



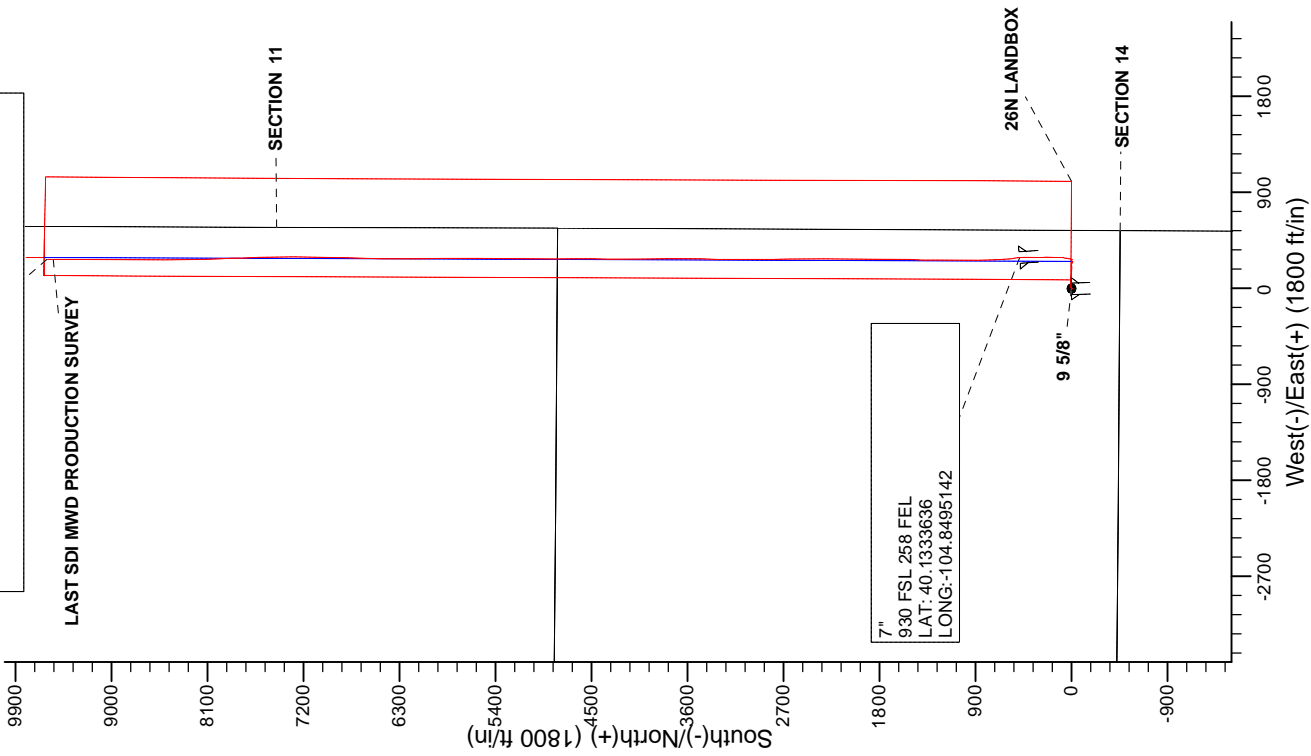
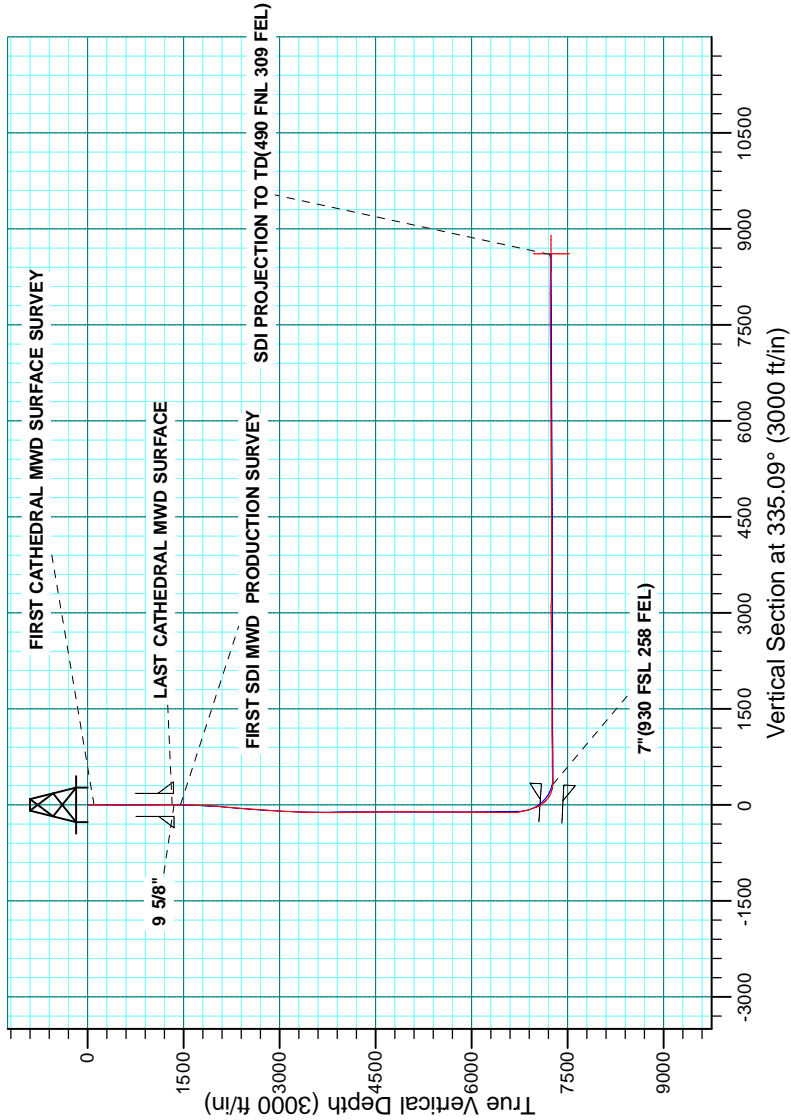
Project: COLORADO NORTHERN ZONE - 83
Site: BARCLAY 16-14HZ PAD
Well: BARCLAY 26N-11HZ
Wellbore: OH
Design: OH



