



SHELL E&P

MOFFAT COUNTY, CO

HAMILTON 2-29

HAMILTON 2-29

HAMILTON 2-29

Plan: PLAN 7

Standard Planning Report

16 July, 2013





Project: MOFFAT COUNTY, CO
Site: HAMILTON PAD
Well: HAMILTON 2-29
Wellbore: HAMILTON 2-29
Design: Design #7
Latitude: 40° 21' 16.130 N
Longitude: 107° 37' 17.090 W
GL: 6343.00
KB: NEW KB @ 6358.00ft (SAVANA 650)



Weatherford®

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL - HAMILTON 2-29 P6	2332.12	-4123.32	-198.21	40° 20' 35.383 N 107° 37' 19.650 W		Point
HEEL HAMILTON 2-29 P6	2660.00	-1116.77	628.63	40° 21' 5.094 N 107° 37' 8.970 W		Point

WELL DETAILS: HAMILTON 2-29

+N/-S	+E/-W	Northing	Ground Level: Easting	6343.00 Latitude	Longitude	Slot
0.00	0.00	1379049.71	2408823.95	40° 21' 16.130 N	107° 37' 17.090 W	

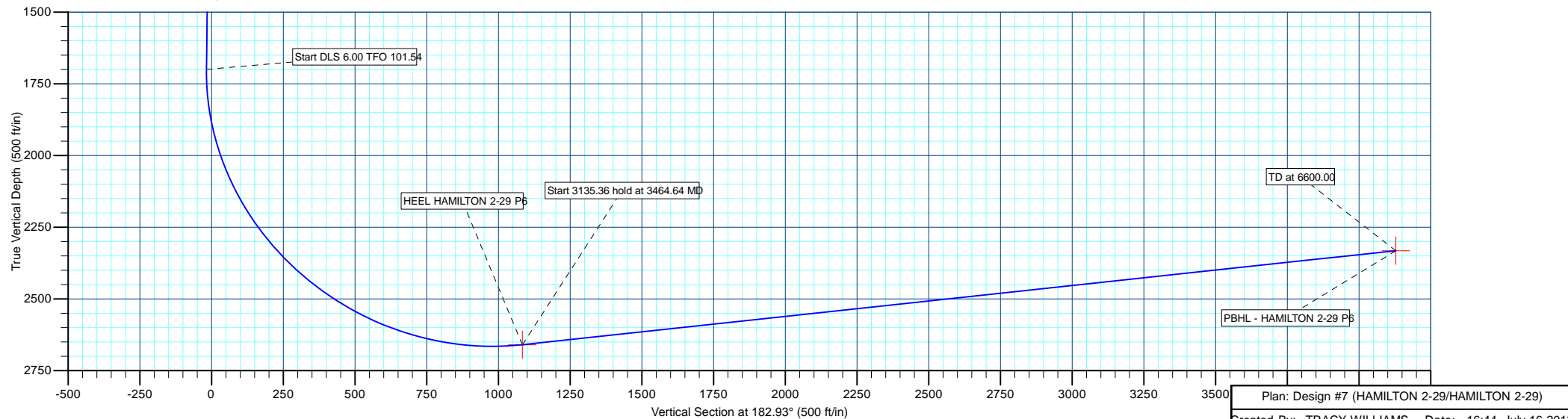
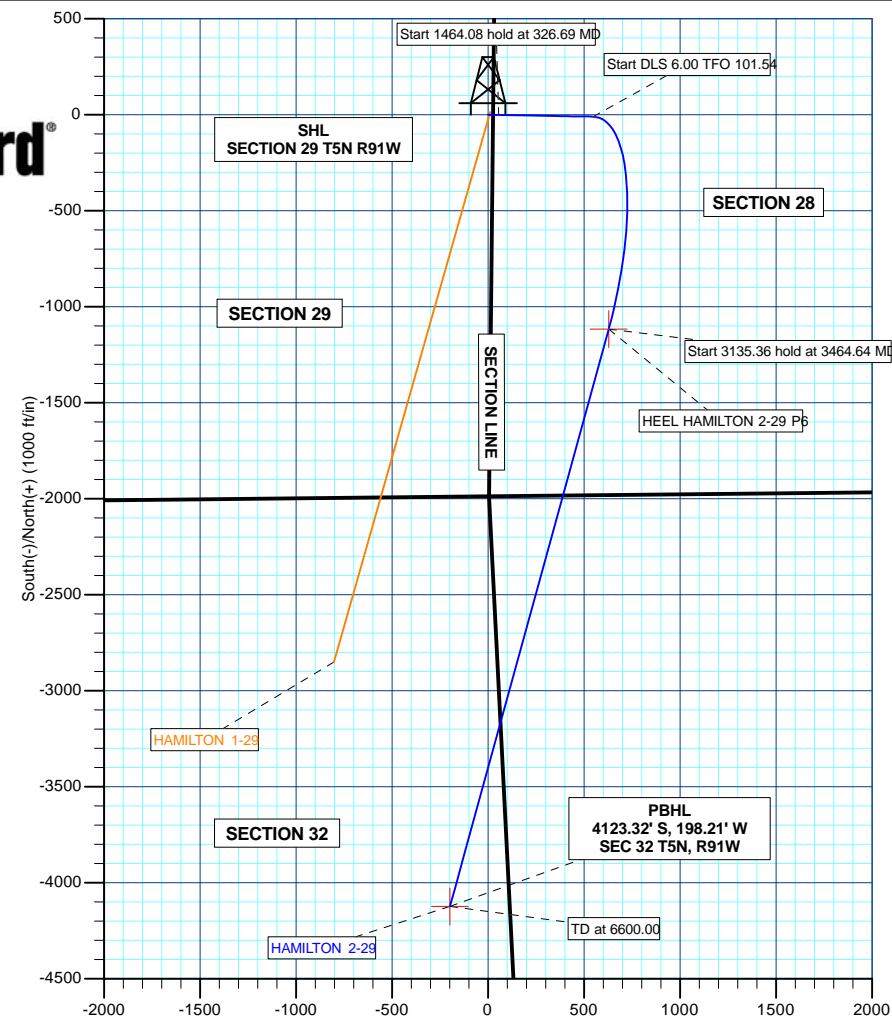
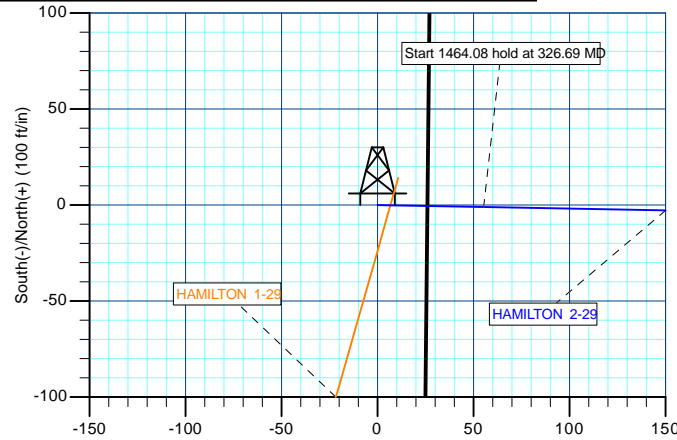
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
326.69	19.60	91.05	320.35	-1.02	55.33	6.00	91.05	-1.81	Start 1464.08 hold at 326.69 MD
1790.77	19.60	91.05	1699.59	-10.03	546.41	0.00	0.00	-17.92	Start DLS 6.00 TFO 101.54
3464.64	96.00	195.38	2660.00	-1116.77	628.63	6.00	101.54	1083.16	Start 3135.36 hold at 3464.64 MD
6600.00	96.00	195.38	2332.12	-4123.32	-198.21	0.00	0.00	4128.06	TD at 6600.00



