

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised October 15, 2009

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-22162	Pool Code 96403 97905	Pool Name WILDCAT (BONE SPRING)
Property Code 306407	Property Name JAMES RANCH UNIT	Well Number 12H
OGRID No. 260737	Operator Name BOPCO, L.P.	Elevation 3169'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	21	22 S	30 E		1451	NORTH	1821	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	23	22 S	30 E		2333	NORTH	1783	WEST	EDDY

Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

SURFACE LOCATION

Lat - N 32°22'51.00"
Long - W 103°52'58.82"
NMSPCE- N 502555.105
E 639020.081
(NAD-27)

**PROPOSED BOTTOM
HOLE LOCATION**

Lat - N 32°22'42.07"
Long - W 103°51'14.91"
NMSPCE- N 501691.125
E 647972.901
(NAD-27)

OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Sandra J. Belt 11-8-11
Signature Date

Sandra J. Belt
Printed Name

SURVEYOR CERTIFICATION

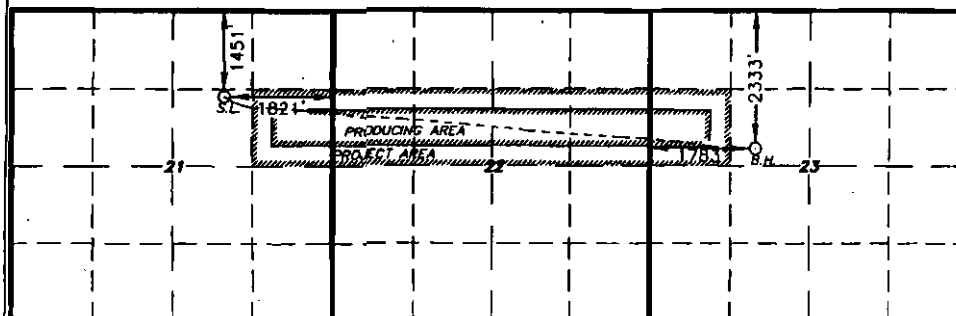
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.

DECEMBER 10, 2009

Date Surveyed
Signature of
Professional Surveyor
7977

Certificate No. Gary L. Jones 7977

Basin Surveys





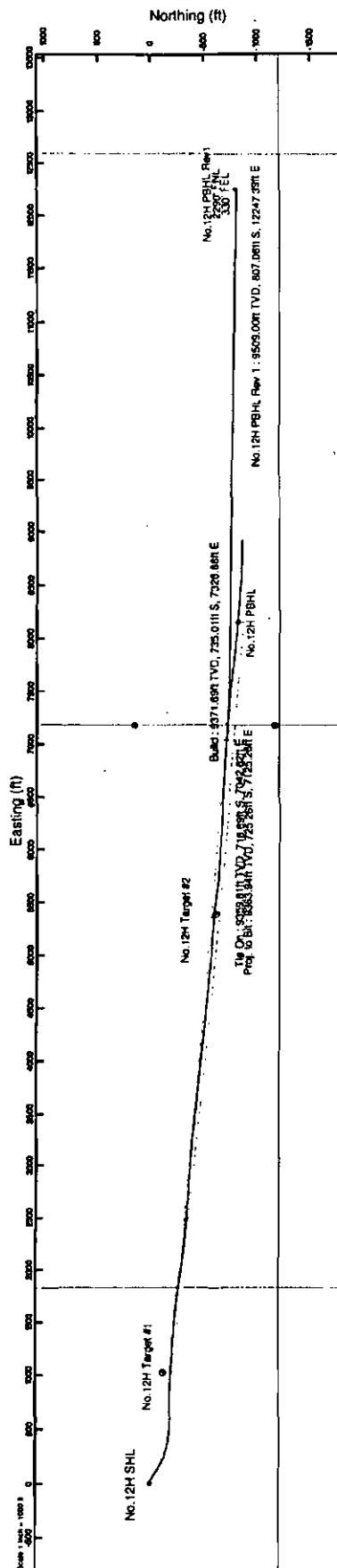
BOPCO, L.P.

Location: Eddy County, NM
Field: JRU NAD07
Facility: JRU No. 124

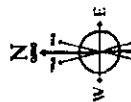
Slit: No. 12H SHL
Well: No. 12H PWB
Wellbore: No. 12H PWB

Well Profile Data

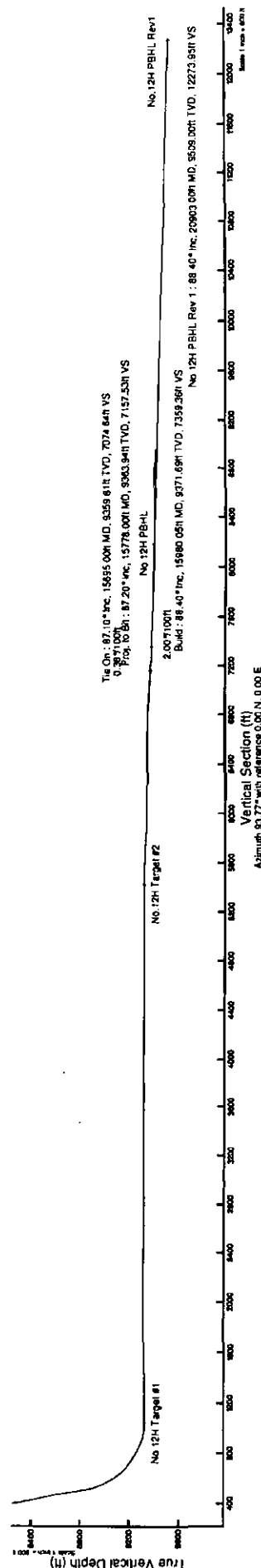
Design Comment	MD (ft)	Inc. (°)	Az. (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (7100ft)	VS (ft)
Tie On	15695.00	87.100	94.400	9359.81	-718.88	7042.82	0.00	7074.64
Prof. to Bit	15778.00	87.200	94.700	9363.94	-725.26	7125.26	0.38	7157.53
Build	15980.05	88.402	90.839	9371.69	-735.01	7328.88	2.00	7359.36
No. 12H PBHL Rev 1	20903.00	88.402	90.839	9509.00	-807.06	12247.39	0.00	12273.95



