



Weatherford®

Weatherford
2000 Oil Drive
Casper, WY 82604

Survey Certification

Operating Company:	Anadarko Petroleum Corp.
Well Name:	REIGLE 3N-4HZ
State:	CO
County:	WELD
API Number:	512336137
Datum:	NAD 83
Survey Calculation Method:	Minimum Curvature
North Reference:	True North

I, J. Aaron Underwood, hereby certify the attached
directional survey run from the measure depth of 942.00 feet
to the measured depth of 11,000.00 feet as accurate and true
to the best of my knowledge.

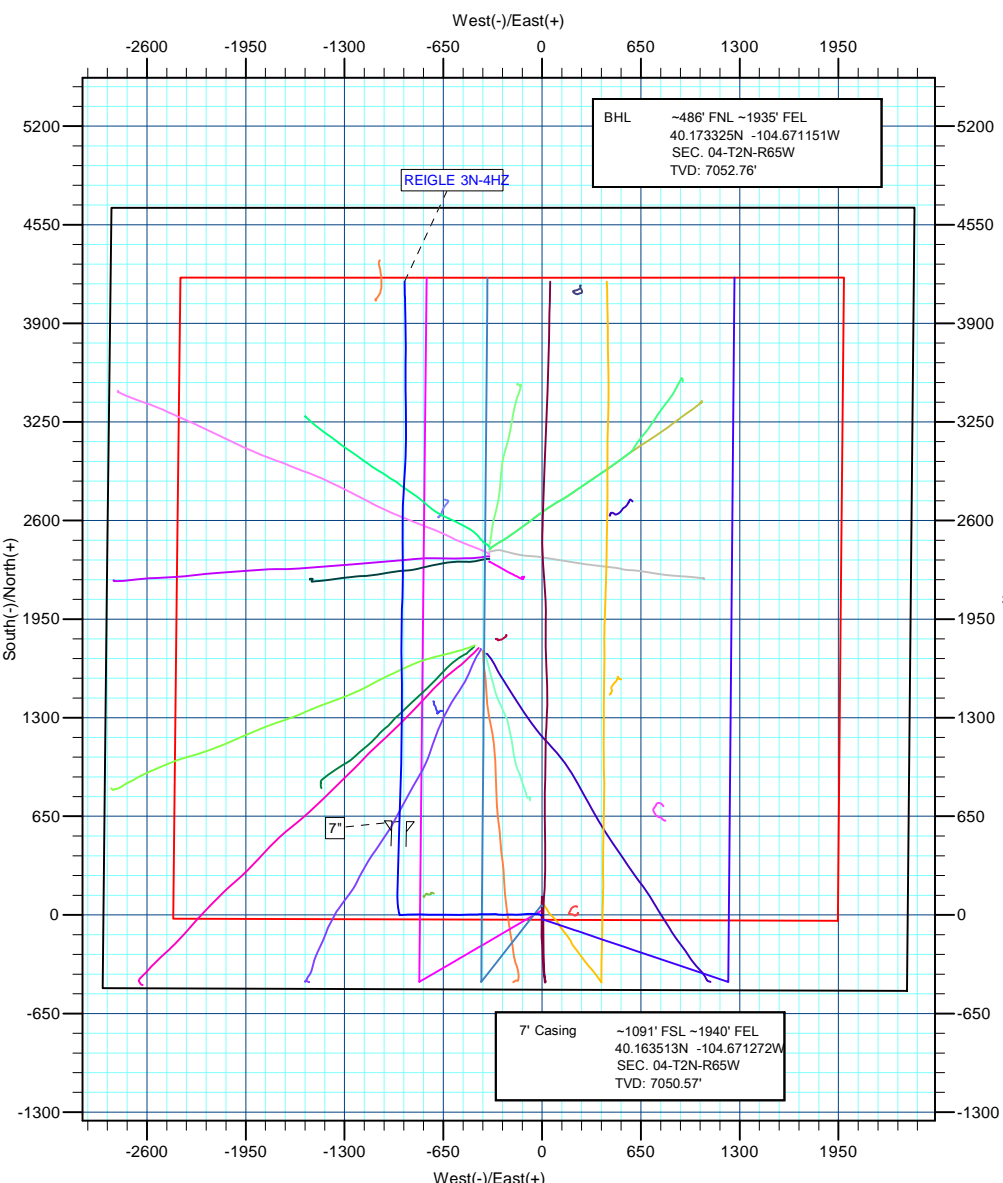
Signature

17-Dec-12

Date

J. Aaron Underwood

Directional Planning
Weatherford - Rockies District



Azimuths to True North
Magnetic North: 8.62°
Magnetic Field
Strength: 52881.4snT
Dip Angle: 66.83°
Date: 9/25/2012
Model: IGRF2010

Project: COLORADO NORTHERN ZONE - 83
Site: WELD REIGLE 15-4HZ PAD
Well: REIGLE 3N-4HZ
Wellbore: REIGLE 3N-4HZ
Design: REIGLE 3N-4HZ
Latitude: 40.161863
Longitude: -104.667912
GL: 4858.00
KB: GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)

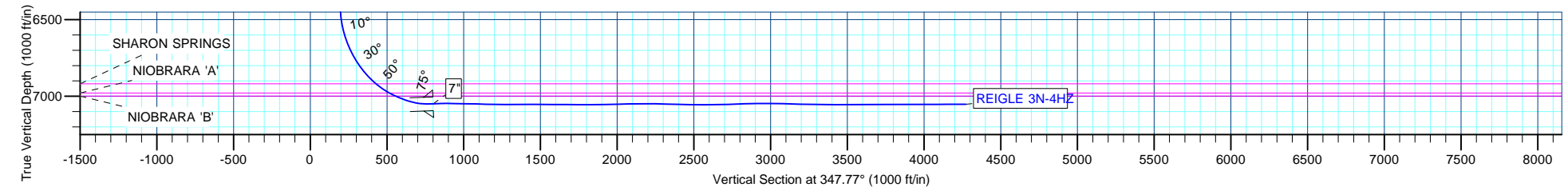
WELL DETAILS: REIGLE 3N-4HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4858.00 Latitude	Longitude	Slot
0.00	0.00	1302900.93	3232555.74	40.161863	-104.667912	

