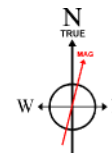
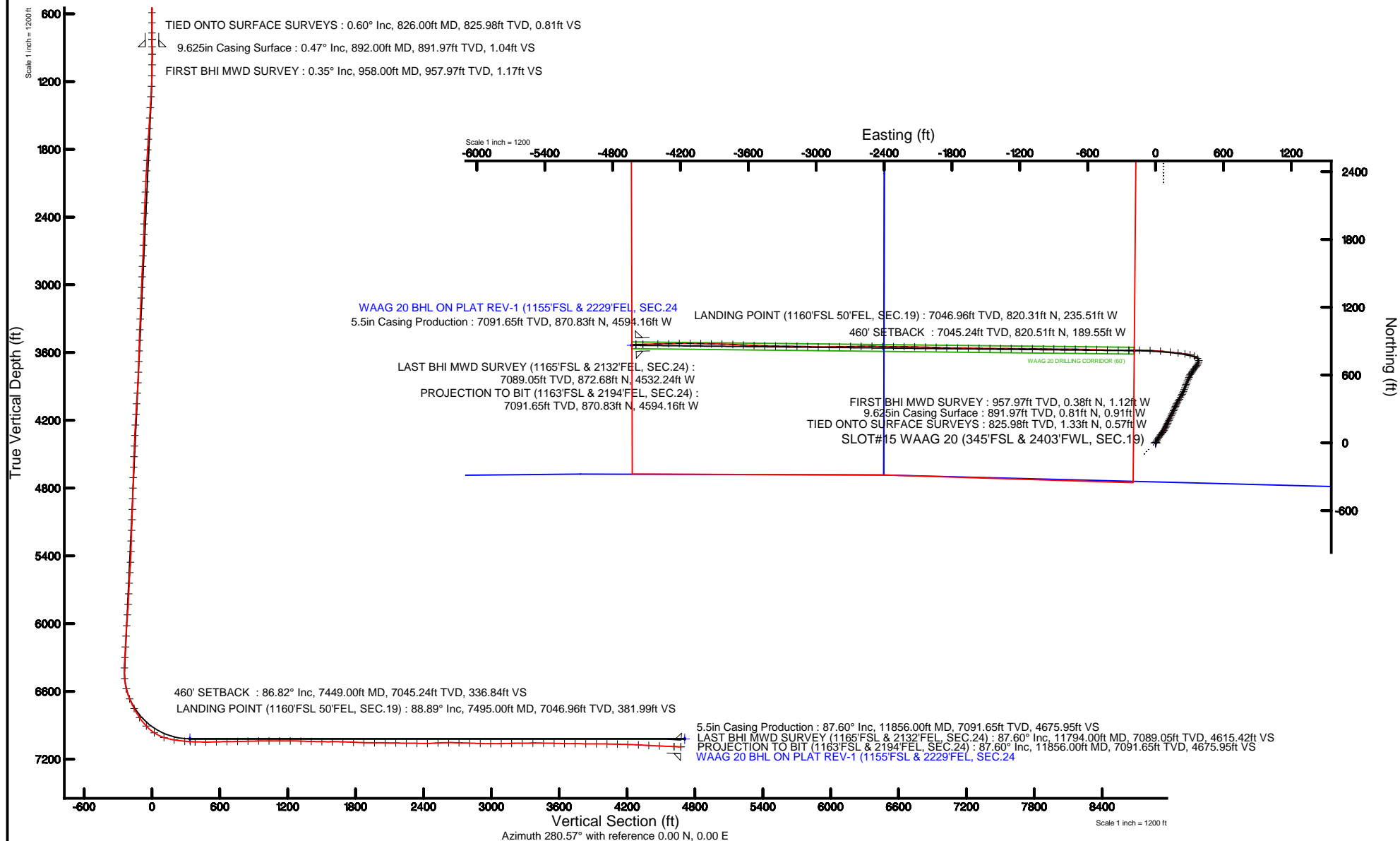


Location:	COLORADO	Slot:	SLOT#15 WAAG 20 (345FSL & 2403FWL, SEC.19)
Field:	WELD COUNTY (NAD83/TRUE NORTH)	Well:	WAAG 20
Facility:	SEC.19-T07N-R65W	Wellbore:	WAAG 20 PWB
Plot reference wellpath is WAAG 20 PWP (REV-A.0)			
True vertical depths are referenced to SAVANNA 802 (RKB)		Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	
Measured depths are referenced to SAVANNA 802 (RKB)		North Reference: True north	
SAVANNA 802 (RKB) to Mean Sea Level: 4888 feet		Scale: True distance	
Mean Sea Level to Mud line (At Slot: SLOT#15 WAAG 20 (345FSL & 2403FWL, SEC.19)): 0 feet		Depths are in feet	
Coordinates are in feet referenced to Slot		Created by: ingmjmr on 10/5/2015	



