

HG ENERGY

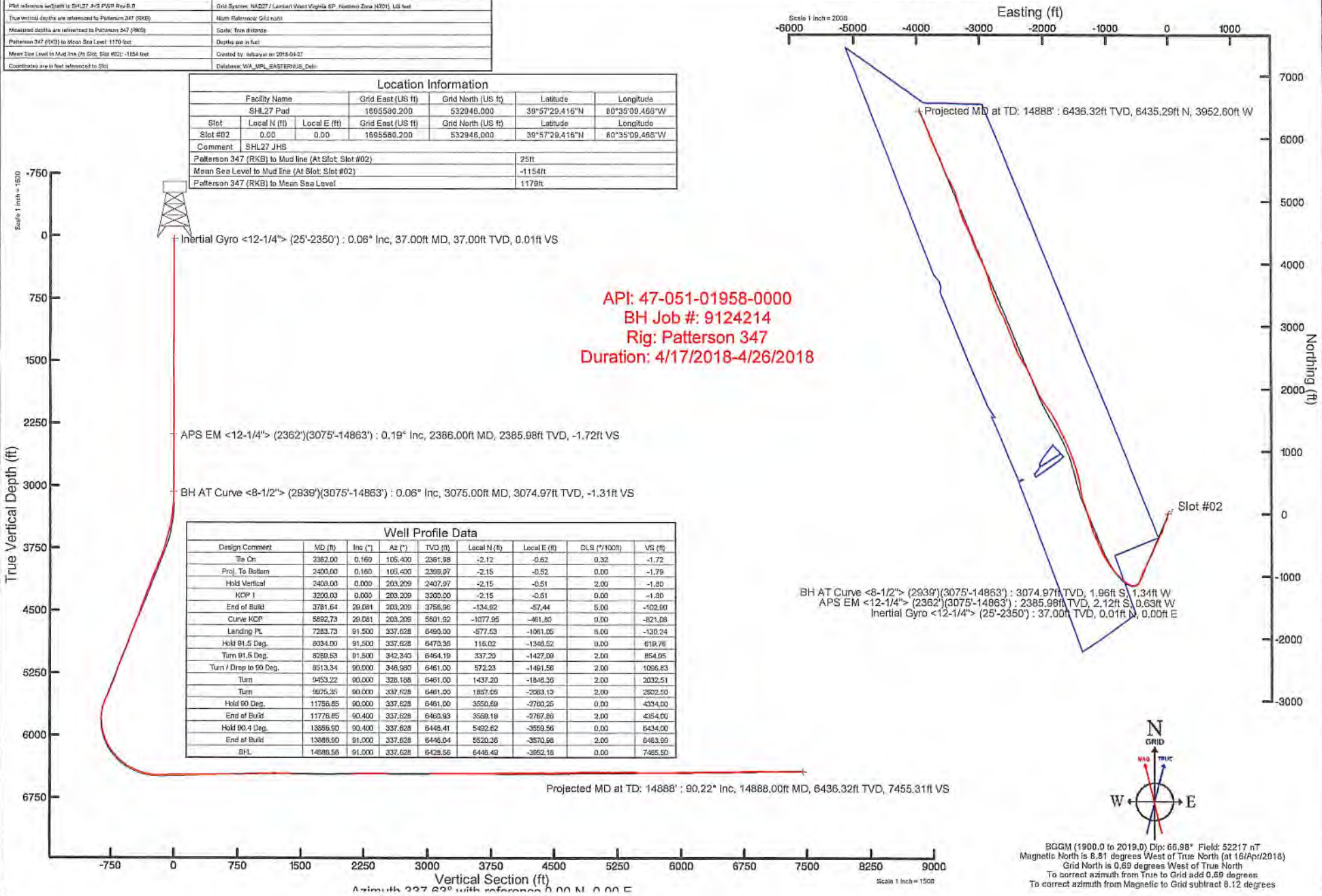
Location: Marshall County, WV
 Field: Marshall (NAD27 SP Northern Zone 4701)
 Facility: SHL27 Pad

Slot: Slot #02
 Well: SHL27 JHS
 Wellbore: SHL27 JHS PWB

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Plot reference wellpath is SHL27 JHS PWB Rev B.0	Grid System: NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet
True vertical depths are referenced to Patterson 347 (RKB)	North Reference: GCS north
Measured depths are referenced to Patterson 347 (RKB)	Scale: True distance
Patterson 347 (RKB) to Mean Sea Level: 1179 feet	Depth is in feet
Mean Sea Level to Mud line (At Slot, Slot #02): -1154 feet	Created by: adaryai on 2018-04-27
Coordinates are in feet referenced to GCS	Database: WA_MPL_EASTERNUS_Cells

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SHL27 Pad	1895590.200	532948.000	39°57'29.416"N	80°35'09.466"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #02	0.00	0.00	1895580.200	532948.000
			Latitude	Longitude
			39°57'29.416"N	80°35'09.466"W
Comment: SHL27 JHS				
Patterson 347 (RKB) to Mud line (At Slot, Slot #02)			25ft	
Mean Sea Level to Mud line (At Slot, Slot #02)			-1154ft	
Patterson 347 (RKB) to Mean Sea Level			1179ft	



API: 47-051-01958-0000
 BH Job #: 9124214
 Rig: Patterson 347
 Duration: 4/17/2018-4/26/2018

Well Profile Data								
Design Comment	MD (ft)	Incl (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (*/100ft)	VS (ft)
Title On	2362.00	0.169	105.400	2361.98	-2.12	-0.62	0.32	-1.72
Proj. To Bottom	2400.00	0.160	105.400	2369.97	-2.15	-0.52	0.00	-1.79
Hold Vertical	2400.00	0.000	203.209	2407.97	-2.15	-0.51	2.00	-1.80
KOP 1	3200.00	0.000	203.209	3200.00	-2.15	-0.51	0.00	-1.80
End of Build	3781.64	29.081	203.209	3758.96	-134.62	-57.44	5.00	-102.90
Curve KCF	5892.73	29.081	203.209	5501.92	-1077.95	-61.80	0.00	-821.08
Landing Pt.	7283.73	91.500	337.628	6490.00	-577.53	-1061.05	8.00	-130.24
Hold 91.5 Deg.	8034.00	91.500	337.628	6470.36	116.02	-1346.52	0.00	619.76
Turn 91.5 Deg.	8289.63	91.500	342.340	6464.19	337.20	-1427.09	2.00	854.95
Turn / Drop to 90 Deg.	8513.34	90.000	346.990	6461.00	572.23	-1461.56	2.00	1056.83
Turn	9453.22	90.000	328.188	6461.00	1437.20	-1848.39	2.00	2032.51
Turn	9625.24	90.000	337.628	6461.00	1857.65	-2063.13	2.00	2502.50
Hold 90 Deg.	11756.85	90.000	337.628	6461.00	3550.69	-2700.25	0.00	4334.00
End of Build	11776.85	90.400	337.628	6463.93	3559.18	-2707.66	2.00	4344.00
Hold 90.4 Deg.	13856.90	90.400	337.628	6448.41	5492.62	-3559.56	0.00	6434.00
End of Build	13886.90	91.000	337.628	6448.04	5520.36	-3570.96	2.00	6463.99
BHL	14888.96	91.000	337.628	6428.56	6446.49	-3562.16	0.00	7465.50

