

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

API 47-009-00195 County BROOKE District BUFFALO
Quad BETHANY Pad Name ALAN H. DEGARMO BRK PAD Field/Pool Name PANHANDLE FIELD WET
Farm name ALAN H. DEGARMO & MARY DEGARMO Well Number ALAN H. DEGARMO BRK 405H
Operator (as registered with the OOG) SWN PRODUCTION COMPANY, LLC
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,455,198.038 Easting 536,403.285
Landing Point of Curve Northing 4,455,593.206 Easting 536,914.078
Bottom Hole Northing 4,458,077.176 Easting 535,842.819

Elevation (ft) 1204 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

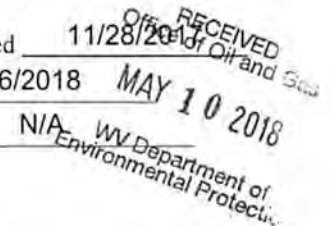
Date permit issued 5/31/2017 Date drilling commenced 10/02/2017 Date drilling ceased 11/28/2017
Date completion activities began 12/28/2017 Date completion activities ceased 03/06/2018
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 212 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 428 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 271 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by

C. J. ... 4-3-19



WR-35
Rev. 8/23/13

API 47- 009 - 00195 Farm name ALAN H. DEGARMO & MARY DEGARMO Well number ALAN H. DEGARMO BRK 405H

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	26	20	126	NEW	J-55/94#		Y
Surface	17.5	13.375	377	NEW	J-55/54.50#	243.6'	Y
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	1685	NEW	J-55/36#		Y
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	15425	NEW	HCP-110/20#		Y
Tubing		2.375	6454	NEW	P-110/4.7#		N
Packer type and depth set							

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	CLASS A	GROUT TO SURFACE				SURFACE	24
Surface	CLASS A	220/285	15.60	1.20/1.19	264/339.15	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	643	15.60	1.20	771.6	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	2869	15.60	1.19	3414.11	SURFACE	24
Tubing							

Drillers TD (ft) 15425 Loggers TD (ft) 15425
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5450

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: 7 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 INTERMEDIATE: 24 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 PRODUCTION: 181 CENTRALIZERS - EVERY THIRD JOINT FROM SURFACE TO TOP OF CURVE, THEN EVERY JOINT UNTIL TD

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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 _____

API 47- 009 - 00195 Farm name ALAN H. DEGARMO & MARY DEGARMO Well number ALAN H. DEGARMO BRK 405H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	SEE	ATTACHMENT	1		

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	ATTACHMENT	2				

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PRODUCING FORMATION(S)	DEPTHS		
MARCELLUS	5899	TVD	6595 MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1111 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 3,338 mcfpd Oil 546 bpd NGL _____ bpd Water 438 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP		BOTTOM		DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
	SEE	ATTACHMENT	3		

Please insert additional pages as applicable.

Drilling Contractor SWN DRILLING COMPANY
Address PO BOX 12359 City SPRING State TX Zip 77061

Logging Company WEATHERFORD
Address 2000 ST. JAMES PLACE City HOUSTON State TX Zip 77056

Cementing Company SCHLUMBERGER WELL SERVICES
Address 1080 US HWY 33 EAST City WESTON State WV Zip 26452

Stimulating Company HALLIBURTON ENERGY SERVICES
Address 5146 ELK RIVER ROAD City BLUE CREEK State WV Zip 25026

Please insert additional pages as applicable.

Completed by BOBBY WILLIAMS Telephone 832-796-2884
Signature [Signature] Title REGULATORY ANALYST Date 05/09/18

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

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2359
Zip

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/12/2018
Job End Date:	2/13/2018
State:	West Virginia
County:	Brooke
API Number:	47-009-00197-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Alan H DeGarmo BRK 405H
Latitude:	40.24644000
Longitude:	-80.57198900
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	5,925
Total Base Water Volume (gall):	10,069,146
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
Fresh Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	83.05189	Density = 8.330
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	1.08578	



