

30-015-42615



2105 MARKET STREET
MIDLAND, TX 79703
24 HR (432) 694-9517

STATE OF NEW MEXICO

COUNTY OF EDDY

I, Rex Long, Directional Driller certify that I am employed by Baker Hughes INTEQ; did conduct
or supervise on the day(s) of 10/30/2014 through 12/03/2014 the
taking of MWD surveys from a depth of 8182 to a depth of 18058 that

the data is true, correct, complete and within the limitations of the tool as set forth by Baker Hughes INTEQ; that I am
authorized and qualified to make this report; that this survey was conducted at the request of BOPCO, LP

for the JRU DI-1 No. 162H Well, API No. 30-015-42615

in Eddy County, NM; and that I have reviewed this report and find that it conforms to
the principles and procedures as set forth by INTEQ.

NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 21 2016

RECEIVED

Thomas
Janousek

Digitally signed by Thomas Janousek
DN: cn=Thomas Janousek, o=Baker
Hughes, ou=INTEQ,
email=Thomas.Janousek@BakerHughe
s.com, c=US
Date: 2015.01.06 11:48:28 -06'00'

Field Service Engineer: Rex Long



BOPCO LP

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

Slot: JRU DI1 No. 162H
Well: DI1 No. 162H
Wellbore: DI1 No. 162H AWB

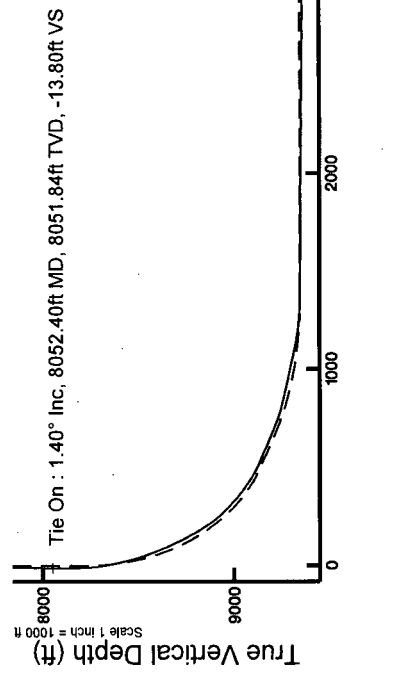
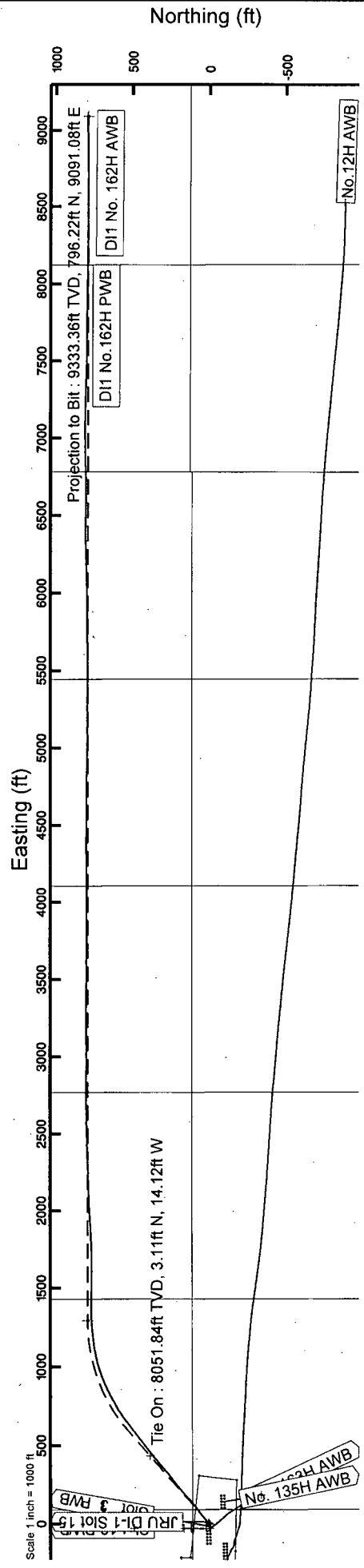


Plot reference wellpath is DI1 No. 162H AWP

True vertical depths are referenced to Rig on No. 24H SHL (KB) | Grid System: NAD27 / TM New Mexico SP, Eastern Zone (5001), US feet
Measured depths are referenced to Rig on No. 24H SHL (KB) | North Reference: Grid north
Rig on No. 24H SHL (KB) to Mean Sea Level, 3191 feet
Scale: True distance
Digits are in feet
Created by JRU on 12/20/14
Coordinates are in feet referenced to Slot

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
JRU Drilling Island 1	639020.080	502555.100	103°52'58.8167W
Slot	Local E (ft)	Local N (ft)	Longitude
JRU DI1 No. 162H	17.80	3987.75	103°52'54.2837W
Rig on No. 24H SHL (KB) to Mean Sea Level (At Slot: JRU DI1 No. 162H)			3191 ft
Mean Sea Level to Mud line (At Slot: JRU DI1 No. 162H)			0 ft
Rig on No. 24H SHL (KB) to Mean Sea Level			3191 ft

Bottom Hole Location			
MD (ft)	Inc (°)	TVD (ft)	Local N (ft)
18133.00	81.900	9333.36	798.22
Wellpath Composition			
Start MD (ft)	End MD (ft)	Tool	Log Name/Comment
26.00	8052.40	Generic gyro - north-seeking	Gyro Survey - 97.80/8052.40
8052.40	18058.00	NorthTrack	NorthTrack - 91.90/18058.00
18058.00	18133.00	Blind Drilling	Blind Drilling (est)





Actual Wellpath Report

DI1 No. 162H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	JRU DI1 No.162H
Area	Eddy County, NM	Well	DI1 No.162H
Field	JRU NAD27	Wellbore	DI1 No. 162H AWB
Facility	JRU Drilling Island 1		

