

Legacy Reserves

Lea County, NM (NAD83)

Lea

Lea Unit #65H

Pilot Wellbore

Plan: Plan 2

Standard Planning Report

07 March, 2018



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Lea Unit #65H
Company:	Legacy Reserves	TVD Reference:	RKB @ 3672.01ft
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3672.01ft
Site:	Lea	North Reference:	Grid
Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Wellbore		
Design:	Plan 2		

Project	Lea County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Lea			
Site Position:		Northing:	567,587.000 usft	Latitude:	32.557609°N
From:	Map	Easting:	797,256.100 usft	Longitude:	-103.502704
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45

Well	Lea Unit #65H					
Well Position	+N/-S	8,455.87 ft	Northing:	576,042.850 usft	Latitude:	32.580962°N
	+E/-W	-5,325.94 ft	Easting:	791,930.170 usft	Longitude:	-103.519779
Position Uncertainty		0.00 ft	Wellhead Elevation:	3,681.01 ft	Ground Level:	3,654.01 ft

Wellbore	Pilot Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/12/2018	6.73	60.57	48,256

Design	Plan 2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	270.00

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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,549.81	8.25	270.00	2,547.92	0.00	-39.50	1.50	1.50	0.00	270.00	
4,473.88	8.25	270.00	4,452.08	0.00	-315.50	0.00	0.00	0.00	0.00	
5,023.69	0.00	0.00	5,000.00	0.00	-355.00	1.50	-1.50	0.00	180.00	
12,223.69	0.00	0.00	12,200.00	0.00	-355.00	0.00	0.00	0.00	0.00	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Lea Unit #65H
Company:	Legacy Reserves	TVD Reference:	RKB @ 3672.01ft
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3672.01ft
Site:	Lea	North Reference:	Grid
Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Wellbore		
Design:	Plan 2		

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
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,549.81	8.25	270.00	2,547.92	0.00	-39.50	39.50	1.50	1.50	0.00
4,473.88	8.25	270.00	4,452.08	0.00	-315.50	315.50	0.00	0.00	0.00
5,023.69	0.00	0.00	5,000.00	0.00	-355.00	355.00	1.50	-1.50	0.00
10,868.71	0.00	0.00	10,845.02	0.00	-355.00	355.00	0.00	0.00	0.00
FTP-Lea 65H									
11,001.59	0.00	0.00	10,977.90	0.00	-355.00	355.00	0.00	0.00	0.00
BHL-Lea 65H									
12,223.69	0.00	0.00	12,200.00	0.00	-355.00	355.00	0.00	0.00	0.00

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP-Lea 65H - plan misses target center by 553.13ft at 10868.71ft MD (10845.02 TVD, 0.00 N, -355.00 E) - Point	0.00	0.00	10,845.02	-553.11	-350.69	575,489.740	791,579.480	32.579450°N	-103.520931
BHL-Lea 65H - plan misses target center by 7802.93ft at 11001.59ft MD (10977.90 TVD, 0.00 N, -355.00 E) - Point	0.00	0.00	10,977.90	-7,802.70	-295.03	568,240.170	791,635.140	32.559523°N	-103.520930

Legacy Reserves

Lea County, NM (NAD83)

Lea

Lea Unit #65H

Sidetrack Wellbore

Plan: Plan 2

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Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Lea Unit #65H
Company:	Legacy Reserves	TVD Reference:	RKB @ 3672.01ft
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3672.01ft
Site:	Lea	North Reference:	Grid
Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack Wellbore		
Design:	Plan 2		

Project	Lea County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Lea			
Site Position:		Northing:	567,587.000 usft	Latitude:	32.557609°N
From:	Map	Easting:	797,256.100 usft	Longitude:	-103.502704
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45

Well	Lea Unit #65H					
Well Position	+N/-S	8,455.87 ft	Northing:	576,042.850 usft	Latitude:	32.580962°N
	+E/-W	-5,325.94 ft	Easting:	791,930.170 usft	Longitude:	-103.519779
Position Uncertainty		0.00 ft	Wellhead Elevation:	3,681.01 ft	Ground Level:	3,654.01 ft

Wellbore	Sidetrack Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/12/2018	6.73	60.57	48,256

Design	Plan 2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	10,396.30
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	182.17