Plot reference wellbath is Plan #2	Grid System: NAD07 / TM New Mexico SP, Eastern Zone (3001), US feet
True vertical depths are referenced to Rig on No. 12H SHL (KB)	North Reference: Grid north
Measured depths are referenced to Rig on No. 12H SHL (KB)	Scale: True distance
Rig on No. 12H SHL (KB) to Mean Sea Level: 3168 feet	Depths are in feet
Mean Sea Level to Mud line (At Slot No. 12H SHL): 3169 feet	Coordinates are in feet referenced to Slot
Coordinates are in feet referenced to Slot	Created by: Bentley on 8/18/2011



BGM (1945 to 2012) Dip: 80.30° Field: 4889.6 ft
Magnetic declination: 0.24 degrees East of True North
To convert azimuth from True to Grid subtract 0.24 degrees
For example: if the Magnetic North Azimuth = 90.00, then the Grid North Azimuth = 90.00 - 0.24 = 89.76





Actual Wellpath Report

Positional Uncertainty

No.12H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No.12H SHL
Area	Eddy County, NM	Well	No.12H
Field	JRU NAD27	Wellbore	No.12H AWB
Facility	JRU No.12H		

REPORT SETUP INFORMATION			
Projection System	NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect@ 3.0.0
North Reference	Grid	User	Calhphik
Scale	0.999931	Report Generated	8/25/2011 at 8:10:19 AM
Convergence at slot	0.24° East	Database/Source file	WA_Midland/No.12H_AWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	639020.08	502555.11	32°22'51.004"N	103°52'58.816"W
Facility Reference Pt			639020.08	502555.11	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.12H SHL (KB) to Facility Vertical Datum	19.00ft
Horizontal Reference Pt	Slot	Rig on No.12H SHL (KB) to Mean Sea Level	3188.00ft
Vertical Reference Pt	Rig on No.12H SHL (KB)	Rig on No.12H SHL (KB) to Mud Line at Slot (No.12H SHL)	19.00ft
MD Reference Pt	Rig on No.12H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	93.77°

POSITIONAL UNCERTAINTY CALCULATION SETTINGS					
Ellipse Confidence Limit	2.00 Std Dev	Ellipse Start MD	19.00ft	Surface Position Uncertainty	included
Declination	7.78° East of TN	Dip Angle	60.28°	Magnetic Field Strength	48700nT
Slot Surface Uncertainty @1SD		Horizontal	0.100ft	Vertical	0.100ft
Facility Surface Uncertainty @1SD		Horizontal	8.100ft	Vertical	2.000ft



Actual Wellpath Report

Positional Uncertainty

No.12H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	No.12H SHL
Area	Eddy County, NM	Well	No.12H
Field	JRU NAD27	Wellbore	No.12H AWP
Facility	JRU No.12H		

