# Data Management Plan

Maintaining an online archive of the tank data will provide an extremely useful reference for all parties involved in testing and calibrating sensors in the proposed test-bed facility. Accordingly, results from the discrete samples and in-tank sensors (section c.4.3) will be posted online at http://martzlab.ucsd.edu/data, where we have already begun archiving QC'd datasets from autonomous pH sensor deployments (screenshot below).
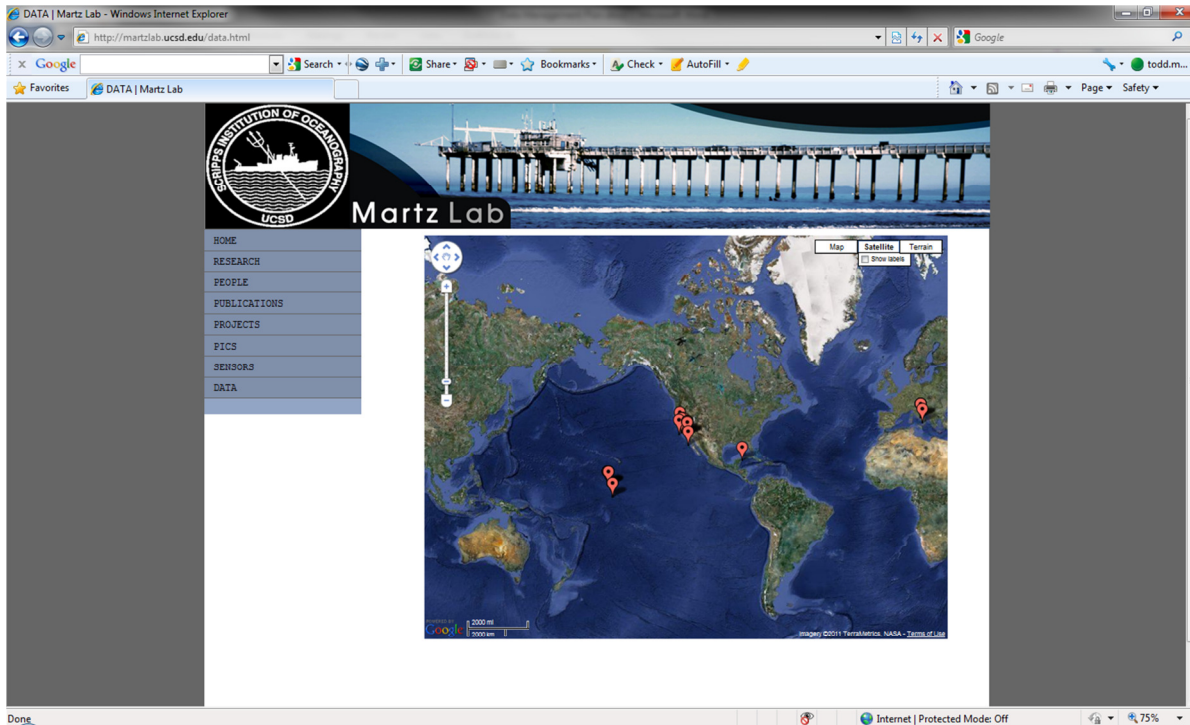
Data will be reported based on the time stamp of the discrete samples. Online data will lag real time by the amount of time required to carry out and report the discrete analysis. In many cases samples may be analyzed on multiple days per week, but in other cases we expect that a batch of 10-20 bottles, representing 1-2 weeks of continuous operation will be analyzed at once, resulting in up to ~2 week lag in online data and real-time.

As described in Section c.4.8, in addition to posting measured tank data online we will produce several data products corresponding to times in-between discrete samples. These products include values interpolated between discrete samples and estimated from thermodynamic calculations. An example of the data format that will be posted on our website is shown in the table below.