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
10,396.30	0.00	0.00	10,372.61	0.00	-355.00	0.00	0.00	0.00	0.00	
11,137.97	89.00	179.56	10,850.00	-469.12	-351.40	12.00	12.00	0.00	179.56	
18,472.88	89.00	179.56	10,977.90	-7,802.70	-295.03	0.00	0.00	0.00	0.00	BHL-Lea 65H

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Lea Unit #65H
Company:	Legacy Reserves	TVD Reference:	RKB @ 3672.01ft
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3672.01ft
Site:	Lea	North Reference:	Grid
Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack Wellbore		
Design:	Plan 2		

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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	1.50	270.00	2,099.99	0.00	-1.31	0.05	1.50	1.50	0.00
2,200.00	3.00	270.00	2,199.91	0.00	-5.23	0.20	1.50	1.50	0.00
2,300.00	4.50	270.00	2,299.69	0.00	-11.77	0.44	1.50	1.50	0.00
2,400.00	6.00	270.00	2,399.27	0.00	-20.92	0.79	1.50	1.50	0.00
2,500.00	7.50	270.00	2,498.57	0.00	-32.68	1.23	1.50	1.50	0.00
2,549.81	8.25	270.00	2,547.92	0.00	-39.50	1.49	1.50	1.50	0.00
2,600.00	8.25	270.00	2,597.58	0.00	-46.70	1.76	0.00	0.00	0.00
2,700.00	8.25	270.00	2,696.55	0.00	-61.05	2.31	0.00	0.00	0.00
2,800.00	8.25	270.00	2,795.52	0.00	-75.39	2.85	0.00	0.00	0.00
2,900.00	8.25	270.00	2,894.48	0.00	-89.73	3.39	0.00	0.00	0.00
3,000.00	8.25	270.00	2,993.45	0.00	-104.08	3.93	0.00	0.00	0.00
3,100.00	8.25	270.00	3,092.41	0.00	-118.42	4.47	0.00	0.00	0.00
3,200.00	8.25	270.00	3,191.38	0.00	-132.77	5.02	0.00	0.00	0.00
3,300.00	8.25	270.00	3,290.35	0.00	-147.11	5.56	0.00	0.00	0.00
3,400.00	8.25	270.00	3,389.31	0.00	-161.46	6.10	0.00	0.00	0.00
3,500.00	8.25	270.00	3,488.28	0.00	-175.80	6.64	0.00	0.00	0.00
3,600.00	8.25	270.00	3,587.24	0.00	-190.15	7.18	0.00	0.00	0.00
3,700.00	8.25	270.00	3,686.21	0.00	-204.49	7.73	0.00	0.00	0.00
3,800.00	8.25	270.00	3,785.17	0.00	-218.83	8.27	0.00	0.00	0.00
3,900.00	8.25	270.00	3,884.14	0.00	-233.18	8.81	0.00	0.00	0.00
4,000.00	8.25	270.00	3,983.11	0.00	-247.52	9.35	0.00	0.00	0.00
4,100.00	8.25	270.00	4,082.07	0.00	-261.87	9.89	0.00	0.00	0.00
4,200.00	8.25	270.00	4,181.04	0.00	-276.21	10.44	0.00	0.00	0.00
4,300.00	8.25	270.00	4,280.00	0.00	-290.56	10.98	0.00	0.00	0.00
4,400.00	8.25	270.00	4,378.97	0.00	-304.90	11.52	0.00	0.00	0.00
4,473.88	8.25	270.00	4,452.08	0.00	-315.50	11.92	0.00	0.00	0.00
4,500.00	7.86	270.00	4,477.95	0.00	-319.16	12.06	1.50	-1.50	0.00
4,600.00	6.36	270.00	4,577.18	0.00	-331.53	12.53	1.50	-1.50	0.00
4,700.00	4.86	270.00	4,676.70	0.00	-341.29	12.90	1.50	-1.50	0.00
4,800.00	3.36	270.00	4,776.44	0.00	-348.45	13.17	1.50	-1.50	0.00
4,900.00	1.86	270.00	4,876.33	0.00	-353.00	13.34	1.50	-1.50	0.00
5,000.00	0.36	270.00	4,976.31	0.00	-354.93	13.41	1.50	-1.50	0.00
5,023.69	0.00	0.00	5,000.00	0.00	-355.00	13.41	1.50	-1.50	0.00

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Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3672.01ft
Site:	Lea	North Reference:	Grid
Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack Wellbore		
Design:	Plan 2		

