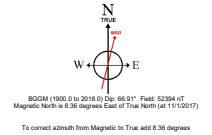
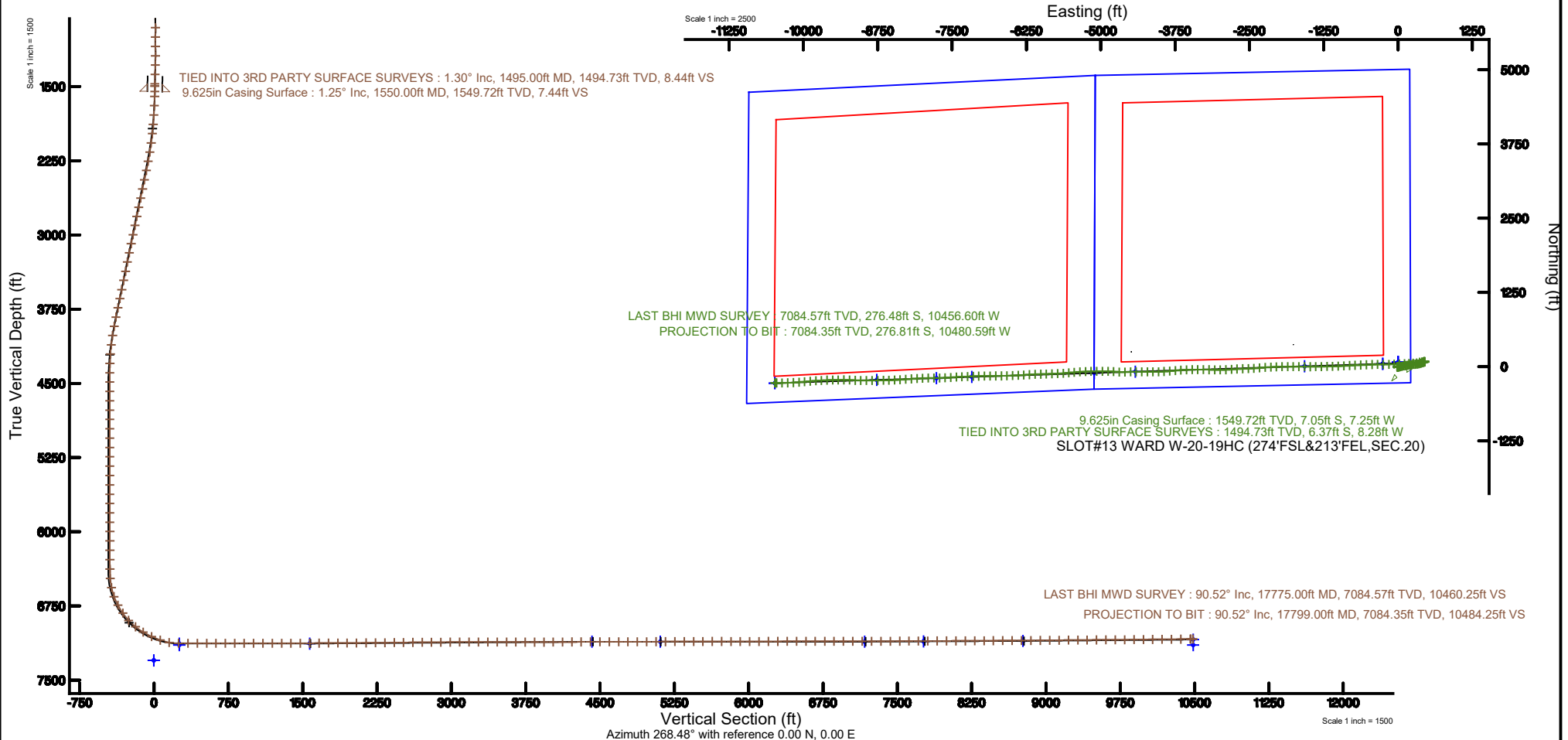


BAYSWATER E & P LLC

Location: COLORADO Slot: SLOT#13 WARD W-20-19HC (274'FSL&213'FEL,SEC.20)
 Field: WELD COUNTY (NAD83/TRUE NORTH) Well: WARD W-20-19HC
 Facility: SEC.20-T06N-R66W Wellbore: WARD W-20-19HC PWB



