



Actual Wellpath Report

No.163H AWP

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30-015-41694

REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	JRU No.163H (Slot 28)
Area	Eddy County, NM	Well	No.163H
Field	JRU NAD27	Wellbore	No.163H AWP
Facility	Drilling Island 1		

WELLPATH DATA (229 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 [°/100ft]	Comments
0.00	0.000	31.320	0.00	0.00	0.00	0.00	639366.00	502572.50	32°22'51.162"N	103°52'54.782"W	0.00	
100.00	0.750	31.320	100.00	0.22	0.56	0.34	639366.34	502573.06	32°22'51.167"N	103°52'54.778"W	0.75	
200.00	0.910	356.050	199.99	0.24	1.91	0.63	639366.63	502574.41	32°22'51.181"N	103°52'54.774"W	0.53	
300.00	1.250	350.020	299.97	-0.37	3.78	0.38	639366.38	502576.28	32°22'51.199"N	103°52'54.777"W	0.36	
400.00	1.310	7.810	399.94	-0.83	5.98	0.35	639366.35	502578.48	32°22'51.221"N	103°52'54.777"W	0.40	
470.00	1.310	7.940	469.93	-0.93	7.57	0.57	639366.57	502580.07	32°22'51.237"N	103°52'54.775"W	0.00	
627.00	1.300	12.100	626.89	-1.01	11.09	1.19	639367.19	502583.59	32°22'51.272"N	103°52'54.767"W	0.06	
693.00	1.290	10.200	692.87	-1.02	12.55	1.48	639367.48	502585.05	32°22'51.286"N	103°52'54.764"W	0.07	
757.00	1.300	4.050	756.85	-1.12	13.98	1.66	639367.66	502586.48	32°22'51.300"N	103°52'54.762"W	0.22	
851.00	0.340	358.740	850.84	-1.32	15.33	1.73	639367.73	502587.83	32°22'51.314"N	103°52'54.761"W	1.02	
945.00	0.200	294.910	944.84	-1.54	15.67	1.57	639367.57	502588.17	32°22'51.317"N	103°52'54.763"W	0.33	
1008.00	0.280	316.070	1007.84	-1.77	15.83	1.36	639367.36	502588.33	32°22'51.319"N	103°52'54.765"W	0.19	
1103.00	0.090	87.490	1102.84	-1.89	16.00	1.28	639367.28	502588.50	32°22'51.320"N	103°52'54.766"W	0.36	
1197.00	0.170	167.250	1196.84	-1.76	15.87	1.38	639367.38	502588.37	32°22'51.319"N	103°52'54.765"W	0.19	
1292.00	0.260	171.860	1291.84	-1.63	15.52	1.44	639367.44	502588.02	32°22'51.315"N	103°52'54.764"W	0.10	
1387.00	0.560	165.790	1386.84	-1.36	14.86	1.59	639367.59	502587.35	32°22'51.309"N	103°52'54.762"W	0.32	
1482.00	0.680	143.270	1481.83	-0.74	13.95	2.04	639368.04	502586.45	32°22'51.300"N	103°52'54.757"W	0.28	
1576.00	3.990	142.460	1575.74	2.14	10.91	4.37	639370.37	502583.41	32°22'51.270"N	103°52'54.730"W	3.52	
1671.00	5.730	143.640	1670.40	8.13	4.47	9.19	639375.19	502576.97	32°22'51.206"N	103°52'54.674"W	1.83	
1766.00	5.630	141.630	1764.93	15.20	3.00	14.90	639380.89	502569.50	32°22'51.132"N	103°52'54.608"W	0.23	
1861.00	5.450	140.570	1859.48	22.24	-10.14	20.65	639386.65	502562.36	32°22'51.061"N	103°52'54.541"W	0.22	
1956.00	5.260	142.160	1954.07	29.03	-17.06	26.19	639392.19	502555.44	32°22'50.992"N	103°52'54.477"W	0.25	
2050.00	4.830	141.630	2047.71	35.31	-23.57	31.29	639397.29	502548.93	32°22'50.927"N	103°52'54.418"W	0.46	
2145.00	5.010	141.080	2142.36	41.55	-29.93	36.38	639402.38	502542.57	32°22'50.864"N	103°52'54.359"W	0.20	
2240.00	4.830	141.980	2237.01	47.77	-36.31	41.45	639407.45	502536.19	32°22'50.801"N	103°52'54.300"W	0.21	
2335.00	4.350	140.920	2331.70	53.58	-42.26	46.18	639412.18	502530.25	32°22'50.742"N	103°52'54.245"W	0.51	
2430.00	5.140	140.580	2426.37	59.65	-48.34	51.16	639417.15	502524.16	32°22'50.681"N	103°52'54.188"W	0.83	
2524.00	5.190	142.330	2519.99	66.12	-54.96	56.43	639422.42	502517.54	32°22'50.616"N	103°52'54.126"W	0.18	
2619.00	4.850	141.780	2614.63	72.42	-61.52	61.54	639427.53	502510.99	32°22'50.551"N	103°52'54.067"W	0.36	
2713.00	4.960	141.010	2708.28	78.57	-67.80	66.55	639432.55	502504.71	32°22'50.488"N	103°52'54.009"W	0.14	
2808.00	5.250	139.170	2802.91	85.16	-74.28	71.98	639437.98	502498.23	32°22'50.424"N	103°52'53.946"W	0.35	
2903.00	5.110	137.820	2897.52	92.00	-80.70	77.66	639443.66	502491.81	32°22'50.360"N	103°52'53.880"W	0.20	
2997.00	4.890	139.130	2991.16	98.53	-86.83	83.10	639449.09	502485.67	32°22'50.299"N	103°52'53.817"W	0.26	
3092.00	5.060	135.270	3085.80	105.20	-92.87	88.69	639454.69	502479.64	32°22'50.239"N	103°52'53.752"W	0.40	
3186.00	4.980	136.030	3179.44	112.00	-98.75	94.44	639460.44	502473.76	32°22'50.181"N	103°52'53.685"W	0.11	
3281.00	4.950	135.810	3274.09	118.76	-104.66	100.16	639466.16	502467.85	32°22'50.122"N	103°52'53.619"W	0.04	
3376.00	4.590	135.290	3368.76	125.30	-110.30	105.69	639471.69	502462.21	32°22'50.066"N	103°52'53.555"W	0.38	
3470.00	4.990	144.090	3462.43	131.42	-116.28	110.74	639476.73	502456.23	32°22'50.007"N	103°52'53.496"W	0.89	
3494.00	5.160	147.870	3486.34	132.92	-118.04	111.92	639477.92	502454.47	32°22'49.989"N	103°52'53.482"W	1.56	
3555.00	5.200	149.200	3547.09	136.67	-122.74	114.80	639480.79	502449.77	32°22'49.943"N	103°52'53.449"W	0.21	
3650.00	4.900	149.000	3641.72	142.29	-129.91	119.09	639485.08	502442.59	32°22'49.871"N	103°52'53.399"W	0.32	
3745.00	5.000	147.700	3736.36	147.87	-136.89	123.39	639489.39	502435.62	32°22'49.802"N	103°52'53.350"W	0.16	
3840.00	5.000	150.200	3831.00	153.45	-143.98	127.66	639493.65	502428.53	32°22'49.732"N	103°52'53.300"W	0.23	
3934.00	4.800	148.100	3924.66	158.84	-150.88	131.78	639497.77	502421.63	32°22'49.664"N	103°52'53.252"W	0.29	
4029.00	4.800	148.900	4019.33	164.24	-157.66	135.93	639501.92	502414.86	32°22'49.596"N	103°52'53.204"W	0.07	



