Results of Directional Survey

API number:	30-025-40437			
OGRID:		Operator:	CIMAREX ENERGY CO. OF COLORADO	
		Property:	MADURO UNIT	# 9H

surface	ULSTR:	D	29	T	19S	R	33E
				330	FNL	1060	FWL
BH Loc	ULSTR:	E	32	T	19S	R	33E
16973	MD	9988.4	TVD	2306	FNL	699	FWL
				7586	FNL		
Top Perf/OH	ULSTR:	D	29	T	19S	R	33E
9550	MD	9547.3	TVD	363	FNL	1033	FWL
Bot Perf/OH	ULSTR:	E	32	T	19S	R	33E
16936	MD	9988.0	TVD	2269	FNL	699	FWL
				7549	FNL		

	MD	N/S	E/W	VD
	9537	-29.56	-19.62	9534.74
TOP PERFS/OH	**9550**	-32.73	-26.95	9547.32
	9568	-37.11	-37.11	9564.75
	16930	-7213.27	-360.43	9987.94
BOT PERFS/OH	**16936**	-7219.27	-360.56	9988.02
	16950	-7233.27	-360.86	9988.19

NEXT TO LAST	16950	-7233.27	-360.86	9988.19
LAST READING	16973	-7256.26	-361.34	9988.44
TD	**16973**	-7256.26	-361.34	9988.44

Surface Location	330	FN	1060	FW
Projected BHL	7586	FN	699	FW
Location of				
Top Perfs/OH	363	FN	1033	FW
Bottom Perfs/OH	7549	FN	699	FW

SUMMARY of Subsurface Locations

Surface Location	D-29-19S-33E	330	FN	1060	FW	Vert. Depth
Top Perfs/OH	D-29-19S-33E	363	FN	1033	FW	9547.32
Bottom Perfs/OH	E-32-19S-33E	7549	FN	699	FW	9988.02
Projected TD	E-32-19S-33E	7586	FN	699	FW	9988.44

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Weatherford
WFT Survey Report X & Y's

Company:	Cimarex Energy	**Date:** 8/2/2012 **Time:** 07:03:08	**Page:** 1
Field:	Lea Co., NM (NAD 83)	**Co-ordinate(NE) Reference:**	Well: Maduro Unit #9, Grid North
Site:	Maduro Unit #9	**Vertical (TVD) Reference:**	SITE 3623.0
Well:	Maduro Unit #9	**Section (VS) Reference:**	Well (0.00N,0.00E,182.86Azi)
Wellpath:	1	**Survey Calculation Method:**	Minimum Curvature **Db:** Sybase

Survey:	Wft Svy	**Start Date:**	7/30/2012
Company:	Weatherford	**Engineer:**	Russell W. Joyner
Tool:	MWD;MWD - Standard	**Tied-to:**	User Defined

Field:	Lea Co., NM (NAD 83)		
Map System:	US State Plane Coordinate System 1983	**Map Zone:**	New Mexico, Eastern Zone
Geo Datum:	GRS 1980	**Coordinate System:**	Well Centre
Sys Datum:	Mean Sea Level	**Geomagnetic Model:**	IGRF2010

Site:	Maduro Unit #9						
Site Position:		**Northing:**	596293.80 ft	**Latitude:**	32	38	15.400 N
From:	Map	**Easting:**	739238.20 ft	**Longitude:**	103	41	25.588 W
Position Uncertainty:	0.00 ft			**North Reference:**			Grid
Ground Level:	3598.00 ft			**Grid Convergence:**			0.35 deg

Well:	Maduro Unit #9				**Slot Name:**			
Well Position:	+N/-S	0.00 ft	**Northing:**	596293.80 ft	**Latitude:**	32	38	15.400 N
	+E/-W	0.00 ft	**Easting :**	739238.20 ft	**Longitude:**	103	41	25.588 W
Position Uncertainty:		0.00 ft						

Wellpath:	1		**Drilled From:**	Surface	
			Tie-on Depth:	0.00 ft	
Current Datum:	SITE	**Height** 3623.00 ft	**Above System Datum:**	Mean Sea Level	
Magnetic Data:	7/25/2012		**Declination:**	7.54 deg	
Field Strength:	48767 nT		**Mag Dip Angle:**	60.52 deg	

Vertical Section: Depth From (TVD)	**+N/-S**	**+E/-W**	**Direction**
ft	ft	ft	deg
0.00	0.00	0.00	182.86