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SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant		Listed Below					
HAI-150E	Halliburton	Corrosion Inhibitor		Listed Below					
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant		Listed Below					
FR-76	Halliburton	Friction Reducer		Listed Below					
CALCIUM CHLORIDE - HI-TEST PELLETS	Halliburton	Accelerator		Listed Below					
FDP-S1176-15	Halliburton	Friction Reducer		Listed Below					
SCAL16486A	NALCO	Scale Inhibitor		Listed Below					
HYDROCHLORIC ACID	Halliburton	Solvent		Listed Below					

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				Crystalline silica, quartz	14808-60-7	100.00000	15.79828		
				Hydrochloric acid	7647-01-0	15.00000	0.15505		
				Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02604		
				Polyacrylate	Proprietary	30.00000	0.01849		
				Methanol	67-56-1	60.00000	0.01370		
				Inorganic salt	Proprietary	30.00000	0.00755		
				Acrylamide acrylate copolymer	Proprietary	30.00000	0.00755		
				Benzyl-Dimethyl-Ammonium Chloride	68424-85-1	30.00000	0.00685		Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
				Sodium chloride	7647-14-5	5.00000	0.00313		
				Castor oil, ethoxylated	61791-12-6	5.00000	0.00308		
				Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00308		
				Ammonium chloride	12125-02-9	5.00000	0.00308		
				9-Octadecenamide, n,n-bis-2(hydroxy-ethyl)-(Z)	93-83-4	5.00000	0.00308		
				Glutaraldehyde	111-30-8	10.00000	0.00228		
				Ethylene Glycol	107-21-1	30.00000	0.00156		
				Amine Triphosphate	Proprietary	30.00000	0.00156		
				Calcium chloride	10043-52-4	96.00000	0.00095		
				Non-hazardous food substance	Proprietary	100.00000	0.00032		
				Strontium chloride	10476-85-4	5.00000	0.00005		
				Potassium chloride	7447-40-7	5.00000	0.00005		

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

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* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%
*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line
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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Well Name: Alan H Degarmo BRK 405H

47009001950000

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LITHOLOGY/FORMATION	TOP DEPTH, MD (FT)	TOP DEPTH, TVD (FT)	BOTTOM DEPTH, MD (FT)	BOTTOM DEPTH, TVD (FT)	QUANTITY AND TYPE OF FLUID
Base of Fresh Water	0.00	0.00	212.00	212.00	
Top of Salt Water	428.00	428.00	NA	NA	
Pittsburgh Coal	271.00	271.00	NA	NA	
Pottsville (ss)	420.00	420.00	499.00	499.00	
Mauch Chunk (shale)	501.00	501.00	1279.00	1279.00	
Raven Cliff (ss)	755.00	755.00	951.00	951.00	
Maxton (ss)	1144.00	1144.00	1205.00	1205.00	
Greenbriar (ls)	1279.00	1279.00	1458.00	1458.00	
Big Injun (ss)	1458.00	1458.00	1601.00	1601.00	
Berea (siltstone)	1948.00	1948.00	1999.00	1999.00	
Rhinestreet (shale)	5713.00	5358.00	6000.00	5595.00	
Cashagua (shale)	6000.00	5595.00	6072.00	5649.00	
Middlesex (shale)	6072.00	5649.00	6158.00	5709.00	
Burket (shale)	6158.00	5709.00	6182.00	5725.00	
Tully (ls)	6182.00	5725.00	6277.00	5782.00	
Mahantango (shale)	6277.00	5782.00	6595.00	5899.00	
Marcellus (shale)	6595.00	5899.00	NA	NA	Gas