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)
5,100.00	0.00	0.00	5,076.31	0.00	-355.00	13.41	0.00	0.00	0.00
5,200.00	0.00	0.00	5,176.31	0.00	-355.00	13.41	0.00	0.00	0.00
5,300.00	0.00	0.00	5,276.31	0.00	-355.00	13.41	0.00	0.00	0.00
5,400.00	0.00	0.00	5,376.31	0.00	-355.00	13.41	0.00	0.00	0.00
5,500.00	0.00	0.00	5,476.31	0.00	-355.00	13.41	0.00	0.00	0.00
5,600.00	0.00	0.00	5,576.31	0.00	-355.00	13.41	0.00	0.00	0.00
5,700.00	0.00	0.00	5,676.31	0.00	-355.00	13.41	0.00	0.00	0.00
5,800.00	0.00	0.00	5,776.31	0.00	-355.00	13.41	0.00	0.00	0.00
5,900.00	0.00	0.00	5,876.31	0.00	-355.00	13.41	0.00	0.00	0.00
6,000.00	0.00	0.00	5,976.31	0.00	-355.00	13.41	0.00	0.00	0.00
6,100.00	0.00	0.00	6,076.31	0.00	-355.00	13.41	0.00	0.00	0.00
6,200.00	0.00	0.00	6,176.31	0.00	-355.00	13.41	0.00	0.00	0.00
6,300.00	0.00	0.00	6,276.31	0.00	-355.00	13.41	0.00	0.00	0.00
6,400.00	0.00	0.00	6,376.31	0.00	-355.00	13.41	0.00	0.00	0.00
6,500.00	0.00	0.00	6,476.31	0.00	-355.00	13.41	0.00	0.00	0.00
6,600.00	0.00	0.00	6,576.31	0.00	-355.00	13.41	0.00	0.00	0.00
6,700.00	0.00	0.00	6,676.31	0.00	-355.00	13.41	0.00	0.00	0.00
6,800.00	0.00	0.00	6,776.31	0.00	-355.00	13.41	0.00	0.00	0.00
6,900.00	0.00	0.00	6,876.31	0.00	-355.00	13.41	0.00	0.00	0.00
7,000.00	0.00	0.00	6,976.31	0.00	-355.00	13.41	0.00	0.00	0.00
7,100.00	0.00	0.00	7,076.31	0.00	-355.00	13.41	0.00	0.00	0.00
7,200.00	0.00	0.00	7,176.31	0.00	-355.00	13.41	0.00	0.00	0.00
7,300.00	0.00	0.00	7,276.31	0.00	-355.00	13.41	0.00	0.00	0.00
7,400.00	0.00	0.00	7,376.31	0.00	-355.00	13.41	0.00	0.00	0.00
7,500.00	0.00	0.00	7,476.31	0.00	-355.00	13.41	0.00	0.00	0.00
7,600.00	0.00	0.00	7,576.31	0.00	-355.00	13.41	0.00	0.00	0.00
7,700.00	0.00	0.00	7,676.31	0.00	-355.00	13.41	0.00	0.00	0.00
7,800.00	0.00	0.00	7,776.31	0.00	-355.00	13.41	0.00	0.00	0.00
7,900.00	0.00	0.00	7,876.31	0.00	-355.00	13.41	0.00	0.00	0.00
8,000.00	0.00	0.00	7,976.31	0.00	-355.00	13.41	0.00	0.00	0.00
8,100.00	0.00	0.00	8,076.31	0.00	-355.00	13.41	0.00	0.00	0.00
8,200.00	0.00	0.00	8,176.31	0.00	-355.00	13.41	0.00	0.00	0.00
8,300.00	0.00	0.00	8,276.31	0.00	-355.00	13.41	0.00	0.00	0.00
8,400.00	0.00	0.00	8,376.31	0.00	-355.00	13.41	0.00	0.00	0.00
8,500.00	0.00	0.00	8,476.31	0.00	-355.00	13.41	0.00	0.00	0.00
8,600.00	0.00	0.00	8,576.31	0.00	-355.00	13.41	0.00	0.00	0.00
8,700.00	0.00	0.00	8,676.31	0.00	-355.00	13.41	0.00	0.00	0.00
8,800.00	0.00	0.00	8,776.31	0.00	-355.00	13.41	0.00	0.00	0.00
8,900.00	0.00	0.00	8,876.31	0.00	-355.00	13.41	0.00	0.00	0.00
9,000.00	0.00	0.00	8,976.31	0.00	-355.00	13.41	0.00	0.00	0.00
9,100.00	0.00	0.00	9,076.31	0.00	-355.00	13.41	0.00	0.00	0.00
9,200.00	0.00	0.00	9,176.31	0.00	-355.00	13.41	0.00	0.00	0.00
9,300.00	0.00	0.00	9,276.31	0.00	-355.00	13.41	0.00	0.00	0.00
9,400.00	0.00	0.00	9,376.31	0.00	-355.00	13.41	0.00	0.00	0.00
9,500.00	0.00	0.00	9,476.31	0.00	-355.00	13.41	0.00	0.00	0.00
9,600.00	0.00	0.00	9,576.31	0.00	-355.00	13.41	0.00	0.00	0.00
9,700.00	0.00	0.00	9,676.31	0.00	-355.00	13.41	0.00	0.00	0.00
9,800.00	0.00	0.00	9,776.31	0.00	-355.00	13.41	0.00	0.00	0.00
9,900.00	0.00	0.00	9,876.31	0.00	-355.00	13.41	0.00	0.00	0.00
10,000.00	0.00	0.00	9,976.31	0.00	-355.00	13.41	0.00	0.00	0.00
10,100.00	0.00	0.00	10,076.31	0.00	-355.00	13.41	0.00	0.00	0.00
10,200.00	0.00	0.00	10,176.31	0.00	-355.00	13.41	0.00	0.00	0.00
10,300.00	0.00	0.00	10,276.31	0.00	-355.00	13.41	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Lea Unit #65H
Company:	Legacy Reserves	TVD Reference:	RKB @ 3672.01ft
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3672.01ft
Site:	Lea	North Reference:	Grid
Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack Wellbore		
Design:	Plan 2		