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
9387.66	1.02	154.14	9386.22	-18.29	15.42	0.00	17.50	596275.51	739253.62	Tie On Ves
9443.00	1.47	130.94	9441.55	-19.20	16.17	1.21	18.37	596274.60	739254.37	First Wft Svy
9474.00	4.37	156.27	9472.50	-20.54	16.95	10.02	19.67	596273.26	739255.15	
9506.00	8.69	163.75	9504.29	-23.98	18.11	13.73	23.05	596269.82	739256.31	
9537.00	12.82	165.68	9534.74	-29.56	19.62	13.37	28.55	596264.24	739257.82	
9568.00	16.09	169.00	9564.75	-37.11	21.29	10.88	36.01	596256.69	739259.49	
9600.00	19.41	174.72	9595.23	-46.76	22.63	11.71	45.58	596247.04	739260.83	
9631.00	23.56	176.38	9624.07	-58.08	23.49	13.53	56.84	596235.72	739261.69	
9662.00	26.94	178.24	9652.10	-71.29	24.10	11.20	70.00	596222.51	739262.30	
9694.00	30.99	179.30	9680.09	-86.78	24.42	12.76	85.45	596207.02	739262.62	
9725.00	34.00	180.92	9706.24	-103.43	24.38	10.11	102.08	596190.37	739262.58	
9757.00	37.74	181.66	9732.17	-122.17	23.95	11.77	120.82	596171.63	739262.15	
9788.00	41.04	181.75	9756.12	-141.83	23.37	10.65	140.49	596151.97	739261.57	
9820.00	45.38	182.51	9779.44	-163.72	22.55	13.66	162.39	596130.08	739260.75	
9851.00	49.43	183.01	9800.42	-186.51	21.45	13.12	185.21	596107.29	739259.65	
9883.00	52.63	181.67	9820.54	-211.36	20.44	10.52	210.08	596082.44	739258.64	
9915.00	56.29	181.52	9839.14	-237.39	19.71	11.44	236.11	596056.41	739257.91	
9946.00	60.06	183.86	9855.48	-263.69	18.47	13.75	262.44	596030.11	739256.67	
9978.00	63.47	185.10	9870.62	-291.79	16.26	11.19	290.62	596002.01	739254.46	
10009.00	65.56	185.74	9883.96	-319.65	13.62	6.99	318.57	595974.15	739251.82	
10041.00	68.16	186.24	9896.53	-348.91	10.54	8.25	347.95	595944.89	739248.74	
10072.00	70.77	185.82	9907.40	-377.78	7.50	8.51	376.93	595916.02	739245.70	
10104.00	72.81	185.26	9917.40	-408.03	4.56	6.59	407.30	595885.77	739242.76	
10136.00	73.62	183.73	9926.65	-438.57	2.16	5.23	437.92	595855.23	739240.36	

SUR: D-29-19s-33e. 330/N & 1060/W
BHL: E-32-19s-33e, 7586/N & 699/W
API # 30-025-40437

Weatherford

WFT Survey Report X & Y's

Company:	Cimarex Energy	**Date:**	8/2/2012	**Time:**	07:03:08	**Page:**	2
Field:	Lea Co. NM (NAD 83)	**Co-ordinate(NE) Reference:**	Well: Maduro Unit #9, Grid North				
Site:	Maduro Unit #9	**Vertical (TVD) Reference:**	SITE 3623.0				
Well:	Maduro Unit #9	**Section (VS) Reference:**	Well (0.00N,0.00E,182.86Azi)				
Wellpath:	1	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase		

