



TARGET DETAILS

OPERATOR:			BTA Oil Producers, LLC							Supervisors:				TARGET N-S		Directional						
WELL:			20702 Harroun Ranch Fed Com 4H							Will Ellison		DD		TARGET E-W								
LOCATION:			Eddy Co. N.M.							Jason Wenninger		DD		TARGET RADIUS								
JOB NUMBER:			WT-180283							Daniel Longoria		MWD		TARGET DISPLACEMENT								
Curr<		Prev<	DIFF		S/Ahead			PROJ		Beau Shelton		MWD		TARGET CLOSURE								
			0.0		#DIV/0!			#DIV/0!		B.Hoffman		Co. Rep		TARGET KBTVD		Horizontal		10814.36				
Slide/Seen		BR/FT	A/BR		BRN		JNT		D/S		Jk.Garrison		Co. Rep		DIP AZ				4.63			
0.00			#DIV/0!		#DIV/0!			#DIV/0!			Patterson-UTI # 594		Rig		DIP DEG UP+/DN-				-0.21			
															TARGET INCLINATION				89.79			
															Magnetic Declination				6.92			
TARGET			MD	TVD	Vertical Section		N-S		E-W		Sec/Plane	4.63	TARGET TRACKING		CLOSURE		CLOSURE		BUILD	WALK		
SVY					COURSE					DLS/		ABOVE(+)		RIGHT(+)		DIR		DISTANCE		RATE/		WALK
TEMP	NUM	MD	INC	AZM	LENGTH	TVD	SECT	N-S	E-W	100	BELOW(-)	LEFT(-)	(DEG AZ)	(FEET)	%/100'	RATE/	%/100'					
°F	TIE				0.00	318.00	-0.46	-0.47	0.14													
61°	1	437	0.80	46.10	119.00	436.99	0.35	0.29	0.84	0.51	10377.36	0.82	71.33	0.89	0.50		0.11					
68°	2	621	0.80	34.00	184.00	620.98	2.43	2.24	2.49	0.09	10193.39	2.30	47.99	3.35	0.00		-0.09					
75°	3	715	0.80	18.70	94.00	714.97	3.64	3.41	3.06	0.23	10099.40	2.78	41.98	4.58	0.00		-0.23					
79°	4	904	1.00	0.40	189.00	903.95	6.57	6.31	3.50	0.18	9910.44	2.98	29.03	7.21	0.11		-0.15					
86°	5	1094	0.90	0.40	190.00	1093.92	9.71	9.46	3.52	0.05	9720.48	2.75	20.43	10.09	-0.05		0.00					
99°	6	1284	1.30	358.30	190.00	1283.88	13.34	13.10	3.47	0.21	9530.52	2.40	14.83	13.55	0.21		0.02					
111°	7	1473	1.70	14.80	189.00	1472.82	18.23	17.96	4.12	0.31	9341.61	2.66	12.92	18.42	0.21		-0.23					
120°	8	1663	1.70	7.10	190.00	1662.74	23.82	23.48	5.19	0.12	9151.71	3.28	12.46	24.04	0.00		-0.12					
126°	9	1852	1.60	9.70	189.00	1851.66	29.25	28.86	5.98	0.07	8962.81	3.63	11.71	29.47	-0.05		0.04					
127°	10	2042	1.60	44.50	190.00	2041.59	33.93	33.37	8.29	0.50	8772.90	5.57	13.95	34.38	0.00		0.50					
126°	11	2231	2.10	69.80	189.00	2230.49	37.41	36.44	13.39	0.50	8584.00	10.40	20.17	38.82	0.26		0.43					
124°	12	2421	3.30	79.20	190.00	2420.28	40.32	38.67	22.02	0.67	8394.23	18.83	29.66	44.50	0.63		0.23					
118°	13	2611	2.90	102.20	190.00	2610.01	41.14	38.68	32.09	0.68	8204.50	28.87	39.68	50.26	-0.21		0.03					
126°	14	2804	2.20	106.60	193.00	2802.82	39.73	36.59	40.42	0.38	8011.69	37.33	47.84	54.52	-0.36		0.00					
81°	15	2871	1.90	104.70	67.00	2869.77	39.27	35.94	42.72	0.46	7944.73	39.68	49.93	55.83	-0.45		0.00					
86°	16	3060	2.10	105.70	189.00	3058.66	38.06	34.21	49.09	0.11	7755.84	46.17	55.13	59.83	0.11		0.00					
91°	17	3250	5.20	91.30	190.00	3248.25	37.89	33.07	61.05	1.69	7566.25	58.18	61.56	69.43	1.63		-0.02					
97°	18	3438	7.60	93.10	188.00	3435.07	38.72	32.21	81.98	1.28	7379.43	79.12	68.55	88.08	1.28		0.00					
102°	19	3628	8.00	104.10	190.00	3623.32	36.88	28.30	107.35	0.81	7191.17	104.72	75.23	111.02	0.21		0.04					
106°	20	3817	7.60	101.70	189.00	3810.57	33.18	22.57	132.35	0.27	7003.91	130.10	80.32	134.26	-0.21		-0.01					
108°	21	4006	7.90	100.40	189.00	3997.84	30.33	17.69	157.36	0.18	6816.63	155.42	83.59	158.35	0.16		0.00					
109°	22	4196	8.20	107.10	190.00	4185.98	26.09	11.35	183.16	0.52	6628.48	181.64	86.46	183.51	0.16		0.02					
113°	23	4385	7.90	106.10	189.00	4373.11	20.60	3.78	208.52	0.18	6441.32	207.53	88.96	208.55	-0.16		0.00					
111°	24	4574	7.20	109.10	189.00	4560.47	15.06	-3.70	232.19	0.42	6253.94	231.73	90.91	232.22	-0.37		0.01					
113°	25	4764	7.80	108.30	190.00	4748.85	9.04	-11.64	255.68	0.32	6065.54	255.79	92.61	255.95	0.32		0.00					



