



Legacy Reserves Operating

Lea County, NM

Hamon Fed Pad

Hamon Fed Com A #9H

Wellbore #1

Design: Wellbore #1

Standard Survey Report

24 July, 2017





Integrity Directional Services, LLC

Survey Report



Company:	Legacy Reserves Operating	Local Co-ordinate Reference:	Well Hamon Fed Com A #9H
Project:	Lea County, NM	TVD Reference:	KB=18' @ 3628.00ft (McVay 4)
Site:	Hamon Fed Pad	MD Reference:	KB=18' @ 3628.00ft (McVay 4)
Well:	Hamon Fed Com A #9H	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
From:	Map	Easting:	723,480.4000 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32.5954069
		Longitude:	-103.7419035
		Grid Convergence:	0.32 °

Well	Hamon Fed Com A #9H		
Well Position	+N/-S	0.00 ft	Northing: 575,256.5000 usft
	+E/-W	0.00 ft	Easting: 724,514.7000 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft
		Latitude:	32.5800272
		Longitude:	-103.7386467
		Ground Level:	3,610.00 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	7/1/2017	7.10
			Dip Angle (°)
			60.52
			Field Strength (nT)
			48,403

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)
	0.00	0.00	0.00
			Direction (°)
			14.52

Survey Program	Date 7/24/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
100.00	10,080.00	Phoenix Gyros (Wellbore #1)	NS-GYRO-MS
10,205.00	16,000.00	IDS MWD Surveys (Wellbore #1)	MWD
			Description
			North sensing gyrocompassing m/s
			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
A #9H Drilling Window									
100.00	0.55	282.49	100.00	0.10	-0.47	-0.02	0.55	0.55	0.00
200.00	0.51	292.54	199.99	0.38	-1.35	0.03	0.10	-0.04	10.05
300.00	0.52	230.28	299.99	0.26	-2.11	-0.28	0.53	0.01	-62.26
400.00	0.47	131.02	399.99	-0.30	-2.15	-0.83	0.75	-0.05	-99.26
500.00	0.23	305.27	499.99	-0.45	-2.00	-0.94	0.70	-0.24	174.25
600.00	0.26	251.16	599.99	-0.41	-2.38	-0.99	0.22	0.03	-54.11
700.00	0.33	229.11	699.99	-0.67	-2.81	-1.36	0.13	0.07	-22.05
800.00	0.28	217.96	799.98	-1.05	-3.18	-1.82	0.08	-0.05	-11.15



