



Directional Survey Certification

2948 I-70 Business Loop
Grand Junction, CO 81504
(970)-245-9447 Fax (970)-245-9454

Operator	WPX Energy
Well Name & No.	GM 411-9
County & State	Garfield, CO
SDI Job No.	420616DEFK368332
Rig	H&P 318

I, Janie Collins, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 82 feet to a measured depth of 6,714 feet is true and correct as determined from all available records.



Signature

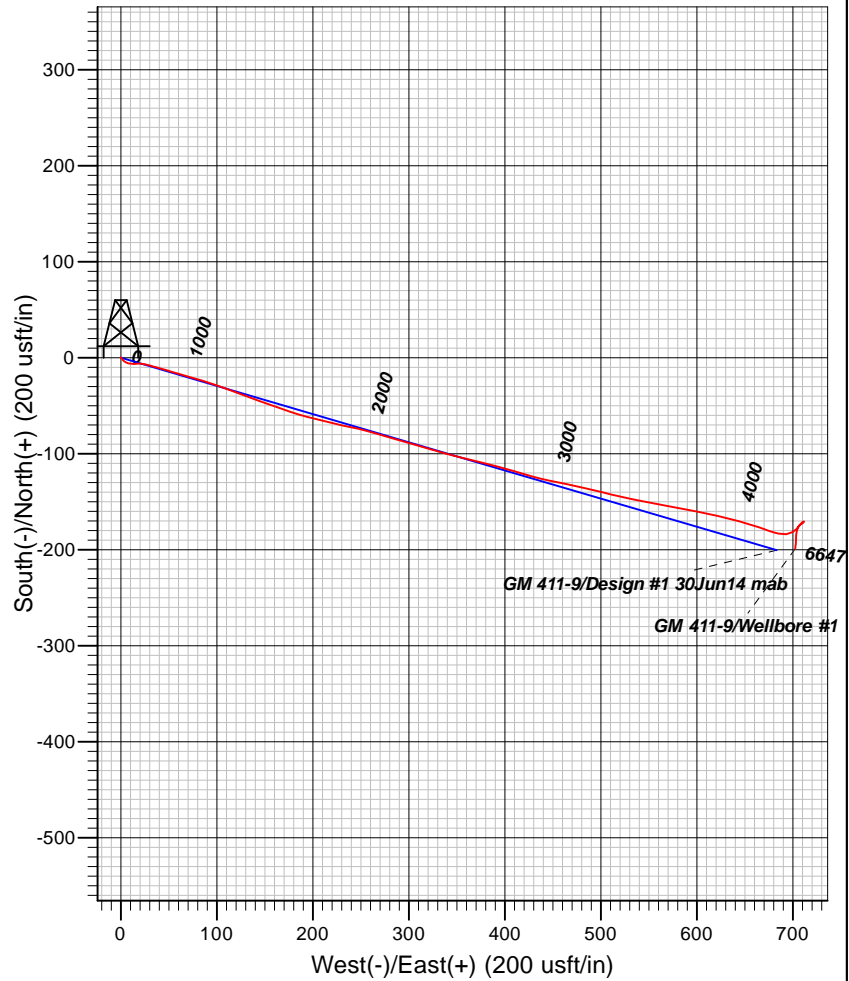
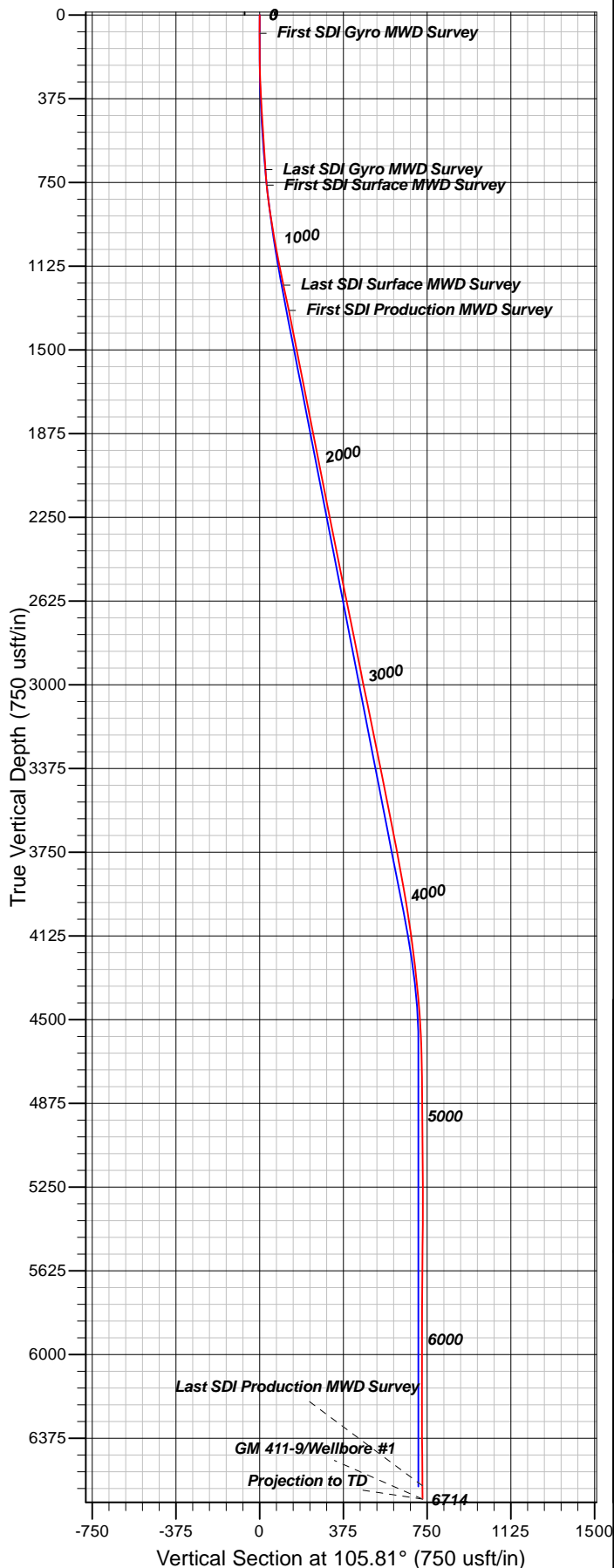
1-Jul-16

