



Legacy Reserves Operating LP

Lea County, NM (NAD27 NME)

Lea Unit #4

Lea Unit #4

OH

SUR @ H-11-20s-34e, 1980/N & 660/E
BHL @ A-14-20: 34e, 1187/N & 623/E
API # 30-025-02424

Design: Actual

Standard Survey Report

05 August, 2011



Scientific Drilling
Directional Drilling Operations

Company:	Legacy Reserves Operating LP	Local Co-ordinate Reference:	Well Lea Unit #4
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB Elev (17') @ 3672.00usft (Key #115)
Site:	Lea Unit #4	MD Reference:	KB Elev (17') @ 3672.00usft (Key #115)
Well:	Lea Unit #4	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Julio

Project	Lea County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Lea Unit #4		
Site Position:		Northing:	579,050.10 usft
From:	Map	Easting:	749,279.80 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 35' 21.507 N
		Longitude:	103° 31' 26.340 W
		Grid Convergence:	0.44 °

Well	Lea Unit #4		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 35' 21.507 N
		Longitude:	103° 31' 26.340 W
		Ground Level:	3,655.00 usft

Wellbore	OH		
----------	----	--	--

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/07/22	7.58	60.53	48,831

Design	Actual		
--------	--------	--	--

Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.55

Survey Program		Date	2011/08/05	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	10,590.00	Gyro Survey (OH)	Keeper	Standard Wireline Keeper ver 1 0.2
10,698.00	15,318.00	MWD Survey (OH)	MWD	MWD - Standard

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	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	0.48	337.12	100.00	0.39	-0.16	-0.39	0.48	0.48	0.00
200.00	0.47	329.88	200.00	1.13	-0.53	-1.13	0.06	-0.01	-7.24
300.00	0.47	345.41	299.99	1.88	-0.84	-1.88	0.13	0.00	15.53
400.00	0.50	347.84	399.99	2.70	-1.04	-2.71	0.04	0.03	2.43
500.00	0.64	349.98	499.98	3.68	-1.22	-3.69	0.14	0.14	2.14
600.00	0.69	2.90	599.98	4.83	-1.29	-4.84	0.16	0.05	12.92
700.00	0.74	17.21	699.97	6.05	-1.07	-6.06	0.18	0.05	14.31
800.00	0.76	14.85	799.96	7.31	-0.71	-7.31	0.04	0.02	-2.36
900.00	0.82	23.78	899.95	8.60	-0.25	-8.60	0.14	0.06	8.93

Company:	Legacy Reserves Operating LP	Local Co-ordinate Reference:	Well Lea Unit #4
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB Elev (17') @ 3672.00usft (Key #115)
Site:	Lea Unit #4	MD Reference:	KB Elev (17') @ 3672.00usft (Key #115)
Well:	Lea Unit #4	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Julio

