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

API 47 - 051 - 01738 County Marshall District Franklin
Quad Powhatan Point Pad Name MND 3 Field/Pool Name NA
Farm name Consol Mining Co., LLC Well Number MND 3 BHS
Operator (as registered with the OOG) Noble Energy, Inc.
Address 333 Technology Drive, Suite 116 City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4411187.19 Easting 517798.41
Landing Point of Curve Northing 4411457.26 Easting 518155.71
Bottom Hole Northing 4409815.50 Easting 519345.04

Elevation (ft) 1498.81' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Synthetic Oil Based

Date permit issued 3/25/2014 Date drilling commenced 4/12/2014 Date drilling ceased 5/30/2014
Date completion activities began 10/9/2014 Date completion activities ceased 12/3/2014
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 165' and 298' Open mine(s) (Y/N) depths N
Salt water depth(s) ft None noted for Offsets Void(s) encountered (Y/N) depths N
Coal depth(s) ft 612' Pittsburgh Base Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) Y - Ireland Mine

RECEIVED
Office of Oil and Gas

Reviewed by: _____

FEB 02 2015

API 47-051 - 01738 Farm name Consol Mining Co., LLC Well number MND 3 BHS

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	36	30	40	N			
Surface	24	20	420.7	N	J-55 94#		Y
Coal							
Intermediate 1	17 1/2	13 3/8	1,061.1	N	J-55 54.5#		Y
Intermediate 2	12 3/8	9 5/8	2,618.4	N	J 55 36#		Y
Intermediate 3							
Production	8 3/4	5 1/2	13,570.0	N	P-110 20#		Y
Tubing							
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							
Surface	Type I	579	15.6	1.19	119.0	0	8
Coal							
Intermediate 1	Class A	912	15.4	1.19	181.0	0	8
Intermediate 2	Class A	894	15.4	1.19	195.0	0	
Intermediate 3							
Production	Class A	Lead - 629 Tail - 1442	Lead 14.2 Tail 14.8	Lead - 1.54 Tail - 1.38	Lead 173 - Tail 353		8
Tubing							

Drillers TD (ft) 13,590 Loggers TD (ft) 13,564

Deepest formation penetrated Marcellus Plug back to (ft) Not a Pilot Hole

Plug back procedure Not a Pilot Hole

Kick off depth (ft) 7,032

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 _____

4 Centralizers on Surface Casing, 9 Centralizers on Intermediate 1 Casing, 22 Centralizer used on the Intermediate 2 String, and on the Production 213 Centralizers were utilized.

On the Surface and Intermediate strings the centralizers are on every 3 joint of casing.

On the Production String, they are on every 3rd joint from the Surface to Top of Curve, then every joint until TD.

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 Hydrocarbon (HC) Tracers

Perforation Record

API: 47-051-01738

Farm name:

Consol Mining
Co. LLC.

Well Name: MDN-3B-HS

Stage No.	Stim Date	Top Perf	Bottom Perf	# of Perfs	Formation
Toe Prep Inj Test	10/8/2014	13,138	13,412	-	Marcellus
1	10/9/2014	13,138	13,412	50	Marcellus
2	10/10/2014	12,839	13,113	50	Marcellus
3	10/10/2014	12,540	12,812	50	Marcellus
4	10/11/2014	12,241	12,515	50	Marcellus
5	10/11/2014	11,942	12,214	50	Marcellus
6	10/11/2014	11,643	11,914	50	Marcellus
7	10/12/2014	11,344	11,618	50	Marcellus
8	10/12/2014	11,045	11,316	50	Marcellus
9	10/13/2014	10,746	11,018	50	Marcellus
10	10/13/2014	10,447	10,718	50	Marcellus
11	10/14/2014	10,148	10,420	50	Marcellus
12	10/15/2014	9,849	10,122	50	Marcellus
13	10/15/2014	9,550	9,821	50	Marcellus
14	10/16/2014	9,251	9,522	50	Marcellus
15	10/16/2014	8,952	9,226	50	Marcellus
16	10/16/2014	8,653	8,927	50	Marcellus
17	10/17/2014	8,354	8,628	50	Marcellus
18	10/17/2014	8,155	8,329	50	Marcellus
19	10/18/2014	7,483	7,756	50	Marcellus
20	10/18/2014	7,184	7,456	50	Marcellus
21	10/20/2014	6,885	7,159	50	Marcellus
22	10/20/2014	6,698	6,859	50	Marcellus

STIMULATION INFORMATION PER STAGE

API: 47-051-01738

Farm name:

