

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

API 47-009-00158 County BROOKE District BUFFALO
Quad STUEBENVILLE Pad Name MILDRED MANI BRK PAD Field/Pool Name PANHANDLE
Farm name MILDRED MANI & ERICK PHILIP Well Number MILDRED MANI BRK 1H
Operator (as registered with the OOG) SWN PRODUCTION COMPANY LLC
Address PO BOX 12359 City SPRING State TX Zip 77397-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4456028.124 Easting 534901.935
Landing Point of Curve Northing 4455967.438 Easting 534530.176
Bottom Hole Northing 4457624.891 Easting 533833.173

Elevation (ft) 1073' 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)
SOBM

Date permit issued 07/30/2015 Date drilling commenced 08/08/2015 Date drilling ceased 09/24/2015
Date completion activities began 12/05/2015 Date completion activities ceased 01/10/2016
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 300' Open mine(s) (Y/N) depths N
Salt water depth(s) ft ~~500'~~ 802' Void(s) encountered (Y/N) depths Received
Coal depth(s) ft 140' Cavern(s) encountered (Y/N) depths Office of Oil & Gas

APPROVED

NAME: Jackie Shamba
DATE: 7/5/16

JUL 05 2016
Reviewed by:

AX RBDMS
10/21/2016
10/19/16

API 47- 009 - 00158 Farm name MILDRED MANI & ERICK PHILIP Well number MILDRED MANI BRK 1H

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	20	190'	N	J-55/ 94#		Y
Surface	17.5	13.375	421'	N	J-55/ 54.50#		Y, 33 BBLS TO SURFACE
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	1499'	N	J-55/ 40#		Y, 20 BBLS TO SURFACE
Intermediate 2							
Intermediate 3							
Production	8.75 TO 8.50	5.5	12051'	N	P-110/20#		Y
Tubing		2.375	6111'	N	P-110/4.70#		N
Packer type and depth set		N/A					

Comment Details _____

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	A	GROUT	15.7	1.29		SURFACE	24
Surface	A	468	15.6	1.20	562	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	A	570	15.6	1.18	673	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	A	2255	15.6	1.19	2684	SURFACE	24
Tubing							

Drillers TD (ft) 12051' Loggers TD (ft) 12051'

Deepest formation penetrated MARCELLUS Plug back to (ft) NA

Plug back procedure NA

Kick off depth (ft) 5230'

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 _____

ALL CASING STRINGS RAN WITH A CENTRALIZER AT A MINIMUM OF 1 PER EVERY 3RD JOINT OF CASING

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- 009 - 00158 Farm name MILDRED MANI & ERICK PHILIP Well number MILDRED MANI BRK 1H

PRODUCING FORMATION(S)	DEPTHS		
MARCELLUS	5650'	TVD	5977' MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1298 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 1309.263 mcfpd Oil 205.25 bpd NGL _____ bpd Water 288.53 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	
	0		0		
		SEE ATTACHED			

Please insert additional pages as applicable.

Drilling Contractor SWN DRILLING
 Address PO BOX 12359 City SPRING State TX Zip 77391-2359

Logging Company NINE ENERGY SERVICES
 Address 16945 NORTHCHASE DR, STE 1600 City HOUSTON State TX Zip 77060

Cementing Company SCHLUMBERGER
 Address 110 SCHLUMBERGER DRIVE City SUGAR LAND State TX Zip 77478

Stimulating Company DOWELL SCHLUMBERGER
 Address 1121 BUSCHONG ST City HOUSTON State TX Zip 77039

Please insert additional pages as applicable.