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation	
844.98	845.00	0.03	197.45	-2.04	-3.88	-1.17	5.11	TIE ON	
941.98	942.00	0.84	207.10	-2.70	-4.21	-1.74	5.85	FIRST MWD SURVEY	
7050.57	7478.00	91.36	2.06	601.05	-939.06	786.36	1548.25	7 IN. CASING	
7052.51	11000.00	89.74	358.25	4121.53	-903.51	4219.39	5069.72	LAST MWD SURVEY	
7052.76	11054.00	89.74	358.25	4175.50	-905.16	4272.49	5123.72	PROJECTION TO TD	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)							
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape	
REIGLE 3N-4HZ PBHL	7054.00	4201.30	-895.60	40.173396	-104.671117	Point	

FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	
3850.00	3899.02	PARKMAN	
4441.00	4502.66	SUSSEX	
6919.00	7078.31	SHARON SPRINGS	
6979.00	7187.84	NIOBRARA 'A'	
6999.00	7233.67	NIOBRARA 'B'	

CASING DETAILS			
TVD	MD	Name	Size
7050.57	7478.00	7"	7



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_REIGLE 15-4HZ PAD

REIGLE 3N-4HZ

REIGLE 3N-4HZ

Design: REIGLE 3N-4HZ

Standard Survey Report

17 December, 2012

Andarko Petroleum Corporation

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well REIGLE 3N-4HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Site:	WELD_REIGLE 15-4HZ PAD	MD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Well:	REIGLE 3N-4HZ	North Reference:	True
Wellbore:	REIGLE 3N-4HZ	Survey Calculation Method:	Minimum Curvature
Design:	REIGLE 3N-4HZ	Database:	edmp

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_REIGLE 15-4HZ PAD			
Site Position:		Northing:	1,303,020.80 usft	Latitude:	40.162192
From:	Lat/Long	Easting:	3,232,556.30 usft	Longitude:	-104.667906
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54 °

Well	REIGLE 3N-4HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,302,900.92 usft	Latitude:	40.161863
	+E/-W	0.00 ft	Easting:	3,232,555.75 usft	Longitude:	-104.667912
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,858.00 ft

Wellbore	REIGLE 3N-4HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/25/2012	8.62	66.83	52,881

Design	REIGLE 3N-4HZ				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	16.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	16.00	0.00	0.00	347.77	

Survey Program	Date	12/12/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
116.00	845.00	Survey #1 (REIGLE 3N-4HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
942.00	11,054.00	Survey #2 (REIGLE 3N-4HZ)	MWD	MWD - STANDARD	

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)	
16.00	0.00	0.00	16.00	0.00	0.00	0.00	0.00	0.00	0.00	
116.00	0.67	245.96	116.00	-0.24	-0.53	-0.12	0.67	0.67	0.00	
216.00	0.50	250.45	215.99	-0.62	-1.48	-0.29	0.18	-0.17	4.49	
316.00	0.46	262.25	315.99	-0.82	-2.29	-0.32	0.11	-0.04	11.80	
416.00	0.11	248.55	415.99	-0.91	-2.78	-0.30	0.35	-0.35	-13.70	
516.00	0.42	257.88	515.99	-1.02	-3.22	-0.32	0.31	0.31	9.33	
616.00	0.21	160.57	615.99	-1.27	-3.52	-0.50	0.49	-0.21	-97.31	
716.00	0.29	255.06	715.98	-1.51	-3.70	-0.69	0.37	0.08	94.49	

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Survey Report

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Site:	WELD_REIGLE 15-4HZ PAD	MD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Well:	REIGLE 3N-4HZ	North Reference:	True
Wellbore:	REIGLE 3N-4HZ	Survey Calculation Method:	Minimum Curvature
Design:	REIGLE 3N-4HZ	Database:	edmp

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)
816.00	0.41	170.81	815.98	-1.93	-3.89	-1.06	0.48	0.12	-84.25
845.00	0.03	197.45	844.98	-2.04	-3.88	-1.17	1.32	-1.31	91.86
TIE ON									
942.00	0.84	207.10	941.98	-2.70	-4.21	-1.74	0.84	0.84	9.95
FIRST MWD SURVEY									
1,031.00	0.72	207.78	1,030.97	-3.77	-4.77	-2.68	0.14	-0.13	0.76
1,122.00	1.77	316.31	1,121.96	-3.26	-6.00	-1.92	2.32	1.15	119.26
1,213.00	3.22	316.21	1,212.87	-0.40	-8.74	1.46	1.59	1.59	-0.11
1,302.00	5.36	289.07	1,301.62	2.76	-14.40	5.75	3.25	2.40	-30.49
1,393.00	6.36	267.82	1,392.16	3.96	-23.46	8.84	2.61	1.10	-23.35
1,489.00	7.97	275.05	1,487.40	4.34	-35.40	11.74	1.92	1.68	7.53
1,583.00	9.91	273.66	1,580.26	5.43	-49.97	15.90	2.08	2.06	-1.48
1,676.00	12.54	273.35	1,671.47	6.53	-68.04	20.80	2.83	2.83	-0.33
1,770.00	13.48	267.45	1,763.06	6.64	-89.17	25.38	1.73	1.00	-6.28
1,863.00	12.46	265.20	1,853.69	5.32	-110.00	28.50	1.22	-1.10	-2.42
1,956.00	12.25	265.14	1,944.53	3.65	-129.82	31.07	0.23	-0.23	-0.06
2,048.00	11.25	262.89	2,034.61	1.71	-148.46	33.12	1.20	-1.09	-2.45
2,142.00	11.12	273.23	2,126.83	1.08	-166.61	36.36	2.14	-0.14	11.00
2,235.00	9.86	273.86	2,218.27	2.13	-183.51	40.95	1.36	-1.35	0.68
2,329.00	11.63	271.97	2,310.62	2.99	-201.01	45.51	1.92	1.88	-2.01
2,422.00	12.17	267.29	2,401.63	2.85	-220.17	49.43	1.19	0.58	-5.03
2,516.00	11.23	267.33	2,493.67	1.96	-239.21	52.59	1.00	-1.00	0.04
2,609.00	10.03	268.30	2,585.07	1.29	-256.35	55.58	1.30	-1.29	1.04
2,702.00	10.72	272.35	2,676.55	1.41	-273.09	59.23	1.08	0.74	4.35
2,796.00	11.08	277.98	2,768.86	3.02	-290.77	64.55	1.20	0.38	5.99
2,881.00	12.29	274.95	2,852.10	4.94	-307.87	70.05	1.60	1.42	-3.56
2,967.00	12.77	267.52	2,936.06	5.31	-326.49	74.36	1.95	0.56	-8.64
3,052.00	11.88	267.98	3,019.10	4.60	-344.62	77.50	1.05	-1.05	0.54
3,138.00	11.03	268.79	3,103.38	4.11	-361.69	80.65	1.01	-0.99	0.94
3,223.00	10.25	270.01	3,186.92	3.94	-377.38	83.81	0.96	-0.92	1.44
3,309.00	11.73	271.13	3,271.34	4.12	-393.77	87.45	1.74	1.72	1.30
3,394.00	11.85	266.92	3,354.55	3.82	-411.13	90.83	1.02	0.14	-4.95
3,480.00	10.41	269.31	3,438.93	3.25	-427.71	93.79	1.76	-1.67	2.78
3,565.00	11.47	268.14	3,522.38	2.88	-443.84	96.85	1.27	1.25	-1.38
3,650.00	12.03	269.92	3,605.60	2.60	-461.14	100.24	0.78	0.66	2.09
3,736.00	10.32	269.47	3,689.97	2.51	-477.81	103.68	1.99	-1.99	-0.52
3,821.00	10.70	268.63	3,773.54	2.25	-493.31	106.72	0.48	0.45	-0.99
3,906.00	12.42	268.39	3,856.82	1.81	-510.34	109.89	2.02	2.02	-0.28
3,992.00	12.50	267.92	3,940.79	1.21	-528.89	113.23	0.15	0.09	-0.55
4,077.00	12.15	267.34	4,023.83	0.46	-547.01	116.34	0.44	-0.41	-0.68
4,163.00	10.96	267.86	4,108.09	-0.26	-564.22	119.28	1.39	-1.38	0.60
4,248.00	11.65	270.53	4,191.44	-0.49	-580.88	122.59	1.02	0.81	3.14

