

Results of Directional Survey

API number:	30-025-40694		
OGRID:		Operator:	CIMAREX ENERGY CO.
		Property:	CHIEF 30 STATE # 2H

surface	ULSTR:	L	30	T	20S	R	35E
				1880	FSL	300	FWL

BH Loc	ULSTR:	I	30	T	20S	R	35E
15200	MD	10795.6	TVD	2247	FSL	432	FEL
						4848	FWL

Top Perf/OH	ULSTR:	L	30	T	20S	R	35E
11200	MD	10742.6	TVD	1793	FSL	870	FWL

Bot Perf/OH	ULSTR:	I	30	T	20S	R	35E
15163	MD	10795.5	TVD	1424	FSL	469	FEL
						4811	FWL

	MD	N/S	E/W	VD
	11158	-79.82	528.36	10743.68
TOP PERFS/OH	11200	-87.20	569.69	10742.56
	11221	-90.89	590.36	10742.00
	15045	-444.40	4393.71	10795.16
BOT PERFS/OH	15163	-456.24	4511.11	10795.51
	15200.06	-459.96	4547.98	10795.62

NEXT TO LAST	15045	-444.40	4393.71	10795.16
LAST READING	15200	-459.96	4547.98	10795.62
TD	15200	-459.96	4547.98	10795.62

Surface Location	1880	FS	300	FW
Projected BHL	1420	FS	4848	FW
Location of				
Top Perfs/OH	1793	FS	870	FW
Bottom Perfs/OH	1424	FS	4811	FW

SUMMARY of Subsurface Locations

Surface Location	L-30-20S-35E	1880	FS	300	FW	Vert. Depth
Top Perfs/OH	L-30-20S-35E	1793	FS	870	FW	10742.56
Bottom Perfs/OH	I-30-20S-35E	1424	FS	4811	FW	10795.51
Projected TD	I-30-20S-35E	1420	FS	4848	FW	10795.62



Cimarex



WELL Chief 30 State #2H

FIELD NM Lea County

STRUCTURE Scandill Eagle

Metadata	Location	Well	Operator	Company
Model: BCON 301	Lat: N 33 33 285	Well: Chief 30 State #2H	Operator: NM Lea County	Company: Scandill Eagle
Date: Aug 27, 2012	Long: W 03 38 5118	Well: Chief 30 State #2H	Operator: NM Lea County	Company: Scandill Eagle
Mag Dec: 7.5319	Grid: 0.4467	Well: Chief 30 State #2H	Operator: NM Lea County	Company: Scandill Eagle

Legend

HOBS OGD

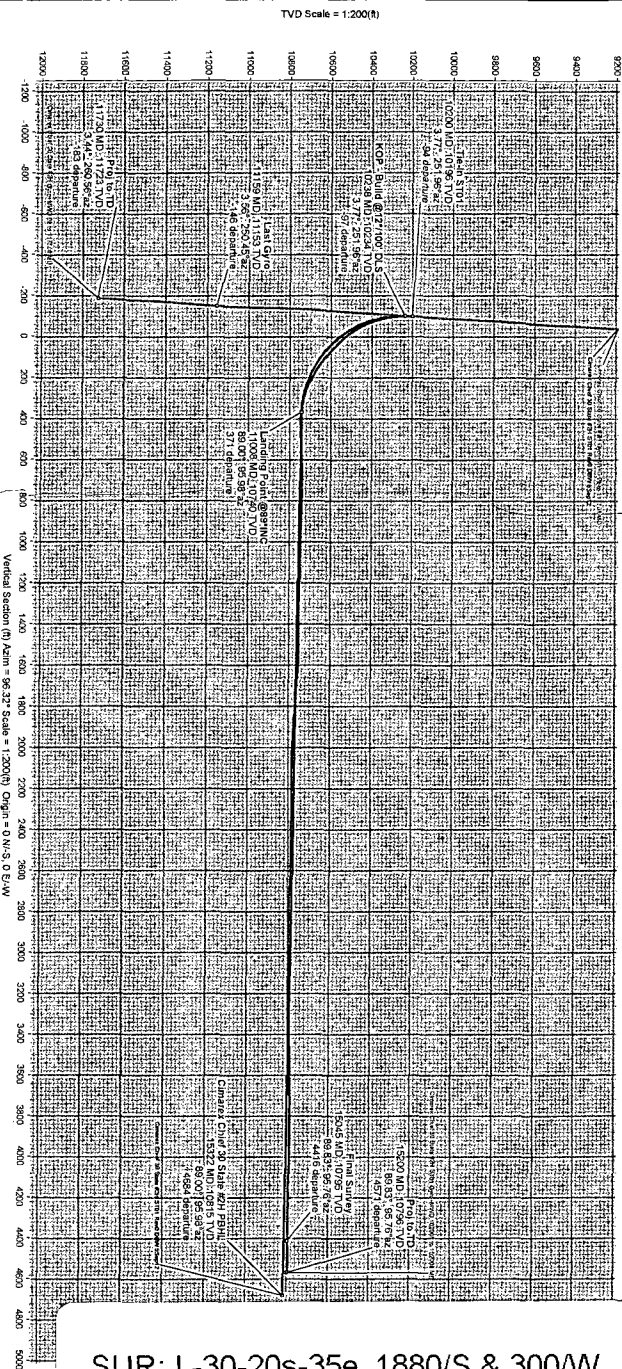
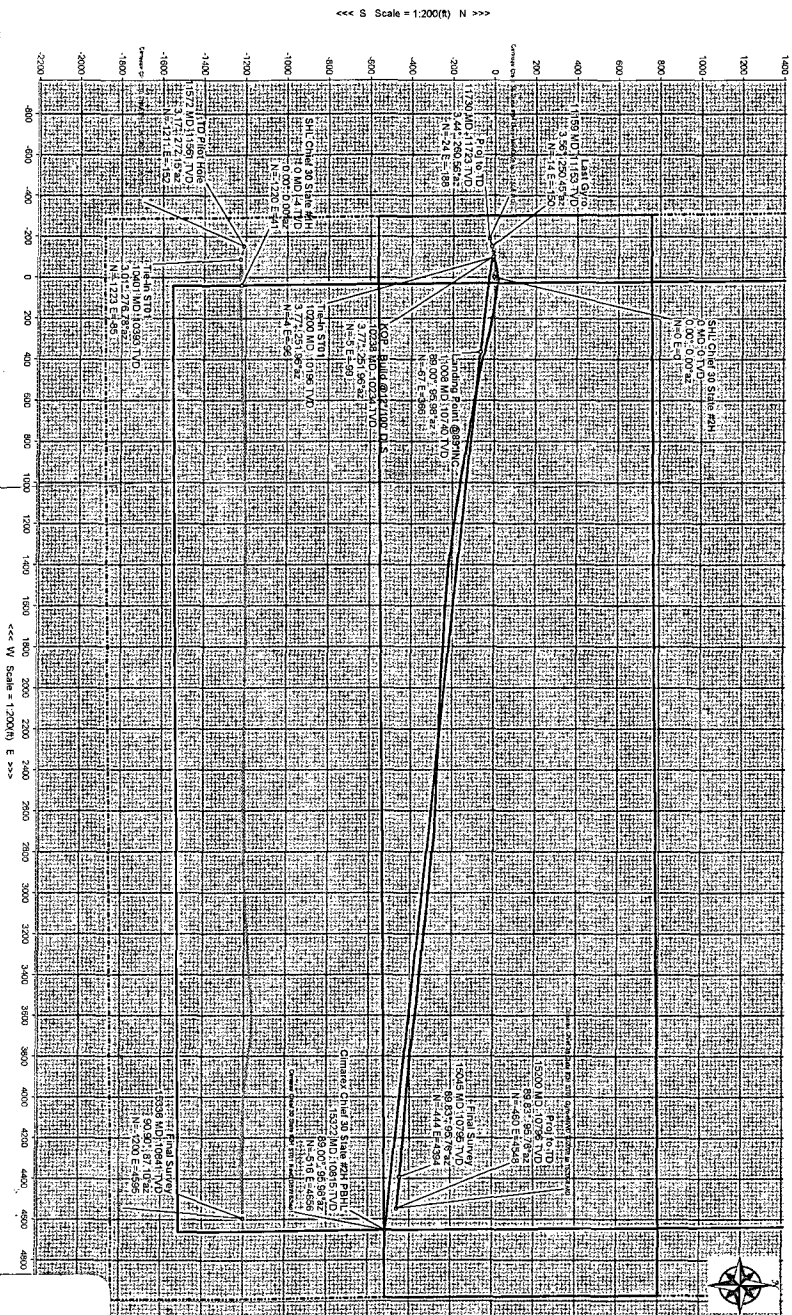


