



Legacy Reserves
Project: Lea County, NM (NAD-27 2015)
Site: Lea Unit #55H
Well: Lea Unit #55H
Wellbore: Lateral #1
Plan: Design #1 (Lea Unit #55H/Lateral #1)

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dlog	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	9927.04	0.00	0.00	9927.04	0.00	0.00	0.00	0.00	0.00	
3	10827.04	90.00	181.79	10500.00	-672.68	-17.91	10.00	181.79	572.96	
4	17677.81	90.00	181.79	10500.00	-7420.10	-232.00	0.00	0.00	7423.73	BHL-D1 (LU#55H/L1)

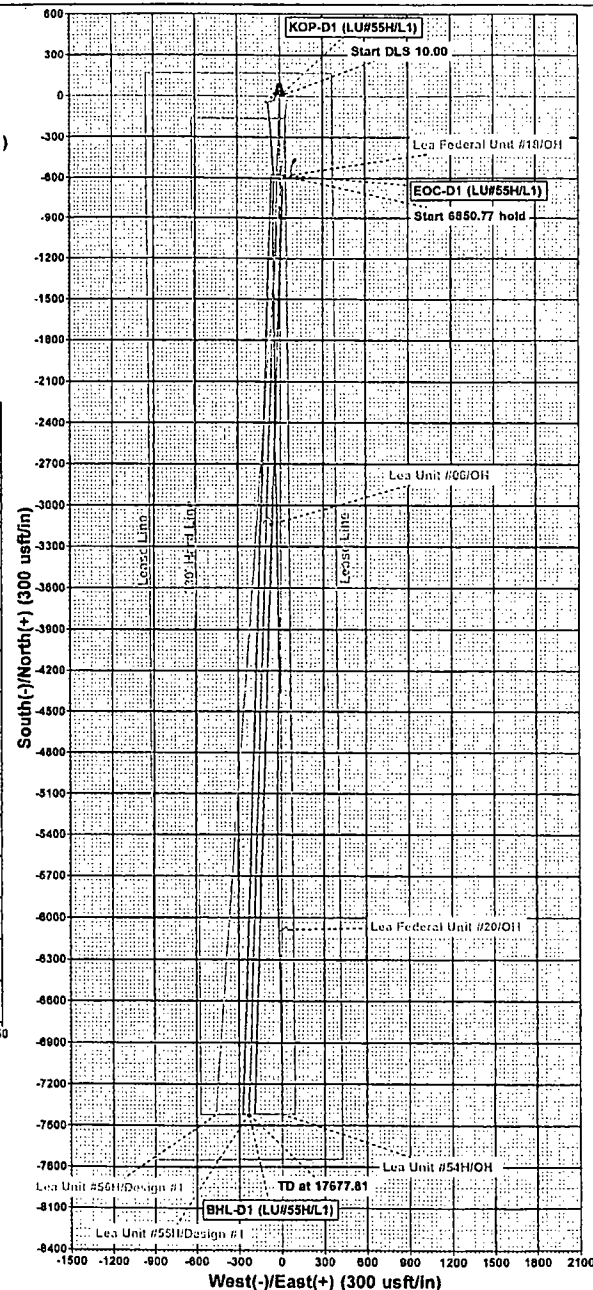
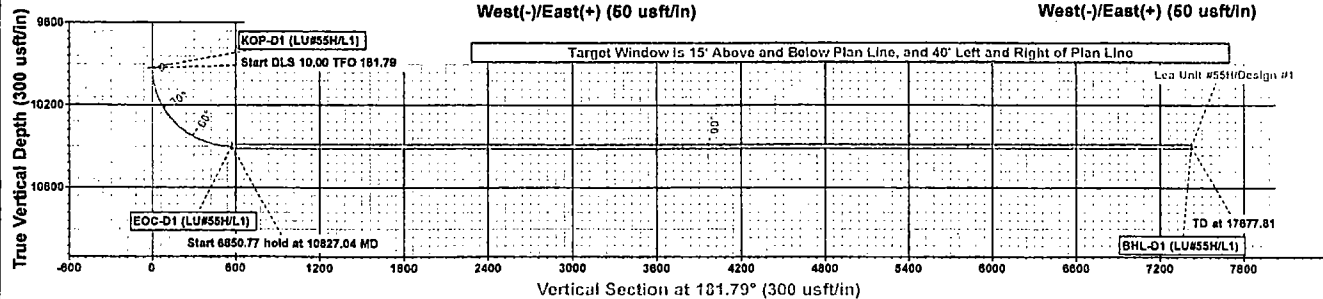
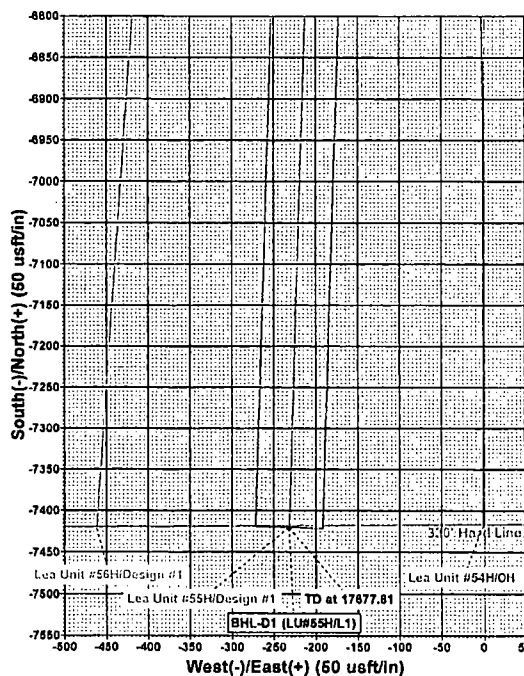
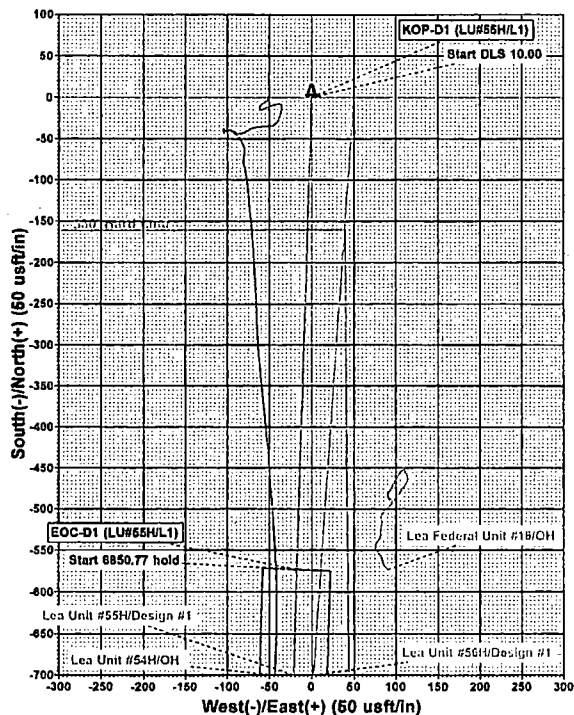
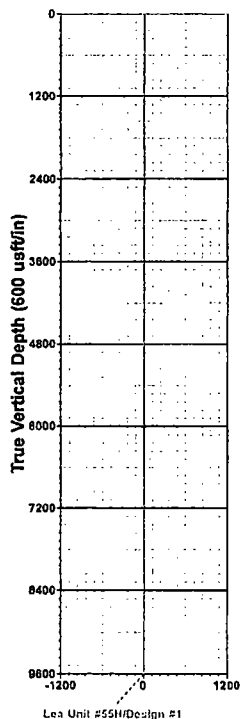
WELL DETAILS: Lea Unit #55H

Ground Elevation:: 3662.00
RKB Elevation: KB @ 3680.00usft (McVay 4)
Rlg Name: McVay 4



Azimuths to Grid North
True North: -0.43°
Magnetic North: 6.59°
Magnetic Field
Strength: 48220.3nT
Dip Angle: 60.42°
Date: 11/20/2016
Model: IGRF2015

Northing 580856.40 Easting 748236.40 Latitude 32° 35' 39.458 N Longitude 103° 31' 38.375 W



Plan: Design #1 (Lea Unit #55H/Lateral #1)
dated By: Well Planner Date: 7:48, December 02 2016

Terra Directional Services
3705 South County Road 1210, Midland, TX 79706
Office: (432) 618-1210

PROJECT DETAILS: Lea County, NM (NAD-27 2015)
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
Local North: Grid



Legacy Reserves

Lea County, NM (NAD-27 2015)

