

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

API 47-069-00178 County OHIO District LIBERTY
Quad VALLEY GROVE Pad Name ALICE EDGE OHI Field/Pool Name PANHANDLE FIELD
Farm name ALICE MAE EDGE Well Number 5H
Operator (as registered with the OOG) SWN PRODUCTION CO., LLC
Address 10000 ENERGY DRIVE City SPRING State TX Zip 77389

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4438936.56 Easting 537474.59
Landing Point of Curve Northing 4439279.65 Easting 537706.24
Bottom Hole Northing 4441229.16 Easting 536778.41

Elevation (ft) 1199' 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 8/28/14 Date drilling commenced 9/26/14 Date drilling ceased 10/27/14
Date completion activities began 7/19/15 Date completion activities ceased 10/17/15
Verbal plugging (Y/N) 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 394 Open mine(s) (Y/N) depths _____
Salt water depth(s) ft 731 Void(s) encountered (Y/N) depths _____
Coal depth(s) ft 582 Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) Y

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API 47- 069 - 00178 Farm name ALICE MAE EDGE Well number 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	101	N	94/J-55		Y
Surface	17.5	13.375	611	N	54.5/J-55		Y
Coal	17.5	13.375	611	N	54.5/J-55		Y
Intermediate 1	12.250	9.625	2079	N	40/J-55		Y
Intermediate 2							
Intermediate 3							
Production	8.75/8.5	5.5	14543	N	20/P-110		N
Tubing		2.375	7088	N	4.7/P-110		NA
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	A		15.6			GTS	GTS
Surface	A	623	15.6	1.2	748	7.4	8
Coal	A	623	15.6	1.2	748	7.4	8
Intermediate 1	A	818	15.7	1.19	973	6.8	8
Intermediate 2							
Intermediate 3							
Production	A		15.3	1.30		670	24
Tubing							

Drillers TD (ft) 14543 Loggers TD (ft) 14543
 Deepest formation penetrated MARCELLUS Plug back to (ft) NA
 Plug back procedure NA

Kick off depth (ft) 5657

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 will be ran with a centralizer at a minimum of 1 per every 3 joints 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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PRODUCING FORMATION(S)	DEPTHS		
MARCELLUS	5566	TVD	14543 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 NA hrs
 OPEN FLOW Gas 4117 mcfpd Oil 337 bpd NGL _____ bpd Water 405 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 ₂ S, ETC)
	0		0		
			SEE	ATTACHED	

Please insert additional pages as applicable.

Drilling Contractor NOMAC DRILLING
 Address 3400 South Radio Road El Reno, OK 73036 City EL RENO State OK Zip 73036

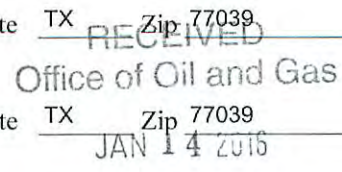
Logging Company NINE ENERGY SERVICES
 Address 8885 State Hwy 21 E, Bryan, TX 77808 City BRYAN State TX Zip 77808

Cementing Company SCHLUMBERGER OILFIELD SERVICES
 Address 1121 Buschong St, Houston, TX 77039 City HOUSTON State TX Zip 77039

Stimulating Company SCHLUMBERGER OILFIELD SERVICES
 Address 1121 Buschong St, Houston, TX 77039 City HOUSTON State TX Zip 77039

Please insert additional pages as applicable.

Completed by CODY MAGBY Telephone 832-796-6215 Department of
 Signature *Cody Magby* Title SR. STAFF REGULATORY Environmental Protection
 Date 1/14/16



