

25-43249

Legacy Reserves Operating

Lea County, NM

Hamon Fed Pad

Hamon Fed Com A #8H

HOBBS OCD

MAR 01 2018

RECEIVED

Wellbore #1

Design: Wellbore #1

Standard Survey Report

19 September, 2017

Provide signature page for
directional survey

Integrity Directional Services, LLC

Survey Report

Company:	Legacy Reserves Operating	Local Co-ordinate Reference:	Well Hamon Fed Com A #8H
Project:	Lea County, NM	TVD Reference:	KB=18' @ 3629.00ft (McVay 4)
Site:	Hamon Fed Pad	MD Reference:	KB=18' @ 3629.00ft (McVay 4)
Well:	Hamon Fed Com A #8H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

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

Site	Hamon Fed Pad				
Site Position:		Northing:	580,846.2000 usft	Latitude:	32.595407
From:	Map	Easting:	723,480.4000 usft	Longitude:	-103.741904
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.32 °

Well	Hamon Fed Com A #8H					
Well Position	+N/-S	0.00 ft	Northing:	581,400.6000 usft	Latitude:	32.596878
	+E/-W	0.00 ft	Easting:	726,902.7000 usft	Longitude:	-103.730782
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	3,611.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/22/2017	7.08	60.55	48,396

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	164.99	

Survey Program	Date 9/19/2017				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
100.00	5,384.00	Gyro Surveys (Wellbore #1)	NS-GYRO-MS	North sensing gyrocompassing m/s	
5,561.00	15,580.00	MWD Surveys (Wellbore #1)	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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.29	106.25	100.00	-0.07	0.24	0.13	0.29	0.29	0.00	
First Gyro Survey										
200.00	0.36	110.74	200.00	-0.25	0.78	0.45	0.07	0.07	4.49	
300.00	0.32	111.63	300.00	-0.47	1.33	0.80	0.04	-0.04	0.89	
400.00	0.15	78.24	400.00	-0.54	1.72	0.97	0.21	-0.17	-33.39	
500.00	0.24	79.25	499.99	-0.48	2.05	0.99	0.09	0.09	1.01	
600.00	0.33	10.76	599.99	-0.16	2.31	0.75	0.33	0.09	-68.49	
700.00	0.44	55.46	699.99	0.35	2.68	0.36	0.31	0.11	44.70	
800.00	0.36	112.72	799.99	0.44	3.29	0.43	0.39	-0.08	57.26	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

