



Scientific
Drilling

Directional Survey Certification

30-045-38650
E 24-29N-09W
SRF 1480/N 940/W
BHL 735/N 1816/W

RE: D.J. Simmons Operator
Simmons E3C Well Name & No.
Sec. 24, T29N, R9W Surface Hole Location
San Juan County, NM Location
41DEF1001272 SDI Job No.

I, Judi Moore, having personal knowledge of all the facts, hereby
certify that the attached directional survey run from a measured depth of 278 feet to a
measured depth of 5803 feet is true and correct as determined from all available records.

Judi Moore
Signature

Well Planner
Title

SDI
Company

State of: Wyoming }
County of: Natrona } ss

On this 2nd day of January, 2002, before me personally appeared
Judi Moore to me known as the person described in and who executed the foregoing
instrument and acknowledged that (s)he executed the same as his/her free act and deed.

Seal

Summer J. Whitehouse
Notary Public

Aug 18, 2004
My Commission Expires





**Scientific
Drilling**

DIRECTIONAL SURVEY REPORT

Prepared For

**D.J. SIMMONS
Simmons E3C
San Juan County, NM**

***Prepared By:
Judi Moore - Well Planner
Scientific Drilling International
Rocky Mountain District***

Scientific Drilling International
7237 W. Barton Rd., Casper, WY 82604
P.O. Box 1600, Mills, WY 82644
(307) 472-6621
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Scientific Drilling CASPER, WY

Company: D.J. SIMMONS	Date: 1/2/2002	Time: 08:37:17	Page: 1
Field: San Juan County, NM	Co-ordinate(N/E) Reference:	Site: Simmons E3C, True North	
Site: Simmons E3C	Vertical (TVD) Reference:	SITE 0.0	
Well: Simmons E3C	Section (VS) Reference:	Well (0.00N,0.00E,33.62Azi)	
Wellpath: OH	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: Survey #1 **Start Date:** 11/17/2001

Company: Scientific Drilling **Engineer:** Sears
Tool: MWD,E-Field **Tied-to:** From Surface

Field: San Juan County, NM

Map System: US State Plane Coordinate System 1927	Map Zone: New Mexico, Western Zone
Geo Datum: NAD27 (Clarke 1866)	Coordinate System: Site Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: igrf2000

Site: Simmons E3C
SHL SEC.24,T29N,R9W 1980'FNL & 990'FWL
PBHL 721'FNL & 1827'FWL

Site Position:	Northing: m	Latitude:
From: Lease Line	Easting: m	Longitude:
Position Uncertainty: 0.00 ft		North Reference: True
Ground Level: 0.00 ft		Grid Convergence: 0.05 deg

Well: Simmons E3C **Slot Name:**

Well Position: +N/-S 0.00 ft	Northing: 637723.03 m	Latitude: 36 44 59.999 N
+E/-W 0.00 ft	Easting: 159841.40 m	Longitude: 107 45 0.000 W
Position Uncertainty: 0.00 ft		

Wellpath: OH

Current Datum: SITE	Height 0.00 ft	Drilled From: Surface
Magnetic Data: 7/10/2001		Tie-on Depth: 0.00 ft
Field Strength: 51853 nT		Above System Datum: Mean Sea Level
Vertical Section: Depth From (TVD)	+N/-S ft	Declination: 11.15 deg
		Mag Dip Angle: 63.73 deg
		+E/-W ft
		Direction deg
5290.00	0.00	0.00 33.62

