

V09.04.02

Company: Matador Production Company

Well Name: Forehand Ranch 35 Federal 1H - OWB

Location: Eddy County, NM

Rig: Patterson #810

Job Number: DDMO-170647

API #: 30-015-43490

Vertical Section Azimuth: 0.67

Survey Calculation Method: Minimum Curvature

Proposed Direction: 0.67

Magnetic Declination: 7.20

REFERENCED TO GRID NORTH

PTB:	MD		INC		AZM		TVD		N/S		E/W		VS	
	12,620		90		359.9		10123.9		2433.61		-65.56		2432.68	
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'			
TIE IN	442	1.54	126.37	441.46	-4.01	3.78	-3.97	5.51	136.69					
1	448	1.80	124.10	447.94	-4.12	3.93	-4.07	5.70	136.31	4.14	4.01			
2	604	1.20	120.80	603.88	-6.33	7.37	-6.24	9.71	130.67	0.39	-0.38			
3	785	1.30	109.90	784.84	-8.00	10.92	-7.87	13.54	126.21	0.14	0.06			
4	972	2.70	213.70	971.76	-12.39	10.48	-12.26	16.22	139.78	1.75	0.75			
5	1,162	3.10	211.70	1161.52	-20.48	5.29	-20.42	21.15	165.51	0.22	0.21			
6	1,352	2.90	211.80	1351.26	-28.94	0.06	-28.93	28.94	179.88	0.11	-0.11			
7	1,543	3.70	221.00	1541.94	-37.69	-6.53	-37.77	38.25	189.83	0.50	0.42			
8	1,732	3.60	186.70	1730.58	-48.19	-11.22	-48.32	49.48	193.11	1.14	-0.05			
9	1,921	3.90	183.20	1919.18	-60.50	-12.27	-60.64	61.73	191.47	0.20	0.16			
10	2,112	4.20	175.40	2109.70	-73.96	-12.08	-74.09	74.94	189.27	0.33	0.16			
11	2,233	3.50	173.40	2230.43	-82.04	-11.30	-82.17	82.82	187.84	0.59	-0.58			
12	2,305	3.10	174.60	2302.31	-86.17	-10.86	-86.29	86.85	187.18	0.56	-0.56			
13	2,496	4.50	211.80	2492.91	-97.68	-14.32	-97.84	98.72	188.34	1.45	0.73			
14	2,687	5.90	217.20	2683.12	-111.87	-24.21	-112.14	114.45	192.21	0.78	0.73			
15	2,877	6.00	216.60	2872.10	-127.62	-36.03	-128.03	132.60	195.77	0.06	0.05			
16	3,068	7.40	214.40	3061.79	-145.78	-48.93	-146.34	153.77	198.56	0.75	0.73			
17	3,258	8.50	207.30	3249.96	-168.35	-62.29	-169.07	179.51	200.30	0.78	0.58			
18	3,449	8.20	207.30	3438.94	-193.00	-75.01	-193.87	207.07	201.24	0.16	-0.16			
19	3,639	7.70	206.00	3627.11	-216.48	-86.80	-217.48	233.24	201.85	0.28	-0.26			
20	3,829	8.70	204.40	3815.17	-241.01	-98.32	-242.14	260.29	202.19	0.54	0.53			
21	4,020	8.70	204.90	4003.97	-267.27	-110.37	-268.54	289.16	202.44	0.04	0.00			
22	4,209	8.30	205.20	4190.89	-292.58	-122.20	-293.99	317.07	202.67	0.21	-0.21			
23	4,399	7.50	205.50	4379.09	-316.18	-133.37	-317.72	343.16	202.87	0.42	-0.42			
24	4,590	5.90	192.70	4568.79	-337.01	-140.90	-338.63	365.28	202.69	1.14	-0.84			
25	4,780	2.50	194.60	4758.25	-350.55	-144.09	-352.21	379.01	202.34	1.79	-1.79			
26	4,970	0.60	219.50	4948.17	-355.33	-145.77	-357.01	384.06	202.31	1.04	-1.00			
27	5,160	0.60	104.70	5138.17	-356.35	-145.44	-358.02	384.88	202.20	0.53	0.00			
28	5,350	0.50	106.10	5328.16	-356.83	-143.68	-358.49	384.67	201.93	0.05	-0.05			
29	5,541	0.90	69.80	5519.15	-356.54	-141.47	-358.17	383.58	201.64	0.30	0.21			
30	5,730	0.40	127.70	5708.13	-356.43	-139.56	-358.04	382.78	201.38	0.41	-0.26			
31	5,825	0.70	114.00	5803.13	-356.87	-138.76	-358.47	382.90	201.25	0.34	0.32			
32	5,920	0.70	146.20	5898.12	-357.59	-137.91	-359.18	383.26	201.09	0.41	0.00			
33	6,016	0.20	96.70	5994.12	-358.10	-137.42	-359.68	383.56	200.99	0.61	-0.52			



