

ENSIGN

Directional

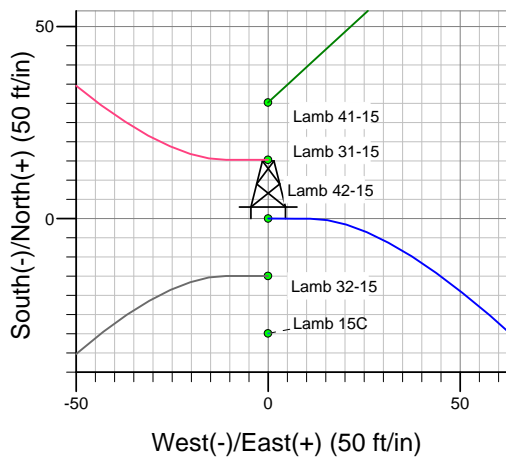
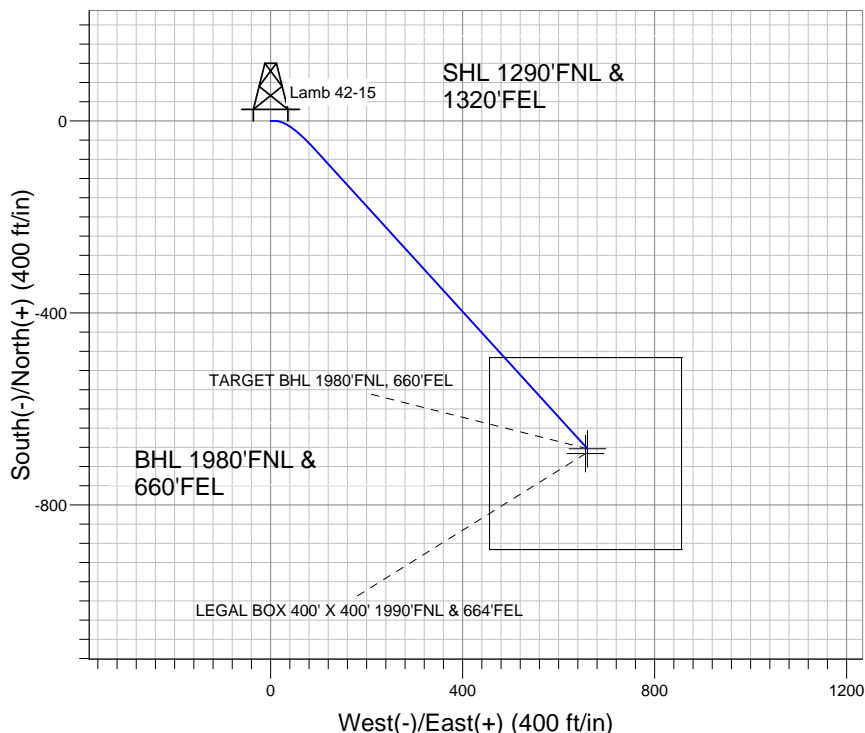
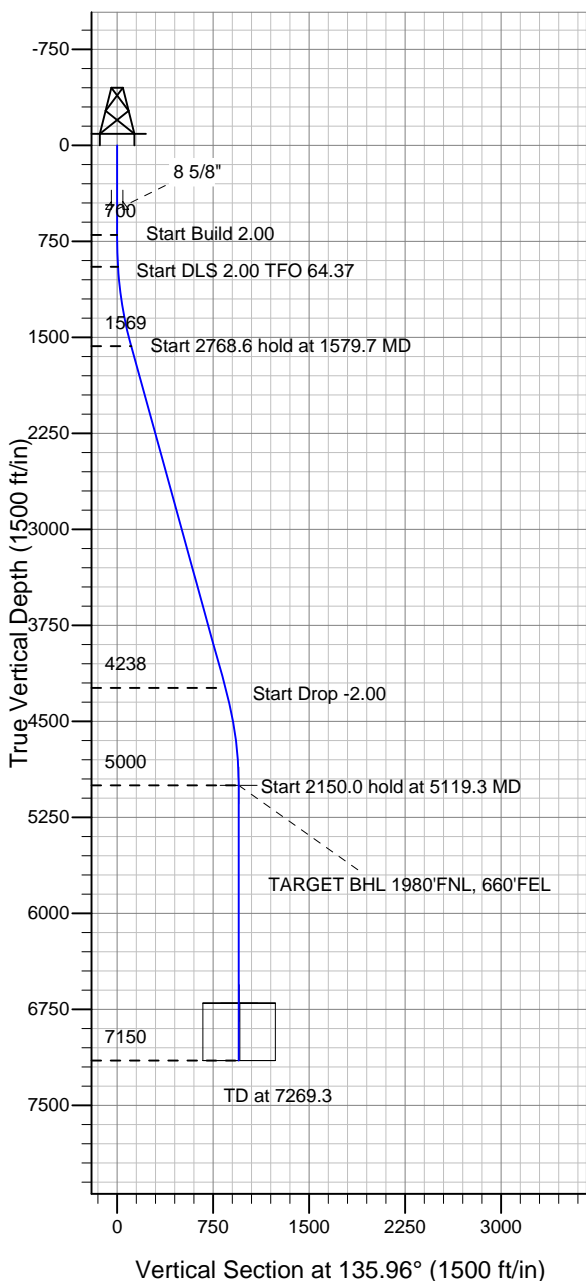
Well Name: Lamb 42-15

Surface Location: Lamb 5 Pad Sec.15-T4N-R68W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4941.0

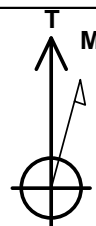
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1358856.22	3143747.51	40.317314	-104.984496	

Original Well Elev WELL @ 4954.0ft (Original Well Elev)

Sundance Energy, Weld County, CO



Lamb 5 Pad Sec.15-T4N-R68W
 Lamb 42-15
 Plan #1 (12-07-11)
 16:57, December 08 2011



Azimuths to True North
 Magnetic North: 8.91°

Magnetic Field
 Strength: 53012.7nT
 Dip Angle: 66.93°
 Date: 12/7/2011
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1980'FNL, 660'FEL	5000.0	-682.7	660.1	40.315440	-104.982129	Point
LEGAL BOX 400' X 400' 1990'FNL & 664'FEL	6701.0	-692.7	656.1	40.315413	-104.982143	Rectangle (Sides: L400.0 W400.0)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.0	
3	950.0	5.00	90.00	949.7	0.0	10.9	2.00	90.00	7.6	
4	1579.7	15.42	137.68	1569.4	-62.2	95.0	2.00	64.37	110.7	
5	4348.3	15.42	137.68	4238.3	-606.4	590.7	0.00	0.00	846.5	
6	5119.3	0.00	0.00	5000.0	-682.7	660.1	2.00	180.00	949.6	TARGET BHL 1980'FNL, 660'FEL
7	7269.3	0.00	0.00	7150.0	-682.7	660.1	0.00	0.00	949.6	



