

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

API 47-103-02931 County WETZEL District CENTER  
Quad LITTLETON 7.5' Pad Name JOLLIFFE UNIT 1 Field/Pool Name MARCELLUS SHALE  
Farm name JOE JOLLIFFE Well Number JOE JOLLIFFE UNIT 1 5H  
Operator (as registered with the OOG) STATOIL USA ONSHORE PROPERTIES INC.  
Address 2103 CITYWEST BLVD, STE 800 City HOUSTON State TX Zip 77042

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 419,525 Easting 1,671,174  
Landing Point of Curve Northing \_\_\_\_\_ Easting \_\_\_\_\_  
Bottom Hole Northing 414,695 Easting 1,675,005

Elevation (ft) 1336' 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)  
Surface - Drill Water; Intermediate - KCl/Polymer; Production - CyberDrill

Date permit issued 11/05/2013 Date drilling commenced 09/28/2014 Date drilling ceased 11/03/2014  
Date completion activities began 01/25/2015 Date completion activities ceased 02/04/2015  
Verbal plugging (Y/N) N/A 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 130' - 320' Open mine(s) (Y/N) depths \_\_\_\_\_  
Salt water depth(s) ft 2150' - Void(s) encountered (Y/N) depths \_\_\_\_\_  
Coal depth(s) ft 755' - Cavern(s) encountered (Y/N) depths \_\_\_\_\_  
Is coal being mined in area (Y/N) N

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Reviewed by  
A.L. 5/21/15  
W.S. 6/5/15  
**06/05/2015**

API 47- 103 - 02931

Farm name JOE JOLLIFFE

Well number JOE JOLLIFFE UNIT I 5H

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	24	20	120'	NEW			
Surface	17 1/2	13 3/8	640'	NEW	J-55		Yes - 1/2 bbl
Coal							
Intermediate 1	12 1/4	9 5/8	2650'	NEW	J-55		Yes- 12 bbls
Intermediate 2							
Intermediate 3							
Production	8 3/4	5.5	13,616'	NEW	J-55; P-110		Yes - 5 bbls
Tubing	4 5/8	2 3/8	7195'	NEW	L-80; 4.7#		N/A
Packer type and depth set		VersaSet Packer set at 7190'					

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	Class A	250	15.8	2.31	429.51	SURFACE	480
Coal							
Intermediate 1	Class A	460	15.8	2.31	791.65	2650	13.5
Intermediate 2							
Intermediate 3							
Production	Class A	2355	15	1.29	1894.92	1250	
Tubing							

Drillers TD (ft) 13,619'      Loggers TD (ft) 13,670'

Deepest formation penetrated Marcellus      Plug back to (ft) N/A

Plug back procedure \_\_\_\_\_

Kick off depth (ft) 6,826'

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: 1 Centralizer with stop collar 10 ft above floatshoe. One single bow every joint to 100ft below surface.

Intermediate: 1 centralizer with stop collar 10 ft above float shoe. 1 centralizer with stop collar 10 ft above float collar. 1 centralizer every joint for the first 15 joints. One centralizer every 3 joints to 100 ft below surface.

Production: 1 centralizer w/ stop collar 10ft above shoe. 1 centralizer 10ft above float collar. 1 centralizer every joint (floating) until KOP. 1 centralizer every 3 joints (floating) until 200ft inside intermediate shoe. 1 centralizer 50ft below mandrel hanger.

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 \_\_\_\_\_

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API 47- 103 - 02931 Farm name JOE JOLLIFFE Well number JOE JOLLIFFE UNIT I 5H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	1/24/15	13,359'	13,239'	48	Marcellus
2	1/25/15	13,139'	12,959'	48	Marcellus
3	1/26/15	12,839'	12,959'	48	Marcellus
4	1/26/15	12,542'	12,359'	48	Marcellus
5	1/27/15	12,244'	12,059'	48	Marcellus
6	1/28/15	11,939'	11,759'	48	Marcellus
7	1/28/15	11,639'	11,459'	48	Marcellus
8	1/29/15	11,344'	11,156'	48	Marcellus
9	1/29/15	11,039'	10,859'	48	Marcellus
10	1/30/15	10,734'	10,559'	48	Marcellus
11	1/30/15	10,442'	10,262'	48	Marcellus
12	1/31/15	10,139'	9,959'	48	Marcellus
13	2/1/15	9,839'	9,659'	48	Marcellus
14	2/1/15	9,539'	9,359'	48	Marcellus
15	2/2/15	9,241'	9,059'	48	Marcellus
16	2/3/15	8,939'	8,759'	48	Marcellus

