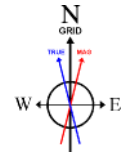


NOBLE ENERGY, INC

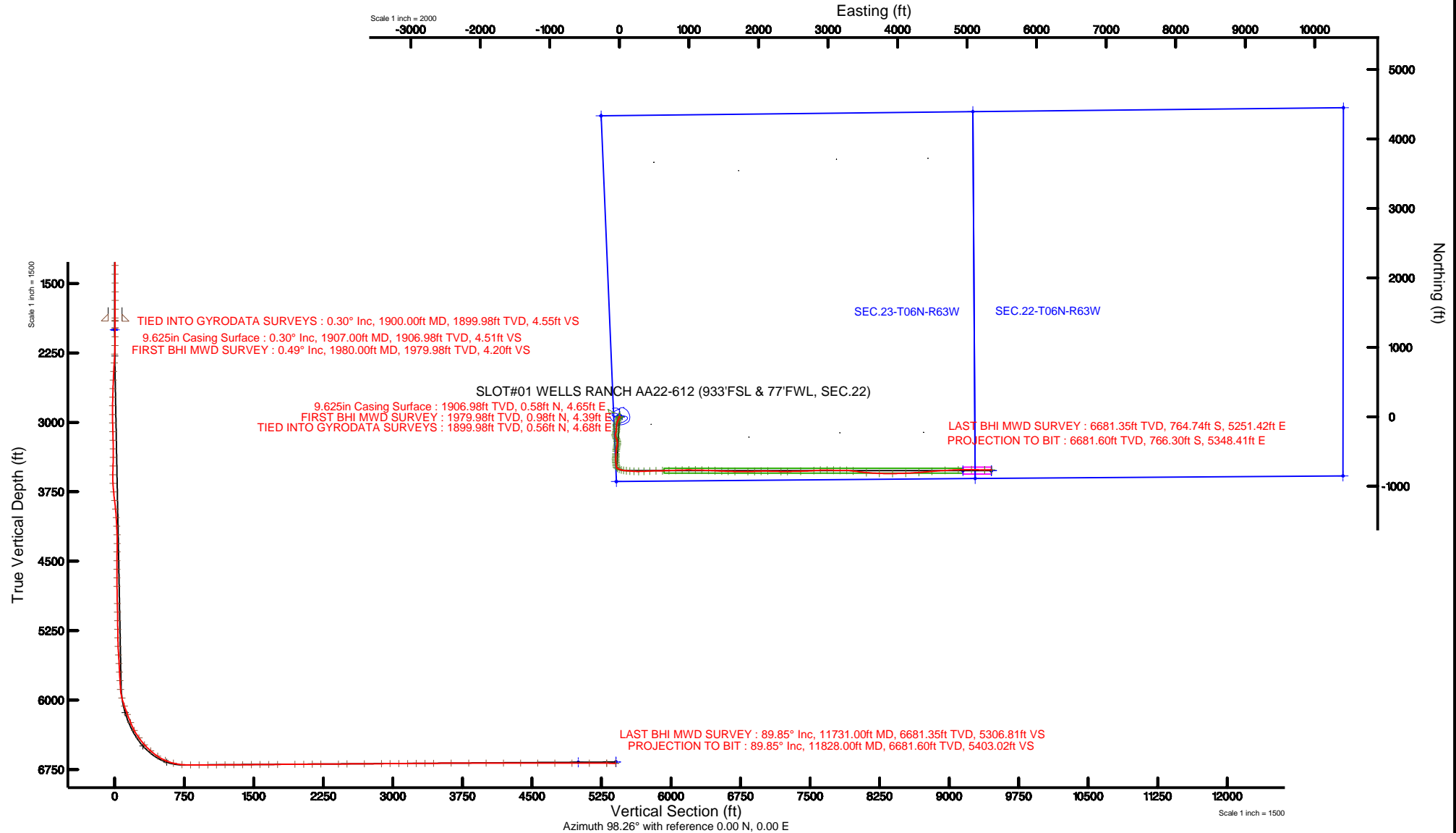
Location: COLORADO Slot: SLOT#01 WELLS RANCH AA22-612 (933'FSL & 77'FWL, SEC.22)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: WELLS RANCH AA22-612
Facility: SEC.22-T06N-R63W Wellbore: WELLS RANCH AA22-612 PWB

