

NM OIL CONSERVATION
ARTESIA DISTRICT

APR 09 2018



State of New Mexico
Eddy County

RECEIVED
Eagle 34C Fed #85
30-015 - 43813

I, James Dowdell, certify that; I am employed by Accel Directional; that I did on the day(s) of 03/23/2018 through 03/28/2018 conduct or supervise the taking of MWD survey(s) from a depth of 403' feet to a depth of 4885' feet; that the data is true, correct, complete and within the limitations of the tool set forth by Accel Directional; that I am authorized and qualified to make this report; that this report was conducted at the request of Limerock Resources for the Eagle 34C Fed #85, in Eddy County, New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Accel Directional.

A handwritten signature in blue ink, appearing to read "James Dowdell", written over a horizontal line.

James Dowdell
Supervisor

A handwritten signature in blue ink, appearing to read "Chris Shipp", written over a horizontal line.

Chris Shipp
President



Enclosed, please find the original and one copy of the survey performed on the referenced well by Accel Directional, (Operator No. 301287) supervised by James Dowdell. Other information required by your office is as follows:

Name & Title of Supervisor	Drainhole Number	Surveyed Depths	Dates Performed	Type of Survey
James Dowdell		403' – 4885'	03/23/18 – 03/28/18	MWD

If any other information is required, please contact the undersigned.

A handwritten signature in blue ink, appearing to read "J. Dowdell", written over a horizontal line.

James Dowdell

Supervisor

jdowdell@acceldirectional.com

832-401-3400

A handwritten signature in blue ink, appearing to read "C. Shipp", written over a horizontal line.

Chris Shipp

President

Cshipp@acceldirectional.com

936-900-6204



SURVEY CALCULATION PROGRAM

Minimum Curvature

File:

OPERATOR:		Lime Rock Resources								Target Information				VS Referenced to Offset from Surface					
WELL:		Eagle 34C Fed85								TARGET KBTVD:		4900.00		NORTH/SOUTH:		92.00			
LOCATION:		Artesia, New Mexico								TARGET INCL:		0.00		EAST/WEST:		-184.60			
RIG:		United 33								TARGET AZM:		0.00		(Enter 0° N and 0° E for Surface)					
JOB NUMBER:		TX-18-038																	
SURVEY COMPANY						DIRECTIONAL COMPANY						PROPOSED DIRECTION:		296.49		Dec / Total Corr.(+/-):		7.21	
Accel Directional						Accel Directional						COMMENTS:							
Directional Drillers						COORDINATORS													
C. Tinkham						Chris Shipp													
D. Dowdell						Corey Treadwell													
Lime Rock Resources						Eagle 34C Fed85										Target Calculations			
		TRUE	TEMP	API	Course			Surface		CLOSURE		DLS/	BUR/	TVD AT 0'	ABOVE (+)	RIGHT(+)			
SVY	MD	INC	AZM	*F	Gamma	Length	TVD	N-S	E-W	Vert Sect	DIST	DIR	100	100'	V. SEC.	BELOW (-)	LEFT(-)		
Tie-In	0	0.0	0.0			N/A	0.00	0.00	0.00		0.00	0.00	N/A	N/A					
1	403	0.5	124.2			403	402.99	-0.99	1.45	-1.74	1.76	124.20	0.12	0.12	#DIV/0!	#DIV/0!	186.05		
2	435	0.5	124.2			32	434.99	-1.15	1.69	-2.02	2.04	124.20	0.00	0.00	#DIV/0!	#DIV/0!	186.29		
3	499	0.9	305.8			64	498.99	-1.01	1.51	-1.80	1.81	123.76	2.19	0.63	#DIV/0!	#DIV/0!	186.11		
4	563	3.1	320.0			64	562.95	0.61	-0.01	0.28	0.61	358.91	3.50	3.44	#DIV/0!	#DIV/0!	184.59		
5	626	5.1	316.7			63	625.78	3.95	-3.03	4.47	4.98	322.57	3.20	3.17	#DIV/0!	#DIV/0!	181.57		
6	722	5.5	309.8			96	721.38	10.01	-9.49	12.95	13.79	316.52	0.78	0.42	#DIV/0!	#DIV/0!	175.11		
7	786	5.7	298.0			64	785.07	13.46	-14.65	19.12	19.90	312.58	1.82	0.31	#DIV/0!	#DIV/0!	169.95		
8	850	5.5	295.8			64	848.77	16.29	-20.22	25.36	25.96	308.85	0.46	-0.31	#DIV/0!	#DIV/0!	164.38		
9	914	5.1	292.4			64	912.49	18.71	-25.61	31.27	31.71	306.15	0.79	-0.63	#DIV/0!	#DIV/0!	158.99		
10	1,010	4.9	290.1			96	1008.13	21.74	-33.41	39.60	39.86	303.06	0.29	-0.21	#DIV/0!	#DIV/0!	151.19		
11	1,106	5.2	294.4			96	1103.76	24.95	-41.22	48.02	48.18	301.19	0.50	0.31	#DIV/0!	#DIV/0!	143.38		
12	1,202	5.5	295.8			96	1199.34	28.75	-49.32	56.97	57.09	300.24	0.34	0.31	#DIV/0!	#DIV/0!	135.28		
13	1,298	5.5	296.7			96	1294.89	32.82	-57.57	66.17	66.27	299.68	0.09	0.00	#DIV/0!	#DIV/0!	127.03		
14	1,394	5.4	290.7			96	1390.46	36.48	-65.91	75.26	75.33	298.96	0.60	-0.10	#DIV/0!	#DIV/0!	118.69		
15	1,490	5.4	291.7			96	1486.04	39.75	-74.33	84.26	84.29	298.13	0.10	0.00	#DIV/0!	#DIV/0!	110.27		
16	1,586	5.4	287.7			96	1581.61	42.79	-82.83	93.22	93.23	297.32	0.39	0.00	#DIV/0!	#DIV/0!	101.77		
17	1,682	5.5	287.4			96	1677.18	45.54	-91.53	102.23	102.23	296.45	0.11	0.10	#DIV/0!	#DIV/0!	93.07		
18	1,778	5.6	292.2			96	1772.73	48.69	-100.25	111.44	111.45	295.90	0.49	0.10	#DIV/0!	#DIV/0!	84.35		
19	1,874	5.7	291.8			96	1868.26	52.23	-109.02	120.87	120.88	295.60	0.11	0.10	#DIV/0!	#DIV/0!	75.58		
20	1,970	5.9	293.3			96	1963.77	55.95	-117.97	130.54	130.57	295.37	0.26	0.21	#DIV/0!	#DIV/0!	66.63		
21	2,067	5.6	292.4			97	2060.28	59.72	-126.93	140.24	140.28	295.20	0.32	-0.31	#DIV/0!	#DIV/0!	57.67		
22	2,163	6.0	293.3			96	2155.79	63.49	-135.87	149.92	149.97	295.05	0.43	0.42	#DIV/0!	#DIV/0!	48.73		
23	2,258	5.2	302.3			95	2250.34	67.76	-144.07	159.16	159.20	295.19	1.25	-0.84	#DIV/0!	#DIV/0!	40.53		
24	2,355	5.2	302.3			97	2346.94	72.46	-151.50	167.91	167.93	295.56	0.00	0.00	#DIV/0!	#DIV/0!	33.10		
25	2,451	5.2	303.0			96	2442.54	77.15	-158.82	176.56	176.57	295.91	0.07	0.00	#DIV/0!	#DIV/0!	25.78		
26	2,546	5.2	306.0			95	2537.15	82.02	-165.92	185.08	185.08	296.31	0.29	0.00	#DIV/0!	#DIV/0!	18.68		
27	2,643	5.5	304.1			97	2633.73	87.21	-173.32	194.03	194.03	296.71	0.36	0.31	#DIV/0!	#DIV/0!	11.28		
28	2,739	4.7	296.7			96	2729.35	91.56	-180.65	202.52	202.52	296.88	1.08	-0.83	#DIV/0!	#DIV/0!	3.95		
29	2,770	4.2	284.4			31	2760.26	92.41	-182.88	204.90	204.90	296.81	3.47	-1.61	#DIV/0!	#DIV/0!	1.72		
30	2,802	3.1	275.1			32	2792.19	92.78	-184.88	206.85	206.85	296.65	3.89	-3.44	#DIV/0!	#DIV/0!	-0.28		
31	2,835	2.1	252.2			33	2825.16	92.68	-186.34	208.12	208.12	296.44	4.31	-3.03	#DIV/0!	#DIV/0!	-1.74		
32	2,905	0.4	245.1			70	2895.14	92.18	-187.78	209.19	209.19	296.15	2.43	-2.43	#DIV/0!	#DIV/0!	-3.18		
33	2,969	0.3	182.3			64	2959.14	91.92	-187.99	209.26	209.26	296.06	0.59	-0.16	#DIV/0!	#DIV/0!	-3.39		
34	3,064	0.5	179.4			95	3054.13	91.26	-188.00	208.97	208.98	295.89	0.21	0.21	#DIV/0!	#DIV/0!	-3.40		
35	3,159	0.4	168.9			95	3149.13	90.52	-187.93	208.57	208.59	295.72	0.14	-0.11	#DIV/0!	#DIV/0!	-3.33		
36	3,255	0.4	127.7			96	3245.13	89.98	-187.60	208.04	208.07	295.62	0.29	0.00	#DIV/0!	#DIV/0!	-3.00		
37	3,351	0.3	146.7			96	3341.13	89.57	-187.20	207.50	207.52	295.57	0.16	-0.10	#DIV/0!	#DIV/0!	-2.60		
38	3,415	0.3	137.3			64	3405.13	89.31	-186.99	207.19	207.22	295.53	0.08	0.00	#DIV/0!	#DIV/0!	-2.39		
39	3,511	0.5	124.9			96	3501.12	88.88	-186.48	206.55	206.58	295.48	0.23	0.21	#DIV/0!	#DIV/0!	-1.88		
40	3,607	0.4	96.9			96	3597.12	88.60	-185.80	205.82	205.85	295.49	0.25	-0.10	#DIV/0!	#DIV/0!	-1.20		
41	3,702	0.6	82.8			95	3692.12	88.62	-184.98	205.09	205.11	295.60	0.25	0.21	#DIV/0!	#DIV/0!	-0.38		
42	3,799	0.7	82.6			97	3789.11	88.76	-183.89	204.17	204.19	295.77	0.10	0.10	#DIV/0!	#DIV/0!	0.71		
43	3,895	0.8	92.4			96	3885.10	88.81	-182.64	203.08	203.09	295.93	0.17	0.10	#DIV/0!	#DIV/0!	1.96		
44	3,990	0.7	68.7			95	3980.10	88.99	-181.43	202.08	202.08	296.13	0.34	-0.11	#DIV/0!	#DIV/0!	3.17		
45	4,086	0.6	66.7			96	4076.09	89.41	-180.43	201.36	201.36	296.36	0.11	-0.10	#DIV/0!	#DIV/0!	4.17		
46	4,183	0.6	97.2			97	4173.08	89.54	-179.46	200.55	200.55	296.52	0.33	0.00	#DIV/0!	#DIV/0!	5.14		
47	4,279	0.4	82.2			96	4269.08	89.53	-178.62	199.80	199.80	296.62	0.25	-0.21	#DIV/0!	#DIV/0!	5.98		
48	4,375	0.7	283.5			96	4365.08	89.71	-178.86	200.10	200.10	296.64	1.13	0.31	#DIV/0!	#DIV/0!	5.74		
49	4,470	0.5	288.5			95	4460.07	89.98	-179.82	201.07	201.07	296.58	0.22	-0.21	#DIV/0!	#DIV/0!	4.78		
50	4,566	0.7	280.9			96	4556.07	90.22	-180.79	202.05	202.05	296.52	0.22	0.21	#DIV/0!	#DIV/0!	3.81		
51	4,662	0.6	294.0			96	4652.06	90.53	-181.83	203.12	203.12	296.47	0.19	-0.10	#DIV/0!	#DIV/0!	2.77		
52	4,758	0.9	293.2			96	4748.05	91.04	-182.98	204.38	204.38	296.45	0.31	0.31	#DIV/0!	#DIV/0!	1.62		
53	4,853	0.7	289.0			95	4843.04	91.52	-184.21	205.70	205.70	296.42	0.22	-0.21	#DIV/0!	#DIV/0!	0.39		
54	4,885	0.7	311.8			32	4875.04	91.71	-184.55	206.08	206.08	296.43	0.86	0.00	#DIV/0!	#DIV/0!	0.05		