WELL DETAILS: BARCLAY 26N-11HZ					
GL 4908 & KB 25 @ 483.00ft (HP 311)					
+N/-S 0.00	+E/-W 0.00	Northing 1291606.51	Easting 3181592.44	Latitude 40.1320279	Longitude -104.8505480

PROJECT DETAILS: COLORADO NORTHERN ZONE - 83	
Geodetic System: US State Plane 1983	
Datum: North American Datum 1983	
Ellipsoid: GRS 1980	
Zone: Colorado Northern Zone	
Location: SECTION 14 T2N R67W	
System Datum: Mean Sea Level	

CASING DETAILS		
TVD	MD	Name
1347.95	1348.00	9 5/8"
7266.65	7541.00	7"



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well BARCLAY 26N-11HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 4908 & KB 25 @ 4933.00ft (HP 311)
Site:	BARCLAY 16-14HZ PAD	MD Reference:	GL 4908 & KB 25 @ 4933.00ft (HP 311)
Well:	BARCLAY 26N-11HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales

Project	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		BARCLAY 16-14HZ PAD, SECTION 14 T2N R67W			
Site Position:		Northing:	1,291,606.81 usft	Latitude:	40.1320300
From:	Lat/Long	Easting:	3,181,532.32 usft	Longitude:	-104.8507630
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.42 °

Well	BARCLAY 26N-11HZ, 451 FSL 546 FEL					
Well Position	+N/-S	0.00 ft	Northing:	1,291,606.51 usft	Latitude:	40.1320280
	+E/-W	0.00 ft	Easting:	3,181,592.44 usft	Longitude:	-104.8505480
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,908.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	2/25/2015	8.50	66.68	52,473