Sundance Energy, Weld County, CO

SEC.15-T4N-R68W

Lamb 5 Pad Sec.15-T4N-R68W

Lamb 42-15

Wellbore #1

Plan: Plan #1 (12-07-11)

Standard Planning Report

08 December, 2011

Database:	Landmark	Local Co-ordinate Reference:	Well Lamb 42-15
Company:	Sundance Energy, Weld County, CO	TVD Reference:	WELL @ 4954.0ft (Original Well Elev)
Project:	SEC.15-T4N-R68W	MD Reference:	WELL @ 4954.0ft (Original Well Elev)
Site:	Lamb 5 Pad Sec.15-T4N-R68W	North Reference:	True
Well:	Lamb 42-15	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-07-11)		

Project	SEC.15-T4N-R68W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		Lamb 5 Pad Sec.15-T4N-R68W			
Site Position:		Northing:	1,358,886.47 ft	Latitude:	40.317397
From:	Lat/Long	Easting:	3,143,747.33ft	Longitude:	-104.984496
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.33 °

Well	Lamb 42-15					
Well Position	+N-S	-30.2 ft	Northing:	1,358,856.22 ft	Latitude:	40.317314
	+E-W	0.0 ft	Easting:	3,143,747.51 ft	Longitude:	-104.984496
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,941.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/7/2011	8.91	66.93	53,013

Design	Plan #1 (12-07-11)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	135.96