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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	JRU No.163H (Slot 28)
Area	Eddy County, NM	Well	No.163H
Field	JRU NAD27	Wellbore	No.163H AWP
Facility	Drilling Island 1		

WELLPATH DATA (229 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 [°/100ft]	Comments
4124.00	5.000	149.800	4113.98	169.67	-164.64	140.07	639506.06	502407.88	32°22'49.527"N	103°52'53.157"W	0.23	
4219.00	4.700	148.300	4208.64	175.07	-171.53	144.19	639510.18	502400.99	32°22'49.459"N	103°52'53.109"W	0.34	
4313.00	4.700	149.800	4302.32	180.25	-178.13	148.16	639514.14	502394.38	32°22'49.393"N	103°52'53.063"W	0.13	
4408.00	4.400	150.900	4397.02	185.19	-184.68	151.89	639517.87	502387.83	32°22'49.328"N	103°52'53.020"W	0.33	
4503.00	5.600	147.300	4491.66	190.78	-191.76	156.16	639522.15	502380.75	32°22'49.258"N	103°52'52.970"W	1.31	
4598.00	5.700	144.300	4586.20	197.45	-199.50	161.42	639527.41	502373.02	32°22'49.181"N	103°52'52.909"W	0.33	
4788.00	5.500	144.500	4775.29	211.00	-214.57	172.21	639538.20	502357.94	32°22'49.032"N	103°52'52.784"W	0.11	
4977.00	5.500	144.500	4963.42	224.21	-229.32	182.73	639548.72	502343.20	32°22'48.885"N	103°52'52.662"W	0.00	
5167.00	4.900	147.800	5152.64	236.43	-243.60	192.34	639558.33	502328.92	32°22'48.743"N	103°52'52.551"W	0.35	
5356.00	4.400	149.300	5341.02	246.85	-256.66	200.35	639566.33	502315.86	32°22'48.614"N	103°52'52.458"W	0.27	
5546.00	5.400	137.300	5530.32	258.96	-269.50	210.13	639576.12	502303.02	32°22'48.486"N	103°52'52.345"W	0.75	
5736.00	5.100	138.900	5719.53	272.89	-282.43	221.75	639587.73	502290.09	32°22'48.358"N	103°52'52.210"W	0.18	
5925.00	4.300	138.900	5907.89	285.16	-294.10	231.93	639597.91	502278.42	32°22'48.242"N	103°52'52.092"W	0.42	
6115.00	5.000	134.000	6097.26	297.78	-305.22	242.56	639608.55	502267.30	32°22'48.132"N	103°52'51.968"W	0.42	
6305.00	5.900	132.500	6286.40	313.10	-317.57	255.72	639621.70	502254.95	32°22'48.009"N	103°52'51.815"W	0.48	
6493.00	5.100	133.900	6473.54	328.41	-329.90	268.87	639634.85	502242.63	32°22'47.886"N	103°52'51.663"W	0.43	
6682.00	4.400	139.700	6661.89	341.18	-341.25	279.61	639645.59	502231.27	32°22'47.774"N	103°52'51.538"W	0.45	
6871.00	5.400	136.500	6850.20	354.13	-353.23	290.42	639656.40	502219.29	32°22'47.655"N	103°52'51.413"W	0.55	
7060.00	5.400	138.600	7038.36	368.48	-366.35	302.42	639668.40	502206.17	32°22'47.524"N	103°52'51.273"W	0.10	
7260.00	4.600	139.200	7237.59	382.29	-379.48	313.89	639679.86	502193.04	32°22'47.394"N	103°52'51.140"W	0.40	
7449.00	4.900	141.000	7425.94	394.49	-391.49	323.92	639689.89	502181.04	32°22'47.275"N	103°52'51.024"W	0.18	
7639.00	4.600	142.400	7615.29	406.48	-403.84	333.67	639699.65	502168.69	32°22'47.152"N	103°52'50.911"W	0.17	
7828.00	4.700	139.600	7803.67	418.27	-415.74	343.32	639709.29	502156.79	32°22'47.034"N	103°52'50.799"W	0.13	
8018.00	5.600	136.100	7992.90	432.00	-428.34	354.79	639720.76	502144.19	32°22'46.909"N	103°52'50.666"W	0.50	
8208.00	6.200	137.600	8181.89	447.88	-442.60	368.14	639734.11	502129.93	32°22'46.767"N	103°52'50.511"W	0.33	
8397.00	6.400	147.200	8369.76	463.45	-458.99	380.72	639746.70	502113.54	32°22'46.604"N	103°52'50.365"W	0.57	
8429.00	7.700	152.200	8401.52	466.04	-462.39	382.69	639748.66	502110.14	32°22'46.571"N	103°52'50.342"W	4.49	
8460.00	9.600	152.400	8432.16	468.97	-466.52	384.86	639750.83	502106.02	32°22'46.530"N	103°52'50.317"W	6.13	
8491.00	11.100	152.600	8462.66	472.47	-471.46	387.43	639753.40	502101.08	32°22'46.481"N	103°52'50.287"W	4.84	
8523.00	12.900	154.100	8493.96	476.55	-477.41	390.41	639756.38	502095.13	32°22'46.422"N	103°52'50.253"W	5.71	
8555.00	14.600	153.800	8525.04	481.17	-484.24	393.75	639759.72	502088.30	32°22'46.354"N	103°52'50.214"W	5.32	
8586.00	15.900	155.900	8554.95	486.01	-491.62	397.21	639763.18	502080.91	32°22'46.281"N	103°52'50.174"W	4.56	
8618.00	17.600	157.700	8585.59	491.23	-500.10	400.83	639766.80	502072.44	32°22'46.197"N	103°52'50.132"W	5.55	
8649.00	18.000	164.300	8615.11	496.01	-509.05	403.91	639769.88	502063.49	32°22'46.108"N	103°52'50.097"W	6.63	
8681.00	19.000	162.600	8645.45	500.76	-518.78	406.80	639772.77	502053.76	32°22'46.012"N	103°52'50.064"W	3.55	
8713.00	20.100	162.800	8675.61	505.89	-529.00	409.99	639775.96	502043.54	32°22'45.910"N	103°52'50.027"W	3.44	
8744.00	21.400	163.100	8704.60	511.10	-539.50	413.21	639779.18	502033.04	32°22'45.806"N	103°52'49.990"W	4.21	
8776.00	22.000	166.200	8734.33	516.41	-550.91	416.33	639782.30	502021.63	32°22'45.693"N	103°52'49.954"W	4.04	
8807.00	24.100	165.000	8762.85	521.68	-562.66	419.36	639785.33	502009.88	32°22'45.577"N	103°52'49.920"W	6.94	
8839.00	25.900	165.000	8791.85	527.68	-575.72	422.86	639788.83	501996.82	32°22'45.447"N	103°52'49.879"W	5.62	
8871.00	26.900	164.500	8820.52	534.05	-589.45	426.60	639792.57	501983.09	32°22'45.311"N	103°52'49.836"W	3.20	
8904.00	27.700	164.700	8849.84	540.85	-604.04	430.62	639796.59	501968.50	32°22'45.167"N	103°52'49.790"W	2.44	
8935.00	29.900	164.400	8877.00	547.58	-618.44	434.60	639800.57	501954.11	32°22'45.024"N	103°52'49.745"W	7.11	
8967.00	32.100	164.800	8904.43	554.99	-634.33	438.97	639804.94	501938.22	32°22'44.867"N	103°52'49.694"W	6.91	
8998.00	34.900	164.700	8930.28	562.64	-650.83	443.47	639809.44	501921.72	32°22'44.703"N	103°52'49.643"W	9.03	