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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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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	0.36	264.42	899.98	-1.28	-3.64	-2.15	0.26	0.08	46.46
1,000.00	0.43	211.57	999.98	-1.63	-4.15	-2.62	0.36	0.07	-52.85
1,100.00	0.69	221.00	1,099.98	-2.40	-4.74	-3.51	0.27	0.26	9.43
1,200.00	0.82	240.17	1,199.97	-3.21	-5.76	-4.55	0.28	0.13	19.17
1,300.00	1.13	253.49	1,299.95	-3.85	-7.33	-5.56	0.38	0.31	13.32
1,400.00	1.50	240.61	1,399.93	-4.77	-9.41	-6.98	0.47	0.37	-12.88
1,500.00	1.54	245.57	1,499.89	-5.97	-11.78	-8.73	0.14	0.04	4.96
1,600.00	1.36	237.15	1,599.86	-7.17	-14.00	-10.45	0.28	-0.18	-8.42
1,700.00	1.16	197.94	1,699.84	-8.77	-15.31	-12.33	0.87	-0.20	-39.21
1,800.00	1.14	186.90	1,799.82	-10.73	-15.74	-14.33	0.22	-0.02	-11.04
1,900.00	0.70	188.98	1,899.80	-12.32	-15.95	-15.92	0.44	-0.44	2.08
2,000.00	0.67	192.93	1,999.80	-13.49	-16.18	-17.11	0.06	-0.03	3.95
2,100.00	0.47	181.02	2,099.79	-14.47	-16.32	-18.10	0.23	-0.20	-11.91
2,200.00	0.13	140.75	2,199.79	-14.97	-16.25	-18.56	0.38	-0.34	-40.27
2,300.00	0.26	234.16	2,299.79	-15.19	-16.36	-18.81	0.30	0.13	93.41
2,400.00	0.29	96.73	2,399.79	-15.35	-16.30	-18.95	0.51	0.03	-137.43
2,500.00	0.26	181.15	2,499.79	-15.61	-16.05	-19.13	0.37	-0.03	84.42
2,600.00	0.31	52.00	2,599.79	-15.67	-15.84	-19.14	0.52	0.05	-129.15
2,700.00	0.79	65.53	2,699.78	-15.22	-15.00	-18.49	0.49	0.48	13.53
2,800.00	1.03	67.57	2,799.77	-14.59	-13.54	-17.52	0.24	0.24	2.04
2,900.00	1.11	70.51	2,899.75	-13.92	-11.80	-16.43	0.10	0.08	2.94
3,000.00	1.02	70.97	2,999.74	-13.31	-10.04	-15.40	0.09	-0.09	0.46
3,100.00	0.68	68.94	3,099.72	-12.80	-8.65	-14.56	0.34	-0.34	-2.03
3,200.00	1.12	79.93	3,199.71	-12.42	-7.13	-13.81	0.47	0.44	10.99
3,300.00	0.69	107.97	3,299.70	-12.43	-5.60	-13.44	0.61	-0.43	28.04
3,400.00	0.84	102.55	3,399.69	-12.78	-4.31	-13.45	0.17	0.15	-5.42
3,500.00	0.97	149.37	3,499.68	-13.67	-3.16	-14.02	0.73	0.13	46.82
3,600.00	0.97	144.61	3,599.67	-15.09	-2.24	-15.17	0.08	0.00	-4.76
3,700.00	1.28	106.69	3,699.65	-16.10	-0.68	-15.75	0.79	0.31	-37.92
3,800.00	1.30	177.59	3,799.63	-17.55	0.44	-16.88	1.50	0.02	70.90
3,900.00	1.15	169.04	3,899.61	-19.67	0.68	-18.87	0.24	-0.15	-8.55
4,000.00	1.00	160.64	3,999.59	-21.48	1.16	-20.50	0.22	-0.15	-8.40
4,100.00	1.24	162.36	4,099.57	-23.33	1.77	-22.14	0.24	0.24	1.72
4,200.00	0.76	171.16	4,199.55	-25.02	2.20	-23.67	0.50	-0.48	8.80
4,300.00	1.44	188.71	4,299.53	-26.92	2.11	-25.53	0.75	0.68	17.55
4,400.00	0.29	196.10	4,399.52	-28.40	1.85	-27.03	1.15	-1.15	7.39
4,500.00	0.30	306.93	4,499.52	-28.49	1.57	-27.18	0.49	0.01	110.83
4,600.00	0.62	308.84	4,599.52	-27.99	0.94	-26.86	0.32	0.32	1.91
4,700.00	0.23	325.81	4,699.51	-27.49	0.41	-26.50	0.41	-0.39	16.97
4,800.00	0.27	342.58	4,799.51	-27.09	0.23	-26.17	0.08	0.04	16.77
4,900.00	0.28	354.26	4,899.51	-26.63	0.13	-25.74	0.06	0.01	11.68
5,000.00	0.03	40.60	4,999.51	-26.36	0.12	-25.49	0.26	-0.25	46.34
5,100.00	0.11	169.97	5,099.51	-26.44	0.16	-25.55	0.13	0.08	129.37