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)
1	1/24/15	81.9	7644	8355	4564	441800	7941	
2	1/24/15	83.6	7933	8425	5848	441800	7702	
3	1/26/15	85.7	7806	8167	5289	441800	7771	
4	1/26/15	85.5	7393	8239	5254	441800	7509	
5	1/27/15	83.4	8086	8154	5385	441800	8098	
6	1/28/15	86.1	7813	8089	5846	441800	7856	
7	1/28/15	85.9	7618	7816	5782	441800	7893	
8	1/29/15	85.2	7695	7941	5892	441775	7594	
9	1/29/15	84.6	7413	8734	5575	441735	7961	
10	1/30/15	81	7695	8307	5316	441735	7244	
11	1/30/15	85.9	7097	7826	5279	441735	7697	
12	1/31/15	85.5	7674	8737	6619	441800	7512	
13	1/31/15	85	7556	8650	5194	441800	7168	
14	2/1/15	85.4	7719	9075	5821	417500	7172	
15	2/2/15	84.7	7426	7850	5334	441800	7470	
16	2/3/15	85.1	7436	8073	5548	441800	7112	

Please insert additional pages as applicable.

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06/05/2015

API 47- 103 - 02931 Farm name Joe Jolliffe Well number Joe Jolliffe Unit I 5H

**PERFORATION RECORD**

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	02/03/15	8,639	8,459'	48	Marcellus
18	02/04/15	8,339'	8,159'	48	Marcellus

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)
17	02/03/15	84.8	7403	7981	5687	441800	7292	
18	02/04/15	85.2	7638	8420	4249	441800	7486	

Please insert additional pages as applicable.

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API 47- 103 - 02931 Farm name JOE JOLLIFFE Well number JOE JOLLIFFE UNIT I 5H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
Marcellus (shut in-not yet producing)	7466'-7509'	TVD 8099' - 13419' MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump  
 SHUT-IN PRESSURE Surface \_\_\_\_\_ psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs  
 OPEN FLOW Gas \_\_\_\_\_ mcfpd Oil \_\_\_\_\_ bpd NGL \_\_\_\_\_ bpd Water \_\_\_\_\_ bpd GAS MEASURED BY  
 Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	0		0		
Gordon	3145	3201	3155	3212	
Warren	3835	3867	3845	3878	
Alexander	5828	5865	5839	5875	
Middlesex	7185	7224	7224	7274	Gas
Geneseo	7307	7331	7403	7451	Gas
Tully	7331	7355	7451	7507	
Hamilton	7355	7454	7507	8018	
Marcellus	7454	8018	N/A	N/A	Gas

Please insert additional pages as applicable.

Drilling Contractor ORION DRILLING  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Logging Company HALLIBURTON  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Cementing Company HALLIBURTON  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Stimulating Company Producer's Service Corp  
 Address 109 S. Graham Street City Zanesville State OH Zip 43701

Please insert additional pages as applicable.

Completed by Beth Davidson Telephone 281-797-7757  
 Signature *Beth Davidson* Title Regulatory Advisor Date 04/30/2015

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

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

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Landing Point of Curve Northing \_\_\_\_\_ Easting \_\_\_\_\_  
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Elevation (ft) 1336' 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)  
Surface - Drill Water; Intermediate - KCl/Polymer; Production - CyberDrill

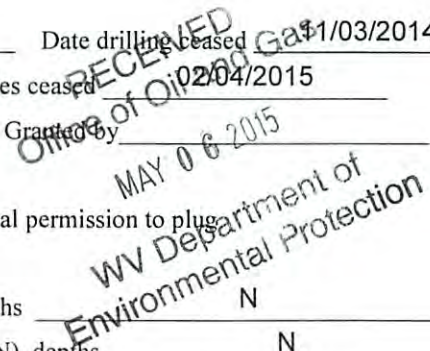
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Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug.

Freshwater depth(s) ft 130' - 320' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 2150' - Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 755' - Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by: \_\_\_\_\_

**06/05/2015**



API 47-103 - 02931

Farm name JOE JOLLIFFE

Well number JOE JOLLIFFE UNIT I 5H

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	24	20	120'	NEW			
Surface	17 1/2	13 3/8	640'	NEW	J-55		Yes - 1/2 bbl
Coal							
Intermediate 1	12 1/4	9 5/8	2650'	NEW	J-55		Yes- 12 bbls
Intermediate 2							
Intermediate 3							
Production	8 3/4	5.5	13,616'	NEW	J-55; P-110		Yes - 5 bbls
Tubing	4 5/8	2 3/8	7195'	NEW	L-80; 4.7#		N/A
Packer type and depth set		VersaSet Packer set at 7190'					

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	Class A	250	15.8	2.31	429.51	SURFACE	480
Coal							
Intermediate 1	Class A	460	15.8	2.31	791.65	2650	13.5
Intermediate 2							
Intermediate 3							
Production	Class A	2355	15	1.29	1894.92	1250	
Tubing							