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	335.09	

Survey Program	Date	3/19/2015			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
19.00	1,322.00	Survey #1 CATHEDRAL MWD SURFACE	MWD	MWD - Standard	
1,447.00	16,664.00	Survey #2 SDI MWD PRODUCTION (OH)	MWD+IFR	MWD + IFR correction	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
19.00	0.00	0.00	19.00	0.00	0.00	0.00	0.00	0.00	0.00	
99.00	0.50	260.60	99.00	-0.06	-0.34	0.09	0.63	0.63	0.00	
FIRST CATHEDRAL MWD SURFACE SURVEY										
142.00	0.70	278.40	142.00	-0.05	-0.79	0.29	0.63	0.47	41.40	
182.00	0.80	278.40	181.99	0.03	-1.31	0.58	0.25	0.25	0.00	
271.00	0.80	235.80	270.99	-0.23	-2.44	0.82	0.65	0.00	-47.87	
351.00	0.70	176.30	350.98	-1.03	-2.87	0.27	0.94	-0.13	-74.38	
431.00	0.30	153.20	430.98	-1.71	-2.74	-0.39	0.55	-0.50	-28.88	
511.00	0.40	90.10	510.98	-1.89	-2.37	-0.72	0.47	0.13	-78.88	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well BARCLAY 26N-11HZ
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Site:	BARCLAY 16-14HZ PAD	MD Reference:	GL 4908 & KB 25 @ 4933.00ft (HP 311)
Well:	BARCLAY 26N-11HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
591.00	0.70	117.20	590.97	-2.12	-1.65	-1.23	0.49	0.38	33.88
671.00	0.50	137.40	670.97	-2.60	-0.98	-1.94	0.36	-0.25	25.25
751.00	0.40	7.40	750.97	-2.58	-0.71	-2.04	1.02	-0.13	-162.50
831.00	0.60	5.40	830.96	-1.89	-0.63	-1.44	0.25	0.25	-2.50
911.00	0.20	26.20	910.96	-1.34	-0.53	-0.99	0.52	-0.50	26.00
991.00	0.30	333.70	990.96	-1.03	-0.56	-0.70	0.30	0.13	-65.63
1,071.00	0.60	346.90	1,070.96	-0.43	-0.75	-0.08	0.39	0.38	16.50
1,151.00	0.50	358.40	1,150.95	0.32	-0.86	0.65	0.19	-0.13	14.38
1,231.00	0.50	14.40	1,230.95	1.01	-0.78	1.24	0.17	0.00	20.00
1,311.00	0.30	345.60	1,310.95	1.55	-0.74	1.72	0.35	-0.25	-36.00
1,322.00	0.30	11.50	1,321.95	1.61	-0.75	1.77	1.22	0.00	235.46
LAST CATHEDRAL MWD SURFACE									
1,348.00	0.23	359.37	1,347.95	1.73	-0.73	1.87	0.34	-0.26	-46.64
9 5/8"									
