

APPENDIX F

MODEL PERFORMANCE STATISTICS

Table 1 Calculated RMS errors for water temperature calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (°C)	Relative RMS	Data Avg. (°C)	Model Avg. (°C)
Site1(Sfc)	Layer 6	4/22/2008 9:44	4/22/2009 9:19	53	1.735	7.047	21.202	22.014
Site1(Bot)	Layer 1	4/22/2008 10:02	4/22/2009 9:37	55	2.049	11.655	17.465	15.989
Site2(Sfc)	Layer 6	4/22/2008 12:30	4/15/2009 11:47	37	1.776	7.274	21.189	21.923
Site2(Bot)	Layer 1	4/22/2008 12:39	4/15/2009 11:36	36	2.267	11.918	19.621	17.836
Site3(Sfc)	Layer 6	4/22/2008 12:51	4/15/2009 11:58	27	1.971	8.402	21.371	22.224
Site3(Bot)	Layer 1	4/22/2008 12:56	4/15/2009 12:03	26	1.688	7.951	20.664	19.472
Site4(Sfc)	Layer 6	4/22/2008 12:06	4/15/2009 10:22	38	1.394	5.821	21.609	22.036
Site4(Bot)	Layer 1	4/22/2008 12:16	4/15/2009 10:06	41	1.748	8.292	18.800	17.560
Site5(Sfc)	Layer 6	4/22/2008 11:17	4/15/2009 11:00	22	1.762	7.964	22.101	22.883
Site5(Bot)	Layer 1	4/22/2008 11:22	4/15/2009 10:53	20	2.180	9.691	21.381	19.793
Site6(Sfc)	Layer 6	4/22/2008 10:51	4/15/2009 11:10	17	1.952	9.484	25.115	26.158
Site6(Bot)	Layer 1	4/22/2008 10:53	4/15/2009 11:12	16	3.959	20.426	22.076	18.730
Site7(Sfc)	Layer 6	4/22/2008 11:42	4/15/2009 10:32	18	2.797	12.592	20.531	22.501
Site7(Bot)	Layer 1	4/22/2008 11:48	4/15/2009 10:38	23	1.636	7.738	21.539	20.709
Site8(Sfc)	Layer 6	4/22/2008 13:11	4/15/2009 12:13	17	2.259	8.955	22.820	23.416
Site8(Bot)	Layer 1	4/22/2008 13:14	4/15/2009 12:15	19	2.611	10.477	21.567	19.784
Composite				465	1.997	9.291	20.726	20.348

Table 2 Calculated RMS errors for TSS calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (mg/L)	Relative RMS	Data Avg. (mg/L)	Model Avg. (mg/L)
Site1(Sfc)	Layer 6	4/22/2008 9:14	4/15/2009 9:10	18	14.969	136.084	6.944	13.367
Site1(Bot)	Layer 1	4/22/2008 9:59	4/15/2009 9:14	19	34.960	55.492	23.421	21.299
Site2(Sfc)	Layer 6	4/22/2008 11:50	4/15/2009 11:47	30	16.435	149.405	8.600	14.486
Site2(Bot)	Layer 1	4/22/2008 12:00	12/8/2008 11:52	16	22.649	150.994	10.188	21.505
Site4(Sfc)	Layer 6	4/22/2008 11:29	4/15/2009 10:22	30	15.644	120.336	8.200	14.220
Site4(Bot)	Layer 1	4/22/2008 11:40	12/8/2008 13:40	16	27.408	58.314	20.625	19.469
Site6(Sfc)	Layer 6	4/22/2008 10:20	2/9/2009 13:25	28	38.926	72.084	40.857	30.975
Site8(Sfc)	Layer 6	4/22/2008 12:35	2/9/2009 13:04	27	16.066	50.206	19.370	17.050
Composite				184	22.938	99.560	17.576	18.966

