Results of Directional Survey

API number:	30-025-39998			
OGRID:		Operator:	CIMAREX ENERGY CO. OF COLORADO	
		Property:	NORTH MADURO FEDERAL UNIT	# 4H

surface	ULSTR:	D	20	T	19S	R	33E	
				660	FNL	410	FWL	
BH Loc	ULSTR:	A	20	T	19S	R	33E	
14275	MD	9938.7	TVD	364	FNL	4943	FWL	
						337	FEL	
Top Perf/OH	ULSTR:	D	20	T	19S	R	33E	
10850	MD	9888.0	TVD	595	FNL	1530	FWL	
Bot Perf/OH	ULSTR:	A	20	T	19S	R	33E	
14212	MD	9939.2	TVD	372	FNL	4881	FWL	
						399	FWL	

	MD	N/S	E/W	VD
	10778	66.70	1047.90	9886.7
TOP PERFS/OH	**10850**	65.49	1119.90	9887.99
	10873	65.10	1142.90	9888.40
	14118	276.90	4377.60	9940.00
BOT PERFS/OH	**14212**	288.16	4470.92	9939.24
	14229	290.20	4487.80	9939.10

NEXT TO LAST	14118	276.90	4377.60	9940.00
LAST READING	14229	290.20	4487.80	9939.10
TD	**14275**	295.71	4533.47	9938.73

Surface Location	660	FN	410	FW
Projected BHL	364	FN	4943	FW
Location of				
Top Perfs/OH	595	FN	1530	FW
Bottom Perfs/OH	372	FN	4881	FW

SUMMARY of Subsurface Locations

Surface Location	D-20-19S-33E	660	FN	410	FW	Vert. Depth
Top Perfs/OH	D-20-19S-33E	595	FN	1530	FW	9887.99
Bottom Perfs/OH	A-20-19S-33E	372	FN	4881	FW	9939.24
Projected TD	A-20-19S-33E	364	FN	4943	FW	9938.73

AUG 3 1 2011

HOBBS OCD

JUL 08 2011

RECEIVED

CIMAREX ENERGY

Tonto
Lea County, NM
North Maduro Federal Unit #4H
VH - Job #32K0111100

SUR: D-20-19s-33e, 660/N & 410/W
BHL: A-20-19s-33e, 364/N & 4943/W
API # 30-025-39998

Survey: Actual

SDI Standard Survey Report

11 February, 2011

This survey is correct to the best of my knowledge and is supported by actual field data.

Notarized this date 11th of February, 2011.

Notary Signature
County of Midland
State of Texas

NOTARY PUBLIC STATE OF TEXAS
CARRIE REED
My Commission Expires
October 4, 2011

Scientific Drilling
Directional Drilling Operations

Scientific Drilling International, Inc.

SDI Standard Survey Report

Scientific Drilling
Directional Drilling Operations

Company:	CIMAREX ENERGY	**Local Co-ordinate Reference:**	Well North Maduro Federal Unit #4H
Project:	Tonto	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	Lea County, NM	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Well:	North Maduro Federal Unit #4H	**North Reference:**	Grid
Wellbore:	VH - Job #32K0111100	**Survey Calculation Method:**	Minimum Curvature
Design:	VH - Job #32K0111100	**Database:**	EDM-Regulatory

Project Tonto

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Lea County, NM

Site Position:		**Northing:**	601,221 98 usft	**Latitude:**	32° 39' 4 410 N
From:	Lat/Long	**Easting:**	697,235.55 usft	**Longitude:**	103° 41' 33.050 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16"	**Grid Convergence:**	0.35 °

Well North Maduro Federal Unit #4H, Directional (Great White)

Well Position	**+N/-S**	0 0 usft	**Northing:**	601,221 98 usft	**Latitude:**	32° 39' 4.410 N
	+E/-W	0 0 usft	**Easting:**	697,235.55 usft	**Longitude:**	103° 41' 33.050 W
Position Uncertainty		0 0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	0 0 usft

Wellbore VH - Job #32K0111100

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2/5/2011	7 71	60.59	48,957

Design VH - Job #32K0111100

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0 0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0 0	0.0	0.0	347 34

Survey Program **Date** 2/11/2011

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100 0	9,220.0	Actual (VH - Job #32K0111100)	Keeper	Keeper Gyro

