

Directional Survey Calculations	Measured Depth (ft)	Sub-Sea Incl. (deg)	Vertical Azim. (ft)	True Vert Depth (ft)	Northings (+) Southings (-) (ft)	Eastings (+) Westings (-) (ft)	Vert Section (ft)	DLS deg/100' (deg)	FNL	FSL	FWL	FEL
	SHL	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5074	200	3318
BHL	9140	92.07	0.58	4721.53	4692.12	-164.84	4694.75	0.33	335	4894	3268	1933
Miss Entry	4940	61.53	357.22	4735.72	554.98	-39.41	556.20	11.05	4519	756	3292	1997
Top Perf	4964	64.28	357.33	4746.67	576.30	-40.42	577.55	11.41	4498	777	3291	1997
Bottom Perf	9022	92.50	0.91	4724.55	4618.20	-165.86	4620.95	1.92	455	4820	3265	1937

Survey Points	X	Y	X	Y	North Line slope	m
NW Corner XY Coord	2092604	139968	2096045	134924	0.0088615	
SW Corner XY Coord	2092733	134692			-0.0457219	
NE Corner XY Coord	2097795	140014			0.0096172	
SE Corner XY Coord	2098036	134743			-0.0244503	

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		0	0.0	0	0	0	0	0	0	5074	200	3318
	15	0	0	15	0	0	0	0	5074	200	3318	1983
	250	0.75	318.36	249.99329	1.1	-1.0	1.2	0.32	5073	201	3317	1984
	500	1	318.36	499.96354	4.0	-3.6	4.2	0.10	5070	204	3314	1986
	743	0.75	318.36	742.93463	6.8	-6.0	7.0	0.10	5068	207	3312	1988
	820	0.29	318.36	819.93125	7.3	-6.5	7.6	0.60	5067	208	3311	1989
	1004	0.15	211.17	1003.9304	7.4	-6.9	7.7	0.20	5067	208	3311	1989
	1096	0.09	163.77	1095.9302	7.3	-7.0	7.6	0.12	5067	207	3311	1989
	1187	0.09	231.6	1186.93	7.2	-7.0	7.5	0.11	5067	207	3311	1989
	1279	0.28	180.27	1278.9294	6.9	-7.1	7.2	0.25	5068	207	3311	1989
	1371	0.15	174.8	1370.9	6.5	-7.0	6.9	0.14	5068	207	3311	1989
	1463	0.31	106.63	1462.9	6.3	-6.8	6.7	0.32	5068	207	3311	1989
	1559	0.47	105.63	1558.9	6.2	-6.2	6.4	0.17	5068	206	3312	1989
	1650	0.07	82.62	1649.9	6.1	-5.8	6.3	0.45	5068	206	3312	1988
	1742	0.17	356.96	1741.9	6.2	-5.7	6.5	0.19	5068	206	3312	1988
	1836	0.2	329.55	1835.9	6.5	-5.8	6.8	0.10	5068	207	3312	1988
	1931	0.1	208.53	1930.9	6.6	-5.9	6.8	0.28	5068	207	3312	1988
	2025	0.41	45.29	2024.9	6.7	-5.7	7.0	0.54	5068	207	3312	1988
	2120	0.37	344.31	2119.9	7.3	-5.6	7.5	0.42	5067	207	3312	1988
	2215	0.41	57.44	2214.9	7.7	-5.4	8.0	0.49	5067	208	3313	1988
	2310	0.33	33.55	2309.9	8.2	-4.9	8.4	0.18	5066	208	3313	1987
	2405	0.06	123.56	2404.9	8.4	-4.7	8.6	0.35	5066	209	3313	1987
	2500	0.34	315.71	2499.9	8.5	-4.9	8.7	0.42	5066	209	3313	1987
	2594	0.22	334.35	2593.9	8.9	-5.2	9.1	0.16	5066	209	3313	1987
	2689	0.25	40.28	2688.9	9.2	-5.1	9.4	0.27	5065	209	3313	1987
	2784	0.06	75.33	2783.9	9.4	-4.9	9.6	0.21	5065	210	3313	1987
	2879	0.19	196.3	2878.9	9.2	-4.9	9.5	0.24	5065	209	3313	1987
	2974	0.25	54.54	2973.9	9.2	-4.8	9.4	0.44	5065	209	3313	1987
	3069	0.23	67.51	3068.9	9.4	-4.4	9.6	0.06	5065	210	3313	1987
	3164	0.46	71.48	3163.9	9.6	-3.9	9.8	0.24	5065	210	3314	1986
	3258	0.37	164.88	3257.9	9.4	-3.5	9.6	0.65	5065	210	3314	1986
	3544	0.17	311.23	3543.9	8.8	-3.6	9.0	0.18	5066	209	3314	1986
	3638	0.4	263.16	3637.9	8.9	-4.0	9.0	0.33	5066	209	3314	1986
