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30-015-37832



SURVEY CALCULATION PROGRAM

AUG 1 2011

NMOCD ARTESIA

TARGET DETAILS

OPERATOR:		Marbob Energy				Supervisors:					TARGET N-S		Directional						
WELL:		Big Papi Fed Com #1H				Joe Hargrove					TARGET E-W								
LOCATION:		Eddy Co., Nm				Phillip Smith					TARGET RADIUS								
JOB NUMBER:		WT-10508				Nic Black					TARGET DISPLACEMENT								
COMMENTS:											TARGET CLOSURE								
										MAG DEC.(-/+)	7.84	TARGET TVD		Horizontal	7375.00				
										GRID CORR.(-/+)	-0.18	DIP AZ		178.23					
										TOTAL CORR.(-/+)	7.66	DIP DEG UP+/DN-		0.00					
DATE: 07/12/11				TIME: 11:00 AM							▼		TARGET INCLINATION		90.00				
MINIMUM CURVATURE CALCULATIONS(SPE-3362)								PROPOSED DIRECTION		178.23	TARGET TRACKING								
										TO CENTER		CLOSURE DIR (DEG AZ)		CLOSURE DISTANCE (FEET)		BUILD RATE/ °/100'		WALK RATE/ °/100'	
										ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)								
SVY NUM	MD	INC	TRUE AZM	TVD	SECT	N-S	E-W	DLS/ 100											
Tie	6472	1.1	195.8	6469.49	65.3	-63.27	67.63	0.67	905.51	-65.64	133.09	92.61							
1	6642	1.2	201.6	6639.46	68.48	-66.45	66.54	0.10	735.54	-64.46	134.96	94.04	0.08	3.39					
2	6769	1.3	152.0	6766.43	70.99	-68.96	66.73	0.83	608.57	-64.57	135.94	95.96	0.08	-39.06					
3	6801	1.6	145.6	6798.42	71.69	-69.65	67.15	1.06	576.58	-64.97	136.05	96.75	0.94	-20.00					
4	6833	2.2	156.6	6830.40	72.64	-70.58	67.65	2.19	544.60	-65.44	136.22	97.77	1.87	34.38					
5	6864	4.4	170.2	6861.35	74.37	-72.30	68.09	7.48	513.65	-65.82	136.72	99.31	7.10	43.87					
6	6896	8.0	175.3	6893.16	77.81	-75.73	68.48	11.37	481.84	-66.11	137.88	102.10	11.25	15.94					
7	6928	11.9	178.1	6924.67	83.33	-81.25	68.77	12.28	450.33	-66.23	139.76	106.45	12.19	8.75					
8	6960	15.6	178.1	6955.75	90.94	-88.85	69.02	11.56	419.25	-66.24	142.16	112.51	11.56	0.00					
9	6991	18.8	179.6	6985.36	100.10	-98.01	69.20	10.42	389.64	-66.13	144.78	119.98	10.32	4.84					
10	7023	22.2	179.9	7015.33	111.30	-109.22	69.24	10.63	359.67	-65.84	147.63	129.32	10.62	0.94					
11	7055	25.3	179.6	7044.61	124.19	-122.10	69.30	9.69	330.39	-65.50	150.42	140.40	9.69	-0.94					
12	7087	27.6	178.8	7073.26	138.44	-136.35	69.50	7.27	301.74	-65.26	152.99	153.05	7.19	-2.50					
13	7119	29.8	178.3	7101.33	153.80	-151.72	69.89	6.92	273.67	-65.17	155.26	167.04	6.87	-1.56					
14	7150	31.8	178.5	7127.95	169.67	-167.58	70.34	6.46	247.05	-65.13	157.23	181.74	6.45	0.65					
15	7182	33.9	178.3	7154.84	187.03	-184.93	70.82	6.57	220.16	-65.08	159.05	198.03	6.56	-0.62					
16	7214	36.7	178.3	7180.95	205.52	-203.41	71.37	8.75	194.05	-65.05	160.67	215.57	8.75	0.00					
17	7246	38.8	178.8	7206.25	225.11	-223.00	71.86	6.63	168.75	-64.94	162.14	234.29	6.56	1.56					
18	7278	40.8	178.5	7230.83	245.59	-243.47	72.35	6.28	144.17	-64.79	163.45	254.00	6.25	-0.94					
19	7310	43.2	178.3	7254.61	267.00	-264.88	72.95	7.51	120.39	-64.73	164.60	274.74	7.50	-0.62					
20	7341	45.5	177.9	7276.78	288.67	-286.53	73.67	7.47	98.22	-64.78	165.58	295.85	7.42	-1.29					
21	7373	49.3	176.1	7298.44	312.21	-310.05	74.91	12.58	76.56	-65.30	166.42	318.97	11.88	-5.63					
22	7405	54.9	174.5	7318.09	337.42	-335.20	76.99	17.94	56.91	-66.60	167.06	343.93	17.50	-5.00					
23	7437	61.3	174.2	7334.99	364.51	-362.22	79.67	20.02	40.01	-68.44	167.60	370.88	20.00	-0.94					
24	7468	66.2	175.9	7348.70	392.26	-389.91	82.06	16.55	26.30	-69.97	168.12	398.45	15.81	5.48					
25	7500	71.0	181.0	7360.37	422.03	-419.68	82.84	21.09	14.63	-69.84	168.83	427.77	15.00	15.94					
26	7532	74.9	183.5	7369.76	452.54	-450.24	81.63	14.29	5.24	-67.69	169.72	457.58	12.19	7.81					



