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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 47-051-01740 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 DHS
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 4411179.68 Easting 517793.20
Landing Point of Curve Northing 4411112.25 Easting 518030.82
Bottom Hole Northing 4409652.89 Easting 519070.50

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 4/16/2014 Date drilling ceased 7/30/2014
Date completion activities began 10/23/2014 Date completion activities ceased 12/11/2014
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

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Office of Oil and Gas
FEB 02 2015
WV Department of
Environmental Protection

Reviewed by: _____

API 47- 051 - 01740 Farm name Consol Mining Co., LLC Well number MND 3 DHS

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	404.8	N	J-55 94#		Y
Coal							
Intermediate 1	17 1/2	13 3/8	1,079.0	N	J-55 54.5#		Y
Intermediate 2	12 3/8	9 5/8	2,617.0	N	K 55 36#		Y
Intermediate 3							
Production	8 3/4	5 1/2	11,841.0	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	558	15.6	1.21	120.0	0	8
Coal							
Intermediate 1	Class A	955	15.6	1.19	179.0	0	8
Intermediate 2	Class A	884	15.6	1.19	192.0	0	8
Intermediate 3							
Production	Class A	Lead - 558 Tail - 1459	Lead 14.2 Tail 14.8	Lead - 1.54 Tail - 1.37	Lead 153 - Tail 357.2	2,618	8
Tubing							

Drillers TD (ft) 12,823 Loggers TD (ft) 12,756

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

Plug back procedure Not a Pilot Hole

Kick off depth (ft) 6,908

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 _____

Perforation Record

API: 47-051-01740

Farm name:

Consol Mining
Co. LLC.

Well Name: MND-3D-HS

Stage No.	Stim Date	Top Perf	Bottom Perf	# of Perfs	Formation
Toe Prep Inj test	10/23/2014	-	-	-	Marcellus
1	10/23/2014	11,489	11,626	45	Marcellus
2	10/24/2014	11,124	11,422	48	Marcellus
3	10/24/2014	10,838	11,037	48	Marcellus
4	10/24/2014	10,538	10,754	48	Marcellus
5	10/25/2014	10,220	10,381	48	Marcellus
6	10/25/2014	10,025	10,156	45	Marcellus
7	10/25/2014	9,789	9,950	48	Marcellus
8	10/25/2014	9,630	9,723	45	Marcellus
9	10/26/2014	9,425	9,564	45	Marcellus
10	10/26/2014	9,276	9,363	45	Marcellus
11	10/26/2014	8,975	9,201	48	Marcellus
12	10/26/2014	8,744	8,904	48	Marcellus
13	10/26/2014	8,546	8,679	45	Marcellus
14	10/27/2014	8,382	8,474	45	Marcellus
15	10/27/2014	8,155	8,316	48	Marcellus
16	10/27/2014	7,855	8,089	50	Marcellus
17	10/27/2014	7,565	7,794	50	Marcellus
18	10/27/2014	7,360	7,493	45	Marcellus
19	10/27/2014	6,908	7,294	60	Marcellus

STIMULATION INFORMATION PER STAGE

API: 47-051-01740

Farm name:

Consol Mining Co.
LLC.

Well Name: MND-3D-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	10/23/2014	14.6	8,492	-	6,962	-	421.87	
1	10/23/2014	85.8	7,961	6,922	3,589	400,150	9,916.74	
2	10/24/2014	74.3	7,753	5,693	3,449	602,059	16,114.88	
3	10/24/2014	90.6	7,273	5,804	3,139	501,235	10,910.67	
4	10/24/2014	88.4	6,894	5,822	4,393	502,725	10,263.05	
5	10/25/2014	79.6	8,537	5,467	3,601	503,066	13,701.67	
6	10/25/2014	90.6	8,319	5,824	3,811	294,840	7,417.88	
7	10/25/2014	88.0	7,176	5,588	4,799	402,755	8,162.05	
8	10/25/2014	88.7	7,501	5,852	4,159	299,329	6,928.10	
9	10/26/2014	88.8	7,447	6,537	3,896	301,312	6,917.19	
10	10/26/2014	90.6	7,176	6,428	3,328	300,727	6,942.90	
11	10/26/2014	90.5	7,560	5,598	4,615	417,873	10,408.70	
12	10/26/2014	89.5	7,014	5,679	3,784	440,054	9,994.42	
13	10/26/2014	88.8	7,209	6,000	4,604	299,958	6,791.67	
14	10/27/2014	89.0	7,589	5,407	3,943	300,939	7,038.92	
15	10/27/2014	91.8	7,395	5,954	3,800	401,525	8,963.88	
16	10/27/2014	90.5	7,321	5,308	3,529	500,682	11,273.66	
17	10/27/2014	90.1	6,289	4,811	3,317	500,595	9,598.32	
18	10/27/2014	85.9	8,565	5,254	3,993	301,342	7,163.39	
19	10/27/2014	88.3	6,645	5,191	3,964	128,313	5,489.80	

MND 3D 47-051-01740

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:	10/23/2014
Job End Date:	10/27/2014
State:	West Virginia
County:	Marshall
API Number:	47-051-01740-00-00
Operator Name:	Noble Energy, Inc.
Well Name and Number:	MND 3 D
Longitude:	-80.79219200
Latitude:	39.85037500
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,276
Total Base Water Volume (gal):	7,326,245
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	88.33128	Density = 8.340
SAND - PREMIUM WHITE	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	8.40986	
SAND - COMMON WHITE	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	2.29583	
HCl < 10%	Halliburton	Solvent	Hydrochloric acid	7647-01-0	10.00000	0.08244	
FR-66	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02032	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive	Acetic anhydride	108-24-7	100.00000	0.00428	
			Acetic acid	64-19-7	60.00000	0.00257	
BE-9	Halliburton	Biocide	Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00405	
Scalechek(R) LP-65 Scale Inhibitor	Halliburton	Scale Inhibitor					

