

HG ENERGY

Location: Weizel County, WV
 Field: Weizel (UTM 17N MAD 27)
 Facility: Long 408 Pad

Wellbore: Slot #05
 Well: Long 408 S-5H
 Long 408 S-5H PWB



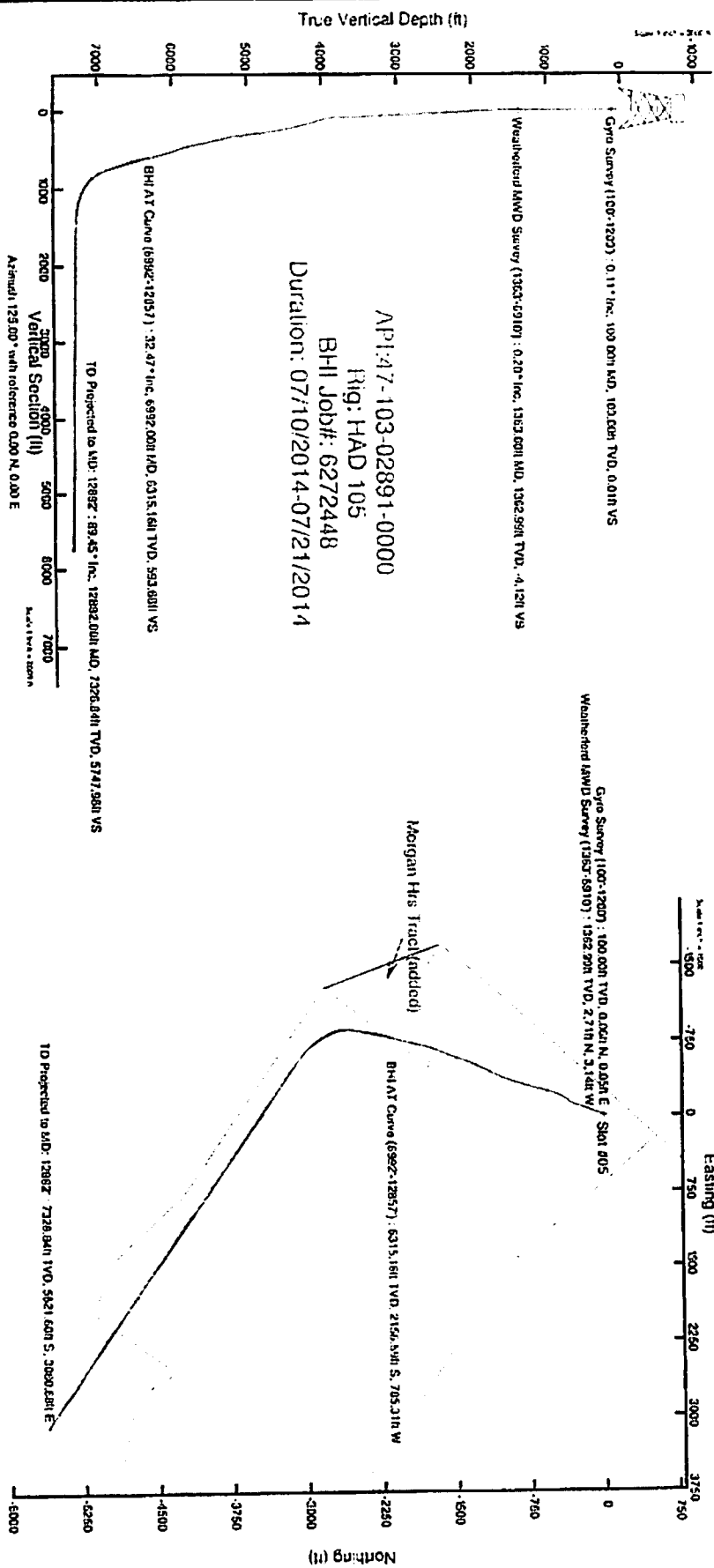
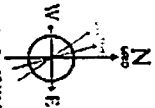
Location Information

Facility Name	Grid East (US In)	Grid North (US In)	Latitude	Longitude
Long 408 Pad	1731579.700	14374541.000	39°35'00.496"N	80°40'35.195"W
Slot #05	-12.30	-38.72	14374529.300	80°40'35.946"W
Mean Sea Level to Mean Sea Level			17N	-1341.5ft
Mean Sea Level to Mean Sea Level				1350.5ft

Well Data

Slot	Well	Wellbore	Wellbore
Slot #05	Long 408 S-5H	Long 408 S-5H PWB	Long 408 S-5H PWB
Slot #05	Long 408 S-5H	Long 408 S-5H	Long 408 S-5H PWB

00001104540 281627 016 47216 EQU 12283.1 ft
 Uplift: 1600 feet from the mean sea level
 To be used as a reference point for all depths
 To be used as a reference point for all depths