Andarko Petroleum Corporation

Survey Report

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Site:	WELD_REIGLE 15-4HZ PAD	MD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Well:	REIGLE 3N-4HZ	North Reference:	True
Wellbore:	REIGLE 3N-4HZ	Survey Calculation Method:	Minimum Curvature
Design:	REIGLE 3N-4HZ	Database:	edmp

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)	
4,333.00	11.86	273.34	4,274.65	0.10	-598.18	126.83	0.72	0.25	3.31	
4,419.00	11.21	274.92	4,358.92	1.33	-615.33	131.67	0.84	-0.76	1.84	
4,504.00	11.12	269.77	4,442.31	2.01	-631.76	135.81	1.18	-0.11	-6.06	
4,590.00	12.70	269.33	4,526.46	1.87	-649.51	139.43	1.84	1.84	-0.51	
4,675.00	12.22	268.85	4,609.45	1.58	-667.85	143.03	0.58	-0.56	-0.56	
4,761.00	11.00	270.10	4,693.69	1.41	-685.15	146.53	1.45	-1.42	1.45	
4,846.00	11.14	271.59	4,777.11	1.65	-701.47	150.23	0.37	0.16	1.75	
4,932.00	12.04	269.33	4,861.36	1.78	-718.74	154.01	1.17	1.05	-2.63	
5,017.00	10.18	267.85	4,944.76	1.39	-735.12	157.10	2.21	-2.19	-1.74	
5,102.00	9.61	271.85	5,028.50	1.34	-749.71	160.14	1.05	-0.67	4.71	
5,188.00	10.78	272.97	5,113.14	1.99	-764.92	164.00	1.38	1.36	1.30	
5,273.00	12.75	271.32	5,196.35	2.61	-782.24	168.28	2.35	2.32	-1.94	
5,359.00	12.91	271.42	5,280.20	3.07	-801.33	172.77	0.19	0.19	0.12	
5,444.00	11.19	272.08	5,363.33	3.61	-819.07	177.05	2.03	-2.02	0.78	
5,529.00	11.08	268.89	5,446.73	3.75	-835.47	180.66	0.74	-0.13	-3.75	
5,615.00	9.31	267.87	5,531.37	3.33	-850.69	183.48	2.07	-2.06	-1.19	
5,700.00	10.13	268.04	5,615.14	2.82	-865.03	186.02	0.97	0.96	0.20	
5,786.00	9.64	268.63	5,699.87	2.39	-879.79	188.72	0.58	-0.57	0.69	
5,871.00	8.20	264.74	5,783.84	1.66	-892.94	190.80	1.84	-1.69	-4.58	
5,957.00	6.58	264.53	5,869.12	0.63	-903.95	192.12	1.88	-1.88	-0.24	
6,042.00	5.40	265.80	5,953.66	-0.13	-912.79	193.26	1.40	-1.39	1.49	
6,127.00	4.34	265.42	6,038.35	-0.68	-919.98	194.24	1.25	-1.25	-0.45	
6,213.00	3.38	263.67	6,124.15	-1.22	-925.75	194.94	1.12	-1.12	-2.03	
6,298.00	2.79	269.66	6,209.03	-1.51	-930.31	195.62	0.79	-0.69	7.05	
6,384.00	2.10	270.67	6,294.95	-1.50	-933.98	196.40	0.80	-0.80	1.17	
6,469.00	1.21	278.58	6,379.91	-1.35	-936.42	197.07	1.08	-1.05	9.31	
6,490.00	1.05	269.71	6,400.91	-1.32	-936.83	197.19	1.13	-0.76	-42.24	
6,522.00	0.74	283.95	6,432.91	-1.27	-937.33	197.34	1.19	-0.97	44.50	
6,607.00	8.77	350.44	6,517.56	5.27	-938.94	204.07	10.00	9.45	78.22	
6,650.00	13.63	346.71	6,559.73	13.43	-940.65	212.41	11.42	11.30	-8.67	
6,692.00	17.00	346.88	6,600.23	24.23	-943.18	223.50	8.02	8.02	0.40	
6,735.00	21.05	350.07	6,640.88	37.97	-945.94	237.51	9.72	9.42	7.42	
6,778.00	24.56	354.63	6,680.51	54.48	-948.11	254.11	9.13	8.16	10.60	
6,820.00	27.30	355.17	6,718.28	72.77	-949.74	272.33	6.55	6.52	1.29	
6,863.00	30.23	356.05	6,755.97	93.40	-951.31	292.82	6.88	6.81	2.05	
6,906.00	34.27	358.35	6,792.33	116.31	-952.41	315.45	9.82	9.40	5.35	
6,948.00	38.19	359.99	6,826.20	141.12	-952.75	339.77	9.61	9.33	3.90	
6,991.00	42.68	0.53	6,858.92	169.01	-952.62	366.99	10.47	10.44	1.26	
7,033.00	46.19	2.11	6,888.91	198.40	-951.93	395.57	8.76	8.36	3.76	
7,076.00	50.34	2.96	6,917.53	230.44	-950.50	426.58	9.76	9.65	1.98	
7,118.00	54.84	2.27	6,943.04	263.76	-948.99	458.82	10.79	10.71	-1.64	
7,161.00	60.22	1.96	6,966.11	300.00	-947.65	493.96	12.53	12.51	-0.72	