Azimuths to True North
Magnetic North: 10.07°

Magnetic Field
Strength: 52484.6snT
Dip Angle: 66.44°
Date: 7/16/2013
Model: BGGM2013



Plan: Design #7 (HAMILTON 2-29/HAMILTON 2-29)

Created By: TRACY WILLIAMS Date: 16:44, July 16 2013



SHELL E&P

**MOFFAT COUNTY, CO
HAMILTON PAD
HAMILTON 2-29**

HAMILTON 2-29

Plan: Design #7

Standard Planning Report

16 July, 2013



Weatherford®



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HAMILTON 2-29
Company:	SHELL E&P	TVD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Project:	MOFFAT COUNTY, CO	MD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Site:	HAMILTON PAD	North Reference:	True
Well:	HAMILTON 2-29	Survey Calculation Method:	Minimum Curvature
Wellbore:	HAMILTON 2-29		
Design:	Design #7		

Project	MOFFAT COUNTY, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		HAMILTON PAD			
Site Position:		Northing:	1,379,063.61 usft	Latitude:	40° 21' 16.270 N
From:	Lat/Long	Easting:	2,408,835.12 usft	Longitude:	107° 37' 16.950 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16"	Grid Convergence:	-1.37 °

Well	HAMILTON 2-29					
Well Position	+N/-S	-14.17 ft	Northing:	1,379,049.71 usft	Latitude:	40° 21' 16.130 N
	+E/-W	-10.84 ft	Easting:	2,408,823.95 usft	Longitude:	107° 37' 17.090 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,343.00 ft