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
0.0	0.00	0.00	0.0	0 0	0.0	0.00	0.0
100 0	0.33	92.99	100.0	0.0	0.3	92.99	0.3
200 0	0 40	89.16	200 0	0.0	0.9	91 54	0 9
300.0	0 46	99.10	300.0	-0 1	1.7	92.86	1.7
400.0	0.45	104.60	400 0	-0.2	2.4	95 74	2.5
500 0	0 53	113 55	500.0	-0 5	3.2	99.25	3.3
600.0	0.51	118 94	600.0	-0.9	4.1	102 89	4 2
700 0	0 59	135 03	700 0	-1.5	4.8	107.40	5.0
800.0	0.47	133.82	800 0	-2.2	5 5	111.50	5 9
900 0	0.26	168.96	900.0	-2.7	5.8	114 61	6 4
1,000 0	0 22	195.51	1,000.0	-3.1	5 8	117 87	6 6
1,100.0	0.56	219.47	1,100.0	-3.6	5.4	123 72	6.5

Company:	CIMAREX ENERGY	**Local Co-ordinate Reference:**	Well North Maduro Federal Unit #4H
Project:	Tonto	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	Lea County, NM	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Well:	North Maduro Federal Unit #4H	**North Reference:**	Grid
Wellbore:	VH - Job #32K0111100	**Survey Calculation Method:**	Minimum Curvature
Design:	VH - Job #32K0111100	**Database:**	EDM-Regulatory

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,200 0	0.59	218.85	1,200.0	-4 4	4.8	132.52	6.5
1,300 0	0 71	232.46	1,300 0	-5.2	4 0	142.39	6.6
1,400.0	0.27	192 59	1,400 0	-5 8	3.5	149 21	6 7
1,500 0	0 26	162.92	1,500 0	-6.2	3.5	150 94	7.1
1,600 0	0.34	164.54	1,600 0	-6.7	3 6	151.81	7.7
1,700 0	0 25	168 71	1,700.0	-7 2	3.7	152.72	8.2
1,800.0	0.34	177.44	1,799 9	-7 8	3 8	153.94	8.6
1,900.0	0 34	177.74	1,899 9	-8.4	3 8	155.42	9 2
2,000 0	0 23	164 52	1,999.9	-8 8	3 9	156.28	9.7
2,100 0	0.09	125.67	2,099.9	-9 1	4 0	156.22	9.9
2,200 0	0 06	352.66	2,199 9	-9.1	4.1	155.90	9.9
2,300 0	1.05	358 63	2,299.9	-8 1	4.0	153.56	9.1
2,400.0	1.97	9.77	2,399.9	-5 5	4 3	141 96	7.0
2,500 0	2 43	29.29	2,499 8	-2.0	5.6	109 14	6.0
2,600 0	2 48	33 76	2,599.7	1 7	7.9	77.85	8 0
2,700 0	2 76	36.02	2,699 6	5.4	10 5	62 58	11 8
2,800 0	3.19	41.60	2,799.5	9.5	13 7	55.45	16 7
2,900.0	3.38	45.75	2,899 3	13.6	17.7	52.46	22 3
3,000 0	2.46	51.78	2,999 2	17.0	21.5	51.69	27 4
3,100 0	1 91	57.70	3,099.1	19.2	24 6	52 02	31.2
3,200 0	1.40	59.82	3,199.1	20.7	27.1	52.57	34.1
3,300 0	1 14	64.17	3,299 1	21.8	29.0	53.13	36 3
3,400.0	0.77	52.98	3,399.1	22.6	30.4	53.42	37 9
3,500.0	0 43	59.99	3,499.0	23 2	31 3	53.47	39 0
3,600.0	0.19	82 03	3,599.0	23 4	31 8	53 65	39.5
3,700.0	0.16	40.47	3,699 0	23 5	32 1	53.72	39.8
3,800.0	0 08	33 23	3,799 0	23 7	32.2	53.64	40.0
3,900.0	0.16	42.76	3,899.0	23 9	32.3	53 56	40 2
4,000 0	0 25	357.63	3,999.0	24 2	32.4	53.27	40 4
4,100.0	0 22	9 97	4,099.0	24.6	32.4	52.83	40.7
4,200.0	0.33	6.38	4,199.0	25 1	32 5	52.36	41.0
4,300 0	0.40	23.18	4,299.0	25.7	32 7	51.84	41.5
4,400 0	0 26	47.14	4,399.0	26 1	33 0	51.58	42.1
4,500.0	0 30	37 56	4,499.0	26.5	33 3	51 48	42.6
4,600.0	0 45	46 50	4,599 0	27.0	33 7	51 35	43.2
4,700 0	0 41	57.91	4,699 0	27.4	34.3	51.36	43.9
4,800.0	0 50	61.78	4,799 0	27 8	35 0	51.51	44 7
4,900.0	0.47	47.03	4,899.0	28 3	35 7	51.57	45.6
5,000 0	0 21	38 08	4,999.0	28.7	36.1	51.47	46 2
5,100.0	0.20	77.86	5,099 0	28.9	36 4	51.52	46.5
5,200.0	0 26	96 84	5,199.0	28.9	36 8	51.81	46.8
5,300 0	0 23	114 46	5,299.0	28 8	37.2	52 22	47.1
5,400 0	0 05	20.90	5,399.0	28.8	37.4	52.41	47 2
5,500 0	0.33	297.60	5,499 0	29 0	37.2	52.07	47.1

