

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NMOCD

Hobbs

HOBBS OCD
DEC 04 2017
RECEIVEDFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM13276
2. Name of Operator LEGACY RESERVES OPERATING LP Contact: MATT DICKSON E-Mail: mdickson@legacyp.com		6. If Indian, Allottee or Tribe Name
3a. Address 303 W WALL ST STE 1800 MIDLAND, TX 79701	3b. Phone No. (include area code) Ph: 432-689-5200 Ext: 5204	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 18 T20S R34E NWNW 320FNL 1145FWL		8. Well Name and No. HAMON FED COM A 12H
		9. API Well No. 30-025-43253
		10. Field and Pool or Exploratory Area TEAS; BONE SPRING, EAST
		11. County or Parish, State LEA CO COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Legacy Reserves Operating respectfully request to shift the proposed BHL of the subject well. The SHL will remain the same as originally permitted. Please see the attached C-102 and directional plan that reflect the revised plan.

Original COAs still stand along w/ EC# 375707 COAs

14. I hereby certify that the foregoing is true and correct. Electronic Submission #381725 verified by the BLM Well Information System For LEGACY RESERVES OPERATING LP, sent to the Hobbs Committed to AFMSS for processing by JENNIFER SANCHEZ on 11/01/2017 ()	
Name (Printed/Typed) MATT DICKSON	Title DRILLING ENGINEER
Signature (Electronic Submission)	Date 07/18/2017
THIS SPACE FOR FEDERAL OR STATE OFFICE USE	
Approved By	Title
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	
Office	
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.	

(Instructions on page 2)

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

Legacy Reserves Operating
Project: Lea County, NM
Site: Hamon Fed Pad
Well: Hamon Fed Com A #12H
Wellbore: Wellbore #1
Plan: Plan#3 (Hamon Fed Com A #12H/Wellbore #1)

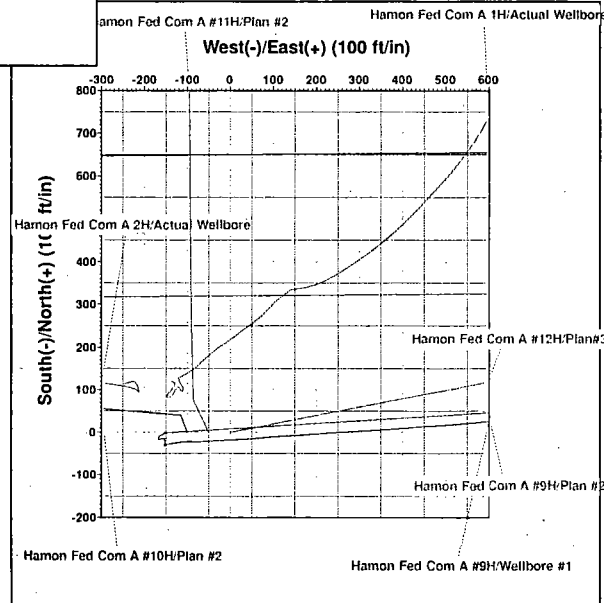
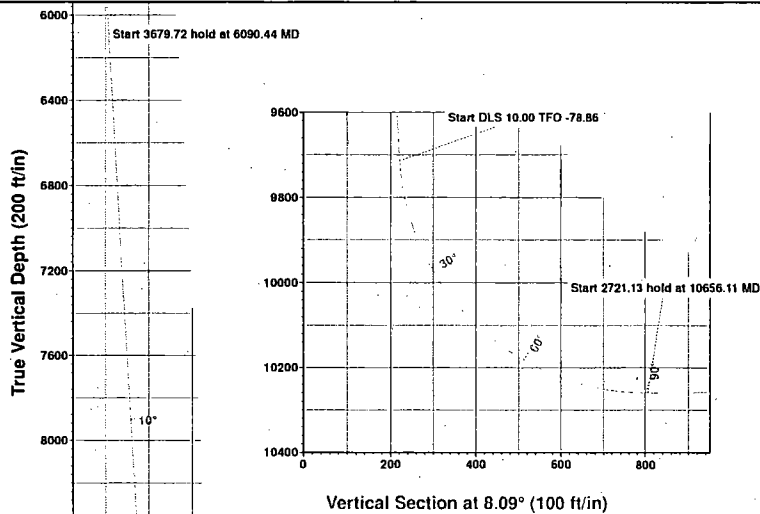
WELL DETAILS: Hamon Fed Com A #12H

Ground Elevation:: 3610.00
RKB Elevation: KB=18 @ 3628.00ft
Rig Name:

Northing 575257.9000 Easting 724664.7000 Latitude 32.5800288 Longitude -103.7381598

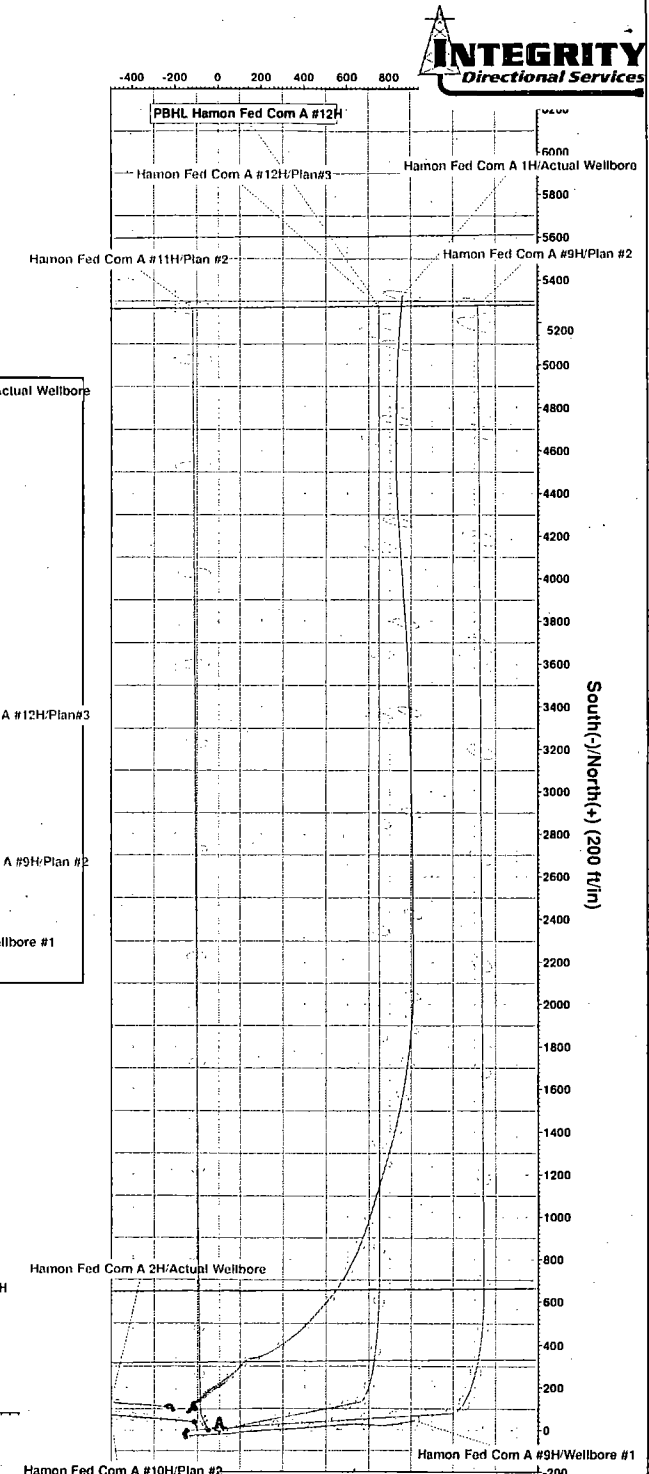
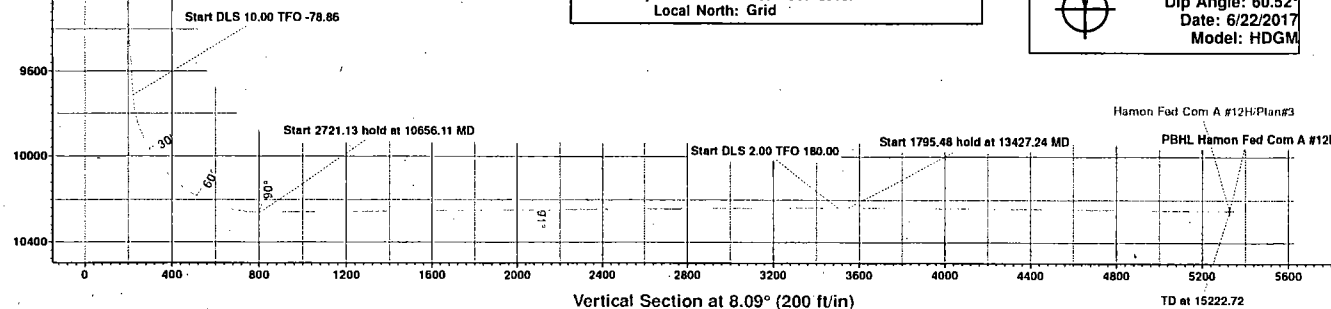
Planned Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	0.00
3	6090.44	9.81	78.79	6088.05	8.14	41.08	2.00	78.79	13.84
4	9770.16	9.81	78.79	9713.98	130.00	656.00	0.00	0.00	221.06
5	10656.11	90.50	0.01	10260.00	707.56	749.49	10.00	-78.86	806.04
6	13377.24	90.50	0.01	10236.25	3428.59	749.79	0.00	0.00	3500.01
7	13427.24	89.50	0.01	10236.25	3478.59	749.80	2.00	180.00	3549.51
8	15222.72	89.50	0.01	10251.92	5274.00	750.00	0.00	0.00	5327.06



PROJECT DETAILS: Lea County, NM
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid

Azimuths to Grid North
True North: -0.32°
Magnetic North: 6.78°
Magnetic Field
Strength: 48406.3snT
Dip Angle: 60.52°
Date: 6/22/2017
Model: HDGM





Legacy Reserves Operating

Lea County, NM

Hamon Fed Pad

Hamon Fed Com A #12H

Wellbore #1

Plan: Plan#3

Standard Survey Report

13 July, 2017





Integrity Directional Services, LLC

Survey Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Site: Hamon Fed Pad
Well: Hamon Fed Com A #12H
Wellbore: Wellbore #1
Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

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

Site		Hamon Fed Pad			
Site Position:		Northing:	580,846.2000 usft	Latitude:	32.5954069
From:	Map	Easting:	723,480.4000 usft	Longitude:	-103.7419035
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.32 °

Well	Hamon Fed Com A #12H					
Well Position	+N/-S	0.00 ft	Northing:	575,257.9000 usft	Latitude:	32.5800288
	+E/-W	0.00 ft	Easting:	724,664.7000 usft	Longitude:	-103.7381597
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	3,610.00 ft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/22/2017	7.10	60.52	48,406

Design	Plan#3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	10,250.55	0.00	0.00	8.09

Survey Tool Program		Date 7/13/2017		
From	To	Survey (Wellbore)	Tool Name	Description
(ft)	(ft)			
0.00	15,222.72	Plan#3 (Wellbore #1)	MWD	MWD - Standard

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00



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Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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



Integrity Directional Services, LLC
Survey Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Site: Hamon Fed Pad
Well: Hamon Fed Com A #12H
Wellbore: Wellbore #1
Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	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
Start Build 2.00									
5,700.00	2.00	78.79	5,699.98	0.34	1.71	0.58	2.00	2.00	0.00
5,800.00	4.00	78.79	5,799.84	1.36	6.85	2.31	2.00	2.00	0.00
5,900.00	6.00	78.79	5,899.45	3.05	15.39	5.19	2.00	2.00	0.00
6,000.00	8.00	78.79	5,998.70	5.42	27.35	9.22	2.00	2.00	0.00
6,090.44	9.81	78.79	6,088.05	8.14	41.08	13.84	2.00	2.00	0.00
Start 3679.72 hold at 6090.44 MD									
6,100.00	9.81	78.79	6,097.47	8.46	42.68	14.38	0.00	0.00	0.00
6,200.00	9.81	78.79	6,196.01	11.77	59.39	20.01	0.00	0.00	0.00
6,300.00	9.81	78.79	6,294.54	15.08	76.10	25.64	0.00	0.00	0.00
6,400.00	9.81	78.79	6,393.08	18.39	92.81	31.28	0.00	0.00	0.00
6,500.00	9.81	78.79	6,491.62	21.70	109.52	36.91	0.00	0.00	0.00
6,600.00	9.81	78.79	6,590.16	25.02	126.23	42.54	0.00	0.00	0.00
6,700.00	9.81	78.79	6,688.70	28.33	142.94	48.17	0.00	0.00	0.00
6,800.00	9.81	78.79	6,787.24	31.64	159.65	53.80	0.00	0.00	0.00
6,900.00	9.81	78.79	6,885.77	34.95	176.37	59.43	0.00	0.00	0.00
7,000.00	9.81	78.79	6,984.31	38.26	193.08	65.06	0.00	0.00	0.00
7,100.00	9.81	78.79	7,082.85	41.57	209.79	70.70	0.00	0.00	0.00
7,200.00	9.81	78.79	7,181.39	44.89	226.50	76.33	0.00	0.00	0.00
7,300.00	9.81	78.79	7,279.93	48.20	243.21	81.96	0.00	0.00	0.00
7,400.00	9.81	78.79	7,378.46	51.51	259.92	87.59	0.00	0.00	0.00
7,500.00	9.81	78.79	7,477.00	54.82	276.63	93.22	0.00	0.00	0.00
7,600.00	9.81	78.79	7,575.54	58.13	293.34	98.85	0.00	0.00	0.00
7,700.00	9.81	78.79	7,674.08	61.44	310.05	104.48	0.00	0.00	0.00
7,800.00	9.81	78.79	7,772.62	64.76	326.76	110.12	0.00	0.00	0.00
7,900.00	9.81	78.79	7,871.16	68.07	343.48	115.75	0.00	0.00	0.00
8,000.00	9.81	78.79	7,969.69	71.38	360.19	121.38	0.00	0.00	0.00
8,100.00	9.81	78.79	8,068.23	74.69	376.90	127.01	0.00	0.00	0.00
8,200.00	9.81	78.79	8,166.77	78.00	393.61	132.64	0.00	0.00	0.00
8,300.00	9.81	78.79	8,265.31	81.31	410.32	138.27	0.00	0.00	0.00
8,400.00	9.81	78.79	8,363.85	84.63	427.03	143.90	0.00	0.00	0.00
8,500.00	9.81	78.79	8,462.38	87.94	443.74	149.54	0.00	0.00	0.00
8,600.00	9.81	78.79	8,560.92	91.25	460.45	155.17	0.00	0.00	0.00
8,700.00	9.81	78.79	8,659.46	94.56	477.16	160.80	0.00	0.00	0.00
8,800.00	9.81	78.79	8,758.00	97.87	493.88	166.43	0.00	0.00	0.00
8,900.00	9.81	78.79	8,856.54	101.18	510.59	172.06	0.00	0.00	0.00
9,000.00	9.81	78.79	8,955.08	104.49	527.30	177.69	0.00	0.00	0.00
9,100.00	9.81	78.79	9,053.61	107.81	544.01	183.32	0.00	0.00	0.00
9,200.00	9.81	78.79	9,152.15	111.12	560.72	188.96	0.00	0.00	0.00
9,300.00	9.81	78.79	9,250.69	114.43	577.43	194.59	0.00	0.00	0.00



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9,400.00	9.81	78.79	9,349.23	117.74	594.14	200.22	0.00	0.00	0.00
9,500.00	9.81	78.79	9,447.77	121.05	610.85	205.85	0.00	0.00	0.00
9,600.00	9.81	78.79	9,546.30	124.36	627.56	211.48	0.00	0.00	0.00
9,700.00	9.81	78.79	9,644.84	127.68	644.28	217.11	0.00	0.00	0.00
9,770.16	9.81	78.79	9,713.98	130.00	656.00	221.06	0.00	0.00	0.00
Start DLS 10.00 TFO -78.86									
9,800.00	10.79	62.95	9,743.34	131.76	660.98	223.51	10.00	3.28	-53.08
9,900.00	17.67	32.23	9,840.35	148.90	677.45	242.80	10.00	6.89	-30.72
10,000.00	26.58	19.90	9,932.94	182.87	693.20	278.64	10.00	8.91	-12.34
10,100.00	36.04	13.57	10,018.30	232.62	707.76	329.95	10.00	9.46	-6.33
10,200.00	45.70	9.61	10,093.84	296.66	720.67	395.17	10.00	9.66	-3.95
10,300.00	55.46	6.79	10,157.27	373.04	731.54	472.32	10.00	9.76	-2.82
10,400.00	65.27	4.57	10,206.66	459.43	740.05	559.04	10.00	9.81	-2.22
10,500.00	75.11	2.67	10,240.51	553.21	745.94	652.72	10.00	9.84	-1.89
10,600.00	84.97	0.95	10,257.78	651.53	749.02	750.49	10.00	9.85	-1.73
10,656.11	90.50	0.01	10,260.00	707.56	749.49	806.04	10.00	9.86	-1.68
Start 2721.13 hold at 10656.11 MD									
10,700.00	90.50	0.01	10,259.62	751.46	749.49	849.49	0.00	0.00	0.00
10,800.00	90.50	0.01	10,258.74	851.45	749.51	948.49	0.00	0.00	0.00
10,900.00	90.50	0.01	10,257.87	951.45	749.52	1,047.50	0.00	0.00	0.00
11,000.00	90.50	0.01	10,257.00	1,051.44	749.53	1,146.50	0.00	0.00	0.00
11,100.00	90.50	0.01	10,256.12	1,151.44	749.54	1,245.50	0.00	0.00	0.00
11,200.00	90.50	0.01	10,255.25	1,251.44	749.55	1,344.50	0.00	0.00	0.00
11,300.00	90.50	0.01	10,254.38	1,351.43	749.56	1,443.50	0.00	0.00	0.00
11,400.00	90.50	0.01	10,253.51	1,451.43	749.57	1,542.50	0.00	0.00	0.00
11,500.00	90.50	0.01	10,252.63	1,551.42	749.58	1,641.51	0.00	0.00	0.00
11,600.00	90.50	0.01	10,251.76	1,651.42	749.59	1,740.51	0.00	0.00	0.00
11,700.00	90.50	0.01	10,250.89	1,751.42	749.61	1,839.51	0.00	0.00	0.00
11,800.00	90.50	0.01	10,250.02	1,851.41	749.62	1,938.51	0.00	0.00	0.00
11,900.00	90.50	0.01	10,249.14	1,951.41	749.63	2,037.51	0.00	0.00	0.00
12,000.00	90.50	0.01	10,248.27	2,051.41	749.64	2,136.51	0.00	0.00	0.00
12,100.00	90.50	0.01	10,247.40	2,151.40	749.65	2,235.52	0.00	0.00	0.00
12,200.00	90.50	0.01	10,246.53	2,251.40	749.66	2,334.52	0.00	0.00	0.00
12,300.00	90.50	0.01	10,245.65	2,351.39	749.67	2,433.52	0.00	0.00	0.00
12,400.00	90.50	0.01	10,244.78	2,451.39	749.68	2,532.52	0.00	0.00	0.00
12,500.00	90.50	0.01	10,243.91	2,551.39	749.70	2,631.52	0.00	0.00	0.00
12,600.00	90.50	0.01	10,243.04	2,651.38	749.71	2,730.53	0.00	0.00	0.00
12,700.00	90.50	0.01	10,242.16	2,751.38	749.72	2,829.53	0.00	0.00	0.00
12,800.00	90.50	0.01	10,241.29	2,851.38	749.73	2,928.53	0.00	0.00	0.00
12,900.00	90.50	0.01	10,240.42	2,951.37	749.74	3,027.53	0.00	0.00	0.00
13,000.00	90.50	0.01	10,239.54	3,051.37	749.75	3,126.53	0.00	0.00	0.00
13,100.00	90.50	0.01	10,238.67	3,151.36	749.76	3,225.53	0.00	0.00	0.00
13,200.00	90.50	0.01	10,237.80	3,251.36	749.77	3,324.54	0.00	0.00	0.00
13,300.00	90.50	0.01	10,236.93	3,351.36	749.78	3,423.54	0.00	0.00	0.00



Integrity Directional Services, LLC

Survey Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Site: Hamon Fed Pad
Well: Hamon Fed Com A #12H
Wellbore: Wellbore #1
Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,377.24	90.50	0.01	10,236.25	3,428.59	749.79	3,500.01	0.00	0.00	0.00
Start DLS 2.00 TFO 180.00									
13,400.00	90.04	0.01	10,236.14	3,451.35	749.80	3,522.54	2.00	-2.00	0.00
13,427.24	89.50	0.01	10,236.25	3,478.59	749.80	3,549.51	2.00	-2.00	0.00
Start 1795.48 hold at 13427.24 MD									
13,500.00	89.50	0.01	10,236.89	3,551.35	749.81	3,621.54	0.00	0.00	0.00
13,600.00	89.50	0.01	10,237.76	3,651.35	749.82	3,720.54	0.00	0.00	0.00
13,700.00	89.50	0.01	10,238.63	3,751.34	749.83	3,819.55	0.00	0.00	0.00
13,800.00	89.50	0.01	10,239.51	3,851.34	749.84	3,918.55	0.00	0.00	0.00
13,900.00	89.50	0.01	10,240.38	3,951.33	749.85	4,017.55	0.00	0.00	0.00
14,000.00	89.50	0.01	10,241.25	4,051.33	749.86	4,116.55	0.00	0.00	0.00
14,100.00	89.50	0.01	10,242.12	4,151.33	749.87	4,215.55	0.00	0.00	0.00
14,200.00	89.50	0.01	10,243.00	4,251.32	749.89	4,314.55	0.00	0.00	0.00
14,300.00	89.50	0.01	10,243.87	4,351.32	749.90	4,413.56	0.00	0.00	0.00
14,400.00	89.50	0.01	10,244.74	4,451.32	749.91	4,512.56	0.00	0.00	0.00
14,500.00	89.50	0.01	10,245.61	4,551.31	749.92	4,611.56	0.00	0.00	0.00
14,600.00	89.50	0.01	10,246.49	4,651.31	749.93	4,710.56	0.00	0.00	0.00
14,700.00	89.50	0.01	10,247.36	4,751.30	749.94	4,809.56	0.00	0.00	0.00
14,800.00	89.50	0.01	10,248.23	4,851.30	749.95	4,908.56	0.00	0.00	0.00
14,900.00	89.50	0.01	10,249.10	4,951.30	749.96	5,007.57	0.00	0.00	0.00
15,000.00	89.50	0.01	10,249.98	5,051.29	749.98	5,106.57	0.00	0.00	0.00
15,100.00	89.50	0.01	10,250.85	5,151.29	749.99	5,205.57	0.00	0.00	0.00
15,200.00	89.50	0.01	10,251.72	5,251.29	750.00	5,304.57	0.00	0.00	0.00
15,222.70	89.50	0.01	10,251.92	5,273.99	750.00	5,327.05	0.00	0.00	0.00
PBHL Hamon Fed Com A #12H									
15,222.72	89.50	0.01	10,251.92	5,274.00	750.00	5,327.06	0.01	0.00	0.00
TD at 15222.72									

Design Targets

Target Name

hit/miss target	Dip Angle	Dip Dir.	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
PBHL Hamon Fed Co	0.00	0.00	10,250.5	5,274.00	750.00	580,531.8894	725,414.6985	32.5945133	-103.7356288

- plan misses target center by 1.37ft at 15222.70ft MD (10251.92 TVD, 5273.99 N, 750.00 E)
- Point



Integrity Directional Services, LLC
Survey Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Site: Hamon Fed Pad
Well: Hamon Fed Com A #12H
Wellbore: Wellbore #1
Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
5600	5600	0	0	Start Build 2.00
6090	6088	8	41	Start 3679.72 hold at 6090.44 MD
9770	9714	130	656	Start DLS 10.00 TFO -78.86
10,656	10,260	708	749	Start 2721.13 hold at 10656.11 MD
13,377	10,236	3429	750	Start DLS 2.00 TFO 180.00
13,427	10,236	3479	750	Start 1795.48 hold at 13427.24 MD
15,223	10,252	5274	750	TD at 15222.72