REPORT SETUP INFORMATION

Projection System	NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 4.0.0
North Reference	Grid	User	Janotho
Scale	0.999931	Report Generated	12/3/2014 at 9:00:33 AM
Convergence at slot	0.24° East	Database/Source file	WA_Midland/DI1_No._162H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	17.80	388.75	639408.80	502572.90	32°22'51.164"N	103°52'54.283"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.24H SHL (KB) to Facility Vertical Datum	3191.00ft
Horizontal Reference Pt	Slot	Rig on No.24H SHL (KB) to Mean Sea Level	3191.00ft
Vertical Reference Pt	Rig on No.24H SHL (KB)	Rig on No.24H SHL (KB) to Mud Line at Slot (JRU DI1 No.162H)	3191.00ft
MD Reference Pt	Rig on No.24H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	85.03°



Actual Wellpath Report

DI1 No. 162H AWP

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BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	JRU DI1 No.162H
Area	Eddy County, NM	Well	DI1 No.162H
Field	JRU NAD27	Wellbore	DI1 No. 162H AWB
Facility	JRU Drilling Island 1		

WELLPATH DATA (239 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	338.020	0.00	0.00	0.00	0.00	639408.80	502572.90	32°22'51.164"N	103°52'54.283"W	0.00	
26.00	0.000	338.020	26.00	0.00	0.00	0.00	639408.80	502572.90	32°22'51.164"N	103°52'54.283"W	0.00	
97.80	0.190	338.020	97.80	-0.03	0.11	-0.04	639408.76	502573.01	32°22'51.165"N	103°52'54.283"W	0.26	
160.70	0.170	277.360	160.70	-0.16	0.22	-0.18	639408.62	502573.12	32°22'51.166"N	103°52'54.285"W	0.29	
254.00	0.160	278.640	254.00	-0.42	0.26	-0.44	639408.36	502573.16	32°22'51.167"N	103°52'54.288"W	0.01	
377.80	0.170	223.070	377.80	-0.72	0.15	-0.74	639408.06	502573.05	32°22'51.166"N	103°52'54.291"W	0.12	
440.70	0.170	223.040	440.70	-0.86	0.01	-0.87	639407.93	502572.91	32°22'51.164"N	103°52'54.293"W	0.00	
534.00	0.150	301.320	534.00	-1.06	-0.03	-1.06	639407.74	502572.87	32°22'51.164"N	103°52'54.295"W	0.22	
627.30	0.160	294.890	627.30	-1.27	0.09	-1.29	639407.51	502572.99	32°22'51.165"N	103°52'54.298"W	0.02	
692.70	0.100	280.360	692.70	-1.41	0.14	-1.43	639407.37	502573.04	32°22'51.166"N	103°52'54.299"W	0.10	
785.30	0.450	124.420	785.30	-1.21	-0.05	-1.21	639407.59	502572.85	32°22'51.164"N	103°52'54.297"W	0.59	
877.90	0.840	123.670	877.89	-0.39	-0.63	-0.34	639408.46	502572.27	32°22'51.158"N	103°52'54.287"W	0.42	
972.60	0.710	103.810	972.58	0.70	-1.16	0.81	639409.61	502571.74	32°22'51.153"N	103°52'54.273"W	0.31	
1067.20	1.050	24.470	1067.17	1.68	-0.51	1.73	639410.53	502572.39	32°22'51.159"N	103°52'54.262"W	1.22	
1161.90	1.390	12.520	1161.85	2.46	1.40	2.34	639411.14	502574.30	32°22'51.178"N	103°52'54.255"W	0.45	
1256.50	1.190	324.580	1256.43	2.30	3.32	2.02	639410.82	502576.22	32°22'51.197"N	103°52'54.259"W	1.12	
1351.20	1.010	236.230	1351.12	1.07	3.66	0.76	639409.56	502576.56	32°22'51.200"N	103°52'54.273"W	1.62	