Grid North
Tol Corr (M->G 7.0850°)
Mag Dec (7.5319°)
Grid Conv (0.446°)

RECEIVED

DEC 18 2012

HOBS OGD
Chief 30 State #2H
Aug 27, 2012
Mag Dec: 7.5319
Grid Conv: 0.4467



SUR: L-30-20s-35e, 1880/S & 300/W
BHL: I-30-20s-35e, 1420/S & 4848/W
API # 30-025-40694

Drawn By: J. Schindler
Checked By: J. Schindler
Approved By: J. Schindler
Date: 11/15/12



Cimarex Chief 30 State #2H ST01 Gyro+MWD 10200ft to 15200ft MD

(Def Survey)

Report Date: September 25, 2012 - 08:18 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Scandrell Eagle / Cimarex Chief 30 State #2H
Well: Cimarex Chief 30 State #2H
Borehole: ST01
UWI / API#: Unknown / Unknown

Survey Name: Cimarex Chief 30 State #2H ST01 Gyro+MWD 10200ft to 15200ft MD

Survey Date: August 27, 2012
Tort / AHD / DDI / ERD Ratio: -167.482 ° / 4884.133 ft / 6.061 / 0.452
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 32' 31.28042", W 103° 30' 15.11804"
Location Grid N/E Y/X: N 561912.900 ftUS, E 796839.400 ftUS
CRS Grid Convergence Angle: 0.4460 °

Grid Scale Factor: 0.99998385

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 96.323 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3771.000 ft above MSL
Seabed / Ground Elevation: 3746.000 ft above MSL
Magnetic Declination: 7.531 °

Total Gravity Field Strength: 999.1577 mgn (9.8 based)

Total Magnetic Field Strength: 48687.859 nT
Magnetic Dip Angle: 60.431 °
Declination Date: August 27, 2012
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: 0.4460 °