Table 3 Calculated RMS errors for DO calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (mg/L)	Relative RMS	Data Avg. (mg/L)	Model Avg. (mg/L)
Site1(Sfc)	Layer 6	4/22/2008 9:44	4/22/2009 9:19	49	1.418	20.914	8.373	7.655
Site1(Bot)	Layer 1	4/22/2008 10:02	4/22/2009 9:37	52	2.476	21.073	3.951	3.216
Site2(Sfc)	Layer 6	4/22/2008 12:30	4/15/2009 11:47	34	1.123	16.156	8.712	8.096
Site2(Bot)	Layer 1	4/22/2008 12:39	4/15/2009 11:36	34	2.041	17.353	3.359	2.769
Site3(Sfc)	Layer 6	4/22/2008 12:51	4/15/2009 11:58	25	1.097	23.046	9.11	8.316
Site3(Bot)	Layer 1	4/22/2008 12:56	4/15/2009 12:03	24	3.26	28.106	5.096	5.007
Site4(Sfc)	Layer 6	4/22/2008 12:06	4/15/2009 10:22	35	1.601	26.458	8.796	7.813
Site4(Bot)	Layer 1	4/22/2008 12:16	4/15/2009 10:06	38	2.003	17.021	4.231	3.601
Site5(Sfc)	Layer 6	4/22/2008 11:17	4/15/2009 11:00	20	0.998	21.844	8.968	8.593
Site5(Bot)	Layer 1	4/22/2008 11:22	4/15/2009 10:53	18	2.717	24.105	5.663	4.168
Site6(Sfc)	Layer 6	4/22/2008 10:51	4/15/2009 11:10	16	1.055	21.619	7.699	8.41
Site6(Bot)	Layer 1	4/22/2008 10:53	4/15/2009 11:12	15	1.862	24.899	6.481	5.765
Site7(Sfc)	Layer 6	4/22/2008 11:42	4/15/2009 10:32	17	1.221	20.839	8.967	8.464
Site7(Bot)	Layer 1	4/22/2008 11:48	4/15/2009 10:38	21	2.695	23.623	5.389	5.482
Site8(Sfc)	Layer 6	4/22/2008 13:11	4/15/2009 12:13	16	0.577	13.458	8.536	8.407
Site8(Bot)	Layer 1	4/22/2008 13:14	4/15/2009 12:15	18	1.787	16.231	7.614	7.388
Composite				432	1.796	20.906	6.68	6.121

Table 4 Calculated RMS errors for chlorophyll a calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (µg/L)	Relative RMS	Data Avg. (µg/L)	Model Avg. (µg/L)
Site1(Sfc)	Layer 6	4/22/2008 9:14	4/15/2009 9:10	15	10.001	21.193	17.395	13.994
Site2(Sfc)	Layer 6	4/22/2008 11:50	4/15/2009 11:47	28	16.181	27.594	21.984	16.097
Site3(Sfc)	Layer 6	4/22/2008 12:16	4/15/2009 11:57	30	12.614	25.048	24.803	17.325
Site4(Sfc)	Layer 6	4/22/2008 11:29	4/15/2009 10:22	30	13.432	24.873	19.969	14.049
Site5(Sfc)	Layer 6	4/22/2008 10:44	4/15/2009 11:00	27	16.645	27.773	23.867	18.19
Site6(Sfc)	Layer 6	4/22/2008 10:20	4/15/2009 11:10	29	14.714	27.659	30.414	27.856
Site7(Sfc)	Layer 6	4/22/2008 11:10	4/15/2009 10:37	28	11.537	17.184	23.908	20.248
Site7(Bot)	Layer 1	2/9/2009 12:53	2/9/2009 12:53	1	9.159	-999	11.9	2.741
Site8(Sfc)	Layer 6	4/22/2008 12:35	4/15/2009 12:13	30	6.685	17.062	21.589	17.787
Composite				218	12.813	18.964	23.28	18.367

Table 5 Calculated RMS errors for TN calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (mg/L)	Relative RMS	Data Avg. (mg/L)	Model Avg. (mg/L)
Site1(Sfc)	Layer 6	4/22/2008 9:44	4/15/2009 9:10	15	0.27	75.109	0.819	0.644
Site1(Bot)	Layer 1	4/22/2008 10:03	4/15/2009 9:14	16	0.979	32.685	1.402	0.745
Site2(Sfc)	Layer 6	4/22/2008 12:30	4/15/2009 11:47	15	0.43	37.086	0.874	0.632
Site2(Bot)	Layer 1	4/22/2008 12:39	12/8/2008 11:52	13	0.308	41.047	0.955	0.754
Site4(Sfc)	Layer 6	4/22/2008 12:06	4/15/2009 10:22	15	0.246	54.67	0.796	0.644
Site4(Bot)	Layer 1	4/22/2008 12:17	12/8/2008 13:40	13	0.249	61.368	0.987	0.779
Site6(Sfc)	Layer 6	4/22/2008 10:51	2/9/2009 13:25	14	2.28	25.024	0.355	0.886
Site8(Sfc)	Layer 6	4/22/2008 13:11	12/8/2008 10:56	13	2.4	26.343	0.138	0.646
Composite				114	0.879	44.299	0.805	0.714