Checked By: _____ Approved By: _____ Date: _____



Legacy Reserves Operating

Lea County, NM

Hamon Fed Pad

Hamon Fed Com A #12H

Wellbore #1

Plan#3

Anticollision Report

13 July, 2017





Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Reference	Plan#3		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program Date 7/13/2017

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	15,222.72	Plan#3 (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Off-set Well - Wellbore - Design						
Hamon Fed Pad						
Hamon Fed Com A #10H - Wellbore #1 - Plan #2	1,633.71	1,633.71	100.01	92.93	14.127	CC
Hamon Fed Com A #10H - Wellbore #1 - Plan #2	1,700.00	1,699.42	100.15	92.77	13.579	ES
Hamon Fed Com A #10H - Wellbore #1 - Plan #2	5,600.00	5,600.00	121.68	96.84	4.898	SF
Hamon Fed Com A #11H - Wellbore #1 - Plan #2	5,600.00	5,600.00	50.10	25.19	2.011	CC, ES, SF
Hamon Fed Com A #9H - Wellbore #1 - Plan #2	7,482.79	7,515.90	29.29	-6.01	0.830	Level 1, CC
Hamon Fed Com A #9H - Wellbore #1 - Plan #2	7,500.00	7,533.00	29.36	-6.13	0.827	Level 1, ES, SF
Hamon Fed Com A #9H - Wellbore #1 - Wellbore #1	7,502.11	7,536.64	54.54	20.22	1.589	CC, ES, SF
Hamon Fed Com A 1H - Wellbore #1 - Actual Wellbore	3,966.14	3,973.11	148.04	131.83	9.137	CC, ES
Hamon Fed Com A 1H - Wellbore #1 - Actual Wellbore	5,800.00	5,809.72	173.88	150.78	7.529	SF
Hamon Fed Com A 2H - Wellbore #1 - Actual Wellbore	4,902.33	4,908.13	232.81	212.55	11.494	CC
Hamon Fed Com A 2H - Wellbore #1 - Actual Wellbore	5,200.00	5,204.70	233.25	211.92	10.936	ES
Hamon Fed Com A 2H - Wellbore #1 - Actual Wellbore	15,223.43	15,934.00	1,464.74	1,290.82	8.422	SF

Offset Design Hamon Fed Pad - Hamon Fed Com A #10H - Wellbore #1 - Plan #2											Offset Site Error: 0.00 ft		
Survey Program: 0-MWD											Offset Well Error: 0.00 ft		
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
0.00	0.00	0.00	0.00	0.00	0.00	-90.57	-1.00	-100.00	100.01				
100.00	100.00	100.00	100.00	0.09	0.09	-90.57	-1.00	-100.00	100.01	99.82	0.18	542.597	
200.00	200.00	200.00	200.00	0.32	0.32	-90.57	-1.00	-100.00	100.01	99.37	0.63	157.777	
300.00	300.00	300.00	300.00	0.54	0.54	-90.57	-1.00	-100.00	100.01	98.92	1.08	92.309	
400.00	400.00	400.00	400.00	0.77	0.77	-90.57	-1.00	-100.00	100.01	98.47	1.53	65.239	
500.00	500.00	500.00	500.00	0.99	0.99	-90.57	-1.00	-100.00	100.01	98.02	1.98	50.446	
600.00	600.00	600.00	600.00	1.22	1.22	-90.57	-1.00	-100.00	100.01	97.57	2.43	41.121	
700.00	700.00	700.00	700.00	1.44	1.44	-90.57	-1.00	-100.00	100.01	97.12	2.88	34.706	
800.00	800.00	800.00	800.00	1.67	1.67	-90.57	-1.00	-100.00	100.01	96.67	3.33	30.022	
900.00	900.00	900.00	900.00	1.89	1.89	-90.57	-1.00	-100.00	100.01	96.22	3.78	26.452	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.57	-1.00	-100.00	100.01	95.78	4.23	23.641	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-90.57	-1.00	-100.00	100.01	95.33	4.68	21.370	
1,200.00	1,200.00	1,200.00	1,200.00	2.56	2.56	-90.57	-1.00	-100.00	100.01	94.88	5.13	19.497	
1,300.00	1,300.00	1,300.00	1,300.00	2.79	2.79	-90.57	-1.00	-100.00	100.01	94.43	5.58	17.926	
1,400.00	1,400.00	1,400.00	1,400.00	3.01	3.01	-90.57	-1.00	-100.00	100.01	93.98	6.03	16.589	
1,500.00	1,500.00	1,500.00	1,500.00	3.24	3.24	-90.57	-1.00	-100.00	100.01	93.53	6.48	15.438	

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #10H - Wellbore #1 - Plan #2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (ft)	+E/W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
1,600.00	1,600.00	1,600.00	1,600.00	3.46	3.46	-90.57	-1.00	-100.00	100.01	93.08	6.93	14.436	
1,633.71	1,633.71	1,633.71	1,633.71	3.54	3.54	-90.57	-1.00	-100.00	100.01	92.93	7.08	14.127 CC	
1,700.00	1,700.00	1,699.42	1,699.42	3.69	3.69	-90.34	-0.60	-100.15	100.15	92.77	7.38	13.579 ES	
1,800.00	1,800.00	1,798.77	1,798.72	3.91	3.91	-88.73	2.24	-101.18	101.21	93.39	7.82	12.939	
1,900.00	1,900.00	1,898.71	1,898.60	4.14	4.13	-86.92	5.52	-102.37	102.53	94.26	8.27	12.396	
2,000.00	2,000.00	1,998.65	1,998.47	4.36	4.36	-85.15	8.79	-103.57	103.95	95.23	8.72	11.921	
2,100.00	2,100.00	2,098.59	2,098.35	4.59	4.58	-83.43	12.07	-104.76	105.46	96.29	9.17	11.502	
2,200.00	2,200.00	2,198.52	2,198.23	4.81	4.81	-81.76	15.35	-105.95	107.07	97.45	9.62	11.131	
2,300.00	2,300.00	2,298.46	2,298.11	5.04	5.03	-80.14	18.63	-107.14	108.77	98.70	10.07	10.802	
2,400.00	2,400.00	2,398.40	2,397.99	5.26	5.26	-78.57	21.90	-108.34	110.55	100.03	10.52	10.508	
2,500.00	2,500.00	2,498.34	2,497.87	5.49	5.49	-77.05	25.18	-109.53	112.41	101.44	10.97	10.246	
2,600.00	2,600.00	2,598.28	2,597.74	5.71	5.71	-75.59	28.46	-110.72	114.34	102.92	11.42	10.010	
2,700.00	2,700.00	2,698.22	2,697.62	5.94	5.94	-74.17	31.74	-111.92	116.35	104.48	11.87	9.799	
2,800.00	2,800.00	2,798.16	2,797.50	6.16	6.17	-72.80	35.01	-113.11	118.43	106.10	12.33	9.608	
2,900.00	2,900.00	2,898.10	2,897.38	6.39	6.40	-71.48	38.29	-114.30	120.57	107.79	12.78	9.435	
3,000.00	3,000.00	3,000.74	3,000.00	6.61	6.60	-70.81	39.99	-114.92	121.68	108.47	13.21	9.214	
3,100.00	3,100.00	3,100.74	3,100.00	6.84	6.80	-70.81	39.99	-114.92	121.68	108.05	13.63	8.929	
3,200.00	3,200.00	3,200.74	3,200.00	7.06	7.02	-70.81	39.99	-114.92	121.68	107.61	14.08	8.645	
3,300.00	3,300.00	3,300.74	3,300.00	7.28	7.24	-70.81	39.99	-114.92	121.68	107.16	14.52	8.378	
3,400.00	3,400.00	3,400.74	3,400.00	7.51	7.47	-70.81	39.99	-114.92	121.68	106.71	14.97	8.127	
3,500.00	3,500.00	3,500.74	3,500.00	7.73	7.69	-70.81	39.99	-114.92	121.68	106.26	15.42	7.891	
3,600.00	3,600.00	3,600.74	3,600.00	7.96	7.91	-70.81	39.99	-114.92	121.68	105.81	15.87	7.668	
3,700.00	3,700.00	3,700.74	3,700.00	8.18	8.14	-70.81	39.99	-114.92	121.68	105.36	16.32	7.457	
3,800.00	3,800.00	3,800.74	3,800.00	8.41	8.36	-70.81	39.99	-114.92	121.68	104.91	16.77	7.257	
3,900.00	3,900.00	3,900.74	3,900.00	8.63	8.58	-70.81	39.99	-114.92	121.68	104.47	17.22	7.068	
4,000.00	4,000.00	4,000.74	4,000.00	8.86	8.81	-70.81	39.99	-114.92	121.68	104.02	17.66	6.889	
4,100.00	4,100.00	4,100.74	4,100.00	9.08	9.03	-70.81	39.99	-114.92	121.68	103.57	18.11	6.718	
4,200.00	4,200.00	4,200.74	4,200.00	9.31	9.26	-70.81	39.99	-114.92	121.68	103.12	18.56	6.556	
4,300.00	4,300.00	4,300.74	4,300.00	9.53	9.48	-70.81	39.99	-114.92	121.68	102.67	19.01	6.401	
4,400.00	4,400.00	4,400.74	4,400.00	9.76	9.70	-70.81	39.99	-114.92	121.68	102.22	19.46	6.253	
4,500.00	4,500.00	4,500.74	4,500.00	9.98	9.93	-70.81	39.99	-114.92	121.68	101.77	19.91	6.112	
4,600.00	4,600.00	4,600.74	4,600.00	10.21	10.15	-70.81	39.99	-114.92	121.68	101.32	20.36	5.977	
4,700.00	4,700.00	4,700.74	4,700.00	10.43	10.38	-70.81	39.99	-114.92	121.68	100.88	20.81	5.848	
4,800.00	4,800.00	4,800.74	4,800.00	10.66	10.60	-70.81	39.99	-114.92	121.68	100.43	21.25	5.725	
4,900.00	4,900.00	4,900.74	4,900.00	10.88	10.82	-70.81	39.99	-114.92	121.68	99.98	21.70	5.606	
5,000.00	5,000.00	5,000.74	5,000.00	11.11	11.05	-70.81	39.99	-114.92	121.68	99.53	22.15	5.493	
5,100.00	5,100.00	5,100.74	5,100.00	11.33	11.27	-70.81	39.99	-114.92	121.68	99.08	22.60	5.384	
5,200.00	5,200.00	5,200.74	5,200.00	11.56	11.50	-70.81	39.99	-114.92	121.68	98.63	23.05	5.279	
5,300.00	5,300.00	5,300.74	5,300.00	11.78	11.72	-70.81	39.99	-114.92	121.68	98.18	23.50	5.178	
5,400.00	5,400.00	5,400.74	5,400.00	12.00	11.94	-70.81	39.99	-114.92	121.68	97.73	23.95	5.081	
5,500.00	5,500.00	5,500.74	5,500.00	12.23	12.17	-70.81	39.99	-114.92	121.68	97.28	24.40	4.987	
5,566.42	5,566.42	5,567.16	5,566.42	12.38	12.32	-70.81	39.99	-114.92	121.68	96.98	24.70	4.927	
5,600.00	5,600.00	5,600.00	5,599.26	12.45	12.39	-70.81	39.99	-114.92	121.68	96.84	24.85	4.898 SF	
5,700.00	5,699.98	5,696.65	5,695.89	12.67	12.60	-150.15	40.13	-116.55	124.84	99.60	25.24	4.947	
5,800.00	5,799.84	5,791.94	5,791.05	12.87	12.80	-151.62	40.52	-121.33	134.31	108.71	25.60	5.247	
5,900.00	5,899.45	5,885.93	5,884.72	13.08	12.99	-153.63	41.15	-129.13	150.19	124.26	25.92	5.793	
6,000.00	5,998.70	5,978.04	5,976.20	13.29	13.20	-155.80	42.02	-139.75	172.53	146.31	26.22	6.580	
6,090.44	6,088.05	6,062.82	6,060.15	13.49	13.39	-157.72	42.98	-151.57	197.76	171.29	26.46	7.473	
6,100.00	6,097.47	6,071.92	6,069.16	13.52	13.41	-157.93	43.08	-152.86	200.59	174.09	26.50	7.570	
6,200.00	6,196.01	6,167.14	6,163.42	13.74	13.62	-159.87	44.18	-166.31	230.33	203.45	26.89	8.567	
6,300.00	6,294.54	6,262.36	6,257.68	13.98	13.85	-161.36	45.27	-179.77	260.26	232.99	27.28	9.542	
6,400.00	6,393.08	6,357.58	6,351.94	14.22	14.07	-162.54	46.37	-193.22	290.32	262.65	27.67	10.492	

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #10H - Wellbore #1 - Plan #2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,500.00	6,491.62	6,452.80	6,446.19	14.47	14.30	-163.51	47.46	-206.67	320.48	292.41	28.07	11.417	
6,600.00	6,590.16	6,548.02	6,540.45	14.73	14.54	-164.31	48.56	-220.12	350.70	322.22	28.47	12.317	
6,700.00	6,688.70	6,643.25	6,634.71	14.99	14.78	-164.98	49.65	-233.58	380.97	352.09	28.88	13.192	
6,800.00	6,787.24	6,738.47	6,728.97	15.25	15.02	-165.55	50.75	-247.03	411.28	381.99	29.29	14.043	
6,900.00	6,885.77	6,833.69	6,823.23	15.52	15.26	-166.04	51.85	-260.48	441.63	411.93	29.70	14.871	
7,000.00	6,984.31	6,928.91	6,917.49	15.80	15.51	-166.47	52.94	-273.94	472.00	441.88	30.11	15.675	
7,100.00	7,082.85	7,024.13	7,011.75	16.08	15.76	-166.85	54.04	-287.39	502.39	471.86	30.53	16.457	
7,200.00	7,181.39	7,119.35	7,106.01	16.36	16.01	-167.19	55.13	-300.84	532.80	501.85	30.94	17.218	
7,300.00	7,279.93	7,214.57	7,200.27	16.65	16.27	-167.49	56.23	-314.29	563.22	531.86	31.36	17.957	
7,400.00	7,378.46	7,309.79	7,294.52	16.94	16.52	-167.75	57.32	-327.75	593.66	561.87	31.79	18.676	
7,500.00	7,477.00	7,405.01	7,388.78	17.24	16.78	-168.00	58.42	-341.20	624.11	591.90	32.21	19.376	
7,600.00	7,575.54	7,500.23	7,483.04	17.53	17.05	-168.22	59.51	-354.65	654.56	621.93	32.64	20.056	
7,700.00	7,674.08	7,595.45	7,577.30	17.84	17.31	-168.42	60.61	-368.10	685.03	651.97	33.06	20.718	
7,800.00	7,772.62	7,690.67	7,671.56	18.14	17.58	-168.60	61.70	-381.56	715.50	682.01	33.49	21.362	
7,900.00	7,871.16	7,785.89	7,765.82	18.45	17.85	-168.77	62.80	-395.01	745.98	712.05	33.92	21.989	
8,000.00	7,969.69	7,881.11	7,860.08	18.76	18.12	-168.92	63.89	-408.46	776.46	742.11	34.36	22.600	
8,100.00	8,068.23	7,976.33	7,954.34	19.07	18.39	-169.07	64.99	-421.92	806.95	772.16	34.79	23.194	
8,200.00	8,166.77	8,071.55	8,048.60	19.39	18.67	-169.20	66.08	-435.37	837.44	802.22	35.23	23.773	
8,300.00	8,265.31	8,166.77	8,142.85	19.71	18.94	-169.32	67.18	-448.82	867.94	832.28	35.66	24.337	
8,400.00	8,363.85	8,261.99	8,237.11	20.03	19.22	-169.44	68.28	-462.27	898.44	862.34	36.10	24.887	
8,500.00	8,462.38	8,357.21	8,331.37	20.35	19.50	-169.55	69.37	-475.73	928.94	892.40	36.54	25.422	
8,600.00	8,560.92	8,452.43	8,425.63	20.67	19.78	-169.65	70.47	-489.18	959.45	922.46	36.98	25.944	
8,700.00	8,659.46	8,547.65	8,519.89	21.00	20.06	-169.74	71.56	-502.63	989.95	952.53	37.42	26.452	
8,800.00	8,758.00	8,642.87	8,614.15	21.33	20.34	-169.83	72.66	-516.08	1,020.46	982.60	37.87	26.949	
8,900.00	8,856.54	8,738.09	8,708.41	21.66	20.63	-169.91	73.75	-529.54	1,050.98	1,012.67	38.31	27.432	
9,000.00	8,955.08	8,833.31	8,802.67	21.99	20.91	-169.99	74.85	-542.99	1,081.49	1,042.73	38.76	27.904	
9,100.00	9,053.61	8,928.53	8,896.93	22.33	21.20	-170.07	75.94	-556.44	1,112.01	1,072.80	39.20	28.365	
9,200.00	9,152.15	9,023.75	8,991.19	22.66	21.49	-170.14	77.04	-569.90	1,142.52	1,102.87	39.65	28.814	
9,300.00	9,250.69	9,118.98	9,085.44	23.00	21.78	-170.21	78.13	-583.35	1,173.04	1,132.94	40.10	29.253	
9,400.00	9,349.23	9,214.20	9,179.70	23.34	22.07	-170.27	79.23	-596.80	1,203.56	1,163.01	40.55	29.681	
9,500.00	9,447.77	9,309.42	9,273.96	23.68	22.36	-170.33	80.32	-610.25	1,234.09	1,193.09	41.00	30.099	
9,600.00	9,546.30	9,404.64	9,368.22	24.02	22.65	-170.39	81.42	-623.71	1,264.61	1,223.16	41.45	30.507	
9,700.00	9,644.84	9,499.86	9,462.48	24.36	22.95	-170.44	82.51	-637.16	1,295.13	1,253.23	41.91	30.906	
9,770.16	9,713.98	9,566.67	9,528.61	24.60	23.15	-170.48	83.28	-646.60	1,316.55	1,274.33	42.22	31.180	
9,800.00	9,743.34	9,595.05	9,556.71	24.70	23.24	-153.99	83.61	-650.61	1,325.68	1,283.31	42.36	31.294	
9,850.00	9,792.21	9,642.33	9,603.51	24.87	23.39	-133.94	84.15	-657.29	1,341.01	1,298.38	42.63	31.460	
9,900.00	9,840.35	9,688.94	9,649.66	25.05	23.53	-121.55	84.69	-663.87	1,356.33	1,313.42	42.92	31.603	
9,950.00	9,887.37	9,734.54	9,694.79	25.23	23.67	-113.59	85.21	-670.31	1,371.63	1,328.40	43.23	31.726	
10,000.00	9,932.94	9,786.37	9,746.03	25.41	23.83	-108.22	85.74	-677.63	1,386.79	1,343.21	43.58	31.823	
10,050.00	9,976.69	9,841.07	9,799.61	25.60	24.00	-104.30	86.27	-685.30	1,401.58	1,357.63	43.95	31.892	
10,100.00	10,018.30	9,898.14	9,854.48	25.79	24.18	-101.31	86.80	-693.16	1,415.88	1,371.54	44.34	31.934	
10,150.00	10,057.45	9,957.85	9,910.16	25.99	24.37	-98.96	87.32	-701.15	1,429.54	1,384.79	44.75	31.946	
10,200.00	10,093.84	10,020.40	9,965.95	26.20	24.58	-97.08	87.84	-709.18	1,442.44	1,397.25	45.18	31.925	
10,250.00	10,127.20	10,085.97	10,020.94	26.41	24.80	-95.55	88.36	-717.11	1,454.42	1,408.77	45.65	31.863	
10,300.00	10,157.27	10,154.64	10,073.91	26.64	25.05	-94.30	88.88	-724.77	1,465.34	1,419.19	46.15	31.750	
10,350.00	10,183.83	10,226.36	10,123.39	26.88	25.32	-93.27	89.39	-731.95	1,475.06	1,428.34	46.72	31.573	
10,400.00	10,206.66	10,300.92	10,167.67	27.13	25.64	-92.41	89.90	-738.42	1,483.44	1,436.08	47.36	31.325	
10,450.00	10,225.60	10,377.91	10,204.96	27.41	26.01	-91.70	90.41	-743.90	1,490.34	1,442.25	48.09	30.991	
10,500.00	10,240.51	10,456.72	10,233.57	27.70	26.44	-91.11	90.92	-748.16	1,495.68	1,446.76	48.92	30.575	
10,550.00	10,251.26	10,536.54	10,252.13	28.01	26.93	-90.61	91.43	-750.99	1,499.36	1,449.51	49.85	30.078	
10,600.00	10,257.78	10,616.49	10,259.86	28.34	27.49	-90.19	91.94	-752.29	1,501.35	1,450.48	50.87	29.516	
10,650.00	10,260.02	10,676.18	10,259.41	28.70	27.95	-89.98	92.45	-752.37	1,501.85	1,450.07	51.78	29.003	