Completed by Elizabeth Gee Telephone 832-796-7632
 Signature [Signature] Title Sr. Regulatory Analyst Date 06/30/2016

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

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MILDRED MANI BRK 1H

LITHOLOGY/FORMATION	TOP DEPTH, TVD (FT)	BOTTOM DEPTH, TVD (FT)	TOP DEPTH, MD (FT)	BOTTOM DEPTH, MD (FT)	QUANTITY AND TYPE OF FLUID
Base of Fresh Water	N.A.	300.00	N.A.	300.00	
Top of Salt Water	802.00	N.A.	802.00	N.A.	
Pittsburgh Coal	132.99	139.99	133.00	140.00	
Big Injun (ss)	1209.24	1753.79	1215.00	1754.00	
Berea (siltstone)	1753.79	5132.41	1754.00	5297.89	
Rhinestreet (shale)	5132.41	5367.88	5297.89	5560.40	
Cashaqua (shale)	5367.88	5419.44	5560.40	5621.37	
Middlesex (shale)	5419.44	5470.94	5621.37	5685.86	
Burket (shale)	5470.94	5493.46	5685.86	5715.46	
Tully (ls)	5493.46	5546.73	5715.46	5790.26	
Mahantango (shale)	5546.73	5650.03	5790.26	5977.19	
Marcellus (shale)	5650.03	N.A.	5977.19	N.A.	

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MILDRED MANI BRK 1 - PERFORATION RECORD

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	12/5/2015	11,724	11,924	42
2	12/5/2015	11,460	11,660	42
3	12/5/2015	11,196	11,398	42
4	12/5/2015	10,932	11,132	42
5	12/6/2015	10,668	10,868	42
6	12/6/2015	10,404	10,604	42
7	12/6/2015	10,140	10,340	42
8	12/7/2015	9,876	10,076	42
9	12/20/2015	9,612	9,812	42
10	12/20/2015	9,348	9,548	42
11	12/20/2015	9,084	9,284	42
12	12/21/2015	8,820	9,020	42
13	12/21/2015	8,556	8,756	42
14	12/21/2015	8,292	8,492	42
15	12/22/2015	8,028	8,228	42
16	12/27/2015	7,764	7,964	42
17	12/27/2015	7,500	7,700	42
18	12/29/2015	7,236	7,436	42
19	12/29/2015	6,972	7,172	42
20	12/29/2015	6,708	6,908	42
21	12/29/2015	6,444	6,644	42
22	12/30/2015	6,180	6,380	42

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Office of [unclear]

MILDRED MANI BRK 1 - STIMULATION INFORMATION

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdow n Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/ other
1	12/5/2015	2	7,489	8,093	3,254	698,100	10,372	
2	12/5/2015	2	7,502	8,501	4,140	702,220	9,570	
3	12/5/2015	2	7,208	7,829	4,022	700,820	9,757	
4	12/5/2015	2	7,467	8,841	3,977	698,280	10,331	
5	12/6/2015	2	7,223	7,830	4,472	702,620	9,669	
6	12/6/2015	2	7,220	7,868	4,281	701,580	9,613	
7	12/6/2015	2	7,605	9,075	4,489	700,340	10,452	
8	12/7/2015	2	7,363	9,979	3,851	675,940	9,482	
9	12/20/2015	2	6,888	8,009	4,113	696,860	10,962	
10	12/20/2015	2	6,964	7,706	4,043	698,413	10,931	
11	12/20/2015	2	6,826	7,204	4,156	691,580	10,069	
12	12/21/2015	2	6,691	7,227	4,285	698,520	9,612	
13	12/21/2015	2	6,788	7,549	4,215	659,220	9,200	
14	12/21/2015	2	6,818	9,072	4,489	700,200	13,201	
15	12/22/2015	2	6,709	7,273	4,575	701,320	9,556	
16	12/27/2015	2	6,808	7,466	3,967	698,600	12,725	
17	12/27/2015	2	7,393	8,678	4,471	609,180	9,266	
18	12/29/2015	2	6,607	7,595	4,561	700,560	10,039	
19	12/29/2015	2	6,296	7,509	4,290	702,000	9,566	
20	12/29/2015	2	6,202	7,082	4,390	703,380	9,640	
21	12/29/2015	2	6,337	6,845	4,382	707,380	9,520	
22	12/30/2015	2	6,210	7,117	4,386	712,460	9,687	
TOTAL			6,937	9,979	4,219	15,259,573	223,220	

