

Results of Directional Survey

API number:	30-025-40632		
OGRID:		Operator:	RMR OPERATING, LLC
		Property:	MADERA 24 FEDERAL # 3H

surface	ULSTR:	B	24	T	26S	R	34E
				330	FNL	1980	FEL

BH Loc	ULSTR:	O	24	T	26S	R	34E
13570	MD	9062.2	TVD	329	FSL	1940	FEL
				4951	FNL		

Top Perf/OH	ULSTR:	B	24	T	26S	R	34E
9194	MD	9085.3	TVD	583	FNL	1961	FEL

Bot Perf/OH	ULSTR:	O	24	T	26S	R	34E
13570	MD	9062.2	TVD	329	FSL	1940	FEL
				4951	FNL		

	MD	N/S	E/W	VD
	9176	-236.04	18.57	9078.41
TOP PERFS/OH	9194	-252.67	18.91	9085.25
	9208	-265.61	19.17	9090.57
	13519	-4570.21	40.44	9063.16
BOT PERFS/OH	13570	-4621.19	40.08	9062.18
	13570	-4621.19	40.08	9062.18

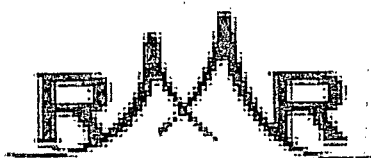
NEXT TO LAST	13519	-4570.21	40.44	9063.16
LAST READING	13570	-4621.19	40.08	9062.18
TD	13570	-4621.19	40.08	9062.18

Surface Location	330	FN	1980	FE
Projected BHL	4951	FN	1940	FE
Location of				
Top Perfs/OH	583	FN	1961	FE
Bottom Perfs/OH	4951	FN	1940	FE

SUMMARY of Subsurface Locations

Surface Location	B-24-26S-34E	330	FN	1980	FE	Vert. Depth
Top Perfs/OH	B-24-26S-34E	583	FN	1961	FE	9085.25
Bottom Perfs/OH	O-24-26S-34E	4951	FN	1940	FE	9062.18
Projected TD	O-24-26S-34E	4951	FN	1940	FE	9062.18

JUL 17 2013



SUR: B-24-26s-34e, 330/N & 1980/E
BHL: O-24-26s-34e, 4951/N & 1940/E
API # 30-025-40632

RMR Operating LLC

Lea Co., NM

Sec.24-T26S-R34E

Madera 24 Federal #3H

HOBBS OCD

MAY 30 2013

Wellbore #2-ST

RECEIVED

Design: Wellbore #2-ST

Standard Survey Report

22 March, 2013

Archer



Archer
Survey Report

Archer

Company:	RMR Operating LLC	Local Co-ordinate Reference:	Well Madera 24 Federal #3H
Project:	Lea Co., NM	TVD Reference:	WELL @ 3231.70usft (Original Well Elev)
Site:	Sec.24-T26S-R34E	MD Reference:	WELL @ 3231.70usft (Original Well Elev)
Well:	Madera 24 Federal #3H	North Reference:	Grid
Wellbore:	Wellbore #2-ST	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #2-ST	Database:	EDM 5000.1 Single User Db

Project:	Lea Co., NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:		Sec.24-T26S-R34E			
Site Position:		Northing:	377,736.850 usft	Latitude:	32° 2' 6.720 N
From:	Lat/Long	Easting:	823,888.123 usft	Longitude:	103° 25' 17.447 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.48 °

Well	Madera 24 Federal #3H					
Well Position	+N/-S	0.00 usft	Northing:	377,736.850 usft	Latitude:	32° 2' 6.720 N
	+E/-W	0.00 usft	Easting:	823,888.123 usft	Longitude:	103° 25' 17.447 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,231.70 usft

Wellbore						Wellbore #2-ST					
Magnetics		Model Name		Sample Date		Declination (°)		Dip Angle (°)		Field Strength (nT)	
		IGRF2010		2013/03/04		7.29		59.99		48,348	

Design		Wellbore #2-ST			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	49.94	

Survey Program		Date 2013/03/22		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	1,225.00	Survey #1-SDI Gyro (Wellbore #2-ST)	NS-GYRO-MS	North sensing gyrocompassing m/s
1,225.00	8,619.00	Survey #2-Archer MWD Pilot (Wellbore #2)	MWD	MWD - Standard
8,619.00	13,570.00	Survey #3-ST (Wellbore #2-ST)	MWD	MWD - Standard