Actual Wellpath Report

No.163H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	JRU No.163H (Slot 28)
Area	Eddy County, NM	Well	No.163H
Field	JRU NAD27	Wellbore	No.163H AWP
Facility	Drilling Island 1		

WELLPATH DATA (229 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 [°/100ft]	Comments
9030.00	37.500	164.700	8956.10	571.11	-669.06	448.46	639814.43	501903.49	32°22'44.523"N	103°52'49.585"W	8.12	
9062.00	39.900	164.000	8981.07	580.19	-688.32	453.86	639819.83	501884.23	32°22'44.332"N	103°52'49.523"W	7.62	
9093.00	43.600	162.800	9004.20	589.86	-708.10	459.76	639825.73	501864.45	32°22'44.136"N	103°52'49.456"W	12.21	
9125.00	46.500	161.500	9026.80	600.91	-729.65	466.71	639832.68	501842.90	32°22'43.922"N	103°52'49.376"W	9.51	
9156.00	49.500	162.000	9047.54	612.27	-751.53	473.92	639839.89	501821.03	32°22'43.706"N	103°52'49.293"W	9.75	
9188.00	52.400	163.400	9067.70	624.17	-775.25	481.30	639847.27	501797.30	32°22'43.471"N	103°52'49.208"W	9.68	
9220.00	54.800	164.000	9086.69	636.11	-799.97	488.53	639854.50	501772.58	32°22'43.226"N	103°52'49.125"W	7.65	
9251.00	58.200	164.400	9103.80	647.89	-824.84	495.57	639861.53	501747.72	32°22'42.979"N	103°52'49.044"W	11.02	
9283.00	61.800	164.000	9119.79	660.53	-851.50	503.11	639869.08	501721.06	32°22'42.715"N	103°52'48.957"W	11.30	
9315.00	64.900	164.500	9134.15	673.54	-879.03	510.87	639876.84	501693.54	32°22'42.443"N	103°52'48.868"W	9.79	
9346.00	68.100	164.900	9146.51	686.28	-906.44	518.37	639884.34	501666.12	32°22'42.171"N	103°52'48.782"W	10.39	
9378.00	70.200	165.700	9157.89	699.40	-935.37	525.96	639891.92	501637.20	32°22'41.884"N	103°52'48.695"W	6.97	
9410.00	72.000	166.800	9168.26	712.23	-964.77	533.15	639899.12	501607.79	32°22'41.593"N	103°52'48.613"W	6.50	
9441.00	73.400	166.300	9177.48	724.63	-993.56	540.04	639906.00	501579.01	32°22'41.308"N	103°52'48.534"W	4.77	
9473.00	75.100	165.500	9186.16	737.85	-1023.43	547.54	639913.50	501549.14	32°22'41.012"N	103°52'48.448"W	5.83	
9505.00	76.800	164.800	9193.93	751.55	-1053.43	555.50	639921.46	501519.14	32°22'40.715"N	103°52'48.356"W	5.72	
9536.00	77.100	164.600	9200.93	765.08	-1082.56	563.47	639929.43	501490.01	32°22'40.426"N	103°52'48.265"W	1.15	
9568.00	78.400	164.000	9207.72	779.29	-1112.67	571.93	639937.89	501459.91	32°22'40.128"N	103°52'48.168"W	4.46	
9600.00	79.800	164.400	9213.77	793.62	-1142.90	580.48	639946.44	501429.68	32°22'39.829"N	103°52'48.069"W	4.54	
9631.00	81.000	164.800	9218.94	807.36	-1172.37	588.60	639954.56	501400.21	32°22'39.537"N	103°52'47.976"W	4.07	
9663.00	81.300	163.900	9223.87	821.70	-1202.81	597.13	639963.09	501369.77	32°22'39.235"N	103°52'47.878"W	2.93	
9694.00	81.300	164.400	9228.55	835.70	-1232.29	605.50	639971.46	501340.29	32°22'38.943"N	103°52'47.782"W	1.59	