Date

Janie Collins
Colorado District Well Planner
Scientific Drilling International



Company: WPX Energy Rocky Mountain, LLC
Project: Garfield County, CO NAD83
Site: MV 16-9 Pad
Well: GM 411-9
Wellbore: Wellbore #1
Design: Wellbore #1



Well Details: GM 411-9

+N/-S	+E/-W	TVD Reference: KB @ 6111.00usft (HP 318)	Ground Level: 6087.00	Slot
0.00	0.00	Northings	Eastings	B01
		1601981.60	2260360.50	
		Latitude	Longitude	
		39.4569292	-108.1198809	

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well GM 411-9 - Slot B01, True North
Vertical (TVD) Reference: KB @ 6111.00usft (HP 318)
Section (VS) Reference: Slot - B01(0.00N, 0.00E)
Measured Depth Reference: KB @ 6111.00usft (HP 318)
Calculation Method: Minimum Curvature

PROJECT DETAILS: Garfield County, CO NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Central Zone

System Datum: Mean Sea Level

Plan: Wellbore #1

14:59, July 01 2016
Created By: Janie Collins



Company:	WPX Energy Rocky Mountain, LLC	Local Co-ordinate Reference:	Well GM 411-9 - Slot B01
Project:	Garfield County, CO NAD83	TVD Reference:	KB @ 6111.00usft (HP 318)
Site:	MV 16-9 Pad	MD Reference:	KB @ 6111.00usft (HP 318)
Well:	GM 411-9	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Grand Junction District

Project	Garfield County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	MV 16-9 Pad			
Site Position:		Northing:	1,601,987.30 usft	Latitude: 39.4569442
From: Map		Easting:	2,260,352.30 usft	Longitude: -108.1199106
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -1.65 °

Well	GM 411-9 - Slot B01			
Well Position	+N/-S	0.00 usft	Northing:	1,601,981.60 usft
	+E/-W	0.00 usft	Easting:	2,260,360.50 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft
			Ground Level:	6,087.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	5/19/2016	9.76	65.59	51,621

Design	Wellbore #1			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	105.81

Survey Program	Date	7/1/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
82.00	693.00	Survey #1 - Gyro Survey (Wellbore #1)	SDI Gyro MWD 104	SDI Gyro MWD Error Model Ver 1.0.4
763.00	1,217.00	Survey #2 - Surface MWD Survey (Wellbo	SDI MWD	SDI MWD - Standard ver 1.0.1
1,333.00	6,714.00	Survey #3 - Production MWD Survey (Wel	SDI MWD	SDI MWD - Standard ver 1.0.1

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	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	
82.00	0.35	359.03	82.00	0.25	0.00	-0.07	0.43	0.43	0.00	
First SDI Gyro MWD Survey										
148.00	0.18	118.83	148.00	0.40	0.08	-0.03	0.71	-0.26	181.52	
239.00	1.58	148.89	238.99	-0.74	0.86	1.03	1.57	1.54	33.03	
329.00	2.90	131.57	328.92	-3.31	3.20	3.98	1.63	1.47	-19.24	
420.00	3.78	108.72	419.76	-5.80	7.76	9.05	1.74	0.97	-25.11	
511.00	3.87	82.88	510.57	-6.39	13.65	14.88	1.88	0.10	-28.40	
602.00	3.43	90.44	601.38	-6.03	19.42	20.33	0.72	-0.48	8.31	