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First SDI Gyro Survey									
100.00	0.37	210.64	100.00	-0.28	-0.16	-0.30	0.37	0.37	0.00
200.00	0.40	196.28	200.00	-0.89	-0.43	-0.90	0.10	0.03	-14.36
300.00	0.34	215.75	300.00	-1.47	-0.70	-1.48	0.14	-0.06	19.47
400.00	0.67	233.98	399.99	-2.05	-1.34	-2.35	0.36	0.33	18.23
500.00	0.80	237.94	499.98	-2.77	-2.41	-3.62	0.14	0.13	3.96
600.00	0.95	240.89	599.97	-3.54	-3.72	-5.13	0.16	0.15	2.95
700.00	1.13	236.51	699.95	-4.49	-5.27	-6.92	0.20	0.18	-4.38
800.00	1.45	238.71	799.93	-5.69	-7.18	-9.15	0.32	0.32	2.20
900.00	1.88	239.98	899.89	-7.17	-9.68	-12.02	0.43	0.43	1.27



Archer
Survey Report



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Site:	Sec.24-T26S-R34E	MD Reference:	WELL @ 3231.70usft (Original Well Elev)
Well:	Madera 24 Federal #3H	North Reference:	Grid
Wellbore:	Wellbore #2-ST	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #2-ST	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	2.22	243.02	999.82	-8.87	-12.82	-15.52	0.36	0.34	3.04
1,100.00	2.22	242.23	1,099.75	-10.65	-16.26	-19.30	0.03	0.00	-0.79
1,200.00	1.74	236.94	1,199.69	-12.38	-19.25	-22.70	0.51	-0.48	-5.29
Tie-In / SDI Gyro									
1,225.00	1.71	233.04	1,224.68	-12.81	-19.86	-23.45	0.48	-0.12	-15.60
First Archer Survey-Pilot									
1,260.00	1.40	216.30	1,259.66	-13.47	-20.54	-24.38	1.56	-0.89	-47.83
1,352.00	1.40	225.10	1,351.64	-15.17	-22.00	-26.60	0.23	0.00	9.57
1,445.00	1.10	221.40	1,444.61	-16.64	-23.39	-28.61	0.33	-0.32	-3.98
1,537.00	1.10	226.00	1,536.60	-17.91	-24.61	-30.37	0.10	0.00	5.00
1,630.00	1.00	237.70	1,629.58	-18.97	-25.94	-32.06	0.25	-0.11	12.58
1,722.00	1.00	241.50	1,721.57	-19.78	-27.32	-33.64	0.07	0.00	4.13
1,814.00	0.90	241.60	1,813.55	-20.51	-28.66	-35.14	0.11	-0.11	0.11
1,906.00	0.70	243.30	1,905.55	-21.10	-29.80	-36.39	0.22	-0.22	1.85
1,998.00	0.30	217.80	1,997.54	-21.54	-30.45	-37.17	0.49	-0.43	-27.72
2,090.00	0.20	203.70	2,089.54	-21.88	-30.66	-37.55	0.13	-0.11	-15.33
2,182.00	0.30	258.50	2,181.54	-22.08	-30.96	-37.91	0.27	0.11	59.57
2,274.00	0.10	156.70	2,273.54	-22.20	-31.17	-38.14	0.36	-0.22	-110.65
2,367.00	0.30	132.50	2,366.54	-22.44	-30.96	-38.13	0.23	0.22	-26.02
2,459.00	0.30	87.60	2,458.54	-22.59	-30.54	-37.91	0.25	0.00	-48.80
