



Ursa Operating Company, LLC

Rockies Region

McLin B

McLin B6

Wellbore #1

Design: Actual

End Of Well Report

02 November, 2014



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well McLin B6
Project:	Rockies Region	TVD Reference:	McLin B6 @ 5661.8usft (Capstar 321)
Site:	McLin B	MD Reference:	McLin B6 @ 5661.8usft (Capstar 321)
Well:	McLin B6	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Project		Rockies Region	
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		McLin B			
Site Position:		Northing:		1,625,192.80	usft
From:	Lat/Long	Easting:		2,405,423.91	usft
Position Uncertainty:		Slot Radius:		13-3/16	"
				0.0	usft
</					

Well		McLin B6, SHL 39.531043700, -107.608092400				
Well Position	+N/-S	0.0 usft	Northing:	1,625,209.84 usft	Latitude:	39° 31' 51.757 N
	+E/-W	0.0 usft	Easting:	2,405,444.89 usft	Longitude:	107° 36' 29.133 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,661.8 usft	Ground Level:	5,648.8 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/2/2013	9.87	65.80	52,146

Design		Actual			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:		Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
		0.0	0.0	0.0	97.12

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Design: Actual

Local Co-ordinate Reference: Well McLin B6
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MD Reference: McLin B6 @ 5661.8usft (Capstar 321)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: MasterDB

Survey Program **Date** 11/2/2014

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
13.0	913.0	Survey #1 (Wellbore #1)	IS-GYRO-WLINE	MEMS RATE GYRO
1,036.0	7,155.0	Survey #2 (Wellbore #1)	MWD	MWD - Standard

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
13.0	0.00	0.00	13.0	0.0	0.0	0.0	0.00	0.00	0.00
113.0	0.08	84.50	113.0	0.1	0.0	0.1	0.08	0.08	0.00
213.0	0.45	80.51	213.0	0.5	0.1	0.5	0.37	0.37	-3.99
313.0	0.53	82.81	313.0	1.3	0.2	1.4	0.08	0.08	2.30
413.0	0.76	72.70	413.0	2.4	0.5	2.5	0.26	0.23	-10.11
513.0	0.75	95.63	513.0	3.6	0.6	3.7	0.30	-0.01	22.93
613.0	1.00	98.22	613.0	5.2	0.4	5.3	0.25	0.25	2.59
713.0	0.80	106.62	713.0	6.7	0.1	6.8	0.24	-0.20	8.40
813.0	1.02	114.71	812.9	8.3	-0.5	8.3	0.25	0.22	8.09
913.0	1.29	110.67	912.9	10.2	-1.3	10.1	0.28	0.27	-4.04
1,036.0	1.52	111.74	1,035.9	13.1	-2.4	12.9	0.19	0.19	0.87
1,122.0	2.50	93.46	1,121.8	16.1	-2.9	15.9	1.35	1.14	-21.26
1,207.0	5.23	80.14	1,206.6	21.7	-2.3	21.5	3.36	3.21	-15.67
1,293.0	7.34	74.69	1,292.1	30.5	-0.2	30.7	2.55	2.45	-6.34
1,378.0	9.61	74.54	1,376.2	42.1	3.1	42.8	2.67	2.67	-0.18
1,463.0	10.85	78.42	1,459.8	56.2	6.6	57.5	1.67	1.46	4.56
1,549.0	12.13	74.47	1,544.1	72.2	10.6	74.1	1.75	1.49	-4.59
1,634.0	13.89	75.67	1,626.9	89.9	15.6	92.6	2.09	2.07	1.41
1,720.0	16.19	75.16	1,710.0	110.7	21.2	114.2	2.68	2.67	-0.59
1,805.0	17.89	71.53	1,791.2	133.4	28.4	138.0	2.36	2.00	-4.27

