SPERRY-SUN DRILLING SERVICES

CERTIFIED SURVEY WORK SHEET

OPERATOR:	Anadarko Petroleum Corp
WELL:	Milk 36C-28HZ
FIELD:	Wattenberg
RIG:	Ensign 145
LEGALS:	Sec 28-T3N-R65W
COUNTY:	Weld
STATE:	Colorado
CAL. METHOD:	Minimum Curvature
MAG. DECL. APPLIED:	8.46
VERTICAL SEC. DIR. :	180.020

SSDS Job Number :	902265607
Start Date of Job :	4-Apr-15
End Date of Job :	11-Apr-15
Lead Directional Driller:	Dan Dietrich
Other SSDS DD's :	Ryan White
	Patrick Lane
SSDS MWD Engineers :	Matt Busche
	Scott Trowbridge

	Main Hole ==========>		1st Side Track ========>		2nd Side Track ========>		3rd Side Track ========>		4th Side Track ========>	
				Tie On		Tie On		Tie On		Tie On
Tie On Point	1193.00	Gyro								
First Survey	1285.00	MWD								
KOP Depth	6636.00	KOP		KOP-ST1		KOP-ST2		KOP-ST3		KOP-ST4
Last Survey Depth	12661.00	MWD								
				MWD		MWD		MWD		MWD
Bit Extrapolation to TD	12703.00	Projection				MWD		MWD		MWD
				T.D.		T.D.		T.D.		T.D.

The following personnel listed below, certify the above survey information to be accurate to the their knowledge. :

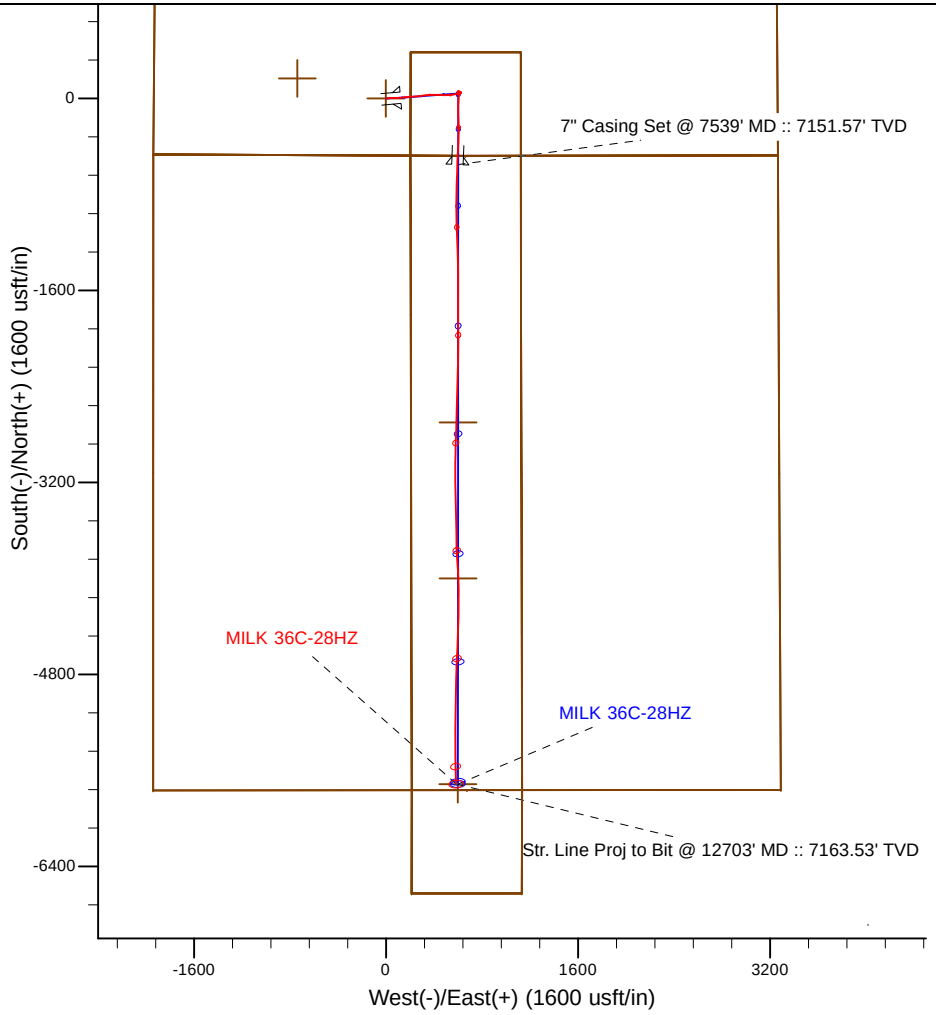
Print Name : Dan Dietrich	Print Name : Ryan White	Print Name :
Sign Name :	Sign Name :	Sign Name :
Print Name : Matt Busche	Print Name : Scott Trowbridge	Print Name :
Sign Name :	Sign Name :	Sign Name :

Examples of Survey Types:	TieOn	Tie On to Surface Casing (Assumed Vertical), Tie On to existing MWD Survey (prior drilled hole)
	MWD	Sperry Sun Drilling Services (SSDS) Measurement While Drilling (MWD) Survey's
	ESS	Sperry Sun Drilling Services (SSDS) Electronic Survey System (ESS) Survey's
	Gyro	Gyro Survey's ; Provided by third party vendor, or by Sperry Sun Drilling Services (SSDS)
	SS	Single Shot (SS) Survey's ; Provided by Sperry Sun Drilling Services (SSDS) or third party vendor.

Project: WELD-NAD83-UTMFT13N
Site: 3N-65W-21 Milk 4-21HZ Pad
Well: MILK 36C-28HZ
Wellbore: Plan A
Design: Actual Surveys