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	0.83	23.06	999.94	9.92	0.32	-9.92	0.01	0.01	-0.72
1,100.00	0.61	23.11	1,099.93	11.08	0.81	-11.07	0.22	-0.22	0.05
1,200.00	0.23	42.98	1,199.93	11.72	1.16	-11.71	0.40	-0.38	19.87
1,300.00	0.33	58.86	1,299.93	12.01	1.54	-12.00	0.13	0.10	15.88
1,400.00	0.35	60.53	1,399.93	12.31	2.06	-12.29	0.02	0.02	1.67
1,500.00	0.19	56.75	1,499.93	12.55	2.46	-12.53	0.16	-0.16	-3.78
1,600.00	0.26	37.59	1,599.93	12.82	2.74	-12.80	0.10	0.07	-19.16
1,700.00	0.27	61.88	1,699.92	13.11	3.08	-13.09	0.11	0.01	24.29
1,800.00	0.49	62.38	1,799.92	13.42	3.67	-13.39	0.22	0.22	0.50
1,900.00	0.61	60.16	1,899.92	13.89	4.51	-13.85	0.12	0.12	-2.22
2,000.00	0.62	70.37	1,999.91	14.33	5.48	-14.29	0.11	0.01	10.21
2,100.00	0.64	63.52	2,099.91	14.76	6.49	-14.71	0.08	0.02	-6.85
2,200.00	0.53	77.23	2,199.90	15.11	7.44	-15.06	0.18	-0.11	13.71
2,300.00	0.61	73.90	2,299.90	15.36	8.41	-15.30	0.09	0.08	-3.33
2,400.00	0.51	54.95	2,399.89	15.77	9.28	-15.69	0.21	-0.10	-18.95
2,500.00	0.54	68.27	2,499.89	16.20	10.08	-16.12	0.13	0.03	13.32
2,600.00	0.44	47.34	2,599.88	16.63	10.80	-16.55	0.20	-0.10	-20.93
2,700.00	0.51	65.14	2,699.88	17.08	11.49	-16.99	0.16	0.07	17.80
2,800.00	0.74	54.77	2,799.87	17.64	12.42	-17.54	0.26	0.23	-10.37
2,900.00	0.89	53.70	2,899.86	18.47	13.57	-18.36	0.15	0.15	-1.07
3,000.00	1.14	51.90	2,999.85	19.54	14.98	-19.43	0.25	0.25	-1.80
3,100.00	1.15	49.96	3,099.83	20.80	16.53	-20.67	0.04	0.01	-1.94
3,200.00	1.20	49.87	3,199.81	22.12	18.10	-21.98	0.05	0.05	-0.09
3,300.00	1.22	38.53	3,299.78	23.63	19.57	-23.48	0.24	0.02	-11.34
3,400.00	1.68	25.95	3,399.75	25.78	20.87	-25.62	0.56	0.46	-12.58
3,500.00	1.90	25.27	3,499.70	28.60	22.22	-28.42	0.22	0.22	-0.68
3,600.00	1.96	23.50	3,599.65	31.67	23.61	-31.48	0.08	0.06	-1.77
3,700.00	1.94	15.46	3,699.59	34.87	24.74	-34.67	0.27	-0.02	-8.04
3,800.00	2.20	10.58	3,799.52	38.39	25.55	-38.18	0.31	0.26	-4.88
3,900.00	2.40	0.96	3,899.44	42.37	25.93	-42.16	0.43	0.20	-9.62
4,000.00	2.42	0.29	3,999.36	46.57	25.98	-46.36	0.03	0.02	-0.67
4,100.00	2.33	0.47	4,099.27	50.71	26.01	-50.51	0.09	-0.09	0.18
4,200.00	2.26	1.83	4,199.19	54.72	26.09	-54.51	0.09	-0.07	1.36
4,300.00	2.05	7.02	4,299.12	58.46	26.37	-58.25	0.29	-0.21	5.19
4,400.00	1.87	10.99	4,399.06	61.84	26.90	-61.63	0.23	-0.18	3.97
4,500.00	2.08	13.35	4,499.00	65.21	27.63	-64.99	0.23	0.21	2.36
4,600.00	2.35	15.71	4,598.93	68.95	28.60	-68.72	0.28	0.27	2.36
4,700.00	2.33	16.28	4,698.84	72.87	29.73	-72.64	0.03	-0.02	0.57
4,800.00	2.31	17.53	4,798.76	76.74	30.90	-76.50	0.05	-0.02	1.25
4,900.00	2.14	21.36	4,898.68	80.41	32.19	-80.15	0.23	-0.17	3.83
5,000.00	2.33	22.49	4,998.61	84.02	33.65	-83.76	0.20	0.19	1.13
5,100.00	2.41	22.75	5,098.52	87.84	35.24	-87.56	0.08	0.08	0.26
5,200.00	2.24	19.69	5,198.44	91.62	36.71	-91.33	0.21	-0.17	-3.06

Company:	Legacy Reserves Operating LP	Local Co-ordinate Reference:	Well Lea Unit #4
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB Elev (17') @ 3672.00usft (Key #115)
Site:	Lea Unit #4	MD Reference:	KB Elev (17') @ 3672.00usft (Key #115)
Well:	Lea Unit #4	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Julio

