



Bill Barrett Corporation

Bill Barrett Corp.

Weld Co., CO (NAD 83)

SEC 16 T4N R62W

Anschutz Eq Farms 4-62-16-0560BH

OH

Survey: MWD Survey

Standard Survey Report

30 September, 2014





Bill Barrett Corp.
 Project: Weld Co., CO (NAD 83)
 Site: SEC 16 T4N R62W
 Well: Anschutz Eq Farms 4-62-16-0560BH
 Wellbore: OH
 Design: WP03
 Lat: 40.31889
 Long: -104.32458
 Pad GL: 4523.00
 KB @ 4546.00ft



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1000.00	0.000	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.50
2618.07	24.271	279.26	2570.11	54.33	-333.22	1.50	279.26	44.16	Start 1612.88 hold at 2618.07 MD
4230.95	24.271	279.26	4040.43	161.02	-987.56	0.00	0.00	130.87	Start Drop -1.50
5849.02	0.000	0.00	5610.54	215.35	-1320.78	1.50	180.00	175.03	Start 100.00 hold at 5849.02 MD
5949.03	0.000	0.00	5710.54	215.35	-1320.78	0.00	0.00	175.03	Start Build 12.00
6701.03	90.240	180.65	6188.01	-264.09	-1326.25	12.00	180.65	635.64	Start 4298.40 hold at 6701.03 MD
10999.43	90.240	180.65	6170.00	-4562.17	-1375.29	0.00	0.00	4764.96	TD at 10999.43

WELL DETAILS: Anschutz Eq Farms 4-62-16-0560BH

+N/-S	+E/-W	Northing	Ground Level: Easting	4523.00	Latitude	Longitude	Slot
0.00	0.00	1361185.49	3327747.87		40.31889	-104.32458	

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
AS EQ FM 4-62-16-0560BH WP03 VT	5610.54	215.35	-1320.78	40.31948	-104.32932	Point
AS EQ FM 4-62-16-0560BH WP03 PBHL	6170.00	-4562.17	-1375.29	40.30637	-104.32951	Point
AS EQ FM 4-62-16-0560BH WP03 LP	6188.00	-264.09	-1326.25	40.31817	-104.32934	Point

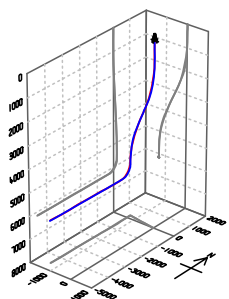
PROJECT DETAILS: Weld Co., CO (NAD 83)

