WELL LOGS

K Z

API number:	30-025-38513		
OGRID:		Operator:	CINAREX ENERGY CO OF COLORADO
		Property:	HARVARD 6 FEE # 2

surface	ULSTR:	D	06	T	15S	R	38E
			730 FNL		430 FWL		
BH Loc	ULSTR:	E	06	T	15S	R	38E
			2595 FNL		441 FWL		

Ground Level:	3792	DF:	3814	KB:	3815	
Datum:	KB			TD:	11123	

Land: FEE

Completion Date: (1)	1/11/2008
Date Logs Received:	9/23/2008 ***LATE***
Date Logs Due in: (2)	1/31/2008

Confidential:	NO		Date out:	

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		
TD LD CN/GR	200	9787	Three Detector Litho-Density
HRLA	4564	9764	High Resolution Laterolog
BHC	4564	9818	Borehole Compensated Sonic
	8800	9800	Fullbore Formation Micro Imager
	4564	9743	Hostile Natural Gamma Ray Spectroscopy
RCBL	2400	9712	Radial Cement Bond Log

K Z **OCD TOPS**

Rustler	2232	Strawn			
Tansill		Atoka			
Yates	3182	Morrow			
7R	3364				
T. Bowers Sd					
B. Bowers Sd					
Queen					
Penrose					
Grayburg					
San Andres	4434				
Glorieta	6696				
Tubb	7430				
Drinkard	7692				
Abo	8160				
Wolfcamp	9363				

Results of Directional Survey

API number:	30-025-38513			
OGRID:		Operator:	CINAREX ENERGY CO OF COLORADO	
		Property:	HARVARD 6 FEE	# 2

surface	ULSTR:	D	06	T	15S	R	38E
			730 FNL		430 FWL		
BH Loc	ULSTR:	E	06	T	15S	R	38E
			2595 FNL		441 FWL		

	MD	N/S	E/W	VD
	9100	-19.87	-17.06	9099.41
TOP PERFS/OH	**9159**	-19.84	-17 10	9158.41
	9159	-19.84	-17.10	9158.41
	10303	-1045.56	13.08	9368.91
BOT PERFS/OH	**11123**	-1865.30	10.70	9353.83
	10334	-1076.55	12.99	9368.34

NEXT TO LAST	10303	-1045.56	13.08	9368.91
LAST READING	10334	-1076.55	12.99	9368.34
TD	**11123**	-1865.30	10.70	9353.83

Surface Location	730	FN	430	FW
Projected BHL	2595	FN	441	FW
Location of				
Top Perfs/OH	750	FN	413	FW
Bottom Perfs/OH	2595	FN	441	FW

SUMMARY of Subsurface Locations

Surface Location	D-06-15S-38E	730	FN	430	FW	Vert. Depth
Top Perfs/OH	D-06-15S-38E	750	FN	413	FW	9158.41
Bottom Perfs/OH	E-06-15S-38E	2595	FN	441	FW	9353.83
Projected TD	E-06-15S-38E	2595	FN	441	FW	9353 83

OPERATOR	CIMAREX ENERGY CO.	075-0057
WELL/LEASE	HARVARD 6 FEE 2	
COUNTY	LEA	

STATE OF NEW MEXICO
DEVIATION REPORT

204	0.50
591	1.75
1,087	1.00
1,170	1.00
1,594	1.00
2,136	0.75
3,248	1.00
3,854	2.25
4,330	1.50
4,817	0.50
5,262	0.75
5,835	1.00
6,342	0.75
6,850	0.50
7,390	0.25
7,866	0.75
8,375	0.50
9,170	1.00
9,476	1.00
9,825	1.00

SUR: D-6-15s-38e, 730/N & 430/W
BHL: E-6-15s-38e, 2595/N & 441/W
API # 30-025-38513

BY: Steve Moore

STATE OF TEXAS

COUNTY OF MIDLAND

The foregoing instrument was acknowledged before me on December 12, 2007, by Steve Moore on behalf of Patterson-UTI Drilling Company LLC.

Joni D. Hodges
Notary Public for Midland County, Texas
My Commission Expires: 4/11/11

JONI D. HODGES
Notary Public
STATE OF TEXAS
My Commission
Expires 04/11/2011

Cimarex Energy Company

Lea County, NM
Harvard "6" Fee
2H

Side Track #1

SUR: D-6-15s-38e, 730/N & 430/W
BHL: E-6-15s-38e, 2595/N & 441/W
API # 30-025-38513

Design: ST01 Surveys

Sperry Drilling Services
Combo Report

19 December, 2007

Well Coordinates: 748,672.89 N, 905,868.15 E (33° 03' 08 71" N, 103° 08' 37.06" W)
Ground Level: 3,792.00 ft

Local Coordinate Origin:	Centered on Well 2H
Viewing Datum:	3,792'+0' KB @ 3792.00ft (T&B)
TVDs to System:	N
North Reference:	Grid
Unit System:	API - U.S. Survey Feet