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	1.86	19.30	5,298.38	94.99	37.91	-94.69	0.38	-0.38	-0.39
5,400.00	1.70	17.35	5,398.33	97.94	38.88	-97.63	0.17	-0.16	-1.95
5,500.00	1.40	16.91	5,498.29	100.52	39.68	-100.21	0.30	-0.30	-0.44
5,600.00	1.17	15.48	5,598.27	102.67	40.31	-102.36	0.23	-0.23	-1.43
5,700.00	0.99	15.89	5,698.25	104.49	40.82	-104.17	0.18	-0.18	0.41
5,800.00	0.90	7.35	5,798.24	106.10	41.16	-105.77	0.17	-0.09	-8.54
5,900.00	0.89	13.14	5,898.22	107.63	41.43	-107.31	0.09	-0.01	5.79
6,000.00	0.69	7.20	5,998.21	108.99	41.68	-108.66	0.22	-0.20	-5.94
6,100.00	0.69	357.75	6,098.21	110.19	41.74	-109.86	0.11	0.00	-9.45
6,200.00	0.77	351.72	6,198.20	111.45	41.62	-111.12	0.11	0.08	-6.03
6,300.00	0.64	349.69	6,298.19	112.67	41.42	-112.34	0.13	-0.13	-2.03
6,400.00	0.48	345.56	6,398.19	113.62	41.22	-113.30	0.16	-0.16	-4.13
6,500.00	0.44	329.42	6,498.18	114.36	40.92	-114.03	0.14	-0.04	-16.14
6,600.00	0.39	334.02	6,598.18	115.00	40.57	-114.67	0.06	-0.05	4.60
6,700.00	0.35	313.86	6,698.18	115.51	40.20	-115.19	0.14	-0.04	-20.16
6,800.00	0.37	300.50	6,798.18	115.89	39.70	-115.57	0.09	0.02	-13.36
6,900.00	0.48	277.53	6,898.17	116.11	39.01	-115.80	0.20	0.11	-22.97
7,000.00	0.57	264.54	6,998.17	116.12	38.10	-115.81	0.15	0.09	-12.99
7,100.00	0.58	267.67	7,098.16	116.05	37.10	-115.75	0.03	0.01	3.13
7,200.00	0.53	261.05	7,198.16	115.96	36.14	-115.67	0.08	-0.05	-6.62
7,300.00	0.62	253.30	7,298.15	115.73	35.16	-115.45	0.12	0.09	-7.75
7,400.00	0.60	250.61	7,398.15	115.40	34.15	-115.13	0.03	-0.02	-2.69
7,500.00	0.66	240.31	7,498.14	114.94	33.15	-114.68	0.13	0.06	-10.30
7,600.00	0.71	237.34	7,598.14	114.32	32.13	-114.06	0.06	0.05	-2.97
7,700.00	0.69	237.89	7,698.13	113.67	31.10	-113.42	0.02	-0.02	0.55
7,800.00	0.78	232.65	7,798.12	112.93	30.05	-112.69	0.11	0.09	-5.24
7,900.00	0.81	231.13	7,898.11	112.08	28.96	-111.84	0.04	0.03	-1.52
8,000.00	0.81	228.52	7,998.10	111.16	27.88	-110.94	0.04	0.00	-2.61
8,100.00	0.63	237.02	8,098.09	110.40	26.89	-110.18	0.21	-0.18	8.50
8,200.00	0.65	246.72	8,198.09	109.87	25.91	-109.67	0.11	0.02	9.70
8,300.00	0.55	239.69	8,298.08	109.41	24.97	-109.21	0.12	-0.10	-7.03
8,400.00	0.39	246.85	8,398.08	109.03	24.24	-108.84	0.17	-0.16	7.16
8,500.00	0.21	295.01	8,498.08	108.97	23.76	-108.78	0.29	-0.18	48.16
8,600.00	0.35	311.57	8,598.07	109.25	23.37	-109.07	0.16	0.14	16.56
8,700.00	0.45	346.44	8,698.07	109.84	23.05	-109.65	0.26	0.10	34.87
8,800.00	0.68	354.26	8,798.07	110.81	22.90	-110.63	0.24	0.23	7.82
8,900.00	0.33	60.10	8,898.06	111.55	23.09	-111.36	0.62	-0.35	65.84
9,000.00	0.54	132.41	8,998.06	111.37	23.69	-111.18	0.54	0.21	72.31
9,100.00	0.66	142.56	9,098.06	110.60	24.38	-110.40	0.16	0.12	10.15
9,200.00	0.91	150.89	9,198.05	109.44	25.12	-109.24	0.27	0.25	8.33
9,300.00	1.36	159.80	9,298.03	107.64	25.92	-107.43	0.48	0.45	8.91
9,400.00	1.53	164.01	9,398.00	105.24	26.69	-105.03	0.20	0.17	4.21
9,500.00	1.29	160.21	9,497.97	102.90	27.44	-102.68	0.26	-0.24	-3.80

Company:	Legacy Reserves Operating LP	Local Co-ordinate Reference:	Well Lea Unit #4
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB Elev (17') @ 3672.00usft (Key #115)
Site:	Lea Unit #4	MD Reference:	KB Elev (17') @ 3672 00usft (Key #115)
Well:	Lea Unit #4	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Julio