Wellbore	HAMILTON 2-29				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	7/16/2013	10.08	66.44	52,485

Design	Design #7			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	182.93

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
326.69	19.60	91.05	320.35	-1.02	55.33	6.00	6.00	0.00	91.05	
1,790.77	19.60	91.05	1,699.59	-10.03	546.41	0.00	0.00	0.00	0.00	
3,464.64	96.00	195.38	2,660.00	-1,116.77	628.63	6.00	4.56	6.23	101.54	HEEL HAMILTON 2-2
6,600.00	96.00	195.38	2,332.12	-4,123.32	-198.21	0.00	0.00	0.00	0.00	PBHL - HAMILTON 2-



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HAMILTON 2-29
Company:	SHELL E&P	TVD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Project:	MOFFAT COUNTY, CO	MD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Site:	HAMILTON PAD	North Reference:	True
Well:	HAMILTON 2-29	Survey Calculation Method:	Minimum Curvature
Wellbore:	HAMILTON 2-29		
Design:	Design #7		

Planned 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
50.00	3.00	91.05	49.98	-0.02	1.31	-0.04	6.00	6.00	0.00
100.00	6.00	91.05	99.82	-0.10	5.23	-0.17	6.00	6.00	0.00
150.00	9.00	91.05	149.38	-0.22	11.75	-0.39	6.00	6.00	0.00
200.00	12.00	91.05	198.54	-0.38	20.86	-0.68	6.00	6.00	0.00
250.00	15.00	91.05	247.15	-0.60	32.53	-1.07	6.00	6.00	0.00
300.00	18.00	91.05	295.09	-0.86	46.73	-1.53	6.00	6.00	0.00
Start 1464.08 hold at 326.69 MD									
326.69	19.60	91.05	320.35	-1.02	55.33	-1.81	6.00	6.00	0.00
400.00	19.60	91.05	389.42	-1.47	79.92	-2.62	0.00	0.00	0.00
500.00	19.60	91.05	483.62	-2.08	113.46	-3.72	0.00	0.00	0.00
600.00	19.60	91.05	577.83	-2.70	147.00	-4.82	0.00	0.00	0.00
700.00	19.60	91.05	672.03	-3.32	180.54	-5.92	0.00	0.00	0.00
800.00	19.60	91.05	766.24	-3.93	214.09	-7.02	0.00	0.00	0.00
900.00	19.60	91.05	860.44	-4.55	247.63	-8.12	0.00	0.00	0.00
1,000.00	19.60	91.05	954.65	-5.16	281.17	-9.22	0.00	0.00	0.00
1,100.00	19.60	91.05	1,048.85	-5.78	314.71	-10.32	0.00	0.00	0.00
1,200.00	19.60	91.05	1,143.06	-6.39	348.25	-11.42	0.00	0.00	0.00
1,300.00	19.60	91.05	1,237.26	-7.01	381.79	-12.52	0.00	0.00	0.00
1,400.00	19.60	91.05	1,331.47	-7.63	415.34	-13.62	0.00	0.00	0.00
1,500.00	19.60	91.05	1,425.67	-8.24	448.88	-14.72	0.00	0.00	0.00
1,600.00	19.60	91.05	1,519.88	-8.86	482.42	-15.82	0.00	0.00	0.00
1,700.00	19.60	91.05	1,614.08	-9.47	515.96	-16.92	0.00	0.00	0.00
Start DLS 6.00 TFO 101.54									
1,790.77	19.60	91.05	1,699.59	-10.03	546.41	-17.92	0.00	0.00	0.00
1,800.00	19.50	92.68	1,708.29	-10.13	549.49	-17.98	6.00	-1.12	17.62
1,850.00	19.20	101.70	1,755.48	-12.19	565.88	-16.77	6.00	-0.60	18.04
1,900.00	19.34	110.78	1,802.68	-16.80	581.68	-12.97	6.00	0.29	18.18
1,950.00	19.93	119.55	1,849.79	-23.94	596.84	-6.62	6.00	1.17	17.53
2,000.00	20.91	127.68	1,896.65	-33.60	611.32	2.29	6.00	1.97	16.26
2,050.00	22.25	134.99	1,943.16	-45.75	625.08	13.72	6.00	2.67	14.62
2,100.00	23.87	141.43	1,989.17	-60.35	638.08	27.64	6.00	3.25	12.89
2,150.00	25.73	147.05	2,034.56	-77.38	650.30	44.02	6.00	3.72	11.24
2,200.00	27.78	151.93	2,079.21	-96.77	661.69	62.81	6.00	4.09	9.75
PBHL - HAMILTON 2-29 p4									
2,221.42	28.70	153.82	2,098.08	-105.79	666.30	71.58	6.00	4.32	8.81
2,250.00	29.98	156.17	2,122.99	-118.48	672.22	83.95	6.00	4.45	8.22
2,300.00	32.29	159.86	2,165.79	-142.45	681.87	107.39	6.00	4.63	7.39
2,350.00	34.70	163.10	2,207.49	-168.61	690.60	133.07	6.00	4.82	6.49
2,400.00	37.18	165.97	2,247.97	-196.89	698.40	160.92	6.00	4.97	5.73
2,450.00	39.73	168.52	2,287.13	-227.22	705.25	190.85	6.00	5.09	5.10
2,500.00	42.32	170.81	2,324.84	-259.50	711.12	222.80	6.00	5.19	4.58
2,550.00	44.96	172.88	2,361.03	-293.66	715.99	256.66	6.00	5.28	4.14
2,600.00	47.63	174.77	2,395.57	-329.59	719.86	292.34	6.00	5.34	3.78
2,650.00	50.33	176.51	2,428.38	-367.20	722.72	329.76	6.00	5.40	3.47
2,700.00	53.06	178.11	2,459.37	-406.39	724.55	368.80	6.00	5.45	3.20
2,750.00	55.80	179.60	2,488.45	-447.05	725.36	409.37	6.00	5.49	2.98
2,800.00	58.56	181.00	2,515.55	-489.06	725.13	451.34	6.00	5.52	2.79
2,850.00	61.34	182.31	2,540.59	-532.32	723.87	494.60	6.00	5.55	2.63
2,900.00	64.13	183.56	2,563.49	-576.70	721.59	539.04	6.00	5.57	2.50
2,950.00	66.92	184.75	2,584.21	-622.08	718.29	584.53	6.00	5.59	2.38
3,000.00	69.73	185.89	2,602.67	-668.34	713.97	630.95	6.00	5.61	2.28
3,050.00	72.54	187.00	2,618.84	-715.34	708.66	678.17	6.00	5.63	2.20