Plot reference wellpath is WELLS RANCH AA22-612 (REV-A.D) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to H&P 321 (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to H&P 321 (RKB)	North Reference: Grid north
H&P 321 (RKB) to Mean Sea Level: 4775 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#01 WELLS RANCH AA22-612 (933'FSL & 77'FWL, SEC.22)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: cookdanm on 2016-05-24
	Database: WA_DEN_Denver_Defn



BGGM (1945.0 to 2017.0) Dip: 67.06° Field: 52613.4 nT
Magnetic North is 8.29 degrees East of True North (at 4/11/16)
Grid North is 0.69 degrees East of True North
To correct azimuth from True to Grid subtract 0.69 degrees
To correct azimuth from Magnetic to Grid add 7.60 degrees

API: 05-123-42264



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#01 WELLS RANCH AA22-612 (933'FSL & 77'FWL, SEC.22)
Area	COLORADO	Well	WELLS RANCH AA22-612
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH AA22-612 AWB
Facility	SEC.22-T06N-R63W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Cookdanm
Scale	0.999964	Report Generated	5/24/16 at 5:29:09 PM
Convergence at slot	0.70° East	Database/Source file	WA_DEN_Denver_Defn/WELLS_RANCH_AA22-612_AWP.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	3297157.15	1414914.69	40°28'02.748"N	104°25'55.056"W
Facility Reference Pt			3297157.15	1414914.69	40°28'02.748"N	104°25'55.056"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.315"N	105°30'00.000"W

WELLPATH DATUM

Calculation method	Minimum curvature	H&P 321 (RKB) to Facility Vertical Datum	4775.00ft
Horizontal Reference Pt	Slot	H&P 321 (RKB) to Mean Sea Level	4775.00ft
Vertical Reference Pt	H&P 321 (RKB)	H&P 321 (RKB) to Mud Line at Slot (SLOT#01 WELLS RANCH AA22-612 (933'FSL & 77'FWL, SEC.22))	4775.00ft
MD Reference Pt	H&P 321 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	98.15°

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 WELLS RANCH AA22-612 (933'FSL & 77'FWL, SEC.22)
Area	COLORADO	Well	WELLS RANCH AA22-612
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH AA22-612 AWB
Facility	SEC.22-T06N-R63W		