ALAN H DEGARMO BRK 405H

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	12/30/2017	15,117	15,314	42
2	1/12/2018	14,857	15,056	42
3	1/21/2018	14,597	14,796	42
4	1/22/2018	14,337	14,536	42
5	1/23/2018	14,077	14,276	42
6	1/24/2018	13,817	14,016	42
7	1/24/2018	13,557	13,753	42
8	1/25/2018	13,297	13,496	42
9	1/27/2018	13,037	13,236	42
10	1/28/2018	12,777	12,974	42
11	1/28/2018	12,517	12,716	42
12	1/29/2018	12,257	12,456	42
13	1/29/2018	11,997	12,196	42
14	1/30/2018	11,737	11,936	42
15	1/31/2018	11,477	11,676	42
16	1/31/2018	11,217	11,416	42
17	2/2/2018	10,957	11,156	42
18	2/2/2018	10,697	10,896	42
19	2/2/2018	10,437	10,634	42
20	2/3/2018	10,177	10,376	42
21	2/3/2018	9,917	10,116	42
22	2/4/2018	9,657	9,856	42
23	2/5/2018	9,392	9,596	42
24	2/5/2018	9,137	9,336	42
25	2/6/2018	8,877	9,076	42
26	2/6/2018	8,617	8,816	42
27	2/7/2018	8,361	8,556	42
28	2/7/2018	8,097	8,296	42
29	2/9/2018	7,837	8,036	42
30	2/11/2018	7,577	7,776	42
31	2/11/2018	7,317	7,516	42
32	2/11/2018	7,057	7,256	42
33	2/12/2018	6,797	6,996	42

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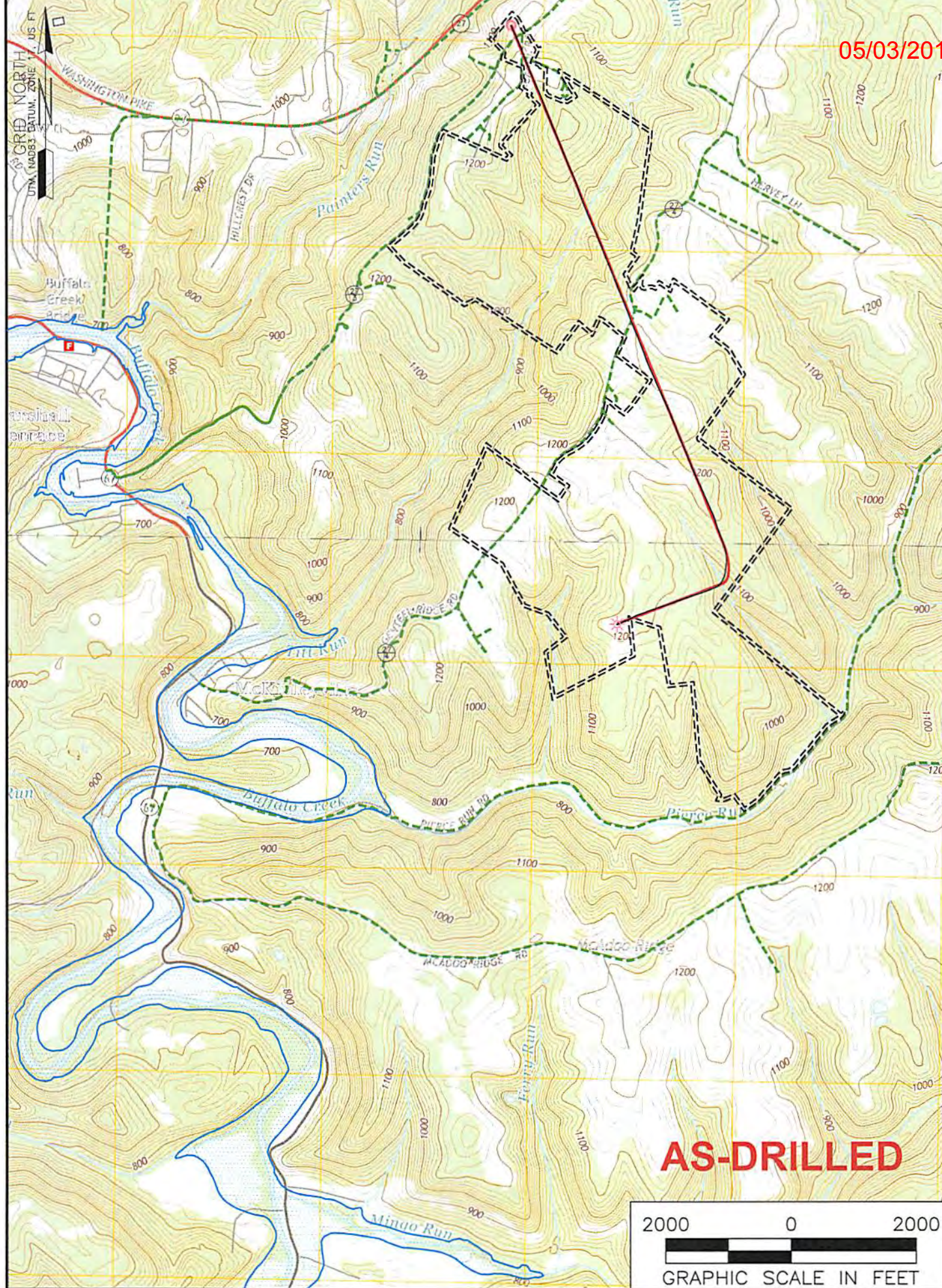
ALAN H DEGARMO BRK 5H
ATTACHMENT 405
STIM REPORT

