

FEB 05 2018



Survey Calculation Program

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CLIENT: Mack Energy Cooperation

WELL: Rudolph Federal #2

COUNTY: Eddy County **30.015-44499**

RIG: Silver Oak #10

MWD OPERATORS: Sean Sivannarath / Jared Jackson

DIRECTIONAL DRILLERS: Greg Hickey / Bart Davis

MAGNETIC DECLINATION: 7.32

JOB NUMBER: NM017433MK

Vertical Section Angle:

89.58

Minimum Curvature Calculation

Svy Type	Sur #	Meas. Depth	Inc.	Azm.	T.V.D.	+N / -S	+E / -W	Ver.Sect.	DLS	CL
Surface	TIE IN	845.00	0.90	310.80	844.96	2.49	0.98	0.00	0.00	000 F
MWD	1	884	1.00	315.90	883.95	2.93	0.51	0.53	0.34	39
MWD	2	933	1.00	310.50	932.95	3.52	-0.11	-0.09	0.19	49
MWD	3	981	0.80	283.00	980.94	3.87	-0.76	-0.73	0.98	48
MWD	4	1000	0.90	230.40	999.94	3.80	-1.00	-0.97	3.99	19
MWD	5	1030	1.60	182.50	1029.93	3.23	-1.20	-1.18	4.00	30
MWD	6	1070	2.20	162.60	1069.91	1.94	-1.00	-0.98	2.21	40
MWD	7	1135	2.20	156.50	1134.86	-0.39	-0.12	-0.13	0.36	65
MWD	8	1164	2.00	156.70	1163.84	-1.37	0.30	0.29	0.69	29
MWD	9	1258	1.60	146.40	1257.80	-3.97	1.67	1.64	0.55	94
MWD	10	1327	1.60	137.90	1326.77	-5.48	2.85	2.81	0.34	69
MWD	11	1421	3.00	122.80	1420.69	-7.79	5.80	5.74	1.61	94
MWD	12	1468	8.80	100.70	1467.43	-9.13	10.37	10.30	13.03	47
MWD	13	1515	14.40	95.70	1513.45	-10.37	19.73	19.65	12.09	47
MWD	14	1609	26.00	95.80	1601.52	-13.63	51.96	51.86	12.34	94
MWD	15	1645	31.40	95.40	1633.09	-15.31	69.16	69.05	15.01	36
MWD	16	1703	38.30	91.90	1680.66	-17.33	102.21	102.08	12.38	58
MWD	17	1740	42.50	88.60	1708.83	-17.41	126.18	126.05	12.74	37
MWD	18	1798	47.60	92.20	1749.80	-17.75	167.20	167.07	9.83	58
MWD	19	1833	50.00	93.50	1772.86	-19.06	193.50	193.35	7.40	35
MWD	20	1860	53.20	93.00	1789.62	-20.26	214.62	214.47	11.94	27
MWD	21	1887	57.10	92.30	1805.05	-21.28	236.75	236.59	14.60	27
MWD	22	1919	62.10	90.20	1821.24	-21.87	264.33	264.17	16.62	32
MWD	23	1964	67.80	88.70	1840.29	-21.47	305.08	304.92	13.02	45
MWD	24	1998	71.70	88.10	1852.05	-20.57	336.96	336.80	11.59	34
MWD	25	2031	76.00	87.40	1861.23	-19.33	368.63	368.48	13.19	33
MWD	26	2064	79.80	87.40	1868.15	-17.87	400.85	400.71	11.52	33
MWD	27	2093	83.20	86.60	1872.43	-16.36	429.49	429.36	12.04	29
MWD	28	2187	87.50	88.20	1880.05	-12.12	523.06	522.96	4.88	94
MWD	29	2281	90.60	89.30	1881.61	-10.07	617.01	616.92	3.50	94
MWD	30	2375	92.00	86.80	1879.48	-6.87	710.92	710.86	3.05	94
MWD	31	2469	90.40	90.30	1877.51	-4.50	804.86	804.80	4.09	94
MWD	32	2563	89.80	89.20	1877.34	-4.09	898.85	898.80	1.33	94
MWD	33	2657	90.30	88.90	1877.26	-2.53	992.84	992.79	0.62	94
MWD	34	2743	88.70	87.20	1878.01	0.40	1078.78	1078.76	2.71	86
MWD	35	2872	88.30	86.20	1881.39	7.82	1207.52	1207.55	0.83	129
MWD	36	2967	87.60	87.70	1884.79	12.87	1302.32	1302.38	1.74	95
MWD	37	3061	87.90	87.30	1888.48	16.97	1396.16	1396.25	0.53	94
MWD	38	3155	89.10	88.80	1890.94	20.17	1490.07	1490.18	2.04	94
MWD	39	3250	88.80	87.10	1892.68	23.57	1584.99	1585.12	1.82	95
MWD	40	3344	87.70	89.40	1895.55	26.44	1678.89	1679.04	2.71	94
MWD	41	3438	89.00	88.80	1898.26	27.91	1772.84	1773.00	1.52	94
MWD	42	3469	89.30	88.60	1898.72	28.61	1803.83	1803.99	1.16	31
MWD	43	3530	90.30	88.60	1898.93	30.10	1864.81	1864.98	1.64	61
MWD	44	3626	91.70	88.90	1897.25	32.20	1960.77	1960.95	1.49	96
MWD	45	3719	90.60	90.30	1895.39	32.85	2053.75	2053.93	1.91	93

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MWD	46	3815	88.70	91.70	1895.97	31.17	2149.72	2149.89	2.46	96
MWD	47	3911	87.80	91.20	1898.90	28.74	2245.65	2245.80	1.07	96
MWD	48	3933	88.10	90.50	1899.69	28.42	2267.63	2267.78	3.46	22
PTB	49	4000	88.10	90.50	1901.91	27.83	2334.59	2334.73	0.00	67