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HAMILTON 2-29
Company:	SHELL E&P	TVD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Project:	MOFFAT COUNTY, CO	MD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Site:	HAMILTON PAD	North Reference:	True
Well:	HAMILTON 2-29	Survey Calculation Method:	Minimum Curvature
Wellbore:	HAMILTON 2-29		
Design:	Design #7		

Planned 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)
3,100.00	75.36	188.06	2,632.66	-762.98	702.36	726.06	6.00	5.64	2.14
3,150.00	78.19	189.10	2,644.10	-811.10	695.09	774.49	6.00	5.65	2.08
3,200.00	81.01	190.12	2,653.12	-859.58	686.88	823.33	6.00	5.65	2.04
3,250.00	83.84	191.13	2,659.71	-908.29	677.74	872.44	6.00	5.66	2.01
3,300.00	86.67	192.12	2,663.84	-957.09	667.70	921.69	6.00	5.66	1.99
3,350.00	89.51	193.11	2,665.51	-1,005.85	656.78	970.95	6.00	5.67	1.97
3,400.00	92.34	194.10	2,664.70	-1,054.44	645.03	1,020.07	6.00	5.67	1.97
3,450.00	95.17	195.09	2,661.43	-1,102.71	632.46	1,068.93	6.00	5.67	1.98
Start 3135.36 hold at 3464.64 MD - HEEL HAMILTON 2-29 P5 - HEEL HAMILTON 2-29 P6									
3,464.64	96.00	195.38	2,660.00	-1,116.77	628.63	1,083.16	6.00	5.66	1.99
3,500.00	96.00	195.38	2,656.30	-1,150.68	619.31	1,117.50	0.00	0.00	0.00
3,600.00	96.00	195.38	2,645.84	-1,246.57	592.94	1,214.62	0.00	0.00	0.00
3,700.00	96.00	195.38	2,635.39	-1,342.46	566.57	1,311.73	0.00	0.00	0.00
3,800.00	96.00	195.38	2,624.93	-1,438.35	540.19	1,408.85	0.00	0.00	0.00
3,900.00	96.00	195.38	2,614.47	-1,534.24	513.82	1,505.96	0.00	0.00	0.00
4,000.00	96.00	195.38	2,604.01	-1,630.14	487.45	1,603.07	0.00	0.00	0.00
4,100.00	96.00	195.38	2,593.56	-1,726.03	461.08	1,700.19	0.00	0.00	0.00
4,200.00	96.00	195.38	2,583.10	-1,821.92	434.71	1,797.30	0.00	0.00	0.00
4,300.00	96.00	195.38	2,572.64	-1,917.81	408.34	1,894.42	0.00	0.00	0.00
4,400.00	96.00	195.38	2,562.18	-2,013.70	381.96	1,991.53	0.00	0.00	0.00
4,500.00	96.00	195.38	2,551.73	-2,109.59	355.59	2,088.65	0.00	0.00	0.00
4,600.00	96.00	195.38	2,541.27	-2,205.49	329.22	2,185.76	0.00	0.00	0.00
4,700.00	96.00	195.38	2,530.81	-2,301.38	302.85	2,282.88	0.00	0.00	0.00
4,800.00	96.00	195.38	2,520.35	-2,397.27	276.48	2,379.99	0.00	0.00	0.00
4,900.00	96.00	195.38	2,509.90	-2,493.16	250.11	2,477.11	0.00	0.00	0.00
5,000.00	96.00	195.38	2,499.44	-2,589.05	223.73	2,574.22	0.00	0.00	0.00
5,100.00	96.00	195.38	2,488.98	-2,684.94	197.36	2,671.34	0.00	0.00	0.00
5,200.00	96.00	195.38	2,478.52	-2,780.83	170.99	2,768.45	0.00	0.00	0.00
5,300.00	96.00	195.38	2,468.07	-2,876.73	144.62	2,865.57	0.00	0.00	0.00
5,400.00	96.00	195.38	2,457.61	-2,972.62	118.25	2,962.68	0.00	0.00	0.00
PBHL - HAMILTON 2-29									
5,480.94	96.00	195.38	2,449.14	-3,050.24	96.90	3,041.29	0.00	0.00	0.00
5,500.00	96.00	195.38	2,447.15	-3,068.51	91.88	3,059.79	0.00	0.00	0.00
5,600.00	96.00	195.38	2,436.69	-3,164.40	65.50	3,156.91	0.00	0.00	0.00
5,700.00	96.00	195.38	2,426.23	-3,260.29	39.13	3,254.02	0.00	0.00	0.00
5,800.00	96.00	195.38	2,415.78	-3,356.18	12.76	3,351.14	0.00	0.00	0.00
5,900.00	96.00	195.38	2,405.32	-3,452.07	-13.61	3,448.25	0.00	0.00	0.00
6,000.00	96.00	195.38	2,394.86	-3,547.97	-39.98	3,545.37	0.00	0.00	0.00
6,100.00	96.00	195.38	2,384.40	-3,643.86	-66.35	3,642.48	0.00	0.00	0.00
6,200.00	96.00	195.38	2,373.95	-3,739.75	-92.73	3,739.60	0.00	0.00	0.00
6,300.00	96.00	195.38	2,363.49	-3,835.64	-119.10	3,836.71	0.00	0.00	0.00
6,400.00	96.00	195.38	2,353.03	-3,931.53	-145.47	3,933.83	0.00	0.00	0.00
6,500.00	96.00	195.38	2,342.57	-4,027.42	-171.84	4,030.94	0.00	0.00	0.00
TD at 6600.00 - PBHL - HAMILTON 2-29 P6 - PBHL - HAMILTON 2-29 P4R1 - PBHL - HAMILTON 2-29 P5									
6,600.00	96.00	195.38	2,332.12	-4,123.32	-198.21	4,128.06	0.00	0.00	0.00



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HAMILTON 2-29
Company:	SHELL E&P	TVD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Project:	MOFFAT COUNTY, CO	MD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Site:	HAMILTON PAD	North Reference:	True
Well:	HAMILTON 2-29	Survey Calculation Method:	Minimum Curvature
Wellbore:	HAMILTON 2-29		
Design:	Design #7		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
PBHL - HAMILTON 2-29	0.00	0.00	2,332.12	-4,123.32	-198.21	1,374,932.32	2,408,527.16	40° 20' 35.383 N	107° 37' 19.650 W
- plan hits target center									
- Point									
HEEL HAMILTON 2-29 f	0.00	0.00	2,660.00	-1,116.77	628.63	1,377,918.22	2,409,425.69	40° 21' 5.094 N	107° 37' 8.970 W
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
326.69	320.35	-1.02	55.33	Start 1464.08 hold at 326.69 MD
1,790.77	1,699.59	-10.03	546.41	Start DLS 6.00 TFO 101.54
3,464.64	2,660.00	-1,116.77	628.63	Start 3135.36 hold at 3464.64 MD
6,600.00	2,332.12	-4,123.32	-198.21	TD at 6600.00



SHELL E&P

**MOFFAT COUNTY, CO
HAMILTON PAD
HAMILTON 2-29**

**HAMILTON 2-29
Design #7**

Anticollision Report

16 July, 2013



Weatherford®



Company:	SHELL E&P	Local Co-ordinate Reference:	Well HAMILTON 2-29
Project:	MOFFAT COUNTY, CO	TVD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Reference Site:	HAMILTON PAD	MD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Site Error:	0.00 ft	North Reference:	True
Reference Well:	HAMILTON 2-29	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	HAMILTON 2-29	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #7	Offset TVD Reference:	Offset Datum