Company:	WPX Energy Rocky Mountain, LLC	Local Co-ordinate Reference:	Well GM 411-9 - Slot B01
Project:	Garfield County, CO NAD83	TVD Reference:	KB @ 6111.00usft (HP 318)
Site:	MV 16-9 Pad	MD Reference:	KB @ 6111.00usft (HP 318)
Well:	GM 411-9	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Grand Junction District

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
693.00	3.87	102.74	692.20	-6.73	25.14	26.02	0.98	0.48	13.52
Last SDI Gyro MWD Survey									
763.00	5.62	106.48	761.96	-8.22	30.73	31.81	2.54	2.50	5.34
First SDI Surface MWD Survey									
855.00	7.73	104.79	853.33	-11.08	41.03	42.50	2.30	2.29	-1.84
944.00	9.08	107.29	941.37	-14.69	53.53	55.51	1.57	1.52	2.81
1,035.00	10.57	106.13	1,031.04	-19.14	68.40	71.03	1.65	1.64	-1.27
1,126.00	11.70	105.65	1,120.32	-23.95	85.31	88.60	1.25	1.24	-0.53
1,217.00	11.78	110.52	1,209.42	-29.70	102.89	107.09	1.09	0.09	5.35
Last SDI Surface MWD Survey									
1,333.00	11.84	110.38	1,322.96	-37.99	125.14	130.75	0.06	0.05	-0.12
First SDI Production MWD Survey									
1,428.00	11.40	109.24	1,416.02	-44.48	143.14	149.84	0.52	-0.46	-1.20
1,522.00	11.01	109.30	1,508.22	-50.51	160.38	168.07	0.42	-0.41	0.06
1,616.00	10.52	109.90	1,600.57	-56.40	176.92	185.59	0.53	-0.52	0.64
1,711.00	11.67	103.87	1,693.80	-61.65	194.40	203.85	1.72	1.21	-6.35
1,805.00	11.46	103.59	1,785.89	-66.13	212.71	222.68	0.23	-0.22	-0.30
1,899.00	11.06	102.68	1,878.08	-70.30	230.58	241.01	0.47	-0.43	-0.97
1,994.00	10.85	102.54	1,971.35	-74.24	248.20	259.04	0.22	-0.22	-0.15
2,088.00	11.55	106.92	2,063.56	-78.90	265.84	277.28	1.17	0.74	4.66
2,183.00	11.02	106.22	2,156.72	-84.20	283.66	295.87	0.58	-0.56	-0.74
2,277.00	10.66	105.31	2,249.04	-89.01	300.67	313.55	0.42	-0.38	-0.97
2,371.00	12.04	106.48	2,341.20	-94.09	318.46	332.04	1.49	1.47	1.24
2,465.00	11.71	105.41	2,433.19	-99.40	337.05	351.39	0.42	-0.35	-1.14
2,559.00	10.69	103.41	2,525.40	-103.96	354.73	369.64	1.16	-1.09	-2.13
2,653.00	12.17	103.80	2,617.53	-108.34	372.84	388.25	1.58	1.57	0.41
2,748.00	11.61	105.15	2,710.50	-113.23	391.79	407.82	0.66	-0.59	1.42
2,842.00	11.10	106.01	2,802.66	-118.20	409.62	426.32	0.57	-0.54	0.91
2,936.00	10.69	106.20	2,894.96	-123.13	426.69	444.09	0.44	-0.44	0.20
3,030.00	12.03	101.44	2,987.12	-127.50	444.66	462.58	1.74	1.43	-5.06
3,124.00	11.80	102.00	3,079.09	-131.44	463.66	481.93	0.27	-0.24	0.60
3,219.00	11.59	102.77	3,172.12	-135.57	482.47	501.16	0.28	-0.22	0.81
3,313.00	11.22	103.13	3,264.27	-139.74	500.59	519.72	0.40	-0.39	0.38
3,407.00	10.87	103.99	3,356.52	-143.96	518.09	537.71	0.41	-0.37	0.91
3,502.00	11.75	100.78	3,449.68	-147.93	536.29	556.30	1.14	0.93	-3.38
3,596.00	11.30	101.20	3,541.78	-151.51	554.72	575.02	0.49	-0.48	0.45
3,690.00	11.13	101.04	3,633.99	-155.04	572.66	593.24	0.18	-0.18	-0.17
3,785.00	11.01	100.72	3,727.22	-158.48	590.58	611.41	0.14	-0.13	-0.34
3,879.00	10.49	101.70	3,819.57	-161.89	607.77	628.89	0.59	-0.55	1.04
3,974.00	9.90	102.21	3,913.07	-165.37	624.22	645.66	0.63	-0.62	0.54
4,068.00	9.15	104.10	4,005.77	-168.90	639.37	661.20	0.86	-0.80	2.01
4,162.00	7.90	107.11	4,098.73	-172.62	652.79	675.13	1.41	-1.33	3.20
4,257.00	7.26	108.82	4,192.90	-176.48	664.72	687.65	0.71	-0.67	1.80
4,352.00	6.54	110.92	4,287.22	-180.34	675.45	699.03	0.80	-0.76	2.21