Lea Unit #55H

Lea Unit #55H

Lateral #1

Plan: Design #1

Standard Planning Report

02 December, 2016

HOBBS OCD

SEP 18 2017

RECEIVED





TDS
Planning Report



Database: EDM 5000.1 Single User Db
Company: Legacy Reserves
Project: Lea County, NM (NAD-27 2015)
Site: Lea Unit #55H
Well: Lea Unit #55H
Wellbore: Lateral #1
Design: Design #1

Local Co-ordinate Reference: Well Lea Unit #55H
TVD Reference: KB @ 3680.00usft (McVay 4)
MD Reference: KB @ 3680.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Lea County, NM (NAD-27 2015)		
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 #55H			
Site Position:		Northing:	580,856.40 usft	Latitude: 32° 35' 39.458 N
From:	Map	Easting:	748,236.40 usft	Longitude: 103° 31' 38.375 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: 0.43 °

Well	Lea Unit #55H			
Well Position	+N/-S	0.00 usft	Northing:	580,856.40 usft
	+E/-W	0.00 usft	Easting:	748,236.40 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level: 3,662.00 usft

Wellbore	Lateral #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/20/2016	7.02	60.42	48,220

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	181.79

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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	
9,927.04	0.00	0.00	9,927.04	0.00	0.00	0.00	0.00	0.00	0.00	
10,827.04	90.00	181.79	10,500.00	-572.68	-17.91	10.00	10.00	-19.80	181.79	
17,677.81	90.00	181.79	10,500.00	-7,420.10	-232.00	0.00	0.00	0.00	0.00	BHL-D1 (LU#55H/L1)



TDS
Planning Report



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Company: Legacy Reserves
Project: Lea County, NM (NAD-27 2015)
Site: Lea Unit #55H
Well: Lea Unit #55H
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Local Co-ordinate Reference: Well Lea Unit #55H
TVD Reference: KB @ 3680.00usft (McVay 4)
MD Reference: KB @ 3680.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
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	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00



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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)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	0.00	0.00
9,900.00	0.00	0.00	9,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,927.04	0.00	0.00	9,927.04	0.00	0.00	0.00	0.00	0.00	0.00
Start DLS 10.00 TFO 181.79									
9,950.00	2.30	181.79	9,949.99	-0.46	-0.01	0.46	10.00	10.00	0.00
10,000.00	7.30	181.79	9,999.80	-4.64	-0.14	4.64	10.00	10.00	0.00
10,050.00	12.30	181.79	10,049.06	-13.14	-0.41	13.14	10.00	10.00	0.00
10,100.00	17.30	181.79	10,097.39	-25.90	-0.81	25.91	10.00	10.00	0.00
10,150.00	22.30	181.79	10,144.42	-42.82	-1.34	42.84	10.00	10.00	0.00



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North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
10,200.00	27.30	181.79	10,189.79	-63.77	-1.99	63.80	10.00	10.00	0.00
10,250.00	32.30	181.79	10,233.17	-88.59	-2.77	88.64	10.00	10.00	0.00
10,300.00	37.30	181.79	10,274.21	-117.10	-3.66	117.16	10.00	10.00	0.00
10,350.00	42.30	181.79	10,312.62	-149.08	-4.66	149.15	10.00	10.00	0.00
10,400.00	47.30	181.79	10,348.09	-184.28	-5.76	184.37	10.00	10.00	0.00
10,450.00	52.30	181.79	10,380.35	-222.44	-6.95	222.55	10.00	10.00	0.00
10,500.00	57.30	181.79	10,409.17	-263.26	-8.23	263.39	10.00	10.00	0.00
10,550.00	62.30	181.79	10,434.31	-306.44	-9.58	306.59	10.00	10.00	0.00
10,600.00	67.30	181.79	10,455.60	-351.64	-10.99	351.81	10.00	10.00	0.00
10,650.00	72.30	181.79	10,472.86	-398.53	-12.46	398.72	10.00	10.00	0.00
10,700.00	77.30	181.79	10,485.97	-446.74	-13.97	446.96	10.00	10.00	0.00
10,750.00	82.30	181.79	10,494.83	-495.91	-15.51	496.15	10.00	10.00	0.00
10,800.00	87.30	181.79	10,499.36	-545.66	-17.06	545.93	10.00	10.00	0.00
10,827.04	90.00	181.79	10,500.00	-572.68	-17.91	572.96	10.00	10.00	0.00
Start 6850.77 hold at 10827.04 MD									
10,900.00	90.00	181.79	10,500.00	-645.60	-20.19	645.92	0.00	0.00	0.00
11,000.00	90.00	181.79	10,500.00	-745.55	-23.31	745.92	0.00	0.00	0.00
11,100.00	90.00	181.79	10,500.00	-845.50	-26.44	845.92	0.00	0.00	0.00
11,200.00	90.00	181.79	10,500.00	-945.46	-29.56	945.92	0.00	0.00	0.00
11,300.00	90.00	181.79	10,500.00	-1,045.41	-32.69	1,045.92	0.00	0.00	0.00
11,400.00	90.00	181.79	10,500.00	-1,145.36	-35.81	1,145.92	0.00	0.00	0.00
11,500.00	90.00	181.79	10,500.00	-1,245.31	-38.94	1,245.92	0.00	0.00	0.00
11,600.00	90.00	181.79	10,500.00	-1,345.26	-42.06	1,345.92	0.00	0.00	0.00
11,700.00	90.00	181.79	10,500.00	-1,445.21	-45.19	1,445.92	0.00	0.00	0.00
11,800.00	90.00	181.79	10,500.00	-1,545.16	-48.31	1,545.92	0.00	0.00	0.00
11,900.00	90.00	181.79	10,500.00	-1,645.11	-51.44	1,645.92	0.00	0.00	0.00
12,000.00	90.00	181.79	10,500.00	-1,745.07	-54.56	1,745.92	0.00	0.00	0.00
12,100.00	90.00	181.79	10,500.00	-1,845.02	-57.69	1,845.92	0.00	0.00	0.00
12,200.00	90.00	181.79	10,500.00	-1,944.97	-60.81	1,945.92	0.00	0.00	0.00
12,300.00	90.00	181.79	10,500.00	-2,044.92	-63.94	2,045.92	0.00	0.00	0.00
12,400.00	90.00	181.79	10,500.00	-2,144.87	-67.06	2,145.92	0.00	0.00	0.00
12,500.00	90.00	181.79	10,500.00	-2,244.82	-70.19	2,245.92	0.00	0.00	0.00
12,600.00	90.00	181.79	10,500.00	-2,344.77	-73.31	2,345.92	0.00	0.00	0.00
12,700.00	90.00	181.79	10,500.00	-2,444.72	-76.44	2,445.92	0.00	0.00	0.00
12,800.00	90.00	181.79	10,500.00	-2,544.67	-79.56	2,545.92	0.00	0.00	0.00
12,900.00	90.00	181.79	10,500.00	-2,644.63	-82.69	2,645.92	0.00	0.00	0.00
13,000.00	90.00	181.79	10,500.00	-2,744.58	-85.81	2,745.92	0.00	0.00	0.00
13,100.00	90.00	181.79	10,500.00	-2,844.53	-88.94	2,845.92	0.00	0.00	0.00
13,200.00	90.00	181.79	10,500.00	-2,944.48	-92.06	2,945.92	0.00	0.00	0.00
13,300.00	90.00	181.79	10,500.00	-3,044.43	-95.19	3,045.92	0.00	0.00	0.00
13,400.00	90.00	181.79	10,500.00	-3,144.38	-98.31	3,145.92	0.00	0.00	0.00
13,500.00	90.00	181.79	10,500.00	-3,244.33	-101.44	3,245.92	0.00	0.00	0.00
13,600.00	90.00	181.79	10,500.00	-3,344.28	-104.56	3,345.92	0.00	0.00	0.00
13,700.00	90.00	181.79	10,500.00	-3,444.23	-107.69	3,445.92	0.00	0.00	0.00
13,800.00	90.00	181.79	10,500.00	-3,544.19	-110.81	3,545.92	0.00	0.00	0.00
13,900.00	90.00	181.79	10,500.00	-3,644.14	-113.94	3,645.92	0.00	0.00	0.00
14,000.00	90.00	181.79	10,500.00	-3,744.09	-117.06	3,745.92	0.00	0.00	0.00
14,100.00	90.00	181.79	10,500.00	-3,844.04	-120.19	3,845.92	0.00	0.00	0.00
14,200.00	90.00	181.79	10,500.00	-3,943.99	-123.31	3,945.92	0.00	0.00	0.00
14,300.00	90.00	181.79	10,500.00	-4,043.94	-126.44	4,045.92	0.00	0.00	0.00
14,400.00	90.00	181.79	10,500.00	-4,143.89	-129.56	4,145.92	0.00	0.00	0.00
14,500.00	90.00	181.79	10,500.00	-4,243.84	-132.69	4,245.92	0.00	0.00	0.00
14,600.00	90.00	181.79	10,500.00	-4,343.80	-135.81	4,345.92	0.00	0.00	0.00
14,700.00	90.00	181.79	10,500.00	-4,443.75	-138.94	4,445.92	0.00	0.00	0.00