Consol
Mining

Well Name: MND-3B-HS

Stage No.	Stim Date	Avg Rate (bpm)	ATP (psi)	Max BD Pressure	ISIP (psi)	Proppant (lbs)	Water (BBLs)	Amount of N ² / other (units)
Toe Prep Inj Test	10/8/2014	19.8	7,704	-	7,111	-	214.87	
1	10/9/2014	82.3	8,109	6,861	3,407	599,012	14,016.42	
2	10/10/2014	89.8	9,031	6,304	3,219	599,984	14,840.76	
3	10/10/2014	84.8	8,838	5,432	3,299	600,587	15,011.64	
4	10/11/2014	86.8	8,950	5,690	3,376	602,600	13,181.29	
5	10/11/2014	89.2	8,873	5,880	2,847	603,069	14,302.33	
6	10/11/2014	89.5	8,239	6,187	3,109	601,272	13,026.14	
7	10/12/2014	87.3	7,348	6,244	3,104	602,515	12,788.21	
8	10/12/2014	85.9	7,110	5,650	3,853	602,591	12,780.83	
9	10/13/2014	90.1	7,112	6,409	3,528	602,813	12,841.17	
10	10/13/2014	85.3	7,110	6,123	3,074	600,655	12,785.72	
11	10/14/2014	88.4	7,170	6,677	3,092	604,440	12,603.88	
12	10/15/2014	89.8	7,174	5,924	3,327	597,831	13,473.86	
13	10/15/2014	87	6,760	6,332	3,106	600,622	12,591.10	
14	10/16/2014	86.6	6,874	6,007	3,512	603,233	12,562.26	
15	10/16/2014	89.1	6,895	5,838	3,255	596,678	13,069.21	
16	10/16/2014	87.5	6,843	5,954	4,371	602,398	12,991.93	
17	10/17/2014	90.5	6,918	5,250	3,027	599,979	12,488.71	
18	10/17/2014	88.2	6,609	6,030	3,555	600,349	12,844.20	
19	10/18/2014	90.3	6,701	5,617	4,466	600,611	12,341.64	
20	10/18/2014	90	6,212	6,091	4,196	599,601	12,259.54	
21	10/20/2014	88	6,679	7,456	5,259	550,490	11,838.83	
22	10/20/2014	89.3	5,993	6,237	3,071	652,317	12,487.10	

MND 3B 47-051-01738

Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale and Sandstone	0	606	0	606	
Pittsburgh Coal	606	616	606	616	
Shale and Sandstone	616	1069	616	1069	
Dunkard Sand	1069	1090	1069	1090	
Shale	1090	1239	1090	1239	
Gas Sand	1239	1310	1239	1310	
Shale	1310	1379	1310	1379	
1st Salt Sand	1379	1395	1379	1395	
Shale	1395	1502	1395	1502	
2nd Salt Sand	1502	1531	1502	1531	
Shale and Sandstone	1531	1661	1531	1661	
Maxton Sand	1661	1708	1661	1708	
Shale	1708	1726	1708	5044	
Big Lime	1726	1798	1726	5120	
Big Injun	1798	2068	1798	5711	
Price	2068	2166	2068	6033	
Murrysville	2166	2273	2166	6107	
Shale and Sandstone	2273	2811	2273	6131	
Gordon	2811	2841	2811	6194	
Shale and Sandstone	2841	3362	2841	6220	
Fifth Sand	3362	3415	3363	6247	
Shale and Sandstone	3415	4217	3416	not encountered	
Warren Sand	4217	4226	4226	not encountered	
Shale	4226	4943	4236	not encountered	
Java Shale	4943	5027	4960	not encountered	
Pipe Creek Shale	5027	5102	5044	5120	
Angola Shale	5102	5686	5120	5711	
Rhinestreet	5686	6005	5711	6033	
Cashaqua	6005	6077	6033	6107	
Middlesex	6077	6100	6107	6131	
West River	6100	6161	6131	6194	
Burkett	6161	6185	6194	6220	
Tully Limestone	6185	6211	6220	6247	Gas
Hamilton	6211	6246	6247	not encountered	
Marcellus	6246	6299	not encountered	not encountered	
Onondaga	6299		not encountered	not encountered	

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/9/2014
Job End Date:	10/20/2014
State:	West Virginia
County:	Marshall
API Number:	47-051-01738-08-00
Operator Name:	Noble Energy, Inc.
Well Name and Number:	MND3B
Longitude:	-80.79213100
Latitude:	39.85044400
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,261
Total Base Water Volume (gal):	12,068,353
Total Base Non Water Volume:	0



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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					
			Fresh Water	7732-18-5	100.00000	87.81610	Density = 8.340
SAND - PREMIUM WHITE	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	9.23493	
SAND - COMMON WHITE	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	2.31137	
HYDROCHLORIC ACID 5-10%	Halliburton	Solvent					
			Hydrochloric acid	7647-01-0	10.00000	0.05200	
FR-66	Halliburton	Friction Reducer					
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02073	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive					
			Acetic anhydride	108-24-7	100.00000	0.00270	
			Acetic acid	64-19-7	60.00000	0.00162	
Scalechek® LP-65 Scale Inhibitor	Halliburton	Scale Inhibitor					
			Ammonium chloride	12125-02-9	10.00000	0.00244	
BE-9	Halliburton	Biocide					

			Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00205	
LoSurf-300D	Halliburton	Non-ionic Surfactant					
			Ethanol	64-17-5	60.00000	0.00027	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00014	
			Naphthalene	91-20-3	5.00000	0.00002	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00002	
			1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00000	
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
			Methanol	67-56-1	60.00000	0.00027	
			Propargyl alcohol	107-19-7	10.00000	0.00004	
Ingredients shown above are subject to 29 CFR 1910.1200(l) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
		Other Ingredient(s)					
			Water	7732-18-5		0.59658	
		Other Ingredient(s)					
			Polyacrylamide copolymer	Confidential		0.02073	
		Other Ingredient(s)					
			Organic phosphonate	Confidential		0.01466	
		Other Ingredient(s)					
			Fatty acid tall oil amide	Confidential		0.00346	Denise Tuck, Halliburton 3000 N. Sam Houston Pkwy E., Houston, TX 77032 281-871-6226
		Other Ingredient(s)					
			Sodium chloride	7647-14-5		0.00346	
		Other Ingredient(s)					
			Alcohols, C12-16, ethoxylated	68551-12-2		0.00346	
		Other Ingredient(s)					
			Ammonium chloride	12125-02-9		0.00346	
		Other Ingredient(s)					
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6		0.00069	
		Other Ingredient(s)					
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8		0.00069	
		Other Ingredient(s)					
			Formaldehyde	50-00-0		0.00024	
		Other Ingredient(s)					
			Oxyalkylated phenolic resin	Confidential		0.00014	
		Other Ingredient(s)					
			Alcohols, C14-C15, ethoxylated	68951-67-7		0.00013	
		Other Ingredient(s)					

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		Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1		0.00013	
	Other Ingredient(s)					
		Fatty acids, tall oil	Confidential		0.00013	
	Other Ingredient(s)					
		Oxyalkylated phenolic resin	Confidential		0.00005	
	Other Ingredient(s)					
		Olefins	Confidential		0.00002	
	Other Ingredient(s)					
		Olefins	Confidential		0.00002	
	Other Ingredient(s)					
		Olefins	Confidential		0.00000	
	Other Ingredient(s)					
		Olefins	Confidential		0.00000	

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* 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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Noble Energy MND-3B-HS Gyro+MWD 0ft to 13590ft MD Survey Report



(Def Offset)

Report Date: May 29, 2014 - 08:22 AM
Client: Noble Energy
Field: WV Marshall County (NAD 27)
Structure / Slot: Noble Energy MND-3 Pad / MND-3B-HS
Well: MND-3B-HS
Original Borehole: Unknown / Unknown
Survey Name: Noble Energy MND-3B-HS Gyro+MWD 0ft to 13590ft MD
Survey Date: May 05, 2014
Tort / AHD / DDI / ERD Ratio: 300.165' / 6831.544' R / 6.760' / 1.411
Coordinate Reference System: NAD27 West Virginia State Plane, Northern Zone, US Feet
Location Lat / Long: N 39° 51' 17.81" W 80° 47' 31.67" W
Location Grid NE YX: N 494474.473 (RUS. E HS3725.817 (RUS.
CRS Grid Convergence Angle: -0.8241 °
Grid Scale Factor: 0.9999481
Version / Patch: 2.7.1043.0
Survey / DLS Computation: Vertical Section Azimuth: 132.462 ° (Grid North)
Vertical Section Origin: 0.000 R, 0.000 ft
TVD Reference Datum: NB
Sealed / Ground Elevation: 1134.200 ft above MSL
Magnetic Declination: -7.591 °
Total Gravity Field Strength: 988.3555mgm (S 80665 Eased)
Gravity Model: GARM
Total Magnetic Field Strength: 52794.524 nT
Magnetic Dip Angle: 67.327 °
Destination Date: May 05, 2014
Magnetic Declination Model: HDGM 2013
North Reference: Grid North
Grid Convergence Used: -0.8241 °
Total Corr Mag North-Grid North: -0.670 °
Local Coord Reference To: Well Head

Table with columns: Comments, MD (ft), Incl (°), Azim Grid (°), TVD (ft), TVDSS (ft), VSEC (ft), NS (ft), EW (ft), DLS (ft/100ft), BR (ft/100ft), TR (ft/100ft), Northing (ftUS), Easting (ftUS), Latitude (NS ° ' ''), Longitude (EW ° ' ''), Directional Difficulty Index