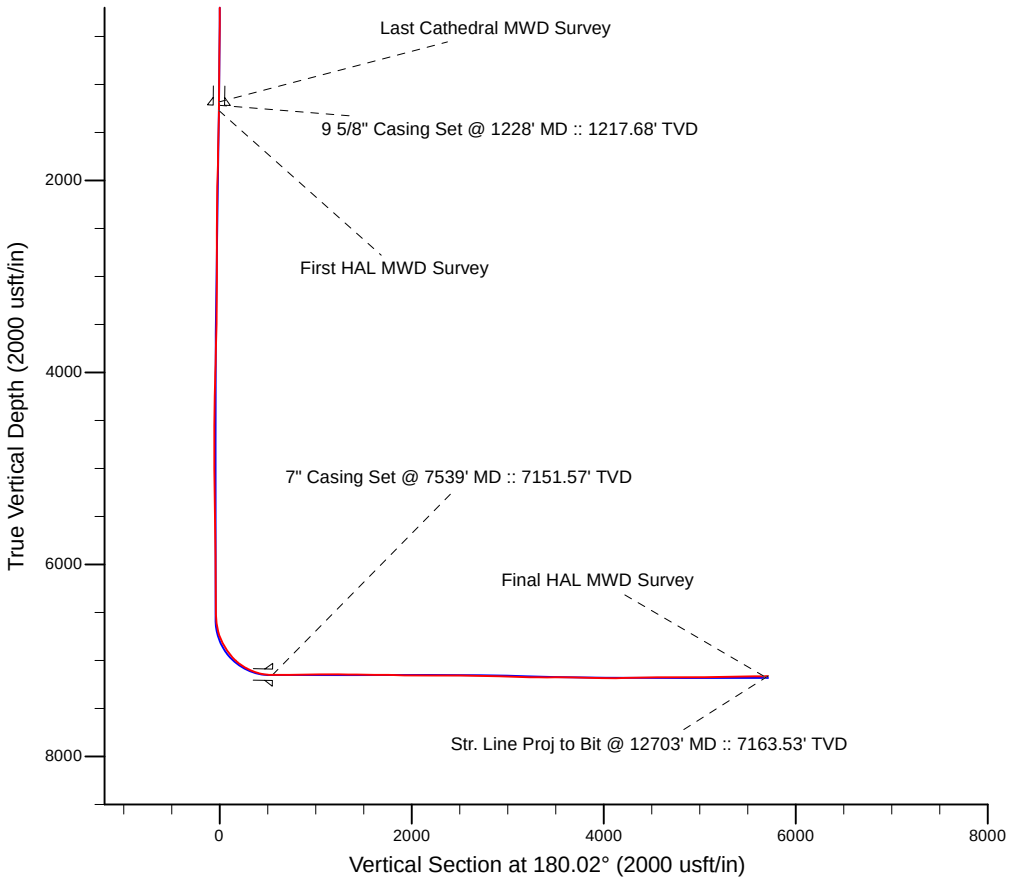
Anadarko Petroleum Corporation

HALLIBURTON
Sperry Drilling



LEGEND

MILK 36C-28HZ, Plan A, Rev A0 V0
Actual Surveys



7" Casing: ~74.24' FNL, ~2534.49' FWL
Lat/Long: 40.203479 N, -104.668833 E
UTM - NAD 83 - Zone 13N: 14,601,002.32' N, 1,732,884.65' E
Location: Sec. 28-T3N-R65W

BHL: ~50.77' FSL, ~2526.05' FWL
Lat/Long: 40.189306 N, -104.668868 E
UTM - NAD 83 - Zone 13N: 14,595,840.94' N, 1,732,893.96' E
Location: Sec. 28-T3N-R65W

WELL DETAILS: MILK 36C-28HZ

Ground Level: 4837.00
RKB = 13' @ 4850.00usft (Ensign 145)

Design: Actual Surveys (MILK 36C-28HZ/Plan A)

Created By: Clint Eshelman Date: 4/13/2015
Reviewed: _____ Date: _____

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N
3N-65W-21 Milk 4-21HZ Pad
MILK 36C-28HZ
05-123-41006

Design: Actual Surveys

Sperry Drilling Services

Standard Report

13 April, 2015

Surface UWI : 05-123-41006

Well Coordinates: 14,601,551.69 N, 1,732,287.18 E (40° 12' 17.98" N, 104° 40' 15.47" W)
Ground Level: 4,837.00 usft

Local Coordinate Origin:	Centered on Well MILK 36C-28HZ
Viewing Datum:	RKB = 13' @ 4850.00usft (Ensign 145)
TVDs to System:	N
North Reference:	True
Unit System:	Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

HALLIBURTON

Design Report for MILK 36C-28HZ - Actual Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.00	0.80	103.30	90.00	-0.14	0.61	0.14	0.89
First Cathedral MWD Survey							
153.00	0.90	77.10	152.99	-0.14	1.52	0.13	0.63
212.00	1.10	92.30	211.98	-0.05	2.54	0.05	0.56
272.00	1.10	93.40	271.97	-0.11	3.69	0.11	0.04
331.00	1.20	89.70	330.96	-0.14	4.87	0.14	0.21
395.00	1.20	82.50	394.94	-0.05	6.21	0.05	0.24
458.00	1.20	82.50	457.93	0.12	7.52	-0.12	0.00
521.00	2.30	80.80	520.90	0.41	9.42	-0.41	1.75
585.00	3.90	76.80	584.80	1.11	12.80	-1.12	2.52
650.00	5.70	81.00	649.57	2.12	18.15	-2.13	2.82
712.00	6.80	86.20	711.21	2.85	24.85	-2.86	1.99
776.00	8.40	83.30	774.64	3.64	33.27	-3.65	2.57
838.00	9.90	89.10	835.85	4.26	43.10	-4.27	2.84
902.00	11.50	89.20	898.74	4.43	54.98	-4.45	2.50
964.00	11.70	89.80	959.47	4.54	67.45	-4.56	0.38
1,027.00	11.80	88.70	1,021.15	4.71	80.28	-4.74	0.39
1,091.00	12.00	90.50	1,083.78	4.80	93.47	-4.83	0.66
1,193.00	12.30	85.40	1,183.49	5.58	114.90	-5.62	1.09
Last Cathedral MWD Survey							
1,228.00	12.45	85.02	1,217.68	6.20	122.38	-6.25	0.48
9 5/8" Casing Set @ 1228' MD :: 1217.68' TVD							
1,285.00	12.69	84.43	1,273.31	7.34	134.73	-7.39	0.48
First HAL MWD Survey							
1,380.00	13.16	85.06	1,365.91	9.29	155.89	-9.34	0.52
1,474.00	13.34	84.48	1,457.40	11.25	177.34	-11.31	0.24
1,571.00	13.65	86.09	1,551.73	13.11	199.90	-13.18	0.50
1,664.00	13.41	85.81	1,642.15	14.64	221.60	-14.72	0.27
1,758.00	12.94	86.14	1,733.67	16.15	242.98	-16.23	0.51
1,945.00	11.02	83.51	1,916.59	19.58	281.63	-19.68	1.07
2,038.00	10.82	83.03	2,007.91	21.64	299.12	-21.75	0.24
2,131.00	10.15	82.11	2,099.35	23.83	315.91	-23.94	0.74
2,225.00	11.04	84.13	2,191.75	25.89	333.06	-26.00	1.03
2,318.00	10.62	83.85	2,283.09	27.71	350.44	-27.84	0.46
2,411.00	9.81	82.24	2,374.62	29.70	366.81	-29.83	0.92
2,505.00	11.03	91.96	2,467.07	30.48	383.74	-30.61	2.27
2,598.00	10.35	90.97	2,558.46	30.03	400.98	-30.17	0.76
2,691.00	10.24	91.43	2,649.96	29.68	417.60	-29.83	0.15
2,785.00	10.48	91.75	2,742.43	29.21	434.50	-29.36	0.26
2,878.00	10.66	90.79	2,833.85	28.84	451.55	-28.99	0.27
2,972.00	10.57	90.30	2,926.24	28.67	468.87	-28.83	0.14
3,065.00	10.65	91.17	3,017.65	28.45	485.99	-28.62	0.19
3,159.00	9.92	92.14	3,110.14	27.97	502.76	-28.15	0.80
3,253.00	10.92	86.40	3,202.59	28.23	519.74	-28.41	1.53
3,343.00	9.97	83.82	3,291.10	29.60	535.99	-29.79	1.18
3,433.00	9.20	83.68	3,379.85	31.23	550.89	-31.42	0.86
3,523.00	8.48	81.98	3,468.78	32.95	564.61	-33.15	0.85
3,613.00	7.78	81.05	3,557.87	34.82	577.20	-35.03	0.79
3,703.00	7.04	79.31	3,647.12	36.79	588.64	-37.00	0.86