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
10167.00	74.51	182.70	9935.16	-468.33	0.49	4.30	467.73	595825.47	739238.69	
10199.00	76.36	183.09	9943.20	-499.26	-1.07	5.90	498.70	595794.54	739237.13	
10230.00	79.53	184.15	9949.68	-529.52	-2.99	10.76	529.01	595764.28	739235.21	
10262.00	83.13	184.07	9954.50	-561.06	-5.26	11.25	560.63	595732.74	739232.94	
10293.00	85.52	183.94	9957.57	-591.83	-7.41	7.72	591.47	595701.97	739230.79	
10325.00	88.32	183.82	9959.28	-623.71	-9.57	8.76	623.41	595670.09	739228.63	
10357.00	89.86	183.25	9959.79	-655.65	-11.54	5.13	655.40	595638.15	739226.66	
10378.00	89.75	182.94	9959.86	-676.61	-12.68	1.57	676.40	595617.19	739225.52	
10491.00	88.70	184.25	9961.39	-789.38	-19.76	1.49	789.38	595504.42	739218.44	
10585.00	88.83	187.43	9963.42	-882.86	-29.32	3.39	883.22	595410.94	739208.88	
10680.00	88.33	188.60	9965.77	-976.90	-42.57	1.34	977.80	595316.90	739195.63	
10775.00	91.17	187.42	9966.19	-1070.96	-55.80	3.24	1072.41	595222.84	739182.40	
10869.00	89.07	185.17	9965.99	-1164.38	-66.11	3.27	1166.23	595129.42	739172.09	
10964.00	88.27	181.49	9968.20	-1259.18	-71.62	3.96	1261.18	595034.62	739166.58	
11059.00	88.03	179.31	9971.26	-1354.12	-72.29	2.31	1356.04	594939.68	739165.91	
11154.00	87.78	179.15	9974.74	-1449.05	-71.01	0.31	1450.79	594844.75	739167.19	
11248.00	87.10	178.15	9978.94	-1542.93	-68.80	1.29	1544.44	594750.87	739169.40	
11343.00	92.04	182.16	9979.65	-1637.87	-69.06	6.70	1639.28	594655.93	739169.14	
11437.00	88.34	181.28	9979.34	-1731.81	-71.88	4.05	1733.24	594561.99	739166.32	
11532.00	88.28	184.41	9982.14	-1826.64	-76.59	3.29	1828.19	594467.16	739161.61	
11627.00	88.83	186.73	9984.54	-1921.16	-85.81	2.51	1923.05	594372.64	739152.39	
11721.00	87.91	185.94	9987.21	-2014.54	-96.17	1.29	2016.83	594279.26	739142.03	
11816.00	89.21	184.90	9989.60	-2109.09	-105.14	1.75	2111.71	594184.71	739133.06	
11910.00	90.44	183.31	9989.88	-2202.84	-111.87	2.14	2205.68	594090.96	739126.33	
12005.00	88.09	182.36	9991.10	-2297.71	-116.57	2.67	2300.66	593996.09	739121.63	
12099.00	90.80	182.40	9992.01	-2391.61	-120.47	2.88	2394.65	593902.19	739117.73	
12194.00	89.69	182.57	9991.61	-2486.52	-124.59	1.18	2489.64	593807.28	739113.61	
12288.00	90.86	183.74	9991.16	-2580.38	-129.77	1.76	2583.64	593713.42	739108.43	
12383.00	89.38	183.66	9990.96	-2675.17	-135.90	1.56	2678.62	593618.63	739102.30	
12478.00	90.00	186.66	9991.47	-2769.78	-144.44	3.22	2773.53	593524.02	739093.76	
12573.00	88.64	187.78	9992.60	-2864.01	-156.38	1.85	2868.25	593429.79	739081.82	
12667.00	90.25	186.79	9993.51	-2957.25	-168.30	2.01	2961.96	593336.55	739069.90	
12762.00	91.06	186.84	9992.42	-3051.57	-179.57	0.85	3056.73	593242.23	739058.63	
12857.00	92.96	186.19	9989.09	-3145.89	-190.34	2.11	3151.47	593147.91	739047.86	
12953.00	90.86	185.62	9985.89	-3241.32	-200.21	2.27	3247.28	593052.48	739037.99	
13048.00	87.97	183.66	9986.86	-3335.99	-207.89	3.68	3342.21	592957.81	739030.31	
13143.00	89.20	181.88	9989.21	-3430.85	-212.48	2.28	3437.18	592862.95	739025.72	
13237.00	89.32	180.76	9990.42	-3524.81	-214.65	1.20	3531.13	592768.99	739023.55	
13332.00	89.38	180.04	9991.50	-3619.80	-215.31	0.76	3626.04	592674.00	739022.89	
13426.00	90.37	179.74	9991.70	-3713.80	-215.13	1.10	3719.91	592580.00	739023.07	
13521.00	89.57	178.09	9991.75	-3808.78	-213.33	1.93	3814.68	592485.02	739024.87	
13616.00	90.25	178.32	9991.90	-3903.73	-210.36	0.76	3909.37	592390.07	739027.84	
13711.00	90.62	179.66	9991.18	-3998.71	-208.68	1.46	4004.15	592295.09	739029.52	
13805.00	90.19	181.03	9990.52	-4092.71	-209.25	1.53	4098.05	592201.09	739028.95	
13900.00	90.35	181.90	9990.07	-4187.67	-211.68	0.93	4193.02	592106.13	739026.52	
13994.00	90.00	182.88	9989.78	-4281.59	-215.60	1.11	4287.01	592012.21	739022.60	
14089.00	90.71	183.66	9989.19	-4376.43	-221.02	1.11	4382.01	591917.37	739017.18	
14184.00	88.85	182.96	9989.56	-4471.27	-226.50	2.09	4477.00	591822.53	739011.70	
14278.00	90.09	183.14	9990.43	-4565.13	-231.50	1.33	4570.99	591728.67	739006.70	
14373.00	89.57	182.41	9990.71	-4660.02	-236.10	0.94	4665.99	591633.78	739002.10	
14467.00	90.43	182.26	9990.71	-4753.94	-239.93	0.93	4759.99	591539.86	738998.27	
14562.00	90.06	180.87	9990.30	-4848.90	-242.53	1.51	4854.96	591444.90	738995.67	