SURVEY CALCULATION PROGRAM

v1 00 02

TARGET DETAILS

OPERATOR:		Marbob Energy				Supervisors:					TARGET N-S				Directional				
WELL:		Big Papi Fed Com #1H				Joe Hargrove					TARGET E-W								
LOCATION:		Eddy Co., Nm				Phillip Smith					TARGET RADIUS								
JOB NUMBER:		WT-10508				Nic Black					TARGET DISPLACEMENT								
COMMENTS:											TARGET CLOSURE								
									MAG DEC.(-/+)		7.84		TARGET TVD		Horizontal		7375.00		
									GRID CORR.(-/+)		-0.18		DIP AZ		178.23				
									TOTAL CORR.(-/+)		7.66		DIP DEG UP+/DN-		0.00				
DATE:		07/12/11		TIME:		11:00 AM						TARGET INCLINATION		90.00					
MINIMUM CURVATURE CALCULATIONS(SPE-3362)						PROPOSED DIRECTION		178.23		TARGET TRACKING TO CENTER		CLOSURE		CLOSURE		BUILD		WALK	
SVY NUM		MD	INC	TRUE AZM	TVD	SECT	N-S	E-W	DLS/ 100	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	DIR (DEG AZ)	DISTANCE (FEET)	RATE/ °/100'	RATE/ °/100'				
27	7563	78.7	183.8	7376.83	482.58	-480.35	79.71	12.29	-1.83	-64.84	170.58	486.92	12.26	0.97					
28	7595	82.7	183.3	7382.00	514.02	-511.86	77.76	12.59	-7.00	-61.91	171.36	517.74	12.50	-1.56					
29	7627	86.4	181.9	7385.04	545.78	-543.68	76.31	12.36	-10.04	-59.48	172.01	549.01	11.56	-4.38					
30	7690	92.5	180.4	7385.65	608.66	-606.63	75.05	9.97	-10.65	-56.28	172.95	611.26	9.68	-2.38					
31	7754	91.6	179.0	7383.36	672.60	-670.59	75.39	2.60	-8.36	-54.64	173.59	674.81	-1.41	-2.19					
32	7818	91.1	178.0	7381.85	736.58	-734.55	77.06	1.75	-6.85	-54.34	174.01	738.58	-0.78	-1.56					
33	7881	89.6	178.2	7381.47	799.57	-797.51	79.15	2.40	-6.47	-54.48	174.33	801.43	-2.38	0.32					
34	7945	89.6	178.4	7381.91	863.57	-861.48	81.05	0.31	-6.91	-54.40	174.63	865.28	0.00	0.31					
35	8040	89.3	177.7	7382.82	958.57	-956.42	84.28	0.80	-7.82	-54.70	174.96	960.13	-0.32	-0.74					
36	8135	90.2	178.0	7383.24	1053.56	-1051.35	87.84	1.00	-8.24	-55.33	175.22	1055.01	0.95	0.32					
37	8230	89.0	179.4	7383.90	1148.55	-1146.32	90.00	1.94	-8.90	-54.55	175.51	1149.85	-1.26	1.47					
38	8325	89.9	180.5	7384.81	1243.50	-1241.31	90.08	1.50	-9.81	-51.70	175.85	1244.58	0.95	1.16					
39	8421	88.2	180.4	7386.41	1339.41	-1337.29	89.33	1.77	-11.41	-47.98	176.18	1340.27	-1.77	-0.10					
40	8516	87.4	179.9	7390.05	1434.29	-1432.22	89.08	0.99	-15.05	-44.80	176.44	1434.99	-0.84	-0.53					
41	8580	87.4	179.8	7392.96	1498.20	-1496.16	89.25	0.16	-17.96	-42.99	176.59	1498.82	#NUM!	-0.16					
42	8643	88.5	180.8	7395.21	1561.12	-1559.11	88.92	2.36	-20.21	-40.72	176.74	1561.65	1.75	1.59					
43	8739	90.7	181.9	7395.88	1656.96	-1655.08	86.66	2.56	-20.88	-35.49	177.00	1657.34	2.29	1.15					
44	8834	90.5	182.5	7394.89	1751.73	-1750.00	83.01	0.67	-19.89	-28.92	177.28	1751.97	-0.21	0.63					
45	8929	90.1	182.7	7394.39	1846.45	-1844.90	78.70	0.47	-19.39	-21.68	177.56	1846.58	-0.42	0.21					
46	9025	90.2	181.0	7394.14	1942.26	-1940.85	75.60	1.77	-19.14	-15.62	177.77	1942.32	0.10	-1.77					
47	9120	89.5	180.4	7394.39	2037.17	-2035.84	74.44	0.97	-19.39	-11.52	177.91	2037.20	-0.74	-0.63					
48	9215	90.7	180.9	7394.22	2132.08	-2130.83	73.36	1.37	-19.22	-7.51	178.03	2132.09	1.26	0.53					
49	9311	90.9	181.0	7392.88	2227.96	-2226.81	71.77	0.23	-17.88	-2.96	178.15	2227.96	0.21	0.10					
50	9405	90.5	180.4	7391.73	2321.87	-2320.79	70.62	0.77	-16.73	1.09	178.26	2321.87	-0.43	-0.64					
51	9500	89.8	179.6	7391.48	2416.82	-2415.79	70.62	1.12	-16.48	4.03	178.33	2416.82	-0.74	-0.84					
52	9595	90.6	179.1	7391.15	2511.80	-2510.78	71.70	0.99	-16.15	5.89	178.36	2511.81	0.84	-0.53					
53	9690	90.2	178.7	7390.49	2606.79	-2605.76	73.52	0.60	-15.49	7.00	178.38	2606.80	-0.42	-0.42					