Plot reference wellpath is WARD W-20-19HC (REV-A.0) PWB	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to TRUE 38 (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to TRUE 38 (RKB)	North Reference: True north
TRUE 38 (RKB) to Mean Sea Level: 4753 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: SLOT#13 WARD W-20-19HC (274'FSL&213'FEL,SEC.20)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: doddanna on 2017-11-28
	Database: Denver DB



Actual Wellpath Report

WARD W-20-19HC AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BAYSWATER E & P LLC	Slot	SLOT#13 WARD W-20-19HC (274'FSL&213'FEL,SEC.20)
Area	COLORADO	Well	WARD W-20-19HC
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WARD W-20-19HC AWB
Facility	SEC.20-T06N-R66W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Doddanna
Scale	0.999964	Report Generated	11/28/2017 at 1:58:06 PM
Convergence at slot	0.46° East	Database/Source file	Denver DB/WARD_W-20-19HC_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-246.92	4484.69	3196666.26	1413806.95	40°28'01.740"N	104°47'35.362"W
Facility Reference Pt			3192179.96	1414018.92	40°28'04.184"N	104°48'33.386"W
Field Reference Pt			3174587.00	1430859.71	40°30'51.890"N	104°52'19.470"W

WELLPATH DATUM			
Calculation method	Minimum curvature	TRUE 38 (RKB) to Facility Vertical Datum	4753.00ft
Horizontal Reference Pt	Slot	TRUE 38 (RKB) to Mean Sea Level	4753.00ft
Vertical Reference Pt	TRUE 38 (RKB)	TRUE 38 (RKB) to Ground Level at Slot (SLOT#13 WARD W-20-19HC (274'FSL&213'FEL,SEC.20))	4753.00ft
MD Reference Pt	TRUE 38 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	268.49°

Actual Wellpath Report

WARD W-20-19HC AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BAYSWATER E & P LLC	Slot	SLOT#13 WARD W-20-19HC (274'FSL&213'FEL,SEC.20)
Area	COLORADO	Well	WARD W-20-19HC
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WARD W-20-19HC AWB
Facility	SEC.20-T06N-R66W		

WELLPATH DATA (190 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00	0.000	281.600	0.00	0.00	0.00	0.00	0.00	
241.00	2.200	281.600	240.94	4.51	0.93	-4.53	0.91	
336.00	1.200	286.700	335.90	7.23	1.58	-7.27	1.06	
430.00	0.300	265.600	429.89	8.41	1.85	-8.46	0.99	
525.00	0.400	244.200	524.89	8.96	1.68	-9.01	0.17	