HG ENERGY

Location: Weitzel County, WV
 Field: Weitzel (UTM 17N MAD 27)
 Facility: Long 408 PWB

Wellbore: Slot #05
 Well: Long 408 S-SH
 Wellbore: Long 408 S-SH PWB

Location Information

Facility Name	Grid East (US In)	Grid North (US In)	Latitude	Longitude
Long 408 PWB	1731579.700	1437451.600	39°25'00.465"N	80°40'25.165"W
Slot #05	-12.20	-28.72	39°25'00.376"N	80°40'25.846"W
HAD 105 (R1) to Mean Sea Level (M.S.L.) Slot #05			1711	
HAD 105 (R1) to Mean Sea Level (M.S.L.) Slot #05			-1241.511	
HAD 105 (R1) to Mean Sea Level (M.S.L.) Slot #05			1356.511	

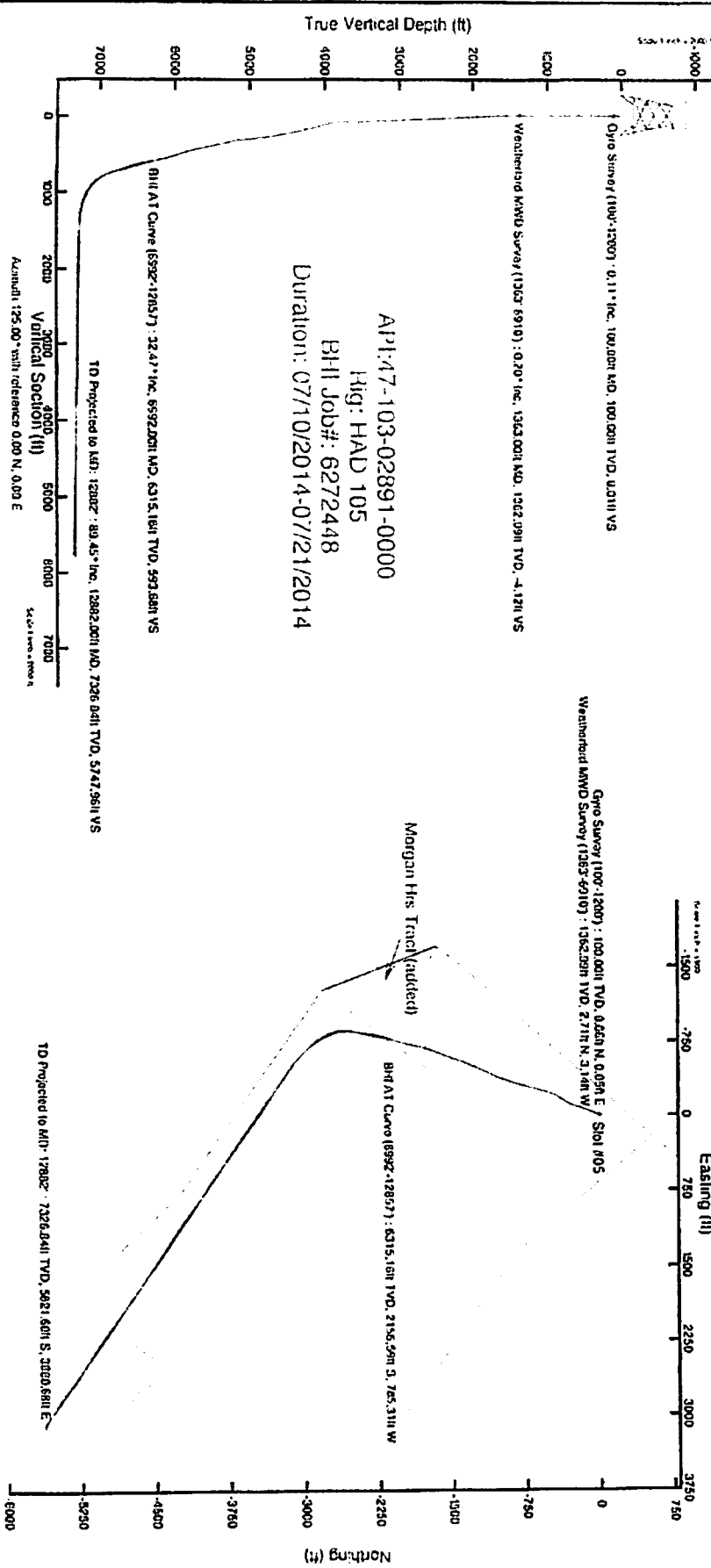
Well Data

Slot	Well	Wellbore	Wellbore
Slot #05	Long 408 S-SH	Long 408 S-SH PWB	Long 408 S-SH PWB
Slot #05	Long 408 S-SH	Long 408 S-SH PWB	Long 408 S-SH PWB