Weatherford
WFT Survey Report X & Y's

Company:	Cimarex Energy	**Date:** 8/2/2012 **Time:** 07:03:08	**Page:** 3
Field:	Lea Co., NM (NAD 83)	**Co-ordinate(NE) Reference:**	Well: Maduro Unit #9, Grid North
Site:	Maduro Unit #9	**Vertical (TVD) Reference:**	SITE 3623.0
Well:	Maduro Unit #9	**Section (VS) Reference:**	Well (0.00N,0.00E,182.86Azi)
Wellpath:	1	**Survey Calculation Method:**	Minimum Curvature **Db:** Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
14656.00	90.43	181.49	9989.90	-4942.88	-244.46	0.77	4948.92	591350.92	738993.74	
14751.00	90.09	182.43	9989.47	-5037.82	-247.71	1.05	5043.90	591255.98	738990.49	
14845.00	90.12	183.12	9989.30	-5131.71	-252.26	0.73	5137.90	591162.09	738985.94	
14940.00	90.00	181.80	9989.20	-5226.62	-256.34	1.40	5232.90	591067.18	738981.86	
15035.00	90.06	181.26	9989.15	-5321.58	-258.88	0.57	5327.87	590972.22	738979.32	
15130.00	90.12	181.38	9989.00	-5416.56	-261.06	0.14	5422.84	590877.24	738977.14	
15224.00	89.51	181.77	9989.30	-5510.52	-263.65	0.77	5516.81	590783.28	738974.55	
15318.00	90.18	181.25	9989.56	-5604.49	-266.12	0.90	5610.79	590689.31	738972.08	
15413.00	89.65	181.72	9989.70	-5699.46	-268.59	0.75	5705.76	590594.34	738969.61	
15508.00	89.63	183.47	9990.30	-5794.35	-272.89	1.84	5800.75	590499.45	738965.31	
15602.00	89.69	184.33	9990.85	-5888.13	-279.28	0.92	5894.73	590405.67	738958.92	
15697.00	90.31	185.31	9990.85	-5982.80	-287.26	1.22	5989.68	590311.00	738950.94	
15792.00	90.06	185.70	9990.55	-6077.36	-296.38	0.49	6084.57	590216.44	738941.82	
15887.00	90.25	185.16	9990.29	-6171.93	-305.37	0.60	6179.48	590121.87	738932.83	
15981.00	90.26	184.55	9989.87	-6265.59	-313.32	0.65	6273.42	590028.21	738924.88	
16076.00	89.44	184.21	9990.12	-6360.31	-320.58	0.93	6368.39	589933.49	738917.62	
16171.00	90.00	184.02	9990.58	-6455.07	-327.39	0.62	6463.36	589838.73	738910.81	
16266.00	90.49	183.64	9990.18	-6549.85	-333.74	0.65	6558.35	589743.95	738904.46	
16360.00	90.62	182.08	9989.27	-6643.73	-338.43	1.67	6652.34	589650.07	738899.77	
16455.00	90.43	181.74	9988.40	-6738.67	-341.59	0.41	6747.32	589555.13	738896.61	
16550.00	90.00	181.86	9988.04	-6833.62	-344.58	0.47	6842.30	589460.18	738893.62	
16645.00	90.25	183.18	9987.83	-6928.53	-348.76	1.41	6937.30	589365.27	738889.44	
16740.00	90.09	182.61	9987.55	-7023.41	-353.55	0.62	7032.30	589270.39	738884.65	
16835.00	90.12	182.22	9987.38	-7118.32	-357.56	0.41	7127.30	589175.48	738880.64	
16930.00	89.20	181.25	9987.94	-7213.27	-360.43	1.41	7222.27	589080.53	738877.77	
16950.00	89.38	181.20	9988.19	-7233.27	-360.86	0.93	7242.26	589060.53	738877.34	Last Wft Svy
16973.00	89.38	181.20	9988.44	-7256.26	-361.34	0.00	7265.25	589037.54	738876.86	Proj. To Bit

Annotation

MD ft	TVD ft	
9387.66	9386.22	Tie On Ves
9443.00	9441.55	First Wft Svy
16950.00	9988.19	Last Wft Svy
16973.00	9988.44	Proj. To Bit

Weatherford

Cimarex Energy Co

Maduro Unit #9

Lea County, NM

Section 2

Days vs. Depth

Company: Cimarex
Lease/Well: Maduro Unit/# 9
Location: S29 T19s R33r
Rig Name: Scan Eagle
State/County: New Mexico/Lea
Latitude: 32.64
GRID North is 0.35 Degrees East of True North
VS-Azi: 0.00 Degrees

FIELD COPY ONLY (NOT DEFINITIVE)

RKB : 25 Feet

DRILLOG MS GYRO SURVEY CALCULATIONS
Filename: maduro unit #9 gyro survey.ut
Minimum Curvature Method
Report Date/Time: 7/20/2012 / 10:05