WELL NAME	STAGE RUM	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
ALICE EDGE OHI 5	1	7/19/2015	2	8,484	8,962	4,355	499,460	9,059	
ALICE EDGE OHI 5	2	7/19/2015	2	8,709	9,165	4,491	500,580	8,043	
ALICE EDGE OHI 5	3	7/19/2015	2	8,755	9,136	4,259	495,460	7,531	
ALICE EDGE OHI 5	4	7/20/2015	2	8,624	9,085	4,757	502,160	7,556	
ALICE EDGE OHI 5	5	7/20/2015	2	8,806	9,241	4,889	501,720	7,938	
ALICE EDGE OHI 5	6	7/20/2015	2	8,549	9,053	4,822	501,900	7,559	
ALICE EDGE OHI 5	7	7/21/2015	2	8,624	9,163	4,650	499,300	7,526	
ALICE EDGE OHI 5	8	7/21/2015	2	8,748	8,989	5,354	450,920	7,594	
ALICE EDGE OHI 5	9	7/23/2015	2	8,622	8,970	4,559	507,860	7,518	
ALICE EDGE OHI 5	10	7/23/2015	2	8,422	9,236	4,714	495,480	7,611	
ALICE EDGE OHI 5	11	7/23/2015	2	8,478	9,182	4,853	500,560	7,181	
ALICE EDGE OHI 5	12	7/23/2015	2	8,327	9,305	4,789	501,300	7,389	
ALICE EDGE OHI 5	13	7/23/2015	2	8,435	9,360	4,934	499,860	7,516	
ALICE EDGE OHI 5	14	7/23/2015	2	8,332	9,243	4,959	495,500	7,346	
ALICE EDGE OHI 5	15	7/24/2015	2	8,194	9,273	4,650	500,340	7,229	
ALICE EDGE OHI 5	16	7/24/2015	2	8,417	9,189	4,818	504,880	7,178	
ALICE EDGE OHI 5	17	7/24/2015	2	8,263	9,216	4,789	500,460	7,088	
ALICE EDGE OHI 5	18	7/25/2015	2	8,337	9,272	4,790	500,380	7,418	
ALICE EDGE OHI 5	19	7/25/2015	2	8,135	9,216	4,707	501,980	7,136	
ALICE EDGE OHI 5	20	7/25/2015	2	8,251	9,074	4,985	498,060	7,120	
ALICE EDGE OHI 5	21	7/26/2015	2	7,906	8,845	5,376	500,740	7,162	
ALICE EDGE OHI 5	22	7/26/2015	2	8,185	9,321	4,965	500,420	7,107	
ALICE EDGE OHI 5	23	7/26/2015	2	8,283	9,214	4,685	500,560	7,271	
ALICE EDGE OHI 5	24	7/27/2015	2	8,176	10,071	4,584	374,180	11,495	
ALICE EDGE OHI 5	25	7/30/2015	2	7,846	9,156	4,623	498,960	7,504	
ALICE EDGE OHI 5	26	7/30/2015	2	7,969	9,204	4,990	501,720	7,385	
ALICE EDGE OHI 5	27	7/30/2015	2	8,126	9,210	4,759	500,680	8,081	
ALICE EDGE OHI 5	28	7/31/2015	2	7,800	9,149	5,055	500,340	7,117	
ALICE EDGE OHI 5	29	7/31/2015	2	7,838	9,223	4,900	500,640	7,092	
ALICE EDGE OHI 5	30	7/31/2015	2	7,845	9,028	4,938	500,600	7,123	
ALICE EDGE OHI 5	31	8/1/2015	2	7,656	9,180	4,791	500,200	7,130	
ALICE EDGE OHI 5	32	8/1/2015	2	7,640	8,972	4,757	500,580	7,212	
ALICE EDGE OHI 5	33	8/2/2015	2	7,825	9,258	5,122	500,640	7,115	
ALICE EDGE OHI 5	34	8/2/2015	2	7,660	9,245	4,690	499,680	7,124	
ALICE EDGE OHI 5	35	8/2/2015	2	7,710	9,089	4,631	500,840	7,169	
ALICE EDGE OHI 5	36	8/3/2015	2	7,847	8,830	4,957	505,740	6,975	
ALICE EDGE OHI 5	37	8/3/2015	2	7,749	9,391	4,657	496,760	7,083	
ALICE EDGE OHI 5	38	8/3/2015	2	7,793	9,193	4,738	496,940	7,046	
ALICE EDGE OHI 5	39	8/4/2015	2	7,806	9,125	5,088	499,900	7,165	
ALICE EDGE OHI 5	40	8/4/2015	2	7,732	9,144	4,822	495,980	7,147	
ALICE EDGE OHI 5	41	8/4/2015	2	7,684	8,874	5,017	500,800	7,752	
ALICE EDGE OHI 5	42	8/5/2015	2	7,567	9,046	4,559	500,340	7,091	
ALICE EDGE OHI 5	43	8/5/2015	2	7,615	9,293	4,623	494,620	7,131	
ALICE EDGE OHI 5	44	8/5/2015	2	7,670	9,161	4,733	501,140	7,069	
ALICE EDGE OHI 5	45	8/6/2015	2	7,565	9,002	4,550	499,509	7,118	
ALICE EDGE OHI 5	46	8/6/2015	2	7,594	9,259	4,923	496,709	6,930	
ALICE EDGE OHI 5	47	8/6/2015	2	7,446	8,952	4,656	503,236	7,075	
ALICE EDGE OHI 5	48	8/6/2015	2	7,597	9,125	4,864	501,319	7,096	
ALICE EDGE OHI 5	49	8/7/2015	2	7,786	9,118	5,287	501,212	7,051	
ALICE EDGE OHI 5	50	8/7/2015	2	7,314	8,679	4,724	499,849	7,027	
ALICE EDGE OHI 5	51	8/7/2015	2	7,735	9,166	4,867	499,541	7,113	
ALICE EDGE OHI 5	52	8/7/2015	1	8,902	9,243	4,497	15,272	2,468	
ALICE EDGE OHI 5	53	8/8/2015	2	7,150	9,037	4,788	1,010,257	12,530	
Grand total	Grand total	7/19/2015	2	8,048	10,071	4,801	26,359,864	392,490	

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WELL NAME	STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
ALICE EDGE OHI 5	1	7/19/2015	14,311	14,407	42
ALICE EDGE OHI 5	2	7/19/2015	14,170	14,275	42
ALICE EDGE OHI 5	3	7/19/2015	14,032	14,137	42
ALICE EDGE OHI 5	4	7/20/2015	13,894	13,999	42
ALICE EDGE OHI 5	5	7/20/2015	13,756	13,858	42
ALICE EDGE OHI 5	6	7/20/2015	13,620	13,723	42
ALICE EDGE OHI 5	7	7/21/2015	13,480	13,585	42
ALICE EDGE OHI 5	8	7/21/2015	13,342	13,447	42
ALICE EDGE OHI 5	9	7/22/2015	13,204	13,305	42
ALICE EDGE OHI 5	10	7/22/2015	13,066	13,171	42
ALICE EDGE OHI 5	11	7/22/2015	12,928	13,033	42
ALICE EDGE OHI 5	12	7/23/2015	12,790	12,895	42
ALICE EDGE OHI 5	13	7/23/2015	12,652	12,757	42
ALICE EDGE OHI 5	14	7/23/2015	12,514	12,619	42
ALICE EDGE OHI 5	15	7/24/2015	12,382	12,481	42
ALICE EDGE OHI 5	16	7/24/2015	12,238	12,343	42
ALICE EDGE OHI 5	17	7/24/2015	12,100	12,205	42
ALICE EDGE OHI 5	18	7/25/2015	11,968	12,067	42
ALICE EDGE OHI 5	19	7/25/2015	11,824	11,929	42
ALICE EDGE OHI 5	20	7/25/2015	11,698	11,791	42
ALICE EDGE OHI 5	21	7/26/2015	11,542	11,635	42
ALICE EDGE OHI 5	22	7/26/2015	11,414	11,515	42
ALICE EDGE OHI 5	23	7/26/2015	11,272	11,377	42
ALICE EDGE OHI 5	24	7/27/2015	11,134	11,242	42
ALICE EDGE OHI 5	25	7/30/2015	10,996	11,101	42
ALICE EDGE OHI 5	26	7/30/2015	10,858	10,963	42
ALICE EDGE OHI 5	27	7/30/2015	10,720	10,825	42
ALICE EDGE OHI 5	28	7/31/2015	10,587	10,687	42
ALICE EDGE OHI 5	29	7/31/2015	10,444	10,549	42
ALICE EDGE OHI 5	30	7/31/2015	10,306	10,411	42
ALICE EDGE OHI 5	31	8/1/2015	10,168	10,273	42
ALICE EDGE OHI 5	32	8/1/2015	10,034	10,135	42
ALICE EDGE OHI 5	33	8/2/2015	9,892	9,997	42
ALICE EDGE OHI 5	34	8/2/2015	9,754	9,859	42
ALICE EDGE OHI 5	35	8/2/2015	9,616	9,721	42
ALICE EDGE OHI 5	36	8/3/2015	9,478	9,583	42
ALICE EDGE OHI 5	37	8/3/2015	9,362	9,455	42
ALICE EDGE OHI 5	38	8/3/2015	9,202	9,307	42
ALICE EDGE OHI 5	39	8/4/2015	9,067	9,169	42
ALICE EDGE OHI 5	40	8/4/2015	8,926	9,031	42
ALICE EDGE OHI 5	41	8/4/2015	8,788	8,893	42
ALICE EDGE OHI 5	42	8/5/2015	8,650	8,750	42
ALICE EDGE OHI 5	43	8/5/2015	8,507	8,617	42
ALICE EDGE OHI 5	44	8/5/2015	8,374	8,479	42
ALICE EDGE OHI 5	45	8/6/2015	8,236	8,341	42
ALICE EDGE OHI 5	46	8/6/2015	8,098	8,198	42

