

C-32-28N-7W

LEAM DRILLING SYSTEMS, INC.

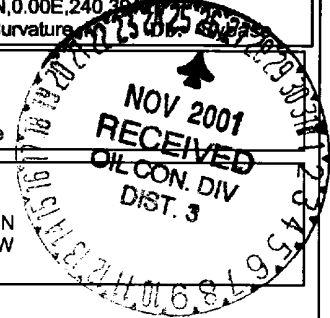
Survey Report

30-039-26754

Company: CONOCO, INC.	Date: 7/29/2001	Time: 13:56:09	Page: 1
Field: RIO ARRIBA COUNTY, NEW MEXICO	Co-ordinate(N/E) Reference: Site: SAN JUAN 28-7 252M, True North		
Site: SAN JUAN 28-7 252M	Vertical (TVD) Reference: SITE 0.0		
Well: 1108D-CN	Section (VS) Reference: Well (0.00N,0.00E,240.38)		
Wellpath: MWD	Survey Calculation Method: Minimum Curvature		

Survey: MWD MWD SVY RUN BY LEAM DRLG. SYSTEMS	Start Date: 7/29/2001
Company:	Engineer:
Tool:	Tied-to: From Surface

Well: 1108D-CN	Slot Name:
Well Position: +N/-S 0.00 ft Northing: 2046019.49 ft Latitude: 36 37 21.930 N	
+E/-W 0.00 ft Easting: 568854.36 ft Longitude: 107 35 55.310 W	
Position Uncertainty: 0.00 ft	



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	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	0.00
305.00	0.40	32.80	305.00	0.89	0.58	-0.94	0.13	0.13	0.00	1.06	32.80
386.00	0.90	201.60	385.99	0.54	0.50	-0.70	1.60	0.62	208.40	0.73	42.49
477.00	2.80	215.60	476.94	-1.93	-1.06	1.88	2.13	2.09	15.38	2.20	208.80
568.00	5.50	230.20	567.70	-6.53	-5.71	8.19	3.16	2.97	16.04	8.67	221.15
660.00	8.10	236.60	659.05	-12.92	-14.51	19.00	2.94	2.83	6.96	19.43	228.31
754.00	10.70	241.80	751.78	-20.69	-27.73	34.33	2.91	2.77	5.53	34.60	233.27
847.00	13.00	239.90	842.79	-30.02	-44.39	53.42	2.51	2.47	-2.04	53.59	235.93
941.00	16.00	238.70	933.78	-42.05	-64.61	76.95	3.21	3.19	-1.28	77.09	236.94
1033.00	18.20	240.30	1021.71	-55.76	-87.93	104.00	2.45	2.39	1.74	104.12	237.62
1125.00	20.20	239.60	1108.59	-70.92	-114.11	134.25	2.19	2.17	-0.76	134.35	238.14
1218.00	22.30	241.00	1195.26	-87.60	-143.39	167.95	2.32	2.26	1.51	168.04	238.58
1343.00	22.90	240.20	1310.66	-111.19	-185.24	215.99	0.54	0.48	-0.64	216.05	239.03
1436.00	23.40	239.80	1396.18	-129.47	-216.90	252.55	0.56	0.54	-0.43	252.61	239.17
1530.00	22.60	239.90	1482.70	-147.92	-248.66	289.27	0.85	-0.85	0.11	289.33	239.25
1624.00	23.20	239.80	1569.29	-166.29	-280.29	325.85	0.64	0.64	-0.11	325.91	239.32
1717.00	21.50	239.60	1655.30	-184.13	-310.83	361.21	1.83	-1.83	-0.22	361.27	239.36
1839.00	22.70	239.00	1768.34	-207.57	-350.29	407.10	1.00	0.98	-0.49	407.17	239.35
1933.00	21.70	240.80	1855.37	-225.39	-381.01	442.61	1.29	-1.06	1.91	442.68	239.39
2026.00	22.60	240.60	1941.51	-242.55	-411.58	477.67	0.97	0.97	-0.22	477.73	239.49
2119.00	21.20	241.50	2027.79	-259.34	-441.93	512.36	1.55	-1.51	0.97	512.41	239.59
2212.00	21.40	241.70	2114.44	-275.41	-471.65	546.13	0.23	0.22	0.22	546.17	239.72
2307.00	21.20	240.30	2202.95	-292.14	-501.83	580.64	0.58	-0.21	-1.47	580.67	239.79
2401.00	20.60	239.40	2290.77	-308.98	-530.83	614.17	0.72	-0.64	-0.96	614.20	239.80
2491.00	21.00	239.90	2374.90	-325.12	-558.41	646.13	0.49	0.44	0.56	646.16	239.79
2586.00	21.70	238.80	2463.38	-342.76	-588.16	680.70	0.85	0.74	-1.16	680.74	239.77
2678.00	22.50	242.50	2548.63	-359.70	-618.32	715.30	1.74	0.87	4.02	715.34	239.81
2771.00	24.30	241.50	2633.97	-377.05	-650.93	752.22	1.98	1.94	-1.08	752.24	239.92
2894.00	21.80	243.80	2747.15	-399.21	-693.67	800.33	2.16	-2.03	1.87	800.34	240.08
2990.00	21.80	241.90	2836.28	-415.48	-725.39	835.94	0.73	0.00	-1.98	835.95	240.20
3085.00	22.10	240.90	2924.40	-432.48	-756.56	871.45	0.50	0.32	-1.05	871.45	240.25
3177.00	22.20	243.00	3009.61	-448.79	-787.17	906.11	0.87	0.11	2.28	906.12	240.31
3270.00	21.80	243.50	3095.84	-464.47	-818.28	940.91	0.47	-0.43	0.54	940.91	240.42
3362.00	21.70	242.30	3181.29	-480.00	-848.63	974.97	0.50	-0.11	-1.30	974.97	240.51
3456.00	22.40	240.00	3268.41	-497.03	-879.52	1010.25	1.18	0.74	-2.45	1010.25	240.53
3550.00	22.80	240.50	3355.19	-514.95	-910.89	1046.37	0.47	0.43	0.53	1046.37	240.52
3600.00	21.50	242.20	3401.50	-524.00	-927.43	1065.22	2.90	-2.60	3.40	1065.22	240.53
3650.00	21.50	242.20	3448.02	-532.55	-943.64	1083.53	0.00	0.00	0.00	1083.54	240.56