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)
10,396.30	0.00	0.00	10,372.61	0.00	-355.00	13.41	0.00	0.00	0.00
10,400.00	0.44	179.56	10,376.31	-0.01	-355.00	13.43	12.00	12.00	0.00
10,425.00	3.44	179.56	10,401.29	-0.86	-354.99	14.27	12.00	12.00	0.00
10,450.00	6.44	179.56	10,426.20	-3.02	-354.98	16.43	12.00	12.00	0.00
10,475.00	9.44	179.56	10,450.95	-6.47	-354.95	19.88	12.00	12.00	0.00
10,500.00	12.44	179.56	10,475.50	-11.22	-354.91	24.62	12.00	12.00	0.00
10,525.00	15.44	179.56	10,499.76	-17.24	-354.87	30.64	12.00	12.00	0.00
10,550.00	18.44	179.56	10,523.67	-24.53	-354.81	37.91	12.00	12.00	0.00
10,575.00	21.44	179.56	10,547.17	-33.05	-354.75	46.43	12.00	12.00	0.00
10,600.00	24.44	179.56	10,570.19	-42.80	-354.67	56.17	12.00	12.00	0.00
10,625.00	27.44	179.56	10,592.66	-53.73	-354.59	67.09	12.00	12.00	0.00
10,650.00	30.44	179.56	10,614.54	-65.83	-354.49	79.18	12.00	12.00	0.00
10,675.00	33.44	179.56	10,635.75	-79.05	-354.39	92.39	12.00	12.00	0.00
10,700.00	36.44	179.56	10,656.24	-93.37	-354.28	106.69	12.00	12.00	0.00
10,725.00	39.44	179.56	10,675.95	-108.74	-354.16	122.05	12.00	12.00	0.00
10,750.00	42.44	179.56	10,694.84	-125.12	-354.04	138.41	12.00	12.00	0.00
10,775.00	45.44	179.56	10,712.83	-142.47	-353.91	155.74	12.00	12.00	0.00
10,800.00	48.44	179.56	10,729.90	-160.73	-353.77	173.98	12.00	12.00	0.00
10,825.00	51.44	179.56	10,745.99	-179.87	-353.62	193.10	12.00	12.00	0.00
10,850.00	54.44	179.56	10,761.05	-199.81	-353.47	213.03	12.00	12.00	0.00
10,875.00	57.44	179.56	10,775.05	-220.52	-353.31	233.71	12.00	12.00	0.00
10,900.00	60.44	179.56	10,787.94	-241.94	-353.14	255.11	12.00	12.00	0.00
10,925.00	63.44	179.56	10,799.70	-264.00	-352.97	277.14	12.00	12.00	0.00
10,950.00	66.44	179.56	10,810.29	-286.64	-352.80	299.77	12.00	12.00	0.00
10,975.00	69.44	179.56	10,819.67	-309.81	-352.62	322.91	12.00	12.00	0.00
11,000.00	72.44	179.56	10,827.84	-333.43	-352.44	346.51	12.00	12.00	0.00
11,025.00	75.44	179.56	10,834.75	-357.45	-352.25	370.51	12.00	12.00	0.00
11,050.00	78.44	179.56	10,840.40	-381.80	-352.07	394.83	12.00	12.00	0.00
11,075.00	81.44	179.56	10,844.76	-406.42	-351.88	419.42	12.00	12.00	0.00
11,100.00	84.44	179.56	10,847.83	-431.22	-351.69	444.20	12.00	12.00	0.00
11,125.00	87.44	179.56	10,849.60	-456.16	-351.50	469.11	12.00	12.00	0.00
11,137.97	89.00	179.56	10,850.00	-469.12	-351.40	482.06	12.00	12.00	0.00
11,200.00	89.00	179.56	10,851.08	-531.14	-350.92	544.02	0.00	0.00	0.00
11,221.86	89.00	179.56	10,851.47	-553.00	-350.75	565.86	0.00	0.00	0.00
FTP-Lea 65H									
11,300.00	89.00	179.56	10,852.83	-631.12	-350.15	643.90	0.00	0.00	0.00
11,400.00	89.00	179.56	10,854.58	-731.10	-349.39	743.78	0.00	0.00	0.00
11,500.00	89.00	179.56	10,856.32	-831.09	-348.62	843.66	0.00	0.00	0.00
11,600.00	89.00	179.56	10,858.07	-931.07	-347.85	943.55	0.00	0.00	0.00
11,700.00	89.00	179.56	10,859.81	-1,031.05	-347.08	1,043.43	0.00	0.00	0.00
11,800.00	89.00	179.56	10,861.56	-1,131.03	-346.31	1,143.31	0.00	0.00	0.00
11,900.00	89.00	179.56	10,863.30	-1,231.01	-345.55	1,243.19	0.00	0.00	0.00
12,000.00	89.00	179.56	10,865.05	-1,330.99	-344.78	1,343.07	0.00	0.00	0.00
12,100.00	89.00	179.56	10,866.79	-1,430.98	-344.01	1,442.95	0.00	0.00	0.00
12,200.00	89.00	179.56	10,868.54	-1,530.96	-343.24	1,542.83	0.00	0.00	0.00
12,300.00	89.00	179.56	10,870.28	-1,630.94	-342.48	1,642.72	0.00	0.00	0.00
12,400.00	89.00	179.56	10,872.03	-1,730.92	-341.71	1,742.60	0.00	0.00	0.00
12,500.00	89.00	179.56	10,873.77	-1,830.90	-340.94	1,842.48	0.00	0.00	0.00
12,600.00	89.00	179.56	10,875.52	-1,930.89	-340.17	1,942.36	0.00	0.00	0.00
12,700.00	89.00	179.56	10,877.26	-2,030.87	-339.40	2,042.24	0.00	0.00	0.00
12,800.00	89.00	179.56	10,879.01	-2,130.85	-338.64	2,142.12	0.00	0.00	0.00
12,900.00	89.00	179.56	10,880.75	-2,230.83	-337.87	2,242.00	0.00	0.00	0.00
13,000.00	89.00	179.56	10,882.50	-2,330.81	-337.10	2,341.89	0.00	0.00	0.00
13,100.00	89.00	179.56	10,884.24	-2,430.79	-336.33	2,441.77	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Lea Unit #65H
Company:	Legacy Reserves	TVD Reference:	RKB @ 3672.01ft
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3672.01ft
Site:	Lea	North Reference:	Grid
Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack Wellbore		
Design:	Plan 2		