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.00	0.00	
950.0	5.00	90.00	949.7	0.0	10.9	2.00	2.00	0.00	90.00	
1,579.7	15.42	137.68	1,569.4	-62.2	95.0	2.00	1.65	7.57	64.37	
4,348.3	15.42	137.68	4,238.3	-606.4	590.7	0.00	0.00	0.00	0.00	
5,119.3	0.00	0.00	5,000.0	-682.7	660.1	2.00	-2.00	0.00	180.00	TARGET BHL 198C
7,269.3	0.00	0.00	7,150.0	-682.7	660.1	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Lamb 42-15
Company:	Sundance Energy, Weld County, CO	TVD Reference:	WELL @ 4954.0ft (Original Well Elev)
Project:	SEC.15-T4N-R68W	MD Reference:	WELL @ 4954.0ft (Original Well Elev)
Site:	Lamb 5 Pad Sec.15-T4N-R68W	North Reference:	True
Well:	Lamb 42-15	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-07-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.40	90.00	720.0	0.0	0.1	0.0	2.00	2.00	0.00
760.0	1.20	90.00	760.0	0.0	0.6	0.4	2.00	2.00	0.00
800.0	2.00	90.00	800.0	0.0	1.7	1.2	2.00	2.00	0.00
840.0	2.80	90.00	839.9	0.0	3.4	2.4	2.00	2.00	0.00
880.0	3.60	90.00	879.9	0.0	5.7	3.9	2.00	2.00	0.00
920.0	4.40	90.00	919.8	0.0	8.4	5.9	2.00	2.00	0.00
950.0	5.00	90.00	949.7	0.0	10.9	7.6	2.00	2.00	0.00
960.0	5.09	92.03	959.6	0.0	11.8	8.2	2.00	0.90	20.33
1,000.0	5.51	99.44	999.5	-0.4	15.4	11.0	2.00	1.04	18.51
1,040.0	6.00	105.72	1,039.3	-1.3	19.4	14.4	2.00	1.24	15.69
1,080.0	6.56	110.99	1,079.0	-2.7	23.5	18.2	2.00	1.39	13.18
1,120.0	7.16	115.41	1,118.7	-4.5	27.9	22.6	2.00	1.50	11.06
1,160.0	7.80	119.13	1,158.4	-6.9	32.5	27.6	2.00	1.59	9.30
1,200.0	8.46	122.28	1,198.0	-9.8	37.4	33.0	2.00	1.66	7.88
1,240.0	9.15	124.97	1,237.5	-13.2	42.5	39.0	2.00	1.72	6.72
1,280.0	9.85	127.29	1,277.0	-17.1	47.8	45.5	2.00	1.76	5.78
1,320.0	10.57	129.29	1,316.4	-21.5	53.3	52.5	2.00	1.79	5.01
1,360.0	11.29	131.04	1,355.6	-26.4	59.1	60.1	2.00	1.82	4.38
1,400.0	12.03	132.58	1,394.8	-31.8	65.2	68.2	2.00	1.84	3.85
1,440.0	12.78	133.94	1,433.9	-37.7	71.4	76.7	2.00	1.86	3.41
1,480.0	13.53	135.16	1,472.8	-44.1	77.9	85.8	2.00	1.88	3.04
1,520.0	14.28	136.25	1,511.6	-51.0	84.6	95.4	2.00	1.89	2.72
1,560.0	15.04	137.23	1,550.3	-58.3	91.5	105.6	2.00	1.90	2.45
1,579.7	15.42	137.68	1,569.4	-62.2	95.0	110.7	2.00	1.91	2.28
1,600.0	15.42	137.68	1,588.9	-66.1	98.7	116.1	0.00	0.00	0.00
1,640.0	15.42	137.68	1,627.5	-74.0	105.8	126.8	0.00	0.00	0.00
1,680.0	15.42	137.68	1,666.0	-81.9	113.0	137.4	0.00	0.00	0.00
1,720.0	15.42	137.68	1,704.6	-89.7	120.2	148.0	0.00	0.00	0.00
1,760.0	15.42	137.68	1,743.2	-97.6	127.3	158.7	0.00	0.00	0.00
1,800.0	15.42	137.68	1,781.7	-105.5	134.5	169.3	0.00	0.00	0.00
1,840.0	15.42	137.68	1,820.3	-113.3	141.6	179.9	0.00	0.00	0.00
1,880.0	15.42	137.68	1,858.8	-121.2	148.8	190.6	0.00	0.00	0.00
1,920.0	15.42	137.68	1,897.4	-129.0	156.0	201.2	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Lamb 42-15
Company:	Sundance Energy, Weld County, CO	TVD Reference:	WELL @ 4954.0ft (Original Well Elev)
Project:	SEC.15-T4N-R68W	MD Reference:	WELL @ 4954.0ft (Original Well Elev)
Site:	Lamb 5 Pad Sec.15-T4N-R68W	North Reference:	True
Well:	Lamb 42-15	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-07-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,960.0	15.42	137.68	1,936.0	-136.9	163.1	211.8	0.00	0.00	0.00
2,000.0	15.42	137.68	1,974.5	-144.8	170.3	222.4	0.00	0.00	0.00
2,040.0	15.42	137.68	2,013.1	-152.6	177.4	233.1	0.00	0.00	0.00
2,080.0	15.42	137.68	2,051.6	-160.5	184.6	243.7	0.00	0.00	0.00
2,120.0	15.42	137.68	2,090.2	-168.4	191.8	254.3	0.00	0.00	0.00
2,160.0	15.42	137.68	2,128.8	-176.2	198.9	265.0	0.00	0.00	0.00
2,200.0	15.42	137.68	2,167.3	-184.1	206.1	275.6	0.00	0.00	0.00
2,240.0	15.42	137.68	2,205.9	-192.0	213.2	286.2	0.00	0.00	0.00
2,280.0	15.42	137.68	2,244.4	-199.8	220.4	296.9	0.00	0.00	0.00
2,320.0	15.42	137.68	2,283.0	-207.7	227.6	307.5	0.00	0.00	0.00
2,360.0	15.42	137.68	2,321.6	-215.6	234.7	318.1	0.00	0.00	0.00
2,400.0	15.42	137.68	2,360.1	-223.4	241.9	328.8	0.00	0.00	0.00
2,440.0	15.42	137.68	2,398.7	-231.3	249.0	339.4	0.00	0.00	0.00
2,480.0	15.42	137.68	2,437.2	-239.1	256.2	350.0	0.00	0.00	0.00
2,520.0	15.42	137.68	2,475.8	-247.0	263.4	360.6	0.00	0.00	0.00
2,560.0	15.42	137.68	2,514.4	-254.9	270.5	371.3	0.00	0.00	0.00
2,600.0	15.42	137.68	2,552.9	-262.7	277.7	381.9	0.00	0.00	0.00
2,640.0	15.42	137.68	2,591.5	-270.6	284.9	392.5	0.00	0.00	0.00
2,680.0	15.42	137.68	2,630.0	-278.5	292.0	403.2	0.00	0.00	0.00
2,720.0	15.42	137.68	2,668.6	-286.3	299.2	413.8	0.00	0.00	0.00
2,760.0	15.42	137.68	2,707.2	-294.2	306.3	424.4	0.00	0.00	0.00
2,800.0	15.42	137.68	2,745.7	-302.1	313.5	435.1	0.00	0.00	0.00
2,840.0	15.42	137.68	2,784.3	-309.9	320.7	445.7	0.00	0.00	0.00
2,880.0	15.42	137.68	2,822.8	-317.8	327.8	456.3	0.00	0.00	0.00
2,920.0	15.42	137.68	2,861.4	-325.6	335.0	467.0	0.00	0.00	0.00
2,960.0	15.42	137.68	2,900.0	-333.5	342.1	477.6	0.00	0.00	0.00
3,000.0	15.42	137.68	2,938.5	-341.4	349.3	488.2	0.00	0.00	0.00
3,040.0	15.42	137.68	2,977.1	-349.2	356.5	498.8	0.00	0.00	0.00
3,080.0	15.42	137.68	3,015.6	-357.1	363.6	509.5	0.00	0.00	0.00
3,120.0	15.42	137.68	3,054.2	-365.0	370.8	520.1	0.00	0.00	0.00
3,160.0	15.42	137.68	3,092.8	-372.8	377.9	530.7	0.00	0.00	0.00
3,200.0	15.42	137.68	3,131.3	-380.7	385.1	541.4	0.00	0.00	0.00
3,240.0	15.42	137.68	3,169.9	-388.6	392.3	552.0	0.00	0.00	0.00
3,280.0	15.42	137.68	3,208.4	-396.4	399.4	562.6	0.00	0.00	0.00
3,320.0	15.42	137.68	3,247.0	-404.3	406.6	573.3	0.00	0.00	0.00
3,360.0	15.42	137.68	3,285.6	-412.1	413.7	583.9	0.00	0.00	0.00
3,400.0	15.42	137.68	3,324.1	-420.0	420.9	594.5	0.00	0.00	0.00
3,440.0	15.42	137.68	3,362.7	-427.9	428.1	605.1	0.00	0.00	0.00
3,480.0	15.42	137.68	3,401.2	-435.7	435.2	615.8	0.00	0.00	0.00
3,520.0	15.42	137.68	3,439.8	-443.6	442.4	626.4	0.00	0.00	0.00
3,560.0	15.42	137.68	3,478.4	-451.5	449.5	637.0	0.00	0.00	0.00
3,600.0	15.42	137.68	3,516.9	-459.3	456.7	647.7	0.00	0.00	0.00
3,640.0	15.42	137.68	3,555.5	-467.2	463.9	658.3	0.00	0.00	0.00
3,680.0	15.42	137.68	3,594.0	-475.1	471.0	668.9	0.00	0.00	0.00
3,720.0	15.42	137.68	3,632.6	-482.9	478.2	679.6	0.00	0.00	0.00
3,760.0	15.42	137.68	3,671.2	-490.8	485.3	690.2	0.00	0.00	0.00
3,800.0	15.42	137.68	3,709.7	-498.6	492.5	700.8	0.00	0.00	0.00
3,840.0	15.42	137.68	3,748.3	-506.5	499.7	711.5	0.00	0.00	0.00
3,880.0	15.42	137.68	3,786.8	-514.4	506.8	722.1	0.00	0.00	0.00
3,920.0	15.42	137.68	3,825.4	-522.2	514.0	732.7	0.00	0.00	0.00
3,960.0	15.42	137.68	3,864.0	-530.1	521.1	743.3	0.00	0.00	0.00
4,000.0	15.42	137.68	3,902.5	-538.0	528.3	754.0	0.00	0.00	0.00
4,040.0	15.42	137.68	3,941.1	-545.8	535.5	764.6	0.00	0.00	0.00
4,042.0	15.42	137.68	3,943.0	-546.2	535.8	765.1	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Lamb 42-15
Company:	Sundance Energy, Weld County, CO	TVD Reference:	WELL @ 4954.0ft (Original Well Elev)