Design Report for MILK 36C-28HZ - Actual Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
3,793.00	4.79	73.82	3,736.63	38.87	597.67	-39.07	2.58
3,883.00	4.30	69.39	3,826.35	41.10	604.44	-41.31	0.67
3,973.00	3.42	63.86	3,916.15	43.47	610.00	-43.68	1.06
4,063.00	2.96	65.10	4,006.01	45.63	614.52	-45.85	0.52
4,153.00	2.04	73.39	4,095.92	47.07	618.16	-47.28	1.10
4,243.00	1.61	10.18	4,185.88	48.77	619.92	-48.99	2.16
4,333.00	1.75	357.96	4,275.84	51.39	620.10	-51.60	0.43
4,423.00	1.27	331.41	4,365.81	53.64	619.57	-53.85	0.93
4,513.00	1.16	305.09	4,455.79	55.04	618.35	-55.25	0.63
4,603.00	1.37	295.34	4,545.77	56.02	616.63	-56.24	0.33
4,693.00	1.42	292.19	4,635.75	56.90	614.63	-57.12	0.10
4,783.00	1.58	285.40	4,725.72	57.65	612.40	-57.87	0.27
4,872.00	1.14	251.50	4,814.69	57.70	610.37	-57.91	1.01
4,962.00	1.65	229.55	4,904.66	56.57	608.54	-56.79	0.81
5,052.00	1.81	240.24	4,994.62	55.03	606.32	-55.24	0.40
5,142.00	1.00	226.77	5,084.60	53.78	604.51	-53.99	0.97
5,232.00	1.03	183.98	5,174.58	52.44	603.89	-52.65	0.82
5,321.00	1.12	184.13	5,263.57	50.77	603.77	-50.98	0.10
5,500.00	0.74	166.45	5,442.54	47.90	603.91	-48.12	0.26
5,590.00	0.58	173.74	5,532.54	46.89	604.10	-47.10	0.20
5,680.00	0.46	157.53	5,622.53	46.10	604.29	-46.31	0.21
5,860.00	0.77	106.41	5,802.53	45.09	605.72	-45.30	0.33
5,950.00	1.12	116.42	5,892.51	44.53	607.09	-44.74	0.43
6,040.00	0.42	191.34	5,982.51	43.81	607.81	-44.03	1.21
6,130.00	0.65	203.79	6,072.50	43.02	607.54	-43.24	0.28
6,220.00	0.74	189.29	6,162.50	41.98	607.24	-42.19	0.22
6,310.00	1.06	186.72	6,252.48	40.58	607.05	-40.79	0.36
6,400.00	0.22	229.75	6,342.48	39.64	606.82	-39.86	1.01
6,580.00	0.74	191.72	6,522.47	38.28	606.32	-38.49	0.32
6,670.00	7.07	180.52	6,612.22	32.17	606.15	-32.38	7.05
6,759.00	14.75	184.81	6,699.54	15.38	605.15	-15.59	8.67
6,849.00	24.37	182.75	6,784.25	-14.66	603.30	14.45	10.71
6,939.00	31.01	182.63	6,863.90	-56.41	601.34	56.20	7.38
7,029.00	38.25	179.43	6,937.91	-107.50	600.55	107.29	8.29
7,119.00	47.62	176.22	7,003.74	-168.67	603.03	168.46	10.69
7,209.00	57.45	180.26	7,058.43	-239.96	605.05	239.75	11.48
7,300.00	65.40	181.84	7,101.92	-319.80	603.55	319.59	8.87
7,390.00	75.06	182.15	7,132.33	-404.34	600.59	404.13	10.74
7,480.00	84.07	182.10	7,148.61	-492.70	597.32	492.49	10.01
7,505.00	87.59	181.62	7,150.43	-517.62	596.51	517.41	14.21
7,539.00	88.57	182.02	7,151.57	-551.58	595.43	551.37	3.11
7" Casing Set @ 7539' MD :: 7151.57' TVD							
7,610.00	90.62	182.84	7,152.07	-622.51	592.42	622.30	3.11
7,700.00	90.43	181.29	7,151.25	-712.44	589.18	712.24	1.74
7,790.00	91.57	181.22	7,149.68	-802.41	587.21	802.20	1.27
7,880.00	91.35	180.13	7,147.38	-892.37	586.15	892.17	1.24
7,970.00	90.43	178.74	7,145.99	-982.35	587.04	982.15	1.85
8,060.00	89.75	177.77	7,145.84	-1,072.31	589.78	1,072.10	1.32
8,150.00	90.37	177.70	7,145.75	-1,162.24	593.33	1,162.03	0.69
8,240.00	89.88	177.89	7,145.55	-1,252.17	596.80	1,251.96	0.58
8,330.00	89.17	178.83	7,146.30	-1,342.13	599.37	1,341.92	1.31