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Survey Report

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7,203.00	63.61	1.59	6,985.88	337.03	-946.51	529.91	8.11	8.07	-0.88	
7,245.00	66.54	1.15	7,003.58	375.11	-945.60	566.92	7.04	6.98	-1.05	
7,288.00	69.49	1.23	7,019.68	414.97	-944.77	605.70	6.86	6.86	0.19	
7,331.00	73.90	1.06	7,033.18	455.77	-943.95	645.41	10.26	10.26	-0.40	
7,373.00	79.25	1.94	7,042.93	496.59	-942.88	685.08	12.90	12.74	2.10	
7,416.00	85.23	2.11	7,048.73	539.15	-941.38	726.35	13.91	13.91	0.40	
7,440.00	87.62	2.21	7,050.23	563.09	-940.47	749.55	9.97	9.96	0.42	
7,478.00	91.36	2.06	7,050.57	601.05	-939.06	786.36	9.85	9.84	-0.40	
7 IN. CASING										
7,483.00	91.85	2.04	7,050.43	606.05	-938.88	791.20	9.85	9.84	-0.40	
7,525.00	92.84	1.27	7,048.71	648.00	-937.67	831.94	2.99	2.36	-1.83	
7,611.00	88.77	1.93	7,047.50	733.94	-935.27	915.42	4.79	-4.73	0.77	
7,696.00	88.89	2.02	7,049.24	818.87	-932.34	997.80	0.18	0.14	0.11	
7,782.00	88.77	1.39	7,050.99	904.81	-929.78	1,081.25	0.75	-0.14	-0.73	
7,867.00	88.89	1.24	7,052.73	989.77	-927.83	1,163.87	0.23	0.14	-0.18	
7,953.00	89.32	0.98	7,054.07	1,075.74	-926.16	1,247.54	0.58	0.50	-0.30	
8,038.00	90.31	1.40	7,054.35	1,160.72	-924.40	1,330.22	1.27	1.16	0.49	
8,123.00	90.19	0.61	7,053.97	1,245.71	-922.91	1,412.96	0.94	-0.14	-0.93	
8,209.00	89.88	0.51	7,053.92	1,331.70	-922.07	1,496.82	0.38	-0.36	-0.12	
8,294.00	89.75	359.77	7,054.20	1,416.70	-921.86	1,579.85	0.88	-0.15	-0.87	
8,379.00	89.94	359.91	7,054.43	1,501.70	-922.10	1,662.97	0.28	0.22	0.16	
8,465.00	89.01	358.59	7,055.21	1,587.69	-923.22	1,747.24	1.88	-1.08	-1.53	
8,550.00	90.31	358.96	7,055.72	1,672.67	-925.04	1,830.67	1.59	1.53	0.44	
8,636.00	91.11	0.39	7,054.65	1,758.66	-925.53	1,914.81	1.91	0.93	1.66	
8,721.00	91.23	0.92	7,052.92	1,843.63	-924.55	1,997.66	0.64	0.14	0.62	
8,807.00	91.60	0.36	7,050.79	1,929.60	-923.59	2,081.47	0.78	0.43	-0.65	
8,892.00	90.56	2.20	7,049.19	2,014.56	-921.70	2,164.10	2.49	-1.22	2.16	
8,978.00	89.01	2.29	7,049.51	2,100.49	-918.33	2,247.36	1.81	-1.80	0.10	
9,063.00	88.15	0.86	7,051.62	2,185.43	-915.99	2,329.88	1.96	-1.01	-1.68	
9,148.00	89.20	359.36	7,053.59	2,270.40	-915.83	2,412.89	2.15	1.24	-1.76	
9,234.00	88.64	359.50	7,055.21	2,356.38	-916.68	2,497.10	0.67	-0.65	0.16	
9,319.00	90.25	359.48	7,056.03	2,441.37	-917.44	2,580.32	1.89	1.89	-0.02	
9,404.00	91.29	0.59	7,054.89	2,526.36	-917.39	2,663.37	1.79	1.22	1.31	
9,490.00	91.54	359.89	7,052.76	2,612.33	-917.03	2,747.31	0.86	0.29	-0.81	
9,575.00	92.35	2.03	7,049.88	2,697.27	-915.61	2,830.02	2.69	0.95	2.52	
9,660.00	91.11	3.51	7,047.31	2,782.13	-911.50	2,912.08	2.27	-1.46	1.74	
9,746.00	89.01	2.93	7,047.22	2,867.98	-906.67	2,994.97	2.53	-2.44	-0.67	
9,831.00	89.01	2.98	7,048.69	2,952.86	-902.29	3,076.99	0.06	0.00	0.06	
9,917.00	88.46	2.17	7,050.59	3,038.75	-898.43	3,160.11	1.14	-0.64	-0.94	
10,002.00	87.80	0.72	7,053.36	3,123.67	-896.28	3,242.65	1.87	-0.78	-1.71	
10,087.00	90.25	0.56	7,054.81	3,208.65	-895.33	3,325.50	2.89	2.88	-0.19	
10,173.00	89.12	359.31	7,055.28	3,294.65	-895.43	3,409.56	1.96	-1.31	-1.45	

Andarko Petroleum Corporation

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well REIGLE 3N-4HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Site:	WELD_REIGLE 15-4HZ PAD	MD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Well:	REIGLE 3N-4HZ	North Reference:	True
Wellbore:	REIGLE 3N-4HZ	Survey Calculation Method:	Minimum Curvature
Design:	REIGLE 3N-4HZ	Database:	edmp