BH AT Curve <8-1/2"> (2939°)(3075'-14863') : 3074.97ft TVD, 1.96ft S, 1.31ft W
 APS EM <12-1/4"> (2362°)(3075'-14863') : 2385.98ft TVD, 2.12ft S, 0.63ft W
 Inertial Gyro <12-1/4"> (25'-2350') : 37.00ft TVD, 0.01ft N, 0.00ft E

Projected MD at TD: 14888' : 90.22° Inc, 14888.00ft MD, 6436.32ft TVD, 7455.31ft VS

BGGM (1900.0 to 2019.0) Dip: 66.98° Field: 52217 nT
 Magnetic North is 8.81 degrees West of True North (at 16/Apr/2018)
 Grid North is 0.69 degrees West of True North
 To correct azimuth from True to Grid add 0.69 degrees
 To correct azimuth from Magnetic to Grid subtract 8.12 degrees

Actual Wellpath Report

SHL27 JHS AWP Proj: 14888'

Page 1 of 11

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REFERENCE WELLPATH IDENTIFICATION

Operator	HG ENERGY	Slot	Slot #02
Area	Marshall County, WV	Well	SHL27 JHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 JHS AWB
Facility	SHL27 Pad		

REPORT SETUP INFORMATION

Projection System	NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Edsaryar
Scale	0.999958	Report Generated	27/Apr/2018 at 18:20
Convergence at slot	0.69° West	Database/Source file	WA_MPL_EASTERNUS_Defn/SHL27_JHS_AWP_Proj_14888_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	1695580.20	532946.00	39°57'29.416"N	80°35'09.466"W
Facility Reference Pt			1695580.20	532946.00	39°57'29.416"N	80°35'09.466"W
Field Reference Pt			1695580.20	532946.00	39°57'29.416"N	80°35'09.466"W

WELLPATH DATUM

Calculation method	Minimum curvature	Patterson 347 (RKB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Patterson 347 (RKB) to Mean Sea Level	1179.00ft
Vertical Reference Pt	Patterson 347 (RKB)	Patterson 347 (RKB) to Mud Line at Slot (Slot #02)	25.00ft
MD Reference Pt	Patterson 347 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	337.63°

Actual Wellpath Report

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Page 2 of 11

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Area	Marshall County, WV		Well	SHL27 JHS
Field	Marshall (NAD27 SP Northern Zone 4701)		Wellbore	SHL27 JHS AWB
Facility	SHL27 Pad			

WELLPATH DATA (194 stations) † = interpolated/extrapolated station																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	
0.00†	0.000	338.000	0.00	0.00	0.00	0.00	1695580.20	532946.00	39°57'29.416"N	80°35'09.466"W	0.00	0.000	0.00	0.00	0.00	
25.00	0.000	338.000	25.00	0.00	0.00	0.00	1695580.20	532946.00	39°57'29.416"N	80°35'09.466"W	0.00	0.000	0.00	0.00	0.00	
37.00	0.060	338.000	37.00	0.01	0.01	0.00	1695580.20	532946.01	39°57'29.416"N	80°35'09.466"W	0.01	338.000	0.50	0.50	-183.33	
62.00	0.200	283.400	62.00	0.04	0.03	-0.05	1695580.15	532946.03	39°57'29.416"N	80°35'09.467"W	0.06	299.460	0.69	0.56	-218.40	
87.00	0.170	280.700	87.00	0.09	0.05	-0.13	1695580.07	532946.05	39°57'29.416"N	80°35'09.468"W	0.14	289.316	0.12	-0.12	-10.80	
112.00	0.400	209.000	112.00	0.06	-0.02	-0.21	1695579.99	532945.98	39°57'29.416"N	80°35'09.469"W	0.21	263.298	1.53	0.92	-286.80	
137.00	0.100	80.200	137.00	0.00	-0.10	-0.23	1695579.97	532945.90	39°57'29.415"N	80°35'09.469"W	0.25	246.972	1.88	-1.20	-515.20	
162.00	0.490	212.000	162.00	-0.07	-0.18	-0.26	1695579.94	532945.82	39°57'29.414"N	80°35'09.469"W	0.32	235.065	2.25	1.56	527.20	
187.00	0.140	128.600	187.00	-0.16	-0.29	-0.30	1695579.90	532945.71	39°57'29.413"N	80°35'09.470"W	0.42	225.238	1.98	-1.40	-333.60	
212.00	0.420	239.000	212.00	-0.20	-0.36	-0.35	1695579.85	532945.64	39°57'29.412"N	80°35'09.470"W	0.50	224.264	1.95	1.12	441.60	
237.00	0.100	96.300	237.00	-0.22	-0.41	-0.41	1695579.79	532945.59	39°57'29.412"N	80°35'09.471"W	0.58	224.870	2.01	-1.28	-570.80	
262.00	0.520	233.600	262.00	-0.26	-0.48	-0.48	1695579.72	532945.52	39°57'29.411"N	80°35'09.472"W	0.68	224.883	2.39	1.68	549.20	
287.00	0.060	276.700	287.00	-0.28	-0.54	-0.58	1695579.62	532945.46	39°57'29.411"N	80°35'09.473"W	0.80	226.859	1.91	-1.84	172.40	
312.00	0.330	187.800	312.00	-0.34	-0.61	-0.60	1695579.60	532945.39	39°57'29.410"N	80°35'09.474"W	0.86	224.508	1.34	1.08	-355.60	
337.00	0.680	238.800	337.00	-0.42	-0.76	-0.74	1695579.46	532945.24	39°57'29.408"N	80°35'09.475"W	1.06	224.163	2.15	1.40	204.00	
362.00	0.500	251.800	362.00	-0.44	-0.87	-0.97	1695579.23	532945.13	39°57'29.407"N	80°35'09.478"W	1.31	228.028	0.89	-0.72	52.00	
387.00	0.270	251.100	386.99	-0.43	-0.93	-1.13	1695579.07	532945.07	39°57'29.407"N	80°35'09.480"W	1.46	230.657	0.92	-0.92	-2.80	
412.00	0.530	201.100	411.99	-0.51	-1.05	-1.23	1695578.97	532944.95	39°57'29.405"N	80°35'09.482"W	1.62	229.366	1.65	1.04	-200.00	
437.00	0.800	246.300	436.99	-0.60	-1.23	-1.43	1695578.77	532944.77	39°57'29.404"N	80°35'09.484"W	1.89	229.247	2.27	1.08	180.80	
462.00	0.520	241.700	461.99	-0.61	-1.36	-1.69	1695578.51	532944.64	39°57'29.402"N	80°35'09.487"W	2.17	231.248	1.14	-1.12	-18.40	
487.00	0.380	200.100	486.99	-0.68	-1.49	-1.82	1695578.38	532944.51	39°57'29.401"N	80°35'09.489"W	2.35	230.704	1.38	-0.56	-166.40	
512.00	0.510	267.600	511.99	-0.71	-1.57	-1.96	1695578.24	532944.43	39°57'29.400"N	80°35'09.491"W	2.51	231.265	2.02	0.52	270.00	
537.00	0.110	150.500	536.99	-0.69	-1.60	-2.06	1695578.14	532944.40	39°57'29.400"N	80°35'09.492"W	2.60	232.195	2.27	-1.60	-468.40	
562.00	0.440	214.200	561.99	-0.77	-1.70	-2.10	1695578.10	532944.30	39°57'29.399"N	80°35'09.493"W	2.70	231.061	1.61	1.32	254.80	
587.00	0.580	245.800	586.99	-0.83	-1.83	-2.27	1695577.93	532944.17	39°57'29.398"N	80°35'09.495"W	2.91	231.147	1.23	0.56	126.40	
612.00	0.150	187.900	611.99	-0.86	-1.91	-2.39	1695577.81	532944.09	39°57'29.397"N	80°35'09.496"W	3.06	231.326	2.06	-1.72	-231.60	
662.00	0.180	152.200	661.99	-0.99	-2.05	-2.36	1695577.84	532943.95	39°57'29.395"N	80°35'09.496"W	3.12	229.086	0.21	0.06	-71.40	
712.00	0.280	215.600	711.99	-1.14	-2.21	-2.39	1695577.81	532943.79	39°57'29.394"N	80°35'09.496"W	3.26	227.241	0.51	0.20	126.80	
762.00	0.370	298.300	761.99	-1.08	-2.24	-2.61	1695577.59	532943.76	39°57'29.394"N	80°35'09.499"W	3.44	229.377	0.87	0.18	165.40	
812.00	0.200	52.000	811.99	-0.93	-2.11	-2.68	1695577.52	532943.89	39°57'29.395"N	80°35'09.500"W	3.41	231.841	0.97	-0.34	227.40	

