

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	5072	200	3354	1981
BHL	9161	91.10	358.60	4760.82	4742.16	-25.67	4742.19	0.00	330	4943	3337	2001
Miss Entry	4950	54.77	358.85	4749.34	552.00	-9.85	552.01	8.84	4520	752	3345	1990
Top Perf	5300	91.19	359.42	4829.91	884.04	-11.55	884.05	1.81	4188	1084	3344	1991
Bottom Perf	9040	90.25	359.04	4762.59	4621.21	-22.99	4621.23	2.57	451	4822	3339	1999

Survey Points	NW Corner XY Coord	X	Y	Surface XY	X	Y	m			
							North Line slope	East Line slope	South Line slope	West Line slope
	2028615	134398					0.00843012	-0.0011385	0.00974695	-0.0017055
	2028624	129121								
	2033953	134443								
	2033959	129173								

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	0	0.0	0	0	0	0	0	0	5072	200	3354	1981
	972	0.30	29.10	972.00	2.22	1.24	2.22	0.03	5070	203	3356	1980
	1434	0.40	48.30	1433.99	4.35	3.03	4.35	0.03	5068	205	3357	1978
	1910	0.40	46.50	1909.98	6.60	5.48	6.60	0.00	5066	207	3360	1975
	2385	0.40	77.30	2384.96	8.11	8.30	8.10	0.04	5064	208	3363	1972
	2860	0.60	53.40	2859.95	9.96	11.91	9.94	0.06	5062	210	3366	1969
	3334	1.00	31.60	3333.90	14.96	16.07	14.94	0.10	5058	215	3370	1965
	3812	0.60	338.10	3811.86	20.83	17.32	20.81	0.17	5052	221	3372	1963
	3907	1.90	338.70	3906.83	22.76	16.56	22.74	1.37	5050	223	3371	1964
	3939	2.90	9.40	3938.81	24.05	16.50	24.04	4.98	5048	224	3371	1964
	3970	4.20	14.20	3969.75	25.93	16.91	25.91	4.30	5047	226	3371	1964
	4002	5.60	12.40	4001.63	28.59	17.53	28.57	4.40	5044	229	3372	1963
	4033	7.40	8.70	4032.43	32.04	18.16	32.02	5.96	5040	232	3373	1963
	4065	9.80	7.20	4064.07	36.78	18.81	36.76	7.53	5036	237	3373	1962
	4097	11.90	6.10	4095.49	42.76	19.51	42.74	6.59	5030	243	3374	1961
	4129	13.60	4.60	4126.70	49.79	20.16	49.77	5.41	5023	250	3375	1961
	4160	15.30	3.20	4156.72	57.51	20.68	57.49	5.60	5015	258	3375	1960
	4192	17.00	3.20	4187.46	66.40	21.17	66.38	5.31	5006	267	3376	1960
	4224	18.90	3.80	4217.90	76.24	21.78	76.22	5.97	4996	276	3376	1959
	4256	21.10	2.90	4247.97	87.17	22.41	87.14	6.94	4985	287	3377	1958
	4287	23.40	0.60	4276.66	98.90	22.76	98.87	7.93	4974	299	3377	1958
	4319	25.80	359.00	4305.75	112.22	22.71	112.19	7.78	4960	312	3377	1958
	4350	29.00	358.40	4333.27	126.48	22.38	126.45	10.36	4946	327	3377	1958
	4382	31.90	359.10	4360.85	142.69	22.03	142.66	9.13	4930	343	3377	1959
	4414	34.90	359.80	4387.57	160.30	21.86	160.28	9.45	4912	360	3377	1959
	4445	37.80	0.40	4412.53	178.67	21.90	178.65	9.42	4894	379	3377	1959
	4478	40.70	359.40	4438.08	199.55	21.86	199.53	8.99	4873	400	3377	1959
	4509	43.10	357.80	4461.16	220.24	21.35	220.22	8.47	4852	420	3376	1959
	4540	44.80	356.10	4483.47	241.72	20.20	241.70	6.67	4831	442	3375	1960
	4572	46.60	355.10	4505.82	264.56	18.44	264.54	6.05	4808	465	3373	1962
	4635	50.10	354.60	4547.68	311.43	14.21	311.42	5.59	4761	512	3369	1966
	4699	50.30	353.90	4588.65	360.36	9.28	360.35	0.90	4712	561	3364	1971
	4762	49.50	353.00	4629.23	408.23	3.78	408.23	1.68	4664	609	3359	1977
	4825	48.40	352.50	4670.60	455.36	-2.21	455.36	1.85	4617	656	3353	1982
	4857	49.60	353.80	4691.60	479.34	-5.09	479.34	4.84	4593	680	3350	1985
	4889	50.20	355.00	4712.21	503.70	-7.48	503.70	3.43	4569	704	3348	1988
	4921	52.50	357.40	4732.20	528.63	-9.12	528.64	9.27	4544	729	3346	1989
	4953	55.00	359.00	4751.12	554.42	-9.93	554.43	8.79	4518	755	3345	1990
	4984	58.20	0.10	4768.18	580.29	-10.13	580.30	10.74	4492	781	3345	1990
	5016	61.50	0.30	4784.25	607.96	-10.03	607.97	10.33	4464	808	3345	1990
	5048	65.50	0.30	4798.53	636.59	-9.88	636.60	12.50	4436	837	3346	1990
	5079	70.90	360.00	4810.04	665.37	-9.80	665.38	17.44	4407	866	3346	1990
	5111	75.80	359.60	4819.20	696.01	-9.91	696.02	15.36	4376	896	3346	1990
	5143	80.70	358.80	4825.72	727.33	-10.35	727.34	15.51	4345	928	3345	1990
	5174	85.30	359.70	4829.49	758.09	-10.75	758.10	15.12	4314	959	3345	1991
	5206	89.60	359.60	4830.92	790.05	-10.95	790.06	13.44	4282	990	3345	1991
	5244	90.50	359.90	4830.88	828.05	-11.11	828.06	2.50	4244	1028	3345	1991
	5325	91.50	359.20	4829.47	909.03	-11.75	909.04	1.51	4163	1109	3344	1992
	5356	91.50	358.90	4828.66	940.02	-12.26	940.03	0.97	4132	1140	3344	1992
	5449	91.50	358.30	4826.22	1032.96	-14.54	1032.97	0.64	4039	1233	3342	1994
	5541	92.00	359.60	4823.41	1124.90	-16.22	1124.91	1.51	3947	1325	3340	1996
	5635	91.50	1.40	4820.54	1218.84	-15.40	1218.86	1.99	3853	1419	3341	1995
	5727	91.80	1.20	4817.89	1310.78	-13.31	1310.80	0.39	3761	1511	3343	1993
	5819	92.00	0.60	4814.84	1402.72	-11.87	1402.73	0.69	3670	1603	3345	1991
	5911	92.50	0.30	4811.23	1494.65	-11.15	1494.66	0.63	3578	1695	3346	1990
	6004	91.00	1.20	4808.39	1587.59	-9.93	1587.60	1.88	3485	1788	3347	1989
	6095	91.10	1.10	4806.72	1678.56	-8.11	1678.56	0.16	3394	1879	3349	1987
	6188	90.10	0.10	4805.75	1771.54	-7.13	1771.55	1.52	3301	1972	3350	1986
	6281	90.90	0.90	4804.94	1864.54	-6.32	1864.54	1.22	3208	2065	3351	1985
	6379	89.70	0.70	4804.43	1962.52	-4.95	1962.53	1.24	3110	2163	3353	1984
	6475	92.90	359.90	4802.25	2058.48	-4.45	2058.49	3.44	3014	2259	3353	1983
	6570	93.70	359.90	4796.78	2153.33	-4.61	2153.33	0.84	2919	2354	3353	1983
	6665	92.20	359.10	4791.89	2248.19	-5.44	2248.20	1.79	2824	2449	3353	1984
	6759	90.90	358.70	4789.35	2342.14	-7.25	2342.14	1.45	2730	2543	3351	1985
	6854	91.20	358.30	4787.61	2437.09	-9.73	2437.10	0.53	2635	2637	3349	1988
	6951	89.60	359.30	4786.93	2534.06	-11.76	2534.07	1.95	2538	2734	3347	1990
	7046	89.80	359.80	4787.43	2629.06	-12.51	2629.07	0.57	2443	2829	3346	1990
	7142	88.90	0.70	4788.52	2725.05	-12.09	2725.06	1.33	2347	2925	3347	1990
	7237	92.10	2.10	4787.69	2820.00	-9.77	2820.01	3.68	2252	3020	3349	1987