2,552.00	0.70	102.80	2,551.53	-22.71	-29.74	-37.38	0.45	0.43	16.34
2,644.00	0.60	102.50	2,643.53	-22.94	-28.72	-36.74	0.11	-0.11	-0.33
2,734.00	0.90	87.40	2,733.52	-23.00	-27.56	-35.90	0.40	0.33	-16.78
2,826.00	0.90	82.50	2,825.51	-22.88	-26.12	-34.71	0.08	0.00	-5.33
2,918.00	1.00	95.20	2,917.50	-22.86	-24.60	-33.54	0.25	0.11	13.80
3,010.00	1.00	80.80	3,009.48	-22.80	-23.01	-32.29	0.27	0.00	-15.65
3,103.00	1.00	88.30	3,102.47	-22.65	-21.40	-30.95	0.14	0.00	8.06
3,195.00	1.10	69.20	3,194.45	-22.31	-19.77	-29.49	0.39	0.11	-20.76
3,287.00	1.40	56.60	3,286.43	-21.38	-18.01	-27.54	0.44	0.33	-13.70
3,379.00	1.90	58.40	3,378.39	-19.96	-15.77	-24.92	0.55	0.54	1.96
3,472.00	1.70	43.10	3,471.35	-18.14	-13.51	-22.02	0.56	-0.22	-16.45
3,564.00	1.80	34.80	3,563.31	-15.96	-11.76	-19.27	0.30	0.11	-9.02
3,656.00	2.00	33.70	3,655.25	-13.44	-10.04	-16.33	0.22	0.22	-1.20
3,749.00	1.80	30.40	3,748.20	-10.83	-8.40	-13.40	0.25	-0.22	-3.55
3,841.00	1.70	30.80	3,840.16	-8.41	-6.97	-10.75	0.11	-0.11	0.43
3,934.00	1.30	39.80	3,933.13	-6.42	-5.59	-8.41	0.50	-0.43	9.68
4,026.00	2.00	149.80	4,025.11	-7.00	-4.11	-7.66	2.97	0.76	119.57
4,118.00	1.80	41.80	4,117.08	-7.31	-2.34	-6.50	3.34	-0.22	-117.39
4,211.00	2.00	41.90	4,210.03	-5.02	-0.29	-3.45	0.22	0.22	0.11
4,303.00	1.80	34.50	4,301.98	-2.63	1.60	-0.46	0.34	-0.22	-8.04
4,395.00	1.20	34.90	4,393.94	-0.65	2.97	1.86	0.65	-0.65	0.43
4,487.00	1.30	34.50	4,485.92	1.00	4.12	3.80	0.11	0.11	-0.43
4,580.00	1.50	50.80	4,578.89	2.64	5.66	6.03	0.48	0.22	17.53
4,672.00	1.80	68.50	4,670.86	3.93	7.93	8.60	0.64	0.33	19.24
4,765.00	1.80	68.60	4,763.81	5.00	10.65	11.37	0.00	0.00	0.11
4,857.00	2.10	79.70	4,855.76	5.83	13.66	14.20	0.52	0.33	12.07
4,950.00	1.80	79.70	4,948.70	6.39	16.77	16.95	0.32	-0.32	0.00
5,043.00	2.20	84.90	5,041.65	6.81	19.99	19.68	0.47	0.43	5.59
5,135.00	1.50	78.10	5,133.60	7.22	22.92	22.19	0.80	-0.76	-7.39
5,228.00	1.40	69.70	5,226.57	7.86	25.18	24.33	0.25	-0.11	-9.03
5,313.00	1.40	73.70	5,311.54	8.52	27.15	26.26	0.11	0.00	4.71
5,390.00	1.40	87.40	5,388.52	8.82	28.99	27.87	0.43	0.00	17.79
5,482.00	1.20	84.90	5,480.50	8.96	31.07	29.55	0.23	-0.22	-2.72
5,575.00	1.50	83.90	5,573.47	9.17	33.25	31.36	0.32	0.32	-1.08



