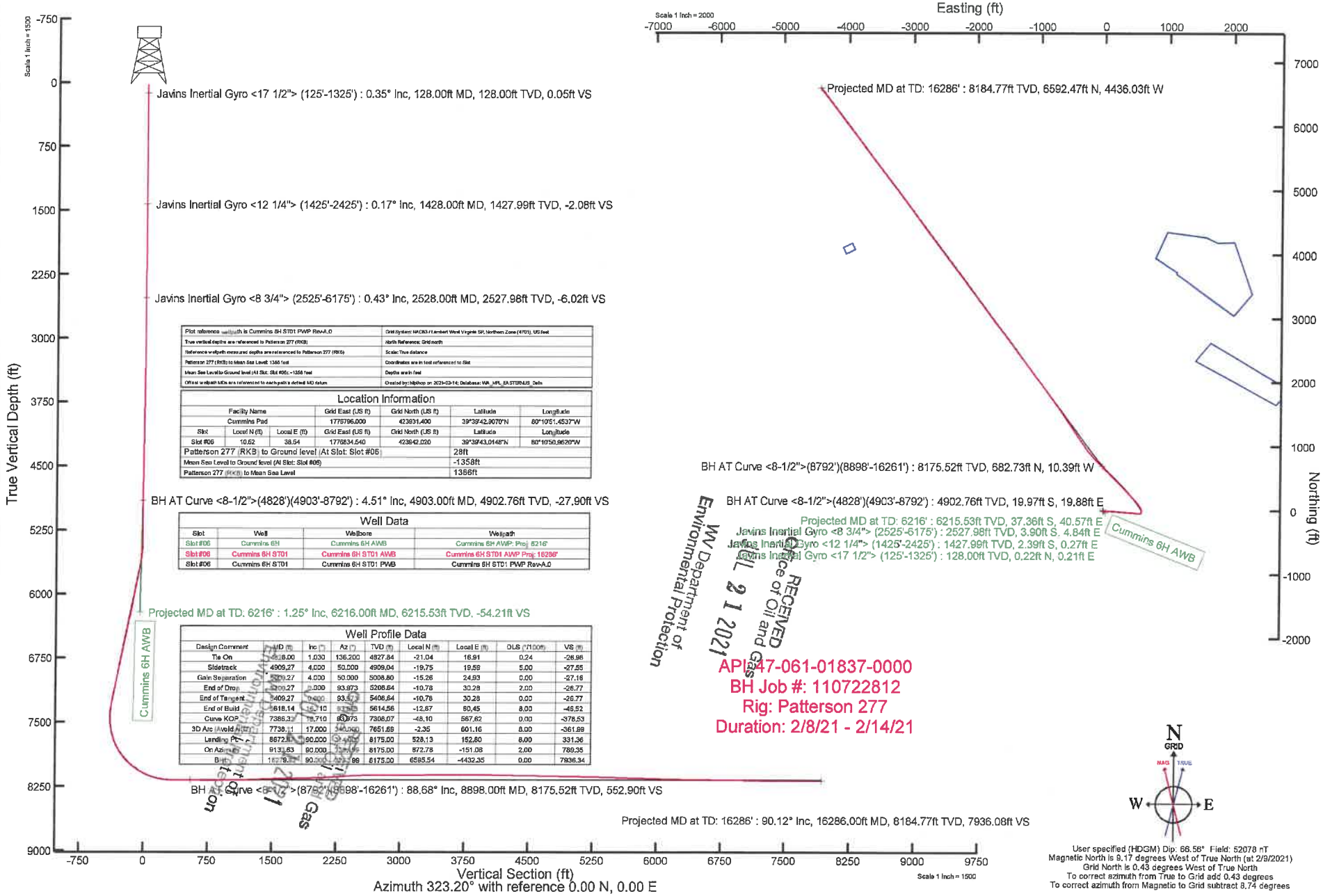
NORTHEAST NATURAL ENERGY, LLC

Location: Monongalia County, WV
Field: Monongalia
Facility: Cummins Pad

Slot: Slot #06
Well: Cummins 6H ST01
Wellbore: Cummins 6H ST01 PWB



Plot reference wellpath is Cummins 6H ST01 PWP Rev-A.0	Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet
True vertical depths are referenced to Patterson 277 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to Patterson 277 (RKB)	Scale: True distance
Patterson 277 (RKB) to Mean Sea Level: 1386 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot #06): -1358 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: hbjohnson on 2021-02-14; Database: WA_MPL_EASTERNUS_Defn

Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Cummins Pad			1775796.000	423931.400	39°39'42.9070"N	80°10'51.4537"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot #06	10.62	38.54	1776834.540	423942.020	39°39'43.0148"N	80°10'50.9620"W
Patterson 277 (RKB) to Ground level (At Slot: Slot #06)					28ft	
Mean Sea Level to Ground level (At Slot: Slot #06)					-1358ft	
Patterson 277 (RKB) to Mean Sea Level					1386ft	

Well Data

Slot	Well	Wellbore	Wellpath
Slot #06	Cummins 6H	Cummins 6H AWB	Cummins 6H AWP: Proj 6216'
Slot #06	Cummins 6H ST01	Cummins 6H ST01 AWB	Cummins 6H ST01 AWP Proj: 16286'
Slot #06	Cummins 6H ST01	Cummins 6H ST01 PWB	Cummins 6H ST01 PWP Rev-A.0

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	4828.00	1.030	136.200	4827.84	-21.04	16.91	0.24	-26.98
Sidetrack	4909.27	4.000	50.000	4909.04	-19.75	19.59	5.00	-27.55
Gain Separation	5009.27	4.000	50.000	5008.80	-15.26	24.93	0.00	-27.16
End of Drop	5109.27	2.000	93.873	5208.64	-10.78	30.28	2.00	-26.77
End of Tangent	5409.27	0.000	93.873	5408.64	-10.78	30.28	0.00	-26.77
End of Build	5618.14	16.710	[illegible]	5614.56	-12.87	50.45	8.00	-46.52
Curve KOP	7386.31	16.710	80.973	7308.07	-48.10	567.62	0.00	-378.53
3D Arc (Avoid Anti-Collision)	7738.11	17.000	340.000	7651.69	-2.35	601.16	8.00	-361.99
Landing Point	8872.83	90.000	[illegible]	8175.00	528.13	152.80	8.00	331.36
On Azimuth	9131.83	90.000	[illegible]	8175.00	872.78	-151.08	2.00	789.35
Bit	16279.[illegible]	90.000	[illegible]	8175.00	6595.54	-4432.35	0.00	7936.34

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Office of Oil and Gas
APR 2 1 2021
WV Department of Environmental Protection

API 47-061-01837-0000
BH Job #: 110722812
Rig: Patterson 277
Duration: 2/8/21 - 2/14/21

User specified (HDGM) Dip: 66.56° Field: 52078 nT
Magnetic North is 9.17 degrees West of True North (at 2/9/2021)
Grid North is 0.43 degrees West of True North
To correct azimuth from True to Grid add 0.43 degrees
To correct azimuth from Magnetic to Grid subtract 8.74 degrees