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,600.00	1.45	162.77	9,597.94	100.63	28.20	-100.41	0.17	0.16	2.56
9,700.00	1.48	167.85	9,697.90	98.16	28.84	-97.93	0.13	0.03	5.08
9,800.00	1.72	176.89	9,797.86	95.40	29.20	-95.17	0.35	0.24	9.04
9,900.00	1.68	182.47	9,897.82	92.43	29.22	-92.20	0.17	-0.04	5.58
10,000.00	1.34	196.55	9,997.79	89.85	28.82	-89.62	0.50	-0.34	14.08
10,100.00	1.63	194.55	10,097.75	87.35	28.13	-87.13	0.29	0.29	-2.00
10,200.00	1.87	182.98	10,197.71	84.35	27.69	-84.13	0.43	0.24	-11.57
10,300.00	1.74	190.67	10,297.66	81.22	27.32	-81.01	0.27	-0.13	7.69
10,400.00	1.59	181.37	10,397.61	78.35	27.01	-78.13	0.31	-0.15	-9.30
10,500.00	1.86	203.80	10,497.57	75.47	26.32	-75.26	0.72	0.27	22.43
10,590.00	2.66	194.38	10,587.50	72.11	25.21	-71.91	0.98	0.89	-10.47
Gyro Survey									
10,698.00	13.50	184.85	10,694.27	57.08	23.52	-56.89	10.08	10.04	-8.82
10,729.00	20.74	183.33	10,723.88	47.98	22.89	-47.80	23.40	23.35	-4.90
10,761.00	28.04	182.06	10,753.00	34.79	22.29	-34.62	22.87	22.81	-3.97
10,793.00	34.45	180.10	10,780.35	18.21	22.01	-18.03	20.28	20.03	-6.13
10,825.00	41.03	179.33	10,805.64	-1.37	22.11	1.54	20.61	20.56	-2.41
10,857.00	46.48	179.32	10,828.74	-23.49	22.37	23.66	17.03	17.03	-0.03
10,888.00	52.29	180.18	10,848.92	-47.01	22.47	47.18	18.86	18.74	2.77
10,920.00	56.49	179.93	10,867.54	-73.02	22.44	73.19	13.14	13.13	-0.78
10,952.00	61.29	179.69	10,884.07	-100.41	22.54	100.58	15.01	15.00	-0.75
10,984.00	66.95	178.93	10,898.04	-129.19	22.89	129.36	17.82	17.69	-2.38
11,015.00	72.69	178.59	10,908.73	-158.26	23.52	158.44	18.54	18.52	-1.10
11,047.00	78.85	178.12	10,916.59	-189.25	24.41	189.44	19.30	19.25	-1.47
11,076.00	85.80	177.91	10,920.46	-217.96	25.41	218.15	23.98	23.97	-0.72
11,108.00	91.65	178.28	10,921.17	-249.92	26.47	250.12	18.32	18.28	1.16
11,140.00	92.49	178.17	10,920.01	-281.88	27.46	282.09	2.65	2.63	-0.34
11,171.00	92.25	178.18	10,918.73	-312.84	28.45	313.06	0.77	-0.77	0.03
11,203.00	92.45	179.60	10,917.42	-344.81	29.07	345.03	4.48	0.63	4.44
11,235.00	92.72	180.12	10,915.98	-376.77	29.14	376.99	1.83	0.84	1.63
11,267.00	92.99	179.63	10,914.38	-408.73	29.21	408.95	1.75	0.84	-1.53
11,299.00	93.09	179.80	10,912.69	-440.69	29.37	440.91	0.62	0.31	0.53
11,331.00	91.61	180.19	10,911.37	-472.66	29.37	472.88	4.78	-4.63	1.22
11,363.00	91.41	180.53	10,910.53	-504.65	29.17	504.86	1.23	-0.63	1.06
11,394.00	91.82	180.49	10,909.66	-535.64	28.90	535.85	1.33	1.32	-0.13
11,425.00	92.22	180.17	10,908.56	-566.62	28.72	566.82	1.65	1.29	-1.03
11,457.00	92.45	180.07	10,907.26	-598.59	28.65	598.80	0.78	0.72	-0.31
11,489.00	91.14	179.66	10,906.26	-630.57	28.73	630.78	4.29	-4.09	-1.28
11,521.00	90.91	179.77	10,905.69	-662.57	28.89	662.77	0.80	-0.72	0.34
11,552.00	91.58	179.14	10,905.01	-693.56	29.18	693.77	2.97	2.16	-2.03
11,584.00	91.92	180.23	10,904.04	-725.54	29.36	725.75	3.57	1.06	3.41
11,616.00	92.45	178.99	10,902.81	-757.52	29.58	757.73	4.21	1.66	-3.88
11,646.00	91.38	179.07	10,901.81	-787.50	30.08	787.71	3.58	-3.57	0.27
11,678.00	91.61	179.11	10,900.98	-819.48	30.59	819.70	0.73	0.72	0.13