WELLPATH DATA (205 stations) - with Positional Uncertainty values † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Major Semi-Axis [ft]	Minor Semi-Axis [ft]	Vertical Semi-Axis [ft]	Minor Axis Azim [°]	Comments
0.00†	0.000	123.990	0.00	0.00	0.00	0.00	32°22'51.004"N	103°52'58.816"W	0.00	0.00	0.00	1.31	0.000	
19.00	0.000	123.990	19.00	0.00	0.00	0.00	32°22'51.004"N	103°52'58.816"W	0.00	16.20	16.20	4.21	0.000	
100.00	1.430	123.990	99.99	0.87	-0.57	0.84	32°22'50.999"N	103°52'58.807"W	1.77	16.21	16.20	4.22	213.990	
200.00	1.460	122.050	199.96	3.07	-1.94	2.95	32°22'50.985"N	103°52'58.782"W	0.06	16.23	16.20	4.22	33.877	
300.00	1.130	111.140	299.93	5.14	-2.97	4.95	32°22'50.975"N	103°52'58.759"W	0.41	16.24	16.21	4.23	33.160	
400.00	1.430	69.840	399.91	7.22	-2.90	7.04	32°22'50.975"N	103°52'58.734"W	0.95	16.25	16.22	4.24	32.203	
500.00	1.040	94.090	499.89	9.27	-2.53	9.12	32°22'50.979"N	103°52'58.710"W	0.64	16.27	16.23	4.25	32.306	
600.00	1.000	103.230	599.87	11.03	-2.80	10.87	32°22'50.976"N	103°52'58.690"W	0.17	16.29	16.25	4.27	26.273	
700.00	0.980	110.970	699.86	12.71	-3.30	12.52	32°22'50.971"N	103°52'58.670"W	0.14	16.32	16.26	4.29	23.750	
800.00	0.970	110.430	799.84	14.34	-3.90	14.11	32°22'50.965"N	103°52'58.652"W	0.01	16.35	16.27	4.32	22.497	
900.00	1.050	113.970	899.83	16.01	-4.57	15.74	32°22'50.958"N	103°52'58.633"W	0.10	16.39	16.29	4.35	201.870	
1000.00	1.170	116.460	999.81	17.81	-5.40	17.50	32°22'50.950"N	103°52'58.613"W	0.13	16.43	16.31	4.38	201.803	
1100.00	1.210	117.590	1099.79	19.72	-6.34	19.35	32°22'50.941"N	103°52'58.591"W	0.05	16.47	16.33	4.41	201.984	
1200.00	1.330	118.270	1199.76	21.74	-7.38	21.30	32°22'50.930"N	103°52'58.568"W	0.12	16.52	16.35	4.45	202.246	
1300.00	1.330	119.050	1299.74	23.85	-8.49	23.34	32°22'50.919"N	103°52'58.545"W	0.02	16.57	16.37	4.49	202.562	
1400.00	1.390	120.070	1399.71	25.98	-9.66	25.40	32°22'50.908"N	103°52'58.521"W	0.06	16.63	16.39	4.54	202.919	
1500.00	1.320	116.120	1499.68	28.14	-10.78	27.49	32°22'50.896"N	103°52'58.496"W	0.12	16.69	16.42	4.58	203.155	
1600.00	1.340	116.670	1599.65	30.28	-11.81	29.57	32°22'50.886"N	103°52'58.472"W	0.02	16.75	16.45	4.63	203.271	
1700.00	1.360	117.220	1699.63	32.45	-12.88	31.67	32°22'50.875"N	103°52'58.448"W	0.02	16.82	16.48	4.69	203.409	
1800.00	1.160	117.300	1799.60	34.46	-13.89	33.62	32°22'50.865"N	103°52'58.425"W	0.20	16.89	16.51	4.74	203.559	
1900.00	0.840	116.390	1899.59	36.07	-14.68	35.18	32°22'50.858"N	103°52'58.407"W	0.32	16.97	16.54	4.80	203.682	
2000.00	0.630	119.010	1999.58	37.24	-15.27	36.32	32°22'50.852"N	103°52'58.394"W	0.21	17.05	16.58	4.86	203.844	
2100.00	0.740	107.180	2099.57	38.37	-15.73	37.41	32°22'50.847"N	103°52'58.381"W	0.18	17.14	16.62	4.93	23.760	
2200.00	0.960	114.330	2199.56	39.78	-16.26	38.79	32°22'50.842"N	103°52'58.365"W	0.24	17.23	16.66	5.00	203.581	
2300.00	0.880	113.110	2299.55	41.29	-16.91	40.26	32°22'50.835"N	103°52'58.348"W	0.08	17.32	16.70	5.07	23.574	
2400.00	1.030	109.080	2399.53	42.88	-17.50	41.82	32°22'50.829"N	103°52'58.330"W	0.16	17.41	16.74	5.14	23.440	
2500.00	1.030	108.450	2499.52	44.62	-18.08	43.52	32°22'50.824"N	103°52'58.310"W	0.01	17.51	16.78	5.22	23.218	
2600.00	1.730	109.860	2599.49	46.94	-18.88	45.79	32°22'50.816"N	103°52'58.283"W	0.70	17.62	16.83	5.29	23.038	
2700.00	2.920	116.280	2699.40	50.74	-20.52	49.50	32°22'50.799"N	103°52'58.240"W	1.22	17.73	16.88	5.38	203.097	
2800.00	4.370	120.570	2799.20	56.49	-23.58	55.06	32°22'50.769"N	103°52'58.175"W	1.47	17.85	16.93	5.46	203.580	
2900.00	4.640	118.730	2898.89	63.56	-27.47	61.89	32°22'50.730"N	103°52'58.096"W	0.31	17.98	16.98	5.55	204.043	
3000.00	4.820	119.170	2998.55	71.02	-31.46	69.10	32°22'50.690"N	103°52'58.012"W	0.18	18.10	17.03	5.64	204.155	
3100.00	4.770	120.960	3098.20	78.52	-35.65	76.34	32°22'50.648"N	103°52'57.928"W	0.16	18.22	17.09	5.73	204.313	
3200.00	4.860	120.550	3197.85	86.00	-39.94	83.55	32°22'50.606"N	103°52'57.844"W	0.10	18.34	17.14	5.82	204.479	
3300.00	4.680	121.570	3297.50	93.39	-44.23	90.67	32°22'50.563"N	103°52'57.761"W	0.20	18.46	17.20	5.92	204.648	
3400.00	4.240	124.920	3397.20	100.16	-48.48	97.18	32°22'50.521"N	103°52'57.686"W	0.51	18.59	17.26	6.02	204.862	
3500.00	4.110	125.380	3496.93	106.37	-52.67	103.13	32°22'50.479"N	103°52'57.616"W	0.13	18.72	17.32	6.12	205.107	
3600.00	3.880	125.040	3596.69	112.32	-56.69	108.83	32°22'50.439"N	103°52'57.550"W	0.23	18.85	17.38	6.22	205.367	
3700.00	3.780	124.900	3696.46	118.03	-60.52	114.30	32°22'50.401"N	103°52'57.487"W	0.10	18.99	17.45	6.33	205.610	
3800.00	3.840	128.580	3796.24	123.60	-64.49	119.62	32°22'50.361"N	103°52'57.425"W	0.25	19.13	17.51	6.44	205.885	
3900.00	3.610	122.850	3896.03	129.10	-68.29	124.88	32°22'50.323"N	103°52'57.363"W	0.44	19.27	17.58	6.55	206.126	
4000.00	3.450	121.590	3995.84	134.52	-71.57	130.09	32°22'50.291"N	103°52'57.303"W	0.18	19.41	17.65	6.66	206.282	
4100.00	3.940	121.450	4095.63	140.22	-74.94	135.59	32°22'50.257"N	103°52'57.239"W	0.49	19.56	17.72	6.78	206.401	
4200.00	3.950	120.210	4195.40	146.35	-78.46	141.49	32°22'50.222"N	103°52'57.170"W	0.09	19.71	17.79	6.90	206.498	
4300.00	3.650	119.970	4295.18	152.29	-81.79	147.23	32°22'50.189"N	103°52'57.104"W	0.30	19.87	17.86	7.02	206.572	



Actual Wellpath Report

Positional Uncertainty

No.12H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No.12H SHL
Area	Eddy County, NM	Well	No.12H
Field	JRU NAD27	Wellbore	No.12H AWP
Facility	JRU No.12H		