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)	
10,258.00	90.12	358.40	7,055.85	3,379.63	-897.13	3,492.97	1.59	1.18	-1.07	
10,344.00	90.49	0.24	7,055.39	3,465.61	-898.15	3,577.23	2.18	0.43	2.14	
10,429.00	90.31	359.47	7,054.80	3,550.61	-898.37	3,660.34	0.93	-0.21	-0.91	
10,514.00	90.31	0.72	7,054.34	3,635.61	-898.22	3,743.38	1.47	0.00	1.47	
10,600.00	90.19	0.31	7,053.96	3,721.60	-897.45	3,827.26	0.50	-0.14	-0.48	
10,685.00	90.12	359.55	7,053.73	3,806.60	-897.56	3,910.35	0.90	-0.08	-0.89	
10,771.00	90.43	359.18	7,053.32	3,892.60	-898.51	3,994.59	0.56	0.36	-0.43	
10,856.00	89.74	357.90	7,053.19	3,977.57	-900.67	4,078.09	1.71	-0.81	-1.51	
10,942.00	90.80	359.70	7,052.79	4,063.54	-902.48	4,162.50	2.43	1.23	2.09	
11,000.00	89.74	358.25	7,052.51	4,121.53	-903.51	4,219.39	3.10	-1.83	-2.50	
LAST MWD SURVEY										
11,054.00	89.74	358.25	7,052.76	4,175.50	-905.16	4,272.49	0.00	0.00	0.00	
PROJECTION TO TD										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
845.00	844.98	-2.04	-3.88	TIE ON	
942.00	941.98	-2.70	-4.21	FIRST MWD SURVEY	
7,478.00	7,050.57	601.05	-939.06	7 IN. CASING	
11,000.00	7,052.51	4,121.53	-903.51	LAST MWD SURVEY	
11,054.00	7,052.76	4,175.50	-905.16	PROJECTION TO TD	

Checked By: _____ Approved By: _____ Date: _____

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_REIGLE 15-4HZ PAD

REIGLE 3N-4HZ

REIGLE 3N-4HZ

Design: REIGLE 3N-4HZ

Survey Report - Geographic

17 December, 2012

Andarko Petroleum Corporation

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well REIGLE 3N-4HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Site:	WELD_REIGLE 15-4HZ PAD	MD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Well:	REIGLE 3N-4HZ	North Reference:	True
Wellbore:	REIGLE 3N-4HZ	Survey Calculation Method:	Minimum Curvature
Design:	REIGLE 3N-4HZ	Database:	edmp

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_REIGLE 15-4HZ PAD			
Site Position:		Northing:	1,303,020.80 usft	Latitude:	40.162192
From:	Lat/Long	Easting:	3,232,556.30 usft	Longitude:	-104.667906
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54 °

Well		REIGLE 3N-4HZ				
Well Position	+N/-S	0.00 ft	Northing:	1,302,900.92 usft	Latitude:	40.161863
	+E/-W	0.00 ft	Easting:	3,232,555.75 usft	Longitude:	-104.667912
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,858.00 ft

Wellbore	REIGLE 3N-4HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/25/2012	8.62	66.83	52,881

Design	REIGLE 3N-4HZ				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	16.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	16.00	0.00	0.00	347.77	

Survey Program	Date	12/12/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
116.00	845.00	Survey #1 (REIGLE 3N-4HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
942.00	11,054.00	Survey #2 (REIGLE 3N-4HZ)	MWD	MWD - STANDARD	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
16.00	0.00	0.00	16.00	0.00	0.00	1,302,900.92	3,232,555.75	40.161863	-104.667912	
116.00	0.67	245.96	116.00	-0.24	-0.53	1,302,900.68	3,232,555.21	40.161862	-104.667914	
216.00	0.50	250.45	215.99	-0.62	-1.48	1,302,900.29	3,232,554.27	40.161861	-104.667918	
316.00	0.46	262.25	315.99	-0.82	-2.29	1,302,900.08	3,232,553.47	40.161861	-104.667920	
416.00	0.11	248.55	415.99	-0.91	-2.78	1,302,899.99	3,232,552.98	40.161861	-104.667922	
516.00	0.42	257.88	515.99	-1.02	-3.22	1,302,899.87	3,232,552.53	40.161860	-104.667924	
616.00	0.21	160.57	615.99	-1.27	-3.52	1,302,899.62	3,232,552.24	40.161860	-104.667925	
716.00	0.29	255.06	715.98	-1.51	-3.70	1,302,899.38	3,232,552.06	40.161859	-104.667926	
816.00	0.41	170.81	815.98	-1.93	-3.89	1,302,898.96	3,232,551.87	40.161858	-104.667926	