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Comments	MD (ft)	Incl (°)	Azlm Grd (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	BR (ft/100ft)	TR (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ° °)	Longitude (E/W ° ° °)	Directional Difficulty Index
5854.00	30.44	33.42		5514.35	4380.96	-363.85	1195.34	801.55	9.93	-3.38	17.84	495670.75	1637827.42	N 39 51 13.50 W	80 47 24.18	5.21
5889.00	28.80	42.20		5553.90	4419.11	-365.51	1195.34	801.55	9.93	-3.38	17.84	495670.75	1637827.42	N 39 51 13.50 W	80 47 24.18	5.23
5943.00	27.35	51.52		5592.24	4457.95	-363.96	1226.16	830.23	10.49	-3.30	21.18	495702.56	1637856.10	N 39 51 13.82 W	80 47 23.82	5.26
5988.00	27.19	61.99		5632.27	4497.98	-358.89	1239.42	847.41	10.65	-0.36	23.27	495713.83	1637873.28	N 39 51 13.94 W	80 47 23.80	5.28
6033.00	27.07	69.57		5672.33	4538.04	-350.78	1247.83	866.09	10.78	-0.27	24.84	495722.23	1637891.96	N 39 51 14.02 W	80 47 23.38	5.30
6078.00	26.90	77.71		5712.48	4578.17	-340.26	1256.21	885.62	10.91	-0.10	26.42	495731.67	1637911.47	N 39 51 14.09 W	80 47 22.91	5.32
6123.00	26.78	87.23		5752.65	4618.36	-327.25	1265.59	905.95	11.03	-0.04	28.00	495741.08	1637931.52	N 39 51 14.11 W	80 47 22.88	5.34
6167.00	26.16	97.54		5791.53	4657.24	-311.47	1265.29	926.19	11.17	0.03	29.58	495750.49	1637952.08	N 39 51 14.10 W	80 47 22.59	5.36
6212.00	32.33	103.02		5830.21	4695.92	-291.99	1251.13	946.79	9.39	7.04	12.18	495725.54	1637974.68	N 39 51 14.07 W	80 47 22.30	5.38
6257.00	34.90	107.39		5867.68	4733.39	-269.84	1244.57	964.71	7.84	5.71	9.71	495718.98	1637998.87	N 39 51 13.68 W	80 47 21.89	5.40
6302.00	37.84	112.32		5903.92	4769.63	-245.21	1238.48	979.87	9.21	6.53	10.96	495709.89	1638023.74	N 39 51 13.92 W	80 47 21.67	5.42
6347.00	41.90	117.36		5938.46	4804.17	-217.72	1223.32	924.01	11.52	9.02	11.20	495697.73	1638048.87	N 39 51 13.80 W	80 47 21.33	5.44
6391.00	45.17	121.78		5970.36	4836.07	-188.19	1206.35	850.34	10.12	7.43	9.98	495682.76	1638076.20	N 39 51 13.66 W	80 47 21.09	5.46
6436.00	48.84	124.37		6001.05	4866.76	-155.73	1190.39	877.90	9.20	8.16	5.82	495664.80	1638103.78	N 39 51 13.48 W	80 47 20.64	5.48
6481.00	52.81	127.47		6029.47	4895.18	-121.08	1169.91	906.12	10.31	8.82	6.89	495644.32	1638131.98	N 39 51 13.29 W	80 47 20.27	5.50
6526.00	57.28	130.67		6055.25	4920.96	-84.28	1148.65	934.73	11.51	9.93	7.11	495621.05	1638160.58	N 39 51 13.06 W	80 47 19.90	5.53
6571.00	60.00	132.54		6078.67	4944.38	-45.86	1121.13	963.45	7.01	6.04	4.16	495595.85	1638189.30	N 39 51 12.81 W	80 47 19.53	5.55