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone

System Datum: Mean Sea Level

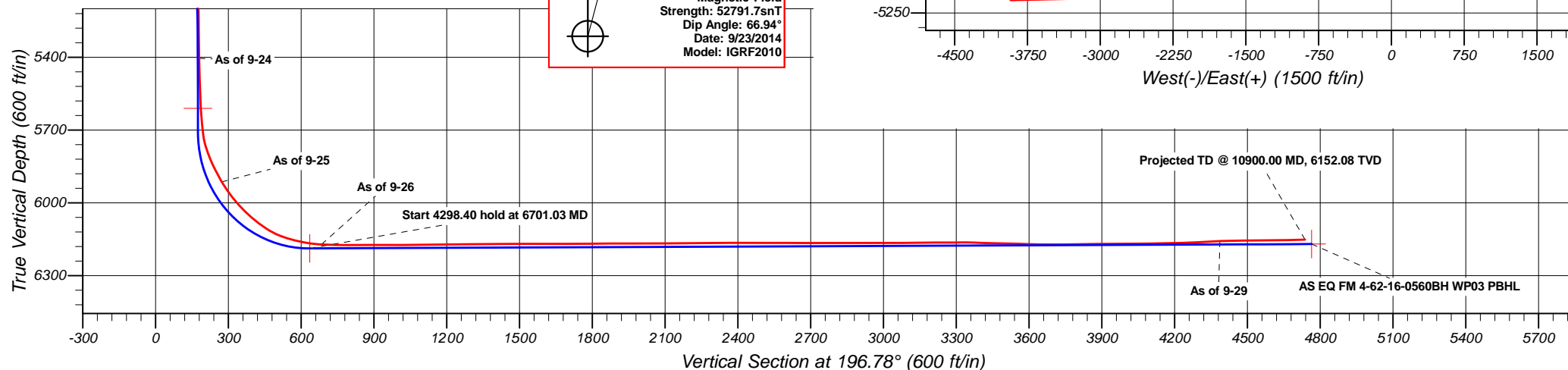
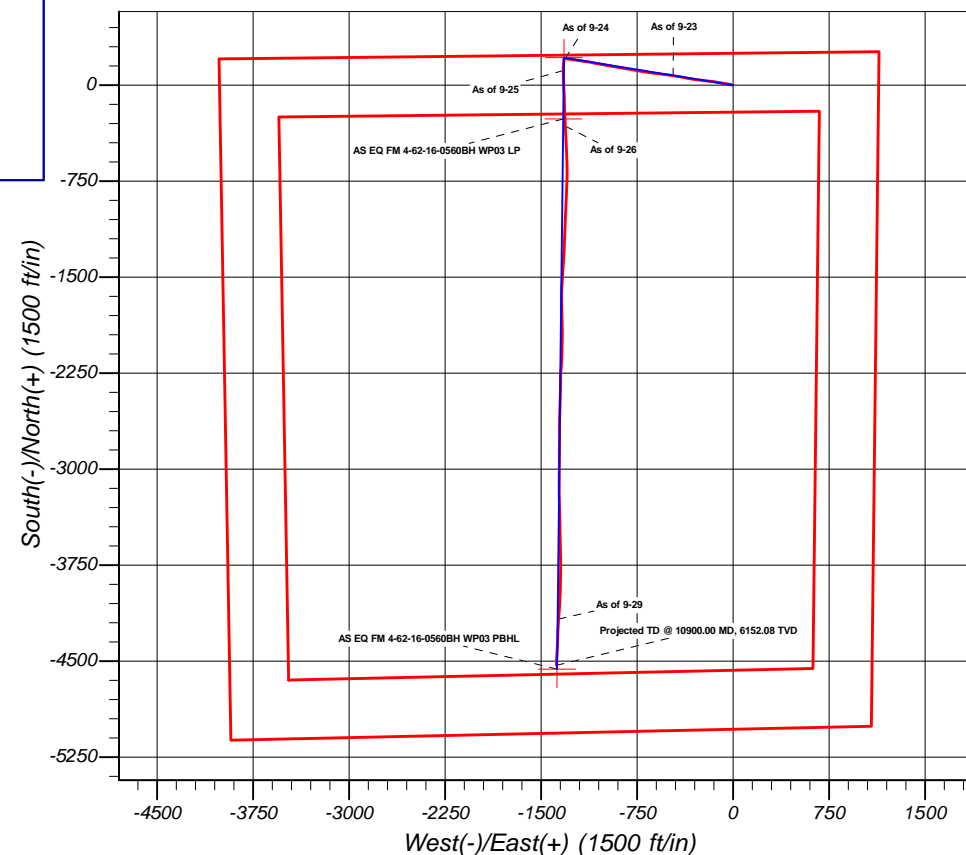
CASING DETAILS

No casing data is available



Azimuths to True North
 Magnetic North: 8.18°

Magnetic Field
 Strength: 52791.7snT
 Dip Angle: 66.94°
 Date: 9/23/2014
 Model: IGRF2010



Company:	Bill Barrett Corp.	Local Co-ordinate Reference:	Well Anschutz Eq Farms 4-62-16-0560BH
Project:	Weld Co., CO (NAD 83)	TVD Reference:	KB @ 4546.00ft
Site:	SEC 16 T4N R62W	MD Reference:	KB @ 4546.00ft
Well:	Anschutz Eq Farms 4-62-16-0560BH	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Local Db

Project	Weld Co., CO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	SEC 16 T4N R62W		
Site Position:		Northing:	1,361,185.49 usft
From:	Lat/Long	Easting:	3,327,747.87 usft
Position Uncertainty:	0.00 ft	Slot Radius:	1.10 ft
		Latitude:	40.31889
		Longitude:	-104.32459
		Grid Convergence:	0.76 °