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)
900.00	0.78	77.60	899.98	0.47	4.24	0.65	0.53	0.42	-35.12
1,000.00	0.55	65.79	999.98	0.81	5.35	0.60	0.27	-0.23	-11.81
1,100.00	0.43	79.44	1,099.97	1.07	6.15	0.56	0.17	-0.12	13.65
1,200.00	0.67	86.40	1,199.97	1.18	7.11	0.70	0.25	0.24	6.96
1,300.00	0.11	1.83	1,299.97	1.31	7.69	0.72	0.67	-0.56	-84.57
1,400.00	0.37	114.23	1,399.97	1.28	7.99	0.84	0.42	0.26	112.40
1,500.00	0.77	134.48	1,499.96	0.67	8.76	1.62	0.44	0.40	20.25
1,600.00	0.61	41.15	1,599.96	0.60	9.59	1.90	1.01	-0.16	-93.33
1,700.00	0.61	37.30	1,699.95	1.43	10.27	1.28	0.04	0.00	-3.85
1,800.00	0.45	38.31	1,799.95	2.16	10.83	0.72	0.16	-0.16	1.01
1,900.00	0.26	256.87	1,899.95	2.42	10.86	0.48	0.67	-0.19	-141.44
2,000.00	0.09	20.18	1,999.95	2.44	10.66	0.41	0.32	-0.17	123.31
2,100.00	0.33	215.06	2,099.95	2.28	10.52	0.53	0.42	0.24	-165.12
2,200.00	0.26	80.01	2,199.94	2.08	10.58	0.73	0.55	-0.07	-135.05
2,300.00	0.37	62.53	2,299.94	2.27	11.09	0.68	0.14	0.11	-17.48
2,400.00	0.35	64.18	2,399.94	2.55	11.65	0.56	0.02	-0.02	1.65
2,500.00	0.40	141.35	2,499.94	2.41	12.15	0.82	0.47	0.05	77.17
2,600.00	1.58	140.95	2,599.92	1.07	13.23	2.40	1.18	1.18	-0.40
2,700.00	3.34	127.20	2,699.83	-1.77	16.42	5.96	1.84	1.76	-13.75
2,800.00	3.74	105.23	2,799.64	-4.38	21.89	9.90	1.40	0.40	-21.97
2,900.00	4.95	86.72	2,899.36	-4.99	29.34	12.43	1.84	1.21	-18.51
3,000.00	5.99	71.28	2,998.91	-3.07	38.59	12.97	1.79	1.04	-15.44
3,100.00	6.98	83.19	3,098.27	-0.68	49.57	13.50	1.67	0.99	11.91
3,200.00	7.31	92.53	3,197.50	-0.24	61.96	16.28	1.21	0.33	9.34
3,300.00	9.33	98.44	3,296.44	-1.71	76.33	21.43	2.19	2.02	5.91
3,400.00	10.54	101.94	3,394.94	-4.79	93.30	28.80	1.35	1.21	3.50
3,500.00	11.10	103.44	3,493.16	-8.92	111.61	37.53	0.63	0.56	1.50
3,600.00	12.76	106.09	3,591.00	-14.22	131.59	47.82	1.75	1.66	2.65
3,700.00	13.39	108.61	3,688.41	-20.97	153.17	59.94	0.85	0.63	2.52
3,800.00	14.04	111.06	3,785.56	-29.03	175.47	73.49	0.87	0.65	2.45
3,900.00	15.47	112.98	3,882.26	-38.59	199.06	88.85	1.51	1.43	1.92
4,000.00	16.69	116.37	3,978.34	-50.18	224.21	106.55	1.54	1.22	3.39
4,100.00	18.07	116.66	4,073.78	-63.52	250.94	126.36	1.38	1.38	0.29
4,200.00	19.52	116.59	4,168.44	-77.95	279.74	147.76	1.45	1.45	-0.07
4,300.00	21.38	117.54	4,262.14	-93.86	310.84	171.19	1.89	1.86	0.95
4,400.00	23.42	118.53	4,354.59	-111.78	344.47	197.21	2.07	2.04	0.99
4,500.00	25.70	119.32	4,445.53	-131.90	380.84	226.06	2.30	2.28	0.79
4,600.00	29.01	119.88	4,534.34	-154.60	420.78	258.33	3.32	3.31	0.56
4,700.00	32.49	120.13	4,620.26	-180.17	465.05	294.50	3.48	3.48	0.25
4,800.00	36.17	120.12	4,702.83	-208.47	513.82	334.47	3.68	3.68	-0.01
4,900.00	40.11	119.86	4,781.47	-239.33	567.30	378.13	3.94	3.94	-0.26
5,000.00	44.17	119.74	4,855.60	-272.66	625.51	425.40	4.06	4.06	-0.12
5,100.00	48.17	119.47	4,924.84	-308.29	688.22	476.06	4.00	4.00	-0.27

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Survey Report

Company: Legacy Reserves Operating
Project: Lea County, NM
Site: Hamon Fed Pad
Well: Hamon Fed Com A #8H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Hamon Fed Com A #8H
TVD Reference: KB=18' @ 3629.00ft (McVay 4)
MD Reference: KB=18' @ 3629.00ft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