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #10H - Wellbore #1 - Plan #2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis			Distance				Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			Minimum Separation (ft)
10,656.11	10,260.00	10,682.29	10,259.31	28.74	28.00	-89.97	707.67	-752.37	1,501.86	1,449.97	51.89	28.945	
10,700.00	10,259.62	10,726.18	10,258.54	29.07	28.36	-89.96	751.56	-752.36	1,501.86	1,449.18	52.67	28.512	
10,800.00	10,258.74	10,826.17	10,256.80	29.89	29.25	-89.93	851.54	-752.36	1,501.86	1,447.28	54.59	27.513	
10,900.00	10,257.87	10,926.17	10,255.05	30.81	30.23	-89.89	951.52	-752.35	1,501.87	1,445.20	56.67	26.501	
11,000.00	10,257.00	11,026.17	10,253.31	31.80	31.29	-89.86	1,051.50	-752.34	1,501.87	1,442.96	58.91	25.494	
11,100.00	10,256.12	11,126.16	10,251.56	32.88	32.43	-89.83	1,151.48	-752.33	1,501.88	1,440.59	61.29	24.506	
11,200.00	10,255.25	11,226.16	10,249.81	34.02	33.62	-89.79	1,251.46	-752.32	1,501.88	1,438.10	63.78	23.547	
11,300.00	10,254.38	11,326.16	10,248.07	35.22	34.87	-89.76	1,351.44	-752.32	1,501.89	1,435.50	66.39	22.623	
11,400.00	10,253.51	11,426.15	10,246.32	36.47	36.17	-89.73	1,451.42	-752.31	1,501.90	1,432.81	69.09	21.738	
11,500.00	10,252.63	11,526.15	10,244.58	37.77	37.52	-89.69	1,551.41	-752.30	1,501.91	1,430.03	71.88	20.896	
11,600.00	10,251.76	11,626.14	10,242.83	39.12	38.91	-89.66	1,651.39	-752.29	1,501.91	1,427.18	74.74	20.096	
11,700.00	10,250.89	11,726.14	10,241.09	40.51	40.33	-89.63	1,751.37	-752.28	1,501.92	1,424.26	77.67	19.338	
11,800.00	10,250.02	11,826.14	10,239.34	41.93	41.78	-89.59	1,851.35	-752.28	1,501.93	1,421.28	80.65	18.622	
11,900.00	10,249.14	11,926.13	10,237.60	43.38	43.27	-89.56	1,951.33	-752.27	1,501.94	1,418.24	83.70	17.945	
12,000.00	10,248.27	12,026.13	10,235.85	44.86	44.77	-89.53	2,051.31	-752.26	1,501.95	1,415.16	86.79	17.306	
12,100.00	10,247.40	12,126.12	10,234.11	46.36	46.31	-89.49	2,151.29	-752.25	1,501.96	1,412.04	89.92	16.704	
12,200.00	10,246.53	12,226.12	10,232.36	47.89	47.86	-89.46	2,251.27	-752.24	1,501.97	1,408.88	93.09	16.135	
12,300.00	10,245.65	12,326.12	10,230.62	49.44	49.43	-89.43	2,351.25	-752.24	1,501.98	1,405.69	96.30	15.598	
12,400.00	10,244.78	12,426.11	10,228.87	51.00	51.02	-89.39	2,451.23	-752.23	1,502.00	1,402.46	99.53	15.091	
12,500.00	10,243.91	12,526.11	10,227.13	52.59	52.62	-89.36	2,551.21	-752.22	1,502.01	1,399.21	102.80	14.611	
12,600.00	10,243.04	12,626.11	10,225.38	54.19	54.24	-89.33	2,651.20	-752.21	1,502.02	1,395.93	106.09	14.158	
12,700.00	10,242.16	12,726.10	10,223.64	55.80	55.87	-89.29	2,751.18	-752.20	1,502.04	1,392.63	109.40	13.729	
12,800.00	10,241.29	12,826.10	10,221.89	57.43	57.52	-89.26	2,851.16	-752.20	1,502.05	1,389.31	112.74	13.323	
12,900.00	10,240.42	12,926.09	10,220.15	59.07	59.17	-89.23	2,951.14	-752.19	1,502.06	1,385.97	116.09	12.938	
13,000.00	10,239.54	13,026.09	10,218.40	60.72	60.84	-89.19	3,051.12	-752.18	1,502.08	1,382.61	119.47	12.573	
13,100.00	10,238.67	13,126.09	10,216.66	62.38	62.51	-89.16	3,151.10	-752.17	1,502.10	1,379.24	122.86	12.226	
13,200.00	10,237.80	13,226.08	10,214.91	64.05	64.19	-89.13	3,251.08	-752.16	1,502.11	1,375.85	126.26	11.897	
13,300.00	10,236.93	13,326.08	10,213.17	65.73	65.88	-89.09	3,351.06	-752.16	1,502.13	1,372.45	129.68	11.583	
13,377.24	10,236.25	13,403.32	10,211.82	67.03	67.20	-89.07	3,428.29	-752.15	1,502.14	1,369.81	132.33	11.352	
13,400.00	10,236.14	13,426.07	10,211.42	67.37	67.58	-89.06	3,451.04	-752.15	1,502.15	1,369.08	133.07	11.288	
13,427.24	10,236.25	13,453.31	10,210.95	67.75	68.05	-89.03	3,478.27	-752.15	1,502.16	1,368.24	133.92	11.217	
13,500.00	10,236.89	13,526.04	10,209.68	68.86	69.29	-88.96	3,551.00	-752.14	1,502.19	1,365.90	136.30	11.021	
13,600.00	10,237.76	13,626.01	10,207.93	70.56	71.00	-88.86	3,650.95	-752.13	1,502.25	1,362.50	139.75	10.750	
13,700.00	10,238.63	13,725.97	10,206.19	72.27	72.71	-88.76	3,750.90	-752.12	1,502.30	1,359.10	143.20	10.491	
13,800.00	10,239.51	13,825.94	10,204.44	73.98	74.43	-88.66	3,850.85	-752.12	1,502.37	1,355.69	146.67	10.243	
13,900.00	10,240.38	13,925.93	10,202.70	75.69	76.16	-88.56	3,950.82	-752.11	1,502.43	1,352.29	150.14	10.007	
14,000.00	10,241.25	14,026.56	10,202.30	77.42	77.77	-88.51	4,051.45	-752.10	1,502.47	1,348.96	153.51	9.787	
14,100.00	10,242.12	14,126.56	10,202.30	79.14	79.51	-88.48	4,151.45	-752.09	1,502.49	1,345.49	157.01	9.570	
14,200.00	10,243.00	14,226.55	10,202.30	80.87	81.25	-88.45	4,251.44	-752.08	1,502.52	1,342.01	160.51	9.361	
14,300.00	10,243.87	14,326.55	10,202.30	82.61	82.99	-88.41	4,351.44	-752.07	1,502.55	1,338.53	164.01	9.161	
14,400.00	10,244.74	14,426.55	10,202.30	84.35	84.74	-88.38	4,451.44	-752.07	1,502.57	1,335.05	167.53	8.969	
14,500.00	10,245.61	14,526.54	10,202.30	86.09	86.49	-88.35	4,551.43	-752.06	1,502.60	1,331.55	171.05	8.785	
14,600.00	10,246.49	14,626.54	10,202.30	87.84	88.24	-88.31	4,651.43	-752.05	1,502.63	1,328.06	174.57	8.607	
14,700.00	10,247.36	14,726.54	10,202.30	89.59	90.00	-88.28	4,751.43	-752.04	1,502.66	1,324.55	178.11	8.437	
14,800.00	10,248.23	14,826.53	10,202.30	91.34	91.76	-88.25	4,851.42	-752.03	1,502.69	1,321.05	181.64	8.273	
14,900.00	10,249.10	14,926.53	10,202.30	93.10	93.52	-88.22	4,951.42	-752.03	1,502.72	1,317.54	185.18	8.115	
15,000.00	10,249.98	15,026.52	10,202.30	94.86	95.28	-88.18	5,051.41	-752.02	1,502.75	1,314.02	188.73	7.963	
15,100.00	10,250.85	15,126.52	10,202.30	96.62	97.05	-88.15	5,151.41	-752.01	1,502.78	1,310.51	192.27	7.816	
15,200.00	10,251.72	15,226.52	10,202.30	98.38	98.82	-88.12	5,251.41	-752.00	1,502.81	1,306.99	195.83	7.674	
15,222.72	10,251.92	15,237.22	10,202.30	98.79	99.01	-88.11	5,262.11	-752.00	1,502.87	1,306.45	196.42	7.651	
15,223.43	10,251.93	15,237.22	10,202.30	98.85	99.01	-88.11	5,262.11	-752.00	1,502.87	1,306.44	196.43	7.651	

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #11H - Wellbore #1 - Plan #2										Offset Site Error: 0.00 ft	
Survey Program: 0-MWD										Offset Well Error: 0.00 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Between Centres (ft)	Between Ellipses (ft)			
0.00	0.00	0.00	0.00	0.00	0.00	-90.57	-0.50	-50.10	50.10		
100.00	100.00	100.00	100.00	0.09	0.09	-90.57	-0.50	-50.10	50.10	49.92	0.18 271.841
200.00	200.00	200.00	200.00	0.32	0.32	-90.57	-0.50	-50.10	50.10	49.47	0.63 79.046
300.00	300.00	300.00	300.00	0.54	0.54	-90.57	-0.50	-50.10	50.10	49.02	1.08 46.247
400.00	400.00	400.00	400.00	0.77	0.77	-90.57	-0.50	-50.10	50.10	48.57	1.53 32.685
500.00	500.00	500.00	500.00	0.99	0.99	-90.57	-0.50	-50.10	50.10	48.12	1.98 25.273
600.00	600.00	600.00	600.00	1.22	1.22	-90.57	-0.50	-50.10	50.10	47.67	2.43 20.602
700.00	700.00	700.00	700.00	1.44	1.44	-90.57	-0.50	-50.10	50.10	47.22	2.88 17.388
800.00	800.00	800.00	800.00	1.67	1.67	-90.57	-0.50	-50.10	50.10	46.77	3.33 15.041
900.00	900.00	900.00	900.00	1.89	1.89	-90.57	-0.50	-50.10	50.10	46.32	3.78 13.253
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.57	-0.50	-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	-90.57	-0.50	-50.10	50.10	45.42	4.68 10.707
1,200.00	1,200.00	1,200.00	1,200.00	2.56	2.56	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-50.10	50.10	43.62	6.48 7.735
1,600.00	1,600.00	1,600.00	1,600.00	3.46	3.46	-90.57	-0.50	-50.10	50.10	43.18	6.93 7.233
1,700.00	1,700.00	1,700.00	1,700.00	3.69	3.69	-90.57	-0.50	-50.10	50.10	42.73	7.38 6.792
1,800.00	1,800.00	1,800.00	1,800.00	3.91	3.91	-90.57	-0.50	-50.10	50.10	42.28	7.83 6.402
1,900.00	1,900.00	1,900.00	1,900.00	4.14	4.14	-90.57	-0.50	-50.10	50.10	41.83	8.28 6.054
2,000.00	2,000.00	2,000.00	2,000.00	4.36	4.36	-90.57	-0.50	-50.10	50.10	41.38	8.73 5.742
2,100.00	2,100.00	2,100.00	2,100.00	4.59	4.59	-90.57	-0.50	-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	-90.57	-0.50	-50.10	50.10	40.48	9.62 5.206
2,300.00	2,300.00	2,300.00	2,300.00	5.04	5.04	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-50.10	50.10	34.18	15.92 3.148
3,700.00	3,700.00	3,700.00	3,700.00	8.18	8.18	-90.57	-0.50	-50.10	50.10	33.74	16.37 3.061
3,800.00	3,800.00	3,800.00	3,800.00	8.41	8.41	-90.57	-0.50	-50.10	50.10	33.29	16.82 2.979
3,900.00	3,900.00	3,900.00	3,900.00	8.63	8.63	-90.57	-0.50	-50.10	50.10	32.84	17.27 2.902
4,000.00	4,000.00	4,000.00	4,000.00	8.86	8.86	-90.57	-0.50	-50.10	50.10	32.39	17.72 2.828
4,100.00	4,100.00	4,100.00	4,100.00	9.08	9.08	-90.57	-0.50	-50.10	50.10	31.94	18.17 2.758
4,200.00	4,200.00	4,200.00	4,200.00	9.31	9.31	-90.57	-0.50	-50.10	50.10	31.49	18.62 2.691
4,300.00	4,300.00	4,300.00	4,300.00	9.53	9.53	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-50.10	50.10	29.24	20.86 2.402
4,800.00	4,800.00	4,800.00	4,800.00	10.66	10.66	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-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	-90.57	-0.50	-50.10	50.10	27.44	22.66 2.211

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #11H - Wellbore #1 - Plan #2														Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (ft)	+E/W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
5,200.00	5,200.00	5,200.00	5,200.00	11.56	11.56	-90.57	-0.50	-50.10	50.10	26.99	23.11	2.168			
5,300.00	5,300.00	5,300.00	5,300.00	11.78	11.78	-90.57	-0.50	-50.10	50.10	26.54	23.56	2.127			
5,400.00	5,400.00	5,400.00	5,400.00	12.00	12.00	-90.57	-0.50	-50.10	50.10	26.09	24.01	2.087			
5,500.00	5,500.00	5,500.00	5,500.00	12.23	12.23	-90.57	-0.50	-50.10	50.10	25.64	24.46	2.048			
5,600.00	5,600.00	5,600.00	5,600.00	12.45	12.45	-90.57	-0.50	-50.10	50.10	25.19	24.91	2.011	CC, ES, SF		
5,700.00	5,699.98	5,699.41	5,699.40	12.67	12.68	-168.11	0.95	-50.78	52.50	27.17	25.33	2.073			
5,800.00	5,799.84	5,799.21	5,799.16	12.87	12.90	-166.90	3.25	-51.87	58.75	33.04	25.71	2.285			
5,900.00	5,899.45	5,898.73	5,898.65	13.08	13.12	-166.61	5.55	-52.94	68.39	42.33	26.06	2.624			
6,000.00	5,998.70	5,997.88	5,997.76	13.29	13.34	-166.95	7.83	-54.02	81.41	55.03	26.38	3.086			
6,090.44	6,088.05	6,087.11	6,086.96	13.49	13.54	-167.55	9.89	-54.99	96.09	69.45	26.64	3.607			
6,100.00	6,097.47	6,096.51	6,096.37	13.52	13.56	-167.63	10.11	-55.09	97.79	71.11	26.68	3.665			
6,200.00	6,196.01	6,194.92	6,194.74	13.74	13.78	-168.30	12.37	-56.16	115.55	88.46	27.10	4.264			
6,300.00	6,294.54	6,293.32	6,293.11	13.98	14.00	-168.80	14.64	-57.23	133.33	105.81	27.52	4.845			
6,400.00	6,393.08	6,391.72	6,391.48	14.22	14.22	-169.18	16.91	-58.29	151.12	123.18	27.94	5.408			
6,500.00	6,491.62	6,490.12	6,489.85	14.47	14.44	-169.48	19.18	-59.36	168.91	140.54	28.37	5.954			
6,600.00	6,590.16	6,588.52	6,588.22	14.73	14.66	-169.72	21.45	-60.43	186.70	157.91	28.79	6.484			
6,700.00	6,688.70	6,686.92	6,686.59	14.99	14.88	-169.92	23.72	-61.50	204.50	175.28	29.22	6.998			
6,800.00	6,787.24	6,785.32	6,784.95	15.25	15.10	-170.09	25.99	-62.56	222.30	192.65	29.65	7.496			
6,900.00	6,885.77	6,883.72	6,883.32	15.52	15.32	-170.23	28.25	-63.63	240.10	210.02	30.09	7.980			
7,000.00	6,984.31	6,982.13	6,981.69	15.80	15.54	-170.36	30.52	-64.70	257.90	227.38	30.52	8.450			
7,100.00	7,082.85	7,080.53	7,080.06	16.08	15.76	-170.46	32.79	-65.77	275.71	244.75	30.96	8.906			
7,200.00	7,181.39	7,178.93	7,178.43	16.36	15.98	-170.56	35.06	-66.83	293.51	262.12	31.39	9.350			
7,300.00	7,279.93	7,277.33	7,276.80	16.65	16.20	-170.64	37.33	-67.90	311.32	279.49	31.83	9.780			
7,400.00	7,378.46	7,375.73	7,375.17	16.94	16.42	-170.72	39.60	-68.97	329.12	296.85	32.27	10.199			
7,500.00	7,477.00	7,474.13	7,473.54	17.24	16.64	-170.78	41.87	-70.04	346.93	314.22	32.71	10.606			
7,600.00	7,575.54	7,572.53	7,571.91	17.53	16.86	-170.84	44.13	-71.10	364.73	331.58	33.15	11.002			
7,700.00	7,674.08	7,670.93	7,670.28	17.84	17.08	-170.90	46.40	-72.17	382.54	348.95	33.59	11.387			
7,800.00	7,772.62	7,769.34	7,768.65	18.14	17.30	-170.95	48.67	-73.24	400.35	366.31	34.04	11.762			
7,900.00	7,871.16	7,867.74	7,867.02	18.45	17.52	-170.99	50.94	-74.31	418.15	383.67	34.48	12.126			
8,000.00	7,969.69	7,966.14	7,965.39	18.76	17.75	-171.04	53.21	-75.37	435.96	401.03	34.93	12.482			
8,100.00	8,068.23	8,064.54	8,063.76	19.07	17.97	-171.07	55.48	-76.44	453.77	418.39	35.38	12.827			
8,200.00	8,166.77	8,162.94	8,162.12	19.39	18.19	-171.11	57.74	-77.51	471.58	435.75	35.82	13.164			
8,300.00	8,265.31	8,261.34	8,260.49	19.71	18.41	-171.14	60.01	-78.58	489.38	453.11	36.27	13.492			
8,400.00	8,363.85	8,359.74	8,358.86	20.03	18.63	-171.17	62.28	-79.64	507.19	470.47	36.72	13.812			
8,500.00	8,462.38	8,458.14	8,457.23	20.35	18.85	-171.20	64.55	-80.71	525.00	487.83	37.17	14.124			
8,600.00	8,560.92	8,556.55	8,555.60	20.67	19.07	-171.23	66.82	-81.78	542.81	505.19	37.62	14.428			
8,700.00	8,659.46	8,654.95	8,653.97	21.00	19.30	-171.25	69.09	-82.85	560.62	522.54	38.07	14.725			
8,800.00	8,758.00	8,753.35	8,752.34	21.33	19.52	-171.28	71.36	-83.91	578.42	539.90	38.53	15.014			
8,900.00	8,856.54	8,852.63	8,851.57	21.66	19.74	-171.26	74.04	-84.99	596.22	557.24	38.98	15.295			
9,000.00	8,955.08	8,953.67	8,951.37	21.99	19.98	-170.09	88.94	-86.15	613.66	574.19	39.46	15.551			
9,100.00	9,053.61	9,047.91	9,040.76	22.33	20.21	-167.61	118.42	-87.28	631.51	591.55	39.96	15.802			
9,200.00	9,152.15	9,131.61	9,115.16	22.66	20.44	-164.42	156.59	-88.31	651.67	611.18	40.49	16.095			
9,300.00	9,250.69	9,200.00	9,171.31	23.00	20.65	-161.22	195.55	-89.14	676.17	635.15	41.01	16.488			
9,400.00	9,349.23	9,264.13	9,219.40	23.34	20.88	-157.84	237.93	-89.91	706.56	664.99	41.57	16.996			
9,500.00	9,447.77	9,314.87	9,253.90	23.68	21.09	-154.96	275.10	-90.50	743.78	701.67	42.11	17.663			
9,600.00	9,546.30	9,350.00	9,275.81	24.02	21.24	-152.89	302.56	-90.90	788.10	745.53	42.58	18.510			
9,700.00	9,644.84	9,400.00	9,303.99	24.36	21.49	-149.87	343.84	-91.44	839.16	795.99	43.17	19.439			
9,770.16	9,713.98	9,414.72	9,311.59	24.60	21.57	-148.96	356.45	-91.60	878.70	835.24	43.46	20.219			
9,800.00	9,743.34	9,423.58	9,316.00	24.70	21.62	-130.84	364.13	-91.69	896.18	852.41	43.77	20.476			
9,850.00	9,792.21	9,450.00	9,328.46	24.87	21.77	-107.49	387.42	-91.97	925.57	881.22	44.35	20.871			
9,900.00	9,840.35	9,450.00	9,328.46	25.05	21.77	-93.19	387.42	-91.97	954.42	909.75	44.68	21.363			
9,950.00	9,887.37	9,471.96	9,337.99	25.23	21.90	-82.43	407.19	-92.19	982.73	937.72	45.01	21.834			

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #11H - Wellbore #1 - Plan #2														Offset Site Error: 0.00 ft
Survey Program: 0-MWD														Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,000.00	9,932.94	9,500.00	9,349.04	25.41	22.07	-74.24	432.96	-92.46	1,010.32	965.15	45.17	22.368		
10,050.00	9,976.69	9,500.00	9,349.04	25.60	22.07	-68.69	432.96	-92.46	1,036.61	991.61	45.00	23.038		
10,100.00	10,018.30	9,525.01	9,357.83	25.79	22.24	-63.58	456.38	-92.69	1,061.60	1,016.90	44.70	23.747		
10,150.00	10,057.45	9,550.00	9,365.58	25.99	22.40	-59.43	480.13	-92.91	1,085.21	1,041.01	44.19	24.557		
10,200.00	10,093.84	9,550.00	9,365.58	26.20	22.40	-56.43	480.13	-92.91	1,107.22	1,063.79	43.43	25.494		
10,250.00	10,127.20	9,581.14	9,373.77	26.41	22.63	-53.46	510.17	-93.18	1,127.19	1,084.60	42.59	26.463		
10,300.00	10,157.27	9,600.00	9,377.94	26.64	22.77	-51.16	528.56	-93.34	1,145.41	1,103.80	41.62	27.523		
10,350.00	10,183.83	9,619.71	9,381.65	26.88	22.92	-49.26	547.92	-93.49	1,161.62	1,121.04	40.58	28.624		
10,400.00	10,206.66	9,650.00	9,386.03	27.13	23.16	-47.62	577.88	-93.72	1,175.85	1,136.28	39.57	29.716		
10,450.00	10,225.60	9,650.00	9,386.03	27.41	23.16	-46.52	577.88	-93.72	1,187.75	1,149.24	38.52	30.838		
10,500.00	10,240.51	9,678.68	9,388.73	27.70	23.39	-45.50	606.43	-93.91	1,197.38	1,159.71	37.67	31.789		
10,550.00	10,251.26	9,700.00	9,389.80	28.01	23.57	-44.79	627.73	-94.05	1,204.81	1,167.85	36.95	32.604		
10,600.00	10,257.78	9,718.43	9,390.09	28.34	23.73	-44.34	646.15	-94.16	1,209.91	1,173.47	36.44	33.202		
10,650.00	10,260.02	9,753.69	9,389.56	28.70	24.05	-44.11	681.40	-94.37	1,212.52	1,176.23	36.29	33.412		
10,656.11	10,260.00	9,759.79	9,389.45	28.74	24.10	-44.10	687.51	-94.40	1,212.61	1,176.30	36.31	33.400		
10,700.00	10,259.62	9,803.68	9,388.68	29.07	24.51	-44.10	731.39	-94.66	1,213.06	1,176.20	36.86	32.913		
10,800.00	10,258.74	9,903.68	9,386.94	29.89	25.51	-44.09	831.37	-95.23	1,214.10	1,175.86	38.23	31.757		
10,900.00	10,257.87	10,003.67	9,385.19	30.81	26.60	-44.08	931.35	-95.81	1,215.13	1,175.38	39.75	30.571		
11,000.00	10,257.00	10,103.67	9,383.45	31.80	27.77	-44.07	1,031.32	-96.38	1,216.17	1,174.77	41.39	29.381		
11,100.00	10,256.12	10,203.66	9,381.70	32.88	29.01	-44.07	1,131.30	-96.96	1,217.20	1,174.05	43.15	28.209		
11,200.00	10,255.25	10,303.66	9,379.96	34.02	30.31	-44.06	1,231.28	-97.54	1,218.24	1,173.23	45.01	27.068		
11,300.00	10,254.38	10,403.65	9,378.21	35.22	31.66	-44.05	1,331.26	-98.11	1,219.27	1,172.32	46.95	25.969		
11,400.00	10,253.51	10,503.64	9,376.47	36.47	33.06	-44.04	1,431.23	-98.69	1,220.31	1,171.34	48.97	24.919		
11,500.00	10,252.63	10,603.64	9,374.72	37.77	34.50	-44.03	1,531.21	-99.26	1,221.34	1,170.28	51.06	23.920		
11,600.00	10,251.76	10,703.63	9,372.98	39.12	35.97	-44.02	1,631.19	-99.84	1,222.38	1,169.17	53.21	22.974		
11,700.00	10,250.89	10,803.63	9,371.23	40.51	37.48	-44.01	1,731.17	-100.41	1,223.41	1,168.01	55.41	22.080		
11,800.00	10,250.02	10,903.62	9,369.49	41.93	39.01	-44.01	1,831.14	-100.99	1,224.45	1,166.79	57.66	21.237		
11,900.00	10,249.14	11,003.62	9,367.74	43.38	40.57	-44.00	1,931.12	-101.57	1,225.49	1,165.54	59.94	20.444		
12,000.00	10,248.27	11,103.61	9,366.00	44.86	42.15	-43.99	2,031.10	-102.14	1,226.52	1,164.25	62.27	19.697		
12,100.00	10,247.40	11,203.61	9,364.25	46.36	43.75	-43.98	2,131.08	-102.72	1,227.56	1,162.93	64.63	18.995		
12,200.00	10,246.53	11,303.60	9,362.51	47.89	45.37	-43.97	2,231.05	-103.29	1,228.59	1,161.58	67.01	18.334		
12,300.00	10,245.65	11,403.59	9,360.76	49.44	47.00	-43.96	2,331.03	-103.87	1,229.63	1,160.20	69.43	17.711		
12,400.00	10,244.78	11,503.59	9,359.02	51.00	48.65	-43.95	2,431.01	-104.45	1,230.66	1,158.80	71.86	17.125		
12,500.00	10,243.91	11,603.58	9,357.27	52.59	50.31	-43.95	2,530.99	-105.02	1,231.70	1,157.38	74.32	16.573		
12,600.00	10,243.04	11,703.58	9,355.53	54.19	51.98	-43.94	2,630.96	-105.60	1,232.73	1,155.94	76.79	16.052		
12,700.00	10,242.16	11,803.57	9,353.78	55.80	53.67	-43.93	2,730.94	-106.17	1,233.77	1,154.48	79.29	15.561		
12,800.00	10,241.29	11,903.57	9,352.04	57.43	55.36	-43.92	2,830.92	-106.75	1,234.81	1,153.01	81.80	15.096		
12,900.00	10,240.42	12,003.56	9,350.29	59.07	57.06	-43.91	2,930.90	-107.32	1,235.84	1,151.52	84.32	14.657		
13,000.00	10,239.54	12,103.56	9,348.55	60.72	58.77	-43.90	3,030.88	-107.90	1,236.88	1,150.02	86.85	14.241		
13,100.00	10,238.67	12,203.55	9,346.80	62.38	60.48	-43.89	3,130.85	-108.48	1,237.91	1,148.51	89.40	13.847		
13,200.00	10,237.80	12,303.54	9,345.05	64.05	62.20	-43.89	3,230.83	-109.05	1,238.95	1,146.99	91.96	13.473		
13,300.00	10,236.93	12,403.54	9,343.31	65.73	63.93	-43.88	3,330.81	-109.63	1,239.99	1,145.46	94.53	13.118		
13,377.24	10,236.25	12,480.78	9,341.96	67.03	65.27	-43.87	3,408.03	-110.07	1,240.79	1,144.27	96.51	12.856		
13,400.00	10,236.14	12,503.53	9,341.56	67.37	65.67	-43.87	3,430.78	-110.20	1,241.09	1,143.95	97.14	12.776		
13,427.24	10,236.25	12,530.77	9,341.09	67.75	66.14	-43.86	3,458.01	-110.36	1,241.62	1,143.77	97.85	12.689		
13,500.00	10,236.89	12,617.97	9,339.94	68.86	67.55	-43.82	3,545.20	-110.86	1,243.10	1,143.38	99.72	12.466		
13,600.00	10,237.76	12,734.81	9,341.47	70.56	69.36	-43.86	3,662.03	-111.54	1,243.13	1,140.68	102.45	12.134		
13,700.00	10,238.63	12,834.80	9,343.22	72.27	71.11	-43.91	3,762.01	-112.11	1,242.91	1,137.78	105.13	11.823		
13,800.00	10,239.51	12,934.80	9,344.96	73.98	72.86	-43.95	3,861.99	-112.69	1,242.69	1,134.87	107.82	11.526		
13,900.00	10,240.38	13,034.79	9,346.71	75.69	74.62	-44.00	3,961.96	-113.26	1,242.47	1,131.95	110.51	11.243		
14,000.00	10,241.25	13,134.78	9,348.45	77.42	76.38	-44.05	4,061.94	-113.84	1,242.25	1,129.03	113.22	10.972		
14,100.00	10,242.12	13,234.78	9,350.20	79.14	78.14	-44.10	4,161.92	-114.42	1,242.03	1,126.09	115.94	10.713		