SURVEY CALCULATION PROGRAM

v1.00 02

TARGET DETAILS

OPERATOR:		Marbob Energy				Supervisors:					TARGET N-S				Directional														
WELL:		Big Papi Fed Com #1H				Joe Hargrove					TARGET E-W																		
LOCATION:		Eddy Co., Nm				Phillip Smith					TARGET RADIUS																		
JOB NUMBER:		WT-10508				Nic Black					TARGET DISPLACEMENT																		
COMMENTS:												TARGET CLOSURE																	
												MAG DEC.(-/+)		7.84		TARGET TVD		Horizontal		7375.00									
												GRID CORR.(-/+)		-0.18		DIP AZ				178.23									
												TOTAL CORR.(-/+)		7.66		DIP DEG UP+/DN-				0.00									
DATE: 07/12/11				TIME: 11:00 AM						▼		TARGET INCLINATION				90.00													
MINIMUM CURVATURE CALCULATIONS(SPE-3362)										PROPOSED DIRECTION			178.23		TARGET TRACKING TO CENTER		CLOSURE		CLOSURE		BUILD		WALK						
SVY				TRUE				DLS/				ABOVE(+)		RIGHT(+)		DIR		DISTANCE		RATE/		RATE/							
NUM		MD		INC		AZM		TVD		SECT		N-S		E-W		100		BELOW(-)		LEFT(-)		(DEG AZ)		(FEET)		%/100'		%/100'	
54		9785		90.3		177.4		7390.07		2701.79		-2700.71		76.76		1.37		-15.07		6.70		178.37		2701.80		0.11		-1.37	
55		9881		89.7		176.9		7390.07		2797.77		-2796.59		81.53		0.81		-15.07		4.89		178.33		2797.77		-0.63		-0.52	
56		9977		91.2		177.6		7389.32		2893.75		-2892.47		86.13		1.72		-14.32		3.25		178.29		2893.75		1.56		0.73	
57		10072		91.7		177.4		7386.91		2988.71		-2987.35		90.28		0.57		-11.91		2.04		178.27		2988.71		0.53		-0.21	
58		10167		90.9		177.8		7384.76		3083.68		-3082.24		94.25		0.94		-9.76		0.99		178.25		3083.68		-0.84		0.42	
59		10263		90.1		177.8		7383.92		3179.67		-3178.16		97.94		0.83		-8.92		0.27		178.23		3179.67		-0.83		0.00	
60		10358		90.4		178.0		7383.51		3274.67		-3273.10		101.42		0.38		-8.51		-0.27		178.23		3274.67		0.32		0.21	
61		10453		92.4		179.2		7381.19		3369.63		-3368.04		103.74		2.45		-6.19		0.34		178.24		3369.63		2.11		1.26	
62		10516		90.9		178.7		7379.37		3432.60		-3431.00		104.90		2.51		-4.37		1.13		178.25		3432.60		-2.38		-0.79	
63		10611		91.3		179.2		7377.55		3527.58		-3525.96		106.64		0.67		-2.55		2.32		178.27		3527.58		0.42		0.53	
64		10706		90.2		178.4		7376.30		3622.56		-3620.93		108.63		1.43		-1.30		3.27		178.28		3622.56		-1.16		-0.84	