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)
13,200.00	89.00	179.56	10,885.99	-2,530.78	-335.56	2,541.65	0.00	0.00	0.00
13,300.00	89.00	179.56	10,887.73	-2,630.76	-334.80	2,641.53	0.00	0.00	0.00
13,400.00	89.00	179.56	10,889.48	-2,730.74	-334.03	2,741.41	0.00	0.00	0.00
13,500.00	89.00	179.56	10,891.23	-2,830.72	-333.26	2,841.29	0.00	0.00	0.00
13,600.00	89.00	179.56	10,892.97	-2,930.70	-332.49	2,941.17	0.00	0.00	0.00
13,700.00	89.00	179.56	10,894.72	-3,030.69	-331.73	3,041.06	0.00	0.00	0.00
13,800.00	89.00	179.56	10,896.46	-3,130.67	-330.96	3,140.94	0.00	0.00	0.00
13,900.00	89.00	179.56	10,898.21	-3,230.65	-330.19	3,240.82	0.00	0.00	0.00
14,000.00	89.00	179.56	10,899.95	-3,330.63	-329.42	3,340.70	0.00	0.00	0.00
14,100.00	89.00	179.56	10,901.70	-3,430.61	-328.65	3,440.58	0.00	0.00	0.00
14,200.00	89.00	179.56	10,903.44	-3,530.59	-327.89	3,540.46	0.00	0.00	0.00
14,300.00	89.00	179.56	10,905.19	-3,630.58	-327.12	3,640.34	0.00	0.00	0.00
14,400.00	89.00	179.56	10,906.93	-3,730.56	-326.35	3,740.22	0.00	0.00	0.00
14,500.00	89.00	179.56	10,908.68	-3,830.54	-325.58	3,840.11	0.00	0.00	0.00
14,600.00	89.00	179.56	10,910.42	-3,930.52	-324.82	3,939.99	0.00	0.00	0.00
14,700.00	89.00	179.56	10,912.17	-4,030.50	-324.05	4,039.87	0.00	0.00	0.00
14,800.00	89.00	179.56	10,913.91	-4,130.49	-323.28	4,139.75	0.00	0.00	0.00
14,900.00	89.00	179.56	10,915.66	-4,230.47	-322.51	4,239.63	0.00	0.00	0.00
15,000.00	89.00	179.56	10,917.40	-4,330.45	-321.74	4,339.51	0.00	0.00	0.00
15,100.00	89.00	179.56	10,919.15	-4,430.43	-320.98	4,439.39	0.00	0.00	0.00
15,200.00	89.00	179.56	10,920.89	-4,530.41	-320.21	4,539.28	0.00	0.00	0.00
15,300.00	89.00	179.56	10,922.64	-4,630.39	-319.44	4,639.16	0.00	0.00	0.00
15,400.00	89.00	179.56	10,924.38	-4,730.38	-318.67	4,739.04	0.00	0.00	0.00
15,500.00	89.00	179.56	10,926.13	-4,830.36	-317.90	4,838.92	0.00	0.00	0.00
15,600.00	89.00	179.56	10,927.88	-4,930.34	-317.14	4,938.80	0.00	0.00	0.00
15,700.00	89.00	179.56	10,929.62	-5,030.32	-316.37	5,038.68	0.00	0.00	0.00
15,800.00	89.00	179.56	10,931.37	-5,130.30	-315.60	5,138.56	0.00	0.00	0.00
15,900.00	89.00	179.56	10,933.11	-5,230.29	-314.83	5,238.45	0.00	0.00	0.00
