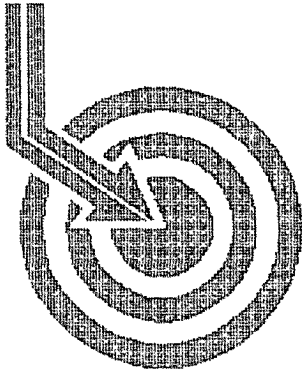


30.015.36715



Scientific Drilling

CIMAREX ENERGY

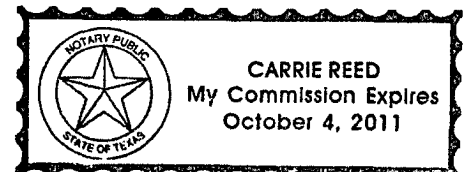
Field: Empire
Site: Eddy County, NM
Well: Toad 31 Federal Com #1
Wellpath: VH - Job #32K1108879
Survey: 11/05/08

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

.....L. Wharton.....Company Representative

Notorized this date 22nd of December, 2008.

Carrie Reed
Notary Signature
County of Midland
State of Texas





Scientific
Drilling

Scientific Drilling International Survey Report

Company: CIMAREX ENERGY	Date: 12/17/2008	Time: 14:54:00	Page: 1
Field: Empire	Co-ordinate(NE) Reference:	Site: Eddy County, NM, Grid North	
Site: Eddy County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: Toad 31 Federal Com #1	Section (VS) Reference:	Well (0.00N,0.00E,106.86Azi)	
Wellpath: VH - Job #32K1108879	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Survey: 11/05/08	Start Date: 11/05/2008
Company: Scientific Drilling Internatio	Engineer: Melendez w/GeoGyro
Tool: Keeper;Keeper Gyro	Tied-to: From Surface

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/V ft	DLS deg/100ft	ClsD ft	ClsA deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.65	93.42	100.00	0.55	-0.03	0.57	0.65	0.57	93.42
200.00	0.73	86.62	199.99	1.70	-0.03	1.77	0.11	1.77	90.98
300.00	0.78	108.32	299.98	2.98	-0.21	3.05	0.29	3.06	93.87
400.00	0.93	95.25	399.97	4.45	-0.49	4.50	0.25	4.53	96.27
500.00	0.83	70.48	499.96	5.83	-0.33	6.00	0.39	6.00	93.12
600.00	0.75	73.26	599.95	6.96	0.10	7.30	0.09	7.31	89.19
700.00	0.70	82.37	699.94	8.06	0.37	8.54	0.13	8.55	87.50
800.00	0.68	82.24	799.93	9.16	0.53	9.73	0.02	9.75	86.86
900.00	0.58	73.39	899.93	10.12	0.76	10.80	0.14	10.83	85.98
1000.00	0.44	79.00	999.92	10.88	0.98	11.67	0.15	11.71	85.21
1100.00	0.23	93.15	1099.92	11.41	1.04	12.24	0.22	12.29	85.15
1200.00	0.23	88.89	1199.92	11.80	1.03	12.64	0.02	12.69	85.33
1300.00	0.20	81.97	1299.92	12.15	1.06	13.02	0.04	13.06	85.34
1400.00	0.20	76.10	1399.92	12.46	1.13	13.36	0.02	13.41	85.18
1500.00	0.16	133.57	1499.92	12.73	1.07	13.63	0.18	13.67	85.50
1600.00	0.22	121.02	1599.92	13.04	0.88	13.90	0.07	13.92	86.39
1700.00	0.32	77.85	1699.92	13.47	0.84	14.33	0.22	14.36	86.66
1800.00	0.39	98.19	1799.92	14.05	0.85	14.94	0.14	14.97	86.75
1900.00	0.12	109.57	1899.92	14.50	0.76	15.38	0.27	15.40	87.16
2000.00	0.10	37.12	1999.92	14.63	0.80	15.53	0.13	15.55	87.06
2100.00	0.23	127.55	2099.92	14.85	0.75	15.74	0.25	15.76	87.29
2200.00	0.03	213.84	2199.92	15.03	0.60	15.89	0.23	15.90	87.83
2300.00	0.10	13.35	2299.92	15.02	0.66	15.89	0.13	15.91	87.60
2400.00	0.17	5.01	2399.91	14.98	0.90	15.93	0.07	15.95	86.77
2500.00	0.11	28.48	2499.91	14.97	1.13	15.98	0.08	16.02	85.96
2600.00	0.16	72.53	2599.91	15.10	1.26	16.16	0.11	16.21	85.56
2700.00	0.13	177.52	2699.91	15.26	1.18	16.30	0.23	16.34	85.84
2800.00	0.23	74.43	2799.91	15.46	1.13	16.50	0.29	16.54	86.10
2900.00	0.17	138.26	2899.91	15.76	1.07	16.79	0.22	16.83	86.36
3000.00	0.42	130.34	2999.91	16.22	0.72	17.17	0.25	17.18	87.60
3100.00	0.33	188.99	3099.91	16.60	0.20	17.40	0.38	17.40	89.35
3200.00	0.37	126.59	3199.91	16.94	-0.28	17.62	0.36	17.62	90.91
3300.00	0.28	154.01	3299.91	17.41	-0.69	17.98	0.18	18.00	92.20
3400.00	0.40	132.92	3399.91	17.89	-1.15	18.35	0.17	18.38	93.58
3500.00	0.45	155.39	3499.90	18.46	-1.74	18.77	0.17	18.85	95.30
3600.00	0.61	158.63	3599.90	19.05	-2.60	19.12	0.16	19.30	97.73
3700.00	0.33	194.03	3699.90	19.40	-3.37	19.25	0.39	19.54	99.93
3800.00	0.40	152.38	3799.89	19.66	-3.96	19.34	0.27	19.74	101.57
3900.00	0.44	137.16	3899.89	20.23	-4.55	19.76	0.12	20.28	102.96
4000.00	0.42	156.15	3999.89	20.80	-5.17	20.17	0.14	20.82	104.37
4100.00	0.29	160.19	4099.89	21.19	-5.74	20.41	0.13	21.20	105.71
4194.00	0.37	157.97	4193.88	21.53	-6.25	20.60	0.09	21.53	106.86