Well	Anschutz Eq Farms 4-62-16-0560BH		
Well Position	+N/-S	0.00 ft	Northing: 1,361,185.49 usft
	+E/-W	0.00 ft	Easting: 3,327,747.87 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
		Latitude:	40.31889
		Longitude:	-104.32459
		Ground Level:	4,523.00 ft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	9/23/2014	8.18
			Dip Angle (°)
			66.94
			Field Strength (nT)
			52,792

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction (°)
			196.78

Survey Program	Date	9/30/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
886.00	10,900.00	MWD Survey (OH)	MWD	MWD - Standard

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)
0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
886.00	0.100	249.70	886.00	-0.27	-0.73	0.47	0.01	0.01	0.00
979.00	2.100	292.60	978.98	0.36	-2.37	0.34	2.18	2.15	46.13
1,071.00	4.000	289.80	1,070.84	2.09	-6.95	0.00	2.07	2.07	-3.04
1,164.00	6.200	286.60	1,163.47	4.63	-14.82	-0.15	2.38	2.37	-3.44
1,257.00	8.100	281.00	1,255.74	7.31	-26.06	0.52	2.17	2.04	-6.02
1,351.00	10.100	278.00	1,348.56	9.72	-40.73	2.44	2.19	2.13	-3.19
1,444.00	11.300	279.20	1,439.94	12.32	-57.80	4.89	1.31	1.29	1.29
1,538.00	12.400	279.00	1,531.93	15.37	-76.86	7.47	1.17	1.17	-0.21
1,631.00	11.500	278.60	1,622.92	18.31	-95.88	10.14	0.97	-0.97	-0.43

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Site:	SEC 16 T4N R62W	MD Reference:	KB @ 4546.00ft
Well:	Anschutz Eq Farms 4-62-16-0560BH	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Local Db

