

WELL LOGS

K Z

API number:	30-025-38606		
OGRID:		Operator:	CIMAREX ENERGY CO
		Property:	MISSOURI UNIT 13 FEE # 5

surface	ULSTR:	B	13	T	15S	R	37E
			430	FNL	2150	FEL	

BH Loc	ULSTR:	G	13	T	15S	R	37E
			2295	FNL	2150	FEL	

Ground Level:	3676	DF:	3796	KB:	3797	
Datum:	KB			TD:	9723	Pilot Hole

Land: FEE

Completion Date: (1) 8/2/2008

Date Logs Received: 12/15/2008

LATE

Date Logs Due in: (2) 8/22/2008

Confidential:	NO			Date out:	
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Confidential period: 90 Days for State & Fee, 1 Year for federal

Date Due In: (1) is equal to Completion Date (1) + 20 days

Logs	Depth interval		
DSN/SDL	200	9778	Spectral Density Dual Spaced Neutron
DLL/MGRD	4450	9839	Dual Laterolog Micro Guard Log
ISAT	4450	9795	Insite Sonic Array Tool
RCBL	2000	9736	Radial Cement Bond Log

K Z

OCD TOPS

Rustler	2193	Strawn		
Tansill		Atoka		
Yates	3162	Morrow		
7R	3435			
T. Bowers Sd				
B. Bowers Sd				
Queen	3957			
Penrose				
Grayburg				
San Andres	4450			
Glorieta				
Tubb	7574			
Drinkard	7830			
Abo	8288			
Wolfcamp	9422			

Results of Directional Survey

API number:	30-025-38606		
OGRID:		Operator:	CIMAREX ENERGY CO
		Property:	MISSOURI UNIT 13 FEE # 5

surface	ULSTR:	B	13	T	15S	R	37E
			430	FNL	2150	FEL	

BH Loc	ULSTR:	G	13	T	15S	R	37E
			2295	FNL	2150	FEL	

	MD	N/S	E/W	VD
	9100	117.10	80.50	9097.88
TOP PERFS/OH	9106	116.84	80.66	9103.87
	9194	113.09	83.04	9191.65
	11215	-1803.10	7.36	9451.60
BOT PERFS/OH	11277	-1865.00	-0.08	9453.34
	11240	-1828.06	4.36	9452.30

NEXT TO LAST	11215	-1803.10	7.36	9451.60
LAST READING	11240	-1828.06	4.36	9452.30
TD	11277	-1865.00	-0.08	9453.34

Surface Location	430	FN	2150	FE
Projected BHL	2295	FN	2150	FE
Location of				
Top Perfs/OH	313	FN	2069	FE
Bottom Perfs/OH	2295	FN	2150	FE

SUMMARY of Subsurface Locations

Surface Location	B-13-15S-37E	430	FN	2150	FE	Vert. Depth
Top Perfs/OH	B-13-15S-37E	313	FN	2069	FE	9103.87
Bottom Perfs/OH	G-13-15S-37E	2295	FN	2150	FE	9453.34
Projected TD	G-13-15S-37E	2295	FN	2150	FE	9453.34

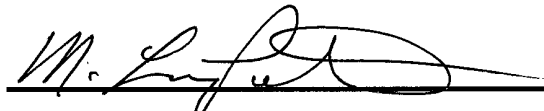
OPERATOR: Cimarex Energy Co.
WELL/LEASE: Missouri Unit 13 Fee # 005
COUNTY: Lea, Co., NM Sec.13, T15S, R37E

SUR; B-13-15s-37e, 430/N & 2150/E
BHL; G-13-15s-37e, 2295/N & 2150/E
API # 30-025-38606

STATE OF NEW MEXICO
DEVIATION REPORT

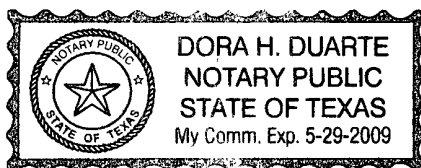
<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
258	1/2	6,776	1
612	2/3	7,188	1 2/9
1,044	1/2	7,600	1 2/3
1,543	3/4	7,853	2
2,017	1/2	8,068	2 1/4
2,459	2/7	8,289	2 1/3
2,934	3/4	8,606	2 5/8
3,480	1/2	8,922	3
3,947	4/7	9,207	3
4,397	3/4	9,365	3 3/5
4,878	1		
5,322	1 5/8		
5,670	1 3/7		
6,018	1 1/3		
6,365	1 1/6		

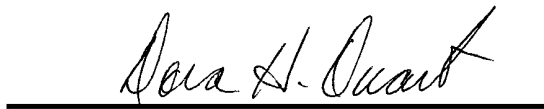
Patriot Drilling, LLC


M. Leroy Peterson, Executive Vice-
President

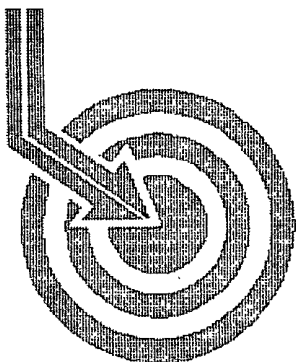
The foregoing instrument was acknowledged before me on this 6th day of May, 2008 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling, LLC.