**Scientific
Drilling**

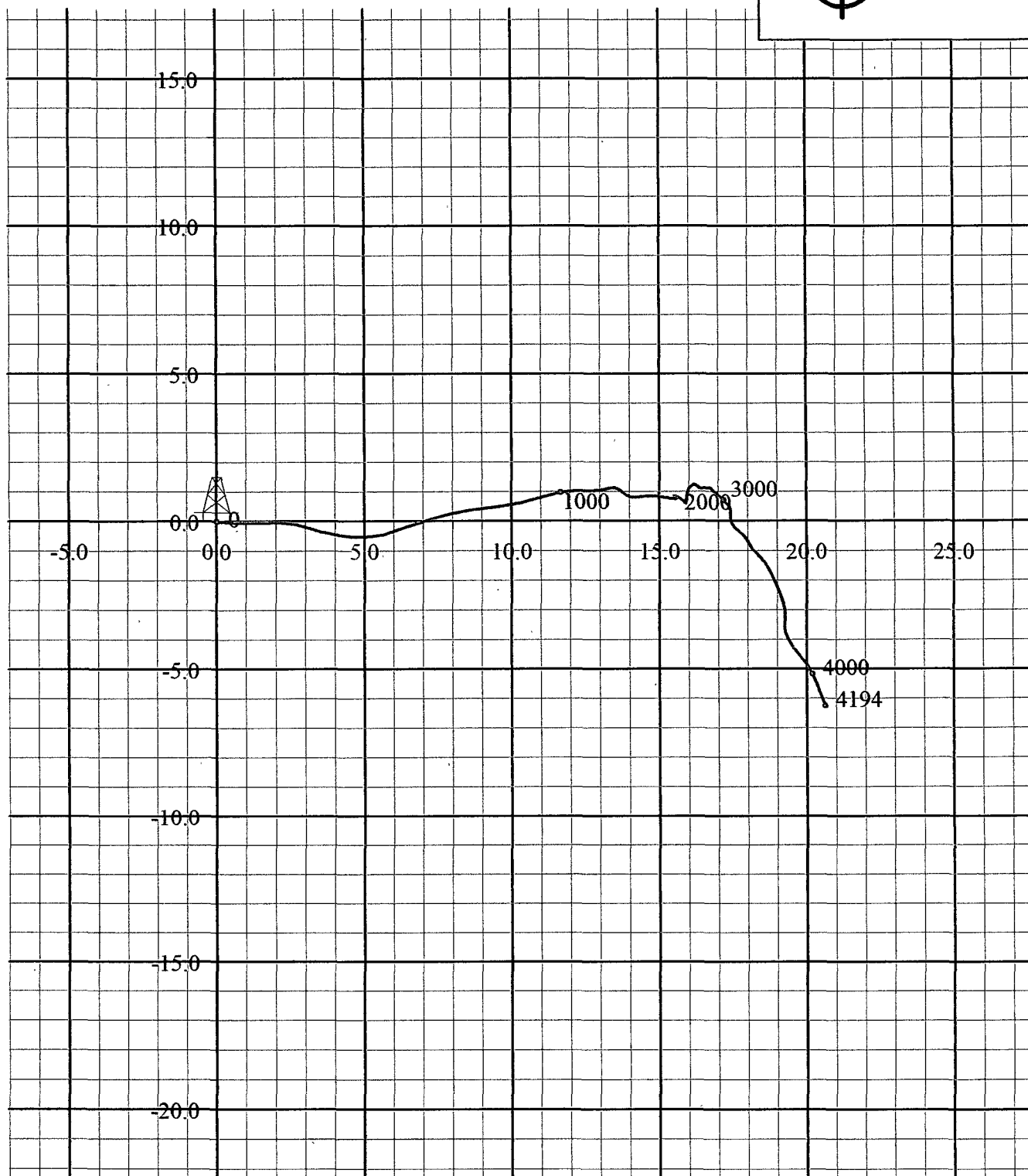
Field: Empire
Site: Eddy County, NM
Well: Toad 31 Federal Com #1
Wellpath: VH - Job #32K1108879
Survey: 11/05/08



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

Magnetic Field
Strength: 0nT
Dip Angle: 0.00°
Date: 12/17/2008
Model: igrf2000

South(-)/North(+) [5ft/in]



West(-)/East(+) [5ft/in]