Company:	CIMAREX ENERGY	**Local Co-ordinate Reference:**	Well North Maduro Federal Unit #4H
Project:	Tonto	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	Lea County, NM	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Well:	North Maduro Federal Unit #4H	**North Reference:**	Grid
Wellbore:	VH - Job #32K0111100	**Survey Calculation Method:**	Minimum Curvature
Design:	VH - Job #32K0111100	**Database:**	EDM-Regulatory

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
5,600 0	0.20	279.43	5,599.0	29.1	36.7	51.59	46.9
5,700 0	0.55	291.03	5,699.0	29 3	36 1	50.92	46 5
5,800 0	0.89	303.53	5,799.0	29.9	35 0	49.48	46.1
5,900 0	0 96	296.74	5,899.0	30.7	33.6	47 57	45.5
6,000 0	0.84	300.65	5,999.0	31.5	32 2	45.68	45.1
6,100.0	0.99	311.95	6,099 0	32.4	31.0	43.67	44.8
6,200.0	0.91	300 63	6,199.0	33.4	29 6	41.57	44.7
6,300.0	0.95	299.61	6,298.9	34.2	28 2	39 52	44.4
6,400.0	0.79	312.52	6,398 9	35.1	27 0	37 57	44.3
6,500 0	0.74	317 98	6,498 9	36 0	26.1	35.87	44 5
6,600.0	0.82	317.31	6,598.9	37.1	25.1	34 16	44.8
6,700 0	0 78	316.12	6,698 9	38 1	24.2	32.43	45 1
6,800.0	0 68	318.97	6,798 9	39.0	23.3	30.88	45.5
6,900.0	0.58	328.33	6,898.9	39 9	22 7	29.62	45.9
7,000 0	0.62	335.23	6,998.9	40 8	22 2	28 53	46.4
7,100.0	0 66	327.71	7,098 9	41.8	21.6	27.39	47.1
7,200.0	0 55	341 73	7,198.9	42 7	21 2	26 38	47.7
7,300 0	0 41	355.89	7,298 9	43.5	21.0	25 76	48.3
7,400 0	0 42	7.68	7,398 9	44.3	21.0	25.42	49 0
7,500.0	0.59	30.40	7,498 9	45.1	21.3	25 34	49 9
7,600 0	0.61	34.71	7,598 9	46 0	21 9	25 49	50.9
7,700.0	0.72	18 78	7,698.9	47 0	22.4	25.50	52.1
7,800.0	0 82	16 61	7,798 8	48.3	22.8	25 31	53.4
7,900.0	0 83	15.10	7,898 8	49.7	23 2	25 06	54.8
8,000 0	0.70	355.20	7,998 8	51.0	23.4	24.62	56.1
8,100 0	0 77	316.83	8,098 8	52.1	22.8	23 69	56.8
8,200 0	1.09	307.92	8,198 8	53.1	21.6	22.15	57 4
8,300.0	1.47	306 21	8,298 8	54 5	19 8	20.02	58 0
8,400.0	1 67	297 10	8,398.7	55 9	17.5	17 40	58 6
8,500.0	1.71	289.54	8,498 7	57.1	14.8	14 55	59 0
8,600 0	2.38	283.26	8,598.6	58.0	11.4	11 10	59.1
8,700 0	2 56	284.03	8,698.5	59.1	7.2	6.95	59.5
8,800 0	2.21	283.91	8,798 5	60.1	3 2	3.01	60.1
8,900 0	2 47	287.47	8,898.4	61.2	-0.8	359 28	61.2
9,000 0	2 78	287 33	8,998.3	62.5	-5 1	355 30	62.7
9,100 0	2.71	291.70	9,098.1	64.1	-9.7	351.44	64.9
9,200.0	2.74	294.21	9,198.0	66.0	-14.0	348.00	67 5
9,220.0	2.88	295.56	9,218 0	66 4	-14 9	347.34	68.1