SURVEY CALCULATION PROGRAM

8/30/17 14:43

Company:		Matador Production Company									
Well Name:		Forehand Ranch 35 Federal 1H - OWB									
Location:		Eddy County, NM									
Rig:		Patterson #810									
Job Number:		DDMO-170647									
API #:		30-015-43490									
Vertical Section Azimuth:		0.67									
Survey Calculation Method:		Minimum Curvature									
PTB:		MD		INC		AZM		TVD		VS	
		12,620		90		359.9		10123.9		2432.68	
		Depth		Inc		Azim		TVD		N/S	
#		Feet		Degrees		Degrees		Feet		Feet	
34	6,111	0.90	72.90	6089.12	-357.90	-136.54	-359.47	383.06	200.88	0.76	0.74
35	6,207	1.00	85.70	6185.10	-357.61	-134.98	-359.17	382.24	200.68	0.24	0.10
36	6,302	0.30	149.20	6280.10	-357.76	-134.03	-359.31	382.05	200.54	0.95	-0.74
37	6,398	1.40	260.20	6376.09	-358.18	-135.06	-359.73	382.80	200.66	1.60	1.15
38	6,493	1.10	233.50	6471.07	-358.92	-136.93	-360.50	384.15	200.88	0.68	-0.32
39	6,587	0.10	186.90	6565.06	-359.54	-137.67	-361.12	384.99	200.95	1.10	-1.06
40	6,680	0.70	203.80	6658.06	-360.14	-137.91	-361.73	385.64	200.95	0.65	0.65
41	6,775	1.10	17.20	6753.05	-359.80	-137.87	-361.39	385.31	200.97	1.89	0.42
42	6,870	1.30	18.40	6848.03	-357.90	-137.26	-359.49	383.32	200.98	0.21	0.21
43	6,965	0.70	8.90	6943.02	-356.31	-136.83	-357.88	381.68	201.01	0.65	-0.63
44	7,061	0.40	1.30	7039.01	-355.39	-136.73	-356.97	380.79	201.04	0.32	-0.31
45	7,156	0.30	70.40	7134.01	-354.98	-136.49	-356.55	380.32	201.03	0.43	-0.11
46	7,251	0.90	51.60	7229.00	-354.43	-135.67	-355.99	379.51	200.95	0.66	0.63
47	7,346	1.20	44.10	7323.99	-353.25	-133.07	-354.80	377.96	200.83	0.35	0.32
48	7,441	1.10	44.30	7418.97	-351.89	-133.40	-352.42	376.21	200.71	0.11	-0.11
49	7,536	0.90	40.90	7513.95	-350.67	-131.94	-352.19	374.67	200.62	0.22	-0.21
50	7,631	0.50	19.80	7608.95	-349.72	-131.31	-351.23	373.56	200.58	0.49	-0.42
51	7,726	0.50	269.80	7703.95	-349.33	-131.59	-350.84	373.29	200.64	0.86	0.00
52	7,822	0.90	266.60	7799.94	-349.37	-132.76	-350.90	373.75	200.81	0.42	0.42
53	7,916	1.30	261.10	7893.92	-349.58	-134.55	-351.13	374.58	201.05	0.44	0.43
54	8,011	0.80	319.40	7988.91	-349.25	-136.05	-350.81	374.81	201.28	1.17	-0.53
55	8,106	1.40	273.50	8083.89	-348.67	-137.64	-350.26	374.85	201.54	1.07	0.63
56	8,201	1.40	56.90	8178.88	-347.97	-137.82	-349.56	374.27	201.61	2.80	0.00
57	8,296	1.00	100.70	8273.86	-347.49	-136.04	-349.05	373.17	201.38	1.02	-0.42
58	8,392	1.70	121.10	8369.83	-348.38	-133.99	-349.92	373.26	201.04	0.87	0.73
59	8,487	2.20	119.80	8464.78	-350.01	-131.20	-351.52	373.80	200.55	0.53	0.53
60	8,582	1.60	117.10	8559.73	-351.52	-128.44	-353.00	374.25	200.07	0.64	-0.63
61	8,677	1.80	108.00	8654.68	-352.59	-125.84	-354.04	374.37	199.64	0.35	0.21
62	8,773	1.90	67.10	8750.64	-352.44	-122.94	-353.85	373.26	199.23	1.35	0.10
63	8,868	1.70	61.00	8845.59	-351.14	-120.26	-352.52	371.16	198.91	0.29	-0.21
64	8,963	1.50	64.60	8940.55	-349.92	-117.90	-351.28	369.25	198.62	0.24	-0.21
65	9,058	1.20	71.00	9035.53	-349.07	-115.84	-350.40	367.78	198.36	0.35	-0.32
66	9,153	0.90	62.50	9130.51	-348.40	-114.24	-349.71	366.65	198.15	0.35	-0.32
67	9,248	0.50	41.20	9225.50	-347.74	-113.30	-349.04	365.73	198.05	0.50	-0.42



