

Texas American Resources

Weld County, CO
Sec. 9-T7N-R62W
Cass Farms 11-9H

Plan A

Plan: Plan A rev0

Sperry Drilling Services

Proposal Report

29 October, 2010

Well Coordinates: 1,461,734.02 N, 3,323,641.26 E (40° 35' 42.07" N, 104° 20' 04.45" W)

Ground Level: 5,008.00 ft

Local Coordinate Origin:

Centered on Well Cass Farms 11-9H

Viewing Datum:

RKB 15' @ 5023.00ft (Original Well Elev)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Version: 2003.16 Build: 431

HALLIBURTON

Plan Report for Cass Farms 11-9H - Plan A rev0

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)	Toolface Azimuth (°)
0.00	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	0.00
200.00	0.00	0.00	200.00	0.00	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	0.00
400.00	0.00	0.00	400.00	0.00	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	0.00
600.00	0.00	0.00	600.00	0.00	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	0.00
800.00	0.00	0.00	800.00	0.00	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	0.00
1,000.00	0.00	0.00	1,000.00	0.00	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	0.00
1,200.00	0.00	0.00	1,200.00	0.00	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	0.00
1,400.00	0.00	0.00	1,400.00	0.00	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	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,637.00	0.00	0.00	1,637.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre										
1,700.00	0.00	0.00	1,700.00	0.00	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	0.00
1,900.00	0.00	0.00	1,900.00	0.00	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	0.00
2,100.00	0.00	0.00	2,100.00	0.00	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	0.00
2,300.00	0.00	0.00	2,300.00	0.00	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	0.00
2,500.00	0.00	0.00	2,500.00	0.00	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	0.00
2,700.00	0.00	0.00	2,700.00	0.00	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	0.00
2,900.00	0.00	0.00	2,900.00	0.00	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	0.00
3,100.00	0.00	0.00	3,100.00	0.00	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	0.00
3,300.00	0.00	0.00	3,300.00	0.00	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	0.00
3,500.00	0.00	0.00	3,500.00	0.00	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	0.00
3,700.00	0.00	0.00	3,700.00	0.00	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	0.00
3,900.00	0.00	0.00	3,900.00	0.00	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	0.00
4,100.00	0.00	0.00	4,100.00	0.00	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	0.00
4,300.00	0.00	0.00	4,300.00	0.00	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	0.00
4,500.00	0.00	0.00	4,500.00	0.00	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	0.00
4,700.00	0.00	0.00	4,700.00	0.00	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	0.00
4,900.00	0.00	0.00	4,900.00	0.00	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	0.00
5,100.00	0.00	0.00	5,100.00	0.00	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	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	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	0.00