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #11H - Wellbore #1 - Plan #2													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
14,200.00	10,243.00	13,334.77	9,351.94	80.87	79.90	-44.14	4,261.90	-114.99	1,241.81	1,123.15	118.66	10.465		
14,300.00	10,243.87	13,434.77	9,353.69	82.61	81.67	-44.19	4,361.87	-115.57	1,241.59	1,120.20	121.39	10.228		
14,400.00	10,244.74	13,534.76	9,355.44	84.35	83.45	-44.24	4,461.85	-116.14	1,241.38	1,117.25	124.13	10.001		
14,500.00	10,245.61	13,634.76	9,357.18	86.09	85.22	-44.29	4,561.83	-116.72	1,241.16	1,114.29	126.88	9.782		
14,600.00	10,246.49	13,734.75	9,358.93	87.84	87.00	-44.33	4,661.81	-117.29	1,240.95	1,111.32	129.63	9.573		
14,700.00	10,247.36	13,834.75	9,360.67	89.59	88.78	-44.38	4,761.78	-117.87	1,240.74	1,108.34	132.39	9.372		
14,800.00	10,248.23	13,934.74	9,362.42	91.34	90.56	-44.43	4,861.76	-118.45	1,240.52	1,105.36	135.16	9.178		
14,900.00	10,249.10	14,034.74	9,364.16	93.10	92.34	-44.48	4,961.74	-119.02	1,240.31	1,102.37	137.94	8.992		
15,000.00	10,249.98	14,134.73	9,365.91	94.86	94.12	-44.52	5,061.72	-119.60	1,240.10	1,099.38	140.72	8.813		
15,100.00	10,250.85	14,234.72	9,367.65	96.62	95.91	-44.57	5,161.69	-120.17	1,239.89	1,096.38	143.50	8.640		
15,200.00	10,251.72	14,334.72	9,369.40	98.38	97.70	-44.62	5,261.67	-120.75	1,239.68	1,093.38	146.30	8.474		
15,209.02	10,251.80	14,341.15	9,369.51	98.54	97.81	-44.62	5,268.10	-120.79	1,239.66	1,093.15	146.51	8.461		
15,222.72	10,251.92	14,341.15	9,369.51	98.79	97.81	-44.62	5,268.10	-120.79	1,239.74	1,093.05	146.69	8.451		
15,223.43	10,251.93	14,341.15	9,369.51	98.85	97.81	-44.62	5,268.10	-120.79	1,239.75	1,093.05	146.70	8.451		



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #9H - Wellbore #1 - Plan #2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-90.53	-1.40	-150.00	150.01				
100.00	100.00	100.00	100.00	0.09	0.09	-90.53	-1.40	-150.00	150.01	149.82	0.18	813.890	
200.00	200.00	200.00	200.00	0.32	0.32	-90.53	-1.40	-150.00	150.01	149.37	0.63	236.663	
300.00	300.00	300.00	300.00	0.54	0.54	-90.53	-1.40	-150.00	150.01	148.92	1.08	138.463	
400.00	400.00	400.00	400.00	0.77	0.77	-90.53	-1.40	-150.00	150.01	148.47	1.53	97.858	
500.00	500.00	500.00	500.00	0.99	0.99	-90.53	-1.40	-150.00	150.01	148.02	1.98	75.668	
600.00	600.00	600.00	600.00	1.22	1.22	-90.53	-1.40	-150.00	150.01	147.57	2.43	61.681	
700.00	700.00	700.00	700.00	1.44	1.44	-90.53	-1.40	-150.00	150.01	147.13	2.88	52.059	
800.00	800.00	800.00	800.00	1.67	1.67	-90.53	-1.40	-150.00	150.01	146.68	3.33	45.033	
900.00	900.00	900.00	900.00	1.89	1.89	-90.53	-1.40	-150.00	150.01	146.23	3.78	39.678	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.53	-1.40	-150.00	150.01	145.78	4.23	35.462	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-90.53	-1.40	-150.00	150.01	145.33	4.68	32.055	
1,200.00	1,200.00	1,200.00	1,200.00	2.56	2.56	-90.53	-1.40	-150.00	150.01	144.88	5.13	29.246	
1,300.00	1,300.00	1,300.00	1,300.00	2.79	2.79	-90.53	-1.40	-150.00	150.01	144.43	5.58	26.889	
1,400.00	1,400.00	1,400.00	1,400.00	3.01	3.01	-90.53	-1.40	-150.00	150.01	143.98	6.03	24.884	
1,500.00	1,500.00	1,500.00	1,500.00	3.24	3.24	-90.53	-1.40	-150.00	150.01	143.53	6.48	23.157	
1,600.00	1,600.00	1,600.00	1,600.00	3.46	3.46	-90.53	-1.40	-150.00	150.01	143.08	6.93	21.654	
1,700.00	1,700.00	1,700.00	1,700.00	3.69	3.69	-90.53	-1.40	-150.00	150.01	142.63	7.38	20.335	
1,800.00	1,800.00	1,800.00	1,800.00	3.91	3.91	-90.53	-1.40	-150.00	150.01	142.18	7.83	19.167	
1,900.00	1,900.00	1,900.00	1,900.00	4.14	4.14	-90.53	-1.40	-150.00	150.01	141.73	8.28	18.126	
2,000.00	2,000.00	2,000.00	2,000.00	4.36	4.36	-90.53	-1.40	-150.00	150.01	141.28	8.73	17.192	
2,100.00	2,100.00	2,100.00	2,100.00	4.59	4.59	-90.53	-1.40	-150.00	150.01	140.83	9.17	16.350	
2,200.00	2,200.00	2,200.00	2,200.00	4.81	4.81	-90.53	-1.40	-150.00	150.01	140.38	9.62	15.586	
2,300.00	2,300.00	2,300.00	2,300.00	5.04	5.04	-90.53	-1.40	-150.00	150.01	139.93	10.07	14.890	
2,400.00	2,400.00	2,400.00	2,400.00	5.26	5.26	-90.53	-1.40	-150.00	150.01	139.48	10.52	14.254	
2,500.00	2,500.00	2,500.00	2,500.00	5.49	5.49	-90.53	-1.40	-150.00	150.01	139.03	10.97	13.670	
2,600.00	2,600.00	2,600.00	2,600.00	5.71	5.71	-90.53	-1.40	-150.00	150.01	138.58	11.42	13.132	
2,700.00	2,700.00	2,700.00	2,700.00	5.94	5.94	-90.53	-1.40	-150.00	150.01	138.13	11.87	12.635	
2,800.00	2,800.00	2,800.00	2,800.00	6.16	6.16	-90.53	-1.40	-150.00	150.01	137.69	12.32	12.174	
2,900.00	2,900.00	2,900.00	2,900.00	6.39	6.39	-90.53	-1.40	-150.00	150.01	137.24	12.77	11.746	
3,000.00	3,000.00	3,000.00	3,000.00	6.61	6.61	-90.53	-1.40	-150.00	150.01	136.79	13.22	11.346	
3,100.00	3,100.00	3,100.00	3,100.00	6.84	6.84	-90.53	-1.40	-150.00	150.01	136.34	13.67	10.973	
3,200.00	3,200.00	3,200.00	3,200.00	7.06	7.06	-90.53	-1.40	-150.00	150.01	135.89	14.12	10.624	
3,300.00	3,300.00	3,300.00	3,300.00	7.28	7.28	-90.53	-1.40	-150.00	150.01	135.44	14.57	10.296	
3,400.00	3,400.00	3,400.00	3,400.00	7.51	7.51	-90.53	-1.40	-150.00	150.01	134.99	15.02	9.988	
3,500.00	3,500.00	3,500.00	3,500.00	7.73	7.73	-90.53	-1.40	-150.00	150.01	134.54	15.47	9.698	
3,600.00	3,600.00	3,600.00	3,600.00	7.96	7.96	-90.53	-1.40	-150.00	150.01	134.09	15.92	9.424	
3,700.00	3,700.00	3,700.00	3,700.00	8.18	8.18	-90.53	-1.40	-150.00	150.01	133.64	16.37	9.165	
3,800.00	3,800.00	3,800.00	3,800.00	8.41	8.41	-90.53	-1.40	-150.00	150.01	133.19	16.82	8.920	
3,900.00	3,900.00	3,900.00	3,900.00	8.63	8.63	-90.53	-1.40	-150.00	150.01	132.74	17.27	8.688	
4,000.00	4,000.00	4,000.00	4,000.00	8.86	8.86	-90.53	-1.40	-150.00	150.01	132.29	17.72	8.467	
4,100.00	4,100.00	4,100.00	4,100.00	9.08	9.08	-90.53	-1.40	-150.00	150.01	131.84	18.17	8.258	
4,200.00	4,200.00	4,200.00	4,200.00	9.31	9.31	-90.53	-1.40	-150.00	150.01	131.39	18.62	8.058	
4,300.00	4,300.00	4,300.00	4,300.00	9.53	9.53	-90.53	-1.40	-150.00	150.01	130.94	19.06	7.868	
4,400.00	4,400.00	4,400.00	4,400.00	9.76	9.76	-90.53	-1.40	-150.00	150.01	130.49	19.51	7.687	
4,500.00	4,500.00	4,500.00	4,500.00	9.98	9.98	-90.53	-1.40	-150.00	150.01	130.04	19.96	7.514	
4,600.00	4,600.00	4,600.00	4,600.00	10.21	10.21	-90.53	-1.40	-150.00	150.01	129.59	20.41	7.349	
4,700.00	4,700.00	4,700.00	4,700.00	10.43	10.43	-90.53	-1.40	-150.00	150.01	129.14	20.86	7.190	
4,800.00	4,800.00	4,800.00	4,800.00	10.66	10.66	-90.53	-1.40	-150.00	150.01	128.69	21.31	7.039	
4,900.00	4,900.00	4,900.00	4,900.00	10.88	10.88	-90.53	-1.40	-150.00	150.01	128.24	21.76	6.893	
5,000.00	5,000.00	5,000.00	5,000.00	11.11	11.11	-90.53	-1.40	-150.00	150.01	127.80	22.21	6.754	
5,100.00	5,100.00	5,100.00	5,100.00	11.33	11.33	-90.53	-1.40	-150.00	150.01	127.35	22.66	6.620	

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #9H - Wellbore #1 - Plan #2														Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
5,200.00	5,200.00	5,200.00	5,200.00	11.56	11.56	-90.53	-1.40	-150.00	150.01	126.90	23.11	6.491			
5,300.00	5,300.00	5,300.00	5,300.00	11.78	11.78	-90.53	-1.40	-150.00	150.01	126.45	23.56	6.367			
5,400.00	5,400.00	5,400.00	5,400.00	12.00	12.00	-90.53	-1.40	-150.00	150.01	126.00	24.01	6.248			
5,500.00	5,500.00	5,500.00	5,500.00	12.23	12.23	-90.53	-1.40	-150.00	150.01	125.55	24.46	6.133			
5,600.00	5,600.00	5,600.00	5,600.00	12.45	12.45	-90.53	-1.40	-150.00	150.01	125.10	24.91	6.022			
5,700.00	5,699.98	5,705.52	5,705.49	12.67	12.68	-169.42	-1.28	-148.06	149.88	124.55	25.33	5.917			
5,800.00	5,799.84	5,811.02	5,810.83	12.87	12.89	-169.69	-0.91	-142.25	149.51	123.82	25.70	5.819			
5,900.00	5,899.45	5,916.50	5,915.86	13.08	13.11	-170.15	-0.29	-132.57	148.91	122.87	26.03	5.720			
6,000.00	5,998.70	6,021.95	6,020.42	13.29	13.33	-170.79	0.56	-119.05	148.08	121.73	26.34	5.621			
6,090.44	6,088.05	6,117.27	6,114.47	13.49	13.54	-171.54	1.55	-103.52	147.14	120.54	26.60	5.532			
6,100.00	6,097.47	6,127.35	6,124.37	13.52	13.56	-171.63	1.66	-101.70	147.02	120.38	26.64	5.519			
6,200.00	6,196.01	6,232.62	6,227.49	13.74	13.81	-172.55	3.00	-80.57	143.73	116.67	27.05	5.313			
6,300.00	6,294.54	6,337.49	6,329.37	13.98	14.08	-173.54	4.58	-55.79	136.81	109.34	27.47	4.980			
6,400.00	6,393.08	6,440.13	6,428.19	14.22	14.36	-174.67	6.33	-28.13	126.51	98.62	27.89	4.536			
6,500.00	6,491.62	6,539.48	6,523.64	14.47	14.65	-175.98	8.08	-0.60	115.48	87.17	28.31	4.079			
6,600.00	6,590.16	6,638.83	6,619.08	14.73	14.96	-177.57	9.82	26.94	104.53	75.80	28.73	3.638			
6,700.00	6,688.70	6,738.18	6,714.53	14.99	15.29	-179.53	11.57	54.48	93.67	64.51	29.17	3.212			
6,800.00	6,787.24	6,837.54	6,809.97	15.25	15.63	-178.00	13.32	82.01	82.95	53.34	29.61	2.801			
6,900.00	6,885.77	6,936.89	6,905.41	15.52	15.98	-174.81	15.06	109.55	72.43	42.35	30.08	2.408			
7,000.00	6,984.31	7,036.24	7,000.86	15.80	16.34	-170.55	16.81	137.08	62.20	31.62	30.59	2.034			
7,100.00	7,082.85	7,135.59	7,096.30	16.08	16.71	-164.68	18.56	164.62	52.45	21.28	31.17	1.683			
7,200.00	7,181.39	7,234.94	7,191.75	16.36	17.10	-156.27	20.30	192.15	43.49	11.59	31.89	1.363 Level 3			
7,300.00	7,279.93	7,334.30	7,287.19	16.65	17.50	-143.97	22.05	219.69	35.91	3.02	32.89	1.092 Level 2			
7,400.00	7,378.46	7,433.65	7,382.63	16.94	17.90	-126.50	23.80	247.23	30.77	-3.44	34.21	0.899 Level 1			
7,482.79	7,460.04	7,515.90	7,461.65	17.18	18.24	-108.80	25.24	270.02	29.29	-6.01	35.30	0.830 Level 1, CC			
7,500.00	7,477.00	7,533.00	7,478.08	17.24	18.31	-105.00	25.54	274.76	29.36	-6.13	35.48	0.827 Level 1, ES, SF			
7,600.00	7,575.54	7,632.35	7,573.52	17.53	18.74	-84.48	27.29	302.30	32.18	-3.95	36.13	0.891 Level 1			
7,700.00	7,674.08	7,731.70	7,668.97	17.84	19.16	-68.86	29.04	329.83	38.31	2.02	36.29	1.056 Level 2			
7,800.00	7,772.62	7,831.06	7,764.41	18.14	19.60	-58.07	30.78	357.37	46.45	10.10	36.36	1.278 Level 3			
7,900.00	7,871.16	7,930.41	7,859.85	18.45	20.04	-50.67	32.53	384.90	55.74	19.24	36.50	1.527			
8,000.00	7,969.69	8,029.76	7,955.30	18.76	20.49	-45.43	34.28	412.44	65.68	28.95	36.73	1.788			
8,100.00	8,068.23	8,129.11	8,050.74	19.07	20.95	-41.59	36.02	439.97	76.02	38.99	37.03	2.053			
8,200.00	8,166.77	8,228.46	8,146.19	19.39	21.41	-38.68	37.77	467.51	86.62	49.24	37.38	2.317			
8,300.00	8,265.31	8,327.82	8,241.63	19.71	21.87	-36.41	39.52	495.05	97.40	59.63	37.77	2.579			
8,400.00	8,363.85	8,427.17	8,337.07	20.03	22.34	-34.59	41.26	522.58	108.29	70.11	38.18	2.837			
8,500.00	8,462.38	8,526.52	8,432.52	20.35	22.82	-33.11	43.01	550.12	119.27	80.67	38.61	3.089			
8,600.00	8,560.92	8,625.87	8,527.96	20.67	23.30	-31.87	44.76	577.65	130.32	91.27	39.05	3.337			
8,700.00	8,659.46	8,725.22	8,623.41	21.00	23.78	-30.83	46.50	605.19	141.42	101.91	39.51	3.579			
8,800.00	8,758.00	8,824.58	8,718.85	21.33	24.27	-29.94	48.25	632.72	152.56	112.58	39.98	3.816			
8,900.00	8,856.54	8,923.93	8,814.29	21.66	24.76	-29.17	50.00	660.26	163.73	123.28	40.45	4.048			
9,000.00	8,955.08	9,023.28	8,909.74	21.99	25.25	-28.50	51.74	687.79	174.92	133.99	40.93	4.274			
9,100.00	9,053.61	9,122.63	9,005.18	22.33	25.75	-27.91	53.49	715.33	186.14	144.72	41.42	4.494			
9,200.00	9,152.15	9,221.98	9,100.63	22.66	26.25	-27.39	55.24	742.87	197.37	155.46	41.91	4.710			
9,300.00	9,250.69	9,321.33	9,196.07	23.00	26.75	-26.92	56.98	770.40	208.62	166.21	42.40	4.920			
9,400.00	9,349.23	9,420.69	9,291.51	23.34	27.25	-26.51	58.73	797.94	219.88	176.97	42.90	5.125			
9,500.00	9,447.77	9,520.04	9,386.96	23.68	27.76	-26.13	60.48	825.47	231.15	187.74	43.41	5.325			
9,600.00	9,546.30	9,619.39	9,482.40	24.02	28.27	-25.78	62.22	853.01	242.43	198.51	43.91	5.521			
9,700.00	9,644.84	9,718.74	9,577.85	24.36	28.78	-25.47	63.97	880.54	253.71	209.29	44.42	5.711			
9,770.16	9,713.98	9,788.45	9,644.81	24.60	29.14	-25.27	65.20	899.86	261.64	216.86	44.78	5.843			
9,800.00	9,743.34	9,818.07	9,673.27	24.70	29.29	-40.59	65.72	908.07	265.19	220.25	44.94	5.901			
9,850.00	9,792.21	9,867.43	9,720.68	24.87	29.55	-59.43	66.58	921.75	272.01	226.73	45.27	6.008			
9,900.00	9,840.35	9,916.12	9,767.46	25.05	29.80	-71.50	67.44	935.25	280.01	234.34	45.67	6.132			

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #9H - Wellbore #1 - Plan #2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,950.00	9,887.37	9,963.78	9,813.24	25.23	30.05	79.83	68.28	948.46	289.48	243.38	46.10	6.279	
10,000.00	9,932.94	10,010.03	9,857.68	25.41	30.29	86.15	69.09	961.28	300.78	254.25	46.53	6.464	
10,050.00	9,976.69	10,054.54	9,900.43	25.60	30.53	91.24	69.87	973.61	314.34	267.44	46.90	6.702	
10,100.00	10,018.30	10,096.95	9,941.17	25.79	30.75	95.44	70.62	985.36	330.55	283.38	47.17	7.008	
10,150.00	10,057.45	10,136.95	9,979.60	25.99	30.96	98.87	71.32	996.45	349.74	302.45	47.29	7.396	
10,200.00	10,093.84	10,174.23	10,015.41	26.20	31.15	101.53	71.98	1,006.78	372.15	324.88	47.27	7.873	
10,250.00	10,127.20	10,208.50	10,048.34	26.41	31.33	103.40	72.58	1,016.28	397.89	350.74	47.14	8.440	
10,300.00	10,157.27	10,239.52	10,078.14	26.64	31.50	104.42	73.13	1,024.88	426.91	379.94	46.98	9.088	
10,350.00	10,183.83	10,267.03	10,104.57	26.88	31.64	104.48	73.61	1,032.50	459.10	412.23	46.87	9.795	
10,400.00	10,206.66	10,290.84	10,127.44	27.13	31.77	103.47	74.03	1,039.10	494.21	447.27	46.94	10.529	
10,450.00	10,225.60	10,310.76	10,146.57	27.41	31.87	101.23	74.38	1,044.62	531.92	484.67	47.26	11.256	
10,500.00	10,240.51	10,326.63	10,161.83	27.70	31.95	97.56	74.66	1,049.02	571.89	524.04	47.85	11.951	
10,550.00	10,251.26	10,338.35	10,173.08	28.01	32.02	92.23	74.86	1,052.27	613.71	565.10	48.61	12.625	
10,600.00	10,257.78	10,345.81	10,180.25	28.34	32.06	85.08	74.99	1,054.34	656.97	607.76	49.21	13.349	
10,650.00	10,260.02	10,348.97	10,183.28	28.70	32.07	76.16	75.05	1,055.21	701.25	652.07	49.18	14.260	
10,656.11	10,260.00	10,349.06	10,183.37	28.74	32.07	74.96	75.05	1,055.24	706.70	657.60	49.10	14.393	
10,700.00	10,259.62	10,349.46	10,183.75	29.07	32.07	75.04	75.06	1,055.35	746.20	696.71	49.49	15.077	
10,800.00	10,258.74	11,573.90	10,836.44	29.89	37.89	139.50	864.39	1,243.06	759.94	722.74	37.20	20.431	
10,900.00	10,257.87	11,673.89	10,834.70	30.81	38.55	139.49	964.37	1,242.48	758.89	720.40	38.49	19.718	
11,000.00	10,257.00	11,773.89	10,832.95	31.80	39.28	139.48	1,064.35	1,241.91	757.84	717.93	39.91	18.989	
11,100.00	10,256.12	11,873.88	10,831.21	32.88	40.08	139.47	1,164.33	1,241.33	756.80	715.35	41.45	18.257	
11,200.00	10,255.25	11,973.88	10,829.46	34.02	40.96	139.46	1,264.30	1,240.75	755.75	712.65	43.10	17.535	
11,300.00	10,254.38	12,073.87	10,827.72	35.22	41.90	139.45	1,364.28	1,240.17	754.70	709.86	44.84	16.830	
11,400.00	10,253.51	12,173.86	10,825.97	36.47	42.90	139.44	1,464.26	1,239.59	753.66	706.99	46.67	16.149	
11,500.00	10,252.63	12,273.86	10,824.23	37.77	43.96	139.43	1,564.24	1,239.01	752.61	704.04	48.57	15.496	
11,600.00	10,251.76	12,373.85	10,822.48	39.12	45.08	139.42	1,664.21	1,238.43	751.56	701.03	50.54	14.872	
11,700.00	10,250.89	12,473.85	10,820.74	40.51	46.25	139.41	1,764.19	1,237.85	750.52	697.96	52.56	14.279	
11,800.00	10,250.02	12,573.84	10,818.99	41.93	47.46	139.41	1,864.17	1,237.27	749.47	694.83	54.64	13.717	
11,900.00	10,249.14	12,673.84	10,817.25	43.38	48.72	139.40	1,964.15	1,236.70	748.42	691.66	56.77	13.184	
12,000.00	10,248.27	12,773.83	10,815.50	44.86	50.01	139.39	2,064.12	1,236.12	747.38	688.44	58.93	12.682	
12,100.00	10,247.40	12,873.83	10,813.76	46.36	51.34	139.38	2,164.10	1,235.54	746.33	685.19	61.14	12.207	
12,200.00	10,246.53	12,973.82	10,812.01	47.89	52.71	139.37	2,264.08	1,234.96	745.28	681.91	63.38	11.760	
12,300.00	10,245.65	13,073.81	10,810.27	49.44	54.10	139.36	2,364.06	1,234.38	744.24	678.59	65.64	11.337	
12,400.00	10,244.78	13,173.81	10,808.52	51.00	55.52	139.35	2,464.03	1,233.80	743.19	675.25	67.94	10.939	
12,500.00	10,243.91	13,273.80	10,806.78	52.59	56.97	139.34	2,564.01	1,233.22	742.14	671.88	70.26	10.563	
12,600.00	10,243.04	13,373.80	10,805.03	54.19	58.44	139.33	2,663.99	1,232.64	741.10	668.49	72.61	10.207	
12,700.00	10,242.16	13,473.79	10,803.29	55.80	59.93	139.32	2,763.97	1,232.06	740.05	665.08	74.97	9.871	
12,800.00	10,241.29	13,573.79	10,801.54	57.43	61.44	139.31	2,863.94	1,231.49	739.01	661.65	77.35	9.554	
12,900.00	10,240.42	13,673.78	10,799.80	59.07	62.97	139.30	2,963.92	1,230.91	737.96	658.21	79.75	9.253	
13,000.00	10,239.54	13,773.78	10,798.05	60.72	64.52	139.29	3,063.90	1,230.33	736.91	654.75	82.17	8.968	
13,100.00	10,238.67	13,873.77	10,796.30	62.38	66.08	139.28	3,163.88	1,229.75	735.87	651.27	84.60	8.699	
13,200.00	10,237.80	13,973.76	10,794.56	64.05	67.65	139.27	3,263.85	1,229.17	734.82	647.78	87.04	8.442	
13,300.00	10,236.93	14,073.76	10,792.81	65.73	69.24	139.27	3,363.83	1,228.59	733.77	644.28	89.49	8.199	
13,377.24	10,236.25	14,151.00	10,791.47	67.03	70.48	139.26	3,441.05	1,228.14	732.97	641.57	91.40	8.019	
13,400.00	10,236.14	14,173.75	10,791.07	67.37	70.84	139.25	3,463.81	1,228.01	732.66	640.53	92.13	7.952	
13,427.24	10,236.25	14,200.99	10,790.59	67.75	71.28	139.22	3,491.04	1,227.86	732.11	639.11	93.00	7.872	
13,500.00	10,236.89	14,273.72	10,789.32	68.86	72.46	139.15	3,563.76	1,227.43	730.39	635.57	94.82	7.703	
13,600.00	10,237.76	14,373.68	10,787.58	70.56	74.08	139.05	3,663.71	1,226.86	728.02	630.58	97.44	7.472	
13,700.00	10,238.63	14,473.65	10,785.84	72.27	75.71	138.95	3,763.65	1,226.28	725.66	625.59	100.07	7.251	
13,800.00	10,239.51	14,573.61	10,784.09	73.98	77.35	138.85	3,863.60	1,225.70	723.30	620.58	102.72	7.041	
13,900.00	10,240.38	14,673.58	10,782.35	75.69	79.00	138.74	3,963.55	1,225.12	720.94	615.55	105.39	6.841	
14,000.00	10,241.25	14,773.54	10,780.60	77.42	80.66	138.64	4,063.49	1,224.54	718.59	610.52	108.07	6.649	