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)
1,725.00	12.100	282.10	1,714.93	21.78	-114.78	12.28	0.99	0.64	3.72
1,818.00	10.200	277.90	1,806.17	24.96	-132.47	14.34	2.22	-2.04	-4.52
1,912.00	11.200	277.60	1,898.54	27.31	-149.77	17.08	1.07	1.06	-0.32
2,005.00	12.600	279.20	1,989.54	30.12	-168.73	19.86	1.55	1.51	1.72
2,099.00	13.200	276.00	2,081.16	32.89	-189.53	23.22	0.99	0.64	-3.40
2,192.00	14.300	274.20	2,171.50	34.84	-211.54	27.70	1.27	1.18	-1.94
2,286.00	15.100	274.30	2,262.42	36.60	-235.33	32.88	0.85	0.85	0.11
2,379.00	16.600	276.20	2,351.88	38.95	-260.62	37.93	1.71	1.61	2.04
2,475.00	18.300	279.20	2,443.46	42.84	-289.13	42.43	2.00	1.77	3.13
2,571.00	20.300	279.60	2,534.06	48.03	-320.43	46.50	2.09	2.08	0.42
2,666.00	22.600	281.80	2,622.48	54.51	-354.55	50.14	2.56	2.42	2.32
2,761.00	23.600	280.00	2,709.86	61.54	-391.15	53.97	1.29	1.05	-1.89
2,856.00	23.600	279.60	2,796.92	68.02	-428.63	58.59	0.17	0.00	-0.42
2,953.00	23.600	278.10	2,885.81	73.99	-467.00	63.95	0.62	0.00	-1.55
As of 9-23									
3,049.00	24.300	279.00	2,973.54	79.79	-505.53	69.52	0.82	0.73	0.94
3,144.00	24.000	276.90	3,060.23	85.17	-544.02	75.47	0.96	-0.32	-2.21
3,240.00	25.100	276.90	3,147.55	89.96	-583.62	82.32	1.15	1.15	0.00
3,335.00	25.800	278.40	3,233.33	95.40	-624.07	88.78	1.00	0.74	1.58
3,430.00	26.500	277.00	3,318.60	101.00	-665.56	95.39	0.98	0.74	-1.47
3,525.00	26.400	279.10	3,403.66	106.93	-707.45	101.81	0.99	-0.11	2.21
3,622.00	25.400	278.90	3,490.92	113.56	-749.30	107.54	1.03	-1.03	-0.21
3,719.00	23.000	280.10	3,579.39	120.10	-788.52	112.60	2.53	-2.47	1.24
3,814.00	22.300	280.40	3,667.06	126.61	-824.52	116.76	0.75	-0.74	0.32
3,909.00	21.600	279.30	3,755.17	132.69	-859.50	121.03	0.85	-0.74	-1.16
4,004.00	20.300	279.30	3,843.89	138.18	-893.02	125.45	1.37	-1.37	0.00
4,099.00	19.600	279.80	3,933.19	143.55	-924.99	129.53	0.76	-0.74	0.53
4,195.00	20.400	281.00	4,023.40	149.49	-957.28	133.17	0.94	0.83	1.25
4,291.00	21.800	280.80	4,112.96	156.02	-991.21	136.71	1.46	1.46	-0.21
4,387.00	21.600	280.90	4,202.16	162.70	-1,026.08	140.38	0.21	-0.21	0.10
4,482.00	19.300	280.10	4,291.17	168.76	-1,058.71	143.99	2.44	-2.42	-0.84
4,577.00	19.900	281.30	4,380.66	174.68	-1,090.02	147.36	0.76	0.63	1.26
4,673.00	18.600	279.60	4,471.29	180.44	-1,121.14	150.83	1.47	-1.35	-1.77
4,768.00	17.400	278.00	4,561.64	184.94	-1,150.14	154.89	1.37	-1.26	-1.68
4,865.00	17.400	277.20	4,654.20	188.78	-1,178.89	159.52	0.25	0.00	-0.82
4,959.00	16.600	276.30	4,744.10	192.01	-1,206.18	164.30	0.90	-0.85	-0.96
5,055.00	13.700	279.40	4,836.75	195.37	-1,231.04	168.25	3.14	-3.02	3.23
5,150.00	11.400	280.00	4,929.47	198.84	-1,251.38	170.80	2.42	-2.42	0.63
5,246.00	9.700	275.90	5,023.85	201.32	-1,268.77	173.45	1.93	-1.77	-4.27
5,342.00	7.700	278.50	5,118.74	203.10	-1,283.18	175.90	2.12	-2.08	2.71
5,437.00	6.500	279.40	5,213.01	204.92	-1,294.78	177.51	1.27	-1.26	0.95
5,533.00	5.400	282.20	5,308.49	206.76	-1,304.56	178.56	1.18	-1.15	2.92
5,630.00	4.400	276.90	5,405.14	208.18	-1,312.71	179.57	1.13	-1.03	-5.46
As of 9-24									

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Well:	Anschutz Eq Farms 4-62-16-0560BH	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Local Db

