

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	255	5018	3306	1979
BHL	9684	90.81	179.78	5416.68	-4688.54	-10.22	4688.55	0.00	4944	330	3308	1974
Miss Entry	5497	53.27	175.45	5305.83	-527.77	2.48	527.76	13.63	783	4491	3310	1975
Top Perf	5432	45.20	176.36	5263.32	-478.83	-1.07	478.83	6.19	734	4540	3306	1979
Bottom Perf	9577	90.65	179.66	5418.00	-4581.55	-10.79	4581.56	1.12	4837	437	3307	1975

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
	1733075	1733075	166379	1733075	166379	-0.0037843	0.0032301	0.0017039	0.0026455	
	1733061	1733061	161087	1733061	161087					
	1738360	1738360	166359	1738360	166359					
	1738343	1738343	161096	1738343	161096					

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0	0.0	0	0	0	0	0	0	255	5018	3306	1979
1148	0.71	297.18	1147.97	3	-6	-3.23	0.06	252	5022	3299	1986
1424	0.80	319.21	1423.95	5	-9	-5.46	0.11	250	5024	3297	1988
1885	0.71	308.10	1884.91	10	-13	-9.64	0.04	246	5028	3292	1993
2265	1.10	303.30	2264.86	13	-18	-13.08	0.11	242	5032	3287	1998
2740	0.80	304.49	2739.79	18	-25	-17.44	0.06	238	5036	3281	2004
3214	0.40	304.71	3213.77	20	-29	-20.24	0.09	235	5039	3277	2008
3689	0.31	74.11	3688.76	22	-29	-21.54	0.14	234	5040	3277	2008
4164	0.40	344.28	4163.76	24	-28	-23.49	0.11	232	5042	3277	2008
4354	0.31	344.37	4353.75	25	-29	-24.63	0.05	231	5043	3277	2008
4386	0.31	345.78	4385.75	25	-29	-24.79	0.02	231	5043	3277	2008
4417	1.19	255.88	4416.75	25	-29	-24.80	3.97	231	5043	3277	2008
4449	3.00	202.30	4448.73	24	-30	-23.94	7.77	232	5042	3276	2009
4481	5.61	184.19	4480.64	22	-30	-21.60	9.10	234	5040	3276	2009
4512	8.22	177.71	4511.41	18	-30	-17.88	8.78	238	5036	3276	2009
4544	10.69	172.69	4542.97	13	-30	-12.65	8.13	243	5031	3276	2009
4576	13.08	170.88	4574.29	6	-29	-6.13	7.56	249	5025	3277	2008
4607	15.38	172.07	4604.33	-1	-28	1.40	7.48	257	5017	3278	2007
4639	17.72	171.41	4635.00	-10	-26	10.41	7.34	266	5008	3279	2005
4671	19.89	173.08	4665.29	-21	-25	20.62	6.99	276	4998	3281	2004
4702	22.18	171.98	4694.23	-32	-23	31.65	7.50	287	4987	3282	2003
4734	23.99	172.20	4723.66	-44	-22	44.07	5.66	300	4974	3284	2001
4766	25.72	172.60	4752.70	-57	-20	57.39	5.43	313	4961	3286	1999
4797	27.62	175.51	4780.40	-71	-18	71.22	7.44	327	4947	3287	1997
4829	29.30	177.18	4808.53	-86	-18	86.44	5.81	342	4932	3288	1996
4861	31.42	178.11	4836.14	-103	-17	102.59	6.79	358	4916	3289	1996
4892	33.01	177.88	4862.37	-119	-16	119.10	5.15	375	4899	3290	1995
4924	34.51	177.88	4888.97	-137	-16	136.87	4.69	392	4882	3290	1994
4956	36.01	177.18	4915.10	-155	-15	155.32	4.86	411	4863	3291	1994
4987	37.30	177.71	4939.97	-174	-14	173.81	4.29	429	4845	3292	1993
5019	39.28	177.18	4965.09	-194	-13	193.61	6.27	449	4825	3293	1992
5051	41.41	178.37	4989.47	-214	-12	214.30	7.08	470	4804	3294	1991
5082	43.39	178.37	5012.36	-235	-12	235.20	6.39	491	4783	3295	1990
5114	44.72	179.07	5035.36	-257	-11	257.44	4.43	513	4761	3295	1990
5146	44.50	178.68	5058.14	-280	-11	279.90	1.10	535	4738	3296	1989
5177	44.41	177.58	5080.27	-302	-10	301.60	2.50	557	4717	3296	1988
5209	44.41	177.88	5103.13	-324	-9	323.97	0.66	579	4694	3297	1987
5240	44.32	177.97	5125.29	-346	-8	345.63	0.36	601	4673	3298	1986
5272	44.32	177.88	5148.19	-368	-8	367.97	0.20	623	4650	3299	1986
5304	44.19	177.80	5171.11	-390	-7	390.28	0.44	646	4628	3300	1985
5335	43.88	177.18	5193.39	-412	-6	411.80	1.71	667	4607	3301	1984
5367	43.70	175.77	5216.49	-434	-4	433.90	3.10	689	4584	3302	1982
5399	43.31	175.37	5239.70	-456	-3	455.85	1.49	711	4563	3304	1980
5430	44.98	176.39	5261.95	-477	-1	477.38	5.86	733	4541	3305	1979
5462	48.52	175.90	5283.87	-501	0	500.62	11.12	756	4518	3307	1977
5493	52.72	175.37	5303.53	-525	2	524.50	13.61	780	4494	3309	1975
5525	57.09	175.99	5321.93	-551	4	550.60	13.75	806	4468	3311	1973
5557	61.11	176.87	5338.36	-578	6	577.99	12.78	833	4440	3313	1971
5588	64.21	177.88	5352.59	-606	7	605.49	10.41	861	4413	3314	1970
5620	66.51	179.87	5365.93	-635	8	634.56	9.14	890	4384	3315	1969
5652	68.98	181.81	5378.05	-664	7	664.17	9.54	920	4354	3315	1970
5683	71.10	183.70	5388.64	-693	6	693.27	8.92	949	4325	3313	1971
5715	73.40	182.60	5398.39	-724	4	723.71	7.90	979	4295	3312	1973
5747	75.78	182.29	5406.89	-755	3	754.53	7.50	1010	4264	3311	1974
5778	78.22	182.47	5413.87	-785	2	784.71	7.89	1040	4234	3309	1975
5810	80.78	181.98	5419.70	-816	0	816.15	8.14	1072	4202	3308	1976
5828	82.28	181.90	5422.35	-834	0	833.95	8.35	1089	4184	3308	1977
5926	87.98	182.38	5430.67	-931	-4	931.49	5.84	1187	4087	3304	1980
6018	90.81	181.50	5431.64	-1023	-7	1023.44	3.22	1279	3995	3301	1983
6111	92.80	181.50	5428.71	-1116	-9	1116.36	2.14	1372	3902	3299	1985
6203	92.18	180.97	5424.71	-1208	-11	1208.26	0.89	1464	3810	3298	1987
6295	92.00	180.00	5421.36	-1300	-12	1300.19	1.07	1556	3718	3297	1987
6387	91.91	179.07	5418.22	-1392	-11	1392.13	1.02	1648	3626	3298	1986
6478	90.10	179.47	5416.62	-1483	-10	1483.10	2.04	1739	3535	3299	1985
6570	88.51	179.47	5417.74	-1575	-9	1575.08	1.73	1831	3443	3301	1983