Total Corr Mag North->Grid North: 7.0850 °

Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
SHL Chief 30 State #2H	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	343.92M
First Gyro	100.00	0.12	343.92	100.00	-0.04	0.10	-0.03	0.10	343.92	0.12	309.43M
	200.00	0.19	309.43	200.00	-0.22	0.31	-0.19	0.36	328.74	0.11	290M
	300.00	0.17	290.00	300.00	-0.50	0.46	-0.45	0.65	315.57	0.06	250.31M
	400.00	0.28	250.31	400.00	-0.87	0.43	-0.82	0.93	297.64	0.18	257.57M
	500.00	0.16	257.57	500.00	-1.22	0.32	-1.19	1.23	285.00	0.12	246.89M
	600.00	0.22	246.89	600.00	-1.52	0.21	-1.50	1.52	278.08	0.07	238.73M
	700.00	0.11	238.73	700.00	-1.76	0.09	-1.76	1.76	272.86	0.11	247.43M
	800.00	0.28	247.43	800.00	-2.05	-0.06	-2.07	2.07	268.46	0.17	229.67M
	900.00	0.45	229.67	899.99	-2.53	-0.40	-2.59	2.62	261.16	0.20	238.65M
	1000.00	0.76	238.65	999.99	-3.33	-1.00	-3.46	3.60	253.84	0.32	227.1M
	1100.00	0.75	227.10	1099.98	-4.28	-1.79	-4.51	4.85	248.30	0.15	238.77M
	1200.00	0.81	238.77	1199.97	-5.27	-2.61	-5.59	6.17	245.01	0.17	237.7M
	1300.00	0.72	237.70	1299.96	-6.32	-3.31	-6.72	7.49	243.81	0.09	241.48M
	1400.00	0.87	241.48	1399.95	-7.43	-4.01	-7.92	8.88	243.18	0.16	241.25M
	1500.00	0.81	241.25	1499.94	-8.63	-4.71	-9.21	10.34	242.92	0.06	238.33M
	1600.00	0.89	238.33	1599.93	-9.83	-5.46	-10.49	11.82	242.52	0.09	263.19M
	1700.00	0.92	263.19	1699.92	-11.22	-5.96	-11.95	13.35	243.49	0.39	261.54M
	1800.00	1.00	261.54	1799.90	-12.84	-6.18	-13.61	14.95	245.57	0.08	261.64M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	1900.00	0.70	261.64	1899.89	-14.28	-6.40	-15.08	16.38	247.00	0.30	244.05M
	2000.00	0.28	244.05	1999.89	-15.08	-6.60	-15.90	17.21	247.47	0.44	72.44M
	2100.00	0.33	72.44	2099.89	-15.02	-6.62	-15.85	17.17	247.34	0.61	82.79M
	2200.00	0.28	82.79	2199.89	-14.52	-6.50	-15.33	16.65	247.03	0.07	93.23M
	2300.00	0.41	93.23	2299.89	-13.92	-6.49	-14.73	16.09	246.23	0.14	119.09M
	2400.00	0.28	119.09	2399.88	-13.34	-6.63	-14.16	15.63	244.92	0.20	91.48M
	2500.00	0.48	91.48	2499.88	-12.70	-6.76	-13.53	15.12	243.46	0.27	112.05M
	2600.00	0.35	112.05	2599.88	-11.99	-6.88	-12.82	14.55	241.78	0.20	93.86M
	2700.00	0.53	93.86	2699.88	-11.23	-7.03	-12.08	13.97	239.81	0.23	84.36M
	2800.00	0.55	84.36	2799.87	-10.30	-7.01	-11.14	13.16	237.82	0.09	95.64M
	2900.00	0.64	95.64	2899.87	-9.27	-7.02	-10.11	12.30	235.22	0.15	79.69M
	3000.00	0.97	79.69	2999.86	-7.90	-6.92	-8.72	11.13	231.55	0.40	71.91M
	3100.00	1.88	71.91	3099.82	-5.60	-6.26	-6.33	8.90	225.29	0.93	71.01M
	3200.00	2.36	71.01	3199.76	-2.24	-5.08	-2.82	5.81	209.03	0.48	71.45M
	3300.00	2.41	71.45	3299.67	1.53	-3.74	1.12	3.91	163.34	0.05	64.38M
	3400.00	2.50	64.38	3399.58	5.28	-2.13	5.08	5.51	112.76	0.32	58.81M
	3500.00	2.55	58.81	3499.48	8.90	-0.04	8.95	8.95	90.23	0.25	55.66M
	3600.00	2.78	55.66	3599.37	12.50	2.48	12.85	13.09	79.06	0.27	55.5M
	3700.00	2.29	55.50	3699.27	15.85	4.98	16.50	17.24	73.20	0.49	54.17M
	3800.00	1.42	54.17	3799.22	18.28	6.84	19.15	20.34	70.35	0.87	57.74M
	3900.00	0.77	57.74	3899.20	19.73	7.92	20.73	22.19	69.08	0.65	56.43M
	4000.00	0.81	56.43	3999.19	20.80	8.67	21.88	23.54	68.38	0.04	33.03M
	4100.00	0.17	33.03	4099.19	21.41	9.19	22.55	24.35	67.83	0.66	228.57M
	4200.00	0.19	228.57	4199.19	21.36	9.20	22.51	24.32	67.76	0.36	220.97M
	4300.00	0.49	220.97	4299.19	21.01	8.77	22.11	23.78	68.36	0.30	222.49M
	4400.00	0.41	222.49	4399.18	20.55	8.18	21.58	23.08	69.23	0.08	219.26M
	4500.00	0.54	219.26	4499.18	20.08	7.56	21.04	22.36	70.25	0.13	221.03M
	4600.00	0.50	221.03	4599.18	19.58	6.86	20.46	21.58	71.46	0.04	240.91M
	4700.00	0.57	240.91	4699.17	18.93	6.29	19.74	20.72	72.32	0.20	225.93M
	4800.00	0.38	225.93	4799.17	18.31	5.82	19.07	19.93	73.03	0.23	220.05M
	4900.00	0.25	220.05	4899.17	17.98	5.42	18.69	19.46	73.82	0.13	228.02M
	5000.00	0.40	228.02	4999.16	17.62	5.02	18.29	18.96	74.65	0.16	238.26M
	5100.00	0.33	238.26	5099.16	17.16	4.64	17.78	18.38	75.39	0.10	256.43M
	5200.00	0.46	256.43	5199.16	16.56	4.39	17.15	17.70	75.64	0.18	250.68M
	5300.00	0.44	250.68	5299.16	15.84	4.17	16.40	16.92	75.74	0.05	341.77M
	5400.00	0.20	341.77	5399.16	15.42	4.21	15.98	16.52	75.25	0.49	303.96M
	5500.00	0.13	303.96	5499.16	15.24	4.44	15.83	16.44	74.34	0.13	21.08M
	5600.00	0.20	21.08	5599.16	15.19	4.66	15.80	16.47	73.56	0.21	18.93M
	5700.00	0.19	18.93	5699.15	15.27	4.98	15.91	16.68	72.62	0.01	3.2M
	5800.00	0.59	3.20	5799.15	15.28	5.65	16.00	16.97	70.54	0.41	359.58M
	5900.00	0.58	359.58	5899.15	15.19	6.67	16.02	17.36	67.39	0.04	2.03M
	6000.00	0.66	2.03	5999.14	15.09	7.75	16.04	17.82	64.20	0.08	346.29M
	6100.00	0.63	346.29	6099.13	14.86	8.86	15.93	18.23	60.90	0.18	8.12M
	6200.00	0.62	8.12	6199.13	14.68	9.93	15.88	18.73	57.96	0.24	8.12M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	6300.00	0.76	8.12	6299.12	14.72	11.13	16.05	19.53	55.26	0.14	16.54M
	6400.00	0.78	16.54	6399.11	14.86	12.44	16.33	20.53	52.72	0.11	17.52M
	6500.00	0.84	17.52	6499.10	15.13	13.79	16.75	21.69	50.54	0.06	6.01M
	6600.00	0.75	6.01	6599.09	15.27	15.14	17.04	22.79	48.38	0.18	18.99M
	6700.00	0.70	18.99	6699.09	15.40	16.37	17.30	23.82	46.60	0.17	1.67M
	6800.00	0.76	1.67	6799.08	15.48	17.61	17.52	24.84	44.86	0.23	14.82M
	6900.00	0.59	14.82	6899.07	15.50	18.77	17.67	25.78	43.28	0.23	11.77M
	7000.00	0.71	11.77	6999.06	15.63	19.87	17.93	26.77	42.06	0.12	327.61M
	7100.00	0.66	327.61	7099.06	15.33	20.96	17.75	27.47	40.25	0.52	331.25M
	7200.00	0.64	331.25	7199.05	14.65	21.94	17.17	27.86	38.05	0.05	264.56M
	7300.00	0.91	264.56	7299.04	13.55	22.35	16.11	27.56	35.78	0.88	255.14M
	7400.00	0.97	255.14	7399.03	11.99	22.06	14.50	26.40	33.32	0.17	250.92M
	7500.00	1.05	250.92	7499.01	10.37	21.55	12.82	25.07	30.75	0.11	251.68M
	7600.00	1.08	251.68	7599.00	8.68	20.95	11.06	23.69	27.83	0.03	258.08M
	7700.00	0.85	258.08	7698.98	7.12	20.50	9.44	22.57	24.72	0.25	251.98M
	7800.00	1.14	251.98	7798.97	5.51	20.04	7.77	21.49	21.19	0.31	251.6M
	7900.00	1.09	251.60	7898.95	3.74	19.43	5.92	20.31	16.94	0.05	252.45M
	8000.00	1.25	252.45	7998.93	1.88	18.80	3.98	19.22	11.94	0.16	247.86M
	8100.00	1.30	247.86	8098.90	-0.11	18.05	1.89	18.14	5.97	0.11	250.82M
	8200.00	1.33	250.82	8198.88	-2.16	17.24	-0.26	17.24	359.13	0.07	245.88M
	8300.00	1.33	245.88	8298.85	-4.21	16.38	-2.42	16.56	351.61	0.11	254.6M
	8400.00	1.59	254.60	8398.82	-6.50	15.54	-4.81	16.27	342.79	0.34	251.7M
	8500.00	1.74	251.70	8498.78	-9.16	14.69	-7.59	16.54	332.67	0.17	256.61M
	8600.00	1.92	256.61	8598.72	-12.12	13.83	-10.66	17.46	322.36	0.24	256.16M
	8700.00	2.10	256.16	8698.66	-15.42	13.00	-14.07	19.16	312.74	0.18	261.76M
	8800.00	2.02	261.76	8798.60	-18.84	12.31	-17.60	21.48	304.98	0.22	264.17M
	8900.00	2.17	264.17	8898.53	-22.40	11.87	-21.22	24.32	299.21	0.17	263.3M
	9000.00	2.20	263.30	8998.46	-26.12	11.45	-25.01	27.51	294.60	0.04	265.47M
	9100.00	2.75	265.47	9098.37	-30.35	11.04	-29.31	31.32	290.63	0.56	264.94M
	9200.00	3.10	264.94	9198.23	-35.35	10.61	-34.40	35.99	287.14	0.35	265.38M
	9300.00	3.14	265.38	9298.09	-40.69	10.15	-39.82	41.09	284.30	0.05	265.8M
	9400.00	3.25	265.80	9397.93	-46.17	9.72	-45.38	46.41	282.09	0.11	260.1M
	9500.00	3.65	260.10	9497.75	-52.01	8.97	-51.34	52.12	279.91	0.53	260.81M
	9600.00	4.06	260.81	9597.52	-58.48	7.85	-57.97	58.50	277.72	0.41	259.65M
	9700.00	4.19	259.65	9697.26	-65.39	6.63	-65.06	65.39	275.82	0.15	254.25M
	9800.00	3.86	254.25	9797.02	-72.01	5.06	-71.89	72.07	274.03	0.50	250.26M
	9900.00	3.71	250.26	9896.80	-78.04	3.06	-78.18	78.23	272.24	0.30	248.97M
	10000.00	3.59	248.97	9996.60	-83.72	0.84	-84.14	84.15	270.57	0.15	247.74M
	10100.00	3.77	247.74	10096.39	-89.39	-1.53	-90.11	90.12	269.03	0.20	251.96M
	10200.00	3.77	251.96	10196.17	-95.27	-3.79	-96.28	96.35	267.74	0.28	80.39M
	10307.00	8.42	80.39	10302.88	-90.93	-3.57	-91.88	91.95	267.77	11.37	33.33L
	10339.00	12.25	69.17	10334.36	-85.65	-1.97	-86.39	86.42	268.69	13.47	2.22L
	10370.00	16.81	68.56	10364.36	-78.76	0.84	-79.14	79.15	270.60	14.72	16.39R
	10402.00	20.85	71.87	10394.64	-69.47	4.30	-69.42	69.55	273.54	13.05	33.68R