Andarko Petroleum Corporation

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well REIGLE 3N-4HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Site:	WELD_REIGLE 15-4HZ PAD	MD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Well:	REIGLE 3N-4HZ	North Reference:	True
Wellbore:	REIGLE 3N-4HZ	Survey Calculation Method:	Minimum Curvature
Design:	REIGLE 3N-4HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
845.00	0.03	197.45	844.98	-2.04	-3.88	1,302,898.85	3,232,551.89	40.161857	-104.667926
TIE ON									
942.00	0.84	207.10	941.98	-2.70	-4.21	1,302,898.19	3,232,551.56	40.161856	-104.667927
FIRST MWD SURVEY									
1,031.00	0.72	207.78	1,030.97	-3.77	-4.77	1,302,897.11	3,232,551.02	40.161853	-104.667929
1,122.00	1.77	316.31	1,121.96	-3.26	-6.00	1,302,897.61	3,232,549.77	40.161854	-104.667934
1,213.00	3.22	316.21	1,212.87	-0.40	-8.74	1,302,900.44	3,232,547.01	40.161862	-104.667944
1,302.00	5.36	289.07	1,301.62	2.76	-14.40	1,302,903.55	3,232,541.32	40.161871	-104.667964
1,393.00	6.36	267.82	1,392.16	3.96	-23.46	1,302,904.66	3,232,532.25	40.161874	-104.667996
1,489.00	7.97	275.05	1,487.40	4.34	-35.40	1,302,904.94	3,232,520.31	40.161875	-104.668039
1,583.00	9.91	273.66	1,580.26	5.43	-49.97	1,302,905.89	3,232,505.73	40.161878	-104.668091
1,676.00	12.54	273.35	1,671.47	6.53	-68.04	1,302,906.82	3,232,487.65	40.161881	-104.668156
1,770.00	13.48	267.45	1,763.06	6.64	-89.17	1,302,906.73	3,232,466.52	40.161881	-104.668231
1,863.00	12.46	265.20	1,853.69	5.32	-110.00	1,302,905.21	3,232,445.71	40.161878	-104.668306
1,956.00	12.25	265.14	1,944.53	3.65	-129.82	1,302,903.35	3,232,425.89	40.161873	-104.668377
2,048.00	11.25	262.89	2,034.61	1.71	-148.46	1,302,901.24	3,232,407.28	40.161868	-104.668443
2,142.00	11.12	273.23	2,126.83	1.08	-166.61	1,302,900.44	3,232,389.14	40.161866	-104.668508
2,235.00	9.86	273.86	2,218.27	2.13	-183.51	1,302,901.33	3,232,372.23	40.161869	-104.668569
2,329.00	11.63	271.97	2,310.62	2.99	-201.01	1,302,902.03	3,232,354.72	40.161871	-104.668631
2,422.00	12.17	267.29	2,401.63	2.85	-220.17	1,302,901.71	3,232,335.56	40.161871	-104.668700
2,516.00	11.23	267.33	2,493.67	1.96	-239.21	1,302,900.64	3,232,316.53	40.161868	-104.668768
2,609.00	10.03	268.30	2,585.07	1.29	-256.35	1,302,899.81	3,232,299.40	40.161867	-104.668829
2,702.00	10.72	272.35	2,676.55	1.41	-273.09	1,302,899.77	3,232,282.66	40.161867	-104.668889
2,796.00	11.08	277.98	2,768.86	3.02	-290.77	1,302,901.22	3,232,264.96	40.161871	-104.668953
2,881.00	12.29	274.95	2,852.10	4.94	-307.87	1,302,902.97	3,232,247.84	40.161877	-104.669014
2,967.00	12.77	267.52	2,936.06	5.31	-326.49	1,302,903.18	3,232,229.23	40.161878	-104.669080
3,052.00	11.88	267.98	3,019.10	4.60	-344.62	1,302,902.29	3,232,211.10	40.161876	-104.669145
3,138.00	11.03	268.79	3,103.38	4.11	-361.69	1,302,901.64	3,232,194.04	40.161874	-104.669206
3,223.00	10.25	270.01	3,186.92	3.94	-377.38	1,302,901.33	3,232,178.35	40.161874	-104.669263
3,309.00	11.73	271.13	3,271.34	4.12	-393.77	1,302,901.35	3,232,161.95	40.161874	-104.669321
3,394.00	11.85	266.92	3,354.55	3.82	-411.13	1,302,900.89	3,232,144.60	40.161874	-104.669383
3,480.00	10.41	269.31	3,438.93	3.25	-427.71	1,302,900.16	3,232,128.02	40.161872	-104.669443
3,565.00	11.47	268.14	3,522.38	2.88	-443.84	1,302,899.64	3,232,111.90	40.161871	-104.669500
3,650.00	12.03	269.92	3,605.60	2.60	-461.14	1,302,899.19	3,232,094.60	40.161870	-104.669562
3,736.00	10.32	269.47	3,689.97	2.51	-477.81	1,302,898.95	3,232,077.93	40.161870	-104.669622
3,821.00	10.70	268.63	3,773.54	2.25	-493.31	1,302,898.55	3,232,062.44	40.161869	-104.669677
3,906.00	12.42	268.39	3,856.82	1.81	-510.34	1,302,897.94	3,232,045.41	40.161868	-104.669738
3,992.00	12.50	267.92	3,940.79	1.21	-528.89	1,302,897.17	3,232,026.87	40.161866	-104.669805
4,077.00	12.15	267.34	4,023.83	0.46	-547.01	1,302,896.25	3,232,008.75	40.161864	-104.669869
4,163.00	10.96	267.86	4,108.09	-0.26	-564.22	1,302,895.37	3,231,991.55	40.161862	-104.669931
4,248.00	11.65	270.53	4,191.44	-0.49	-580.88	1,302,894.99	3,231,974.90	40.161862	-104.669991
4,333.00	11.86	273.34	4,274.65	0.10	-598.18	1,302,895.41	3,231,957.59	40.161863	-104.670053
4,419.00	11.21	274.92	4,358.92	1.33	-615.33	1,302,896.49	3,231,940.43	40.161867	-104.670114
4,504.00	11.12	269.77	4,442.31	2.01	-631.76	1,302,897.01	3,231,923.99	40.161869	-104.670173
4,590.00	12.70	269.33	4,526.46	1.87	-649.51	1,302,896.70	3,231,906.25	40.161868	-104.670236
4,675.00	12.22	268.85	4,609.45	1.58	-667.85	1,302,896.23	3,231,887.92	40.161867	-104.670302
4,761.00	11.00	270.10	4,693.69	1.41	-685.15	1,302,895.90	3,231,870.61	40.161867	-104.670364
4,846.00	11.14	271.59	4,777.11	1.65	-701.47	1,302,895.99	3,231,854.29	40.161868	-104.670422
4,932.00	12.04	269.33	4,861.36	1.78	-718.74	1,302,895.96	3,231,837.02	40.161868	-104.670484
5,017.00	10.18	267.85	4,944.76	1.39	-735.12	1,302,895.42	3,231,820.65	40.161867	-104.670542
5,102.00	9.61	271.85	5,028.50	1.34	-749.71	1,302,895.23	3,231,806.06	40.161867	-104.670595
5,188.00	10.78	272.97	5,113.14	1.99	-764.92	1,302,895.73	3,231,790.84	40.161868	-104.670649
5,273.00	12.75	271.32	5,196.35	2.61	-782.24	1,302,896.20	3,231,773.52	40.161870	-104.670711