1445.90	1.070	172.150	1445.81	0.39	2.32	0.19	639408.99	502575.22	32°22'51.187"N	103°52'54.280"W	1.17	
1540.50	1.310	134.370	1540.39	1.14	0.69	1.08	639409.88	502573.59	32°22'51.171"N	103°52'54.270"W	0.85	
1635.20	0.400	86.230	1635.08	2.17	-0.04	2.18	639410.98	502572.86	32°22'51.164"N	103°52'54.257"W	1.15	
1729.80	0.220	359.750	1729.68	2.52	0.16	2.51	639411.31	502573.06	32°22'51.166"N	103°52'54.253"W	0.47	
1824.50	0.490	150.780	1824.37	2.70	-0.01	2.71	639411.51	502572.89	32°22'51.164"N	103°52'54.251"W	0.73	
1919.20	0.460	152.370	1919.07	3.01	-0.70	3.08	639411.88	502572.20	32°22'51.157"N	103°52'54.247"W	0.03	
2013.80	0.390	155.560	2013.67	3.26	-1.33	3.39	639412.19	502571.57	32°22'51.151"N	103°52'54.243"W	0.08	
2108.50	0.330	155.170	2108.37	3.46	-1.87	3.64	639412.44	502571.03	32°22'51.145"N	103°52'54.240"W	0.06	
2203.10	0.300	148.470	2202.97	3.67	-2.33	3.88	639412.68	502570.57	32°22'51.141"N	103°52'54.237"W	0.05	
2297.80	0.270	139.490	2297.66	3.91	-2.71	4.16	639412.96	502570.19	32°22'51.137"N	103°52'54.234"W	0.06	
2392.50	0.250	180.480	2392.36	4.02	-3.09	4.30	639413.10	502569.81	32°22'51.133"N	103°52'54.233"W	0.19	
2487.10	0.170	229.880	2486.96	3.88	-3.39	4.19	639412.99	502569.51	32°22'51.130"N	103°52'54.234"W	0.20	
2581.80	0.220	344.900	2581.66	3.74	-3.30	4.04	639412.84	502569.60	32°22'51.131"N	103°52'54.236"W	0.35	
2676.40	0.600	85.870	2676.26	4.20	-3.09	4.48	639413.28	502569.81	32°22'51.133"N	103°52'54.230"W	0.72	
2771.10	0.800	102.970	2770.95	5.32	-3.20	5.62	639414.42	502569.70	32°22'51.132"N	103°52'54.217"W	0.30	
2865.80	0.250	83.830	2865.65	6.16	-3.33	6.47	639415.27	502569.57	32°22'51.131"N	103°52'54.207"W	0.60	
2960.40	0.320	12.150	2960.25	6.44	-3.05	6.73	639415.53	502569.85	32°22'51.134"N	103°52'54.204"W	0.36	
3055.10	0.550	43.930	3054.95	6.86	-2.46	7.10	639415.90	502570.44	32°22'51.139"N	103°52'54.200"W	0.34	
3149.70	0.880	51.100	3149.54	7.81	-1.68	7.99	639416.78	502571.22	32°22'51.147"N	103°52'54.189"W	0.36	
3244.40	0.900	46.260	3244.23	8.99	-0.71	9.09	639417.89	502572.19	32°22'51.157"N	103°52'54.177"W	0.08	
3339.10	0.300	32.150	3338.92	9.72	0.02	9.76	639418.56	502572.92	32°22'51.164"N	103°52'54.169"W	0.65	
3433.70	0.510	232.910	3433.52	9.52	-0.03	9.55	639418.35	502572.87	32°22'51.163"N	103°52'54.171"W	0.84	
3528.40	0.810	242.580	3528.21	8.54	-0.59	8.62	639417.42	502572.31	32°22'51.158"N	103°52'54.182"W	0.34	
3623.00	0.990	254.090	3622.80	7.12	-1.12	7.24	639416.04	502571.78	32°22'51.153"N	103°52'54.198"W	0.27	
3717.70	1.040	267.450	3717.49	5.46	-1.39	5.60	639414.40	502571.51	32°22'51.150"N	103°52'54.217"W	0.25	
3812.40	0.970	277.340	3812.17	3.82	-1.32	3.94	639412.74	502571.58	32°22'51.151"N	103°52'54.237"W	0.20	
3907.00	0.950	285.410	3906.76	2.30	-1.01	2.39	639411.19	502571.89	32°22'51.154"N	103°52'54.255"W	0.14	
4001.70	1.110	287.520	4001.44	0.71	-0.53	0.76	639409.56	502572.37	32°22'51.159"N	103°52'54.274"W	0.17	



