



Actual Wellpath Report

Gravitas 2 State SWD No. 002 awp 158' - 14904' Proj: 14960'

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**BAKER
HUGHES**

30-015-43892

REFERENCE WELLPATH IDENTIFICATION

Operator	Chevron U.S.A. Inc.	Slot	Gravitas 2 State SWD
Area	Eddy County, NM	Well	Gravitas 2 State SWD No. 002
Field	Hayhurst South(Eddy Co., NM) Nad 27	Wellbore	Gravitas 2 State SWD AWB
Facility	Gravitas 2 State SWD		

REPORT SETUP INFORMATION

Projection System	NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect@ 5.0
North Reference	Grid	User	Tranlam
Scale	0.999912	Report Generated	5/11/2017 at 2:21:54 PM
Convergence at slot	0.09° East	Database/Source file	WA_Midland/Gravitas_2_State_SWD_No_002_awp_158_-14904_Proj_14960_.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	552344.00	387394.00	32°03'53.816"N	104°09'51.695"W
Facility Reference Pt			552344.00	387394.00	32°03'53.816"N	104°09'51.695"W
Field Reference Pt			152400.30	0.00	30°59'42.846"N	105°26'33.659"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig: Patterson 815 (KB) to Facility Vertical Datum	3247.00ft
Horizontal Reference Pt	Slot	Rig: Patterson 815 (KB) to Mean Sea Level	3247.00ft
Vertical Reference Pt	Rig: Patterson 815 (KB)	Rig: Patterson 815 (KB) to Ground Level at Slot (Gravitas 2 State SWD)	28.00ft
MD Reference Pt	Rig: Patterson 815 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	0.00°

We hereby certify that the surveys contained herein, are to the best of our knowledge a true and accurate account of the well.

[Signature]

MWD COORDINATOR



Actual Wellpath Report

Gravitas 2 State SWD No. 002 awp 158' - 14904' Proj: 14960'

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REFERENCE WELLPATH IDENTIFICATION

Operator	Chevron U.S.A. Inc.	Slot	Gravitas 2 State SWD
Area	Eddy County, NM	Well	Gravitas 2 State SWD No. 002
Field	Hayhurst South(Eddy Co., NM) Nad 27	Wellbore	Gravitas 2 State SWD AWB
Facility	Gravitas 2 State SWD		