Andarko Petroleum Corporation

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well REIGLE 3N-4HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Site:	WELD_REIGLE 15-4HZ PAD	MD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Well:	REIGLE 3N-4HZ	North Reference:	True
Wellbore:	REIGLE 3N-4HZ	Survey Calculation Method:	Minimum Curvature
Design:	REIGLE 3N-4HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,359.00	12.91	271.42	5,280.20	3.07	-801.33	1,302,896.48	3,231,754.43	40.161871	-104.670779
5,444.00	11.19	272.08	5,363.33	3.61	-819.07	1,302,896.84	3,231,736.68	40.161873	-104.670843
5,529.00	11.08	268.89	5,446.73	3.75	-835.47	1,302,896.83	3,231,720.28	40.161873	-104.670902
5,615.00	9.31	267.87	5,531.37	3.33	-850.69	1,302,896.27	3,231,705.07	40.161872	-104.670956
5,700.00	10.13	268.04	5,615.14	2.82	-865.03	1,302,895.62	3,231,690.73	40.161871	-104.671007
5,786.00	9.64	268.63	5,699.87	2.39	-879.79	1,302,895.05	3,231,675.98	40.161870	-104.671060
5,871.00	8.20	264.74	5,783.84	1.66	-892.94	1,302,894.21	3,231,662.83	40.161868	-104.671107
5,957.00	6.58	264.53	5,869.12	0.63	-903.95	1,302,893.07	3,231,651.83	40.161865	-104.671147
6,042.00	5.40	265.80	5,953.66	-0.13	-912.79	1,302,892.23	3,231,643.00	40.161863	-104.671178
6,127.00	4.34	265.42	6,038.35	-0.68	-919.98	1,302,891.61	3,231,635.81	40.161861	-104.671204
6,213.00	3.38	263.67	6,124.15	-1.22	-925.75	1,302,891.02	3,231,630.05	40.161860	-104.671225
6,298.00	2.79	269.66	6,209.03	-1.51	-930.31	1,302,890.69	3,231,625.50	40.161859	-104.671241
6,384.00	2.10	270.67	6,294.95	-1.50	-933.98	1,302,890.66	3,231,621.83	40.161859	-104.671254
6,469.00	1.21	278.58	6,379.91	-1.35	-936.42	1,302,890.79	3,231,619.38	40.161859	-104.671263
6,490.00	1.05	269.71	6,400.91	-1.32	-936.83	1,302,890.82	3,231,618.97	40.161859	-104.671264
6,522.00	0.74	283.95	6,432.91	-1.27	-937.33	1,302,890.86	3,231,618.48	40.161860	-104.671266
6,607.00	8.77	350.44	6,517.56	5.27	-938.94	1,302,897.38	3,231,616.80	40.161877	-104.671272
6,650.00	13.63	346.71	6,559.73	13.43	-940.65	1,302,905.53	3,231,615.02	40.161900	-104.671278
6,692.00	17.00	346.88	6,600.23	24.23	-943.18	1,302,916.31	3,231,612.38	40.161930	-104.671287
6,735.00	21.05	350.07	6,640.88	37.97	-945.94	1,302,930.01	3,231,609.49	40.161967	-104.671297
6,778.00	24.56	354.63	6,680.51	54.48	-948.11	1,302,946.50	3,231,607.17	40.162013	-104.671305
6,820.00	27.30	355.17	6,718.28	72.77	-949.74	1,302,964.78	3,231,605.37	40.162063	-104.671310
6,863.00	30.23	356.05	6,755.97	93.40	-951.31	1,302,985.39	3,231,603.60	40.162119	-104.671316
6,906.00	34.27	358.35	6,792.33	116.31	-952.41	1,303,008.29	3,231,602.29	40.162182	-104.671320
6,948.00	38.19	359.99	6,826.20	141.12	-952.75	1,303,033.10	3,231,601.72	40.162250	-104.671321
6,991.00	42.68	0.53	6,858.92	169.01	-952.62	1,303,060.98	3,231,601.59	40.162327	-104.671321
7,033.00	46.19	2.11	6,888.91	198.40	-951.93	1,303,090.38	3,231,602.00	40.162408	-104.671318
7,076.00	50.34	2.96	6,917.53	230.44	-950.50	1,303,122.44	3,231,603.13	40.162496	-104.671313
7,118.00	54.84	2.27	6,943.04	263.76	-948.99	1,303,155.77	3,231,604.33	40.162587	-104.671308
7,161.00	60.22	1.96	6,966.11	300.00	-947.65	1,303,192.02	3,231,605.32	40.162687	-104.671303
7,203.00	63.61	1.59	6,985.88	337.03	-946.51	1,303,229.06	3,231,606.12	40.162788	-104.671299
7,245.00	66.54	1.15	7,003.58	375.11	-945.60	1,303,267.14	3,231,606.67	40.162893	-104.671296
7,288.00	69.49	1.23	7,019.68	414.97	-944.77	1,303,307.01	3,231,607.13	40.163002	-104.671293
7,331.00	73.90	1.06	7,033.18	455.77	-943.95	1,303,347.82	3,231,607.56	40.163114	-104.671290
7,373.00	79.25	1.94	7,042.93	496.59	-942.88	1,303,388.65	3,231,608.25	40.163226	-104.671286
7,416.00	85.23	2.11	7,048.73	539.15	-941.38	1,303,431.22	3,231,609.36	40.163343	-104.671281
7,440.00	87.62	2.21	7,050.23	563.09	-940.47	1,303,455.16	3,231,610.03	40.163409	-104.671277
7,478.00	91.36	2.06	7,050.57	601.05	-939.06	1,303,493.14	3,231,611.09	40.163513	-104.671272
7 IN. CASING									
7,483.00	91.85	2.04	7,050.43	606.05	-938.88	1,303,498.14	3,231,611.22	40.163527	-104.671272
7,525.00	92.84	1.27	7,048.71	648.00	-937.67	1,303,540.09	3,231,612.04	40.163642	-104.671267
7,611.00	88.77	1.93	7,047.50	733.94	-935.27	1,303,626.05	3,231,613.64	40.163878	-104.671259
7,696.00	88.89	2.02	7,049.24	818.87	-932.34	1,303,711.01	3,231,615.77	40.164111	-104.671248
7,782.00	88.77	1.39	7,050.99	904.81	-929.78	1,303,796.97	3,231,617.52	40.164347	-104.671239
7,867.00	88.89	1.24	7,052.73	989.77	-927.83	1,303,881.94	3,231,618.67	40.164580	-104.671232
7,953.00	89.32	0.98	7,054.07	1,075.74	-926.16	1,303,967.93	3,231,619.53	40.164816	-104.671226
8,038.00	90.31	1.40	7,054.35	1,160.72	-924.40	1,304,052.92	3,231,620.50	40.165049	-104.671220
8,123.00	90.19	0.61	7,053.97	1,245.71	-922.91	1,304,137.92	3,231,621.19	40.165283	-104.671215
8,209.00	89.88	0.51	7,053.92	1,331.70	-922.07	1,304,223.92	3,231,621.23	40.165519	-104.671212
8,294.00	89.75	359.77	7,054.20	1,416.70	-921.86	1,304,308.91	3,231,620.64	40.165752	-104.671211
8,379.00	89.94	359.91	7,054.43	1,501.70	-922.10	1,304,393.91	3,231,619.60	40.165985	-104.671212
8,465.00	89.01	358.59	7,055.21	1,587.69	-923.22	1,304,479.88	3,231,617.67	40.166221	-104.671216
8,550.00	90.31	358.96	7,055.72	1,672.67	-925.04	1,304,564.83	3,231,615.06	40.166455	-104.671222