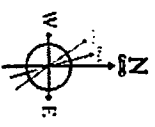
Office of Oil & Gas

JUL 05 2016

07/08/2016



Additional to 2015BOP of 07 East 12811 ft
 Slugging Action is a 20 degree trend of true (vertical)
 Is correct location from time to time (vertical)
 To correct it must have happened in time from 12811 ft



Actual Wellpath Report

Long 408 S-SH AWP Proj: 12882
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Received at
Office of Oil & Gas

JUL 05 2016

07/08/2016

REFERENCE WELLPATH IDENTIFICATION			
Operator	HIG ENERGY	Slot	Slot 905
Area	Wayne County, WV	Well	Long 408 S-SH
Field	Wayne (UTM EN NAD 27)	Wellbore	Long 408 S-SH AWP
Facility	Long 408 Pad		

PROJECT/SPECIFICATION INFORMATION			
Project System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect 4.0.1
North Reference	Grid	User	Kraocher
Scale	0.999609	Report Generated	22Jul2014 at 15:11
Convergence at site	0.21' East	Dataverse/Source File	WA_Pennsylvania/Long_408_S-SH_AWP.xml

WELLBORE WELL REFERENCE			
Slot Location	Local coordinates		
	North (ft)	East (ft)	Easting (US ft)
	-12.30	-58.72	1731521.60
Facility Reference Pt	Grid coordinates		
	Northing (US ft)	Easting (US ft)	Section Azimuth
Facility Reference Pt	1731579.70	14374541.60	
Facility Reference Pt	1731860.70	14374712.90	

WELLBORE WELL REFERENCE			
Calculation method	Minimum curvature		
	Horizontal Reference Pt	Slot	HAD 105 (RTD) to Mean Sea Level
	Vertical Reference Pt	HAD 105 (RTD)	HAD 105 (RTD) to Mud Line at Slot (Slot 905)
MID Reference Pt	HAD 105 (RTD)	Section Origin	Section Azimuth
Depth Vertical Reference	Mean Sea Level		

Actual Wellpath Report

Long 408 S-SH AWP Proj: 12882
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Operator: **HG ENERGY**
 Area: **Wetzel County, WV**
 Field: **Wetzel (UTM 17N NAD 83)**
 Facility: **Long 408 Pad**

Well: **Wetzel**
 Wellbore: **Long 408 S-SH AWP**

Stat 805
 Long 408 S-SH
 Long 408 S-SH AWP



WELLPATH DATA (171 stations)