Drillers TD (ft) 13,619'      Loggers TD (ft) 13,670'

Deepest formation penetrated Marcellus      Plug back to (ft) N/A

Plug back procedure \_\_\_\_\_

Kick off depth (ft) 6,826'

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 \_\_\_\_\_

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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 \_\_\_\_\_

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 MAY 06 2015  
 WV Department of  
 Environmental Protection

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Well number JOE JOLLIFFE UNIT I 5H

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12	1/31/15	85.5	7674	8737	6619	441800	7512	
13	1/31/15	85	7556	8650	5194	441800	7495	
14	2/1/15	85.4	7719	9075	5821	417500	7172	
15	2/2/15	84.7	7426	7850	5334	441800	7479	
16	2/3/15	85.1	7436	8073	5548	441800	7412	

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
Marcellus (shut in-not yet producing)	7466'-7509'	TVD 8099' - 13419' MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface \_\_\_\_\_ psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs

OPEN FLOW Gas \_\_\_\_\_ mcfpd Oil \_\_\_\_\_ bpd NGL \_\_\_\_\_ bpd Water \_\_\_\_\_ 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 <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
Gordon	3145	3201	3155	3212	
Warren	3835	3867	3845	3878	
Alexander	5828	5865	5839	5875	
Middlesex	7185	7224	7224	7274	Gas
Geneseo	7307	7331	7403	7451	Gas
Tully	7331	7355	7451	7507	
Hamilton	7355	7454	7507	8018	
Marcellus	7454	8018	N/A	N/A	Gas

Please insert additional pages as applicable.

Drilling Contractor ORION DRILLING  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Logging Company HALLIBURTON  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Cementing Company HALLIBURTON  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Stimulating Company Producer's Service Corp  
Address 109 S. Graham Street City Zanesville State OH

Please insert additional pages as applicable.

Completed by Beth Davidson Telephone 281-797-7757  
Signature *Beth Davidson* Title Regulatory Advisor Date 04/30/2015

MAY 06 2015

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Office of Oil and Gas  
WV Department of Environmental Protection

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry



April 30, 2015

West Virginia Department of Environmental Protection  
Office of Oil and Gas  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

Reference: Well Operator's Report of Well Work  
Jolliffe Unit 1 Well No. 5H  
Wetzel County

Gentlemen:

Statoil USA Onshore Properties Inc. herein submits the Well Operator's Report of Well Work and other applicable documentation for the Jolliffe Unit 1 5H well. Please note that this well is shut in and has not begun flowing back. An updated WR-35 will be submitted upon once flowback tests have been run. Enclosed please find the following documents:

- One (1) original and one (1) copy of Well Operator's Report of Well Work (Form WR-35)
- One (1) "As-drilled" plat
- One (1) Profile plat
- One (1) Deviation survey
- One (1) Frac Focus Disclosure

Should you have any questions or require additional information please contact the undersigned at 281-797-7757 or [betda@statoil.com](mailto:betda@statoil.com).

Sincerely,

A handwritten signature in black ink that reads "Beth Davidson".

Beth Davidson  
Regulatory Advisor – Marcellus Asset

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Office of Oil and Gas

MAY 06 2015

WV Department of  
Environmental Protection

06/05/2015

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/24/2015
Job End Date:	2/4/2015
State:	West Virginia
County:	Wetzel
API Number:	47-103-02931-00-00
Operator Name:	Statoil USA Onshore Properties Inc.
Well Name and Number:	Joe Jolliffe Unit 1 5H
Longitude:	-80.55593200
Latitude:	39.64701700
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,462
Total Base Water Volume (gal):	5,612,502
Total Base Non Water Volume:	0



## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Company 1	Carrier/Base Fluid	Water	7732-18-5	100.00000	84.36755	None
Sand (Proppant)	PSC	Proppant	Silica Substrate	NA	100.00000	14.28110	None
PRO GEL 4.0L	Producers Service Corp	Gelling Agent	Distillates (Petroleum), hydrotreated light	64742-47-8	65.00000	0.08356	None
			Guar Gum	9000-30-0	50.00000	0.06428	None
			Nonionic Surfactant	60828-78-6	5.00000	0.00643	None
			Nonylphenol, Ethoxylate	9016-45-9	5.00000	0.00643	None
			Nonionic Surfactant	60828-78-6	5.00000	0.00643	None
Hydrochloric Acid (2.5%)	Producers Service Corp	Acidizing	Hydrochloric Acid	7647-01-0	7.50000	0.08442	None
PRO ER 2000	Producers Service Corp	Friction Reducer	Petroleum Distillate	064742-47-8	24.00000	0.01728	None
MB7530	Producers Service Corp	Biocide	Tetrahydro-3, 5-dimethyl-2H-1, 3, 5-thiadiazine-2-thione	533-74-4	24.00000	0.00575	None