Table 6 Calculated RMS errors for TP calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (mg/L)	Relative RMS	Data Avg. (mg/L)	Model Avg. (mg/L)
Site1(Sfc)	Layer 6	4/22/2008 9:14	4/15/2009 9:10	18	0.12	669.058	0.03	0.12
Site1(Bot)	Layer 1	4/22/2008 9:59	4/15/2009 9:14	19	0.184	25.892	0.183	0.181
Site2(Sfc)	Layer 6	4/22/2008 11:50	4/15/2009 11:47	30	0.124	364.103	0.032	0.13
Site2(Bot)	Layer 1	4/22/2008 12:00	12/8/2008 11:52	16	0.109	43.25	0.079	0.141
Site4(Sfc)	Layer 6	4/22/2008 11:29	4/15/2009 10:22	30	0.129	585.763	0.031	0.135
Site4(Bot)	Layer 1	4/22/2008 11:40	12/8/2008 13:40	16	0.144	44.316	0.081	0.16
Site6(Sfc)	Layer 6	4/22/2008 10:20	2/9/2009 13:25	28	0.095	113.926	0.084	0.148
Site8(Sfc)	Layer 6	4/22/2008 12:35	2/9/2009 13:04	27	0.103	258.347	0.041	0.114
Site8(Bot)	Layer 1	12/8/2008 10:58	12/8/2008 10:58	1	0.169	-999	0.044	0.213
Composite				185	0.124	278.910	0.065	0.14

Table 7 Calculated RMS errors for TPO4 calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (mg/L)	Relative RMS	Data Avg. (mg/L)	Model Avg. (mg/L)
Site1(Sfc)	Layer 6	4/22/2008 9:14	4/15/2009 9:10	18	0.112	455.655	0.012	0.093
Site1(Bot)	Layer 1	4/22/2008 9:59	4/15/2009 9:14	19	0.184	28.274	0.149	0.164
Site2(Sfc)	Layer 6	4/22/2008 11:50	4/15/2009 11:47	30	0.117	460.226	0.012	0.101
Site2(Bot)	Layer 1	4/22/2008 12:00	12/8/2008 11:52	16	0.109	53.879	0.047	0.12
Site4(Sfc)	Layer 6	4/22/2008 11:29	4/15/2009 10:22	30	0.122	412.406	0.013	0.107
Site4(Bot)	Layer 1	4/22/2008 11:40	12/8/2008 13:40	16	0.144	55.079	0.049	0.14
Site6(Sfc)	Layer 6	4/22/2008 10:20	2/9/2009 13:25	28	0.084	124.971	0.037	0.088
Site8(Sfc)	Layer 6	4/22/2008 12:35	2/9/2009 13:04	27	0.097	442.462	0.015	0.081
Site8(Bot)	Layer 1	12/8/2008 10:58	12/8/2008 10:58	1	0.189	-999	0.013	0.202
Composite				185	0.118	276.259	0.037	0.108

Table 8 Calculated RMS errors for NH4 calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (mg/L)	Relative RMS	Data Avg. (mg/L)	Model Avg. (mg/L)
Site1(Sfc)	Layer 6	4/22/2008 9:14	4/15/2009 9:10	18	0.108	-999	0.05	0.131
Site1(Bot)	Layer 1	4/22/2008 9:59	4/15/2009 9:14	19	0.8	25.481	0.552	0.305
Site2(Sfc)	Layer 6	4/22/2008 11:50	4/15/2009 11:47	30	0.11	-999	0.05	0.128
Site2(Bot)	Layer 1	4/22/2008 12:00	12/8/2008 11:52	16	0.197	25.755	0.208	0.254
Site4(Sfc)	Layer 6	4/22/2008 11:29	4/15/2009 10:22	30	0.122	-999	0.05	0.144
Site4(Bot)	Layer 1	4/22/2008 11:40	12/8/2008 13:40	16	0.157	22.266	0.188	0.273
Site6(Sfc)	Layer 6	4/22/2008 10:20	2/9/2009 13:25	28	0.069	69.133	0.066	0.109
Site8(Sfc)	Layer 6	4/22/2008 12:35	2/9/2009 13:04	27	0.081	-999	0.05	0.117
Composite				184	0.184	35.66	0.13	0.168