Version: 2003.16 Build: 42B

HALLIBURTON

Design Report for 2H - ST01 Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)
0.00	0.00	0.00	-3,792.00	0.00	0.00 N	0.00 E	748,672.89	905,868.15	0.00	0.00
100.00	0.11	271.27	-3,692.00	100.00	0.00 N	0.10 W	748,672.89	905,868.05	0.11	0.00
200.00	0.33	285.75	-3,592.00	200.00	0.08 N	0.47 W	748,672.97	905,867.68	0.22	-0.09
300.00	0.28	282.21	-3,492.00	300.00	0.21 N	0.98 W	748,673.10	905,867.17	0.05	-0.22
400.00	0.26	259.37	-3,392.00	400 00	0.22 N	1.45 W	748,673.11	905,866.70	0.11	-0.24
500.00	0.83	225.59	-3,292.01	499.99	0.33 S	2.18 W	748,672.56	905,865.97	0.63	0.30
600.00	0.99	225.85	-3,192.02	599.98	1.43 S	3.32 W	748,671.46	905,864.83	0.17	1.40
700.00	0.76	230.04	-3,092.03	699.97	2.46 S	4.45 W	748,670 43	905,863.70	0.25	2.42
800.00	0.74	227.25	-2,992.04	799.96	3.32 S	5.43 W	748,669.57	905,862.72	0.04	3 27
900.00	0.51	225.59	-2,892.05	899.95	4.08 S	6.22 W	748,668.81	905,861.93	0 23	4.01
1,000.00	0.49	220.61	-2,792.05	999.95	4.71 S	6.82 W	748,668.18	905,861.33	0 05	4 64
1,100.00	0.42	222.99	-2,692.05	1,099.95	5.30 S	7.34 W	748,667.59	905,860.81	0.07	5.22
1,200.00	0 36	226.63	-2,592.06	1,199.94	5.78 S	7.82 W	748,667.11	905,860.33	0.07	5.70
1,300.00	0.35	245.20	-2,492.06	1,299.94	6.13 S	8.33 W	748,666 76	905,859.82	0.11	6.04
1,400.00	0.38	258.81	-2,392.06	1,399.94	6.32 S	8.93 W	748,666.57	905,859.22	0.09	6.22
1,500.00	0 47	257.62	-2,292.06	1,499.94	6.47 S	9.65 W	748,666.42	905,858.50	0.09	6.37
1,600.00	0.45	256.21	-2,192.07	1,599.93	6.65 S	10.44 W	748,666.24	905,857.71	0 02	6 54
1,700.00	0.37	258.02	-2,092.07	1,699 93	6.82 S	11.14 W	748,666.07	905,857.01	0.08	6.70
1,800.00	0.20	258.55	-1,992.07	1,799.93	6.92 S	11.63 W	748,665.97	905,856.52	0.18	6.79
1,900.00	0.15	238.54	-1,892.07	1,899.93	7.02 S	11.90 W	748,665.87	905,856.25	0.08	6.89
2,000.00	0.24	237.22	-1,792.07	1,999.93	7.20 S	12.19 W	748,665.69	905,855.96	0.09	7.07
2,100.00	0.30	216.79	-1,692.07	2,099.93	7.52 S	12.52 W	748,665.37	905,855.63	0.11	7.39
2,200 00	0.45	211 44	-1,592.07	2,199 93	8.07 S	12.89 W	748,664.82	905,855.26	0.16	7.93
2,300.00	0.38	204.00	-1,492.08	2,299.92	8.71 S	13.23 W	748,664.18	905,854.92	0.09	8.57
2,400.00	0.18	213.45	-1,392.08	2,399.92	9.15 S	13.45 W	748,663.74	905,854.70	0 21	9 01
2,500.00	0.10	299.84	-1,292.08	2,499.92	9.24 S	13.62 W	748,663.65	905,854.53	0 20	9.09
2,600.00	0.07	357.10	-1,192.08	2,599 92	9.13 S	13.70 W	748,663.76	905,854.45	0.09	8 98
2,700.00	0.06	335.03	-1,092.08	2,699.92	9.02 S	13.72 W	748,663.87	905,854.43	0.03	8.88
2,800.00	0.18	323.16	-992.08	2,799.92	8.85 S	13.84 W	748,664.04	905,854.31	0.12	8.71
2,900 00	0 41	345.85	-892.08	2,899.92	8.38 S	14 02 W	748,664.51	905,854.13	0.25	8.24
3,000.00	0 47	336.82	-792.08	2,999.92	7.66 S	14.27 W	748,665.23	905,853.88	0.10	7.51
3,100.00	0.46	332.58	-692.09	3,099.91	6.92 S	14.61 W	748,665.97	905,853.54	0.04	6.77
3,200.00	0.30	0.49	-592.09	3,199.91	6.31 S	14.80 W	748,666.58	905,853.35	0.24	6.15
3,300.00	0.31	15.76	-492.09	3,299.91	5.79 S	14.72 W	748,667.10	905,853.43	0 08	5.63
3,400.00	0.28	128 08	-392.09	3,399.91	5.67 S	14.46 W	748,667.22	905,853.69	0.49	5.52
3,500.00	0.50	147.40	-292.09	3,499.91	6.19 S	14.03 W	748,666.70	905,854.12	0.26	6.05
3,600 00	0.64	153.84	-192.10	3,599.90	7.07 S	13.55 W	748,665.82	905,854.60	0.15	6.92
3,700.00	0.88	150.36	-92.11	3,699.89	8.23 S	12.92 W	748,664.66	905,855.23	0.24	8.10
3,800.00	1.16	159.65	7.88	3,799.88	9.84 S	12.19 W	748,663.05	905,855.96	0.33	9.72
3,900.00	1.12	166.32	107.86	3,899.86	11.75 S	11.61 W	748,661.14	905,856.54	0.14	11.62
4,000.00	0.97	192.31	207.84	3,999.84	13 52 S	11.56 W	748,659 37	905,856.59	0.49	13.40
4,100.00	0.97	196.05	307.83	4,099.83	15.17 S	11.97 W	748,657.72	905,856.18	0.06	15 04
4,200.00	1.10	189.69	407.81	4,199.81	16.93 S	12.37 W	748,655.96	905,855 78	0.17	16 79
4,300.00	1.31	188.57	507.79	4,299.79	19.00 S	12.70 W	748,653.89	905,855.45	0.22	18.87
4,400.00	1.31	184.26	607.76	4,399.76	21.27 S	12.95 W	748,651.62	905,855.20	0.10	21.14