Archer
Survey Report



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5,667.00	1.40	82.80	5,665.44	9.44	35.57	33.30	0.11	-0.11	-1.20
5,759.00	1.40	89.50	5,757.41	9.59	37.81	35.11	0.18	0.00	7.28
5,852.00	1.20	81.50	5,850.39	9.75	39.91	36.82	0.29	-0.22	-8.60
5,944.00	1.40	78.10	5,942.37	10.12	41.96	38.63	0.23	0.22	-3.70
6,036.00	1.40	80.10	6,034.34	10.55	44.16	40.59	0.05	0.00	2.17
6,129.00	0.40	71.80	6,127.33	10.84	45.59	41.88	1.08	-1.08	-8.92
6,221.00	0.40	346.80	6,219.33	11.26	45.82	42.32	0.59	0.00	-92.39
6,314.00	0.70	347.30	6,312.32	12.13	45.62	42.73	0.32	0.32	0.54
6,406.00	0.70	290.00	6,404.32	12.87	44.97	42.70	0.73	0.00	-62.28
6,497.00	0.70	276.30	6,495.31	13.12	43.90	42.04	0.18	0.00	-15.05
6,589.00	0.90	273.80	6,587.30	13.23	42.62	41.13	0.22	0.22	-2.72
6,681.00	1.40	264.40	6,679.28	13.17	40.78	39.69	0.58	0.54	-10.22
6,773.00	1.40	265.30	6,771.25	12.96	38.54	37.84	0.02	0.00	0.98
6,866.00	1.10	264.30	6,864.23	12.78	36.52	36.18	0.32	-0.32	-1.08
6,958.00	1.10	267.90	6,956.21	12.66	34.76	34.75	0.08	0.00	3.91
7,051.00	1.50	250.10	7,049.19	12.22	32.72	32.91	0.61	0.43	-19.14
7,143.00	1.50	250.90	7,141.16	11.41	30.45	30.65	0.02	0.00	0.87
7,235.00	1.50	250.60	7,233.13	10.62	28.18	28.40	0.01	0.00	-0.33
7,328.00	1.50	244.60	7,326.10	9.69	25.93	26.09	0.17	0.00	-6.45
7,420.00	1.40	238.70	7,418.07	8.59	23.88	23.81	0.20	-0.11	-6.41
7,512.00	1.20	235.80	7,510.04	7.47	22.13	21.74	0.23	-0.22	-3.15
7,604.00	1.30	254.80	7,602.02	6.65	20.32	19.83	0.46	0.11	20.65
7,696.00	1.50	260.40	7,693.99	6.18	18.13	17.85	0.26	0.22	6.09
7,789.00	1.50	256.30	7,786.96	5.69	15.74	15.71	0.12	0.00	-4.41
7,881.00	1.10	262.80	7,878.94	5.29	13.70	13.89	0.46	-0.43	7.07
7,974.00	0.90	282.20	7,971.92	5.33	12.10	12.69	0.42	-0.22	20.86
8,066.00	0.90	257.00	8,063.91	5.32	10.69	11.61	0.43	0.00	-27.39
8,159.00	0.90	259.40	8,156.90	5.02	9.26	10.32	0.04	0.00	2.58
8,251.00	0.50	270.40	8,248.89	4.89	8.15	9.39	0.46	-0.43	11.96
8,343.00	0.20	267.20	8,340.89	4.89	7.59	8.95	0.33	-0.33	-3.48
8,436.00	0.30	204.50	8,433.89	4.66	7.32	8.60	0.29	0.11	-67.42
8,528.00	0.30	285.50	8,525.89	4.50	6.99	8.25	0.42	0.00	88.04
Tie-In / Pilot Hole									
8,619.00	0.30	75.60	8,616.89	4.63	6.99	8.33	0.64	0.00	164.95
First Archer Survey-ST									
8,640.00	0.20	19.50	8,637.89	4.67	7.06	8.41	1.20	-0.48	-267.14
8,671.00	0.30	76.50	8,668.89	4.74	7.15	8.53	0.82	0.32	183.87
8,703.00	0.80	24.20	8,700.89	4.97	7.33	8.81	2.06	1.56	-163.44
8,735.00	1.40	158.30	8,732.89	4.81	7.56	8.88	6.37	1.87	419.06
8,766.00	7.70	171.00	8,763.77	2.40	8.03	7.69	20.46	20.32	40.97
8,798.00	14.80	167.30	8,795.14	-3.71	9.26	4.70	22.29	22.19	-11.56
8,829.00	19.90	169.60	8,824.72	-12.77	11.09	0.27	16.60	16.45	7.42
8,861.00	24.30	171.00	8,854.36	-24.63	13.10	-5.82	13.85	13.75	4.37
8,893.00	28.20	172.30	8,883.05	-38.63	15.15	-13.27	12.32	12.19	4.06
8,924.00	31.70	174.40	8,909.91	-54.00	16.92	-21.80	11.78	11.29	6.77
8,956.00	34.80	175.60	8,936.67	-71.48	18.44	-31.88	9.90	9.69	3.75
8,987.00	37.80	176.60	8,961.65	-89.79	19.69	-42.71	9.86	9.68	3.23
9,019.00	41.30	178.80	8,986.32	-110.14	20.49	-55.20	11.78	10.94	6.87
9,050.00	46.80	180.00	9,008.60	-131.69	20.70	-68.90	17.94	17.74	3.87
9,082.00	53.00	180.60	9,029.20	-156.15	20.57	-84.74	19.43	19.37	1.87
9,114.00	56.80	182.70	9,047.60	-182.31	19.81	-102.16	13.03	11.87	6.56
9,145.00	59.60	181.60	9,063.93	-208.64	18.82	-119.86	9.52	9.03	-3.55
9,176.00	64.70	179.50	9,078.41	-236.04	18.57	-137.68	17.51	16.45	-6.77
9,208.00	70.60	178.20	9,090.57	-265.61	19.17	-156.25	18.82	18.44	-4.06