TDS
Planning Report



Database: EDM 5000.1 Single User Db
Company: Legacy Reserves
Project: Lea County, NM (NAD-27 2015)
Site: Lea Unit #55H
Well: Lea Unit #55H
Wellbore: Lateral #1
Design: Design #1

Local Co-ordinate Reference: Well Lea Unit #55H
TVD Reference: KB @ 3680.00usft (McVay 4)
MD Reference: KB @ 3680.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
14,800.00	90.00	181.79	10,500.00	-4,543.70	-142.07	4,545.92	0.00	0.00	0.00
14,900.00	90.00	181.79	10,500.00	-4,643.65	-145.19	4,645.92	0.00	0.00	0.00
15,000.00	90.00	181.79	10,500.00	-4,743.60	-148.32	4,745.92	0.00	0.00	0.00
15,100.00	90.00	181.79	10,500.00	-4,843.55	-151.44	4,845.92	0.00	0.00	0.00
15,200.00	90.00	181.79	10,500.00	-4,943.50	-154.57	4,945.92	0.00	0.00	0.00
15,300.00	90.00	181.79	10,500.00	-5,043.45	-157.69	5,045.92	0.00	0.00	0.00
15,400.00	90.00	181.79	10,500.00	-5,143.40	-160.82	5,145.92	0.00	0.00	0.00
15,500.00	90.00	181.79	10,500.00	-5,243.36	-163.94	5,245.92	0.00	0.00	0.00
15,600.00	90.00	181.79	10,500.00	-5,343.31	-167.07	5,345.92	0.00	0.00	0.00
15,700.00	90.00	181.79	10,500.00	-5,443.26	-170.19	5,445.92	0.00	0.00	0.00
15,800.00	90.00	181.79	10,500.00	-5,543.21	-173.32	5,545.92	0.00	0.00	0.00
15,900.00	90.00	181.79	10,500.00	-5,643.16	-176.44	5,645.92	0.00	0.00	0.00
16,000.00	90.00	181.79	10,500.00	-5,743.11	-179.57	5,745.92	0.00	0.00	0.00
16,100.00	90.00	181.79	10,500.00	-5,843.06	-182.69	5,845.92	0.00	0.00	0.00
16,200.00	90.00	181.79	10,500.00	-5,943.01	-185.82	5,945.92	0.00	0.00	0.00
16,300.00	90.00	181.79	10,500.00	-6,042.96	-188.94	6,045.92	0.00	0.00	0.00
16,400.00	90.00	181.79	10,500.00	-6,142.92	-192.07	6,145.92	0.00	0.00	0.00
16,500.00	90.00	181.79	10,500.00	-6,242.87	-195.19	6,245.92	0.00	0.00	0.00
16,600.00	90.00	181.79	10,500.00	-6,342.82	-198.32	6,345.92	0.00	0.00	0.00
16,700.00	90.00	181.79	10,500.00	-6,442.77	-201.44	6,445.92	0.00	0.00	0.00
16,800.00	90.00	181.79	10,500.00	-6,542.72	-204.57	6,545.92	0.00	0.00	0.00
16,900.00	90.00	181.79	10,500.00	-6,642.67	-207.69	6,645.92	0.00	0.00	0.00
17,000.00	90.00	181.79	10,500.00	-6,742.62	-210.82	6,745.92	0.00	0.00	0.00
17,100.00	90.00	181.79	10,500.00	-6,842.57	-213.94	6,845.92	0.00	0.00	0.00
17,200.00	90.00	181.79	10,500.00	-6,942.53	-217.07	6,945.92	0.00	0.00	0.00
17,300.00	90.00	181.79	10,500.00	-7,042.48	-220.19	7,045.92	0.00	0.00	0.00
17,400.00	90.00	181.79	10,500.00	-7,142.43	-223.32	7,145.92	0.00	0.00	0.00
17,500.00	90.00	181.79	10,500.00	-7,242.38	-226.44	7,245.92	0.00	0.00	0.00
17,600.00	90.00	181.79	10,500.00	-7,342.33	-229.57	7,345.92	0.00	0.00	0.00
17,677.81	90.00	181.79	10,500.00	-7,420.10	-232.00	7,423.73	0.00	0.00	0.00

TD at 17677.81

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
KOP-D1 (LU#55H/L1) - hit/miss target - Shape - Point	0.00	0.00	9,927.04	0.00	0.00	580,856.40	748,236.40	32° 35' 39.458 N	103° 31' 38.375 W
EOC-D1 (LU#55H/L1) - plan hits target center - Point	0.00	0.00	10,500.00	-572.68	-17.91	580,283.73	748,218.49	32° 35' 33.793 N	103° 31' 38.635 W
BHL-D1 (LU#55H/L1) - plan hits target center - Rectangle (sides W80.00 H6,850.77 D30.00)	0.00	181.79	10,500.00	-7,420.10	-232.00	573,436.30	748,004.40	32° 34' 26.055 N	103° 31' 41.743 W



TDS
Planning Report



Database: EDM 5000.1 Single User Db
Company: Legacy Reserves
Project: Lea County, NM (NAD-27 2015)
Site: Lea Unit #55H
Well: Lea Unit #55H
Wellbore: Lateral #1
Design: Design #1

Local Co-ordinate Reference: Well Lea Unit #55H
TVD Reference: KB @ 3680.00usft (McVay 4)
MD Reference: KB @ 3680.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,927.04	9,927.04	0.00	0.00	Start DLS 10.00 TFO 181.79
10,827.04	10,500.00	-572.68	-17.91	Start 6850.77 hold at 10827.04 MD
17,677.81	10,500.00	-7,420.10	-232.00	TD at 17677.81



Legacy Reserves

Lea County, NM (NAD-27 2015)

Lea Unit #55H

Lea Unit #55H

Lateral #1

Design #1

Anticollision Report

02 December, 2016





TDS Anticollision Report



Company: Legacy Reserves
Project: Lea County, NM (NAD-27 2015)
Reference Site: Lea Unit #55H
Site Error: 0.00 usft
Reference Well: Lea Unit #55H
Well Error: 0.00 usft
Reference Wellbore: Lateral #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Lea Unit #55H
TVD Reference: KB @ 3680.00usft (McVay 4)
MD Reference: KB @ 3680.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Reference	Design #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	12/2/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	17,677.81	Design #1 (Lateral #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Lea County Offset Wells						
Lea Federal Unit #18 - OH - OH	10,807.59	10,485.02	99.60	56.34	2.303	CC, ES, SF
Lea Federal Unit #20 - OH - OH	16,333.56	10,471.29	246.80	115.91	1.886	CC, ES, SF
Lea Unit #06 - OH - OH	13,397.54	10,133.00	335.13	286.75	6.927	CC
Lea Unit #06 - OH - OH	13,400.00	10,133.00	335.14	286.74	6.925	ES, SF
Lea Unit #54H						
Lea Unit #54H - OH - OH	3,458.10	3,457.76	36.77	23.20	2.709	CC
Lea Unit #54H - OH - OH	3,500.00	3,499.44	36.90	23.16	2.686	ES
Lea Unit #54H - OH - OH	10,229.31	10,216.89	78.44	38.70	1.974	SF
Lea Unit #56H						
Lea Unit #56H - Lateral #1 - Design #1	9,290.71	9,290.84	49.97	8.51	1.205	Level 2, CC
Lea Unit #56H - Lateral #1 - Design #1	9,300.00	9,300.06	49.99	8.48	1.204	Level 2, ES, SF