Company:	Legacy Reserves Operating LP	Local Co-ordinate Reference:	Well Lea Unit #4
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB Elev (17') @ 3672.00usft (Key #115)
Site:	Lea Unit #4	MD Reference:	KB Elev (17') @ 3672.00usft (Key #115)
Well:	Lea Unit #4	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Julio

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,710.00	91.88	179.25	10,900.00	-851.46	31.05	851.68	0.95	0.84	0.44
11,742.00	92.39	180.52	10,898.81	-883.44	31.11	883.66	4.27	1.59	3.97
11,774.00	92.55	180.53	10,897.43	-915.41	30.82	915.62	0.50	0.50	0.03
11,805.00	91.61	179.18	10,896.31	-946.39	30.90	946.60	5.30	-3.03	-4.35
11,837.00	91.65	180.47	10,895.40	-978.37	31.00	978.59	4.03	0.13	4.03
11,869.00	92.15	179.46	10,894.34	-1,010.36	31.02	1,010.57	3.52	1.56	-3.16
11,901.00	92.59	178.48	10,893.01	-1,042.32	31.59	1,042.54	3.35	1.38	-3.06
11,933.00	90.94	179.04	10,892.03	-1,074.30	32.28	1,074.52	5.44	-5.16	1.75
11,964.00	91.01	179.89	10,891.50	-1,105.29	32.57	1,105.51	2.75	0.23	2.74
11,996.00	89.80	180.38	10,891.27	-1,137.29	32.50	1,137.51	4.08	-3.78	1.53
12,028.00	90.03	179.26	10,891.32	-1,169.29	32.60	1,169.51	3.57	0.72	-3.50
12,060.00	90.37	179.74	10,891.21	-1,201.29	32.88	1,201.51	1.84	1.06	1.50
12,091.00	90.87	179.34	10,890.87	-1,232.29	33.13	1,232.51	2.07	1.61	-1.29
12,123.00	90.71	178.78	10,890.43	-1,264.28	33.65	1,264.50	1.82	-0.50	-1.75
12,155.00	90.44	180.25	10,890.11	-1,296.27	33.92	1,296.50	4.67	-0.84	4.59
12,187.00	90.67	179.82	10,889.80	-1,328.27	33.90	1,328.50	1.52	0.72	-1.34
12,218.00	91.28	180.70	10,889.27	-1,359.27	33.76	1,359.49	3.45	1.97	2.84
12,250.00	89.60	180.31	10,889.03	-1,391.26	33.48	1,391.48	5.39	-5.25	-1.22
12,282.00	89.13	180.43	10,889.38	-1,423.26	33.27	1,423.48	1.52	-1.47	0.38
12,314.00	89.50	180.25	10,889.76	-1,455.26	33.08	1,455.47	1.29	1.16	-0.56
12,345.00	89.73	180.63	10,889.97	-1,486.26	32.84	1,486.47	1.43	0.74	1.23
12,377.00	89.97	179.02	10,890.06	-1,518.26	32.94	1,518.47	5.09	0.75	-5.03
12,409.00	90.34	180.24	10,889.97	-1,550.25	33.15	1,550.47	3.98	1.16	3.81
12,441.00	90.71	180.01	10,889.68	-1,582.25	33.08	1,582.46	1.36	1.16	-0.72
12,473.00	91.55	179.41	10,889.05	-1,614.25	33.24	1,614.46	3.23	2.63	-1.88
12,505.00	92.15	178.63	10,888.01	-1,646.22	33.79	1,646.44	3.07	1.88	-2.44
12,536.00	90.71	178.88	10,887.24	-1,677.21	34.46	1,677.43	4.71	-4.65	0.81
12,568.00	90.44	180.14	10,886.92	-1,709.20	34.73	1,709.42	4.03	-0.84	3.94
12,600.00	91.14	178.96	10,886.48	-1,741.20	34.99	1,741.42	4.29	2.19	-3.69
12,632.00	91.61	180.34	10,885.71	-1,773.19	35.18	1,773.41	4.55	1.47	4.31
12,664.00	89.90	181.02	10,885.29	-1,805.18	34.80	1,805.40	5.75	-5.34	2.13
12,695.00	90.03	180.14	10,885.31	-1,836.18	34.49	1,836.39	2.87	0.42	-2.84
12,728.00	90.30	180.01	10,885.21	-1,869.18	34.44	1,869.39	0.91	0.82	-0.39
12,759.00	88.35	181.72	10,885.58	-1,900.17	33.98	1,900.38	8.37	-6.29	5.52
12,791.00	88.35	181.96	10,886.50	-1,932.14	32.95	1,932.34	0.75	0.00	0.75
12,823.00	88.79	180.87	10,887.30	-1,964.12	32.16	1,964.31	3.67	1.38	-3.41
12,855.00	89.13	181.87	10,887.88	-1,996.11	31.39	1,996.29	3.30	1.06	3.13
12,886.00	89.50	180.43	10,888.25	-2,027.10	30.77	2,027.28	4.80	1.19	-4.65
12,918.00	89.93	179.49	10,888.41	-2,059.10	30.80	2,059.27	3.23	1.34	-2.94
12,950.00	90.44	179.04	10,888.30	-2,091.09	31.21	2,091.27	2.13	1.59	-1.41
12,982.00	90.64	178.97	10,888.00	-2,123.09	31.76	2,123.27	0.66	0.63	-0.22
13,010.00	89.19	179.77	10,888.04	-2,151.08	32.07	2,151.27	5.91	-5.18	2.86
13,042.00	89.09	179.86	10,888.52	-2,183.08	32.17	2,183.26	0.42	-0.31	0.28