My Commission Expires: 5/29/2009




Dora H. Duarte
Notary Public for Midland Co., Texas

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Scientific Drilling

SUR; B-13-15s-37e, 430/N & 2150/E
BHL; G-13-15s-37e, 2295/N & 2150/E
API # 30-025-38606

CIMAREX ENERGY

Field: Missouri
Site: Lea County, NM
Well: Missouri Unit 13 Fee #5
Wellpath: VH - Job #32K0408276
Survey: 04/23/08

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

.....*R. Wharto*.....Company Representative

Notorized this date 19th of May, 2008.

Carrie Reed
Notary Signature
County of Midland
State of Texas

Ka





Scientific Drilling International Survey Report

Company: CIMAREX ENERGY	Date: 05/15/2008	Time: 11:54:21	Page: 1
Field: Missouri	Co-ordinate(NE) Reference:	Site: Lea County, NM, Grid North	
Site: Lea County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: Missouri Unit 13 Fee #5	Section (VS) Reference:	Well (0.00N,0.00E,36.61Azi)	
Wellpath: VH - Job #32K0408276	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: 04/23/08	Start Date: 04/23/2008
Company: Scientific Drilling Internatio	Engineer: Guebara/Lanier w/
Tool: Keeper;Keeper Gyro	Tied-to: From Surface

Survey

MD ft	Incl deg	Azlm deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0.00	0.00	359.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.36	105.62	100.00	0.11	-0.08	0.30	0.36	0.31	105.62
200.00	0.05	230.52	200.00	0.18	-0.20	0.57	0.39	0.60	109.01
300.00	0.12	90.46	300.00	0.20	-0.23	0.64	0.16	0.68	109.34
400.00	0.04	236.27	400.00	0.23	-0.25	0.72	0.15	0.76	108.89
500.00	0.08	79.28	500.00	0.25	-0.25	0.76	0.12	0.80	108.40
600.00	0.05	151.63	600.00	0.28	-0.28	0.85	0.08	0.89	108.14
700.00	0.04	149.00	700.00	0.25	-0.35	0.89	0.01	0.95	111.33
800.00	0.06	130.68	800.00	0.23	-0.41	0.94	0.03	1.03	113.48
900.00	0.04	155.22	900.00	0.21	-0.48	1.00	0.03	1.11	115.49
1000.00	0.05	147.68	1000.00	0.18	-0.54	1.04	0.01	1.17	117.72
1100.00	0.03	143.51	1100.00	0.16	-0.60	1.07	0.02	1.23	119.27
1200.00	0.08	117.55	1200.00	0.16	-0.66	1.15	0.05	1.33	119.64
1300.00	0.16	108.78	1300.00	0.21	-0.73	1.35	0.08	1.53	118.56
1400.00	0.19	55.64	1400.00	0.41	-0.68	1.62	0.16	1.75	112.96
1500.00	0.28	34.05	1500.00	0.82	-0.39	1.89	0.12	1.93	101.61
1600.00	0.38	46.16	1600.00	1.39	0.04	2.26	0.12	2.27	88.89
1700.00	0.29	41.11	1699.99	1.97	0.46	2.67	0.09	2.71	80.14
1800.00	0.26	59.26	1799.99	2.43	0.77	3.03	0.09	3.13	75.73
1900.00	0.24	89.53	1899.99	2.76	0.89	3.44	0.13	3.55	75.50
2000.00	0.26	73.73	1999.99	3.07	0.95	3.86	0.07	3.98	76.13
2100.00	0.29	77.74	2099.99	3.44	1.07	4.33	0.04	4.46	76.10
2200.00	0.30	69.57	2199.99	3.85	1.22	4.82	0.04	4.97	75.84
2300.00	0.21	83.64	2299.99	4.20	1.33	5.25	0.11	5.41	75.80
2400.00	0.09	96.97	2399.99	4.36	1.34	5.51	0.12	5.67	76.34
2500.00	0.10	76.66	2499.99	4.47	1.35	5.67	0.03	5.83	76.62
2600.00	0.13	49.56	2599.99	4.64	1.44	5.84	0.06	6.02	76.13
2700.00	0.17	356.59	2699.99	4.87	1.66	5.92	0.14	6.15	74.29
2800.00	0.37	329.34	2799.98	5.11	2.09	5.75	0.23	6.12	70.01
2900.00	0.36	346.67	2899.98	5.43	2.67	5.51	0.11	6.12	64.11
3000.00	0.36	335.49	2999.98	5.79	3.27	5.31	0.07	6.23	58.39
3100.00	0.38	315.13	3099.98	5.99	3.79	4.94	0.13	6.23	52.55
3200.00	0.36	331.94	3199.98	6.17	4.30	4.56	0.11	6.27	46.70
3300.00	0.26	340.15	3299.98	6.43	4.79	4.34	0.11	6.46	42.16
3400.00	0.36	319.13	3399.97	6.62	5.24	4.05	0.15	6.63	37.72
3500.00	0.33	12.59	3499.97	6.96	5.76	3.91	0.31	6.96	34.18
3600.00	0.48	16.62	3599.97	7.61	6.44	4.09	0.15	7.63	32.44
3700.00	0.50	20.85	3699.97	8.43	7.25	4.37	0.04	8.47	31.07
3800.00	0.61	27.98	3799.96	9.37	8.13	4.77	0.13	9.43	30.43
3900.00	0.69	26.52	3899.96	10.49	9.14	5.29	0.08	10.56	30.08
4000.00	0.67	19.29	3999.95	11.64	10.23	5.75	0.09	11.74	29.36
4100.00	0.66	17.17	4099.94	12.74	11.33	6.12	0.03	12.88	28.37
4200.00	0.57	10.85	4199.94	13.73	12.37	6.38	0.11	13.92	27.29
4300.00	0.55	16.46	4299.93	14.63	13.32	6.61	0.06	14.87	26.40
4400.00	0.58	10.60	4399.93	15.54	14.28	6.84	0.07	15.83	25.60
4500.00	0.72	24.80	4499.92	16.61	15.34	7.20	0.21	16.95	25.13
4600.00	0.75	21.98	4599.91	17.86	16.52	7.71	0.05	18.23	25.00
4700.00	0.93	17.17	4699.90	19.25	17.90	8.19	0.19	19.69	24.58
4800.00	0.92	16.66	4799.89	20.77	19.45	8.66	0.01	21.29	24.00