WELLPATH DATA (205 stations) - with Positional Uncertainty values														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Major Semi- Axis [ft]	Minor Semi- Axis [ft]	Vertical Semi- Axis [ft]	Minor Axis Azim [°]	Comments
4400.00	3.590	118.800	4394.98	157.98	-84.88	152.73	32°22'50.158"N	103°52'57.040"W	0.10	20.02	17.93	7.14	206.628	
4500.00	3.420	118.390	4494.79	163.53	-87.81	158.10	32°22'50.129"N	103°52'56.977"W	0.17	20.18	18.01	7.27	206.664	
4600.00	3.520	119.000	4594.61	169.02	-90.72	163.40	32°22'50.100"N	103°52'56.915"W	0.11	20.34	18.08	7.39	206.701	
4700.00	3.270	119.840	4694.43	174.35	-93.63	168.56	32°22'50.071"N	103°52'56.855"W	0.25	20.50	18.16	7.52	206.751	
4800.00	3.180	116.100	4794.27	179.48	-96.26	173.53	32°22'50.044"N	103°52'56.798"W	0.23	20.67	18.24	7.66	26.768	
4900.00	3.210	116.280	4894.12	184.63	-98.72	178.53	32°22'50.020"N	103°52'56.739"W	0.03	20.83	18.32	7.79	26.753	
5000.00	3.070	114.930	4993.97	189.72	-101.09	183.47	32°22'49.996"N	103°52'56.682"W	0.16	21.00	18.40	7.93	26.724	
5100.00	2.820	115.120	5093.84	194.51	-103.27	188.12	32°22'49.975"N	103°52'56.628"W	0.25	21.17	18.49	8.06	26.686	
5200.00	2.690	115.290	5193.72	198.98	-105.31	192.47	32°22'49.954"N	103°52'56.577"W	0.13	21.34	18.57	8.21	26.651	
5300.00	2.530	117.580	5293.62	203.18	-107.34	196.55	32°22'49.934"N	103°52'56.530"W	0.19	21.52	18.66	8.35	206.641	
5400.00	2.450	115.100	5393.52	207.19	-109.27	200.44	32°22'49.915"N	103°52'56.484"W	0.13	21.70	18.74	8.49	26.628	
5500.00	2.010	114.700	5493.45	210.82	-110.91	203.97	32°22'49.898"N	103°52'56.443"W	0.44	21.87	18.83	8.64	26.593	
5600.00	1.900	112.100	5593.39	214.03	-112.26	207.10	32°22'49.885"N	103°52'56.407"W	0.14	22.06	18.92	8.79	26.532	
5700.00	1.820	109.720	5693.34	217.13	-113.42	210.13	32°22'49.873"N	103°52'56.372"W	0.11	22.24	19.01	8.94	26.430	
5800.00	1.870	112.410	5793.28	220.21	-114.58	213.13	32°22'49.862"N	103°52'56.337"W	0.10	22.42	19.10	9.10	26.334	
5900.00	1.840	115.910	5893.23	223.24	-115.90	216.09	32°22'49.848"N	103°52'56.302"W	0.12	22.61	19.20	9.25	26.293	
6000.00	1.660	110.580	5993.18	226.11	-117.11	218.89	32°22'49.836"N	103°52'56.270"W	0.24	22.79	19.29	9.41	26.239	
6100.00	1.480	116.260	6093.15	228.69	-118.19	221.40	32°22'49.825"N	103°52'56.241"W	0.24	22.98	19.39	9.57	206.191	
6200.00	1.270	115.900	6193.12	230.91	-119.25	223.56	32°22'49.815"N	103°52'56.215"W	0.21	23.17	19.48	9.73	26.183	
6300.00	1.280	115.100	6293.09	232.98	-120.21	225.56	32°22'49.805"N	103°52'56.192"W	0.02	23.36	19.58	9.90	26.169	
6400.00	1.270	114.900	6393.07	235.05	-121.15	227.58	32°22'49.796"N	103°52'56.169"W	0.01	23.56	19.68	10.06	26.147	
6500.00	1.080	120.140	6493.05	236.93	-122.09	229.40	32°22'49.787"N	103°52'56.147"W	0.22	23.75	19.78	10.23	206.165	
6600.00	0.670	145.750	6593.04	238.14	-123.04	230.55	32°22'49.777"N	103°52'56.134"W	0.56	23.94	19.88	10.40	206.405	
6700.00	0.630	155.450	6693.03	238.76	-124.03	231.10	32°22'49.767"N	103°52'56.128"W	0.12	24.12	19.98	10.58	206.881	
6800.00	0.760	145.100	6793.02	239.43	-125.07	231.71	32°22'49.757"N	103°52'56.121"W	0.18	24.30	20.08	10.75	207.344	
6900.00	0.540	132.620	6893.02	240.21	-125.93	232.44	32°22'49.748"N	103°52'56.112"W	0.26	24.49	20.18	10.93	207.647	
7000.00	1.010	131.620	6993.01	241.28	-126.84	233.44	32°22'49.739"N	103°52'56.101"W	0.47	24.69	20.29	11.11	207.855	
7100.00	1.080	137.550	7092.99	242.65	-128.12	234.74	32°22'49.727"N	103°52'56.085"W	0.13	24.89	20.39	11.29	208.090	
7150.00	1.730	148.430	7142.97	243.43	-129.11	235.45	32°22'49.717"N	103°52'56.077"W	1.40	24.98	20.45	11.39	208.261	
7219.00	7.100	118.200	7211.75	247.92	-132.01	239.76	32°22'49.688"N	103°52'56.027"W	8.22	25.08	20.50	12.18	28.202	
7283.00	9.600	106.900	7275.07	256.72	-135.44	248.35	32°22'49.654"N	103°52'55.927"W	4.65	25.15	20.54	12.32	27.556	
7378.00	8.300	102.600	7368.91	271.21	-139.23	262.62	32°22'49.616"N	103°52'55.761"W	1.54	25.17	20.58	12.52	27.333	
7473.00	6.600	88.000	7463.12	283.42	-140.54	274.77	32°22'49.602"N	103°52'55.619"W	2.66	25.20	20.59	12.73	27.405	
7568.00	5.800	94.400	7557.56	293.65	-140.72	285.02	32°22'49.600"N	103°52'55.500"W	1.11	25.23	20.61	12.95	27.514	
7663.00	5.100	115.100	7652.14	302.39	-142.88	293.63	32°22'49.578"N	103°52'55.400"W	2.18	25.24	20.65	13.16	27.485	
7758.00	6.500	120.200	7746.65	311.13	-147.37	302.10	32°22'49.533"N	103°52'55.301"W	1.57	25.26	20.69	13.38	207.443	
7853.00	10.000	113.100	7840.66	323.74	-153.32	314.34	32°22'49.474"N	103°52'55.159"W	3.83	25.30	20.74	13.60	27.408	
7949.00	11.900	105.000	7934.91	341.31	-159.15	331.57	32°22'49.416"N	103°52'54.958"W	2.54	25.38	20.81	13.82	27.067	
8044.00	9.500	102.600	8028.25	358.67	-163.40	348.68	32°22'49.373"N	103°52'54.759"W	2.57	25.42	20.89	14.05	26.931	
8139.00	7.000	117.200	8122.27	371.73	-167.75	361.48	32°22'49.329"N	103°52'54.610"W	3.41	25.48	20.96	14.28	206.857	
8234.00	9.700	108.100	8216.26	384.80	-172.89	374.24	32°22'49.278"N	103°52'54.461"W	3.16	25.54	21.05	14.51	26.521	
8326.00	11.700	96.600	8306.67	401.63	-176.37	390.88	32°22'49.243"N	103°52'54.267"W	3.17	25.60	21.16	14.74	26.266	
8421.00	11.600	93.600	8399.71	420.80	-178.07	409.98	32°22'49.225"N	103°52'54.045"W	0.65	25.64	21.30	14.97	26.232	
8516.00	12.700	93.700	8492.58	440.80	-179.35	429.93	32°22'49.212"N	103°52'53.812"W	1.16	25.68	21.40	15.21	26.440	
8612.00	10.300	93.900	8586.65	459.94	-180.61	449.03	32°22'49.198"N	103°52'53.589"W	2.50	25.73	21.52	15.45	26.602	