			Ammonium chloride	12125-02-9	10.00000	0.00241	
LOSURF-300D	Halliburton	Non-ionic Surfactant					
			Ethanol	64-17-5	60.00000	0.00086	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00043	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00007	
			Naphthalene	91-20-3	5.00000	0.00007	
			1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00001	
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
			Methanol	67-56-1	60.00000	0.00042	
			Propargyl alcohol	107-19-7	10.00000	0.00007	
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		0.09553	
		Other Ingredient(s)					
			Polyacrylamide copolymer	Confidential		0.02032	
		Other Ingredient(s)					
			Organic phosphonate	Confidential		0.01444	
		Other Ingredient(s)					
			Alcohols ethoxylated	Confidential		0.00339	Denise Tuck, Halliburton 3000 N. Sam Houston Pkwy E., Houston, TX 77032 281-871-6226
		Other Ingredient(s)					
			Amide	Confidential		0.00339	
		Other Ingredient(s)					
			Sodium chloride	7647-14-5		0.00339	
		Other Ingredient(s)					
			Ammonium chloride	12125-02-9		0.00339	
		Other Ingredient(s)					
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8		0.00068	
		Other Ingredient(s)					
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6		0.00068	
		Other Ingredient(s)					
			Oxyalkylated phenolic resin	Confidential		0.00043	
		Other Ingredient(s)					
			Formaldehyde	50-00-0		0.00024	
		Other Ingredient(s)					
			Fatty acids, tall oil	Confidential		0.00021	
		Other Ingredient(s)					
			Alcohols, C14-C15, ethoxylated	68951-67-7		0.00021	
		Other Ingredient(s)					

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			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1		0.00021	
		Other Ingredient(s)					
			Oxyalkylated phenolic resin	Confidential		0.00014	
		Other Ingredient(s)					
			Olefins	Confidential		0.00004	
		Other Ingredient(s)					
			Olefins	Confidential		0.00004	
		Other Ingredient(s)					
			Olefins	Confidential		0.00001	
		Other Ingredient(s)					
			Olefins	Confidential		0.00001	

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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-3D-HS Gyro+MWD 0ft to 12823ft MD

(Non-Def Survey)