It has proven convenient to share data through our website using Google Spreadsheets. Currently, we utilize the Google Visualization API to display archived time series of Quality Controlled sensor data. Several of these can be accessed by navigating the map at http://martzlab.ucsd.edu/data and clicking on the flagged deployment locations (figure above). Some of these data are currently available in linked Google Spreadsheets where the user can obtain the raw data by clicking a single button that links to the public spreadsheet. We plan to utilize this basic approach, which has proven extremely easy and powerful for data sharing, for all measurements and data products associated with the tank facility.

time	Temp/C	S_dis	S_CTD	ΔS	S_QC	A_T_dis	C_T_dis	pCO2_calc	pCO2_IR	ΔpCO2	pCO2_QC	pH_SWS	pH_TOT	pH_free
1/1/12 0:00	20.00	33.500	33.509	0.009	1	2435.1	2199.1	481.0	481.3	0.3	1	7.9950	8.0041	8.0941
1/1/12 1:00	20.00	33.500	33.506	0.006	1	2435.0	2199.2	481.5	481.6	0.1	1	7.9946	8.0037	8.0938
1/1/12 2:00	20.00	33.501	33.508	0.007	1	2434.9	2199.3	482.0	482.7	0.7	1	7.9943	8.0033	8.0934
1/1/12 3:00	20.00	33.501	33.503	0.002	1	2434.9	2199.5	482.5	482.6	0.2	1	7.9939	8.0029	8.0930
1/1/12 4:00	20.00	33.502	33.506	0.004	1	2434.8	2199.6	482.9	483.9	1.0	1	7.9935	8.0026	8.0926
1/1/12 5:00	20.00	33.502	33.510	0.008	1	2434.7	2199.7	483.4	483.7	0.3	1	7.9931	8.0022	8.0922
1/1/12 6:00	20.00	33.503	33.504	0.001	1	2434.6	2199.8	483.9	483.9	0.0	1	7.9927	8.0018	8.0919
1/1/12 7:00	20.00	33.503	33.506	0.003	1	2434.5	2199.9	484.4	484.5	0.1	1	7.9924	8.0014	8.0915
1/1/12 8:00	20.00	33.503	33.511	0.007	1	2434.4	2200.0	484.8	485.6	0.8	1	7.9920	8.0010	8.0911
1/1/12 9:00	20.00	33.504	33.512	0.009	1	2434.4	2200.2	485.3	485.7	0.4	1	7.9916	8.0007	8.0907
1/1/12 10:00	20.00	33.504	33.510	0.006	1	2434.3	2200.3	485.8	486.1	0.3	1	7.9912	8.0003	8.0903
1/1/12 11:00	20.00	33.505	33.514	0.010	1	2434.2	2200.4	486.3	486.8	0.5	1	7.9908	7.9999	8.0900
1/1/12 12:00	25.00	33.505	33.515	0.010	1	2434.1	2200.5	594.5	594.9	0.3	1	7.9161	7.9257	8.0318
1/1/12 13:00	25.00	33.506	33.511	0.006	1	2434.0	2200.6	595.1	595.7	0.6	1	7.9157	7.9253	8.0314
1/1/12 14:00	25.00	33.506	33.515	0.009	1	2433.9	2200.7	595.7	596.6	0.9	1	7.9153	7.9249	8.0310
1/1/12 15:00	25.00	33.507	33.511	0.004	1	2433.9	2200.9	596.3	596.5	0.2	1	7.9150	7.9245	8.0306
1/1/12 16:00	25.00	33.507	33.508	0.001	1	2433.8	2201.0	596.9	597.6	0.7	1	7.9146	7.9241	8.0303
1/1/12 17:00	25.00	33.507	33.509	0.002	1	2433.7	2201.1	597.5	598.4	1.0	1	7.9142	7.9238	8.0299
1/1/12 18:00	25.00	33.508	33.514	0.007	1	2433.6	2201.2	598.1	598.3	0.3	1	7.9138	7.9234	8.0295
1/1/12 19:00	25.00	33.508	33.511	0.003	1	2433.5	2201.3	598.6	599.3	0.7	1	7.9135	7.9230	8.0291
1/1/12 20:00	25.00	33.509	33.509	0.000	1	2433.4	2201.4	599.2	599.3	0.1	1	7.9131	7.9226	8.0288
1/1/12 21:00	25.00	33.509	33.518	0.009	1	2433.4	2201.6	599.8	600.2	0.3	1	7.9127	7.9223	8.0284
1/1/12 22:00	25.00	33.510	33.513	0.003	1	2433.3	2201.7	600.4	601.3	0.9	1	7.9123	7.9219	8.0280
1/1/12 23:00	25.00	33.510	33.516	0.006	1	2433.2	2201.8	601.0	601.7	0.7	1	7.9119	7.9215	8.0276