WELLPATH DATA (89 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	DLS [°/100ft]	Comments
0.00†	0.000	271.960	0.00	0.00	0.00	0.00	552344.00	387394.00	32°03'53.816"N	104°09'51.695"W	0.00	
28.00	0.000	271.960	28.00	0.00	0.00	0.00	552344.00	387394.00	32°03'53.816"N	104°09'51.695"W	0.00	
158.00	1.890	271.960	157.98	0.07	0.07	-2.14	552341.86	387394.07	32°03'53.816"N	104°09'51.720"W	1.45	
288.00	2.860	285.550	287.86	1.02	1.02	-7.41	552336.59	387395.02	32°03'53.826"N	104°09'51.781"W	0.86	
387.00	3.740	284.890	386.70	2.51	2.51	-12.91	552331.09	387396.51	32°03'53.841"N	104°09'51.845"W	0.89	24 BHI MWD 158' - 387'
527.00	4.230	286.390	526.36	5.14	5.14	-22.28	552321.73	387399.14	32°03'53.867"N	104°09'51.954"W	0.36	
711.00	2.800	325.020	710.03	10.74	10.74	-31.36	552312.64	387404.74	32°03'53.922"N	104°09'52.059"W	1.46	
803.00	1.890	355.250	801.96	14.09	14.09	-32.78	552311.22	387408.09	32°03'53.956"N	104°09'52.076"W	1.64	
898.00	1.150	40.880	896.93	16.37	16.37	-32.28	552311.72	387410.37	32°03'53.978"N	104°09'52.070"W	1.43	
1088.00	0.160	171.960	1086.92	17.55	17.55	-31.00	552313.00	387411.55	32°03'53.990"N	104°09'52.055"W	0.66	
1277.00	0.330	233.000	1275.91	16.96	16.96	-31.40	552312.61	387410.96	32°03'53.984"N	104°09'52.060"W	0.15	
1466.00	0.650	206.230	1464.91	15.67	15.67	-32.31	552311.70	387409.67	32°03'53.971"N	104°09'52.070"W	0.20	
1655.00	1.130	134.870	1653.89	13.40	13.40	-31.46	552312.54	387407.39	32°03'53.949"N	104°09'52.060"W	0.59	
1845.00	1.170	152.040	1843.85	10.36	10.36	-29.22	552314.78	387404.36	32°03'53.919"N	104°09'52.034"W	0.18	
2034.00	1.850	119.750	2032.79	7.14	7.14	-25.67	552318.33	387401.14	32°03'53.887"N	104°09'51.993"W	0.56	
2224.00	2.420	116.220	2222.66	3.85	3.85	-19.41	552324.60	387397.85	32°03'53.854"N	104°09'51.920"W	0.31	
2413.00	2.570	118.440	2411.48	0.07	0.07	-12.10	552331.90	387394.07	32°03'53.817"N	104°09'51.836"W	0.09	
2602.00	2.820	115.230	2600.27	-3.93	-3.93	-4.17	552339.83	387390.07	32°03'53.777"N	104°09'51.743"W	0.15	
2792.00	1.140	127.970	2790.15	-7.09	-7.09	1.55	552345.55	387386.91	32°03'53.745"N	104°09'51.677"W	0.91	
2981.00	1.290	132.450	2979.10	-9.68	-9.68	4.60	552348.60	387384.32	32°03'53.720"N	104°09'51.642"W	0.09	
3171.00	1.320	135.910	3169.06	-12.70	-12.70	7.70	552351.70	387381.31	32°03'53.690"N	104°09'51.606"W	0.04	
3360.00	0.280	285.360	3358.04	-14.14	-14.14	8.77	552352.77	387379.86	32°03'53.676"N	104°09'51.593"W	0.83	
3549.00	0.160	231.720	3547.04	-14.18	-14.18	8.12	552352.12	387379.82	32°03'53.675"N	104°09'51.601"W	0.12	
3739.00	0.190	281.040	3737.04	-14.28	-14.28	7.60	552351.60	387379.72	32°03'53.674"N	104°09'51.607"W	0.08	
3928.00	0.250	199.120	3926.04	-14.61	-14.61	7.16	552351.16	387379.39	32°03'53.671"N	104°09'51.612"W	0.15	
4118.00	0.370	236.100	4116.04	-15.35	-15.35	6.51	552350.51	387378.66	32°03'53.664"N	104°09'51.620"W	0.12	
4299.00	0.250	159.540	4297.03	-16.04	-16.04	6.17	552350.17	387377.96	32°03'53.657"N	104°09'51.624"W	0.22	
4488.00	0.150	160.240	4486.03	-16.66	-16.66	6.39	552350.39	387377.34	32°03'53.651"N	104°09'51.621"W	0.05	
4678.00	0.150	267.700	4676.03	-16.90	-16.90	6.23	552350.23	387377.10	32°03'53.648"N	104°09'51.623"W	0.13	
4872.00	0.470	210.780	4870.03	-17.60	-17.60	5.57	552349.57	387376.40	32°03'53.641"N	104°09'51.631"W	0.21	



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Gravitas 2 State SWD No. 002 awp 158' - 14904' Proj: 14960'

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Area	Eddy County, NM	Well	Gravitas 2 State SWD No. 002
Field	Hayhurst South(Eddy Co., NM) Nad 27	Wellbore	Gravitas 2 State SWD AWB
Facility	Gravitas 2 State SWD		