9726.00	81.600	163.700	9233.31	850.20	-1262.72	614.20	639980.15	501309.87	32°22'38.642"N	103°52'47.682"W	2.36	
9757.00	81.500	163.700	9237.87	864.42	-1292.15	622.80	639988.76	501280.44	32°22'38.350"N	103°52'47.583"W	0.32	
9789.00	82.000	165.100	9242.46	878.76	-1322.65	631.32	639997.27	501249.94	32°22'38.048"N	103°52'47.486"W	2.46	
9821.00	82.100	164.200	9246.89	892.99	-1353.21	639.71	640005.66	501219.38	32°22'37.745"N	103°52'47.389"W	2.80	
9852.00	80.200	160.900	9251.66	907.73	-1382.43	648.89	640014.84	501190.17	32°22'37.455"N	103°52'47.284"W	12.17	
9884.00	78.500	158.100	9257.57	924.31	-1411.88	659.90	640025.85	501160.72	32°22'37.164"N	103°52'47.157"W	10.11	
9915.00	77.900	155.000	9263.91	941.61	-1439.72	671.97	640037.92	501132.88	32°22'36.888"N	103°52'47.017"W	9.98	
9947.00	77.500	152.600	9270.73	960.65	-1467.77	685.77	640051.73	501104.83	32°22'36.609"N	103°52'46.858"W	7.43	
9978.00	78.300	149.500	9277.23	980.25	-1494.29	700.45	640066.40	501078.32	32°22'36.346"N	103°52'46.688"W	10.11	
10010.00	78.100	147.500	9283.77	1001.54	-1520.99	716.81	640082.76	501051.61	32°22'36.082"N	103°52'46.499"W	6.15	
10042.00	78.200	144.500	9290.35	1023.80	-1546.96	734.32	640100.27	501025.65	32°22'35.824"N	103°52'46.296"W	9.18	
10073.00	78.700	142.000	9296.55	1046.40	-1571.29	752.49	640118.44	501001.32	32°22'35.582"N	103°52'46.085"W	8.06	
10105.00	80.100	140.400	9302.44	1070.54	-1595.80	772.20	640138.15	500976.81	32°22'35.339"N	103°52'45.856"W	6.58	
10137.00	81.400	137.200	9307.59	1095.60	-1619.56	793.00	640158.95	500953.06	32°22'35.103"N	103°52'45.615"W	10.67	
10168.00	81.900	134.000	9312.09	1120.94	-1641.47	814.46	640180.40	500931.15	32°22'34.885"N	103°52'45.366"W	10.34	
10200.00	83.200	130.600	9316.24	1148.14	-1662.82	837.93	640203.87	500909.80	32°22'34.673"N	103°52'45.093"W	11.29	
10231.00	84.400	128.900	9319.59	1175.25	-1682.52	861.62	640227.56	500890.09	32°22'34.477"N	103°52'44.818"W	6.69	
10263.00	85.700	126.900	9322.35	1203.76	-1702.11	886.77	640252.71	500870.51	32°22'34.282"N	103°52'44.526"W	7.43	
10295.00	85.500	126.500	9324.80	1232.58	-1721.17	912.36	640278.29	500851.45	32°22'34.093"N	103°52'44.228"W	1.39	
10326.00	86.100	123.700	9327.07	1260.87	-1738.95	937.65	640303.58	500833.67	32°22'33.916"N	103°52'43.934"W	9.21	
10358.00	86.100	121.000	9329.25	1290.67	-1756.03	964.62	640330.55	500816.59	32°22'33.745"N	103°52'43.621"W	8.42	
10389.00	86.800	117.500	9331.17	1320.11	-1771.15	991.61	640357.54	500801.48	32°22'33.595"N	103°52'43.307"W	11.49	
10421.00	86.400	113.200	9333.07	1351.09	-1784.82	1020.47	640386.40	500787.81	32°22'33.458"N	103°52'42.971"W	13.47	



Actual Wellpath Report

No.163H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	JRU No.163H (Slot 28)
Area	Eddy County, NM	Well	No.163H
Field	JRU NAD27	Wellbore	No.163H AWB
Facility	Drilling Island 1		

WELLPATH DATA (229 stations)