Scientific Drilling
Directional Drilling Operations

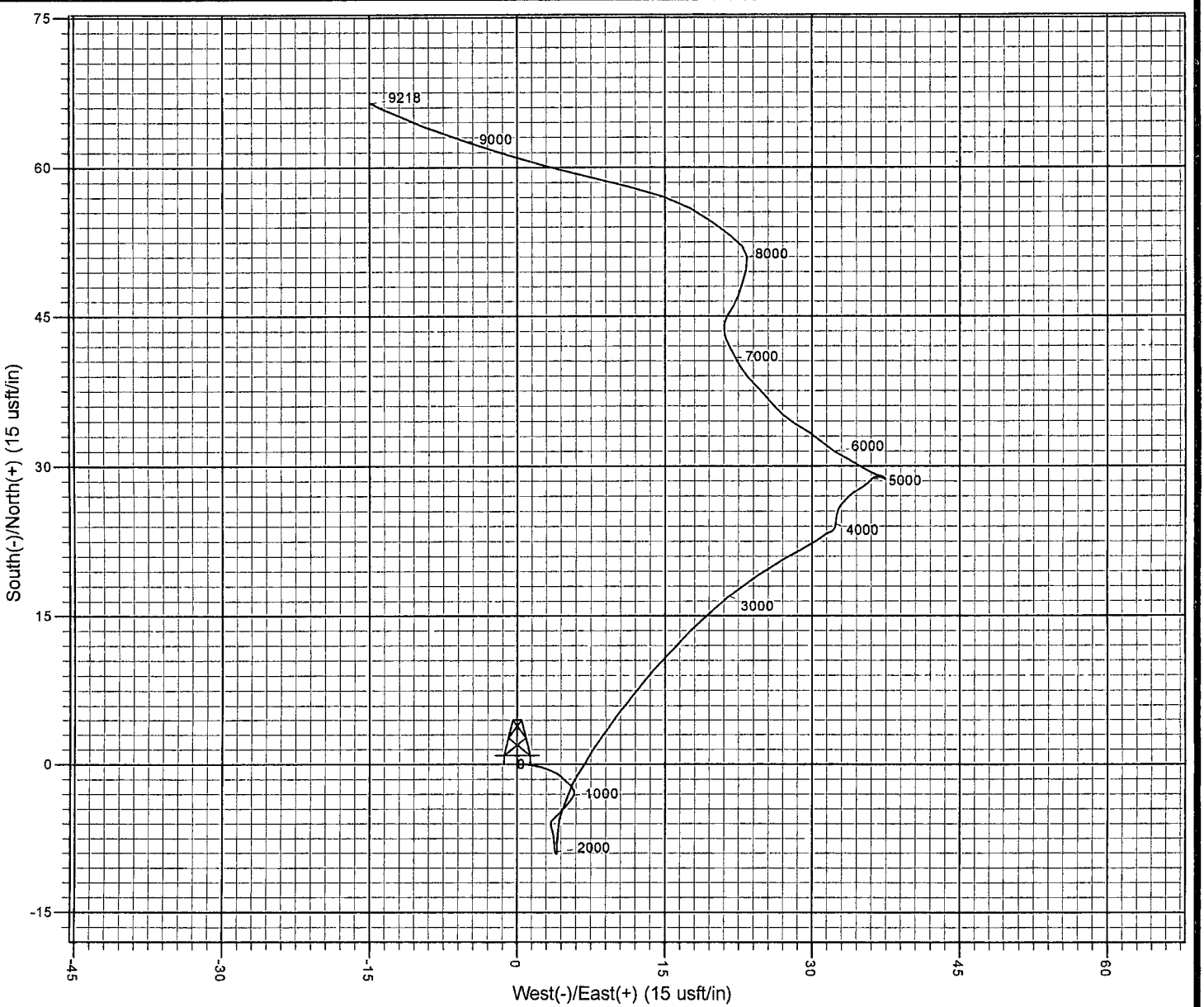
Project: Tonto
Lea County, NM
Well: North Maduro Federal Unit #4H
Wellbore: VH - Job #32K0111100
Design: VH - Job #32K0111100

Azimuths to Grid North
True North: -0 35°
Magnetic North. 7.36°

Magnetic Field
Strength 48956.8snT
Dip Angle: 60 59°
Date: 2/5/2011
Model: IGRF200510

WELL DETAILS: North Maduro Federal Unit #4H
WELL @ 0.0usft (Original Well Elev)
Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	601221.98	697235 55	32° 39' 4.410 N	103° 41' 33.050 W	



PROJECT DETAILS: Tonto
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

SITE DETAILS: Lea County, NM
Site Centre Latitude: 32° 39' 4.410 N
Longitude: 103° 41' 33.050 W
Positional Uncertainity: 0.0
Convergence: 0.35
Local North: Grid

HOBBS OCD

JUL 08 2011

RECEIVED

CIMAREX

Cimarex Energy Co.