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #9H - Wellbore #1 - Plan #2													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)
14,100.00	10,242.12	14,873.50	10,778.86	79.14	82.33	138.54	4,163.44	1,223.96	716.23	605.47	110.76	6.466	
14,200.00	10,243.00	14,973.47	10,777.11	80.87	84.00	138.44	4,263.39	1,223.38	713.88	600.41	113.47	6.291	
14,300.00	10,243.87	15,073.43	10,775.37	82.61	85.68	138.33	4,363.34	1,222.81	711.53	595.34	116.19	6.124	
14,400.00	10,244.74	15,173.40	10,773.62	84.35	87.37	138.23	4,463.28	1,222.23	709.19	590.26	118.93	5.963	
14,500.00	10,245.61	15,273.36	10,771.88	86.09	89.06	138.12	4,563.23	1,221.65	706.84	585.16	121.68	5.809	
14,600.00	10,246.49	15,373.32	10,770.13	87.84	90.76	138.01	4,663.18	1,221.07	704.50	580.06	124.44	5.661	
14,700.00	10,247.36	15,473.29	10,768.39	89.59	92.46	137.91	4,763.12	1,220.49	702.16	574.95	127.21	5.520	
14,800.00	10,248.23	15,573.25	10,766.64	91.34	94.17	137.80	4,863.07	1,219.91	699.82	569.82	130.00	5.383	
14,900.00	10,249.10	15,673.22	10,764.90	93.10	95.88	137.69	4,963.02	1,219.33	697.49	564.69	132.80	5.252	
15,000.00	10,249.98	15,773.18	10,763.16	94.86	97.60	137.58	5,062.96	1,218.75	695.16	559.54	135.61	5.126	
15,100.00	10,250.85	15,873.14	10,761.41	96.62	99.32	137.47	5,162.91	1,218.18	692.83	554.39	138.44	5.005	
15,200.00	10,251.72	15,973.11	10,759.67	98.38	101.05	137.36	5,262.86	1,217.60	690.50	549.23	141.27	4.888	
15,222.72	10,251.92	15,989.46	10,759.38	98.79	101.33	137.34	5,279.21	1,217.50	690.00	548.18	141.82	4.865	
15,223.43	10,251.93	15,989.46	10,759.38	98.85	101.33	137.34	5,279.21	1,217.50	689.99	548.16	141.83	4.865	

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Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
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Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #9H - Wellbore #1 - Wellbore #1											Offset Site Error: 0.00 ft	
Survey Program: 197-MWD											Offset Well Error: 0.00 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)
0.00	0.00	0.00	0.00	0.00	0.00	-90.53	-1.40	-150.00	150.01			
100.00	100.00	99.12	99.12	0.09	0.10	-90.50	-1.31	-150.29	150.30	150.11	0.19 775.368	
200.00	200.00	198.24	198.23	0.32	0.21	-90.40	-1.05	-151.17	151.18	150.66	0.52 289.717	
300.00	300.00	298.09	298.08	0.54	0.43	-90.25	-0.67	-152.43	152.44	151.47	0.97 157.211	
400.00	400.00	399.24	399.22	0.77	0.63	-90.13	-0.36	-153.31	153.32	151.92	1.40 109.850	
500.00	500.00	500.04	500.02	0.99	0.83	-90.16	-0.42	-153.50	153.50	151.68	1.82 84.408	
590.92	590.92	590.94	590.92	1.20	1.02	-90.30	-0.81	-153.46	153.46	151.25	2.21 69.395	
600.00	600.00	599.98	599.96	1.22	1.03	-90.32	-0.85	-153.46	153.47	151.21	2.25 68.181	
700.00	700.00	699.78	699.76	1.44	1.24	-90.44	-1.19	-153.58	153.59	150.90	2.68 57.214	
800.00	800.00	799.79	799.77	1.67	1.45	-90.56	-1.50	-153.74	153.74	150.62	3.12 49.301	
900.00	900.00	899.95	899.93	1.89	1.67	-90.70	-1.87	-153.85	153.86	150.30	3.56 43.269	
1,000.00	1,000.00	999.62	999.60	2.12	1.88	-90.92	-2.47	-153.94	153.96	149.97	3.99 38.556	
1,100.00	1,100.00	1,099.11	1,099.09	2.34	2.09	-91.22	-3.29	-154.35	154.39	149.96	4.43 34.869	
1,200.00	1,200.00	1,198.28	1,198.25	2.56	2.30	-91.57	-4.24	-155.17	155.24	150.38	4.86 31.926	
1,300.00	1,300.00	1,296.73	1,296.67	2.79	2.51	-91.92	-5.24	-156.75	156.87	151.57	5.30 29.614	
1,400.00	1,400.00	1,396.00	1,395.91	3.01	2.73	-92.29	-6.35	-159.05	159.23	153.50	5.74 27.758	
1,500.00	1,500.00	1,495.72	1,495.60	3.24	2.94	-92.70	-7.63	-161.65	161.89	155.71	6.18 26.203	
1,600.00	1,600.00	1,596.22	1,596.05	3.46	3.16	-92.99	-8.58	-164.32	164.59	157.97	6.61 24.883	
1,700.00	1,700.00	1,698.36	1,698.16	3.69	3.37	-93.55	-10.28	-165.85	166.18	159.13	7.05 23.570	
1,800.00	1,800.00	1,798.86	1,798.63	3.91	3.58	-94.30	-12.53	-166.68	167.15	159.67	7.48 22.333	
1,900.00	1,900.00	1,899.13	1,898.88	4.14	3.79	-95.03	-14.70	-167.19	167.84	159.92	7.92 21.204	
2,000.00	2,000.00	1,999.51	1,999.24	4.36	3.99	-95.52	-16.20	-167.69	168.47	160.13	8.34 20.189	
2,100.00	2,100.00	2,100.18	2,099.92	4.59	4.20	-95.80	-17.06	-167.82	168.69	159.91	8.78 19.222	
2,200.00	2,200.00	2,200.30	2,200.04	4.81	4.40	-95.91	-17.38	-167.76	168.66	159.45	9.21 18.318	
2,300.00	2,300.00	2,300.39	2,300.12	5.04	4.61	-95.91	-17.37	-167.74	168.64	158.99	9.64 17.491	
2,400.00	2,400.00	2,400.67	2,400.40	5.26	4.82	-95.90	-17.31	-167.60	168.49	158.42	10.07 16.724	
2,500.00	2,500.00	2,500.60	2,500.33	5.49	5.03	-95.94	-17.42	-167.34	168.25	157.74	10.51 16.011	
2,600.00	2,600.00	2,601.82	2,601.55	5.71	5.24	-95.95	-17.38	-166.86	167.77	156.82	10.94 15.330	
2,700.00	2,700.00	2,702.80	2,702.52	5.94	5.45	-95.92	-17.16	-165.62	166.52	155.15	11.38 14.636	
2,800.00	2,800.00	2,803.07	2,802.78	6.16	5.66	-95.80	-16.66	-164.04	164.91	153.10	11.81 13.961	
2,900.00	2,900.00	2,903.38	2,903.07	6.39	5.87	-95.66	-16.08	-162.30	163.12	150.88	12.25 13.320	
3,000.00	3,000.00	3,003.35	3,003.03	6.61	6.07	-95.52	-15.50	-160.47	161.25	148.56	12.68 12.716	
3,100.00	3,100.00	3,103.39	3,103.05	6.84	6.28	-95.42	-15.05	-158.61	159.35	146.23	13.11 12.151	
3,200.00	3,200.00	3,203.11	3,202.75	7.06	6.49	-95.36	-14.71	-156.74	157.45	143.91	13.55 11.623	
3,300.00	3,300.00	3,302.00	3,301.63	7.28	6.70	-95.48	-14.92	-155.40	156.12	142.14	13.98 11.169	
3,400.00	3,400.00	3,401.63	3,401.25	7.51	6.90	-95.77	-15.59	-154.39	155.18	140.77	14.41 10.770	
3,500.00	3,500.00	3,501.15	3,500.76	7.73	7.11	-96.20	-16.69	-153.64	154.55	139.71	14.84 10.413	
3,600.00	3,600.00	3,600.74	3,600.34	7.96	7.32	-96.71	-18.03	-153.13	154.19	138.91	15.28 10.093	
3,663.63	3,663.63	3,664.04	3,663.63	8.10	7.46	-97.16	-19.21	-152.91	154.11	138.56	15.55 9.909	
3,700.00	3,700.00	3,700.12	3,699.70	8.18	7.53	-97.45	-19.99	-152.85	154.15	138.44	15.71 9.812	
3,800.00	3,800.00	3,799.80	3,799.35	8.41	7.74	-98.31	-22.33	-152.92	154.54	138.39	16.14 9.572	
3,900.00	3,900.00	3,899.83	3,899.37	8.63	7.95	-99.05	-24.36	-152.99	154.92	138.34	16.58 9.344	
4,000.00	4,000.00	4,000.40	3,999.92	8.86	8.16	-99.59	-25.86	-153.08	155.25	138.23	17.01 9.125	
4,080.10	4,080.10	4,080.57	4,080.08	9.04	8.33	-100.10	-27.21	-152.78	155.18	137.82	17.36 8.938	
4,100.00	4,100.00	4,100.34	4,099.84	9.08	8.37	-100.23	-27.57	-152.73	155.19	137.75	17.45 8.895	
4,200.00	4,200.00	4,199.86	4,199.35	9.31	8.59	-100.91	-29.42	-152.67	155.48	137.60	17.88 8.695	
4,300.00	4,300.00	4,299.44	4,298.91	9.53	8.80	-101.49	-31.09	-152.90	156.03	137.72	18.32 8.519	
4,400.00	4,400.00	4,400.14	4,399.61	9.76	9.01	-101.85	-32.15	-153.25	156.59	137.83	18.75 8.350	
4,500.00	4,500.00	4,499.56	4,499.03	9.98	9.22	-101.85	-32.22	-153.60	156.95	137.76	19.19 8.180	
4,600.00	4,600.00	4,599.72	4,599.18	10.21	9.43	-101.74	-32.05	-154.25	157.55	137.93	19.62 8.029	
4,700.00	4,700.00	4,699.63	4,699.09	10.43	9.64	-101.58	-31.73	-154.87	158.09	138.03	20.06 7.882	
4,800.00	4,800.00	4,800.09	4,799.55	10.66	9.85	-101.43	-31.40	-155.37	158.51	138.02	20.49 7.736	

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Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #9H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 ft
Survey Program: 197-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N-S (ft)	+E-W (ft)	(ft)	(ft)	(ft)			
4,900.00	4,900.00	4,900.16	4,899.62	10.88	10.05	-101.31	-31.15	-155.70	158.78	137.86	20.92	7.589		
5,000.00	5,000.00	5,000.54	5,000.00	11.11	10.26	-101.28	-31.08	-155.81	158.88	137.53	21.36	7.439		
5,100.00	5,100.00	5,100.60	5,100.05	11.33	10.47	-101.28	-31.09	-155.81	158.88	137.09	21.79	7.291		
5,200.00	5,200.00	5,200.77	5,200.23	11.56	10.68	-101.31	-31.13	-155.69	158.77	136.55	22.22	7.144		
5,300.00	5,300.00	5,300.77	5,300.22	11.78	10.89	-101.34	-31.20	-155.53	158.63	135.97	22.66	7.001		
5,400.00	5,400.00	5,400.91	5,400.37	12.00	11.10	-101.36	-31.20	-155.36	158.47	135.37	23.09	6.862		
5,500.00	5,500.00	5,501.91	5,501.37	12.23	11.31	-101.20	-30.72	-155.08	158.10	134.57	23.53	6.719		
5,600.00	5,600.00	5,605.98	5,605.41	12.45	11.53	-101.07	-29.93	-152.99	155.99	132.01	23.97	6.507		
5,700.00	5,699.98	5,710.43	5,709.73	12.67	11.74	-179.91	-29.06	-147.92	152.80	128.41	24.40	6.263		
5,800.00	5,799.84	5,815.10	5,814.07	12.87	11.97	-179.91	-27.47	-139.82	150.15	125.38	24.77	6.061		
5,900.00	5,899.45	5,918.58	5,916.94	13.08	12.19	179.93	-25.69	-128.75	148.02	122.90	25.12	5.892		
6,000.00	5,998.70	6,022.45	6,019.92	13.29	12.41	179.71	-23.63	-115.41	147.23	121.78	25.44	5.787		
6,031.74	6,030.11	6,055.09	6,052.20	13.36	12.49	179.59	-22.98	-110.60	147.11	121.57	25.54	5.760		
6,090.44	6,088.05	6,113.05	6,109.52	13.49	12.62	179.21	-22.28	-102.01	147.85	122.15	25.70	5.753		
6,100.00	6,097.47	6,122.49	6,118.85	13.52	12.64	179.13	-22.23	-100.62	148.10	122.36	25.74	5.754		
6,200.00	6,196.01	6,225.68	6,220.77	13.74	12.87	177.92	-22.30	-84.51	149.93	123.77	26.17	5.730		
6,300.00	6,294.54	6,332.14	6,325.28	13.98	13.13	176.49	-21.98	-64.22	148.35	121.75	26.61	5.576		
6,400.00	6,393.08	6,439.00	6,429.12	14.22	13.42	174.88	-20.62	-39.08	142.18	115.13	27.06	5.255		
6,500.00	6,491.62	6,542.92	6,528.82	14.47	13.72	172.73	-18.81	-9.90	131.48	103.96	27.51	4.779		
6,600.00	6,590.16	6,641.00	6,622.71	14.73	14.01	170.13	-17.24	18.44	120.27	92.30	27.96	4.301		
6,700.00	6,688.70	6,739.53	6,717.38	14.99	14.31	167.31	-15.57	45.71	110.47	82.04	28.43	3.886		
6,800.00	6,787.24	6,839.01	6,812.99	15.25	14.62	164.30	-13.22	73.07	100.85	71.93	28.92	3.487		
6,900.00	6,885.77	6,937.75	6,908.04	15.52	14.95	160.93	-10.79	99.68	92.03	62.59	29.44	3.126		
7,000.00	6,984.31	7,037.26	7,003.97	15.80	15.28	156.87	-8.61	126.04	84.13	54.14	30.00	2.805		
7,100.00	7,082.85	7,137.99	7,100.61	16.08	15.65	150.47	-7.45	154.45	76.03	45.36	30.67	2.479		
7,200.00	7,181.39	7,237.55	7,195.67	16.36	16.03	142.38	-5.31	183.96	67.33	35.87	31.46	2.140		
7,300.00	7,279.93	7,336.30	7,290.22	16.65	16.41	133.12	-2.96	212.35	60.62	28.28	32.34	1.874		
7,400.00	7,378.46	7,435.57	7,385.42	16.94	16.80	122.30	-0.82	240.42	56.27	22.95	33.32	1.689		
7,500.00	7,477.00	7,534.54	7,480.13	17.24	17.20	109.45	0.89	269.08	54.54	20.24	34.31	1.590		
7,502.11	7,479.09	7,536.64	7,482.14	17.24	17.21	109.19	0.93	269.67	54.54	20.22	34.33	1.589 CC, ES, SF		
7,600.00	7,575.54	7,633.77	7,575.38	17.53	17.60	97.47	2.39	296.85	55.86	20.74	35.12	1.590		
7,700.00	7,674.08	7,733.14	7,670.70	17.84	18.02	86.23	4.01	324.88	59.42	23.68	35.74	1.663		
7,800.00	7,772.62	7,832.81	7,766.21	18.14	18.44	76.19	5.93	353.28	64.84	28.67	36.17	1.793		
7,900.00	7,871.16	7,932.50	7,862.23	18.45	18.86	69.08	7.74	380.07	71.12	34.58	36.54	1.946		
8,000.00	7,969.69	8,031.77	7,957.64	18.76	19.29	62.58	10.18	407.33	78.18	41.33	36.86	2.121		
8,100.00	8,068.23	8,129.35	8,050.86	19.07	19.73	56.29	12.67	436.06	87.45	50.34	37.11	2.357		
8,200.00	8,166.77	8,229.41	8,146.45	19.39	20.19	51.37	14.63	465.55	98.00	60.61	37.39	2.621		
8,300.00	8,265.31	8,330.07	8,243.17	19.71	20.65	48.03	16.57	493.37	107.61	69.86	37.75	2.851		
8,400.00	8,363.85	8,428.77	8,337.90	20.03	21.09	45.15	18.59	521.01	117.75	79.64	38.11	3.090		
8,500.00	8,462.38	8,530.89	8,436.36	20.35	21.55	43.03	20.72	548.03	126.77	88.24	38.53	3.290		
8,600.00	8,560.92	8,631.36	8,533.53	20.67	21.98	41.39	23.06	573.43	134.78	95.81	38.97	3.459		
8,700.00	8,659.46	8,731.09	8,630.16	21.00	22.41	40.04	25.50	598.01	142.24	102.82	39.42	3.608		
8,800.00	8,758.00	8,828.84	8,724.74	21.33	22.84	38.97	27.24	622.63	150.57	110.69	39.88	3.775		
8,900.00	8,856.54	8,926.35	8,819.01	21.66	23.27	38.63	28.86	647.55	160.28	119.88	40.41	3.967		
9,000.00	8,955.08	9,022.72	8,911.98	21.99	23.71	38.68	24.97	672.84	171.35	130.39	40.97	4.183		
9,100.00	9,053.61	9,119.91	9,005.19	22.33	24.18	38.49	22.83	700.27	184.34	142.83	41.51	4.441		
9,200.00	9,152.15	9,216.75	9,097.84	22.66	24.66	38.10	21.15	728.41	197.90	155.86	42.04	4.708		
9,300.00	9,250.69	9,313.70	9,189.95	23.00	25.17	37.27	20.41	758.65	213.00	170.48	42.52	5.009		
9,400.00	9,349.23	9,410.38	9,281.28	23.34	25.70	35.89	21.80	790.29	228.68	185.73	42.95	5.324		
9,500.00	9,447.77	9,512.85	9,377.53	23.68	26.29	33.93	25.73	825.22	244.89	201.57	43.33	5.652		
9,600.00	9,546.30	9,619.08	9,478.10	24.02	26.86	32.00	31.67	858.91	258.39	214.68	43.71	5.912		
9,700.00	9,644.84	9,722.94	9,577.11	24.36	27.40	30.33	38.19	889.58	269.76	225.66	44.10	6.117		