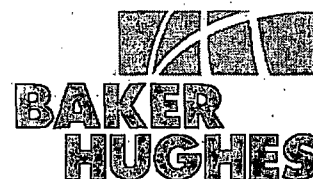
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10452.00	85.500	110.800	9335.26	1381.47	-1796.40	1049.14	640415.06	500776.22	32°22'33.342"N	103°52'42.637"W	8.25	
10484.00	85.400	108.500	9337.80	1413.04	-1807.13	1079.18	640445.10	500765.50	32°22'33.235"N	103°52'42.288"W	7.17	
10515.00	85.900	106.300	9340.15	1443.77	-1816.37	1108.67	640474.59	500756.26	32°22'33.142"N	103°52'41.944"W	7.26	
10547.00	86.700	104.100	9342.22	1475.63	-1824.74	1139.48	640505.40	500747.89	32°22'33.058"N	103°52'41.585"W	7.30	
10578.00	88.400	103.200	9343.54	1506.57	-1832.05	1169.58	640535.50	500740.58	32°22'32.985"N	103°52'41.235"W	6.20	
10610.00	90.200	99.800	9343.93	1538.56	-1838.43	1200.93	640566.84	500734.20	32°22'32.920"N	103°52'40.870"W	12.02	
10642.00	89.300	96.400	9344.07	1570.51	-1842.94	1232.60	640598.52	500729.69	32°22'32.874"N	103°52'40.500"W	10.99	
10673.00	88.100	94.400	9344.77	1601.33	-1845.85	1263.46	640629.37	500726.78	32°22'32.844"N	103°52'40.141"W	7.52	
10705.00	87.900	94.500	9345.89	1633.08	-1848.34	1295.34	640661.25	500724.29	32°22'32.818"N	103°52'39.769"W	0.70	
10736.00	88.500	92.800	9346.87	1663.79	-1850.31	1326.26	640692.17	500722.32	32°22'32.797"N	103°52'39.409"W	5.81	
10766.00	88.900	91.300	9347.55	1693.39	-1851.38	1356.23	640722.14	500721.25	32°22'32.785"N	103°52'39.059"W	5.17	
10808.00	89.100	90.900	9348.28	1734.72	-1852.19	1398.22	640764.12	500720.44	32°22'32.776"N	103°52'38.570"W	1.06	
10839.00	88.900	90.500	9348.82	1765.18	-1852.57	1429.21	640795.11	500720.06	32°22'32.771"N	103°52'38.209"W	1.44	
10934.00	90.700	90.700	9349.15	1858.52	-1853.56	1524.20	640890.10	500719.07	32°22'32.757"N	103°52'37.101"W	1.91	
11029.00	90.700	90.600	9347.99	1951.86	-1854.64	1619.19	640985.08	500717.99	32°22'32.742"N	103°52'35.994"W	0.11	
11125.00	90.800	90.900	9346.73	2046.23	-1855.90	1715.17	641081.05	500716.74	32°22'32.726"N	103°52'34.875"W	0.33	
11220.00	90.800	90.700	9345.41	2139.62	-1857.22	1810.15	641176.03	500715.41	32°22'32.708"N	103°52'33.767"W	0.21	
11313.00	90.800	90.400	9344.11	2230.97	-1858.11	1903.14	641269.01	500714.52	32°22'32.696"N	103°52'32.683"W	0.32	
11408.00	90.500	90.300	9343.03	2324.23	-1858.69	1998.13	641363.99	500713.94	32°22'32.686"N	103°52'31.575"W	0.33	
11503.00	90.400	89.600	9342.29	2417.36	-1858.61	2093.13	641458.98	500714.02	32°22'32.683"N	103°52'30.468"W	0.74	
11598.00	90.200	88.900	9341.79	2510.25	-1857.37	2188.12	641553.96	500715.26	32°22'32.691"N	103°52'29.360"W	0.77	
11694.00	90.200	88.300	9341.45	2603.89	-1855.02	2284.09	641649.93	500717.61	32°22'32.710"N	103°52'28.241"W	0.62	
11789.00	89.700	88.600	9341.54	2696.50	-1852.45	2379.05	641744.89	500720.18	32°22'32.732"N	103°52'27.134"W	0.61	
11884.00	89.700	88.300	9342.03	2789.12	-1849.88	2474.02	641839.84	500722.75	32°22'32.753"N	103°52'26.026"W	0.32	
11979.00	89.800	88.500	9342.45	2881.71	-1847.23	2568.98	641934.80	500725.40	32°22'32.775"N	103°52'24.919"W	0.24	
12074.00	89.200	87.800	9343.28	2974.20	-1844.16	2663.93	642029.74	500728.47	32°22'32.801"N	103°52'23.812"W	0.97	
12170.00	89.100	86.700	9344.70	3067.31	-1839.56	2759.80	642125.61	500733.07	32°22'32.843"N	103°52'22.694"W	1.15	
12265.00	89.100	86.800	9346.19	3159.24	-1834.17	2854.64	642220.44	500738.46	32°22'32.892"N	103°52'21.588"W	0.11	
12360.00	89.200	87.900	9347.60	3251.42	-1829.78	2949.53	642315.32	500742.85	32°22'32.932"N	103°52'20.481"W	1.16	
12455.00	89.200	87.500	9348.93	3343.73	-1825.97	3044.44	642410.22	500746.66	32°22'32.965"N	103°52'19.374"W	0.42	
12550.00	89.100	87.200	9350.34	3435.91	-1821.58	3139.33	642505.11	500751.05	32°22'33.005"N	103°52'18.268"W	0.33	
12646.00	89.200	88.400	9351.76	3529.24	-1817.89	3235.24	642601.02	500754.74	32°22'33.037"N	103°52'17.149"W	1.25	
12741.00	89.100	89.700	9353.17	3622.05	-1816.32	3330.22	642695.98	500756.31	32°22'33.049"N	103°52'16.042"W	1.37	
12836.00	89.400	90.600	9354.42	3715.24	-1816.57	3425.21	642790.97	500756.06	32°22'33.042"N	103°52'14.934"W	1.00	
12931.00	89.800	91.300	9355.08	3808.69	-1818.14	3520.19	642885.94	500754.49	32°22'33.022"N	103°52'13.827"W	0.85	
13026.00	89.700	91.500	9355.49	3902.26	-1820.46	3615.16	642980.91	500752.17	32°22'32.995"N	103°52'12.719"W	0.24	
13121.00	89.600	90.900	9356.07	3995.78	-1822.45	3710.14	643075.88	500750.18	32°22'32.972"N	103°52'11.612"W	0.64	
13216.00	89.700	89.700	9356.65	4089.03	-1822.95	3805.14	643170.87	500749.68	32°22'32.963"N	103°52'10.504"W	1.27	
13311.00	89.500	89.500	9357.32	4182.04	-1822.29	3900.13	643265.86	500750.34	32°22'32.965"N	103°52'09.397"W	0.30	
13406.00	89.400	90.500	9358.23	4275.19	-1822.29	3995.13	643360.84	500750.34	32°22'32.961"N	103°52'08.289"W	1.06	
13502.00	89.900	91.500	9358.82	4369.63	-1823.96	4091.11	643456.82	500748.67	32°22'32.940"N	103°52'07.170"W	1.16	
13597.00	90.100	92.700	9358.82	4463.40	-1827.44	4186.04	643551.75	500745.19	32°22'32.902"N	103°52'06.063"W	1.28	
13692.00	90.200	92.500	9358.57	4557.30	-1831.75	4280.94	643646.64	500740.88	32°22'32.855"N	103°52'04.957"W	0.24	
13787.00	90.200	91.900	9358.24	4651.09	-1835.40	4375.87	643741.56	500737.23	32°22'32.815"N	103°52'03.851"W	0.63	
13882.00	90.500	91.600	9357.65	4744.77	-1838.30	4470.83	643836.51	500734.33	32°22'32.782"N	103°52'02.744"W	0.45	