Lea County (NAD 83)
Sec 20 - T19S - R33E
North Maduro Fed Unit #4

Wellbore #1

SUR: D-20-19s-33e, 660/N & 410/W
BHL: A-20-19s-33e, 364/N & 4943/W
API # 30-025-39998

Survey: MWD Survey

Standard Survey Report

04 March, 2011

CIMAREX

Cimarex Energy Co.
Project: Lea County (NAD 83)
Site: Sec 20 - T19S - R33E
Well: North Maduro Fed Unit #4
Wellbore: Wellbore #1

WELL DETAILS: North Maduro Fed Unit #4

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	601242.10	738568.00	32° 39' 4.414 N	103° 41' 33.059 W

SHL: 660' FNL / 410' FWL
BHL: 660' FNL / 330' FEL

GREAT WHITE DIRECTIONAL SERVICES, L.L.C.

T G M

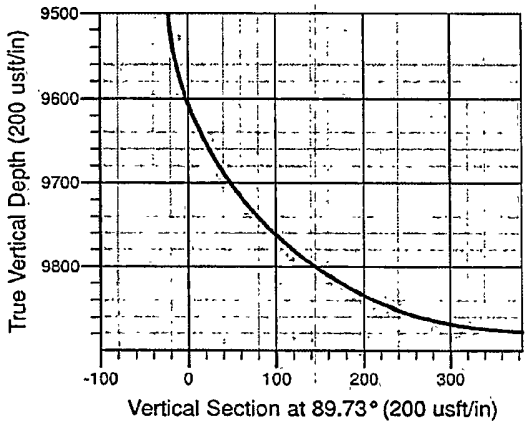
Azimuths to Grid North
Total Correction: 7.37°
Magnetic Field
Strength: 48962.9snT
Dip Angle: 60.59°
Date: 01/13/2011
Model: IGRF200510

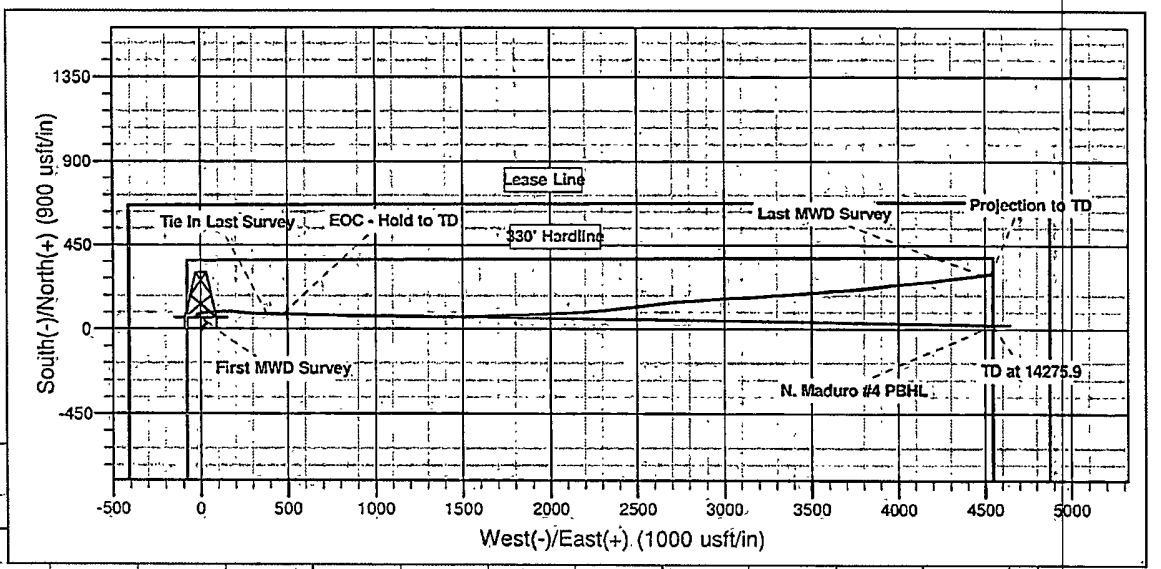
WELLBORE TARGET DETAILS (LAT/LONG)