16,000.00	89.00	179.56	10,934.86	-5,330.27	-314.07	5,338.33	0.00	0.00	0.00
16,100.00	89.00	179.56	10,936.60	-5,430.25	-313.30	5,438.21	0.00	0.00	0.00
16,200.00	89.00	179.56	10,938.35	-5,530.23	-312.53	5,538.09	0.00	0.00	0.00
16,300.00	89.00	179.56	10,940.09	-5,630.21	-311.76	5,637.97	0.00	0.00	0.00
16,400.00	89.00	179.56	10,941.84	-5,730.19	-310.99	5,737.85	0.00	0.00	0.00
16,500.00	89.00	179.56	10,943.58	-5,830.18	-310.23	5,837.73	0.00	0.00	0.00
16,600.00	89.00	179.56	10,945.33	-5,930.16	-309.46	5,937.62	0.00	0.00	0.00
16,700.00	89.00	179.56	10,947.07	-6,030.14	-308.69	6,037.50	0.00	0.00	0.00
16,800.00	89.00	179.56	10,948.82	-6,130.12	-307.92	6,137.38	0.00	0.00	0.00
16,900.00	89.00	179.56	10,950.56	-6,230.10	-307.16	6,237.26	0.00	0.00	0.00
17,000.00	89.00	179.56	10,952.31	-6,330.09	-306.39	6,337.14	0.00	0.00	0.00
17,100.00	89.00	179.56	10,954.05	-6,430.07	-305.62	6,437.02	0.00	0.00	0.00
17,200.00	89.00	179.56	10,955.80	-6,530.05	-304.85	6,536.90	0.00	0.00	0.00
17,300.00	89.00	179.56	10,957.54	-6,630.03	-304.08	6,636.79	0.00	0.00	0.00
17,400.00	89.00	179.56	10,959.29	-6,730.01	-303.32	6,736.67	0.00	0.00	0.00
17,500.00	89.00	179.56	10,961.03	-6,829.99	-302.55	6,836.55	0.00	0.00	0.00
17,600.00	89.00	179.56	10,962.78	-6,929.98	-301.78	6,936.43	0.00	0.00	0.00
17,700.00	89.00	179.56	10,964.53	-7,029.96	-301.01	7,036.31	0.00	0.00	0.00
17,800.00	89.00	179.56	10,966.27	-7,129.94	-300.24	7,136.19	0.00	0.00	0.00
17,900.00	89.00	179.56	10,968.02	-7,229.92	-299.48	7,236.07	0.00	0.00	0.00
18,000.00	89.00	179.56	10,969.76	-7,329.90	-298.71	7,335.96	0.00	0.00	0.00
18,100.00	89.00	179.56	10,971.51	-7,429.89	-297.94	7,435.84	0.00	0.00	0.00
18,200.00	89.00	179.56	10,973.25	-7,529.87	-297.17	7,535.72	0.00	0.00	0.00
18,300.00	89.00	179.56	10,975.00	-7,629.85	-296.41	7,635.60	0.00	0.00	0.00
18,400.00	89.00	179.56	10,976.74	-7,729.83	-295.64	7,735.48	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Lea Unit #65H
Company:	Legacy Reserves	TVD Reference:	RKB @ 3672.01ft
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3672.01ft
Site:	Lea	North Reference:	Grid
Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack Wellbore		
Design:	Plan 2		