SURVEY CALCULATION PROGRAM

TARGET DETAILS

OPERATOR:			BTA Oil Producers, LLC							Supervisors:				TARGET N-S		Directional		
WELL:			20702 Harroun Ranch Fed Com 4H							Will Ellison		DD		TARGET E-W				
LOCATION:			Eddy Co. N.M.							Jason Wenninger		DD		TARGET RADIUS				
JOB NUMBER:			WT-180283							Daniel Longoria		MWD		TARGET DISPLACEMENT				
Curr<		Prev<	DIFF		S/Ahead			PROJ		Beau Shelton		MWD		TARGET CLOSURE				
			0.0		#DIV/0!			#DIV/0!		B.Hoffman		Co. Rep		TARGET KBTVD		Horizontal	10814.36	
Slide/Seen		BR/FT	A/BR		BRN		JNT		D/S		Jk.Garrison		Co. Rep		DIP AZ		4.63	
0.00			#DIV/0!		#DIV/0!			#DIV/0!		Patterson-UTI # 594		Rig		DIP DEG UP+/DN-		-0.21		
			#DIV/0!		#DIV/0!			#DIV/0!						TARGET INCLINATION		89.79		
															Magnetic Declination		6.92	
TARGET		MD	TVD	Vertical Section		N-S		E-W		Sec/Plane	4.63	TARGET TRACKING		CLOSURE		CLOSURE	BUILD	WALK
												TO CENTER						
TEMP	SVY	NUM	MD	INC	AZM	COURSE	LENGTH	TVD	SECT	N-S	E-W	DLS/100	ABOVE(+)	RIGHT(+)	DIR	DISTANCE	RATE/	RATE/
													BELOW(-)	LEFT(-)	(DEG AZ)	(FEET)	%/100'	%/100'
115°	26	4954	7.50	108.90		190.00	4937.16	2.93	-19.71	279.65	0.16	5877.21	280.33		94.03	280.35	-0.16	0.00
118°	27	5144	7.10	110.80		190.00	5125.62	-3.39	-27.89	302.36	0.25	5688.73	303.63		95.27	303.65	-0.21	0.01
120°	28	5333	6.60	111.20		189.00	5313.27	-9.75	-35.97	323.41	0.27	5501.06	325.26		96.35	325.40	-0.26	0.00
117°	29	5523	6.10	112.20		190.00	5502.10	-15.91	-43.73	342.94	0.27	5312.20	345.35		97.27	345.71	-0.26	0.00
118°	30	5712	7.10	105.40		189.00	5689.85	-21.12	-50.63	363.50	0.67	5124.43	366.40		97.93	367.00	0.53	-0.02
122°	31	5902	6.90	107.10		190.00	5878.43	-25.78	-57.10	385.72	0.15	4935.83	389.07		98.42	389.93	-0.11	0.01
124°	32	6092	6.30	111.70		190.00	6067.17	-31.30	-64.31	406.32	0.42	4747.07	410.18		98.99	411.38	-0.32	0.01
126°	33	6282	6.90	102.40		190.00	6255.92	-35.91	-70.62	427.15	0.64	4558.31	431.46		99.39	432.95	0.32	-0.03
