SURFACE OWNER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF MARION COUNTY WV. IN JUNE OF 2015. LEASE OWNERS AND BOUNDARIES PROVIDED BY XTO ENERGY, INC.
 - WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.

SWEARINGEN 3H	
LEASE LESSOR	MINERAL ACREAGE
1) DON E. CARDER, ET AL.	98.73±
2) SHERILYN J. GRIFIN, ET AL.	63.05±
3) E.E. & C. GLOVER, ET AL.	56.59±
4) BRENDA K. JOSEPH, ET AL.	38.86±
5) THE ESTATE OF A.E. JOSEPH	72.75±
6) J.F. & M.J. HESS	138.78±

SWEARINGEN 3H TOP HOLE					
STATE PLANE COORDINATES NORTH ZONE-NAD 27		LAT. & LONG. DECIMAL DEG. - NAD 27		UTM ZONE 17 NAD 83 (METERS)	
PERMITTED:	AS-DRILLED:	PERMITTED:	AS-DRILLED:	PERMITTED:	AS-DRILLED:
(N) 352083'	(N) 352083'	39.463526	39.463526	(N) 4368425	(N) 4368425
(E) 1758820'	(E) 1758820'	-80.354248	-80.354248	(E) 555567	(E) 555567

SWEARINGEN 3H BOTTOM HOLE					
STATE PLANE COORDINATES NORTH ZONE-NAD 27		LAT. & LONG. DECIMAL DEG. - NAD 27		UTM ZONE 17 NAD 83 (METERS)	
PERMITTED:	AS-DRILLED:	PERMITTED:	AS-DRILLED:	PERMITTED:	AS-DRILLED:
(N) 357643'	(N) 357678'	39.478731	39.478828	(N) 4370108	(N) 4370118
(E) 1756566'	(E) 1756557'	-80.362419	-80.362452	(E) 554852	(E) 554849



XTO ENERGY
810 HOUSTON STREET
FORT WORTH, TX 76102

0' 1000'
SCALE: 1" = 1000'

TRI-COUNTY ENGINEERING, LLC
An ENERCON Company
319 Paintersville Road
Hunker, PA 15639
www.tricountyeng.com

Voice: (724) 635-0210
09/15/2017
Fax: (724) 635-0676

SUPPLEMENTAL SURFACE & LESSOR EXHIBIT
SWEARINGEN 3H

DRAWN BY: NJP	MANNINGTON DISTRICT, MARION COUNTY, WEST VIRGINIA
DATE: 6/28/16	SHEET: 2 OF 2
SCALE: 1"=1000'	FILE NO. OG57-10

09/15/2017



XTO ENERGY
810 HOUSTON STREET
FORT WORTH, TX 76103

SCALE: 1" = 1000'

0' 1000'



Excellence-Every project. Every day.

DATE: 8/28/18
DRAWN BY: MJP
MANNING DISTRICT
MARION COUNTY, WEST VIRGINIA

SWEARINGEN 3H

SURFACE & LESSOR EXHIBIT

SUPPLEMENTAL

TRI-COUNTY ENGINEERING, LLC
An ENERCON Company
319 Paintsville Road
Hunker, PA 16828
www.tricountyeng.com
Phone: (724) 828-0878
Fax: (724) 828-0878

- NOTES ON SURVEY:
1. WELLS SHOWN ARE TAKEN FROM RECORDS OF WDEP.
 2. SURFACE OWNER INFORMATION TAKEN FROM THE BOUNDARY SURVEY.
 3. DRAWING IS NOT REPRESENTATIVE OF A FULL MAPS, DEEDS, AND FIELD SURVEY. THIS NAVD88.
 4. WELL ELEVATION ESTABLISHED BY DIRECT GPS PLANE GRID NORTH W/ NORTH ZONE NAD 83.
 5. TIES TO WELLS AND CORNERS ARE BASED ON STATE WITHIN 250' WERE FOUND.
 6. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
 7. TWO DWELLINGS WITHIN 650' WERE FOUND.