6615.00	62.03	132.97		6099.99	4965.70	-7.38	1095.01	991.71	4.89	4.61	0.98	495569.42	1638217.56	N 39 51 12.56 W	80 47 19.16	5.56
6660.00	66.13	134.29		6119.66	4985.37	33.08	1067.08	1029.59	9.49	9.11	2.93	495541.50	1638246.84	N 39 51 12.29 W	80 47 18.78	5.58
6705.00	70.32	137.35		6138.35	5002.06	74.78	1037.11	1050.09	11.25	9.31	6.80	495513.60	1638275.94	N 39 51 11.99 W	80 47 18.40	5.61
6750.00	73.50	140.98		6150.32	5018.03	117.33	1005.20	1075.87	8.00	7.07	3.96	495479.62	1638304.42	N 39 51 11.88 W	80 47 18.03	5.63
6794.00	76.57	142.98		6161.88	5027.39	159.46	972.82	1105.85	8.07	6.88	4.20	495447.04	1638331.70	N 39 51 11.38 W	80 47 17.67	5.64
6839.00	81.19	142.26		6170.36	5036.07	203.03	936.01	1133.26	10.64	10.27	2.84	495412.43	1638359.10	N 39 51 11.03 W	80 47 17.32	5.67
6884.00	84.46	143.00		6175.88	5041.69	246.97	902.53	1160.35	7.45	7.27	1.64	495376.96	1638386.20	N 39 51 10.68 W	80 47 16.96	5.69
6929.00	87.31	143.13		6179.21	5044.92	291.08	866.66	1187.32	6.34	6.33	0.29	495341.09	1638413.16	N 39 51 10.33 W	80 47 16.61	5.70
6974.00	89.32	143.44		6180.53	5046.24	335.26	830.80	1214.21	4.52	4.47	0.89	495305.03	1638440.05	N 39 51 9.98 W	80 47 16.26	5.72
7019.00	91.25	143.65		6181.12	5046.84	379.20	793.84	1253.51	3.25	3.20	1.58	495269.27	1638467.35	N 39 51 9.47 W	80 47 15.74	5.74
7129.00	88.04	143.99		6183.20	5048.81	487.63	706.92	1307.57	2.58	-1.57	2.04	495181.35	1638533.40	N 39 51 8.77 W	80 47 15.04	5.76
7218.00	87.18	146.78		6186.91	5052.62	574.29	633.74	1358.08	3.28	-0.97	3.13	495108.18	1638583.91	N 39 51 8.05 W	80 47 14.38	5.79
7305.00	90.41	148.28		6188.81	5054.82	660.94	557.43	1405.71	4.54	-3.59	2.78	495051.87	1638631.54	N 39 51 7.30 W	80 47 13.75	5.82
7397.00	89.82	148.71		6189.53	5055.12	747.01	481.23	1458.27	3.68	-4.68	2.58	495002.71	1638679.87	N 39 51 6.57 W	80 47 13.12	5.85
7487.00	86.22	149.19		6187.22	5052.93	835.45	416.76	1508.04	4.48	-1.53	-4.21	494885.21	1638733.87	N 39 51 5.87 W	80 47 12.41	5.88
7577.00	86.22	139.06		6190.49	5056.20	924.56	341.75	1565.69	4.46	-3.78	-2.37	494816.20	1638791.51	N 39 51 5.20 W	80 47 11.66	5.90
7666.00	83.46	141.39		6198.49	5064.20	1012.38	273.63	1622.39	4.05	-3.10	2.62	494748.09	1638848.21	N 39 51 4.53 W	80 47 10.98	5.93
7756.00	84.08	142.93		6206.29	5073.97	1100.29	202.11	1676.13	3.61	-2.77	3.17	494678.57	1638905.87	N 39 51 3.86 W	80 47 10.32	5.95
7846.00	85.94	145.69		6216.10	5081.81	1188.95	126.74	1724.62	3.58	-2.07	5.46	494601.21	1638964.44	N 39 51 3.09 W	80 47 9.58	5.98