Survey

Meas Depth ft	Inclination deg	Azimuth deg	TVD ft	Vert Sect ft	N/S ft	E/W ft	DLS deg/100ft	CLen ft	CLSD ft	CLSA deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
278.00	0.00	0.00	278.00	0.00	0.00	0.00	0.00	278.00	0.00	0.00
512.00	0.50	46.30	512.00	1.00	0.71	0.74	0.21	234.00	1.02	46.30
1051.00	0.10	15.10	1050.99	3.74	2.78	2.56	0.08	539.00	3.78	42.61
1500.00	0.60	297.30	1499.98	3.85	4.24	0.57	0.13	449.00	4.28	7.71
1965.00	0.40	13.00	1964.97	5.10	6.94	-1.22	0.14	465.00	7.05	349.99
1996.00	0.60	103.20	1995.97	5.26	7.01	-1.04	2.33	31.00	7.08	351.54
2027.00	2.10	77.20	2026.96	5.73	7.10	-0.33	5.11	31.00	7.10	357.34
2058.00	4.00	68.90	2057.91	7.02	7.61	1.23	6.28	31.00	7.71	9.20
2089.00	5.70	63.40	2088.80	9.24	8.69	3.62	5.68	31.00	9.41	22.60
2120.00	7.60	62.70	2119.59	12.37	10.32	6.82	6.13	31.00	12.37	33.45
2149.00	9.40	60.80	2148.27	16.15	12.35	10.59	6.28	29.00	16.27	40.60
2181.00	11.00	61.70	2179.76	21.17	15.08	15.56	5.02	32.00	21.66	45.90
2213.00	12.80	63.10	2211.07	26.95	18.13	21.41	5.70	32.00	28.05	49.74
2245.00	14.30	64.60	2242.18	33.42	21.43	28.14	4.81	32.00	35.37	52.71
2275.00	15.80	65.10	2271.15	40.08	24.74	35.19	5.02	30.00	43.02	54.90
2306.00	17.20	64.80	2300.88	47.60	28.47	43.17	4.52	31.00	51.71	56.60
2337.00	18.40	63.30	2330.39	55.78	32.62	51.69	4.14	31.00	61.12	57.75
2368.00	19.60	62.00	2359.70	64.60	37.25	60.65	4.10	31.00	71.18	58.44
2399.00	20.60	61.20	2388.81	74.01	42.32	70.02	3.35	31.00	81.81	58.85
2430.00	21.50	60.40	2417.74	83.91	47.76	79.74	3.05	31.00	92.94	59.08
2462.00	22.70	59.70	2447.39	94.70	53.77	90.17	3.84	32.00	104.98	59.19
2494.00	23.70	58.70	2476.80	106.07	60.23	100.99	3.36	32.00	117.59	59.19
2524.00	25.30	56.90	2504.10	117.42	66.86	111.52	5.88	30.00	130.02	59.06



Scientific Drilling CASPER, WY

Company: D.J. SIMMONS
Field: San Juan County, NM
Site: Simmons E3C
Well: Simmons E3C
Wellpath: OH

Date: 1/2/2002 Time: 08:37:17 Page: 2
Co-ordinate(NE) Reference: Site: Simmons E3C, True North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,33.62Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