BGGM (1945.0 to 2017.0) Dip: 67.09° Field: 52677.8 nT
Magnetic North is 8.52 degrees East of True North (at 9/21/2015)

To correct azimuth from Magnetic to True add 8.52 degrees





Actual Wellpath Report

WAAG 20 AWP

Page 1 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	EXTRACTION OIL & GAS	Slot	SLOT#15 WAAG 20 (345'FSL & 2403'FWL, SEC.19)
Area	COLORADO	Well	WAAG 20
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WAAG 20 AWB
Facility	SEC.19-T07N-R65W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.1.1
North Reference	True	User	Ingmjmr
Scale	0.999971	Report Generated	10/5/2015 at 3:03:15 PM
Convergence at slot	0.51° East	Database/Source file	WA_DEN_Denver_Defn/WAAG_20_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-2644.98	-72.25	3220291.56	1445800.88	40°33'15.912"N	104°42'25.992"W
Facility Reference Pt			3220340.15	1448446.32	40°33'42.048"N	104°42'25.056"W
Field Reference Pt			3185481.27	1419166.81	40°28'55.560"N	104°49'59.556"W

WELLPATH DATUM

Calculation method	Minimum curvature	SAVANNA 802 (RKB) to Facility Vertical Datum	4888.00ft
Horizontal Reference Pt	Slot	SAVANNA 802 (RKB) to Mean Sea Level	4888.00ft
Vertical Reference Pt	SAVANNA 802 (RKB)	SAVANNA 802 (RKB) to Mud Line at Slot (SLOT#15 WAAG 20 (345'FSL & 2403'FWL, SEC.19))	4888.00ft
MD Reference Pt	SAVANNA 802 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	280.73°



Actual Wellpath Report

WAAG 20 AWP

Page 2 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	EXTRACTION OIL & GAS	Slot	SLOT#15 WAAG 20 (345'FSL & 2403'FWL, SEC.19)
Area	COLORADO	Well	WAAG 20
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WAAG 20 AWB
Facility	SEC.19-T07N-R65W		