Plan Report for Cass Farms 11-9H - Plan A rev0

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)	Toolface Azimuth (°)
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,878.82	0.00	0.00	5,878.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kick Off Point at 5878.82 ft										
5,900.00	2.12	135.00	5,900.00	-0.28	0.28	0.30	10.00	10.00	0.00	135.00
6,000.00	12.12	135.00	5,999.10	-9.03	9.03	9.64	10.00	10.00	0.00	0.00
6,100.00	22.12	135.00	6,094.55	-29.81	29.81	31.83	10.00	10.00	0.00	0.00
6,200.00	32.12	135.00	6,183.44	-62.01	62.01	66.19	10.00	10.00	0.00	0.00
6,220.00	34.12	135.00	6,200.19	-69.73	69.73	74.44	10.00	10.00	0.00	0.00
Build Rate = 10.00°/100 ft										
6,300.00	42.12	135.00	6,263.08	-104.62	104.62	111.68	10.00	10.00	0.00	0.00
6,400.00	52.12	135.00	6,331.04	-156.37	156.37	166.93	10.00	10.00	0.00	0.00
6,500.00	62.12	135.00	6,385.26	-215.68	215.68	230.24	10.00	10.00	0.00	0.00
6,578.82	70.00	135.00	6,417.22	-266.58	266.58	284.57	10.00	10.00	0.00	0.00
End Build at 6578.82 ft										
6,600.00	70.00	135.00	6,424.47	-280.65	280.65	299.59	0.00	0.00	0.00	0.00
6,636.65	70.00	135.00	6,437.00	-305.00	305.00	325.59	0.00	0.00	0.00	0.00
Begin Build & Turn at 6636.65 ft - Niobrara - 7" Casing - Cass Farms 11-9H Plan A0 Niobrara Entry Point										
6,700.00	71.52	139.96	6,457.89	-349.08	345.40	372.38	7.78	2.40	7.83	72.82
6,800.00	74.18	147.61	6,487.41	-426.13	401.76	453.19	7.78	2.66	7.65	71.18
6,900.00	77.10	155.06	6,512.24	-511.07	448.15	541.17	7.78	2.92	7.44	68.92
6,990.00	79.90	161.60	6,530.20	-592.99	480.68	625.15	7.78	3.11	7.27	67.08
Build & Turn Rate = 7.78°/100 ft										
7,000.00	80.22	162.32	6,531.93	-602.35	483.73	634.71	7.78	3.20	7.20	65.77
7,100.00	83.49	169.45	6,546.11	-698.28	507.82	732.09	7.78	3.27	7.13	65.64
7,200.00	86.87	176.48	6,554.52	-797.10	520.00	831.52	7.78	3.37	7.03	64.63
7,300.00	90.29	183.47	6,557.01	-897.00	520.04	931.17	7.78	3.42	6.99	64.04
7,301.34	90.33	183.56	6,557.00	-898.33	519.96	932.50	7.78	3.43	6.98	63.87
End Build & Turn at 7301.34 ft										
7,400.00	90.33	183.56	6,556.43	-996.80	513.83	1,030.30	0.00	0.00	0.00	63.87
7,500.00	90.33	183.56	6,555.85	-1,096.61	507.61	1,129.42	0.00	0.00	0.00	0.00
7,600.00	90.33	183.56	6,555.27	-1,196.41	501.40	1,228.55	0.00	0.00	0.00	0.00
7,700.00	90.33	183.56	6,554.69	-1,296.22	495.18	1,327.68	0.00	0.00	0.00	0.00
7,800.00	90.33	183.56	6,554.12	-1,396.02	488.96	1,426.80	0.00	0.00	0.00	0.00
7,900.00	90.33	183.56	6,553.54	-1,495.83	482.75	1,525.93	0.00	0.00	0.00	0.00
8,000.00	90.33	183.56	6,552.96	-1,595.63	476.53	1,625.05	0.00	0.00	0.00	0.00
8,100.00	90.33	183.56	6,552.38	-1,695.44	470.32	1,724.18	0.00	0.00	0.00	0.00
8,200.00	90.33	183.56	6,551.80	-1,795.24	464.10	1,823.31	0.00	0.00	0.00	0.00
8,300.00	90.33	183.56	6,551.22	-1,895.05	457.89	1,922.43	0.00	0.00	0.00	0.00
8,400.00	90.33	183.56	6,550.65	-1,994.85	451.67	2,021.56	0.00	0.00	0.00	0.00
8,500.00	90.33	183.56	6,550.07	-2,094.66	445.46	2,120.68	0.00	0.00	0.00	0.00
8,600.00	90.33	183.56	6,549.49	-2,194.46	439.24	2,219.81	0.00	0.00	0.00	0.00
8,700.00	90.33	183.56	6,548.91	-2,294.27	433.02	2,318.93	0.00	0.00	0.00	0.00
8,800.00	90.33	183.56	6,548.33	-2,394.07	426.81	2,418.06	0.00	0.00	0.00	0.00
8,900.00	90.33	183.56	6,547.75	-2,493.88	420.59	2,517.19	0.00	0.00	0.00	0.00
9,000.00	90.33	183.56	6,547.18	-2,593.68	414.38	2,616.31	0.00	0.00	0.00	0.00
Hold Angle 90.33°										
9,100.00	90.33	183.56	6,546.60	-2,693.49	408.16	2,715.44	0.00	0.00	0.00	0.00
9,200.00	90.33	183.56	6,546.02	-2,793.29	401.95	2,814.56	0.00	0.00	0.00	0.00
9,300.00	90.33	183.56	6,545.44	-2,893.10	395.73	2,913.69	0.00	0.00	0.00	0.00
9,400.00	90.33	183.56	6,544.86	-2,992.90	389.52	3,012.82	0.00	0.00	0.00	0.00
9,500.00	90.33	183.56	6,544.29	-3,092.71	383.30	3,111.94	0.00	0.00	0.00	0.00
9,600.00	90.33	183.56	6,543.71	-3,192.51	377.08	3,211.07	0.00	0.00	0.00	0.00
9,700.00	90.33	183.56	6,543.13	-3,292.32	370.87	3,310.19	0.00	0.00	0.00	0.00
9,800.00	90.33	183.56	6,542.55	-3,392.12	364.65	3,409.32	0.00	0.00	0.00	0.00
9,900.00	90.33	183.56	6,541.97	-3,491.93	358.44	3,508.44	0.00	0.00	0.00	0.00
10,000.00	90.33	183.56	6,541.39	-3,591.73	352.22	3,607.57	0.00	0.00	0.00	0.00
10,100.00	90.33	183.56	6,540.82	-3,691.54	346.01	3,706.70	0.00	0.00	0.00	0.00

Plan Report for Cass Farms 11-9H - Plan A rev0

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)	Toolface Azimuth (°)
10,200.00	90.33	183.56	6,540.24	-3,791.34	339.79	3,805.82	0.00	0.00	0.00	0.00
10,300.00	90.33	183.56	6,539.66	-3,891.15	333.58	3,904.95	0.00	0.00	0.00	0.00
10,400.00	90.33	183.56	6,539.08	-3,990.95	327.36	4,004.07	0.00	0.00	0.00	0.00
10,500.00	90.33	183.56	6,538.50	-4,090.76	321.14	4,103.20	0.00	0.00	0.00	0.00
10,600.00	90.33	183.56	6,537.92	-4,190.56	314.93	4,202.32	0.00	0.00	0.00	0.00
10,700.00	90.33	183.56	6,537.35	-4,290.37	308.71	4,301.45	0.00	0.00	0.00	0.00
10,759.75	90.33	183.56	6,537.00	-4,350.00	305.00	4,360.68	0.00	0.00	0.00	0.00