ID	True Elev	Asynch	True Elev	Vert Sec	North	East	Grid East	Grid North	Latitude	Longitude	Chorey Dist	Chorey ID	MLS
101	FT	FT	101	101	101	101	HESS1	USST0					1990001
2727.00	9.220	198.350	3313.84	71.97	-260.21	-94.69	1731426.35	14374268.69	39°43'57.803°N	80°40'32.167°W	2717.17	1993500	0.61
1377.00	8.130	192.100	3302.77	76.66	-271.85	-98.91	1731422.13	14374255.55	39°43'57.803°N	80°40'32.167°W	291.17	1993858	0.90
1395.00	8.250	198.220	3300.05	78.29	-263.35	-101.90	1731419.14	14374246.16	39°43'57.803°N	80°40'32.167°W	201.02	1992787	0.14
3523.00	7.820	195.540	3306.80	84.40	-306.52	-109.25	1731413.79	14374222.58	39°43'57.803°N	80°40'32.167°W	118.90	1996553	0.18
3509.00	9.380	195.910	3342.28	86.42	-306.84	-109.35	1731411.69	14374222.58	39°43'57.803°N	80°40'32.167°W	235.74	1996615	3.21
2641.00	13.150	211.700	3386.42	87.72	-314.63	-113.22	1731407.82	14374214.79	39°43'57.803°N	80°40'32.167°W	314.39	1992792	10.13
1390.00	23.380	215.760	3570.11	88.09	-336.85	-138.53	1731392.70	14374192.58	39°43'57.803°N	80°40'32.167°W	164.48	2003859	10.69
1390.00	30.910	214.510	3378.65	88.03	-369.70	-151.05	1731390.01	14374180.25	39°43'57.803°N	80°40'32.167°W	398.50	2022741	9.63
1879.00	37.270	210.220	3823.10	90.50	-411.65	-177.77	1731384.30	14374170.51	39°43'57.803°N	80°40'32.167°W	448.40	2011356	8.13
3004.00	40.160	205.880	3883.20	97.20	-436.80	-202.67	1731381.81	14374160.78	39°43'57.803°N	80°40'32.167°W	501.66	2034528	4.51
4092.00	41.620	192.860	3952.33	112.13	-518.48	-230.53	1731291.91	14374011.12	39°43'57.803°N	80°40'32.167°W	565.66	2013566	4.41
4138.00	40.270	196.020	4019.74	127.65	-566.14	-260.15	1731280.50	14373993.38	39°43'57.803°N	80°40'32.167°W	618.14	2010254	2.22
4226.00	38.620	194.840	4083.69	146.45	-620.06	-285.38	1731265.62	14373909.40	39°43'57.803°N	80°40'32.167°W	670.89	2023845	2.12
4310.00	37.290	194.260	4183.91	164.70	-670.03	-308.48	1731252.62	14373858.97	39°43'57.803°N	80°40'32.167°W	723.82	2018826	1.59
4399.00	35.170	193.860	4235.72	181.62	-720.62	-322.86	1731238.23	14373808.07	39°43'57.803°N	80°40'32.167°W	774.14	201432	2.84
4485.00	33.950	195.000	4296.54	197.07	-767.38	-309.75	1731224.37	14373762.22	39°43'57.803°N	80°40'32.167°W	822.76	201142	1.58
4570.00	32.920	195.820	4367.44	212.55	-812.50	-309.43	1731211.67	14373717.12	39°43'57.803°N	80°40'32.167°W	869.44	200380	1.19
4687.00	32.320	197.100	4440.69	232.66	-857.57	-322.56	1731198.56	14373672.86	39°43'57.803°N	80°40'32.167°W	916.23	2006117	1.52
4760.00	31.630	199.270	4516.19	241.34	-902.76	-337.22	1731183.91	14373627.91	39°43'57.803°N	80°40'32.167°W	963.31	2004401	1.26
4822.00	30.020	197.660	4590.04	253.95	-944.18	-351.10	1731170.04	14373585.69	39°43'57.803°N	80°40'32.167°W	1007.34	2003078	2.15
4901.00	28.420	196.420	4666.81	266.57	-985.08	-364.34	1731156.81	14373541.61	39°43'57.803°N	80°40'32.167°W	1050.30	2002202	1.84
5084.00	34.610	200.776	4816.25	285.45	-1025.32	-379.41	1731141.74	14373501.48	39°43'57.803°N	80°40'32.167°W	1093.27	2003006	1.90