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7332	92.90	2.10	4783.54	2914.85	-6.29	2914.85	0.84	2157	3115	3353	1984	
7426	90.90	1.90	4780.43	3008.73	-3.02	3008.73	2.14	2064	3209	3357	1980	
7521	91.00	3.50	4778.85	3103.61	1.46	3103.61	1.69	1969	3304	3361	1976	
7616	91.60	3.20	4776.70	3198.42	7.01	3198.41	0.71	1874	3399	3367	1970	
7711	92.20	2.10	4773.55	3293.27	11.40	3293.25	1.32	1779	3493	3371	1966	
7807	91.50	0.40	4770.45	3389.19	13.49	3389.18	1.91	1683	3589	3374	1963	
7902	91.20	358.70	4768.21	3484.16	12.75	3484.14	1.82	1588	3684	3373	1964	
7997	91.80	359.10	4765.72	3579.11	10.92	3579.09	0.76	1493	3779	3371	1966	
8092	91.00	358.40	4763.40	3674.06	8.85	3674.04	1.12	1398	3874	3370	1968	
8187	93.30	358.70	4759.84	3768.95	6.45	3768.94	2.44	1303	3969	3367	1970	
8283	91.30	358.80	4755.98	3864.85	4.36	3864.84	2.09	1208	4065	3365	1972	
8378	89.10	358.50	4755.65	3959.81	2.12	3959.81	2.34	1113	4160	3363	1974	
8473	88.80	358.40	4757.39	4054.76	-0.45	4054.76	0.33	1018	4255	3361	1977	
8568	90.60	359.10	4757.89	4149.73	-2.52	4149.73	2.03	923	4350	3359	1979	
8662	89.70	357.40	4757.65	4243.69	-5.39	4243.69	2.05	829	4444	3356	1981	
8758	89.80	357.30	4758.06	4339.58	-9.83	4339.59	0.15	733	4540	3352	1986	
8854	88.40	356.70	4759.57	4435.44	-14.86	4435.45	1.59	637	4636	3347	1991	
8948	88.80	357.10	4761.87	4529.27	-19.94	4529.29	0.60	543	4730	3342	1996	
9043	90.30	359.10	4762.61	4624.21	-23.09	4624.23	2.63	448	4825	3339	1999	
9111	91.10	358.60	4761.78	4692.19	-24.45	4692.21	1.39	380	4893	3338	2000	
<b>TD</b>	9161	91.10	358.60	4760.82	4742.16	-25.67	4742.19	0.00	330	4943	3337	2001