WELLPATH DATA (89 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [r/100ft]	Comments
5065.00	0.750	229.100	5063.02	-19.11	-19.11	4.21	552348.21	387374.90	32°03'53.627"N	104°09'51.646"W	0.18	
5255.00	0.400	224.320	5253.01	-20.39	-20.39	2.81	552346.81	387373.61	32°03'53.614"N	104°09'51.663"W	0.19	
5444.00	0.480	176.240	5442.00	-21.66	-21.66	2.40	552346.40	387372.35	32°03'53.601"N	104°09'51.668"W	0.19	
5634.00	0.560	176.500	5632.00	-23.38	-23.38	2.51	552346.51	387370.62	32°03'53.584"N	104°09'51.666"W	0.04	
5823.00	0.520	170.730	5820.98	-25.15	-25.15	2.70	552346.70	387368.86	32°03'53.567"N	104°09'51.664"W	0.04	
6013.00	0.750	190.720	6010.98	-27.22	-27.22	2.61	552346.61	387366.78	32°03'53.546"N	104°09'51.665"W	0.17	
6202.00	0.570	266.740	6199.97	-28.49	-28.49	1.44	552345.44	387365.52	32°03'53.534"N	104°09'51.679"W	0.44	
6385.00	0.760	253.640	6382.95	-28.88	-28.88	-0.63	552343.37	387365.12	32°03'53.530"N	104°09'51.703"W	0.13	
6575.00	1.110	201.920	6572.93	-30.94	-30.94	-2.53	552341.47	387363.06	32°03'53.509"N	104°09'51.725"W	0.46	
6765.00	0.970	303.090	6762.91	-31.77	-31.77	-4.56	552339.44	387362.23	32°03'53.501"N	104°09'51.749"W	0.85	
6966.00	0.790	248.140	6963.89	-31.36	-31.36	-7.28	552336.72	387362.64	32°03'53.505"N	104°09'51.780"W	0.41	
7158.00	0.900	334.790	7155.88	-30.49	-30.49	-9.15	552334.85	387363.51	32°03'53.514"N	104°09'51.802"W	0.61	
7347.00	1.460	46.310	7344.85	-27.48	-27.48	-8.04	552335.96	387366.52	32°03'53.544"N	104°09'51.789"W	0.77	
7537.00	1.600	80.020	7534.78	-25.35	-25.35	-3.68	552340.33	387368.65	32°03'53.565"N	104°09'51.738"W	0.47	
7726.00	1.140	88.630	7723.73	-24.85	-24.85	0.80	552344.80	387369.15	32°03'53.570"N	104°09'51.686"W	0.27	
7916.00	1.920	77.440	7913.66	-24.11	-24.11	5.80	552349.80	387369.89	32°03'53.577"N	104°09'51.628"W	0.44	
8102.00	0.810	89.080	8099.60	-23.41	-23.41	10.16	552354.15	387370.59	32°03'53.584"N	104°09'51.577"W	0.61	
8294.00	1.310	114.400	8291.57	-24.30	-24.30	13.51	552357.51	387369.71	32°03'53.575"N	104°09'51.538"W	0.35	
8482.00	1.390	99.270	8479.52	-25.55	-25.55	17.72	552361.72	387368.45	32°03'53.563"N	104°09'51.490"W	0.19	
8518.00	1.410	107.880	8515.51	-25.76	-25.76	18.57	552362.57	387368.24	32°03'53.560"N	104°09'51.480"W	0.59	16 1/2 BHI MWD 527' - 8518'
8653.00	0.060	286.700	8650.49	-26.25	-26.25	20.08	552364.08	387367.75	32°03'53.556"N	104°09'51.462"W	1.09	
8842.00	0.100	23.340	8839.49	-26.07	-26.07	20.05	552364.05	387367.93	32°03'53.557"N	104°09'51.462"W	0.06	
9032.00	0.060	116.830	9029.49	-25.96	-25.96	20.21	552364.21	387368.04	32°03'53.558"N	104°09'51.461"W	0.06	
9221.00	0.090	58.210	9218.49	-25.93	-25.93	20.42	552364.42	387368.08	32°03'53.559"N	104°09'51.458"W	0.04	
9411.00	0.060	330.960	9408.49	-25.76	-25.76	20.54	552364.50	387368.24	32°03'53.560"N	104°09'51.457"W	0.06	
9600.00	0.070	134.870	9597.49	-25.76	-25.76	20.54	552364.53	387368.25	32°03'53.560"N	104°09'51.457"W	0.07	
9789.00	0.140	172.880	9786.49	-26.07	-26.07	20.65	552364.64	387367.94	32°03'53.557"N	104°09'51.456"W	0.05	
9877.00	0.070	190.530	9874.49	-26.23	-26.23	20.65	552364.65	387367.78	32°03'53.556"N	104°09'51.455"W	0.09	12 1/4 BHI MWD 8653' - 9877'
9992.00	0.120	100.830	9989.49	-26.32	-26.32	20.76	552364.75	387367.68	32°03'53.555"N	104°09'51.454"W	0.12	
10181.00	0.290	252.760	10178.49	-26.50	-26.50	20.49	552364.49	387367.51	32°03'53.553"N	104°09'51.457"W	0.21	



Actual Wellpath Report

Gravitas 2 State SWD No. 002 awp 158' - 14904' Proj: 14960'