Design Report for 2H - ST01 Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)
4,500.00	1.00	185 63	707.74	4,499.74	23.28 S	13.12 W	748,649.61	905,855.03	0.31	23.14
4,600.00	0.88	196.36	807.73	4,599.73	24.89 S	13.43 W	748,648.00	905,854.72	0.21	24.74
4,700.00	0.91	202.80	907.72	4,699.72	26.36 S	13.95 W	748,646.53	905,854.20	0.10	26.21
4,800.00	0.79	207.08	1,007.71	4,799.71	27.70 S	14.57 W	748,645.19	905,853.58	0.14	27.55
4,900.00	0 83	208.42	1,107.70	4,899.70	28.95 S	15.23 W	748,643.94	905,852.92	0.05	28.79
5,000.00	0.71	210.97	1,207.69	4,999.69	30.12 S	15.89 W	748,642.77	905,852.26	0.13	29.95
5,100.00	0.60	219.27	1,307.68	5,099.68	31.05 S	16.54 W	748,641.84	905,851.61	0.14	30.88
5,200 00	0 42	207.17	1,407.68	5,199.68	31.79 S	17.04 W	748,641.10	905,851.11	0.21	31.61
5,300.00	0.46	213.30	1,507.67	5,299.67	32.45 S	17.43 W	748,640.44	905,850.72	0 06	32.27
5,400.00	0.42	210.57	1,607.67	5,399.67	33.10 S	17.84 W	748,639.79	905,850.31	0.04	32.92
5,500.00	0.39	184.72	1,707.67	5,499.67	33.76 S	18 05 W	748,639.13	905,850.10	0.18	33.57
5,600.00	0.75	149.28	1,807.66	5,599.66	34.65 S	17.75 W	748,638.24	905,850.40	0.49	34.46
5,700.00	0.86	153.50	1,907.65	5,699.65	35.88 S	17.08 W	748,637.01	905,851.07	0.12	35.70
5,800.00	0.92	151 99	2,007.64	5,799 64	37.26 S	16.37 W	748,635.63	905,851.78	0.07	37.09
5,900.00	0.89	151.30	2,107.63	5,899.63	38.65 S	15.62 W	748,634.24	905,852.53	0.03	38.49
6,000.00	0.98	166 38	2,207.62	5,999.62	40.16 S	15.05 W	748,632.73	905,853.10	0.26	40.00
6,100.00	0.97	164.82	2,307.60	6,099.60	41.81 S	14.62 W	748,631.08	905,853.53	0.03	41.65
6,200.00	0.87	156.90	2,407.59	6,199.59	43.33 S	14.10 W	748,629.56	905,854.05	0.16	43.18
6,300.00	0.57	166.64	2,507.58	6,299.58	44.51 S	13.69 W	748,628.38	905,854.46	0.32	44.36
6,400.00	0.37	178.07	2,607.58	6,399.58	45 31 S	13.57 W	748,627.58	905,854.58	0.21	45.17
6,500.00	0.12	169.66	2,707.58	6,499.58	45.74 S	13.54 W	748,627.15	905,854.61	0.26	45.60
6,600.00	0.14	5.80	2,807.58	6,599.58	45.72 S	13.51 W	748,627.17	905,854.64	0 25	45.58
6,700.00	0.43	333.83	2,907.57	6,699.57	45.27 S	13.66 W	748,627.62	905,854.49	0.32	45 12
6,800.00	0.54	349.64	3,007.57	6,799.57	44.47 S	13.91 W	748,628.42	905,854.24	0.17	44.32
6,900.00	0.51	348.75	3,107.57	6,899.57	43.56 S	14.08 W	748,629.33	905,854.07	0.03	43.41
7,000.00	0.42	355.23	3,207.56	6,999.56	42.76 S	14.20 W	748,630.13	905,853.95	0.11	42.61
7,100.00	0.40	357.71	3,307.56	7,099.56	42.04 S	14.24 W	748,630.85	905,853.91	0.03	41.89
7,200 00	0.40	349.79	3,407.56	7,199.56	41.35 S	14.32 W	748,631.54	905,853.83	0.06	41.20
7,300.00	0.38	356.97	3,507.56	7,299.56	40.68 S	14.40 W	748,632.21	905,853.75	0.05	40.53
7,400.00	0 33	342.61	3,607.55	7,399.55	40.08 S	14 50 W	748,632.81	905,853.65	0.10	39.92
7,500 00	0.49	0.75	3,707.55	7,499.55	39 37 S	14.58 W	748,633.52	905,853.57	0.21	39.22
7,600 00	0.57	8.27	3,807.55	7,599.55	38.45 S	14.51 W	748,634.44	905,853.64	0.10	38.30
7,700.00	0.48	352.86	3,907.54	7,699.54	37.55 S	14.49 W	748,635.34	905,853.66	0.17	37.39
7,800.00	0.47	343.08	4,007.54	7,799.54	36.75 S	14.66 W	748,636.14	905,853.49	0.08	36.59
7,900.00	0 38	3.00	4,107.54	7,899 54	36.03 S	14.76 W	748,636 86	905,853.39	0.17	35.87
8,000.00	0 41	348.63	4,207.53	7,999.53	35.35 S	14.81 W	748,637.54	905,853.34	0.10	35.19
8,100.00	0.39	357.27	4,307.53	8,099.53	34.66 S	14.90 W	748,638.23	905,853.25	0.06	34.50
8,200.00	0.53	341.77	4,407.53	8,199.53	33.88 S	15.06 W	748,639.01	905,853.09	0 18	33.72
8,300.00	0.74	351.99	4,507.52	8,299.52	32.80 S	15.29 W	748,640.09	905,852.86	0.24	32.64
8,400.00	0.85	0.23	4,607.51	8,399.51	31 42 S	15.38 W	748,641.47	905,852.77	0.16	31.26
8,500.00	1.04	354.35	4,707.50	8,499.50	29.77 S	15.47 W	748,643.12	905,852.68	0.21	29.61
8,600.00	1.00	350.44	4,807.48	8,599.48	28.01 S	15.70 W	748,644.88	905,852.45	0.08	27.84
8,700.00	0.97	346.61	4,907.47	8,699.47	26.32 S	16.04 W	748,646.57	905,852.11	0.07	26.15
8,800.00	0.89	342.18	5,007.46	8,799.46	24.76 S	16.48 W	748,648.13	905,851.67	0.11	24.58
8,900.00	0.90	349.04	5,107.44	8,899.44	23.24 S	16.86 W	748,649.65	905,851.29	0.11	23.07