SWEARINGEN 3H TOP HOLE		
STATE PLANE COORDINATES NORTH ZONE-NAD 83	DECIMAL DEG. - NAD 83	LAT. & LONG.
PERMITTED: (E) 178820, (N) 325083	PERMITTED: (E) 80.324248, (N) 438425	AS-DRILLED: (E) 80.324248, (N) 438425
PERMITTED: (E) 178820, (N) 325083	PERMITTED: (E) 80.324248, (N) 438425	AS-DRILLED: (E) 80.324248, (N) 438425
UTM ZONE 17 NAD 83 (METERS)		

SWEARINGEN 3H BOTTOM HOLE		
STATE PLANE COORDINATES NORTH ZONE-NAD 83	DECIMAL DEG. - NAD 83	LAT. & LONG.
PERMITTED: (E) 178820, (N) 325083	PERMITTED: (E) 80.324248, (N) 437018	AS-DRILLED: (E) 80.324248, (N) 437018
PERMITTED: (E) 178820, (N) 325083	PERMITTED: (E) 80.324248, (N) 437018	AS-DRILLED: (E) 80.324248, (N) 437018
UTM ZONE 17 NAD 83 (METERS)		

SWEARINGEN 3H MINERAL ACREAGE	
1	LEASOR LESSOR DON E. CORDER ET AL. 98.73±
2	SHERILYN J. GRINN ET AL. 63.05±
3	E.E. & C. GLOVER ET AL. 58.99±
4	BRENDA K. JOSEPH ET AL. 38.86±
5	THE ESTATE OF A.E. JOSEPH 72.75±
6	J.F. & M.L. HESS 138.78±

TOP HOLE LOC. (E) 178819.722 (N) 325082.586
STATE PLANE COORD. NAD27
WEST VIRGINIA NORTH
LINDA M. HALL

TO HOLE TO SCENE

SWEARINGEN 3H

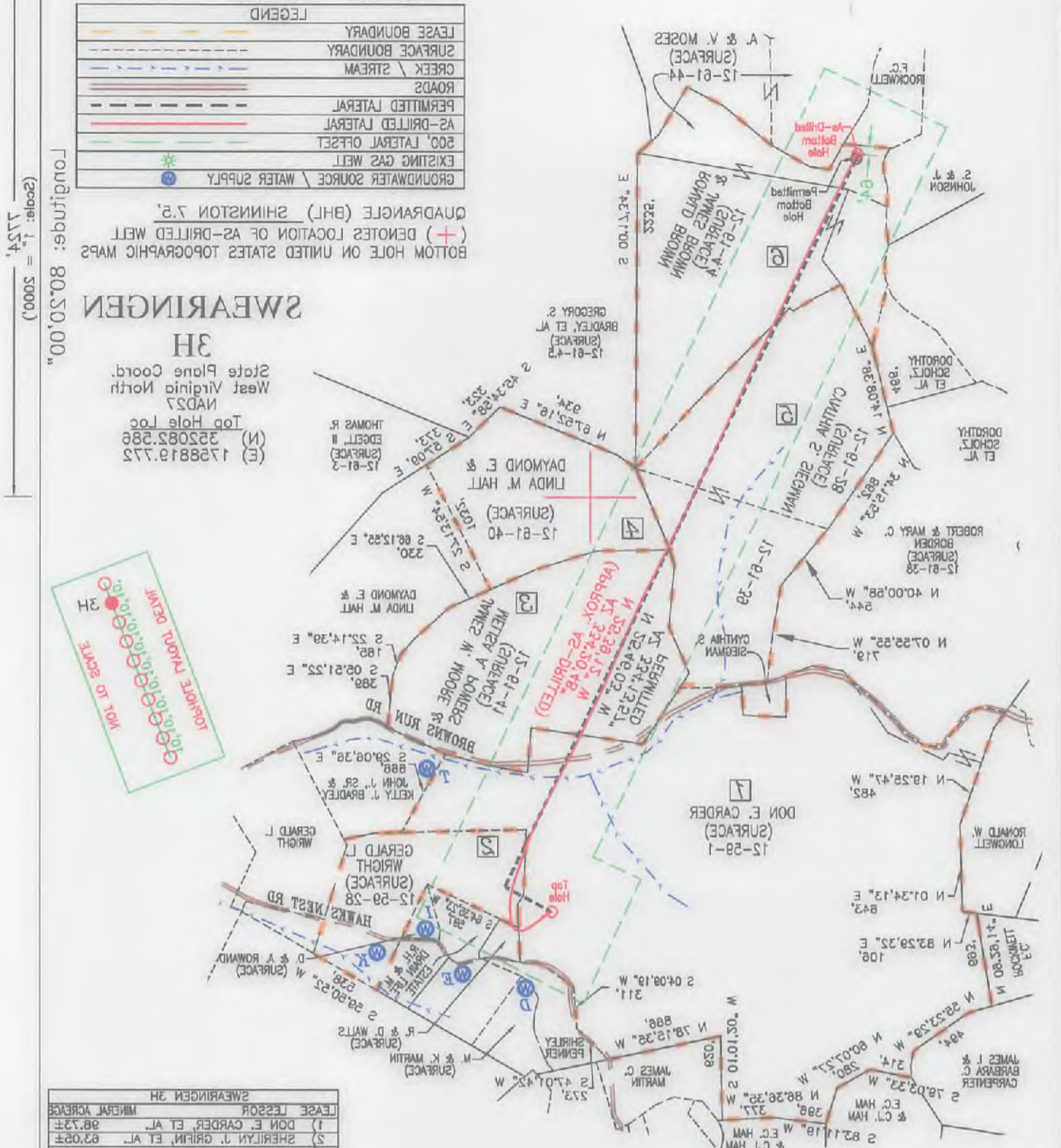
State Plane Coord. NAD27
West Virginia North
LINDA M. HALL
Top Hole Loc. (E) 178819.722 (N) 325082.586