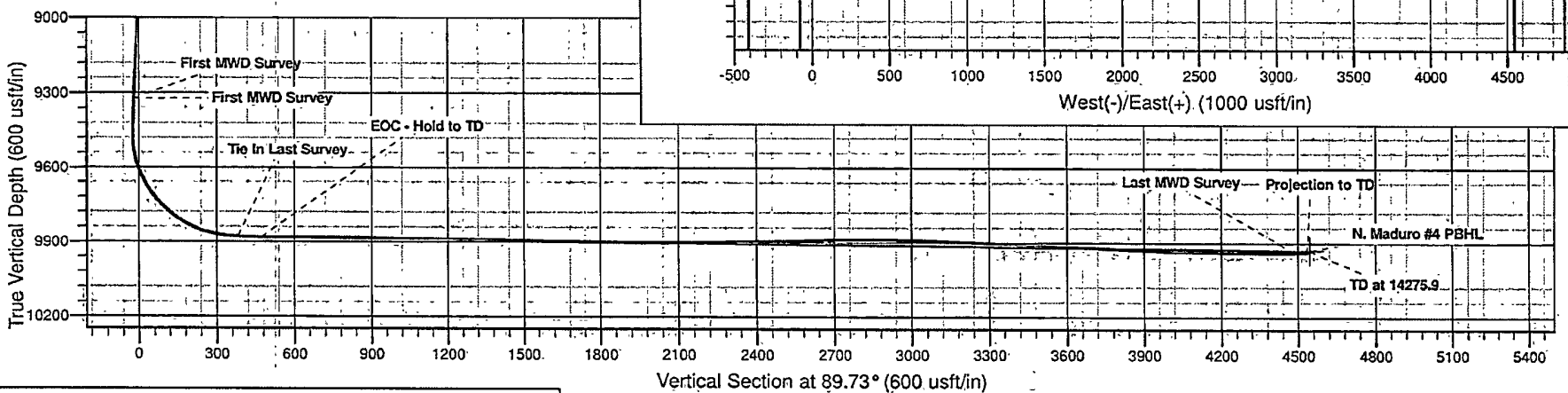
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
N. Maduro #4 PBHL	9930.0	22.0	4545.1	32° 39' 4.358 N	103° 40' 39.897 W

SECTION DETAILS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
9877.9	10113.0	86.70	90.20	78.7	383.2	383.5	0.0	Tie In Last Survey
9881.0	10201.9	89.30	90.80	77.9	472.0	472.4	88.9	EOC - Hold to TD
9930.8	14275.7	89.30	90.80	21.1	4545.1	4545.1	4162.3	TD at 14275.9







Plan: Plan #3 (North Maduro Fed Unit #4/Wellbore #1)

Created By: Aaron Pullin Date: 9:54, March 04 2011

CIMAREX

Great White Directional Services

Survey Report

Company:	Cimarex Energy Co.	Local Co-ordinate Reference:	Well North Maduro Fed Unit #4
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 20 - T19S - R33E	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	North Maduro Fed Unit #4	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Lea County (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 20 - T19S - R33E				
Site Position:		Northing:	601,242.10 usft	Latitude:	32° 39' 4.414 N
From:	Map	Easting:	738,568.00 usft	Longitude:	103° 41' 33.059 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.35 °

Well	North Maduro Fed Unit #4					
Well Position	+N/-S	0.0 usft	Northing:	601,242.10 usft	Latitude:	32° 39' 4.414 N
	+E/-W	0.0 usft	Easting:	738,568.00 usft	Longitude:	103° 41' 33.059 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	0.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	01/13/11	7.71	60.59	48,963

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	89.72	

Survey Program Date 03/04/11

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	9,220.0	Gyro (Wellbore #1)	MWD	MWD - Standard
9,325.0	14,275.0	MWD Survey (Wellbore #1)	MWD	MWD - Standard