Actual Wellpath Report

SHL27 JHS AWP Proj: 14888'

Page 3 of 11

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REFERENCE WELLPATH IDENTIFICATION			
Operator	HG ENERGY	Slot	Slot #02
Area	Marshall County, WV	Well	SHL27 JHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 JHS AWB
Facility	SHL27 Pad		

WELLPATH DATA (194 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Build Rate ["/100ft]	Turn Rate ["/100ft]
862.00	0.260	226.800	861.99	-0.94	-2.13	-2.70	1695577.50	532943.87	39°57'29.395"N	80°35'09.500"W	3.44	231.671	0.92	0.12	349.60
912.00	0.190	53.300	911.99	-0.96	-2.16	-2.71	1695577.49	532943.84	39°57'29.394"N	80°35'09.500"W	3.47	231.473	0.90	-0.14	-347.00
962.00	0.220	139.600	961.99	-1.04	-2.18	-2.58	1695577.62	532943.82	39°57'29.394"N	80°35'09.499"W	3.38	229.802	0.56	0.06	172.60
1012.00	0.200	286.500	1011.99	-1.07	-2.23	-2.60	1695577.60	532943.77	39°57'29.394"N	80°35'09.499"W	3.43	229.417	0.81	-0.04	293.80
1062.00	0.200	33.800	1061.99	-0.97	-2.13	-2.64	1695577.56	532943.87	39°57'29.395"N	80°35'09.499"W	3.39	231.051	0.64	0.00	214.60
1112.00	0.310	196.000	1111.99	-1.03	-2.19	-2.63	1695577.57	532943.81	39°57'29.394"N	80°35'09.499"W	3.42	230.183	1.01	0.22	324.40
1162.00	0.200	10.900	1161.98	-1.06	-2.24	-2.65	1695577.55	532943.76	39°57'29.394"N	80°35'09.500"W	3.47	229.840	1.02	-0.22	349.80
1212.00	0.200	74.500	1211.98	-1.00	-2.13	-2.55	1695577.65	532943.87	39°57'29.395"N	80°35'09.498"W	3.32	230.159	0.42	0.00	127.20
1262.00	0.200	262.400	1261.98	-0.98	-2.11	-2.55	1695577.65	532943.89	39°57'29.395"N	80°35'09.498"W	3.31	230.342	0.80	0.00	-344.20
1312.00	0.910	170.400	1311.98	-1.35	-2.52	-2.57	1695577.63	532943.48	39°57'29.391"N	80°35'09.499"W	3.60	225.602	1.88	1.42	-184.00
1362.00	0.360	14.300	1361.98	-1.61	-2.76	-2.47	1695577.73	532943.24	39°57'29.388"N	80°35'09.497"W	3.70	221.814	2.50	-1.10	-312.20
1412.00	0.200	115.300	1411.98	-1.55	-2.64	-2.35	1695577.85	532943.36	39°57'29.390"N	80°35'09.496"W	3.54	221.634	0.89	-0.32	202.00
1462.00	0.260	11.300	1461.98	-1.52	-2.57	-2.25	1695577.95	532943.43	39°57'29.390"N	80°35'09.494"W	3.41	221.190	0.73	0.12	-208.00
1512.00	0.200	357.800	1511.98	-1.34	-2.37	-2.23	1695577.97	532943.63	39°57'29.392"N	80°35'09.494"W	3.25	223.241	0.16	-0.12	-27.00
1562.00	0.040	143.400	1561.98	-1.28	-2.30	-2.22	1695577.98	532943.70	39°57'29.393"N	80°35'09.494"W	3.20	224.048	0.47	-0.32	291.20
1612.00	0.200	124.700	1611.98	-1.37	-2.36	-2.14	1695578.06	532943.64	39°57'29.392"N	80°35'09.493"W	3.19	222.190	0.33	0.32	-37.40
1662.00	0.300	38.100	1661.98	-1.38	-2.31	-1.99	1695578.21	532943.69	39°57'29.393"N	80°35'09.491"W	3.04	220.737	0.70	0.20	-173.20
1712.00	0.230	336.100	1711.98	-1.21	-2.11	-1.95	1695578.25	532943.89	39°57'29.395"N	80°35'09.491"W	2.87	222.666	0.56	-0.14	-124.00
1762.00	0.210	126.200	1761.98	-1.19	-2.07	-1.91	1695578.29	532943.93	39°57'29.395"N	80°35'09.490"W	2.82	222.687	0.85	-0.04	300.20
1812.00	0.420	27.500	1811.98	-1.15	-1.97	-1.75	1695578.45	532944.03	39°57'29.396"N	80°35'09.488"W	2.64	221.752	0.99	0.42	-197.40
1862.00	0.150	180.500	1861.98	-1.09	-1.87	-1.67	1695578.53	532944.13	39°57'29.397"N	80°35'09.487"W	2.51	221.796	1.12	-0.54	306.00
1912.00	0.020	290.500	1911.98	-1.15	-1.93	-1.68	1695578.52	532944.07	39°57'29.397"N	80°35'09.487"W	2.56	221.011	0.32	-0.26	220.00
1962.00	0.310	83.800	1961.98	-1.18	-1.91	-1.55	1695578.65	532944.09	39°57'29.397"N	80°35'09.486"W	2.46	219.065	0.66	0.58	306.60
2012.00	0.140	151.700	2011.98	-1.28	-1.95	-1.39	1695578.81	532944.05	39°57'29.396"N	80°35'09.483"W	2.40	215.439	0.58	-0.34	135.80
2062.00	0.220	339.000	2061.98	-1.24	-1.92	-1.40	1695578.80	532944.08	39°57'29.397"N	80°35'09.484"W	2.37	216.049	0.72	0.16	-345.40
2112.00	0.260	61.900	2111.98	-1.13	-1.77	-1.33	1695578.87	532944.23	39°57'29.398"N	80°35'09.483"W	2.22	216.852	0.64	0.08	165.80
2162.00	0.180	140.800	2161.98	-1.20	-1.78	-1.18	1695579.02	532944.22	39°57'29.398"N	80°35'09.481"W	2.14	213.518	0.57	-0.16	157.80
2212.00	0.190	111.700	2211.98	-1.33	-1.87	-1.05	1695579.15	532944.13	39°57'29.397"N	80°35'09.479"W	2.15	209.351	0.19	0.02	-58.20
2262.00	0.250	100.200	2261.98	-1.45	-1.92	-0.87	1695579.33	532944.08	39°57'29.397"N	80°35'09.477"W	2.11	204.316	0.15	0.12	-23.00
2312.00	0.200	156.400	2311.98	-1.59	-2.02	-0.73	1695579.47	532943.98	39°57'29.396"N	80°35'09.475"W	2.15	199.764	0.43	-0.10	112.40