Total Depth at 10759.75 ft - Cass Farms 11-9H Plan A0 BHL**Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
5,878.82	5,878.82	0.00	0.00	Kick Off Point at 5878.82 ft
6,220.00	6,200.19	-69.73	69.73	Build Rate = 10.00°/100 ft
6,578.82	6,417.22	-266.58	266.58	End Build at 6578.82 ft
6,636.65	6,437.00	-305.00	305.00	Begin Build & Turn at 6636.65 ft
6,990.00	6,530.20	-592.99	480.68	Build & Turn Rate = 7.78°/100 ft
7,301.34	6,557.00	-898.33	519.96	End Build & Turn at 7301.34 ft
9,000.00	6,547.18	-2,593.68	414.38	Hold Angle 90.33°
10,759.75	6,537.00	-4,350.00	305.00	Total Depth at 10759.75 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Cass Farms 11-9H Plan A0 BHL	175.99	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	10,759.75	Plan A rev0	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
6,636.65	6,437.00	7" Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,637.00	1,637.00	Pierre		0.00	
6,636.65	6,437.00	Niobrara		0.00	

Plan Report for Cass Farms 11-9H - Plan A rev0

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Cass Farms 11-9H Setbacks	0.00	0.00	0.00	Polygon
Cass Farms 11-9H Plan A0 BHL	6,537.00	-4,350.00	305.00	Point
Cass Farms 11-9H Section Lines	0.00	0.00	0.00	Polygon
Cass Farms 11-9H Plan A0 Niobrara Entry Point	6,437.00	-305.00	305.00	Point

North Reference Sheet for Sec. 9-T7N-R62W - Cass Farms 11-9H - Plan A

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB 15' @ 5023.00ft (Original Well Elev). Northing and Easting are relative to Cass Farms 11-9H

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.50°, Longitude Origin: 0° 0' 0.000 E°, Latitude Origin: 40° 47' 0.000 N°

False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99997486

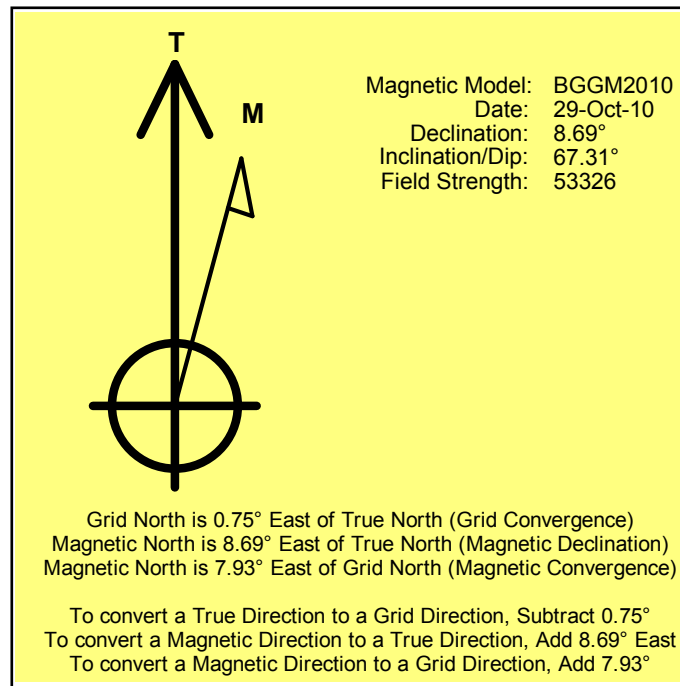
Grid Coordinates of Well: 1,461,734.02 ft N, 3,323,641.26 ft E

Geographical Coordinates of Well: 40° 35' 42.07" N, 104° 20' 04.45" W

Grid Convergence at Surface is: 0.75°

Based upon Minimum Curvature type calculations, at a Measured Depth of 10,759.75ft
the Bottom Hole Displacement is 4,360.68ft in the Direction of 175.99° (True).

Magnetic Convergence at surface is: -7.93° (29 October 2010, , BGGM2010)



Project: Weld County, CO
 Site: Sec. 9-T7N-R62W
 Well: Cass Farms 11-9H
 Wellbore: Plan A
 Design: Plan A rev0

Texas American Resources

HALLIBURTON
 Sperry Drilling

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5878.82	0.00	0.00	5878.82	0.00	0.00	0.00	0.00	0.00	
3	6578.82	70.00	135.00	6417.22	-266.58	266.58	10.00	135.00	284.57	
4	6636.65	70.00	135.00	6437.00	-305.00	305.00	0.00	0.00	325.59	Cass Farms 11-9H Plan A0 Niobrara Entry Point
5	7301.34	90.33	183.56	6557.00	-898.34	519.96	7.78	72.82	932.50	
6	10759.75	90.33	183.56	6537.00	-4350.00	305.00	0.00	0.00	4360.68	Cass Farms 11-9H Plan A0 BHL