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
74.49	0.28	65.34	74.49	0.08	0.17	0.08	0.18	65.34	0.38
170.10	0.20	266.51	170.10	0.17	0.22	0.17	0.27	52.83	0.49
265.71	0.28	309.97	265.71	0.30	-0.12	0.30	0.33	338.05	0.20
361.32	0.39	335.52	361.32	0.74	-0.43	0.74	0.86	329.87	0.19
456.93	0.18	23.53	456.93	1.17	-0.51	1.17	1.28	336.70	0.31
552.54	0.06	139.49	552.54	1.27	-0.41	1.27	1.34	342.03	0.22
648.15	0.09	129.52	648.15	1.19	-0.32	1.19	1.23	344.77	0.03
743.76	0.11	99.55	743.76	1.13	-0.18	1.13	1.14	351.09	0.06
839.37	0.13	64.86	839.37	1.16	0.01	1.16	1.16	0.62	0.08
934.98	0.15	30.16	934.98	1.31	0.17	1.31	1.32	7.55	0.09
1030.59	0.18	31.56	1030.58	1.55	0.31	1.55	1.58	11.50	0.03
1126.20	0.21	37.97	1126.19	1.81	0.50	1.81	1.88	15.42	0.04
1221.81	0.21	88.13	1221.80	1.95	0.78	1.95	2.10	21.76	0.18
1317.42	0.21	139.30	1317.41	1.83	1.06	1.83	2.11	30.26	0.19
1413.03	0.17	109.12	1413.02	1.65	1.32	1.65	2.11	38.62	0.11
1508.64	0.14	78.94	1508.63	1.62	1.57	1.62	2.26	44.04	0.09
1604.25	0.13	49.28	1604.24	1.72	1.77	1.72	2.46	45.84	0.07
1699.86	0.12	10.62	1699.85	1.89	1.87	1.89	2.65	44.72	0.09
1795.47	0.13	316.10	1795.46	2.06	1.81	2.06	2.74	41.29	0.12
1891.08	0.14	260.58	1891.07	2.12	1.62	2.12	2.67	37.40	0.13
1986.69	0.31	330.20	1986.68	2.33	1.38	2.33	2.70	30.68	0.30
2082.30	0.48	39.82	2082.29	2.86	1.51	2.86	3.23	27.83	0.49
2177.91	0.51	42.68	2177.90	3.47	2.05	3.47	4.03	30.55	0.04
2273.52	0.53	49.54	2273.50	4.07	2.68	4.07	4.87	33.30	0.07
2369.13	0.80	37.67	2369.10	4.89	3.42	4.89	5.97	34.98	0.31
2464.74	1.06	25.80	2464.70	6.21	4.21	6.21	7.50	34.15	0.34
2560.35	1.10	55.85	2560.30	7.52	5.35	7.52	9.23	35.46	0.59
2655.96	1.14	85.89	2655.89	8.10	7.07	8.10	10.75	41.10	0.61
2751.57	1.63	105.62	2751.47	7.80	9.33	7.80	12.16	50.08	0.71
2847.18	2.12	125.34	2847.03	6.42	12.08	6.42	13.67	62.02	0.84
2942.79	2.01	151.56	2942.58	3.92	14.32	3.92	14.84	74.69	0.99
3038.40	1.91	157.79	3038.13	0.96	15.72	0.96	15.75	86.50	0.25
3134.01	2.04	133.01	3133.69	-1.67	17.56	-1.67	17.64	95.45	0.89