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Survey									
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5,200.00	0.08	86.13	5,199.51	-26.53	0.24	-25.62	0.13	-0.03	-83.84
5,300.00	0.17	186.35	5,299.51	-26.67	0.30	-25.74	0.20	0.09	100.22
5,400.00	0.23	70.82	5,399.51	-26.75	0.47	-25.78	0.34	0.06	-115.53
5,500.00	0.29	69.12	5,499.51	-26.60	0.90	-25.52	0.06	0.06	-1.70
5,600.00	1.96	73.55	5,599.49	-26.02	2.77	-24.50	1.67	1.67	4.43
5,700.00	3.43	77.70	5,699.37	-24.90	7.34	-22.27	1.48	1.47	4.15
5,800.00	4.38	78.43	5,799.14	-23.50	14.00	-19.24	0.95	0.95	0.73
5,900.00	6.32	80.48	5,898.70	-21.82	23.17	-15.31	1.95	1.94	2.05
6,000.00	7.27	81.65	5,998.00	-19.99	34.86	-10.61	0.96	0.95	1.17
6,100.00	8.45	84.64	6,097.06	-18.39	48.43	-5.66	1.25	1.18	2.99
6,200.00	8.65	89.55	6,195.95	-17.64	63.27	-1.21	0.76	0.20	4.91
6,300.00	10.50	88.76	6,294.55	-17.38	79.90	3.20	1.85	1.85	-0.79
6,400.00	12.70	86.48	6,392.50	-16.51	99.98	9.08	2.25	2.20	-2.28
6,500.00	16.05	85.75	6,489.36	-14.81	124.75	16.94	3.35	3.35	-0.73
6,600.00	16.77	86.39	6,585.28	-12.88	152.93	25.87	0.74	0.72	0.64
6,700.00	15.77	86.51	6,681.28	-11.14	180.89	34.57	1.00	-1.00	0.12
6,800.00	15.80	85.10	6,777.51	-9.15	208.02	43.29	0.38	0.03	-1.41
6,900.00	15.57	84.83	6,873.78	-6.78	234.95	52.34	0.24	-0.23	-0.27
7,000.00	15.12	85.10	6,970.22	-4.46	261.31	61.20	0.46	-0.45	0.27
7,100.00	16.20	88.06	7,066.50	-2.87	288.25	69.49	1.34	1.08	2.96
7,200.00	17.23	85.78	7,162.28	-1.31	316.96	78.20	1.22	1.03	-2.28
7,300.00	16.39	85.10	7,258.00	0.99	345.79	87.65	0.86	-0.84	-0.68
7,400.00	16.11	85.38	7,354.01	3.31	373.68	96.89	0.29	-0.28	0.28
7,500.00	16.67	86.47	7,449.95	5.31	401.82	105.88	0.64	0.56	1.09
7,600.00	15.90	86.60	7,545.93	7.00	429.81	114.54	0.77	-0.77	0.13
7,700.00	15.93	86.39	7,642.10	8.68	457.18	123.03	0.06	0.03	-0.21
7,800.00	16.37	85.85	7,738.15	10.56	484.93	131.81	0.46	0.44	-0.54
7,900.00	15.56	86.15	7,834.30	12.48	512.37	140.55	0.81	-0.81	0.30
8,000.00	15.57	84.92	7,930.63	14.57	539.12	149.28	0.33	0.01	-1.23
8,100.00	16.93	84.96	8,026.63	17.04	567.00	158.65	1.36	1.36	0.04
8,200.00	17.08	86.51	8,122.26	19.21	596.16	168.07	0.48	0.15	1.55
8,300.00	16.00	86.78	8,218.12	20.88	624.58	176.81	1.08	-1.08	0.27
8,400.00	16.25	86.55	8,314.19	22.50	652.30	185.32	0.26	0.25	-0.23
8,500.00	15.07	85.68	8,410.47	24.32	679.23	193.84	1.20	-1.18	-0.87
8,600.00	14.52	84.89	8,507.16	26.42	704.68	202.25	0.59	-0.55	-0.79
8,700.00	14.06	84.26	8,604.06	28.75	729.25	210.67	0.49	-0.46	-0.63
8,800.00	14.35	85.60	8,701.01	30.91	753.70	218.89	0.44	0.29	1.34
8,900.00	14.56	91.67	8,797.85	31.50	778.62	225.70	1.53	0.21	6.07
9,000.00	14.96	94.92	8,894.55	30.02	804.04	230.65	0.92	0.40	3.25
9,100.00	16.49	94.49	8,990.80	27.81	831.05	235.28	1.53	1.53	-0.43
9,200.00	16.80	93.17	9,086.61	25.90	859.63	240.59	0.49	0.31	-1.32
9,300.00	17.83	91.62	9,182.08	24.66	889.36	246.86	1.13	1.03	-1.55
9,400.00	19.10	87.37	9,276.93	24.98	921.01	255.10	1.85	1.27	-4.25