Project:	SEC.15-T4N-R68W	MD Reference:	WELL @ 4954.0ft (Original Well Elev)
Site:	Lamb 5 Pad Sec.15-T4N-R68W	North Reference:	True
Well:	Lamb 42-15	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-07-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
SUSSEX									
4,080.0	15.42	137.68	3,979.6	-553.7	542.6	775.2	0.00	0.00	0.00
4,120.0	15.42	137.68	4,018.2	-561.6	549.8	785.9	0.00	0.00	0.00
4,160.0	15.42	137.68	4,056.8	-569.4	557.0	796.5	0.00	0.00	0.00
4,200.0	15.42	137.68	4,095.3	-577.3	564.1	807.1	0.00	0.00	0.00
4,240.0	15.42	137.68	4,133.9	-585.2	571.3	817.8	0.00	0.00	0.00
4,280.0	15.42	137.68	4,172.4	-593.0	578.4	828.4	0.00	0.00	0.00
4,320.0	15.42	137.68	4,211.0	-600.9	585.6	839.0	0.00	0.00	0.00
4,348.3	15.42	137.68	4,238.3	-606.4	590.7	846.5	0.00	0.00	0.00
4,360.0	15.19	137.68	4,249.6	-608.7	592.7	849.6	2.00	-2.00	0.00
4,400.0	14.39	137.68	4,288.3	-616.3	599.6	859.8	2.00	-2.00	0.00
4,440.0	13.59	137.68	4,327.1	-623.4	606.1	869.5	2.00	-2.00	0.00
4,458.4	13.22	137.68	4,345.0	-626.6	609.0	873.8	2.00	-2.00	0.00
SHANNON									
4,480.0	12.79	137.68	4,366.0	-630.2	612.3	878.6	2.00	-2.00	0.00
4,520.0	11.99	137.68	4,405.1	-636.5	618.0	887.2	2.00	-2.00	0.00
4,560.0	11.19	137.68	4,444.3	-642.5	623.4	895.2	2.00	-2.00	0.00
4,600.0	10.39	137.68	4,483.6	-648.0	628.5	902.7	2.00	-2.00	0.00
4,640.0	9.59	137.68	4,523.0	-653.1	633.2	909.6	2.00	-2.00	0.00
4,680.0	8.79	137.68	4,562.4	-657.8	637.5	916.0	2.00	-2.00	0.00
4,720.0	7.99	137.68	4,602.0	-662.1	641.4	921.9	2.00	-2.00	0.00
4,760.0	7.19	137.68	4,641.7	-666.1	644.9	927.1	2.00	-2.00	0.00
4,800.0	6.39	137.68	4,681.4	-669.5	648.1	931.9	2.00	-2.00	0.00
4,840.0	5.59	137.68	4,721.2	-672.6	650.9	936.0	2.00	-2.00	0.00
4,880.0	4.79	137.68	4,761.0	-675.3	653.4	939.6	2.00	-2.00	0.00
4,920.0	3.99	137.68	4,800.9	-677.6	655.4	942.7	2.00	-2.00	0.00
4,960.0	3.19	137.68	4,840.8	-679.4	657.1	945.2	2.00	-2.00	0.00
5,000.0	2.39	137.68	4,880.8	-680.9	658.4	947.1	2.00	-2.00	0.00
5,040.0	1.59	137.68	4,920.7	-681.9	659.3	948.5	2.00	-2.00	0.00
5,080.0	0.79	137.68	4,960.7	-682.5	659.9	949.4	2.00	-2.00	0.00
5,119.3	0.00	0.00	5,000.0	-682.7	660.1	949.6	2.00	-2.00	0.00
TARGET BHL 1980'FNL, 660'FEL									
5,120.0	0.00	0.00	5,000.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,160.0	0.00	0.00	5,040.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,200.0	0.00	0.00	5,080.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,240.0	0.00	0.00	5,120.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,280.0	0.00	0.00	5,160.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,320.0	0.00	0.00	5,200.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,360.0	0.00	0.00	5,240.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,400.0	0.00	0.00	5,280.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,440.0	0.00	0.00	5,320.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,480.0	0.00	0.00	5,360.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,520.0	0.00	0.00	5,400.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,560.0	0.00	0.00	5,440.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,600.0	0.00	0.00	5,480.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,640.0	0.00	0.00	5,520.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,680.0	0.00	0.00	5,560.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,720.0	0.00	0.00	5,600.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,760.0	0.00	0.00	5,640.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,800.0	0.00	0.00	5,680.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,840.0	0.00	0.00	5,720.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,880.0	0.00	0.00	5,760.7	-682.7	660.1	949.6	0.00	0.00	0.00
5,920.0	0.00	0.00	5,800.7	-682.7	660.1	949.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Lamb 42-15
Company:	Sundance Energy, Weld County, CO	TVD Reference:	WELL @ 4954.0ft (Original Well Elev)
Project:	SEC.15-T4N-R68W	MD Reference:	WELL @ 4954.0ft (Original Well Elev)
Site:	Lamb 5 Pad Sec.15-T4N-R68W	North Reference:	True
Well:	Lamb 42-15	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-07-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,960.0	0.00	0.00	5,840.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,880.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,040.0	0.00	0.00	5,920.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,080.0	0.00	0.00	5,960.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,120.0	0.00	0.00	6,000.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,160.0	0.00	0.00	6,040.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,200.0	0.00	0.00	6,080.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,240.0	0.00	0.00	6,120.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,280.0	0.00	0.00	6,160.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,320.0	0.00	0.00	6,200.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,360.0	0.00	0.00	6,240.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,400.0	0.00	0.00	6,280.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,440.0	0.00	0.00	6,320.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,480.0	0.00	0.00	6,360.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,520.0	0.00	0.00	6,400.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,560.0	0.00	0.00	6,440.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,480.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,640.0	0.00	0.00	6,520.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,680.0	0.00	0.00	6,560.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,720.0	0.00	0.00	6,600.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,760.0	0.00	0.00	6,640.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,680.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,820.3	0.00	0.00	6,701.0	-682.7	660.1	949.6	0.00	0.00	0.00
NIOBRARA - LEGAL BOX 400' X 400' 1990'FNL & 664'FEL									
6,840.0	0.00	0.00	6,720.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,880.0	0.00	0.00	6,760.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,920.0	0.00	0.00	6,800.7	-682.7	660.1	949.6	0.00	0.00	0.00
6,960.0	0.00	0.00	6,840.7	-682.7	660.1	949.6	0.00	0.00	0.00
7,000.0	0.00	0.00	6,880.7	-682.7	660.1	949.6	0.00	0.00	0.00
7,040.0	0.00	0.00	6,920.7	-682.7	660.1	949.6	0.00	0.00	0.00
7,080.0	0.00	0.00	6,960.7	-682.7	660.1	949.6	0.00	0.00	0.00
7,114.3	0.00	0.00	6,995.0	-682.7	660.1	949.6	0.00	0.00	0.00
CODELL									
7,120.0	0.00	0.00	7,000.7	-682.7	660.1	949.6	0.00	0.00	0.00
7,160.0	0.00	0.00	7,040.7	-682.7	660.1	949.6	0.00	0.00	0.00
7,200.0	0.00	0.00	7,080.7	-682.7	660.1	949.6	0.00	0.00	0.00
7,240.0	0.00	0.00	7,120.7	-682.7	660.1	949.6	0.00	0.00	0.00
7,269.3	0.00	0.00	7,150.0	-682.7	660.1	949.6	0.00	0.00	0.00