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LEAM DRILLING SYSTEMS, INC.

Survey Report

Company: CONOCO, INC.

Field: RIO ARRIBA COUNTY, NEW MEXICO

Site: SAN JUAN 28-7 252M

Well: 1108D-CN

Wellpath: MWD

Date: 7/29/2001

Time: 13:56:09

Page: 2

Co-ordinate(NE) Reference: Site: SAN JUAN 28-7 252M, True North

Vertical (TVD) Reference: SITE 0.0

Section (VS) Reference: Well (0.00N,0.00E,240.39Azi)

Survey Calculation Method: Minimum Curvature

Db: Sybase

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
313.00	313.00	9.625	12.250	9 5/8"

Annotation

MD ft	TVD ft	
3650.00	3448.02	PROJECTION TO TD MD:3650'

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LEAM DRILLING SYSTEMS, INC.

UTM Report (Survey)

Company: CONOCO, INC. Field: RIO ARRIBA COUNTY, NEW MEXICO Site: SAN JUAN 28-7 252M Well: 1108D-CN Wellpath: MWD	Date: 7/29/2001 Co-ordinate(NE) Reference: Site: SAN JUAN 28-7 252M, True North Vertical (TVD) Reference: SITE 0.0 Section (VS) Reference: Well (0.00N,0.00E,240.39Azi)	Time: 13:56:51 Survey Calculation Method: Minimum Curvature	Page: 1 Db: Sybase
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Survey: MWD MWD SVY RUN BY LEAM DRLG. SYSTEMS Company: Tool:	Start Date: 7/29/2001 Engineer: Tied-to: From Surface
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Well: 1108D-CN Well Position: +N/-S 0.00 ft Northing: 2046019.49 ft +E/-W 0.00 ft Easting: 568854.36 ft Position Uncertainty: 0.00 ft	Slot Name: Latitude: 36 37 21.930 N Longitude: 107 35 55.310 W
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Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	MapN ft	MapE ft	Lat	Long
0.00	0.00	0.00	0.00	0.00	0.00	2046019.49	568854.36	36 37 21.930	N107 35 55.310
305.00	0.40	32.80	305.00	0.89	0.58	2046020.38	568854.93	36 37 21.939	N107 35 55.303
386.00	0.90	201.60	385.99	0.54	0.50	2046020.03	568854.85	36 37 21.935	N107 35 55.304
477.00	2.80	215.60	476.94	-1.93	-1.06	2046017.56	568853.30	36 37 21.911	N107 35 55.323
568.00	5.50	230.20	567.70	-6.53	-5.71	2046012.94	568848.67	36 37 21.865	N107 35 55.380
660.00	8.10	236.60	659.05	-12.92	-14.51	2046006.53	568839.89	36 37 21.802	N107 35 55.488
754.00	10.70	241.80	751.78	-20.69	-27.73	2045998.73	568826.68	36 37 21.725	N107 35 55.650
847.00	13.00	239.90	842.79	-30.02	-44.39	2045989.36	568810.04	36 37 21.633	N107 35 55.855
941.00	16.00	238.70	933.78	-42.05	-64.61	2045977.28	568789.85	36 37 21.514	N107 35 56.103
1033.00	18.20	240.30	1021.71	-55.76	-87.93	2045963.51	568766.57	36 37 21.379	N107 35 56.389
1125.00	20.20	239.60	1108.59	-70.92	-114.11	2045948.29	568740.42	36 37 21.229	N107 35 56.710