1,447.00	0.24	270.09	1,446.95	1.93	-0.94	2.15	0.34	0.01	-90.18
FIRST SDI MWD PRODUCTION SURVEY									
1,541.00	1.57	89.32	1,540.94	1.94	0.15	1.70	1.93	1.41	190.67
1,636.00	3.56	75.61	1,635.84	2.69	4.31	0.63	2.18	2.09	-14.43
1,730.00	5.47	84.66	1,729.54	3.83	11.60	-1.41	2.16	2.03	9.63
1,824.00	6.89	91.26	1,823.00	4.13	21.69	-5.39	1.69	1.51	7.02
1,918.00	9.36	88.11	1,916.05	4.26	34.97	-10.87	2.67	2.63	-3.35
2,013.00	10.73	87.38	2,009.59	4.91	51.53	-17.25	1.45	1.44	-0.77
2,107.00	9.58	85.83	2,102.11	5.88	68.07	-23.34	1.26	-1.22	-1.65
2,201.00	9.61	93.73	2,194.80	5.94	83.70	-29.87	1.40	0.03	8.40
2,295.00	11.44	95.13	2,287.22	4.60	100.82	-38.30	1.97	1.95	1.49
2,390.00	9.81	96.73	2,380.59	2.81	118.24	-47.26	1.74	-1.72	1.68
2,484.00	11.50	92.15	2,472.96	1.52	135.56	-55.72	2.01	1.80	-4.87
2,579.00	10.33	91.40	2,566.24	0.95	153.54	-63.81	1.24	-1.23	-0.79
2,673.00	9.97	98.43	2,658.78	-0.45	170.01	-72.02	1.37	-0.38	7.48
2,767.00	10.75	90.34	2,751.25	-1.69	186.83	-80.23	1.75	0.83	-8.61
2,862.00	9.65	90.44	2,844.74	-1.80	203.65	-87.42	1.16	-1.16	0.11
2,956.00	8.10	90.32	2,937.62	-1.90	218.15	-93.61	1.65	-1.65	-0.13
3,050.00	6.59	93.33	3,030.84	-2.25	230.16	-98.99	1.66	-1.61	3.20
3,144.00	4.87	97.01	3,124.37	-3.05	239.51	-103.65	1.87	-1.83	3.91
3,239.00	4.18	95.08	3,219.07	-3.85	246.96	-107.51	0.74	-0.73	-2.03
3,333.00	1.31	108.98	3,312.96	-4.50	251.39	-109.97	3.11	-3.05	14.79
3,427.00	0.98	148.07	3,406.94	-5.54	252.83	-111.52	0.88	-0.35	41.59
3,521.00	0.59	150.96	3,500.93	-6.64	253.49	-112.80	0.42	-0.41	3.07
3,616.00	0.92	184.38	3,595.92	-7.83	253.67	-113.95	0.57	0.35	35.18
3,710.00	1.80	192.84	3,689.89	-10.02	253.28	-115.77	0.96	0.94	9.00
3,804.00	0.60	297.85	3,783.88	-11.23	252.52	-116.55	2.17	-1.28	111.71
3,898.00	0.84	303.44	3,877.87	-10.62	251.51	-115.57	0.27	0.26	5.95
3,992.00	1.39	282.12	3,971.85	-10.00	249.82	-114.30	0.72	0.59	-22.68
4,086.00	1.66	279.87	4,065.82	-9.53	247.36	-112.84	0.29	0.29	-2.39