Report Date: July 28, 2014 - 08:54 AM
 Client: Noble Energy
 Field: WV Marshall County (NAD 27)
 Structure / Slot: Noble Energy MND-3 Pad / MND-3D-HS
 Well: MND-3D-HS
 Original Borehole: Unknown / Unknown
 UWI / API#: Noble Energy MND-3D-HS Gyro+MWD 0ft to Update
 Survey Name: July 11, 2014
 Ter / AHD / DDI / ERD Ratio: 300.011 / 7303.749 ft / 0.651 / 1.154
 Coordinate Reference System: NAD27 West Virginia State Plane, Northern Zone, US Foot
 Location Lat / Long: N 30° 51' 1.35295" W 80° 47' 31.89100"
 Location Grid NE YK: N 494450 123 NUS, E 1837268 422 HHS
 CRS Grid Convergence Angle: -0.8251 *
 Grid Scale Factor: 0.99904839
 Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 140.628 * (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: KB
 TVD Reference Elevation: 1134.260 ft above MSL
 Seabed / Ground Elevation: 1115.760 ft above MSL
 Magnetic Declination: -7.504 *
 Total Gravity Field Strength: 999.3556mgals (9.80665 m/s^2)
 Gravity Model: GARM
 Total Magnetic Field Strength: 52770.485 nT
 Magnetic Dip Angle: 67.310 *
 Destination Date: July 11, 2014
 Magnetic Declination Model: IJDCM 2013
 North Reference: Grid North
 Grid Convergence Used: -0.8251 *
 Total Corr Mag North-to-Grid: -6.7723 *
 North: Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDS5 (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°1000)	RR (°1000)	TR (°1000)	Normaling (ft)	Existing (ft)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Directional Difficulty Index
SHL	0.00	0.00	0.00	0.00	-1134.26	0.00	0.00	0.00	N/A	N/A	N/A	494450.12	1837208.42	N 38 51 1.35 W	80 47 31.89	0.00
	109.50	0.20	48.56	109.50	-1024.76	-0.01	0.13	0.14	0.18	0.18	0.01	494450.25	1837208.57	N 38 51 1.35 W	80 47 31.89	0.00
	209.50	0.15	283.90	209.50	-924.76	-0.12	0.27	0.15	0.31	-0.15	-124.66	494450.40	1837208.57	N 38 51 1.26 W	80 47 31.89	0.00
	309.50	0.27	313.32	309.50	-824.76	-0.48	0.47	-0.15	0.16	0.12	29.42	494450.56	1837208.27	N 38 51 1.36 W	80 47 31.89	0.00
	409.50	0.21	10.29	409.50	-724.76	-0.83	0.83	-0.29	0.24	-0.03	56.97	494450.96	1837208.14	N 38 51 1.36 W	80 47 31.89	0.03
Final Gyro	509.50	0.48	22.93	509.50	-624.76	-1.10	1.43	-0.08	0.25	0.24	12.64	494451.55	1837208.34	N 38 51 1.37 W	80 47 31.89	0.52
	579.50	0.69	49.98	579.49	-554.77	-1.30	1.37	0.35	0.49	0.30	38.81	494452.09	1837208.77	N 38 51 1.37 W	80 47 31.89	0.57
	607.00	0.80	129.95	606.99	-527.27	-1.11	1.59	0.63	0.50	0.40	290.87	494452.07	1837209.05	N 38 51 1.27 W	80 47 31.88	0.64
	645.00	0.97	157.13	644.99	-486.27	-0.48	1.81	0.98	0.49	0.41	17.51	494451.84	1837209.50	N 38 51 1.37 W	80 47 31.88	0.96
	742.00	0.50	239.39	741.98	-392.26	0.24	0.68	1.21	1.32	-2.10	106.79	494450.81	1837209.83	N 38 51 1.36 W	80 47 31.88	1.24
	831.00	2.60	260.90	830.94	-303.32	-0.51	-0.19	-1.02	2.16	2.15	12.93	494449.94	1837207.40	N 38 51 1.35 W	80 47 31.90	1.60
	921.00	3.24	265.92	920.73	-213.50	-3.54	-1.15	-0.98	3.21	3.04	18.24	494448.97	1837201.45	N 38 51 1.34 W	80 47 31.98	2.05
	965.00	6.81	262.64	965.46	-165.78	-6.13	-1.05	-1.17	3.55	3.49	-8.40	494446.47	1837196.73	N 38 51 1.33 W	80 47 32.04	2.28
	1048.00	8.44	259.04	1046.76	-87.50	-11.39	-0.92	-2.26	2.18	1.98	-8.76	494446.30	1837195.04	N 38 51 1.31 W	80 47 32.16	2.54
	1100.00	9.21	258.69	1098.14	-36.12	-14.33	-5.42	-30.13	1.48	1.49	-9.17	494444.71	1837178.29	N 38 51 1.30 W	80 47 32.28	2.67
	1189.00	6.64	261.70	1165.08	51.80	-21.53	-3.40	-45.68	1.05	-0.64	5.40	494442.13	1837184.74	N 38 51 1.27 W	80 47 32.45	2.84
	1228.00	5.79	270.21	1224.71	30.45	-24.51	-8.01	-48.89	5.56	-4.74	21.82	494441.71	1837166.54	N 38 51 1.26 W	80 47 32.52	2.95
	1315.00	4.30	280.88	1315.25	191.83	-38.51	-7.26	-57.40	3.48	-2.85	21.92	494442.85	1837161.02	N 38 51 1.27 W	80 47 32.63	3.09
	1408.00	1.21	327.01	1404.19	259.93	-34.54	-5.38	-60.88	3.73	-3.39	41.72	494444.76	1837147.44	N 38 51 1.26 W	80 47 32.67	3.19
	1458.00	2.14	78.55	1494.16	350.90	-34.75	-5.17	-59.86	3.10	1.03	121.71	494445.95	1837148.56	N 38 51 1.30 W	80 47 32.66	3.25
	1587.00	2.71	95.99	1583.08	448.82	-33.47	-2.93	-56.33	0.81	0.64	-11.87	494447.19	1837152.10	N 38 51 1.32 W	80 47 32.61	3.26
	1677.00	3.07	67.77	1672.97	538.71	-32.16	-1.15	-59.13	0.41	0.40	1.98	494448.97	1837152.27	N 38 51 1.33 W	80 47 32.58	3.32
	1766.00	3.83	58.25	1761.81	627.58	-31.10	1.21	-47.42	1.07	0.83	-10.75	494445.43	1837161.01	N 38 51 1.38 W	80 47 32.50	3.36
	1856.00	3.03	56.30	1851.65	717.39	-30.46	4.31	-42.88	0.80	-0.89	-2.17	494454.34	1837162.34	N 38 51 1.39 W	80 47 32.44	3.40