Actual Wellpath Report

No.163H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	JRU No.163H (Slot 28)
Area	Eddy County, NM	Well	No.163H
Field	JRU NAD27	Wellbore	No.163H AWB
Facility	Drilling Island 1		

WELLPATH DATA (229 stations)

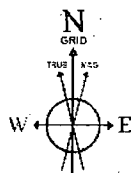
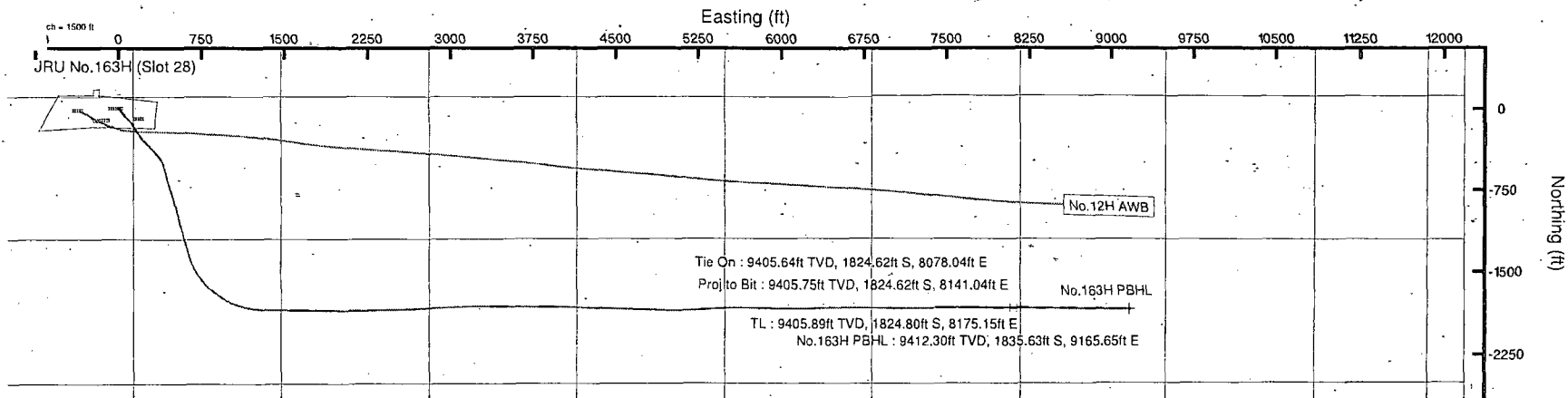
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13978.00	90.900	91.500	9356.48	4839.37	-1840.90	4566.78	643932.46	500731.73	32°22'32.752"N	103°52'01.625"W	0.43	
14073.00	91.200	91.800	9354.74	4933.00	-1843.63	4661.73	644027.40	500729.00	32°22'32.721"N	103°52'00.518"W	0.45	
14168.00	90.200	91.400	9353.58	5026.63	-1846.28	4756.68	644122.35	500726.35	32°22'32.691"N	103°51'59.411"W	1.13	
14263.00	89.100	91.200	9354.16	5120.17	-1848.44	4851.66	644217.31	500724.19	32°22'32.665"N	103°51'58.304"W	1.18	
14358.00	89.500	91.600	9355.32	5213.74	-1850.76	4946.62	644312.27	500721.87	32°22'32.638"N	103°51'57.197"W	0.60	
14453.00	89.000	91.000	9356.56	5307.29	-1852.92	5041.59	644407.23	500719.72	32°22'32.613"N	103°51'56.089"W	0.82	
14547.00	89.100	88.700	9358.12	5399.39	-1852.67	5135.57	644501.20	500719.96	32°22'32.611"N	103°51'54.994"W	2.45	
14640.00	88.200	86.700	9360.31	5489.74	-1848.94	5228.46	644594.09	500723.69	32°22'32.644"N	103°51'53.910"W	2.36	
14735.00	88.000	86.400	9363.46	5581.55	-1843.22	5323.24	644688.86	500729.41	32°22'32.697"N	103°51'52.805"W	0.38	
14828.00	91.400	86.300	9363.95	5671.38	-1837.31	5416.03	644781.65	500735.32	32°22'32.751"N	103°51'51.723"W	3.66	
14923.00	92.300	86.800	9360.88	5763.19	-1831.59	5510.81	644876.42	500741.04	32°22'32.804"N	103°51'50.617"W	1.08	
15015.00	93.300	90.300	9356.39	5852.79	-1829.27	5602.65	644968.26	500743.36	32°22'32.823"N	103°51'49.546"W	3.95	
15046.00	91.500	90.900	9355.09	5883.22	-1829.59	5633.62	644999.23	500743.04	32°22'32.818"N	103°51'49.185"W	6.12	
15141.00	87.500	91.600	9355.92	5976.73	-1831.66	5728.58	645094.17	500740.97	32°22'32.793"N	103°51'48.078"W	4.27	
15236.00	88.800	91.400	9358.99	6070.28	-1834.15	5823.49	645189.08	500738.48	32°22'32.765"N	103°51'46.972"W	1.38	
15332.00	85.400	91.300	9363.84	6164.70	-1836.41	5919.33	645284.91	500736.22	32°22'32.738"N	103°51'45.854"W	3.54	
15427.00	82.000	90.300	9374.27	6257.52	-1837.73	6013.73	645379.31	500734.90	32°22'32.721"N	103°51'44.754"W	3.73	
15522.00	82.800	89.800	9386.83	6349.87	-1837.81	6107.90	645473.47	500734.82	32°22'32.716"N	103°51'43.656"W	0.99	
15617.00	86.900	89.200	9395.36	6442.46	-1836.98	6202.49	645568.05	500735.65	32°22'32.720"N	103°51'42.553"W	4.36	
15684.00	87.500	87.700	9398.63	6507.69	-1835.97	6269.38	645634.94	500737.46	32°22'32.735"N	103°51'41.773"W	2.41	
15780.00	89.500	87.500	9401.14	6600.91	-1831.15	6365.26	645730.81	500741.48	32°22'32.771"N	103°51'40.655"W	2.09	