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Site:	BARCLAY 16-14HZ PAD	MD Reference:	GL 4908 & KB 25 @ 4933.00ft (HP 311)
Well:	BARCLAY 26N-11HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,181.00	0.97	337.27	4,160.80	-8.55	245.70	-111.25	1.47	-0.73	60.42
4,275.00	1.82	37.40	4,254.77	-6.63	246.30	-109.76	1.68	0.90	63.97
4,369.00	2.05	51.68	4,348.72	-4.40	248.52	-108.67	0.57	0.24	15.19
4,463.00	0.24	169.78	4,442.70	-3.55	249.88	-108.48	2.31	-1.93	125.64
4,557.00	0.38	144.67	4,536.70	-4.00	250.09	-108.97	0.20	0.15	-26.71
4,651.00	0.34	122.02	4,630.70	-4.41	250.51	-109.51	0.16	-0.04	-24.10
4,746.00	0.69	32.27	4,725.69	-4.07	251.05	-109.44	0.81	0.37	-94.47
4,840.00	1.93	45.86	4,819.67	-2.49	252.49	-108.61	1.35	1.32	14.46
4,934.00	0.27	104.13	4,913.65	-1.44	253.84	-108.23	1.92	-1.77	61.99
5,028.00	0.47	62.52	5,007.65	-1.32	254.40	-108.35	0.34	0.21	-44.27
5,122.00	0.46	91.22	5,101.64	-1.15	255.12	-108.50	0.25	-0.01	30.53
5,217.00	0.62	29.21	5,196.64	-0.71	255.75	-108.37	0.60	0.17	-65.27
5,311.00	0.71	61.80	5,290.63	0.01	256.51	-108.03	0.41	0.10	34.67
5,405.00	1.00	16.26	5,384.63	1.07	257.25	-107.38	0.76	0.31	-48.45
5,594.00	1.41	95.67	5,573.59	2.43	260.03	-107.33	0.83	0.22	42.02
5,688.00	1.31	109.04	5,667.57	1.96	262.20	-108.66	0.35	-0.11	14.22
5,782.00	1.14	65.22	5,761.55	2.00	264.06	-109.41	0.99	-0.18	-46.62
5,877.00	1.67	135.87	5,856.53	1.41	265.88	-110.72	1.77	0.56	74.37
5,971.00	1.62	127.82	5,950.49	-0.39	267.89	-113.19	0.25	-0.05	-8.56
6,065.00	0.94	217.62	6,044.47	-1.82	268.47	-114.73	1.99	-0.72	95.53
6,160.00	0.72	163.99	6,139.46	-3.01	268.16	-115.68	0.81	-0.23	-56.45
6,254.00	0.78	130.10	6,233.45	-3.99	268.81	-116.84	0.47	0.06	-36.05
6,348.00	1.11	104.41	6,327.44	-4.63	270.18	-118.00	0.56	0.35	-27.33
6,442.00	1.41	120.47	6,421.42	-5.44	272.06	-119.53	0.49	0.32	17.09
6,537.00	0.77	114.04	6,516.40	-6.29	273.65	-120.97	0.68	-0.67	-6.77
6,631.00	1.02	71.72	6,610.39	-6.29	275.02	-121.54	0.73	0.27	-45.02
6,725.00	7.16	12.27	6,704.12	-0.29	277.06	-116.97	7.13	6.53	-63.24
6,819.00	13.86	5.70	6,796.50	16.65	279.43	-102.59	7.23	7.13	-6.99
6,914.00	19.59	10.61	6,887.44	43.65	283.49	-79.82	6.21	6.03	5.17
7,007.00	22.57	9.12	6,974.21	76.61	289.19	-52.33	3.26	3.20	-1.60
7,102.00	32.91	3.73	7,058.19	120.49	293.78	-14.46	11.19	10.88	-5.67
7,196.00	44.01	358.71	7,131.70	178.81	294.70	38.04	12.26	11.81	-5.34
7,290.00	55.95	358.51	7,192.04	250.65	292.95	103.93	12.70	12.70	-0.21
7,384.00	67.99	2.27	7,236.14	333.45	293.67	178.73	13.28	12.81	4.00
7,478.00	82.05	356.93	7,260.40	423.98	292.90	261.17	15.93	14.96	-5.68
7,541.00	86.56	356.05	7,266.65	486.54	289.06	319.52	7.30	7.16	-1.40
7"(930 FSL 258 FEL)									
7,588.00	89.93	355.40	7,268.08	533.38	285.56	363.47	7.30	7.16	-1.38
7,619.00	90.47	355.00	7,267.98	564.27	282.96	392.58	2.17	1.74	-1.29
7,713.00	92.18	355.78	7,265.80	657.94	275.41	480.72	2.00	1.82	0.83
7,807.00	91.64	358.76	7,262.67	751.77	270.93	567.70	3.22	-0.57	3.17
7,901.00	90.20	358.99	7,261.16	845.73	269.09	653.70	1.55	-1.53	0.24
7,996.00	90.17	359.33	7,260.85	940.72	267.70	740.44	0.36	-0.03	0.36