WELLPATH DATA (91 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
1900.00	0.300	295.270	1899.98	4.55	0.56	4.68	40°28'02.753"N	104°25'54.995"W	0.15	TIED INTO GYRODATA SURVEYS
1980.00	0.490	342.330	1979.98	4.20	0.98	4.39	40°28'02.757"N	104°25'54.999"W	0.45	FIRST BHI MWD SURVEY
2075.00	1.950	193.030	2074.96	3.89	-0.21	3.90	40°28'02.745"N	104°25'55.006"W	2.51	
2170.00	4.700	204.640	2169.79	2.65	-5.32	1.91	40°28'02.695"N	104°25'55.032"W	2.97	
2265.00	6.550	211.690	2264.33	-0.62	-13.47	-2.56	40°28'02.615"N	104°25'55.091"W	2.08	
2359.00	9.060	207.840	2357.46	-5.26	-24.58	-8.83	40°28'02.506"N	104°25'55.174"W	2.73	
2454.00	11.260	204.220	2450.96	-10.34	-39.65	-16.13	40°28'02.358"N	104°25'55.271"W	2.41	
2548.00	11.160	200.400	2543.17	-14.81	-56.55	-23.07	40°28'02.192"N	104°25'55.363"W	0.80	
2643.00	11.160	198.120	2636.37	-18.36	-73.90	-29.13	40°28'02.021"N	104°25'55.444"W	0.46	
2737.00	11.190	196.590	2728.59	-21.27	-91.29	-34.56	40°28'01.850"N	104°25'55.517"W	0.32	
2832.00	11.160	193.210	2821.79	-23.43	-109.08	-39.30	40°28'01.675"N	104°25'55.581"W	0.69	
2927.00	11.370	186.690	2914.97	-24.00	-127.33	-42.49	40°28'01.495"N	104°25'55.626"W	1.36	
3021.00	11.130	181.040	3007.16	-22.64	-145.60	-43.73	40°28'01.315"N	104°25'55.644"W	1.20	
3116.00	11.310	180.340	3100.35	-20.24	-164.08	-43.96	40°28'01.132"N	104°25'55.650"W	0.24	
3211.00	11.120	180.860	3193.53	-17.81	-182.56	-44.15	40°28'00.949"N	104°25'55.656"W	0.23	
3306.00	10.320	185.370	3286.88	-16.23	-200.19	-45.08	40°28'00.775"N	104°25'55.670"W	1.22	
3400.00	10.970	192.460	3379.26	-16.50	-217.31	-47.80	40°28'00.606"N	104°25'55.708"W	1.55	
3495.00	11.420	197.840	3472.46	-18.76	-235.09	-52.63	40°28'00.431"N	104°25'55.774"W	1.20	
3590.00	11.550	193.070	3565.56	-21.16	-253.31	-57.66	40°28'00.252"N	104°25'55.841"W	1.01	
3685.00	11.540	172.890	3658.67	-19.47	-272.01	-58.64	40°28'00.067"N	104°25'55.857"W	4.23	
3779.00	11.820	158.760	3750.74	-12.27	-290.32	-53.99	40°27'59.886"N	104°25'55.800"W	3.05	
3874.00	11.950	156.360	3843.71	-2.31	-308.39	-46.52	40°27'59.706"N	104°25'55.706"W	0.54	
3969.00	11.680	159.270	3936.70	7.52	-326.40	-39.17	40°27'59.528"N	104°25'55.614"W	0.69	
4063.00	11.560	167.910	4028.78	15.37	-344.51	-33.83	40°27'59.348"N	104°25'55.547"W	1.85	
4158.00	11.410	174.440	4121.88	20.90	-363.17	-30.92	40°27'59.163"N	104°25'55.513"W	1.38	
4253.00	11.470	180.360	4214.99	24.40	-381.97	-30.07	40°27'58.977"N	104°25'55.505"W	1.24	
4348.00	11.530	189.170	4308.09	25.52	-400.79	-31.65	40°27'58.792"N	104°25'55.528"W	1.85	
4442.00	11.680	194.180	4400.18	24.35	-419.29	-35.47	40°27'58.609"N	104°25'55.580"W	1.08	
4537.00	11.730	191.610	4493.20	22.76	-438.07	-39.77	40°27'58.424"N	104°25'55.639"W	0.55	
4632.00	11.580	188.600	4586.24	22.10	-456.96	-43.14	40°27'58.238"N	104°25'55.685"W	0.66	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 WELLS RANCH AA22-612 (933'FSL & 77'FWL, SEC.22)
Area	COLORADO	Well	WELLS RANCH AA22-612
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH AA22-612 AWB
Facility	SEC.22-T06N-R63W		