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Well:	McLin B6	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
1,891.0	21.50	72.59	1,872.2	159.7	37.3	165.6	4.22	4.20	1.23	
1,976.0	24.35	73.24	1,950.5	189.9	47.0	197.2	3.37	3.35	0.76	
2,061.0	27.55	73.90	2,026.9	224.0	57.5	232.9	3.78	3.76	0.78	
2,147.0	30.45	71.61	2,102.1	262.0	69.9	272.7	3.61	3.37	-2.66	
2,232.0	33.44	69.77	2,174.2	302.2	84.8	315.1	3.70	3.52	-2.16	
2,318.0	35.90	70.78	2,244.9	345.9	101.3	361.2	2.94	2.86	1.17	
2,403.0	35.24	70.12	2,314.1	390.0	117.8	407.8	0.90	-0.78	-0.78	
2,489.0	35.07	71.70	2,384.4	434.5	134.0	454.6	1.08	-0.20	1.84	
2,574.0	34.58	70.95	2,454.2	478.2	149.6	500.6	0.77	-0.58	-0.88	
2,660.0	34.28	71.75	2,525.1	522.0	165.1	546.6	0.63	-0.35	0.93	
2,745.0	34.10	73.63	2,595.4	565.4	179.3	592.2	1.26	-0.21	2.21	
2,830.0	33.84	73.99	2,665.9	609.1	192.6	637.8	0.39	-0.31	0.42	
2,916.0	32.92	77.55	2,737.7	653.1	204.2	683.7	2.52	-1.07	4.14	
3,001.0	32.08	76.05	2,809.4	695.9	214.6	728.1	1.37	-0.99	-1.76	
3,087.0	31.73	73.24	2,882.4	737.9	226.7	772.0	1.77	-0.41	-3.27	
3,172.0	31.95	74.56	2,954.6	779.1	239.1	815.0	0.86	0.26	1.55	
3,258.0	30.48	70.42	3,028.2	819.6	252.5	857.5	3.02	-1.71	-4.81	
3,343.0	28.56	70.43	3,102.2	857.1	266.5	897.0	2.26	-2.26	0.01	
3,429.0	26.94	70.47	3,178.3	892.8	279.9	934.7	1.88	-1.88	0.05	
3,514.0	24.70	71.22	3,254.8	926.0	292.0	969.7	2.66	-2.64	0.88	
3,600.0	22.98	71.79	3,333.4	957.4	303.1	1,002.7	2.02	-2.00	0.66	
3,685.0	20.92	73.37	3,412.3	986.3	312.6	1,033.0	2.52	-2.42	1.86	
3,770.0	19.02	73.18	3,492.2	1,012.8	321.0	1,060.8	2.24	-2.24	-0.22	
3,856.0	16.79	72.01	3,574.0	1,036.9	328.8	1,086.0	2.63	-2.59	-1.36	
3,941.0	14.59	71.31	3,655.8	1,057.6	336.1	1,107.8	2.60	-2.59	-0.82	
4,027.0	12.13	72.45	3,739.5	1,075.6	342.3	1,126.7	2.88	-2.86	1.33	
4,112.0	11.12	73.55	3,822.7	1,091.2	347.3	1,143.1	1.22	-1.19	1.29	