	1945.00	2.73	57.17	1940.53	806.27	-29.99	6.67	-39.14	0.24	-0.34	0.98	494458.79	1837169.28	N 38 51 1.41 W	80 47 32.39	3.43
	2035.00	2.67	55.83	2030.43	895.17	-29.56	9.01	-35.61	0.10	-0.07	-1.43	494458.13	1837172.81	N 38 51 1.44 W	80 47 32.25	3.45
	2124.00	2.78	43.74	2119.33	985.07	-29.63	11.74	-32.40	0.65	0.13	-13.70	494441.86	1837170.02	N 38 51 1.46 W	80 47 32.31	3.47
	2213.00	2.40	55.92	2208.24	1073.98	-29.73	14.36	-29.36	0.75	-0.44	-13.57	494464.46	1837179.08	N 38 51 1.48 W	80 47 32.27	3.50
	2302.00	0.98	86.83	2297.21	1162.95	-29.29	15.43	-27.37	2.17	-2.04	34.93	494465.55	1837181.05	N 38 51 1.59 W	80 47 32.24	3.51
	2392.00	0.53	172.51	2387.20	1252.94	-28.41	14.73	-26.82	1.76	0.30	95.20	494464.85	1837181.60	N 38 51 1.49 W	80 47 32.24	3.59
	2481.00	1.44	197.99	2476.18	1341.92	-27.19	12.95	-27.08	0.81	0.57	28.63	494463.07	1837181.35	N 38 51 1.46 W	80 47 32.24	3.57
	2568.00	1.17	195.74	2563.16	1428.90	-26.09	11.08	-27.85	0.32	-0.31	-2.50	494461.18	1837180.77	N 38 51 1.48 W	80 47 32.25	3.59
	2671.00	0.82	174.34	2656.15	1531.85	-24.88	9.31	-27.87	0.49	-0.34	-20.78	494459.43	1837180.56	N 38 51 1.44 W	80 47 32.25	3.60
	2760.00	1.01	175.87	2750.14	1620.88	-23.89	7.28	-27.75	0.24	0.24	1.72	494458.00	1837180.58	N 38 51 1.43 W	80 47 32.25	3.60
	2848.00	0.94	175.43	2844.12	1709.85	-22.44	5.35	-27.63	0.10	-0.10	-0.48	494458.48	1837180.79	N 38 51 1.41 W	80 47 32.25	3.61
	2939.00	0.87	168.31	2934.11	1799.85	-21.22	4.95	-27.41	0.16	-0.08	-10.13	494455.08	1837181.01	N 38 51 1.40 W	80 47 32.25	3.62
	3028.00	0.41	169.05	3023.10	1888.84	-20.31	4.00	-27.14	0.52	-0.52	-8.16	494454.12	1837181.29	N 38 51 1.39 W	80 47 32.24	3.63
	3118.00	0.15	311.58	3113.10	1978.84	-19.85	3.51	-26.85	0.50	-0.26	-19.41	494453.73	1837181.48	N 38 51 1.38 W	80 47 32.24	3.63
	3207.00	0.32	102.50	3202.10	2067.84	-19.57	3.46	-26.63	0.26	0.18	-15.51	494453.59	1837181.79	N 38 51 1.38 W	80 47 32.25	3.64
	3297.00	0.45	63.77	3292.10	2157.64	-19.36	3.62	-26.10	0.36	0.14	-64.14	494453.74	1837182.32	N 38 51 1.38 W	80 47 32.23	3.64
	3389.00	0.46	29.81	3381.10	2248.84	-19.46	4.11	-25.64	0.21	0.01	-26.92	494454.25	1837182.78	N 38 51 1.39 W	80 47 32.22	3.65
	3475.00	0.47	4.38	3470.10	2339.84	-19.88	4.81	-25.44	0.23	0.01	-26.57	494454.93	1837182.99	N 38 51 1.40 W	80 47 32.22	3.65
	3565.00	0.54	359.30	3559.09	2429.63	-20.47	5.40	-25.44	0.11	-0.08	-6.38	494459.72	1837182.59	N 38 51 1.40 W	80 47 32.22	3.66
	3650.00	0.53	339.32	3650.06	2519.63	-21.20	6.41	-25.81	0.18	-0.01	-18.87	494455.53	1837182.81	N 38 51 1.41 W	80 47 32.22	3.66
	3744.00	0.45	313.27	3739.06	2604.63	-21.34	7.04	-26.01	0.26	-0.08	-29.27	494457.16	1837182.41	N 38 51 1.42 W	80 47 32.23	3.67
	3833.00	0.44	312.23	3829.08	2693.82	-22.83	7.51	-26.52	0.01	-0.01	-1.10	494467.83	1837181.81	N 38 51 1.42 W	80 47 32.23	3.67
	3923.00	0.36	312.02	3919.08	2783.82	-23.23	7.93	-26.88	0.09	-0.03	0.70	494468.05	1837181.44	N 38 51 1.43 W	80 47 32.24	3.67
	4012.00	0.42	295.64	4007.08	2872.82	-23.82	8.26	-27.49	0.15	0.07	-19.53	494458.38	1837180.94	N 38 51 1.43 W	80 47 32.24	3.68
	4102.00	0.38	311.34	4097.08	2962.82	-24.41	8.60	-28.00	0.13	-0.04	17.50	494458.72	1837180.42	N 38 51 1.43 W	80 47 32.25	3.68
	4191.00	0.37	313.52	4187.07	3051.81	-24.89	9.00	-28.43	0.02	-0.01	2.90	494459.12	1837179.99	N 38 51 1.44 W	80 47 32.26	3.68
	4281.00	0.38	294.30	4276.07	3141.81	-25.55	9.32	-28.91	0.14	0.01	-21.80	494459.44	1837179.51	N 38 51 1.44 W	80 47 32.26	3.68
	4370.00	0.33	309.32	4365.07	3230.81	-26.08	9.69	-29.38	0.11	-0.05	15.75	494459.72	1837179.04	N 38 51 1.44 W	80 47 32.27	3.69
	4460.00	0.54	292.20	4455.07	3320.81	-26.69	9.92	-29.98	0.27	0.23	-17.80	494460.04	1837178.45	N 38 51 1.45 W	80 47 32.28	3.69
	4549.00	0.78	299.39	4544.08	3409.80	-27.80	10.32	-30.89	0.27	0.27	1.45	494460.45	1837177.50	N 38 51 1.45 W	80 47 32.29	3.70
	4639.00	0.78	284.41	4634.05	3499.79	-28.64	10.73	-32.08	0.14	0.01	-10.20	494460.84	1837176.35	N 38 51 1.45 W	80 47 32.30	3.70
	4729.00	0.74	274.69	4724.05	3589.79	-28.53	10.62	-33.25	0.15	-0.04	-10.89	494461.04	1837175.18	N 38 51 1.46 W	80 47 32.33	3.71
	4818.00	0.70	276.00	4814.04	3678.76	-30.34	11.05	-34.36	0.07	-0.04	4.78	494461.17	1837174.07	N 38 51 1.46 W	80 47 32.33	3.71
	4908.00	0.72	284.26	4903.03	3768.77	-31.21	11.28	-36.41	0.08	0.02	-0.07	494451.40	1837172.98	N 38 51 1.48 W	80 47 32.35	3.72
	4998.00	0.67	272.96	4993.03	3858.77	-31.47	11.53	-38.51	0.52	-0.17	-11.00	494451.46	1837172.02	N 38 51 1.4		