127°	34	6472	6.40	102.00		190.00	6444.64	-38.81	-75.27	448.66	0.26	4369.58	453.27		99.52	454.93	-0.26	0.00
126°	35	6661	5.50	106.90		189.00	6632.62	-42.08	-80.09	467.63	0.55	4181.58	472.57		99.72	474.44	-0.48	0.01
127°	36	6851	5.20	98.50		190.00	6821.80	-44.60	-84.01	484.86	0.44	3992.40	490.06		99.83	492.08	-0.16	-0.02
127°	37	7041	4.90	93.40		190.00	7011.06	-45.01	-85.77	501.47	0.28	3803.13	506.76		99.71	508.75	-0.16	-0.01
129°	38	7230	7.90	104.10		189.00	7198.87	-46.97	-89.41	522.13	1.70	3615.32	527.65		99.72	529.73	1.59	0.03
131°	39	7420	4.80	102.50		190.00	7387.68	-50.21	-94.31	542.56	1.63	3426.50	548.40		99.86	550.70	-1.63	0.00
131°	40	7610	4.90	102.00		190.00	7577.00	-52.34	-97.72	558.26	0.06	3237.17	564.33		99.93	566.75	0.05	0.00
131°	41	7705	6.10	99.90		95.00	7671.56	-53.32	-99.43	567.20	1.28	3142.60	573.38		99.94	575.85	1.26	-0.01
133°	42	7800	5.60	97.80		95.00	7766.06	-54.04	-100.93	576.77	0.57	3048.10	583.03		99.93	585.53	-0.53	-0.01
133°	43	7895	4.80	96.90		95.00	7860.67	-54.46	-102.04	585.30	0.85	2953.49	591.63		99.89	594.13	-0.84	0.00
133°	44	7990	5.40	99.20		95.00	7955.30	-54.97	-103.23	593.66	0.67	2858.86	600.06		99.86	602.57	0.63	0.01
133°	45	8083	6.20	94.80		93.00	8047.82	-55.33	-104.35	602.99	0.98	2766.34	609.44		99.82	611.95	0.86	-0.02
133°	46	8178	5.00	88.80		95.00	8142.37	-54.93	-104.69	612.24	1.40	2671.79	618.69		99.70	621.13	-1.26	-0.03
131°	47	8273	5.30	92.30		95.00	8236.98	-54.33	-104.78	620.76	0.46	2577.18	627.19		99.58	629.54	0.32	0.02
124°	48	8377	5.40	99.90		104.00	8340.53	-54.58	-105.81	630.38	0.69	2473.63	636.87		99.53	639.20	0.10	0.03
127°	49	8472	8.00	101.70		95.00	8434.87	-55.81	-107.92	641.26	2.75	2379.28	647.88		99.55	650.28	2.74	0.01
129°	50	8566	8.50	101.80		94.00	8527.90	-57.48	-110.67	654.47	0.53	2286.25	661.26		99.60	663.76	0.53	0.00
131°	51	8661	8.40	103.60		95.00	8621.87	-59.44	-113.74	668.08	0.30	2192.27	675.08		99.66	677.70	-0.11	0.01