Archer Survey Report



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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,240.00	75.30	179.20	9,099.95	-296.19	19.86	-175.40	14.99	14.69	3.12
9,271.00	77.00	179.50	9,107.37	-326.28	20.20	-194.51	5.56	5.48	0.97
9,303.00	81.00	180.80	9,113.48	-357.69	20.12	-214.78	13.12	12.50	4.06
9,335.00	84.60	181.60	9,117.49	-389.42	19.45	-235.72	11.52	11.25	2.50
9,366.00	89.10	181.10	9,119.19	-420.36	18.72	-256.18	14.61	14.52	-1.61
9,398.00	90.40	180.90	9,119.33	-452.35	18.17	-277.20	4.11	4.06	-0.62
9,429.00	90.30	180.50	9,119.14	-483.35	17.79	-297.44	1.33	-0.32	-1.29
9,524.00	90.70	180.10	9,118.31	-578.35	17.29	-358.95	0.60	0.42	-0.42
9,620.00	88.80	177.90	9,118.73	-674.32	18.96	-419.43	3.03	-1.98	-2.29
9,715.00	89.10	177.30	9,120.47	-769.22	22.94	-477.45	0.71	0.32	-0.63
9,809.00	91.20	179.90	9,120.23	-863.18	25.24	-536.16	3.56	2.23	2.77
9,905.00	91.80	180.40	9,117.71	-959.14	24.99	-598.11	0.81	0.62	0.52
9,999.00	90.80	179.40	9,115.58	-1,053.12	25.15	-658.46	1.50	-1.06	-1.06
10,093.00	89.50	177.10	9,115.33	-1,147.07	28.02	-716.72	2.81	-1.38	-2.45
10,188.00	90.00	177.10	9,115.75	-1,241.94	32.83	-774.10	0.53	0.53	0.00
10,282.00	90.60	178.20	9,115.26	-1,335.86	36.68	-831.59	1.33	0.64	1.17
10,377.00	91.40	180.20	9,113.60	-1,430.83	38.01	-891.69	2.27	0.84	2.11
10,472.00	91.40	180.00	9,111.28	-1,525.80	37.84	-952.93	0.21	0.00	-0.21
10,566.00	93.40	180.50	9,107.34	-1,619.71	37.43	-1,013.68	2.19	2.13	0.53
10,661.00	92.80	178.30	9,102.20	-1,714.56	38.43	-1,073.96	2.40	-0.63	-2.32
10,755.00	91.40	176.10	9,098.76	-1,808.38	43.02	-1,130.82	2.77	-1.49	-2.34
10,849.00	90.40	178.50	9,097.28	-1,902.26	47.44	-1,187.84	2.77	-1.06	2.55
10,943.00	91.30	180.90	9,095.89	-1,996.24	47.94	-1,247.94	2.73	0.96	2.55
11,038.00	92.60	185.30	9,092.65	-2,091.02	42.80	-1,312.86	4.83	1.37	4.63
11,132.00	92.70	183.90	9,088.31	-2,184.61	35.27	-1,378.86	1.49	0.11	-1.49
11,225.00	89.30	182.70	9,086.68	-2,277.43	29.92	-1,442.68	3.88	-3.66	-1.29
11,320.00	90.20	183.80	9,087.10	-2,372.27	24.54	-1,507.84	1.50	0.95	1.16
11,414.00	91.50	183.10	9,085.70	-2,466.09	18.88	-1,572.54	1.57	1.38	-0.74
11,509.00	89.80	181.30	9,084.63	-2,561.01	15.23	-1,636.42	2.61	-1.79	-1.89
11,604.00	90.20	181.00	9,084.63	-2,655.99	13.33	-1,699.00	0.53	0.42	-0.32
11,699.00	90.00	180.80	9,084.46	-2,750.97	11.84	-1,761.27	0.30	-0.21	-0.21
11,794.00	90.80	181.60	9,083.80	-2,845.95	9.85	-1,823.91	1.19	0.84	0.84