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Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	TVD98 (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	BR (ft/100ft)	TR (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ° °)	Longitude (E/W ° ° °)	Directional Difficulty Index
	8475.00	71.99	137.03	6149.51	5015.25	217.31	126.22	496.33	5.10	3.42	4.00	494576.34	1637704.73	N 39 51 2.67 W	80 47 25.56	5.26
	8519.00	73.89	138.40	6162.42	5028.16	259.32	95.11	524.83	5.24	4.32	3.11	494545.22	1637733.02	N 39 51 2.37 W	80 47 25.18	5.29
	8564.00	77.90	141.45	6175.38	5039.12	302.94	61.71	552.71	11.07	8.91	6.78	494511.83	1637761.10	N 39 51 2.04 W	80 47 24.82	5.32
	8609.00	82.13	142.79	6181.18	5046.92	347.24	26.74	579.91	9.85	9.40	2.98	494476.86	1637788.30	N 39 51 1.70 W	80 47 24.46	5.35
	8654.00	85.06	143.31	6186.20	5051.94	391.91	-8.99	606.79	6.61	6.51	1.16	494441.13	1637815.18	N 39 51 1.35 W	80 47 24.11	5.38
	8692.00	87.65	143.35	6186.82	5054.36	429.79	-39.41	629.43	6.82	6.82	0.11	494410.72	1637837.82	N 39 51 1.05 W	80 47 23.81	5.40
	8743.00	88.09	143.50	6190.65	5060.69	460.69	-68.24	650.89	6.91	6.96	0.29	494383.29	1637860.59	N 39 51 0.74 W	80 47 23.42	5.42
	8785.00	88.38	142.97	6191.81	5057.55	522.63	-113.97	684.93	1.44	0.69	-1.26	494336.16	1637893.31	N 39 51 0.32 W	80 47 23.09	5.44
	8833.00	88.76	143.01	6193.01	5058.75	570.57	-152.29	719.81	0.80	0.79	0.08	494297.85	1637922.20	N 39 50 59.95 W	80 47 22.71	5.46
	8878.00	89.28	142.76	6193.78	5059.52	615.53	-188.16	749.96	1.28	1.18	-0.08	494261.97	1637948.35	N 39 50 59.80 W	80 47 22.36	5.48
	8936.00	89.69	142.74	6194.30	5060.04	673.49	-224.33	778.07	0.71	0.71	-0.03	494215.81	1637984.45	N 39 50 58.15 W	80 47 21.90	5.50
	9000.00	89.98	142.66	6194.72	5060.31	722.31	-260.32	806.97	4.12	-3.75	1.71	494144.32	1638037.35	N 39 50 58.45 W	80 47 21.21	5.54
	9070.00	87.67	143.94	6199.72	5065.46	807.16	-342.22	855.32	3.02	2.93	-0.71	494107.92	1638063.69	N 39 50 58.09 W	80 47 20.86	5.56
	9150.00	86.35	141.59	6202.07	5067.81	852.07	-377.99	882.51	5.98	-2.93	-5.22	494072.15	1638090.88	N 39 50 57.74 W	80 47 20.51	5.58
	9189.00	86.09	140.06	6204.97	5070.71	905.97	-412.03	910.24	3.52	-3.59	-3.48	494038.12	1638118.81	N 39 50 57.41 W	80 47 20.15	5.60
	9204.00	86.11	141.25	6207.24	5072.98	940.91	-446.78	938.70	5.21	4.49	2.64	494003.36	1638147.10	N 39 50 57.07 W	80 47 19.77	5.62
	9249.00	90.57	142.08	6207.76	5073.50	985.89	-482.08	968.64	5.77	5.47	1.84	493968.07	1638175.01	N 39 50 56.73 W	80 47 19.41	5.64
	9294.00	91.10	142.63	6207.11	5072.85	1030.87	-517.70	994.12	1.70	1.18	1.22	493932.45	1638202.49	N 39 50 56.38 W	80 47 19.05	5.65
	9339.00	90.40	144.21	6206.52	5072.28	1075.81	-553.83	1020.93	3.84	-1.56	3.51	493898.32	1638229.30	N 39 50 56.03 W	80 47 18.70	5.67
	9384.00	90.13	145.74	6206.31	5072.05	1120.68	-599.88	1046.78	3.45	-0.60	3.40	493864.47	1638255.13	N 39 50 55.68 W	80 47 18.36	5.68
	9430.00	90.84	147.12	6205.56	5071.50	1209.52	-664.83	1095.97	1.74	0.80	1.55	493785.32	1638304.33	N 39 50 54.94 W	80 47 17.72	5.71
	9480.00	90.66	146.66	6204.38	5070.12	1298.67	-740.21	1145.13	0.55	-0.20	-0.51	493709.85	1638353.49	N 39 50 54.20 W	80 47 17.07	5.74
	9532.00	89.60	145.04	6204.18	5069.92	1387.29	-813.86	1195.09	2.18	-1.19	-1.82	493638.30	1638403.44	N 39 50 53.48 W	80 47 16.42	5.77
	9587.00	89.52	142.96	6204.87	5070.61	1477.13	-886.67	1247.88	2.31	-0.09	-2.31	493563.50	1638456.34	N 39 50 52.77 W	80 47 15.73	5.79
	9642.00	89.78	142.38	6205.42	5071.16	1567.07	-958.23	1302.56	0.71	0.29	-0.64	493491.84	1638510.91	N 39 50 52.07 W	80 47 15.02	5.82
	9697.00	89.52	141.03	6205.97	5071.71	1657.05	-1028.86	1358.33	1.53	-0.29	-1.50	493421.31	1638566.68	N 39 50 51.38 W	80 47 14.29	5.84
	9752.00	89.78	143.38	6206.51	5072.25	1746.01	-1099.19	1412.88	2.67	0.28	2.65	493350.99	1638621.21	N 39 50 50.69 W	80 47 13.58	5.87
	9807.00	90.92	146.13	6206.96	5071.70	1835.76	-1172.69	1464.78	3.30	1.27	3.04	493277.50	1638676.13	N 39 50 49.97 W	80 47 12.90	5.89
	9862.00	89.60	146.62	6204.59	5070.33	1924.30	-1246.79	1514.06	0.56	-0.09	0.55	493203.40	1638722.40	N 39 50 48.57 W	80 47 12.25	5.91
	9917.00	89.60	146.67	6204.25	5069.99	2013.80	-1321.96	1563.55	1.38	-1.38	0.06	493128.23	1638771.88	N 39 50 48.51 W	80 47 11.60	5.93
	9972.00	89.25	146.96	6205.14	5070.88	2102.28	-1396.44	1612.26	0.51	-0.39	0.33	493053.78	1638820.59	N 39 50 48.50 W	80 47 10.97	5.95
	10027.00	89.18	146.80	6205.38	5072.13	2191.73	-1471.85	1661.36	0.12	-0.10	-0.07	492979.25	1638869.89	N 39 50 47.04 W	80 47 10.32	5.97
	10082.00	89.25	147.43	6207.62	5073.38	2280.14	-1546.63	1709.61	0.60	0.10	0.60	492903.58	1638919.94	N 39 50 46.31 W	80 47 9.69	5.99
	10137.00	89.25	146.75	6208.80	5074.54	2369.56	-1622.18	1758.51	0.76	0.00	-0.76	492828.34	1638968.84	N 39 50 45.57 W	80 47 9.05	6.01
	10192.00	87.05	145.02	6211.13	5076.87	2441.30	-1691.03	1799.89	6.01	-3.06	-5.18	492769.18	1639008.22	N 39 50 45.00 W	80 47 8.51	6.03
	10247.00	89.25	145.95	6210.48	5076.12	2530.22	-1766.39	1844.24	1.16	-0.07	-0.07	492694.58	1639057.58	N 39 50 44.16 W	80 47 7.67	6.05
	10302.00	90.22	144.01	6216.06	5081.80	2593.06	-1802.55	1891.03	4.89	4.29	2.36	492647.87	1639099.35	N 39 50 43.81 W	80 47 7.32	6.06
	10357.00	88.37	141.76	6216.62	5082.38	2638.02	-1838.43	1918.18	6.47	-4.11	-5.00	492611.79	1639126.50	N 39 50 43.46 W	80 47 6.96	6.08
	10412.00	89.43	141.30	6217.46	5083.20	2682.00	-1872.87	1945.55	2.83	2.41	-1.05	492577.35	1639153.86	N 39 50 43.12 W	80 47 6.61	6.09
	10467.00	89.68	140.91	6217.50	5083.24	2727.00	-1907.90	1973.80	2.49	0.59	-0.87	492542.33	1639181.81	N 39 50 42.78 W	80 47 6.24	6.10
	10522.00	90.41	141.25	6216.36	5082.10	2771.98	-1942.89	2002.06	4.38	4.31	0.76	492507.33	1639210.38	N 39 50 42.44 W	80 47 5.87	6.11
	10577.00	90.85	141.40	6214.33	5080.07	2815.93	-1977.21	2029.53	1.06	1.00	0.34	492473.02	1639237.84	N 39 50 42.10 W	80 47 5.51	6.12
	10632.00	93.03	141.47	6212.02	5077.78	2860.87	-2012.35	2057.54	0.41	0.38	0.16	492437.88	1639265.85	N 39 50 41.76 W	80 47 5.14	6.12
	10687.00	92.42	143.56	6209.88	5075.62	2905.79	-2048.01	2084.90	4.83	-1.38	4.64	492402.22	1639293.21	N 39 50 41.41 W	80 47 4.79	6.13
	10742.00	90.57	144.96	6208.71	5074.45	2950.68	-2084.52	2111.17	5.15	-4.11	3.11	492367.11	1639319.48	N 39 50 41.05 W	80 47 4.44	6.15
	10797.00	90.48	145.12	6208.30	5074.04	2994.55	-2120.58	2138.38	0.42	-0.20	0.36	492329.65	1639344.69	N 39 50 40.70 W	80 47 4.11	6.15
	10852.00	89.25	145.66	6208.41	5074.15	3039.39	-2157.62	2161.94	2.99	-2.73	1.20	492292.62	1639370.25	N 39 50 40.34 W	80 47 3.78	6.16
	10907.00	89.18	145.46	6209.03	5074.77	3084.22	-2194.73	2187.39	0.49	-0.20	-0.44	492255.51	1639395.69	N 39 50 39.98 W	80 47 3.45	6.17
	10962.00	89.16	144.87	6209.69	5075.43	3129.07	-2231.66	2213.09	1.31	0.00	-1.31	492218.58	1639421.39	N 39 50 39.61 W	80 47 3.11	6.18
	10017.00	89.34	145.10	6210.27	5076.01	3172.94	-2267.69	2238.33	0.66	0.41	0.52	492182.55	1639446.63	N 39 50 39.26 W	80 47 2.78	6.19
	10072.00	88.72	145.05	6211.03	5076.77	3217.80	-2304.58	2264.09	1.38	-1.38	-0.11	492146.66	1639472.39	N 39 50 38.90 W	80 47 2.44	6.19
	10127.00	88.37	145.03	6212.17	5077.91	3262.65	-2341.45	2289.87	0.78	-0.78	-0.04	492108.80	1639498.17	N 39 50 38.54 W	80 47 2.11	6.20
	10182.00	88.02	145.02	6213.56	5079.30	3306.50	-2377.49	2315.08	0.80	-0.80	-0.02	492072.76	1639523.38	N 39 50 38.19 W	80 47 1.78	6.21
	10237.00	88.46	144.23	6214.94	5080.68	3351.37	-2414.16	2341.12	2.01	0.98	-1.76	492038.09	1639549.41	N 39 50 37.83 W	80 47 1.44	6.22
	10292.00	88.46	144.81	6216.15	5081.89	3396.25	-2450.79	2367.23	1.29	0.00	1.29	491999.46	1639575.52	N 39 50 37.47 W	80 47 1.09	6.23
	10347.00	89.18	144.82	6217.08	5082.82	3441.12	-2487.52	2393.24	1.81	1.55	-0.42	491962.74	1639601.51	N 39 50 37.11 W	80 47 0.75	6.23
	10402.00	89.34	145.08	6217.87	5083.41	3486.00	-2524.31	2419.12	1.02	-0.40	1.02	491924.31	1639627.41	N 39 50 36.75 W	80 47 0.42	6.24
	10457.00	88.90	145.57	6218.37	5084.11	3530.84	-2561.31	2444.72	1.46	-0.98	1.09	491888.95	1639653.01	N 39 50 36.39 W	80 47 0.08	6.25
	10512.00	89.16	145.83	6219.11	5084.85	3574.66	-2597.85	2469.51	0.84	0.59	0.59	491852.61	1639677.80	N 39 50 36.03 W	80 46 59.76	6.26
	10567.00	89.24	145.87	6219.70	5085.44	3619.48	-2634.85	2494.83	0.54	0.40	-0.36	491816.42	1639703.12	N 39 50 35.67 W	80 46 59.42	6.26
	10622.00	89.37	146.57	6220.69	5086.24	3664.26	-2671.90	2519.91	2.84	-2.15						