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10/21/2016

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/23/2015
Job End Date:	12/30/2015
State:	West Virginia
County:	Brooke
API Number:	47-009-00158-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Mildred Mani 1H
Longitude:	-80.58959562
Latitude:	40.25398195
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	5,635
Total Base Water Volume (gal):	9,834,342
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
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.							
Proppant Transport	Schlumberger	Acid Corrosion Inhibitor, Acid Breaker, Gelling Agent, Friction Reducer, Accelerator, Fluid Loss Additive, Propping Agent					
			Water (Including Mix Water Supplied by Client)*	NA		83.50069	
			Quartz, Crystalline silica	14808-60-7	98.59213	16.26702	
			Hydrochloric acid	7647-01-0	0.98589	0.16267	
			Ammonium sulfate	7783-20-2	0.17519	0.02891	
			Acrylamide, 2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer	38193-60-1	0.12931	0.02133	
			Calcium chloride	10043-52-4	0.05692	0.00939	
			Guar gum	9000-30-0	0.02416	0.00399	
			Polymer of 2-acrylamido-2-methylpropanesulfonic acid sodium salt and methyl acrylate	136793-29-8	0.01386	0.00229	
			Urea	57-13-6	0.00851	0.00140	
			Potassium chloride	7447-40-7	0.00336	0.00055	
			Sodium sulfate	7757-82-6	0.00198	0.00033	

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		Propan-2-ol	67-63-0	0.00184	0.00030
		Non-crystalline silica (impurity)	7631-86-9	0.00183	0.00030
		Sodium chloride	7647-14-5	0.00102	0.00017
		Diammonium peroxidisulphate	7727-54-0	0.00082	0.00014
		Fatty acid, tall-oil reaction products with acetophenone	68188-40-9	0.00072	0.00012
		Alcohols, C12-C16, ethoxylated	68551-12-2	0.00060	0.00010
		Isodecanol w/6-7 Moles Ethylene Oxide	26183-52-8	0.00040	0.00007
		2-Propenamid (impurity)	79-06-1	0.00042	0.00007
		Tetrasodium ethylenediaminetetraacetate	64-02-8	0.00022	0.00004
		Cinnamaldehyde	104-55-2	0.00026	0.00004
		Dimethyl siloxanes and silicones	63148-62-9	0.00012	0.00002
		Dodecyl poly(oxyethylene) ether	9002-92-0	0.00003	0.00001
		Amines, tallow alkyl, ethoxylated	61791-26-2	0.00008	0.00001
		Glycols, polyethylene, monotetradecyl ether	27306-79-2	0.00002	
		Copper(II) sulfate	7758-98-7	0.00001	
		Siloxanes and silicones, dimethyl, reaction products with silica	67762-90-7	0.00002	
		Octamethylcyclotetrasiloxane	556-67-2	0.00001	
		Decamethyl cyclopentasiloxane	541-02-6	0.00001	
		Dodecamethylcyclohexasiloxane	540-97-6	0.00001	

* 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)

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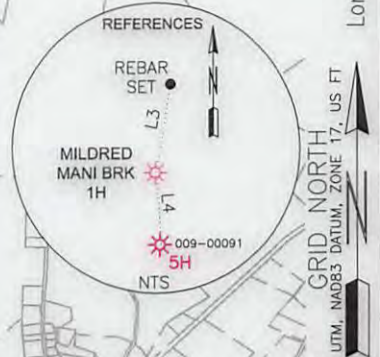
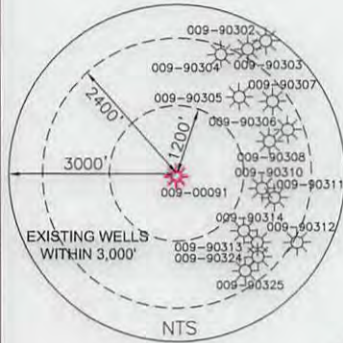
LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	S 88°37'00" E	1442.87'	SHL TO LANDMARK	FOUND IRON PIPE
L2	S 47°10'13" E	997.48'	SHL TO LANDMARK	FOUND IRON PIPE
L3	N 09°13'57" E	156.22'	SHL TO REF. PNT.	1/2" Ø REBAR SET
L4	S 03°47'37" E	34.27'	SHL TO REF. PNT.	MILDRED MANI BRK 5H WELL HEAD 009-00091
LINE	CHORD BEARING	CHORD DIST.	CURVE LENGTH	DESCRIPTION
L5	S 80°43'44" W	1235.82'		SHL TO LP
L6	N 22°48'29" W	5899.09'		LP TO BHL