Actual Wellpath Report

DI1 No. 162H AWP

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BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	JRU DI1 No.162H
Area	Eddy County, NM	Well	DI1 No.162H
Field	JRU NAD27	Wellbore	DI1 No. 162H AWB
Facility	JRU Drilling Island 1		

WELLPATH DATA (239 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
4096.30	1.310	292.020	4096.02	-1.10	0.16	-1.11	639407.69	502573.06	32°22'51.166"N	103°52'54.295"W	0.23	
4191.00	1.280	299.910	4190.70	-2.93	1.09	-3.03	639405.77	502573.99	32°22'51.175"N	103°52'54.318"W	0.19	
4285.70	1.340	310.200	4285.37	-4.58	2.33	-4.80	639404.00	502575.23	32°22'51.187"N	103°52'54.338"W	0.26	
4380.30	1.140	318.770	4379.95	-5.91	3.75	-6.26	639402.54	502576.65	32°22'51.202"N	103°52'54.355"W	0.29	
4475.00	1.290	315.190	4474.63	-7.15	5.22	-7.63	639401.17	502578.12	32°22'51.216"N	103°52'54.371"W	0.18	
4569.60	0.800	310.820	4569.22	-8.29	6.40	-8.88	639399.92	502579.30	32°22'51.228"N	103°52'54.386"W	0.52	
4664.30	0.570	311.480	4663.91	-9.08	7.15	-9.74	639399.06	502580.05	32°22'51.235"N	103°52'54.396"W	0.24	
4759.00	0.600	318.020	4758.60	-9.70	7.83	-10.42	639398.38	502580.73	32°22'51.242"N	103°52'54.404"W	0.08	
4853.60	0.140	354.090	4853.20	-10.00	8.31	-10.76	639398.04	502581.21	32°22'51.247"N	103°52'54.408"W	0.52	
4948.30	0.170	79.410	4947.90	-9.87	8.45	-10.64	639398.16	502581.35	32°22'51.248"N	103°52'54.406"W	0.22	
5042.90	0.280	86.340	5042.50	-9.49	8.49	-10.27	639398.53	502581.39	32°22'51.249"N	103°52'54.402"W	0.12	
5137.60	0.410	90.970	5137.20	-8.93	8.50	-9.70	639399.10	502581.40	32°22'51.249"N	103°52'54.395"W	0.14	
5232.30	0.320	105.020	5231.90	-8.34	8.43	-9.11	639399.69	502581.33	32°22'51.248"N	103°52'54.388"W	0.13	
5326.90	0.270	134.330	5326.50	-7.95	8.20	-8.69	639400.11	502581.10	32°22'51.246"N	103°52'54.383"W	0.17	
5421.60	0.300	141.390	5421.19	-7.66	7.85	-8.38	639400.42	502580.75	32°22'51.242"N	103°52'54.380"W	0.05	
5516.20	0.360	134.490	5515.79	-7.33	7.45	-8.01	639400.79	502580.35	32°22'51.238"N	103°52'54.376"W	0.08	
5610.90	0.410	129.700	5610.49	-6.90	7.03	-7.54	639401.26	502579.93	32°22'51.234"N	103°52'54.370"W	0.06	
5705.60	0.480	124.490	5705.19	-6.35	6.59	-6.95	639401.85	502579.49	32°22'51.230"N	103°52'54.363"W	0.09	
5800.20	0.400	118.230	5799.79	-5.77	6.21	-6.33	639402.47	502579.11	32°22'51.226"N	103°52'54.356"W	0.10	
5894.90	0.340	116.470	5894.48	-5.25	5.92	-5.79	639403.01	502578.82	32°22'51.223"N	103°52'54.350"W	0.06	
5989.50	0.320	107.410	5989.08	-4.77	5.72	-5.29	639403.51	502578.62	32°22'51.221"N	103°52'54.344"W	0.06	
6084.20	0.240	104.000	6083.78	-4.34	5.59	-4.84	639403.96	502578.49	32°22'51.220"N	103°52'54.339"W	0.09	
6178.90	0.300	115.490	6178.48	-3.94	5.44	-4.43	639404.38	502578.34	32°22'51.218"N	103°52'54.334"W	0.09	
6273.50	0.430	123.940	6273.08	-3.45	5.13	-3.91	639404.89	502578.03	32°22'51.215"N	103°52'54.328"W	0.15	
6368.20	0.500	121.620	6367.77	-2.84	4.72	-3.26	639405.54	502577.62	32°22'51.211"N	103°52'54.320"W	0.08	
6462.80	0.370	124.210	6462.37	-2.27	4.33	-2.66	639406.14	502577.23	32°22'51.207"N	103°52'54.313"W	0.14	
6557.50	0.240	165.000	6557.07	-2.00	3.97	-2.35	639406.45	502576.87	32°22'51.203"N	103°52'54.310"W	0.26	
6652.20	0.260	186.210	6651.77	-2.01	3.56	-2.32	639406.48	502576.46	32°22'51.199"N	103°52'54.309"W	0.10	
6746.80	0.440	337.450	6746.37	-2.16	3.68	-2.49	639406.31	502576.58	32°22'51.201"N	103°52'54.311"W	0.72	
6841.50	0.600	331.770	6841.06	-2.46	4.46	-2.86	639405.94	502577.36	32°22'51.208"N	103°52'54.316"W	0.18	
6936.10	0.350	309.260	6935.66	-2.87	5.08	-3.32	639405.48	502577.98	32°22'51.215"N	103°52'54.321"W	0.32	
7030.80	0.280	232.640	7030.36	-3.27	5.12	-3.73	639405.07	502578.02	32°22'51.215"N	103°52'54.326"W	0.42	
7125.50	0.530	199.360	7125.06	-3.64	4.57	-4.06	639404.74	502577.46	32°22'51.209"N	103°52'54.330"W	0.35	
7220.10	0.730	187.900	7219.65	-3.96	3.56	-4.28	639404.52	502576.46	32°22'51.199"N	103°52'54.332"W	0.25	
7314.80	0.560	169.110	7314.35	-4.05	2.50	-4.28	639404.52	502575.40	32°22'51.189"N	103°52'54.332"W	0.28	
7409.40	0.380	262.100	7408.94	-4.31	2.01	-4.50	639404.30	502574.91	32°22'51.184"N	103°52'54.335"W	0.73	
7504.10	0.890	298.400	7503.64	-5.24	2.31	-5.46	639403.34	502575.21	32°22'51.187"N	103°52'54.346"W	0.66	
7598.80	1.080	309.140	7598.32	-6.49	3.23	-6.80	639402.00	502576.13	32°22'51.196"N	103°52'54.362"W	0.28	
7693.40	1.110	300.820	7692.91	-7.88	4.26	-8.28	639400.52	502577.16	32°22'51.207"N	103°52'54.379"W	0.17	
7788.10	1.090	285.760	7787.59	-9.46	4.97	-9.93	639398.87	502577.87	32°22'51.214"N	103°52'54.398"W	0.31	
7882.70	1.320	266.130	7882.17	-11.39	5.14	-11.89	639396.92	502578.04	32°22'51.216"N	103°52'54.421"W	0.50	
7977.40	0.930	216.760	7976.85	-13.00	4.45	-13.43	639395.37	502577.35	32°22'51.209"N	103°52'54.439"W	1.06	
8052.40	1.400	200.720	8051.84	-13.80	3.11	-14.12	639394.68	502576.01	32°22'51.195"N	103°52'54.447"W	0.76	Tie On
8182.00	1.800	153.800	8181.39	-13.75	-0.20	-13.78	639395.02	502572.70	32°22'51.163"N	103°52'54.443"W	1.02	
8213.00	2.100	86.900	8212.38	-13.01	-0.60	-13.00	639395.80	502572.30	32°22'51.159"N	103°52'54.434"W	6.98	



Actual Wellpath Report

DI1 No. 162H AWP

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BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	JRU DI1 No.162H
Area	Eddy County, NM	Well	DI1 No.162H
Field	JRU NAD27	Wellbore	DI1 No. 162H AWB
Facility	JRU Drilling Island 1		