SURVEY CALCULATION PROGRAM

8/30/17 14:43

09/04/02

Company: Matador Production Company

Well Name: Forehand Ranch 35 Federal 1H - OWB

Location: Eddy County, NM

Rig: Patterson #810

Job Number: DDMO-170647

API #: 30-015-43490

Vertical Section Azimuth: 0.67

Proposed Direction: 0.67

Survey Calculation Method: Minimum Curvature

PTB: MD 12.620 INC 90 TVD Feet 359.9 AZM 10123.9 TVD Feet 2433.61 N/S Vert Sec -65.56 E/W Closure 2432.68 DLS/ BUR/ 100' 100'

Magnetic Declination: 7.20



REFERENCED TO GRID NORTH

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	N/S Vert Sec	Distance	E/W Closure	Azm Closure	DLS/ 100'	BUR/ 100'
68	9,343	0.80	31.80	9320.50	-346.87	-112.68	-348.16	364.71	198.00	0.33	0.32	
69	9,439	0.20	266.00	9416.50	-346.31	-112.49	-347.60	364.12	198.00	0.97	-0.63	
70	9,535	5.40	10.00	9512.35	-341.87	-111.87	-343.15	359.71	198.12	5.68	5.42	
71	9,583	10.90	5.60	9559.85	-335.12	-111.04	-336.40	353.04	198.33	11.52	11.46	
72	9,630	14.70	359.90	9605.68	-324.73	-110.62	-326.00	343.05	198.81	8.51	8.09	
73	9,679	19.70	355.60	9652.47	-310.27	-111.26	-311.55	329.61	199.73	10.52	10.20	
74	9,726	22.60	354.90	9696.30	-293.37	-112.67	-294.67	314.26	201.01	6.19	6.17	
75	9,774	27.60	357.80	9739.76	-273.06	-113.92	-274.37	295.87	202.65	10.72	10.42	
76	9,821	31.60	5.50	9780.63	-249.91	-113.16	-251.21	274.33	204.36	11.73	8.51	
77	9,869	35.90	4.20	9820.53	-223.34	-110.92	-224.62	249.37	206.41	9.08	8.96	
78	9,916	41.80	0.60	9857.12	-193.91	-109.74	-195.18	222.81	209.51	13.44	12.55	
79	9,964	44.70	1.00	9892.08	-161.02	-109.28	-162.29	194.61	214.16	6.07	6.04	
80	10,011	48.10	2.20	9924.49	-127.01	-108.32	-128.27	166.93	220.46	7.47	7.23	
81	10,060	52.40	2.90	9955.82	-89.38	-106.64	-90.62	139.14	230.03	8.84	8.78	
82	10,107	57.00	3.20	9982.97	-51.09	-104.60	-52.31	116.41	243.97	9.80	9.79	
83	10,154	60.70	2.50	10007.28	-10.92	-102.60	-12.12	103.18	263.92	7.97	7.87	
84	10,184	62.60	0.70	10021.52	15.47	-101.87	14.28	103.04	278.63	8.25	6.33	
85	10,268	69.80	0.10	10055.40	92.27	-101.34	91.08	137.06	312.32	8.60	8.57	
86	10,315	72.50	0.60	10070.58	136.75	-101.07	135.55	170.04	323.53	5.83	5.74	
87	10,362	72.90	0.80	10084.56	181.62	-100.52	180.43	207.58	331.04	0.94	0.85	
88	10,410	75.10	0.70	10097.79	227.75	-99.92	226.57	248.70	336.31	4.59	4.58	
89	10,457	76.80	0.90	10109.20	273.34	-99.28	272.16	290.81	340.04	3.64	3.62	
90	10,505	81.60	0.30	10118.19	320.47	-98.79	319.29	335.35	342.87	10.08	10.00	
91	10,599	86.30	359.00	10128.09	413.92	-99.36	412.73	425.68	346.50	5.19	5.00	
92	10,693	90.10	359.10	10131.05	507.84	-100.92	506.63	517.77	348.76	4.04	4.04	
93	10,787	90.70	359.90	10130.39	601.83	-101.74	600.60	610.37	350.40	1.06	0.64	
94	10,881	90.10	359.90	10129.73	695.83	-101.91	694.59	703.25	351.67	0.64	-0.64	
95	10,975	88.30	359.60	10131.05	789.82	-102.32	788.57	796.42	352.62	1.94	-1.91	
96	11,069	89.80	0.40	10132.60	883.80	-102.32	882.54	889.70	353.40	1.81	1.60	
97	11,163	91.00	1.00	10131.95	977.79	-101.17	976.54	983.01	354.09	1.43	1.28	
98	11,258	90.80	1.10	10130.46	1072.76	-99.43	1071.53	1077.36	354.70	0.24	-0.21	
99	11,352	89.50	0.90	10130.21	1166.74	-97.79	1165.52	1170.84	355.21	1.40	-1.38	
100	11,446	89.90	1.60	10130.70	1260.72	-95.74	1259.51	1264.35	355.66	0.86	0.43	
101	11,539	92.70	3.00	10128.59	1353.61	-92.01	1352.44	1356.73	356.11	3.37	3.01	