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)
5,726.00	3.400	239.50	5,500.93	207.17	-1,318.82	182.29	2.78	-1.04	-38.96
5,822.00	2.800	203.90	5,596.80	203.58	-1,322.22	186.71	2.06	-0.63	-37.08
5,917.00	5.500	166.20	5,691.55	197.04	-1,322.08	192.93	3.90	2.84	-39.68
5,964.00	12.200	183.80	5,737.97	189.89	-1,321.87	199.72	15.21	14.26	37.45
6,012.00	18.400	191.00	5,784.25	177.38	-1,323.65	212.21	13.49	12.92	15.00
6,059.00	24.300	184.10	5,828.02	160.43	-1,325.76	229.05	13.62	12.55	-14.68
6,108.00	28.600	182.50	5,871.88	138.65	-1,327.00	250.26	8.89	8.78	-3.27
6,155.00	31.200	179.70	5,912.62	115.23	-1,327.42	272.80	6.28	5.53	-5.96
6,156.00	31.316	179.65	5,913.48	114.71	-1,327.42	273.30	11.85	11.60	-4.72
As of 9-25									
6,204.00	36.900	177.70	5,953.20	87.82	-1,326.77	298.86	11.85	11.63	-4.07
6,251.00	41.300	177.60	5,989.67	58.21	-1,325.55	326.86	9.36	9.36	-0.21
6,299.00	45.400	177.80	6,024.57	25.29	-1,324.23	357.99	8.55	8.54	0.42
6,346.00	50.400	178.00	6,056.07	-9.55	-1,322.95	390.98	10.64	10.64	0.43
6,394.00	54.500	177.20	6,085.31	-47.56	-1,321.35	426.91	8.64	8.54	-1.67
6,441.00	59.700	176.80	6,110.83	-86.95	-1,319.29	464.03	11.09	11.06	-0.85
6,491.00	68.100	177.50	6,132.81	-131.76	-1,317.06	506.29	16.85	16.80	1.40
6,539.00	74.700	178.90	6,148.11	-177.20	-1,315.65	549.39	14.02	13.75	2.92
6,587.00	78.600	178.10	6,159.20	-223.88	-1,314.42	593.73	8.29	8.13	-1.67
6,635.00	82.000	177.80	6,167.28	-271.16	-1,312.73	638.51	7.11	7.08	-0.63
6,683.00	87.400	177.40	6,171.71	-318.89	-1,310.73	683.63	11.28	11.25	-0.83
As of 9-26									
6,800.00	90.500	176.70	6,173.86	-435.70	-1,304.71	793.73	2.72	2.65	-0.60
6,893.00	90.300	177.80	6,173.21	-528.59	-1,300.25	881.38	1.20	-0.22	1.18
6,987.00	89.600	179.00	6,173.29	-622.55	-1,297.62	970.59	1.48	-0.74	1.28
7,080.00	90.300	180.40	6,173.37	-715.55	-1,297.13	1,059.48	1.68	0.75	1.51
7,174.00	91.000	182.50	6,172.31	-809.51	-1,299.51	1,150.13	2.35	0.74	2.23
7,267.00	90.200	182.60	6,171.33	-902.41	-1,303.65	1,240.27	0.87	-0.86	0.11
7,361.00	90.900	182.30	6,170.43	-996.32	-1,307.67	1,331.34	0.81	0.74	-0.32
7,455.00	90.100	182.60	6,169.61	-1,090.23	-1,311.69	1,422.42	0.91	-0.85	0.32
7,549.00	90.000	181.70	6,169.53	-1,184.16	-1,315.21	1,513.37	0.96	-0.11	-0.96
7,643.00	90.200	183.00	6,169.36	-1,278.08	-1,319.07	1,604.40	1.40	0.21	1.38
7,736.00	90.200	183.50	6,169.04	-1,370.93	-1,324.34	1,694.82	0.54	0.00	0.54
7,830.00	90.500	184.20	6,168.46	-1,464.71	-1,330.65	1,786.44	0.81	0.32	0.74
7,923.00	90.700	182.90	6,167.49	-1,557.53	-1,336.41	1,876.97	1.41	0.22	-1.40
8,016.00	89.300	179.60	6,167.49	-1,650.49	-1,338.44	1,966.56	3.85	-1.51	-3.55
8,108.00	90.200	179.30	6,167.89	-1,742.48	-1,337.55	2,054.38	1.03	0.98	-0.33
8,201.00	91.300	179.10	6,166.67	-1,835.47	-1,336.26	2,143.03	1.20	1.18	-0.22
8,293.00	90.200	178.70	6,165.47	-1,927.44	-1,334.49	2,230.58	1.27	-1.20	-0.43
8,386.00	90.000	180.60	6,165.31	-2,020.43	-1,333.92	2,319.45	2.05	-0.22	2.04
8,479.00	89.800	183.30	6,165.47	-2,113.37	-1,337.09	2,409.35	2.91	-0.22	2.90
8,572.00	90.800	183.80	6,164.98	-2,206.19	-1,342.84	2,499.88	1.20	1.08	0.54
8,665.00	89.000	181.70	6,165.15	-2,299.07	-1,347.31	2,590.10	2.97	-1.94	-2.26
8,758.00	90.400	181.30	6,165.63	-2,392.04	-1,349.74	2,679.81	1.57	1.51	-0.43