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	10434.00	23.98	76.87	10424.23	-58.15	7.55	-57.67	58.16	277.46	11.44	35.93R
	10465.00	26.82	81.32	10452.23	-45.45	10.04	-44.62	45.74	282.68	11.03	21.26R
	10497.00	31.60	84.83	10480.15	-30.26	11.88	-29.12	31.46	292.20	15.86	15.31R
	10528.00	35.24	86.55	10506.02	-13.48	13.15	-12.10	17.87	317.39	12.13	15.9R
	10560.00	40.13	88.70	10531.34	5.85	13.94	7.44	15.80	28.07	15.82	29.22R
	10592.00	44.00	91.78	10555.10	27.17	13.83	28.86	32.01	64.39	13.70	65.08R
	10623.00	45.36	95.69	10577.14	48.93	12.41	50.61	52.10	76.23	9.89	48.74R
	10655.00	46.50	97.46	10599.40	71.92	9.77	73.44	74.09	82.42	5.34	16.9R
Survey 11-Sep-12	10686.00	48.86	98.41	10620.27	94.83	6.60	96.14	96.37	86.07	7.94	9.72R
	10718.00	51.80	99.05	10640.70	119.44	2.86	120.49	120.52	88.64	9.32	3.87R
	10749.00	55.97	99.39	10658.96	144.44	-1.15	145.20	145.20	90.45	13.48	0.99R
	10781.00	59.46	99.46	10676.05	171.45	-5.58	171.88	171.97	91.86	10.91	12.27R
	10813.00	62.86	100.29	10691.49	199.43	-10.39	199.49	199.76	92.98	10.87	23.74R
Survey 12-Sep-12	10844.00	65.43	101.53	10705.00	227.23	-15.67	226.88	227.42	93.95	9.04	8.56R
	10876.00	69.35	102.16	10717.30	256.63	-21.74	255.79	256.71	94.86	12.38	15.18R
	10907.00	73.31	103.28	10727.23	285.81	-28.21	284.43	285.82	95.66	13.22	11.32R
	10939.00	77.96	104.23	10735.16	316.54	-35.58	314.53	316.54	96.45	14.81	10.47L
	10969.00	83.62	103.18	10739.96	345.89	-42.59	343.29	345.92	97.07	19.18	18.35L
Survey 16-Sep-12	11063.00	90.21	101.00	10745.02	439.22	-62.23	435.02	439.44	98.14	7.38	28.8L
	11158.00	91.41	100.34	10743.68	533.94	-79.82	528.36	534.36	98.59	1.44	60.82L
	11221.00	91.65	99.91	10742.00	596.78	-90.89	590.36	597.31	98.75	0.78	100.62L
	11253.00	91.62	99.75	10741.08	628.70	-96.35	621.88	629.30	98.81	0.51	173.87L
	11348.00	90.41	99.62	10739.40	723.52	-112.33	715.51	724.27	98.92	1.28	158.72R
	11443.00	88.69	100.29	10740.15	818.33	-128.75	809.07	819.25	99.04	1.94	116L
	11537.00	87.94	98.75	10742.91	912.14	-144.29	901.73	913.20	99.09	1.82	66.8R
	11632.00	88.18	99.31	10746.13	1006.98	-159.19	995.50	1008.15	99.09	0.64	16.7L
	11727.00	89.28	98.98	10748.23	1101.84	-174.29	1089.27	1103.12	99.09	1.21	84.86L
	11821.00	89.38	97.87	10749.33	1195.76	-188.06	1182.24	1197.11	99.04	1.19	108.23L
Survey 17-Sep-12	11916.00	89.11	97.05	10750.58	1290.74	-200.39	1276.43	1292.07	98.92	0.91	13.89L
	12011.00	90.00	96.83	10751.32	1385.73	-211.87	1370.73	1387.01	98.79	0.97	65.95L
	12076.00	90.58	95.53	10750.99	1450.72	-218.87	1435.35	1451.94	98.67	2.19	150.35L
	12171.00	88.49	94.34	10751.76	1545.69	-227.04	1529.99	1546.74	98.44	2.53	163.3L
Survey 19-Sep-12	12265.00	86.56	93.76	10755.82	1639.52	-233.67	1623.66	1640.39	98.19	2.14	139.2L
	12359.00	86.04	93.31	10761.89	1733.21	-239.46	1717.29	1733.90	97.94	0.73	42.6L
	12453.00	86.42	92.96	10768.07	1826.86	-244.59	1810.94	1827.38	97.69	0.55	130.8L
	12548.00	86.11	92.60	10774.26	1921.48	-249.18	1905.63	1921.85	97.45	0.50	1.75L
	12643.00	87.42	92.56	10779.62	2016.12	-253.45	2000.38	2016.37	97.22	1.38	1.69L
	12737.00	89.11	92.51	10782.46	2109.87	-257.61	2094.24	2110.03	97.01	1.80	7.25L
	12832.00	89.66	92.44	10783.48	2204.65	-261.71	2189.15	2204.73	96.82	0.58	27.8R
	12927.00	90.21	92.73	10783.59	2299.45	-266.00	2284.05	2299.49	96.64	0.65	169.8R
	13021.00	89.21	92.91	10784.07	2393.27	-270.62	2377.93	2393.28	96.49	1.08	107.41L
	13116.00	89.00	92.24	10785.55	2488.06	-274.89	2472.82	2488.06	96.34	0.74	41.76L
	13211.00	89.28	91.99	10786.98	2582.79	-278.39	2567.75	2582.80	96.19	0.40	113.13R
	13305.00	88.90	92.88	10788.47	2676.56	-282.39	2661.65	2676.59	96.06	1.03	92.4R

