DIRECTIONAL SURVEY CALCULATION

MINIMUM CURVATURE METHOD

Well Name	Target Direction	Slot Coordinate	N / S	E / W	Hole Size	Calculation by	Date
Kelly Danielle 3119	1.10						9/18/12
Job Number	**Type of Survey**	**Tie-in Point**				**Directional Co.**	
0							

Meaured Depth	Hole Angle	Hole Direction	Course Length	True Vertical Depth	Vertical Section	Total Coordinate N + / S -	Total Coordinate E + / W -	Dogleg Severity	Build Up °/100 ft	Walk/ °/100 ft
0	0	0	0	0.00	0.00			<< TIE-IN POINT >>		
0	0	0		0.00	0.00	0.00	0.00			
1164	1	287	1164	1,163.99	1.38	1.48	-4.86	0.04	0.04	24.65
1633	0	251	469	1,632.97	1.52	1.67	-7.98	0.07	-0.04	-7.68
2108	1	161	475	2,107.96	-1.64	-1.48	-8.21	0.16	0.08	-18.93
2584	1	96	476	2,583.93	-4.61	-4.53	-4.37	0.16	0.00	-13.68
3059	1	109	475	3,058.90	-5.77	-5.79	1.25	0.03	0.00	2.84
3534	0	141	475	3,533.88	-7.95	-8.04	5.03	0.09	-0.06	6.65
4009	1	101	475	4,008.86	-9.56	-9.71	8.11	0.07	0.02	-8.51
4246	1	111	237	4,245.85	-10.15	-10.35	10.29	0.06	0.04	4.39
4295	1	345	49	4,294.85	-10.03	-10.23	10.47	2.00	-0.20	477.76
4327	2	348	32	4,326.84	-9.33	-9.53	10.31	5.00	5.00	7.50
4358	4	347	31	4,357.79	-7.65	-7.84	9.92	7.10	7.10	-1.94
4390	7	352	32	4,389.64	-4.64	-4.82	9.38	7.62	7.50	14.69
4422	9	356	32	4,421.35	-0.37	-0.54	8.92	6.77	6.56	12.50
4453	9	357	31	4,451.97	4.44	4.28	8.59	1.07	0.97	2.90
4485	11	357	32	4,483.48	9.98	9.82	8.28	5.63	5.63	1.56
4517	14	357	32	4,514.76	16.72	16.57	7.90	8.13	8.13	-0.94
4548	16	356	31	4,544.73	24.61	24.47	7.37	8.43	8.39	-3.23
4580	18	357	32	4,575.28	34.07	33.94	6.77	7.27	7.19	3.75
4612	20	357	32	4,605.49	44.59	44.48	6.20	5.31	5.31	0.31
4643	22	358	31	4,634.41	55.73	55.63	5.71	6.54	6.45	2.90
4675	24	360	32	4,663.81	68.34	68.25	5.43	7.45	7.19	5.00
4707	27	360	32	4,692.69	82.12	82.03	5.38	6.91	6.88	1.56
4738	29	1	31	4,720.13	96.55	96.46	5.52	7.60	7.42	#######
4770	31	1	32	4,747.89	112.45	112.36	5.84	5.63	5.63	0.31