5179.00	34.800	205.916	4886.16	292.74	-1110.40	-420.15	1731122.48	14373462.69	39°43'57.803°N	80°40'32.167°W	1139.08	2003447	2.00
5254.00	32.440	203.680	4956.93	301.07	-1153.12	-439.88	1731101.62	14373419.41	39°43'57.803°N	80°40'32.167°W	1187.23	2001735	0.62
5351.00	31.820	204.190	5003.61	307.99	-1195.42	-458.62	1731082.56	14373376.64	39°43'57.803°N	80°40'32.167°W	1234.17	200880	1.16
5433.00	32.720	205.160	5099.92	317.84	-1279.22	-476.91	1731064.27	14373334.15	39°43'57.803°N	80°40'32.167°W	1280.47	201111	0.80
5511.00	32.750	206.110	5169.49	325.76	-1328.63	-498.05	1731047.15	14373291.55	39°43'57.803°N	80°40'32.167°W	1324.10	201271	1.18
5608.00	43.960	201.740	5232.46	336.26	-1398.61	-519.81	1731031.19	14373250.88	39°43'57.803°N	80°40'32.167°W	1366.69	201167	8.08
5688.00	43.300	204.280	5295.34	350.76	-1384.65	-541.34	1730979.87	14373210.19	39°43'57.803°N	80°40'32.167°W	1406.21	201353	1.16
5772.00	40.670	198.510	5363.59	360.15	-1440.79	-564.11	1730968.09	14373169.43	39°43'57.803°N	80°40'32.167°W	1456.20	201097	1.86
5862.00	39.160	199.240	5426.79	381.06	-1492.59	-578.77	1730912.45	14373037.49	39°43'57.803°N	80°40'32.167°W	1500.69	201197	1.86
5961.00	39.010	200.420	5495.87	396.58	-1545.18	-597.81	1730843.43	14372912.45	39°43'57.803°N	80°40'32.167°W	1556.29	201151	0.85
6090.00	40.270	201.050	5563.64	409.45	-1597.11	-618.61	1730802.61	14372822.02	39°43'57.803°N	80°40'32.167°W	1602.91	201170	2.18
6133.00	40.640	201.750	5622.56	431.14	-1667.70	-619.37	1730818.88	14372882.82	39°43'57.803°N	80°40'32.167°W	1767.40	201208	1.10
6213.00	39.660	199.740	5701.25	435.19	-1702.95	-662.21	1730839.05	14372822.02	39°43'57.803°N	80°40'32.167°W	1831.83	201192	1.66
6293.00	38.090	198.030	5761.72	450.41	-1753.01	-667.64	1730843.62	14372782.95	39°43'57.803°N	80°40'32.167°W	1879.36	201113	7.54
6384.00	39.460	196.490	5826.37	465.87	-1801.38	-692.82	1730828.59	14372726.95	39°43'57.803°N	80°40'32.167°W	1930.06	201032	7.09
6464.00	40.410	190.840	5893.87	486.43	-1856.33	-705.99	1730815.29	14372671.70	39°43'57.803°N	80°40'32.167°W	1974.48	201027	4.26
6553.00	39.620	191.820	5962.63	500.94	-1902.44	-719.33	1730804.01	14372627.51	39°43'57.803°N	80°40'32.167°W	2042.51	200558	3.11
6637.00	37.460	195.280	6032.44	520.94	-1966.91	-730.32	1730798.97	14372587.14	39°43'57.803°N	80°40'32.167°W	2098.14	200370	1.41
6785.00	36.310	194.900	6102.84	547.92	-2017.91	-744.07	1730777.22	14372512.18	39°43'57.803°N	80°40'32.167°W	2150.73	200427	1.11
6823.00	34.860	195.830	6174.40	565.13	-2067.29	-751.63	1730762.96	14372462.83	39°43'57.803°N	80°40'32.167°W	2200.51	200464	1.62
6910.00	33.500	196.740	6246.47	589.81	-2114.20	-771.55	1730749.66	14372415.93	39°43'57.803°N	80°40'32.167°W	2250.51	200404	1.16
6992.00	32.420	199.780	6318.16	593.68	-2156.99	-787.31	1730737.99	14372371.56	39°43'57.803°N	80°40'32.167°W	2295.12	200000	2.38