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Well:	BARCLAY 26N-11HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,090.00	91.41	359.42	7,259.56	1,034.71	266.67	826.11	1.32	1.32	0.10
8,185.00	91.24	359.92	7,257.36	1,129.68	266.12	912.48	0.56	-0.18	0.53
8,373.00	90.77	1.27	7,254.06	1,317.63	268.08	1,082.13	0.76	-0.25	0.72
8,467.00	89.66	1.38	7,253.71	1,411.61	270.25	1,166.44	1.19	-1.18	0.12
8,562.00	90.74	1.50	7,253.38	1,506.58	272.64	1,251.57	1.14	1.14	0.13
8,750.00	89.06	0.16	7,253.71	1,694.54	275.36	1,420.90	1.14	-0.89	-0.71
8,845.00	90.57	0.01	7,254.01	1,789.54	275.50	1,507.00	1.60	1.59	-0.16
8,939.00	89.56	0.04	7,253.91	1,883.54	275.54	1,592.24	1.07	-1.07	0.03
9,033.00	89.66	0.52	7,254.55	1,977.54	276.00	1,677.30	0.52	0.11	0.51
9,128.00	90.17	1.07	7,254.69	2,072.53	277.32	1,762.89	0.79	0.54	0.58
9,222.00	90.30	0.49	7,254.30	2,166.52	278.60	1,847.60	0.63	0.14	-0.62
9,316.00	89.66	0.71	7,254.33	2,260.51	279.58	1,932.43	0.72	-0.68	0.23
9,410.00	89.77	359.61	7,254.80	2,354.51	279.85	2,017.58	1.18	0.12	-1.17
9,504.00	90.74	0.33	7,254.38	2,448.50	279.80	2,102.85	1.29	1.03	0.77
9,596.00	90.50	359.35	7,253.39	2,540.50	279.54	2,186.39	1.10	-0.26	-1.07
9,687.00	89.97	0.03	7,253.01	2,631.49	279.05	2,269.13	0.95	-0.58	0.75
9,779.00	89.30	359.52	7,253.60	2,723.49	278.69	2,352.72	0.92	-0.73	-0.55
9,871.00	89.93	359.01	7,254.22	2,815.48	277.51	2,436.65	0.88	0.68	-0.55
9,963.00	90.64	359.65	7,253.76	2,907.47	276.43	2,520.53	1.04	0.77	0.70
10,055.00	91.38	0.20	7,252.14	2,999.46	276.31	2,604.01	1.00	0.80	0.60
10,147.00	91.48	359.99	7,249.84	3,091.43	276.46	2,687.36	0.25	0.11	-0.23
10,238.00	91.48	359.96	7,247.49	3,182.40	276.42	2,769.88	0.03	0.00	-0.03
10,330.00	91.51	0.17	7,245.09	3,274.37	276.53	2,853.25	0.23	0.03	0.23
10,422.00	89.97	1.42	7,243.90	3,366.35	277.80	2,936.13	2.16	-1.67	1.36
10,513.00	89.56	1.84	7,244.28	3,457.31	280.39	3,017.54	0.64	-0.45	0.46
10,604.00	89.56	0.32	7,244.98	3,548.29	282.11	3,099.34	1.67	0.00	-1.67
10,696.00	87.85	0.74	7,247.06	3,640.25	282.96	3,182.39	1.91	-1.86	0.46
10,790.00	89.70	0.02	7,249.07	3,734.23	283.58	3,267.36	2.11	1.97	-0.77
10,885.00	89.60	358.92	7,249.65	3,829.22	282.70	3,353.88	1.16	-0.11	-1.16
10,979.00	89.53	359.20	7,250.36	3,923.20	281.16	3,439.77	0.31	-0.07	0.30
11,073.00	90.94	359.15	7,249.97	4,017.19	279.81	3,525.58	1.50	1.50	-0.05
11,167.00	91.24	359.07	7,248.19	4,111.16	278.35	3,611.43	0.33	0.32	-0.09
11,262.00	89.87	359.47	7,247.27	4,206.15	277.14	3,698.08	1.50	-1.44	0.42
11,356.00	89.16	0.19	7,248.06	4,300.14	276.86	3,783.45	1.08	-0.76	0.77
11,450.00	89.13	0.60	7,249.46	4,394.13	277.51	3,868.42	0.44	-0.03	0.44
11,545.00	89.77	0.56	7,250.38	4,489.12	278.47	3,954.17	0.67	0.67	-0.04
11,639.00	90.13	0.86	7,250.46	4,583.11	279.63	4,038.93	0.50	0.38	0.32
11,733.00	90.00	0.75	7,250.35	4,677.10	280.95	4,123.62	0.18	-0.14	-0.12
11,921.00	90.60	359.17	7,249.37	4,865.09	280.82	4,294.17	0.90	0.32	-0.84
12,015.00	90.91	359.85	7,248.13	4,959.08	280.02	4,379.75	0.79	0.33	0.72
12,110.00	90.91	359.32	7,246.62	5,054.07	279.33	4,466.19	0.56	0.00	-0.56
12,204.00	90.87	359.91	7,245.16	5,148.05	278.70	4,551.70	0.63	-0.04	0.63
12,298.00	90.44	0.90	7,244.08	5,242.04	279.36	4,636.67	1.15	-0.46	1.05