4802	33	1	32	4,775.10	129.29	129.19	6.22	6.57	6.56	0.63
4834	34	2	32	4,801.76	147.00	146.89	6.70	5.03	5.00	0.94
4865	36	2	31	4,827.10	164.84	164.73	7.26	4.85	4.84	0.65
4897	38	1	32	4,852.66	184.10	183.98	7.68	7.30	6.88	-4.06
4928	40	360	31	4,876.70	203.66	203.55	7.74	6.97	6.77	1,158.71
4960	43	359	32	4,900.66	224.86	224.75	7.56	8.22	8.12	-1.88
4992	46	359	32	4,923.58	247.17	247.08	7.14	9.13	9.06	-1.56
5023	48	359	31	4,944.70	269.84	269.76	6.65	8.71	8.71	0.32
5055	50	359	32	4,965.67	293.99	293.93	6.21	4.12	4.06	0.94
5087	50	359	32	4,986.35	318.40	318.34	5.74	1.00	0.31	-1.25
5119	50	358	32	5,006.96	342.85	342.81	5.10	1.14	0.63	-1.25
5150	50	358	31	5,026.91	366.55	366.53	4.35	0.59	-0.32	-0.65
5182	50	358	32	5,047.46	391.05	391.05	3.54	0.94	0.94	0.00
5214	50	358	32	5,068.03	415.52	415.55	2.64	1.57	-1.25	-1.25
5245	50	358	31	5,087.97	439.21	439.26	1.77	1.38	0.97	1.29
5277	53	358	32	5,107.87	464.24	464.30	0.94	9.06	9.06	0.00
5308	57	359	31	5,125.63	489.61	489.70	0.26	13.35	13.23	2.26
5340	61	360	32	5,141.98	517.09	517.19	-0.12	13.61	13.44	2.50
5372	66	1	32	5,156.21	545.74	545.85	-0.07	14.03	13.75	#######
5403	68	2	31	5,168.35	574.27	574.36	0.51	8.11	7.42	3.55
5435	70	2	32	5,179.92	604.10	604.18	1.39	4.38	4.38	0.00
5465	71	2	30	5,190.05	632.33	632.40	2.28	5.04	5.00	0.67
5498	74	2	33	5,200.09	663.76	663.82	3.40	7.93	7.88	0.91
5530	78	2	32	5,208.07	694.74	694.78	4.48	12.25	12.19	-1.25
5562	80	2	32	5,214.29	726.13	726.15	5.44	8.13	8.12	-0.31
5593	83	1	31	5,218.97	756.77	756.78	6.27	7.80	7.74	-0.97
5684	88	2	91	5,226.90	847.38	847.36	9.12	5.56	5.49	0.88
5715	88	2	31	5,228.23	878.35	878.31	10.26	0.72	0.32	-0.65
5747	89	2	32	5,229.09	910.33	910.28	11.37	5.31	5.31	0.00
5779	92	2	32	5,228.87	942.33	942.26	12.46	6.88	6.88	-0.31
5842	93	2	63	5,226.23	1,005.26	1,005.17	14.49	2.86	2.86	-0.16
5934	93	1	92	5,220.94	1,097.11	1,096.99	16.50	1.19	0.00	-1.20