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,220.0	2.88	295.56	9,218.0	66.4	-14.9	-14.6	0.00	0.00	0.00
9,325.0	3.00	299.60	9,322.9	68.9	-19.7	-19.3	0.23	0.11	3.85
First MWD Survey									
9,357.0	2.50	315.40	9,354.8	69.8	-20.9	-20.6	2.82	-1.56	49.38
9,388.0	2.60	320.00	9,385.8	70.8	-21.8	-21.5	0.73	0.32	14.84
9,420.0	2.40	315.30	9,417.8	71.9	-22.8	-22.4	0.89	-0.63	-14.69
9,451.0	2.30	315.40	9,448.8	72.8	-23.7	-23.3	0.32	-0.32	0.32
9,483.0	2.20	38.00	9,480.7	73.7	-23.7	-23.4	9.28	-0.31	258.13
9,515.0	6.20	74.10	9,512.6	74.7	-21.7	-21.3	14.40	12.50	112.81
9,547.0	10.70	77.90	9,544.3	75.8	-17.1	-16.8	14.16	14.06	11.88

Company:	Cimarex Energy Co.	Local Co-ordinate Reference:	Well North Maduro Fed Unit #4
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 20 - T19S - R33E	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	North Maduro Fed Unit #4	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,578.0	15.80	76.30	9,574.5	77.4	-10.2	-9.8	16.49	16.45	-5.16
9,610.0	20.40	75.90	9,604.9	79.8	-0.6	-0.2	14.38	14.38	-1.25
9,642.0	24.50	79.60	9,634.4	82.3	11.4	11.8	13.55	12.81	11.56
9,673.0	28.40	83.00	9,662.2	84.4	25.0	25.4	13.49	12.58	10.97
9,705.0	32.30	86.30	9,689.8	85.9	41.1	41.5	13.25	12.19	10.31
9,736.0	36.60	86.60	9,715.4	86.9	58.6	59.0	13.88	13.87	0.97
9,768.0	41.10	85.80	9,740.3	88.3	78.6	79.1	14.15	14.06	-2.50
9,799.0	45.80	85.60	9,762.8	89.8	99.9	100.3	15.16	15.16	0.00
9,831.0	50.20	87.30	9,784.2	91.3	123.6	124.1	14.18	13.75	4.69
9,862.0	54.50	90.30	9,803.1	91.7	148.2	148.6	15.84	13.87	9.68
9,894.0	58.60	92.80	9,820.7	91.0	174.8	175.3	14.37	12.81	7.81
9,926.0	63.60	93.90	9,836.2	89.4	202.8	203.2	15.91	15.63	3.44
9,954.0	67.60	95.20	9,847.8	87.3	228.2	228.6	14.90	14.29	4.64
9,985.0	72.70	95.40	9,858.3	84.6	257.2	257.6	16.46	16.45	0.65
10,017.0	77.50	94.80	9,866.5	81.9	288.0	288.4	15.11	15.00	-1.88
10,050.0	82.10	92.20	9,872.4	79.9	320.4	320.8	15.95	13.94	-7.88
10,082.0	85.50	91.00	9,875.8	79.0	352.2	352.6	11.26	10.63	-3.75
10,113.0	86.70	90.20	9,877.9	78.7	383.2	383.5	4.65	3.87	-2.58
10,145.0	88.40	90.70	9,879.3	78.5	415.1	415.5	5.54	5.31	1.56
10,176.0	88.60	90.80	9,880.1	78.1	446.1	446.5	0.72	0.65	0.32
10,208.0	89.90	91.50	9,880.5	77.4	478.1	478.5	4.61	4.06	2.19
10,303.0	90.00	91.20	9,880.6	75.2	573.1	573.4	0.33	0.11	-0.32
10,398.0	89.80	91.10	9,880.8	73.3	668.1	668.4	0.24	-0.21	-0.11
10,493.0	89.60	91.00	9,881.3	71.5	763.0	763.4	0.24	-0.21	-0.11
10,588.0	88.90	90.80	9,882.5	70.0	858.0	858.3	0.77	-0.74	-0.21
10,683.0	88.70	91.10	9,884.5	68.5	953.0	953.3	0.38	-0.21	0.32
10,778.0	88.70	91.00	9,886.7	66.7	1,047.9	1,048.3	0.11	0.00	-0.11
10,873.0	89.20	90.90	9,888.4	65.1	1,142.9	1,143.2	0.54	0.53	-0.11
10,968.0	89.40	90.80	9,889.6	63.7	1,237.9	1,238.2	0.24	0.21	-0.11
11,063.0	89.10	90.30	9,890.8	62.8	1,332.9	1,333.2	0.61	-0.32	-0.53
11,157.0	89.00	89.70	9,892.4	62.8	1,426.9	1,427.2	0.65	-0.11	-0.64
11,257.0	89.10	89.30	9,894.0	63.7	1,526.8	1,527.1	0.41	0.10	-0.40
11,348.0	88.90	88.70	9,895.6	65.3	1,617.8	1,618.1	0.69	-0.22	-0.66
11,442.0	89.10	88.50	9,897.2	67.6	1,711.8	1,712.1	0.30	0.21	-0.21
11,537.0	89.30	88.10	9,898.6	70.4	1,806.7	1,807.0	0.47	0.21	-0.42
11,632.0	89.40	87.60	9,899.7	74.0	1,901.7	1,902.0	0.54	0.11	-0.53
11,727.0	89.70	87.40	9,900.4	78.1	1,996.6	1,996.9	0.38	0.32	-0.21
11,822.0	90.10	86.70	9,900.6	83.0	2,091.4	2,091.8	0.85	0.42	-0.74
11,917.0	90.50	85.90	9,900.1	89.1	2,186.2	2,186.6	0.94	0.42	-0.84
12,012.0	90.90	85.20	9,898.9	96.5	2,280.9	2,281.4	0.85	0.42	-0.74
12,107.0	91.10	84.50	9,897.2	105.0	2,375.5	2,376.0	0.77	0.21	-0.74
12,202.0	90.90	83.70	9,895.6	114.8	2,470.0	2,470.6	0.87	-0.21	-0.84
12,297.0	91.60	83.50	9,893.5	125.4	2,564.4	2,565.0	0.77	0.74	-0.21