Reference	Design #7		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 860.00 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 7/16/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	6,599.99	Design #7 (HAMILTON 2-29)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
HAMILTON PAD						
HAMILTON 1-29 - HAMILTON 1-29 - Design #5R1	142.26	141.73	14.36	13.84	27.665 CC, ES	
HAMILTON 1-29 - HAMILTON 1-29 - Design #5R1	200.00	198.54	17.67	16.75	19.154 SF	

Offset Design	HAMILTON PAD - HAMILTON 1-29 - HAMILTON 1-29 - Design #5R1											Offset Site Error:	0.00 ft
Survey Program:	0-MWD											Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	37.42	14.17	10.84	17.84				
100.00	99.82	99.82	99.82	0.25	0.10	-69.69	14.17	10.84	15.33	15.02	0.30	50.424	
142.26	141.73	141.73	141.73	0.40	0.19	-90.00	14.17	10.84	14.36	13.84	0.52	27.665 CC, ES	
200.00	198.54	198.54	198.54	0.61	0.32	-125.02	14.17	10.84	17.67	16.75	0.92	19.154 SF	
300.00	295.09	295.09	295.09	1.08	0.53	-157.33	14.17	10.84	38.91	37.30	1.61	24.210	
400.00	389.42	389.42	389.42	1.76	0.75	-167.60	14.17	10.84	70.83	68.74	2.09	33.886	
500.00	483.62	483.62	483.62	2.47	0.96	-171.57	14.17	10.84	103.90	101.36	2.54	40.849	
600.00	577.83	577.83	577.83	3.18	1.17	-173.62	14.17	10.84	137.20	134.19	3.02	45.487	
700.00	672.03	672.03	672.03	3.89	1.38	-174.87	14.17	10.84	170.60	167.10	3.50	48.704	
800.00	766.24	766.24	766.24	4.60	1.59	-175.72	14.17	10.84	204.05	200.05	4.00	51.028	
900.00	860.44	860.44	860.44	5.31	1.80	-176.32	14.17	10.84	237.53	233.03	4.50	52.767	
1,000.00	954.65	954.65	954.65	6.02	2.02	-176.78	14.17	10.84	271.02	266.01	5.01	54.107	
1,100.00	1,048.85	1,048.85	1,048.85	6.73	2.23	-177.13	14.17	10.84	304.53	299.01	5.52	55.167	
1,200.00	1,143.06	1,143.06	1,143.06	7.45	2.44	-177.42	14.17	10.84	338.04	332.01	6.03	56.024	
1,300.00	1,237.26	1,237.26	1,237.26	8.16	2.65	-177.65	14.17	10.84	371.56	365.01	6.55	56.728	
1,400.00	1,331.47	1,331.47	1,331.47	8.87	2.86	-177.84	14.17	10.84	405.09	398.02	7.07	57.316	
1,500.00	1,425.67	1,425.67	1,425.67	9.59	3.08	-178.01	14.17	10.84	438.61	431.03	7.59	57.813	
1,600.00	1,519.88	1,519.88	1,519.88	10.30	3.29	-178.15	14.17	10.84	472.14	464.04	8.11	58.239	
1,700.00	1,614.08	1,614.08	1,614.08	11.01	3.50	-178.27	14.17	10.84	505.68	497.05	8.63	58.607	
1,800.00	1,708.29	1,708.29	1,708.29	11.72	3.71	-179.90	14.17	10.84	539.20	530.05	9.15	58.931	
1,900.00	1,802.68	1,802.68	1,802.68	12.33	3.92	-161.33	14.17	10.84	571.68	562.02	9.66	59.159	
2,000.00	1,896.65	1,896.65	1,896.65	12.91	4.13	145.06	14.17	10.84	602.37	592.19	10.18	59.153	
2,100.00	1,989.17	1,989.17	1,989.17	13.46	4.34	132.78	14.17	10.84	631.66	620.95	10.70	59.007	
2,200.00	2,079.21	2,079.21	2,079.21	13.99	4.54	124.41	14.17	10.84	660.23	649.00	11.24	58.763	
2,300.00	2,165.79	2,165.79	2,165.79	14.52	4.70	118.74	11.81	10.17	689.19	677.42	11.76	58.588	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Company:	SHELL E&P	Local Co-ordinate Reference:	Well HAMILTON 2-29
Project:	MOFFAT COUNTY, CO	TVD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Reference Site:	HAMILTON PAD	MD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Site Error:	0.00 ft	North Reference:	True
Reference Well:	HAMILTON 2-29	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	HAMILTON 2-29	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #7	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
2,400.00	2,247.97	2,249.09	2,248.53	15.06	4.85	114.89	3.14	7.71	719.08	706.71	12.37	58.149	
2,500.00	2,324.84	2,337.06	2,335.00	15.63	5.02	112.33	-12.36	3.31	749.78	736.69	13.09	57.285	
2,600.00	2,395.57	2,427.99	2,422.71	16.25	5.22	110.70	-35.31	-3.20	781.13	767.16	13.97	55.909	
2,700.00	2,459.37	2,522.53	2,511.51	16.93	5.52	109.76	-66.45	-12.04	812.92	797.86	15.06	53.981	
2,800.00	2,515.55	2,621.47	2,601.11	17.69	5.93	109.38	-106.76	-23.48	844.92	828.52	16.40	51.526	