WELLPATH DATA (118 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
826.00	0.600	214.700	825.98	0.81	1.33	-0.57	0.44	TIED ONTO SURFACE SURVEYS
958.00	0.350	201.390	957.97	1.17	0.38	-1.12	0.21	FIRST BHI MWD SURVEY
1053.00	1.880	24.650	1052.96	0.85	1.53	-0.57	2.35	
1148.00	4.620	29.290	1147.79	-0.75	6.28	1.95	2.90	
1243.00	6.740	33.370	1242.32	-4.11	14.28	6.89	2.27	
1337.00	8.900	34.040	1335.44	-9.11	24.91	14.00	2.30	
1433.00	8.530	31.960	1430.34	-14.63	37.10	21.92	0.51	
1527.00	8.830	33.640	1523.26	-19.96	49.02	29.61	0.42	
1622.00	8.840	36.130	1617.13	-25.93	60.99	37.95	0.40	
1716.00	8.040	36.480	1710.11	-31.88	72.11	46.12	0.85	
1811.00	7.950	37.450	1804.19	-37.72	82.67	54.06	0.17	
1906.00	7.200	37.250	1898.36	-43.33	92.62	61.66	0.79	
2000.00	6.800	37.500	1991.66	-48.47	101.73	68.61	0.43	
2095.00	8.940	29.160	2085.76	-53.34	112.64	75.64	2.55	
2190.00	8.570	27.660	2179.65	-57.73	125.35	82.52	0.46	
2285.00	7.980	27.160	2273.67	-61.66	137.49	88.81	0.63	
2380.00	7.400	27.040	2367.81	-65.24	148.80	94.61	0.61	
2475.00	9.350	23.790	2461.79	-68.70	161.32	100.50	2.11	
2570.00	8.350	23.160	2555.66	-71.93	174.72	106.33	1.06	
2664.00	7.590	26.440	2648.75	-75.08	186.55	111.78	0.94	
2759.00	10.260	25.760	2742.59	-78.97	199.79	118.25	2.81	
2855.00	9.420	26.640	2837.18	-83.34	214.52	125.49	0.89	
2949.00	9.450	26.710	2929.91	-87.57	228.29	132.40	0.03	
3044.00	10.410	23.360	3023.49	-91.59	243.13	139.31	1.18	
3139.00	10.030	25.190	3116.98	-95.54	258.50	146.24	0.53	
3233.00	8.900	25.780	3209.70	-99.47	272.45	152.88	1.21	
3328.00	8.290	25.120	3303.63	-103.08	285.27	158.99	0.65	
3423.00	10.270	23.250	3397.38	-106.61	299.25	165.24	2.11	
3518.00	8.080	25.400	3491.16	-110.14	313.07	171.44	2.33	
3612.00	6.230	22.910	3584.43	-112.89	323.73	176.26	2.00	
3707.00	8.170	25.910	3678.67	-115.74	334.56	181.22	2.08	
3802.00	6.800	24.430	3772.86	-118.84	345.75	186.50	1.46	
3897.00	9.620	30.150	3866.88	-122.81	357.74	192.81	3.09	
3992.00	10.670	32.900	3960.39	-128.77	371.98	201.58	1.22	
4087.00	10.330	30.680	4053.80	-135.00	386.69	210.70	0.56	
4182.00	10.450	28.300	4147.25	-140.50	401.61	219.13	0.47	
4277.00	10.280	27.890	4240.70	-145.60	416.68	227.18	0.20	
4372.00	8.510	27.290	4334.42	-150.11	430.42	234.37	1.87	
4466.00	7.380	28.140	4427.51	-153.90	441.93	240.40	1.21	
4561.00	10.800	21.900	4521.31	-157.45	455.57	246.60	3.74	
4656.00	10.610	20.820	4614.66	-160.70	472.00	253.03	0.29	
4750.00	10.340	19.950	4707.09	-163.57	488.02	258.99	0.33	
4845.00	9.060	22.220	4800.73	-166.42	502.96	264.72	1.41	
4939.00	7.490	20.500	4893.75	-168.94	515.55	269.67	1.69	
5034.00	10.800	20.740	4987.53	-171.53	529.68	274.99	3.48	



Actual Wellpath Report

WAAG 20 AWP

Page 3 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	EXTRACTION OIL & GAS	Slot	SLOT#15 WAAG 20 (345'FSL & 2403'FWL, SEC.19)
Area	COLORADO	Well	WAAG 20
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WAAG 20 AWB
Facility	SEC.19-T07N-R65W		