Company:	Legacy Reserves Operating LP	Local Co-ordinate Reference:	Well Lea Unit #4
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB Elev (17') @ 3672.00usft (Key #115)
Site:	Lea Unit #4	MD Reference:	KB Elev (17') @ 3672.00usft (Key #115)
Well:	Lea Unit #4	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Julio

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,073.00	89.30	179.95	10,888.96	-2,214.08	32.22	2,214.26	0.74	0.68	0.29
13,105.00	89.87	178.91	10,889.19	-2,246.07	32.54	2,246.26	3.71	1.78	-3.25
13,137.00	90.13	179.57	10,889.19	-2,278.07	32.97	2,278.26	2.22	0.81	2.06
13,168.00	90.81	179.46	10,888.94	-2,309.07	33.23	2,309.26	2.22	2.19	-0.35
13,200.00	91.51	178.53	10,888.29	-2,341.06	33.79	2,341.25	3.64	2.19	-2.91
13,232.00	90.77	179.81	10,887.65	-2,373.05	34.25	2,373.24	4.62	-2.31	4.00
13,264.00	91.14	180.73	10,887.12	-2,405.04	34.10	2,405.23	3.10	1.16	2.88
13,296.00	90.03	181.24	10,886.79	-2,437.03	33.55	2,437.22	3.82	-3.47	1.59
13,327.00	90.17	180.86	10,886.74	-2,468.03	32.98	2,468.21	1.31	0.45	-1.23
13,359.00	88.66	181.77	10,887.07	-2,500.02	32.25	2,500.19	5.51	-4.72	2.84
13,391.00	88.79	181.95	10,887.78	-2,531.99	31.21	2,532.16	0.69	0.41	0.56
13,423.00	89.13	181.91	10,888.36	-2,563.97	30.13	2,564.13	1.07	1.06	-0.13
13,455.00	89.83	181.23	10,888.65	-2,595.95	29.26	2,596.10	3.05	2.19	-2.13
13,486.00	88.42	180.96	10,889.12	-2,626.94	28.67	2,627.09	4.63	-4.55	-0.87
13,518.00	88.56	180.33	10,889.97	-2,658.93	28.31	2,659.07	2.02	0.44	-1.97
13,550.00	88.92	180.01	10,890.67	-2,690.92	28.21	2,691.06	1.51	1.13	-1.00
13,582.00	89.43	180.08	10,891.13	-2,722.92	28.19	2,723.06	1.61	1.59	0.22
13,614.00	90.13	180.09	10,891.25	-2,754.92	28.14	2,755.06	2.19	2.19	0.03
13,646.00	89.33	178.84	10,891.40	-2,786.92	28.44	2,787.05	4.64	-2.50	-3.91
13,677.00	89.46	177.78	10,891.73	-2,817.90	29.35	2,818.04	3.44	0.42	-3.42
13,709.00	89.60	177.36	10,891.99	-2,849.87	30.71	2,850.02	1.38	0.44	-1.31
13,741.00	88.89	179.08	10,892.41	-2,881.85	31.70	2,882.01	5.81	-2.22	5.38
13,773.00	89.09	179.90	10,892.98	-2,913.84	31.99	2,914.01	2.64	0.63	2.56
13,805.00	90.10	179.76	10,893.20	-2,945.84	32.08	2,946.00	3.19	3.16	-0.44
13,837.00	90.94	180.52	10,892.91	-2,977.84	32.00	2,978.00	3.54	2.63	2.38
13,869.00	89.46	180.66	10,892.80	-3,009.84	31.67	3,009.99	4.65	-4.63	0.44
13,901.00	89.19	180.55	10,893.18	-3,041.83	31.34	3,041.99	0.91	-0.84	-0.34
13,932.00	89.53	180.21	10,893.53	-3,072.83	31.13	3,072.98	1.55	1.10	-1.10
13,964.00	90.03	180.18	10,893.65	-3,104.83	31.02	3,104.98	1.57	1.56	-0.09
13,996.00	90.60	180.16	10,893.47	-3,136.83	30.93	3,136.98	1.78	1.78	-0.06
14,028.00	89.19	179.95	10,893.53	-3,168.83	30.90	3,168.97	4.45	-4.41	-0.66
14,059.00	88.82	179.87	10,894.07	-3,199.83	30.94	3,199.97	1.22	-1.19	-0.26
14,091.00	89.43	179.94	10,894.56	-3,231.82	31.00	3,231.96	1.92	1.91	0.22
14,123.00	90.13	179.44	10,894.68	-3,263.82	31.17	3,263.96	2.69	2.19	-1.56
14,155.00	90.74	179.79	10,894.44	-3,295.82	31.39	3,295.96	2.20	1.91	1.09
14,186.00	89.70	179.94	10,894.32	-3,326.82	31.46	3,326.96	3.39	-3.35	0.48
14,228.00	89.40	179.76	10,894.65	-3,368.82	31.57	3,368.96	0.83	-0.71	-0.43
14,250.00	89.70	179.70	10,894.82	-3,390.82	31.67	3,390.96	1.39	1.36	-0.27
14,282.00	90.17	179.36	10,894.86	-3,422.81	31.93	3,422.96	1.81	1.47	-1.06
14,313.00	88.76	179.38	10,895.15	-3,453.81	32.28	3,453.96	4.55	-4.55	0.06
14,345.00	88.96	179.67	10,895.78	-3,485.80	32.54	3,485.95	1.10	0.63	0.91
14,377.00	89.50	179.87	10,896.21	-3,517.80	32.67	3,517.95	1.80	1.69	0.63
14,409.00	90.40	179.81	10,896.24	-3,549.80	32.76	3,549.95	2.82	2.81	-0.19