STAGE NUM	Stim 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
1	1/12/2018	92	7,990	8,294	3,776	498,940	9,071	
2	1/21/2018	95	7,933	9,500	4,610	494,550	7,461	
3	1/22/2018	95	7,696	8,379	4,303	500,430	7,824	
4	1/23/2018	98	7,390	8,053	4,376	516,780	10,238	
5	1/24/2018	95	7,523	8,073	4,102	509,060	7,857	
6	1/24/2018	94	7,699	8,879	4,089	421,180	6,503	
7	1/25/2018	91	7,491	8,365	4,496	498,220	7,504	
8	1/27/2018	6	5,797	9,600	7,102	7,800	3,028	
9	1/27/2018	97	7,919	8,499	4,125	496,720	8,479	
10	1/28/2018	90	7,474	8,617	4,291	491,280	7,302	
11	1/28/2018	98	8,201	8,977	4,357	491,380	7,756	
12	1/29/2018	87	8,066	8,835	3,833	488,720	7,555	
13	1/30/2018	81	8,243	9,117	4,255	506,520	8,410	
14	1/31/2018	94	8,239	9,078	4,173	498,280	7,710	
15	1/31/2018	92	7,742	8,919	4,402	509,140	7,577	
16	2/1/2018	99	8,161	9,077	4,174	496,340	7,550	
17	2/2/2018	97	7,339	8,000	4,269	498,220	7,569	
18	2/2/2018	100	7,964	8,373	4,333	492,520	7,313	
19	2/3/2018	91	7,117	8,188	4,313	498,960	7,526	
20	2/3/2018	96	7,849	9,030	3,972	504,540	7,494	
21	2/4/2018	97	7,445	8,552	4,450	502,560	7,401	
22	2/5/2018	98	7,538	9,074	4,290	503,580	6,984	
23	2/5/2018	92	7,968	8,897	4,290	483,720	8,037	
24	2/5/2018	99	7,634	9,035	4,329	497,380	7,415	
25	2/6/2018	90	7,089	8,312	4,556	500,080	7,957	
26	2/6/2018	97	6,766	7,139	4,226	493,980	7,272	
27	2/7/2018	90	6,372	7,401	3,906	499,340	7,182	
28	2/9/2018	99	6,671	7,466	3,979	501,600	7,860	
29	2/10/2018	98	7,163	8,795	4,334	495,480	6,631	
30	2/11/2018	98	6,656	8,985	4,143	509,440	7,325	
31	2/11/2018	97	6,784	8,352	4,303	497,580	6,679	
32	2/12/2018	98	6,845	7,835	4,384	501,160	5,893	
33	2/13/2018	97	6,881	7,688	4,417	503,040	5,564	

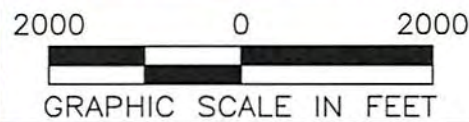


CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
 600 MARKETPLACE AVENUE, SUITE 200
 BRIDGEPORT, WV 26330
 304-933-3119

05/03/2019



AS-DRILLED



NOTES ON SURVEY

1. 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.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
3. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

LEGEND:

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- ★ EXISTING / PRODUCING WELLHEAD
- LPL ✖ LANDING POINT LOCATION
- FLOOD PLAIN
- ACCESS ROAD
- - - PUBLIC ROAD
- ACCESS ROAD TO PREV. SITE
- ==== LEASE BOUNDARY
- PROPOSED PATH

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	WELL (FARM) NAME: ALAN H DEGARMO BRK	WELL # 405H	SERIAL # XXXX
ADDRESS: P.O. BOX 1300 JANE LEW, WV 26378	COUNTY - CODE BROOKE - 009	DISTRICT; BUFFALO	
SURFACE OWNER: ALAN H. DEGARMO & MARY KAY DEGARMO, LIFE ESTATE	USGS 7 1/2 QUADRANGLE MAP NAME BETHANY, WV		

Longitude: 80°32'30"

SURFACE HOLE 8464'

Longitude: 80°32'30"

BOTTOM HOLE 10337'

Latitude: 40°15'00"

Latitude: 40°17'30"



CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
600 MARKETPLACE AVENUE, SUITE 200
BRIDGEPORT, WV 26330
304-933-3119

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,455,198.038
EASTING: 536,403.285

LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,455,593.206
EASTING: 536,914.078

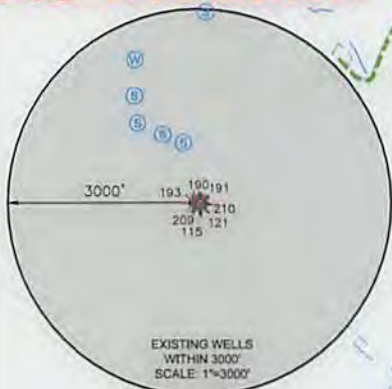
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,458,077.176
EASTING: 535,842.819

PERMIT SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,455,198.038
EASTING: 536,403.285

PERMIT LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,455,592.080
EASTING: 536,915.813

PERMIT BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,458,076.187
EASTING: 353,843.232

AS-DRILLED



WELL RESTRICTIONS

- 1. NO OCCUPIED DWELLINGS > 2500 SQ FT, WITHIN 625 FEET OF CENTER OF PAD.
2. NO AGRICULTURE BUILDINGS > 2500 SQ FT, WITHIN 625 FEET OF CENTER OF PAD.
3. WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 977 FEET OF PROPOSED WELL.
4. PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 800 FEET OF THE LIMITS OF DISTURBANCE.
5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
6. NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

NOTES ON SURVEY

- 1. 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.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
3. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

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. 991



COMPANY: SWN Production Company, LLC

STATE OF WEST VIRGINIA
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SURVEY SOURCE OF GRADE GPS ELEVATION: (NAVD 88, US FT)

ALAN H DEGARMO BRK
OPERATOR'S WELL #: 405H
API WELL #: 47 STATE 009 COUNTY 00195 PERMIT

WELL TYPE: OIL [] WASTE DISPOSAL [] PRODUCTION [X] DEEP [] GAS [X] LIQUID INJECTION [] STORAGE [] SHALLOW [X]
WATERSHED: UPPER OHIO SOUTH
DISTRICT: BUFFALO COUNTY: BROOKE
SURFACE OWNER: ALAN H. DEGARMO & MARY KAY DEGARMO, LIFE ESTATE
OIL & GAS ROYALTY OWNER: ALAN H. DEGARMO
DRILL [] DRILL DEEPER [] REDRILL [] FRACTURE OR STIMULATE [] PLUG OFF OLD FORMATION [] PERFORATE NEW FORMATION []
CONVERT [] PLUG & ABANDON [] CLEAN OUT & REPLUG [] OTHER CHANGE [X] (SPECIFY) ASDRILLED
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 5,899 TVD 15,425 TMD

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

Table with 2 columns: LEGEND (PROPOSED SURFACE HOLE, EXISTING/PRODUCING WELLHEAD, LPL, EXISTING WATER WELL, EXISTING SPRING) and REVISIONS/DATE (DATE: 04-18-2018, DRAWN BY: K.E.S., SCALE: 1" = 2000', DRAWING NO: 164-764, WELL LOCATION PLAT)