Design Report for 2H - ST01 Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)
9,000.00	1.00	0.28	5,207.43	8,999.43	21.60 S	17.01 W	748,651.29	905,851.14	0.21	21.42
9,100.00	0.97	356.47	5,307.41	9,099.41	19.87 S	17.06 W	748,653.02	905,851.09	0.07	19.69
9,159.00	0.91	181.00	5,366.41	9,158.41	19.84 S	17.10 W	748,653.05	905,851.05	3.19	19.66
9,192.00	8.31	192.75	5,399.28	9,191.28	22.43 S	17.63 W	748,650.46	905,850.52	22.49	22.25
9,208.00	12.52	185.09	5,415.02	9,207.02	25 29 S	18.04 W	748,647.60	905,850.11	27.64	25.10
9,224.00	17.58	182.39	5,430.46	9,222.46	29.43 S	18.29 W	748,643.46	905,849.86	31.92	29.24
9,239.00	22.86	183.25	5,444.53	9,236 53	34.61 S	18.55 W	748,638.28	905,849.60	35.25	34.41
9,255.00	28.69	184.40	5,458.94	9,250.94	41.55 S	19.02 W	748,631.34	905,849.13	36 57	41.35
9,271.00	34.27	181.32	5,472.58	9,264 58	49.89 S	19.42 W	748,623.00	905,848.73	36.28	49.68
9,287.00	39 35	178.82	5,485.38	9,277.38	59.47 S	19.42 W	748,613 42	905,848.73	33.10	59 26
9,302 00	43.46	178.91	5,496.63	9,288.63	69.39 S	19.22 W	748,603.50	905,848.93	27.40	69.18
9,318.00	47.19	178.88	5,507.88	9,299.88	80.76 S	19.00 W	748,592.13	905,849.15	23.31	80.56
9,334.00	50.88	178.82	5,518.37	9,310.37	92.84 S	18.76 W	748,580.05	905,849.39	23.06	92.63
9,350.00	53.83	179.76	5,528.14	9,320.14	105.50 S	18.61 W	748,567.39	905,849.54	19.01	105.30
9,365.00	56.11	181.70	5,536.75	9,328.75	117.78 S	18.77 W	748,555.11	905,849.38	18.52	117.58
9,381.00	58.92	180.92	5,545.34	9,337.34	131.27 S	19.07 W	748,541.62	905,849.08	18.04	131.07
9,397.00	62.09	177.04	5,553.22	9,345.22	145.19 S	18.82 W	748,527.70	905,849.33	28.94	144.99
9,413.00	66.12	174.89	5,560 21	9,352 21	159.55 S	17.80 W	748,513.34	905,850.35	27.94	159.35
9,426.00	69.25	174.35	5,565.14	9,357.14	171.52 S	16.67 W	748,501.37	905,851.48	24.38	171.33
9,442.00	74.46	173.40	5,570.12	9,362.12	186.63 S	15.05 W	748,486.26	905,853.10	33.05	186.46
9,457.00	78.94	174.09	5,573.57	9,365.57	201.14 S	13.46 W	748,471.75	905,854.69	30 20	200.98
9,473.00	80.93	174.65	5,576.37	9,368.37	216.81 S	11.92 W	748,456.08	905,856.23	12.91	216.68
9,488.00	82.38	174.36	5,578.55	9,370.55	231.59 S	10.49 W	748,441.30	905,857.66	9.85	231.46
9,519.00	84.55	175.59	5,582.07	9,374.07	262.26 S	7.80 W	748,410.63	905,860.35	8.03	262.17
9,550 00	85.70	176.30	5,584.71	9,376.71	293.07 S	5 61 W	748,379.82	905,862.54	4.36	293.00
9,581.00	88.02	177.16	5,586.41	9,378.41	323.97 S	3.85 W	748,348.92	905,864.30	7.98	323.92
9,610.00	89.60	177.71	5,587.01	9,379.01	352.94 S	2.55 W	748,319.95	905,865.60	5.77	352.89
9,642.00	90.31	178.27	5,587.03	9,379.03	384.92 S	1.43 W	748,287.97	905,866.72	2.83	384.88
9,673.00	90.70	177.28	5,586.76	9,378.76	415.89 S	0.22 W	748,257.00	905,867.93	3 43	415.87
9,705.00	89.75	177.05	5,586 63	9,378 63	447.85 S	1.36 E	748,225.04	905,869.51	3 05	447.84
9,737.00	90.37	178 62	5,586.60	9,378.60	479 83 S	2.57 E	748,193 06	905,870.72	5.27	479.83
9,768.00	90.43	180.16	5,586.38	9,378.38	510.83 S	2.90 E	748,162.06	905,871.05	4.97	510.83
9,800.00	90.86	177.75	5,586.02	9,378.02	542.82 S	3.48 E	748,130.07	905,871.63	7.65	542.82
9,832.00	91.04	178.60	5,585.49	9,377.49	574.80 S	4.50 E	748,098.09	905,872.65	2.71	574.81
9,863.00	90.68	177.91	5,585.03	9,377.03	605.78 S	5.44 E	748,067.11	905,873.59	2.51	605.80
9,895.00	90.61	177.85	5,584.67	9,376.67	637.75 S	6.63 E	748,035.14	905,874.78	0.29	637.79
9,926.00	90.22	180.10	5,584.44	9,376.44	668.75 S	7.18 E	748,004.14	905,875.33	7.37	668.78
9,957.00	90.53	179.49	5,584.24	9,376.24	699.74 S	7.29 E	747,973.15	905,875.44	2.21	699.78
9,989.00	90.77	177.93	5,583.88	9,375.88	731.73 S	8.01 E	747,941.16	905,876.16	4.93	731.78
10,020.00	90.46	178.82	5,583.54	9,375.54	762.72 S	8.89 E	747,910.17	905,877.04	3.04	762.77
10,051.00	90.61	177.98	5,583.26	9,375.26	793.70 S	9.76 E	747,879.19	905,877.91	2.75	793.76
10,083.00	90.61	177.97	5,582.91	9,374.91	825.68 S	10.89 E	747,847.21	905,879.04	0.03	825.75
10,114.00	91.30	178.72	5,582.40	9,374.40	856.67 S	11.78 E	747,816.22	905,879.93	3.29	856.74
10,146.00	92.39	178.96	5,581.37	9,373 37	888.64 S	12.43 E	747,784.25	905,880.58	3.49	888.72
10,176.00	92.79	179.09	5,580.01	9,372.01	918.61 S	12.94 E	747,754.28	905,881.09	1.40	918.69