PROHIB II	Producers Service Corp	Inhibitor	Sodium Hydroxide	1310-73-2	4.00000	0.00096	None
			Dimethylcocoamine, bis (chloroethyl)ether, diquaternary ammonium salt	58607-28-3	60.00000	0.00063	None
			Glycol Ethers	111-76-2	40.00000	0.00042	None
			Ethylene Glycol	107-21-1	40.00000	0.00042	None
			Methanol	67-56-1	30.00000	0.00031	None
			Propargyl Alcohol	107-19-7	30.00000	0.00031	None
			Ethoxylated Nonylphenol	58412-54-4	10.00000	0.00010	None
PRO BREAKER 4	Producers Service Corp	Breaker	Sucrose	57-50-1	40.00000	0.00007	None
			Ethylene Glycol	107-21-1	40.00000	0.00007	None
			Proprietary Ingredient	Proprietary	1.00000		None
			Proprietary Ingredient	Proprietary	1.00000		None
			Sodium Bicarbonate	144-55-8	1.00000		None
			Hexamethylenetetramine	100-97-0	1.00000		None
			Proprietary Ingredient	Proprietary	1.00000		None
			Polyether Polyol	9003-11-6	1.00000		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.

\* 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)

RECEIVED  
Office of Oil and Gas

11/06/2015

U.S. Department of  
Environmental Protection

06/05/2015

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Faint, illegible text, possibly a date or reference number.

Faint, illegible text, possibly a signature or name.

A large grid of empty cells, likely a table or ledger, occupying the right half of the page. The grid consists of approximately 10 columns and 20 rows of empty rectangular boxes.

LATITUDE 39°40'00"

130' TO BOTTOM HOLE  
LATITUDE 39°40'00"

LONGITUDE 80°32'30"

7,157'

1,942' TO BOTTOM HOLE

LONGITUDE 80°32'30"

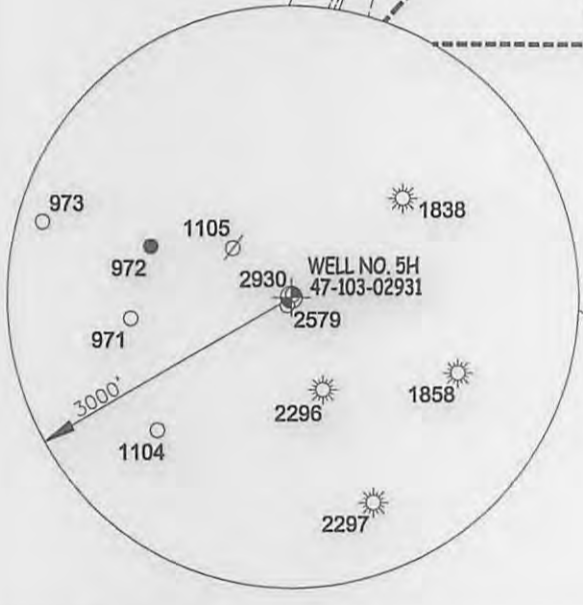
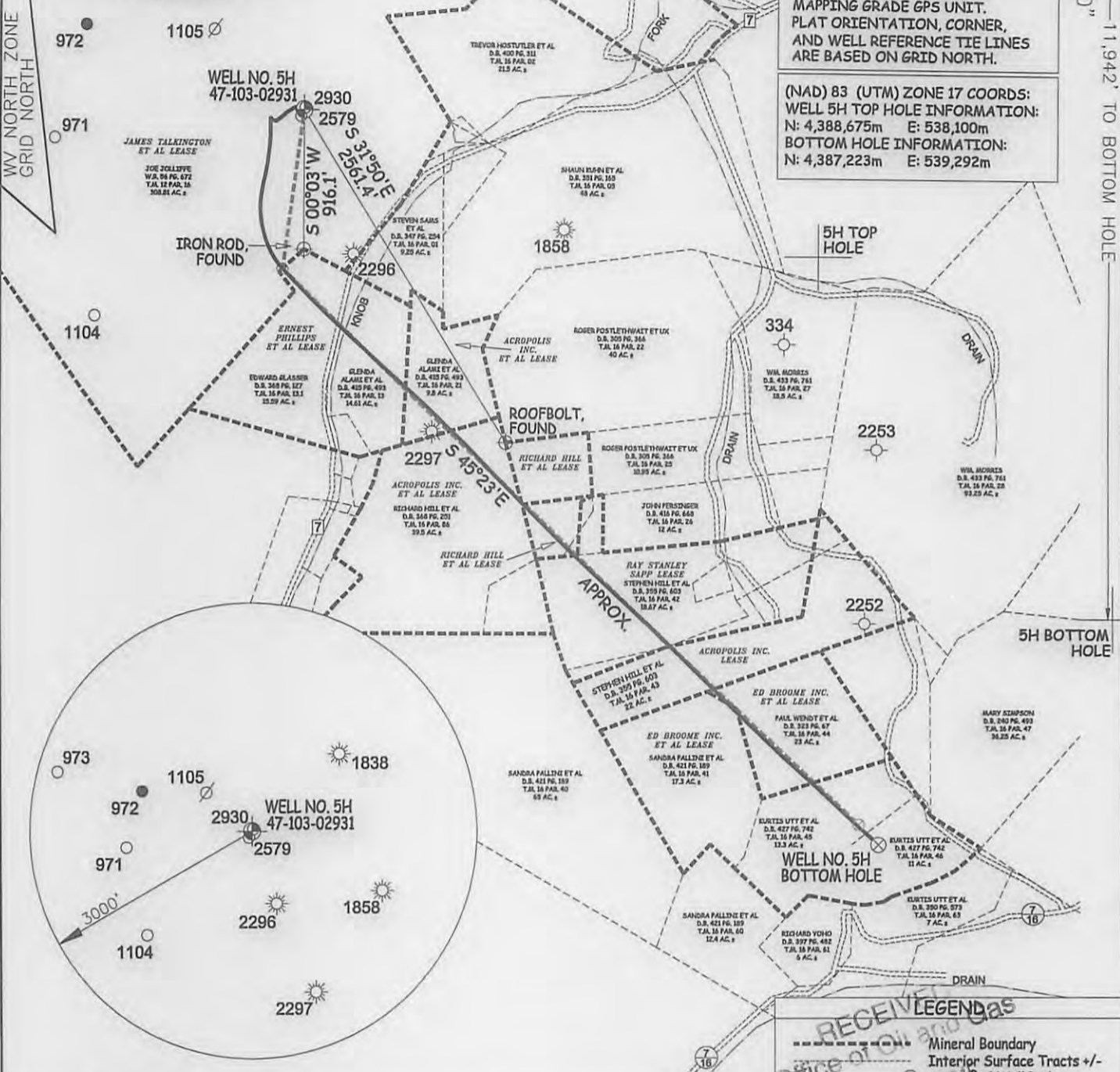
**NOTE**