WELLPATH DATA (239 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
8245.00	5.000	55.800	8244.32	-11.20	0.21	-11.26	639397.54	502573.11	32°22'51.167"N	103°52'54.414"W	10.56	
8276.00	7.300	54.400	8275.13	-8.33	2.12	-8.54	639400.26	502575.02	32°22'51.185"N	103°52'54.382"W	7.43	
8308.00	9.000	56.200	8306.81	-4.38	4.69	-4.81	639403.99	502577.59	32°22'51.211"N	103°52'54.338"W	5.37	
8340.00	10.800	60.400	8338.33	0.53	7.57	-0.12	639408.68	502580.47	32°22'51.239"N	103°52'54.284"W	6.06	
8371.00	12.300	61.300	8368.70	6.20	10.59	5.30	639414.10	502583.49	32°22'51.269"N	103°52'54.220"W	4.87	
8403.00	13.800	58.000	8399.88	12.72	14.25	11.53	639420.33	502587.15	32°22'51.305"N	103°52'54.147"W	5.23	
8435.00	15.900	51.800	8430.81	19.79	18.98	18.21	639427.01	502591.88	32°22'51.351"N	103°52'54.069"W	8.22	
8467.00	17.800	50.700	8461.43	27.49	24.79	25.44	639434.24	502597.69	32°22'51.408"N	103°52'53.985"W	6.02	
8498.00	19.300	50.300	8490.82	35.62	31.06	33.05	639441.85	502603.96	32°22'51.470"N	103°52'53.896"W	4.86	
8530.00	20.800	50.800	8520.88	44.66	38.03	41.52	639450.32	502610.93	32°22'51.539"N	103°52'53.797"W	4.72	
8561.00	22.200	51.200	8549.72	54.08	45.18	50.35	639459.15	502618.08	32°22'51.609"N	103°52'53.693"W	4.54	
8593.00	23.700	52.500	8579.19	64.52	52.89	60.16	639468.96	502625.78	32°22'51.685"N	103°52'53.578"W	4.95	
8625.00	26.000	52.200	8608.23	75.84	61.10	70.81	639479.60	502634.00	32°22'51.766"N	103°52'53.454"W	7.20	
8656.00	27.000	52.300	8635.97	87.47	69.57	81.75	639490.54	502642.46	32°22'51.849"N	103°52'53.326"W	3.23	
8688.00	27.500	52.800	8664.42	99.83	78.48	93.38	639502.17	502651.37	32°22'51.937"N	103°52'53.190"W	1.72	
8720.00	28.600	52.800	8692.66	112.56	87.58	105.36	639514.16	502660.47	32°22'52.026"N	103°52'53.050"W	3.44	
8751.00	29.800	50.400	8719.72	125.18	96.97	117.21	639526.00	502669.87	32°22'52.119"N	103°52'52.911"W	5.41	
8783.00	31.300	49.600	8747.28	138.49	107.43	129.67	639538.46	502680.32	32°22'52.222"N	103°52'52.765"W	4.86	
8815.00	32.900	48.800	8774.38	152.28	118.54	142.54	639551.33	502691.43	32°22'52.331"N	103°52'52.615"W	5.17	
8846.00	34.400	49.100	8800.19	166.16	129.82	155.49	639564.28	502702.71	32°22'52.442"N	103°52'52.463"W	4.87	
8878.00	36.800	48.200	8826.21	181.16	142.13	169.47	639578.26	502715.02	32°22'52.563"N	103°52'52.299"W	7.68	
8910.00	38.500	48.000	8851.54	196.78	155.18	184.02	639592.81	502728.07	32°22'52.692"N	103°52'52.129"W	5.33	
8941.00	40.800	48.500	8875.41	212.63	168.35	198.78	639607.56	502741.24	32°22'52.822"N	103°52'51.956"W	7.49	
8973.00	42.800	49.400	8899.26	229.87	182.36	214.86	639623.65	502755.24	32°22'52.960"N	103°52'51.768"W	6.52	
9005.00	45.900	49.800	8922.14	248.09	196.85	231.90	639640.68	502769.74	32°22'53.102"N	103°52'51.569"W	9.73	
9037.00	48.600	51.200	8943.86	267.45	211.79	250.03	639658.81	502784.68	32°22'53.249"N	103°52'51.357"W	9.03	
9068.00	51.000	51.800	8963.87	287.19	226.53	268.56	639677.34	502799.41	32°22'53.394"N	103°52'51.140"W	7.88	
9100.00	51.600	53.000	8983.88	308.22	241.77	288.35	639697.13	502814.65	32°22'53.544"N	103°52'50.908"W	3.48	
9132.00	53.200	51.200	9003.40	329.50	257.34	308.35	639717.13	502830.22	32°22'53.698"N	103°52'50.674"W	6.70	
9164.00	55.200	50.200	9022.12	350.93	273.78	328.43	639737.21	502846.66	32°22'53.859"N	103°52'50.439"W	6.74	
9195.00	56.700	49.200	9039.48	371.89	290.39	348.02	639756.79	502863.27	32°22'54.023"N	103°52'50.210"W	5.53	
9227.00	58.500	48.800	9056.62	393.74	308.12	368.41	639777.18	502881.00	32°22'54.198"N	103°52'49.972"W	5.72	
9259.00	60.200	48.500	9072.94	415.90	326.31	389.07	639797.84	502899.18	32°22'54.377"N	103°52'49.730"W	5.37	
9290.00	62.200	49.200	9087.87	437.83	344.18	409.53	639818.30	502917.06	32°22'54.553"N	103°52'49.490"W	6.75	
9322.00	63.300	49.900	9102.52	460.99	362.64	431.18	639839.95	502935.51	32°22'54.734"N	103°52'49.237"W	3.95	
9354.00	65.900	51.000	9116.25	484.79	381.04	453.46	639862.23	502953.91	32°22'54.916"N	103°52'48.976"W	8.70	
9385.00	68.100	51.800	9128.36	508.55	398.84	475.77	639884.53	502971.71	32°22'55.091"N	103°52'48.715"W	7.48	
9417.00	70.000	51.800	9139.80	533.55	417.32	499.25	639908.01	502990.19	32°22'55.273"N	103°52'48.440"W	5.94	
9449.00	70.000	52.300	9150.75	558.78	435.81	522.96	639931.72	503008.68	32°22'55.455"N	103°52'48.163"W	1.47	
9480.00	69.900	51.700	9161.37	583.19	453.74	545.91	639954.67	503026.61	32°22'55.631"N	103°52'47.895"W	1.85	
9512.00	69.800	51.200	9172.40	608.22	472.46	569.40	639978.16	503045.33	32°22'55.815"N	103°52'47.620"W	1.50	
9544.00	69.700	51.300	9183.47	633.18	491.25	592.82	640001.57	503064.12	32°22'56.000"N	103°52'47.346"W	0.43	
9575.00	69.700	51.200	9194.23	657.34	509.45	615.49	640024.25	503082.32	32°22'56.179"N	103°52'47.080"W	0.30	
9607.00	70.200	51.100	9205.20	682.30	528.31	638.90	640047.66	503101.17	32°22'56.365"N	103°52'46.807"W	1.59	
9639.00	71.200	51.800	9215.78	707.46	547.13	662.52	640071.28	503119.99	32°22'56.550"N	103°52'46.530"W	3.75	



Actual Wellpath Report

DI1 No. 162H AWP

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BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	JRU DI1 No.162H
Area	Eddy County, NM	Well	DI1 No.162H
Field	JRU NAD27	Wellbore	DI1 No. 162H AWP
Facility	JRU Drilling Island 1		