Design Report for 2H - ST01 Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)
10,208.00	92.19	180.19	5,578.62	9,370.62	950.58 S	13 14 E	747,722.31	905,881.29	3.91	950.66
10,240.00	91.14	179.88	5,577.69	9,369.69	982.56 S	13.12 E	747,690.33	905,881.27	3.42	982.64
10,271 00	90.59	180.21	5,577.22	9,369.22	1,013.56 S	13.10 E	747,659.33	905,881.25	2.07	1,013.64
10,303.00	90.53	179.85	5,576.91	9,368.91	1,045.56 S	13.08 E	747,627.33	905,881.23	1.14	1,045.64
10,334.00	91.57	180.49	5,576.34	9,368.34	1,076.55 S	12.99 E	747,596.34	905,881.14	3.94	1,076.63
Last MWD - H6F#2 PBHL										

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
10,334.00	9,368.34	-1,076.55	12.99	Last MWD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
Target	H6F#2 PBHL	179.40	Slot	0 00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
100.00	9,100.00	Gyro Survey	CB-GYRO-MS
9,159.00	10,334.00	Sperry MWD	MWD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
H6F#2 PBHL	0 00	0.00	9,375.00	-1,880.07	19.75	746,792.82	905,887.90	33° 2' 50.114 N	103° 8' 37.079 W

- actual wellpath misses by 803.57ft at 10334.00ft MD (9368.34 TVD, -1076.55 N, 12.99 E)
- Point

North Reference Sheet for Harvard "6" Fee - 2H - Side Track #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.
Vertical Depths are relative to 3,792'+0' KB @ 3792.00ft (T&B). Northing and Easting are relative to 2H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980
Projection method is Transverse Mercator (Gauss-Kruger)
Central Meridian is 104° 20' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:0° 0' 0.000 N°

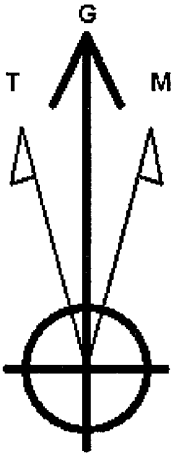
False Easting: 541,337.50ft, False Northing: 0.00ft, Scale Reduction: 1.00006124

Grid Coordinates of Well: 748,672.89 ft N, 905,868.15 ft E

Geographical Coordinates of Well: 33° 03' 08.71" N, 103° 08' 37.06" W
Grid Convergence at Surface is: 0.65°

Based upon Minimum Curvature type calculations, at a Measured Depth of 10,334.00ft
the Bottom Hole Displacement is 1,076 63ft in the Direction of 179.31° (Grid).