Meas Depth ft	Inclination deg	Azimuth deg	TVD ft	Vert Sect ft	N/S ft	E/W ft	DLS deg/100ft	CLen ft	CLSD ft	CLSA deg
2554.00	27.50	56.40	2530.97	129.69	74.19	122.66	7.37	30.00	143.35	58.83
2584.00	29.60	56.40	2557.32	142.91	82.13	134.60	7.00	30.00	157.67	58.61
2616.00	31.60	56.90	2584.87	157.90	91.08	148.20	6.30	32.00	173.95	58.43
2647.00	33.50	57.60	2611.00	173.18	100.10	162.23	6.25	31.00	190.63	58.32
2678.00	35.30	58.00	2636.57	189.15	109.43	177.05	5.85	31.00	208.14	58.28
2710.00	36.90	58.50	2662.43	206.29	119.35	193.09	5.08	32.00	227.00	58.28
2742.00	38.30	59.10	2687.78	223.96	129.46	209.79	4.52	32.00	246.52	58.32
2772.00	39.50	59.40	2711.13	240.94	139.10	225.98	4.05	30.00	265.35	58.39
2803.00	40.50	59.90	2734.87	258.85	149.16	243.17	3.39	31.00	285.28	58.48
2834.00	41.50	60.50	2758.27	277.03	159.27	260.82	3.47	31.00	305.61	58.59
2865.00	43.30	60.20	2781.16	295.70	169.61	278.99	5.84	31.00	326.50	58.70
2896.00	45.10	60.20	2803.38	315.03	180.35	297.74	5.81	31.00	348.10	58.80
2927.00	46.80	59.80	2824.94	334.99	191.49	317.03	5.56	31.00	370.38	58.87
2959.00	48.90	59.50	2846.41	356.30	203.48	337.51	6.60	32.00	394.10	58.91
2989.00	50.70	58.70	2865.77	376.99	215.25	357.17	6.34	30.00	417.01	58.92
3070.00	52.60	56.40	2916.03	435.05	249.34	410.75	3.23	81.00	480.51	58.74
3102.00	51.00	55.10	2935.82	458.34	263.49	431.54	5.93	32.00	505.62	58.59
3133.00	49.20	55.90	2955.71	480.41	276.96	451.14	6.13	31.00	529.37	58.45
3197.00	44.10	50.20	2999.64	524.21	304.83	488.34	10.26	64.00	575.67	58.03
3260.00	41.80	43.70	3045.78	565.92	334.06	519.71	7.92	63.00	617.81	57.27
3323.00	39.80	38.10	3093.48	606.71	365.12	546.67	6.62	63.00	657.39	56.26
3386.00	36.30	37.30	3143.08	645.43	395.83	570.42	5.61	63.00	694.31	55.24
3449.00	33.50	37.10	3194.75	681.40	424.54	592.21	4.45	63.00	728.66	54.36
3510.00	30.60	37.20	3246.45	713.71	450.33	611.76	4.75	61.00	759.64	53.64
3572.00	28.10	38.00	3300.48	744.02	474.41	630.29	4.08	62.00	788.88	53.03
3634.00	26.00	37.20	3355.70	772.15	496.75	647.50	3.44	62.00	816.10	52.51
3697.00	26.00	35.00	3412.32	799.73	519.06	663.77	1.53	63.00	842.62	51.98
3758.00	26.30	32.00	3467.08	826.61	541.47	678.60	2.22	61.00	868.15	51.41
3790.00	26.40	31.70	3495.76	840.81	553.54	686.09	0.52	32.00	881.55	51.10
3822.00	24.30	34.30	3524.68	854.50	565.03	693.54	7.43	32.00	894.57	50.83
3855.00	23.30	32.80	3554.87	867.82	576.12	700.91	3.54	33.00	907.30	50.58
3886.00	22.40	31.90	3583.44	879.85	586.29	707.35	3.11	31.00	918.74	50.35
3980.00	24.80	24.90	3669.59	917.26	619.39	725.12	3.92	94.00	953.65	49.50
4073.00	23.60	24.10	3754.41	954.90	654.08	740.93	1.34	93.00	988.33	48.56
4105.00	23.10	24.00	3783.79	967.40	665.66	746.10	1.57	32.00	999.89	48.26
4199.00	23.50	13.60	3870.16	1003.21	700.74	758.02	4.39	94.00	1032.29	47.25
4291.00	24.10	12.30	3954.34	1037.94	736.92	766.33	0.87	92.00	1063.16	46.12
4384.00	20.80	10.50	4040.28	1070.83	771.71	773.39	3.62	93.00	1092.55	45.06
4476.00	23.80	9.40	4125.39	1102.79	808.10	779.40	3.29	92.00	1121.27	44.04
4570.00	21.40	10.20	4212.16	1135.83	841.69	785.53	2.57	94.00	1151.31	43.02
4663.00	20.70	7.70	4298.96	1166.18	874.68	790.74	1.22	93.00	1179.13	42.11
4755.00	21.50	7.20	4384.79	1195.90	907.52	795.03	0.89	92.00	1206.51	41.22
4849.00	20.80	3.80	4472.46	1225.81	941.27	798.30	1.50	94.00	1234.20	40.30
4943.00	19.80	7.80	4560.63	1254.63	973.70	801.56	1.82	94.00	1261.18	39.46
5035.00	17.90	4.60	4647.69	1281.02	1003.23	804.81	2.35	92.00	1286.15	38.74
5128.00	19.70	11.80	4735.74	1308.08	1032.83	809.16	3.15	93.00	1312.05	38.08
5223.00	20.20	11.10	4825.04	1338.09	1064.59	815.60	0.58	95.00	1341.10	37.46
5316.00	19.20	7.50	4912.60	1366.66	1095.51	820.68	1.69	93.00	1368.82	36.84
5409.00	19.90	6.20	5000.23	1394.44	1126.41	824.39	0.89	93.00	1395.86	36.20
5502.00	19.00	1.00	5087.93	1421.24	1157.29	826.36	2.10	93.00	1422.04	35.53
5594.00	16.60	359.40	5175.52	1444.73	1185.40	826.49	2.66	92.00	1445.08	34.88
5803.00	16.60	359.40	5375.81	1494.10	1245.11	825.86	0.00	209.00	1494.10	33.56



Scientific Drilling CASPER, WY

Company: D.J. SIMMONS
Field: San Juan County, NM
Site: Simmons E3C
Well: Simmons E3C
Wellpath: OH

Date: 1/2/2002 Time: 08:37:17 Page: 3
Co-ordinate(NE) Reference: Site: Simmons E3C, True North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,33.62Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Annotation