Actual Wellpath Report

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Page 4 of 11

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Field	Marshall (NAD27 SP Northern Zone 4701)		Wellbore	SHL27 JHS AWB
Facility	SHL27 Pad			

WELLPATH DATA (194 stations)																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	
2362.00	0.160	105.400	2361.98	-1.72	-2.12	-0.62	1695579.58	532943.88	39°57'29.395"N	80°35'09.474"W	2.21	196.405	0.32	-0.08	-102.00	
2386.00	0.190	289.660	2385.98	-1.72	-2.12	-0.63	1695579.57	532943.88	39°57'29.395"N	80°35'09.474"W	2.21	196.566	1.46	0.12	-732.25	
2481.00	0.030	233.820	2480.97	-1.62	-2.08	-0.80	1695579.40	532943.92	39°57'29.395"N	80°35'09.476"W	2.23	201.007	0.18	-0.17	-58.78	
2576.00	0.040	281.720	2575.97	-1.61	-2.09	-0.85	1695579.35	532943.91	39°57'29.395"N	80°35'09.477"W	2.25	202.182	0.03	0.01	50.42	
2671.00	0.060	312.230	2670.97	-1.54	-2.05	-0.92	1695579.28	532943.95	39°57'29.396"N	80°35'09.477"W	2.24	204.209	0.03	0.02	32.12	
2766.00	0.030	204.110	2765.97	-1.51	-2.03	-0.97	1695579.23	532943.97	39°57'29.396"N	80°35'09.478"W	2.25	205.411	0.08	-0.03	-113.81	
2862.00	0.030	265.210	2861.97	-1.52	-2.06	-1.00	1695579.20	532943.94	39°57'29.395"N	80°35'09.478"W	2.29	205.940	0.03	0.00	63.65	
2939.00	0.210	281.900	2938.97	-1.44	-2.03	-1.16	1695579.04	532943.97	39°57'29.396"N	80°35'09.481"W	2.34	209.718	0.24	0.23	21.68	
3075.00	0.060	74.540	3074.97	-1.31	-1.96	-1.34	1695578.86	532944.04	39°57'29.396"N	80°35'09.483"W	2.37	214.239	0.19	-0.11	112.24	
3170.00	0.810	195.690	3169.97	-1.84	-2.60	-1.47	1695578.73	532943.40	39°57'29.390"N	80°35'09.484"W	2.98	209.512	0.89	0.79	127.53	
3265.00	8.680	195.750	3264.57	-8.02	-10.15	-3.60	1695576.60	532935.85	39°57'29.315"N	80°35'09.511"W	10.77	199.522	8.28	8.28	0.06	
3361.00	7.430	185.130	3359.63	-19.22	-23.31	-6.12	1695574.08	532922.69	39°57'29.185"N	80°35'09.541"W	24.10	194.715	2.02	-1.30	-11.06	
3456.00	13.270	188.470	3453.04	-34.05	-40.23	-8.28	1695571.92	532905.78	39°57'29.017"N	80°35'09.566"W	41.07	191.629	6.18	6.15	3.52	
3552.00	19.230	198.420	3545.18	-55.50	-66.15	-14.90	1695565.30	532879.85	39°57'28.760"N	80°35'09.647"W	67.81	192.697	6.83	6.21	10.36	
3647.00	23.470	206.110	3633.66	-79.90	-98.00	-28.18	1695552.02	532848.00	39°57'28.444"N	80°35'09.813"W	101.97	196.043	5.34	4.46	8.09	
3742.00	23.780	206.610	3720.70	-105.01	-132.11	-45.09	1695535.12	532813.89	39°57'28.105"N	80°35'10.024"W	139.60	198.843	0.39	0.33	0.53	
3838.00	25.860	201.700	3807.84	-132.76	-168.88	-61.50	1695518.70	532777.13	39°57'27.740"N	80°35'10.229"W	179.73	200.010	3.05	2.17	-5.11	
3933.00	28.500	196.560	3892.35	-165.29	-209.87	-75.63	1695504.58	532736.14	39°57'27.333"N	80°35'10.404"W	223.08	199.817	3.72	2.78	-5.41	
4028.00	28.610	196.010	3975.79	-200.75	-253.46	-88.36	1695491.85	532692.56	39°57'26.901"N	80°35'10.561"W	268.42	199.219	0.30	0.12	-0.58	
4124.00	28.120	202.670	4060.29	-234.77	-296.43	-103.42	1695476.78	532649.58	39°57'26.474"N	80°35'10.748"W	313.96	199.233	3.33	-0.51	6.94	
4219.00	28.540	208.000	4143.92	-265.07	-337.14	-122.71	1695457.50	532608.88	39°57'26.070"N	80°35'10.989"W	358.77	200.000	2.70	0.44	5.61	
4314.00	29.090	202.840	4227.17	-295.82	-378.46	-142.33	1695437.88	532567.55	39°57'25.659"N	80°35'11.235"W	404.34	200.610	2.68	0.58	-5.43	
4409.00	29.600	203.830	4309.98	-328.32	-421.21	-160.77	1695419.43	532524.81	39°57'25.234"N	80°35'11.465"W	450.85	200.891	0.74	0.54	1.04	
4505.00	29.610	209.480	4393.47	-359.39	-463.55	-182.03	1695398.18	532482.47	39°57'24.813"N	80°35'11.731"W	498.01	201.439	2.91	0.01	5.89	
4600.00	27.000	205.530	4477.11	-388.35	-503.45	-202.88	1695377.33	532442.57	39°57'24.417"N	80°35'11.993"W	542.79	201.948	3.38	-2.75	-4.16	
4695.00	25.330	202.010	4562.38	-417.34	-541.76	-219.79	1695360.42	532404.27	39°57'24.036"N	80°35'12.204"W	584.64	202.082	2.40	-1.76	-3.71	
4790.00	28.710	202.390	4647.00	-448.07	-581.71	-236.10	1695344.11	532364.32	39°57'23.639"N	80°35'12.407"W	627.80	202.091	3.56	3.56	0.40	
4886.00	29.600	206.900	4730.84	-479.92	-624.18	-255.61	1695324.60	532321.85	39°57'23.217"N	80°35'12.651"W	674.49	202.270	2.47	0.93	4.70	
4981.00	29.550	209.160	4813.47	-509.81	-665.56	-277.64	1695302.57	532280.47	39°57'22.806"N	80°35'12.928"W	721.15	202.644	1.18	-0.05	2.38	
5076.00	28.220	205.140	4896.65	-539.55	-706.36	-298.60	1695281.61	532239.68	39°57'22.400"N	80°35'13.190"W	766.88	202.916	2.48	-1.40	-4.23	