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ALICE EDGE OHI 5	47	8/6/2015	7,960	8,065	42
ALICE EDGE OHI 5	48	8/6/2015	7,816	7,917	42
ALICE EDGE OHI 5	49	8/7/2015	7,684	7,786	42
ALICE EDGE OHI 5	50	8/7/2015	7,557	7,657	42
ALICE EDGE OHI 5	51	8/7/2015	7,427	7,527	42
ALICE EDGE OHI 5	52	8/7/2015	7,296	7,396	42
ALICE EDGE OHI 5	53	8/8/2015	7,168	7,268	42

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ALICE EDGE OHI 5

R^2/A -> V^+

Field: Ohio Co, WV
Map Units: usFt
Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: Zone 17N (84 W to 78 W)

Section: PANHANDLE (ALICE EDGE)
Company Name: Southwestern Energy Company
Units: Feet
TVD Reference: Rotary Table
Position: Northing: 14,563,424.930; Easting: 1,763,332.248; Latitude: 40.0998269770; Longitude: -80.5603396886

Slot: ALICE EDGE OHI 5
Position (Relative to SW Corner Of Section): N/S: -13.887; E/W: 32.313; Northing: 14,563,411.043; Easting: 1,763,364.561; Latitude: 40.0998884037; Longitude: -80.5603396886

Well: ALICE EDGE OHI 5
Type: Main well
KB Elevation: 1219.40mft (NOMAC 74)
Closure Distance: 780.7ft; Closure Azimuth: 343.108

Vertical Section:
Position of Origin (Relative to Slot centre): N/S: 0.00; E/W: 0.00
Vertical Section Azimuth: 343.11

Survey:
Name: Definitive Survey; Company: SWN
Magnetic Parameters: Model: ICGM2014; Field Strength: 52.596; Declination: -8.78; Dip: 67.44; Date: 9/23/2014

Survey Tool Ranges table with columns for Survey Tool, Start MD (ft), End MD (ft), and Source Survey.

Main Survey Data table with columns: MD (ft), Inc, Az, TVD (ft), N/A (ft), +/-W (ft), V Sec (ft), DIS (deg/100ft), Build Rate (deg/100ft), Turn Rate (deg/100ft), Survey Type, Survey Tool, Comment.