WELLPATH DATA (91 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4726.00	11.620	185.510	4678.32	22.47	-475.71	-45.46	40°27'58.053"N	104°25'55.718"W	0.66	
4821.00	11.720	183.590	4771.36	23.68	-494.86	-46.99	40°27'57.864"N	104°25'55.741"W	0.42	
5010.00	11.690	182.440	4956.43	27.11	-533.15	-49.00	40°27'57.486"N	104°25'55.773"W	0.12	
5105.00	11.510	180.140	5049.49	29.39	-552.24	-49.44	40°27'57.297"N	104°25'55.782"W	0.52	
5199.00	10.750	185.560	5141.72	31.09	-570.35	-50.31	40°27'57.118"N	104°25'55.796"W	1.37	
5294.00	11.970	187.550	5234.86	31.60	-588.93	-52.46	40°27'56.935"N	104°25'55.826"W	1.35	
5389.00	11.850	182.500	5327.82	32.66	-608.44	-54.18	40°27'56.743"N	104°25'55.852"W	1.10	
5483.00	11.800	176.370	5419.83	35.58	-627.68	-53.99	40°27'56.552"N	104°25'55.852"W	1.34	
5578.00	11.890	171.840	5512.81	40.31	-647.06	-51.99	40°27'56.361"N	104°25'55.829"W	0.98	
5673.00	12.010	172.700	5605.75	45.69	-666.55	-49.34	40°27'56.168"N	104°25'55.798"W	0.23	
5767.00	11.540	173.070	5697.77	50.74	-685.59	-46.97	40°27'55.979"N	104°25'55.770"W	0.51	
5862.00	11.610	173.550	5790.84	55.63	-704.52	-44.75	40°27'55.792"N	104°25'55.745"W	0.13	
5957.00	11.920	167.850	5883.85	61.44	-723.61	-41.61	40°27'55.603"N	104°25'55.707"W	1.27	
6052.00	15.980	128.590	5976.22	76.16	-741.40	-29.29	40°27'55.426"N	104°25'55.550"W	10.58	
6146.00	19.870	110.600	6065.71	102.94	-755.11	-4.19	40°27'55.287"N	104°25'55.228"W	7.15	
6241.00	20.560	107.100	6154.86	135.19	-765.70	26.86	40°27'55.179"N	104°25'54.828"W	1.47	
6336.00	22.790	97.100	6243.17	170.08	-772.88	61.08	40°27'55.104"N	104°25'54.386"W	4.53	
6430.00	28.260	94.700	6327.97	210.53	-776.96	101.36	40°27'55.059"N	104°25'53.866"W	5.92	
6525.00	35.810	95.300	6408.44	260.81	-781.37	151.52	40°27'55.009"N	104°25'53.218"W	7.95	
6619.00	41.450	93.100	6481.85	319.31	-785.60	210.02	40°27'54.961"N	104°25'52.461"W	6.17	
6714.00	49.020	89.450	6548.71	386.19	-786.96	277.38	40°27'54.939"N	104°25'51.590"W	8.42	
6809.00	57.100	87.420	6605.76	460.95	-784.81	353.21	40°27'54.951"N	104°25'50.609"W	8.67	
6904.00	66.330	87.640	6650.73	543.09	-781.22	436.70	40°27'54.977"N	104°25'49.528"W	9.72	
6998.00	75.730	88.990	6681.25	630.58	-778.64	525.46	40°27'54.992"N	104°25'48.380"W	10.09	
7093.00	85.720	89.220	6696.54	723.05	-777.18	619.09	40°27'54.995"N	104°25'47.168"W	10.52	
7187.00	90.130	87.160	6699.95	815.55	-774.21	712.95	40°27'55.013"N	104°25'45.953"W	5.18	
7282.00	90.160	88.370	6699.70	908.99	-770.50	807.87	40°27'55.039"N	104°25'44.725"W	1.27	
7377.00	90.160	88.380	6699.44	1002.61	-767.81	902.84	40°27'55.054"N	104°25'43.496"W	0.01	
7472.00	90.410	90.140	6698.97	1096.46	-766.58	997.82	40°27'55.055"N	104°25'42.267"W	1.87	
7566.00	90.440	90.590	6698.27	1189.59	-767.18	1091.82	40°27'55.037"N	104°25'41.051"W	0.48	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 WELLS RANCH AA22-612 (933'FSL & 77'FWL, SEC.22)
Area	COLORADO	Well	WELLS RANCH AA22-612
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH AA22-612 AWB
Facility	SEC.22-T06N-R63W		