Design Report for MILK 36C-28HZ - Actual Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
8,420.00	88.98	180.19	7,147.75	-1,432.11	600.14	1,431.90	1.53
8,510.00	88.58	179.88	7,149.67	-1,522.09	600.09	1,521.88	0.56
8,600.00	89.32	179.77	7,151.32	-1,612.08	600.36	1,611.87	0.83
8,690.00	90.49	180.16	7,151.47	-1,702.07	600.42	1,701.86	1.37
8,780.00	88.18	179.82	7,152.51	-1,792.06	600.43	1,791.85	2.59
8,870.00	89.44	179.45	7,154.38	-1,882.04	601.01	1,881.83	1.46
8,960.00	88.74	179.55	7,155.81	-1,972.02	601.79	1,971.81	0.79
9,049.00	89.97	179.76	7,156.81	-2,061.01	602.33	2,060.80	1.40
9,139.00	89.91	181.26	7,156.91	-2,151.01	601.53	2,150.80	1.67
9,229.00	89.38	181.92	7,157.46	-2,240.97	599.03	2,240.76	0.94
9,319.00	90.74	180.90	7,157.37	-2,330.94	596.81	2,330.73	1.89
9,409.00	90.34	181.51	7,156.52	-2,420.92	594.92	2,420.71	0.81
9,498.00	89.41	181.72	7,156.72	-2,509.88	592.41	2,509.67	1.07
9,588.00	88.83	181.71	7,158.10	-2,599.83	589.72	2,599.62	0.64
9,678.00	88.12	181.71	7,160.49	-2,689.76	587.03	2,689.55	0.79
9,768.00	89.72	181.38	7,162.19	-2,779.70	584.61	2,779.50	1.82
9,858.00	87.69	181.79	7,164.22	-2,869.64	582.12	2,869.44	2.30
9,947.00	88.03	181.12	7,167.55	-2,958.55	579.86	2,958.35	0.84
10,037.00	88.18	181.39	7,170.52	-3,048.48	577.89	3,048.28	0.34
10,127.00	88.55	179.39	7,173.09	-3,138.44	577.28	3,138.23	2.26
10,217.00	89.17	179.28	7,174.88	-3,228.41	578.32	3,228.21	0.70
10,307.00	89.66	178.68	7,175.80	-3,318.39	579.93	3,318.19	0.86
10,397.00	89.94	178.28	7,176.11	-3,408.36	582.31	3,408.16	0.54
10,487.00	90.37	178.20	7,175.87	-3,498.32	585.08	3,498.11	0.49
10,576.00	89.11	179.93	7,176.27	-3,587.30	586.53	3,587.09	2.40
10,666.00	89.45	179.01	7,177.41	-3,677.29	587.36	3,677.08	1.09
10,756.00	88.18	177.76	7,179.27	-3,767.23	589.90	3,767.02	1.98
10,846.00	88.86	177.23	7,181.59	-3,857.11	593.83	3,856.90	0.96
10,936.00	88.55	176.68	7,183.63	-3,946.96	598.61	3,946.75	0.70
11,026.00	89.75	177.13	7,184.96	-4,036.82	603.47	4,036.61	1.42
11,116.00	91.23	179.03	7,184.19	-4,126.76	606.48	4,126.54	2.68
11,206.00	91.29	181.62	7,182.21	-4,216.73	605.97	4,216.51	2.88
11,296.00	91.42	181.60	7,180.08	-4,306.66	603.45	4,306.45	0.15
11,386.00	90.86	181.09	7,178.29	-4,396.62	601.33	4,396.41	0.84
11,476.00	91.05	181.38	7,176.79	-4,486.59	599.39	4,486.38	0.39
11,566.00	90.86	182.77	7,175.29	-4,576.51	596.14	4,576.31	1.56
11,656.00	89.75	183.10	7,174.81	-4,666.39	591.53	4,666.19	1.29
11,746.00	89.29	181.57	7,175.57	-4,756.31	587.86	4,756.11	1.78
11,836.00	90.62	181.56	7,175.64	-4,846.28	585.40	4,846.07	1.48
11,926.00	89.85	181.14	7,175.27	-4,936.25	583.28	4,936.05	0.97
12,016.00	91.14	181.11	7,174.49	-5,026.23	581.52	5,026.02	1.43
12,106.00	89.60	180.64	7,173.91	-5,116.21	580.14	5,116.01	1.79
12,196.00	90.68	180.57	7,173.69	-5,206.21	579.19	5,206.00	1.20
12,287.00	91.79	180.40	7,171.73	-5,297.18	578.42	5,296.98	1.23
12,377.00	91.85	180.39	7,168.87	-5,387.13	577.80	5,386.93	0.07
12,467.00	91.08	179.08	7,166.57	-5,477.10	578.22	5,476.90	1.69
12,557.00	90.46	178.23	7,165.36	-5,567.07	580.33	5,566.86	1.17
12,661.00	90.86	177.76	7,164.16	-5,670.99	583.97	5,670.79	0.59
Final HAL MWD Survey							
12,703.00	90.86	177.76	7,163.53	-5,712.96	585.61	5,712.75	0.00
Str. Line Proj to Bit @ 12703' MD :: 7163.53' TVD							

Design Report for MILK 36C-28HZ - Actual Surveys

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
90.00	90.00	-0.14	0.61	First Cathedral MWD Survey
1,193.00	1,183.49	5.58	114.90	Last Cathedral MWD Survey
1,285.00	1,273.31	7.34	134.73	First HAL MWD Survey
12,661.00	7,164.16	-5,670.99	583.97	Final HAL MWD Survey
12,703.00	7,163.53	-5,712.96	585.61	Str. Line Proj to Bit @ 12703' MD :: 7163.53' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	180.02	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
90.00	1,193.00	CES Surface Surveys	APC_ISCWSA REV 2 MWD
1,285.00	7,505.00	HAL MWD+IFR+SC Vertical/Build	APC_ISCWSA REV 2 MWD+IFR1+SC
7,610.00	12,661.00	HAL MWD+IFR+SC Lateral	APC_ISCWSA REV 2 MWD+IFR1+SC

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,228.00	1,217.68	9 5/8" Casing Set @ 1228' MD :: 1217.68' TVD	9-5/8	13-1/2
7,539.00	7,151.57	7" Casing Set @ 7539' MD :: 7151.57' TVD	7	8-3/4

Design Report for MILK 36C-28HZ - Actual Surveys

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
MILK 36C-28HZ_Int T2	0.00	0.00	7,182.00	-4,000.00	600.26	14,597,553.94	1,732,902.26	40.194010	-104.668816
- actual wellpath misses target center by 2.94usft at 10989.02usft MD (7184.64 TVD, -3999.89 N, 601.56 E)									
- Point									
MILK 36C-28HZ_Hardl	0.00	0.00	0.00	0.00	0.00	14,601,551.69	1,732,287.18	40.204994	-104.670965
- actual wellpath hits target center									
- Polygon									
Point 1				1,124.72	384.67	14,601,940.52	1,733,410.46		
Point 2				1,123.29	-477.02	14,601,078.83	1,733,412.23		
Point 3				1,126.17	-1,798.40	14,599,757.47	1,733,420.01		
Point 4				1,129.06	-3,119.79	14,598,436.10	1,733,427.79		
Point 5				1,131.94	-4,441.63	14,597,114.28	1,733,435.57		
Point 6				1,134.83	-5,763.47	14,595,792.46	1,733,443.36		
Point 7				1,132.58	-6,624.51	14,594,931.42	1,733,444.31		
Point 8				212.90	-6,624.92	14,594,927.60	1,732,524.63		
Point 9				215.14	-5,763.91	14,595,788.61	1,732,523.68		
Point 10				212.26	-4,441.28	14,597,111.22	1,732,515.90		
Point 11				209.37	-3,118.65	14,598,433.83	1,732,508.11		
Point 12				206.49	-1,797.20	14,599,755.26	1,732,500.33		
Point 13				203.61	-475.74	14,601,076.70	1,732,492.55		
Point 14				205.03	385.23	14,601,937.67	1,732,490.78		
Point 15				1,124.72	384.67	14,601,940.52	1,733,410.46		
Sec. 28 and 21-T3N-R	0.00	0.00	-14.00	166.79	-738.24	14,601,715.74	1,731,548.32	40.205452	-104.673609
- actual wellpath misses target center by 756.98usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1				-1,157.80	4,631.20	14,606,342.62	1,730,373.36		
Point 2				1,410.20	4,631.80	14,606,352.74	1,732,941.34		
Point 3				3,978.20	4,632.30	14,606,362.76	1,735,509.32		
Point 4				3,987.10	1,999.70	14,603,730.21	1,735,527.98		
Point 5				4,004.20	-640.90	14,601,089.69	1,735,554.87		
Point 6				1,401.70	-644.40	14,601,076.54	1,732,952.40		
Point 7				-1,200.80	-633.90	14,601,077.39	1,730,349.88		
Point 8				1,401.70	-644.40	14,601,076.54	1,732,952.40		
Point 9				4,004.20	-640.90	14,601,089.69	1,735,554.87		
Point 10				4,016.60	-3,289.10	14,598,441.56	1,735,577.09		
Point 11				4,028.80	-5,929.10	14,595,801.62	1,735,599.08		
Point 12				1,413.40	-5,930.40	14,595,790.62	1,732,983.70		
Point 13				-1,202.00	-5,931.80	14,595,779.53	1,730,368.32		
Point 14				-1,201.40	-3,282.80	14,598,428.51	1,730,359.10		
Point 15				-1,200.80	-633.90	14,601,077.39	1,730,349.88		
Point 16				-1,179.30	1,998.70	14,603,710.06	1,730,361.62		
MILK 36C-28HZ_BHL	0.00	0.00	7,182.00	-5,713.61	599.61	14,595,840.34	1,732,907.96	40.189304	-104.668818
- actual wellpath misses target center by 23.18usft at 12703.00usft MD (7163.53 TVD, -5712.96 N, 585.61 E)									
- Point									
MILK 36C-28HZ_Int T1	0.00	0.00	7,154.00	-2,700.00	600.76	14,598,853.93	1,732,897.94	40.197580	-104.668814
- actual wellpath misses target center by 15.58usft at 9687.75usft MD (7160.80 TVD, -2699.49 N, 586.75 E)									
- Point									