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5894.00	26.42	58.24	5873.16	61.95	181.87	3.49	7.50	7.43	2.58	MWVSDU/NOVAC 74 (WB01)
5926.00	28.20	58.44	5901.00	69.43	226.60	6.99	6.99	5.63	0.63	MWVSDU/NOVAC 74 (WB01)
5957.00	31.20	60.84	5928.52	77.06	217.93	12.41	9.97	9.68	4.84	MWVSDU/NOVAC 74 (WB01)
5988.00	34.00	61.24	5955.48	85.39	233.02	14.00	8.76	6.75	0.54	MWVSDU/NOVAC 74 (WB01)
6021.00	36.90	61.84	5981.54	94.23	249.34	17.72	9.13	9.08	1.68	MWVSDU/NOVAC 74 (WB01)
6052.00	39.60	62.74	6008.89	103.45	266.16	21.05	8.58	8.71	-3.55	MWVSDU/NOVAC 74 (WB01)
6084.00	42.10	61.84	6035.29	113.50	284.52	25.93	8.13	7.81	3.44	MWVSDU/NOVAC 74 (WB01)
6115.00	45.30	62.84	6062.50	124.51	303.46	30.00	10.41	10.32	5.84	MWVSDU/NOVAC 74 (WB01)
6147.00	47.20	61.54	6074.63	134.35	322.88	34.46	6.28	5.94	-2.81	MWVSDU/NOVAC 74 (WB01)
6178.00	49.80	62.34	6095.17	145.28	344.25	39.56	6.61	6.29	2.58	MWVSDU/NOVAC 74 (WB01)
6210.00	52.20	61.94	6115.30	156.90	368.33	43.69	7.56	7.50	-1.25	MWVSDU/NOVAC 74 (WB01)
6241.00	55.70	63.94	6133.55	168.29	388.65	48.10	12.44	11.29	6.45	MWVSDU/NOVAC 74 (WB01)
6273.00	57.80	64.34	6151.00	179.96	412.73	52.28	6.85	6.56	1.25	MWVSDU/NOVAC 74 (WB01)
6304.00	60.30	63.54	6167.03	191.64	436.61	56.51	8.36	8.06	-2.58	MWVSDU/NOVAC 74 (WB01)
6336.00	62.40	61.82	6182.37	204.22	461.77	61.25	6.51	6.56	-0.94	MWVSDU/NOVAC 74 (WB01)
6367.00	64.20	63.04	6198.30	216.74	486.47	66.25	5.83	5.81	-0.65	MWVSDU/NOVAC 74 (WB01)
6399.00	66.00	63.08	6219.67	230.15	512.24	71.39	9.02	7.50	-1.13	MWVSDU/NOVAC 74 (WB01)
6430.00	68.50	60.74	6231.48	243.87	537.39	77.31	7.25	6.13	-4.19	MWVSDU/NOVAC 74 (WB01)
6462.00	70.10	62.24	6232.77	258.64	563.42	83.77	5.30	5.02	-1.88	MWVSDU/NOVAC 74 (WB01)
6493.00	70.90	58.24	6243.27	273.58	588.47	90.79	5.80	6.65	-6.13	MWVSDU/NOVAC 74 (WB01)
6525.00	71.10	55.34	6253.85	290.12	613.74	99.27	6.92	2.50	-9.06	MWVSDU/NOVAC 74 (WB01)
6556.00	72.30	48.64	6263.60	308.24	636.91	108.28	20.68	3.87	-21.61	MWVSDU/NOVAC 74 (WB01)
6588.00	73.70	43.94	6272.96	329.38	659.02	113.68	14.71	4.38	-14.69	MWVSDU/NOVAC 74 (WB01)
6619.00	74.00	41.04	6282.42	351.01	679.54	118.42	4.03	2.80	-3.90	MWVSDU/NOVAC 74 (WB01)
6651.00	75.20	40.14	6289.81	374.11	700.53	124.56	6.84	1.25	-9.06	MWVSDU/NOVAC 74 (WB01)
6682.00	75.00	41.84	6297.08	397.08	719.08	130.92	2.63	1.84	-6.05	MWVSDU/NOVAC 74 (WB01)
6714.00	76.10	34.94	6305.51	421.89	738.18	139.01	15.8	-15.63	0.00	MWVSDU/NOVAC 74 (WB01)
6746.00	75.90	34.94	6313.25	447.15	755.86	208.20	0.63	-0.63	0.00	MWVSDU/NOVAC 74 (WB01)
6777.00	75.60	26.94	6320.89	472.63	771.85	227.97	18.78	-0.97	-19.35	MWVSDU/NOVAC 74 (WB01)
6809.00	75.60	30.04	6328.85	499.61	787.13	249.35	3.33	0.00	3.44	MWVSDU/NOVAC 74 (WB01)
6841.00	75.40	26.44	6336.66	526.90	802.77	271.20	10.91	-0.83	-11.25	MWVSDU/NOVAC 74 (WB01)
6872.00	75.40	24.34	6344.66	554.00	818.83	293.39	6.56	0.00	-6.77	MWVSDU/NOVAC 74 (WB01)
6904.00	74.20	20.54	6353.04	582.54	835.62	317.28	11.97	-3.44	-11.88	MWVSDU/NOVAC 74 (WB01)
6935.00	73.80	15.44	6361.51	612.80	853.02	341.77	15.90	-1.91	-16.45	MWVSDU/NOVAC 74 (WB01)
6967.00	74.60	11.84	6370.18	643.79	871.28	368.24	11.11	2.50	-11.25	MWVSDU/NOVAC 74 (WB01)
6998.00	74.20	8.84	6378.10	675.30	890.28	394.91	10.68	5.16	-6.68	MWVSDU/NOVAC 74 (WB01)
7030.00	78.10	7.44	6386.54	707.24	910.68	423.23	10.02	9.06	-4.38	MWVSDU/NOVAC 74 (WB01)
7061.00	81.40	5.84	6395.19	739.58	931.21	451.24	9.00	7.42	-5.18	MWVSDU/NOVAC 74 (WB01)
7093.00	83.40	1.94	6394.42	783.22	952.36	480.89	13.60	6.25	-12.19	MWVSDU/NOVAC 74 (WB01)
7124.00	84.80	357.24	6397.61	794.05	938.14	510.45	15.74	4.52	-15.15	MWVSDU/NOVAC 74 (WB01)
7156.00	86.00	302.64	6400.18	825.81	952.33	541.66	14.66	3.75	-14.38	MWVSDU/NOVAC 74 (WB01)
7188.00	87.30	349.64	6402.05	857.37	950.41	573.28	10.22	4.06	-19.38	MWVSDU/NOVAC 74 (WB01)
7219.00	88.60	349.64	6403.89	889.69	949.89	604.66	3.29	6.25	-9.06	MWVSDU/NOVAC 74 (WB01)
7251.00	88.00	345.54	6404.11	919.10	938.07	635.93	13.47	0.84	-13.44	MWVSDU/NOVAC 74 (WB01)
7282.00	88.90	341.24	6404.81	948.85	929.40	666.92	11.63	0.65	-11.61	MWVSDU/NOVAC 74 (WB01)
7314.00	88.50	337.14	6407.05	1039.80	946.21	701.68	5.06	-0.22	-5.25	MWVSDU/NOVAC 74 (WB01)
7345.00	90.00	338.04	6408.29	1125.62	939.99	734.23	1.84	1.58	0.95	MWVSDU/NOVAC 74 (WB01)
7376.00	90.10	333.64	6408.21	1211.36	921.53	769.45	4.68	0.11	-4.68	MWVSDU/NOVAC 74 (WB01)