Magnetic Convergence at surface is: -7.25° (12 December 2007, , BGGM2007)



Magnetic Model:	BGGM 2007
Date	12-Dec-07
Declination	7 90°
Inclination/Dip	61.14°
Field Strength.	49551

Grid North is 0.65° East of True North (Grid Convergence)
agnetic North is 7.90° East of True North (Magnetic Declination)
gnetic North is 7.25° East of Grid North (Magnetic Convergence)

To convert a True Direction to a Grid Direction, Subtract 0 65°
convert a Magnetic Direction to a True Direction, Add 7 90° East
To convert a Magnetic Direction to a Grid Direction, Add 7.25°

Cimarex Energy Company
2H - ST01 Surveys

Lea County, NM
Harvard "6" Fee
Your Ref:

Measured Depth (ft)	Incl. (ft)	Azim. (ft)	Sub-Sea Vertical Depth (ft)	Vertical Dogleg Depth Section (ft)	Dogleg Rate (°/100ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)
UTM Coordinates Northings (ft)		UTM Coordinates Eastings (ft)					
0.00	0.000	0.000	-3792.00	0.00		0.00 N	0.00 E
748672.890 N		905868.150 E	0.00	0.00			
100.00	0.112	271.269	-3692.00	100.00		0.00 N	0.10 W
748672.892 N		905868.052 E	0.00	0.11			
200.00	0.326	285.752	-3592.00	200.00		0.08 N	0.47 W
748672.972 N		905867.680 E	-0.09	0.22			
300.00	0.283	282.209	-3492.00	300.00		0.21 N	0.98 W
748673.101 N		905867.165 E	-0.22	0.05			
400.00	0.257	259.369	-3392.00	400.00		0.22 N	1.45 W
748673.112 N		905866.704 E	-0.24	0.11			
500.00	0.828	225.592	-3292.01	499.99		0.33 S	2.18 W
748672.565 N		905865.967 E	0.30	0.63			
600.00	0.993	225.846	-3192.02	599.98		1.43 S	3.32 W
748671.455 N		905864.829 E	1.40	0.17			
700.00	0.756	230.045	-3092.03	699.97		2.46 S	4.45 W
748670.428 N		905863.701 E	2.42	0.25			
800.00	0.742	227.246	-2992.04	799.96		3.32 S	5.43 W
748669.565 N		905862.721 E	3.27	0.04			
900.00	0.510	225.587	-2892.05	899.95		4.08 S	6.22 W
748668.814 N		905861.927 E	4.01	0.23			
1000.00	0.486	220.612	-2792.05	999.95		4.71 S	6.82 W
748668.181 N		905861.333 E	4.64	0.05			
1100.00	0.422	222.985	-2692.06	1099.94		5.30 S	7.34 W
748667.589 N		905860.806 E	5.22	0.07			
1200.00	0.357	226.631	-2592.06	1199.94		5.78 S	7.82 W
748667.105 N		905860.328 E	5.70	0.07			
1300.00	0.349	245.199	-2492.06	1299.94		6.13 S	8.33 W
748666.763 N		905859.825 E	6.04	0.11			
1400.00	0.379	258.810	-2392.06	1399.94		6.32 S	8.93 W
748666.571 N		905859.223 E	6.22	0.09			
1500.00	0.473	257.622	-2292.07	1499.93		6.47 S	9.65 W
748666.419 N		905858.496 E	6.37	0.09			
1600.00	0.453	256.214	-2192.07	1599.93		6.65 S	10.44 W
748666.236 N		905857.709 E	6.54	0.02			
1700.00	0.371	258.022	-2092.07	1699.93		6.82 S	11.14 W
748666.075 N		905857.008 E	6.70	0.08			
1800.00	0.196	258.553	-1992.07	1799.93		6.92 S	11.63 W
748665.973 N		905856.524 E	6.79	0.18			
1900.00	0.147	238.539	-1892.07	1899.93		7.02 S	11.90 W
748665.872 N		905856.246 E	6.89	0.08			
2000.00	0.242	237.217	-1792.08	1999.92		7.20 S	12.19 W
748665.691 N		905855.959 E	7.07	0.09			
2100.00	0.299	216.792	-1692.08	2099.92		7.52 S	12.52 W
748665.368 N		905855.625 E	7.39	0.11			
2200.00	0.451	211.437	-1592.08	2199.92		8.07 S	12.89 W
748664.824 N		905855.264 E	7.93	0.16			
2300.00	0.384	203.999	-1492.08	2299.92		8.71 S	13.23 W