Actual Wellpath Report

Positional Uncertainty

No.12H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No.12H SHL
Area	Eddy County, NM	Well	No.12H
Field	JRU NAD27	Wellbore	No.12H AWP
Facility	JRU No.12H		

WELLPATH DATA (205 stations) - with Positional Uncertainty values														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Major Semi- Axis [ft]	Minor Semi- Axis [ft]	Vertical Semi- Axis [ft]	Minor Axis Azim [°]	Comments
8707.00	9.000	91.800	8680.30	475.86	-181.42	464.93	32°22'49.190"N	103°52'53.404"W	1.42	25.80	21.62	15.70	26.681	
8802.00	9.300	95.000	8774.09	490.96	-182.33	480.01	32°22'49.180"N	103°52'53.228"W	0.62	25.85	21.73	15.94	26.890	
8834.00	9.200	98.300	8805.68	496.09	-182.92	485.11	32°22'49.174"N	103°52'53.169"W	1.69	25.86	21.77	16.03	26.969	
8865.00	9.300	105.400	8836.27	501.02	-183.94	489.98	32°22'49.164"N	103°52'53.112"W	3.69	25.88	21.81	16.11	27.037	
8897.00	11.400	106.200	8867.75	506.64	-185.51	495.51	32°22'49.148"N	103°52'53.048"W	6.58	25.90	21.85	16.19	27.104	
8929.00	15.000	101.200	8898.90	513.83	-187.20	502.61	32°22'49.131"N	103°52'52.965"W	11.79	25.92	21.91	16.27	27.170	
8961.00	18.700	96.600	8929.52	523.07	-188.59	511.77	32°22'49.117"N	103°52'52.858"W	12.28	25.95	21.97	16.35	27.228	
8992.00	22.800	93.100	8958.51	534.04	-189.49	522.71	32°22'49.107"N	103°52'52.731"W	13.81	25.98	22.05	16.42	27.335	
9024.00	26.600	90.500	8987.58	547.40	-189.89	536.07	32°22'49.103"N	103°52'52.575"W	12.35	26.01	22.14	16.50	27.518	
9056.00	27.900	89.700	9016.02	562.02	-189.91	550.73	32°22'49.102"N	103°52'52.404"W	4.22	26.05	22.24	16.57	27.810	
9088.00	29.700	89.000	9044.07	577.39	-189.73	566.14	32°22'49.103"N	103°52'52.224"W	5.72	26.08	22.35	16.64	28.223	
9119.00	32.700	88.200	9070.58	593.38	-189.34	582.19	32°22'49.106"N	103°52'52.037"W	9.77	26.12	22.45	16.71	28.687	
9151.00	35.600	89.200	9097.06	611.27	-188.94	600.15	32°22'49.110"N	103°52'51.828"W	9.23	26.16	22.58	16.78	29.256	
9183.00	38.500	89.900	9122.60	630.50	-188.79	619.43	32°22'49.110"N	103°52'51.603"W	9.16	26.21	22.71	16.85	29.956	
9214.00	41.300	90.600	9146.38	650.34	-188.88	639.31	32°22'49.109"N	103°52'51.371"W	9.15	26.26	22.86	16.91	30.766	
9246.00	45.500	91.100	9169.62	672.30	-189.21	661.29	32°22'49.104"N	103°52'51.115"W	13.17	26.32	23.02	16.97	31.767	
9278.00	49.800	92.000	9191.17	695.92	-189.85	684.92	32°22'49.097"N	103°52'50.839"W	13.60	26.39	23.20	17.03	32.973	
9310.00	54.500	91.800	9210.80	721.17	-190.69	710.17	32°22'49.088"N	103°52'50.545"W	14.70	26.47	23.40	17.09	34.467	
9341.00	55.200	91.600	9228.65	746.50	-191.44	735.50	32°22'49.079"N	103°52'50.250"W	2.32	26.55	23.60	17.15	36.229	
9373.00	57.100	91.200	9246.47	773.05	-192.09	762.07	32°22'49.072"N	103°52'49.940"W	6.03	26.64	23.81	17.20	38.415	
9405.00	60.400	91.600	9263.07	800.38	-192.76	789.42	32°22'49.064"N	103°52'49.621"W	10.37	26.75	24.02	17.26	40.959	
9437.00	64.700	92.500	9277.82	828.76	-193.78	817.79	32°22'49.053"N	103°52'49.290"W	13.67	26.89	24.24	17.31	43.922	
9468.00	67.000	93.300	9290.50	857.04	-195.21	846.04	32°22'49.037"N	103°52'48.961"W	7.78	27.04	24.45	17.37	47.210	
9500.00	70.000	93.300	9302.23	886.81	-196.93	875.76	32°22'49.019"N	103°52'48.614"W	9.37	27.22	24.65	17.42	50.982	
9532.00	73.900	92.700	9312.14	917.23	-198.52	906.13	32°22'49.002"N	103°52'48.260"W	12.32	27.44	24.84	17.48	55.006	
9563.00	78.300	91.600	9319.59	947.30	-199.64	936.20	32°22'48.990"N	103°52'47.910"W	14.61	27.68	25.01	17.54	58.986	
9595.00	83.200	92.400	9324.73	978.86	-200.75	967.75	32°22'48.977"N	103°52'47.542"W	15.51	27.98	25.15	17.60	62.965	
9627.00	89.000	93.300	9326.91	1010.77	-202.33	999.62	32°22'48.960"N	103°52'47.170"W	18.34	28.31	25.27	17.67	66.648	
9659.00	91.300	94.200	9326.82	1042.76	-204.43	1031.55	32°22'48.938"N	103°52'46.798"W	7.72	28.68	25.37	17.74	69.962	
9690.00	90.500	94.000	9326.33	1073.76	-206.64	1062.47	32°22'48.915"N	103°52'46.438"W	2.66	29.06	25.45	17.79	72.779	
9722.00	90.100	93.700	9326.17	1105.76	-208.79	1094.40	32°22'48.892"N	103°52'46.066"W	1.56	29.47	25.53	17.84	75.271	
9754.00	90.300	93.400	9326.06	1137.76	-210.77	1126.34	32°22'48.872"N	103°52'45.693"W	1.13	29.92	25.58	17.89	77.376	
9850.00	90.000	92.300	9325.80	1233.74	-215.55	1222.22	32°22'48.820"N	103°52'44.576"W	1.19	31.37	25.71	18.07	81.891	
9944.00	90.700	93.400	9325.23	1327.73	-220.22	1316.10	32°22'48.770"N	103°52'43.481"W	1.39	32.93	25.79	18.27	84.689	
10040.00	91.000	93.900	9323.81	1423.72	-226.33	1411.89	32°22'48.706"N	103°52'42.364"W	0.61	34.61	25.85	18.50	86.674	
10135.00	90.600	95.800	9322.48	1518.69	-234.36	1506.54	32°22'48.622"N	103°52'41.261"W	2.04	36.36	25.91	18.74	88.166	
10230.00	90.700	95.100	9321.40	1613.64	-243.38	1601.10	32°22'48.529"N	103°52'40.159"W	0.74	38.18	25.96	19.01	89.326	
10325.00	90.700	96.300	9320.24	1708.58	-252.82	1695.62	32°22'48.432"N	103°52'39.057"W	1.26	40.04	26.01	19.31	90.227	
10421.00	90.600	98.100	9319.15	1804.39	-264.85	1790.85	32°22'48.308"N	103°52'37.947"W	1.88	41.97	26.06	19.62	91.048	
10516.00	90.600	98.500	9318.16	1899.09	-278.56	1884.85	32°22'48.169"N	103°52'36.852"W	0.42	43.92	26.10	19.95	91.782	
10611.00	90.200	97.900	9317.49	1993.80	-292.11	1978.88	32°22'48.031"N	103°52'35.756"W	0.76	45.90	26.15	20.31	92.383	
10706.00	90.700	98.000	9316.75	2088.55	-305.25	2072.96	32°22'47.897"N	103°52'34.660"W	0.54	47.92	26.19	20.68	92.873	
10803.00	89.700	95.800	9316.41	2185.40	-316.90	2169.25	32°22'47.777"N	103°52'33.538"W	2.49	50.00	26.23	21.07	93.239	
10898.00	90.100	95.600	9316.57	2280.34	-326.34	2263.78	32°22'47.680"N	103°52'32.436"W	0.47	52.08	26.27	21.48	93.481	
10994.00	89.400	94.900	9316.99	2376.31	-335.12	2359.38	32°22'47.589"N	103°52'31.322"W	1.03	54.19	26.31	21.91	93.664	