7935.00	90.24	152.98		6219.06	5084.77	1271.08	48.72	1787.27	3.08	4.83	3.70	494523.19	1638993.08	N 39 51 2.33 W	80 47 9.02	6.01
8025.00	92.02	152.02		6216.58	5082.29	1355.59	-31.07	1808.81	3.16	2.88	-1.07	494443.40	1639034.62	N 39 51 1.55 W	80 47 8.48	6.03
8114.00	94.03	148.75		6211.19	5078.90	1440.10	-108.29	1852.70	3.87	1.25	-3.67	494366.19	1639078.51	N 39 51 0.79 W	80 47 7.90	6.05
8204.00	93.89	145.90		6204.97	5070.68	1526.86	-183.88	1901.17	3.16	-0.16	-3.17	494290.62	1639126.97	N 39 51 0.05 W	80 47 7.26	6.07
8294.00	92.82	143.57		6199.70	5065.41	1614.65	-257.21	1953.04	2.84	-2.19	-2.59	494217.27	1639178.84	N 39 50 59.33 W	80 47 6.59	6.09
8384.00	90.34	143.99		6197.22	5062.93	1702.65	-329.79	2006.19	2.79	-1.76	0.47	494144.70	1639231.99	N 39 50 58.62 W	80 47 5.89	6.11
8474.00	89.31	144.25		6197.50	5063.21	1790.99	-402.71	2056.94	1.18	-1.14	0.29	494071.79	1639284.74	N 39 50 57.91 W	80 47 5.20	6.13
8563.00	89.38	144.16		6198.51	5064.22	1878.12	-474.89	2110.99	0.13	-0.08	-0.10	493999.61	1639338.78	N 39 50 57.20 W	80 47 4.52	6.14
8652.00	89.24	144.20		6199.58	5065.29	1965.25	-547.05	2163.07	0.16	-0.16	0.04	493927.45	1639388.86	N 39 50 56.50 W	80 47 3.84	6.16
8742.00	88.78	144.08		6201.16	5066.87	2053.37	-619.98	2215.79	0.55	-0.53	-0.13	493854.52	1639441.58	N 39 50 55.78 W	80 47 3.15	6.17
8832.00	88.73	143.99		6203.13	5068.84	2141.52	-692.81	2268.63	0.11	-0.03	-0.10	493781.70	1639494.42	N 39 50 55.07 W	80 47 2.48	6.19
8921.00	88.97	143.95		6204.91	5070.62	2228.71	-764.77	2321.97	0.27	0.27	-0.04	493709.74	1639548.76	N 39 50 54.37 W	80 47 1.78	6.20
9010.00	89.24	143.74		6206.30	5072.61	2315.95	-836.62	2373.47	0.38	0.30	-0.24	493637.80	1639598.25	N 39 50 53.67 W	80 47 1.09	6.22
9100.00	89.11	143.14		6207.60	5073.31	2404.29	-908.90	2427.08	0.88	-0.14	-0.67	493565.62	1639652.85	N 39 50 52.96 W	80 47 0.39	6.23
9189.00	89.48	144.47		6208.69	5074.40	2491.54	-980.72	2479.63	1.55	0.42	1.49	493493.80	1639705.40	N 39 50 52.28 W	80 46 59.70	6.24
9279.00	89.69	143.73		6209.35	5075.06	2579.68	-1059.62	2532.40	0.81	0.23	-0.82	493420.91	1639758.17	N 39 50 51.54 W	80 46 59.01	6.26
9368.00	89.69	145.16		6209.83	5075.54	2666.73	-1128.03	2584.15	1.61	0.00	1.61	493348.51	1639809.92	N 39 50 50.83 W	80 46 58.34	6.27
9458.00	89.86	144.14		6210.18	5075.89	2754.70	-1199.43	2636.22	1.15	0.19	-1.13	493275.11	1639861.99	N 39 50 50.12 W	80 46 57.66	6.29
9547.00	89.62	143.54		6210.58	5076.29	2841.95	-1271.29	2688.73	0.73	-0.27	-0.67	493203.25	1639914.50	N 39 50 49.41 W	80 46 56.97	6.30
9637.00	89.90	143.30		6210.96	5076.67	2930.30	-1343.56	2743.27								