North Reference Sheet for 3N-65W-21 Milk 4-21HZ Pad - MILK 36C-28HZ - 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 = 13' @ 4850.00usft (Ensign 145). Northing and Easting are relative to MILK 36C-28HZ

Coordinate System is Universal Transverse Mercator (US Survey Feet), Zone 13N (108 W to 102 W) using datum North American Datum 1983, ellipsoid

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -105.000000°, Longitude Origin:0.000000°, Latitude Origin:0.000000°

False Easting: 1,640,416.67usft, False Northing: 0.00usft, Scale Reduction: 0.99960965

Grid Coordinates of Well: 14,601,551.69 usft N, 1,732,287.18 usft E

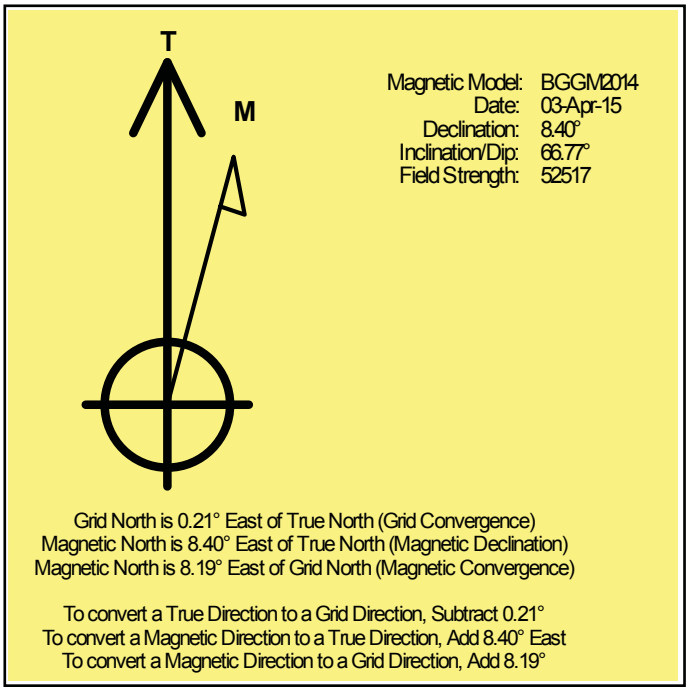
Geographical Coordinates of Well: 40° 12' 17.98" N, 104° 40' 15.47" W

Grid Convergence at Surface is: 0.21°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,703.00usft

the Bottom Hole Displacement is 5,742.89usft in the Direction of 174.15° (True).

Magnetic Convergence at surface is: -8.19° (3 April 2015, , BGGM2014)



US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N
3N-65W-21 Milk 4-21HZ Pad
MILK 36C-28HZ
05-123-41006
Plan A

Design: Actual Surveys

Sperry Drilling Services

Geodetic Report

13 April, 2015

Well Coordinates: 14,601,551.69 N, 1,732,287.18 E (40° 12' 17.98" N, 104° 40' 15.47" W)
Ground Level: 4,837.00 usft

Local Coordinate Origin:	Centered on Well MILK 36C-28HZ
Viewing Datum:	RKB = 13' @ 4850.00usft (Ensign 145)
TVDs to System:	N
North Reference:	True
Unit System:	Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