SURVEY CALCULATION PROGRAM

Minimum Curvature

File:

OPERATOR: Lime Rock Resources		Target Information		VS Referenced to Offset from Surface	
WELL: Eagle 34C Fed85		TARGET KBTVD:	4900.00	NORTH/SOUTH:	92.00
LOCATION: Artesia, New Mexico		TARGET INCL:	0.00	EAST/WEST:	-184.60
RIG: United 33		TARGET AZM:	0.00	(Enter 0° N and 0° E for Surface)	
JOB NUMBER: TX-18-038					
SURVEY COMPANY		DIRECTIONAL COMPANY		PROPOSED DIRECTION:	296.49
Accel Directional		Accel Directional		Dec / Total Corr.(+/-):	7.21
Directional Drillers		COORDINATORS		COMMENTS:	
C. Tinkham		Chris Shipp			
D. Dowdell		Corey Treadwell			
Lime Rock Resources		Eagle 34C Fed85			
TRUE	TEMP	API	Course	Surface	CLOSURE
SVY	MD	INC	AZM	*F	Gamma
PTB	4,930	0.7	311.8	45	4920.04
Length	TVD	N-S	E-W	Vert Sect	DIST
45	4920.04	92.08	-184.96	206.61	206.61
DIR	DLS/	BUR/	TVD AT 0'	ABOVE (+)	RIGHT(+)
296.47	0.00	0.00	#DIV/0!	#DIV/0!	-0.36
100	100'	V. SEC.	BELOW (-)	LEFT(-)	
100	100'	V. SEC.	BELOW (-)	LEFT(-)	
100	100'	V. SEC.	BELOW (-)	LEFT(-)	