748664.182 N	905854.923 E	8.57	0.09			
2400.00	0.183 213.445	-1392.08	2399.92	9.15 S	13.45 W	
748663.742 N	905854.698 E	9.01	0.21			
2499.99	0.103 299.833	-1292.08	2499.92	9.24 S	13.62 W	
748663.654 N	905854.533 E	9.09	0.20			
2599.99	0.072 357.099	-1192.08	2599.92	9.13 S	13.70 W	
748663.761 N	905854.452 E	8.98	0.09			
2699.99	0.056 335.033	-1092.08	2699.92	9.02 S	13.72 W	
748663.869 N	905854.428 E	8.88	0.03			
2799.99	0.179 323.160	-992.08	2799.92	8.85 S	13.84 W	
748664.038 N	905854.314 E	8.71	0.12			
2899.99	0.406 345.849	-892.09	2899.91	8.38 S	14.02 W	
748664.506 N	905854.134 E	8.24	0.25			
2999.99	0.473 336.817	-792.09	2999.91	7.66 S	14.27 W	
748665.230 N	905853.885 E	7.51	0.10			
3099.99	0.461 332.580	-692.09	3099.91	6.92 S	14.61 W	
748665.966 N	905853.537 E	6.77	0.04			
3199.99	0.298 0.485	-592.09	3199.91	6.31 S	14.80 W	
748666.584 N	905853.354 E	6.15	0.24			
3299.99	0.310 15.757	-492.10	3299.90	5.79 S	14.72 W	
748667.104 N	905853.429 E	5.63	0.08			
3399.99	0.278 128.076	-392.10	3399.90	5.67 S	14.46 W	
748667.215 N	905853.694 E	5.52	0.49			
3499.99	0.503 147.394	-292.10	3499.90	6.19 S	14.03 W	
748666.696 N	905854.121 E	6.05	0.26			
3599.99	0.641 153.838	-192.11	3599.89	7.07 S	13.55 W	
748665.824 N	905854.604 E	6.92	0.15			
3699.99	0.875 150.357	-92.11	3699.89	8.23 S	12.92 W	
748664.659 N	905855.228 E	8.10	0.24			
3799.99	1.160 159.645	7.87	3799.87	9.84 S	12.19 W	
748663.046 N	905855.958 E	9.72	0.33			
3899.99	1.124 166.316	107.85	3899.85	11.75 S	11.61 W	
748661.144 N	905856.542 E	11.62	0.14			
3999.99	0.968 192.307	207.83	3999.83	13.52 S	11.56 W	
748659.366 N	905856.594 E	13.40	0.49			
4099.99	0.973 196.054	307.82	4099.82	15.16 S	11.97 W	
748657.725 N	905856.180 E	15.04	0.06			
4199.99	1.098 189.694	407.80	4199.80	16.92 S	12.37 W	
748655.965 N	905855.784 E	16.79	0.17			
4299.99	1.314 188.573	507.78	4299.78	19.00 S	12.70 W	
748653.887 N	905855.451 E	18.87	0.22			
4399.99	1.308 184.260	607.75	4399.75	21.27 S	12.95 W	
748651.616 N	905855.196 E	21.14	0.10			
4499.99	0.999 185.632	707.73	4499.73	23.28 S	13.12 W	
748649.610 N	905855.025 E	23.14	0.31			
4599.99	0.882 196.357	807.72	4599.72	24.89 S	13.43 W	
748648.004 N	905854.723 E	24.74	0.21			
4699.99	0.911 202.799	907.71	4699.71	26.36 S	13.95 W	
748646.533 N	905854.199 E	26.21	0.10			
4799.99	0.785 207.078	1007.70	4799.70	27.70 S	14.57 W	
748645.190 N	905853.579 E	27.55	0.14			
4899.99	0.834 208.419	1107.69	4899.69	28.95 S	15.23 W	
748643.940 N	905852.920 E	28.79	0.05			
4999.99	0.707 210.968	1207.68	4999.68	30.12 S	15.89 W	
748642.770 N	905852.256 E	29.95	0.13			
5099.99	0.599 219.273	1307.67	5099.67	31.05 S	16.54 W	
748641.836 N	905851.608 E	30.88	0.14			
5199.99	0.422 207.172	1407.67	5199.67	31.79 S	17.04 W	
748641.104 N	905851.109 E	31.61	0.21			
5299.99	0.461 213.304	1507.66	5299.66	32.45 S	17.43 W	
748640.440 N	905850.719 E	32.27	0.06			
5399.99	0.422 210.572	1607.66	5399.66	33.10 S	17.84 W	
748639.786 N	905850.311 E	32.92	0.04			

5499.99	0.385	184.723	1707.66	5499.66	33.76 S	18.05 W
748639.133 N	905850.096 E		33.57	0.18		
5599.99	0.747	149.280	1807.65	5599.65	34.65 S	17.75 W
748638.238 N	905850.401 E		34.46	0.49		
5699.99	0.855	153.504	1907.64	5699.64	35.88 S	17.08 W
748637.009 N	905851.067 E		35.70	0.12		
5799.99	0.922	151.992	2007.63	5799.63	37.26 S	16.37 W
748635.631 N	905851.778 E		37.09	0.07		
5899.99	0.891	151.305	2107.62	5899.62	38.65 S	15.62 W
748634.238 N	905852.529 E		38.49	0.03		
5999.99	0.978	166.381	2207.60	5999.60	40.16 S	15.05 W
748632.728 N	905853.103 E		40.00	0.26		
6099.99	0.972	164.821	2307.59	6099.59	41.81 S	14.62 W
748631.080 N	905853.526 E		41.65	0.03		
6199.99	0.869	156.905	2407.58	6199.58	43.33 S	14.10 W
748629.563 N	905854.046 E		43.18	0.16		
6299.99	0.567	166.639	2507.57	6299.57	44.51 S	13.69 W
748628.384 N	905854.458 E		44.36	0.32		
6399.99	0.374	178.070	2607.56	6399.56	45.31 S	13.57 W
748627.576 N	905854.583 E		45.17	0.21		
6499.99	0.118	169.661	2707.56	6499.56	45.74 S	13.54 W
748627.149 N	905854.612 E		45.60	0.26		
6599.99	0.138	5.797	2807.56	6599.56	45.72 S	13.51 W
748627.167 N	905854.643 E		45.58	0.25		
6699.99	0.429	333.830	2907.56	6699.56	45.27 S	13.66 W
748627.623 N	905854.490 E		45.12	0.32		
6799.99	0.540	349.639	3007.56	6799.56	44.47 S	13.91 W
748628.423 N	905854.240 E		44.32	0.17		
6899.99	0.513	348.751	3107.55	6899.55	43.56 S	14.08 W
748629.326 N	905854.068 E		43.41	0.03		
6999.99	0.422	355.232	3207.55	6999.55	42.76 S	14.20 W
748630.132 N	905853.950 E		42.61	0.11		
7099.99	0.401	357.707	3307.55	7099.55	42.04 S	14.24 W
748630.848 N	905853.905 E		41.89	0.03		
7199.99	0.395	349.792	3407.54	7199.54	41.35 S	14.32 W
748631.537 N	905853.830 E		41.20	0.06		
7299.99	0.381	356.968	3507.54	7299.54	40.68 S	14.40 W
748632.208 N	905853.751 E		40.53	0.05		
7399.99	0.329	342.617	3607.54	7399.54	40.08 S	14.50 W
748632.814 N	905853.648 E		39.92	0.10		
7499.98	0.492	0.750	3707.54	7499.54	39.37 S	14.58 W
748633.518 N	905853.568 E		39.22	0.21		
7599.98	0.567	8.272	3807.53	7599.53	38.45 S	14.51 W
748634.438 N	905853.645 E		38.30	0.10		
7699.98	0.477	352.864	3907.53	7699.53	37.55 S	14.49 W
748635.341 N	905853.664 E		37.39	0.17		
7799.98	0.468	343.084	4007.52	7799.52	36.75 S	14.66 W
748636.145 N	905853.494 E		36.59	0.08		
7899.98	0.377	2.997	4107.52	7899.52	36.03 S	14.76 W
748636.864 N	905853.392 E		35.87	0.17		
7999.98	0.409	348.628	4207.52	7999.52	35.35 S	14.81 W
748637.543 N	905853.339 E		35.19	0.10		
8099.98	0.391	357.264	4307.52	8099.52	34.66 S	14.90 W
748638.234 N	905853.252 E		34.50	0.06		
8199.98	0.528	341.770	4407.51	8199.51	33.88 S	15.06 W
748639.012 N	905853.092 E		33.72	0.18		
8299.98	0.738	351.993	4507.51	8299.51	32.80 S	15.29 W
748640.087 N	905852.858 E		32.64	0.24		
8399.98	0.853	0.224	4607.50	8399.50	31.42 S	15.38 W
748641.469 N	905852.771 E		31.26	0.16		
8499.98	1.041	354.347	4707.48	8499.48	29.77 S	15.47 W
748643.117 N	905852.685 E		29.61	0.21		
8599.98	1.002	350.437	4807.47	8599.47	28.01 S	15.70 W