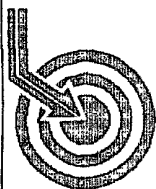
Scientific Drilling International

Survey Report

Company: CIMAREX ENERGY	Date: 05/15/2008	Time: 11:54:21	Page: 2
Field: Missouri	Co-ordinate(NE) Reference:	Site: Lea County, NM, Grid North	
Site: Lea County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: Missouri Unit 13 Fee #5	Section (VS) Reference:	Well (0.00N,0.00E,36.61Azi)	
Wellpath: VH - Job #32K0408276	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey

MD ft	Incl deg	Azlm deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
4900.00	0.95	19.55	4899.87	22.32	21.00	9.17	0.06	22.91	23.58
5000.00	1.10	21.85	4999.86	24.04	22.67	9.80	0.16	24.70	23.38
5100.00	1.23	30.82	5099.84	26.04	24.48	10.71	0.22	26.72	23.62
5200.00	1.38	35.09	5199.81	28.31	26.39	11.95	0.18	28.97	24.36
5300.00	1.47	36.00	5299.78	30.80	28.41	13.40	0.09	31.41	25.24
5400.00	1.51	32.86	5399.75	33.39	30.56	14.87	0.09	33.98	25.94
5500.00	1.33	31.90	5499.72	35.86	32.65	16.19	0.18	36.44	26.38
5600.00	1.27	30.99	5599.69	38.12	34.58	17.38	0.06	38.70	26.68
5700.00	1.25	24.91	5699.67	40.30	36.52	18.41	0.14	40.90	26.75
5800.00	1.23	24.90	5799.64	42.41	38.49	19.32	0.02	43.06	26.66
5900.00	1.27	24.93	5899.62	44.55	40.46	20.24	0.04	45.24	26.57
6000.00	1.25	26.83	5999.59	46.71	42.44	21.20	0.05	47.44	26.54
6100.00	1.28	31.59	6099.57	48.90	44.37	22.27	0.11	49.65	26.66
6200.00	1.20	27.65	6199.55	51.05	46.25	23.35	0.12	51.81	26.79
6300.00	1.09	29.26	6299.53	53.02	48.00	24.30	0.11	53.80	26.85
6400.00	0.97	30.93	6399.51	54.81	49.56	25.20	0.12	55.60	26.95
6500.00	0.95	35.40	6499.50	56.48	50.96	26.11	0.08	57.26	27.13
6600.00	0.94	32.97	6599.48	58.13	52.33	27.04	0.04	58.90	27.33
6700.00	1.05	30.00	6699.47	59.86	53.81	27.94	0.12	60.63	27.44
6800.00	1.05	31.48	6799.45	61.68	55.38	28.88	0.03	62.46	27.54
6900.00	1.11	25.00	6899.43	63.54	57.04	29.77	0.14	64.34	27.56
7000.00	1.17	28.85	6999.41	65.50	58.81	30.67	0.10	66.33	27.54
7100.00	1.18	29.37	7099.39	67.53	60.61	31.67	0.01	68.38	27.59
7200.00	1.26	28.28	7199.37	69.64	62.47	32.69	0.08	70.51	27.62
7300.00	1.33	24.18	7299.34	71.86	64.50	33.69	0.12	72.77	27.58
7400.00	1.52	30.58	7399.31	74.32	66.70	34.84	0.25	75.25	27.58
7500.00	1.59	30.77	7499.28	77.02	69.03	36.22	0.07	77.96	27.69
7600.00	1.72	31.47	7599.24	79.89	71.50	37.72	0.13	80.84	27.81
7700.00	1.78	33.45	7699.19	82.94	74.08	39.36	0.09	83.89	27.98
7800.00	1.90	32.32	7799.14	86.14	76.78	41.10	0.13	87.09	28.16
7900.00	1.92	37.41	7899.08	89.47	79.51	43.00	0.17	90.39	28.41
8000.00	2.08	39.04	7999.02	92.96	82.25	45.16	0.17	93.83	28.77
8100.00	2.18	41.35	8098.95	96.66	85.09	47.56	0.13	97.48	29.21
8200.00	2.32	46.22	8198.87	100.56	87.91	50.28	0.24	101.28	29.77
8300.00	2.34	45.05	8298.79	104.57	90.76	53.19	0.05	105.19	30.37
8400.00	2.42	44.31	8398.71	108.68	93.71	56.11	0.09	109.22	30.91
8500.00	2.61	47.59	8498.61	113.01	96.76	59.26	0.24	113.46	31.49
8600.00	2.58	48.86	8598.51	117.44	99.77	62.64	0.06	117.81	32.12
8700.00	2.66	50.37	8698.40	121.90	102.73	66.12	0.11	122.17	32.77
8800.00	2.71	47.93	8798.29	126.47	105.80	69.66	0.12	126.67	33.36
8900.00	2.91	44.83	8898.17	131.30	109.18	73.21	0.25	131.45	33.84
9000.00	3.07	41.99	8998.04	136.48	112.97	76.79	0.22	136.60	34.20
9100.00	3.29	41.89	9097.88	142.00	117.10	80.50	0.22	142.10	34.51
9200.00	3.70	39.88	9197.70	148.08	121.71	84.48	0.43	148.16	34.77
9300.00	3.63	41.24	9297.49	154.46	126.57	88.64	0.11	154.52	35.00
9400.00	3.39	44.73	9397.30	160.54	131.05	92.80	0.32	160.58	35.31
9500.00	3.01	45.69	9497.15	166.06	134.98	96.76	0.38	166.08	35.64
9600.00	2.82	49.79	9597.02	171.05	138.40	100.52	0.28	171.06	35.99
9700.00	2.52	61.31	9696.91	175.44	141.05	104.33	0.61	175.44	36.49
9723.00	2.02	61.18	9719.89	176.27	141.49	105.13	2.17	176.27	36.61