7408.00	89.50	335.84	6408.54	1296.97	902.42	804.44	2.43	-0.84	2.34	MWVSDU/NOVAC 74 (WB01)
7439.00	90.90	332.94	6408.71	1382.02	882.36	841.33	3.99	1.47	-1.05	MWVSDU/NOVAC 74 (WB01)
7470.00	91.00	331.74	6408.63	1466.15	862.27	879.64	1.27	0.71	-2.26	MWVSDU/NOVAC 74 (WB01)
7501.00	90.40	325.44	6408.14	1549.20	842.85	920.65	0.77	-0.84	0.43	MWVSDU/NOVAC 74 (WB01)
7532.00	90.80	334.04	6408.44	1631.80	823.08	963.40	2.04	0.42	2.02	MWVSDU/NOVAC 74 (WB01)
7563.00	91.00	334.34	6408.30	1713.31	802.77	1009.24	2.38	0.21	0.32	MWVSDU/NOVAC 74 (WB01)
7594.00	89.80	332.64	6408.33	1804.32	825.31	1060.89	2.15	-1.26	-1.79	MWVSDU/NOVAC 74 (WB01)
7625.00	90.60	334.24	6408.20	1893.29	802.83	1096.54	1.88	0.84	1.68	MWVSDU/NOVAC 74 (WB01)
7656.00	91.00	334.64	6408.69	1974.08	802.28	1138.48	0.80	0.43	0.43	MWVSDU/NOVAC 74 (WB01)
7687.00	90.60	335.54	6399.36	2063.23	802.27	1183.52	1.04	-0.42	0.95	MWVSDU/NOVAC 74 (WB01)
7718.00	90.10	334.34	6398.78	2148.25	241.96	1197.54	1.47	-0.53	-1.37	MWVSDU/NOVAC 74 (WB01)
7749.00	90.00	335.34	6399.70	2235.30	217.82	1209.15	1.18	1.17	-0.11	MWVSDU/NOVAC 74 (WB01)
7780.00	89.60	336.24	6399.03	2327.43	181.81	1164.63	0.76	-0.43	-0.63	MWVSDU/NOVAC 74 (WB01)
7811.00	90.30	334.04	6399.11	2422.19	141.20	1127.52	1.05	0.74	-0.74	MWVSDU/NOVAC 74 (WB01)
7842.00	92.20	335.84	6397.04	2488.15	100.83	1151.50	2.61	2.00	1.68	MWVSDU/NOVAC 74 (WB01)
7873.00	90.70	330.34	6394.66	2571.83	54.16	1048.97	5.68	-1.60	-0.64	MWVSDU/NOVAC 74 (WB01)
7904.00	90.40	329.54	6393.75	2654.05	10.58	2536.47	0.50	-0.32	-0.84	MWVSDU/NOVAC 74 (WB01)
7935.00	92.50	332.54	6391.34	2737.13	-82.40	2629.33	3.45	2.11	3.16	MWVSDU/NOVAC 74 (WB01)
7966.00	92.80	334.64	6388.95	2822.12	-77.00	2722.91	2.83	0.32	2.21	MWVSDU/NOVAC 74 (WB01)
7997.00	91.80	333.94	6387.34	2909.89	-139.31	2816.60	3.53	1.84	-1.30	MWVSDU/NOVAC 74 (WB01)
8028.00	91.90	333.84	6386.41	2999.35	-163.22	2907.80	2.47	0.32	2.45	MWVSDU/NOVAC 74 (WB01)
8059.00	91.50	335.14	6377.85	3075.05	-204.11	3001.48	1.43	0.42	1.37	MWVSDU/NOVAC 74 (WB01)
8090.00	90.00	336.94	6376.42	3160.93	-342.28	3094.95	2.49	-1.00	1.91	MWVSDU/NOVAC 74 (WB01)
8121.00	89.80	336.94	6376.59	3248.34	-278.49	3189.40	0.21	0.00	0.00	MWVSDU/NOVAC 74 (WB01)
8152.00	89.90	336.84	6377.47	3335.71	-318.77	3283.84	0.95	-0.95	-0.11	MWVSDU/NOVAC 74 (WB01)
8183.00	87.70	337.34	6380.48	3423.18	-353.74	3378.27	1.37	-1.26	0.53	MWVSDU/NOVAC 74 (WB01)
8214.00	89.50	334.04	6382.78	3508.80	-392.42	3471.44	0.00	1.91	-3.51	MWVSDU/NOVAC 74 (WB01)
8245.00	89.50	334.04	6383.61	3594.21	-434.00	3565.25	0.00	0.00	0.00	MWVSDU/NOVAC 74 (WB01)
8276.00	90.90	332.94	6383.28	3679.22	-481.60	3658.81	1.87	1.47	-1.16	MWVSDU/NOVAC 74 (WB01)
8307.00	92.70	332.84	6382.02	3763.77	-518.40	3753.37	1.89	0.80	0.00	MWVSDU/NOVAC 74 (WB01)
8338.00	92.70	333.64	6381.64	3848.54	-542.25	3848.87	0.74	0.74	0.74	MWVSDU/NOVAC 74 (WB01)
8369.00	92.00	332.14	6371.07	3932.14	-605.00	3938.30	1.76	-0.74	-1.60	MWVSDU/NOVAC 74 (WB01)
8400.00	91.40	332.74	6369.15	4016.32	-648.98	4031.61	0.89	-0.63	-0.63	MWVSDU/NOVAC 74 (WB01)
8431.00	89.50	333.94	6368.07	4101.21	-691.61	4125.23	2.02	-1.58	1.28	MWVSDU/NOVAC 74 (WB01)
8462.00	88.90	332.14	6369.06	4185.88	-734.67	4218.75	2.17	-1.05	-1.69	MWVSDU/NOVAC 74 (WB01)
8493.00	88.90	335.74	6370.87	4270.30	-775.95	4311.92	3.83	0.00	3.83	MWVSDU/NOVAC 74 (WB01)
8524.00	88.70	337.64	6372.68	4354.77	-825.35	4405.66	0.57	-0.29	-0.57	MWVSDU/NOVAC 74 (WB01)
8555.00	89.10	337.74	6374.48	4444.53	-873.63	4499.92	1.74	0.42	1.68	MWVSDU/NOVAC 74 (WB01)
8586.00	90.00	336.54	6375.42	4529.83	-921.12	4593.32	1.01	0.96	-0.32	MWVSDU/NOVAC 74 (WB01)
8617.00	92.10	338.74	6374.51	4617.68	-977.28	4687.88	2.59	2.32	2.32	MWVSDU/NOVAC 74 (WB01)
8648.00	90.20	337.44	6373.43	4705.81	-942.70	4782.51	1.66	-0.95	-1.37	MWVSDU/NOVAC 74 (WB01)
8679.00	91.30	339.34	6373.20	4793.19	-997.31	4878.18	2.34	1.17	2.02	MWVSDU/NOVAC 74 (WB01)
8710.00	92.90	338.04	6368.76	4880.08	-1052.97	4969.68	3.90	1.70	-3.51	MWVSDU/NOVAC 74 (WB01)
8741.00	92.70	335.94	6364.11	4966.78	-1071.58	5063.83	0.24	-0.21	-0.11	MWVSDU/NOVAC 74 (WB01)
8772.00	92.20	334.74	6360.05	5053.01	-1111.18	5157.47	1.37	-0.53	-1.26	MWVSDU/NOVAC 74 (WB01)
8803.00	92.00	335.64	6358.25	5138.11	-1150.61	5250.95	2.53	0.89	0.53	MWVSDU/NOVAC 74 (WB01)
8834.00	92.50	336.64	6359.49	5223.50	-1190.94	5345				