1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD AND NO WATER WELLS OR DEVELOPED SPRINGS WITHIN TWO HUNDRED FIFTY (250) FEET OF WELL.
2. TOP HOLE DATA TAKEN FROM A WELL PLAT FOR AP1# 47-103-02931HSA DATED THE 4TH DAY OF NOVEMBER 2013 AS PREPARED BY TERRY A. SHREVE.
3. AS DRILLED DATA AND LEASE INFORMATION WAS PROVIDED BY STATOIL USA ONSHORE PROPERTIES INC.
4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

**Statoil USA  
Onshore Properties Inc.  
Joe Jolliffe Unit I Well #5H  
47-103-02931 (As Drilled)**

**AS DRILLED DATA  
WELL 5H TOP HOLE INFORMATION:**  
N: 419,525ft E: 1,671,174ft  
LAT: 39.64702 LON: 80.55593  
**BOTTOM HOLE INFORMATION:**  
N: 414,695ft E: 1,675,005ft  
LAT: 39.63388 LON: 80.54213  
**WEST VIRGINIA COORDINATE  
SYSTEM OF 1983 NORTH ZONE.**  
ZONE WAS DERIVED FROM  
MEASUREMENTS TAKEN WITH  
TRIMBLE GEOXT SUBMETER  
MAPPING GRADE GPS UNIT.  
PLAT ORIENTATION, CORNER,  
AND WELL REFERENCE TIE LINES  
ARE BASED ON GRID NORTH.

**(NAD) 83 (UTM) ZONE 17 COORDS:**  
**WELL 5H TOP HOLE INFORMATION:**  
N: 4,388,675m E: 538,100m  
**BOTTOM HOLE INFORMATION:**  
N: 4,387,223m E: 539,292m



**RECEIVED**

Office of Oil and Gas

Mineral Boundary  
Interior Surface Tracts +/-  
As-Drilled Well Path  
Proposed Well Path  
Landing Point  
Bottom Hole  
Found monuments, as noted

DATE: 03/24/15

OPERATOR'S WELL# JOE JOLLIFFE UNIT I WELL #5H

JOB # 15-007WS  
DRAWING # JOEJOLLIFFE5HAD  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS



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

WILLOW LAND SURVEYING PLLC  
P.O. BOX 17  
PENNSBORO, WV 26415

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY  
DIVISION OF OIL AND GAS

WELL TYPE: OIL \_\_\_ GAS  LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS") PRODUCTION  STORAGE \_\_\_ DEEP \_\_\_ SHALLOW