Actual Wellpath Report

SHL27 JHS AWP Proj: 14888'

Page 5 of 11

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REFERENCE WELLPATH IDENTIFICATION

Operator	HG ENERGY	Slot	Slot #02
Area	Marshall County, WV	Well	SHL27 JHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 JHS AWB
Facility	SHL27 Pad		

WELLPATH DATA (194 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
5172.00	30.360	201.280	4980.38	-572.45	-749.52	-317.05	1695263.16	532196.51	39°57'21.971"N	80°35'13.421"W	813.82	202.929	2.97	2.23	-4.02
5267.00	30.290	201.350	5062.39	-607.13	-794.20	-334.49	1695245.72	532151.83	39°57'21.528"N	80°35'13.638"W	861.77	202.839	0.08	-0.07	0.07
5362.00	30.260	207.940	5144.45	-639.74	-837.68	-354.43	1695225.78	532108.36	39°57'21.096"N	80°35'13.887"W	909.57	202.934	3.50	-0.03	6.94
5458.00	30.220	211.790	5227.40	-669.34	-879.58	-378.50	1695201.72	532066.46	39°57'20.679"N	80°35'14.189"W	957.56	203.283	2.02	-0.04	4.01
5553.00	30.340	207.190	5309.45	-698.91	-921.25	-402.06	1695178.16	532024.79	39°57'20.264"N	80°35'14.485"W	1005.17	203.578	2.44	0.13	-4.84
5648.00	30.260	203.080	5391.48	-731.27	-964.62	-422.41	1695157.81	531981.42	39°57'19.833"N	80°35'14.740"W	1053.05	203.649	2.18	-0.08	-4.33
5743.00	30.030	199.840	5473.64	-765.67	-1009.00	-439.86	1695140.36	531937.04	39°57'19.393"N	80°35'14.957"W	1100.71	203.554	1.73	-0.24	-3.41
5839.00	30.320	199.330	5556.63	-801.55	-1054.47	-456.03	1695124.19	531891.58	39°57'18.941"N	80°35'15.158"W	1148.85	203.387	0.40	0.30	-0.53
5934.00	26.600	206.530	5640.16	-833.46	-1096.15	-473.48	1695106.74	531849.90	39°57'18.527"N	80°35'15.375"W	1194.04	203.362	5.32	-3.92	7.58
6030.00	23.060	228.500	5727.45	-853.80	-1127.92	-497.22	1695083.00	531818.13	39°57'18.211"N	80°35'15.675"W	1232.65	203.789	10.23	-3.69	22.89
6125.00	20.620	250.280	5815.78	-859.13	-1145.92	-526.96	1695053.27	531800.13	39°57'18.029"N	80°35'16.054"W	1261.28	204.696	8.85	-2.57	22.93
6220.00	23.030	268.840	5904.06	-851.63	-1151.95	-561.33	1695018.90	531794.10	39°57'17.965"N	80°35'16.495"W	1281.44	205.979	7.66	2.54	19.54
6316.00	26.060	284.980	5991.48	-832.01	-1146.87	-600.53	1694979.70	531799.18	39°57'18.011"N	80°35'16.999"W	1294.58	207.638	7.64	3.16	16.81
6411.00	29.270	298.570	6075.69	-801.28	-1130.35	-641.13	1694939.10	531815.70	39°57'18.169"N	80°35'17.523"W	1299.52	209.562	7.43	3.38	14.31
6506.00	35.710	307.160	6155.82	-759.28	-1102.45	-683.69	1694896.54	531843.60	39°57'18.440"N	80°35'18.073"W	1297.24	211.805	8.32	6.78	9.04
6602.00	42.990	311.040	6230.02	-705.79	-1063.98	-730.78	1694849.46	531882.07	39°57'18.814"N	80°35'18.684"W	1290.77	214.483	8.00	7.58	4.04
6697.00	50.040	313.930	6295.36	-643.40	-1017.39	-781.50	1694798.74	531928.65	39°57'19.269"N	80°35'19.342"W	1282.90	217.529	7.74	7.42	3.04
6792.00	55.530	317.420	6352.81	-573.25	-963.25	-834.26	1694745.97	531982.80	39°57'19.798"N	80°35'20.028"W	1274.30	220.896	6.48	5.78	3.67
6887.00	64.700	321.300	6400.11	-495.10	-900.75	-887.74	1694692.50	532045.29	39°57'20.409"N	80°35'20.725"W	1264.68	224.583	10.28	9.65	4.08
6982.00	69.360	324.350	6437.18	-410.56	-831.06	-940.54	1694639.70	532114.98	39°57'21.091"N	80°35'21.414"W	1255.10	228.536	5.73	4.91	3.21
7078.00	76.390	328.180	6465.44	-320.68	-754.79	-991.40	1694588.85	532191.24	39°57'21.839"N	80°35'22.078"W	1246.03	232.716	8.25	7.32	3.99
7173.00	85.410	332.970	6480.45	-227.70	-673.18	-1037.38	1694542.87	532272.85	39°57'22.640"N	80°35'22.682"W	1236.66	237.020	10.72	9.49	5.04
7268.00	93.390	336.900	6481.45	-132.91	-587.21	-1077.58	1694502.67	532358.81	39°57'23.484"N	80°35'23.211"W	1227.19	241.412	9.36	8.40	4.14
7364.00	91.390	336.780	6477.45	-37.01	-499.03	-1115.30	1694464.95	532446.99	39°57'24.351"N	80°35'23.709"W	1221.85	245.894	2.09	-2.08	-0.12
7458.00	90.770	336.510	6475.67	56.96	-412.75	-1162.56	1694427.69	532533.27	39°57'25.199"N	80°35'24.201"W	1224.24	250.297	0.72	-0.66	-0.29
7553.00	90.310	337.210	6474.78	151.95	-325.40	-1189.89	1694390.36	532620.62	39°57'26.058"N	80°35'24.694"W	1233.58	254.705	0.88	-0.48	0.74
7648.00	90.030	341.470	6474.50	246.88	-236.53	-1223.40	1694356.85	532709.48	39°57'26.932"N	80°35'25.138"W	1246.05	259.058	4.49	-0.29	4.48
7743.00	90.030	344.260	6474.45	341.48	-145.75	-1251.39	1694328.87	532800.26	39°57'27.826"N	80°35'25.512"W	1259.85	263.357	2.94	0.00	2.94
7839.00	90.490	343.660	6474.01	436.89	-53.49	-1277.91	1694302.35	532892.51	39°57'28.734"N	80°35'25.867"W	1279.03	267.603	0.79	0.48	-0.63
7934.00	90.770	340.780	6472.97	531.57	36.96	-1306.92	1694273.34	532982.96	39°57'29.625"N	80°35'26.253"W	1307.44	271.620	3.05	0.29	-3.03