WELL LOCATION PLAT	DRAWING NO: 14-784	SCALE: 1" = 200'	DRAWN BY: K.E.S.	DATE: 04-18-2018
REVISIONS:	CITY: JANE LEW	STATE: WV	ZIP CODE: 26378	DESIGNATED AGENT: DEE SOUTHALL
ESTIMATED DEPTH: 5899 TVD 12425 TMD	OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) ASDRILLED	CONVERT <input type="checkbox"/>	PLUG & ABANDON <input type="checkbox"/>	CLEAN OUT & REPLUG <input type="checkbox"/>
TARGET FORMATION: MARCELLUS	DRILL DEEPER <input type="checkbox"/>	REDRILL <input type="checkbox"/>	FRACTURE OR STIMULATE <input type="checkbox"/>	PLUG OFF OLD FORMATION <input type="checkbox"/>
PERFORATE NEW FORMATION <input type="checkbox"/>	WASTE DISPOSAL <input type="checkbox"/>	DEEP <input type="checkbox"/>	PRODUCTION <input checked="" type="checkbox"/>	LIQUID INJECTION <input type="checkbox"/>
SHALLOW <input checked="" type="checkbox"/>	WATERSHED: UPPER OHIO SOUTH	DISTRICT: BUFFALO	COUNTY: BROOKE	QUADRANGLE: BETHANY
ELEVATION: 1504.0	SURFACE OWNER: ALAN H. DEGARMO & MARY KAY DEGARMO, LIFE ESTATE	OIL & GAS ROYALTY OWNER: ALAN H. DEGARMO	ACREAGE: 140.97±	ACREAGE: 140.97±
WELL TYPE: OIL	OFFICE OF OIL & GAS	601 27TH STREET	CHARLESTON, WV 25034	STATE PERMIT
WDEP	UNITED STATES TOPOGRAPHIC MAPS	ACCURACY: 1/500	OPERATOR'S WELL #:	40SH
MINIMUM DEGREE OF PROVEN SURVEY	ELEVATION: (NAVD 88, US FT)	SOURCE OF GRADE GPS	API WELL #:	47
WVDEP	OFFICE OF OIL & GAS	601 27TH STREET	CHARLESTON, WV 25034	COUNTY PERMIT
WVDEP	UNITED STATES TOPOGRAPHIC MAPS	ACCURACY: 1/500	OPERATOR'S WELL #:	40SH
MINIMUM DEGREE OF PROVEN SURVEY	ELEVATION: (NAVD 88, US FT)	SOURCE OF GRADE GPS	API WELL #:	47
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COMPANY: **swm** swm
 Production Company, LLC. Production Company
 1844 V+ St