WELLPATH DATA (239 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
9670.00	72.000	54.700	9225.56	732.47	564.72	686.09	640094.84	503137.59	32°22'56.723"N	103°52'46.255"W	9.24	
9702.00	73.500	57.200	9235.05	759.18	581.83	711.41	640120.16	503154.69	32°22'56.892"N	103°52'45.958"W	8.81	
9734.00	74.700	59.700	9243.82	786.70	597.93	737.63	640146.38	503170.79	32°22'57.050"N	103°52'45.652"W	8.40	
9765.00	76.100	59.500	9251.63	813.79	613.11	763.51	640172.25	503185.97	32°22'57.199"N	103°52'45.349"W	4.56	
9797.00	77.300	60.400	9259.00	842.00	628.71	790.46	640199.21	503201.56	32°22'57.352"N	103°52'45.034"W	4.64	
9829.00	78.100	61.900	9265.81	870.58	643.79	817.85	640226.59	503216.64	32°22'57.500"N	103°52'44.714"W	5.22	
9860.00	78.200	63.000	9272.18	898.60	657.82	844.74	640253.49	503230.68	32°22'57.638"N	103°52'44.400"W	3.49	
9892.00	78.000	64.900	9278.78	927.82	671.57	872.87	640281.61	503244.43	32°22'57.773"N	103°52'44.071"W	5.84	
9924.00	77.800	66.600	9285.49	957.35	684.42	901.40	640310.14	503257.28	32°22'57.899"N	103°52'43.738"W	5.23	
9956.00	77.300	68.500	9292.39	987.15	696.36	930.28	640339.01	503269.21	32°22'58.016"N	103°52'43.401"W	6.00	
9987.00	77.300	70.200	9299.20	1016.27	707.02	958.58	640367.31	503279.87	32°22'58.120"N	103°52'43.070"W	5.35	
10019.00	77.700	72.900	9306.13	1046.65	716.91	988.21	640396.94	503289.76	32°22'58.217"N	103°52'42.724"W	8.33	
10051.00	77.300	75.300	9313.06	1077.32	725.47	1018.25	640426.98	503298.31	32°22'58.300"N	103°52'42.373"W	7.43	
10082.00	78.600	76.300	9319.53	1107.24	732.90	1047.64	640456.37	503305.75	32°22'58.372"N	103°52'42.030"W	5.25	
10114.00	79.600	78.700	9325.58	1138.39	739.70	1078.32	640487.04	503312.55	32°22'58.438"N	103°52'41.672"W	8.00	
10145.00	80.800	79.400	9330.86	1168.77	745.50	1108.31	640517.03	503318.35	32°22'58.494"N	103°52'41.322"W	4.46	
10177.00	82.200	82.000	9335.59	1200.33	750.62	1139.54	640548.26	503323.46	32°22'58.544"N	103°52'40.958"W	9.15	
10209.00	83.500	83.000	9339.57	1232.05	754.76	1171.02	640579.73	503327.61	32°22'58.583"N	103°52'40.591"W	5.11	
10241.00	85.000	84.800	9342.78	1263.88	758.14	1202.67	640611.39	503330.99	32°22'58.616"N	103°52'40.221"W	7.30	
10272.00	86.800	83.000	9344.99	1294.79	761.43	1233.42	640642.13	503334.27	32°22'58.647"N	103°52'39.863"W	8.20	
10304.00	89.000	84.000	9346.17	1326.75	765.05	1265.19	640673.90	503337.89	32°22'58.681"N	103°52'39.492"W	7.55	
10341.00	90.700	88.100	9346.26	1363.74	767.60	1302.09	640710.80	503340.44	32°22'58.705"N	103°52'39.062"W	12.00	
10436.00	89.100	90.900	9346.43	1458.44	768.42	1397.07	640805.77	503341.27	32°22'58.709"N	103°52'37.954"W	3.39	
10531.00	88.500	90.900	9348.42	1552.92	766.93	1492.04	640900.73	503339.78	32°22'58.690"N	103°52'36.847"W	0.63	
10626.00	90.000	90.100	9349.66	1647.47	766.10	1587.03	640995.71	503338.95	32°22'58.678"N	103°52'35.739"W	1.79	
10721.00	90.300	89.700	9349.41	1742.13	766.27	1682.02	641090.71	503339.12	32°22'58.676"N	103°52'34.631"W	0.53	
10816.00	90.000	88.000	9349.16	1836.91	768.18	1777.00	641185.68	503341.02	32°22'58.691"N	103°52'33.524"W	1.82	
10911.00	89.200	86.800	9349.83	1931.83	772.49	1871.90	641280.57	503345.33	32°22'58.729"N	103°52'32.417"W	1.52	
11007.00	89.600	86.500	9350.83	2027.78	778.09	1967.73	641376.39	503350.94	32°22'58.781"N	103°52'31.299"W	0.52	
11102.00	89.500	88.300	9351.58	2122.69	782.40	2062.62	641471.28	503355.25	32°22'58.819"N	103°52'30.192"W	1.90	
11197.00	89.700	88.000	9352.24	2217.55	785.47	2157.57	641566.22	503358.32	32°22'58.846"N	103°52'29.085"W	0.38	
11292.00	89.600	88.100	9352.82	2312.42	788.70	2252.52	641661.16	503361.55	32°22'58.874"N	103°52'27.978"W	0.15	
11387.00	89.500	86.900	9353.57	2407.32	792.85	2347.42	641756.05	503365.69	32°22'58.911"N	103°52'26.871"W	1.27	
11482.00	89.300	88.900	9354.56	2502.19	796.33	2442.35	641850.97	503369.17	32°22'58.941"N	103°52'25.764"W	2.12	
11577.00	89.400	88.700	9355.64	2596.98	798.32	2537.32	641945.94	503371.16	32°22'58.957"N	103°52'24.656"W	0.24	
11672.00	89.200	89.200	9356.80	2691.75	800.06	2632.30	642040.91	503372.90	32°22'58.970"N	103°52'23.549"W	0.57	
11767.00	89.000	89.600	9358.29	2786.46	801.05	2727.28	642135.89	503373.90	32°22'58.976"N	103°52'22.441"W	0.47	
11862.00	90.900	90.300	9358.38	2881.11	801.14	2822.27	642230.87	503373.98	32°22'58.972"N	103°52'21.334"W	2.13	
11957.00	91.500	90.700	9356.39	2975.65	800.31	2917.25	642325.84	503373.15	32°22'58.960"N	103°52'20.226"W	0.76	
12052.00	92.600	89.700	9352.99	3070.20	799.98	3012.18	642420.77	503372.82	32°22'58.953"N	103°52'19.119"W	1.56	
12146.00	93.400	89.100	9348.07	3163.80	800.96	3106.05	642514.63	503373.80	32°22'58.959"N	103°52'18.025"W	1.06	
12241.00	92.400	89.600	9343.26	3258.41	802.03	3200.92	642609.49	503374.88	32°22'58.965"N	103°52'16.918"W	1.18	
12335.00	91.500	90.200	9340.06	3352.01	802.20	3294.86	642703.43	503375.04	32°22'58.963"N	103°52'15.823"W	1.15	
12431.00	90.100	91.000	9338.72	3447.54	801.19	3390.85	642799.41	503374.04	32°22'58.949"N	103°52'14.704"W	1.68	
12525.00	90.500	90.700	9338.23	3541.06	799.80	3484.83	642893.39	503372.64	32°22'58.931"N	103°52'13.608"W	0.53	