65		10802		89.8		178.4		7376.30		3718.56		-3716.90		111.31		0.42		-1.30		3.55		178.28		3718.56		-0.42		0.00	
66		10897		90.4		178.3		7376.14		3813.56		-3811.86		114.04		0.64		-1.14		3.75		178.29		3813.56		0.63		-0.11	
67		10992		90.7		178.0		7375.23		3908.55		-3906.80		117.11		0.45		-0.23		3.62		178.28		3908.56		0.32		-0.32	
68		11087		89.6		178.1		7374.98		4003.55		-4001.74		120.34		1.16		0.02		3.32		178.28		4003.55		-1.16		0.11	
69		11151		88.3		176.8		7376.15		4067.53		-4065.67		123.19		2.87		-1.15		2.45		178.26		4067.53		-2.03		-2.03	
70		11215		88.8		177.2		7377.77		4131.50		-4129.56		126.54		1.00		-2.77		1.08		178.24		4131.50		0.78		0.62	
71		11278		89.4		177.5		7378.76		4194.48		-4192.48		129.45		1.06		-3.76		0.11		178.23		4194.48		0.95		0.48	
72		11373		89.7		177.0		7379.51		4289.46		-4287.37		134.01		0.61		-4.51		-1.52		178.21		4289.46		0.32		-0.53	
73		11469		89.4		176.6		7380.26		4385.43		-4383.22		139.36		0.52		-5.26		-3.91		178.18		4385.43		-0.31		-0.42	
74		11564		88.8		177.0		7381.75		4480.39		-4478.06		144.67		0.76		-6.75		-6.28		178.15		4480.39		-0.63		0.42	
75		11689		88.1		176.7		7385.13		4605.31		-4602.82		151.53		0.61		-10.13		-9.29		178.11		4605.32		-0.56		-0.24	
PBHL		11740		88.1		176.7		7386.82		4656.26		-4653.71		154.47		0.00		-11.82		-10.65		178.10		4656.27		0.00		0.00	

		SURVEY CALCULATION PROGRAM				TARGET DETAILS			
		v1.00.02							
OPERATOR:		Marbob Energy		Supervisors:				TARGET N-S Directional TARGET E-W TARGET RADIUS TARGET DISPLACEMENT TARGET CLOSURE	
WELL:		Big Papi Fed Com #1H		Joe Hargrove					
LOCATION:		Eddy Co., Nm		Phillip Smith					
JOB NUMBER:		WT-10508		Nic Black					
		COMMENTS:							
				MAG DEC.(-/+)		7.84		TARGET TVD Horizontal 7375.00 DIP AZ 178.23 DIP DEG UP+/DN- 0.00	
				GRID CORR.(-/+)		-0.18			
				TOTAL CORR.(-/+)		7.66			
DATE: 07/12/11		TIME: 11:00 AM						TARGET INCLINATION 90.00	
MINIMUM CURVATURE CALCULATIONS(SPE-3362)				PROPOSED DIRECTION		178.23		TARGET TRACKING TO CENTER	
SVY	MD	INC	TRUE			DLS/	ABOVE(+)	RIGHT(+)	CLOSURE CLOSURE BUILD WALK DIR DISTANCE RATE/ RATE/ (DEG AZ) (FEET) %/100' %/100'
NUM			AZM	TVD	SECT	N-S E-W	100	BELOW(-) LEFT(-)	