Offset Design Lea County Offset Wells - Lea Federal Unit #18 - OH - OH											Offset Site Error: 0.00 usft		
Survey Program: 100-ISCWSA-GYRO-3											Offset Well Error: 0.00 usft		
Reference		Offset		Semi Major Axis			Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Minimum Separation (usft)	Separation Factor
0.00	0.00	0.00	0.00	0.00	0.00	169.08	-488.60	94.30	497.84				
100.00	100.00	86.41	86.41	0.09	0.08	169.09	-488.50	94.16	497.50	497.33	0.17	2,902.333	
200.00	200.00	186.69	186.68	0.32	0.26	169.12	-488.22	93.88	497.17	496.60	0.57	875.293	
300.00	300.00	285.18	285.18	0.54	0.44	169.14	-488.06	93.65	496.96	495.99	0.97	513.722	
400.00	400.00	386.57	386.57	0.77	0.62	169.17	-487.99	93.32	496.83	495.46	1.37	362.314	
500.00	500.00	485.83	485.82	0.99	0.79	169.17	-487.71	93.28	496.55	494.78	1.77	279.855	
542.49	542.49	527.49	527.49	1.09	0.86	169.16	-487.65	93.40	496.51	494.57	1.94	255.745	
600.00	600.00	583.66	583.65	1.22	0.95	169.14	-487.69	93.58	496.59	494.43	2.17	229.331	
700.00	700.00	683.01	683.01	1.44	1.11	169.12	-488.02	93.81	496.96	494.40	2.55	194.579	
800.00	800.00	785.00	784.99	1.67	1.29	169.13	-488.28	93.76	497.20	494.24	2.95	168.397	
900.00	900.00	885.10	885.10	1.89	1.47	169.14	-488.26	93.64	497.15	493.80	3.35	148.291	
1,000.00	1,000.00	987.03	987.02	2.12	1.66	169.16	-488.11	93.44	496.97	493.22	3.76	132.266	
1,100.00	1,100.00	1,087.67	1,087.66	2.34	1.84	169.17	-487.63	93.28	496.48	492.32	4.16	119.267	
1,167.61	1,167.61	1,152.61	1,152.61	2.49	1.95	169.15	-487.39	93.45	496.26	491.84	4.43	112.065	
1,200.00	1,200.00	1,183.42	1,183.41	2.56	2.00	169.13	-487.41	93.58	496.32	491.76	4.55	108.963	
1,300.00	1,300.00	1,284.06	1,284.05	2.79	2.17	169.12	-487.74	93.73	496.67	491.72	4.95	100.302	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



TDS
Anticollision Report



Company: Legacy Reserves
Project: Lea County, NM (NAD-27 2015)
Reference Site: Lea Unit #55H
Site Error: 0.00 usft
Reference Well: Lea Unit #55H
Well Error: 0.00 usft
Reference Wellbore: Lateral #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Lea Unit #55H
TVD Reference: KB @ 3680.00usft (McVay 4)
MD Reference: KB @ 3680.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Lea County Offset Wells - Lea Federal Unit #18 - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 100-ISCWSA-GYRO-3														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
15,600.00	10,500.00	10,624.85	10,622.55	99.52	18.65	-143.68	-560.06	83.67	4,791.79	4,748.50	43.28	110.714			
15,700.00	10,500.00	10,629.83	10,627.53	101.29	18.66	-144.64	-560.21	83.69	4,891.72	4,848.38	43.34	112.866			
15,800.00	10,500.00	10,634.96	10,632.66	103.07	18.67	-145.58	-560.36	83.72	4,991.66	4,948.26	43.40	115.009			
15,900.00	10,500.00	10,640.25	10,637.95	104.84	18.67	-146.50	-560.52	83.74	5,091.59	5,048.13	43.46	117.143			
16,000.00	10,500.00	10,645.71	10,643.40	106.62	18.68	-147.41	-560.69	83.77	5,191.53	5,148.00	43.53	119.268			
16,100.00	10,500.00	10,651.34	10,649.03	108.40	18.69	-148.30	-560.86	83.81	5,291.46	5,247.87	43.59	121.383			
16,200.00	10,500.00	10,657.16	10,654.85	110.18	18.71	-149.18	-561.05	83.84	5,391.39	5,347.74	43.66	123.488			
16,300.00	10,500.00	10,663.17	10,660.85	111.96	18.72	-150.04	-561.24	83.88	5,491.33	5,447.60	43.73	125.583			
16,400.00	10,500.00	10,669.38	10,667.06	113.75	18.73	-150.88	-561.44	83.92	5,591.26	5,547.46	43.80	127.667			
16,500.00	10,500.00	10,675.81	10,673.49	115.53	18.74	-151.70	-561.66	83.97	5,691.19	5,647.32	43.87	129.742			
16,600.00	10,500.00	10,682.46	10,680.14	117.32	18.75	-152.51	-561.88	84.02	5,791.12	5,747.18	43.94	131.805			
16,700.00	10,500.00	10,689.35	10,687.02	119.10	18.76	-153.30	-562.12	84.08	5,891.04	5,847.03	44.01	133.857			
16,800.00	10,500.00	10,696.49	10,694.15	120.89	18.78	-154.08	-562.37	84.14	5,990.97	5,946.88	44.08	135.899			
16,900.00	10,500.00	10,701.89	10,699.55	122.68	18.79	-154.63	-562.56	84.19	6,090.89	6,046.74	44.16	137.943			
17,000.00	10,500.00	10,705.53	10,703.18	124.47	18.79	-154.99	-562.69	84.22	6,190.82	6,146.59	44.22	139.992			
17,100.00	10,500.00	10,709.16	10,706.82	126.26	18.80	-155.35	-562.82	84.26	6,290.74	6,246.45	44.29	142.032			
17,200.00	10,500.00	10,712.80	10,710.46	128.05	18.81	-155.69	-562.95	84.29	6,390.67	6,346.31	44.36	144.063			
17,300.00	10,500.00	10,716.45	10,714.10	129.85	18.81	-156.02	-563.08	84.33	6,490.59	6,446.16	44.43	146.085			
17,400.00	10,500.00	10,720.10	10,717.75	131.64	18.82	-156.35	-563.21	84.37	6,590.52	6,546.02	44.50	148.098			
17,500.00	10,500.00	10,723.75	10,721.40	133.44	18.83	-156.67	-563.34	84.40	6,690.44	6,645.87	44.57	150.103			
17,600.00	10,500.00	10,727.41	10,725.05	135.23	18.83	-156.98	-563.47	84.44	6,790.37	6,745.72	44.64	152.099			
17,677.81	10,500.00	10,730.25	10,727.90	136.63	18.84	-157.21	-563.58	84.47	6,868.12	6,823.42	44.70	153.645			

CC - Min centre to center distance or coverage point, SF - min separation factor, ES - min ellipse separation