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
TARGET BHL 1980'F	0.00	0.00	5,000.0	-682.7	660.1	1,358,177.41	3,144,411.52	40.315440	-104.982129
- plan hits target center									
- Point									
LEGAL BOX 400' X 400'	0.00	0.00	6,701.0	-692.7	656.1	1,358,167.38	3,144,407.59	40.315413	-104.982143
- plan misses target center by 10.8ft at 6820.3ft MD (6701.0 TVD, -682.7 N, 660.1 E)									
- Rectangle (sides W400.0 H400.0 D449.0)									

Database:	Landmark	Local Co-ordinate Reference:	Well Lamb 42-15
Company:	Sundance Energy, Weld County, CO	TVD Reference:	WELL @ 4954.0ft (Original Well Elev)
Project:	SEC.15-T4N-R68W	MD Reference:	WELL @ 4954.0ft (Original Well Elev)
Site:	Lamb 5 Pad Sec.15-T4N-R68W	North Reference:	True
Well:	Lamb 42-15	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-07-11)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
500.0	500.0	8 5/8"	8-5/8	12-1/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,042.0	3,943.0	SUSSEX		0.00		
4,458.4	4,345.0	SHANNON		0.00		
6,820.3	6,701.0	NIOBRARA		0.00		
7,114.3	6,995.0	CODELL		0.00		



Directional

Sundance Energy, Weld County, CO

SEC.15-T4N-R68W

Lamb 5 Pad Sec.15-T4N-R68W

Lamb 42-15

Wellbore #1

Plan #1 (12-07-11)

Anticollision Report

08 December, 2011

Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well Lamb 42-15
Project:	SEC.15-T4N-R68W	TVD Reference:	WELL @ 4954.0ft (Original Well Elev)
Reference Site:	Lamb 5 Pad Sec.15-T4N-R68W	MD Reference:	WELL @ 4954.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lamb 42-15	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-07-11)	Offset TVD Reference:	Offset Datum

Offset Design Lamb 5 Pad Sec.15-T4N-R68W - Lamb 31-15 - Wellbore #1 - Plan #1 (12-07-11)												Offset Site Error:	0.0ft
Survey Program: 0-MWD												Offset Well Error:	0.0ft
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	
1,800.0	1,781.7	1,713.3	1,689.5	5.0	5.9	171.69	167.7	-189.4	433.6	425.9	7.68	56.423	
1,900.0	1,878.1	1,801.8	1,776.0	5.5	6.3	172.32	180.8	-203.0	479.9	471.7	8.15	58.876	
2,000.0	1,974.5	1,890.4	1,862.5	6.0	6.7	172.85	193.9	-216.6	526.2	517.6	8.62	61.028	
2,100.0	2,070.9	1,978.9	1,949.0	6.5	7.1	173.29	207.0	-230.1	572.5	563.4	9.10	62.929	
2,200.0	2,167.3	2,067.4	2,035.5	7.1	7.5	173.67	220.1	-243.7	618.9	609.3	9.58	64.617	
2,300.0	2,263.7	2,156.0	2,121.9	7.6	7.9	173.99	233.2	-257.3	665.3	655.3	10.06	66.126	
2,400.0	2,360.1	2,244.5	2,208.4	8.2	8.3	174.27	246.3	-270.9	711.7	701.2	10.55	67.480	
2,500.0	2,456.5	2,333.0	2,294.9	8.7	8.7	174.52	259.4	-284.5	758.1	747.1	11.04	68.702	
2,600.0	2,552.9	2,421.5	2,381.4	9.3	9.1	174.73	272.5	-298.1	804.6	793.1	11.53	69.809	
2,700.0	2,649.3	2,510.1	2,467.9	9.8	9.5	174.93	285.6	-311.7	851.0	839.0	12.02	70.815	
2,800.0	2,745.7	2,598.6	2,554.4	10.4	10.0	175.10	298.7	-325.3	897.5	885.0	12.51	71.734	
2,900.0	2,842.1	2,687.1	2,640.9	10.9	10.4	175.26	311.8	-338.8	943.9	930.9	13.01	72.575	
3,000.0	2,938.5	2,775.7	2,727.4	11.5	10.8	175.40	324.9	-352.4	990.4	976.9	13.50	73.348	
3,100.0	3,034.9	2,864.2	2,813.9	12.1	11.2	175.53	338.0	-366.0	1,036.8	1,022.8	14.00	74.060	
3,200.0	3,131.3	2,952.7	2,900.4	12.6	11.6	175.65	351.1	-379.6	1,083.3	1,068.8	14.50	74.719	
3,300.0	3,227.7	3,041.2	2,986.9	13.2	12.0	175.76	364.2	-393.2	1,129.8	1,114.8	15.00	75.330	
3,400.0	3,324.1	3,129.8	3,073.4	13.7	12.4	175.86	377.3	-406.8	1,176.2	1,160.7	15.50	75.897	
3,500.0	3,420.5	3,218.3	3,159.9	14.3	12.8	175.95	390.4	-420.4	1,222.7	1,206.7	16.00	76.425	
3,600.0	3,516.9	3,306.8	3,246.4	14.9	13.2	176.04	403.5	-433.9	1,269.2	1,252.7	16.50	76.918	
3,700.0	3,613.3	3,395.3	3,332.8	15.4	13.6	176.12	416.5	-447.5	1,315.7	1,298.7	17.00	77.379	
3,800.0	3,709.7	3,483.9	3,419.3	16.0	14.0	176.19	429.6	-461.1	1,362.2	1,344.6	17.51	77.810	
3,900.0	3,806.1	3,572.4	3,505.8	16.6	14.5	176.26	442.7	-474.7	1,408.6	1,390.6	18.01	78.215	
4,000.0	3,902.5	3,660.9	3,592.3	17.1	14.9	176.33	455.8	-488.3	1,455.1	1,436.6	18.51	78.596	
4,100.0	3,998.9	3,749.5	3,678.8	17.7	15.3	176.39	468.9	-501.9	1,501.6	1,482.6	19.02	78.955	
4,200.0	4,095.3	3,838.0	3,765.3	18.3	15.7	176.44	482.0	-515.5	1,548.1	1,528.6	19.52	79.293	
4,300.0	4,191.7	3,926.5	3,851.8	18.8	16.1	176.50	495.1	-529.1	1,594.6	1,574.5	20.03	79.612	
4,348.3	4,238.3	3,969.3	3,893.6	19.1	16.3	176.52	501.5	-535.6	1,617.0	1,596.8	20.27	79.760	
4,400.0	4,288.3	4,015.3	3,938.5	19.4	16.5	176.58	508.3	-542.7	1,640.7	1,620.1	20.60	79.637	
4,500.0	4,385.5	4,105.4	4,026.6	19.8	16.9	176.68	521.6	-556.5	1,684.0	1,662.8	21.20	79.430	
4,600.0	4,483.6	4,197.0	4,116.0	20.1	17.3	176.76	535.2	-570.6	1,724.1	1,702.4	21.78	79.176	
4,700.0	4,582.2	4,289.9	4,206.8	20.4	17.8	176.82	548.9	-584.8	1,761.1	1,738.7	22.33	78.882	
4,800.0	4,681.4	4,384.0	4,298.8	20.6	18.2	176.88	562.8	-599.3	1,794.7	1,771.9	22.85	78.554	
4,900.0	4,780.9	4,484.0	4,396.4	20.8	18.7	176.92	577.6	-614.6	1,825.1	1,801.8	23.35	78.163	
5,000.0	4,880.8	4,585.6	4,494.3	21.0	19.5	176.96	608.6	-646.7	1,847.3	1,823.2	24.11	76.629	
5,100.0	4,980.7	5,037.3	4,945.2	21.1	20.0	176.97	621.9	-660.5	1,856.6	1,831.8	24.77	74.945	
5,119.3	5,000.0	5,092.1	5,000.0	21.1	20.1	-45.35	622.3	-660.9	1,856.8	1,831.9	24.89	74.597	
5,200.0	5,080.7	5,172.8	5,080.7	21.2	20.2	-45.35	622.3	-660.9	1,856.8	1,831.7	25.18	73.747	
5,300.0	5,180.7	5,272.8	5,180.7	21.3	20.3	-45.35	622.3	-660.9	1,856.8	1,831.3	25.53	72.729	
5,400.0	5,280.7	5,372.8	5,280.7	21.4	20.4	-45.35	622.3	-660.9	1,856.8	1,831.0	25.89	71.731	
5,500.0	5,380.7	5,472.8	5,380.7	21.5	20.5	-45.35	622.3	-660.9	1,856.8	1,830.6	26.24	70.752	
5,600.0	5,480.7	5,572.8	5,480.7	21.6	20.6	-45.35	622.3	-660.9	1,856.8	1,830.2	26.61	69.792	
5,700.0	5,580.7	5,672.8	5,580.7	21.8	20.8	-45.35	622.3	-660.9	1,856.8	1,829.9	26.97	68.851	
5,800.0	5,680.7	5,772.8	5,680.7	21.9	20.9	-45.35	622.3	-660.9	1,856.8	1,829.5	27.34	67.928	
5,900.0	5,780.7	5,872.8	5,780.7	22.0	21.0	-45.35	622.3	-660.9	1,856.8	1,829.1	27.70	67.024	
6,000.0	5,880.7	5,972.8	5,880.7	22.1	21.2	-45.35	622.3	-660.9	1,856.8	1,828.8	28.07	66.139	
6,100.0	5,980.7	6,072.8	5,980.7	22.2	21.3	-45.35	622.3	-660.9	1,856.8	1,828.4	28.45	65.271	
6,200.0	6,080.7	6,172.8	6,080.7	22.3	21.4	-45.35	622.3	-660.9	1,856.8	1,828.0	28.82	64.421	
6,300.0	6,180.7	6,272.8	6,180.7	22.4	21.6	-45.35	622.3	-660.9	1,856.8	1,827.6	29.20	63.588	
6,400.0	6,280.7	6,372.8	6,280.7	22.6	21.7	-45.35	622.3	-660.9	1,856.8	1,827.3	29.58	62.772	
6,500.0	6,380.7	6,472.8	6,380.7	22.7	21.8	-45.35	622.3	-660.9	1,856.8	1,826.9	29.96	61.973	
6,600.0	6,480.7	6,572.8	6,480.7	22.8	22.0	-45.35	622.3	-660.9	1,856.8	1,826.5	30.35	61.190	
6,700.0	6,580.7	6,672.8	6,580.7	22.9	22.1	-45.35	622.3	-660.9	1,856.8	1,826.1	30.73	60.423	