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9,500.00	19.91	83.79	9,371.20	27.57	954.29	265.95	1.44	0.81	-3.58
9,600.00	18.74	79.83	9,465.57	32.25	987.03	278.69	1.76	-1.17	-3.96
9,700.00	17.43	77.85	9,560.62	38.24	1,017.48	292.12	1.45	-1.31	-1.98
9,800.00	16.83	76.93	9,656.19	44.67	1,046.23	305.55	0.66	-0.60	-0.92
9,900.00	14.47	76.27	9,752.47	50.91	1,072.47	318.17	2.37	-2.36	-0.66
10,000.00	12.13	79.44	9,849.79	55.80	1,094.94	328.54	2.45	-2.34	3.17
10,080.00	11.02	85.26	9,928.16	57.97	1,110.82	334.62	2.01	-1.39	7.28
10,205.00	14.60	111.70	10,050.13	53.13	1,137.40	336.60	5.42	2.86	21.15
First MWD Survey									
10,301.00	16.70	109.50	10,142.57	44.05	1,161.64	333.89	2.27	2.19	-2.29
10,364.00	17.30	94.50	10,202.84	40.29	1,179.52	334.73	7.01	0.95	-23.81
10,396.00	17.10	97.00	10,233.41	39.34	1,188.94	336.18	2.39	-0.63	7.81
10,428.00	16.80	91.80	10,264.03	38.63	1,198.23	337.81	4.83	-0.94	-16.25
10,459.00	16.90	85.20	10,293.70	38.86	1,207.20	340.29	6.18	0.32	-21.29
10,491.00	18.00	77.10	10,324.23	40.36	1,216.65	344.10	8.32	3.44	-25.31
10,522.00	19.30	70.40	10,353.60	43.14	1,226.15	349.18	8.08	4.19	-21.61
10,553.00	20.90	64.00	10,382.72	47.29	1,235.95	355.65	8.77	5.16	-20.65
10,585.00	22.20	58.10	10,412.48	52.98	1,246.21	363.74	7.89	4.06	-18.44
10,617.00	24.20	51.40	10,441.90	60.27	1,256.47	373.37	10.34	6.25	-20.94
10,648.00	25.80	44.20	10,470.00	69.08	1,266.14	384.31	11.08	5.16	-23.23
10,680.00	27.80	37.80	10,498.57	79.97	1,275.58	397.22	10.96	6.25	-20.00
10,711.00	29.40	30.10	10,525.80	92.27	1,283.83	411.20	12.95	5.16	-24.84
10,742.00	31.90	24.60	10,552.47	106.30	1,291.05	426.60	12.11	8.06	-17.74
10,774.00	35.00	20.90	10,579.17	122.57	1,297.85	444.05	11.59	9.69	-11.56
10,806.00	39.30	17.20	10,604.67	140.84	1,304.12	463.30	15.14	13.44	-11.56
10,838.00	43.30	14.30	10,628.71	161.16	1,309.83	484.41	13.85	12.50	-9.06
10,869.00	46.90	12.20	10,650.59	182.53	1,314.85	506.36	12.56	11.61	-6.77
10,901.00	50.20	10.60	10,671.77	206.04	1,319.59	530.30	10.97	10.31	-5.00
10,933.00	53.20	9.80	10,691.60	230.75	1,324.03	555.34	9.58	9.38	-2.50
10,964.00	55.30	9.60	10,709.71	255.55	1,328.27	580.41	6.79	6.77	-0.65
10,996.00	57.90	9.50	10,727.32	281.89	1,332.70	607.02	8.13	8.13	-0.31
11,027.00	59.00	9.80	10,743.54	307.94	1,337.13	633.34	3.64	3.55	0.97
11,054.98	59.99	10.07	10,757.75	331.68	1,341.29	657.37	3.65	3.55	0.97
Lease Crossing Point 11054.98' MD / 657.37' VS									
11,058.00	60.10	10.10	10,759.25	334.26	1,341.74	659.98	3.65	3.55	0.96
11,090.00	64.00	10.20	10,774.25	362.08	1,346.73	688.16	12.19	12.19	0.31
11,122.00	68.00	10.60	10,787.26	390.82	1,352.00	717.31	12.55	12.50	1.25
11,153.00	71.00	10.50	10,798.12	419.37	1,357.32	746.28	9.68	9.68	-0.32
11,185.00	73.00	10.10	10,808.01	449.31	1,362.76	776.63	6.36	6.25	-1.25
11,216.00	74.70	8.80	10,816.63	478.68	1,367.65	806.28	6.80	5.48	-4.19
11,248.00	76.90	7.50	10,824.48	509.39	1,372.04	837.11	7.92	6.88	-4.06
11,279.00	78.50	6.20	10,831.08	539.46	1,375.65	867.13	6.59	5.16	-4.19
11,303.00	78.60	6.00	10,835.85	562.85	1,378.15	890.40	0.92	0.42	-0.83
11,330.00	79.60	5.90	10,840.95	589.22	1,380.90	916.61	3.72	3.70	-0.37