Company: Legacy Reserves Operating LP
Project: Lea County, NM (NAD27 NME)
Site: Lea Unit #4
Well: Lea Unit #4
Wellbore: OH
Design: Actual

Local Co-ordinate Reference: Well Lea Unit #4
TVD Reference: KB Elev (17') @ 3672.00usft (Key #115)
MD Reference: KB Elev (17') @ 3672.00usft (Key #115)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM-Julio

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,441.00	89.03	179.81	10,896.40	-3,581.80	32.86	3,581.95	4.28	-4.28	0.00
14,472.00	88.86	179.68	10,896.97	-3,612.79	33.00	3,612.94	0.69	-0.55	-0.42
14,504.00	89.46	179.30	10,897.44	-3,644.79	33.29	3,644.94	2.22	1.88	-1.19
14,536.00	90.27	178.99	10,897.52	-3,676.78	33.76	3,676.93	2.71	2.53	-0.97
14,566.00	88.59	178.59	10,897.82	-3,706.77	34.40	3,706.93	5.76	-5.60	-1.33
14,598.00	88.42	179.06	10,898.65	-3,738.76	35.05	3,738.92	1.56	-0.53	1.47
14,630.00	89.09	179.09	10,899.35	-3,770.74	35.57	3,770.91	2.10	2.09	0.09
14,661.00	89.63	178.82	10,899.69	-3,801.74	36.14	3,801.90	1.95	1.74	-0.87
14,697.00	90.24	178.46	10,899.73	-3,837.73	36.99	3,837.90	1.97	1.69	-1.00
14,729.00	89.66	179.69	10,899.76	-3,869.72	37.51	3,869.90	4.25	-1.81	3.84
14,760.00	88.79	179.38	10,900.18	-3,900.72	37.76	3,900.89	2.98	-2.81	-1.00
14,792.00	89.13	179.22	10,900.76	-3,932.71	38.15	3,932.89	1.17	1.06	-0.50
14,824.00	89.26	180.87	10,901.21	-3,964.71	38.12	3,964.88	5.17	0.41	5.16
14,855.00	89.76	180.91	10,901.48	-3,995.70	37.64	3,995.87	1.62	1.61	0.13
14,887.00	89.09	179.40	10,901.80	-4,027.70	37.56	4,027.87	5.16	-2.09	-4.72
14,919.00	88.02	179.51	10,902.60	-4,059.69	37.86	4,059.86	3.36	-3.34	0.34
14,951.00	88.12	179.98	10,903.68	-4,091.67	38.00	4,091.84	1.50	0.31	1.47
14,983.00	88.62	178.57	10,904.59	-4,123.65	38.41	4,123.82	4.67	1.56	-4.41
15,014.00	88.96	180.48	10,905.25	-4,154.64	38.66	4,154.82	6.26	1.10	6.16
15,046.00	89.50	180.29	10,905.68	-4,186.64	38.45	4,186.81	1.79	1.69	-0.59
15,078.00	90.07	180.55	10,905.80	-4,218.64	38.21	4,218.81	1.96	1.78	0.81
15,110.00	91.04	178.59	10,905.49	-4,250.63	38.45	4,250.80	6.83	3.03	-6.13
15,142.00	90.74	179.77	10,904.99	-4,282.62	38.91	4,282.80	3.80	-0.94	3.69
15,174.00	91.08	178.78	10,904.48	-4,314.62	39.32	4,314.79	3.27	1.06	-3.09