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Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
4,197.0	9.62	72.84	3,906.4	1,105.2	351.7	1,157.7	1.77	-1.76	-0.84	
4,283.0	7.51	70.03	3,991.4	1,116.8	355.7	1,169.9	2.50	-2.45	-3.27	
4,368.0	4.70	59.62	4,075.9	1,124.5	359.4	1,178.1	3.54	-3.31	-12.25	
4,444.3	2.51	82.37	4,152.1	1,128.6	361.2	1,182.4	3.37	-2.87	29.81	
McLin B6 TGT										
4,454.0	2.29	88.14	4,161.7	1,129.0	361.2	1,182.8	3.37	-2.27	59.65	
4,539.0	1.14	182.75	4,246.7	1,130.7	360.4	1,184.5	3.10	-1.35	111.31	
4,625.0	1.05	166.62	4,332.7	1,131.1	358.8	1,184.6	0.37	-0.10	-18.76	
4,710.0	1.01	163.77	4,417.7	1,131.6	357.3	1,185.0	0.08	-0.05	-3.35	
4,796.0	0.66	242.56	4,503.7	1,131.5	356.4	1,184.8	1.27	-0.41	91.62	
4,881.0	1.05	275.04	4,588.7	1,130.3	356.2	1,183.6	0.71	0.46	38.21	
4,967.0	1.23	356.42	4,674.7	1,129.4	357.2	1,182.8	1.74	0.21	94.63	
5,052.0	1.45	358.58	4,759.6	1,129.0	359.2	1,182.7	0.27	0.26	2.54	
5,138.0	1.54	5.61	4,845.6	1,128.9	361.4	1,182.8	0.24	0.10	8.17	
5,223.0	0.70	6.22	4,930.6	1,128.8	363.1	1,182.9	0.99	-0.99	0.72	
5,308.0	0.62	20.81	5,015.6	1,128.9	364.0	1,183.1	0.22	-0.09	17.16	
5,394.0	1.01	20.99	5,101.6	1,129.2	365.2	1,183.6	0.45	0.45	0.21	
5,479.0	1.10	38.21	5,186.6	1,129.8	366.5	1,184.4	0.39	0.11	20.26	
5,565.0	0.31	137.05	5,272.5	1,130.4	367.0	1,185.0	1.38	-0.92	114.93	
5,650.0	0.62	154.27	5,357.5	1,130.8	366.4	1,185.4	0.40	0.36	20.26	
5,736.0	0.54	103.36	5,443.5	1,131.5	365.9	1,186.0	0.59	-0.09	-59.20	
5,821.0	0.22	150.67	5,528.5	1,132.0	365.7	1,186.4	0.50	-0.38	55.66	
5,906.0	1.23	221.12	5,613.5	1,131.6	364.8	1,185.9	1.38	1.19	82.88	
5,992.0	1.36	219.36	5,699.5	1,130.5	363.4	1,184.7	0.16	0.15	-2.05	
6,077.0	0.70	220.81	5,784.5	1,129.7	362.2	1,183.7	0.78	-0.78	1.71	
6,163.0	0.35	222.92	5,870.5	1,129.2	361.6	1,183.2	0.41	-0.41	2.45	
6,248.0	0.13	283.61	5,955.5	1,129.0	361.4	1,182.9	0.36	-0.26	71.40	

Company: Ursa Operating Company, LLC
Project: Rockies Region
Site: McLin B
Well: McLin B6
Wellbore: Wellbore #1
Design: Actual

Local Co-ordinate Reference: Well McLin B6
TVD Reference: McLin B6 @ 5661.8usft (Capstar 321)
MD Reference: McLin B6 @ 5661.8usft (Capstar 321)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
6,334.0	0.18	328.91	6,041.5	1,128.8	361.6	1,182.7	0.15	0.06	52.67	
6,419.0	0.31	345.52	6,126.5	1,128.7	361.9	1,182.6	0.17	0.15	19.54	
6,504.0	0.70	8.42	6,211.5	1,128.6	362.6	1,182.6	0.51	0.46	26.94	
6,590.0	1.01	32.41	6,297.5	1,128.9	363.8	1,183.1	0.54	0.36	27.90	
6,675.0	1.05	352.47	6,382.5	1,129.0	365.2	1,183.4	0.83	0.05	-46.99	
6,760.0	1.15	4.07	6,467.5	1,128.8	366.8	1,183.4	0.29	0.12	13.65	
6,846.0	2.50	28.20	6,553.4	1,129.4	369.3	1,184.3	1.77	1.57	28.06	
6,931.0	3.56	16.29	6,638.3	1,130.5	373.5	1,185.9	1.44	1.25	-14.01	
7,016.0	3.60	10.70	6,723.1	1,131.1	378.7	1,187.2	0.41	0.05	-6.58	
7,098.0	3.47	16.64	6,805.0	1,131.7	383.6	1,188.4	0.47	-0.16	7.24	
7,155.0	3.47	16.64	6,861.9	1,132.2	386.9	1,189.3	0.00	0.00	0.00	