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)
5,200.00	52.70	119.05	4,988.52	-345.95	755.47	529.86	4.54	4.53	-0.42
5,300.00	56.23	118.74	5,046.63	-385.26	826.70	586.28	3.54	3.53	-0.31
5,384.00	58.64	118.54	5,091.84	-419.19	888.83	635.14	2.88	2.87	-0.24
Last Gyro Survey									
5,561.00	58.33	111.53	5,184.45	-482.99	1,025.41	732.16	3.38	-0.18	-3.96
First IDS MWD Survey									
5,655.00	54.73	111.53	5,236.28	-511.77	1,098.34	778.84	3.83	-3.83	0.00
5,659.13	54.51	111.43	5,238.67	-513.00	1,101.47	780.84	5.77	-5.39	-2.51
Cross North Section Line @ 5659.3' MD									
5,750.00	49.63	108.98	5,294.52	-537.79	1,168.69	822.20	5.77	-5.37	-2.69
5,844.00	46.42	107.31	5,357.38	-559.57	1,235.07	860.44	3.66	-3.41	-1.78
5,939.00	40.48	102.91	5,426.33	-576.72	1,298.05	893.31	7.01	-6.25	-4.63
6,033.00	33.71	96.50	5,501.29	-586.50	1,353.80	917.21	8.29	-7.20	-6.82
6,128.00	26.46	92.72	5,583.45	-590.50	1,401.20	933.34	7.88	-7.63	-3.98
6,222.00	19.03	92.98	5,670.08	-592.29	1,437.47	944.47	7.90	-7.90	0.28
6,316.00	12.48	81.47	5,760.52	-591.58	1,462.85	950.36	7.69	-6.97	-12.24
6,411.00	6.59	69.69	5,854.17	-588.16	1,478.13	951.02	6.50	-6.20	-12.40
6,505.00	1.76	43.76	5,947.90	-585.25	1,484.19	949.77	5.39	-5.14	-27.59
6,599.00	1.98	43.76	6,041.85	-583.03	1,486.31	948.18	0.23	0.23	0.00
6,694.00	0.75	281.86	6,136.83	-581.72	1,486.84	947.05	2.59	-1.29	-128.32
6,788.00	1.05	279.75	6,230.82	-581.44	1,485.39	946.41	0.32	0.32	-2.24
6,883.00	1.05	274.74	6,325.81	-581.23	1,483.66	945.75	0.10	0.00	-5.27
6,977.00	0.79	287.13	6,419.79	-580.96	1,482.19	945.12	0.35	-0.28	13.18
7,071.00	1.05	285.99	6,513.78	-580.54	1,480.74	944.33	0.28	0.28	-1.21
7,166.00	1.01	271.75	6,608.77	-580.27	1,479.07	943.64	0.27	-0.04	-14.99
7,260.00	0.75	271.14	6,702.76	-580.23	1,477.62	943.23	0.28	-0.28	-0.65
7,355.00	0.48	243.89	6,797.75	-580.39	1,476.64	943.13	0.41	-0.28	-28.68
7,449.00	0.57	254.61	6,891.75	-580.69	1,475.84	943.21	0.14	0.10	11.40
7,544.00	0.31	251.71	6,986.74	-580.90	1,475.14	943.23	0.27	-0.27	-3.05
7,638.00	0.48	238.35	7,080.74	-581.18	1,474.56	943.35	0.20	0.18	-14.21
7,732.00	0.62	220.25	7,174.74	-581.78	1,473.90	943.76	0.24	0.15	-19.26
7,827.00	0.66	204.78	7,269.73	-582.67	1,473.34	944.47	0.19	0.04	-16.28
7,921.00	1.14	198.19	7,363.72	-584.05	1,472.82	945.67	0.52	0.51	-7.01
8,016.00	1.23	185.53	7,458.70	-585.96	1,472.43	947.41	0.29	0.09	-13.33
8,110.00	1.27	3.51	7,552.69	-585.93	1,472.39	947.37	2.66	0.04	189.34
8,205.00	1.41	1.05	7,647.66	-583.71	1,472.48	945.25	0.16	0.15	-2.59
8,299.00	1.27	7.20	7,741.64	-581.52	1,472.63	943.17	0.21	-0.15	6.54
8,394.00	1.20	2.45	7,836.62	-579.48	1,472.80	941.25	0.13	-0.07	-5.00
8,488.00	1.19	1.57	7,930.60	-577.52	1,472.87	939.38	0.02	-0.01	-0.94
8,582.00	1.10	2.01	8,024.58	-575.64	1,472.93	937.58	0.10	-0.10	0.47
8,676.00	1.32	9.92	8,118.56	-573.67	1,473.15	935.73	0.29	0.23	8.41
8,771.00	1.01	9.05	8,213.54	-571.77	1,473.47	933.98	0.33	-0.33	-0.92
8,865.00	1.01	8.69	8,307.52	-570.13	1,473.72	932.46	0.01	0.00	-0.38
8,959.00	0.84	1.93	8,401.51	-568.62	1,473.87	931.04	0.21	-0.18	-7.19