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

Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well Lamb 42-15
Project:	SEC.15-T4N-R68W	TVD Reference:	WELL @ 4954.0ft (Original Well Elev)
Reference Site:	Lamb 5 Pad Sec.15-T4N-R68W	MD Reference:	WELL @ 4954.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lamb 42-15	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-07-11)	Offset TVD Reference:	Offset Datum

Offset Design Lamb 5 Pad Sec.15-T4N-R68W - Lamb 31-15 - Wellbore #1 - Plan #1 (12-07-11)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 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
6,800.0	6,680.7	6,772.8	6,680.7	23.1	22.3	-45.35	622.3	-660.9	1,856.8	1,825.7	31.12	59.672	
6,900.0	6,780.7	6,872.8	6,780.7	23.2	22.4	-45.35	622.3	-660.9	1,856.8	1,825.3	31.51	58.936	
7,000.0	6,880.7	6,972.8	6,880.7	23.3	22.6	-45.35	622.3	-660.9	1,856.8	1,824.9	31.90	58.216	
7,100.0	6,980.7	7,072.8	6,980.7	23.4	22.7	-45.35	622.3	-660.9	1,856.8	1,824.6	32.29	57.509	
7,200.0	7,080.7	7,172.8	7,080.7	23.6	22.9	-45.35	622.3	-660.9	1,856.8	1,824.2	32.68	56.818	
7,269.3	7,150.0	7,242.1	7,150.0	23.7	23.0	-45.35	622.3	-660.9	1,856.8	1,823.9	32.95	56.347	

Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well Lamb 42-15
Project:	SEC.15-T4N-R68W	TVD Reference:	WELL @ 4954.0ft (Original Well Elev)
Reference Site:	Lamb 5 Pad Sec.15-T4N-R68W	MD Reference:	WELL @ 4954.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lamb 42-15	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-07-11)	Offset TVD Reference:	Offset Datum