14573.00 89.30 191.74 4335.28 7521.63 -2184.05 7860.77 0.00 0.00 0.00 SL Projection to TD
Wellpath created using minimum curvature

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/13/2015
Job End Date:	8/8/2015
State:	West Virginia
County:	Ohio
API Number:	47-069-00178-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Alice Edge 5H
Longitude:	-80.57445700
Latitude:	40.11052300
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,335
Total Base Water Volume (gal):	16,817,967
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	Corrosion Inhibitor, Biocide, Acid, Breaker, Gelling Agent, Friction Reducer, Iron Control Agent, Fluid Loss Additive, Propping Agent					
			Water (Including Mix Water Supplied by Client)*	NA		83.73482	
			Quartz, Crystalline silica	14808-60-7	98.42452	16.00893	
			Hydrochloric acid	7647-01-0	1.27157	0.20682	
			Ammonium sulfate	7783-20-2	0.15416	0.02507	
			Acrylamide, 2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer	38193-60-1	0.11378	0.01851	
			Polymer of 2-acrylamido-2-methylpropanesulfonic acid sodium salt and methyl acrylate	136793-29-8	0.01219	0.00198	
			Urea	57-13-6	0.00748	0.00122	
			Guar gum	9000-30-0	0.00558	0.00091	
			Methanol	67-56-1	0.00206	0.00033	
			Sodium sulfate	7757-82-6	0.00175	0.00028	
			Non-crystalline silica (impurity)	7631-86-9	0.00157	0.00026	

Environmental Protection

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		Fatty acids, tall-oil	61790-12-3	0.00143	0.00023
		Thiourea, polymer with formaldehyde and 1-phenylethanone	68527-49-1	0.00118	0.00019
		Alcohols, C14-15, ethoxylated (7EO)	68951-67-7	0.00056	0.00009
		2-propenamid	79-06-1	0.00037	0.00006
		Propargyl alcohol	107-19-7	0.00037	0.00006
		Diammonium peroxidisulphate	7727-54-0	0.00021	0.00003
		Tetrasodium ethylenediaminetetraacetate	64-02-8	0.00019	0.00003
		Dimethyl siloxanes and silicones	63148-62-9	0.00011	0.00002
		Hexadec-1-ene	629-73-2	0.00012	0.00002
		Sodium erythorbate	6381-77-7	0.00007	0.00001
		1-Octadecene (C18)	112-88-9	0.00006	0.00001
		Glutaraldehyde	111-30-8	0.00001	
		Formaldehyde	50-00-0	0.00001	
		Decamethyl cyclopentasiloxane	541-02-6	0.00001	
		Siloxanes and silicones, dimethyl, reaction products with silica	67762-90-7	0.00001	
		Dodecamethylcyclohexasiloxane	540-97-6		
		Copper(II) sulfate	7758-98-7		
		Alkyl(c12-16) dimethylbenzyl ammonium chloride	68424-85-1		
		Octamethylcyclotetrasiloxane	556-67-2	0.00001	
		Ethanol	64-17-5		

* 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)

ACTUAL WELL PATH REPORT (REVISED)
Prepared by Baker Hughes
Software Version: WellPathReport v 3.2

REFERENCE WELL PATH IDENTIFICATION
Company:
Area:
Well:
Field:
Facility:
Unit:
Well ID:
Well Name:
Well Number:
Wellhead:
Notes:

REPORT INFORMATION
Project or Section:
Well Reference:
Date:
Computation at Well:
Date of Report:
Report Generated:
Report Generated By:

WELL PATH LOCATION
Well Name:
Field Reference:
Section Reference:

WELL PATH DATA
Coordinate Method:
Horizontal Reference Point:
Vertical Reference Point:
Well Reference Point:
Field Reference Point:
Section Reference Point:
Section Depth:

WELL PATH DATA - Unconstrained Horizontal Section

Main data table with columns: MD, Well Path, Azimuth, True Dip, Depth, etc. It contains a large grid of numerical data representing well path coordinates and depths.