Actual Wellpath Report

Positional Uncertainty

No.12H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No.12H SHL
Area	Eddy County, NM	Well	No.12H
Field	JRU NAD27	Wellbore	No.12H AWP
Facility	JRU No.12H		

WELLPATH DATA (205 stations) - with Positional Uncertainty values														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Major Semi- Axis [ft]	Minor Semi- Axis [ft]	Vertical Semi- Axis [ft]	Minor Axis Azim [°]	Comments
11089.00	89.500	94.500	9317.91	2471.29	-342.91	2454.05	32°22'47.508"N	103°52'30.218"W	0.43	56.29	26.34	22.34	93.793	
11185.00	89.600	94.200	9318.66	2567.28	-350.19	2549.77	32°22'47.432"N	103°52'29.103"W	0.33	58.44	26.38	22.80	93.887	
11280.00	89.700	94.000	9319.24	2662.28	-356.98	2644.53	32°22'47.361"N	103°52'27.998"W	0.24	60.57	26.41	23.25	93.956	
11375.00	89.900	93.700	9319.57	2757.28	-363.36	2739.31	32°22'47.294"N	103°52'26.893"W	0.38	62.72	26.45	23.73	94.004	
11471.00	90.200	93.800	9319.49	2853.28	-369.64	2835.11	32°22'47.227"N	103°52'25.776"W	0.33	64.90	26.49	24.21	94.040	
11566.00	90.800	93.700	9318.66	2948.27	-375.85	2929.90	32°22'47.162"N	103°52'24.671"W	0.64	67.06	26.52	24.70	94.069	
11663.00	90.000	93.900	9317.98	3045.27	-382.28	3026.68	32°22'47.094"N	103°52'23.543"W	0.85	69.29	26.56	25.22	94.095	
11758.00	90.200	95.200	9317.82	3140.26	-389.81	3121.38	32°22'47.016"N	103°52'22.439"W	1.38	71.47	26.60	25.73	94.143	
11854.00	90.000	95.100	9317.65	3236.23	-398.43	3217.00	32°22'46.926"N	103°52'21.325"W	0.23	73.69	26.64	26.26	94.206	
11949.00	89.500	95.400	9318.06	3331.20	-407.12	3311.60	32°22'46.836"N	103°52'20.222"W	0.61	75.89	26.69	26.79	94.267	
12046.00	88.600	95.100	9319.67	3428.15	-416.00	3408.17	32°22'46.744"N	103°52'19.097"W	0.98	78.14	26.74	27.34	94.323	
12168.00	90.300	94.400	9320.84	3550.12	-426.10	3529.74	32°22'46.639"N	103°52'17.680"W	1.51	80.99	26.80	28.05	94.368	
12265.00	91.400	96.000	9319.40	3647.08	-434.89	3626.33	32°22'46.548"N	103°52'16.554"W	2.00	83.25	26.84	28.63	94.412	
12361.00	91.300	95.600	9317.14	3742.99	-444.59	3721.81	32°22'46.448"N	103°52'15.441"W	0.43	85.50	26.89	29.20	94.470	
12456.00	91.900	95.400	9314.49	3837.91	-453.69	3816.34	32°22'46.354"N	103°52'14.339"W	0.67	87.73	26.93	29.76	94.514	
12552.00	90.900	96.000	9312.14	3933.82	-463.22	3911.83	32°22'46.255"N	103°52'13.226"W	1.21	89.99	26.98	30.33	94.561	
12647.00	89.400	96.600	9311.89	4028.73	-473.65	4006.25	32°22'46.148"N	103°52'12.126"W	1.70	92.22	27.03	30.92	94.620	
12743.00	89.200	96.100	9313.07	4124.62	-484.26	4101.66	32°22'46.039"N	103°52'11.014"W	0.56	94.49	27.09	31.51	94.678	
12838.00	90.100	96.300	9313.65	4219.54	-494.52	4196.10	32°22'45.933"N	103°52'09.913"W	0.97	96.73	27.14	32.10	94.728	
12933.00	89.300	96.200	9314.14	4314.44	-504.86	4290.53	32°22'45.827"N	103°52'08.813"W	0.85	98.97	27.20	32.69	94.776	
13028.00	88.400	95.800	9316.05	4409.35	-514.79	4384.99	32°22'45.725"N	103°52'07.712"W	1.04	101.22	27.25	33.29	94.815	