WELLPATH DATA (91 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7661.00	90.440	91.730	6697.54	1283.88	-769.11	1186.79	40°27'55.007"N	104°25'39.822"W	1.20	
7756.00	90.280	92.150	6696.94	1378.32	-772.32	1281.74	40°27'54.964"N	104°25'38.595"W	0.47	
7851.00	90.280	93.050	6696.48	1472.87	-776.63	1376.64	40°27'54.910"N	104°25'37.368"W	0.95	
7945.00	90.440	92.670	6695.89	1566.47	-781.32	1470.52	40°27'54.852"N	104°25'36.154"W	0.44	
8040.00	90.440	91.700	6695.16	1660.95	-784.94	1565.45	40°27'54.805"N	104°25'34.926"W	1.02	
8135.00	90.560	91.080	6694.33	1755.28	-787.25	1660.41	40°27'54.771"N	104°25'33.698"W	0.66	
8324.00	90.410	89.830	6692.73	1942.57	-788.75	1849.40	40°27'54.734"N	104°25'31.253"W	0.67	
8419.00	90.500	87.740	6691.98	2036.29	-786.73	1944.37	40°27'54.742"N	104°25'30.024"W	2.20	
8513.00	90.190	88.080	6691.41	2128.79	-783.31	2038.30	40°27'54.765"N	104°25'28.809"W	0.49	
8608.00	90.310	91.450	6690.99	2222.76	-782.92	2133.29	40°27'54.757"N	104°25'27.580"W	3.55	
8798.00	90.470	91.160	6689.70	2411.40	-787.24	2323.23	40°27'54.692"N	104°25'25.123"W	0.17	
8892.00	90.340	89.280	6689.04	2504.50	-787.60	2417.23	40°27'54.677"N	104°25'23.907"W	2.00	
9081.00	90.340	88.460	6687.92	2691.02	-783.88	2606.18	40°27'54.691"N	104°25'21.462"W	0.43	
9271.00	90.440	86.240	6686.62	2877.63	-775.09	2795.96	40°27'54.755"N	104°25'19.006"W	1.17	
9365.00	90.440	86.510	6685.90	2969.65	-769.15	2889.77	40°27'54.803"N	104°25'17.791"W	0.29	
9460.00	90.500	91.330	6685.12	3063.39	-767.36	2984.73	40°27'54.809"N	104°25'16.562"W	5.07	
9555.00	90.410	92.360	6684.37	3157.81	-770.42	3079.67	40°27'54.767"N	104°25'15.335"W	1.09	
9649.00	90.470	88.630	6683.64	3250.95	-771.23	3173.65	40°27'54.748"N	104°25'14.119"W	3.97	
9744.00	90.440	91.630	6682.89	3345.01	-771.45	3268.64	40°27'54.734"N	104°25'12.890"W	3.16	
9838.00	90.560	98.990	6682.07	3438.82	-780.14	3362.16	40°27'54.637"N	104°25'11.682"W	7.83	
10028.00	90.440	95.340	6680.41	3628.75	-803.83	3550.64	40°27'54.380"N	104°25'09.247"W	1.92	
10217.00	89.850	91.660	6679.93	3817.10	-815.37	3739.25	40°27'54.244"N	104°25'06.809"W	1.97	
10406.00	89.910	89.630	6680.33	4004.47	-817.50	3928.23	40°27'54.200"N	104°25'04.364"W	1.07	
10596.00	89.940	87.780	6680.58	4191.88	-813.20	4118.18	40°27'54.219"N	104°25'01.906"W	0.97	
10785.00	89.940	85.400	6680.77	4377.03	-801.96	4306.83	40°27'54.308"N	104°24'59.464"W	1.26	
10974.00	89.940	84.920	6680.97	4561.19	-786.01	4495.15	40°27'54.443"N	104°24'57.025"W	0.25	
11163.00	89.980	86.730	6681.10	4745.83	-772.25	4683.64	40°27'54.556"N	104°24'54.584"W	0.96	
11353.00	89.970	88.340	6681.19	4932.57	-764.08	4873.46	40°27'54.613"N	104°24'52.127"W	0.85	
11542.00	90.040	90.570	6681.17	5119.38	-762.29	5062.44	40°27'54.608"N	104°24'49.682"W	1.18	
11731.00	89.850	90.920	6681.35	5306.80	-764.74	5251.42	40°27'54.561"N	104°24'47.238"W	0.21	LAST BHI MWD SURVEY

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 WELLS RANCH AA22-612 (933'FSL & 77'FWL, SEC.22)
Area	COLORADO	Well	WELLS RANCH AA22-612
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH AA22-612 AWB
Facility	SEC.22-T06N-R63W		

WELLPATH DATA (91 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11828.00	89.850	90.920	6681.60	5403.03	-766.30	5348.41	40°27'54.534"N	104°24'45.983"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: WELLS RANCH AA22-612 AWB Ref Wellpath: WELLS RANCH AA22-612 AWP									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
9.625in Casing Surface	0.00	1907.00	1907.00	0.00	1906.98	0.00	0.00	0.58	4.65
8.5in Open Hole	1907.00	11828.00	9921.00	1906.98	6681.60	0.58	4.65	-766.30	5348.41