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REFERENCE WELLPATH IDENTIFICATION

Operator	Chevron U.S.A. Inc.	Slot	Gravitas 2 State SWD
Area	Eddy County, NM	Well	Gravitas 2 State SWD No. 002
Field	Hayhurst South(Eddy Co., NM) Nad 27	Wellbore	Gravitas 2 State SWD AWB
Facility	Gravitas 2 State SWD		

WELLPATH DATA (89 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude [US ft]	Longitude [°/100ft]	DLS [°/100ft]	Comments
10370.00	0.350	230.810	10367.49	-27.00	-27.00	19.59	552363.59	387367.00	32°03'53.548"N	104°09'51.468"W	0.07	
10559.00	0.420	254.630	10556.49	-27.55	-27.55	18.47	552362.47	387366.45	32°03'53.543"N	104°09'51.481"W	0.09	
10748.00	0.340	243.550	10745.48	-27.99	-27.99	17.30	552361.30	387366.02	32°03'53.538"N	104°09'51.494"W	0.06	
10936.00	0.350	270.570	10933.48	-28.23	-28.23	16.23	552360.23	387365.77	32°03'53.536"N	104°09'51.507"W	0.09	
11126.00	0.190	279.550	11123.48	-28.17	-28.17	15.34	552359.34	387365.83	32°03'53.537"N	104°09'51.517"W	0.09	
11315.00	0.310	287.440	11312.47	-27.96	-27.96	14.54	552358.54	387366.04	32°03'53.539"N	104°09'51.526"W	0.07	
11503.00	0.190	295.250	11500.47	-27.68	-27.68	13.78	552357.77	387366.32	32°03'53.542"N	104°09'51.535"W	0.07	
11693.00	0.190	296.290	11690.47	-27.41	-27.41	13.21	552357.21	387366.60	32°03'53.544"N	104°09'51.542"W	0.00	
11881.00	0.380	295.210	11878.47	-27.00	-27.00	12.36	552356.36	387367.00	32°03'53.548"N	104°09'51.552"W	0.10	
12070.00	0.250	276.530	12067.47	-26.69	-26.69	11.39	552355.39	387367.31	32°03'53.551"N	104°09'51.563"W	0.09	
12266.00	0.220	267.870	12263.46	-26.65	-26.65	10.59	552354.59	387367.35	32°03'53.552"N	104°09'51.572"W	0.02	
12454.00	0.310	225.870	12451.46	-27.02	-27.02	9.86	552353.86	387366.98	32°03'53.548"N	104°09'51.581"W	0.11	
12644.00	0.660	274.830	12641.46	-27.29	-27.29	8.40	552352.40	387366.72	32°03'53.546"N	104°09'51.598"W	0.27	
12834.00	0.590	244.500	12831.45	-27.62	-27.62	6.43	552350.43	387366.39	32°03'53.542"N	104°09'51.621"W	0.18	
13023.00	0.550	264.330	13020.44	-28.12	-28.12	4.65	552348.65	387365.88	32°03'53.537"N	104°09'51.641"W	0.11	
13213.00	0.630	255.690	13210.43	-28.47	-28.47	2.73	552346.73	387365.53	32°03'53.534"N	104°09'51.664"W	0.06	
13402.00	0.590	221.550	13399.42	-29.46	-29.46	1.08	552345.08	387364.55	32°03'53.524"N	104°09'51.683"W	0.19	
13540.00	0.960	239.950	13537.40	-30.57	-30.57	-0.40	552343.60	387363.43	32°03'53.513"N	104°09'51.700"W	0.32	10 5/8 BHI MWD 9992' - 13540'
13703.00	2.410	227.060	13700.33	-33.59	-33.59	-4.09	552339.91	387360.42	32°03'53.483"N	104°09'51.743"W	0.91	
13874.00	2.860	219.080	13871.15	-39.35	-39.35	-9.41	552334.59	387354.66	32°03'53.426"N	104°09'51.805"W	0.34	
13922.00	3.030	225.100	13919.09	-41.17	-41.17	-11.06	552332.94	387352.83	32°03'53.408"N	104°09'51.824"W	0.73	6 3/4 BHI MWD 13703' - 13922'
14109.00	3.420	232.410	14105.79	-48.06	-48.06	-18.98	552325.02	387345.94	32°03'53.340"N	104°09'51.916"W	0.30	
14298.00	3.880	227.560	14294.41	-55.82	-55.82	-28.17	552315.83	387338.19	32°03'53.264"N	104°09'52.023"W	0.29	
14488.00	6.490	208.130	14483.63	-69.63	-69.63	-37.98	552306.02	387324.38	32°03'53.127"N	104°09'52.138"W	1.64	
14677.00	6.870	213.500	14671.34	-88.47	-88.47	-49.25	552294.75	387305.53	32°03'52.941"N	104°09'52.269"W	0.39	
14772.00	6.980	214.150	14765.65	-97.99	-97.99	-55.63	552288.38	387296.02	32°03'52.847"N	104°09'52.343"W	0.14	
14867.00	6.370	213.160	14860.01	-107.18	-107.18	-61.75	552282.25	387286.83	32°03'52.756"N	104°09'52.415"W	0.65	
14904.00	6.310	213.980	14896.78	-110.58	-110.58	-64.01	552279.99	387283.43	32°03'52.722"N	104°09'52.441"W	0.29	5 1/2 BHI MWD 14109' - 14904'
14960.00	6.310	213.980	14952.44	-115.69	-115.69	-67.45	552276.55	387278.32	32°03'52.672"N	104°09'52.481"W	0.00	Projection to TD: 14960'