620.00	0.700	263.100	619.88	9.84	1.47	-9.88	0.36	
715.00	1.100	259.300	714.87	11.32	1.23	-11.35	0.43	
809.00	1.400	257.000	808.85	13.33	0.80	-13.36	0.32	
904.00	0.600	172.800	903.84	14.42	0.05	-14.43	1.54	
999.00	0.500	158.900	998.83	14.23	-0.83	-14.21	0.17	
1094.00	0.800	191.400	1093.83	14.24	-1.87	-14.20	0.49	
1189.00	0.600	176.700	1188.82	14.37	-3.01	-14.30	0.28	
1283.00	1.400	120.600	1282.81	13.39	-4.09	-13.28	1.25	
1378.00	1.800	111.600	1377.77	11.03	-5.23	-10.90	0.50	
1473.00	1.100	113.700	1472.74	8.83	-6.15	-8.67	0.74	
1495.00	1.300	125.000	1494.73	8.44	-6.37	-8.28	1.40	TIED INTO 3RD PARTY SURFACE SURVEYS
1599.00	1.210	118.430	1598.71	6.54	-7.57	-6.34	0.16	
1693.00	2.360	92.910	1692.66	3.75	-8.14	-3.54	1.46	
1788.00	3.640	84.880	1787.53	-1.21	-7.97	1.42	1.41	
1882.00	4.710	81.830	1881.28	-8.02	-7.16	8.21	1.16	
1977.00	6.160	79.130	1975.85	-16.92	-5.64	17.08	1.55	
2071.00	7.920	79.410	2069.14	-28.30	-3.50	28.40	1.87	
2166.00	9.590	78.660	2163.03	-42.56	-0.74	42.59	1.76	
2260.00	11.000	77.930	2255.51	-59.09	2.67	59.04	1.51	
2355.00	11.750	77.450	2348.65	-77.49	6.67	77.34	0.80	
2450.00	11.760	79.360	2441.65	-96.55	10.56	96.30	0.41	
2545.00	11.850	80.390	2534.64	-115.76	13.97	115.43	0.24	
2640.00	11.840	79.390	2627.62	-135.04	17.40	134.63	0.22	
2734.00	11.880	79.270	2719.62	-154.11	20.97	153.61	0.05	
2828.00	11.700	80.680	2811.63	-173.11	24.32	172.53	0.36	
2922.00	11.790	80.480	2903.66	-192.06	27.45	191.40	0.11	
3017.00	11.670	80.740	2996.68	-211.19	30.60	210.46	0.14	
3111.00	11.620	83.330	3088.75	-230.04	33.23	229.24	0.56	
3205.00	11.730	83.990	3180.80	-248.99	35.33	248.15	0.18	
3300.00	11.740	84.260	3273.82	-268.26	37.31	267.37	0.06	
3395.00	11.460	84.380	3366.88	-287.31	39.20	286.38	0.30	
3489.00	11.750	86.880	3458.95	-306.19	40.64	305.23	0.62	
3584.00	11.630	84.810	3551.98	-325.42	42.03	324.42	0.46	
3678.00	12.330	80.570	3643.94	-344.82	44.53	343.76	1.20	
3773.00	12.070	73.240	3736.80	-364.45	49.06	363.28	1.65	
3868.00	11.890	67.930	3829.73	-383.19	55.60	381.86	1.18	
3963.00	11.160	71.550	3922.82	-401.15	62.18	399.65	1.08	
4058.00	9.910	75.430	4016.21	-417.91	67.15	416.28	1.51	
4153.00	7.020	72.120	4110.17	-431.45	70.99	429.72	3.08	
4246.00	4.260	61.740	4202.71	-439.99	74.37	438.18	3.15	