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9,054.00	0.92	336.35	8,496.50	-567.23	1,473.59	929.62	0.42	0.08	-26.93
9,148.00	1.19	330.55	8,590.48	-565.69	1,472.81	927.93	0.31	0.29	-6.17
9,242.00	1.10	334.86	8,684.46	-564.02	1,471.94	926.10	0.13	-0.10	4.59
9,337.00	1.45	308.93	8,779.44	-562.44	1,470.62	924.23	0.70	0.37	-27.29
9,431.00	2.02	278.87	8,873.40	-561.44	1,468.06	922.60	1.12	0.61	-31.98
9,526.00	0.84	182.54	8,968.38	-561.88	1,466.37	922.58	2.39	-1.24	-101.40
9,620.00	1.14	132.00	9,062.37	-563.19	1,467.04	924.02	0.94	0.32	-53.77
9,715.00	1.14	121.00	9,157.35	-564.31	1,468.55	925.50	0.23	0.00	-11.58
9,809.00	0.97	140.53	9,251.33	-565.40	1,469.86	926.89	0.42	-0.18	20.78
9,903.00	1.10	144.57	9,345.32	-566.75	1,470.89	928.46	0.16	0.14	4.30
9,997.00	0.79	177.70	9,439.30	-568.14	1,471.44	929.94	0.65	-0.33	35.24
10,092.00	0.88	182.80	9,534.29	-569.52	1,471.43	931.28	0.12	0.09	5.37
10,186.00	0.92	167.42	9,628.28	-570.98	1,471.56	932.72	0.26	0.04	-16.36
10,280.00	1.27	156.35	9,722.27	-572.67	1,472.14	934.50	0.43	0.37	-11.78
10,327.00	1.80	181.05	9,769.25	-573.88	1,472.33	935.72	1.78	1.13	52.55
10,375.00	6.68	201.00	9,817.10	-577.25	1,471.32	938.71	10.47	10.17	41.56
10,422.00	11.43	201.35	9,863.51	-584.14	1,468.64	944.67	10.11	10.11	0.74
10,469.00	15.69	198.36	9,909.19	-594.51	1,464.94	953.74	9.18	9.06	-6.36
10,516.00	19.52	197.57	9,953.98	-608.04	1,460.57	965.66	8.16	8.15	-1.68
10,563.00	22.42	201.70	9,997.86	-623.85	1,454.88	979.47	6.92	6.17	8.79
10,610.00	26.90	202.76	10,040.56	-641.99	1,447.45	995.06	9.58	9.53	2.26
10,657.00	31.25	204.51	10,081.63	-662.90	1,438.28	1,012.88	9.43	9.26	3.72
10,704.00	34.02	205.39	10,121.21	-685.88	1,427.58	1,032.30	5.98	5.89	1.87
10,751.00	38.68	200.56	10,159.06	-711.53	1,416.78	1,054.27	11.63	9.91	-10.28
10,798.00	43.60	195.29	10,194.46	-740.94	1,407.34	1,080.24	12.80	10.47	-11.21
10,828.00	46.11	193.26	10,215.72	-761.44	1,402.13	1,098.69	9.63	8.37	-6.77
10,877.00	49.93	189.05	10,248.50	-797.16	1,395.13	1,131.38	10.08	7.80	-8.59
10,924.00	53.10	186.32	10,277.75	-833.62	1,390.23	1,165.32	8.13	6.74	-5.81
10,935.73	53.98	185.53	10,284.72	-843.00	1,389.25	1,174.13	9.28	7.51	-6.77
Cross 330' FNL @ 10,935.73' MD									
10,971.00	56.66	183.24	10,304.79	-871.91	1,387.05	1,201.48	9.28	7.60	-6.48
11,018.00	61.01	180.08	10,329.11	-912.10	1,385.91	1,240.00	10.90	9.26	-6.72
H Fed Com A #8H FTP									
11,065.00	64.48	178.59	10,350.63	-953.87	1,386.40	1,280.47	7.90	7.38	-3.17
11,112.00	67.34	177.18	10,369.81	-996.74	1,387.99	1,322.29	6.67	6.09	-3.00
11,159.00	70.46	176.92	10,386.73	-1,040.52	1,390.25	1,365.17	6.66	6.64	-0.55
11,206.00	71.21	175.77	10,402.16	-1,084.83	1,393.08	1,408.69	2.81	1.60	-2.45
11,253.00	73.63	176.92	10,416.35	-1,129.54	1,395.93	1,452.61	5.65	5.15	2.45
11,300.00	73.76	177.09	10,429.55	-1,174.59	1,398.29	1,496.74	0.44	0.28	0.36
11,347.00	76.62	176.30	10,441.56	-1,219.94	1,400.91	1,541.22	6.30	6.09	-1.68
11,394.00	80.48	176.83	10,450.89	-1,265.92	1,403.67	1,586.34	8.29	8.21	1.13
11,442.00	83.43	179.99	10,457.61	-1,313.41	1,404.98	1,632.56	8.96	6.15	6.58
11,521.00	89.27	179.03	10,462.64	-1,392.22	1,405.66	1,708.85	7.49	7.39	-1.22
11,568.00	89.76	179.55	10,463.03	-1,439.21	1,406.24	1,754.39	1.52	1.04	1.11