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
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Gravitas 2 State SWD No. 002 awp 158' - 14904' Proj: 14960'

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REFERENCE WELLPATH IDENTIFICATION

Operator	Chevron U.S.A. Inc.	Slot	Gravitas 2 State SWD
Area	Eddy County, NM	Well	Gravitas 2 State SWD No. 002
Field	Hayhurst South(Eddy Co., NM) Nad 27	Wellbore	Gravitas 2 State SWD AWB
Facility	Gravitas 2 State SWD		

COMMENTS

Wellpath general comments

Well: Gravitas 2 State SWD No. 002

Field: Hayhurst South

Rig: Patterson 815

Location: Eddy Co., NM

API: 30-015-43892-00

Latitude: 32° 03' 53.816" N

Longitude: 104° 09' 51.695" W

DF Elevation: 3247 feet

Elev. GL: 3219 feet

Proposed Direction: 0.0°

PBHL: 14960 feet

Duration: 12/15/2016-04/27/2017

FSE's: J. Girdley

SO#: 8274833

24 BHI MWD 158' - 387'

16 1/2 BHI MWD 527' - 8518'

12 1/4 BHI MWD 8653' - 9877'

10 5/8 BHI MWD 9992' - 13540'

6 3/4 BHI MWD 13703' - 13922'

5 1/2 BHI MWD 14109' - 14904'

Projection to TD: 14960'

TARGETS									
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape	
Gravitas 2 State SWD Point 1 rev 1	10000.00	0.00	0.00	552344.00	387394.00	32°03'53.816"N	104°09'51.695"W	rectangle	
Gravitas 2 State SWD PBHL rev 2	14944.00	0.00	0.00	552344.00	387394.00	32°03'53.816"N	104°09'51.695"W	rectangle	

WELLPATH COMPOSITION - Ref Wellbore: Gravitas 2 State SWD AWB Ref Wellpath: Gravitas 2 State SWD No. 002 awp 158' - 14904' Proj: 14960'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
28.00	387.00	BHI NaviTrak (Axial)	24 BHI MWD 158' - 387'	Gravitas 2 State SWD AWB
387.00	8518.00	BHI NaviTrak (Axial)	16 1/2 BHI MWD 527' - 8518'	Gravitas 2 State SWD AWB
8518.00	9877.00	BHI AutoTrak G3 (Standard)	12 1/4 BHI MWD 8653' - 9877'	Gravitas 2 State SWD AWB
9877.00	13540.00	BHI NaviTrak (Standard)	10 5/8 BHI MWD 9992' - 13540'	Gravitas 2 State SWD AWB
13540.00	13922.00	BHI NaviTrak (Standard)	6 3/4 BHI MWD 13703' - 13922'	Gravitas 2 State SWD AWB
13922.00	14904.00	BHI NaviTrak (Standard)	5 1/2 BHI MWD 14109' - 14904'	Gravitas 2 State SWD AWB
14904.00	14960.00	Blind Drilling (std)	Projection to bit	Gravitas 2 State SWD AWB