Top of Tangent @ 4683'	3733	0.42	243.22	3732.9	8.7	-4.6	8.9	0.15	5066	209	3313	1987
	3828	0.69	249.14	3827.9	8.3	-5.5	8.6	0.29	5066	209	3312	1988
	3923	4.13	349.42	3922.8	11.5	-6.6	11.8	4.53	5063	212	3311	1989
	3955	6.24	354.03	3954.7	14.3	-7.0	14.6	6.72	5060	215	3311	1989
	3986	8.65	357.58	3985.4	18.3	-7.3	18.7	7.91	5056	219	3311	1989
Btm of Tangent @ 4841'	4018	10.89	359.35	4017.0	23.8	-7.4	24.1	7.06	5051	224	3311	1989
	4050	12.07	358.46	4048.3	30.1	-7.6	30.5	3.73	5044	230	3311	1989
	4081	13.34	358.22	4078.6	37.0	-7.8	37.3	4.10	5037	237	3311	1989
	4113	14.2	358.72	4109.6	44.6	-8.0	44.9	2.71	5030	245	3311	1989
	4144	16.6	356.98	4139.5	52.8	-8.3	53.1	7.88	5022	253	3311	1989
	4176	20.01	354.69	4169.9	62.8	-9.0	63.2	10.89	5012	263	3310	1989
	4208	23.69	352.7	4199.6	74.6	-10.3	75.0	11.73	5000	275	3309	1990
	4240	26.32	352.19	4228.6	88.1	-12.1	88.5	8.25	4986	288	3308	1991
	4271	28.19	352.6	4256.1	102.1	-14.0	102.7	6.06	4972	302	3306	1992
	4303	29.07	352.92	4284.2	117.3	-15.9	117.9	2.79	4957	318	3305	1993
	4334	29.41	353.43	4311.3	132.4	-17.7	133.0	1.36	4942	333	3303	1994
	4366	30.2	354.94	4339.1	148.2	-19.3	148.9	3.41	4926	349	3302	1995
	4398	31.75	357.05	4366.5	164.6	-20.5	165.4	5.91	4910	365	3301	1996
	4430	33.96	359	4393.4	182.0	-21.1	182.7	7.66	4892	382	3301	1995
	4461	36.02	359.6	4418.8	199.7	-21.3	200.5	6.74	4875	400	3301	1995
	4493	38.88	359.8	4444.2	219.2	-21.4	219.9	8.95	4855	420	3302	1994
	4525	40.42	359.08	4468.8	239.6	-21.6	240.3	5.02	4835	440	3302	1993
	4556	42.08	358.53	4492.1	260.0	-22.0	260.8	5.48	4814	460	3302	1993
	4588	44.79	358.01	4515.3	282.0	-22.7	282.8	8.54	4792	482	3302	1993
	4619	47.03	357.42	4536.9	304.3	-23.6	305.0	7.35	4770	505	3302	1992
	4683	49.65	356.55	4579.5	352.0	-26.1	352.9	4.22	4722	552	3300	1993
	4730	49.47	356.06	4609.9	387.7	-28.4	388.6	0.88	4687	588	3299	1993
	4778	50.07	355.94	4640.9	424.3	-31.0	425.2	1.26	4650	625	3297	1994
	4841	51.31	355.62	4680.9	472.9	-34.6	474.0	2.01	4601	673	3295	1996
	4872	54.19	356.35	4699.6	497.5	-36.3	498.6	9.48	4577	698	3294	1996
	4904	57.56	356.92	4717.6	523.9	-37.8	525.1	10.63	4550	724	3293	1997
	4936	61.07	357.2	4733.9	551.4	-39.2	552.6	10.99	4523	752	3292	1997

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								FNL	FSL	FWL	FEL
4967	64.62	357.34	4748.0	579.0	-40.6	580.2	11.46	4495	780	3291	1997
4999	68.28	356.64	4760.8	608.3	-42.1	609.5	11.61	4466	809	3290	1997
5030	70.62	356.13	4771.7	637.2	-43.9	638.6	7.70	4437	838	3289	1998
5062	72.36	356.15	4781.9	667.5	-46.0	668.9	5.44	4407	868	3288	1998
5093	74.6	355.6	4790.7	697.1	-48.1	698.6	7.42	4377	898	3287	1999
5125	77.47	355.32	4798.4	728.1	-50.6	729.6	9.01	4346	929	3285	2000
5157	79.57	355.03	4804.8	759.3	-53.2	761.0	6.62	4315	960	3283	2001
5188	82.1	355.04	4809.7	789.8	-55.9	791.6	8.16	4284	991	3281	2002
5220	84.2	354.96	4813.5	821.5	-58.6	823.3	6.57	4252	1022	3279	2004
5252	86.8	354.67	4816.0	853.2	-61.5	855.2	8.18	4221	1054	3277	2005
5312	89.54	355.28	4817.9	913.0	-66.8	915.1	4.68	4161	1114	3273	2008