Andarko Petroleum Corporation

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well REIGLE 3N-4HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Site:	WELD_REIGLE 15-4HZ PAD	MD Reference:	GL + 16 RKB XTREME 23 @ 4874.00ft (XTREME 23)
Well:	REIGLE 3N-4HZ	North Reference:	True
Wellbore:	REIGLE 3N-4HZ	Survey Calculation Method:	Minimum Curvature
Design:	REIGLE 3N-4HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,636.00	91.11	0.39	7,054.65	1,758.66	-925.53	1,304,650.81	3,231,613.76	40.166691	-104.671224
8,721.00	91.23	0.92	7,052.92	1,843.63	-924.55	1,304,735.80	3,231,613.93	40.166924	-104.671221
8,807.00	91.60	0.36	7,050.79	1,929.60	-923.59	1,304,821.77	3,231,614.09	40.167160	-104.671217
8,892.00	90.56	2.20	7,049.19	2,014.56	-921.70	1,304,906.74	3,231,615.19	40.167393	-104.671210
8,978.00	89.01	2.29	7,049.51	2,100.49	-918.33	1,304,992.70	3,231,617.75	40.167629	-104.671198
9,063.00	88.15	0.86	7,051.62	2,185.43	-915.99	1,305,077.66	3,231,619.29	40.167862	-104.671190
9,148.00	89.20	359.36	7,053.59	2,270.40	-915.83	1,305,162.63	3,231,618.66	40.168096	-104.671189
9,234.00	88.64	359.50	7,055.21	2,356.38	-916.68	1,305,248.60	3,231,616.99	40.168332	-104.671192
9,319.00	90.25	359.48	7,056.03	2,441.37	-917.44	1,305,333.57	3,231,615.44	40.168565	-104.671195
9,404.00	91.29	0.59	7,054.89	2,526.36	-917.39	1,305,418.56	3,231,614.69	40.168798	-104.671195
9,490.00	91.54	359.89	7,052.76	2,612.33	-917.03	1,305,504.53	3,231,614.25	40.169034	-104.671194
9,575.00	92.35	2.03	7,049.88	2,697.27	-915.61	1,305,589.48	3,231,614.87	40.169267	-104.671189
9,660.00	91.11	3.51	7,047.31	2,782.13	-911.50	1,305,674.37	3,231,618.18	40.169500	-104.671174
9,746.00	89.01	2.93	7,047.22	2,867.98	-906.67	1,305,760.27	3,231,622.21	40.169736	-104.671157
9,831.00	89.01	2.98	7,048.69	2,952.86	-902.29	1,305,845.18	3,231,625.79	40.169969	-104.671141
9,917.00	88.46	2.17	7,050.59	3,038.75	-898.43	1,305,931.10	3,231,628.85	40.170205	-104.671127
10,002.00	87.80	0.72	7,053.36	3,123.67	-896.28	1,306,016.04	3,231,630.19	40.170438	-104.671120
10,087.00	90.25	0.56	7,054.81	3,208.65	-895.33	1,306,101.03	3,231,630.35	40.170671	-104.671116
10,173.00	89.12	359.31	7,055.28	3,294.65	-895.43	1,306,187.02	3,231,629.44	40.170907	-104.671117
10,258.00	90.12	358.40	7,055.85	3,379.63	-897.13	1,306,271.98	3,231,626.95	40.171140	-104.671123
10,344.00	90.49	0.24	7,055.39	3,465.61	-898.15	1,306,357.95	3,231,625.12	40.171377	-104.671126
10,429.00	90.31	359.47	7,054.80	3,550.61	-898.37	1,306,442.94	3,231,624.11	40.171610	-104.671127
10,514.00	90.31	0.72	7,054.34	3,635.61	-898.22	1,306,527.94	3,231,623.45	40.171843	-104.671127
10,600.00	90.19	0.31	7,053.96	3,721.60	-897.45	1,306,613.94	3,231,623.41	40.172079	-104.671124
10,685.00	90.12	359.55	7,053.73	3,806.60	-897.56	1,306,698.93	3,231,622.51	40.172313	-104.671124
10,771.00	90.43	359.18	7,053.32	3,892.60	-898.51	1,306,784.91	3,231,620.75	40.172549	-104.671128
10,856.00	89.74	357.90	7,053.19	3,977.57	-900.67	1,306,869.86	3,231,617.79	40.172782	-104.671135
10,942.00	90.80	359.70	7,052.79	4,063.54	-902.48	1,306,955.81	3,231,615.18	40.173018	-104.671142
11,000.00	89.74	358.25	7,052.51	4,121.53	-903.51	1,307,013.79	3,231,613.60	40.173177	-104.671146
LAST MWD SURVEY									
11,054.00	89.74	358.25	7,052.76	4,175.50	-905.16	1,307,067.74	3,231,611.45	40.173325	-104.671151
PROJECTION TO TD									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
845.00	844.98	-2.04	-3.88	TIE ON	
942.00	941.98	-2.70	-4.21	FIRST MWD SURVEY	
7,478.00	7,050.57	601.05	-939.06	7 IN. CASING	
11,000.00	7,052.51	4,121.53	-903.51	LAST MWD SURVEY	
11,054.00	7,052.76	4,175.50	-905.16	PROJECTION TO TD	

Checked By: _____	Approved By: _____	Date: _____
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