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.22-T06N-R63W	0.00	0.00	0.00	3297157.15	1414914.69	40°28'02.748"N	104°25'55.056"W	polygon
SEC.22-T06N-R63W NE CORNER	0.00	4393.80	5082.93	3302239.88	1419308.32	40°28'45.552"N	104°24'48.600"W	point
SEC.22-T06N-R63W NW CORNER	0.00	4332.51	-263.63	3296893.53	1419247.03	40°28'45.588"N	104°25'57.792"W	point
SEC.22-T06N-R63W SE CORNER	0.00	-888.77	5117.05	3302274.00	1414025.95	40°27'53.352"N	104°24'48.996"W	point
SEC.22-T06N-R63W SW CORNER	0.00	-933.25	-44.41	3297112.73	1413981.47	40°27'53.532"N	104°25'55.776"W	point
SEC.23-T06N-R63W	0.00	0.00	0.00	3297157.15	1414914.69	40°28'02.748"N	104°25'55.056"W	polygon
SEC.23-T06N-R63W NE CORNER	0.00	4448.76	10412.88	3307569.63	1419363.27	40°28'45.444"N	104°23'39.624"W	point
SEC.23-T06N-R63W SE CORNER	0.00	-852.54	10406.63	3307563.38	1414062.17	40°27'53.064"N	104°23'40.560"W	point
WELLS RANCH AA22-612 KOP (35' RADII)	2000.00	0.00	0.00	3297157.15	1414914.69	40°28'02.748"N	104°25'55.056"W	circle
WELLS RANCH AA22-612 BHL ON PLAT REV-1 (111'FSL & 235'FWL, SEC.23)	6667.92	-776.62	5349.42	3302506.37	1414138.10	40°27'54.432"N	104°24'45.972"W	point
WELLS RANCH AA22-612 DRILLING CORRIDOR (35' LEFT/RIGHT & 8' UP/DOWN)	6667.92	-776.62	5349.42	3302506.37	1414138.10	40°27'54.432"N	104°24'45.972"W	polygon
WELLS RANCH AA22-612 DRILLING CORRIDOR (50' LEFT/RIGHT & 8' UP/DOWN)	6667.92	-776.62	5349.42	3302506.37	1414138.10	40°27'54.432"N	104°24'45.972"W	polygon

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
WELLS RANCH AA22-612 DRILLING CORRIDOR 5000'VS	6670.78	-776.62	4940.08	3302097.04	1414138.10	40°27'54.482"N	104°24'51.268"W	point

WELLPATH COMPOSITION - Ref Wellbore: WELLS RANCH AA22-612 AWB Ref Wellpath: WELLS RANCH AA22-612 AWP									
Start MD [ft]	End MD [ft]	Positional Uncertainty Model		Log Name/Comment			Wellbore		
0.00	1900.00	Gyrodata standard - Drop gyro or Multi-shot		GYRODATA SURFACE SURVEYS <0 - 1900>			WELLS RANCH AA22-612 AWB		
1900.00	11731.00	Custom BHI AutoTrak Curve (IFR1, Short) (Rockies 0.03Gt model)		BHI AUTOTRAK CURVE (IFR1,SHORT) 8 1/2" HOLE, MONOBORE <1900 - 11731>			WELLS RANCH AA22-612 AWB		
11731.00	11828.00	Blind Drilling (std)		Projection to bit			WELLS RANCH AA22-612 AWB		

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 WELLS RANCH AA22-612 (933'FSL & 77'FWL, SEC.22)
Area	COLORADO	Well	WELLS RANCH AA22-612
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH AA22-612 AWB
Facility	SEC.22-T06N-R63W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1900.00	0.300	295.270	1899.98	TIED INTO GYRODATA SURVEYS
1980.00	0.490	342.330	1979.98	FIRST BHI MWD SURVEY
11731.00	89.850	90.920	6681.35	LAST BHI MWD SURVEY
11828.00	89.850	90.920	6681.60	PROJECTION TO BIT