5407	90.25	355.69	4818.1	1007.7	-74.2	1010.0	0.86	4066	1209	3268	2011
5470	91.3	354.86	4817.3	1070.5	-79.4	1073.0	2.12	4003	1271	3264	2013
5533	91.77	358.26	4815.6	1133.3	-83.2	1135.9	5.45	3940	1334	3262	2014
5627	91.68	357.1	4812.7	1227.2	-87.0	1229.9	1.24	3847	1428	3261	2014
5722	91.76	359.29	4809.9	1322.1	-90.0	1324.8	2.31	3752	1523	3260	2012
5817	91.11	357.18	4807.5	1417.0	-92.9	1419.8	2.32	3657	1618	3259	2011
5912	91.38	355.51	4805.5	1511.8	-99.0	1514.7	1.78	3562	1713	3256	2013
6007	90.81	354.1	4803.6	1606.4	-107.6	1609.6	1.60	3467	1808	3249	2017
6102	90.25	353.14	4802.8	1700.8	-118.1	1704.4	1.17	3373	1902	3241	2023
6197	91.2	355.27	4801.6	1795.3	-127.7	1799.3	2.45	3278	1997	3234	2028
6291	90.59	358.38	4800.1	1889.1	-132.9	1893.2	3.37	3184	2091	3231	2029
6386	91.42	0.01	4798.4	1984.1	-134.3	1988.2	1.93	3089	2186	3232	2026
6481	91.11	0.27	4796.3	2079.1	-134.0	2083.0	0.43	2994	2281	3234	2022
6576	90.83	0.16	4794.7	2174.1	-133.7	2177.9	0.32	2899	2375	3237	2017
6671	91.52	359.27	4792.8	2269.0	-134.1	2272.8	1.19	2804	2470	3239	2013
6765	92.03	358.71	4789.9	2363.0	-135.8	2366.7	0.81	2710	2564	3240	2010
6860	91.62	358.37	4786.8	2457.9	-138.2	2461.6	0.56	2615	2659	3240	2009
6955	90.93	359	4784.7	2552.8	-140.4	2556.6	0.98	2520	2754	3240	2006
7050	92.67	359.9	4781.7	2647.8	-141.3	2651.5	2.06	2425	2849	3241	2003
7145	92.04	357.69	4777.8	2742.7	-143.3	2746.4	2.42	2331	2944	3241	2001
7240	92.19	358.42	4774.3	2837.6	-146.5	2841.3	0.78	2236	3039	3241	2000
7334	92.07	358.24	4770.8	2931.5	-149.3	2935.2	0.23	2142	3133	3240	1998
7429	90.96	357.39	4768.3	3026.4	-152.9	3030.2	1.47	2047	3228	3239	1997
7524	90.09	357.75	4767.4	3121.3	-156.9	3125.2	0.99	1952	3323	3237	1997
7619	92.26	359.31	4765.5	3216.2	-159.4	3220.1	2.81	1857	3418	3237	1995
7714	91.58	358.78	4762.3	3311.1	-160.9	3315.0	0.91	1762	3513	3238	1992
7809	90.52	358.81	4760.6	3406.1	-162.9	3410.0	1.12	1667	3608	3238	1990
7904	90.58	359.37	4759.7	3501.1	-164.4	3504.9	0.59	1572	3703	3239	1987
7999	89.63	358.67	4759.5	3596.1	-166.1	3599.9	1.24	1477	3798	3240	1984
8093	91.23	358.67	4758.8	3690.0	-168.2	3693.9	1.70	1383	3892	3240	1982
8188	92.71	359.12	4755.5	3785.0	-170.1	3788.8	1.63	1288	3987	3240	1980
8282	93.24	359.64	4750.6	3878.8	-171.1	3882.6	0.79	1194	4081	3241	1976
8377	92.69	359.59	4745.7	3973.7	-171.7	3977.4	0.58	1099	4175	3243	1973
8472	91.23	359.27	4742.5	4068.6	-172.7	4072.3	1.57	1004	4270	3244	1969
8566	91.42	0.49	4740.3	4162.6	-172.9	4166.2	1.31	910	4364	3247	1965
8661	90.37	359.91	4738.8	4257.6	-172.5	4261.0	1.26	815	4459	3249	1961
8756	91.7	1.35	4737.1	4352.6	-171.5	4355.9	2.06	720	4554	3253	1955
8850	92.45	0.86	4733.7	4446.5	-169.7	4449.6	0.95	627	4648	3257	1949
8945	93.76	1.76	4728.6	4541.3	-167.5	4544.2	1.67	532	4743	3261	1943
9040	92.2	0.71	4723.6	4636.2	-165.5	4638.9	1.98	437	4838	3266	1936
9096.00	92.07	0.58	4721.5	4692.1	-164.8	4694.8	0.33	381	4894	3268	1933
9140.00	92.07	0.58	4721.5	4692.1	-164.8	4694.8	0.33	335	4894	3268	1933