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
3229.62	2.16	108.24	3229.24	-3.40	20.52	-3.40	20.80	99.40	0.95
3325.23	2.22	93.51	3324.78	-4.07	24.07	-4.07	24.42	99.60	0.59
3420.84	2.28	98.79	3420.31	-4.48	27.80	-4.48	28.16	99.15	0.23
3516.45	2.39	116.13	3515.85	-5.64	31.47	-5.64	31.97	100.17	0.74
3612.06	2.49	133.47	3611.37	-7.95	34.76	-7.95	35.66	102.88	0.78
3707.67	2.73	144.97	3706.88	-11.24	37.57	-11.24	39.22	106.66	0.60
3803.28	2.97	156.48	3802.38	-15.38	39.87	-15.38	42.73	111.09	0.65
3898.89	2.50	172.19	3897.88	-19.72	41.14	-19.72	45.62	115.61	0.92
3994.50	2.04	191.90	3993.41	-23.45	41.08	-23.45	47.30	119.72	0.94
4090.11	1.64	207.18	4088.97	-26.33	40.10	-26.33	47.97	123.29	0.66
4185.72	1.24	232.47	4184.56	-28.18	38.65	-28.18	47.84	126.09	0.78
4281.33	1.04	278.00	4280.15	-28.69	36.98	-28.69	46.80	127.81	0.94
4376.94	0.83	313.52	4375.75	-28.09	35.62	-28.09	45.37	128.26	0.63
4472.55	0.76	312.91	4471.35	-27.19	34.66	-27.19	44.05	128.11	0.08
4568.16	0.68	322.30	4566.95	-26.30	33.85	-26.30	42.87	127.85	0.15
4663.77	0.74	320.02	4662.55	-25.38	33.10	-25.38	41.71	127.48	0.07
4759.38	0.80	337.74	4758.15	-24.29	32.45	-24.29	40.54	126.82	0.25
4854.99	0.65	344.52	4853.76	-23.15	32.05	-23.15	39.54	125.84	0.17
4950.60	0.51	341.30	4949.36	-22.22	31.77	-22.22	38.77	124.97	0.15
5046.21	0.33	338.17	5044.97	-21.56	31.53	-21.56	38.20	124.36	0.19
5141.82	0.15	315.05	5140.58	-21.22	31.34	-21.22	37.85	124.09	0.21
5237.43	0.16	317.98	5236.19	-21.03	31.17	-21.03	37.60	124.01	0.02
5333.04	0.17	316.92	5331.80	-20.83	30.98	-20.83	37.33	123.91	0.01
5428.65	0.12	319.43	5427.41	-20.65	30.82	-20.65	37.09	123.82	0.05
5524.26	0.07	321.94	5523.02	-20.52	30.71	-20.52	36.94	123.75	0.05
5619.87	0.09	325.30	5618.63	-20.42	30.64	-20.42	36.82	123.68	0.02
5715.48	0.10	348.66	5714.24	-20.28	30.58	-20.28	36.69	123.55	0.04
5811.09	0.16	338.81	5809.85	-20.07	30.51	-20.07	36.52	123.33	0.07
5906.70	0.23	328.95	5905.46	-19.77	30.37	-19.77	36.24	123.07	0.08
6002.31	0.21	325.72	6001.06	-19.47	30.17	-19.47	35.91	122.83	0.03
6097.92	0.18	327.49	6096.67	-19.20	29.99	-19.20	35.61	122.62	0.02
6193.53	0.12	232.73	6192.28	-19.13	29.83	-19.13	35.44	122.67	0.24
6289.14	0.05	222.97	6287.89	-19.22	29.72	-19.22	35.40	122.88	0.07
6384.75	0.06	235.24	6383.50	-19.28	29.66	-19.28	35.37	123.02	0.01
6480.36	0.06	267.51	6479.11	-19.30	29.57	-19.30	35.31	123.14	0.03
6575.97	0.11	187.47	6574.72	-19.40	29.51	-19.40	35.31	123.32	0.12
6671.58	0.15	107.43	6670.33	-19.52	29.62	-19.52	35.47	123.39	0.18
6767.19	0.24	106.47	6765.94	-19.62	29.93	-19.62	35.79	123.24	0.09
6862.80	0.15	105.50	6861.55	-19.71	30.24	-19.71	36.10	123.09	0.10
6958.41	0.13	192.77	6957.16	-19.85	30.34	-19.85	36.25	123.19	0.20
7054.02	0.11	280.04	7052.77	-19.94	30.22	-19.94	36.21	123.41	0.17
7149.63	0.14	273.78	7148.38	-19.91	30.01	-19.91	36.02	123.56	0.04
7245.24	0.18	261.51	7243.99	-19.93	29.75	-19.93	35.81	123.82	0.05
7340.85	0.30	304.83	7339.60	-19.81	29.40	-19.81	35.45	123.97	0.22
7436.46	0.42	348.15	7435.21	-19.33	29.13	-19.33	34.95	123.57	0.30
7532.07	0.48	21.14	7530.82	-18.61	29.20	-18.61	34.63	122.52	0.27
7627.68	0.54	54.14	7626.42	-17.98	29.71	-17.98	34.72	121.18	0.31
7723.29	0.37	25.35	7722.03	-17.43	30.21	-17.43	34.88	119.99	0.29
7818.90	0.20	356.57	7817.64	-16.99	30.33	-16.99	34.76	119.26	0.23
7914.51	0.41	320.57	7913.25	-16.56	30.10	-16.56	34.36	118.82	0.28
8010.12	0.61	284.58	8008.85	-16.17	29.39	-16.17	33.55	118.82	0.39
8105.73	0.92	276.71	8104.45	-15.96	28.13	-15.96	32.34	119.56	0.34
8201.34	1.23	268.84	8200.05	-15.89	26.34	-15.89	30.76	121.09	0.36
8296.95	1.24	269.81	8295.64	-15.91	24.28	-15.91	29.03	123.24	0.02
8392.56	1.24	270.78	8391.22	-15.90	22.21	-15.90	27.32	125.59	0.02
8488.17	1.31	277.87	8486.81	-15.74	20.09	-15.74	25.52	128.07	0.18