Logo for Baker Hughes WellPath Report, featuring the text 'Baker Hughes WellPath Report' and 'A Division of Baker Hughes Services' with a stylized globe graphic.

03/04/2016

Well Name: ALICE EDGE OHI 5H

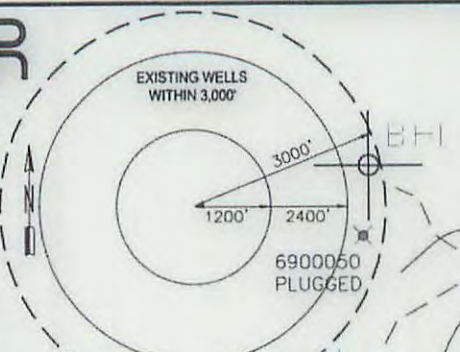
LITHOLOGY/FORMATION	TOP DEPTH, TVD (FT)	BOTTOM DEPTH, TVD (FT)	TOP DEPTH, MD (FT)	BOTTOM DEPTH, MD (FT)	QUANTITY AND TYPE OF FLUID
Base of Fresh Water	N.A.	394.00	N.A.	394.00	
Top of Salt Water	731.00	N.A.	731.00	N.A.	
Pittsburgh Coal	581.99	587.99	582.00	588.00	
Big Injun (ss)	1820.37	2280.02	1829.00	2289.00	
Berea (siltstone)	2280.02	5777.18	2289.00	5790.00	
Rhinestreet (shale)	5777.18	6058.80	5790.00	6124.11	
Cashaqua (shale)	6058.80	6130.35	6124.11	6235.56	
Middlesex (shale)	6130.35	6205.00	6235.56	6387.89	
Burket (shale)	6205.00	6229.50	6387.89	6452.75	
Tully (ls)	6229.50	6266.10	6452.75	6564.56	
Mahantango (shale)	6266.10	6401.00	6564.56	7164.00	
Marcellus (shale)	6401.00	N.A.	7164.00	N.A.	

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THE THRASHER GROUP, INC.
600 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
PHONE 304-624-4108

NOTES ON SURVEY

- COORDINATES 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 FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.



	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES	LEASE NO.
1	ALICE MAE EDGE	3-L11-23	103.0	1-292590-000
2	ALICE MAE EDGE	3-L11-24	112.94	1-292590-000
3	BRUCE J KIGER	3-L11-25	40.436	1-304360-000
4	EDWARD G & JOAN GROUX	3-L11-27	113.0	
5	J & F CHAMBERS HOLDING	3-L11-26.5	20.2	47-000606-000
6	J & F CHAMBERS HOLDING	3-L11-26	194.84	47-000606-000
7	RICHARD L & R. L. ASHTON	3-LB-32.1	20.141	1-384429-000
8	ROBERT A & MARY ASHTON	3-LB-32.2	23.722	1-384430-000
9	BERNARD S & C. D. GAUS	3-LB-30.4	3.630	1-284428-000

AS-DRILLED

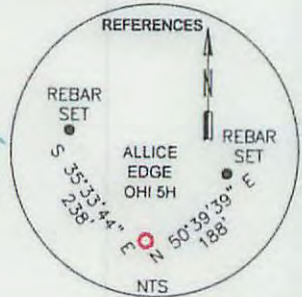
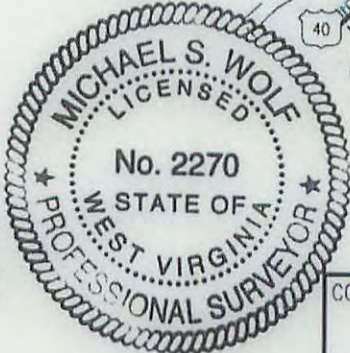


REFERENCES TO PROPOSED HORIZONTAL WELLS SURFACE LOCATIONS

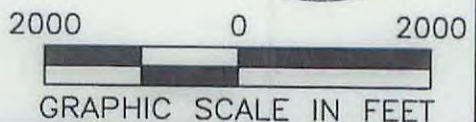
AS-DRILLED SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,438,936.564 EASTING: 537,474.593
AS-DRILLED LANDING POINT LOCATION (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,439,279.653 EASTING: 537,706.239
AS-DRILLED BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,441,229.161 EASTING: 536,778.413