LOCATION: ELEVATION 1,336' WATERSHED WEST VIRGINIA FORK FISH CREEK

QUADRANGLE LITTLETON 7.5' DISTRICT CENTER COUNTY WETZEL

SURFACE OWNER JOE B. JOLLIFFE ACREAGE 308.81 ACRES +/-

OIL & GAS ROYALTY OWNER JAMES TALKINGTON ET AL; STEVEN SAMS ET AL; SHAUN KUHN ET AL; ROGER POSTLETHWAIT ET UX; ROGER POSTLETHWAIT ET UX; JOSEPHINE WOLFE ET AL; RAY STANLEY SAPP; ACROPOLIS INC.; PAUL WENDT ET UX; ACROPOLIS INC. ET AL LEASE ACREAGE 287 ACRES +/-; 9.25 ACRES +/-; 48 ACRES +/-; 10.95 ACRES +/-; 12 ACRES +/-; 19.63 ACRES +/-; 22 ACRES +/-; 22 ACRES +/-; 36.75 ACRES +/-

PROPOSED WORK: DRILL \_\_\_ CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_  
PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL  
(SPECIFY)  AS DRILLED \_\_\_ PLUG & ABANDON \_\_\_ CLEAN OUT & REPLUG \_\_\_  
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,521' TVD 13,670' MD

WELL OPERATOR STATOIL USA ONSHORE PROPERTIES INC. DESIGNATED AGENT WILLIAM T. FAHEY  
ADDRESS 2103 CITYWEST BLVD. SUITE 800 ADDRESS 2116 PENNSYLVANIA AVE.  
HOUSTON, TX 77042 WEIRTON, WV 26062

06/05/2015

1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO (2) HUNDRED FIFTY (250) SQUARE FEET OR LARGER USED TO HOUSE OR SHELDER DAIRY CATTLE OR POULTRY, HUSBANDRY OR OTHER LIVESTOCK WITHIN SIX HUNDRED (600) FEET OF THE CENTER OF THE WELL. AND NO WATER WELLS OR OTHER STRUCTURES WITHIN TWO HUNDRED FIFTY (250) FEET OF THE CENTER OF THE WELL FROM WELL PATH FOR 200 FEET. AS PREPARED BY TERRY A. SHREVE

2. AS DRILLED DATA AND LEASE INFORMATION WAS PROVIDED BY STATOIL USA ONSHORE PROPERTIES INC. (STATOIL) FOR THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3 ONLY. THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES. 2. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

StatOil USA  
Onshore Properties Inc.  
10e Joliffe Unit I Well #5H  
47-103-05331 (As Drilled)

AS DRILLED DATA  
WELL 5H TOP HOLE INFORMATION:  
N: 419258ft E: 167174ft  
LAT: 39.4705 Lon: 80.5593  
BOTTOM HOLE INFORMATION:  
N: 41468ft E: 172500ft  
LAT: 39.4388 Lon: 80.5423  
EASTING OF 1983 NORTH ZONE.  
ZONE WAS DERIVED FROM  
MEASUREMENTS TAKEN WITH  
TRIMBLE GEOTECH SUBMETER  
MAPPING GRADE 6PS UNIT.  
PLAT ORIENTATION, CORNER  
AND WELL REFERENCE TIE LINES  
ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:  
WELL 5H TOP HOLE INFORMATION:  
N: 4388675m E: 238100m  
BOTTOM HOLE INFORMATION:  
N: 4387523m E: 238252m

5H TOP HOLE  
5H BOTTOM HOLE

ROOBOOT, FOUND

RECEIVED LEGENDS

WELL OPERATOR STATOIL USA ONSHORE PROPERTIES INC.  
ADDRESS 5103 CITYWEST BLVD SUITE 800  
HOUSTON, TX 77074

DESIGNATED AGENT WILLIAM T. FAHEY  
ADDRESS 2118 PENNSYLVANIA AVE  
WEIRTON, WV 26068

ESTIMATED DEPTH 7521 TVD 13670 MD  
PLUG & ABANDON OTHER PHYSICAL CHANGE IN WELL  
CLEAN OUT & REPLUG

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE

WOLFE ET AL: RAY STANLEY S&P; ACROPOLIS INC.; PAUL WENDT ET UX; ACROPOLIS INC. ET AL  
SHAWN KUHN ET AL: ROGER POSTLTHWALT ET UX; JOSEPHINE  
OIL & GAS ROYALTY OWNER JAMES TALKINGTON ET AL: STEVEN SAMS ET AL:

QUADRANGLE LITTLETON T.S.  
LOCATION: ELEVATION 1336'. WATERSHED WEST VIRGINIA FORK FISH CREEK  
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X  
WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL  
DIVISION OF OIL AND GAS DEPARTMENT OF ENERGY STATE OF WEST VIRGINIA  
SUBMETER MAPPING GRADE GPS PROVEN SOURCE OF ELEV. ACCURACY SUBMETER  
SCALE 1" = 1000'  
DRAWING # JOEJOLIFFE5HAD  
JOB # 15-00725



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

WILLOW LAND SURVEYING PLLC  
P.O. BOX 17  
PENNSBORO, WV 26419

FORM WV-8  
ADDRESS 5103 CITYWEST BLVD SUITE 800  
HOUSTON, TX 77074  
WELL OPERATOR STATOIL USA ONSHORE PROPERTIES INC.  
DESIGNATED AGENT WILLIAM T. FAHEY  
ADDRESS 2118 PENNSYLVANIA AVE  
WEIRTON, WV 26068  
ESTIMATED DEPTH 7521 TVD 13670 MD  
PLUG & ABANDON OTHER PHYSICAL CHANGE IN WELL  
CLEAN OUT & REPLUG  
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE  
WOLFE ET AL: RAY STANLEY S&P; ACROPOLIS INC.; PAUL WENDT ET UX; ACROPOLIS INC. ET AL  
SHAWN KUHN ET AL: ROGER POSTLTHWALT ET UX; JOSEPHINE  
OIL & GAS ROYALTY OWNER JAMES TALKINGTON ET AL: STEVEN SAMS ET AL:  
QUADRANGLE LITTLETON T.S.  
LOCATION: ELEVATION 1336'. WATERSHED WEST VIRGINIA FORK FISH CREEK  
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WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL  
DIVISION OF OIL AND GAS DEPARTMENT OF ENERGY STATE OF WEST VIRGINIA  
SUBMETER MAPPING GRADE GPS PROVEN SOURCE OF ELEV. ACCURACY SUBMETER  
SCALE 1" = 1000'  
DRAWING # JOEJOLIFFE5HAD  
JOB # 15-00725

WELL OPERATOR STATOIL USA ONSHORE PROPERTIES INC.  
ADDRESS 5103 CITYWEST BLVD SUITE 800  
HOUSTON, TX 77074  
DESIGNATED AGENT WILLIAM T. FAHEY  
ADDRESS 2118 PENNSYLVANIA AVE  
WEIRTON, WV 26068  
ESTIMATED DEPTH 7521 TVD 13670 MD  
PLUG & ABANDON OTHER PHYSICAL CHANGE IN WELL  
CLEAN OUT & REPLUG  
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE  
WOLFE ET AL: RAY STANLEY S&P; ACROPOLIS INC.; PAUL WENDT ET UX; ACROPOLIS INC. ET AL  
SHAWN KUHN ET AL: ROGER POSTLTHWALT ET UX; JOSEPHINE  
OIL & GAS ROYALTY OWNER JAMES TALKINGTON ET AL: STEVEN SAMS ET AL:  
QUADRANGLE LITTLETON T.S.  
LOCATION: ELEVATION 1336'. WATERSHED WEST VIRGINIA FORK FISH CREEK  
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X  
WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL  
DIVISION OF OIL AND GAS DEPARTMENT OF ENERGY STATE OF WEST VIRGINIA  
SUBMETER MAPPING GRADE GPS PROVEN SOURCE OF ELEV. ACCURACY SUBMETER  
SCALE 1" = 1000'  
DRAWING # JOEJOLIFFE5HAD  
JOB # 15-00725

06/05/2015

LATITUDE 39.40'00" LONGITUDE 80.35.30"

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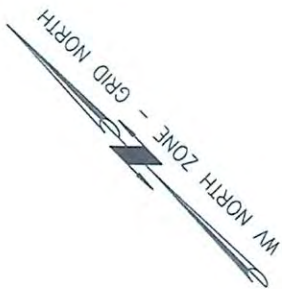
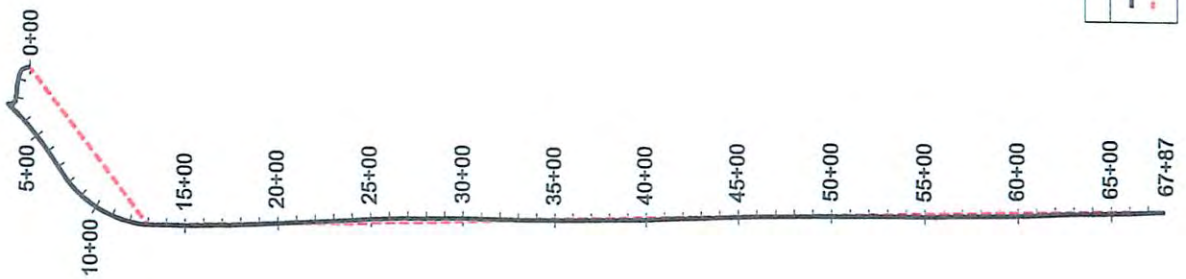