HALLIBURTON

Design Report for MILK 36C-28HZ - Actual Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	40.204994	-104.670965	14,601,551.69	1,732,287.18
90.00	0.80	103.30	90.00	-0.14	0.61	40.204994	-104.670963	14,601,551.54	1,732,287.79
153.00	0.90	77.10	152.99	-0.14	1.52	40.204994	-104.670960	14,601,551.56	1,732,288.70
212.00	1.10	92.30	211.98	-0.05	2.54	40.204994	-104.670956	14,601,551.64	1,732,289.72
272.00	1.10	93.40	271.97	-0.11	3.69	40.204994	-104.670952	14,601,551.59	1,732,290.87
331.00	1.20	89.70	330.96	-0.14	4.87	40.204994	-104.670948	14,601,551.56	1,732,292.05
395.00	1.20	82.50	394.94	-0.05	6.21	40.204994	-104.670943	14,601,551.66	1,732,293.38
458.00	1.20	82.50	457.93	0.12	7.52	40.204994	-104.670938	14,601,551.83	1,732,294.69
521.00	2.30	80.80	520.90	0.41	9.42	40.204995	-104.670932	14,601,552.13	1,732,296.59
585.00	3.90	76.80	584.80	1.11	12.80	40.204997	-104.670919	14,601,552.84	1,732,299.98
650.00	5.70	81.00	649.57	2.12	18.15	40.205000	-104.670900	14,601,553.87	1,732,305.31
712.00	6.80	86.20	711.21	2.85	24.85	40.205002	-104.670876	14,601,554.62	1,732,312.01
776.00	8.40	83.30	774.64	3.64	33.27	40.205004	-104.670846	14,601,555.45	1,732,320.43
838.00	9.90	89.10	835.85	4.26	43.10	40.205006	-104.670811	14,601,556.10	1,732,330.26
902.00	11.50	89.20	898.74	4.43	54.98	40.205006	-104.670768	14,601,556.32	1,732,342.14
964.00	11.70	89.80	959.47	4.54	67.45	40.205007	-104.670724	14,601,556.47	1,732,354.61
1,027.00	11.80	88.70	1,021.15	4.71	80.28	40.205007	-104.670678	14,601,556.69	1,732,367.43
1,091.00	12.00	90.50	1,083.78	4.80	93.47	40.205007	-104.670631	14,601,556.83	1,732,380.63
1,193.00	12.30	85.40	1,183.49	5.58	114.90	40.205009	-104.670554	14,601,557.69	1,732,402.06
1,228.00	12.45	85.02	1,217.68	6.20	122.38	40.205011	-104.670527	14,601,558.34	1,732,409.53
1,285.00	12.69	84.43	1,273.31	7.34	134.73	40.205014	-104.670483	14,601,559.53	1,732,421.88
1,380.00	13.16	85.06	1,365.91	9.29	155.89	40.205020	-104.670407	14,601,561.55	1,732,443.03
1,474.00	13.34	84.48	1,457.40	11.25	177.34	40.205025	-104.670330	14,601,563.59	1,732,464.48
1,571.00	13.65	86.09	1,551.73	13.11	199.90	40.205030	-104.670249	14,601,565.54	1,732,487.03
1,664.00	13.41	85.81	1,642.15	14.64	221.60	40.205034	-104.670172	14,601,567.15	1,732,508.72
1,758.00	12.94	86.14	1,733.67	16.15	242.98	40.205038	-104.670095	14,601,568.74	1,732,530.09
1,945.00	11.02	83.51	1,916.59	19.58	281.63	40.205048	-104.669957	14,601,572.31	1,732,568.73
2,038.00	10.82	83.03	2,007.91	21.64	299.12	40.205054	-104.669894	14,601,574.44	1,732,586.22
2,131.00	10.15	82.11	2,099.35	23.83	315.91	40.205060	-104.669834	14,601,576.68	1,732,602.99
2,225.00	11.04	84.13	2,191.75	25.89	333.06	40.205065	-104.669772	14,601,578.81	1,732,620.14
2,318.00	10.62	83.85	2,283.09	27.71	350.44	40.205070	-104.669710	14,601,580.70	1,732,637.51
2,411.00	9.81	82.24	2,374.62	29.70	366.81	40.205076	-104.669652	14,601,582.75	1,732,653.88
2,505.00	11.03	91.96	2,467.07	30.48	383.74	40.205078	-104.669591	14,601,583.58	1,732,670.80
2,598.00	10.35	90.97	2,558.46	30.03	400.98	40.205077	-104.669529	14,601,583.20	1,732,688.04
2,691.00	10.24	91.43	2,649.96	29.68	417.60	40.205076	-104.669470	14,601,582.92	1,732,704.66
2,785.00	10.48	91.75	2,742.43	29.21	434.50	40.205074	-104.669409	14,601,582.51	1,732,721.56
2,878.00	10.66	90.79	2,833.85	28.84	451.55	40.205073	-104.669348	14,601,582.20	1,732,738.62
2,972.00	10.57	90.30	2,926.24	28.67	468.87	40.205073	-104.669286	14,601,582.09	1,732,755.93
3,065.00	10.65	91.17	3,017.65	28.45	485.99	40.205072	-104.669225	14,601,581.94	1,732,773.05
3,159.00	9.92	92.14	3,110.14	27.97	502.76	40.205071	-104.669165	14,601,581.52	1,732,789.83
3,253.00	10.92	86.40	3,202.59	28.23	519.74	40.205072	-104.669104	14,601,581.84	1,732,806.81
3,343.00	9.97	83.82	3,291.10	29.60	535.99	40.205075	-104.669046	14,601,583.27	1,732,823.06

Design Report for MILK 36C-28HZ - Actual Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
3,433.00	9.20	83.68	3,379.85	31.23	550.89	40.205080	-104.668992	14,601,584.96	1,732,837.95
3,523.00	8.48	81.98	3,468.78	32.95	564.61	40.205085	-104.668943	14,601,586.73	1,732,851.66
3,613.00	7.78	81.05	3,557.87	34.82	577.20	40.205090	-104.668898	14,601,588.65	1,732,864.24
3,703.00	7.04	79.31	3,647.12	36.79	588.64	40.205095	-104.668857	14,601,590.66	1,732,875.67
3,793.00	4.79	73.82	3,736.63	38.87	597.67	40.205101	-104.668825	14,601,592.77	1,732,884.70
3,883.00	4.30	69.39	3,826.35	41.10	604.44	40.205107	-104.668800	14,601,595.03	1,732,891.46
3,973.00	3.42	63.86	3,916.15	43.47	610.00	40.205113	-104.668781	14,601,597.42	1,732,897.01
4,063.00	2.96	65.10	4,006.01	45.63	614.52	40.205119	-104.668764	14,601,599.59	1,732,901.52
4,153.00	2.04	73.39	4,095.92	47.07	618.16	40.205123	-104.668751	14,601,601.04	1,732,905.16
4,243.00	1.61	10.18	4,185.88	48.77	619.92	40.205128	-104.668745	14,601,602.75	1,732,906.91
4,333.00	1.75	357.96	4,275.84	51.39	620.10	40.205135	-104.668744	14,601,605.37	1,732,907.08
4,423.00	1.27	331.41	4,365.81	53.64	619.57	40.205141	-104.668746	14,601,607.62	1,732,906.54
4,513.00	1.16	305.09	4,455.79	55.04	618.35	40.205145	-104.668751	14,601,609.01	1,732,905.32
4,603.00	1.37	295.34	4,545.77	56.02	616.63	40.205148	-104.668757	14,601,609.99	1,732,903.59
4,693.00	1.42	292.19	4,635.75	56.90	614.63	40.205150	-104.668764	14,601,610.87	1,732,901.59
4,783.00	1.58	285.40	4,725.72	57.65	612.40	40.205152	-104.668772	14,601,611.61	1,732,899.36
4,872.00	1.14	251.50	4,814.69	57.70	610.37	40.205153	-104.668779	14,601,611.65	1,732,897.33
4,962.00	1.65	229.55	4,904.66	56.57	608.54	40.205149	-104.668786	14,601,610.51	1,732,895.50
5,052.00	1.81	240.24	4,994.62	55.03	606.32	40.205145	-104.668794	14,601,608.96	1,732,893.29
5,142.00	1.00	226.77	5,084.60	53.78	604.51	40.205142	-104.668800	14,601,607.71	1,732,891.49
5,232.00	1.03	183.98	5,174.58	52.44	603.89	40.205138	-104.668802	14,601,606.36	1,732,890.86
5,321.00	1.12	184.13	5,263.57	50.77	603.77	40.205134	-104.668803	14,601,604.70	1,732,890.75
5,500.00	0.74	166.45	5,442.54	47.90	603.91	40.205126	-104.668802	14,601,601.83	1,732,890.91
5,590.00	0.58	173.74	5,532.54	46.89	604.10	40.205123	-104.668802	14,601,600.81	1,732,891.10
5,680.00	0.46	157.53	5,622.53	46.10	604.29	40.205121	-104.668801	14,601,600.03	1,732,891.29
5,860.00	0.77	106.41	5,802.53	45.09	605.72	40.205118	-104.668796	14,601,599.02	1,732,892.73
5,950.00	1.12	116.42	5,892.51	44.53	607.09	40.205116	-104.668791	14,601,598.46	1,732,894.10
6,040.00	0.42	191.34	5,982.51	43.81	607.81	40.205114	-104.668788	14,601,597.75	1,732,894.82
6,130.00	0.65	203.79	6,072.50	43.02	607.54	40.205112	-104.668789	14,601,596.96	1,732,894.55
6,220.00	0.74	189.29	6,162.50	41.98	607.24	40.205109	-104.668790	14,601,595.92	1,732,894.26
6,310.00	1.06	186.72	6,252.48	40.58	607.05	40.205106	-104.668791	14,601,594.52	1,732,894.07
6,400.00	0.22	229.75	6,342.48	39.64	606.82	40.205103	-104.668792	14,601,593.58	1,732,893.85
6,580.00	0.74	191.72	6,522.47	38.28	606.32	40.205099	-104.668794	14,601,592.22	1,732,893.35
6,670.00	7.07	180.52	6,612.22	32.17	606.15	40.205082	-104.668794	14,601,586.10	1,732,893.21
6,759.00	14.75	184.81	6,699.54	15.38	605.15	40.205036	-104.668798	14,601,569.31	1,732,892.27
6,849.00	24.37	182.75	6,784.25	-14.66	603.30	40.204954	-104.668805	14,601,539.26	1,732,890.52
6,939.00	31.01	182.63	6,863.90	-56.41	601.34	40.204839	-104.668812	14,601,497.50	1,732,888.72
7,029.00	38.25	179.43	6,937.91	-107.50	600.55	40.204699	-104.668814	14,601,446.41	1,732,888.12
7,119.00	47.62	176.22	7,003.74	-168.67	603.03	40.204531	-104.668806	14,601,385.25	1,732,890.82
7,209.00	57.45	180.26	7,058.43	-239.96	605.05	40.204335	-104.668798	14,601,313.97	1,732,893.11
7,300.00	65.40	181.84	7,101.92	-319.80	603.55	40.204116	-104.668804	14,601,234.13	1,732,891.90
7,390.00	75.06	182.15	7,132.33	-404.34	600.59	40.203884	-104.668814	14,601,149.57	1,732,889.26

