

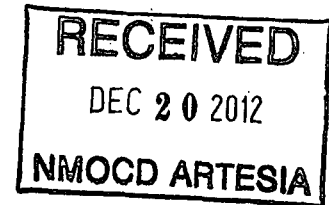
Job Number: 32D12121502
 Company: LIME ROCK RESOURCES
 Lease/Well: STIRILING F # 8
 Location: ☐
 Rig Name: UDI # 22
 RKB: 13.4
 G.L. or M.S.L.: ☐

State/Country: NEW MEXICO
 Declination: ☐
 Grid: ☐
 File name: D:\WINSERVE\21502.SVY
 Date/Time: 16-Dec-12 / 18:04
 Curve Name: ☐

30-015-40860

Scientific Drilling

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane .00
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead



Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
GYRO TIE IN									
1021.00	2.55	249.32	1020.57	-8.48	-21.70	-8.48	23.30	248.66	.00
1031.00	2.31	250.25	1030.56	-8.63	-22.10	-8.63	23.72	248.68	2.43
1095.00	1.58	247.66	1094.52	-9.40	-24.13	-9.40	25.89	248.72	1.15
1158.00	1.12	258.72	1157.51	-9.85	-25.54	-9.85	27.37	248.91	.84
1222.00	1.36	262.22	1221.49	-10.07	-26.90	-10.07	28.73	249.47	.39
1285.00	1.29	255.18	1284.47	-10.36	-28.33	-10.36	30.16	249.92	.28
1349.00	1.37	258.10	1348.46	-10.70	-29.77	-10.70	31.64	250.23	.16
1412.00	.79	196.24	1411.45	-11.27	-30.63	-11.27	32.64	249.80	1.93
1475.00	.79	188.94	1474.44	-12.12	-30.82	-12.12	33.12	248.54	.16
1507.00	.62	191.40	1506.44	-12.50	-30.89	-12.50	33.32	247.96	.54
1570.00	.43	73.89	1569.44	-12.77	-30.73	-12.77	33.28	247.43	1.43
1634.00	.95	83.85	1633.43	-12.65	-29.97	-12.65	32.53	247.12	.83
1697.00	.69	65.17	1696.43	-12.43	-29.11	-12.43	31.65	246.87	.59
1761.00	.61	283.22	1760.42	-12.19	-29.09	-12.19	31.54	247.26	1.92
1824.00	1.95	263.37	1823.41	-12.24	-30.48	-12.24	32.85	248.12	2.21
1887.00	1.09	260.03	1886.39	-12.47	-32.13	-12.47	34.47	248.79	1.37
1951.00	.77	94.14	1950.38	-12.61	-32.31	-12.61	34.68	248.68	2.88
2014.00	1.22	93.56	2013.37	-12.68	-31.21	-12.68	33.69	247.90	.71
2078.00	.23	125.23	2077.37	-12.79	-30.43	-12.79	33.01	247.20	1.61
2141.00	.40	212.77	2140.37	-13.05	-30.44	-13.05	33.12	246.79	.72
2204.00	.22	161.76	2203.36	-13.35	-30.53	-13.35	33.32	246.38	.50
2268.00	.32	222.46	2267.36	-13.60	-30.61	-13.60	33.49	246.04	.45
2331.00	.24	217.64	2330.36	-13.83	-30.81	-13.83	33.77	245.82	.13
2395.00	.26	210.12	2394.36	-14.07	-30.96	-14.07	34.01	245.57	.06
2458.00	.55	221.13	2457.36	-14.42	-31.23	-14.42	34.40	245.22	.47
2521.00	.35	236.40	2520.36	-14.75	-31.59	-14.75	34.87	244.97	.37
2585.00	.44	222.69	2584.36	-15.04	-31.92	-15.04	35.29	244.77	.20
2648.00	.41	224.68	2647.36	-15.38	-32.24	-15.38	35.72	244.50	.05
2712.00	.26	260.83	2711.36	-15.56	-32.55	-15.56	36.08	244.44	.39
2775.00	.18	198.34	2774.35	-15.68	-32.72	-15.68	36.28	244.39	.38
2839.00	.09	148.95	2838.35	-15.82	-32.73	-15.82	36.35	244.20	.22

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
2934.00	.21	187.42	2933.35	-16.06	-32.71	-16.06	36.44	243.86	.16
3029.00	.26	53.11	3028.35	-16.10	-32.56	-16.10	36.32	243.69	.46
3123.00	.11	236.45	3122.35	-16.02	-32.46	-16.02	36.20	243.73	.39
3218.00	.22	79.79	3217.35	-16.04	-32.36	-16.04	36.12	243.64	.34
3314.00	.26	58.25	3313.35	-15.89	-31.99	-15.89	35.72	243.59	.10
3409.00	.36	357.38	3408.35	-15.48	-31.83	-15.48	35.39	244.06	.34
3504.00	.44	24.55	3503.35	-14.85	-31.69	-14.85	34.99	244.89	.21
3599.00	.74	35.84	3598.34	-14.02	-31.18	-14.02	34.18	245.78	.34
3694.00	.65	32.35	3693.34	-13.07	-30.53	-13.07	33.21	246.82	.10
3789.00	.70	26.52	3788.33	-12.09	-29.98	-12.09	32.33	248.03	.09
3884.00	.76	47.19	3883.32	-11.15	-29.26	-11.15	31.31	249.14	.28
3980.00	.92	44.45	3979.31	-10.16	-28.25	-10.16	30.03	250.21	.17
4075.00	1.06	43.04	4074.30	-8.98	-27.12	-8.98	28.57	251.68	.15
4170.00	.27	36.36	4169.29	-8.16	-26.39	-8.16	27.62	252.83	.83
Final Survey									
4251.00	.34	32.52	4250.29	-7.80	-26.14	-7.80	27.28	253.39	.09
4300.00	.34	32.52	4299.29	-7.55	-25.99	-7.55	27.06	253.79	.00