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Site:	SEC 16 T4N R62W	MD Reference:	KB @ 4546.00ft
Well:	Anschutz Eq Farms 4-62-16-0560BH	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Local Db

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)
8,850.00	90.000	181.10	6,165.31	-2,484.02	-1,351.67	2,768.43	0.49	-0.43	-0.22
8,942.00	89.400	181.10	6,165.79	-2,576.00	-1,353.43	2,857.00	0.65	-0.65	0.00
9,033.00	91.000	180.80	6,165.48	-2,666.98	-1,354.94	2,944.55	1.79	1.76	-0.33
9,125.00	89.700	180.50	6,164.91	-2,758.97	-1,355.99	3,032.93	1.45	-1.41	-0.33
9,218.00	91.000	180.10	6,164.35	-2,851.97	-1,356.47	3,122.11	1.46	1.40	-0.43
9,311.00	89.200	181.00	6,164.18	-2,944.96	-1,357.37	3,211.40	2.16	-1.94	0.97
9,403.00	91.200	180.80	6,163.86	-3,036.94	-1,358.81	3,299.88	2.18	2.17	-0.22
9,495.00	87.900	179.30	6,164.58	-3,128.92	-1,358.89	3,387.97	3.94	-3.59	-1.63
9,587.00	89.200	179.10	6,166.91	-3,220.88	-1,357.61	3,475.65	1.43	1.41	-0.22
9,680.00	88.000	178.40	6,169.18	-3,313.83	-1,355.58	3,564.06	1.49	-1.29	-0.75
9,775.00	89.100	178.40	6,171.59	-3,408.76	-1,352.93	3,654.18	1.16	1.16	0.00
9,871.00	91.000	179.00	6,171.50	-3,504.73	-1,350.75	3,745.44	2.08	1.98	0.63
9,966.00	90.500	179.70	6,170.26	-3,599.72	-1,349.67	3,836.07	0.91	-0.53	0.74
10,061.00	90.500	178.40	6,169.43	-3,694.70	-1,348.10	3,926.55	1.37	0.00	-1.37
10,157.00	90.600	179.30	6,168.51	-3,790.67	-1,346.17	4,017.89	0.94	0.10	0.94
10,252.00	90.400	181.40	6,167.68	-3,885.66	-1,346.75	4,109.00	2.22	-0.21	2.21
10,348.00	91.500	183.90	6,166.09	-3,981.54	-1,351.19	4,202.08	2.84	1.15	2.60
10,443.00	92.900	183.90	6,162.44	-4,076.25	-1,357.64	4,294.62	1.47	1.47	0.00
10,538.00	92.900	182.60	6,157.64	-4,170.97	-1,363.02	4,386.86	1.37	0.00	-1.37
As of 9-29									
10,634.00	89.900	182.20	6,155.29	-4,266.85	-1,367.04	4,479.82	3.15	-3.13	-0.42
10,729.00	90.300	182.90	6,155.12	-4,361.75	-1,371.27	4,571.91	0.85	0.42	0.74
10,825.00	91.300	183.10	6,153.78	-4,457.61	-1,376.29	4,665.13	1.06	1.04	0.21
10,900.00	91.300	183.10	6,152.08	-4,532.48	-1,380.35	4,737.99	0.00	0.00	0.00
Projected TD @ 10900.00 MD, 6152.08 TVD									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,953.00	2,885.81	73.99	-467.00	As of 9-23
5,630.00	5,405.14	208.18	-1,312.71	As of 9-24
6,156.00	5,913.48	114.71	-1,327.42	As of 9-25
6,683.00	6,171.71	-318.89	-1,310.73	As of 9-26
10,538.00	6,157.64	-4,170.97	-1,363.02	As of 9-29
10,900.00	6,152.08	-4,532.48	-1,380.35	Projected TD @ 10900.00 MD, 6152.08 TVD

Checked By: _____ Approved By: _____ Date: _____