15875.00	90.600	88.300	9401.06	6693.31	-1827.67	6460.19	645825.74	500744.96	32°22'32.801"N	103°51'39.548"W	1.43	
15970.00	90.300	89.700	9400.31	6786.12	-1826.01	6555.17	645920.71	500746.62	32°22'32.813"N	103°51'38.440"W	1.51	
16065.00	89.600	90.700	9400.40	6879.33	-1826.34	6650.17	646015.70	500746.28	32°22'32.806"N	103°51'37.332"W	1.28	
16162.00	88.700	90.900	9401.84	6974.69	-1827.70	6747.15	646112.67	500744.93	32°22'32.788"N	103°51'36.202"W	0.95	
16257.00	88.900	90.900	9403.82	7068.10	-1829.19	6842.12	646207.63	500743.44	32°22'32.769"N	103°51'35.095"W	0.21	
16352.00	88.900	90.000	9405.65	7161.38	-1829.94	6937.10	646302.61	500742.69	32°22'32.758"N	103°51'33.987"W	0.95	
16447.00	89.900	89.700	9406.64	7254.47	-1829.69	7032.09	646397.59	500742.94	32°22'32.756"N	103°51'32.880"W	1.10	
16542.00	89.900	89.800	9406.81	7347.54	-1829.27	7127.09	646492.59	500743.36	32°22'32.756"N	103°51'31.772"W	0.11	
16637.00	89.800	89.600	9407.06	7440.59	-1828.78	7222.09	646587.58	500743.85	32°22'32.757"N	103°51'30.664"W	0.24	
16732.00	89.900	89.100	9407.31	7533.52	-1827.70	7317.08	646682.56	500744.93	32°22'32.763"N	103°51'29.557"W	0.54	
16827.00	89.900	88.600	9407.47	7626.28	-1825.79	7412.06	646777.54	500746.84	32°22'32.778"N	103°51'28.449"W	0.53	
16923.00	90.400	89.400	9407.22	7720.06	-1824.12	7508.04	646873.51	500748.51	32°22'32.790"N	103°51'27.330"W	0.98	
17018.00	90.200	90.100	9406.72	7813.13	-1823.70	7603.04	646968.50	500748.93	32°22'32.790"N	103°51'26.222"W	0.77	
17112.00	90.400	90.100	9406.23	7905.33	-1823.87	7697.04	647062.50	500748.76	32°22'32.784"N	103°51'25.126"W	0.21	
17208.00	90.400	90.300	9405.56	7999.53	-1824.20	7793.04	647158.49	500748.43	32°22'32.777"N	103°51'24.007"W	0.21	
17303.00	89.900	90.200	9405.31	8092.76	-1824.62	7888.04	647253.48	500748.01	32°22'32.769"N	103°51'22.899"W	0.54	
17398.00	89.900	89.900	9405.48	8185.92	-1824.70	7983.04	647348.47	500747.93	32°22'32.764"N	103°51'21.792"W	0.32	
17493.00	89.900	90.000	9405.64	8279.06	-1824.62	8078.04	647443.46	500748.01	32°22'32.760"N	103°51'20.684"W	0.11	
17588.00	89.300	90.500	9406.31	8372.28	-1825.03	8173.03	647538.45	500747.60	32°22'32.752"N	103°51'19.576"W	0.82	
17683.00	89.100	91.000	9407.63	8465.66	-1826.27	8268.01	647633.43	500746.36	32°22'32.735"N	103°51'18.469"W	0.57	
17778.00	89.000	91.000	9409.21	8559.11	-1827.93	8362.99	647728.40	500744.70	32°22'32.715"N	103°51'17.362"W	0.11	
17873.00	89.000	90.400	9410.87	8652.47	-1829.09	8457.96	647823.37	500743.54	32°22'32.699"N	103°51'16.254"W	0.63	
17968.00	89.100	91.000	9412.44	8745.82	-1830.25	8552.94	647918.34	500742.38	32°22'32.683"N	103°51'15.147"W	0.64	
18063.00	89.100	90.900	9413.93	8839.26	-1831.83	8647.92	648013.31	500740.80	32°22'32.664"N	103°51'14.040"W	0.11	



BOPCO, L.P.