Design Report for MILK 36C-28HZ - Actual Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
7,480.00	84.07	182.10	7,148.61	-492.70	597.32	40.203641	-104.668826	14,601,061.20	1,732,886.31
7,505.00	87.59	181.62	7,150.43	-517.62	596.51	40.203573	-104.668829	14,601,036.28	1,732,885.60
7,539.00	88.57	182.02	7,151.57	-551.58	595.43	40.203479	-104.668833	14,601,002.32	1,732,884.65
7,610.00	90.62	182.84	7,152.07	-622.51	592.42	40.203285	-104.668844	14,600,931.38	1,732,881.90
7,700.00	90.43	181.29	7,151.25	-712.44	589.18	40.203038	-104.668855	14,600,841.43	1,732,878.99
7,790.00	91.57	181.22	7,149.68	-802.41	587.21	40.202791	-104.668862	14,600,751.46	1,732,877.35
7,880.00	91.35	180.13	7,147.38	-892.37	586.15	40.202544	-104.668866	14,600,661.49	1,732,876.63
7,970.00	90.43	178.74	7,145.99	-982.35	587.04	40.202296	-104.668863	14,600,571.52	1,732,877.85
8,060.00	89.75	177.77	7,145.84	-1,072.31	589.78	40.202049	-104.668853	14,600,481.57	1,732,880.92
8,150.00	90.37	177.70	7,145.75	-1,162.24	593.33	40.201802	-104.668840	14,600,391.65	1,732,884.81
8,240.00	89.88	177.89	7,145.55	-1,252.17	596.80	40.201556	-104.668828	14,600,301.74	1,732,888.61
8,330.00	89.17	178.83	7,146.30	-1,342.13	599.37	40.201308	-104.668819	14,600,211.79	1,732,891.52
8,420.00	88.98	180.19	7,147.75	-1,432.11	600.14	40.201061	-104.668816	14,600,121.81	1,732,892.62
8,510.00	88.58	179.88	7,149.67	-1,522.09	600.09	40.200814	-104.668816	14,600,031.83	1,732,892.90
8,600.00	89.32	179.77	7,151.32	-1,612.08	600.36	40.200567	-104.668815	14,599,941.85	1,732,893.51
8,690.00	90.49	180.16	7,151.47	-1,702.07	600.42	40.200320	-104.668815	14,599,851.85	1,732,893.90
8,780.00	88.18	179.82	7,152.51	-1,792.06	600.43	40.200073	-104.668815	14,599,761.86	1,732,894.25
8,870.00	89.44	179.45	7,154.38	-1,882.04	601.01	40.199826	-104.668813	14,599,671.89	1,732,895.15
8,960.00	88.74	179.55	7,155.81	-1,972.02	601.79	40.199579	-104.668810	14,599,581.91	1,732,896.27
9,049.00	89.97	179.76	7,156.81	-2,061.01	602.33	40.199334	-104.668808	14,599,492.92	1,732,897.14
9,139.00	89.91	181.26	7,156.91	-2,151.01	601.53	40.199087	-104.668811	14,599,402.92	1,732,896.67
9,229.00	89.38	181.92	7,157.46	-2,240.97	599.03	40.198840	-104.668820	14,599,312.95	1,732,894.51
9,319.00	90.74	180.90	7,157.37	-2,330.94	596.81	40.198593	-104.668828	14,599,222.97	1,732,892.63
9,409.00	90.34	181.51	7,156.52	-2,420.92	594.92	40.198346	-104.668835	14,599,132.99	1,732,891.07
9,498.00	89.41	181.72	7,156.72	-2,509.88	592.41	40.198102	-104.668844	14,599,044.02	1,732,888.89
9,588.00	88.83	181.71	7,158.10	-2,599.83	589.72	40.197855	-104.668853	14,598,954.06	1,732,886.53
9,678.00	88.12	181.71	7,160.49	-2,689.76	587.03	40.197608	-104.668863	14,598,864.13	1,732,884.18
9,768.00	89.72	181.38	7,162.19	-2,779.70	584.61	40.197361	-104.668872	14,598,774.17	1,732,882.09
9,858.00	87.69	181.79	7,164.22	-2,869.64	582.12	40.197114	-104.668881	14,598,684.22	1,732,879.93
9,947.00	88.03	181.12	7,167.55	-2,958.55	579.86	40.196870	-104.668889	14,598,595.31	1,732,878.00
10,037.00	88.18	181.39	7,170.52	-3,048.48	577.89	40.196623	-104.668896	14,598,505.37	1,732,876.37
10,127.00	88.55	179.39	7,173.09	-3,138.44	577.28	40.196376	-104.668898	14,598,415.41	1,732,876.09
10,217.00	89.17	179.28	7,174.88	-3,228.41	578.32	40.196129	-104.668894	14,598,325.44	1,732,877.46
10,307.00	89.66	178.68	7,175.80	-3,318.39	579.93	40.195882	-104.668889	14,598,235.47	1,732,879.40
10,397.00	89.94	178.28	7,176.11	-3,408.36	582.31	40.195634	-104.668880	14,598,145.51	1,732,882.12
10,487.00	90.37	178.20	7,175.87	-3,498.32	585.08	40.195387	-104.668870	14,598,055.56	1,732,885.22
10,576.00	89.11	179.93	7,176.27	-3,587.30	586.53	40.195143	-104.668865	14,597,966.59	1,732,887.00
10,666.00	89.45	179.01	7,177.41	-3,677.29	587.36	40.194896	-104.668862	14,597,876.60	1,732,888.17
10,756.00	88.18	177.76	7,179.27	-3,767.23	589.90	40.194649	-104.668853	14,597,786.67	1,732,891.04
10,846.00	88.86	177.23	7,181.59	-3,857.11	593.83	40.194402	-104.668839	14,597,696.80	1,732,895.30
10,936.00	88.55	176.68	7,183.63	-3,946.96	598.61	40.194155	-104.668822	14,597,606.97	1,732,900.41
11,026.00	89.75	177.13	7,184.96	-4,036.82	603.47	40.193909	-104.668804	14,597,517.13	1,732,905.61