11,888.00	89.30	179.30	9,083.71	-2,939.94	9.11	-1,884.96	2.92	-1.60	-2.45
11,982.00	90.60	179.20	9,083.80	-3,033.93	10.34	-1,944.50	1.39	1.38	-0.11
12,078.00	91.40	179.50	9,082.12	-3,129.91	11.43	-2,005.43	0.89	0.83	0.31
12,172.00	89.90	177.30	9,081.05	-3,223.85	14.05	-2,063.88	2.83	-1.60	-2.34
12,267.00	91.20	177.70	9,080.14	-3,318.76	18.20	-2,121.78	1.43	1.37	0.42
12,362.00	92.60	179.60	9,076.99	-3,413.67	20.43	-2,181.15	2.48	1.47	2.00
12,456.00	91.10	178.80	9,073.96	-3,507.61	21.74	-2,240.60	1.81	-1.60	-0.85
12,550.00	90.90	177.90	9,072.32	-3,601.56	24.45	-2,298.98	0.98	-0.21	-0.96
12,645.00	92.70	179.50	9,069.33	-3,696.48	26.61	-2,358.42	2.53	1.89	1.68
12,740.00	91.40	179.80	9,065.94	-3,791.41	27.19	-2,419.07	1.40	-1.37	0.32
12,835.00	90.20	178.00	9,064.61	-3,886.38	29.01	-2,478.79	2.28	-1.26	-1.89
12,931.00	91.10	178.40	9,063.52	-3,982.33	32.02	-2,538.22	1.03	0.94	0.42
13,026.00	90.70	179.50	9,062.03	-4,077.30	33.76	-2,598.01	1.23	-0.42	1.16
13,121.00	89.20	179.30	9,062.11	-4,172.29	34.76	-2,658.38	1.59	-1.58	-0.21
13,214.00	91.10	179.50	9,061.87	-4,265.28	35.73	-2,717.47	2.05	2.04	0.22
13,308.00	88.90	178.50	9,061.87	-4,359.26	37.37	-2,776.69	2.57	-2.34	-1.06
13,404.00	89.20	178.80	9,063.46	-4,455.22	39.64	-2,836.72	0.44	0.31	0.31
Last Archer Survey-ST									
13,519.00	91.10	180.40	9,063.16	-4,570.21	40.44	-2,910.10	2.16	1.65	1.39
PTB									
13,570.00	91.10	180.40	9,062.18	-4,621.19	40.08	-2,943.18	0.00	0.00	0.00



Archer
Survey Report

Archer

Company:	RMR Operating LLC	Local Co-ordinate Reference:	Well Madera 24 Federal #3H
Project:	Lea Co., NM	TVD Reference:	WELL @ 3231.70usft (Original Well Elev)
Site:	Sec.24-T26S-R34E	MD Reference:	WELL @ 3231.70usft (Original Well Elev)
Well:	Madera 24 Federal #3H	North Reference:	Grid
Wellbore:	Wellbore #2-ST	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #2-ST	Database:	EDM 5000.1 Single User Db

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100.00	100.00	-0.28	-0.16	First SDI Gyro Survey
1,225.00	1,224.68	-12.81	-19.86	Tie-In / SDI Gyro
1,260.00	1,259.66	-13.47	-20.54	First Archer Survey-Pilot
8,619.00	8,616.89	4.63	6.99	Tie-In / Pilot Hole
8,640.00	8,637.89	4.67	7.06	First Archer Survey-ST
13,519.00	9,063.16	-4,570.21	40.44	Last Archer Survey-ST
13,570.00	9,062.18	-4,621.19	40.08	PTB

Checked By: _____	Approved By: _____	Date: _____
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