DIRECTIONAL SURVEY CALCULATION

MINIMUM CURVATURE METHOD

Well Name	Target Direction	Slot Coordinate	N / S	E / W	Hole Size	Calculation by	Date
Kelly Danielle 311S	1.10						9/18/12
Job Number	**Type of Survey**	**Tie-in Point**				**Directional Co.**	
0							

Meaured Depth	Hole Angle	Hole Direction	Course Length	True Vertical Depth	Vertical Section	Total Coordinate N + / S -	Total Coordinate E + / W -	Dogleg Severity	Build Up °/100 ft	Walk/ °/100 ft
0	0	0	0	0.00	0.00			<< TIE-IN POINT >>		
6027	92	1	93	5,216.96	1,190.02	1,189.90	17.87	1.86	-1.83	0.32
6122	92	1	95	5,213.89	1,284.97	1,284.83	19.61	0.54	0.53	0.11
6215	89	1	93	5,212.92	1,377.95	1,377.80	21.07	3.25	-3.23	-0.43
6306	89	2	91	5,214.11	1,468.94	1,468.77	23.22	1.47	0.33	1.43
6401	90	2	95	5,214.44	1,563.92	1,563.70	26.87	0.94	0.84	0.42
6496	88	1	95	5,215.69	1,658.90	1,658.63	29.85	2.37	-2.00	-1.26
6587	89	0	91	5,217.51	1,749.88	1,749.61	31.12	1.49	1.21	-0.88
6682	91	1	95	5,217.51	1,844.87	1,844.60	31.87	1.27	1.26	0.11
6777	93	2	95	5,214.94	1,939.83	1,939.55	33.52	2.26	2.00	1.05
6868	93	2	91	5,210.58	2,030.72	2,030.40	36.14	0.64	0.55	0.33
6928	93	1	60	5,207.59	2,090.65	2,090.31	37.50	1.74	-0.50	-1.67
7053	94	1	125	5,200.29	2,215.43	2,215.09	38.91	1.07	1.04	-0.24
7147	92	0	94	5,195.78	2,309.30	2,308.97	39.57	2.67	-2.66	-0.21
7239	90	1	92	5,194.98	2,401.29	2,400.96	40.21	2.18	-2.17	0.22
7333	91	0	94	5,194.57	2,495.28	2,494.95	40.87	1.61	1.60	-0.21
7428	90	2	95	5,193.65	2,590.27	2,589.93	42.61	1.84	-0.95	1.58
7523	91	1	95	5,193.07	2,685.27	2,684.90	45.01	0.91	0.53	-0.74
7618	92	1	95	5,191.17	2,780.24	2,779.86	46.50	1.23	1.16	-0.42
7713	92	1	95	5,187.94	2,875.19	2,874.80	47.91	0.61	0.53	0.32
7808	92	1	95	5,184.87	2,970.14	2,969.73	49.82	0.80	-0.74	0.32
7903	90	1	95	5,183.79	3,065.13	3,064.70	51.73	1.82	-1.79	-0.32
7998	91	1	95	5,182.88	3,160.12	3,159.68	53.47	1.58	1.58	0.11
8093	90	2	95	5,181.80	3,255.11	3,254.63	56.28	1.86	-1.37	1.26
8188	90	2	95	5,181.80	3,350.09	3,349.57	59.60	0.63	0.00	-0.63
8283	91	1	95	5,180.81	3,445.09	3,444.54	61.59	1.64	1.26	-1.05
8378	92	2	95	5,178.57	3,540.06	3,539.49	63.41	0.90	0.32	0.84
8473	90	3	95	5,176.99	3,635.03	3,634.42	66.73	1.56	-1.16	1.05
8568	92	3	95	5,175.25	3,729.98	3,729.31	70.87	1.37	1.37	0.00
8688	90	2	120	5,173.37	3,849.93	3,849.18	76.00	1.34	-1.33	-0.08
8783	89	2	95	5,174.03	3,944.92	3,944.12	79.23	1.42	-1.05	-0.95
8878	89	1	95	5,175.77	4,039.90	4,039.08	81.30	0.61	-0.32	-0.53
8973	90	1	95	5,176.68	4,134.89	4,134.07	82.55	1.47	1.37	-0.53
9068	91	0	95	5,176.10	4,229.88	4,229.06	83.29	0.54	0.53	-0.11
9163	91	360	95	5,174.86	4,324.86	4,324.06	83.63	0.53	0.32	378.53
9257	91	360	94	5,173.22	4,418.83	4,418.04	83.30	0.48	0.21	-0.43
9352	91	360	95	5,171.31	4,513.77	4,513.02	82.63	0.11	0.11	0.00
9447	91	358	95	5,169.16	4,608.68	4,607.98	80.98	1.28	0.21	-1.26
9543	92	358	96	5,166.56	4,704.53	4,703.90	78.05	0.44	0.31	-0.31
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			

DIRECTIONAL SURVEY CALCULATION

MINIMUM CURVATURE METHOD

Well Name	Target Direction	Slot Coordinate	N / S	E / W	Hole Size	Calculation by	Date
Kelly Danielle 3119	1.10						9/18/12
Job Number	**Type of Survey**	**Tie-in Point**				**Directional Co.**	
0							

Meaured Depth	Hole Angle	Hole Direction	Course Length	True Vertical Depth	Vertical Section	Total Coordinate N + / S -	Total Coordinate E + / W -	Dogleg Severity	Build Up °/100 ft	Walk/ °/100 ft
0	0	0	0	0.00	0.00			<< TIE-IN POINT >>		
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			

DIRECTIONAL SURVEY CALCULATION

MINIMUM CURVATURE METHOD

Well Name	Target Direction	Slot Coordinate	N / S	E / W	Hole Size	Calculation by	Date
Kelly Danielle 311S	1.10						9/18/12
Job Number	**Type of Survey**	**Tie-in Point**				**Directional Co.**	
0							

Meaured Depth	Hole Angle	Hole Direction	Course Length	True Vertical Depth	Vertical Section	Total Coordinate N + / S -	Total Coordinate E + / W -	Dogleg Severity	Build Up °/100 ft	Walk/ °/100 ft
0	0	0	0	0.00	0.00			<< TIE-IN POINT >>		
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			
0	0	0		5,166.56	4,704.53	4,703.90	78.05			