Actual Wellpath Report

WARD W-20-19HC AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BAYSWATER E & P LLC	Slot	SLOT#13 WARD W-20-19HC (274'FSL&213'FEL,SEC.20)
Area	COLORADO	Well	WARD W-20-19HC
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WARD W-20-19HC AWB
Facility	SEC.20-T06N-R66W		

WELLPATH DATA (190 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
4341.00	2.880	45.830	4297.53	-444.89	77.71	443.00	1.77	
4436.00	1.270	15.180	4392.47	-446.95	80.38	444.98	2.00	
4530.00	0.260	274.960	4486.46	-447.04	81.41	445.04	1.43	
4625.00	0.100	255.590	4581.46	-446.74	81.41	444.75	0.18	
4719.00	0.290	219.660	4675.46	-446.51	81.20	444.52	0.23	
4814.00	0.060	246.660	4770.46	-446.30	81.00	444.32	0.25	
4908.00	0.190	284.370	4864.46	-446.11	81.02	444.12	0.16	
5003.00	0.030	257.250	4959.46	-445.93	81.05	443.94	0.17	
5098.00	0.070	226.570	5054.46	-445.86	81.01	443.88	0.05	
5192.00	0.060	221.300	5148.46	-445.79	80.93	443.80	0.01	
5286.00	0.210	312.220	5242.46	-445.63	81.01	443.64	0.23	
5380.00	0.070	279.480	5336.46	-445.45	81.13	443.46	0.17	
5475.00	0.460	99.760	5431.46	-445.76	81.08	443.78	0.56	
5569.00	0.180	50.590	5525.45	-446.25	81.11	444.26	0.39	
5664.00	0.210	263.470	5620.45	-446.20	81.18	444.21	0.39	
5758.00	0.180	282.520	5714.45	-445.88	81.20	443.89	0.08	
5852.00	0.160	303.060	5808.45	-445.63	81.30	443.64	0.07	
5947.00	0.130	283.500	5903.45	-445.42	81.40	443.42	0.06	
6041.00	0.070	279.410	5997.45	-445.26	81.43	443.26	0.06	
6136.00	0.000	98.370	6092.45	-445.20	81.44	443.20	0.07	
6230.00	0.000	98.370	6186.45	-445.20	81.44	443.20	0.00	
6325.00	0.110	331.500	6281.45	-445.16	81.52	443.16	0.12	
6420.00	0.220	285.240	6376.45	-444.94	81.65	442.94	0.17	
6515.00	3.640	258.650	6471.38	-441.80	81.10	439.81	3.63	
6609.00	12.340	271.630	6564.39	-428.80	80.80	426.82	9.39	
6704.00	19.280	263.710	6655.75	-403.00	79.37	401.04	7.63	
6799.00	29.650	256.190	6742.12	-364.30	72.02	362.52	11.38	
6894.00	34.620	262.320	6822.56	-314.46	62.80	312.91	6.25	
6988.00	42.750	265.940	6895.89	-255.94	56.96	254.52	8.97	
7083.00	51.070	267.170	6960.73	-186.66	52.84	185.33	8.81	
7178.00	59.900	267.160	7014.51	-108.48	48.98	107.23	9.29	
7273.00	64.210	266.790	7059.01	-24.61	44.54	23.44	4.55	
7368.00	70.650	268.220	7095.46	63.05	40.75	-64.15	6.92	
7462.00	79.730	268.390	7119.46	153.84	38.07	-154.89	9.66	
7557.00	90.000	269.440	7127.95	248.32	36.29	-249.37	10.87	
7651.00	90.520	270.040	7127.53	342.30	35.86	-343.37	0.84	
7745.00	90.060	267.870	7127.05	436.29	34.15	-437.34	2.36	
7840.00	89.940	267.410	7127.05	531.28	30.23	-532.26	0.50	
7934.00	90.000	267.560	7127.10	625.26	26.11	-626.17	0.17	
8029.00	90.120	267.530	7127.00	720.25	22.04	-721.08	0.13	
8124.00	90.060	266.910	7126.85	815.23	17.43	-815.97	0.66	
8219.00	90.060	266.720	7126.75	910.19	12.15	-910.82	0.20	
8314.00	90.030	267.670	7126.68	1005.16	7.50	-1005.71	1.00	
8408.00	90.060	268.390	7126.60	1099.16	4.27	-1099.65	0.77	
8503.00	89.910	268.680	7126.63	1194.16	1.84	-1194.62	0.34	