Integrity Directional Services, LLC

Survey Report

Company: Legacy Reserves Operating
Project: Lea County, NM
Site: Hamon Fed Pad
Well: Hamon Fed Com A #8H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Hamon Fed Com A #8H
TVD Reference: KB=18' @ 3629.00ft (McVay 4)
MD Reference: KB=18' @ 3629.00ft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

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)
11,662.00	90.15	178.94	10,463.11	-1,533.20	1,407.48	1,845.49	0.77	0.41	-0.65
11,756.00	90.02	178.23	10,462.97	-1,627.17	1,409.80	1,936.85	0.77	-0.14	-0.76
11,850.00	90.15	178.76	10,462.83	-1,721.14	1,412.27	2,028.25	0.58	0.14	0.56
11,945.00	90.73	178.76	10,462.10	-1,816.11	1,414.32	2,120.52	0.61	0.61	0.00
12,039.00	91.30	178.67	10,460.43	-1,910.07	1,416.43	2,211.82	0.61	0.61	-0.10
12,133.00	89.76	178.85	10,459.56	-2,004.05	1,418.47	2,303.11	1.65	-1.64	0.19
12,228.00	89.76	178.23	10,459.96	-2,099.01	1,420.89	2,395.46	0.65	0.00	-0.65
12,322.00	89.80	178.50	10,460.32	-2,192.97	1,423.57	2,486.91	0.29	0.04	0.29
12,416.00	90.33	177.80	10,460.22	-2,286.92	1,426.60	2,578.43	0.93	0.56	-0.74
12,511.00	90.95	177.18	10,459.16	-2,381.83	1,430.76	2,671.17	0.92	0.65	-0.65
12,605.00	90.95	176.92	10,457.60	-2,475.69	1,435.60	2,763.08	0.28	0.00	-0.28
12,700.00	90.95	176.65	10,456.02	-2,570.53	1,440.93	2,856.06	0.28	0.00	-0.28
12,794.00	90.33	176.83	10,454.97	-2,664.37	1,446.27	2,948.09	0.69	-0.66	0.19
12,889.00	90.95	177.00	10,453.91	-2,759.22	1,451.38	3,041.03	0.68	0.65	0.18
12,983.00	91.21	177.09	10,452.14	-2,853.08	1,456.23	3,132.94	0.29	0.28	0.10
13,078.00	88.48	177.27	10,452.40	-2,947.96	1,460.90	3,225.79	2.88	-2.87	0.19
13,172.00	88.53	177.44	10,454.85	-3,041.83	1,465.24	3,317.57	0.19	0.05	0.18
13,267.00	87.43	179.64	10,458.20	-3,136.73	1,467.66	3,409.86	2.59	-1.16	2.32
13,361.00	87.03	179.64	10,462.74	-3,230.62	1,468.25	3,500.70	0.43	-0.43	0.00
13,455.00	89.45	180.43	10,465.63	-3,324.56	1,468.19	3,591.42	2.71	2.57	0.84
13,550.00	89.54	180.78	10,466.46	-3,419.56	1,467.19	3,682.91	0.38	0.09	0.37
13,644.00	89.98	180.43	10,466.86	-3,513.55	1,466.19	3,773.44	0.60	0.47	-0.37
13,739.00	90.15	179.82	10,466.75	-3,608.55	1,465.99	3,865.14	0.67	0.18	-0.64
13,833.00	90.77	179.64	10,466.00	-3,702.54	1,466.43	3,956.04	0.69	0.66	-0.19
13,928.00	91.12	179.55	10,464.43	-3,797.53	1,467.10	4,047.96	0.38	0.37	-0.09
14,022.00	89.93	179.73	10,463.57	-3,891.52	1,467.69	4,138.89	1.28	-1.27	0.19
14,116.00	89.76	179.99	10,463.82	-3,985.52	1,467.92	4,229.74	0.33	-0.18	0.28
14,211.00	89.58	179.90	10,464.37	-4,080.52	1,468.01	4,321.52	0.21	-0.19	-0.09
14,305.00	88.92	179.99	10,465.60	-4,174.51	1,468.10	4,412.33	0.71	-0.70	0.10
14,400.00	88.57	180.08	10,467.68	-4,269.49	1,468.05	4,504.05	0.38	-0.37	0.09
14,494.00	87.43	179.82	10,470.96	-4,363.43	1,468.13	4,594.80	1.24	-1.21	-0.28
14,589.00	88.35	180.26	10,474.46	-4,458.36	1,468.06	4,686.48	1.07	0.97	0.46
14,683.00	88.31	179.90	10,477.20	-4,552.32	1,467.93	4,777.20	0.39	-0.04	-0.38
14,777.00	88.18	180.08	10,480.08	-4,646.28	1,467.95	4,867.95	0.24	-0.14	0.19
14,872.00	87.25	180.43	10,483.86	-4,741.20	1,467.52	4,959.52	1.05	-0.98	0.37
14,966.00	88.26	181.66	10,487.55	-4,835.11	1,465.81	5,049.78	1.69	1.07	1.31
15,061.00	89.93	182.01	10,489.05	-4,930.05	1,462.77	5,140.69	1.80	1.76	0.37
15,155.00	88.84	181.22	10,490.06	-5,024.00	1,460.12	5,230.75	1.43	-1.16	-0.84
15,250.00	88.09	181.57	10,492.60	-5,118.94	1,457.81	5,321.84	0.87	-0.79	0.37
15,344.00	87.12	182.10	10,496.53	-5,212.81	1,454.80	5,411.73	1.18	-1.03	0.56
15,439.00	87.47	182.19	10,501.01	-5,307.63	1,451.25	5,502.40	0.38	0.37	0.09
15,526.00	86.24	182.54	10,505.79	-5,394.43	1,447.66	5,585.30	1.47	-1.41	0.40