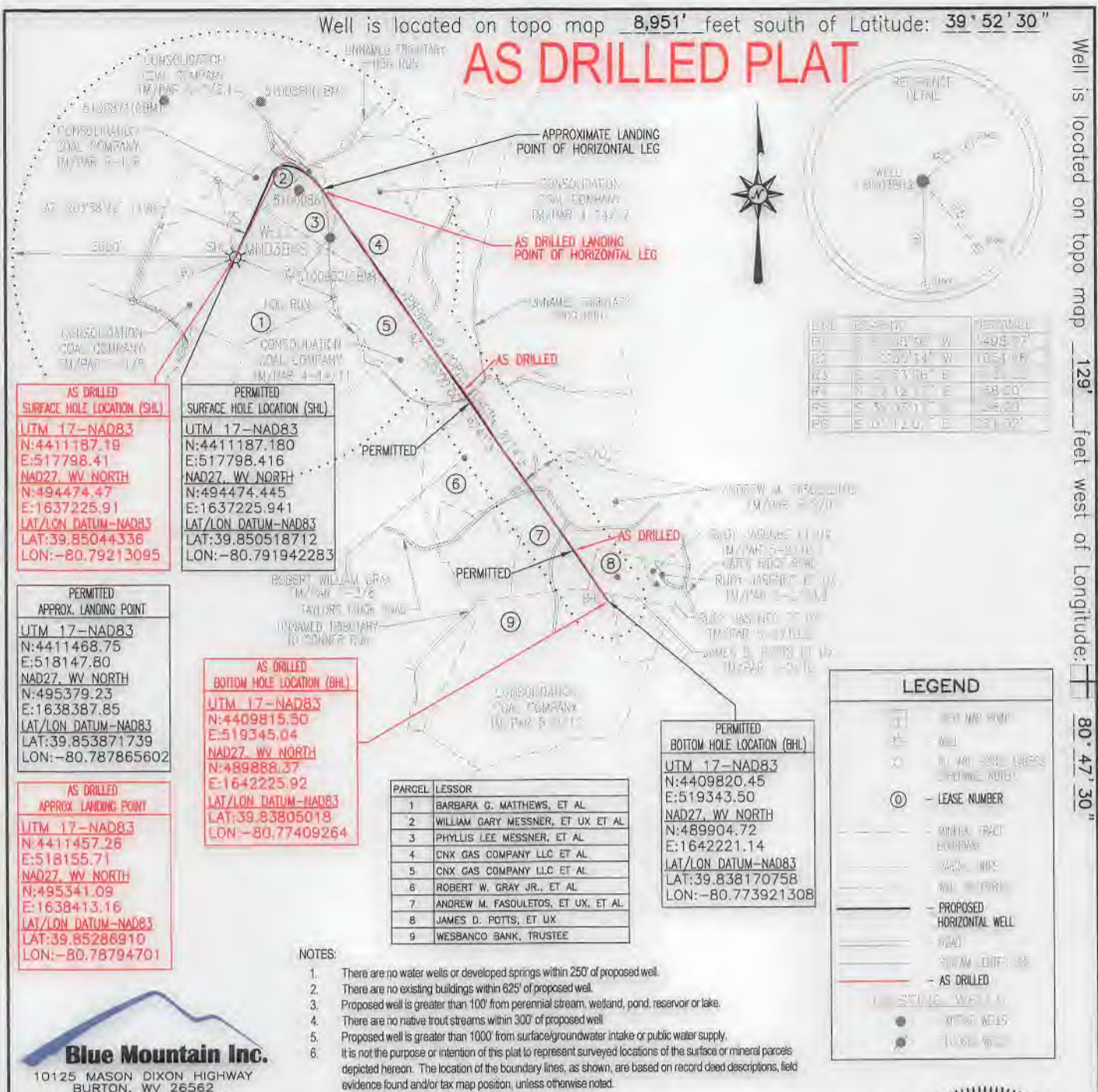
51-01738

Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	TVSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (*100ft)	BR (*100ft)	TR (*100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (NS ***)	Longitude (EW ***)	Directional Difficulty Index
		1	579.500	684.000	Act Stns	30.000	30.000	SLB_JNC_ONLY<10		Original Borehole / Noble Energy						
		1	684.000	13564.000	Act Stns	30.000	30.000	SLB_MWD-STD		MND-3B-HS Gyro-MWD 0ft to						
		1	13564.000	13560.000	Act Stns	30.000	30.000	SLB_BLIND+TREND		Original Borehole / Noble Energy						
										MND-3B-HS Gyro-MWD 0ft to						

Well is located on topo map 8,951' feet south of Latitude: 39° 52' 30"

AS DRILLED PLAT

Well is located on topo map 129' feet west of Longitude: 80° 47' 30"



LINE	BEARING	DISTANCE
R1	S 82° 34' 50" W	1498.97'
R2	N 05° 02' 14" W	1051.06'
R3	E 89° 06' 00" E	1051.06'
R4	N 82° 12' 17" E	1498.97'
R5	N 89° 06' 00" E	1051.06'
R6	N 05° 02' 14" E	1051.06'

LEGEND	
	WELL MAP POINT
	WELL
	WELL - LEASE/DRILL/WELL
	LEASE NUMBER
	MINERAL TRACT BOUNDARY
	LEASE LINE
	WELL LOCATION
	PROPOSED HORIZONTAL WELL
	ROAD
	SURVEY CENTER LINE
	AS DRILLED
	EXISTING WELL
	MINING WELL
	FLOOD WELL

PARCEL	LESSOR
1	BARBARA G. MATTHEWS, ET AL
2	WILLIAM GARY MESSNER, ET UX ET AL
3	PHYLLIS LEE MESSNER, ET AL
4	CNX GAS COMPANY LLC ET AL
5	CNX GAS COMPANY LLC ET AL
6	ROBERT W. GRAY JR., ET AL
7	ANDREW M. FASOULETOS, ET UX, ET AL
8	JAMES D. POTTS, ET UX
9	WESBANCO BANK, TRUSTEE

NOTES:

- There are no water wells or developed springs within 250' of proposed well.
- There are no existing buildings within 625' of proposed well.
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Blue Mountain Inc.
10125 MASON DIXON HIGHWAY
BURTON, WV 26562
PHONE: (304) 662-6486

FILE #: MND3BHS-AS DRILLED
DRAWING #: MND3BHS-AS DRILLED
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1/2500
PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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 THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed:

R.P.E.: _____ L.L.S.: P.S. No. 2000

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP

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

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

WATERSHED: SHORT CREEK ELEVATION: 1122.81'

COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, OH-WV 7.5'