13123.00	87.400	95.400	9319.53	4504.24	-524.06	4479.47	32°22'45.629"N	103°52'06.611"W	1.13	103.47	27.31	33.90	94.843	
13219.00	88.300	95.300	9323.13	4600.13	-533.00	4574.99	32°22'45.536"N	103°52'05.497"W	0.94	105.75	27.38	34.51	94.864	
13314.00	90.600	95.000	9324.05	4695.10	-541.53	4669.59	32°22'45.448"N	103°52'04.395"W	2.44	108.01	27.44	35.13	94.878	
13410.00	90.700	95.500	9322.96	4791.06	-550.31	4765.18	32°22'45.357"N	103°52'03.281"W	0.53	110.29	27.49	35.76	94.894	
13505.00	91.100	95.800	9321.46	4885.99	-559.66	4859.71	32°22'45.260"N	103°52'02.179"W	0.53	112.55	27.55	36.37	94.917	
13601.00	90.100	94.800	9320.46	4981.95	-568.53	4955.29	32°22'45.169"N	103°52'01.065"W	1.47	114.84	27.61	36.99	94.931	
13696.00	90.200	94.100	9320.21	5076.94	-575.90	5050.01	32°22'45.091"N	103°51'59.961"W	0.74	117.10	27.67	37.61	94.928	
13792.00	90.800	94.400	9319.37	5172.94	-583.02	5145.74	32°22'45.017"N	103°51'58.845"W	0.70	119.39	27.73	38.24	94.920	
13886.00	90.700	95.100	9318.14	5266.91	-590.80	5239.41	32°22'44.936"N	103°51'57.753"W	0.75	121.64	27.79	38.86	94.922	
13982.00	90.900	95.400	9316.80	5362.87	-599.58	5334.99	32°22'44.845"N	103°51'56.639"W	0.38	123.93	27.85	39.49	94.934	
14077.00	90.200	95.800	9315.89	5457.82	-608.85	5429.54	32°22'44.749"N	103°51'55.537"W	0.85	126.20	27.91	40.12	94.951	
14173.00	89.800	95.800	9315.89	5553.76	-618.55	5525.04	32°22'44.649"N	103°51'54.424"W	0.42	128.50	27.98	40.76	94.971	
14268.00	88.700	95.600	9317.13	5648.70	-627.99	5619.56	32°22'44.551"N	103°51'53.322"W	1.18	130.77	28.05	41.39	94.989	
14363.00	87.100	95.200	9320.61	5743.59	-636.92	5714.08	32°22'44.459"N	103°51'52.221"W	1.74	133.05	28.12	42.03	95.001	
14458.00	86.000	93.000	9326.33	5838.41	-643.70	5808.65	32°22'44.388"N	103°51'51.118"W	2.59	135.32	28.20	42.68	94.990	
14553.00	88.000	94.200	9331.30	5933.27	-649.66	5903.33	32°22'44.325"N	103°51'50.015"W	2.45	137.59	28.27	43.33	94.970	
14648.00	90.300	94.400	9332.71	6028.25	-656.78	5998.05	32°22'44.250"N	103°51'48.911"W	2.43	139.87	28.34	43.99	94.962	
14744.00	89.400	92.900	9332.96	6124.25	-662.89	6093.85	32°22'44.185"N	103°51'47.794"W	1.82	142.17	28.42	44.65	94.943	
14839.00	89.900	92.500	9333.55	6219.23	-667.37	6188.74	32°22'44.137"N	103°51'46.688"W	0.67	144.45	28.49	45.30	94.910	
14934.00	89.100	92.800	9334.37	6314.20	-671.76	6283.63	32°22'44.089"N	103°51'45.581"W	0.90	146.73	28.56	45.94	94.877	
15029.00	88.400	93.200	9336.45	6409.17	-676.73	6378.48	32°22'44.036"N	103°51'44.476"W	0.85	149.01	28.63	46.60	94.850	
15125.00	89.500	94.100	9338.21	6505.15	-682.84	6474.27	32°22'43.972"N	103°51'43.359"W	1.48	151.31	28.71	47.25	94.834	
15220.00	89.100	93.800	9339.37	6600.15	-689.38	6569.03	32°22'43.903"N	103°51'42.255"W	0.53	153.60	28.79	47.91	94.823	
15315.00	89.000	93.400	9340.94	6695.13	-695.35	6663.83	32°22'43.839"N	103°51'41.149"W	0.43	155.88	28.86	48.56	94.807	