Integrity Directional Services, LLC

Survey Report



Company:	Legacy Reserves Operating	Local Co-ordinate Reference:	Well Hamon Fed Com A #9H
Project:	Lea County, NM	TVD Reference:	KB=18' @ 3628.00ft (McVay 4)
Site:	Hamon Fed Pad	MD Reference:	KB=18' @ 3628.00ft (McVay 4)
Well:	Hamon Fed Com A #9H	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)
11,360.00	82.10	5.20	10,845.72	618.69	1,383.77	945.87	8.65	8.33	-2.33
11,392.00	85.10	3.40	10,849.29	650.40	1,386.15	977.16	10.91	9.38	-5.63
11,403.66	86.04	2.94	10,850.19	662.01	1,386.79	988.56	9.01	8.09	-3.98
330' Hardline Crossing Point 11403.66'MD / 988.55'VS									
11,455.00	90.20	0.90	10,851.87	713.28	1,388.51	1,038.62	9.01	8.10	-3.96
11,550.00	91.70	0.20	10,850.30	808.26	1,389.42	1,130.79	1.74	1.58	-0.74
11,644.00	91.90	0.40	10,847.34	902.21	1,389.91	1,221.87	0.30	0.21	0.21
11,739.00	92.30	0.20	10,843.86	997.14	1,390.41	1,313.89	0.47	0.42	-0.21
11,834.00	90.60	0.00	10,841.46	1,092.11	1,390.57	1,405.87	1.80	-1.79	-0.21
11,928.00	90.60	0.30	10,840.48	1,186.10	1,390.82	1,496.92	0.32	0.00	0.32
12,023.00	91.00	0.30	10,839.15	1,281.09	1,391.32	1,589.00	0.42	0.42	0.00
12,117.00	91.30	0.30	10,837.26	1,375.07	1,391.81	1,680.10	0.32	0.32	0.00
12,212.00	91.50	0.20	10,834.94	1,470.04	1,392.22	1,772.14	0.24	0.21	-0.11
12,305.00	91.80	0.20	10,832.26	1,563.00	1,392.55	1,862.22	0.32	0.32	0.00
12,401.00	91.00	359.70	10,829.92	1,658.97	1,392.46	1,955.10	0.98	-0.83	-0.52
12,495.00	90.40	358.10	10,828.77	1,752.95	1,390.66	2,045.62	1.82	-0.64	-1.70
12,590.00	90.50	357.60	10,828.02	1,847.88	1,387.09	2,136.62	0.54	0.11	-0.53
12,685.00	89.90	359.20	10,827.69	1,942.83	1,384.44	2,227.89	1.80	-0.63	1.68
12,779.00	88.10	359.90	10,829.33	2,036.81	1,383.70	2,318.68	2.05	-1.91	0.74
12,873.00	88.30	359.80	10,832.28	2,130.77	1,383.46	2,409.57	0.24	0.21	-0.11
12,968.00	88.90	0.10	10,834.61	2,225.74	1,383.38	2,501.48	0.71	0.63	0.32
13,062.00	89.70	0.60	10,835.75	2,319.73	1,383.95	2,592.62	1.00	0.85	0.53
13,156.00	89.80	0.50	10,836.16	2,413.72	1,384.85	2,683.84	0.15	0.11	-0.11
13,251.00	90.20	1.10	10,836.16	2,508.71	1,386.18	2,776.12	0.76	0.42	0.63
13,346.00	90.80	1.10	10,835.34	2,603.69	1,388.00	2,868.53	0.63	0.63	0.00
13,440.00	90.80	0.90	10,834.02	2,697.67	1,389.64	2,959.91	0.21	0.00	-0.21
13,535.00	90.30	1.10	10,833.11	2,792.65	1,391.30	3,052.28	0.57	-0.53	0.21
13,630.00	89.70	1.00	10,833.11	2,887.63	1,393.04	3,144.66	0.64	-0.63	-0.11
13,725.00	89.20	0.30	10,834.02	2,982.62	1,394.12	3,236.89	0.91	-0.53	-0.74
13,819.00	89.00	359.60	10,835.50	3,076.61	1,394.04	3,327.85	0.77	-0.21	-0.74
13,914.00	89.20	359.90	10,836.99	3,171.60	1,393.62	3,419.70	0.38	0.21	0.32
14,009.00	89.00	358.90	10,838.48	3,266.58	1,392.63	3,511.40	1.07	-0.21	-1.05
14,105.00	89.00	358.80	10,840.16	3,362.54	1,390.70	3,603.82	0.10	0.00	-0.10
14,205.00	89.70	358.70	10,841.29	3,462.51	1,388.52	3,700.05	0.71	0.70	-0.10
14,295.00	90.00	358.70	10,841.53	3,552.49	1,386.48	3,786.64	0.33	0.33	0.00
14,390.00	90.00	359.10	10,841.53	3,647.47	1,384.65	3,878.13	0.42	0.00	0.42
14,485.00	90.40	359.40	10,841.20	3,742.46	1,383.41	3,969.77	0.53	0.42	0.32
14,580.00	90.50	359.50	10,840.45	3,837.45	1,382.50	4,061.50	0.15	0.11	0.11
14,685.00	90.70	359.50	10,839.35	3,942.44	1,381.58	4,162.91	0.19	0.19	0.00
14,769.00	90.80	359.70	10,838.25	4,026.44	1,381.00	4,244.07	0.27	0.12	0.24
14,863.00	90.70	358.50	10,837.02	4,120.41	1,379.52	4,334.68	1.28	-0.11	-1.28
14,957.00	90.80	357.70	10,835.79	4,214.35	1,376.40	4,424.84	0.86	0.11	-0.85
15,052.00	91.00	357.80	10,834.30	4,309.27	1,372.67	4,515.79	0.24	0.21	0.11
15,146.00	91.30	358.30	10,832.41	4,403.19	1,369.48	4,605.91	0.62	0.32	0.53