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6662	89.70	178.90	5419.17	-1667	-8	1667.05	1.44	1923	3351	3302	1982
6754	90.99	179.21	5418.62	-1759	-7	1759.03	1.44	2015	3259	3304	1980
6846	88.69	179.30	5418.88	-1851	-5	1851.01	2.50	2107	3167	3305	1979
6938	88.51	178.90	5421.13	-1943	-4	1942.96	0.48	2198	3075	3307	1977
7030	89.62	180.18	5422.63	-2035	-3	2034.94	1.84	2290	2983	3308	1976
7121	90.50	180.57	5422.53	-2126	-4	2125.94	1.06	2381	2892	3308	1976
7213	91.78	180.48	5420.70	-2218	-5	2217.92	1.40	2473	2800	3307	1977
7305	91.30	180.48	5418.23	-2310	-5	2309.88	0.52	2565	2708	3306	1977
7399	89.31	180.40	5417.73	-2404	-6	2403.87	2.12	2659	2614	3306	1978
7494	89.40	180.79	5418.80	-2499	-7	2498.86	0.42	2754	2520	3305	1978
7589	89.48	180.88	5419.73	-2594	-8	2593.85	0.13	2849	2425	3304	1979
7684	90.01	180.88	5420.15	-2689	-10	2688.84	0.56	2944	2330	3303	1980
7779	89.88	181.28	5420.24	-2784	-12	2783.83	0.44	3039	2235	3301	1982
7874	90.99	181.10	5419.52	-2879	-14	2878.81	1.18	3134	2140	3300	1984
7969	90.28	180.88	5418.47	-2974	-15	2973.79	0.78	3229	2045	3298	1985
8064	90.81	179.87	5417.56	-3069	-16	3068.79	1.20	3324	1950	3298	1985
8159	90.50	179.47	5416.48	-3164	-15	3163.77	0.53	3419	1855	3299	1984
8254	90.10	180.09	5415.98	-3259	-15	3258.77	0.78	3514	1760	3299	1984
8349	88.60	180.97	5417.06	-3354	-16	3353.76	1.83	3609	1665	3299	1984
8444	89.62	180.97	5418.53	-3449	-17	3448.73	1.07	3704	1570	3297	1986
8539	89.88	180.71	5418.95	-3544	-19	3543.73	0.39	3799	1475	3296	1987
8634	90.50	180.00	5418.63	-3639	-19	3638.72	0.99	3894	1380	3296	1987
8729	90.50	178.68	5417.80	-3734	-18	3733.71	1.39	3989	1285	3297	1986
8824	89.88	179.87	5417.49	-3829	-17	3828.69	1.41	4084	1190	3299	1984
8919	89.88	179.69	5417.69	-3924	-17	3923.69	0.19	4179	1095	3299	1983
9013	90.50	179.87	5417.37	-4018	-16	4017.68	0.69	4273	1001	3300	1983
9108	91.12	179.78	5416.03	-4113	-16	4112.67	0.66	4368	906	3300	1982
9203	89.62	179.60	5415.42	-4208	-16	4207.66	1.59	4463	811	3301	1981
9298	89.48	179.21	5416.16	-4303	-15	4302.65	0.44	4558	716	3302	1980
9393	88.38	178.68	5417.94	-4398	-13	4397.60	1.29	4653	621	3304	1978
9488	90.41	179.47	5418.94	-4493	-11	4492.57	2.29	4748	526	3306	1976
9635	90.81	179.78	5417.38	-4640	-10	4639.56	0.35	4895	379	3308	1975
9684	90.81	179.78	5416.68	-4689	-10	4688.55	0.00	4944	330	3308	1974