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. 2270 *M.S. Wolf* 1/11/16



REFERENCES



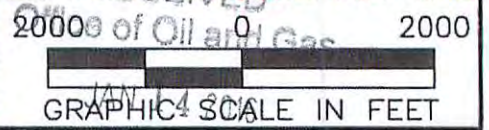
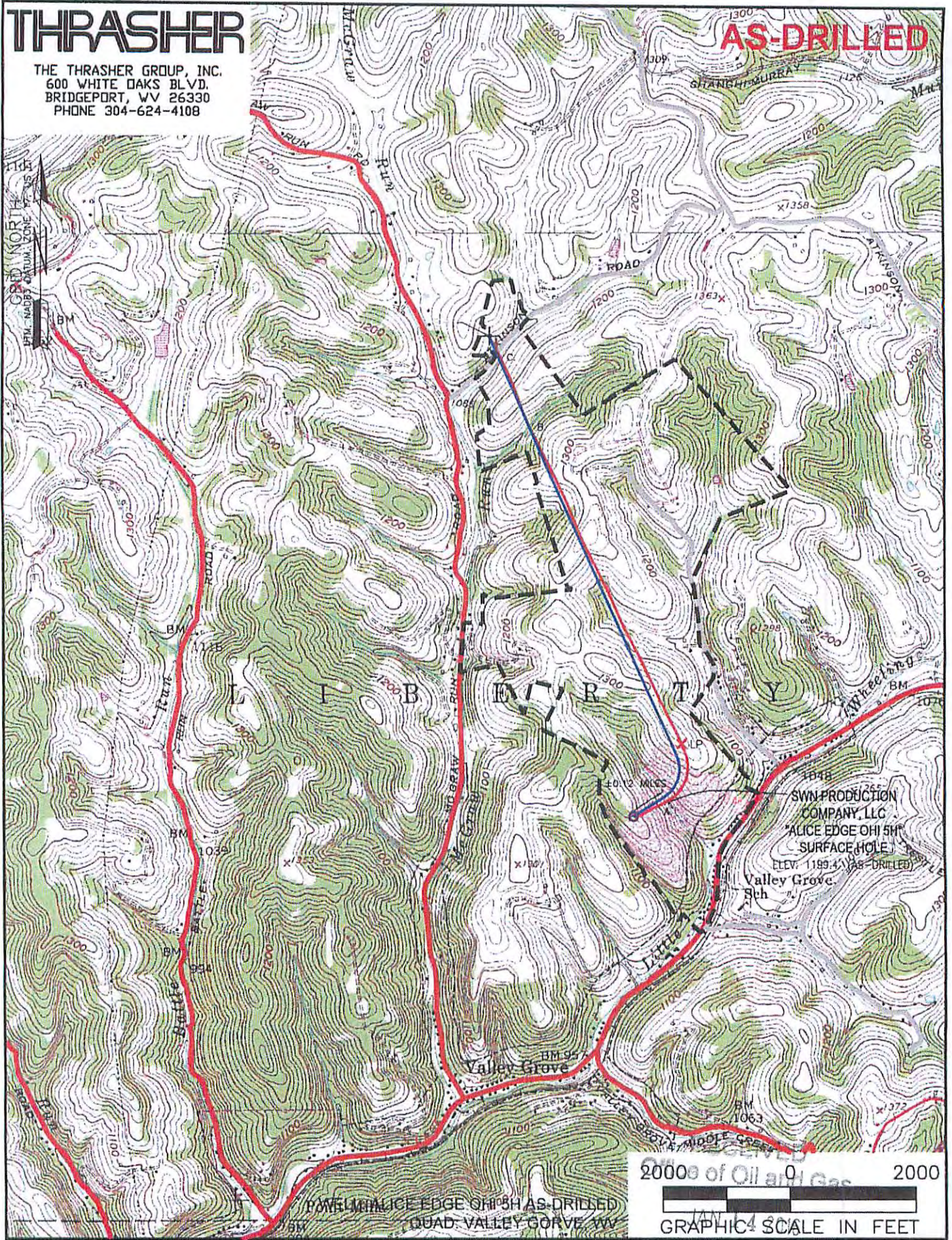
(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034	MINIMUM DEGREE OF ACCURACY: 1/200 PROVEN SURVEY SOURCE OF GRADE GPS ELEVATION: (NAVD 88, US FT)	COMPANY: SWN Production Company, LLC SWN Production Company™ OPERATOR'S WELL #: ALICE EDGE OHI 5H API WELL #: 47 STATE 069 COUNTY 00178 PERMIT
	WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS <input checked="" type="checkbox"/> LIQUID INJECTION STORAGE SHALLOW <input checked="" type="checkbox"/> WATERSHED: UPPER OHIO SOUTH DISTRICT: LIBERTY COUNTY: OHIO SURFACE OWNER: ALICE MAE EDGE OIL & GAS ROYALTY OWNER: ALICE MAE EDGE DRILL <input checked="" type="checkbox"/> DRILL DEEPER REDRILL FRACTURE OR STIMULATE <input checked="" type="checkbox"/> PLUG OFF OLD FORMATION PERFORATE NEW FORMATION CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,410 TVD 15,209 TMD	ELEVATION: 1199.4 QUADRANGLE: VALLEY GROVE ACREAGE: 103± ACREAGE: 103±
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	
LEGEND: ○ PROPOSED SURFACE HOLE / BOTTOM HOLE * EXISTING / PRODUCING WELLHEAD ✕ ABANDONED WELL ✕ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR	--- LEASE BOUNDARY --- DESIGN DHP --- AS-DRILLED DHP --- ABANDONED PATH	

03/04/2016

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THE THRASHER GROUP, INC.
600 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
PHONE 304-624-4108

AS-DRILLED



NAME AND DISTANCE TO THE NEAREST STREAM: AN UNNAMED TRIBUTARY TO LITTLE WHEELING CREEK IS LOCATED ±0.12 MILES (NE) OF THE CENTER OF THE DRILL PAD.	STREAM CROSSING COORDINATES (NAD 83): A. LAT: 40.100552° / LONG: -80.558412° B. LAT: 40.116693° / LONG: -80.566114° C. LAT: 40.119664° / LONG: -80.567752°
--	--

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: ALICE EDGE

WELL #: OHI 5H

LOCATION: LIBERTY DISTRICT, OHIO, WEST VIRGINIA

AS-DRILLED SURFACE HOLE LOCATION:

FEMA FLOOD INFORMATION:
NO FLOOD ZONES.

AS-DRILLED SURFACE HOLE LOCATION:
GEOGRAPHIC (NAD83):
LATITUDE: 40.099888°
LONGITUDE: -80.560340°

AS-DRILLED BOTTOM HOLE LOCATION:
GEOGRAPHIC (NAD83):
LATITUDE: 40.120574°
LONGITUDE: -80.568377°

03/04/2016

LEGEND:

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- ⊙ EXISTING / PRODUCING WELLHEAD
- ⊗ ABANDONED WELL
- ⊕ PLUGGED & ABANDONED WELL
- △ CUT CONDUCTOR
- EXISTING SPRING
- ⊙ EXISTING WATER WELL
- ACCESS ROAD
- ACCESS ROAD TO PREV. SITE
- HIGHWAY/INTERSTATE
- COUNTY ROAD

REVISIONS:

DATE: 01-11-2016

DRAWN BY: KJP

SCALE: 1" = 2000'

DRAWING NO: 030-2725

TOPOGRAPHIC MAP