Latitude: 40°17'30"

Longitude: 80°35'00"

NOTES ON SURVEY

- COORDINATE SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO OCCUPIED DWELLINGS AND AGRICULTURE BUILDINGS GREATER THAN 2500 SQ. FT. WITHIN 625 FEET OF PROPOSED CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
- NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

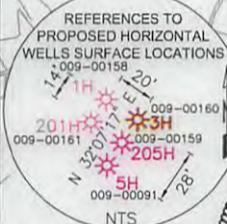


TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES
1	ERIK PHILIP BAUER (S/R) MILDRED MANI (S/R) MILES BAUER (R)	B27-26	95.00
2	STARVAGGI INDUSTRIES (S) CORNELIA JEAN WAUGH (R)	B27-27	62.61
3	ERIK PHILIP BAUER (S/R) MILDRED MANI (S/R) MILES BAUER (R)	B27-21	204.94
4	JAMES L WEAVER (S/R) DAVID E SMITH (S/R)	B27G-40	18.60
5	DELIA DAVIS BALLOG (S/R) THOMAS A LOVE (S/R)	B27G-15	75.84
6	DAVID M. HUBBARD & NANCY L. HUBBARD (S/R)	B27G-60	15.25
7	DAVID M. HUBBARD & NANCY L. HUBBARD (S/R)	B27G-64	13.141
8	JOHN HUBBARD (S/R)	B27G-62	2.678
9	MARIANNA HUBBARD DOUGLAS LIVING TRUST (S/R)	B27G-63	1.228
10	SAMUAL H. HUBBARD & SHELBA HUBBARD (S/R)	B27-2	43.74

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,456,028.124
EASTING: 534,901.935

LANDING POINT (LP):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,455,967.438
EASTING: 534,530.176

BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,457,624.891
EASTING: 533,833.173



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.

P.S. 2315

<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034</p>	<p>MINIMUM DEGREE OF ACCURACY: 1/200</p> <p>PROVEN SURVEY SOURCE OF GRADE GPS ELEVATION: (NAVD 88, US FT)</p>	<p>COMPANY: SWN Production Company, LLC</p> <p>OPERATOR'S WELL #: MILDRED MANI BRK 1H</p> <p>API WELL #: 47 09 00158</p> <p>STATE COUNTY PERMIT</p>
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WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW

WATERSHED: BUFFALO CREEK ELEVATION: 1073.0'

DISTRICT: BUFFALO COUNTY: BROOKE QUADRANGLE: STUEBENVILLE EAST WV.