WELLPATH DATA (118 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
5129.00	11.820	21.450	5080.68	-174.89	547.06	281.70	1.08	
5224.00	11.410	21.640	5173.74	-178.48	564.85	288.72	0.43	
5319.00	9.400	20.830	5267.17	-181.62	580.84	294.95	2.12	
5414.00	7.120	20.080	5361.18	-183.93	593.62	299.73	2.40	
5509.00	9.090	37.580	5455.24	-188.28	605.10	306.33	3.30	
5603.00	7.880	36.030	5548.21	-194.39	616.20	314.65	1.31	
5698.00	6.020	33.550	5642.51	-199.10	625.61	321.23	1.98	
5792.00	8.090	30.950	5735.79	-203.30	635.40	327.36	2.23	
5887.00	7.960	36.570	5829.86	-208.47	646.41	334.72	0.84	
5981.00	9.330	39.990	5922.79	-215.04	657.48	343.49	1.56	
6077.00	8.540	37.310	6017.63	-222.03	669.11	352.81	0.93	
6171.00	5.960	35.780	6110.87	-227.22	678.62	359.90	2.75	
6267.00	7.850	37.080	6206.17	-232.24	687.90	366.77	1.98	
6362.00	10.390	29.380	6299.96	-237.86	700.54	374.88	2.96	
6456.00	8.350	21.500	6392.70	-241.84	714.28	381.54	2.56	
6551.00	11.110	347.230	6486.41	-239.48	729.64	382.05	6.62	
6645.00	17.180	315.130	6577.65	-224.38	748.35	370.22	10.32	
6740.00	23.000	297.850	6666.90	-195.01	767.00	343.87	8.69	
6834.00	27.910	282.000	6751.85	-155.39	780.18	306.05	8.89	
6928.00	33.980	277.430	6832.45	-107.12	788.16	258.43	6.92	
7023.00	42.820	276.810	6906.82	-48.29	795.43	199.93	9.31	
7117.00	56.730	277.570	6967.38	23.17	804.44	128.90	14.81	
7212.00	72.570	273.330	7007.94	108.34	812.36	43.72	17.15	
7306.00	80.750	273.140	7029.61	198.94	817.51	-47.52	8.70	
7401.00	84.660	270.360	7041.67	291.99	820.38	-141.68	5.04	
7449.00†	86.820	269.951	7045.24	339.04	820.51	-189.55	4.58	460' SETBACK
7495.00	88.890	269.560	7046.96	384.16	820.31	-235.51	4.58	LANDING POINT (1160'FSL 50'FEL, SEC.19)
7590.00	89.780	270.500	7048.06	477.50	820.36	-330.50	1.36	
7686.00	91.480	271.600	7047.01	572.12	822.12	-426.48	2.11	
7780.00	90.890	271.720	7045.06	664.93	824.84	-520.42	0.64	
7875.00	91.080	271.270	7043.43	758.68	827.32	-615.37	0.51	
7969.00	91.360	271.130	7041.43	851.36	829.29	-709.33	0.33	
8064.00	90.920	270.060	7039.54	944.86	830.28	-804.30	1.22	
8158.00	89.540	270.820	7039.16	1037.34	831.00	-898.29	1.68	
8253.00	90.580	271.030	7039.06	1130.95	832.53	-993.28	1.12	
8348.00	89.820	270.740	7038.73	1224.55	834.00	-1088.27	0.86	
8442.00	88.180	270.120	7040.37	1317.02	834.70	-1182.25	1.87	
8537.00	88.520	270.280	7043.10	1410.38	835.04	-1277.21	0.40	
8631.00	88.740	269.700	7045.35	1502.70	835.02	-1371.18	0.66	
8725.00	90.860	271.120	7045.68	1595.17	835.69	-1465.17	2.71	
8820.00	88.000	270.700	7046.63	1688.76	837.20	-1560.14	3.04	
8916.00	87.290	271.110	7050.57	1783.28	838.72	-1656.05	0.85	
9010.00	88.800	270.450	7053.78	1875.80	839.99	-1749.98	1.75	
9105.00	89.540	271.500	7055.15	1969.42	841.61	-1844.96	1.35	
9199.00	89.720	272.470	7055.76	2062.32	844.87	-1938.90	1.05	



Actual Wellpath Report

WAAG 20 AWP

Page 4 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	EXTRACTION OIL & GAS	Slot	SLOT#15 WAAG 20 (345'FSL & 2403'FWL, SEC.19)
Area	COLORADO	Well	WAAG 20
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WAAG 20 AWB
Facility	SEC.19-T07N-R65W		

WELLPATH DATA (118 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
9294.00	88.680	270.400	7057.09	2156.06	847.25	-2033.85	2.44	
9389.00	89.750	272.290	7058.39	2249.77	849.48	-2128.81	2.29	
9484.00	88.520	270.240	7059.82	2343.46	851.57	-2223.77	2.52	
9578.00	90.800	270.510	7060.38	2435.92	852.19	-2317.76	2.44	
9673.00	93.270	271.590	7057.01	2529.50	853.93	-2412.67	2.84	
9768.00	90.550	270.570	7053.84	2623.09	855.72	-2507.60	3.06	
9863.00	88.240	268.660	7054.84	2716.29	855.08	-2602.58	3.15	
9958.00	88.000	268.960	7057.96	2809.19	853.11	-2697.51	0.40	
10053.00	87.870	269.520	7061.38	2902.23	851.85	-2792.43	0.60	
10148.00	89.780	269.200	7063.33	2995.34	850.79	-2887.40	2.04	
10242.00	91.480	270.680	7062.30	3087.66	850.69	-2981.39	2.40	
10337.00	91.420	271.910	7059.89	3181.34	852.83	-3076.34	1.30	
10431.00	90.340	270.670	7058.45	3274.06	854.95	-3170.30	1.75	
10526.00	90.460	270.210	7057.79	3367.52	855.68	-3265.29	0.50	
10621.00	89.320	271.480	7057.97	3461.11	857.08	-3360.28	1.80	
10716.00	88.520	271.810	7059.76	3554.90	859.81	-3455.22	0.91	
10810.00	88.580	271.700	7062.14	3647.72	862.68	-3549.15	0.13	
10904.00	89.910	273.300	7063.38	3740.74	866.78	-3643.04	2.21	
10999.00	88.890	271.980	7064.37	3834.78	871.16	-3737.94	1.76	
11094.00	89.970	272.070	7065.32	3928.68	874.52	-3832.87	1.14	
11189.00	89.480	270.370	7065.77	4022.37	876.54	-3927.84	1.86	
11283.00	88.430	271.150	7067.49	4114.93	877.78	-4021.82	1.39	
11377.00	88.430	271.010	7070.06	4207.57	879.56	-4115.77	0.15	
11472.00	87.200	269.240	7073.69	4300.87	879.76	-4210.69	2.27	
11566.00	86.920	268.730	7078.51	4392.78	878.10	-4304.55	0.62	
11661.00	87.380	268.800	7083.23	4485.60	876.06	-4399.41	0.49	
11794.00	87.600	268.290	7089.05	4615.47	872.68	-4532.24	0.42	LAST BHI MWD SURVEY (1165'FSL & 2132'FEL, SEC.24)
11856.00	87.600	268.290	7091.65	4675.96	870.83	-4594.16	0.00	PROJECTION TO BIT (1163'FSL & 2194'FEL, SEC.24)