1218.00	22.30	241.00	1195.26	-87.60	-143.39	2045931.54	568711.18	36 37 21.064	N107 35 57.069
1343.00	22.90	240.20	1310.66	-111.19	-185.24	2045907.85	568669.39	36 37 20.830	N107 35 57.582
1436.00	23.40	239.80	1396.18	-129.47	-216.90	2045889.49	568637.77	36 37 20.650	N107 35 57.971
1530.00	22.60	239.90	1482.70	-147.92	-248.66	2045870.97	568606.06	36 37 20.467	N107 35 58.361
1624.00	23.20	239.80	1569.29	-166.29	-280.29	2045852.52	568574.47	36 37 20.286	N107 35 58.749
1717.00	21.50	239.60	1655.30	-184.13	-310.83	2045834.60	568543.98	36 37 20.109	N107 35 59.123
1839.00	22.70	239.00	1768.34	-207.57	-350.29	2045811.07	568504.58	36 37 19.877	N107 35 59.607
1933.00	21.70	240.80	1855.37	-225.39	-381.01	2045793.17	568473.91	36 37 19.701	N107 35 59.984
2026.00	22.60	240.60	1941.51	-242.55	-411.58	2045775.94	568443.37	36 37 19.531	N107 36 0.359
2119.00	21.20	241.50	2027.79	-259.34	-441.93	2045759.07	568413.06	36 37 19.365	N107 36 0.731
2212.00	21.40	241.70	2114.44	-275.41	-471.65	2045742.93	568383.39	36 37 19.206	N107 36 1.096
2307.00	21.20	240.30	2202.95	-292.14	-501.83	2045726.13	568353.25	36 37 19.041	N107 36 1.466
2401.00	20.60	239.40	2290.77	-308.98	-530.83	2045709.22	568324.29	36 37 18.874	N107 36 1.822
2491.00	21.00	239.90	2374.90	-325.12	-558.41	2045693.00	568296.75	36 37 18.715	N107 36 2.160
2586.00	21.70	238.80	2463.38	-342.76	-588.16	2045675.29	568267.04	36 37 18.540	N107 36 2.525
2678.00	22.50	242.50	2548.63	-359.70	-618.32	2045658.28	568236.92	36 37 18.373	N107 36 2.895
2771.00	24.30	241.50	2633.97	-377.05	-650.93	2045640.85	568204.36	36 37 18.201	N107 36 3.295
2894.00	21.80	243.80	2747.15	-399.21	-693.67	2045618.58	568161.67	36 37 17.982	N107 36 3.820
2990.00	21.80	241.90	2836.28	-415.48	-725.39	2045602.24	568129.99	36 37 17.821	N107 36 4.209
3085.00	22.10	240.90	2924.40	-432.48	-756.56	2045585.16	568098.86	36 37 17.653	N107 36 4.591
3177.00	22.20	243.00	3009.61	-448.79	-787.17	2045568.78	568068.29	36 37 17.492	N107 36 4.967
3270.00	21.80	243.50	3095.84	-464.47	-818.28	2045553.02	568037.22	36 37 17.337	N107 36 5.348
3362.00	21.70	242.30	3181.29	-480.00	-848.63	2045537.42	568006.91	36 37 17.183	N107 36 5.721
3456.00	22.40	240.00	3268.41	-497.03	-879.52	2045520.31	567976.05	36 37 17.015	N107 36 6.100
3550.00	22.80	240.50	3355.19	-514.95	-910.89	2045502.31	567944.73	36 37 16.837	N107 36 6.484
3600.00	21.50	242.20	3401.50	-524.00	-927.43	2045493.23	567928.22	36 37 16.748	N107 36 6.687
3650.00	21.50	242.20	3448.02	-532.55	-943.64	2045484.64	567912.03	36 37 16.663	N107 36 6.886

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