Actual Wellpath Report

WARD W-20-19HC AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BAYSWATER E & P LLC	Slot	SLOT#13 WARD W-20-19HC (274'FSL&213'FEL,SEC.20)
Area	COLORADO	Well	WARD W-20-19HC
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WARD W-20-19HC AWB
Facility	SEC.20-T06N-R66W		

WELLPATH DATA (190 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
8597.00	90.030	268.660	7126.68	1288.16	-0.34	-1288.60	0.13	
8691.00	90.030	269.130	7126.63	1382.15	-2.15	-1382.58	0.50	
8786.00	90.150	270.160	7126.48	1477.13	-2.74	-1477.58	1.09	
8881.00	90.150	270.640	7126.23	1572.08	-2.08	-1572.57	0.51	
8975.00	90.520	271.100	7125.68	1666.00	-0.65	-1666.56	0.63	
9070.00	90.180	270.310	7125.10	1760.92	0.52	-1761.55	0.91	
9165.00	90.090	269.440	7124.88	1855.89	0.31	-1856.55	0.92	
9258.00	90.340	268.620	7124.53	1948.89	-1.26	-1949.53	0.92	
9353.00	90.400	268.400	7123.91	2043.89	-3.73	-2044.50	0.24	
9448.00	90.370	266.660	7123.28	2138.87	-7.82	-2139.41	1.83	
9543.00	90.520	264.900	7122.54	2233.75	-14.82	-2234.14	1.86	
9638.00	90.710	265.420	7121.52	2328.59	-22.83	-2328.80	0.58	
9733.00	90.650	267.070	7120.39	2423.51	-29.05	-2423.58	1.74	
9827.00	90.620	267.760	7119.35	2517.48	-33.29	-2517.48	0.73	
9921.00	90.710	267.870	7118.26	2611.47	-36.87	-2611.41	0.15	
10016.00	90.550	267.260	7117.21	2706.45	-40.91	-2706.31	0.66	
10110.00	89.660	265.010	7117.04	2800.36	-47.25	-2800.09	2.57	
10204.00	90.580	267.810	7116.84	2894.29	-53.13	-2893.90	3.14	
10299.00	90.680	268.830	7115.80	2989.29	-55.92	-2988.85	1.08	
10394.00	90.220	271.660	7115.05	3084.23	-55.51	-3083.84	3.02	
10488.00	89.780	271.690	7115.05	3178.08	-52.76	-3177.80	0.47	
10583.00	89.970	270.920	7115.26	3272.97	-50.60	-3272.77	0.83	
10678.00	90.120	269.870	7115.19	3367.91	-49.94	-3367.77	1.12	
10773.00	89.910	268.550	7115.16	3462.90	-51.25	-3462.76	1.41	
10867.00	89.940	267.880	7115.28	3556.90	-54.18	-3556.71	0.71	
10961.00	89.880	265.830	7115.43	3650.86	-59.34	-3650.56	2.18	
11056.00	90.000	263.910	7115.53	3745.66	-67.83	-3745.18	2.02	
11150.00	89.820	266.110	7115.68	3839.48	-76.01	-3838.82	2.35	
11245.00	90.180	266.230	7115.68	3934.41	-82.35	-3933.60	0.40	
11339.00	90.550	267.750	7115.08	4028.37	-87.29	-4027.47	1.66	
11433.00	90.550	270.060	7114.18	4122.36	-89.09	-4121.44	2.46	
11527.00	90.220	270.150	7113.55	4216.32	-88.91	-4215.44	0.36	
11621.00	90.310	270.770	7113.11	4310.26	-88.16	-4309.43	0.67	
11716.00	90.090	269.870	7112.78	4405.21	-87.63	-4404.43	0.98	
11810.00	90.000	267.800	7112.71	4499.20	-89.54	-4498.41	2.20	
11905.00	90.220	268.530	7112.52	4594.20	-92.58	-4593.36	0.80	
11999.00	90.250	273.020	7112.14	4688.10	-91.31	-4687.32	4.78	
12094.00	90.120	275.020	7111.83	4782.65	-84.65	-4782.08	2.11	
12188.00	90.220	270.870	7111.55	4876.35	-79.82	-4875.94	4.42	
12283.00	90.150	269.920	7111.25	4971.29	-79.17	-4970.94	1.00	
12378.00	90.250	270.070	7110.91	5066.26	-79.18	-5065.94	0.19	
12473.00	90.150	268.870	7110.58	5161.24	-80.05	-5160.93	1.27	
12567.00	90.250	267.080	7110.25	5255.24	-83.38	-5254.87	1.91	
12662.00	90.150	265.810	7109.92	5350.17	-89.27	-5349.68	1.34	
12757.00	90.310	264.860	7109.54	5445.03	-96.99	-5444.36	1.01	

Actual Wellpath Report

WARD W-20-19HC AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BAYSWATER E & P LLC	Slot	SLOT#13 WARD W-20-19HC (274'FSL&213'FEL,SEC.20)
Area	COLORADO	Well	WARD W-20-19HC
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WARD W-20-19HC AWB
Facility	SEC.20-T06N-R66W		