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
Survey 21-Sep-12	13400.00	88.80	95.29	10790.38	2771.46	-289.15	2756.38	2771.51	95.99	2.54	36.53R
	13495.00	89.07	95.49	10792.14	2866.43	-298.07	2850.95	2866.49	95.97	0.35	24.78L
	13590.00	89.59	95.25	10793.25	2961.41	-306.97	2945.52	2961.48	95.95	0.60	39.88R
	13685.00	90.38	95.91	10793.28	3056.40	-316.20	3040.07	3056.47	95.94	1.08	90R
	13779.00	90.38	96.03	10792.65	3150.40	-325.98	3133.56	3150.47	95.94	0.13	159.97L
	13873.00	89.42	95.68	10792.82	3244.39	-335.57	3227.07	3244.47	95.94	1.09	HS
	13968.00	90.38	95.68	10792.98	3339.39	-344.97	3321.60	3339.47	95.93	1.01	32.53L
	14063.00	90.96	95.31	10791.87	3434.37	-354.07	3416.16	3434.46	95.92	0.72	84.19R
Survey 24-Sep-12	14158.00	91.10	96.69	10790.17	3529.35	-363.99	3510.62	3529.44	95.92	1.46	36.68R
	14288.00	91.61	97.07	10787.09	3659.31	-379.56	3639.65	3659.38	95.95	0.49	152.16L
	14383.00	89.28	95.84	10786.35	3754.30	-390.24	3734.03	3754.37	95.97	2.77	63.44L
	14478.00	89.45	95.50	10787.41	3849.28	-399.63	3828.56	3849.36	95.96	0.40	87.68L
	14572.00	89.48	94.76	10788.28	3943.26	-408.03	3922.18	3943.35	95.94	0.79	134.09R
	14667.00	89.17	95.08	10789.40	4038.22	-416.18	4016.82	4038.33	95.92	0.47	106.25L
	14761.00	88.87	94.05	10791.01	4132.16	-423.66	4110.51	4132.29	95.88	1.14	16.56L
	14855.00	89.24	93.94	10792.56	4226.07	-430.21	4204.27	4226.22	95.84	0.41	147.1L
Final Survey Proj to TD	14950.00	88.90	93.72	10794.10	4320.97	-436.55	4299.04	4321.15	95.80	0.43	65.51R
	15045.00	89.83	95.76	10795.16	4415.92	-444.40	4393.71	4416.12	95.78	2.36	HS
	15200.06	89.83	95.76	10795.62	4570.98	-459.96	4547.98	4571.18	95.78	0.00	