BOTTOM HOLE ON UNITED STATES TOPOGRAPHIC MAPS (+) DENOTES LOCATION OF AS-DRILLED WELL.
QUADRANGLE (BHL) SHINNINGTON 7.5.

LEGEND

	GROUNDWATER SOURCE / WATER SUPPLY
	EXISTING GAS WELL
	500' LATERAL OFFSET
	AS-DRILLED LATERAL
	PERMITTED LATERAL
	ROADS
	CREEK / STREAM
	SURFACE BOUNDARY
	LEASE BOUNDARY

Latitude: 39.30'00"
Longitude: 80.50'00"
Scale: 1" = 5000'



Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/24/2016
Job End Date:	11/6/2016
State:	West Virginia
County:	Marion
API Number:	47-049-02409-00-00
Operator Name:	XTO Energy/ExxonMobil
Well Name and Number:	Swearingen 3H
Latitude:	39.46352600
Longitude:	-80.35424800
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,614
Total Base Water Volume (gal):	10,568,670
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

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	Carrier/Base Fluid	Water	7732-18-5	100.00000	91.74692	None
Sand (Proppant)	Keane	Proppant	Crystalline silica: Quartz (SiO2)	14806-60-7	100.00000	7.19594	None
Hydrochloric Acid (15%)	Keane	Acidizing	Water	7732-18-5	85.00000	0.79949	None
			Hydrochloric Acid	7647-01-0	15.00000	0.14109	None
MBC-516	Keane	Biocide	glutaral	111-30-8	26.70000	0.00633	None
			didecylidimethylammonium chloride	7173-51-5	8.00000	0.00086	None
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00057	None
KSI-16	Keane	Scale Inhibitor	Alkyl phosphonic acid	Proprietary	5.00000	0.00404	None
			Ethylene glycol	107-21-1	5.00000	0.00118	None
			ammonia	7664-41-7	0.50000	0.00040	None
KFR-16FW	Keane	Friction Reducer					

			oleic acid diethanolamide	93-83-4	1.50000	0.00121	None
			alcohols, C12-16, ethoxylated	68551-12-2	1.00000	0.00081	None
			Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.00025	None
			ammonium chloride	12125-02-9	1.50000	0.00002	None
KAI-13	Keane	Acid Inhibitor					
			ethanediol	107-21-1	40.00000	0.00051	None
			dipropylene glycol, monomethyl ether	34590-94-8	20.00000	0.00025	None
			formic acid	64-18-6	10.00000	0.00013	None
			Ethoxylated alcohol	Proprietary	10.00000	0.00013	None
			Cinnamaldehyde	104-55-2	10.00000	0.00013	None
			Tar bases, quinoline derivs., benzyl chloride-quaternized	72480-70-7	10.00000	0.00013	None
			propan-2-ol	67-63-0	5.00000	0.00006	None
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Water	7732-18-5	85.00000	0.79949	
			Alkyl phosphonic acid	Proprietary	5.00000	0.00404	
			oleic acid diethanolamide	93-83-4	1.50000	0.00121	
			Ethylene glycol	107-21-1	5.00000	0.00118	
			didecyltrimethylammonium chloride	7173-51-5	8.00000	0.00086	
			alcohols, C12-16, ethoxylated	68551-12-2	1.00000	0.00081	
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00057	
			dipropylene glycol, monomethyl ether	34590-94-8	20.00000	0.00025	
			Tar bases, quinoline derivs., benzyl chloride-quaternized	72480-70-7	10.00000	0.00013	
			formic acid	64-18-6	10.00000	0.00013	
			Ethoxylated alcohol	Proprietary	10.00000	0.00013	
			Cinnamaldehyde	104-55-2	10.00000	0.00013	
			propan-2-ol	67-63-0	5.00000	0.00006	
			ammonium chloride	12125-02-9	1.50000	0.00002	

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)