748644.883	N	905852.450	E	27.84	0.08			
8699.98	0.971	346.615		4907.45	8699.45	26.32	S	16.04 W
748646.568	N	905852.109	E	26.15	0.07			
8799.98	0.891	342.185		5007.44	8799.44	24.76	S	16.48 W
748648.133	N	905851.675	E	24.58	0.11			
8899.98	0.902	349.038		5107.43	8899.43	23.24	S	16.86 W
748649.646	N	905851.287	E	23.07	0.11			
8999.98	1.002	0.274		5207.41	8999.41	21.60	S	17.01 W
748651.293	N	905851.142	E	21.42	0.21			
9099.98	0.975	356.470		5307.40	9099.40	19.87	S	17.06 W
748653.016	N	905851.094	E	19.69	0.07			
9199.98	10.388	188.161		5407.16	9199.16	23.71	S	17.86 W
748649.183	N	905850.293	E	23.52	11.34			
9299.98	42.907	178.899		5495.16	9287.16	68.00	S	19.25 W
748604.886	N	905848.899	E	67.80	32.69			
9399.98	62.838	176.628		5554.60	9346.60	147.83	S	18.67 W
748525.058	N	905849.478	E	147.63	20.01			
9499.98	83.218	174.837		5580.05	9372.05	243.42	S	9.38 W
748429.470	N	905858.775	E	243.31	20.45			
9599.98	89.054	177.520		5586.89	9378.89	342.93	S	2.97 W
748329.961	N	905865.183	E	342.88	6.42			
9699.98	89.899	177.086		5586.62	9378.62	442.84	S	1.10 E
748230.049	N	905869.251	E	442.83	0.95			
9799.98	90.860	177.751		5586.02	9378.02	542.80	S	3.48 E
748130.093	N	905871.630	E	542.80	1.17			
9899.98	90.547	178.211		5584.62	9376.62	642.73	S	6.80 E
748030.160	N	905874.948	E	642.77	0.56			
9999.98	90.660	178.245		5583.74	9375.74	742.71	S	8.38 E
747930.184	N	905876.529	E	742.75	0.12			
10099.98	90.988	178.381		5582.68	9374.68	842.65	S	11.43 E
747830.237	N	905879.578	E	842.73	0.35			
10199.98	92.340	179.914		5578.94	9370.94	942.56	S	13.15 E
747730.329	N	905881.299	E	942.65	2.04			
10299.98	90.536	179.884		5576.94	9368.94	1042.54	S	13.07 E
747630.354	N	905881.224	E	1042.62	1.81			
10334.00	91.570	180.490		5576.34	9368.34	1076.55	S	12.99 E
747596.340	N	905881.139	E	1076.63	3.52			

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to 3,792'+0' KB. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet.
Vertical Section is from Slot and calculated along an Azimuth of 179.398° (Grid).

Coordinate System is North American Datum 1983 US State Plane 1983, New Mexico Eastern Zone.
Grid Convergence at Surface is 0.649°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 10334.00ft., the Bottom Hole Displacement is 1076.63ft., in the Direction of 179.398° (Grid).

Cimarex Energy Company

HALLIBURTON
Sperry Drilling Services

Project: Lea County, NM
Site: Harvard "6" Fee
Well: 2H
Wellbore: Side Track #1
Design: ST01 Surveys (2H/Side Track #1)
Rig: T&B

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
H6F#2 PBHL	9375.00	-1880.07	19.75	746792.82	905887.90	Point

Surface Location:

US State Plane 1983
New Mexico Eastern Zone
Elevation: 3,792'+0' KB @ 3792.00ft (T&B)

Northing	Easting	Latittude	Longitude
748672.89	905868.15	33° 3' 8.715 N	103° 8' 37.060 W

To convert a Magnetic Direction to a Grid Direction, Add 7.25°

Magnetic Model: BGGM2007 Date: 12-Dec-07
Azimuths to Grid North