TDS
Anticollision Report



Company: Legacy Reserves
Project: Lea County, NM (NAD-27 2015)
Reference Site: Lea Unit #55H
Site Error: 0.00 usft
Reference Well: Lea Unit #55H
Well Error: 0.00 usft
Reference Wellbore: Lateral #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Lea Unit #55H
TVD Reference: KB @ 3680.00usft (McVay 4)
MD Reference: KB @ 3680.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Lea County Offset Wells - Lea Unit #06 - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 100-ISCWSA-GYRO-3												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toothface (")	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N-S (usft)	+E-W (usft)					
13,500.00	10,500.00	10,133.00	10,131.67	62.93	17.67	-3.97	-3,142.64	-75.07	350.45	302.03	48.42	7.237	
13,600.00	10,500.00	10,133.00	10,131.67	64.63	17.67	-3.97	-3,142.64	-75.07	391.54	343.94	47.60	8.225	
13,700.00	10,500.00	10,133.00	10,131.67	66.33	17.67	-3.97	-3,142.64	-75.07	451.44	404.90	46.54	9.701	
13,800.00	10,500.00	10,133.00	10,131.67	68.05	17.67	-3.97	-3,142.64	-75.07	523.73	478.15	45.58	11.490	
13,900.00	10,500.00	10,133.00	10,131.67	69.76	17.67	-3.97	-3,142.64	-75.07	603.97	559.14	44.83	13.472	
14,000.00	10,500.00	10,133.00	10,131.67	71.48	17.67	-3.97	-3,142.64	-75.07	689.40	645.13	44.27	15.572	
14,100.00	10,500.00	10,133.00	10,131.67	73.21	17.67	-3.97	-3,142.64	-75.07	778.31	734.45	43.86	17.746	
14,200.00	10,500.00	10,133.00	10,131.67	74.94	17.67	-3.97	-3,142.64	-75.07	869.63	826.08	43.55	19.968	
14,300.00	10,500.00	10,133.00	10,131.67	76.68	17.67	-3.97	-3,142.64	-75.07	962.68	919.36	43.32	22.222	
14,400.00	10,500.00	10,133.00	10,131.67	78.42	17.67	-3.97	-3,142.64	-75.07	1,057.00	1,013.85	43.15	24.496	
14,500.00	10,500.00	10,133.00	10,131.67	80.16	17.67	-3.97	-3,142.64	-75.07	1,152.28	1,109.26	43.02	26.784	
14,600.00	10,500.00	10,133.00	10,131.67	81.90	17.67	-3.97	-3,142.64	-75.07	1,248.29	1,205.37	42.93	29.081	
14,700.00	10,500.00	10,133.00	10,131.67	83.65	17.67	-3.97	-3,142.64	-75.07	1,344.89	1,302.04	42.85	31.383	
14,800.00	10,500.00	10,133.00	10,131.67	85.41	17.67	-3.97	-3,142.64	-75.07	1,441.95	1,399.15	42.80	33.689	
14,900.00	10,500.00	10,133.00	10,131.67	87.16	17.67	-3.97	-3,142.64	-75.07	1,539.39	1,496.62	42.77	35.996	
15,000.00	10,500.00	10,133.00	10,131.67	88.92	17.67	-3.97	-3,142.64	-75.07	1,637.13	1,594.39	42.74	38.303	
15,100.00	10,500.00	10,133.00	10,131.67	90.68	17.67	-3.97	-3,142.64	-75.07	1,735.14	1,692.41	42.73	40.609	
15,200.00	10,500.00	10,133.00	10,131.67	92.44	17.67	-3.97	-3,142.64	-75.07	1,833.36	1,790.63	42.72	42.913	
15,300.00	10,500.00	10,133.00	10,131.67	94.21	17.67	-3.97	-3,142.64	-75.07	1,931.76	1,889.03	42.72	45.214	
15,400.00	10,500.00	10,133.00	10,131.67	95.98	17.67	-3.97	-3,142.64	-75.07	2,030.31	1,987.58	42.73	47.512	
15,500.00	10,500.00	10,133.00	10,131.67	97.75	17.67	-3.97	-3,142.64	-75.07	2,129.01	2,086.26	42.75	49.806	
15,600.00	10,500.00	10,133.00	10,131.67	99.52	17.67	-3.97	-3,142.64	-75.07	2,227.82	2,185.05	42.76	52.095	
15,700.00	10,500.00	10,133.00	10,131.67	101.29	17.67	-3.97	-3,142.64	-75.07	2,326.73	2,283.94	42.79	54.380	
15,800.00	10,500.00	10,133.00	10,131.67	103.07	17.67	-3.97	-3,142.64	-75.07	2,425.73	2,382.91	42.81	56.660	
15,900.00	10,500.00	10,133.00	10,131.67	104.84	17.67	-3.97	-3,142.64	-75.07	2,524.80	2,481.96	42.84	58.935	
16,000.00	10,500.00	10,133.00	10,131.67	106.62	17.67	-3.97	-3,142.64	-75.07	2,623.95	2,581.08	42.87	61.204	
16,100.00	10,500.00	10,133.00	10,131.67	108.40	17.67	-3.97	-3,142.64	-75.07	2,723.16	2,680.26	42.91	63.468	
16,200.00	10,500.00	10,133.00	10,131.67	110.18	17.67	-3.97	-3,142.64	-75.07	2,822.43	2,779.49	42.94	65.726	
16,300.00	10,500.00	10,133.00	10,131.67	111.96	17.67	-3.97	-3,142.64	-75.07	2,921.75	2,878.77	42.98	67.977	
16,400.00	10,500.00	10,133.00	10,131.67	113.75	17.67	-3.97	-3,142.64	-75.07	3,021.11	2,978.09	43.02	70.223	
16,500.00	10,500.00	10,133.00	10,131.67	115.53	17.67	-3.97	-3,142.64	-75.07	3,120.51	3,077.45	43.06	72.462	
16,600.00	10,500.00	10,133.00	10,131.67	117.32	17.67	-3.97	-3,142.64	-75.07	3,219.95	3,176.84	43.11	74.694	
16,700.00	10,500.00	10,133.00	10,131.67	119.10	17.67	-3.97	-3,142.64	-75.07	3,319.42	3,276.27	43.15	76.920	
16,800.00	10,500.00	10,133.00	10,131.67	120.89	17.67	-3.97	-3,142.64	-75.07	3,418.93	3,375.73	43.20	79.138	
16,900.00	10,500.00	10,133.00	10,131.67	122.68	17.67	-3.97	-3,142.64	-75.07	3,518.46	3,475.21	43.25	81.350	
17,000.00	10,500.00	10,133.00	10,131.67	124.47	17.67	-3.97	-3,142.64	-75.07	3,618.02	3,574.72	43.30	83.555	
17,100.00	10,500.00	10,133.00	10,131.67	126.26	17.67	-3.97	-3,142.64	-75.07	3,717.60	3,674.25	43.35	85.753	
17,200.00	10,500.00	10,133.00	10,131.67	128.05	17.67	-3.97	-3,142.64	-75.07	3,817.20	3,773.80	43.41	87.943	
17,300.00	10,500.00	10,133.00	10,131.67	129.85	17.67	-3.97	-3,142.64	-75.07	3,916.83	3,873.37	43.46	90.126	
17,400.00	10,500.00	10,133.00	10,131.67	131.64	17.67	-3.97	-3,142.64	-75.07	4,016.47	3,972.95	43.51	92.302	
17,500.00	10,500.00	10,133.00	10,131.67	133.44	17.67	-3.97	-3,142.64	-75.07	4,116.13	4,072.56	43.57	94.470	
17,600.00	10,500.00	10,133.00	10,131.67	135.23	17.67	-3.97	-3,142.64	-75.07	4,215.81	4,172.18	43.63	96.630	
17,677.81	10,500.00	10,133.00	10,131.67	136.63	17.67	-3.97	-3,142.64	-75.07	4,293.37	4,249.70	43.67	98.306	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