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #9H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 ft
Survey Program: 197-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,770.16	9,713.98	9,795.73	9,646.84	24.60	27.77	29.34	42.68	910.02	276.87	232.48	44.39	6.237	
9,800.00	9,743.34	9,826.77	9,676.64	24.70	27.92	44.42	44.53	918.45	279.91	235.37	44.53	6.285	
9,850.00	9,792.21	9,826.00	9,675.91	24.87	27.92	62.06	44.49	918.24	290.33	245.76	44.57	6.515	
9,900.00	9,840.35	9,826.00	9,675.91	25.05	27.92	71.23	44.49	918.24	309.71	265.24	44.47	6.964	
9,950.00	9,887.37	9,826.00	9,675.91	25.23	27.92	75.07	44.49	918.24	336.38	292.09	44.29	7.594	
10,000.00	9,932.94	9,826.00	9,675.91	25.41	27.92	75.45	44.49	918.24	368.59	324.50	44.09	8.360	
10,050.00	9,976.69	9,826.00	9,675.91	25.60	27.92	73.36	44.49	918.24	404.79	360.89	43.90	9.222	
10,100.00	10,018.30	9,826.00	9,675.91	25.79	27.92	69.41	44.49	918.24	443.77	400.09	43.69	10.158	
10,150.00	10,057.45	9,826.00	9,675.91	25.99	27.92	64.09	44.49	918.24	484.61	441.25	43.36	11.177	
10,200.00	10,093.84	9,826.00	9,675.91	26.20	27.92	57.92	44.49	918.24	526.60	483.86	42.73	12.323	
10,250.00	10,127.20	9,826.00	9,675.91	26.41	27.92	51.41	44.49	918.24	569.19	527.54	41.65	13.667	
10,300.00	10,157.27	9,826.00	9,675.91	26.64	27.92	45.02	44.49	918.24	611.98	571.96	40.02	15.290	
10,350.00	10,183.83	9,826.00	9,675.91	26.88	27.92	39.08	44.49	918.24	654.63	616.71	37.92	17.265	
10,400.00	10,206.66	9,826.00	9,675.91	27.13	27.92	33.77	44.49	918.24	696.87	661.41	35.46	19.651	
10,450.00	10,225.60	9,826.00	9,675.91	27.41	27.92	29.14	44.49	918.24	738.48	705.63	32.85	22.477	
10,500.00	10,240.51	9,826.00	9,675.91	27.70	27.92	25.15	44.49	918.24	779.27	748.97	30.30	25.717	
10,550.00	10,251.26	9,826.00	9,675.91	28.01	27.92	21.73	44.49	918.24	819.07	791.06	28.01	29.239	
10,600.00	10,257.78	9,826.00	9,675.91	28.34	27.92	18.79	44.49	918.24	857.74	831.53	26.20	32.737	
10,650.00	10,260.02	9,826.00	9,675.91	28.70	27.92	16.26	44.49	918.24	895.14	870.08	25.06	35.718	
10,656.11	10,260.00	9,826.00	9,675.91	28.74	27.92	15.97	44.49	918.24	899.62	874.64	24.98	36.019	
10,700.00	10,259.62	9,826.00	9,675.91	29.07	27.92	15.97	44.49	918.24	932.20	907.04	25.16	37.046	
10,800.00	10,258.74	9,826.00	9,675.91	29.89	27.92	15.97	44.49	918.24	1,009.64	984.02	25.62	39.409	
10,900.00	10,257.87	9,826.00	9,675.91	30.81	27.92	15.97	44.49	918.24	1,090.75	1,064.64	26.11	41.770	
11,000.00	10,257.00	9,826.00	9,675.91	31.80	27.92	15.97	44.49	918.24	1,174.78	1,148.14	26.64	44.098	
11,100.00	10,256.12	9,826.00	9,675.91	32.88	27.92	15.97	44.49	918.24	1,261.14	1,233.94	27.20	46.369	
11,200.00	10,255.25	9,826.00	9,675.91	34.02	27.92	15.97	44.49	918.24	1,349.38	1,321.60	27.78	48.569	
11,300.00	10,254.38	9,826.00	9,675.91	35.22	27.92	15.97	44.49	918.24	1,439.17	1,410.77	28.39	50.690	
11,400.00	10,253.51	9,826.00	9,675.91	36.47	27.92	15.97	44.49	918.24	1,530.22	1,501.19	29.02	52.725	
11,500.00	10,252.63	9,826.00	9,675.91	37.77	27.92	15.97	44.49	918.24	1,622.32	1,592.65	29.67	54.673	
11,600.00	10,251.76	9,826.00	9,675.91	39.12	27.92	15.97	44.49	918.24	1,715.31	1,684.97	30.34	56.534	
11,700.00	10,250.89	9,826.00	9,675.91	40.51	27.92	15.97	44.49	918.24	1,809.05	1,778.02	31.02	58.310	
11,800.00	10,250.02	9,826.00	9,675.91	41.93	27.92	15.97	44.49	918.24	1,903.42	1,871.70	31.72	60.002	
11,900.00	10,249.14	9,826.00	9,675.91	43.38	27.92	15.97	44.49	918.24	1,998.35	1,965.91	32.43	61.614	
12,000.00	10,248.27	9,826.00	9,675.91	44.86	27.92	15.97	44.49	918.24	2,093.74	2,060.59	33.16	63.150	
12,100.00	10,247.40	9,826.00	9,675.91	46.36	27.92	15.97	44.49	918.24	2,189.55	2,155.66	33.89	64.612	
12,200.00	10,246.53	9,826.00	9,675.91	47.89	27.92	15.97	44.49	918.24	2,285.71	2,251.09	34.63	66.006	
12,300.00	10,245.65	9,826.00	9,675.91	49.44	27.92	15.97	44.49	918.24	2,382.20	2,346.82	35.38	67.333	
12,400.00	10,244.78	9,826.00	9,675.91	51.00	27.92	15.97	44.49	918.24	2,478.96	2,442.82	36.14	68.599	
12,500.00	10,243.91	9,826.00	9,675.91	52.59	27.92	15.97	44.49	918.24	2,575.96	2,539.06	36.90	69.806	
12,600.00	10,243.04	9,826.00	9,675.91	54.19	27.92	15.97	44.49	918.24	2,673.19	2,635.52	37.67	70.958	
12,700.00	10,242.16	9,826.00	9,675.91	55.80	27.92	15.97	44.49	918.24	2,770.62	2,732.17	38.45	72.058	
12,800.00	10,241.29	9,826.00	9,675.91	57.43	27.92	15.97	44.49	918.24	2,868.22	2,828.99	39.23	73.108	
12,900.00	10,240.42	9,826.00	9,675.91	59.07	27.92	15.97	44.49	918.24	2,965.98	2,925.96	40.02	74.113	
13,000.00	10,239.54	9,826.00	9,675.91	60.72	27.92	15.97	44.49	918.24	3,063.89	3,023.08	40.81	75.074	
13,100.00	10,238.67	9,826.00	9,675.91	62.38	27.92	15.97	44.49	918.24	3,161.93	3,120.32	41.61	75.994	
13,200.00	10,237.80	9,826.00	9,675.91	64.05	27.92	15.97	44.49	918.24	3,260.08	3,217.68	42.41	76.876	
13,300.00	10,236.93	9,826.00	9,675.91	65.73	27.92	15.97	44.49	918.24	3,358.35	3,315.14	43.21	77.721	
13,377.24	10,236.25	9,826.00	9,675.91	67.03	27.92	15.97	44.49	918.24	3,434.32	3,390.49	43.83	78.350	
13,400.00	10,236.14	9,826.00	9,675.91	67.37	27.92	16.70	44.49	918.24	3,456.73	3,412.18	44.55	77.585	
13,427.24	10,236.25	9,826.00	9,675.91	67.75	27.92	17.66	44.49	918.24	3,483.60	3,438.09	45.51	76.550	
13,500.00	10,236.89	9,826.00	9,675.91	68.86	27.92	17.66	44.49	918.24	3,555.44	3,509.35	46.09	77.136	
13,600.00	10,237.76	9,826.00	9,675.91	70.56	27.92	17.66	44.49	918.24	3,654.24	3,607.31	46.93	77.865	

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A #9H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 ft
Survey Program: 197-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,700.00	10,238.63	9,826.00	9,675.91	72.27	27.92	17.66	44.49	918.24	3,753.11	3,705.34	47.77	78.566	
13,800.00	10,239.51	9,826.00	9,675.91	73.98	27.92	17.66	44.49	918.24	3,852.03	3,803.42	48.61	79.240	
13,900.00	10,240.38	9,826.00	9,675.91	75.69	27.92	17.66	44.49	918.24	3,951.01	3,901.55	49.46	79.888	
14,000.00	10,241.25	9,826.00	9,675.91	77.42	27.92	17.66	44.49	918.24	4,050.03	3,999.73	50.30	80.512	
14,100.00	10,242.12	9,826.00	9,675.91	79.14	27.92	17.66	44.49	918.24	4,149.11	4,097.96	51.15	81.112	
14,200.00	10,243.00	9,826.00	9,675.91	80.87	27.92	17.66	44.49	918.24	4,248.23	4,196.22	52.00	81.691	
14,300.00	10,243.87	9,826.00	9,675.91	82.61	27.92	17.66	44.49	918.24	4,347.38	4,294.53	52.86	82.250	
14,400.00	10,244.74	9,826.00	9,675.91	84.35	27.92	17.66	44.49	918.24	4,446.58	4,392.87	53.71	82.788	
14,500.00	10,245.61	9,826.00	9,675.91	86.09	27.92	17.66	44.49	918.24	4,545.81	4,491.24	54.57	83.308	
14,600.00	10,246.49	9,826.00	9,675.91	87.84	27.92	17.66	44.49	918.24	4,645.07	4,589.65	55.42	83.811	
14,700.00	10,247.36	9,826.00	9,675.91	89.59	27.92	17.66	44.49	918.24	4,744.37	4,688.09	56.28	84.296	
14,800.00	10,248.23	9,826.00	9,675.91	91.34	27.92	17.66	44.49	918.24	4,843.69	4,786.55	57.14	84.765	
14,900.00	10,249.10	9,826.00	9,675.91	93.10	27.92	17.66	44.49	918.24	4,943.04	4,885.04	58.00	85.220	
15,000.00	10,249.98	9,826.00	9,675.91	94.86	27.92	17.66	44.49	918.24	5,042.42	4,983.55	58.87	85.659	
15,100.00	10,250.85	9,826.00	9,675.91	96.62	27.92	17.66	44.49	918.24	5,141.82	5,082.09	59.73	86.085	
15,200.00	10,251.72	9,826.00	9,675.91	98.38	27.92	17.66	44.49	918.24	5,241.24	5,180.65	60.59	86.497	
15,222.72	10,251.92	9,826.00	9,675.91	98.79	27.92	17.66	44.49	918.24	5,263.83	5,203.04	60.79	86.589	
15,223.43	10,251.93	9,826.00	9,675.91	98.85	27.92	17.66	44.49	918.24	5,264.54	5,203.75	60.79	86.595	

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A 1H - Wellbore #1 - Actual Wellbore														Offset Site Error:	0.00 ft
Survey Program: 100-NS-GYRO-MS, 7362-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.00	0.00	5.91	5.91	0.00	0.01	-48.82	118.90	-135.90	180.57						
100.00	100.00	104.42	104.42	0.09	0.11	-48.80	119.25	-136.24	181.06	180.85	0.21	878.926			
200.00	200.00	209.82	209.81	0.32	0.30	-48.64	119.42	-135.64	180.76	180.15	0.61	295.442			
300.00	300.00	311.28	311.22	0.54	0.46	-48.29	118.43	-132.89	178.09	177.08	1.01	177.140			
400.00	400.00	409.72	409.63	0.77	0.68	-48.12	117.35	-130.86	175.80	174.35	1.45	121.148			
500.00	500.00	508.72	508.63	0.99	0.92	-48.18	116.02	-129.65	174.00	172.10	1.91	91.256			
600.00	600.00	607.83	607.71	1.22	1.14	-48.49	114.32	-129.18	172.51	170.16	2.35	73.327			
700.00	700.00	707.90	707.76	1.44	1.34	-49.04	112.47	-129.55	171.57	168.79	2.78	61.634			
800.00	800.00	807.59	807.43	1.67	1.55	-49.80	110.29	-130.49	170.86	167.65	3.22	53.120			
900.00	900.00	907.58	907.38	1.89	1.76	-50.66	108.02	-131.78	170.40	166.74	3.65	46.624			
1,000.00	1,000.00	1,006.59	1,006.36	2.12	1.99	-51.53	105.80	-133.16	170.07	165.97	4.10	41.466			
1,100.00	1,100.00	1,106.39	1,106.12	2.34	2.22	-52.44	103.58	-134.71	169.93	165.38	4.55	37.311			
1,107.94	1,107.94	1,114.21	1,113.94	2.36	2.23	-52.51	103.42	-134.83	169.93	165.34	4.59	37.019			
1,200.00	1,200.00	1,206.39	1,206.08	2.56	2.45	-53.36	101.48	-136.43	170.03	165.02	5.01	33.933			
1,211.95	1,211.95	1,218.25	1,217.94	2.59	2.48	-53.47	101.22	-136.62	170.03	164.96	5.07	33.563			
1,300.00	1,300.00	1,306.20	1,305.86	2.79	2.69	-54.29	99.27	-138.10	170.08	164.60	5.47	31.066			
1,400.00	1,400.00	1,406.21	1,405.82	3.01	2.93	-55.25	97.01	-139.86	170.21	164.27	5.94	28.639			
1,500.00	1,500.00	1,506.40	1,505.97	3.24	3.18	-56.21	94.74	-141.58	170.36	163.94	6.42	26.552			
1,600.00	1,600.00	1,605.74	1,605.27	3.46	3.43	-57.20	92.36	-143.32	170.50	163.61	6.89	24.745			
1,700.00	1,700.00	1,705.81	1,705.29	3.69	3.69	-58.21	89.91	-145.09	170.69	163.33	7.37	23.166			
1,800.00	1,800.00	1,806.37	1,805.82	3.91	3.94	-59.07	87.79	-146.52	170.81	162.96	7.85	21.758			
1,878.84	1,878.84	1,885.41	1,884.84	4.09	4.15	-59.68	86.22	-147.44	170.79	162.56	8.23	20.747			
1,900.00	1,900.00	1,906.42	1,905.84	4.14	4.20	-59.84	85.82	-147.69	170.81	162.48	8.33	20.496			
2,000.00	2,000.00	2,008.14	2,007.54	4.36	4.47	-60.44	84.01	-148.15	170.32	161.50	8.82	19.308			
2,100.00	2,100.00	2,109.20	2,108.60	4.59	4.68	-60.65	82.86	-147.35	169.07	159.81	9.26	18.265			
2,200.00	2,200.00	2,210.51	2,209.89	4.81	4.82	-60.46	82.39	-145.37	167.14	157.52	9.62	17.374			
2,300.00	2,300.00	2,310.31	2,309.65	5.04	4.93	-60.00	82.45	-142.78	164.92	154.96	9.96	16.558			
2,400.00	2,400.00	2,409.68	2,408.98	5.26	5.03	-59.25	83.23	-139.88	162.80	152.51	10.28	15.830			
2,500.00	2,500.00	2,506.93	2,506.15	5.49	5.10	-58.06	85.40	-136.98	161.42	150.84	10.58	15.255			
2,527.54	2,527.54	2,534.33	2,533.54	5.55	5.11	-57.67	86.30	-136.37	161.39	150.73	10.66	15.142			
2,600.00	2,600.00	2,606.64	2,605.77	5.71	5.16	-56.57	88.96	-134.74	161.46	150.59	10.86	14.861			
2,700.00	2,700.00	2,706.80	2,705.85	5.94	5.23	-55.07	92.50	-132.44	161.54	150.38	11.16	14.473			
2,794.07	2,794.07	2,801.10	2,800.07	6.15	5.31	-53.76	95.47	-130.24	161.48	150.03	11.46	14.097			
2,800.00	2,800.00	2,806.94	2,805.91	6.16	5.31	-53.69	95.63	-130.13	161.49	150.01	11.47	14.074			
2,900.00	2,900.00	2,906.96	2,905.88	6.39	5.41	-52.50	98.41	-128.26	161.66	149.87	11.80	13.704			
3,000.00	3,000.00	3,006.22	3,005.09	6.61	5.52	-51.47	100.88	-126.68	161.94	149.81	12.13	13.353			
3,100.00	3,100.00	3,106.36	3,105.19	6.84	5.63	-50.45	103.40	-125.20	162.38	149.91	12.47	13.024			
3,200.00	3,200.00	3,206.84	3,205.62	7.06	5.76	-49.46	105.79	-123.67	162.75	149.93	12.82	12.695			
3,300.00	3,300.00	3,309.56	3,308.32	7.28	5.92	-48.70	107.13	-121.95	162.34	149.14	13.21	12.293			
3,400.00	3,400.00	3,410.73	3,409.47	7.51	6.14	-48.51	106.41	-120.30	160.65	147.00	13.65	11.771			
3,500.00	3,500.00	3,510.73	3,509.45	7.73	6.37	-48.58	104.79	-118.79	158.44	144.34	14.10	11.237			
3,600.00	3,600.00	3,611.13	3,609.82	7.96	6.60	-48.82	102.69	-117.39	156.01	141.45	14.56	10.717			
3,700.00	3,700.00	3,711.38	3,710.03	8.18	6.83	-49.19	100.32	-116.19	153.56	138.54	15.02	10.226			
3,800.00	3,800.00	3,811.13	3,809.75	8.41	7.07	-49.44	98.21	-114.74	151.08	135.60	15.48	9.761			
3,900.00	3,900.00	3,910.24	3,908.83	8.63	7.30	-49.36	96.88	-112.87	148.78	132.84	15.93	9.338			
3,966.14	3,966.14	3,973.11	3,971.69	8.78	7.42	-49.01	97.10	-111.74	148.04	131.83	16.20	9.137 CC, ES			
4,000.00	4,000.00	4,006.46	4,005.03	8.86	7.46	-48.68	97.86	-111.31	148.21	131.89	16.32	9.080			
4,100.00	4,100.00	4,106.21	4,104.74	9.08	7.60	-47.63	100.33	-109.98	148.88	132.20	16.68	8.925			
4,200.00	4,200.00	4,205.00	4,203.50	9.31	7.71	-46.82	102.91	-109.66	150.41	133.39	17.02	8.837			
4,300.00	4,300.00	4,303.89	4,302.35	9.53	7.82	-46.26	105.38	-110.10	152.45	135.09	17.35	8.784			
4,400.00	4,400.00	4,404.22	4,402.65	9.76	7.93	-45.94	107.53	-111.12	154.66	136.98	17.69	8.744			
4,500.00	4,500.00	4,503.76	4,502.17	9.98	8.05	-45.70	109.62	-112.34	157.01	138.98	18.03	8.710			

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
 Project: Lea County, NM
 Reference Site: Hamon Fed Pad
 Site Error: 0.00 ft
 Reference Well: Hamon Fed Com A #12H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
 TVD Reference: KB=18 @ 3628.00ft
 MD Reference: KB=18 @ 3628.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A 1H - Wellbore #1 - Actual Wellbore													Offset Site Error: 0.00 ft
Survey Program: 100-NS-GYRO-MS; 7362-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (ft)	+E/W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,600.00	4,600.00	4,603.76	4,602.13	10.21	8.17	-45.51	111.59	-113.61	159.29	140.92	18.37	8.670	
4,700.00	4,700.00	4,703.92	4,702.26	10.43	8.29	-45.31	113.68	-114.91	161.68	142.96	18.72	8.635	
4,800.00	4,800.00	4,803.53	4,801.84	10.66	8.43	-45.08	115.97	-116.30	164.29	145.21	19.08	8.610	
4,900.00	4,900.00	4,903.39	4,901.66	10.88	8.57	-44.84	118.29	-117.64	166.89	147.44	19.45	8.581	
5,000.00	5,000.00	5,004.02	5,002.26	11.11	8.72	-44.52	120.68	-118.69	169.31	149.49	19.82	8.541	
5,100.00	5,100.00	5,103.96	5,102.16	11.33	8.87	-44.18	123.13	-119.63	171.72	151.52	20.20	8.500	
5,200.00	5,200.00	5,203.92	5,202.09	11.56	9.04	-43.74	125.66	-120.25	173.97	153.38	20.59	8.450	
5,300.00	5,300.00	5,305.93	5,304.07	11.78	9.21	-43.29	127.85	-120.45	175.66	154.67	20.99	8.369	
5,400.00	5,400.00	5,410.07	5,408.14	12.00	9.41	-42.08	129.68	-117.08	174.72	153.31	21.42	8.158	
5,500.00	5,500.00	5,508.85	5,506.80	12.23	9.61	-40.54	132.03	-112.94	173.75	151.91	21.84	7.956	
5,600.00	5,600.00	5,610.44	5,608.14	12.45	9.82	-38.23	135.61	-106.81	172.64	150.37	22.27	7.753	
5,662.90	5,662.90	5,673.04	5,670.53	12.59	9.95	-115.54	138.18	-102.36	172.27	149.73	22.53	7.645	
5,700.00	5,699.98	5,710.04	5,707.40	12.67	10.02	-114.81	139.75	-99.66	172.38	149.69	22.69	7.597	
5,800.00	5,799.84	5,809.72	5,806.68	12.87	10.23	-113.44	144.33	-92.10	173.88	150.78	23.10	7.529 SF	
5,900.00	5,899.45	5,908.08	5,904.62	13.08	10.44	-112.96	149.41	-84.46	177.18	153.67	23.50	7.539	
6,000.00	5,998.70	6,005.21	6,001.25	13.29	10.65	-113.23	155.83	-77.11	183.16	159.25	23.90	7.662	
6,090.44	6,088.05	6,094.84	6,090.39	13.49	10.84	-114.16	162.56	-70.51	190.55	166.28	24.27	7.851	
6,100.00	6,097.47	6,104.34	6,099.83	13.52	10.86	-114.30	163.29	-69.82	191.42	167.10	24.31	7.874	
6,200.00	6,196.01	6,205.47	6,200.39	13.74	11.08	-115.76	170.86	-62.13	200.20	175.45	24.75	8.090	
6,300.00	6,294.54	6,305.50	6,299.82	13.98	11.31	-117.01	177.96	-53.90	208.40	183.21	25.19	8.273	
6,400.00	6,393.08	6,405.08	6,398.79	14.22	11.53	-118.11	185.10	-45.52	216.63	190.99	25.64	8.449	
6,500.00	6,491.62	6,504.54	6,497.69	14.47	11.76	-119.26	191.90	-37.55	224.94	198.84	26.09	8.620	
6,600.00	6,590.16	6,604.61	6,597.37	14.73	11.99	-120.75	197.57	-30.71	233.25	206.70	26.55	8.785	
6,700.00	6,688.70	6,706.18	6,698.58	14.99	12.22	-122.30	202.55	-23.85	241.23	214.21	27.02	8.929	
6,800.00	6,787.24	6,806.57	6,798.64	15.25	12.45	-123.77	206.90	-16.80	248.76	221.27	27.48	9.051	
6,900.00	6,885.77	6,905.05	6,896.72	15.52	12.68	-124.98	211.64	-9.38	256.41	228.46	27.95	9.173	
7,000.00	6,984.31	7,004.34	6,995.54	15.80	12.92	-125.96	217.14	-1.52	264.37	235.95	28.43	9.300	
7,100.00	7,082.85	7,102.93	7,093.66	16.08	13.15	-126.84	222.82	6.23	272.59	243.69	28.90	9.431	
7,200.00	7,181.39	7,202.17	7,192.44	16.36	13.39	-127.69	228.73	13.75	281.23	251.84	29.39	9.570	
7,300.00	7,279.93	7,301.85	7,291.66	16.65	13.63	-128.51	234.64	21.22	289.95	260.08	29.87	9.707	
7,400.00	7,378.46	7,402.57	7,391.89	16.94	13.73	-129.23	240.69	29.12	298.52	268.29	30.23	9.876	
7,500.00	7,477.00	7,503.01	7,491.73	17.24	13.74	-129.72	247.20	37.95	306.68	276.19	30.49	10.059	
7,600.00	7,575.54	7,602.36	7,590.49	17.53	13.75	-130.21	253.55	46.62	314.86	284.11	30.75	10.238	
7,700.00	7,674.08	7,701.13	7,688.72	17.84	13.77	-130.71	259.73	54.97	323.20	292.18	31.03	10.417	
7,800.00	7,772.62	7,799.67	7,786.77	18.14	13.79	-131.28	265.74	62.73	331.92	300.62	31.31	10.603	
7,900.00	7,871.16	7,898.05	7,884.60	18.45	13.82	-131.69	272.44	70.67	340.95	309.36	31.59	10.792	
8,000.00	7,969.69	7,996.53	7,982.46	18.76	13.85	-131.97	279.94	78.74	350.36	318.47	31.89	10.987	
8,100.00	8,068.23	8,094.32	8,079.68	19.07	13.89	-132.29	287.31	86.30	360.12	327.93	32.19	11.186	
8,200.00	8,166.77	8,191.89	8,176.76	19.39	13.93	-132.71	294.35	92.95	370.43	337.94	32.50	11.399	
8,300.00	8,265.31	8,292.02	8,276.44	19.71	13.98	-133.18	301.40	99.35	381.01	348.21	32.81	11.614	
8,400.00	8,363.85	8,396.98	8,380.88	20.03	14.04	-133.59	308.57	106.92	390.82	357.70	33.12	11.800	
8,500.00	8,462.38	8,499.01	8,482.42	20.35	14.09	-134.04	314.48	115.03	399.47	366.03	33.44	11.946	
8,600.00	8,560.92	8,596.14	8,579.10	20.67	14.15	-134.49	319.88	122.57	408.15	374.39	33.76	12.090	
8,700.00	8,659.46	8,699.23	8,671.88	21.00	14.21	-135.05	324.75	128.37	417.95	383.88	34.07	12.266	
8,800.00	8,758.00	8,787.06	8,769.48	21.33	14.27	-135.76	329.51	133.05	428.81	394.43	34.39	12.470	
8,900.00	8,856.54	8,904.05	8,886.09	21.66	14.36	-136.48	334.43	141.01	437.66	402.94	34.71	12.608	
9,000.00	8,955.08	9,009.67	9,075.85	21.99	14.59	-135.62	341.84	183.79	433.02	397.79	35.24	12.289	
9,100.00	9,053.61	9,202.37	9,165.73	22.33	14.87	-131.55	360.21	229.61	416.91	380.96	35.95	11.596	
9,200.00	9,152.15	9,288.82	9,234.40	22.66	15.24	-125.95	387.36	274.35	405.13	368.27	36.86	10.990	
9,299.22	9,249.92	9,366.70	9,288.16	23.00	15.70	-119.20	419.82	320.31	400.45	362.50	37.95	10.552	
9,300.00	9,250.69	9,367.17	9,288.47	23.00	15.70	-119.16	420.03	320.61	400.45	362.49	37.96	10.550	
9,400.00	9,349.23	9,421.94	9,322.15	23.34	16.11	-113.81	446.46	354.74	408.00	369.08	38.92	10.483	