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
8583.78	1.39	284.96	8582.39	-15.29	17.89	-15.29	23.53	130.51	0.19
8679.39	1.03	277.83	8677.98	-14.87	15.92	-14.87	21.79	133.05	0.40
8775.00	0.67	270.69	8773.58	-14.75	14.51	-14.75	20.69	135.47	0.39
8870.61	0.58	231.40	8869.19	-15.04	13.56	-15.04	20.26	137.96	0.45
8966.22	0.49	192.11	8964.79	-15.75	13.10	-15.75	20.48	140.24	0.39
9061.83	0.54	152.05	9060.40	-16.54	13.22	-16.54	21.18	141.36	0.37
9157.44	0.58	112.00	9156.00	-17.12	13.88	-17.12	22.04	140.96	0.40
9253.05	0.46	122.22	9251.61	-17.51	14.66	-17.51	22.83	140.06	0.16
9348.66	0.33	132.44	9347.22	-17.90	15.19	-17.90	23.47	139.68	0.15
9387.66	1.02	154.14	9386.22	-18.29	15.42	-18.29	23.92	139.86	1.84

HORIZONTAL DISPLACEMENT IS
23.92 FEET AT 139.86 DEGREES

CIMAREX

Maduro Unit #9
Lea Co., NM

RECEIVED
DEC 18 2012
HOBBS OCD

KB ELEV: 3623
GL ELEV: 3598

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	9387.66	1.02	154.14	9386.21	-18.26	15.40	0.00	0.00	17.46	
2	9467.65	1.02	154.14	9466.19	-19.54	16.03	0.00	0.00	18.71	
3	10043.55	70.00	183.01	9907.41	-333.36	2.35	12.00	29.05	332.83	
4	10376.88	90.00	183.01	9965.00	-659.52	-14.81	6.00	0.01	659.43	
5	16990.86	90.00	183.01	9965.00	-7264.35	-362.56	0.00	0.00	7273.39	PBHL

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Maduro Unit #9	0.00	0.00	596293.80	739238.20	32°38'15.400N	103°41'25.588W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL	9965.00	-7264.35	-362.56	589029.45	738875.64	Point

SITE DETAILS

Maduro Unit #9

Site Centre Northing: 596293.80
Easting: 739238.20

Ground Level: 3598.00
Positional Uncertainty: 0.00
Convergence: 0.35

FIELD DETAILS

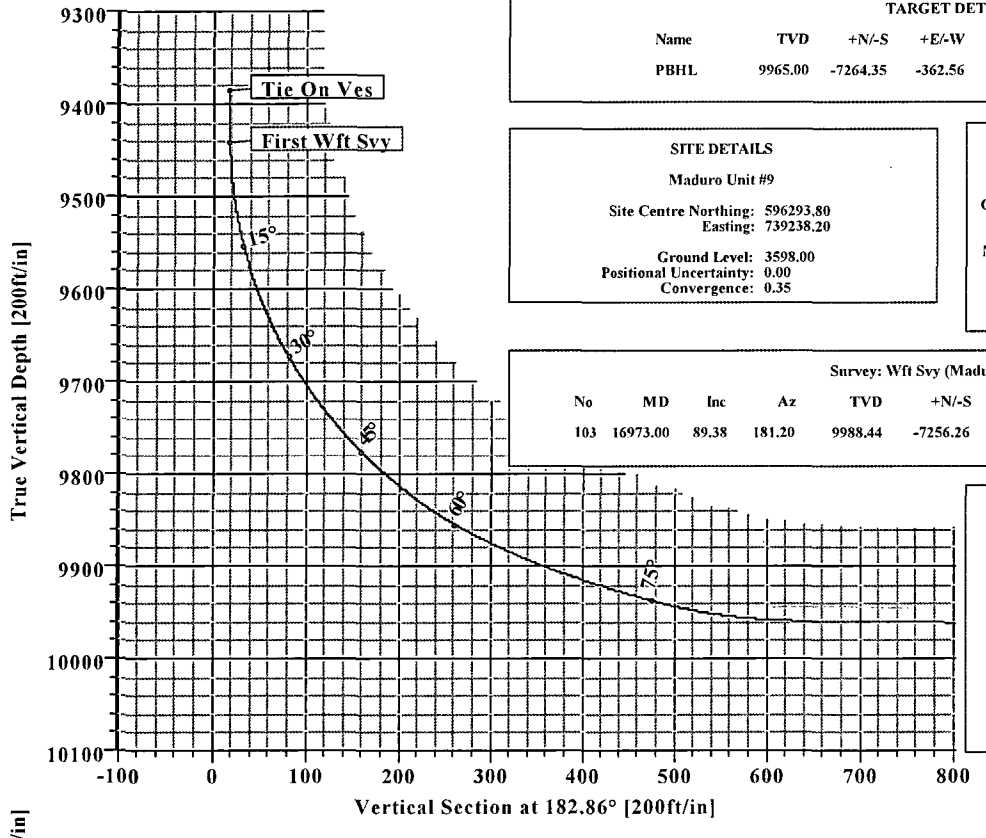
Lea Co., NM (NAD 83)