Operator: HG ENERGY
 Acres: Wetzel County, WV
 Field: Wetzel (UTM 17N NAD 27)
 Property: Long 408 Trd

Site: Well
 Wellbore: Wellbore
 Shot: Shot #15
 Long 408 S-511
 Long 408 S-511 AWP

Actual Wellpath Report
 Long 408 S-511 AWP Proj: 12852
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Station	MD (ft)	Vert Elev (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Change Lat (ft)	Change Dir (ft)	MIS (ft)
707.00	11,070	201,110	6387.44	604.92	1740720.19	1437221.67	39°34'38.6777N	80°40'46.275W	2339.86	200.017	1.89
7166.00	13,410	194,930	6462.36	618.85	1738005.82	1437226.60	39°34'38.272N	80°40'46.463W	2181.19	199.915	4.58
7257.00	16,450	189,930	6533.31	635.78	1736095.35	1437231.64	39°34'37.788N	80°40'46.509W	2435.87	199.821	4.73
7339.00	16,520	187,170	6603.36	660.80	1736687.69	1437218.60	39°34'37.233N	80°40'46.609W	2460.52	199.585	1.68
7424.00	16,690	186,640	6674.11	695.28	1736881.64	1437216.00	39°34'36.743N	80°40'46.763W	2517.28	199.331	0.55
7513.00	168,150	6242.50	702.85	2446.27	1736824.67	1437208.09	39°34'36.292N	80°40'46.871W	2588.64	199.091	1.14
7605.00	18,310	191,280	6670.56	725.07	1736665.77	1437203.07	39°34'35.716N	80°40'46.987W	2640.65	198.805	2.59
7688.00	18,360	184,090	6677.95	748.21	1736588.67	1437197.00	39°34'35.195N	80°40'47.060W	2702.91	198.684	3.21
7778.00	19,270	184,200	6911.37	772.39	1736659.10	1437193.20	39°34'34.915N	80°40'47.076W	2718.59	198.493	3.60
7864.00	19,770	184,200	6913.33	790.53	1736623.31	1437192.52	39°34'34.661N	80°40'47.096W	2743.04	198.250	4.47
7954.00	41,080	172,260	6976.31	809.91	1736655.84	1437189.68	39°34'34.377N	80°40'46.991W	2769.20	197.994	2.14
8044.00	41,030	173,630	7008.56	839.40	1736621.89	1437188.88	39°34'34.099N	80°40'46.925W	2794.55	197.712	13.34
8134.00	42,630	163,080	7008.56	855.08	1736630.86	1437189.25	39°34'33.810N	80°40'46.803W	2810.29	197.344	13.35
8224.00	46,280	158,590	7009.08	882.80	1736600.86	1437188.50	39°34'33.505N	80°40'46.647W	2825.07	196.933	14.85
8314.00	51,450	152,660	7008.91	915.41	1736593.01	1437174.99	39°34'33.173N	80°40'46.471W	2873.19	196.463	13.81
8404.00	56,110	152,030	7095.50	946.74	1736570.01	1437174.99	39°34'32.831N	80°40'46.263W	2901.44	196.958	13.81
8494.00	62,660	152,270	7119.04	985.33	1736523.48	1437170.08	39°34'32.481N	80°40'46.010W	2930.18	196.504	7.90
8584.00	67,660	148,940	7140.71	1016.42	1736433.40	1437160.06	39°34'32.127N	80°40'45.722W	2965.71	196.045	1.91
8674.00	72,210	149,180	7159.29	1051.85	1736356.56	1437160.73	39°34'31.771N	80°40'45.515W	2982.19	194.847	6.34
8764.00	76,280	142,290	7178.05	1088.93	1736282.33	1437161.25	39°34'31.428N	80°40'45.309W	3008.54	193.179	14.85
8854.00	80,880	142,210	7196.72	1129.97	1736211.30	1437160.68	39°34'31.192N	80°40'45.109W	3034.07	193.141	14.00
8944.00	84,930	139,870	7220.08	1171.56	1736149.88	1437154.37	39°34'30.978N	80°40'44.829W	3059.44	192.485	9.62
9034.00	88,470	137,340	7230.82	1212.62	1736089.53	1437154.06	39°34'30.878N	80°40'44.557W	3081.66	191.828	7.45
9124.00	90,780	130,810	7230.12	1255.27	1736021.38	1437148.32	39°34'30.802N	80°40'44.287W	3103.70	191.144	12.13
9214.00	92,940	128,010	7236.74	1308.63	1735954.97	1437145.72	39°34'30.808N	80°40'44.018W	3124.52	190.441	9.51
9304.00	94,780	125,070	7257.16	1342.25	1735892.79	1437144.11	39°34'30.827N	80°40'43.877W	3144.64	189.733	2.21
9394.00	96,380	122,620	7255.83	1384.98	1735832.99	1437140.53	39°34'30.867N	80°40'43.741W	3164.14	189.044	4.29
9484.00	97,590	120,620	7260.69	1427.79	1735779.40	1437138.14	39°34'30.929N	80°40'43.600W	3184.01	188.357	2.67
9574.00	98,210	118,590	7265.35	1472.55	1735731.86	1437134.41	39°34'30.978N	80°40'43.460W	3201.62	187.645	3.81
9664.00	98,320	116,530	7265.35	1515.18	1735689.86	1437129.93	39°34'30.878N	80°40'43.319W	3224.47	186.972	3.33
9754.00	98,190	114,260	7270.91	1558.81	1735651.75	1437129.93	39°34'30.817N	80°40'43.178W	3243.82	186.299	2.99
9844.00	98,090	112,150	7280.66	1601.66	1735615.71	1437128.13	39°34'30.878N	80°40'43.037W	3265.16	185.625	11.44
9934.00	98,000	109,100	7280.66	1648.59	1735581.41	1437124.49	39°34'30.978N	80°40'42.897W	3305.50	184.930	7.94
10024.00	98,460	106,110	7281.14	1696.58	1735549.01	1437121.49	39°34'31.127N	80°40'42.757W	3347.05	184.204	0.75
10114.00	98,460	103,170	7281.08	1742.43	1735521.67	1437118.88	39°34'31.309N	80°40'42.617W	3388.32	183.494	0.17
10204.00	98,730	100,300	7286.01	1856.44	1735485.83	1437114.94	39°34'31.519N	80°40'42.477W	3442.51	182.759	0.89
10294.00	99,380	97,200	7287.41	1911.25	1735451.28	1437109.59	39°34'31.771N	80°40'42.337W	3481.27	182.006	5.40
10384.00	99,280	94,280	7286.46	2076.22	1735418.08	1437104.59	39°34'32.078N	80°40'42.197W	3530.14	181.252	0.86
10474.00	99,200	91,200	7286.46	2115.16	1735386.20	1437099.16	39°34'32.407N	80°40'42.057W	3585.85	180.504	5.40
10564.00	99,140	88,140	7290.95	2201.14	1735356.16	1437094.24	39°34'32.754N	80°40'41.917W	3640.46	179.760	0.86
10654.00	99,170	85,170	7292.40	2285.13	1735328.11	1437089.26	39°34'33.119N	80°40'41.777W	3694.16	179.019	0.08
10744.00	89,140	82,140	7292.40	2368.60	1735301.80	1437084.80	39°34'33.509N	80°40'41.637W	3746.94	178.282	2.90
10834.00	89,140	79,140	7292.40	2451.60	1735276.80	1437080.80	39°34'33.929N	80°40'41.507W	3800.00	177.541	0.85
10924.00	89,290	76,290	7296.85	2534.03	1735252.77	1437076.57	39°34'34.379N	80°40'41.377W	3854.82	176.799	1.45
11014.00	89,430	73,430	7296.85	2628.55	1735229.27	1437072.01	39°34'34.859N	80°40'41.247W	3910.16	176.058	2.92
11104.00	89,600	70,600	7297.54	2714.72	1735206.53	1437068.11	39°34'35.369N	80°40'41.117W	3965.16	175.317	3.38

BAKER Hughes
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07/08/2016

OPERATOR: WELLPATH DATA (171 STATIONS)

Operator: HIG ENERGY
 Area: West of County, WV
 Field: Wezel (T/TAI 17N NAD 27)
 Facility: Long 408 Pad