TDS
Anticollision Report



Company: Legacy Reserves
Project: Lea County, NM (NAD-27 2015)
Reference Site: Lea Unit #55H
Site Error: 0.00 usft
Reference Well: Lea Unit #55H
Well Error: 0.00 usft
Reference Wellbore: Lateral #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Lea Unit #55H
TVD Reference: KB @ 3680.00usft (McVay 4)
MD Reference: KB @ 3680.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Lea Unit #56H - Lea Unit #56H - Lateral #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)		Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	89.89	0.10	50.10	50.10					
100.00	100.00	100.00	100.00	0.09	0.09	89.89	0.10	50.10	50.10	49.92		0.18	271.828	
200.00	200.00	200.00	200.00	0.32	0.32	89.89	0.10	50.10	50.10	49.47		0.63	79.042	
300.00	300.00	300.00	300.00	0.54	0.54	89.89	0.10	50.10	50.10	49.02		1.08	46.245	
400.00	400.00	400.00	400.00	0.77	0.77	89.89	0.10	50.10	50.10	48.57		1.53	32.683	
500.00	500.00	500.00	500.00	0.99	0.99	89.89	0.10	50.10	50.10	48.12		1.98	25.272	
600.00	600.00	600.00	600.00	1.22	1.22	89.89	0.10	50.10	50.10	47.67		2.43	20.601	
700.00	700.00	700.00	700.00	1.44	1.44	89.89	0.10	50.10	50.10	47.22		2.88	17.387	
800.00	800.00	800.00	800.00	1.67	1.67	89.89	0.10	50.10	50.10	46.77		3.33	15.040	
900.00	900.00	900.00	900.00	1.89	1.89	89.89	0.10	50.10	50.10	46.32		3.78	13.252	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	89.89	0.10	50.10	50.10	45.87		4.23	11.844	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	89.89	0.10	50.10	50.10	45.42		4.68	10.706	
1,200.00	1,200.00	1,200.00	1,200.00	2.56	2.56	89.89	0.10	50.10	50.10	44.97		5.13	9.768	
1,300.00	1,300.00	1,300.00	1,300.00	2.79	2.79	89.89	0.10	50.10	50.10	44.52		5.58	8.981	
1,400.00	1,400.00	1,400.00	1,400.00	3.01	3.01	89.89	0.10	50.10	50.10	44.07		6.03	8.311	
1,500.00	1,500.00	1,500.00	1,500.00	3.24	3.24	89.89	0.10	50.10	50.10	43.62		6.48	7.734	
1,600.00	1,600.00	1,600.00	1,600.00	3.46	3.46	89.89	0.10	50.10	50.10	43.17		6.93	7.232	
1,700.00	1,700.00	1,700.00	1,700.00	3.69	3.69	89.89	0.10	50.10	50.10	42.72		7.38	6.792	
1,800.00	1,800.00	1,800.00	1,800.00	3.91	3.91	89.89	0.10	50.10	50.10	42.27		7.83	6.401	
1,900.00	1,900.00	1,900.00	1,900.00	4.14	4.14	89.89	0.10	50.10	50.10	41.82		8.28	6.054	
2,000.00	2,000.00	2,000.00	2,000.00	4.36	4.36	89.89	0.10	50.10	50.10	41.37		8.73	5.742	
2,100.00	2,100.00	2,100.00	2,100.00	4.59	4.59	89.89	0.10	50.10	50.10	40.93		9.17	5.461	
2,200.00	2,200.00	2,200.00	2,200.00	4.81	4.81	89.89	0.10	50.10	50.10	40.48		9.62	5.205	
2,300.00	2,300.00	2,300.00	2,300.00	5.04	5.04	89.89	0.10	50.10	50.10	40.03		10.07	4.973	
2,400.00	2,400.00	2,400.00	2,400.00	5.26	5.26	89.89	0.10	50.10	50.10	39.58		10.52	4.761	
2,500.00	2,500.00	2,500.00	2,500.00	5.49	5.49	89.89	0.10	50.10	50.10	39.13		10.97	4.566	
2,600.00	2,600.00	2,600.00	2,600.00	5.71	5.71	89.89	0.10	50.10	50.10	38.68		11.42	4.386	
2,700.00	2,700.00	2,700.00	2,700.00	5.94	5.94	89.89	0.10	50.10	50.10	38.23		11.87	4.220	
2,800.00	2,800.00	2,800.00	2,800.00	6.16	6.16	89.89	0.10	50.10	50.10	37.78		12.32	4.066	
2,900.00	2,900.00	2,900.00	2,900.00	6.39	6.39	89.89	0.10	50.10	50.10	37.33		12.77	3.923	
3,000.00	3,000.00	3,000.00	3,000.00	6.61	6.61	89.89	0.10	50.10	50.10	36.88		13.22	3.790	
3,100.00	3,100.00	3,100.00	3,100.00	6.84	6.84	89.89	0.10	50.10	50.10	36.43		13.67	3.665	
3,200.00	3,200.00	3,200.00	3,200.00	7.06	7.06	89.89	0.10	50.10	50.10	35.98		14.12	3.548	
3,300.00	3,300.00	3,300.00	3,300.00	7.28	7.28	89.89	0.10	50.10	50.10	35.53		14.57	3.439	
3,400.00	3,400.00	3,400.00	3,400.00	7.51	7.51	89.89	0.10	50.10	50.10	35.08		15.02	3.336	
3,500.00	3,500.00	3,500.00	3,500.00	7.73	7.73	89.89	0.10	50.10	50.10	34.63		15.47	3.239	
3,600.00	3,600.00	3,600.00	3,600.00	7.96	7.96	89.89	0.10	50.10	50.10	34.18		15.92	3.147	
3,700.00	3,700.00	3,700.00	3,700.00	8.18	8.18	89.89	0.10	50.10	50.10	33.73		16.37	3.061	
3,800.00	3,800.00	3,800.00	3,800.00	8.41	8.41	89.89	0.10	50.10	50.10	33.28		16.82	2.979	
3,900.00	3,900.00	3,900.00	3,900.00	8.63	8.63	89.89	0.10	50.10	50.10	32.83		17.27	2.902	
4,000.00	4,000.00	4,000.00	4,000.00	8.86	8.86	89.89	0.10	50.10	50.10	32.38		17.72	2.828	
4,100.00	4,100.00	4,100.00	4,100.00	9.08	9.08	89.89	0.10	50.10	50.10	31.93		18.17	2.758	
4,200.00	4,200.00	4,200.00	4,200.00	9.31	9.31	89.89	0.10	50.10	50.10	31.48		18.62	2.691	
4,300.00	4,300.00	4,300.00	4,300.00	9.53	9.53	89.89	0.10	50.10	50.10	31.04		19.06	2.628	
4,400.00	4,400.00	4,400.00	4,400.00	9.76	9.76	89.89	0.10	50.10	50.10	30.59		19.51	2.567	
4,500.00	4,500.00	4,500.00	4,500.00	9.98	9.98	89.89	0.10	50.10	50.10	30.14		19.96	2.510	
4,600.00	4,600.00	4,600.00	4,600.00	10.21	10.21	89.89	0.10	50.10	50.10	29.69		20.41	2.454	
4,700.00	4,700.00	4,700.00	4,700.00	10.43	10.43	89.89	0.10	50.10	50.10	29.24		20.86	2.401	
4,800.00	4,800.00	4,800.00	4,800.00	10.66	10.66	89.89	0.10	50.10	50.10	28.79		21.31	2.351	
4,900.00	4,900.00	4,900.00	4,900.00	10.88	10.88	89.89	0.10	50.10	50.10	28.34		21.76	2.302	
5,000.00	5,000.00	5,000.00	5,000.00	11.11	11.11	89.89	0.10	50.10	50.10	27.89		22.21	2.256	
5,100.00	5,100.00	5,100.00	5,100.00	11.33	11.33	89.89	0.10	50.10	50.10	27.44		22.66	2.211	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



TDS
Anticollision Report



Company: Legacy Reserves
Project: Lea County, NM (NAD-27 2015)
Reference Site: Lea Unit #55H
Site Error: 0.00 usft
Reference Well: Lea Unit #55H
Well Error: 0.00 usft
Reference Wellbore: Lateral #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Lea Unit #55H
TVD Reference: KB @ 3680.00usft (McVay 4)
MD Reference: KB @ 3680.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Lea Unit #56H - Lea Unit #56H - Lateral #1 - Design #1														Offset Site Error: 0.00 usft	
Survey Program: 0-MWD														Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
14,300.00	10,500.00	13,600.68	9,800.00	76.68	76.05	8.30	-4,036.91	-228.42	707.43	643.64	63.78	11.092			
14,400.00	10,500.00	13,700.61	9,800.00	78.42	77.79	8.60	-4,136.60	-235.30	707.98	642.49	65.49	10.810			
14,500.00	10,500.00	13,800.54	9,800.00	80.16	79.53	8.90	-4,236.29	-242.18	708.55	641.33	67.22	10.540			
14,600.00	10,500.00	13,900.47	9,800.00	81.90	81.28	9.20	-4,335.98	-249.06	709.14	640.17	68.98	10.281			
14,700.00	10,500.00	14,000.40	9,800.00	83.65	83.03	9.50	-4,435.67	-255.94	709.76	639.01	70.75	10.032			
14,800.00	10,500.00	14,100.33	9,800.00	85.41	84.79	9.80	-4,535.37	-262.81	710.39	637.84	72.54	9.792			
14,900.00	10,500.00	14,200.26	9,800.00	87.16	86.54	10.10	-4,635.06	-269.69	711.04	636.68	74.36	9.562			
15,000.00	10,500.00	14,300.19	9,800.00	88.92	88.30	10.40	-4,734.75	-276.57	711.71	635.51	76.20	9.340			
15,100.00	10,500.00	14,400.12	9,800.00	90.68	90.06	10.70	-4,834.44	-283.45	712.40	634.34	78.06	9.127			
15,200.00	10,500.00	14,500.05	9,800.00	92.44	91.83	10.99	-4,934.14	-290.33	713.10	633.17	79.94	8.921			
15,300.00	10,500.00	14,599.98	9,800.00	94.21	93.59	11.29	-5,033.83	-297.20	713.83	631.99	81.84	8.722			
15,400.00	10,500.00	14,699.91	9,800.00	95.98	95.36	11.59	-5,133.52	-304.08	714.58	630.81	83.77	8.531			
15,500.00	10,500.00	14,799.84	9,800.00	97.75	97.13	11.88	-5,233.21	-310.96	715.34	629.63	85.71	8.346			
15,600.00	10,500.00	14,899.76	9,800.00	99.52	98.90	12.17	-5,332.90	-317.84	716.13	628.45	87.68	8.167			
15,700.00	10,500.00	14,999.69	9,800.00	101.29	100.67	12.47	-5,432.60	-324.72	716.93	627.26	89.67	7.995			
15,800.00	10,500.00	15,099.62	9,800.00	103.07	102.44	12.76	-5,532.29	-331.59	717.75	626.07	91.69	7.828			
15,900.00	10,500.00	15,199.55	9,800.00	104.84	104.22	13.05	-5,631.98	-338.47	718.59	624.87	93.72	7.667			
16,000.00	10,500.00	15,299.48	9,800.00	106.62	105.99	13.35	-5,731.67	-345.35	719.45	623.67	95.78	7.512			
16,100.00	10,500.00	15,399.41	9,800.00	108.40	107.77	13.64	-5,831.37	-352.23	720.33	622.47	97.86	7.361			
16,200.00	10,500.00	15,499.34	9,800.00	110.18	109.55	13.93	-5,931.06	-359.11	721.23	621.27	99.96	7.215			
16,300.00	10,500.00	15,599.27	9,800.00	111.96	111.33	14.22	-6,030.75	-365.98	722.14	620.06	102.09	7.074			
16,400.00	10,500.00	15,699.20	9,800.00	113.75	113.11	14.50	-6,130.44	-372.86	723.08	618.85	104.23	6.937			
16,500.00	10,500.00	15,799.13	9,800.00	115.53	114.89	14.79	-6,230.14	-379.74	724.03	617.63	106.40	6.805			
16,600.00	10,500.00	15,899.06	9,800.00	117.32	116.68	15.08	-6,329.83	-386.62	725.00	616.41	108.59	6.676			
16,700.00	10,500.00	15,998.99	9,800.00	119.10	118.46	15.37	-6,429.52	-393.50	725.99	615.18	110.81	6.552			
16,800.00	10,500.00	16,098.92	9,800.00	120.89	120.25	15.65	-6,529.21	-400.37	727.00	613.95	113.04	6.431			
16,900.00	10,500.00	16,198.84	9,800.00	122.68	122.03	15.94	-6,628.90	-407.25	728.02	612.72	115.30	6.314			
17,000.00	10,500.00	16,298.77	9,800.00	124.47	123.82	16.22	-6,728.60	-414.13	729.06	611.48	117.58	6.201			
17,100.00	10,500.00	16,398.70	9,800.00	126.26	125.61	16.50	-6,828.29	-421.01	730.12	610.24	119.88	6.090			
17,200.00	10,500.00	16,498.63	9,800.00	128.05	127.39	16.79	-6,927.98	-427.89	731.20	608.99	122.21	5.983			
17,300.00	10,500.00	16,598.56	9,800.00	129.85	129.18	17.07	-7,027.67	-434.76	732.30	607.74	124.55	5.879			
17,400.00	10,500.00	16,698.49	9,800.00	131.64	130.97	17.35	-7,127.37	-441.64	733.41	606.49	126.92	5.778			
17,500.00	10,500.00	16,798.42	9,800.00	133.44	132.76	17.63	-7,227.06	-448.52	734.54	605.23	129.31	5.680			
17,600.00	10,500.00	16,898.35	9,800.00	135.23	134.55	17.91	-7,326.75	-455.40	735.69	603.97	131.72	5.585			
17,677.81	10,500.00	16,976.10	9,800.00	136.63	135.95	18.12	-7,404.32	-460.75	736.60	602.98	133.62	5.513			