SURVEY CALCULATION PROGRAM

8/30/17 14:43

V09.04.02

Company:	Matador Production Company											
Well Name:	Forehand Ranch 35 Federal 1H - OWB											
Location:	Eddy County, NM											
Rig:	Patterson #810					Magnetic Declination:		7.20				
Job Number:	DDMO-170647					REFERENCED TO GRID NORTH						
API #:	30-015-43490											
Vertical Section Azimuth:					0.67		Proposed Direction:					
Survey Calculation Method:					Minimum Curvature			0.67				
PTB:	MD			INC		AZM		TVD		N/S		VS
	12,620			90		359.9		10123.9		2433.61		2432.68
#	Depth	Inc	Azm	TVD	N/S	E/W	Surface	Closure	DLS/	BUR/		
	Feet	Degrees	Degrees	Feet	Feet	Feet	Vert Sec	Distance	100	100'		
102	11,634	88.60	2.60	10127.51	1448.47	-87.37	1447.35	1451.10	356.55	4.34	-4.32	
103	11,727	88.70	3.30	10129.71	1541.32	-82.58	1540.25	1543.53	356.93	0.76	0.11	
104	11,821	89.60	3.90	10131.10	1635.12	-76.68	1634.11	1636.92	357.32	1.15	0.96	
105	11,916	91.60	2.50	10130.11	1729.96	-71.38	1729.01	1731.43	357.64	2.57	2.11	
106	12,010	92.30	1.20	10126.91	1823.86	-68.34	1822.93	1825.14	357.85	1.57	0.74	
107	12,104	87.70	359.60	10126.91	1917.83	-67.69	1916.90	1919.02	357.98	5.18	-4.89	
108	12,198	87.90	359.80	10130.52	2011.76	-68.18	2010.82	2012.91	358.06	0.30	0.21	
109	12,292	91.50	1.00	10131.01	2105.73	-67.52	2104.80	2106.82	358.16	4.04	3.83	
110	12,386	92.60	0.50	10127.64	2199.66	-66.29	2198.74	2200.66	358.27	1.29	1.17	
111	12,479	91.00	0.30	10124.72	2292.61	-65.65	2291.69	2293.55	358.36	1.73	-1.72	
112	12,573	90.00	359.90	10123.90	2386.61	-65.48	2385.68	2387.51	358.43	1.15	-1.06	
PTB:	12,620	90.00	359.90	10123.90	2433.61	-65.56	2432.68	2434.49	358.46	0.00	0.00	



SURVEY CALCULATION PROGRAM

8/30/17 14:51

Company:		Matador Production Company									
Well Name:		Forehand Ranch 35 Federal 1H - ST									
Location:		Eddy County, NM									
Rig:		Patterson #810									