Location: Eddy County, NM
Field: JRU NAD27
Facility: Drilling Island 1

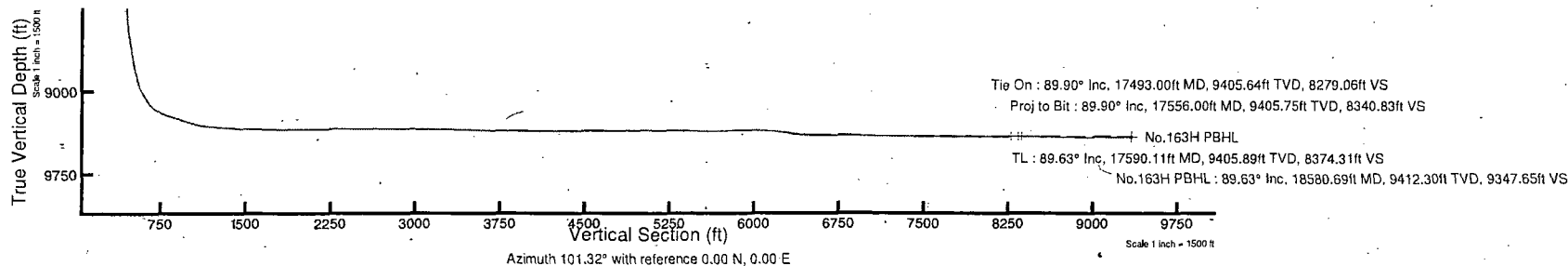
Slot: JRU No.163H (Slot 28)
Well: No.163H
Wellbore: No.163H PWB



BGGM (1945.0 to 2014.0) Dip: 60.18° Field: 48411 nT
Magnetic North is 7.57 degrees East of True North (at 9/26/2013)
Grid North is 0.24 degrees East of True North
To correct azimuth from True to Grid subtract 0.24 degrees
To correct azimuth from Magnetic to Grid add 7.33 degrees

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	17493.00	89.900	90.000	9405.64	-1824.62	8078.04	0.11	8279.06
Proj to Bit	17556.00	89.900	90.000	9405.75	-1824.62	8141.04	0.00	8340.83
TL	17590.11	89.629	90.626	9405.89	-1824.80	8175.15	2.00	8374.31
No.163H PBHL	18580.69	89.629	90.626	9412.30	-1835.63	9165.65	0.00	9347.65

Plot reference wellpath is Rev-K.0	
True vertical depths are referenced to Rig on No.28H SHL (KB)	Grid System: NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No.28H SHL (KB)	North Reference: Grid north
Rig on No.28H SHL (KB) to Mean Sea Level: 3191 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: JRU No.163H (Slot 28)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gentry on 11/21/2013



Rev-K.0



Actual Wellpath Report

No.163H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	JRU No.163H (Slot 28)
Area	Eddy County, NM	Well	No.163H
Field	JRU NAD27	Wellbore	No.163H AWB
Facility	Drilling Island 1		

REPORT SETUP INFORMATION

Projection System	NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 4.0.1
North Reference	Grid	User	Gentbry
Scale	0.999931	Report Generated	12/2/2013 at 11:06:37 AM
Convergence at slot	0.24° East	Database/Source file	MidlandDB/No.163H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	17.40	345.94	639366.00	502572.50	32°22'51.162"N	103°52'54.782"W
Facility Reference Pt			639020.08	502555.10	32°22'51.004"N	103°52'58.816"W
Field Reference Pt			652495.44	494904.92	32°21'34.711"N	103°50'22.090"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No.28H SHL (KB) to Facility Vertical Datum	3191.00ft
Horizontal Reference Pt	Slot	Rig on No.28H SHL (KB) to Mean Sea Level	3191.00ft
Vertical Reference Pt	Rig on No.28H SHL (KB)	Rig on No.28H SHL (KB) to Mud Line at Slot (JRU No.163H (Slot 28))	3191.00ft
MD Reference Pt	Rig on No.28H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	101.32°



Actual Wellpath Report

No.163H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	JRU No.163H (Slot 28)
Area	Eddy County, NM	Well	No.163H
Field	JRU NAD27	Wellbore	No.163H AWB
Facility	Drilling Island 1		

WELLPATH DATA (229 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 [°/100ft]	Comments
18159.00	89.500	90.900	9415.11	8933.67	-1833.33	8743.90	648109.28	500739.29	32°22'32.644"N	103°51'12.921"W	0.42	
18254.00	89.600	90.900	9415.85	9027.10	-1834.83	8838.88	648204.26	500737.80	32°22'32.625"N	103°51'11.813"W	0.11	
18349.00	89.600	90.700	9416.52	9120.50	-1836.15	8933.87	648299.24	500736.48	32°22'32.608"N	103°51'10.706"W	0.21	
18508.00	89.600	90.700	9417.63	9276.77	-1838.10	9092.86	648458.22	500734.53	32°22'32.582"N	103°51'08.852"W	0.00	Proj to Bit

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Target		9387.00	-1844.63	6014.42	645380.00	500728.00	32°22'32.653"N	103°51'44.746"W	point
No.163H PBHL		9412.30	-1835.63	9165.65	648531.00	500737.00	32°22'32.603"N	103°51'08.003"W	point
DI1 No.35H PBHL		10716.00	-1845.13	11850.04	651215.20	500727.50	32°22'32.388"N	103°50'36.705"W	point

WELLPATH COMPOSITION - Ref Wellbore: No.163H AWB Ref Wellpath: No.163H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	470.00	Generic gyro - northseeking (Standard)	Gyro Data <100-470>	No.163H AWB
470.00	18349.00	NaviTrak (Standard)	BHI MWD NaviTrak <757-XXXX>	No.163H AWB
18349.00	18508.00	Blind Drilling (std)	Projection to bit	No.163H AWB