

SURVEY CALCULATION PROGRAM															TARGET DETAILS			
MINIMUM CURVATURE CALCULATIONS(SPE-3362)															v1.00.02			
	OPERATOR: Noble Energy Inc.				Supervisors:								TARGET N-S Directional					
	WELL: SLW Ranch B12-69-1HN				DD-Justin Webb								TARGET E-W					
	LOCATION: Weld County, CO				MWD-Bob Kubistek								TARGET RADIUS					
	JOB NUMBER: RM-13266		Sec-Twp-rge		Sec 1, T5N, R64W, 6th PM								TARGET DISPLACEMENT					
	COMMENTS												TARGET CLOSURE					
													MAG DEC.(-/+)		8.48	TARGET TVD Horizontal		6650.00
								GRID CORR.(-/+)		-0.65	DIP AZ		248.55					
								TOTAL CORR.(-/+)		7.83	DIP DEG UP+/DN-		0.00					
												TARGET INCLINATION		90.00				
DATE: 04/09/13		TIME: 3:37 PM																
TARGET DIP		0.00		ANGLE		90.00		LINE		6,650.00		DIRECTION		248.55				
COMMENTS		SUR										TARGET TRACKING						
MWD TEMP.		#		MD		INC		AZM		TVD		SECT		N-S				

		Survey														
169°	67	7060	71.5	262.2	6580.96	397.02	-1364.17	109.42	14.6	69.0	-1309.7	175.41	1368.55	-2.20	14.46	50
	68	7105	71.5	268.2	6595.25	437.88	-1367.74	66.92	12.6	54.8	-1297.5	177.20	1369.37	0.00	12.64	45
	69	7154	73.7	271.5	6609.91	481.44	-1367.85	20.17	7.8	40.1	-1280.5	179.16	1368.00	4.49	6.43	49
	70	7199	80.3	271.7	6620.02	521.76	-1366.63	-23.64	14.7	30.0	-1263.3	180.99	1366.83	14.67	0.43	45
	71	7249	85.3	273.3	6626.29	567.08	-1364.46	-73.18	10.5	23.7	-1243.2	183.07	1366.42	10.00	3.17	50
	72	7261	85.6	273.3	6627.24	577.94	-1363.77	-85.12	2.5	22.8	-1238.2	183.57	1366.42	2.50	0.00	12
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