Company:	SHELL E&P	Local Co-ordinate Reference:	Well HAMILTON 2-29
Project:	MOFFAT COUNTY, CO	TVD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Reference Site:	HAMILTON PAD	MD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Site Error:	0.00 ft	North Reference:	True
Reference Well:	HAMILTON 2-29	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	HAMILTON 2-29	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #7	Offset TVD Reference:	Offset Datum

Reference Depths are relative to NEW KB @ 6358.00ft (SAVANA 650)

Offset Depths are relative to Offset Datum

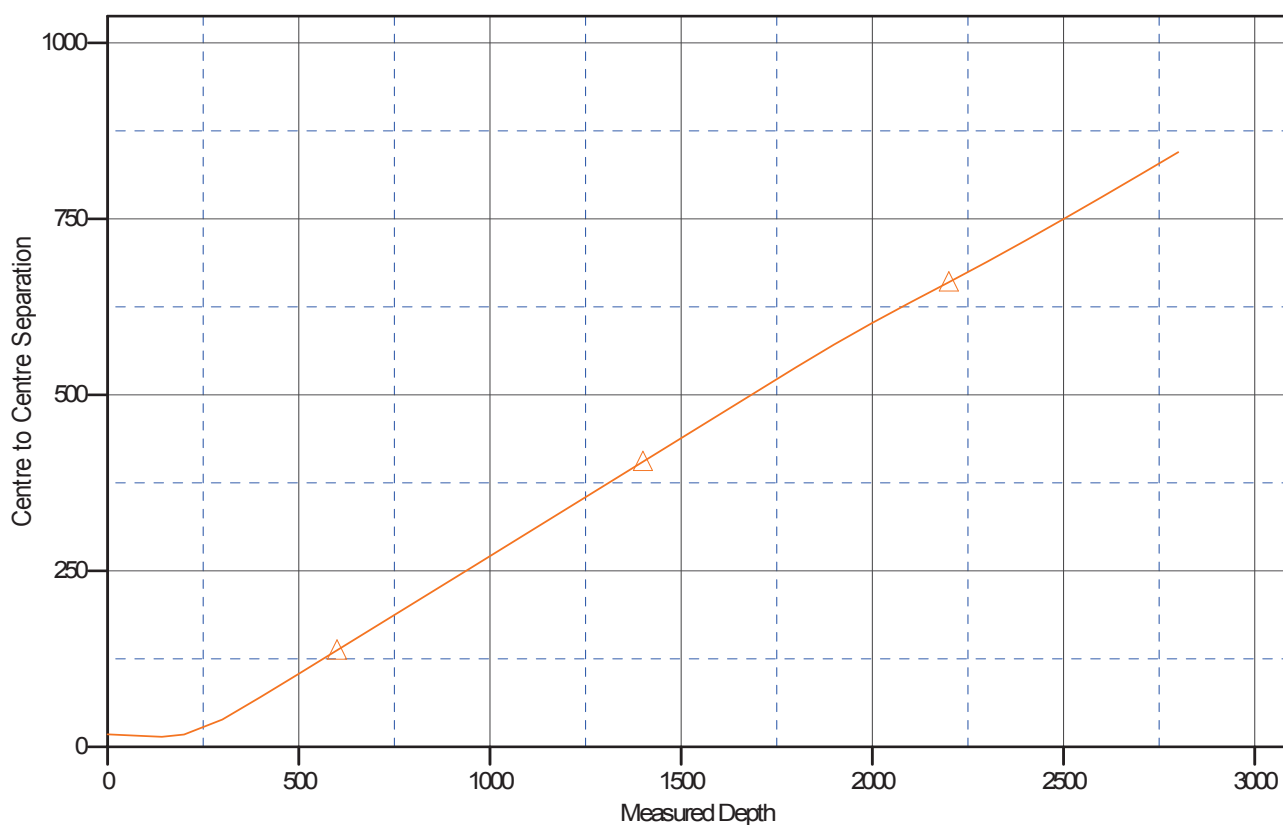
Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: HAMILTON 2-29