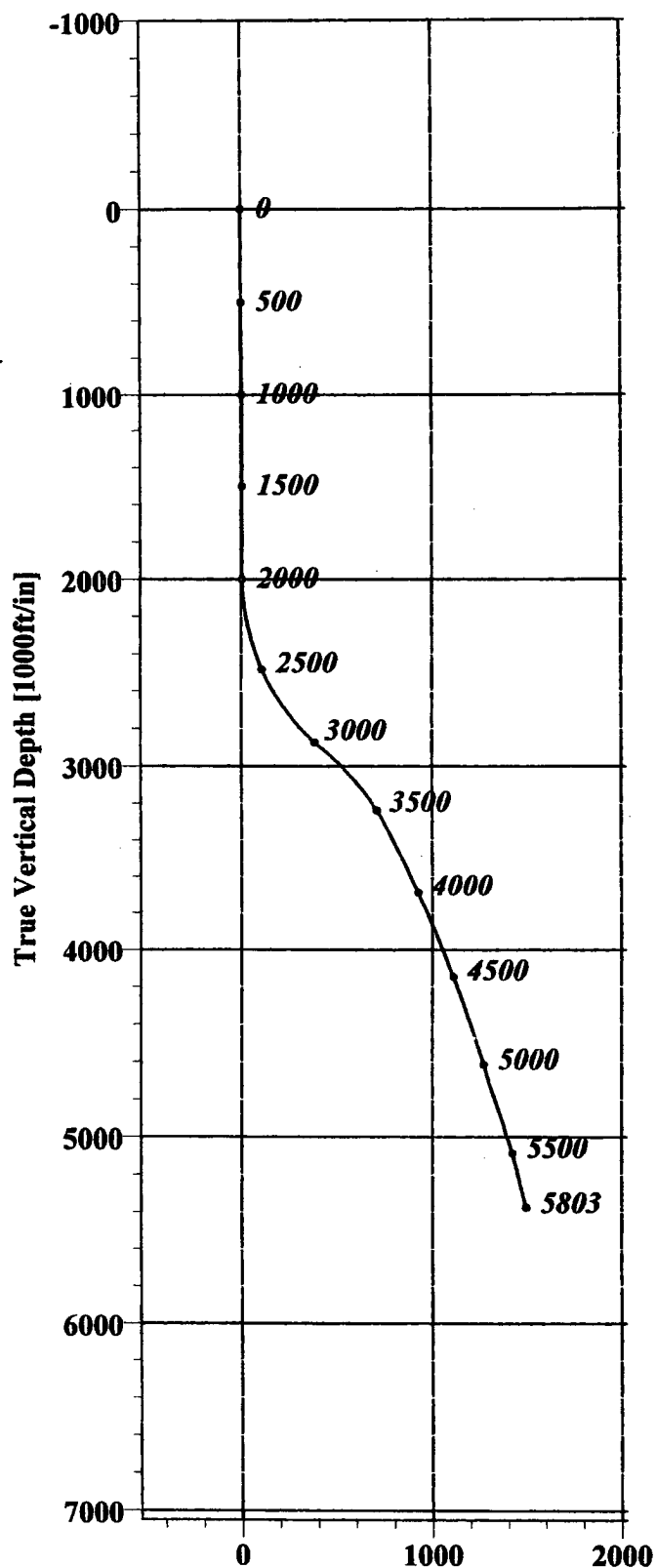
MD ft	TVD ft	
5803.00	5375.81	Survey is a projection



Scientific
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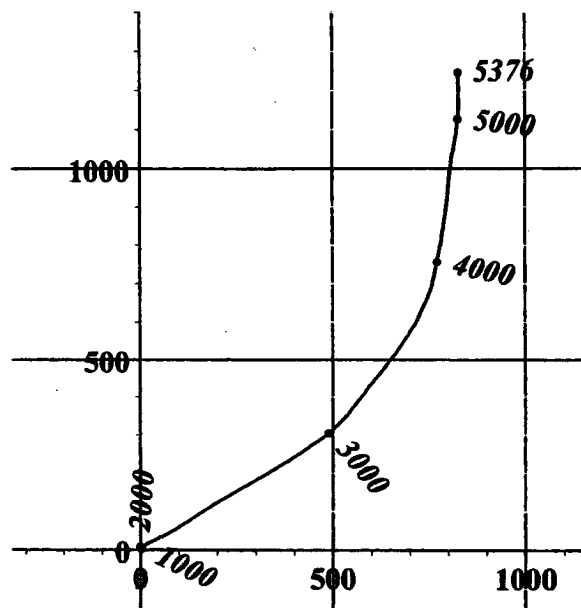
D.J. SIMMONS

Field: San Juan County, NM
Site: Simmons E3C
Well: Simmons E3C
Wellpath: OH
Survey: Survey #1



Vertical Section at 33.62° [1000ft/in]

South(-)/North(+) [500ft/in]



West(-)/East(+) [500ft/in]

BOTTOM HOLE CLOSURE
(Survey @ 5803' MD is a projection)

1494.10 ft. 33.56° Azimuth

FINAL STATION
(Survey @ 5803' MD is a projection)

5803.0' MD 5375.81' TVD
16.6° Angle 359.4° Azimuth
North 1245.11 ft. East 825.86 ft.
1494.1' Vert. Sec.

Survey: Survey #1 (Simmons E3C/OH)

Created By: Judi Moore

Date: 1/2/2002