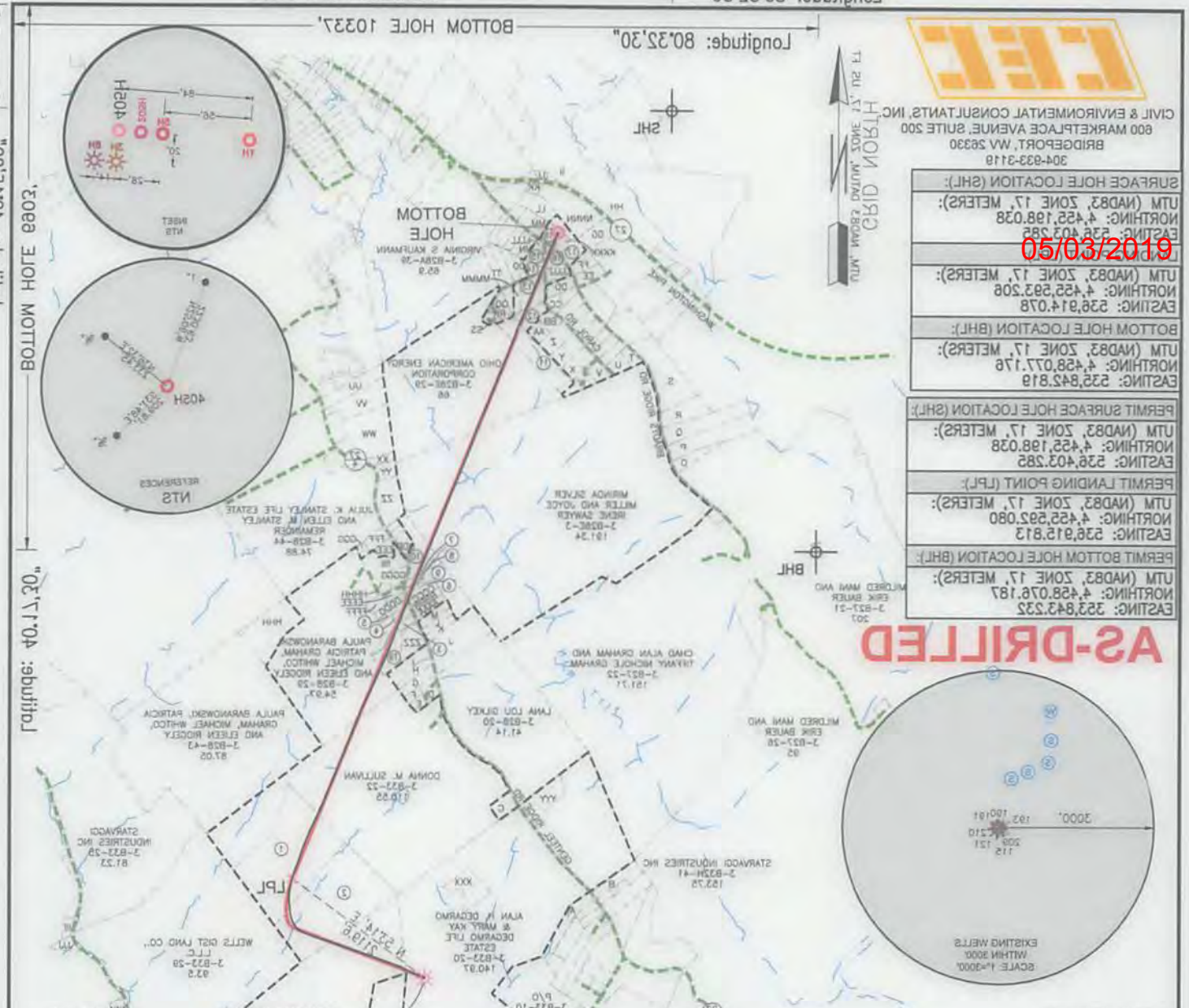
I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTES ON SURVEY

1. 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.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
3. ALL INTERIOR GRID NORTH UNLESS OTHERWISE DEPICTED.

WELL RESTRICTIONS

1. NO OCCUPIED DWELLINGS > 2500 SQ FT WITHIN 825 FEET OF CENTER OF PAD.
2. NO AGRICULTURAL BUILDINGS > 2500 SQ FT WITHIN 825 FEET OF CENTER OF PAD.
3. WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 977 FEET OF PROPOSED WELL.
4. PERMANENT STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 800 FEET OF THE LIMITS OF DISTURBANCE.
5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 200 FEET OF LIMITS OF DISTURBANCE.
6. NO GROUND WATER OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.



AS-DRILLED

PERMIT BOTTOM HOLE LOCATION (B.H.L.):	UTM (NAD83, ZONE 17, METERS):	NORTHING: 4458.076187	EASTING: 252842.232
PERMIT SURFACE HOLE LOCATION (S.H.L.):	UTM (NAD83, ZONE 17, METERS):	NORTHING: 4452.198038	EASTING: 252843.285
PERMIT LANDING POINT (L.P.):	UTM (NAD83, ZONE 17, METERS):	NORTHING: 4452.592080	EASTING: 252842.813
BOTTOM HOLE LOCATION (B.H.L.):	UTM (NAD83, ZONE 17, METERS):	NORTHING: 4458.077178	EASTING: 252842.819
SURFACE HOLE LOCATION (S.H.L.):	UTM (NAD83, ZONE 17, METERS):	NORTHING: 4452.198038	EASTING: 252843.285

05/03/2019