Company:	Cimarex Energy Co.	Local Co-ordinate Reference:	Well North Maduro Fed Unit #4
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 20 - T19S - R33E	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	North Maduro Fed Unit #4	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,392.0	91.50	83.20	9,890.9	136.4	2,658.7	2,659.4	0.33	-0.11	-0.32
12,488.0	91.00	86.50	9,888.9	145.0	2,754.3	2,755.0	3.48	-0.52	3.44
12,583.0	89.70	86.00	9,888.3	151.2	2,849.1	2,849.8	1.47	-1.37	-0.53
12,678.0	88.90	86.60	9,889.4	157.3	2,943.9	2,944.6	1.05	-0.84	0.63
12,773.0	88.40	86.40	9,891.7	163.1	3,038.7	3,039.5	0.57	-0.53	-0.21
12,868.0	87.60	86.20	9,895.0	169.3	3,133.4	3,134.2	0.87	-0.84	-0.21
12,963.0	87.70	86.20	9,898.9	175.5	3,228.1	3,229.0	0.11	0.11	0.00
13,058.0	87.60	86.50	9,902.8	181.6	3,322.9	3,323.7	0.33	-0.11	0.32
13,153.0	86.90	86.00	9,907.3	187.8	3,417.6	3,418.4	0.91	-0.74	-0.53
13,248.0	87.40	86.10	9,912.1	194.3	3,512.2	3,513.1	0.54	0.53	0.11
13,343.0	87.60	85.90	9,916.2	201.0	3,606.9	3,607.8	0.30	0.21	-0.21
13,439.0	87.40	86.20	9,920.4	207.6	3,702.6	3,703.5	0.38	-0.21	0.31
13,534.0	87.00	85.10	9,925.0	214.8	3,797.2	3,798.2	1.23	-0.42	-1.16
13,629.0	87.10	83.60	9,929.9	224.1	3,891.6	3,892.6	1.58	0.11	-1.58
13,737.0	88.20	84.50	9,934.4	235.3	3,998.9	4,000.0	1.32	1.02	0.83
13,832.0	88.90	84.30	9,936.8	244.5	4,093.4	4,094.6	0.77	0.74	-0.21
13,927.0	89.20	83.90	9,938.3	254.3	4,187.9	4,189.1	0.53	0.32	-0.42
14,022.0	89.40	83.00	9,939.5	265.1	4,282.3	4,283.5	0.97	0.21	-0.95
14,118.0	90.00	82.90	9,940.0	276.9	4,377.6	4,378.9	0.63	0.63	-0.10
14,229.0	90.90	83.40	9,939.1	290.2	4,487.8	4,489.1	0.93	0.81	0.45
Last MWD Survey									
14,255.3	90.90	83.40	9,938.7	293.2	4,513.9	4,515.3	0.00	0.00	0.00
N. Maduro #4 PBHL									
14,275.0	90.90	83.40	9,938.4	295.5	4,533.5	4,534.8	0.00	0.00	0.00
Projection to TD									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
9,325.0	9,322.9	68.9	-19.7	First MWD Survey
14,229.0	9,939.1	290.2	4,487.8	Last MWD Survey
14,275.0	9,938.4	295.5	4,533.5	Projection to TD

Checked By: _____ Approved By: _____ Date: _____