OPERATOR:				BTA Oil Producers, LLC						Supervisors:				TARGET N-S				Directional					
WELL:				20702 Harroun Ranch Fed Com 4H						Will Ellison		DD		TARGET E-W									
LOCATION:				Eddy Co. N.M.						Jason Wenninger		DD		TARGET RADIUS									
JOB NUMBER:				WT-180283						Daniel Longoria		MWD		TARGET DISPLACEMENT									
Curr<		Prev<		DIFF		S/Ahead				PROJ		Beau Shelton		MWD		TARGET CLOSURE							
				0.0		#DIV/0!				#DIV/0!		B.Hoffman		Co. Rep		TARGET KBTVD		Horizontal					
Slide/Seen		BR/FT		A/BR		BRN		JNT		D/S		Jk.Garrison		Co. Rep		DIP AZ		10814.36					
0.00				#DIV/0!		#DIV/0!				#DIV/0!		Patterson-UTI # 594		Rig		DIP DEG UP+/DN-		4.63					
																DIP INCLINATION							
																Magnetic Declination							
TARGET				MD		TVD		Vertical Section		N-S		E-W		Sec/Plane		4.63		TARGET TRACKING					
																		TO CENTER					
SVY								COURSE		DLS/		ABOVE(+)		RIGHT(+)		DIR		DISTANCE		BUILD		WALK	
TEMP	NUM	MD	INC	AZM	LENGTH	TVD	SECT	N-S	E-W	100	BELOW(-)	LEFT(-)	(DEG AZ)	(FEET)	%/100'	RATE/	RATE/						
153°	78	11167	74.90	0.90	102.00	10912.01	391.45	333.48	731.58	9.21	-96.22	702.28	65.49	804.01	9.12	-0.06							
156°	79	11230	83.30	2.30	63.00	10923.91	453.17	395.26	733.32	13.51	-107.89	699.02	61.68	833.06	13.33	0.10							
162°	80	11390	91.70	1.80	160.00	10930.89	612.71	554.87	739.03	5.26	-114.28	691.83	53.10	924.15	5.25	-0.01							
167°	81	11453	91.90	1.60	63.00	10928.91	675.60	617.81	740.90	0.45	-112.07	688.61	50.18	964.69	0.32	-0.01							
167°	82	11546	90.70	1.50	93.00	10926.80	768.44	710.75	743.41	1.29	-109.62	683.62	46.29	1028.51	-1.29	0.00							
169°	83	11640	88.80	359.50	94.00	10927.21	862.18	804.73	744.24	2.93	-109.69	676.85	42.76	1096.12	-2.02	0.10							
169°	84	11735	92.50	359.70	95.00	10926.13	956.80	899.71	743.57	3.90	-108.26	668.52	39.57	1167.21	3.89	0.01							
174°	85	11829	92.80	359.70	94.00	10921.78	1050.35	993.61	743.08	0.32	-103.58	660.45	36.79	1240.74	0.32	0.00							
178°	86	11924	92.90	0.80	95.00	10917.06	1144.95	1088.49	743.49	1.16	-98.50	653.20	34.34	1318.18	0.11	-0.05							
180°	87	12018	93.70	2.20	94.00	10911.65	1238.65	1182.30	745.95	1.71	-92.75	648.08	32.25	1397.95	0.85	0.07							
172°	88	12112	90.00	0.20	94.00	10908.61	1332.41	1276.21	747.92	4.47	-89.37	642.46	30.37	1479.22	-3.94	-0.10							
178°	89	12207	88.60	359.20	95.00	10909.77	1427.05	1371.19	747.42	1.81	-90.19	634.30	28.59	1561.67	-1.47	0.05							
181°	90	12302	88.30	359.20	95.00	10912.34	1521.59	1466.15	746.09	0.32	-92.41	625.31	26.97	1645.07	-0.32	0.00							
185°	91	12396	88.10	359.20	94.00	10915.30	1615.12	1560.09	744.78	0.21	-95.02	616.42	25.52	1728.75	-0.21	#NUM!							
183°	92	12491	90.70	359.50	95.00	10916.29	1709.71	1655.07	743.70	2.75	-95.67	607.68	24.20	1814.49	2.74	0.01							
185°	93	12585	92.50	1.80	94.00	10913.67	1803.43	1749.02	744.77	3.11	-92.70	601.16	23.07	1900.99	1.91	-0.11							
1																							