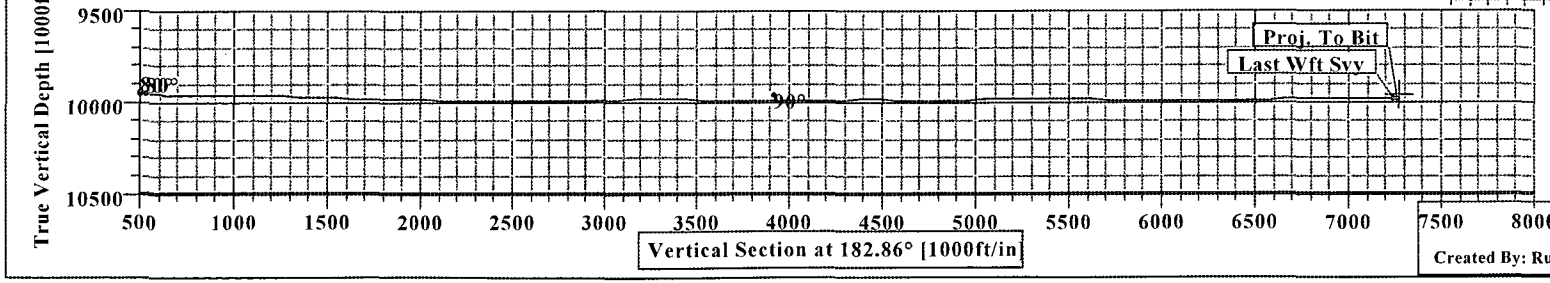
Geodetic System: US State Plane Coordinate System 1983
Ellipsoid: GRS 1980
Zone: New Mexico, Eastern Zone
Magnetic Model: IGRF2010

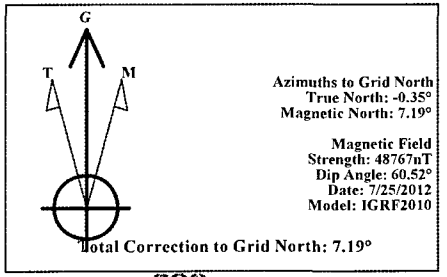
System Datum: Mean Sea Level
Local North: Grid North

Survey: Wft Svy (Maduro Unit #9/1)

No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
103	16973.00	89.38	181.20	9988.44	-7256.26	-361.34	0.00	180.00	7265.25





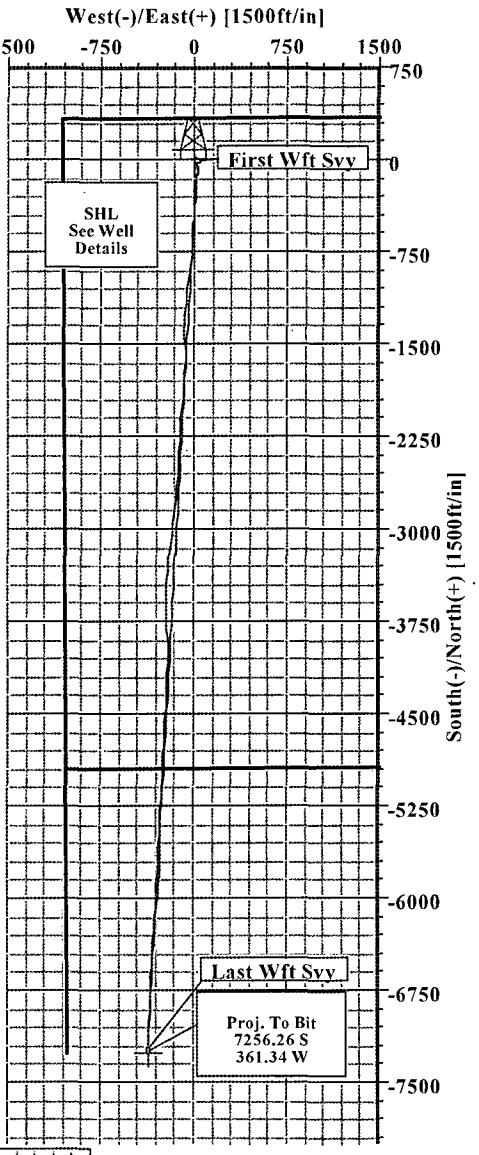


Azimuths to Grid North
True North: -0.35°
Magnetic North: 7.19°

Magnetic Field
Strength: 48767nT
Dip Angle: 60.52°
Date: 7/25/2012
Model: IGRF2010

Total Correction to Grid North: 7.19°

Weatherford



LEGEND

Maduro Unit #9,1,Gyro
Maduro Unit #9,1,Plan #4
Queenie 15-3 (Pilot (Don't Use))
1
Wft Svy

Survey: Wft Svy (Maduro Unit #9/1)

Created By: Russell W. Joyner Date: 8/2/2012