HOLE & CASING SECTIONS - Ref Wellbore: WAAG 20 AWB Ref Wellpath: WAAG 20 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	20.00	892.00	872.00	20.00	891.97	0.02	0.01	0.81	-0.91
7.875in Open Hole	20.00	11856.00	11836.00	20.00	7091.65	0.02	0.01	870.83	-4594.16
5.5in Casing Production	20.00	11856.00	11836.00	20.00	7091.65	0.02	0.01	870.83	-4594.16



Actual Wellpath Report

WAAG 20 AWP

Page 5 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#15 WAAG 20 (345'FSL & 2403'FWL, SEC.19)
Area	COLORADO	Well	WAAG 20
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WAAG 20 AWB
Facility	SEC.19-T07N-R65W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.19-T7N-R65W	-23.00	2502.89	72.24	3220341.42	1448304.24	40°33'40.644"N	104°42'25.056"W	polygon
SEC.24-T7N-R66W	-23.00	2502.89	72.24	3220341.42	1448304.24	40°33'40.644"N	104°42'25.056"W	polygon
WAAG 20 BHL ON PLAT REV-1 (1155'FSL & 2229'FEL, SEC.24)	7020.00	863.88	-4629.40	3215654.77	1446623.31	40°33'24.444"N	104°43'25.968"W	point
WAAG 20 DRILLING CORRIDOR (60')	7020.00	0.00	0.00	3220291.56	1445800.88	40°33'15.912"N	104°42'25.992"W	polygon
WAAG 20 LANDING POINT	7020.00	816.08	-188.96	3220095.32	1446615.21	40°33'23.976"N	104°42'28.440"W	point
WAAG PAD (460' SETBACK)	7145.00	2502.89	72.24	3220341.42	1448304.24	40°33'40.644"N	104°42'25.056"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: WAAG 20 AWB					Ref Wellpath: WAAG 20 AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore	
0.00	826.00	ISCWSA MWD, Rev. 3 (Standard)	NEWSCO SURVEYS <141-826>		WAAG 20 AWB	
826.00	11794.00	NaviTrak (Standard)	BHI MWD/NAVITRAK (STD) 7.875" HOLE <958-11794>		WAAG 20 AWB	
11794.00	11856.00	Blind Drilling (std)	Projection to bit		WAAG 20 AWB	



Actual Wellpath Report

WAAG 20 AWP

Page 6 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	EXTRACTION OIL & GAS	Slot	SLOT#15 WAAG 20 (345'FSL & 2403'FWL, SEC.19)
Area	COLORADO	Well	WAAG 20
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	WAAG 20 AWB
Facility	SEC.19-T07N-R65W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
826.00	0.600	214.700	825.98	TIED ONTO SURFACE SURVEYS
958.00	0.350	201.390	957.97	FIRST BHI MWD SURVEY
7449.00	86.820	269.951	7045.24	460' SETBACK
7495.00	88.890	269.560	7046.96	LANDING POINT (1160'FSL 50'FEL, SEC.19)
11794.00	87.600	268.290	7089.05	LAST BHI MWD SURVEY (1165'FSL & 2132'FEL, SEC.24)
11856.00	87.600	268.290	7091.65	PROJECTION TO BIT (1163'FSL & 2194'FEL, SEC.24)