Integrity Directional Services, LLC

Survey Report



Company:	Legacy Reserves Operating	Local Co-ordinate Reference:	Well Hamon Fed Com A #9H
Project:	Lea County, NM	TVD Reference:	KB=18' @ 3628.00ft (McVay 4)
Site:	Hamon Fed Pad	MD Reference:	KB=18' @ 3628.00ft (McVay 4)
Well:	Hamon Fed Com A #9H	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)
15,241.00	91.50	358.10	10,830.09	4,498.12	1,366.49	4,697.05	0.30	0.21	-0.21
15,336.00	91.90	358.00	10,827.27	4,593.02	1,363.26	4,788.12	0.43	0.42	-0.11
15,430.00	90.90	359.60	10,824.98	4,686.97	1,361.29	4,878.57	2.01	-1.06	1.70
15,525.00	89.10	359.60	10,824.98	4,781.96	1,360.63	4,970.36	1.89	-1.89	0.00
15,620.00	88.10	359.90	10,827.30	4,876.93	1,360.22	5,062.20	1.10	-1.05	0.32
15,715.00	88.40	0.20	10,830.20	4,971.89	1,360.30	5,154.14	0.45	0.32	0.32
15,809.00	88.60	0.10	10,832.66	5,065.86	1,360.55	5,245.17	0.24	0.21	-0.11
15,904.00	88.70	0.20	10,834.90	5,160.83	1,360.79	5,337.17	0.15	0.11	0.11
15,938.00	88.70	0.30	10,835.67	5,194.82	1,360.94	5,370.11	0.29	0.00	0.29
Final MWD Survey									
16,000.00	88.70	0.30	10,837.08	5,256.80	1,361.27	5,430.20	0.00	0.00	0.00
Projection to TD - Hamon Fed Com A #9H BHL									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
10,205.00	10,050.13	53.13	1,137.40	First MWD Survey
11,054.98	10,757.75	331.68	1,341.29	Lease Crossing Point 11054.98'MD / 657.37'VS
11,403.66	10,850.19	662.01	1,386.79	330' Hardline Crossing Point 11403.66'MD / 988.55'VS
15,938.00	10,835.67	5,194.82	1,360.94	Final MWD Survey
16,000.00	10,837.08	5,256.80	1,361.27	Projection to TD

Checked By: _____ Approved By: _____ Date: _____