15,206.00	90.67	179.68	10,903.99	-4,346.61	39.75	4,346.79	3.09	-1.28	2.81
15,237.00	90.37	181.32	10,903.71	-4,377.61	39.48	4,377.78	5.38	-0.97	5.29
15,269.00	90.91	181.59	10,903.35	-4,409.59	38.66	4,409.76	1.89	1.69	0.84
Last MWD Survey									
15,318.00	90.91	181.59	10,902.58	-4,458.57	37.31	4,458.72	0.00	0.00	0.00
Projection to Bit									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,590.00	10,587.50	72.11	25.21	Gyro Survey
15,269.00	10,903.35	-4,409.59	38.66	Last MWD Survey
15,318.00	10,902.58	-4,458.57	37.31	Projection to Bit

Checked By: _____ Approved By: _____ Date: _____



Scientific Drilling for Legacy Reserves Operating LP
Site: Lea County, NM (NAD27 NME)
Well: Lea Unit #4
Wellbore: OH
Design: Plan #5 - 6" Hole



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Diag	TFace	VSed	Target
112695.00	90.03	190.14	10855.31	-1836.16	0.00	0.00	0.00	0.00	1836.29	
22712.13	89.59	179.88	10855.36	-1853.31	24.49	3.00	-143.51	1853.53		
36137.82	89.59	179.88	10910.00	-5278.30	41.80	0.00	0.00	5279.07	PBHL-Lea #4	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

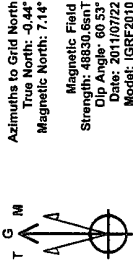
Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude	Shape
PBHL-Lea #4	10910.00	-5278.90	41.80	573771.20	749321.60	32° 34' 28.270 N	103° 31' 26.321 W	Point

WELL DETAILS: Lea Unit #4

	+N/S	+E/W	Northing	Latitude	Longitude	Slot
Ground Level:			3655.00			
	0.00	0.00	579050.10	32° 35' 21.507 N	103° 31' 26.340 W	

LEGEND

- Lea Unit #4, OH, Gyro Survey
- Lea Unit #4, OH, MWD Survey
- Plan #5 - 6" Hole



Asimuths to Grid North
True North: -0.44°
Magnetic North: 7.14°
Magnetic Field
Strength: 48830.6aT
Dip Angle: 60.53°
Date: 2011/07/22
Model: IGRF2010

PROJECT DETAILS: Lea County, NM (NAD27 NME)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

Plan: Plan #5 - 6" Hole (Lea Unit #4/OH)

Created By: Julio Pina Date: 22-Jul-11
Checked: Date:
Reviewed: Date:

AZIMUTH CORRECTIONS

ALL AZIMUTHS MUST BE CORRECTED TO GRID
GRID CORRECTIONS MUST BE APPLIED BEFORE PLOTTING
To convert a Magnetic Direction to a Grid Direction, Add 7.14°
To convert a True Direction to a Grid Direction, Subtract 0.44°