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well BARCLAY 26N-11HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 4908 & KB 25 @ 4933.00ft (HP 311)
Site:	BARCLAY 16-14HZ PAD	MD Reference:	GL 4908 & KB 25 @ 4933.00ft (HP 311)
Well:	BARCLAY 26N-11HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,393.00	90.84	1.51	7,243.02	5,337.02	281.36	4,721.96	0.77	0.42	0.64
12,487.00	90.91	1.34	7,241.59	5,430.98	283.70	4,806.19	0.20	0.07	-0.18
12,581.00	90.97	0.42	7,240.05	5,524.95	285.14	4,890.82	0.98	0.06	-0.98
12,675.00	90.27	359.61	7,239.03	5,618.94	285.17	4,976.06	1.14	-0.74	-0.86
12,769.00	89.70	0.07	7,239.05	5,712.94	284.90	5,061.42	0.78	-0.61	0.49
12,863.00	90.20	359.19	7,239.14	5,806.94	284.30	5,146.93	1.08	0.53	-0.94
12,957.00	90.03	359.42	7,238.95	5,900.93	283.16	5,232.66	0.30	-0.18	0.24
13,052.00	89.93	359.09	7,238.98	5,995.92	281.92	5,319.33	0.36	-0.11	-0.35
13,146.00	90.17	359.31	7,238.90	6,089.91	280.61	5,405.13	0.35	0.26	0.23
13,240.00	90.91	0.06	7,238.01	6,183.91	280.09	5,490.59	1.12	0.79	0.80
13,334.00	90.44	0.23	7,236.90	6,277.90	280.33	5,575.74	0.53	-0.50	0.18
13,428.00	90.34	0.35	7,236.26	6,371.90	280.81	5,660.79	0.17	-0.11	0.13
13,522.00	90.87	0.92	7,235.27	6,465.89	281.85	5,745.60	0.83	0.56	0.61
13,617.00	90.17	1.16	7,234.41	6,560.87	283.57	5,831.02	0.78	-0.74	0.25
13,711.00	89.97	1.74	7,234.29	6,654.83	285.95	5,915.24	0.65	-0.21	0.62
13,805.00	89.77	0.95	7,234.51	6,748.81	288.16	5,999.54	0.87	-0.21	-0.84
13,899.00	89.66	1.22	7,234.98	6,842.79	289.94	6,084.03	0.31	-0.12	0.29
13,992.00	91.14	0.75	7,234.33	6,935.77	291.53	6,167.69	1.67	1.59	-0.51
14,086.00	89.53	1.43	7,233.78	7,029.75	293.32	6,252.17	1.86	-1.71	0.72
14,181.00	89.73	1.26	7,234.39	7,124.72	295.55	6,337.36	0.28	0.21	-0.18
14,275.00	90.27	359.96	7,234.39	7,218.71	296.55	6,422.19	1.50	0.57	-1.38
14,369.00	90.34	359.83	7,233.89	7,312.71	296.38	6,507.52	0.16	0.07	-0.14
14,464.00	89.13	358.98	7,234.33	7,407.70	295.39	6,594.08	1.56	-1.27	-0.89
14,558.00	89.60	358.87	7,235.37	7,501.68	293.63	6,680.06	0.51	0.50	-0.12
14,652.00	89.56	358.73	7,236.06	7,595.66	291.66	6,766.12	0.15	-0.04	-0.15
14,747.00	91.07	358.46	7,235.54	7,690.62	289.33	6,853.24	1.61	1.59	-0.28
14,841.00	91.84	358.47	7,233.15	7,784.56	286.82	6,939.49	0.82	0.82	0.01
14,936.00	90.70	358.31	7,231.05	7,879.50	284.15	7,026.72	1.21	-1.20	-0.17
15,030.00	90.84	357.81	7,229.78	7,973.43	280.97	7,113.26	0.55	0.15	-0.53
15,124.00	90.40	358.41	7,228.77	8,067.38	277.87	7,199.77	0.79	-0.47	0.64
15,218.00	89.87	359.02	7,228.54	8,161.35	275.76	7,285.89	0.86	-0.56	0.65
15,313.00	90.34	358.48	7,228.37	8,256.33	273.69	7,372.90	0.75	0.49	-0.57
15,407.00	90.60	0.04	7,227.60	8,350.31	272.47	7,458.65	1.68	0.28	1.66
15,502.00	90.54	359.64	7,226.65	8,445.31	272.21	7,544.92	0.43	-0.06	-0.42
15,596.00	90.94	358.88	7,225.44	8,539.29	270.99	7,630.67	0.91	0.43	-0.81
15,690.00	91.21	0.06	7,223.68	8,633.27	270.12	7,716.27	1.29	0.29	1.26
15,785.00	89.46	0.26	7,223.12	8,728.26	270.39	7,802.32	1.85	-1.84	0.21
15,879.00	89.23	0.27	7,224.19	8,822.26	270.82	7,887.38	0.24	-0.24	0.01
15,974.00	89.87	0.49	7,224.94	8,917.25	271.45	7,973.27	0.71	0.67	0.23
16,069.00	89.83	0.33	7,225.19	9,012.25	272.13	8,059.15	0.17	-0.04	-0.17
16,163.00	89.73	0.47	7,225.55	9,106.25	272.79	8,144.12	0.18	-0.11	0.15
16,257.00	90.00	0.10	7,225.77	9,200.24	273.26	8,229.18	0.49	0.29	-0.39
16,352.00	89.93	359.67	7,225.83	9,295.24	273.07	8,315.42	0.46	-0.07	-0.45
16,446.00	90.03	359.87	7,225.86	9,389.24	272.69	8,400.83	0.24	0.11	0.21