TDS
Anticollision Report



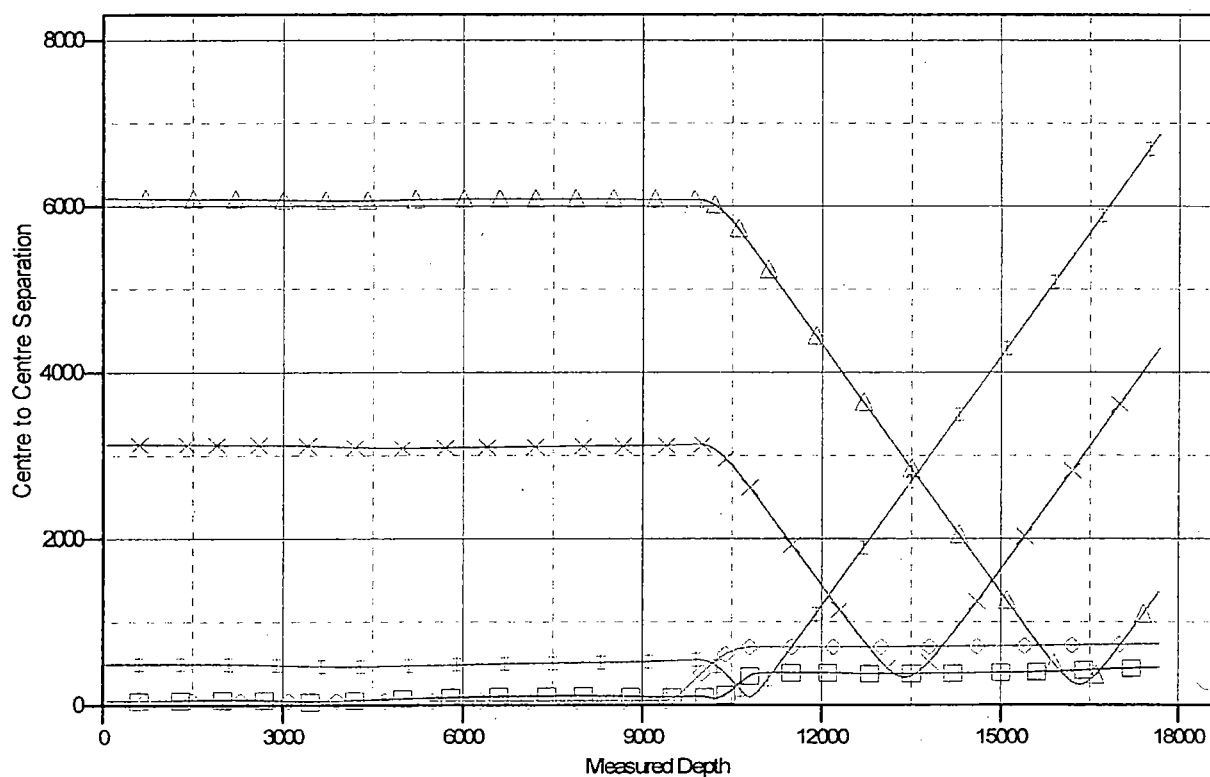
Company: Legacy Reserves
Project: Lea County, NM (NAD-27 2015)
Reference Site: Lea Unit #55H
Site Error: 0.00 usft
Reference Well: Lea Unit #55H
Well Error: 0.00 usft
Reference Wellbore: Lateral #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Lea Unit #55H
TVD Reference: KB @ 3680.00usft (McVay 4)
MD Reference: KB @ 3680.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB @ 3680.00usft (McVay 4)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Lea Unit #55H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.43°

Ladder Plot



LEGEND

Lea Unit#54H, OH, OH V0 Lea Federal Unit#18, OH, OH V0 Lea Federal Unit#20, OH, OH V0
Lea Unit#56H, Lateral#1, Design #1 V0 Lea Unit#06, OH, OH V0

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

DRILLING PLAN
LEA UNIT 55H
LEGACY RESERVES OPERATING LP
 SHL: Unit B, Section 11
 BHL: Unit G, Section 14
 T20S-R34E, Lea County, New Mexico

To satisfy requirements of Onshore Oil and Gas Order No. 1, Legacy Reserves Operating LP submits the following for your consideration:

1. **Location:** SHL: 170' FNL & 1690' FEL, Sec.II, T20S-R34E (First Take: 330 FNL & 1980 FEL)

BHL: 2310' FNL & 1980' FEL, Sec. 14, T20S-R34E (Last Take)

2. **Elevations:** 3,662' GL

3. **Geological Name of Surface Formation:** *Quaternary alluvium deposits*

4. **Drilling Tools and Associated Equipment:** Rotary drilling rig using fluid as a means for removal of solid cuttings from the well.

5. **Proposed Drilling Depth:** 17,678' MD 10,500' TVD

6. **Estimated Tops of Geological Markers:**

Formation	TVD	MD
Rustler Anhydrite	1,680'	Same
Top salt	1,720'	Same
Bottom salt	3,150'	Same
Top of Capitan Reef Carbonate	3,150'	Same
Capitan Reef Bottom	4,710'	Same
San Andres Limestone	4,710'	Same
Delaware Sandstone	5,666'	Same
Bone Spring Lime	8,205'	Same
Avalon Shale	8,760'	Same
1 st Bone Spring Sand	9,501'	Same
2 nd Bone Spring Sand [GOAL]	10,034'	10,035

7. Possible mineral bearing formations:

Primary: Bone Spring (oil); Secondary: Delaware (oil), Avalon (oil), fresh water (~125')

8. Proposed Mud System:

Depth	Mud Wt.	Vise	Fluid Loss	Type Mud
0' to 1800'	8.4-8.9	30-32	NC	Fresh water gel spud mud
1800' to 5600'	9.8-10	28-29	NC	Brine water
5600' to 10,500'	8.4-8.6	28-29	NC	Fresh water/brine, use hi-viscosity
				Weeps to clean hole
10,500' to 17,678'	8.9-9.1	28-29	18-20	Fresh water/brine

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. A Pason PVT system will be rigged up prior to spudding this well. A volume monitoring system that measures, calculates and displays readings from the mud system on the rig to alert the rig crew of impending gas kicks and lost circulation. In order to effectively run open hole logs and casing, the mud viscosity and fluid loss properties may be adjusted.