Actual Wellpath Report

DI1 No. 162H AWP

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BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	JRU DI1 No.162H
Area	Eddy County, NM	Well	DI1 No.162H
Field	JRU NAD27	Wellbore	DI1 No. 162H AWB
Facility	JRU Drilling Island 1		

WELLPATH DATA (239 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
12621.00	91.400	89.600	9336.64	3636.66	799.55	3580.82	642989.37	503372.39	32°22'58.924"N	103°52'12.488"W	1.48	
12716.00	90.400	90.800	9335.15	3731.26	799.22	3675.80	643084.34	503372.06	32°22'58.917"N	103°52'11.381"W	1.64	
12811.00	90.700	90.400	9334.24	3825.80	798.22	3770.79	643179.33	503371.06	32°22'58.903"N	103°52'10.273"W	0.53	
12906.00	91.700	89.300	9332.25	3920.44	798.47	3865.77	643274.30	503371.31	32°22'58.901"N	103°52'09.166"W	1.56	
13001.00	90.600	90.200	9330.34	4015.10	798.88	3960.75	643369.27	503371.73	32°22'58.901"N	103°52'08.058"W	1.50	
13096.00	90.200	90.000	9329.68	4109.72	798.72	4055.74	643464.26	503371.56	32°22'58.896"N	103°52'06.951"W	0.47	
13191.00	89.100	89.500	9330.26	4204.40	799.13	4150.74	643559.25	503371.98	32°22'58.896"N	103°52'05.843"W	1.27	
13287.00	89.900	89.600	9331.09	4300.09	799.89	4246.73	643655.23	503372.73	32°22'58.899"N	103°52'04.723"W	0.84	
13382.00	90.600	89.500	9330.68	4394.80	800.63	4341.73	643750.22	503373.48	32°22'58.902"N	103°52'03.616"W	0.74	
13477.00	91.400	90.800	9329.02	4489.40	800.38	4436.71	643845.20	503373.23	32°22'58.896"N	103°52'02.508"W	1.61	
13572.00	89.100	90.700	9328.61	4583.92	799.14	4531.70	643940.18	503371.98	32°22'58.879"N	103°52'01.401"W	2.42	
13667.00	87.500	89.500	9331.43	4678.50	798.97	4626.65	644035.12	503371.82	32°22'58.874"N	103°52'00.293"W	2.10	
13762.00	88.400	89.600	9334.82	4773.14	799.72	4721.58	644130.05	503372.56	32°22'58.877"N	103°51'59.186"W	0.95	
13857.00	90.300	91.300	9335.90	4867.70	798.97	4816.57	644225.03	503371.82	32°22'58.865"N	103°51'58.079"W	2.68	
13952.00	91.000	91.800	9334.82	4962.08	796.40	4911.53	644319.98	503369.25	32°22'58.836"N	103°51'56.972"W	0.91	
14047.00	89.900	90.500	9334.08	5056.53	794.50	5006.50	644414.95	503367.34	32°22'58.813"N	103°51'55.864"W	1.79	
14142.00	89.800	89.900	9334.33	5151.14	794.17	5101.50	644509.94	503367.01	32°22'58.806"N	103°51'54.757"W	0.64	
14237.00	91.300	89.700	9333.41	5245.81	794.50	5196.49	644604.92	503367.34	32°22'58.805"N	103°51'53.649"W	1.59	
14332.00	90.900	90.600	9331.59	5340.41	794.25	5291.47	644699.90	503367.09	32°22'58.798"N	103°51'52.541"W	1.04	
14427.00	91.500	90.700	9329.60	5434.93	793.17	5386.44	644794.86	503366.01	32°22'58.783"N	103°51'51.434"W	0.64	
14523.00	91.200	89.900	9327.34	5530.50	792.67	5482.42	644890.83	503365.51	32°22'58.774"N	103°51'50.315"W	0.89	
14617.00	90.200	89.000	9326.19	5624.21	793.57	5576.40	644984.81	503366.41	32°22'58.779"N	103°51'49.219"W	1.43	
14713.00	90.200	88.900	9325.86	5719.98	795.33	5672.39	645080.78	503368.17	32°22'58.792"N	103°51'48.100"W	0.10	
14807.00	87.900	89.400	9327.41	5813.72	796.72	5766.36	645174.75	503369.57	32°22'58.802"N	103°51'47.004"W	2.50	
14902.00	87.300	90.300	9331.39	5908.30	796.97	5861.27	645269.66	503369.82	32°22'58.800"N	103°51'45.897"W	1.14	
14997.00	88.400	89.600	9334.96	6002.88	797.06	5956.20	645364.58	503369.90	32°22'58.797"N	103°51'44.790"W	1.37	
15092.00	89.500	88.300	9336.70	6097.64	798.80	6051.17	645459.54	503371.64	32°22'58.810"N	103°51'43.683"W	1.79	
15187.00	88.800	88.500	9338.11	6192.46	801.45	6146.12	645554.48	503374.29	32°22'58.832"N	103°51'42.575"W	0.77	
15282.00	88.900	88.700	9340.01	6287.26	803.77	6241.07	645649.43	503376.61	32°22'58.851"N	103°51'41.468"W	0.24	
15378.00	88.600	88.800	9342.11	6383.03	805.86	6337.02	645745.38	503378.71	32°22'58.868"N	103°51'40.349"W	0.33	
15473.00	88.700	90.800	9344.35	6477.67	806.19	6431.99	645840.34	503379.04	32°22'58.867"N	103°51'39.242"W	2.11	
15568.00	90.800	90.800	9344.76	6572.18	804.87	6526.98	645935.32	503377.71	32°22'58.849"N	103°51'38.134"W	2.21	
15663.00	91.900	89.700	9342.52	6666.76	804.45	6621.95	646030.28	503377.30	32°22'58.841"N	103°51'37.027"W	1.64	
15758.00	91.200	89.600	9339.95	6761.41	805.03	6716.91	646125.24	503377.88	32°22'58.843"N	103°51'35.919"W	0.74	
15860.00	89.600	88.100	9339.24	6863.18	807.08	6818.88	646227.20	503379.92	32°22'58.858"N	103°51'34.730"W	2.15	
15955.00	87.800	89.100	9341.40	6957.96	809.40	6913.82	646322.13	503382.24	32°22'58.877"N	103°51'33.623"W	2.17	
16050.00	87.800	89.300	9345.04	7052.64	810.73	7008.74	646417.05	503383.57	32°22'58.886"N	103°51'32.516"W	0.21	
16145.00	88.200	90.800	9348.36	7147.22	810.64	7103.68	646511.98	503383.49	32°22'58.881"N	103°51'31.409"W	1.63	
16240.00	87.900	91.400	9351.59	7241.63	808.82	7198.61	646606.90	503381.66	32°22'58.859"N	103°51'30.302"W	0.71	
16335.00	89.000	91.300	9354.16	7336.01	806.58	7293.55	646701.83	503379.43	32°22'58.833"N	103°51'29.195"W	1.16	
16430.00	89.400	91.600	9355.49	7430.41	804.18	7388.51	646796.78	503377.02	32°22'58.805"N	103°51'28.088"W	0.53	
16525.00	89.600	91.200	9356.32	7524.82	801.86	7483.47	646891.75	503374.70	32°22'58.778"N	103°51'26.981"W	0.47	
16620.00	90.000	90.800	9356.65	7619.30	800.20	7578.46	646986.72	503373.04	32°22'58.757"N	103°51'25.873"W	0.60	
16715.00	90.600	90.200	9356.15	7713.86	799.37	7673.45	647081.71	503372.22	32°22'58.745"N	103°51'24.766"W	0.89	
16810.00	91.100	90.200	9354.74	7808.47	799.04	7768.44	647176.69	503371.88	32°22'58.737"N	103°51'23.658"W	0.53	