Last IDS MWD Survey

Integrity Directional Services, LLC

Survey Report

Company:	Legacy Reserves Operating	Local Co-ordinate Reference:	Well Hamon Fed Com A #8H
Project:	Lea County, NM	TVD Reference:	KB=18' @ 3629.00ft (McVay 4)
Site:	Hamon Fed Pad	MD Reference:	KB=18' @ 3629.00ft (McVay 4)
Well:	Hamon Fed Com A #8H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

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)
15,580.00	86.24	182.54	10,509.33	-5,448.26	1,445.28	5,636.67	0.00	0.00	0.00
Projection to TD - Hamon Fed Com A #8H BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Cross North Section Line	0.00	0.00	5,238.67	-513.00	1,101.47	580,887.6010	728,004.1698	32.595451	-103.727215
- actual wellpath hits target center									
- Point									
Cross 330' FNL @ 10,932	0.00	0.00	10,284.72	-843.00	1,389.25	580,557.6017	728,291.9498	32.594539	-103.726286
- actual wellpath hits target center									
- Point									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
100.00	100.00	-0.07	0.24	First Gyro Survey	
5,384.00	5,091.84	-419.19	888.83	Last Gyro Survey	
5,561.00	5,184.45	-482.99	1,025.41	First IDS MWD Survey	
15,526.00	10,505.79	-5,394.43	1,447.66	Last IDS MWD Survey	
15,580.00	10,509.33	-5,448.26	1,445.28	Projection to TD	

Checked By: _____	Approved By: _____	Date: _____
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