WELLPATH DATA (190 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
12851.00	90.430	265.030	7108.93	5538.85	-105.27	-5538.00	0.22	
12944.00	90.090	266.220	7108.51	5631.73	-112.37	-5630.72	1.33	
13039.00	89.880	266.920	7108.54	5726.67	-118.05	-5725.55	0.77	
13134.00	89.880	268.270	7108.74	5821.66	-122.04	-5820.47	1.42	
13228.00	89.970	268.340	7108.86	5915.66	-124.82	-5914.42	0.12	
13323.00	89.850	268.220	7109.01	6010.66	-127.67	-6009.38	0.18	
13418.00	90.310	267.780	7108.88	6105.65	-130.99	-6104.32	0.67	
13512.00	89.970	266.320	7108.65	6199.62	-135.82	-6198.20	1.59	
13607.00	90.310	267.050	7108.41	6294.57	-141.32	-6293.04	0.85	
13701.00	90.310	266.660	7107.91	6388.53	-146.47	-6386.89	0.41	
13796.00	90.310	266.730	7107.39	6483.49	-151.95	-6481.73	0.07	
13891.00	90.250	268.770	7106.93	6578.47	-155.68	-6576.65	2.15	
13985.00	89.910	269.810	7106.80	6672.46	-156.84	-6670.64	1.16	
14080.00	89.940	269.630	7106.92	6767.44	-157.31	-6765.64	0.19	
14174.00	89.970	269.120	7106.99	6861.43	-158.33	-6859.64	0.54	
14269.00	90.030	269.320	7106.99	6956.42	-159.63	-6954.63	0.22	
14364.00	90.060	269.050	7106.92	7051.41	-160.98	-7049.62	0.29	
14458.00	89.940	268.650	7106.92	7145.41	-162.87	-7143.60	0.44	
14553.00	89.940	266.830	7107.02	7240.40	-166.61	-7238.52	1.92	
14648.00	90.340	266.950	7106.79	7335.36	-171.77	-7333.38	0.44	
14742.00	90.370	266.330	7106.20	7429.31	-177.27	-7427.22	0.66	
14837.00	90.340	266.020	7105.62	7524.23	-183.61	-7522.00	0.33	
14931.00	90.370	267.360	7105.03	7618.18	-189.04	-7615.84	1.43	
15026.00	90.400	269.140	7104.39	7713.17	-191.94	-7710.79	1.87	
15120.00	90.280	270.190	7103.84	7807.15	-192.49	-7804.79	1.12	
15215.00	90.030	268.380	7103.58	7902.14	-193.68	-7899.78	1.92	
15310.00	90.120	267.390	7103.46	7997.13	-197.18	-7994.71	1.05	
15405.00	90.150	266.700	7103.23	8092.10	-202.08	-8089.58	0.73	
15499.00	90.060	266.990	7103.06	8186.06	-207.25	-8183.44	0.32	
15594.00	90.220	265.290	7102.83	8280.98	-213.65	-8278.22	1.80	
15689.00	90.650	266.050	7102.11	8375.86	-220.82	-8372.95	0.92	
15783.00	90.710	266.880	7100.99	8469.79	-226.61	-8466.76	0.89	
15878.00	90.150	268.650	7100.28	8564.78	-230.32	-8561.68	1.95	
15972.00	90.220	269.820	7099.97	8658.77	-231.57	-8655.67	1.25	
16067.00	90.310	268.570	7099.53	8753.76	-232.91	-8750.66	1.32	
16162.00	90.520	269.670	7098.85	8848.75	-234.37	-8845.64	1.18	
16257.00	90.520	269.690	7097.98	8943.72	-234.90	-8940.64	0.02	
16352.00	90.580	270.760	7097.07	9038.67	-234.53	-9035.63	1.13	
16446.00	90.430	272.530	7096.24	9132.52	-231.83	-9129.59	1.89	
16541.00	91.010	272.900	7095.05	9227.26	-227.33	-9224.47	0.72	
16636.00	90.150	271.140	7094.09	9322.07	-223.98	-9319.40	2.06	
16730.00	90.340	267.840	7093.69	9416.04	-224.82	-9413.38	3.52	
16824.00	90.370	270.180	7093.10	9510.03	-226.44	-9507.36	2.49	
16919.00	90.400	267.630	7092.46	9605.01	-228.26	-9602.33	2.68	
17014.00	90.370	266.640	7091.83	9699.98	-233.00	-9697.21	1.04	

Actual Wellpath Report

WARD W-20-19HC AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	BAYSWATER E & P LLC	Slot	SLOT#13 WARD W-20-19HC (274'FSL&213'FEL,SEC.20)
Area	COLORADO	Well	WARD W-20-19HC
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WARD W-20-19HC AWB
Facility	SEC.20-T06N-R66W		

WELLPATH DATA (190 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
17108.00	90.370	266.040	7091.22	9793.92	-239.00	-9791.02	0.64	
17203.00	90.740	264.950	7090.30	9888.78	-246.47	-9885.72	1.21	
17298.00	90.620	264.690	7089.17	9983.58	-255.04	-9980.32	0.30	
17392.00	90.680	264.780	7088.11	10077.37	-263.67	-10073.92	0.12	
17487.00	90.460	267.630	7087.16	10172.28	-269.95	-10168.70	3.01	
17582.00	90.490	268.270	7086.37	10267.27	-273.35	-10263.63	0.67	
17676.00	90.580	269.350	7085.49	10361.27	-275.30	-10357.61	1.15	
17771.00	90.490	269.290	7084.61	10456.25	-276.43	-10452.60	0.11	
17775.00	90.520	269.220	7084.57	10460.25	-276.48	-10456.60	1.90	LAST BHI MWD SURVEY
17799.00	90.520	269.220	7084.35	10484.25	-276.81	-10480.59	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: WARD W-20-19HC AWB Ref Wellpath: WARD W-20-19HC AWP