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: -1.37°

Ladder Plot



LEGEND

HAMILTON 1-29, HAMILTON 1-29, Design #5R1 V0



Company:	SHELL E&P	Local Co-ordinate Reference:	Well HAMILTON 2-29
Project:	MOFFAT COUNTY, CO	TVD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Reference Site:	HAMILTON PAD	MD Reference:	NEW KB @ 6358.00ft (SAVANA 650)
Site Error:	0.00 ft	North Reference:	True
Reference Well:	HAMILTON 2-29	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	HAMILTON 2-29	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #7	Offset TVD Reference:	Offset Datum

Reference Depths are relative to NEW KB @ 6358.00ft (SAVANA 650)

Offset Depths are relative to Offset Datum

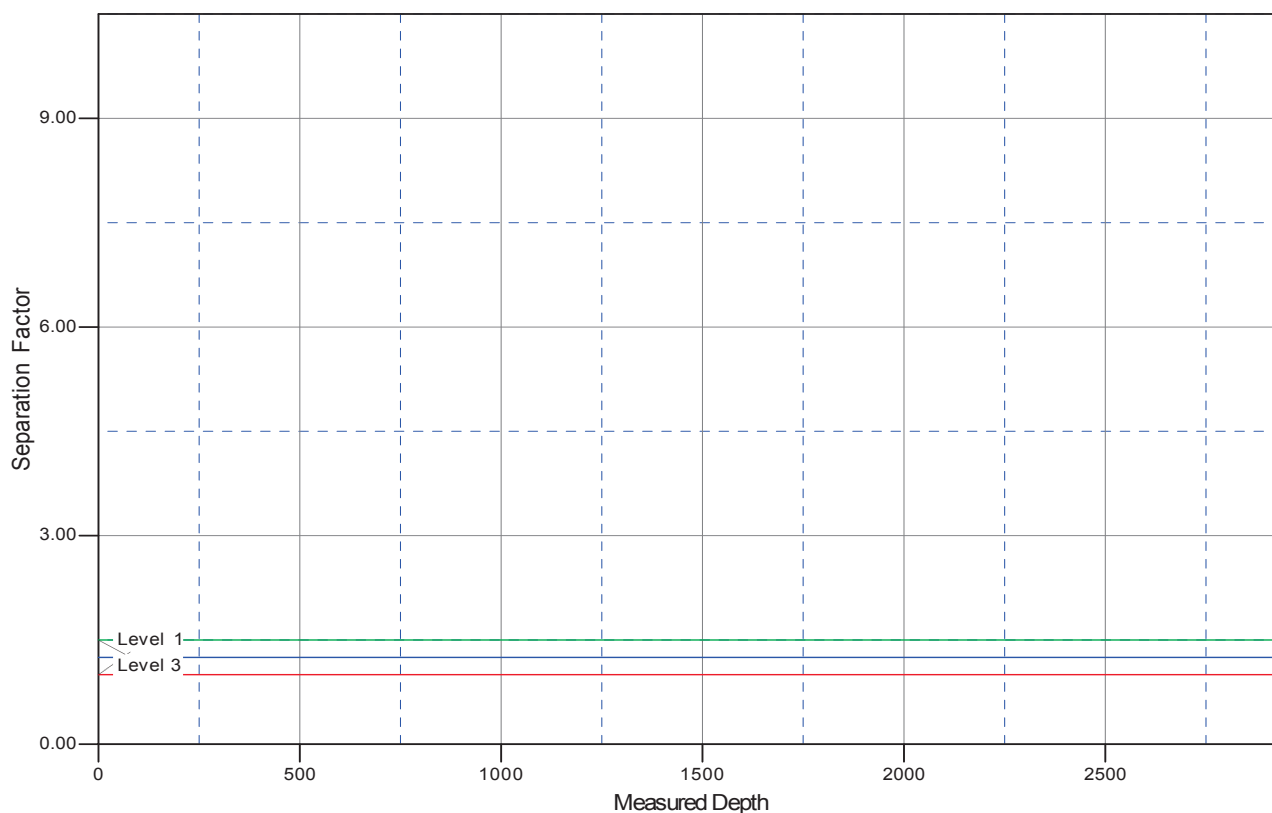
Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: HAMILTON 2-29

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: -1.37°

Separation Factor Plot



LEGEND

HAMILTON 1-29, HAMILTON 1-29, Design #5R1 V0