Job Number:		DDMO-170647									
API #:		30-015-43490									
Vertical Section Azimuth:		0.67									
Survey Calculation Method:		Minimum Curvature									
PTB:		MD		INC		AZM		TVD		N/S	
		14,896		92.5		357.1		10119.23		4702.37	
		Depth		Inc		Azim		TVD		E/W	
		Feet		Degrees		Degrees		Feet		Feet	
#		Feet		Degrees		Degrees		Feet		Feet	
TIE IN		11,821		89.60		3.90		10131.10		1635.12	
1		11,875		89.70		3.70		10131.43		1689.00	
2		11,920		89.40		9.30		10131.78		1733.69	
3		12,010		90.80		9.40		10131.63		1822.49	
4		12,104		90.40		8.90		10130.64		1915.29	
5		12,198		89.60		7.60		10130.64		2008.32	
6		12,292		88.50		5.60		10132.20		2101.67	
7		12,386		89.20		3.00		10134.09		2195.38	
8		12,479		90.30		358.00		10134.49		2288.35	
9		12,573		89.70		356.70		10134.49		2382.24	
10		12,667		92.10		357.50		10133.02		2476.10	
11		12,761		91.30		357.10		10130.23		2569.96	
12		12,855		91.40		357.40		10128.01		2663.82	
13		12,949		88.80		356.70		10127.85		2757.69	
14		13,043		89.80		357.10		10129.00		2851.54	
15		13,137		88.70		356.10		10130.23		2945.37	
16		13,231		89.80		355.60		10131.46		3039.11	
17		13,325		89.70		357.40		10131.87		3132.93	
18		13,419		89.70		358.30		10132.36		3226.86	
19		13,512		89.90		359.30		10132.69		3319.84	
20		13,607		90.20		358.00		10132.60		3414.81	
21		13,701		89.40		357.00		10132.93		3508.72	
22		13,795		94.00		359.90		10130.14		3602.61	
23		13,889		93.40		359.90		10124.08		3696.41	
24		13,982		93.80		0.10		10118.24		3789.23	
25		14,076		90.90		0.80		10114.38		3883.14	
26		14,170		86.70		1.00		10116.35		3977.08	
27		14,265		90.30		1.30		10118.84		4072.02	
28		14,359		87.90		2.70		10120.31		4165.94	
29		14,453		89.80		3.40		10122.20		4259.78	
30		14,547		90.80		0.90		10121.71		4353.70	
31		14,642		88.80		359.40		10122.04		4448.70	
32		14,736		90.40		357.40		10122.70		4542.65	
33		14,830		90.70		356.50		10121.79		4636.51	