Company:	WPX Energy Rocky Mountain, LLC	Local Co-ordinate Reference:	Well GM 411-9 - Slot B01
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Site:	MV 16-9 Pad	MD Reference:	KB @ 6111.00usft (HP 318)
Well:	GM 411-9	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Grand Junction District

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,446.00	5.46	102.85	4,380.70	-183.25	684.81	708.83	1.46	-1.15	-8.59	
4,540.00	4.67	81.77	4,474.34	-183.70	692.96	716.79	2.14	-0.84	-22.43	
4,635.00	3.83	59.29	4,569.09	-181.52	699.52	722.51	1.95	-0.88	-23.66	
4,729.00	2.31	41.25	4,662.95	-178.49	703.46	725.49	1.90	-1.62	-19.19	
4,823.00	1.91	40.38	4,756.89	-175.88	705.73	726.95	0.43	-0.43	-0.93	
4,917.00	1.69	40.72	4,850.84	-173.63	707.65	728.19	0.23	-0.23	0.36	
5,012.00	1.00	42.95	4,945.81	-171.96	709.13	729.15	0.73	-0.73	2.35	
5,107.00	0.66	48.35	5,040.80	-170.99	710.10	729.83	0.37	-0.36	5.68	
5,201.00	0.44	74.01	5,134.80	-170.54	710.85	730.42	0.35	-0.23	27.30	
5,295.00	0.31	100.47	5,228.80	-170.48	711.45	730.98	0.23	-0.14	28.15	
5,390.00	0.17	214.78	5,323.80	-170.64	711.62	731.19	0.43	-0.15	120.33	
5,484.00	0.44	214.78	5,417.79	-171.06	711.34	731.03	0.29	0.29	0.00	
5,579.00	1.04	230.49	5,512.79	-171.90	710.46	730.42	0.66	0.63	16.54	
5,673.00	1.22	237.13	5,606.77	-172.99	708.96	729.28	0.24	0.19	7.06	
5,767.00	0.61	241.51	5,700.76	-173.77	707.68	728.26	0.65	-0.65	4.66	
5,861.00	0.64	225.98	5,794.75	-174.37	706.87	727.64	0.18	0.03	-16.52	
5,956.00	0.87	209.95	5,889.74	-175.37	706.12	727.19	0.33	0.24	-16.87	
6,050.00	1.11	203.83	5,983.73	-176.82	705.40	726.89	0.28	0.26	-6.51	
6,144.00	1.18	195.18	6,077.71	-178.59	704.78	726.77	0.20	0.07	-9.20	
6,239.00	1.26	200.10	6,172.69	-180.51	704.16	726.71	0.14	0.08	5.18	
6,333.00	1.75	190.75	6,266.66	-182.89	703.54	726.76	0.58	0.52	-9.95	
6,427.00	2.08	180.14	6,360.60	-186.01	703.27	727.34	0.51	0.35	-11.29	
6,522.00	2.63	182.23	6,455.52	-189.91	703.18	728.32	0.59	0.58	2.20	
6,616.00	2.66	184.51	6,549.42	-194.24	702.92	729.25	0.12	0.03	2.43	
6,654.00	2.73	185.54	6,587.38	-196.02	702.77	729.59	0.22	0.18	2.71	
Last SDI Production MWD Survey										
6,714.00	2.73	185.54	6,647.31	-198.86	702.49	730.10	0.00	0.00	0.00	
Projection to TD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
82.00	82.00	0.25	0.00	First SDI Gyro MWD Survey	
693.00	692.20	-6.73	25.14	Last SDI Gyro MWD Survey	
763.00	761.96	-8.22	30.73	First SDI Surface MWD Survey	
1,217.00	1,209.42	-29.70	102.89	Last SDI Surface MWD Survey	
1,333.00	1,322.96	-37.99	125.14	First SDI Production MWD Survey	
6,654.00	6,587.38	-196.02	702.77	Last SDI Production MWD Survey	
6,714.00	6,647.31	-198.86	702.49	Projection to TD	

Checked By: _____	Approved By: _____	Date: _____
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