SURFACE OWNER: MILDRED MANI & ERIK PHILIP BAUER ACREAGE: 95.00±

OIL & GAS ROYALTY OWNER: MILDRED MANI & ERIK PHILIP BAUER ACREAGE: 95.00±

DRILL DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION

CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) AS-DRILLED

TARGET FORMATION: MARCELLUS DEPTH: 5,681' TVD 12,051' IMD

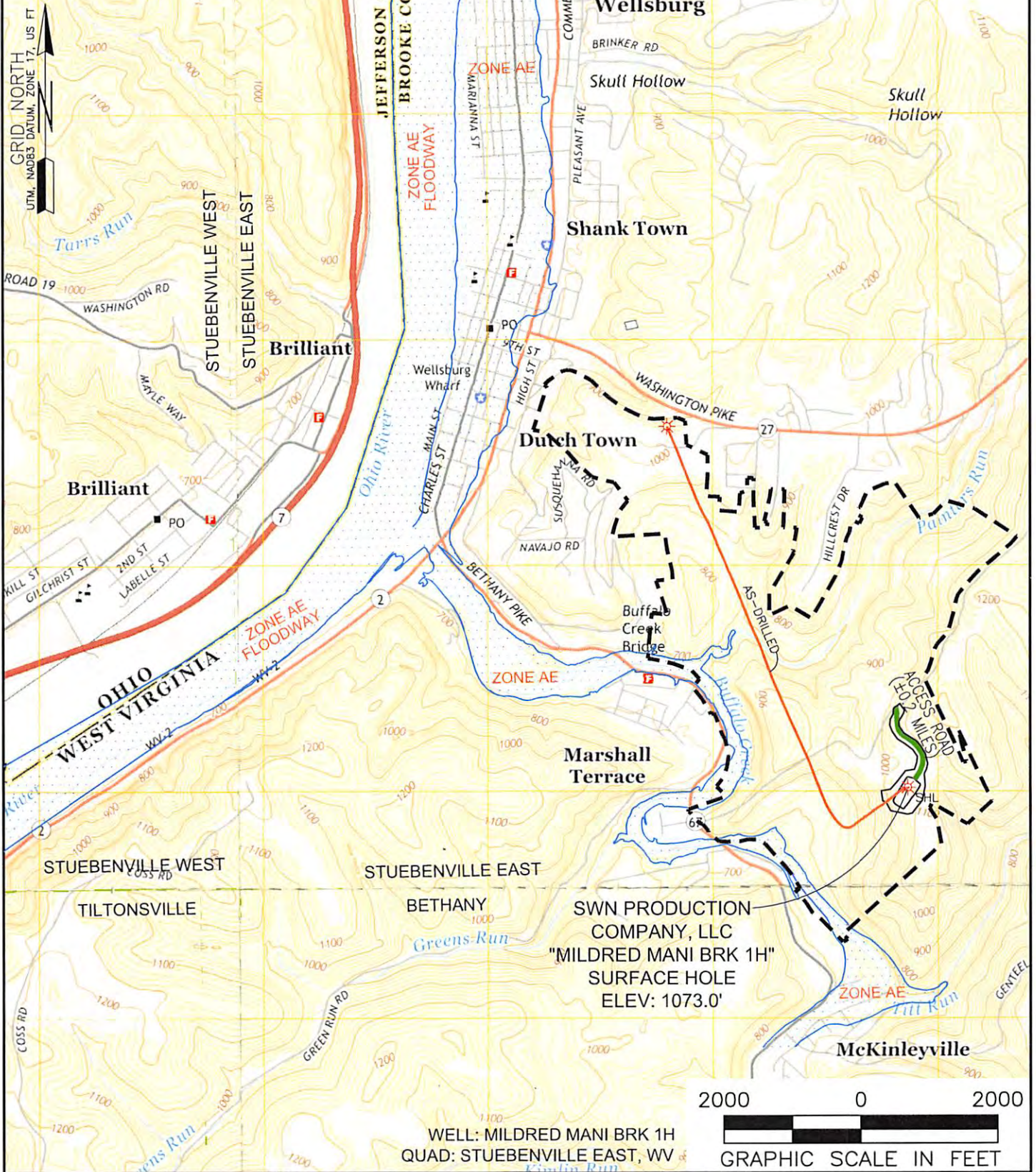
WELL OPERATOR: SWN PRODUCTION COMPANY, LLC ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378

DESIGNATED AGENT: DEE SOUTHALL ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378

<p>LEGEND:</p> <ul style="list-style-type: none"> ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊗ EXISTING / PRODUCING WELLHEAD ⊗ ABANDONED WELL ⊗ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR 	<p>REVISIONS:</p> <ul style="list-style-type: none"> △ REVISED SHL, LP, & BHL FOR ASDRILLED DIRECTIONAL PATH, 11-04-2015 △ REVISED ASDRILLED & PERMITTED DIRECTIONAL PATH COLOR, ADDED LP COORDINATES. 01-29-2016 	<p>DATE: 10-21-2015</p> <p>DRAWN BY: J. HARNESS</p> <p>SCALE: 1" = 2000'</p> <p>DRAWING NO: 59391</p> <p>WELL LOCATION PLAT</p>
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WELL: MILDRED MANI BRK 1H
 QUAD: STUEBENVILLE EAST, WV