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Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ° °)	Longitude (E/W ° ° °)	Directional Difficulty Index
		1	607.000	648.000	Act Stns	30.000	30.000	SLB_MWD-STD		Original Borehole / Noble Energy MND-3D-HS Gyro+MWD 0ft to						
		1	648.000	1189.000	Act Stns	30.000	30.000	SLB_NSG+MSHOT		Original Borehole / Noble Energy MND-3D-HS Gyro+MWD 0ft to						
		1	1189.000	2568.000	Act Stns	30.000	30.000	SLB_MWD-STD		Original Borehole / Noble Energy MND-3D-HS Gyro+MWD 0ft to						
		1	2568.000	2760.000	Act Stns	30.000	30.000	SLB_INC_ONLY<10		Original Borehole / Noble Energy MND-3D-HS Gyro+MWD 0ft to						
		1	2760.000	12756.000	Act Stns	30.000	30.000	SLB_MWD-STD		Original Borehole / Noble Energy MND-3D-HS Gyro+MWD 0ft to						
		1	12756.000	12823.000	Act Stns	30.000	30.000	SLB_BLIND+TREND		Original Borehole / Noble Energy MND-3D-HS Gyro+MWD 0ft to						

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Noble Energy



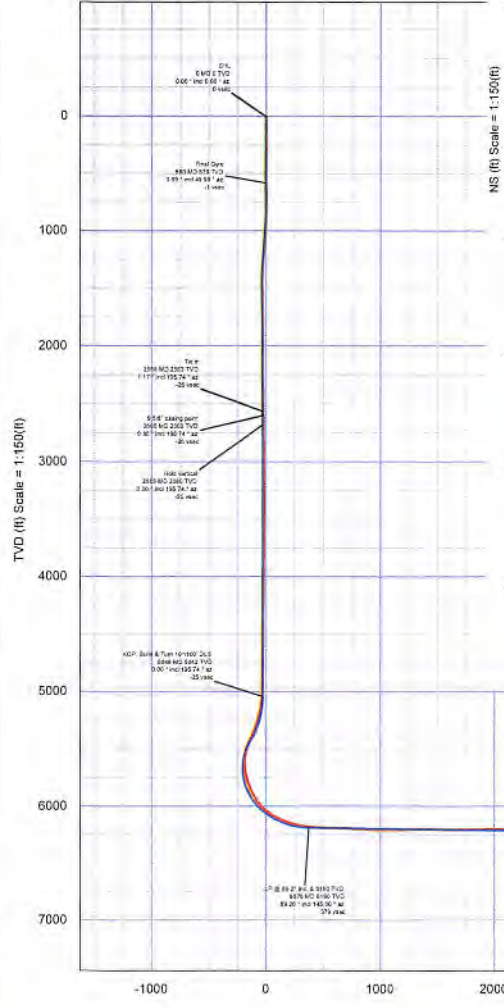
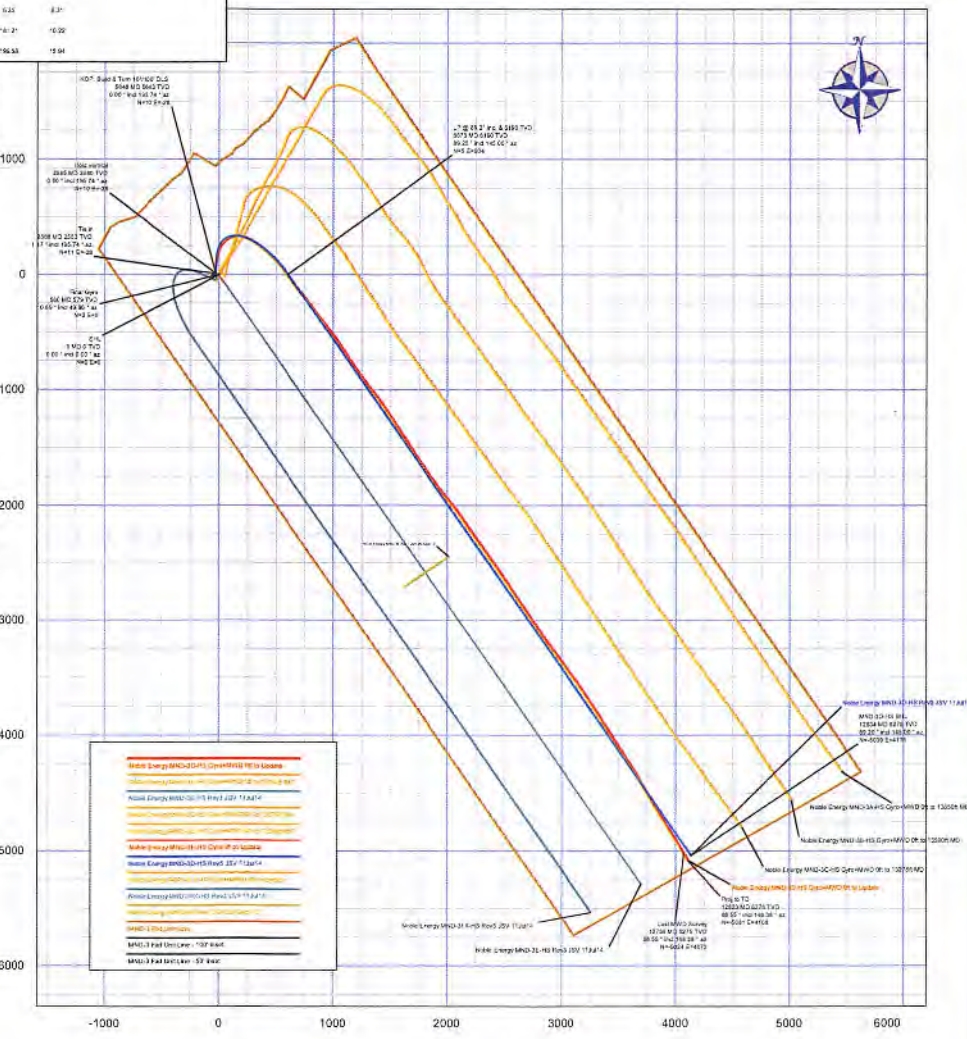
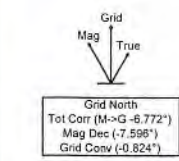
Borehole: Original Borehole	Well: MND-3D-HS	Field: WV Marshall County (NAD 27)	Structure: Precision 543
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Gravity & Magnetic Parameters		Surface Location		Miscellaneous	
Model: HGGM 2013	Dip: 67.31°	Date: 11-Jul-2014	NAD27 West Virginia State Plane, Northern Zone, US Feet	Slot: MND-3D-HS	TVD Ref: KB(1134.26ft above MSL)
MagDec: -7.596°	FS: 52270.435mT	Gravity FS: 989.356mgals (9.80665 Based)	Lat: N 39 51 1.39	Northing: 494455.123ftUS	Grid Conv: -0.8241*
			Lon: W 80 47 31.89	Easting: 1637258.42ftUS	Scale Fact: 0.99994839
				Plan: MND-3D-HS Gyro+MWD Off to Update	