Site: Wellbore
 Wellbore: Long 408 S-5H AWH

Slut 408
 Long 408 S-5H

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Station ID	Station Name	Declination (N)	Azimuth (D)	MD (ft)	Vert. Sep. (ft)	North (ft)	East (ft)	Grid East (USN 01)	Grid North (USN 01)	Latitude	Longitude	Course Dist (ft)	Course Dir (True)	RIS (ft/100ft)
9937.00		89.230	121.956	7298.39	2849.71	-3542.64	666.25	1733181.99	1437038.21	39°14'21.187°N	80°40'27.667°W	3998.04	150.481	2.39
10022.00		89.050	121.181	7299.65	2849.65	-3599.01	734.48	1332255.19	1437031.86	39°14'20.926°N	80°40'28.750°W	4056.05	169.567	2.10
10102.00		88.920	121.500	7301.17	2975.60	-4036.26	800.31	1732132.09	1437034.62	39°14'20.437°N	80°40'28.835°W	4116.01	168.703	2.70
10109.00		89.110	126.140	7302.74	3066.54	-4090.15	870.61	1732402.26	1437040.76	39°14'19.917°N	80°40'24.901°W	4181.66	167.603	4.61
10285.00		89.020	120.280	7304.14	3152.14	-4143.98	916.66	1732667.28	1437050.95	39°14'19.587°N	80°40'24.047°W	4250.73	167.132	1.45
10320.00		89.050	127.600	7305.57	3237.17	-4196.87	1013.18	1732933.78	1437061.08	39°14'18.867°N	80°40'23.208°W	4317.44	166.428	2.09
10355.00		89.020	121.896	7307.00	3322.14	-4250.27	1082.31	1733202.89	1437074.80	39°14'17.897°N	80°40'23.530°W	4383.00	165.701	2.99
10323.00		89.080	121.106	7308.43	3409.09	-4294.18	1154.81	1733475.46	1437086.80	39°14'17.897°N	80°40'20.484°W	4448.78	164.227	0.85
10329.00		89.050	124.120	7309.85	3495.06	-4341.93	1228.42	1733746.91	1437099.06	39°14'17.420°N	80°40'20.484°W	4511.83	164.227	0.85
10329.00		89.110	124.000	7311.26	3583.04	-4391.22	1299.31	1734019.80	1437111.80	39°14'16.911°N	80°40'19.516°W	4579.42	163.317	0.15
10329.00		89.110	124.000	7312.17	3670.02	-4440.30	1371.14	1734289.60	1437124.60	39°14'16.411°N	80°40'18.641°W	4641.18	162.840	1.03
10329.00		89.600	124.680	7312.43	3757.01	-4489.10	1444.16	1734561.60	1437137.56	39°14'15.988°N	80°40'17.723°W	4718.37	162.178	1.32
10329.00		89.020	123.570	7312.43	3844.97	-4536.25	1515.95	1734834.36	1436994.33	39°14'15.485°N	80°40'16.796°W	4784.33	161.523	0.83
10329.00		89.020	123.850	7312.95	3931.91	-4583.07	1589.50	1735109.88	1436906.03	39°14'15.041°N	80°40'15.859°W	4852.77	160.880	1.42
10329.00		89.290	124.750	7313.95	4019.91	-4629.14	1662.40	1735382.75	1436818.78	39°14'14.515°N	80°40'14.910°W	4921.49	160.266	0.24
10329.00		89.310	124.500	7313.87	4099.91	-4682.14	1734.77	1735655.09	1436731.00	39°14'14.000°N	80°40'14.009°W	4990.93	159.656	2.29
10329.00		89.780	126.800	7314.43	4108.90	-4756.14	1803.36	1735928.65	1436643.82	39°14'13.507°N	80°40'13.159°W	5060.01	159.186	1.49
10329.00		89.910	125.970	7314.66	4193.88	-4827.66	1877.29	1736202.55	1436556.52	39°14'12.992°N	80°40'12.103°W	5128.55	158.589	1.80
10329.00		90.120	123.960	7314.36	4268.87	-4896.34	1946.96	1736477.20	1436469.86	39°14'12.408°N	80°40'11.306°W	5211.53	158.072	2.42
10329.00		90.220	123.950	7314.36	4348.87	-4965.48	2014.55	1736754.56	1436384.24	39°14'11.800°N	80°40'10.446°W	5285.49	157.597	1.74
10329.00		90.490	127.130	7313.82	4432.83	-5034.06	2081.45	1737031.34	1436299.18	39°14'11.278°N	80°40'09.559°W	5361.70	157.126	0.31
10329.00		90.520	127.640	7313.04	4520.74	-5102.11	2152.60	1737308.76	1436214.26	39°14'10.761°N	80°40'08.687°W	5436.44	156.624	2.16
10329.00		88.840	124.840	7313.23	4710.64	-5011.12	2220.80	1737584.90	1436129.15	39°14'10.247°N	80°40'07.819°W	5508.01	156.275	2.77
10329.00		88.860	123.840	7313.23	4799.69	-5069.53	2294.50	1737861.30	1436044.07	39°14'09.734°N	80°40'06.956°W	5583.47	155.714	1.83
10329.00		89.420	121.910	7318.11	4884.50	-5135.96	2366.64	1738138.70	1435959.36	39°14'09.218°N	80°40'06.094°W	5655.00	155.260	1.61
10329.00		89.580	122.800	7318.53	4972.40	-5202.99	2441.01	1738416.15	1435874.35	39°14'08.704°N	80°40'05.232°W	5729.04	154.781	1.38
10329.00		89.850	122.800	7318.53	5060.38	-5270.02	2513.15	1738693.60	1435789.34	39°14'08.189°N	80°40'04.370°W	5799.01	154.330	4.61
10329.00		90.000	126.440	7318.53	5147.34	-5338.33	2582.92	1738971.05	1435704.35	39°14'07.674°N	80°40'03.508°W	5868.50	153.850	0.58
10329.00		89.240	123.080	7319.14	5234.31	-5406.36	2655.13	1739248.50	1435619.34	39°14'07.159°N	80°40'02.646°W	5938.20	153.370	0.58
10329.00		89.240	123.080	7319.14	5321.28	-5474.39	2728.69	1739526.05	1435534.33	39°14'06.644°N	80°40'01.784°W	6007.89	152.890	0.58
10329.00		89.240	123.080	7319.14	5408.25	-5542.42	2802.81	1739803.60	1435449.32	39°14'06.129°N	80°40'00.922°W	6077.58	152.410	0.58
10329.00		88.930	126.010	7323.94	5415.20	-5610.45	2874.42	1740081.15	1435364.31	39°14'05.614°N	80°40'00.060°W	6147.27	151.930	0.58
10329.00		88.890	122.700	7324.20	5500.36	-5678.48	2946.19	1740358.70	1435279.30	39°14'05.099°N	80°39'59.198°W	6216.96	151.450	0.58
10329.00		89.110	121.970	7324.20	5589.41	-5746.51	3020.75	1740636.25	1435194.29	39°14'04.584°N	80°39'58.336°W	6286.65	150.970	0.58
10329.00		89.510	122.700	7324.21	5678.46	-5814.54	3099.40	1740913.80	1435109.28	39°14'04.069°N	80°39'57.474°W	6356.34	150.490	0.58
10329.00		89.490	122.520	7324.61	5767.49	-5882.57	3080.68	1741191.35	1435024.27	39°14'03.554°N	80°39'56.612°W	6426.03	150.010	0.58