SURVEY CALCULATION PROGRAM

TARGET DETAILS

OPERATOR:				BTA Oil Producers, LLC						Supervisors:				TARGET N-S		Directional		
WELL:				20702 Harroun Ranch Fed Com 4H						Will Ellison		DD		TARGET E-W				
LOCATION:				Eddy Co. N.M.						Jason Wenninger		DD		TARGET RADIUS				
JOB NUMBER:				WT-180283						Daniel Longoria		MWD		TARGET DISPLACEMENT				
Curr<		Prev<		DIFF		S/Ahead		PROJ		Beau Shelton		MWD		TARGET CLOSURE				
		0.0				#DIV/0!		#DIV/0!		B.Hoffman <td colspan="2">Co. Rep<td colspan="2">TARGET KBTVD</td><td>Horizontal</td><td>10814.36</td></td>		Co. Rep <td colspan="2">TARGET KBTVD</td> <td>Horizontal</td> <td>10814.36</td>		TARGET KBTVD		Horizontal	10814.36	
Slide/Seen		BR/FT		A/BR		BRN		JNT		D/S <td colspan="2">Jk.Garrison<td colspan="2">Co. Rep<td colspan="2">DIP AZ</td><td>4.63</td></td></td>		Jk.Garrison <td colspan="2">Co. Rep<td colspan="2">DIP AZ</td><td>4.63</td></td>		Co. Rep <td colspan="2">DIP AZ</td> <td>4.63</td>		DIP AZ		4.63
0.00			#DIV/0!	#DIV/0!			#DIV/0!		#DIV/0!	Patterson-UTI # 594 <td colspan="2">Rig<td colspan="2">DIP DEG UP-/DN-</td><td colspan="2">-0.21</td></td>		Rig <td colspan="2">DIP DEG UP-/DN-</td> <td colspan="2">-0.21</td>		DIP DEG UP-/DN-		-0.21		
												TARGET INCLINATION		89.79				
												Magnetic Declination		6.92				
TARGET			MD	TVD	Vertical Section		N-S		E-W		Sec/Plane	4.63	TARGET TRACKING TO CENTER		CLOSURE CLOSURE		BUILD	WALK
TEMP	SVY NUM	MD	INC	AZM	COURSE		LENGTH	TVD	SECT	N-S	E-W	DLS/ 100	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	DIR (DEG AZ)	DISTANCE (FEET)	RATE/ °/100'	RATE/ °/100'
196°	104	13625	89.20	355.10			94.00	10897.58	2839.99	2787.84	758.74	2.62	-72.81	531.23	15.22	2889.25	1.17	-0.11
246°	105	13720	90.50	356.00			95.00	10897.83	2933.80	2882.56	751.37	1.66	-72.72	516.23	14.61	2978.87	1.37	0.04
198°	106	13815	90.70	355.70			95.00	10896.83	3027.68	2977.30	744.49	0.38	-71.38	501.73	14.04	3068.97	0.21	-0.01
199°	107	13909	89.30	355.50			94.00	10896.83	3120.51	3071.02	737.28	1.50	-71.04	486.98	13.50	3158.28	-1.49	-0.01
194°	108	14004	88.80	354.60			95.00	10898.41	3214.17	3165.65	729.09	1.08	-72.27	471.17	12.97	3248.53	-0.53	-0.04
183°	109	14094	91.60	355.70			90.00	10898.09	3302.93	3255.32	721.48	3.34	-71.63	456.35	12.50	3334.31	3.11	0.06