Offset Design Lamb 5 Pad Sec.15-T4N-R68W - Lamb 32-15 - Wellbore #1 - Plan #1 (12-07-11)													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
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		
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-14.9	0.0	14.9	14.9	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-14.9	0.0	14.9	14.7	0.22	66.454		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-14.9	0.0	14.9	14.3	0.67	22.151 CC		
227.5	227.5	227.5	227.5	0.4	0.4	-179.49	-14.9	-0.1	14.9	14.1	0.80	18.775		
300.0	300.0	300.0	299.9	0.6	0.6	-173.34	-14.9	-1.7	15.0	13.9	1.11	13.491 ES		
400.0	400.0	399.7	399.5	0.8	0.8	-155.03	-14.9	-7.0	16.5	14.9	1.56	10.548 SF		
500.0	500.0	498.8	498.3	1.0	1.0	-135.01	-15.3	-15.3	21.7	19.7	2.02	10.749		
600.0	600.0	597.5	596.4	1.2	1.3	-126.23	-18.5	-25.2	31.4	28.9	2.49	12.618		
700.0	700.0	695.6	693.7	1.5	1.6	-124.25	-24.7	-36.2	44.3	41.3	3.00	14.771		
800.0	800.0	792.6	789.5	1.7	1.9	145.74	-33.9	-48.4	61.4	58.1	3.36	18.303		
900.0	899.8	888.0	883.2	1.9	2.2	145.67	-45.9	-61.5	84.1	80.3	3.80	22.147		
950.0	949.7	934.9	929.1	2.0	2.4	145.61	-52.8	-68.4	97.5	93.5	4.02	24.235		
1,000.0	999.5	981.7	974.7	2.1	2.6	136.11	-60.5	-75.5	111.8	107.5	4.24	26.371		
1,100.0	1,098.9	1,077.5	1,068.0	2.3	3.0	123.01	-76.6	-90.3	140.5	135.8	4.67	30.050		
1,200.0	1,198.0	1,173.2	1,161.2	2.6	3.5	115.57	-92.7	-105.0	168.8	163.6	5.14	32.820		
1,300.0	1,296.7	1,268.9	1,254.3	2.9	3.9	111.53	-108.7	-119.7	197.0	191.3	5.66	34.794		
1,400.0	1,394.8	1,364.2	1,347.2	3.2	4.4	109.56	-124.7	-134.4	225.3	219.0	6.23	36.131		
1,500.0	1,492.2	1,459.3	1,439.7	3.6	4.8	108.88	-140.7	-149.1	254.0	247.1	6.87	36.944		
1,579.7	1,569.4	1,534.7	1,513.2	3.9	5.2	108.95	-153.4	-160.7	277.3	269.9	7.43	37.317		
1,600.0	1,588.9	1,553.9	1,531.8	4.0	5.3	109.57	-156.6	-163.7	283.3	275.7	7.58	37.374		
1,700.0	1,685.3	1,648.3	1,623.7	4.5	5.8	112.27	-172.5	-178.2	313.4	305.0	8.34	37.582		
1,800.0	1,781.7	1,742.7	1,715.6	5.0	6.2	114.51	-188.3	-192.7	344.0	334.8	9.12	37.718		
1,900.0	1,878.1	1,837.1	1,807.6	5.5	6.7	116.38	-204.2	-207.3	375.0	365.0	9.92	37.814		
2,000.0	1,974.5	1,931.5	1,899.5	6.0	7.1	117.97	-220.1	-221.8	406.3	395.5	10.72	37.886		
2,100.0	2,070.9	2,025.9	1,991.4	6.5	7.6	119.33	-235.9	-236.4	437.8	426.3	11.54	37.943		
2,200.0	2,167.3	2,120.3	2,083.3	7.1	8.1	120.52	-251.8	-250.9	469.6	457.2	12.36	37.990		
2,300.0	2,263.7	2,214.7	2,175.2	7.6	8.5	121.55	-267.6	-265.5	501.5	488.3	13.19	38.032		
2,400.0	2,360.1	2,309.1	2,267.2	8.2	9.0	122.46	-283.5	-280.0	533.5	519.5	14.01	38.070		
2,500.0	2,456.5	2,403.5	2,359.1	8.7	9.5	123.27	-299.4	-294.6	565.7	550.8	14.84	38.104		
2,600.0	2,552.9	2,497.9	2,451.0	9.3	9.9	123.99	-315.2	-309.1	597.9	582.2	15.68	38.136		
2,700.0	2,649.3	2,592.3	2,542.9	9.8	10.4	124.63	-331.1	-323.7	630.2	613.7	16.51	38.166		
2,800.0	2,745.7	2,686.7	2,634.9	10.4	10.9	125.22	-347.0	-338.2	662.6	645.2	17.35	38.194		
2,900.0	2,842.1	2,781.2	2,726.8	10.9	11.3	125.75	-362.8	-352.7	695.0	676.8	18.18	38.221		
3,000.0	2,938.5	2,875.6	2,818.7	11.5	11.8	126.23	-378.7	-367.3	727.5	708.5	19.02	38.246		
3,100.0	3,034.9	2,970.0	2,910.6	12.1	12.3	126.67	-394.5	-381.8	760.0	740.2	19.86	38.271		
3,200.0	3,131.3	3,064.4	3,002.5	12.6	12.7	127.08	-410.4	-396.4	792.6	771.9	20.70	38.294		
3,300.0	3,227.7	3,158.8	3,094.5	13.2	13.2	127.45	-426.3	-410.9	825.2	803.6	21.54	38.316		
3,400.0	3,324.1	3,253.2	3,186.4	13.7	13.7	127.80	-442.1	-425.5	857.8	835.4	22.38	38.337		
3,500.0	3,420.5	3,347.6	3,278.3	14.3	14.1	128.12	-458.0	-440.0	890.4	867.2	23.21	38.357		
3,600.0	3,516.9	3,442.0	3,370.2	14.9	14.6	128.42	-473.9	-454.6	923.1	899.1	24.05	38.376		
3,700.0	3,613.3	3,536.4	3,462.1	15.4	15.1	128.69	-489.7	-469.1	955.8	930.9	24.89	38.394		
3,800.0	3,709.7	3,630.8	3,554.1	16.0	15.5	128.95	-505.6	-483.6	988.5	962.8	25.73	38.412		
3,900.0	3,806.1	3,725.2	3,646.0	16.6	16.0	129.19	-521.4	-498.2	1,021.2	994.7	26.58	38.428		
4,000.0	3,902.5	3,819.6	3,737.9	17.1	16.5	129.42	-537.3	-512.7	1,054.0	1,026.6	27.42	38.444		
4,100.0	3,998.9	3,914.0	3,829.8	17.7	17.0	129.63	-553.2	-527.3	1,086.7	1,058.5	28.26	38.460		
4,200.0	4,095.3	4,008.4	3,921.8	18.3	17.4	129.84	-569.0	-541.8	1,119.5	1,090.4	29.10	38.474		
4,300.0	4,191.7	4,102.9	4,013.7	18.8	17.9	130.03	-584.9	-556.4	1,152.3	1,122.4	29.94	38.488		
4,348.3	4,238.3	4,148.5	4,058.1	19.1	18.1	130.11	-592.6	-563.4	1,168.1	1,137.8	30.34	38.495		
4,400.0	4,288.3	4,197.4	4,105.7	19.4	18.4	130.45	-600.8	-570.9	1,184.8	1,154.0	30.80	38.470		
4,500.0	4,385.5	4,292.6	4,198.4	19.8	18.8	130.98	-616.8	-585.6	1,215.4	1,183.8	31.59	38.473		
4,600.0	4,483.6	4,388.4	4,291.7	20.1	19.3	131.33	-632.9	-600.4	1,243.8	1,211.5	32.35	38.450		
4,700.0	4,582.2	4,501.9	4,402.3	20.4	19.8	131.50	-651.5	-617.5	1,269.8	1,236.7	33.10	38.362		