Actual Wellpath Report

DI1 No. 162H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	JRU DI1 No.162H
Area	Eddy County, NM	Well	DI1 No.162H
Field	JRU NAD27	Wellbore	DI1 No. 162H AWB
Facility	JRU Drilling Island 1		

WELLPATH DATA (239 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
16905.00	90.000	90.700	9353.83	7903.04	798.29	7863.43	647271.68	503371.14	32°22'58.726"N	103°51'22.551"W	1.27	
17001.00	89.900	91.200	9353.91	7998.52	796.70	7959.42	647367.66	503369.55	32°22'58.706"N	103°51'21.431"W	0.53	
17096.00	90.100	90.800	9353.91	8093.01	795.05	8054.40	647462.64	503367.89	32°22'58.685"N	103°51'20.324"W	0.47	
17191.00	91.500	90.900	9352.59	8187.50	793.64	8149.38	647557.61	503366.48	32°22'58.667"N	103°51'19.217"W	1.48	
17285.00	90.900	90.300	9350.62	8281.04	792.65	8243.36	647651.57	503365.50	32°22'58.653"N	103°51'18.121"W	0.90	
17380.00	90.300	90.300	9349.62	8375.63	792.15	8338.35	647746.56	503365.00	32°22'58.644"N	103°51'17.013"W	0.63	
17475.00	91.100	89.800	9348.46	8470.26	792.07	8433.34	647841.55	503364.92	32°22'58.639"N	103°51'15.905"W	0.99	
17570.00	90.600	90.600	9347.05	8564.86	791.74	8528.33	647936.53	503364.58	32°22'58.631"N	103°51'14.798"W	0.99	
17665.00	90.700	90.600	9345.98	8659.40	790.75	8623.32	648031.51	503363.59	32°22'58.617"N	103°51'13.690"W	0.11	
17761.00	91.600	90.000	9344.05	8754.98	790.24	8719.30	648127.48	503363.09	32°22'58.608"N	103°51'12.571"W	1.13	
17856.00	91.800	89.300	9341.23	8849.63	790.82	8814.25	648222.43	503363.67	32°22'58.610"N	103°51'11.464"W	0.77	
17951.00	91.200	89.300	9338.74	8944.33	791.98	8909.21	648317.38	503364.83	32°22'58.617"N	103°51'10.357"W	0.63	
18058.00	91.900	88.400	9335.85	9051.05	794.13	9016.15	648424.31	503366.97	32°22'58.633"N	103°51'09.109"W	1.07	
18133.00	91.900	88.400	9333.36	9125.88	796.22	9091.08	648499.24	503369.07	32°22'58.651"N	103°51'08.236"W	0.00	Projection to Bit

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
JRU DI-1 No. 162H LP Rev-1		9346.00	791.40	1291.27	640699.98	503364.24	32°22'58.941"N	103°52'39.187"W	point
JRU DI-1 No. 162H PBHL Rev-1		9346.00	791.26	9091.74	648499.90	503364.10	32°22'58.602"N	103°51'08.228"W	point

WELLPATH COMPOSITION - Ref Wellbore: DI1 No. 162H AWB Ref Wellpath: DI1 No. 162H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	8052.40	Generic gyro - northseeking (Standard)	Gyro Surveys <97.80-8052.40>	DI1 No. 162H AWB
8052.40	18058.00	NaviTrak (Standard)	BHI NaviTrak <8182-18058>	DI1 No. 162H AWB
18058.00	18133.00	Blind Drilling (std)	Projection to bit	DI1 No. 162H AWB