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	25.000	Act Stns	30.000	30.000	SLB_NSG+MSHOT-Depth Only	Original Borehole / Cimarex Chief 30 State #2H Gyro+MWD 0ft to Update
	25.000	10200.000	Act Stns	30.000	30.000	SLB_NSG+MSHOT	Original Borehole / Cimarex Chief 30 State #2H Gyro+MWD 0ft to ST01 / Cimarex Chief 30 State
	10200.000	11158.000	Act Stns	30.000	30.000	SLB_NSG+MSHOT	#2H ST01 Gyro+MWD 10200ft to ST01 / Cimarex Chief 30 State
	11158.000	15045.000	Act Stns	30.000	30.000	SLB_MWD-STD	#2H ST01 Gyro+MWD 10200ft to ST01 / Cimarex Chief 30 State
	15045.000	15200.060	Act Stns	30.000	30.000	SLB_BLIND+TREND	#2H ST01 Gyro+MWD 10200ft to

A Gyrodata Directional Survey

for

CIMAREX ENERGY

Lease: CHIEF 30 STATE Well: 2H, 4 1/2" DRILLPIPE
Location: SCAN EAGLE, LEA COUNTY, NEW MEXICO

Job Number: MD0912GVC495

Run Date: 04 Sep 2012

Surveyor: Michael Hattar

Calculation Method: MINIMUM CURVATURE

Survey surface coordinates obtained from: Well Plan/Plot
Survey Latitude: 32.542022 deg. N Longitude: 103.504197 deg. W

Azimuth Correction:
Gyro: -0.45000 deg to Grid North

Proposed Well Direction: 96.320 deg

Depth Reference: Rotary Table

Rotary Table Elevation: 27.00

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

SUR: L-30-20s-35e, 1880/S & 300/W
BHL: L-30-20s-35e, 1420/S & 4848/W
API # 30-025-40694

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: CHIEF 30 STATE Well: 2H, 4 1/2" DRILLPIPE

Location: SCAN EAGLE, LEA COUNTY, NEW MEXICO

Job Number: MD0912GVC495

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	VERTICAL SECTION feet	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
0.00	0.00	0.00	0.0	0.00	0.00	0.0 0.0	0.00 N 0.00 E
0 TO 11160 FT. RATE GYROSCOPIC VERTICAL CONTINUOUS SURVEY RUN INSIDE 4 1/2" DRILLPIPE ALL MEASURED DEPTHS AND COORDINATES ARE REFRENCED TO SCAN EAGLE DRILLING RIG AND R.K.B. HEIGHT OF 27 FT.							
100.00	0.12	343.92	-0.0	0.12	100.00	0.1 343.9	0.10 N 0.03 W
200.00	0.19	309.43	-0.2	0.11	200.00	0.4 328.7	0.30 N 0.19 W
300.00	0.17	290.00	-0.5	0.06	300.00	0.6 315.4	0.46 N 0.46 W
400.00	0.28	250.31	-0.9	0.18	400.00	0.9 297.5	0.43 N 0.83 W
500.00	0.16	257.57	-1.2	0.12	500.00	1.2 284.9	0.32 N 1.20 W
600.00	0.22	246.89	-1.5	0.07	600.00	1.5 278.0	0.21 N 1.51 W
700.00	0.10	238.73	-1.8	0.12	700.00	1.8 272.9	0.09 N 1.77 W
800.00	0.28	247.43	-2.0	0.18	800.00	2.1 268.6	0.05 S 2.07 W
900.00	0.45	229.67	-2.5	0.20	899.99	2.6 261.2	0.40 S 2.60 W
1000.00	0.76	238.65	-3.3	0.32	999.99	3.6 253.9	1.00 S 3.46 W
1100.00	0.75	227.10	-4.3	0.15	1099.98	4.8 248.4	1.79 S 4.51 W
1200.00	0.81	238.77	-5.3	0.17	1199.97	6.2 245.1	2.60 S 5.59 W
1300.00	0.72	237.70	-6.3	0.09	1299.96	7.5 243.9	3.30 S 6.72 W
1400.00	0.87	241.48	-7.4	0.16	1399.95	8.9 243.2	3.99 S 7.92 W
1500.00	0.81	241.25	-8.6	0.06	1499.94	10.3 243.0	4.70 S 9.21 W
1600.00	0.89	238.33	-9.8	0.09	1599.93	11.8 242.6	5.45 S 10.49 W
1700.00	0.92	263.19	-11.2	0.39	1699.92	13.3 243.5	5.95 S 11.94 W

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: CHIEF 30 STATE Well: 2H, 4 1/2" DRILLPIPE