183°	110	14189	93.90	358.80			95.00	10893.53	3397.02	3350.08	716.92	4.06	-66.73	444.16	12.08	3425.94	2.42	0.15
190°	111	14284	94.30	359.00			95.00	10886.74	3491.30	3444.82	715.10	0.47	-59.59	434.70	11.73	3518.26	0.42	0.01
190°	112	14378	89.40	358.80			94.00	10883.71	3584.76	3538.73	713.30	5.22	-56.21	425.32	11.40	3609.90	-5.21	-0.01
192°	113	14473	89.50	358.80			95.00	10884.62	3679.26	3633.70	711.31	0.11	-56.78	415.68	11.08	3702.67	0.11	0.00
192°	114	14567	91.40	358.00			94.00	10883.88	3772.70	3727.66	708.69	2.19	-55.70	405.48	10.76	3794.43	2.02	-0.04
189°	115	14663	91.90	359.00			96.00	10881.12	3868.11	3823.58	706.18	1.16	-52.58	395.23	10.46	3888.25	0.52	0.05
185°	116	14758	89.00	358.10			95.00	10880.37	3962.56	3918.54	703.77	3.20	-51.49	385.17	10.18	3981.24	-3.05	-0.04
194°	117	14852	89.00	359.50			94.00	10882.01	4056.06	4012.50	701.80	1.49	-52.79	375.62	9.92	4073.41	0.00	0.07
196°	118	14947	90.30	357.80			95.00	10882.59	4150.53	4107.47	699.57	2.25	-53.02	365.72	9.67	4166.62	1.37	-0.08
196°	119	15041	90.10	358.50			94.00	10882.27	4243.93	4201.42	696.53	0.77	-52.35	355.12	9.41	4258.76	-0.21	0.03
194°	120	15136	91.70	358.30			95.00	10880.77	4338.36	4296.37	693.88	1.70	-50.51	344.81	9.17	4352.04	1.68	-0.01
199°	121	15230	93.70	354.60			94.00	10876.34	4431.28	4390.06	688.07	4.47	-45.74	331.45	8.91	4443.65	2.13	-0.18
189°	122	15321	91.10	358.10			91.00	10872.53	4521.23	4480.77	682.28	4.79	-41.60	318.37	8.66	4532.42	-2.86	0.18
194°	123	15416	88.20	357.40			95.00	10873.11	4615.53	4575.69	678.56	3.14	-41.84	306.99	8.44	4625.73	-3.05	-0.03
199°	124	15510	88.60	358.50			94.00	10875.74	4708.85	4669.59	675.19	1.24	-44.12	296.06	8.23	4718.15	0.43	0.05
207°	125	15605	89.80	357.80			95.00	10877.06	4803.24	4764.53	672.13	1.46	-45.10	285.34	8.03	4811.70	1.26	-0.03
201°	126	15699	90.50	358.80			94.00	10876.82	4896.66	4858.49	669.34	1.30	-44.51	274.97	7.84	4904.37	0.74	0.05
205°	127	15794	89.60	357.60			95.00	10876.73	4991.06	4953.44	666.36	1.58	-44.08	264.34	7.66	4998.05	-0.95	-0.06
185°	128	15833	89.50	357.30			39.00	10877.04	5029.75	4992.40	664.62	0.81	-44.25	259.46	7.58	5036.44	-0.26	-0.04
192°	129	15927	92.70	2.30			94.00	10875.24	5123.36	5086.34	664.29	6.31	-42.10	251.55	7.44	5129.53	3.40	-0.25