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A 1H - Wellbore #1 - Actual Wellbore														Offset Site Error:	0.00 ft
Survey Program: 100-NS-GYRO-MS, 7362-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/S (ft)	Offset Wellbore Centre +E/W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
9,500.00	9,447.77	9,458.00	9,342.01	23.68	16.42	-110.09	466.03	377.59	431.17	391.48	39.69	10.864			
9,600.00	9,546.30	9,505.00	9,364.28	24.02	16.87	-105.12	494.39	407.69	469.70	429.10	40.60	11.570			
9,700.00	9,644.84	9,525.04	9,372.42	24.36	17.08	-103.00	507.40	420.56	521.31	480.14	41.17	12.662			
9,770.16	9,713.98	9,553.00	9,382.41	24.60	17.38	-100.10	526.35	438.53	564.22	522.50	41.71	13.526			
9,800.00	9,743.34	9,553.00	9,382.41	24.70	17.38	-83.66	526.35	438.53	582.94	541.12	41.82	13.938			
9,850.00	9,792.21	9,553.00	9,382.41	24.87	17.38	-63.67	526.35	438.53	613.85	572.04	41.81	14.682			
9,900.00	9,840.35	9,572.67	9,388.45	25.05	17.61	-49.69	540.13	451.20	643.36	601.66	41.71	15.426			
9,950.00	9,887.37	9,587.00	9,392.29	25.23	17.78	-40.78	550.33	460.50	671.61	630.34	41.27	16.273			
10,000.00	9,932.94	9,599.17	9,395.23	25.41	17.93	-34.64	559.08	468.42	698.35	657.79	40.56	17.219			
10,050.00	9,976.69	9,618.00	9,399.24	25.60	18.16	-29.68	572.76	480.73	723.47	683.85	39.61	18.263			
10,100.00	10,018.30	9,630.98	9,401.72	25.79	18.33	-26.16	582.28	489.20	746.75	708.35	38.40	19.448			
10,150.00	10,057.45	9,648.00	9,404.76	25.99	18.55	-23.14	594.90	500.21	768.08	731.11	36.97	20.777			
10,200.00	10,093.84	9,670.40	9,408.47	26.20	18.84	-20.41	611.77	514.46	787.28	751.95	35.34	22.279			
10,250.00	10,127.20	9,691.13	9,411.66	26.41	19.11	-18.22	627.71	527.33	804.26	770.74	33.52	23.993			
10,300.00	10,157.27	9,714.00	9,414.93	26.64	19.41	-16.30	645.73	541.02	818.95	787.39	31.56	25.949			
10,350.00	10,183.83	9,733.38	9,417.44	26.88	19.67	-14.80	661.31	552.27	831.26	801.75	29.50	28.174			
10,400.00	10,206.66	9,754.19	9,419.79	27.13	19.95	-13.47	678.31	564.03	841.15	813.75	27.41	30.691			
10,450.00	10,225.60	9,777.00	9,422.03	27.41	20.25	-12.26	697.46	576.23	848.62	823.27	25.34	33.485			
10,500.00	10,240.51	9,823.34	9,426.76	27.70	20.84	-10.47	737.24	599.51	852.82	829.45	23.37	36.499			
10,550.00	10,251.26	9,856.93	9,430.35	28.01	21.27	-9.28	766.66	615.33	853.50	831.82	21.67	39.378			
10,600.00	10,257.78	9,885.61	9,433.19	28.34	21.64	-8.37	792.30	627.85	851.11	830.71	20.40	41.730			
10,650.00	10,260.02	9,911.79	9,435.37	28.70	21.98	-7.62	816.12	638.50	845.84	826.17	19.67	43.010			
10,656.11	10,260.00	9,914.86	9,435.59	28.74	22.02	-7.54	818.93	639.71	845.00	825.38	19.62	43.068			
10,700.00	10,259.62	9,936.00	9,436.92	29.07	22.29	-7.00	838.42	647.78	839.44	819.66	19.78	42.441			
10,800.00	10,258.74	10,002.75	9,439.39	29.89	23.15	-5.46	901.08	670.63	830.60	810.33	20.27	40.986			
10,900.00	10,257.87	10,101.15	9,441.10	30.81	24.41	-3.31	994.35	701.89	825.26	804.24	21.01	39.270			
11,000.00	10,257.00	10,195.03	9,444.53	31.80	25.59	-1.36	1,083.83	730.11	819.34	797.41	21.94	37.351			
11,100.00	10,256.12	10,271.80	9,446.14	32.88	26.64	0.25	1,157.06	753.09	816.01	793.11	22.90	35.629			
11,142.47	10,255.75	10,302.97	9,446.21	33.36	27.07	0.91	1,186.79	762.45	815.68	792.34	23.34	34.941			
11,200.00	10,255.25	10,342.29	9,445.73	34.02	27.63	1.74	1,224.28	774.30	816.35	792.41	23.95	34.090			
11,300.00	10,254.38	10,491.83	9,448.16	35.22	29.64	4.68	1,367.81	816.03	815.10	789.18	25.92	31.448			
11,400.00	10,253.51	10,603.00	9,453.10	36.47	31.17	6.50	1,475.91	841.46	811.99	784.34	27.66	29.359			
11,500.00	10,252.63	10,679.74	9,455.88	37.77	32.25	7.59	1,551.09	856.52	809.85	780.77	29.08	27.853			
11,600.00	10,251.76	10,788.56	9,458.96	39.12	33.76	8.90	1,658.34	874.67	808.56	777.68	30.88	26.182			
11,700.00	10,250.89	10,889.98	9,461.13	40.51	35.17	9.89	1,758.80	888.33	807.80	775.19	32.61	24.774			
11,800.00	10,250.02	10,982.50	9,463.63	41.93	36.44	10.61	1,850.78	898.07	806.18	771.96	34.22	23.561			
11,822.83	10,249.82	10,999.11	9,463.83	42.26	36.67	10.72	1,867.32	899.56	806.08	771.55	34.53	23.342			
11,900.00	10,249.14	11,055.95	9,463.49	43.38	37.48	11.05	1,923.96	904.20	807.07	771.47	35.60	22.672			
12,000.00	10,248.27	11,149.59	9,460.12	44.86	38.78	11.39	2,017.37	909.74	810.84	773.74	37.11	21.853			
12,100.00	10,247.40	11,269.06	9,457.50	46.36	40.40	11.51	2,136.78	911.74	812.37	773.68	38.68	21.000			
12,200.00	10,246.53	11,359.85	9,455.25	47.89	41.66	11.47	2,227.54	911.42	813.87	773.88	39.99	20.353			
12,300.00	10,245.65	11,453.78	9,451.95	49.44	42.99	11.39	2,321.41	910.81	816.33	775.03	41.30	19.764			
12,400.00	10,244.78	11,570.36	9,448.75	51.00	44.60	11.29	2,437.94	909.81	817.97	775.19	42.77	19.123			
12,500.00	10,243.91	11,660.59	9,446.39	52.59	45.86	11.22	2,528.13	909.18	819.53	775.44	44.09	18.589			
12,600.00	10,243.04	11,783.22	9,444.91	54.19	47.57	11.15	2,650.74	908.19	819.59	773.96	45.63	17.960			
12,700.00	10,242.16	11,879.65	9,444.53	55.80	48.95	11.10	2,747.17	907.39	818.96	771.94	47.02	17.418			
12,743.97	10,241.78	11,920.80	9,444.13	56.52	49.56	11.06	2,788.31	906.80	818.89	771.28	47.61	17.200			
12,800.00	10,241.29	11,971.86	9,443.34	57.43	50.33	10.98	2,839.36	905.77	819.04	770.71	48.34	16.945			
12,900.00	10,240.42	12,068.23	9,440.88	59.07	51.80	10.78	2,935.65	903.06	820.15	770.53	49.62	16.529			
13,000.00	10,239.54	12,177.60	9,438.98	60.72	53.40	10.60	3,044.98	900.64	820.58	769.57	51.02	16.085			
13,068.55	10,238.95	12,245.51	9,438.25	61.86	54.40	10.48	3,112.86	898.92	820.40	768.48	51.93	15.800			
13,100.00	10,238.67	12,271.89	9,437.79	62.38	54.80	10.42	3,139.23	898.13	820.50	768.19	52.31	15.687			

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design: Hamon Fed Pad - Hamon Fed Com A 1H - Wellbore #1 - Actual Wellbore													Offset Site Error: 0.00 ft
Survey Program: 100-NS-GYRO-MS, 7362-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,200.00	10,237.80	12,358.49	9,435.14	64.05	56.13	10.19	3,225.74	895.18	822.03	768.53	53.50	15.364	
13,300.00	10,236.93	12,462.68	9,431.09	65.73	57.70	9.97	3,329.82	892.55	824.57	769.74	54.83	15.038	
13,377.24	10,236.25	12,546.64	9,429.32	67.03	58.96	9.86	3,413.74	891.16	825.26	769.33	55.93	14.755	
13,400.00	10,236.14	12,567.07	9,428.85	67.37	59.28	9.83	3,434.16	890.73	825.60	769.43	56.16	14.700	
13,427.24	10,236.25	12,591.50	9,428.19	67.75	59.66	9.78	3,458.58	890.15	826.32	769.89	56.43	14.643	
13,500.00	10,236.89	12,658.38	9,425.93	68.86	60.74	9.61	3,525.38	888.05	828.98	771.66	57.32	14.463	
13,600.00	10,237.76	12,750.41	9,421.91	70.56	62.23	9.28	3,617.24	884.03	833.44	774.96	58.48	14.252	
13,700.00	10,238.63	12,857.10	9,416.59	72.27	63.93	8.84	3,723.66	878.56	838.45	778.79	59.66	14.054	
13,800.00	10,239.51	12,958.49	9,412.49	73.98	65.52	8.30	3,824.70	871.33	842.25	781.53	60.72	13.870	
13,900.00	10,240.38	13,076.47	9,408.07	75.69	67.33	7.70	3,942.31	863.13	845.98	784.11	61.87	13.674	
14,000.00	10,241.25	13,183.27	9,407.13	77.42	68.99	7.22	4,048.89	856.33	846.85	783.82	63.03	13.436	
14,100.00	10,242.12	13,275.65	9,405.64	79.14	70.49	6.78	4,141.03	850.02	848.48	784.36	64.12	13.234	
14,200.00	10,243.00	13,368.36	9,403.28	80.87	71.99	6.28	4,233.45	842.91	851.00	785.83	65.17	13.058	
14,300.00	10,243.87	13,470.99	9,400.37	82.61	73.60	5.81	4,335.82	836.36	854.03	787.70	66.33	12.876	
14,400.00	10,244.74	13,606.94	9,400.32	84.35	75.72	5.43	4,471.63	830.78	854.50	786.71	67.79	12.606	
14,476.73	10,245.41	13,670.78	9,401.22	85.69	76.74	5.34	4,535.45	829.37	853.92	785.18	68.74	12.422	
14,500.00	10,245.61	13,688.00	9,401.32	86.09	77.01	5.32	4,552.67	829.13	853.98	784.95	69.03	12.372	
14,600.00	10,246.49	13,783.00	9,401.32	87.84	78.54	5.32	4,647.67	829.21	854.86	784.43	70.43	12.137	
14,700.00	10,247.36	13,878.00	9,400.74	89.59	80.10	5.41	4,742.66	830.62	856.48	784.57	71.90	11.912	
14,800.00	10,248.23	13,974.00	9,399.73	91.34	81.68	5.53	4,838.63	832.63	858.58	785.18	73.40	11.697	
14,900.00	10,249.10	14,075.16	9,398.35	93.10	83.37	5.69	4,939.74	835.38	861.08	786.10	74.98	11.484	
15,000.00	10,249.98	14,291.17	9,407.22	94.86	86.88	6.47	5,155.08	846.31	860.49	782.61	77.88	11.049	
15,100.00	10,250.85	14,453.09	9,436.99	96.62	89.50	7.57	5,313.67	859.13	842.88	762.15	80.73	10.440	
15,200.00	10,251.72	14,466.00	9,439.63	98.38	89.72	7.67	5,326.26	860.23	828.88	747.22	81.66	10.150	
15,222.72	10,251.92	14,466.00	9,439.63	98.79	89.72	7.67	5,326.26	860.23	827.33	745.50	81.83	10.110	
15,223.43	10,251.93	14,466.00	9,439.63	98.85	89.72	7.67	5,326.26	860.23	827.29	745.46	81.83	10.110	



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A 2H - Wellbore #1 - Actual Wellbore													Offset Site Error: 0.00 ft
Survey Program: 100-NS-GYRO-MS, 5522-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	4.97	4.97	0.00	0.01	-63.41	118.10	-235.90	263.81				
100.00	100.00	104.53	104.53	0.09	0.11	-63.46	117.91	-236.12	263.93	263.72	0.21	1,277.684	
200.00	200.00	203.58	203.57	0.32	0.36	-63.53	117.79	-236.55	264.26	263.58	0.68	388.255	
300.00	300.00	303.59	303.58	0.54	0.62	-63.62	117.66	-237.24	264.82	263.65	1.17	227.036	
400.00	400.00	403.71	403.70	0.77	0.89	-63.70	117.58	-237.86	265.34	263.68	1.65	160.395	
500.00	500.00	503.66	503.65	0.99	1.12	-63.78	117.35	-238.29	265.62	263.51	2.11	125.786	
600.00	600.00	603.97	603.96	1.22	1.38	-63.83	117.30	-238.73	265.99	263.40	2.59	102.508	
700.00	700.00	703.90	703.89	1.44	1.63	-63.95	116.91	-239.22	266.26	263.19	3.07	86.652	
800.00	800.00	803.21	803.19	1.67	1.89	-64.08	116.60	-239.95	266.78	263.22	3.56	74.968	
900.00	900.00	903.47	903.46	1.89	2.14	-64.15	116.61	-240.67	267.44	263.40	4.03	66.287	
1,000.00	1,000.00	1,004.02	1,004.00	2.12	2.41	-64.22	116.51	-241.26	267.92	263.40	4.52	59.228	
1,100.00	1,100.00	1,104.31	1,104.29	2.34	2.67	-64.30	116.31	-241.67	268.21	263.20	5.01	53.523	
1,200.00	1,200.00	1,204.47	1,204.45	2.56	2.92	-64.38	116.03	-241.98	268.36	262.88	5.48	48.961	
1,300.00	1,300.00	1,304.39	1,304.37	2.79	3.17	-64.49	115.66	-242.40	268.58	262.62	5.96	45.052	
1,400.00	1,400.00	1,404.00	1,403.98	3.01	3.43	-64.63	115.21	-242.92	268.86	262.42	6.44	41.737	
1,500.00	1,500.00	1,502.30	1,502.27	3.24	3.68	-64.78	114.83	-243.79	269.49	262.57	6.92	38.930	
1,600.00	1,600.00	1,603.01	1,602.97	3.46	3.93	-64.86	114.91	-244.85	270.48	263.09	7.40	36.562	
1,700.00	1,700.00	1,704.24	1,704.20	3.69	4.17	-64.91	114.80	-245.15	270.70	262.85	7.85	34.470	
1,800.00	1,800.00	1,803.69	1,803.65	3.91	4.42	-64.98	114.63	-245.62	271.05	262.71	8.34	32.517	
1,900.00	1,900.00	1,903.57	1,903.53	4.14	4.68	-65.05	114.58	-246.31	271.66	262.84	8.81	30.819	
2,000.00	2,000.00	2,004.22	2,004.18	4.36	4.92	-65.06	114.68	-246.64	272.00	262.72	9.28	29.317	
2,100.00	2,100.00	2,104.28	2,104.24	4.59	5.17	-65.09	114.67	-246.93	272.25	262.49	9.76	27.892	
2,200.00	2,200.00	2,204.30	2,204.26	4.81	5.43	-65.17	114.45	-247.37	272.56	262.32	10.24	26.609	
2,300.00	2,300.00	2,304.24	2,304.20	5.04	5.69	-65.23	114.38	-247.84	272.96	262.24	10.73	25.447	
2,400.00	2,400.00	2,404.28	2,404.23	5.26	5.94	-65.28	114.20	-248.09	273.12	261.92	11.20	24.392	
2,500.00	2,500.00	2,505.99	2,505.95	5.49	6.15	-65.37	113.87	-248.40	273.26	261.63	11.63	23.490	
2,600.00	2,600.00	2,609.12	2,609.07	5.71	6.20	-65.30	113.95	-247.74	272.72	260.82	11.91	22.906	
2,700.00	2,700.00	2,711.39	2,711.30	5.94	6.19	-64.91	114.72	-244.98	270.58	258.46	12.12	22.320	
2,800.00	2,800.00	2,812.35	2,812.21	6.16	6.19	-64.42	115.71	-241.78	268.14	255.79	12.35	21.710	
2,900.00	2,900.00	2,912.18	2,911.97	6.39	6.20	-63.88	116.85	-238.31	265.51	252.92	12.59	21.088	
3,000.00	3,000.00	3,012.26	3,011.97	6.61	6.23	-63.31	118.06	-234.82	262.92	250.08	12.84	20.475	
3,100.00	3,100.00	3,112.44	3,112.09	6.84	6.27	-62.75	119.05	-231.16	260.11	247.01	13.10	19.850	
3,200.00	3,200.00	3,212.37	3,211.95	7.06	6.32	-62.22	119.98	-227.75	257.52	244.14	13.38	19.251	
3,300.00	3,300.00	3,312.42	3,311.95	7.28	6.39	-61.92	119.86	-224.65	254.72	241.05	13.67	18.634	
3,400.00	3,400.00	3,411.89	3,411.39	7.51	6.49	-61.93	118.64	-222.43	252.17	238.17	14.00	18.016	
3,500.00	3,500.00	3,510.98	3,510.45	7.73	6.62	-62.12	116.81	-220.77	249.82	235.47	14.36	17.401	
3,600.00	3,600.00	3,611.11	3,610.54	7.96	6.78	-62.41	114.58	-219.23	247.43	232.70	14.74	16.790	
3,700.00	3,700.00	3,711.34	3,710.73	8.18	6.95	-62.77	112.12	-217.90	245.12	229.99	15.13	16.199	
3,800.00	3,800.00	3,811.30	3,810.66	8.41	7.13	-63.19	109.49	-216.63	242.79	227.25	15.54	15.627	
3,900.00	3,900.00	3,910.88	3,910.19	8.63	7.31	-63.63	106.84	-215.47	240.56	224.61	15.95	15.084	
4,000.00	4,000.00	4,009.77	4,009.04	8.86	7.51	-64.10	104.30	-214.75	238.77	222.40	16.37	14.584	
4,100.00	4,100.00	4,108.62	4,107.87	9.08	7.72	-64.54	102.02	-214.26	237.33	220.53	16.80	14.123	
4,200.00	4,200.00	4,207.49	4,206.72	9.31	7.94	-64.92	100.18	-214.03	236.32	219.08	17.24	13.705	
4,300.00	4,300.00	4,306.81	4,306.03	9.53	8.16	-65.25	98.70	-214.09	235.75	218.05	17.69	13.323	
4,400.00	4,400.00	4,407.04	4,406.25	9.76	8.40	-65.55	97.41	-214.25	235.36	217.20	18.15	12.965	
4,500.00	4,500.00	4,507.59	4,506.80	9.98	8.62	-65.78	96.35	-214.22	234.89	216.29	18.61	12.625	
4,600.00	4,600.00	4,607.76	4,606.96	10.21	8.82	-65.91	95.58	-213.75	234.15	215.12	19.03	12.305	
4,700.00	4,700.00	4,707.34	4,706.53	10.43	9.01	-65.99	94.94	-213.18	233.37	213.93	19.44	12.004	
4,800.00	4,800.00	4,806.14	4,805.34	10.66	9.20	-66.04	94.61	-212.90	232.98	213.12	19.86	11.733	
4,900.00	4,900.00	4,905.84	4,905.03	10.88	9.36	-66.04	94.54	-212.75	232.81	212.56	20.25	11.499	
4,902.33	4,902.33	4,908.13	4,907.33	10.89	9.37	-66.04	94.54	-212.75	232.81	212.55	20.26	11.494 CC	
5,000.00	5,000.00	5,005.51	5,004.70	11.11	9.53	-66.05	94.55	-212.85	232.90	212.26	20.64	11.285	