**Scientific
Drilling**

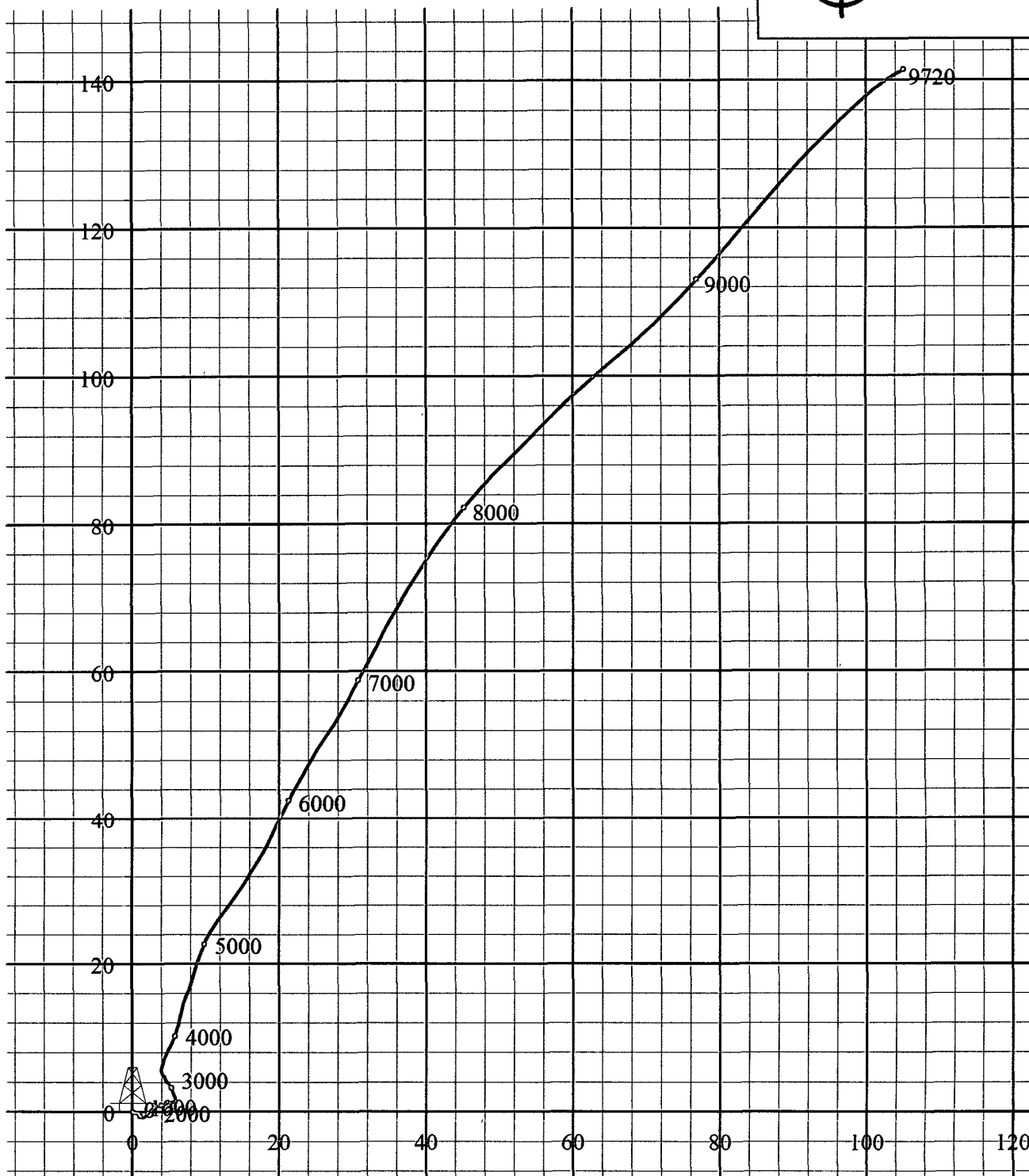
Field: Missouri
Site: Lea County, NM
Well: Missouri Unit 13 Fee #5
Wellpath: VH - Job #32K0408276
Survey: 04/23/08