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well BARCLAY 26N-11HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 4908 & KB 25 @ 4933.00ft (HP 311)
Site:	BARCLAY 16-14HZ PAD	MD Reference:	GL 4908 & KB 25 @ 4933.00ft (HP 311)
Well:	BARCLAY 26N-11HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
16,540.00	90.54	0.94	7,225.40	9,483.24	273.35	8,485.80	1.26	0.54	1.14	
16,605.00	90.10	0.56	7,225.03	9,548.23	274.20	8,544.39	0.89	-0.68	-0.58	
LAST SDI MWD PRODUCTION SURVEY										
16,664.00	90.10	0.56	7,224.93	9,607.23	274.78	8,597.65	0.00	0.00	0.00	
SDI PROJECTION TO TD(490 FNL 309 FEL)										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,348.00	1,347.95	9 5/8"	9.625	13.500	
7,541.00	7,266.65	7"(930 FSL 258 FEL)	7.000	8.750	

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
99.00	99.00	-0.06	-0.34	FIRST CATHEDRAL MWD SURFACE SURVEY	
1,322.00	1,321.95	1.61	-0.75	LAST CATHEDRAL MWD SURFACE	
1,447.00	1,446.95	1.93	-0.94	FIRST SDI MWD PRODUCTION SURVEY	
16,605.00	7,225.03	9,548.23	274.20	LAST SDI MWD PRODUCTION SURVEY	
16,664.00	7,224.93	9,607.23	274.78	SDI PROJECTION TO TD(490 FNL 309 FEL)	

Checked By: _____ Approved By: _____ Date: _____