PHIT	Seq	Survey Tool	Version/Tool	Hook Size (in)	Casing Size (in)	MWD From (ft)	MWD To (ft)	Survey Frequency (Hz)	ECI Dev. (ft)	ECI Str. (ft)	Comments/Contingency
-	1	SLS_NGCHMHOT	Open/SHY	30	30	0	19.9	Act Str	1.55	1.55	
-	2	SLS_NGCHMHOT		30	30	18.5	578.5	Act Str	2.18	2.18	
-	3	SLS_NGCHMHOT		30	30	579.5	907	Act Str	2.47	2.47	
-	4	SLS_MWD-Gyro		30	30	907	948	Act Str	2.42	2.42	
-	5	SLS_NGCHMHOT		30	30	948	1199	Act Str	3.25	3.13	
-	6	SLS_NGCHMHOT		30	30	1199	2960	Act Str	3.84	3.87	
-	7	SLS_MWD-Gyro		30	30	2960	2700	Act Str	5.25	8.31	
-	8	SLS_MWD-Gyro		30	30	2700	2700	Act Str	16.21	15.00	
-	9	SLS_MWD-Gyro		30	30	2700	2625	Act Str	16.53	15.84	

Target Name	Drain	Dimension	Latitude	Longitude	Northing	Easting	TVD	VSec	NAD27	Local Coord
MND-3 Flat Line	Flowline	Max	N 39 51 1.77	W 80 47 31.30	494447.00	1637258.16	1134.26	-13.09	41.34	29.75
MND-3 Flat Line -100' max	Flowline	Max	N 39 51 1.77	W 80 47 31.52	494447.00	1637258.16	1134.26	-13.09	41.34	29.75
MND-3 Flat Line -200' max	Flowline	Max	N 39 51 1.77	W 80 47 32.00	494447.00	1637258.16	1134.26	-13.09	41.34	29.75

Critical Point	MD	RCL	AZIM	TVD	VSEC	R/P (ft)	R/P (ft)	GR (ft)	GR (ft)
Top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Head	579.35	0.00	49.96	579.43	-1.30	1.41	0.00	0.09	0.09
End MWD Survey	12719.00	89.55	148.33	6271.53	1847.00	-5222.62	4227.54	0.75	0.75
True N	12823.00	89.55	148.33	6271.53	1852.33	-5206.64	4236.46	0.96	0.96