Azimuths to Grid North
True North: 0.00°
Magnetic North: 0.00°

Magnetic Field
Strength: 0nT
Dip Angle: 0.00°
Date: 05/15/2008
Model: igrf2000

South(-)/North(+) [20ft/in]



West(-)/East(+) [20ft/in]



Weatherford

SUR; B-13-15s-37e, 430/N & 2150/E
BHL; G-13-15s-37e, 2295/N & 2150/E
API # 30-025-38606

Cimarex
Missouri Unit 13 Fee #5
Lea Co., NM

Section 1

Weatherford (Wft) Final Definitive

Plot & Survey



MISSOURI UNIT 13 FEE #5
LEA COUNTY, NEW MEXICO



Weatherford®

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	9160.50	3.54	40.62	9158.27	119.81	82.87	0.00	0.00	-119.81	
2	9173.00	2.29	72.54	9170.76	120.18	83.36	16.00	142.67	-120.18	
3	9178.00	2.29	72.54	9175.75	120.24	83.55	0.00	0.00	-120.24	
4	9556.91	90.00	182.65	9418.00	-119.03	81.59	23.96	110.10	119.03	
5	11319.76	90.00	182.65	9418.00	-1880.00	0.00	0.00	0.00	1880.00	T4

WELL DETAILS

Name	N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
#5	0.00	0.00	738088.70	903410.60	33°01'24.269N	103°09'07.348W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
T4	9418.00	-1880.00	0.00	736208.82	903431.73	Point

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 bggm2007
System Datum Mean Sea Level
Local North True North

SITE DETAILS

Missouri Unit 13 Fee #5
430' FNL 2150' FEL of SEC 13, T-15-S, R-37-E
Site Centre Northing 738088.70
Easting 903410.60
Ground Level 3776.00
Positional Uncertainty 0.00
Convergence 0.64