Checked By: _____ Approved By: _____ Date: _____



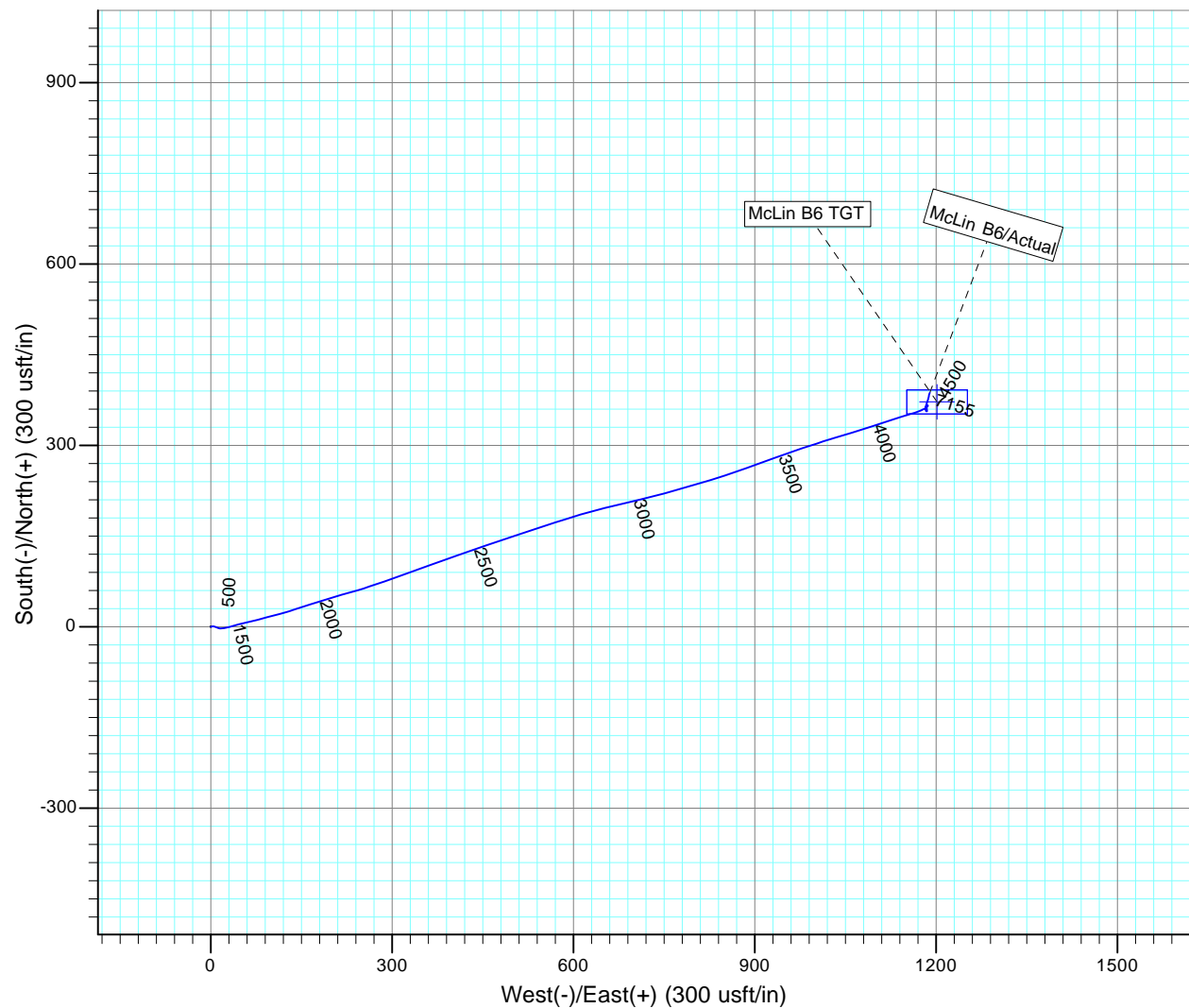
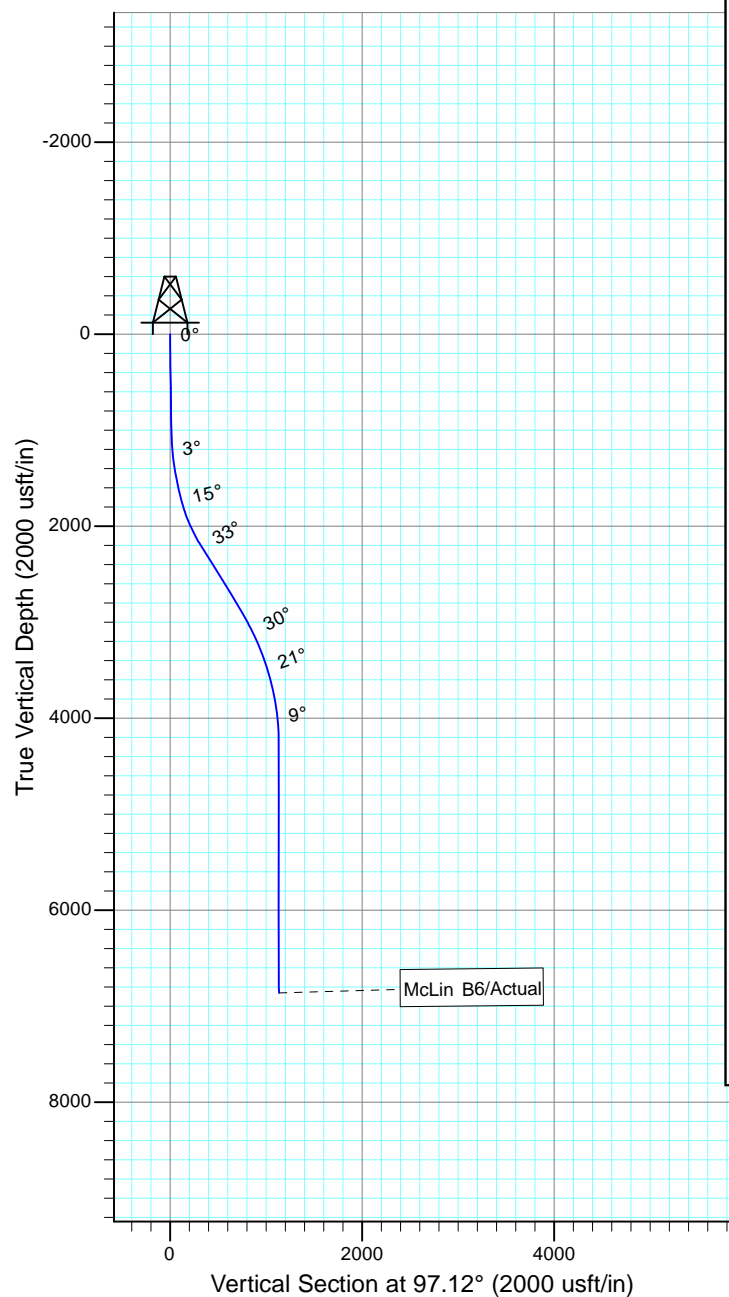
Project: Rockies Region
 Site: McLin B
 Well: McLin B6
 Wellbore: Wellbore ;
 SURVEY: Actual

FINAL SURVEY REPORT



Azimuths to True North
 Magnetic North: 9.87°

Magnetic Field
 Strength: 52145.7snT
 Dip Angle: 65.80°
 Date: 8/2/2013
 Model: IGRF200510



Design: Actual (McLin B6/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 21:16, November 02 2014
 THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS
 SUPPORTED BY ACTUAL FIELD DATA.