NAME AND DISTANCE TO THE NEAREST STREAM: TITT RUN IS LOCATED ±0.31 MILES SOUTHEAST OF THE DRILL PAD.		STREAM CROSSING COORDINATES (NAD 83): NO NEW CROSSINGS.		COMPANY: 	
WELL RESTRICTIONS: WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET CENTER OF PAD TO AGRICULTURAL BUILDINGS LARGER THAN 2500 SQ FT: >625 FEET		OPERATOR'S MILDRED MANI BRK		WELL #: 1H	
FEMA FLOOD INFORMATION: BY GRAPHIC PLOTTING ONLY FEMA FIRM UNINCORPORATED AREA OF BROOKE COUNTY, WEST VIRGINIA; MAP NUMBERS 54009C0090 D, 54009C0130 D, & 54009C0088 D; EFFECTIVE DATE APRIL, 19, 2010.		LOCATION: BUFFALO DISTRICT, BROOKE COUNTY, WEST VIRGINIA		SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.253982° LONGITUDE: -80.589595°	
LEGEND: ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ☼ EXISTING / PRODUCING WELLHEAD ⊗ ABANDONED WELL ⊗ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR		BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.268411° LONGITUDE: -80.602078°		REVISIONS: DATE: 10-21-2015	
○ EXISTING WATER WELL — ACCESS ROAD — ACCESS ROAD TO PREV. SITE — HIGHWAY/INTERSTATE — COUNTY ROAD		DATE: 10-21-2015		DRAWN BY: J. HARNES SCALE: 1" = 2000' DRAWING NO: 59391 TOPOGRAPHIC MAP	



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LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	S 88°37'00" E	1442.87'	SHL TO LANDMARK	FOUND IRON PIPE
L2	S 47°10'13" E	997.48'	SHL TO LANDMARK	FOUND IRON PIPE
L3	N 09°13'57" E	156.22'	SHL TO REF. PNT.	1/2"Ø REBAR SET
L4	S 03°47'37" E	34.27'	SHL TO REF. PNT.	MILDRED MANI BRK 5H WELL HEAD 009-00091

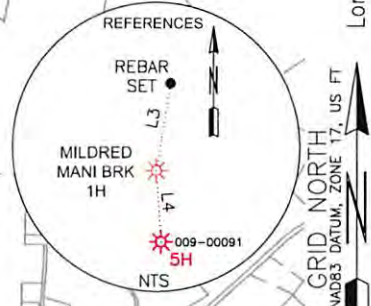
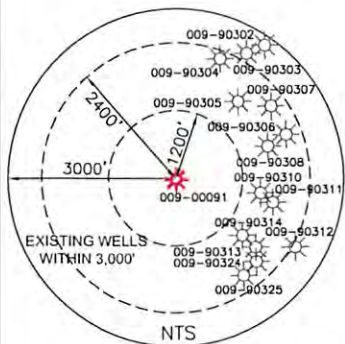
LINE	CHORD BEARING	CHORD DIST.	CURVE LENGTH	DESCRIPTION
L5	S 80°43'44" W	1235.82'		SHL TO LP
L6	N 22°48'29" W	5899.09'		LP TO BHL

Latitude: 40°17'30"

Longitude: 80°35'00"

NOTES ON SURVEY

- COORDINATE SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO OCCUPIED DWELLINGS AND AGRICULTURE BUILDINGS GREATER THAN 2500 SQ. FT. WITHIN 625 FEET OF PROPOSED CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
- NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.



TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES
1	ERIK PHILIP BAUER (S/R) MILDRED MANI (S/R) MILES BAUER (R)	B27-26	95.00
2	STARVAGGI INDUSTRIES (S) CORNELIA JEAN WAUGH (R)	B27-27	62.61
3	ERIK PHILIP BAUER (S/R) MILDRED MANI (S/R) MILES BAUER (R)	B27-21	204.94
4	JAMES L WEAVER (S/R) DAVID E SMITH (S/R)	B27G-40	18.60
5	DELIA DAVIS BALLOG (S/R) THOMAS A LOVE (S/R)	B27G-15	75.84
6	DAVID M. HUBBARD & NANCY L. HUBBARD (S/R)	B27G-60	15.25
7	DAVID M. HUBBARD & NANCY L. HUBBARD (S/R)	B27G-64	13.141
8	JOHN HUBBARD (S/R)	B27G-62	2.678
9	MARIANNA HUBBARD DOUGLAS LIVING TRUST (S/R)	B27G-63	1.228
10	SAMUAL H. HUBBARD & SHELBA HUBBARD (S/R)	B27-2	43.74

SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,456,028.124 EASTING: 534,901.935
LANDING POINT (LP): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,455,967.438 EASTING: 534,530.176
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,457,624.891 EASTING: 533,833.173



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.