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A 2H - Wellbore #1 - Actual Wellbore													Offset Site Error:	0.00 ft
Survey Program: 100-NS-GYRO-MS 5522-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,100.00	5,100.00	5,105.42	5,104.61	11.33	9.66	-66.02	94.74	-212.94	233.07	212.08	20.99	11.102		
5,200.00	5,200.00	5,204.70	5,203.89	11.56	9.77	-65.98	94.93	-213.06	233.25	211.92	21.33	10.936	ES	
5,300.00	5,300.00	5,304.42	5,303.61	11.78	9.89	-65.89	95.44	-213.30	233.68	212.01	21.67	10.786		
5,400.00	5,400.00	5,404.09	5,403.28	12.00	10.00	-65.75	96.26	-213.64	234.33	212.33	22.00	10.650		
5,500.00	5,500.00	5,503.69	5,502.87	12.23	10.11	-65.61	97.08	-214.16	235.15	212.82	22.34	10.528		
5,600.00	5,600.00	5,603.29	5,602.46	12.45	10.22	-65.50	97.90	-214.87	236.14	213.47	22.67	10.416		
5,700.00	5,699.98	5,702.85	5,702.02	12.67	10.34	-144.42	98.71	-215.77	238.72	215.75	22.97	10.394		
5,800.00	5,799.84	5,802.24	5,801.40	12.87	10.45	-145.00	99.51	-216.86	244.31	221.07	23.25	10.510		
5,900.00	5,899.45	5,901.33	5,900.48	13.08	10.56	-145.98	100.29	-218.12	252.99	229.48	23.51	10.762		
6,000.00	5,998.70	5,999.97	5,999.10	13.29	10.67	-147.29	101.07	-219.57	264.84	241.09	23.74	11.154		
6,090.44	6,088.05	6,088.67	6,087.79	13.49	10.77	-148.67	101.75	-221.03	278.38	254.44	23.94	11.628		
6,100.00	6,097.47	6,098.02	6,097.14	13.52	10.78	-148.84	101.82	-221.19	279.95	255.98	23.97	11.680		
6,200.00	6,196.01	6,195.76	6,194.86	13.74	10.90	-150.51	102.57	-222.99	296.68	272.42	24.27	12.225		
6,300.00	6,294.54	6,293.43	6,292.51	13.98	11.01	-152.01	103.30	-224.97	313.81	289.24	24.57	12.771		
6,400.00	6,393.08	6,391.03	6,390.08	14.22	11.12	-153.36	104.03	-227.13	331.30	306.42	24.88	13.317		
6,500.00	6,491.62	6,488.56	6,487.58	14.47	11.23	-154.59	104.74	-229.47	349.13	323.94	25.19	13.862		
6,600.00	6,590.16	6,586.01	6,585.00	14.73	11.34	-155.71	105.45	-231.98	367.27	341.78	25.50	14.405		
6,700.00	6,688.70	6,683.40	6,682.35	14.99	11.45	-156.73	106.14	-234.68	385.72	359.91	25.81	14.946		
6,800.00	6,787.24	6,780.71	6,779.61	15.25	11.56	-157.66	106.83	-237.55	404.45	378.33	26.12	15.483		
6,900.00	6,885.77	6,877.96	6,876.81	15.52	11.67	-158.52	107.50	-240.60	423.46	397.02	26.44	16.017		
7,000.00	6,984.31	6,975.12	6,973.92	15.80	11.78	-159.30	108.17	-243.82	442.73	415.97	26.75	16.548		
7,100.00	7,082.85	7,072.22	7,070.95	16.08	11.89	-160.03	108.82	-247.23	462.25	435.17	27.07	17.074		
7,200.00	7,181.39	7,169.24	7,167.90	16.36	12.00	-160.70	109.46	-250.81	482.01	454.62	27.39	17.597		
7,300.00	7,279.93	7,266.18	7,264.77	16.65	12.11	-161.32	110.10	-254.56	502.01	474.30	27.71	18.115		
7,400.00	7,378.46	7,363.05	7,361.56	16.94	12.22	-161.90	110.72	-258.49	522.24	494.21	28.03	18.629		
7,500.00	7,477.00	7,459.84	7,458.26	17.24	12.33	-162.44	111.34	-262.60	542.70	514.35	28.36	19.138		
7,600.00	7,575.54	7,556.56	7,554.88	17.53	12.44	-162.94	111.94	-266.88	563.38	534.70	28.68	19.643		
7,700.00	7,674.08	7,653.19	7,651.41	17.84	12.55	-163.41	112.54	-271.33	584.28	555.28	29.01	20.144		
7,800.00	7,772.62	7,749.75	7,747.86	18.14	12.66	-163.85	113.12	-275.96	605.39	576.06	29.33	20.640		
7,900.00	7,871.16	7,846.24	7,844.22	18.45	12.77	-164.26	113.70	-280.76	626.71	597.06	29.66	21.132		
8,000.00	7,969.69	7,942.64	7,940.49	18.76	12.88	-164.64	114.26	-285.73	648.24	618.26	29.98	21.619		
8,100.00	8,068.23	8,038.96	8,036.68	19.07	12.98	-165.00	114.81	-290.87	669.97	639.66	30.31	22.102		
8,200.00	8,166.77	8,135.20	8,132.77	19.39	13.09	-165.35	115.36	-296.19	691.91	661.27	30.64	22.581		
8,300.00	8,265.31	8,231.37	8,228.77	19.71	13.20	-165.67	115.89	-301.68	714.04	683.07	30.97	23.056		
8,400.00	8,363.85	8,327.45	8,324.69	20.03	13.31	-165.97	116.42	-307.33	736.38	705.08	31.30	23.526		
8,500.00	8,462.38	8,423.45	8,420.51	20.35	13.42	-166.26	116.94	-313.16	758.91	727.28	31.63	23.992		
8,600.00	8,560.92	8,519.36	8,516.23	20.67	13.53	-166.53	117.44	-319.16	781.63	749.67	31.96	24.455		
8,700.00	8,659.46	8,615.20	8,611.87	21.00	13.64	-166.79	117.94	-325.32	804.55	772.25	32.29	24.913		
8,800.00	8,758.00	8,710.95	8,707.41	21.33	13.75	-167.03	118.42	-331.66	827.66	795.03	32.63	25.367		
8,900.00	8,856.54	8,806.61	8,802.85	21.66	13.85	-167.27	118.90	-338.16	850.96	818.00	32.96	25.818		
9,000.00	8,955.08	8,902.20	8,898.20	21.99	13.96	-167.49	119.37	-344.83	874.45	841.15	33.29	26.265		
9,100.00	9,053.61	8,997.69	8,993.45	22.33	14.07	-167.70	119.82	-351.67	898.12	864.50	33.63	26.708		
9,200.00	9,152.15	9,093.11	9,088.60	22.66	14.18	-167.90	120.27	-358.67	921.99	888.02	33.96	27.148		
9,300.00	9,250.69	9,188.43	9,183.66	23.00	14.29	-168.09	120.71	-365.84	946.04	911.74	34.30	27.584		
9,400.00	9,349.23	9,283.67	9,278.62	23.34	14.40	-168.27	121.14	-373.17	970.27	935.64	34.63	28.016		
9,500.00	9,447.77	9,378.82	9,373.47	23.68	14.50	-168.44	121.56	-380.67	994.69	959.72	34.97	28.446		
9,600.00	9,546.30	9,473.89	9,468.23	24.02	14.61	-168.61	121.96	-388.34	1,019.30	983.99	35.30	28.872		
9,700.00	9,644.84	9,568.86	9,562.88	24.36	14.72	-168.76	122.36	-396.16	1,044.08	1,008.44	35.64	29.294		
9,770.16	9,713.98	9,635.45	9,629.23	24.60	14.79	-168.87	122.64	-401.75	1,061.58	1,025.70	35.88	29.589		
9,800.00	9,743.34	9,663.72	9,657.40	24.70	14.83	-152.60	122.75	-404.15	1,069.05	1,033.05	36.00	29.700		
9,850.00	9,792.21	9,710.76	9,704.27	24.87	14.88	-132.97	122.94	-408.18	1,081.56	1,045.36	36.21	29.873		
9,900.00	9,840.35	9,757.09	9,750.42	25.05	14.93	-121.01	123.13	-412.18	1,094.07	1,057.64	36.43	30.035		

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A 2H - Wellbore #1 - Actual Wellbore													Offset Site Error: 0.00 ft
Survey Program: 100-NS-GYRO-MS, 5522-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,950.00	9,887.37	9,802.35	9,795.51	25.23	14.98	-113.52	123.31	-416.13	1,106.58	1,069.92	36.65	30.189	
10,000.00	9,932.94	9,846.20	9,839.19	25.41	15.03	-108.56	123.48	-420.00	1,119.15	1,082.26	36.89	30.340	
10,050.00	9,976.69	9,888.31	9,881.12	25.60	15.08	-105.10	123.64	-423.74	1,131.88	1,094.76	37.13	30.488	
10,100.00	10,018.30	9,928.35	9,921.00	25.79	15.13	-102.59	123.79	-427.34	1,144.88	1,107.51	37.37	30.635	
10,150.00	10,057.45	9,966.02	9,958.52	25.99	15.17	-100.67	123.94	-430.75	1,158.27	1,120.64	37.63	30.783	
10,200.00	10,093.84	10,001.05	9,993.41	26.20	15.21	-99.12	124.07	-433.94	1,172.19	1,134.29	37.90	30.931	
10,250.00	10,127.20	10,062.00	10,054.10	26.41	15.28	-98.87	124.29	-439.55	1,187.11	1,148.96	38.15	31.114	
10,300.00	10,157.27	10,062.00	10,054.10	26.64	15.28	-96.52	124.29	-439.55	1,202.10	1,163.60	38.49	31.229	
10,350.00	10,183.83	10,085.31	10,077.30	26.88	15.30	-95.16	124.31	-441.72	1,218.32	1,179.50	38.82	31.385	
10,400.00	10,206.66	10,107.22	10,099.11	27.13	15.33	-93.82	124.25	-443.78	1,235.51	1,196.35	39.15	31.555	
10,450.00	10,225.60	10,126.57	10,118.38	27.41	15.35	-92.40	124.24	-445.61	1,253.63	1,214.14	39.49	31.743	
10,500.00	10,240.51	10,142.05	10,133.80	27.70	15.37	-90.80	124.29	-447.07	1,272.69	1,232.86	39.82	31.959	
10,550.00	10,251.26	10,153.46	10,145.15	28.01	15.38	-89.01	124.34	-448.15	1,292.63	1,252.51	40.12	32.218	
10,600.00	10,257.78	10,160.61	10,152.27	28.34	15.39	-87.01	124.39	-448.83	1,313.37	1,273.01	40.36	32.538	
10,650.00	10,260.02	10,163.35	10,154.99	28.70	15.39	-84.80	124.41	-449.09	1,334.79	1,294.27	40.53	32.937	
10,656.11	10,260.00	10,163.37	10,155.02	28.74	15.39	-84.52	124.41	-449.09	1,337.45	1,296.91	40.54	32.991	
10,700.00	10,259.62	10,163.31	10,154.95	29.07	15.39	-84.51	124.41	-449.09	1,357.13	1,316.22	40.92	33.169	
10,800.00	10,258.74	10,163.15	10,154.80	29.89	15.39	-84.51	124.41	-449.07	1,406.08	1,364.24	41.84	33.605	
10,900.00	10,257.87	10,162.99	10,154.64	30.81	15.39	-84.50	124.40	-449.06	1,460.24	1,417.38	42.85	34.074	
11,000.00	10,257.00	10,162.82	10,154.47	31.80	15.39	-84.49	124.40	-449.04	1,519.06	1,475.11	43.95	34.566	
11,100.00	10,256.12	10,162.65	10,154.30	32.88	15.39	-84.48	124.40	-449.02	1,582.02	1,536.91	45.11	35.071	
11,200.00	10,255.25	12,003.38	10,861.97	34.02	29.32	-111.53	1,358.73	-777.94	1,645.24	1,588.69	56.55	29.095	
11,300.00	10,254.38	12,094.64	10,861.75	35.22	30.47	-111.63	1,449.77	-771.73	1,639.16	1,580.24	58.92	27.821	
11,400.00	10,253.51	12,212.65	10,861.11	36.47	32.01	-111.74	1,567.53	-764.08	1,633.33	1,571.64	61.69	26.476	
11,500.00	10,252.63	12,292.84	10,859.43	37.77	33.09	-111.77	1,647.54	-758.99	1,627.02	1,562.95	64.07	25.396	
11,600.00	10,251.76	12,376.23	10,858.91	39.12	34.20	-111.84	1,730.80	-754.43	1,622.03	1,555.54	66.49	24.394	
11,700.00	10,250.89	12,477.11	10,859.65	40.51	35.59	-111.97	1,831.53	-748.98	1,617.62	1,548.42	69.19	23.378	
11,800.00	10,250.02	12,580.53	10,859.23	41.93	37.09	-112.06	1,934.80	-743.43	1,612.83	1,540.79	72.03	22.390	
11,900.00	10,249.14	12,681.45	10,858.03	43.38	38.59	-112.11	2,035.58	-738.26	1,607.97	1,533.07	74.90	21.468	
12,000.00	10,248.27	12,775.82	10,855.81	44.86	40.01	-112.13	2,129.83	-733.96	1,603.21	1,525.48	77.73	20.626	
12,100.00	10,247.40	12,884.05	10,851.88	46.36	41.69	-112.08	2,237.90	-729.64	1,598.49	1,517.66	80.83	19.776	
12,200.00	10,246.53	12,980.59	10,848.14	47.89	43.15	-112.04	2,334.28	-725.61	1,593.50	1,509.75	83.75	19.026	
12,300.00	10,245.65	13,080.27	10,844.66	49.44	44.67	-112.01	2,433.81	-721.43	1,588.65	1,501.91	86.74	18.316	
12,400.00	10,244.78	13,201.02	10,841.21	51.00	46.53	-112.01	2,554.35	-715.21	1,583.13	1,493.08	90.05	17.581	
12,500.00	10,243.91	13,282.59	10,839.32	52.59	47.78	-112.04	2,635.77	-710.49	1,577.29	1,484.51	92.78	17.001	
12,600.00	10,243.04	13,354.98	10,839.95	54.19	48.87	-112.13	2,708.05	-706.91	1,573.31	1,477.99	95.32	16.506	
12,700.00	10,242.16	13,473.14	10,842.26	55.80	50.76	-112.33	2,826.03	-700.89	1,569.71	1,471.13	98.58	15.923	
12,800.00	10,241.29	13,571.91	10,843.25	57.43	52.33	-112.47	2,924.63	-695.20	1,565.11	1,463.53	101.57	15.409	
12,900.00	10,240.42	13,675.33	10,847.37	59.07	53.96	-112.74	3,027.71	-688.00	1,560.54	1,455.99	104.55	14.926	
13,000.00	10,239.54	13,767.78	10,849.75	60.72	55.45	-112.93	3,119.94	-682.05	1,555.97	1,448.54	107.43	14.484	
13,100.00	10,238.67	13,844.00	10,852.54	62.38	56.65	-113.11	3,196.00	-678.02	1,552.83	1,442.80	110.04	14.112	
13,200.00	10,237.80	13,925.07	10,857.07	64.05	57.92	-113.34	3,276.84	-674.05	1,550.89	1,438.21	112.68	13.764	
13,300.00	10,236.93	14,017.88	10,863.52	65.73	59.42	-113.65	3,369.34	-669.91	1,549.92	1,434.44	115.48	13.422	
13,377.24	10,236.25	14,097.76	10,868.25	67.03	60.75	-113.88	3,449.01	-666.84	1,549.32	1,431.51	117.80	13.152	
13,400.00	10,236.14	14,126.62	10,869.72	67.37	61.23	-113.94	3,477.81	-665.71	1,549.02	1,430.49	118.53	13.068	
13,427.24	10,236.25	14,155.20	10,871.01	67.75	61.71	-113.99	3,506.34	-664.58	1,548.50	1,429.20	119.29	12.981	
13,500.00	10,236.89	14,232.96	10,874.00	68.86	63.00	-114.12	3,583.98	-661.46	1,546.71	1,425.24	121.46	12.734	
13,600.00	10,237.76	14,337.55	10,877.90	70.56	64.75	-114.28	3,688.41	-657.15	1,544.13	1,419.56	124.57	12.395	
13,700.00	10,238.63	14,453.26	10,880.44	72.27	66.70	-114.41	3,804.00	-652.44	1,540.99	1,413.08	127.91	12.047	
13,800.00	10,239.51	14,565.01	10,881.20	73.98	68.57	-114.48	3,915.62	-647.28	1,536.70	1,405.50	131.21	11.712	
13,900.00	10,240.38	14,663.36	10,882.81	75.69	70.17	-114.59	4,013.81	-642.00	1,532.15	1,397.93	134.22	11.415	
14,000.00	10,241.25	14,752.56	10,883.85	77.42	71.64	-114.66	4,102.91	-637.79	1,528.00	1,390.85	137.15	11.141	

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



Integrity Directional Services, LLC

Anticollision Report



Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Hamon Fed Pad - Hamon Fed Com A 2H - Wellbore #1 - Actual Wellbore													Offset Site Error: 0.00 ft
Survey Program: 100-NS-GYRO-MS, 5522-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	10,242.12	14,842.35	10,884.41	79.14	73.13	-114.70	4,192.64	-634.61	1,524.68	1,384.57	140.11	10.882	
14,200.00	10,243.00	14,941.44	10,885.89	80.87	74.75	-114.78	4,291.65	-631.09	1,521.72	1,378.54	143.18	10.628	
14,300.00	10,243.87	15,052.96	10,886.29	82.61	76.62	-114.82	4,403.11	-627.30	1,518.44	1,371.95	146.49	10.365	
14,400.00	10,244.74	15,169.49	10,886.56	84.35	78.55	-114.88	4,519.52	-622.08	1,514.12	1,364.25	149.86	10.103	
14,500.00	10,245.61	15,290.75	10,887.30	86.09	80.55	-114.98	4,640.56	-614.76	1,508.53	1,355.29	153.25	9.844	
14,600.00	10,246.49	15,398.05	10,887.54	87.84	82.33	-115.08	4,747.59	-607.19	1,501.87	1,345.43	156.44	9.600	
14,700.00	10,247.36	15,491.72	10,888.68	89.59	83.87	-115.21	4,841.00	-600.27	1,495.33	1,335.96	159.37	9.383	
14,800.00	10,248.23	15,588.50	10,889.98	91.34	85.46	-115.33	4,937.52	-593.34	1,489.07	1,326.73	162.34	9.172	
14,900.00	10,249.10	15,690.67	10,893.14	93.10	87.14	-115.55	5,039.32	-585.38	1,482.99	1,317.68	165.31	8.971	
15,000.00	10,249.98	15,793.82	10,895.99	94.86	88.86	-115.76	5,142.08	-576.82	1,476.32	1,308.02	168.30	8.772	
15,100.00	10,250.85	15,885.37	10,897.47	96.62	90.41	-115.89	5,233.38	-570.25	1,470.18	1,298.98	171.20	8.587	
15,200.00	10,251.72	15,934.00	10,897.90	98.38	91.24	-115.95	5,281.90	-567.03	1,465.13	1,291.59	173.54	8.443	
15,222.72	10,251.92	15,934.00	10,897.90	98.79	91.24	-115.95	5,281.90	-567.03	1,464.74	1,290.83	173.91	8.422	
15,223.43	10,251.93	15,934.00	10,897.90	98.85	91.24	-115.95	5,281.90	-567.03	1,464.74	1,290.82	173.92	8.422 SF	

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



Integrity Directional Services, LLC

Anticollision Report



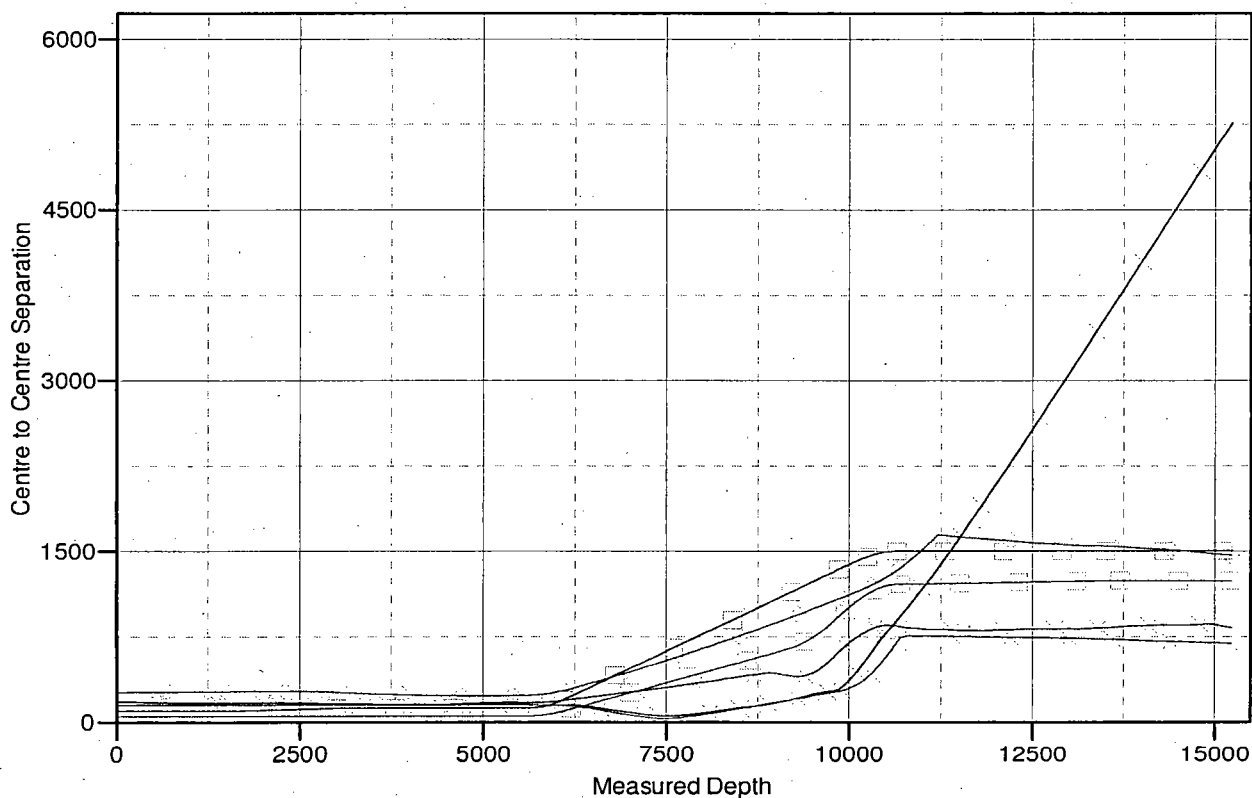
Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB=18 @ 3628.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.3333333

Coordinates are relative to: Hamon Fed Com A #12H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.32°

Ladder Plot



LEGEND

ed Com A #10H, Wellbore #1, Plan #2 V0
ed Com A #11H, Wellbore #1, Plan #2 V0



Hamon Fed Com A 2H, Wellbore #1, Actual Wellbore V0



Hamon Fed Com A 1H, Wellbore #1, Actual Wellbore V0



Hamon Fed Com A #9H, Wellbore #1, W



Hamon Fed Com A #9H, Wellbore #1, Pl



Integrity Directional Services, LLC

Anticollision Report



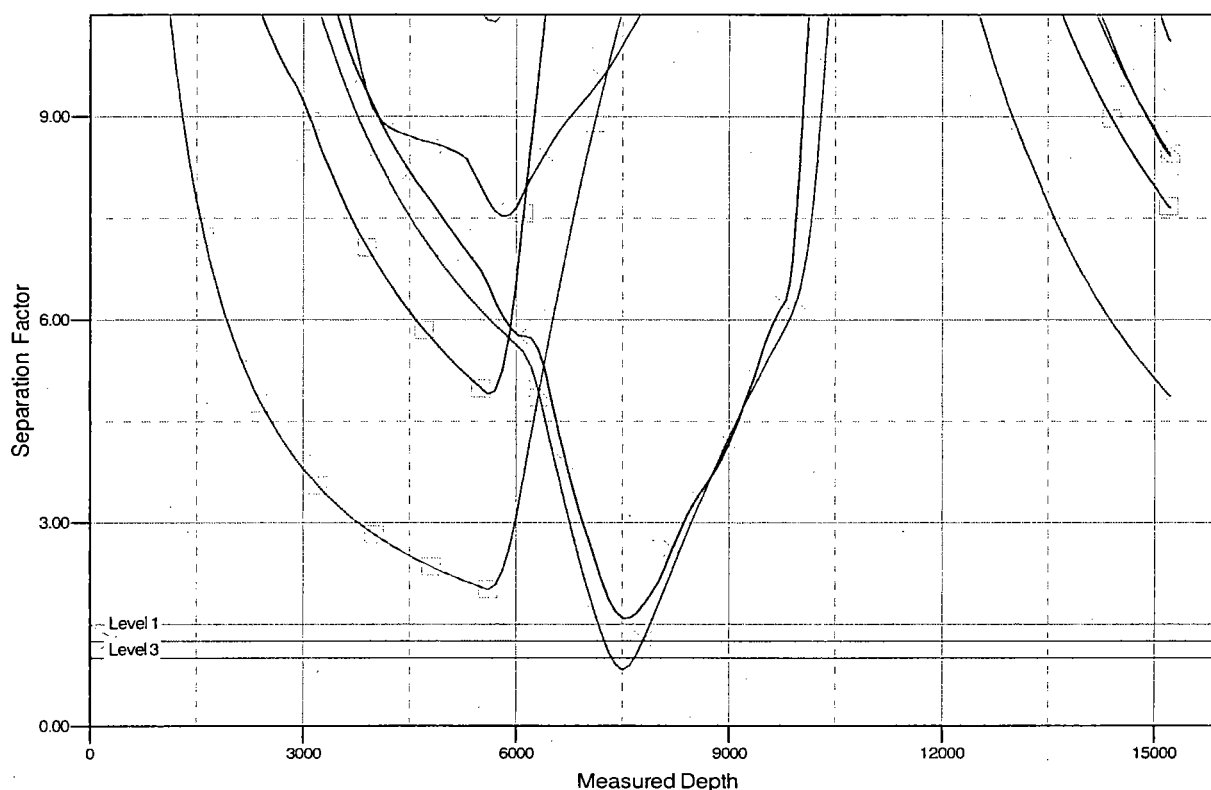
Company: Legacy Reserves Operating
Project: Lea County, NM
Reference Site: Hamon Fed Pad
Site Error: 0.00 ft
Reference Well: Hamon Fed Com A #12H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan#3

Local Co-ordinate Reference: Well Hamon Fed Com A #12H
TVD Reference: KB=18 @ 3628.00ft
MD Reference: KB=18 @ 3628.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB=18 @ 3628.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.3333333

Coordinates are relative to: Hamon Fed Com A #12H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.32°

Separation Factor Plot



LEGEND

ed Com A #10H, Wellbore #1, Plan #2 V0 ♦ Hamon Fed Com A2H, Wellbore #1, Actual Wellbore V0 ✕ Hamon Fed Com A #9H, Wellbore #1, W
ed Com A #11H, Wellbore #1, Plan #2 V0 ✕ Hamon Fed Com A1H, Wellbore #1, Actual Wellbore V0 ✕ Hamon Fed Com A #9H, Wellbore #1, Pl

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