9. Proposed Drilling Plan:

Set surface and intermediate casing and cement to surface. Drill 8-3/4" to ~10,500'. Kick off and drill 8-3/4" hole to TD of ~17,678'. Set 5-1/2" casing from surface to TD (~17,678'). Cement 5-1/2" production casing back to surface.

10. Casing Information:

String	Hole size	Depth	Casing OD	Collar	Weight	Grade
Surface	17-1/2"	1800' MD	New 13-3/8"	STC	54.5#	J-55
Intermediate	12-1/4"	3901' MD	New 9-5/8"	LTC	40#	J-55
Intermediate	12-1/4"	5600' MD	New 9-5/8"	LTC	40#	HCK-55
Production	8-3/4"	17,678' MD	New 5-1/2"	BTC	20#	P-110

5-1/2". P-110:

Collapse Factor: 1.55
Burst Factor: 1.29
Tension Factor: 3.06

9-5/8". HCK-55

Collapse Factor: 1.28
Burst Factor: 2.03
Tension Factor: 3.33

9-5/8. J-55

Collapse Factor: 1.24
Burst Factor: 1.82
Tension Factor: 3.12

13-3/8. J-55

Collapse Factor: 3.08
Burst Factor: 3.54
Tension Factor: 5.66

11. Cementing Information:

Surface Casing (75% excess on lead & 75% excess on tail to design for cement top at surface):

Lead: 1100 sxs class C cement + 4% bwoc bentonite II + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.005% bwoc Static Free + 0.005 gps FP-6L (13.50 ppg, 1.93 cfps, 9.71 gps wtr). [2,123 cu ft]

Tail: 200 sxs class C cement + 1.5% bwoc Calcium Chloride + 0.005 lbs/sack Static Free + 0.005 gps FP-6L (14.80 ppg, 1.34 cfps, 6.35 gps wtr). [268 cu ft]

Intermediate Casings

In the event that circulation is lost (> 50%) while drilling the 12-1/4" intermediate hole in the Capitan Reef at +/-4000', we will plan to install a DV tool and external casing packer within 200' of the top depth where lost circulation occurred and will pump a two-stage cement job with the potential to add an additional DV tool for a three-stage cement job. If there is no lost circulation a single stage cementing procedure will be followed. Legacy plans to cement to surface regardless of whether a single stage, 2-stage or 3-stage procedure is implemented.

No DV tool (80% excess on lead & 80% excess on tail to design for cement top at surface)

Lead: 1400 sx (35:65) poz (fly ash) class C cement+ 4% bwoc bentonite II + 5% bwoc MPA-5 + 0.25% bwoc FL-52 + 5 lbs/sack LCM-1 +0.125 lbs/sk cello flake+ 0.005 lbs/sk defoamer + 0.005 gpsFP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cfps, 8.81 gps wtr) [2,982 cu ft]
Tail: 200 sx class C cement (14.80 ppg, 1.33 cfps, 6.35 gps wtr) [266 cu ft]

With (1) DV Tool (100% excess on lead & 100% excess on tail to design for cement top at surface)

Assuming DV tool set at 3950' but if the setting depth changes, cement volumes will be adjusted proportionately.

Stage 1

Lead: 400 sx (35:65) paz (fly ash) class C cement+ 4% bwoc Bentonite II+ 5% bwoc MPA-5 + 0.25% bwoc FL-52 + 5 lbs/sack LCM-1 +0.125 lbs/sk cello flake+ 0.005 lbs/sk defoamer + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cfps, 8.81 gps wtr) [852 cu ft]

Tail: 200 sx class C cement (14.80 ppg, 1.33 cfps, 6.35 gps wtr) [266 cu ft]

Stage 2

Lead: 1100 sx (35:65) paz (fly ash) class C cement+ 4% bwoc bentonite II + 5% bwoc MPA-5 + 0.25% bwoc FL-52 + 5 lbs/sack LCM-1 + 0.125 lbs/sk Cello Flake+ 0.005 lbs/sk Static Free+ 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cfps, 8.81 gps wtr) [2343 cu ft]

Tail: 200 sx class C cement (14.80 ppg, 1.33 cfps, 6.35 gps wtr) [266 cu ft]

With (2) DV Tools (100% excess on lead & 100% excess on tail to design for cement top at surface)

Assuming one DV tool set at 3950' and one DV tool set at 1800' but if the setting depths change, cement volumes will be adjusted proportionately.

Stage 1

Lead: 400 sx (35:65) paz (fly ash) class C cement+ 4% bwoc Bentonite II+ 5% bwoc MPA-5 + 0.25% bwoc FL-52 + 5 lbs/sack LCM-1 +0.125 lbs/sk cello flake+ 0.005 lbs/sk defoamer + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cfps, 8.81 gps wtr) [852 cu ft]

Tail: 200 sx class C cement (14.80 ppg, 1.33 cfps, 6.35 gps wtr) [266 cu ft]

Stage 2

Lead: 600 sx (35:65) paz (fly ash) class C cement+ 4% bwoc bentonite II + 5% bwoc MPA-5 + 0.25% bwoc FL-52 + 5 lbs/sack LCM-1 +0.125 lbs/sk Cello Flake+ 0.005 lbs/sk Static Free+ 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cfps, 8.81 gps wtr) [1278 cu ft]

Tail: 200 sx class C cement (14.80 ppg, 1.33 cfps, 6.35 gps wtr) [266 cu ft]

Stage 3

Lead: 600 sx (35:65) paz (fly ash) class C cement+ 4% bwoc bentonite II + 5% bwoc MPA-5 + 0.25% bwoc FL-52 + 5 lbs/sack LCM-1 +0.125 lbs/sk Cello Flake+ 0.005 lbs/sk Static Free+ 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cfps, 8.81 gps wtr) [1278 cu ft]

Tail: 200 sx class C cement (14.80 ppg, 1.33 cf/sx, 6.35 gps wtr) [266 cu ft]

Production Casing (80% excess on lead & 20% excess on tail to design for cement top at surface):

Lead: 1600 sxs (50:50) poz (fly ash) class H cement + 10% bwoc bentonite II + 5% bwow sodium chloride + 5

pps LCM-1 + 0.005 lbs/sk Static Free + 0.005 gps FP-6L (11.90 ppg, 2.38 cf/sx, 13.22 gps wtr). [3808 cu ft]

Tail: 1700 sxs Class H (15:61:11) poz (fly ash): class H cement: CSE-2 + 4% bwow sodium chloride + 3 pps LCM-

1 + 0.6% bwoc FL-25 + 0.005 gps FP-6L + 0.005% bwoc Static Free (13.20 ppg, 1.62 cf/sx, 9.45 gps wtr). [2754 cu ft]

12. Pressure Control Eqp/BOP:

Legacy Reserves plans to use a 13-5/8" 5000-psi working pressure BOP system consisting of a double ram BOP with one ram being pipe and one ram being blind, a 5000-psi annular type preventer, a 5000-psi choke manifold and 80 gallon accumulator with floor, five remote operating stations and an auxiliary power system. A rotating head will be utilized as needed. A drill string safety valve in the open position will be available on the rig floor. A mud gas separator will be available for use if needed.

A 3M BOP will be used to drill from the surface casing shoe (~1800') to the intermediate casing shoe (~5600'). The BOP will be a 5M system, however the "A" section wellhead will be a 3M wellhead (see attached BOP Diagram).

The BOP unit will be hydraulically operated. The BOP will be operated at least once per day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling.

The BOPs will be tested by an independent service company to 250 psi low and 5000 psi high.

13. Testing, Logging, and Coring Program:

- A. Mud logging program: 2 man unit from approximately after setting intermediate casing.
- B. No open hole logs, DST's or cores are planned.

14. Potential Hazards

No abnormal pressures or temperatures are expected during the drilling of this well. If H2S is encountered the operator will comply with provisions of Onshore Order 6. Since there will be an H2S Safety package on location, attached is an "H2S Drilling Operations Plan". Adequate flare lines will be installed on the mud/gas separator so gas may be flared safely. All personnel will be familiar with all aspects of safe operations of equipment being used. Lost circulation may occur and a cement contingency plan is included in this plan along with mud materials to be kept on location at all times in order to combat lost circulation or unexpected kicks. Estimated BHP: 4620 psi, estimated BHT: 162°F.

15. Additional Requirements of Project:

Completion: The targeted Bone Spring pay zone will be perforated and stimulated in multiple stages using acid and hydraulic fracturing treatments. Fresh water used in the drilling and completion of this well will be transferred from off-site via temporary flowlines and stored in frac tanks on the location.