P.S. 2315 *[Signature]*

<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034</p>	<p>MINIMUM DEGREE OF ACCURACY: 1/200</p> <p>PROVEN SURVEY SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)</p>	<p>COMPANY: SWN Production Company, LLC</p> <p>MILDRED MANI BRK 1H</p> <p>OPERATOR'S WELL #: 1H</p> <p>API WELL #: 47 09 00158</p> <p>STATE COUNTY PERMIT</p>
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WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW

WATERSHED: BUFFALO CREEK ELEVATION: 1073.0'

DISTRICT: BUFFALO COUNTY: BROOKE QUADRANGLE: STUEBENVILLE EAST WV.

SURFACE OWNER: MILDRED MANI & ERIK PHILIP BAUER ACREAGE: 95.00±

OIL & GAS ROYALTY OWNER: MILDRED MANI & ERIK PHILIP BAUER ACREAGE: 95.00±

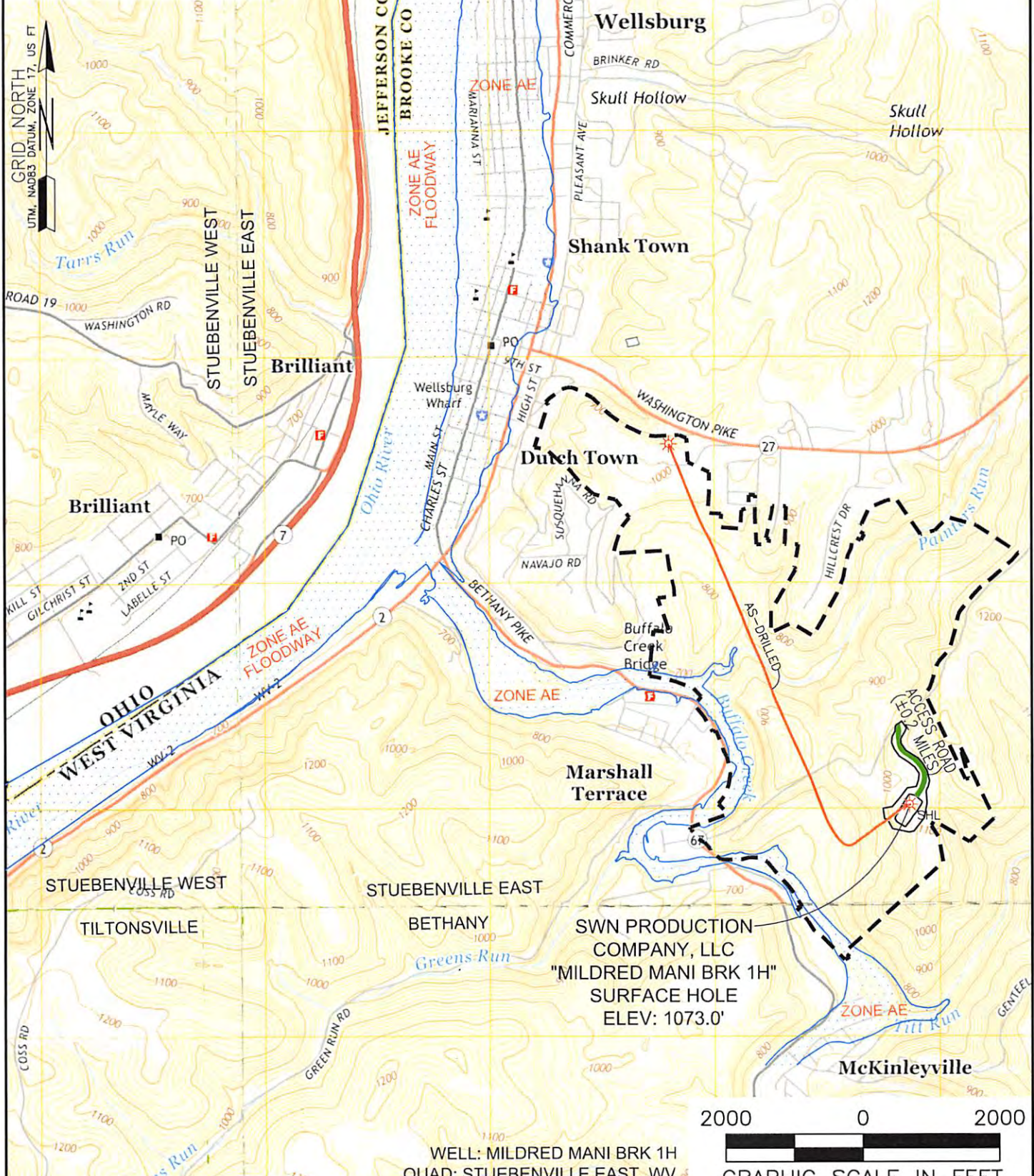
DRILL DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION

CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) AS-DRILLED

TARGET FORMATION: MARCELLUS DEPTH: 5,681' TVD 12,051' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	DESIGNATED AGENT: DEE SOUTHALL
ADDRESS: P.O. BOX 1300	ADDRESS: P.O. BOX 1300
CITY: JANE LEW STATE: WV ZIP CODE: 26378	CITY: JANE LEW STATE: WV ZIP CODE: 26378

LEGEND:	REVISIONS:	DATE: 10-21-2015
○ PROPOSED SURFACE HOLE / BOTTOM HOLE	△ REVISED SHL, LP, & BHL FOR ASDRILLED	
★ EXISTING / PRODUCING WELLHEAD	△ REVISED ASDRILLED & PERMITTED DIRECTIONAL PATH	DRAWN BY: J. HARNESS
○ ABANDONED WELL	△ COLOR, ADDED LP COORDINATES. 01-29-2016	SCALE: 1" = 2000'
○ PLUGGED & ABANDONED WELL		DRAWING NO: 59391
△ CUT CONDUCTOR		WELL LOCATION PLAT



WELL: MILDRED MANI BRK 1H
QUAD: STUEBENVILLE EAST, WV

NAME AND DISTANCE TO THE NEAREST STREAM: TITT RUN IS LOCATED ±0.31 MILES SOUTHEAST OF THE DRILL PAD.		STREAM CROSSING COORDINATES (NAD 83): NO NEW CROSSINGS.		COMPANY: SWN Production Company, LLC		SWN Production Company™	
WELL RESTRICTIONS: WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET CENTER OF PAD TO AGRICULTURAL BUILDINGS LARGER THAN 2500 SQ FT: >625 FEET				OPERATOR'S MILDRED MANI BRK		WELL #: 1H	
FEMA FLOOD INFORMATION: BY GRAPHIC PLOTTING ONLY FEMA FIRM UNINCORPORATED AREA OF BROOKE COUNTY, WEST VIRGINIA; MAP NUMBERS 54009C0090 D, 54009C0130 D, & 54009C0088 D; EFFECTIVE DATE APRIL, 19, 2010.				LOCATION: BUFFALO DISTRICT, BROOKE COUNTY, WEST VIRGINIA		SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.253982° LONGITUDE: -80.589595°	
LEGEND: ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊙ EXISTING / PRODUCING WELLHEAD ⊗ ABANDONED WELL ⊗ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR				BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.268411° LONGITUDE: -80.602078°		DATE: 10-21-2015	
<ul style="list-style-type: none"> ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊙ EXISTING / PRODUCING WELLHEAD ⊗ ABANDONED WELL ⊗ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR ○ EXISTING WATER WELL — ACCESS ROAD — ACCESS ROAD TO PREV. SITE — HIGHWAY/INTERSTATE — COUNTY ROAD 				REVISIONS:		DRAWN BY: J. HARNES	
						SCALE: 1" = 2000'	
						DRAWING NO: 59391	
						TOPOGRAPHIC MAP	

10/21/2016