Design Report for MILK 36C-28HZ - Actual Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
11,116.00	91.23	179.03	7,184.19	-4,126.76	606.48	40.193662	-104.668794	14,597,427.21	1,732,908.95
11,206.00	91.29	181.62	7,182.21	-4,216.73	605.97	40.193415	-104.668795	14,597,337.24	1,732,908.78
11,296.00	91.42	181.60	7,180.08	-4,306.66	603.45	40.193168	-104.668804	14,597,247.29	1,732,906.58
11,386.00	90.86	181.09	7,178.29	-4,396.62	601.33	40.192921	-104.668812	14,597,157.32	1,732,904.80
11,476.00	91.05	181.38	7,176.79	-4,486.59	599.39	40.192674	-104.668819	14,597,067.35	1,732,903.20
11,566.00	90.86	182.77	7,175.29	-4,576.51	596.14	40.192427	-104.668831	14,596,977.41	1,732,900.27
11,656.00	89.75	183.10	7,174.81	-4,666.39	591.53	40.192180	-104.668847	14,596,887.52	1,732,896.00
11,746.00	89.29	181.57	7,175.57	-4,756.31	587.86	40.191933	-104.668860	14,596,797.58	1,732,892.67
11,836.00	90.62	181.56	7,175.64	-4,846.28	585.40	40.191686	-104.668869	14,596,707.61	1,732,890.54
11,926.00	89.85	181.14	7,175.27	-4,936.25	583.28	40.191439	-104.668877	14,596,617.63	1,732,888.75
12,016.00	91.14	181.11	7,174.49	-5,026.23	581.52	40.191192	-104.668883	14,596,527.65	1,732,887.32
12,106.00	89.60	180.64	7,173.91	-5,116.21	580.14	40.190945	-104.668888	14,596,437.66	1,732,886.28
12,196.00	90.68	180.57	7,173.69	-5,206.21	579.19	40.190697	-104.668891	14,596,347.66	1,732,885.66
12,287.00	91.79	180.40	7,171.73	-5,297.18	578.42	40.190448	-104.668894	14,596,256.69	1,732,885.23
12,377.00	91.85	180.39	7,168.87	-5,387.13	577.80	40.190201	-104.668896	14,596,166.73	1,732,884.94
12,467.00	91.08	179.08	7,166.57	-5,477.10	578.22	40.189954	-104.668895	14,596,076.77	1,732,885.69
12,557.00	90.46	178.23	7,165.36	-5,567.07	580.33	40.189707	-104.668887	14,595,986.81	1,732,888.14
12,661.00	90.86	177.76	7,164.16	-5,670.99	583.97	40.189421	-104.668874	14,595,882.90	1,732,892.16
12,703.00	90.86	177.76	7,163.53	-5,712.96	585.61	40.189306	-104.668868	14,595,840.94	1,732,893.96

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
90.00	90.00	-0.14	0.61	First Cathedral MWD Survey
1,193.00	1,183.49	5.58	114.90	Last Cathedral MWD Survey
1,285.00	1,273.31	7.34	134.73	First HAL MWD Survey
12,661.00	7,164.16	-5,670.99	583.97	Final HAL MWD Survey
12,703.00	7,163.53	-5,712.96	585.61	Str. Line Proj to Bit @ 12703' MD :: 7163.53' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	180.02	Slot	0.00	0.00	0.00

Design Report for MILK 36C-28HZ - Actual Surveys

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
90.00	1,193.00	CES Surface Surveys	APC_ISCWSA REV 2 MWD
1,285.00	7,505.00	HAL MWD+IFR+SC Vertical/Build	APC_ISCWSA REV 2 MWD+IFR1+SC
7,610.00	12,661.00	HAL MWD+IFR+SC Lateral	APC_ISCWSA REV 2 MWD+IFR1+SC

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,228.00	1,217.68	9 5/8" Casing Set @ 1228' MD :: 1217.68' TVD	9-5/8	13-1/2
7,539.00	7,151.57	7" Casing Set @ 7539' MD :: 7151.57' TVD	7	8-3/4

Targets for Plan A

Shape	Target Name	TVD (usft)	Northing (usft)	Easting (usft)	+N/-S usft	+E/-W usft	Created	Updated
Point	MILK 36C-28HZ_Int T2	7,182.00	14,597,553.94	1,732,902.26	-4,000.00	600.26	3/18/2015	3/18/2015
Polygon	MILK 36C-28HZ_Hardline	0.00	14,601,551.69	1,732,287.18	0.00	0.00	3/25/2015	3/25/2015
Polygon	Sec. 28 and 21-T3N-R65W	-14.00	14,601,715.74	1,731,548.32	166.79	-738.24	10/10/2014	10/10/2014
Point	MILK 36C-28HZ_BHL Rev A0	7,182.00	14,595,840.34	1,732,907.96	-5,713.61	599.61	3/18/2015	3/18/2015
Point	MILK 36C-28HZ_Int T1	7,154.00	14,598,853.93	1,732,897.94	-2,700.00	600.76	3/18/2015	3/18/2015

North Reference Sheet for 3N-65W-21 Milk 4-21HZ Pad - MILK 36C-28HZ - 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 = 13' @ 4850.00usft (Ensign 145). Northing and Easting are relative to MILK 36C-28HZ

Coordinate System is Universal Transverse Mercator (US Survey Feet), Zone 13N (108 W to 102 W) using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -105.000000°, Longitude Origin:0.000000°, Latitude Origin:0.000000°

False Easting: 1,640,416.67usft, False Northing: 0.00usft, Scale Reduction: 0.99960965

Grid Coordinates of Well: 14,601,551.69 usft N, 1,732,287.18 usft E

Geographical Coordinates of Well: 40° 12' 17.98" N, 104° 40' 15.47" W

Grid Convergence at Surface is: 0.21°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,703.00usft

the Bottom Hole Displacement is 5,742.89usft in the Direction of 174.15° (True).

Magnetic Convergence at surface is: -8.19° (3 April 2015, , BGGM2014)