SURFACE OWNER: CONSOLIDATION COAL COMPANY - CONSOL MINING CO. ACREAGE: 180.214±

OIL & GAS ROYALTY OWNER: BARBARA G. MATTHEWS, ET AL ACREAGE: 524.524±

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

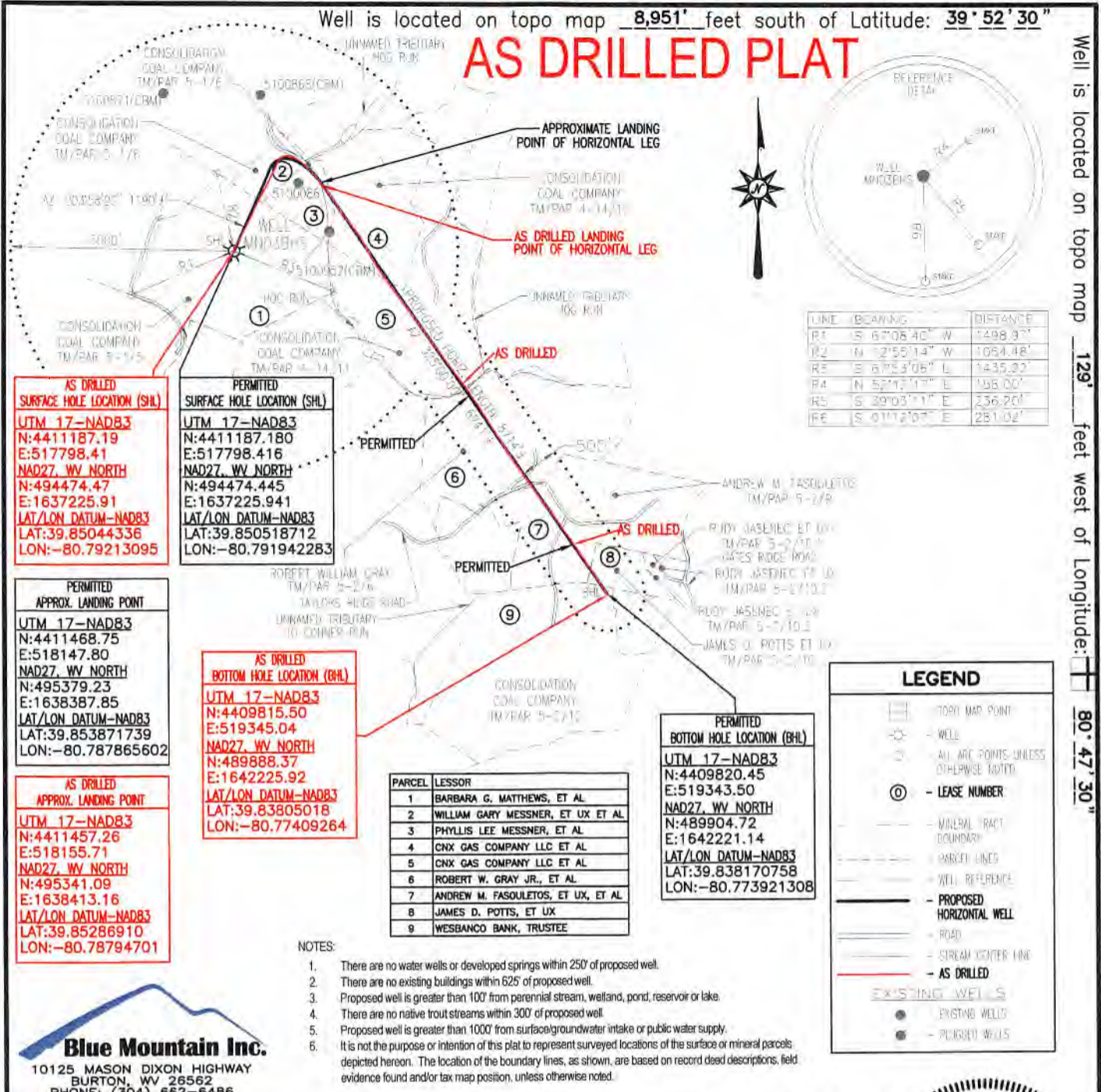
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,279'± TMD: 13,842'±

WELL OPERATOR NOBLE ENERGY, INC. DESIGNATED AGENT STEVEN M. GREEN
Address 333 TECHNOLOGY DRIVE, SUITE 116 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590
City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

Well is located on topo map 8,951' feet south of Latitude: 39° 52' 30"

AS DRILLED PLAT

Well is located on topo map 129' feet west of Longitude: 80° 47' 30"



AS DRILLED SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83
 N:4411187.19
 E:517798.41
 NAD27, WV NORTH
 N:494474.47
 E:1637225.91
 LAT/LON DATUM-NAD83
 LAT:39.85044336
 LON:-80.79213095

PERMITTED SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83
 N:4411187.180
 E:517798.416
 NAD27, WV NORTH
 N:494474.445
 E:1637225.941
 LAT/LON DATUM-NAD83
 LAT:39.850518712
 LON:-80.791942283

PERMITTED APPROX. LANDING POINT
 UTM 17-NAD83
 N:4411468.75
 E:518147.80
 NAD27, WV NORTH
 N:495379.23
 E:1638387.85
 LAT/LON DATUM-NAD83
 LAT:39.853871739
 LON:-80.787865602

AS DRILLED BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83
 N:4409815.50
 E:519345.04
 NAD27, WV NORTH
 N:489888.37
 E:1642225.92
 LAT/LON DATUM-NAD83
 LAT:39.83805018
 LON:-80.77409264

PARCEL	LESSOR
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3	PHYLLIS LEE MESSNER, ET AL
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8	JAMES D. POTTS, ET UX
9	WESBANCO BANK, TRUSTEE

PERMITTED BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83
 N:4409820.45
 E:519343.50
 NAD27, WV NORTH
 N:489904.72
 E:1642221.14
 LAT/LON DATUM-NAD83
 LAT:39.838170758
 LON:-80.773921308

LEGEND

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- LEASE NUMBER
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE
- AS DRILLED
- EXISTING WELLS
- EXISTING WELLS
- PROPOSED WELLS

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Signed: [Signature]
 R.P.E.: _____ L.L.S.: P.S. No. 2000

GEORGE D. SIX
 LICENSED
 No. 2000
 STATE OF
 WEST VIRGINIA
 PROFESSIONAL SURVEYOR

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304

DATE: JANUARY 6, 2015
 OPERATOR'S WELL #: MND3BHS-AS DRILLED
 API WELL #: 47 51 01738
 STATE COUNTY PERMIT

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

WATERSHED: SHORT CREEK ELEVATION: 1122.81'
 COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, OH-WV 7.5'
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 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

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 City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301