Location: SCAN EAGLE, LEA COUNTY, NEW MEXICO

Job Number: MD0912GVC495

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	VERTICAL SECTION feet	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
1800.00	1.00	261.54	-12.8	0.09	1799.90	14.9 245.6	6.17 S 13.60 W
1900.00	0.70	261.64	-14.3	0.31	1899.89	16.4 247.0	6.39 S 15.07 W
2000.00	0.27	244.05	-15.1	0.44	1999.89	17.2 247.5	6.58 S 15.89 W
2100.00	0.33	72.44	-15.0	0.60	2099.89	17.2 247.4	6.60 S 15.83 W
2200.00	0.28	82.79	-14.5	0.07	2199.89	16.6 247.1	6.48 S 15.32 W
2300.00	0.41	93.23	-13.9	0.14	2299.89	16.1 246.3	6.47 S 14.72 W
2400.00	0.28	119.09	-13.3	0.20	2399.88	15.6 244.9	6.61 S 14.15 W
2500.00	0.48	91.48	-12.7	0.26	2499.88	15.1 243.5	6.75 S 13.51 W
2600.00	0.35	112.04	-12.0	0.19	2599.88	14.5 241.8	6.87 S 12.81 W
2700.00	0.53	93.86	-11.2	0.22	2699.88	14.0 239.8	7.02 S 12.06 W
2800.00	0.55	84.36	-10.3	0.09	2799.87	13.1 237.8	7.00 S 11.12 W
2900.00	0.64	95.64	-9.3	0.14	2899.87	12.3 235.2	7.01 S 10.09 W
3000.00	0.97	79.69	-7.9	0.40	2999.86	11.1 231.5	6.91 S 8.70 W
3100.00	1.88	71.91	-5.6	0.93	3099.82	8.9 225.3	6.25 S 6.31 W
3200.00	2.36	71.01	-2.2	0.48	3199.76	5.8 208.9	5.07 S 2.80 W
3300.00	2.41	71.45	1.5	0.05	3299.67	3.9 163.1	3.73 S 1.14 E
3400.00	2.50	64.38	5.3	0.32	3399.58	5.5 112.6	2.12 S 5.09 E
3500.00	2.55	58.81	8.9	0.25	3499.48	9.0 90.2	0.03 S 8.96 E
3600.00	2.78	55.66	12.5	0.28	3599.37	13.1 79.1	2.49 N 12.86 E
3700.00	2.29	55.50	15.9	0.49	3699.27	17.2 73.2	4.99 N 16.51 E
3800.00	1.42	54.17	18.3	0.87	3799.22	20.3 70.3	6.84 N 19.16 E
3900.00	0.77	57.74	19.7	0.66	3899.20	22.2 69.1	7.93 N 20.74 E

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: CHIEF 30 STATE Well: 2H, 4 1/2" DRILLPIPE

Location: SCAN EAGLE, LEA COUNTY, NEW MEXICO

Job Number: MD0912GVC495

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	VERTICAL SECTION feet	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	AZIMUTH deg.	HORIZONTAL COORDINATES feet	
4000.00	0.81	56.44	20.8	0.05	3999.19	23.5	68.4	8.68 N	21.89 E
4100.00	0.17	33.03	21.4	0.66	4099.19	24.4	67.8	9.19 N	22.56 E
4200.00	0.19	228.57	21.4	0.35	4199.19	24.3	67.8	9.20 N	22.52 E
4300.00	0.49	220.97	21.0	0.30	4299.19	23.8	68.4	8.77 N	22.12 E
4400.00	0.41	222.49	20.6	0.08	4399.18	23.1	69.2	8.19 N	21.60 E
4500.00	0.54	219.26	20.1	0.14	4499.18	22.4	70.2	7.56 N	21.06 E
4600.00	0.50	221.03	19.6	0.04	4599.18	21.6	71.5	6.87 N	20.47 E
4700.00	0.57	240.91	18.9	0.20	4699.17	20.7	72.3	6.29 N	19.75 E
4800.00	0.38	225.93	18.3	0.23	4799.17	19.9	73.0	5.82 N	19.07 E
4900.00	0.25	220.05	18.0	0.14	4899.17	19.5	73.8	5.42 N	18.69 E
5000.00	0.40	228.02	17.6	0.16	4999.17	19.0	74.6	5.02 N	18.29 E
5100.00	0.33	238.26	17.2	0.09	5099.16	18.4	75.4	4.64 N	17.79 E
5200.00	0.46	256.43	16.6	0.18	5199.16	17.7	75.6	4.39 N	17.15 E
5300.00	0.44	250.68	15.8	0.05	5299.16	16.9	75.7	4.17 N	16.40 E
5400.00	0.20	341.77	15.4	0.48	5399.16	16.5	75.2	4.21 N	15.99 E
5500.00	0.13	303.96	15.3	0.13	5499.16	16.4	74.3	4.44 N	15.84 E
5600.00	0.20	21.08	15.2	0.21	5599.16	16.5	73.5	4.67 N	15.81 E
5700.00	0.19	18.93	15.3	0.02	5699.16	16.7	72.6	4.99 N	15.92 E
5800.00	0.59	3.20	15.3	0.41	5799.15	17.0	70.5	5.66 N	16.00 E
5900.00	0.58	359.58	15.2	0.04	5899.15	17.4	67.4	6.68 N	16.03 E
6000.00	0.66	2.03	15.1	0.08	5999.14	17.8	64.2	7.76 N	16.05 E

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: CHIEF 30 STATE Well: 2H, 4 1/2" DRILLPIPE