Vertical Section (ft) Azim = 140.623° Scale = 1:150(ft) Origin = 0N/S, 0E/W

CONTROLLED

Doc ID: _____

Revision: _____

Scale: _____

Date: _____

Drawn By: _____

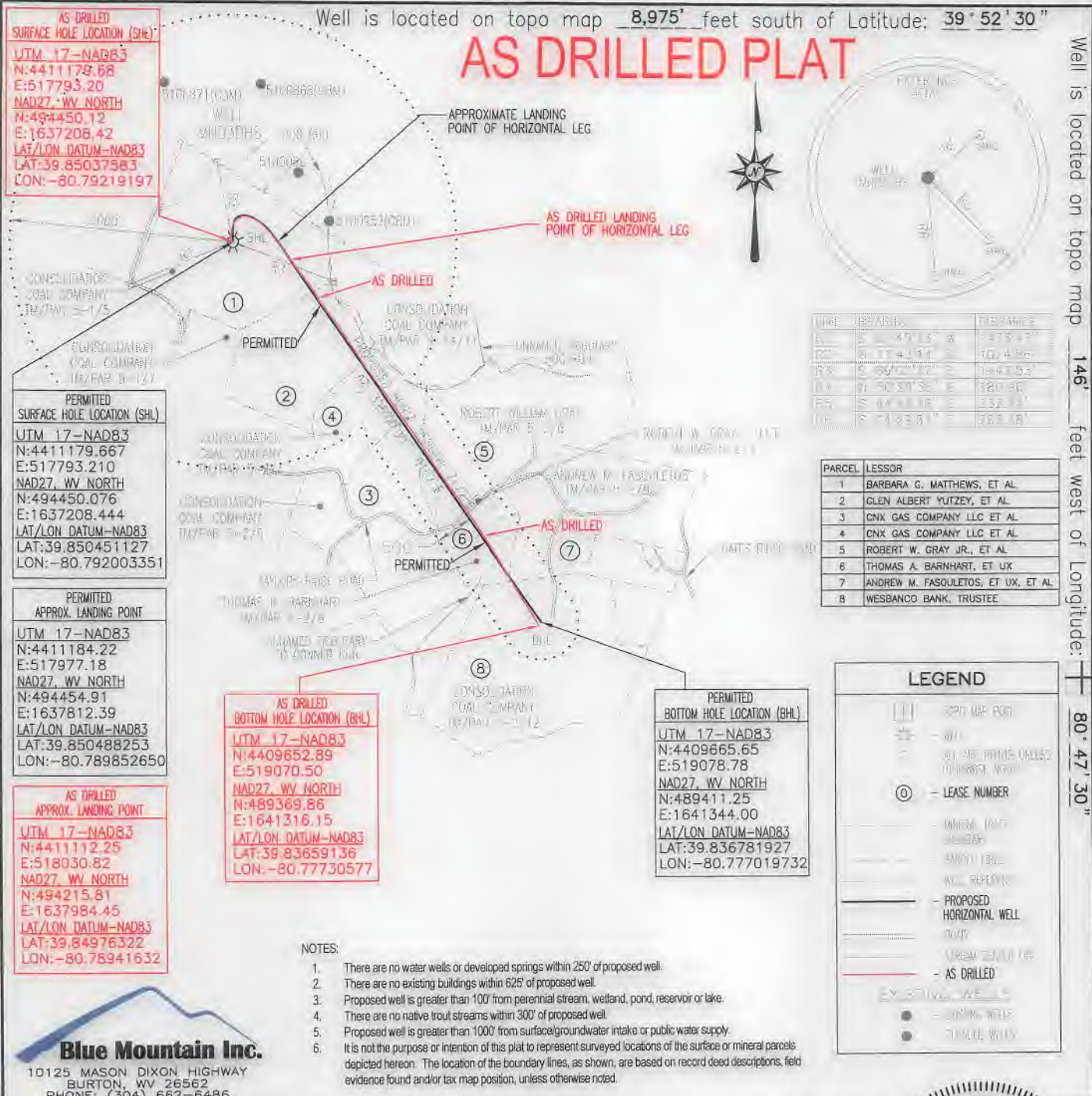
Checked: _____

Company: _____

Well is located on topo map 8,975' feet south of Latitude: 39° 52' 30"

AS DRILLED PLAT

Well is located on topo map 146' feet west of Longitude: 80° 47' 30"



Blue Mountain Inc.
 10125 MASON DIXON HIGHWAY
 BURTON, WV 26562
 PHONE: (304) 662-6486

FILE #: MND3DHS-AS DRILLED
 DRAWING #: MND3DHS-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: *George D. Six*
 R.P.E.: _____ L.L.S.: P.S. No. 2000



(+) 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 #: MND3DHS-AS DRILLED
 API WELL #: 47 51 01740
 STATE COUNTY PERMIT

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

WATERSHED: SHORT CREEK ELEVATION: 1126.02'

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: 560.513±

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: 12,921'±

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 8,975' feet south of Latitude: 39° 52' 30"

AS DRILLED PLAT

Well is located on topo map 146' feet west of Longitude: 80° 47' 30"

AS DRILLED SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83
 N:4411179.68
 E:517793.20
 NAD27 WV NORTH
 N:494450.12
 E:1637208.42
 LAT/LON DATUM-NAD83
 LAT:39.85037583
 LON:-80.79219197

PERMITTED SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83
 N:4411179.667
 E:517793.210
 NAD27 WV NORTH
 N:494450.076
 E:1637208.444
 LAT/LON DATUM-NAD83
 LAT:39.850451127
 LON:-80.792003351

PERMITTED APPROX. LANDING POINT
 UTM 17-NAD83
 N:4411184.22
 E:517977.18
 NAD27 WV NORTH
 N:494454.91
 E:1637812.39
 LAT/LON DATUM-NAD83
 LAT:39.850488253
 LON:-80.789852650

AS DRILLED APPROX. LANDING POINT
 UTM 17-NAD83
 N:4411112.25
 E:518030.82
 NAD27 WV NORTH
 N:494215.81
 E:1637984.45
 LAT/LON DATUM-NAD83
 LAT:39.84976322
 LON:-80.78941632

AS DRILLED BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83
 N:4409652.89
 E:519070.50
 NAD27 WV NORTH
 N:489369.86
 E:1641316.15
 LAT/LON DATUM-NAD83
 LAT:39.83659136
 LON:-80.77730577

PERMITTED BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83
 N:4409665.65
 E:519078.78
 NAD27 WV NORTH
 N:489411.25
 E:1641344.00
 LAT/LON DATUM-NAD83
 LAT:39.836781927
 LON:-80.777019732



NOTES:

- There are no water wells or developed springs within 250' of proposed well.
- There are no existing buildings within 625' of proposed well.
- Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
- There are no native trout streams within 300' of proposed well.
- Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
- It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

LINE	BEARING	DISTANCE
R1	S 87°45'13" W	1473.47'
R2	N 1°14'51" W	1094.66'
R3	S 48°02'37" E	1448.65'
R4	U 50°39'56" E	180.98'
R5	S 44°53'46" E	232.44'
R6	S 04°29'51" E	1263.48'

PARCEL	LESSOR
1	BARBARA G. MATTHEWS, ET AL
2	GLEN ALBERT YUTZEY, ET AL
3	CNX GAS COMPANY LLC ET AL
4	CNX GAS COMPANY LLC ET AL
5	ROBERT W. GRAY JR., ET AL
6	THOMAS A. BARNHART, ET UX
7	ANDREW M. FASOULETOS, ET UX, ET AL
8	WESBANCO BANK, TRUSTEE

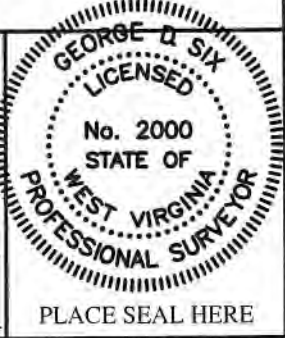
LEGEND

- 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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 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