# PLAN AND PROFILE VIEW FOR WELL # JOE JOLLIFFE 5H API # 47-103-02931

06/05/2015

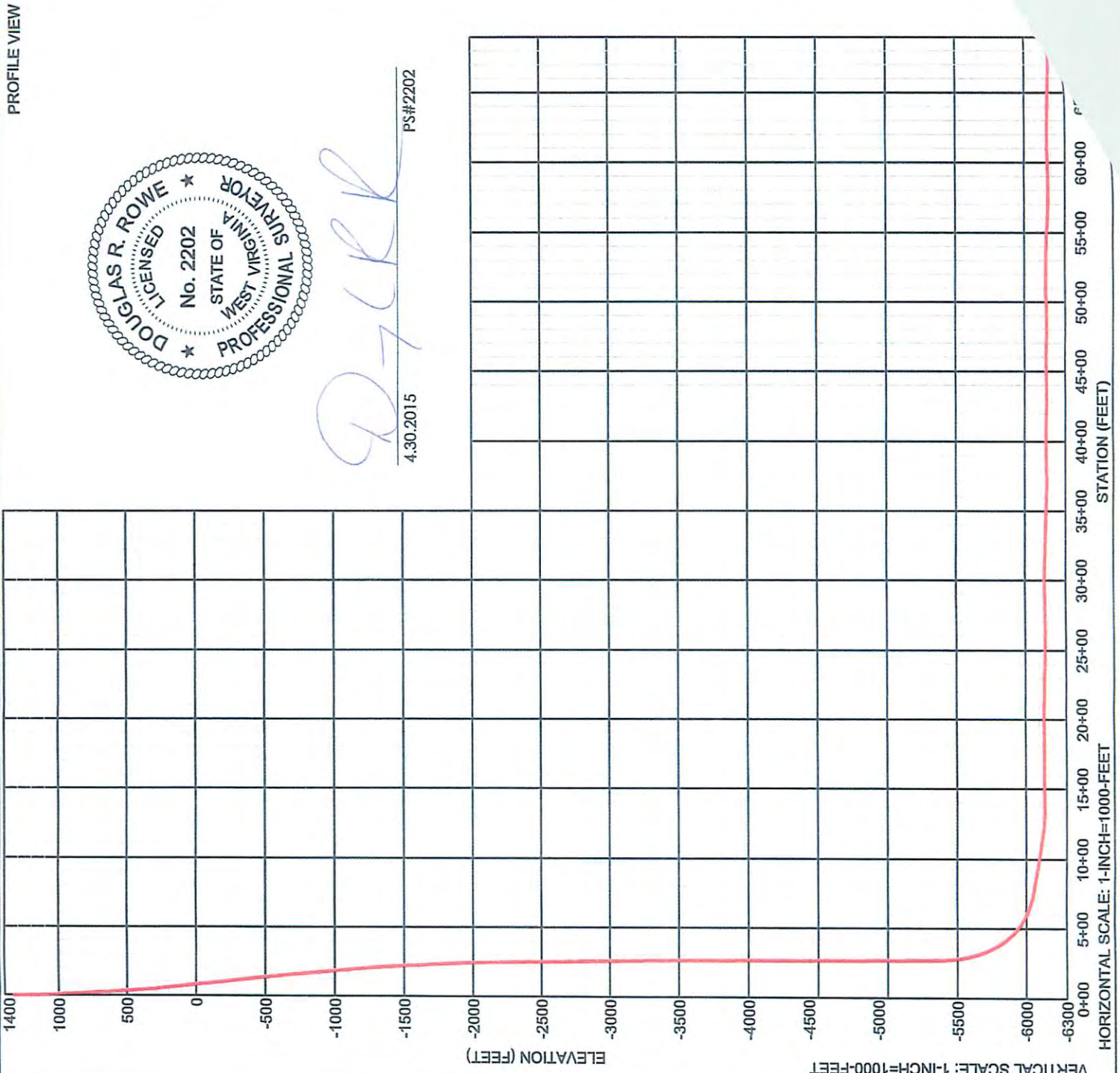


P.O. BOX 17  
PENNSBORO, WV 26115  
304-659-1717



- NOTES**
1. AS DRILLED DATA WAS PROVIDED BY STATOIL USA ONSHORE PROPERTIES INC.
  2. WLS IS NOT CERTIFYING THE DATA AND IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA THAT HAS BEEN PROVIDED.

LEGEND	
	As-Drilled Well Path
	Proposed Well Path



*D. Rowe*  
4.30.2015 PS#2202

PROFILE VIEW

69+00 69+00

06/05/2015