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

Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well Lamb 42-15
Project:	SEC.15-T4N-R68W	TVD Reference:	WELL @ 4954.0ft (Original Well Elev)
Reference Site:	Lamb 5 Pad Sec.15-T4N-R68W	MD Reference:	WELL @ 4954.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lamb 42-15	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-07-11)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Lamb 5 Pad Sec.15-T4N-R68W - Lamb 32-15 - Wellbore #1 - Plan #1 (12-07-11)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
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
4,800.0	4,681.4	4,642.2	4,540.3	20.6	20.2	131.57	-670.6	-635.0	1,290.8	1,257.1	33.74	38.256	
4,900.0	4,780.9	4,785.2	4,681.9	20.8	20.6	131.62	-684.9	-648.1	1,306.3	1,272.0	34.29	38.091	
5,000.0	4,880.8	4,930.0	4,826.1	21.0	20.9	131.64	-694.1	-656.5	1,316.1	1,281.4	34.74	37.884	
5,100.0	4,980.7	5,075.8	4,971.8	21.1	21.1	131.66	-697.9	-660.0	1,320.2	1,285.1	35.09	37.620	
5,119.3	5,000.0	5,104.0	5,000.0	21.1	21.1	-90.66	-698.0	-660.1	1,320.3	1,285.1	35.15	37.556	
5,200.0	5,080.7	5,184.7	5,080.7	21.2	21.2	-90.66	-698.0	-660.1	1,320.3	1,284.9	35.35	37.345	
5,300.0	5,180.7	5,284.7	5,180.7	21.3	21.3	-90.66	-698.0	-660.1	1,320.3	1,284.7	35.58	37.104	
5,400.0	5,280.7	5,384.7	5,280.7	21.4	21.4	-90.66	-698.0	-660.1	1,320.3	1,284.4	35.81	36.864	
5,500.0	5,380.7	5,484.7	5,380.7	21.5	21.5	-90.66	-698.0	-660.1	1,320.3	1,284.2	36.05	36.622	
5,600.0	5,480.7	5,584.7	5,480.7	21.6	21.6	-90.66	-698.0	-660.1	1,320.3	1,284.0	36.29	36.380	
5,700.0	5,580.7	5,684.7	5,580.7	21.8	21.7	-90.66	-698.0	-660.1	1,320.3	1,283.7	36.54	36.137	
5,800.0	5,680.7	5,784.7	5,680.7	21.9	21.8	-90.66	-698.0	-660.1	1,320.3	1,283.5	36.78	35.893	
5,900.0	5,780.7	5,884.7	5,780.7	22.0	21.9	-90.66	-698.0	-660.1	1,320.3	1,283.2	37.04	35.649	
6,000.0	5,880.7	5,984.7	5,880.7	22.1	22.0	-90.66	-698.0	-660.1	1,320.3	1,283.0	37.29	35.405	
6,100.0	5,980.7	6,084.7	5,980.7	22.2	22.1	-90.66	-698.0	-660.1	1,320.3	1,282.7	37.55	35.160	
6,200.0	6,080.7	6,184.7	6,080.7	22.3	22.2	-90.66	-698.0	-660.1	1,320.3	1,282.4	37.81	34.916	
6,300.0	6,180.7	6,284.7	6,180.7	22.4	22.3	-90.66	-698.0	-660.1	1,320.3	1,282.2	38.08	34.672	
6,400.0	6,280.7	6,384.7	6,280.7	22.6	22.5	-90.66	-698.0	-660.1	1,320.3	1,281.9	38.35	34.428	
6,500.0	6,380.7	6,484.7	6,380.7	22.7	22.6	-90.66	-698.0	-660.1	1,320.3	1,281.6	38.62	34.185	
6,600.0	6,480.7	6,584.7	6,480.7	22.8	22.7	-90.66	-698.0	-660.1	1,320.3	1,281.4	38.90	33.942	
6,700.0	6,580.7	6,684.7	6,580.7	22.9	22.8	-90.66	-698.0	-660.1	1,320.3	1,281.1	39.18	33.700	
6,800.0	6,680.7	6,784.7	6,680.7	23.1	22.9	-90.66	-698.0	-660.1	1,320.3	1,280.8	39.46	33.458	
6,900.0	6,780.7	6,884.7	6,780.7	23.2	23.1	-90.66	-698.0	-660.1	1,320.3	1,280.5	39.75	33.218	
7,000.0	6,880.7	6,984.7	6,880.7	23.3	23.2	-90.66	-698.0	-660.1	1,320.3	1,280.2	40.03	32.978	
7,100.0	6,980.7	7,084.7	6,980.7	23.4	23.3	-90.66	-698.0	-660.1	1,320.3	1,279.9	40.33	32.740	
7,200.0	7,080.7	7,184.7	7,080.7	23.6	23.4	-90.66	-698.0	-660.1	1,320.3	1,279.6	40.62	32.502	
7,269.3	7,150.0	7,254.0	7,150.0	23.7	23.5	-90.66	-698.0	-660.1	1,320.3	1,279.5	40.79	32.370	

Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well Lamb 42-15
Project:	SEC.15-T4N-R68W	TVD Reference:	WELL @ 4954.0ft (Original Well Elev)
Reference Site:	Lamb 5 Pad Sec.15-T4N-R68W	MD Reference:	WELL @ 4954.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lamb 42-15	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-07-11)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4954.0ft (Original Well Elev) Coordinates are relative to: Lamb 42-15
Offset Depths are relative to Offset Datum
Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °
Grid Convergence at Surface is: 0.33°



Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well Lamb 42-15
Project:	SEC.15-T4N-R68W	TVD Reference:	WELL @ 4954.0ft (Original Well Elev)
Reference Site:	Lamb 5 Pad Sec.15-T4N-R68W	MD Reference:	WELL @ 4954.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lamb 42-15	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-07-11)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4954.0ft (Original Well Elev) Coordinates are relative to: Lamb 42-15
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.33°