Location: SCAN EAGLE, LEA COUNTY, NEW MEXICO

Job Number: MD0912GVC495

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	VERTICAL SECTION feet	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	AZIMUTH deg.	HORIZONTAL COORDINATES feet	
6100.00	0.63	346.29	14.9	0.18	6099.14	18.2	60.9	8.87 N	15.94 E
6200.00	0.62	8.12	14.7	0.24	6199.13	18.7	57.9	9.95 N	15.88 E
6300.00	0.76	8.12	14.7	0.13	6299.12	19.5	55.2	11.14 N	16.05 E
6400.00	0.78	16.54	14.9	0.11	6399.11	20.5	52.7	12.44 N	16.34 E
6500.00	0.84	17.52	15.1	0.07	6499.10	21.7	50.5	13.79 N	16.75 E
6600.00	0.75	6.01	15.3	0.18	6599.09	22.8	48.4	15.15 N	17.04 E
6700.00	0.70	18.99	15.4	0.17	6699.09	23.8	46.6	16.37 N	17.31 E
6800.00	0.76	1.67	15.5	0.23	6799.08	24.8	44.9	17.61 N	17.53 E
6900.00	0.59	14.82	15.5	0.23	6899.07	25.8	43.3	18.77 N	17.68 E
7000.00	0.71	11.77	15.6	0.12	6999.06	26.8	42.1	19.87 N	17.93 E
7100.00	0.66	327.61	15.3	0.51	7099.06	27.5	40.3	20.96 N	17.75 E
7200.00	0.64	331.25	14.7	0.05	7199.05	27.9	38.1	21.93 N	17.18 E
7300.00	0.91	264.56	13.6	0.88	7299.04	27.5	35.8	22.34 N	16.12 E
7400.00	0.97	255.14	12.0	0.17	7399.03	26.4	33.3	22.05 N	14.51 E
7500.00	1.05	250.92	10.4	0.11	7499.02	25.1	30.8	21.53 N	12.82 E
7600.00	1.08	251.68	8.7	0.03	7599.00	23.7	27.9	20.94 N	11.07 E
7700.00	0.84	258.07	7.1	0.26	7698.98	22.6	24.8	20.49 N	9.45 E
7800.00	1.13	251.98	5.5	0.31	7798.97	21.5	21.2	20.03 N	7.79 E
7900.00	1.09	251.60	3.8	0.05	7898.95	20.3	17.0	19.43 N	5.95 E
8000.00	1.25	252.45	1.9	0.16	7998.93	19.2	12.0	18.80 N	4.00 E
8100.00	1.30	247.86	-0.1	0.11	8098.90	18.1	6.1	18.04 N	1.91 E
8200.00	1.33	250.82	-2.1	0.07	8198.88	17.2	359.2	17.23 N	0.23 W

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: CHIEF 30 STATE Well: 2H, 4 1/2" DRILLPIPE

Location: SCAN EAGLE, LEA COUNTY, NEW MEXICO

Job Number: MD0912GVC495

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	VERTICAL SECTION feet	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
8300.00	1.33	245.88	-4.2	0.11	8298.85	16.6 351.7	16.38 N 2.38 W
8400.00	1.59	254.60	-6.5	0.34	8398.82	16.3 342.9	15.54 N 4.78 W
8500.00	1.74	251.70	-9.1	0.17	8498.78	16.5 332.8	14.69 N 7.56 W
8600.00	1.92	256.61	-12.1	0.24	8598.73	17.4 322.4	13.82 N 10.64 W
8700.00	2.10	256.16	-15.4	0.17	8698.66	19.1 312.8	13.00 N 14.05 W
8800.00	2.02	261.76	-18.8	0.22	8798.60	21.4 305.0	12.31 N 17.57 W
8900.00	2.17	264.17	-22.4	0.18	8898.53	24.3 299.2	11.86 N 21.19 W
9000.00	2.20	263.30	-26.1	0.04	8998.46	27.5 294.6	11.45 N 24.99 W
9100.00	2.75	265.47	-30.3	0.56	9098.37	31.3 290.6	11.03 N 29.28 W
9200.00	3.10	264.94	-35.3	0.35	9198.24	36.0 287.1	10.60 N 34.37 W
9300.00	3.14	265.38	-40.7	0.04	9298.09	41.1 284.3	10.15 N 39.79 W
9400.00	3.25	265.80	-46.1	0.11	9397.93	46.4 282.1	9.72 N 45.34 W
9500.00	3.65	260.10	-52.0	0.53	9497.75	52.1 279.9	8.96 N 51.30 W
9600.00	4.06	260.81	-58.5	0.41	9597.53	58.5 277.7	7.85 N 57.93 W
9700.00	4.19	259.65	-65.3	0.15	9697.27	65.4 275.8	6.63 N 65.02 W
9800.00	3.86	254.25	-72.0	0.50	9797.02	72.0 274.0	5.06 N 71.84 W
9900.00	3.71	250.26	-78.0	0.30	9896.80	78.2 272.2	3.06 N 78.12 W
10000.00	3.59	248.97	-83.7	0.14	9996.60	84.1 270.6	0.84 N 84.08 W
10100.00	3.77	247.74	-89.3	0.20	10096.39	90.1 269.0	1.53 S 90.05 W
10200.00	3.77	251.96	-95.2	0.28	10196.18	96.3 267.7	3.79 S 96.22 W
10300.00	4.04	256.52	-101.5	0.41	10295.95	102.9 266.9	5.63 S 102.77 W
10400.00	4.04	257.51	-108.2	0.07	10395.70	109.9 266.2	7.21 S 109.63 W

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: CHIEF 30 STATE Well: 2H, 4 1/2" DRILLPIPE

Location: SCAN EAGLE, LEA COUNTY, NEW MEXICO

Job Number: MD0912GVC495

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	VERTICAL SECTION feet	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
10500.00	4.06	257.50	-114.9	0.02	10495.45	116.9 265.7	8.74 S 116.53 W
10600.00	4.07	257.72	-121.6	0.02	10595.20	123.9 265.2	10.27 S 123.46 W
10700.00	3.91	250.70	-128.0	0.51	10694.95	130.7 264.7	12.15 S 130.15 W
10800.00	3.36	276.72	-134.0	1.72	10794.76	136.9 264.6	12.93 S 136.28 W
10900.00	0.91	288.06	-137.7	2.48	10894.68	140.5 265.0	12.34 S 139.95 W
11000.00	1.74	281.57	-140.0	0.85	10994.65	142.7 265.3	11.79 S 142.19 W
11100.00	3.17	249.44	-144.0	1.93	11094.56	146.8 265.1	12.46 S 146.26 W
11159.00	3.56	250.45	-147.1	0.67	11153.46	150.1 264.8	13.65 S 149.52 W

Final Station Closure: Distance: 150.14 ft Az: 264.78 deg.