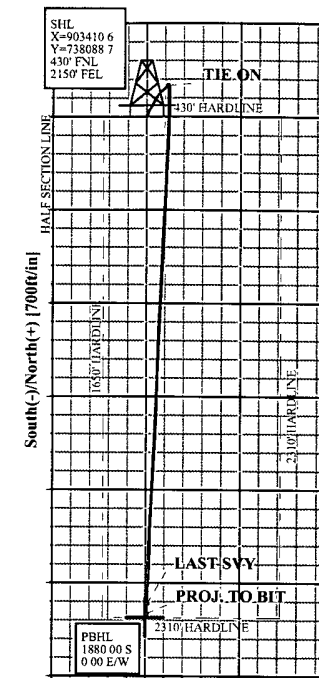
TOTAL CORRECTION TO TRUE NORTH 7.91°

Azimuths to True North
Magnetic North 7.91°

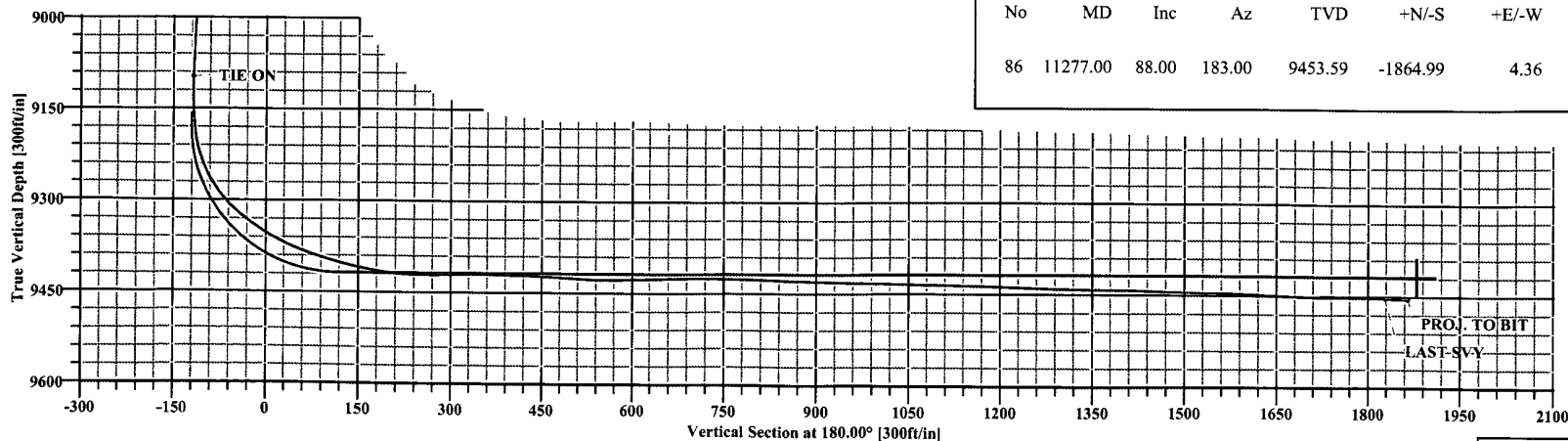
Magnetic Field
Strength 49570nT
Dip Angle 61.11°
Date 11/12/2007
Model bggm2007

LEGEND

— #5, 1. Plan #4
— WFT SVY



KB ELEV 3797
GL ELEV 3776



Proj. to Bit Survey: WFT SVY (#5/1)

No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
86	11277.00	88.00	183.00	9453.59	-1864.99	4.36	0.00	0.00	1864.99

Survey WFT SVY (#5/1)

Created By Jayne Wilson

Date 9/4/2008



Weatherford International Ltd.

SURVEY REPORT

**Weatherford**

Company:	CIMAREX	Date:	9/4/2008	Time:	13:28:55	Page:	1
Field:	Lea Co., NM (NAD 83)	Co-ordinate(NE) Reference:	Site: Missouri Unit 13 Fee #5, True Nort				
Site:	Missouri Unit 13 Fee #5	Vertical (TVD) Reference:	SITE 3797.0				
Well:	#5	Section (VS) Reference:	Well (0.00N,0.00E,180.00Azi)				
Wellpath:	1	Survey Calculation Method:	Minimum Curvature	Db:	Sybase		

Survey:	WFT SVY	Start Date:	7/11/2008
Company:	Weatherford International, Inc	Engineer:	Lindsey Maddux
Tool:	MWD;MWD - Standard	Tied-to:	From: Definitive Path

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:	Site Centre
Sys Datum:	Mean Sea Level	Geomagnetic Model:	bggm2007

Site:	Missouri Unit 13 Fee #5						
	430' FNL 2150' FEL of SEC 13, T-15-S, R-37-E						
Site Position:	Northing:	738088.70	ft	Latitude:	33	1	24.269 N
From: Map	Easting:	903410.60	ft	Longitude:	103	9	7.348 W
Position Uncertainty:	0.00	ft		North Reference:	True		
Ground Level:	3776.00	ft		Grid Convergence:	0.64 deg		

Well:	#5	Slot Name:						
Well Position:	+N/-S	0.00 ft	Northing:	738088.70 ft	Latitude:	33	1	24.269 N
	+E/-W	0.00 ft	Easting :	903410.60 ft	Longitude:	103	9	7.348 W
Position Uncertainty:		0.00 ft						

Wellpath: 1		Drilled From: Surface	
Current Datum: SITE	Height 3797.00 ft	Tie-on Depth:	9160.50 ft
Magnetic Data: 11/12/2007		Above System Datum:	Mean Sea Level
Field Strength: 49570 nT		Declination:	7.91 deg
Vertical Section:	Depth From (TVD)	Mag Dip Angle:	61.11 deg
	ft	+N/-S	Direction
		ft	deg
	0.00	0.00	180.00