Actual Wellpath Report

SHL27 JHS AWP Proj: 14888'

Page 6 of 11

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REFERENCE WELLPATH IDENTIFICATION			
Operator	HG ENERGY	Slot	Slot #02
Area	Marshall County, WV	Well	SHL27 JHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 JHS AWB
Facility	SHL27 Pad		

WELLPATH DATA (194 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
8029.00	90.520	340.240	6471.90	626.44	126.51	-1338.61	1694241.65	533072.50	39°57'30.506"N	80°35'26.674"W	1344.57	275.399	0.63	-0.26	-0.57
8124.00	91.140	345.780	6470.52	720.98	217.32	-1366.36	1694213.91	533163.31	39°57'31.400"N	80°35'27.045"W	1383.53	279.037	5.87	0.65	5.83
8220.00	91.110	349.220	6468.63	815.52	311.01	-1387.13	1694193.13	533256.99	39°57'32.323"N	80°35'27.326"W	1421.56	282.637	3.58	-0.03	3.58
8315.00	91.790	352.090	6466.23	908.04	404.71	-1402.55	1694177.72	533350.69	39°57'33.247"N	80°35'27.538"W	1459.77	286.096	3.10	0.72	3.02
8410.00	92.340	348.950	6462.81	1000.57	498.34	-1418.18	1694162.08	533444.31	39°57'34.171"N	80°35'27.754"W	1503.19	289.361	3.35	0.58	-3.31
8505.00	91.480	345.070	6459.64	1094.23	590.84	-1439.52	1694140.74	533536.81	39°57'35.082"N	80°35'28.042"W	1556.05	292.315	4.18	-0.91	-4.08
8601.00	90.030	343.800	6458.37	1189.54	683.30	-1465.28	1694114.99	533629.27	39°57'35.993"N	80°35'28.387"W	1616.77	295.001	2.01	-1.51	-1.32
8696.00	87.910	342.290	6460.08	1284.10	774.15	-1492.97	1694087.29	533720.12	39°57'36.887"N	80°35'28.757"W	1681.75	297.408	2.74	-2.23	-1.59
8791.00	88.280	341.760	6463.24	1378.76	864.46	-1522.27	1694057.99	533810.42	39°57'37.776"N	80°35'29.148"W	1750.60	299.591	0.68	0.39	-0.56
8886.00	88.830	337.990	6465.64	1473.64	953.62	-1554.94	1694025.33	533899.58	39°57'38.653"N	80°35'29.581"W	1824.07	301.520	4.01	0.58	-3.97
8981.00	88.860	336.580	6467.55	1568.62	1041.23	-1591.62	1693988.65	533987.18	39°57'39.515"N	80°35'30.066"W	1901.95	303.193	1.48	0.03	-1.48
9076.00	89.450	335.620	6468.95	1663.57	1128.07	-1630.10	1693950.17	534074.02	39°57'40.368"N	80°35'30.573"W	1982.37	304.684	1.19	0.62	-1.01
9172.00	89.780	333.270	6469.60	1759.42	1214.67	-1671.51	1693908.76	534160.62	39°57'41.219"N	80°35'31.119"W	2066.25	306.006	2.47	0.34	-2.45
9267.00	90.460	334.110	6469.40	1854.19	1299.83	-1713.62	1693866.66	534245.77	39°57'42.055"N	80°35'31.673"W	2150.82	307.181	1.14	0.72	0.88
9362.00	90.990	334.290	6468.20	1949.01	1385.35	-1754.96	1693825.32	534331.29	39°57'42.896"N	80°35'32.217"W	2235.87	308.287	0.59	0.56	0.19
9457.00	91.360	332.370	6466.25	2043.72	1470.22	-1797.59	1693782.69	534416.16	39°57'43.729"N	80°35'32.778"W	2322.26	309.279	2.06	0.39	-2.02
9552.00	91.200	329.690	6464.13	2138.06	1553.31	-1843.59	1693736.69	534499.24	39°57'44.545"N	80°35'33.381"W	2410.72	310.116	2.83	-0.17	-2.82
9647.00	90.310	326.190	6462.87	2231.68	1633.80	-1894.00	1693686.28	534579.73	39°57'45.334"N	80°35'34.041"W	2501.31	310.782	3.80	-0.94	-3.68
9742.00	90.220	325.010	6462.43	2324.59	1712.18	-1947.67	1693632.61	534658.11	39°57'46.102"N	80°35'34.743"W	2593.26	311.318	1.25	-0.09	-1.24
9838.00	90.090	328.180	6462.17	2418.80	1792.31	-2000.52	1693579.77	534738.23	39°57'46.888"N	80°35'35.434"W	2685.98	311.858	3.30	-0.14	3.30
9933.00	88.830	331.250	6463.07	2512.88	1874.33	-2048.42	1693531.87	534820.25	39°57'47.692"N	80°35'36.062"W	2776.54	312.459	3.49	-1.33	3.23
10028.00	88.740	334.600	6465.08	2607.53	1958.89	-2091.64	1693488.65	534904.80	39°57'48.523"N	80°35'36.630"W	2865.70	313.123	3.53	-0.09	3.53
10124.00	90.590	336.400	6465.65	2703.45	2046.24	-2131.45	1693448.84	534992.15	39°57'49.381"N	80°35'37.155"W	2954.69	313.832	2.69	1.93	1.87
10219.00	90.280	337.610	6464.92	2798.44	2133.69	-2168.56	1693411.74	535079.59	39°57'50.241"N	80°35'37.645"W	3042.25	314.536	1.31	-0.33	1.27
10314.00	90.370	335.440	6464.39	2893.42	2220.82	-2206.40	1693373.90	535166.72	39°57'51.097"N	80°35'38.145"W	3130.53	315.187	2.29	0.09	-2.28
10409.00	90.370	331.340	6463.77	2988.13	2305.73	-2248.94	1693331.36	535251.63	39°57'51.931"N	80°35'38.704"W	3220.89	315.714	4.32	0.00	-4.32
10505.00	90.340	328.960	6463.18	3083.31	2388.99	-2296.72	1693283.58	535334.88	39°57'52.748"N	80°35'39.331"W	3313.94	316.128	2.48	-0.03	-2.48
10600.00	90.430	329.370	6462.54	3177.27	2470.56	-2345.41	1693234.89	535416.45	39°57'53.548"N	80°35'39.969"W	3406.56	316.489	0.44	0.09	0.43
10695.00	90.090	335.470	6462.11	3271.83	2554.72	-2389.37	1693190.93	535500.61	39°57'54.375"N	80°35'40.546"W	3497.96	316.915	6.43	-0.36	6.42
10790.00	90.520	338.870	6461.60	3366.81	2642.27	-2426.23	1693154.08	535588.15	39°57'55.235"N	80°35'41.033"W	3587.22	317.441	3.61	0.45	3.58

Actual Wellpath Report

SHL27 JHS AWP Proj: 14888'