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)
18,472.88	89.00	179.56	10,977.90	-7,802.70	-295.03	7,808.27	0.00	0.00	0.00
BHL-Lea 65H									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP-Lea 65H - plan misses target center by 6.45ft at 11221.86ft MD (10851.47 TVD, -553.00 N, -350.75 E) - Point	0.00	0.00	10,845.02	-553.11	-350.69	575,489.740	791,579.480	32.579450°N	-103.520931
BHL-Lea 65H - plan hits target center - Point	0.00	0.00	10,977.90	-7,802.70	-295.03	568,240.170	791,635.140	32.559523°N	-103.520930



REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Lea Unit #65H, Grid North

Vertical (TVD) Reference: RKB @ 3672.01ft

Measured Depth Reference: RKB @ 3672.01ft

Calculation Method: Minimum Curvature

MOTIVE
DRILLING TECHNOLOGIES

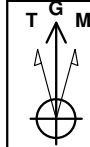
Project: Lea County, NM (NAD83)

Site: Lea

Well: Lea Unit #65H

Wellbore: Sidetrack Wellbore

Design: Plan 2



Azimuths to Grid North

True North: -0.44°

Magnetic North: 6.29°

Magnetic Field

Strength: 48256.0nT

Dip Angle: 60.57°

Date: 2/12/2018

Model: HDGM

WELL DETAILS: Lea Unit #65H

Ground Level: 3654.01

+N/-S
0.00+E/-W
0.00Northing
576042.850Easting
791930.170Latitude
32.580962°NLongitude
-103.519779

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
1	10396.30	0.00	0.00	10372.61	0.00	-355.00	0.00	0.00	13.41
2	11137.97	89.00	179.56	10850.00	-469.12	-351.40	12.00	179.56	482.06
3	118472.88	89.00	179.56	10977.90	-7802.70	-295.03	0.00	0.00	7808.27

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
BHL	10977.90	-7802.70	-295.03	568240.170	791635.140
FTP	10845.02	-553.11	-350.69	575489.740	791579.480