Survey

MD	Incl	Azim	TVD	N/S	E/W	VS	DLS	Build	Turn	Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
9100.00	3.29	41.89	9097.88	117.10	80.50	-117.10	0.00	0.00	0.00	TIE ON
9194.00	7.40	173.00	9191.65	113.09	83.04	-113.09	10.51	4.37	139.48	
9225.00	16.00	178.10	9221.97	106.82	83.43	-106.82	27.92	27.74	16.45	
9240.00	20.20	179.50	9236.23	102.17	83.52	-102.17	28.15	28.00	9.33	
9257.00	25.10	180.20	9251.91	95.62	83.53	-95.62	28.87	28.82	4.12	
9273.00	29.90	179.30	9266.10	88.24	83.57	-88.24	30.11	30.00	-5.62	
9289.00	34.00	179.50	9279.67	79.77	83.66	-79.77	25.63	25.62	1.25	
9299.00	36.80	179.50	9287.82	73.98	83.71	-73.98	28.00	28.00	0.00	
9309.00	39.80	179.30	9295.67	67.78	83.77	-67.78	30.03	30.00	-2.00	
9320.00	43.00	179.50	9303.92	60.51	83.85	-60.51	29.12	29.09	1.82	
9335.00	47.20	181.10	9314.51	49.89	83.79	-49.89	29.00	28.00	10.67	
9352.00	51.20	181.90	9325.61	37.03	83.45	-37.03	23.80	23.53	4.71	
9367.00	53.60	181.60	9334.76	25.15	83.08	-25.15	16.08	16.00	-2.00	
9370.79	54.13	181.33	9337.00	22.09	83.01	-22.09	15.25	14.09	-7.22	WOLFCAMP
9384.00	56.00	180.40	9344.56	11.26	82.84	-11.26	15.25	14.13	-7.01	
9415.00	60.80	180.70	9360.80	-15.13	82.59	15.13	15.51	15.48	0.97	
9446.00	66.10	181.60	9374.65	-42.85	82.03	42.85	17.29	17.10	2.90	
9478.00	70.40	181.90	9386.51	-72.55	81.12	72.55	13.47	13.44	0.94	
9509.00	72.80	181.40	9396.29	-101.95	80.27	101.95	7.89	7.74	-1.61	
9540.00	76.20	181.40	9404.58	-131.81	79.54	131.81	10.97	10.97	0.00	
9570.00	78.50	181.90	9411.15	-161.07	78.70	161.07	7.84	7.67	1.67	
9583.00	79.60	182.10	9413.62	-173.82	78.25	173.82	8.60	8.46	1.54	
9602.00	82.30	182.30	9416.60	-192.57	77.53	192.57	14.25	14.21	1.05	
9617.00	84.20	182.30	9418.37	-207.45	76.94	207.45	12.67	12.67	0.00	