Page 7 of 11

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REFERENCE WELLPATH IDENTIFICATION

Operator	HG ENERGY	Slot	Slot #02
Area	Marshall County, WV	Well	SHL27 JHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 JHS AWB
Facility	SHL27 Pad		

WELLPATH DATA (194 stations)

MD (ft)	Inclination [°]	Azimuth [°]	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist (ft)	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
10885.00	90.310	339.560	6460.91	3461.77	2731.08	-2459.94	1693120.37	535676.96	39°57'56.109"N	80°35'41.480"W	3675.61	317.990	0.76	-0.22	0.73
10980.00	90.310	338.410	6460.40	3556.74	2819.76	-2494.01	1693086.30	535765.63	39°57'56.981"N	80°35'41.932"W	3764.45	318.508	1.21	0.00	-1.21
11075.00	90.400	337.540	6459.81	3651.74	2907.82	-2529.63	1693050.68	535853.70	39°57'57.847"N	80°35'42.403"W	3854.15	318.979	0.92	0.09	-0.92
11171.00	90.550	338.660	6459.01	3747.73	2996.89	-2565.44	1693014.88	535942.76	39°57'58.723"N	80°35'42.877"W	3944.98	319.435	1.18	0.16	1.17
11266.00	91.110	336.800	6457.64	3842.72	3084.79	-2601.43	1692978.88	536030.66	39°57'59.587"N	80°35'43.353"W	4035.27	319.859	2.04	0.59	-1.96
11361.00	90.400	333.340	6456.39	3937.60	3170.92	-2641.47	1692938.85	536116.78	39°58'00.434"N	80°35'43.880"W	4126.99	320.205	3.72	-0.75	-3.64
11457.00	90.250	334.830	6455.84	4033.41	3257.26	-2683.42	1692896.90	536203.12	39°58'01.282"N	80°35'44.433"W	4220.25	320.517	1.56	-0.16	1.55
11552.00	90.520	340.070	6455.20	4128.38	3344.97	-2719.84	1692860.48	536290.82	39°58'02.144"N	80°35'44.914"W	4311.19	320.885	5.52	0.28	5.52
11647.00	90.680	339.290	6454.21	4223.31	3434.05	-2752.83	1692827.50	536379.90	39°58'03.020"N	80°35'45.352"W	4401.22	321.283	0.84	0.17	-0.82
11742.00	90.220	339.570	6453.46	4318.26	3522.99	-2786.20	1692794.12	536468.83	39°58'03.895"N	80°35'45.794"W	4491.59	321.661	0.57	-0.48	0.29
11837.00	89.540	342.840	6453.66	4413.06	3612.91	-2816.81	1692763.52	536558.75	39°58'04.780"N	80°35'46.201"W	4581.21	322.058	3.52	-0.72	3.44
11933.00	90.430	345.590	6453.69	4508.42	3705.28	-2842.92	1692737.41	536651.12	39°58'05.690"N	80°35'46.551"W	4670.26	322.502	3.01	0.93	2.86
12028.00	91.050	343.470	6452.46	4602.72	3796.83	-2868.26	1692712.07	536742.66	39°58'06.591"N	80°35'46.891"W	4758.44	322.931	2.32	0.65	-2.23
12123.00	91.720	338.680	6450.16	4697.49	3886.64	-2899.05	1692681.28	536832.46	39°58'07.475"N	80°35'47.300"W	4848.76	323.281	5.09	0.71	-5.04
12218.00	90.280	335.110	6448.50	4792.45	3973.99	-2936.32	1692644.02	536919.81	39°58'08.334"N	80°35'47.793"W	4941.11	323.540	4.05	-1.52	-3.76
12313.00	90.490	336.210	6447.86	4887.39	4060.54	-2975.47	1692604.86	537006.36	39°58'09.184"N	80°35'48.309"W	5034.02	323.767	1.18	0.22	1.16
12408.00	90.280	335.890	6447.23	4982.35	4147.36	-3014.03	1692566.30	537093.17	39°58'10.038"N	80°35'48.818"W	5126.89	323.993	0.40	-0.22	-0.34
12502.00	90.180	335.460	6446.85	5076.29	4233.01	-3052.75	1692527.58	537178.82	39°58'10.879"N	80°35'49.329"W	5218.97	324.202	0.47	-0.11	-0.46
12597.00	88.860	339.610	6447.65	5171.27	4320.78	-3089.04	1692491.29	537266.59	39°58'11.742"N	80°35'49.808"W	5311.43	324.438	4.58	-1.39	4.37
12693.00	90.150	340.760	6448.47	5267.16	4411.09	-3121.58	1692458.76	537356.89	39°58'12.631"N	80°35'50.240"W	5403.88	324.714	1.80	1.34	1.20
12788.00	90.150	335.650	6448.23	5362.13	4499.27	-3156.84	1692423.50	537445.07	39°58'13.498"N	80°35'50.707"W	5496.28	324.945	5.38	0.00	-5.38
12883.00	89.750	331.930	6448.31	5456.90	4584.48	-3198.79	1692381.55	537530.28	39°58'14.335"N	80°35'51.259"W	5590.15	325.095	3.94	-0.42	-3.92
12978.00	89.510	334.730	6448.92	5551.62	4669.37	-3241.43	1692338.92	537615.16	39°58'15.168"N	80°35'51.820"W	5684.18	325.232	2.96	-0.25	2.95
13074.00	88.680	339.530	6450.44	5647.57	4757.78	-3278.72	1692301.62	537703.57	39°58'16.038"N	80°35'52.313"W	5778.11	325.428	5.07	-0.86	5.00
13169.00	90.920	349.230	6450.77	5741.80	4849.16	-3304.27	1692276.08	537794.94	39°58'16.938"N	80°35'52.655"W	5867.92	325.729	10.48	2.36	10.21
13264.00	89.940	345.870	6450.06	5835.36	4941.91	-3324.75	1692255.60	537887.69	39°58'17.852"N	80°35'52.933"W	5956.21	326.069	3.68	-1.03	-3.54
13359.00	91.630	345.810	6448.76	5929.37	5034.01	-3347.98	1692232.37	537979.78	39°58'18.759"N	80°35'53.246"W	6045.68	326.373	1.78	1.78	-0.06
13454.00	91.020	339.600	6446.56	6023.93	5124.64	-3376.21	1692204.14	538070.42	39°58'19.651"N	80°35'53.623"W	6136.83	326.622	6.57	-0.64	-6.54
13549.00	90.460	334.530	6445.33	6118.88	5212.10	-3413.21	1692167.14	538157.87	39°58'20.511"N	80°35'54.112"W	6230.25	326.781	5.37	-0.59	-5.34
13644.00	90.590	330.410	6444.46	6213.48	5296.32	-3457.11	1692123.24	538242.08	39°58'21.338"N	80°35'54.689"W	6324.76	326.866	4.34	0.14	-4.34

Actual Wellpath Report

SHL27 JHS AWP Proj: 14888'

Page 8 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	HG ENERGY	Slot	Slot #02
Area	Marshall County, WV	Well	SHL27 JHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 JHS AWB
Facility	SHL27 Pad		