SURVEY CALCULATION PROGRAM

TARGET DETAILS

OPERATOR:			BTA Oil Producers, LLC					Supervisors:				TARGET N-S		Directional				
WELL:			20702 Harroun Ranch Fed Com 4H					Will Ellison		DD		TARGET E-W						
LOCATION:			Eddy Co. N.M.					Jason Wenninger		DD		TARGET RADIUS						
JOB NUMBER:			WT-180283					Daniel Longoria		MWD		TARGET DISPLACEMENT						
Curr<		Prev<	DIFF	S/Ahead			PROJ	Beau Shelton		MWD		TARGET CLOSURE						
			0.0		#DIV/0!		#DIV/0!	B.Hoffman		Co. Rep		TARGET KBTVD		Horizontal	10814.36			
Slide/Seen		BR/FT	A/BR	BRN	JNT		D/S	Jk.Garrison		Co. Rep		DIP AZ		4.63				
0.00		#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	Patterson-UTI # 594		Rig		DIP DEG UP+/DN-		-0.21				
											TARGET INCLINATION		89.79					
											Magnetic Declination		6.92					
TARGET		MD	TVD	Vertical Section		N-S	E-W	Sec/Plane	4.63	TARGET TRACKING TO CENTER		CLOSURE		CLOSURE	BUILD	WALK		
TEMP	SVY	NUM	MD	INC	AZM	COURSE	LENGTH	TVD	SECT	N-S	E-W	DLS/100	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	DIR (DEG AZ)	DISTANCE (FEET)	RATE/ °/100'	RATE/ °/100'
196°	130	16021	93.90	1.80		94.00	10869.82	5217.11	5180.12	667.65	1.38	-36.34	247.33	7.34	5222.97	1.28	-0.02	
199°	131	16116	94.00	1.50		95.00	10863.28	5311.75	5274.85	670.38	0.33	-29.45	242.40	7.24	5317.28	0.11	-0.01	
198°	132	16211	90.00	359.70		95.00	10859.97	5406.44	5369.77	671.37	4.62	-25.79	235.73	7.13	5411.57	-4.21	0.09	
196°	133	16305	89.90	1.30		94.00	10860.05	5500.19	5463.76	672.19	1.71	-25.53	228.96	7.01	5504.95	-0.11	-0.08	
201°	134	16400	90.80	1.10		95.00	10859.47	5595.02	5558.74	674.18	0.97	-24.60	223.27	6.92	5599.47	0.95	-0.01	
203°	135	16494	91.30	0.90		94.00	10857.74	5688.81	5652.71	675.82	0.57	-22.54	217.32	6.82	5692.96	0.53	-0.01	
203°	136	16589	91.60	3.00		95.00	10855.34	5783.67	5747.61	679.05	2.23	-19.78	212.88	6.74	5787.59	0.32	0.10	
206°	137	16683	90.00	2.50		94.00	10854.03	5877.61	5841.49	683.56	1.78	-18.13	209.80	6.67	5881.35	-1.70	-0.02	
207°	138	16778	91.20	2.00		95.00	10853.03	5972.52	5936.41	687.29	1.37	-16.78	205.85	6.60	5976.07	1.26	-0.02	
207°	139	16873	88.70	0.90		95.00	10853.12	6067.36	6031.37	689.69	2.88	-16.52	200.59	6.52	6070.68	-2.63	-0.05	
207°	140	16967	90.10	2.00		94.00	10854.10	6161.21	6125.34	692.07	1.89	-17.16	195.37	6.45	6164.31	1.49	0.05	
208°	141	17062	88.70	1.80		95.00	10855.09	6256.10	6220.28	695.22	1.49	-17.81	190.85	6.38	6259.01	-1.47	-0.01	
207°	142	17157	91.30	3.10		95.00	10855.09	6351.02	6315.18	699.28	3.06	-17.46	187.23	6.32	6353.78	2.74	0.06	
204°	143	17251	89.40	1.60		94.00	10854.52	6444.93	6409.09	703.14	2.58	-16.54	183.49	6.26	6447.55	-2.02	-0.07	
208°	144	17346	92.10	2.20		95.00	10853.28	6539.81	6504.02	706.29	2.91	-14.95	178.97	6.20	6542.26	2.84	0.03	
210°	145	17440	89.30	1.10		94.00	10852.13	6633.66	6597.96	708.99	3.20	-13.46	93.28	6.13	6635.95	-2.98	-0.05	
208°	146	17535	96.90	4.80		95.00	10846.99	6728.40	6692.61	713.86	8.89	-7.97	90.49	6.09	6730.58	8.00	0.18	
196°	147	17652	85.70	5.00		117.00	10844.34	6845.18	6808.97	723.83	9.57	-4.90	91.05	6.07	6847.34	-9.57	0.01	
201°	148	17697	84.90	4.80		45.00	10848.03	6890.03	6853.66	727.66	1.83	-8.42	91.26	6.06	6892.18	-1.78	-0.02	
203°	149	17747	85.80	4.80		50.00	10852.08	6939.86	6903.32	731.83	1.80	-12.29	91.40	6.05	6942.00	1.80	0.00	
203°	150	17792	87.80	5.50		45.00	10854.60	6984.79	6948.06	735.87	4.71	-14.64	91.81	6.05	6986.92	4.44	0.07	
201°	151	17842	90.00	8.00		50.00	10855.56	7034.74	6997.70	741.74	6.66	-15.41	93.66	6.05	7036.90	4.40	0.23	
205°	152	17887	86.30	3.40		45.00	10857.01	7079.69	7042.43	746.21	13.11	-16.70	94.50	6.05	7081.86	-8.22	-0.47	
203°	153	17937	86.40	2.00		50.00	10860.19	7129.56	7092.27	748.56	2.80	-19.70	92.82	6.03	7131.67	0.20	-0.13	
204°	154	18032	86.30	357.80		95.00	10866.24	7224.02	7187.06	748.39	4.41	-25.41	85.01	5.94	7225.92	-0.11	0.20	
208°	155	18126	92.20	355.70		94.00	10867.47	7317.08	7280.85	743.07	6.66	-26.30	72.13	5.83	7318.67	6.28	-0.10	