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Field: Lea Co., NM (NAD 83) Co-ordinate(NE) Reference: Site: Missouri Unit 13-Fee #5; True North
Site: Missouri Unit 13 Fee #5 Vertical (TVD) Reference: SITE 3797.0
Well: #5 Section (VS) Reference: Well (0.00N;0.00E;180.00Azi)
Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Comment
9627.00	85.10	182.10	9419.30	-217.40	76.55	217.40	9.22	9.00	-2.00	
9633.00	85.80	182.10	9419.78	-223.38	76.33	223.38	11.67	11.67	0.00	
9665.00	90.00	182.80	9420.95	-255.32	74.97	255.32	13.31	13.12	2.19	
9697.00	91.10	183.50	9420.64	-287.27	73.21	287.27	4.07	3.44	2.19	
9728.00	91.60	183.50	9419.91	-318.20	71.32	318.20	1.61	1.61	0.00	
9760.00	89.50	183.50	9419.60	-350.14	69.36	350.14	6.56	-6.56	0.00	
9792.00	88.20	183.30	9420.25	-382.08	67.47	382.08	4.11	-4.06	-0.62	
9823.00	88.60	183.20	9421.11	-413.02	65.71	413.02	1.33	1.29	-0.32	
9855.00	86.90	182.80	9422.37	-444.95	64.04	444.95	5.46	-5.31	-1.25	
9887.00	86.70	182.50	9424.15	-476.86	62.56	476.86	1.13	-0.62	-0.94	
9919.00	86.70	182.10	9426.00	-508.78	61.28	508.78	1.25	0.00	-1.25	
9951.00	88.60	182.30	9427.31	-540.73	60.05	540.73	5.97	5.94	0.62	
9982.00	90.80	183.00	9427.47	-571.70	58.62	571.70	7.45	7.10	2.26	
10013.00	91.30	182.80	9426.90	-602.65	57.05	602.65	1.74	1.61	-0.65	
10045.00	91.40	182.50	9426.15	-634.61	55.57	634.61	0.99	0.31	-0.94	
10077.00	91.70	182.80	9425.28	-666.56	54.09	666.56	1.33	0.94	0.94	
10109.00	90.50	182.80	9424.67	-698.52	52.53	698.52	3.75	-3.75	0.00	
10141.00	88.60	183.00	9424.92	-730.47	50.91	730.47	5.97	-5.94	0.62	
10156.00	88.60	183.00	9425.29	-745.45	50.12	745.45	0.00	0.00	0.00	
10173.00	88.70	182.60	9425.69	-762.42	49.29	762.42	2.42	0.59	-2.35	
10188.00	88.90	182.80	9426.00	-777.40	48.59	777.40	1.89	1.33	1.33	
10205.00	88.00	182.60	9426.46	-794.38	47.79	794.38	5.42	-5.29	-1.18	
10220.00	88.00	182.50	9426.98	-809.35	47.12	809.35	0.67	0.00	-0.67	
10236.00	88.10	182.50	9427.53	-825.33	46.42	825.33	0.62	0.62	0.00	
10267.00	88.30	182.10	9428.50	-856.29	45.18	856.29	1.44	0.65	-1.29	
10299.00	88.30	181.60	9429.45	-888.26	44.15	888.26	1.56	0.00	-1.56	
10330.00	88.20	181.40	9430.40	-919.23	43.34	919.23	0.72	-0.32	-0.65	
10362.00	88.60	181.80	9431.29	-951.21	42.44	951.21	1.77	1.25	1.25	
10393.00	88.60	181.40	9432.05	-982.19	41.58	982.19	1.29	0.00	-1.29	
10425.00	88.50	181.10	9432.86	-1014.17	40.88	1014.17	0.99	-0.31	-0.94	
10457.00	88.60	180.90	9433.67	-1046.15	40.32	1046.15	0.70	0.31	-0.62	
10489.00	88.80	180.90	9434.39	-1078.14	39.82	1078.14	0.62	0.62	0.00	
10520.00	88.90	182.30	9435.02	-1109.12	38.95	1109.12	4.53	0.32	4.52	
10551.00	89.10	182.10	9435.56	-1140.10	37.76	1140.10	0.91	0.65	-0.65	
10583.00	88.00	182.80	9436.37	-1172.05	36.40	1172.05	4.07	-3.44	2.19	
10598.00	88.10	182.60	9436.88	-1187.03	35.69	1187.03	1.49	0.67	-1.33	
10614.00	88.10	182.30	9437.41	-1203.01	35.01	1203.01	1.87	0.00	-1.87	
10646.00	87.90	183.20	9438.52	-1234.95	33.47	1234.95	2.88	-0.62	2.81	
10678.00	88.20	183.50	9439.61	-1266.88	31.60	1266.88	1.33	0.94	0.94	
10707.00	88.50	183.30	9440.45	-1295.81	29.88	1295.81	1.24	1.03	-0.69	
10739.00	88.90	183.30	9441.17	-1327.75	28.04	1327.75	1.25	1.25	0.00	
10771.00	89.20	183.30	9441.71	-1359.69	26.20	1359.69	0.94	0.94	0.00	
10802.00	89.80	183.30	9441.98	-1390.64	24.42	1390.64	1.94	1.94	0.00	
10834.00	88.20	183.00	9442.53	-1422.59	22.66	1422.59	5.09	-5.00	-0.94	
10865.00	87.80	183.20	9443.62	-1453.52	20.98	1453.52	1.44	-1.29	0.65	
10897.00	88.10	183.00	9444.76	-1485.46	19.25	1485.46	1.13	0.94	-0.62	
10929.00	88.90	181.90	9445.60	-1517.41	17.89	1517.41	4.25	2.50	-3.44	
10961.00	89.80	181.80	9445.96	-1549.40	16.85	1549.40	2.83	2.81	-0.31	
10977.00	88.60	181.90	9446.18	-1565.39	16.34	1565.39	7.53	-7.50	0.62	
10992.00	88.50	181.40	9446.56	-1580.37	15.90	1580.37	3.40	-0.67	-3.33	
11007.00	88.40	181.10	9446.97	-1595.37	15.58	1595.37	2.11	-0.67	-2.00	
11024.00	87.20	180.90	9447.62	-1612.35	15.28	1612.35	7.16	-7.06	-1.18	



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Site: Missouri Unit 13 Fee #5 Vertical (TVD) Reference: SITE 3797.0
Well: #5 Section (VS) Reference: Well (0.00N,0.00E,180.00Azi)
Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Comment
11039.00	87.10	180.70	9448.37	-1627.33	15.07	1627.33	1.49	-0.67	-1.33	
11056.00	87.50	180.90	9449.17	-1644.31	14.83	1644.31	2.63	2.35	1.18	
11088.00	89.00	183.00	9450.15	-1676.27	13.75	1676.27	8.06	4.69	6.56	
11103.00	89.00	183.00	9450.41	-1691.25	12.96	1691.25	0.00	0.00	0.00	
11120.00	88.80	183.20	9450.73	-1708.22	12.04	1708.22	1.66	-1.18	1.18	
11135.00	89.10	183.30	9451.01	-1723.20	11.19	1723.20	2.11	2.00	0.67	
11152.00	89.70	183.70	9451.19	-1740.16	10.15	1740.16	4.24	3.53	2.35	
11183.00	90.00	182.30	9451.27	-1771.12	8.53	1771.12	4.62	0.97	-4.52	
11215.00	88.80	181.90	9451.60	-1803.10	7.36	1803.10	3.95	-3.75	-1.25	
11240.00	88.00	183.00	9452.30	-1828.06	6.29	1828.06	5.44	-3.20	4.40	LAST SVY
11277.00	88.00	183.00	9453.59	-1864.99	4.36	1864.99	0.00	0.00	0.00	PROJ. TO BIT

Casing Points

MD	TVD	Diameter	Hole Size	Name

Annotation

MD ft	TVD ft	
9100.00	9097.88	TIE ON
11240.00	9452.30	LAST SVY
11277.00	9453.59	PROJ. TO BIT