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]
9.625in Casing Surface	25.00	1550.00	1525.00	25.00	1549.72	0.01	-0.05	-7.05	-7.25
8.5in Open Hole	1550.00	17799.00	16249.00	1549.72	7084.35	-7.05	-7.25	-276.81	-10480.59

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WARD W-20-19HC AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	BAYSWATER E & P LLC	Slot	SLOT#13 WARD W-20-19HC (274'FSL&213'FEL,SEC.20)
Area	COLORADO	Well	WARD W-20-19HC
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WARD W-20-19HC AWB
Facility	SEC.20-T06N-R66W		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
WARD R-20-19HN Section 19	0.00	75.09	0.00	3196665.66	1413882.03	40°28'02.482"N	104°47'35.362"W	polygon
WARD R-20-19HN Section 20	0.00	75.09	0.00	3196665.66	1413882.03	40°28'02.482"N	104°47'35.362"W	polygon
WARD W-20-19HC BHL REV-2 (319'FSL & 470'FWL, SEC.19)	7090.00	-278.66	-10481.30	3186187.91	1413444.76	40°27'58.964"N	104°49'50.970"W	point
WARD W-20-19HC WP#4 (~16100'MD)	7104.00	-223.93	-8766.69	3187901.97	1413513.16	40°27'59.512"N	104°49'28.786"W	point
WARD W-20-19HC BORELINE VERTEX #2 @ 7765'VS	7108.00	-195.21	-7762.55	3188905.81	1413549.88	40°27'59.799"N	104°49'15.795"W	point
WARD W-20-19HC BORELINE VERTEX #1 @5109'VS	7111.00	-109.07	-5107.91	3191559.58	1413657.17	40°28'00.657"N	104°48'41.449"W	point
WARD W-20-19HC WP#2 (~11750'MD)	7111.00	-85.14	-4418.93	3192248.32	1413686.59	40°28'00.895"N	104°48'32.535"W	point
WARD W-20-19HC WP#3 (~14500'MD)	7111.00	-172.88	-7167.51	3189500.63	1413576.95	40°28'00.021"N	104°49'08.096"W	point
WARD W-20-19HC LANDING POINT REV-2 (325'FSL & 470'FEL, SEC.20)	7130.00	47.73	-256.79	3196409.11	1413852.62	40°28'02.212"N	104°47'38.684"W	point
WARD W-20-19HC WP#1 (~8900'MD)	7130.00	5.79	-1570.41	3195095.92	1413800.22	40°28'01.797"N	104°47'55.680"W	point
WARD W-20-19HC BHL FROM PLAT (319'FSL&470'FWL,SEC.19)	7145.00	-278.66	-10481.30	3186187.91	1413444.76	40°27'58.964"N	104°49'50.970"W	point
WARD W-20-19HC Landing Point(325'FSL&470'FEL,SEC.20)	7145.00	47.73	-256.79	3196409.11	1413852.62	40°28'02.212"N	104°47'38.684"W	point
WARD R-20-19HN Section 19 Hardline (460'Setback)	7300.00	75.09	0.00	3196665.66	1413882.03	40°28'02.482"N	104°47'35.362"W	polygon
WARD R-20-19HN Section 20 Hardline (460'Setback)	7300.00	75.09	0.00	3196665.66	1413882.03	40°28'02.482"N	104°47'35.362"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: WARD W-20-19HC AWB Ref Wellpath: WARD W-20-19HC AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1495.00	ISCWSA MWD, Rev. 4 (Standard)	3rd Party Surface MWD <241'-1495'>	WARD W-20-19HC AWB
1495.00	17775.00	BHI AutoTrak Curve (Short)	8 1/2" MONOBORE <1599'-17799'>	WARD W-20-19HC AWB
17775.00	17799.00	Blind Drilling (std)	Projection to bit	WARD W-20-19HC AWB

Actual Wellpath Report

WARD W-20-19HC AWP

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REFERENCE WELLPATH IDENTIFICATION			
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Area	COLORADO	Well	WARD W-20-19HC
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WARD W-20-19HC AWB
Facility	SEC.20-T06N-R66W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1495.00	1.300	125.000	1494.73	TIED INTO 3RD PARTY SURFACE SURVEYS
17775.00	90.520	269.220	7084.57	LAST BHI MWD SURVEY
17799.00	90.520	269.220	7084.35	PROJECTION TO BIT