SURVEY CALCULATION PROGRAM

TARGET DETAILS

OPERATOR:		BTA Oil Producers, LLC				Supervisors:		TARGET N-S Directional TARGET E-W TARGET RADIUS TARGET DISPLACEMENT TARGET CLOSURE								
WELL:		20702 Harroun Ranch Fed Com 4H				Will Ellison		DD								
LOCATION:		Eddy Co. N.M.				Jason Wenninger		DD								
JOB NUMBER:		WT-180283				Daniel Longoria		MWD								
Curr<	Prev<	DIFF			S/Ahead	PROJ	Beau Shelton		MWD							
		0.0			#DIV/0!	#DIV/0!	B.Hoffman		Co. Rep							
Slide/Seen		BR/FT	A/BR	BRN	JNT		D/S	Jk.Garrison								
0.00		#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	Patterson-UTI # 594								
TARGET		MD	TVD	Vertical Section		N-S	E-W	Sec/Plane	4.63							
								TARGET TRACKING TO CENTER								
TEMP	SVY NUM	MD	INC	AZM	COURSE		DLS/100	ABOVE(+)	RIGHT(+)							
					LENGTH	TVD	SECT	N-S	E-W							
								BELOW(-)	LEFT(-)							
								DIR (DEG AZ)	DISTANCE (FEET)							
								BUILD RATE/°/100'	WALK RATE/°/100'							
207°	156	18181	92.00	358.10	55.00	10865.46	7371.54	7335.73	740.10	4.38	-24.08	64.73	5.76	7372.97	-0.36	0.20
198°	157	18217	92.20	358.30	36.00	10864.14	7407.29	7371.69	738.97	0.79	-22.63	60.71	5.72	7408.64	0.56	0.03
199°	158	18312	91.10	359.70	95.00	10861.40	7501.78	7466.63	737.31	1.87	-19.55	51.39	5.64	7502.95	-1.16	0.07
203°	159	18407	90.60	2.90	95.00	10859.99	7596.60	7561.59	739.46	3.41	-17.79	45.87	5.59	7597.66	-0.53	-0.16
205°	160	18502	90.70	2.30	95.00	10858.91	7691.53	7656.48	743.77	0.64	-16.37	42.51	5.55	7692.52	0.11	-0.03
205°	161	18596	87.10	0.90	94.00	10860.72	7785.37	7750.41	746.40	4.11	-17.83	37.54	5.50	7786.27	-3.83	-0.07
207°	162	18691	89.20	3.40	95.00	10863.79	7880.22	7845.28	749.96	3.44	-20.55	33.44	5.46	7881.04	2.21	0.12
208°	163	18786	91.00	1.30	95.00	10863.62	7975.13	7940.19	753.86	2.91	-20.03	29.66	5.42	7975.90	1.89	-0.10
208°	164	18881	90.80	0.20	95.00	10862.13	8069.90	8035.17	755.10	1.18	-18.19	23.23	5.37	8070.57	-0.21	-0.05
208°	165	18975	90.70	1.30	94.00	10860.90	8163.68	8129.15	756.33	1.17	-16.62	16.87	5.32	8164.26	-0.11	0.05
208°	166	19005	91.50	2.50	30.00	10860.32	8193.64	8159.13	757.32	4.81	-15.93	15.44	5.30	8194.20	2.67	0.19
208°	167	19069	89.10	0.80	64.00	10859.99	8257.54	8223.09	759.17	4.60	-15.36	12.11	5.27	8258.06	-3.75	-0.12
208°	168	19164	92.50	3.20	95.00	10858.66	8352.41	8318.01	762.48	4.38	-13.69	7.75	5.24	8352.88	3.58	0.12
208°	169	19258	90.30	0.90	94.00	10856.36	8446.28	8411.91	765.84	3.39	-11.05	3.52	5.20	8446.70	-2.34	-0.11
210°	170	19353	88.90	359.70	95.00	10857.03	8541.00	8506.90	766.34	1.94	-11.36	-3.65	5.15	8541.35	-1.47	0.06
210°	171	19447	91.10	3.20	94.00	10857.03	8634.83	8600.85	768.71	4.40	-11.02	-8.86	5.11	8635.13	2.34	-0.17
212°	172	19542	89.10	2.50	95.00	10856.86	8729.78	8695.73	773.44	2.23	-10.51	-11.81	5.08	8730.05	-2.11	-0.03
207°	173	19636	90.60	3.20	94.00	10857.11	8823.73	8789.61	778.11	1.76	-10.41	-14.73	5.06	8823.98	1.60	0.03
212°	174	19730	90.60	4.50	94.00	10856.12	8917.72	8883.39	784.42	1.38	-9.08	-16.01	5.05	8917.95	0.00	0.06
212°	175	19825	88.70	3.00	95.00	10856.70	9012.70	8978.17	790.64	2.55	-9.31	-17.47	5.03	9012.92	-2.00	-0.07
212°	176	19920	91.30	4.80	95.00	10856.70	9107.68	9072.94	797.10	3.33	-8.96	-18.68	5.02	9107.89	2.74	0.09
201°	177	20015	89.90	5.20	95.00	10855.71	9202.67	9167.57	805.38	1.53	-7.62	-18.07	5.02	9202.88	-1.47	0.02
210°	178	20110	89.30	4.30	95.00	10856.37	9297.66	9262.24	813.24	1.14	-7.94	-17.87	5.02	9297.88	-0.63	-0.04
212°	179	20205	92.60	4.80	95.00	10854.80	9392.64	9356.92	820.78	3.51	-6.01	-18.00	5.01	9392.85	3.47	0.02
214°	180	20299	92.20	3.60	94.00	10850.86	9486.55	9450.58	827.65	1.34	-1.73	-18.71	5.01	9486.75	-0.43	-0.06
216°	181	20393	90.00	2.00	94.00	10849.06	9580.48	9544.44	832.24	2.89	0.42	-21.71	4.98	9580.66	-2.34	-0.08

TARGET DETAILS