WELLPATH DATA (194 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
13739.00	90.770	332.040	6443.33	6307.87	5379.58	-3502.84	1692077.52	538325.34	39°58'22.155"N	80°35'55.289"W	6419.48	326.930	1.73	0.19	1.72
13834.00	90.550	335.730	6442.24	6402.65	5464.86	-3544.64	1692035.72	538410.62	39°58'22.993"N	80°35'55.839"W	6513.77	327.032	3.89	-0.23	3.88
13929.00	90.710	340.990	6441.19	6497.60	5553.13	-3579.66	1692000.70	538498.88	39°58'23.861"N	80°35'56.303"W	6606.91	327.193	5.54	0.17	5.54
14025.00	90.770	338.540	6439.95	6593.52	5643.19	-3612.86	1691967.50	538588.94	39°58'24.747"N	80°35'56.743"W	6700.62	327.372	2.55	0.06	-2.55
14119.00	90.650	334.960	6438.79	6687.48	5729.54	-3649.96	1691930.41	538675.28	39°58'25.596"N	80°35'57.233"W	6793.36	327.501	3.81	-0.13	-3.81
14214.00	90.250	331.900	6438.04	6782.22	5814.49	-3692.44	1691887.92	538760.23	39°58'26.430"N	80°35'57.792"W	6887.85	327.583	3.25	-0.42	-3.22
14309.00	89.690	335.880	6438.09	6876.99	5899.78	-3734.24	1691846.12	538845.51	39°58'27.268"N	80°35'58.343"W	6982.26	327.668	4.23	-0.59	4.19
14405.00	90.060	340.630	6438.30	6972.96	5988.92	-3769.80	1691810.57	538934.65	39°58'28.144"N	80°35'58.813"W	7076.62	327.811	4.96	0.39	4.95
14500.00	90.370	340.610	6437.94	7067.83	6078.54	-3801.32	1691779.05	539024.27	39°58'29.026"N	80°35'59.232"W	7169.29	327.979	0.33	0.33	-0.02
14595.00	90.030	339.910	6437.61	7162.73	6167.95	-3833.41	1691746.96	539113.68	39°58'29.906"N	80°35'59.659"W	7262.14	328.139	0.82	-0.36	-0.74
14691.00	90.310	337.710	6437.33	7258.70	6257.46	-3868.11	1691712.27	539203.18	39°58'30.786"N	80°36'00.118"W	7356.49	328.277	2.31	0.29	-2.29
14786.00	90.340	334.990	6436.79	7353.67	6344.47	-3906.21	1691674.16	539290.19	39°58'31.641"N	80°36'00.621"W	7450.55	328.380	2.86	0.03	-2.86
14863.00	90.220	331.700	6436.41	7430.44	6413.27	-3940.75	1691639.63	539358.99	39°58'32.317"N	80°36'01.076"W	7527.26	328.431	4.28	-0.16	-4.27
14888.00	90.220	331.700	6436.32	7455.31	6435.29	-3952.60	1691627.77	539381.00	39°58'32.533"N	80°36'01.231"W	7552.22	328.441	0.00	0.00	0.00

Actual Wellpath Report

SHL27 JHS AWP Proj: 14888'

Page 9 of 11

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REFERENCE WELLPATH IDENTIFICATION			
Operator	HG ENERGY	Slot	Slot #02
Area	Marshall County, WV	Well	SHL27 JHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 JHS AWB
Facility	SHL27 Pad		

HOLE & CASING SECTIONS - Ref Wellbore: SHL27 JHS AWB Ref Wellpath: SHL27 JHS AWP Proj: 14888'									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
30in Open Hole	25.00	60.00	35.00	25.00	60.00	0.00	0.00	0.03	-0.04
26in Conductor	25.00	60.00	35.00	25.00	60.00	0.00	0.00	0.03	-0.04
24in Open Hole	60.00	457.00	397.00	60.00	456.99	0.03	-0.04	-1.33	-1.65
20in Casing Surface	25.00	457.00	432.00	25.00	456.99	0.00	0.00	-1.33	-1.65
17.5in Open Hole	457.00	1076.00	619.00	456.99	1075.99	-1.33	-1.65	-2.11	-2.62
13.375in Casing Intermediate	25.00	1076.00	1051.00	25.00	1075.99	0.00	0.00	-2.11	-2.62
12.25in Open Hole	1076.00	3008.00	1932.00	1075.99	3007.97	-2.11	-2.62	-1.99	-1.33
9.625in Casing Intermediate	25.00	2965.00	2940.00	25.00	2964.97	0.00	0.00	-2.01	-1.24
8.5in Open Hole	3008.00	14888.00	11880.00	3007.97	6436.32	-1.99	-1.33	6435.29	-3952.60
5.5in Casing Production	25.00	14888.00	14863.00	25.00	6436.32	0.00	0.00	6435.29	-3952.60

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SHL27 JHS BHL Rev-3	6428.56	6446.49	-3952.18	1691628.20	539392.20	39°58'32.644"N	80°36'01.228"W	point
SHL27 JHS LP Rev-2	6490.00	-577.53	-1061.05	1694519.20	532368.50	39°57'23.582"N	80°35'23.000"W	point
SHL27 Parcel #3	6500.00	744.91	-2052.42	1693527.87	533690.88	39°57'36.531"N	80°35'35.937"W	polygon
SHL27 Parcel #4	6500.00	744.91	-2052.42	1693527.87	533690.88	39°57'36.531"N	80°35'35.937"W	polygon

Actual Wellpath Report

SHL27 JHS AWP Proj: 14888'

Page 10 of 11

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REFERENCE WELLPATH IDENTIFICATION			
Operator	HG ENERGY	Slot	Slot #02
Area	Marshall County, WV	Well	SHL27 JHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 JHS AWB
Facility	SHL27 Pad		

WELLPATH COMPOSITION - Ref Wellbore: SHL27 JHS AWB Ref Wellpath: SHL27 JHS AWP Proj: 14888'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	2362.00	BHI Generic gyro - northseeking (Standard)	01 Inertial Gyro <12-1/4"> (25'-2350')	SHL27 JHS AWB
2362.00	2939.00	BHI NaviTrak (Axial)	02 APS EM <12-1/4"> (2362')(2386'-2939')	SHL27 JHS AWB
2939.00	14863.00	BHI AutoTrak Curve (Short)	03 BH AT Curve <8-1/2"> (2939')(3075'-14863')	SHL27 JHS AWB
14863.00	14888.00	Blind Drilling (std)	Projection to bit	SHL27 JHS AWB

Actual Wellpath Report

SHL27 JHS AWP Proj: 14888'

Page 11 of 11

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REFERENCE WELLPATH IDENTIFICATION			
Operator	HG ENERGY	Slot	Slot #02
Area	Marshall County, WV	Well	SHL27 JHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 JHS AWB
Facility	SHL27 Pad		

COMMENTS
<p>Wellpath general comments API: 47-051-01958-0000 BH Job #: 9124214 Rig: Patterson 347 Duration: 4/17/2018-4/26/2018 Inertial Gyro <12-1/4"> (25'-2350') APS EM <12-1/4"> (2362')(2386'-2939') BH AT Curve <8-1/2"> (2939')(3075'-14863') Projected MD at TD: 14888'</p>