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REFERENCE WELL PATH INFORMATION

Operator	HC ENERGY	Well	Well 408
Area	Wellbore County, WV	Wellbore	Long 408 S-SH
Field	Wellbore (UTM 17N NAD 27)		Long 408 S-SH AWP
Facility	Long 408 Pool		

PARCELS

Name	AID	TYD	North	East	Grid East	Grid North	Latitude	Longitude
	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]		
Long 408 S-SH 12" Rev 1		7265.00	-1168.22	-516.50	1731004.40	14371422.30	39°41'29.616"N	80°40'42.683"W
Long 408 S-SH BUIL Rev 1		7341.61	-5623.61	3078.31	1734598.10	14363905.20	39°41'04.666"N	80°39'56.897"W

WELLPATH COMPOSITION - Ref Wellbore: Long 408 S-SH AWP Ref Wellpath: Long 408 S-SH AWP Proj: 12882

Start AID	End AID	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	1200.00	Generic pyro - nonoverlaping (Standard)	01. NSG Cont 100'-1200'	Long 408 S-SH AWP
6930.00	12637.00	15C/VISA AWD Rev 2 (Standard)	02. Weatherford AWD 1263'-6930'	Long 408 S-SH AWP
12637.00	12882.00	NorthTAL CAT Curve Short Spaced	03. HIT A/C Curve ex-127 > 6922'-12637'	Long 408 S-SH AWP
12882.00		Blind Logging (old)	Precession to HI	Long 408 S-SH AWP

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Operator	Area	Field	Facility	Slot	Well	Slot #05
HG ENERGY	Wetzel County, WV	Wetzel (UTM 17N NAD 27)	Long 408 Pad		Wellbore	Long 408 S-5H Long 408 S-5H AWP

COMMENTS

Wellpath general comments
 API: 47-013 02891-00000
 Reg: MWD 105
 BHJ Job #: 027244E
 Duration: 07/10/2014-07/21/2014
 Gyro Survey (100'-1200')
 Westcoast MWD Survey (1367'-6910')
 BHJ AT Curve (6992'-12857')
 TD Proposed to MD: 12882'