Actual Wellpath Report

Positional Uncertainty

No.12H AWP

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REFERENCE WELLPATH IDENTIFICATION				
Operator	BOPCO, L.P.		Slot	No.12H SHL
Area	Eddy County, NM		Well	No.12H
Field	JRU NAD27		Wellbore	No.12H AWP
Facility	JRU No.12H			

WELLPATH DATA (205 stations) - with Positional Uncertainty values														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Major Semi- Axis [ft]	Minor Semi- Axis [ft]	Vertical Semi- Axis [ft]	Minor Axis Azim [°]	Comments
15410.00	87.500	93.800	9343.84	6790.08	-701.31	6758.60	32°22'43.776"N	103°51'40.045"W	1.63	158.16	28.95	49.22	94.792	
15505.00	86.400	92.700	9348.90	6884.94	-706.69	6853.31	32°22'43.719"N	103°51'38.941"W	1.64	160.44	29.03	49.88	94.772	
15600.00	86.800	93.500	9354.53	6979.77	-711.82	6948.00	32°22'43.664"N	103°51'37.837"W	0.94	162.72	29.12	50.54	94.750	
15695.00	87.100	94.400	9359.59	7074.63	-718.35	7042.64	32°22'43.595"N	103°51'36.734"W	1.00	165.01	29.21	51.20	94.741	
15791.00	86.800	93.500	9364.69	7170.50	-724.96	7138.27	32°22'43.526"N	103°51'35.619"W	0.99	167.31	29.30	51.86	94.732	
15886.00	86.700	94.900	9370.08	7265.34	-731.90	7232.86	32°22'43.453"N	103°51'34.516"W	1.48	169.60	29.39	52.52	94.727	
15981.00	88.400	94.700	9374.14	7360.23	-739.84	7327.44	32°22'43.370"N	103°51'33.414"W	1.80	171.89	29.48	53.19	94.730	
16054.00	88.500	95.600	9376.12	7433.18	-746.39	7400.12	32°22'43.302"N	103°51'32.567"W	1.24	173.64	29.55	53.70	94.736	
16149.00	88.400	95.600	9378.69	7528.10	-755.66	7494.63	32°22'43.206"N	103°51'31.465"W	0.11	175.93	29.63	54.36	94.749	
16244.00	88.700	95.300	9381.09	7623.03	-764.68	7589.17	32°22'43.113"N	103°51'30.364"W	0.45	178.22	29.72	55.03	94.760	
16339.00	87.800	95.200	9383.99	7717.95	-773.37	7683.73	32°22'43.023"N	103°51'29.261"W	0.95	180.51	29.81	55.69	94.768	
16434.00	88.200	95.500	9387.31	7812.86	-782.22	7778.26	32°22'42.931"N	103°51'28.160"W	0.53	182.80	29.91	56.36	94.777	
16529.00	88.900	95.800	9389.71	7907.77	-791.57	7872.76	32°22'42.834"N	103°51'27.058"W	0.80	185.09	30.00	57.02	94.790	
16624.00	89.300	95.800	9391.20	8002.70	-801.17	7967.27	32°22'42.735"N	103°51'25.957"W	0.42	187.39	30.09	57.69	94.804	
16719.00	89.500	95.500	9392.20	8097.65	-810.52	8061.80	32°22'42.639"N	103°51'24.855"W	0.38	189.68	30.18	58.36	94.816	
16814.00	89.700	95.000	9392.86	8192.61	-819.22	8156.40	32°22'42.548"N	103°51'23.752"W	0.57	191.97	30.27	59.03	94.823	
16910.00	89.900	95.000	9393.20	8288.59	-827.58	8252.03	32°22'42.461"N	103°51'22.638"W	0.21	194.29	30.36	59.70	94.826	
17005.00	89.900	94.700	9393.36	8383.57	-835.61	8346.69	32°22'42.378"N	103°51'21.535"W	0.32	196.58	30.45	60.37	94.828	
17101.00	90.800	94.300	9392.77	8479.56	-843.15	8442.39	32°22'42.299"N	103°51'20.419"W	1.03	198.90	30.54	61.05	94.825	
17196.00	91.600	94.400	9390.79	8574.54	-850.35	8537.10	32°22'42.223"N	103°51'19.315"W	0.85	201.19	30.63	61.72	94.821	
17291.00	87.700	91.900	9391.37	8669.50	-855.57	8631.93	32°22'42.168"N	103°51'18.210"W	4.88	203.48	30.72	62.40	94.803	
17387.00	86.200	91.600	9396.47	8765.30	-858.50	8727.74	32°22'42.134"N	103°51'17.093"W	1.59	205.80	30.82	63.11	94.769	
17482.00	86.400	91.800	9402.60	8860.04	-861.31	8822.50	32°22'42.102"N	103°51'15.988"W	0.30	208.08	30.93	63.79	94.736	
17524.00	86.700	91.600	9405.13	8901.94	-862.55	8864.41	32°22'42.088"N	103°51'15.499"W	0.86	209.09	30.97	64.08	94.722	
17575.00	86.700	91.600	9408.07	8952.82	-863.98	8915.30	32°22'42.072"N	103°51'14.906"W	0.00	210.32	31.03	64.45	94.704	Project to Bit



Actual Wellpath Report

Positional Uncertainty

No.12H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No.12H SHL
Area	Eddy County, NM	Well	No.12H
Field	JRU NAD27	Wellbore	No.12H AWB
Facility	JRU No.12H		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
No.12H Target #2		9311.00	-616.45	5394.00	644413.70	501938.70	32°22'44.675"N	103°51'55.952"W	point
No.12H Target #1		9326.00	-131.21	1030.39	640050.40	502423.90	32°22'49.663"N	103°52'46.808"W	point
No.12H PBHL		9386.00	-823.40	8144.96	647164.46	501731.77	32°22'42.507"N	103°51'23.886"W	point
No.12H PBHL Rev1		9509.00	-807.06	12247.39	651266.60	501748.10	32°22'42.486"N	103°50'36.051"W	point

WELLPATH COMPOSITION - Ref Wellbore: No.12H AWB Ref Wellpath: No.12H AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
19.00	7150.00	Generic gyro - northseeking (Standard)	Gyro	No.12H AWB
7150.00	17575.00	NaviTrak (Standard)	MWD	No.12H AWB