Table 9 Calculated RMS errors for NO3 calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (mg/L)	Relative RMS	Data Avg. (mg/L)	Model Avg. (mg/L)
Site1(Sfc)	Layer 6	4/22/2008 9:44	4/15/2009 9:10	15	0.078	25.11	0.159	0.159
Site1(Bot)	Layer 1	4/22/2008 10:03	4/15/2009 9:14	16	0.083	24.903	0.183	0.182
Site2(Sfc)	Layer 6	4/22/2008 12:30	4/15/2009 11:47	15	0.076	26.375	0.146	0.154
Site2(Bot)	Layer 1	4/22/2008 12:39	12/8/2008 11:52	13	0.092	31.342	0.157	0.19
Site4(Sfc)	Layer 6	4/22/2008 12:06	2/9/2009 12:15	14	0.083	27.616	0.131	0.157
Site4(Bot)	Layer 1	4/22/2008 12:17	12/8/2008 13:40	13	0.052	15.59	0.178	0.188
Site6(Sfc)	Layer 6	4/22/2008 10:51	2/9/2009 13:25	13	0.069	25.484	0.141	0.11
Site8(Sfc)	Layer 6	4/22/2008 13:11	12/8/2008 10:56	12	0.061	27.853	0.096	0.117
Composite				111	0.075	25.523	0.15	0.158

Table 10 Calculated RMS errors for TOC calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (mg/L)	Relative RMS	Data Avg. (mg/L)	Model Avg. (mg/L)
Site1(Sfc)	Layer 6	4/22/2008 9:14	4/15/2009 9:10	19	0.875	49.743	5.529	5.349
Site1(Bot)	Layer 1	4/22/2008 9:59	2/9/2009 11:07	18	0.894	39.232	5.616	4.956
Site2(Sfc)	Layer 6	4/22/2008 11:50	4/15/2009 11:47	34	0.934	58.391	5.664	5.449
Site2(Bot)	Layer 1	4/22/2008 12:00	12/8/2008 11:52	17	0.595	55.633	5.455	4.986
Site4(Sfc)	Layer 6	4/22/2008 11:29	4/15/2009 10:22	34	0.862	53.886	5.623	5.416
Site4(Bot)	Layer 1	4/22/2008 11:40	12/8/2008 13:40	17	0.716	43.935	5.476	5.198
Site6(Sfc)	Layer 6	5/12/2008 12:00	2/9/2009 13:25	30	2.102	122.209	5.758	7.569
Site8(Sfc)	Layer 6	4/22/2008 12:35	2/9/2009 13:04	31	0.949	48.409	5.955	5.566
Composite				200	1.043	61.642	5.666	5.665

Table 11 Calculated RMS errors for TON calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (mg/L)	Relative RMS	Data Avg. (mg/L)	Model Avg. (mg/L)
Site1(Sfc)	Layer 6	4/22/2008 9:44	4/15/2009 9:10	15	0.267	68.492	0.567	0.349
Site1(Bot)	Layer 1	4/22/2008 10:03	4/15/2009 9:14	16	0.37	73.927	0.561	0.237
Site2(Sfc)	Layer 6	4/22/2008 12:30	4/15/2009 11:47	15	0.419	45.592	0.635	0.35
Site2(Bot)	Layer 1	4/22/2008 12:39	12/8/2008 11:52	13	0.255	92.056	0.526	0.291
Site4(Sfc)	Layer 6	4/22/2008 12:06	4/15/2009 10:22	15	0.27	59.907	0.563	0.338
Site4(Bot)	Layer 1	4/22/2008 12:17	12/8/2008 13:40	13	0.298	131.333	0.575	0.295
Site6(Sfc)	Layer 6	4/22/2008 10:51	2/9/2009 13:25	14	0.23	54.86	0.761	0.67
Site8(Sfc)	Layer 6	4/22/2008 13:11	12/8/2008 10:56	13	0.279	48.136	0.642	0.407
Composite				114	0.301	70.970	0.603	0.365

Table 12 Calculated RMS errors for TOP calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (mg/L)	Relative RMS	Data Avg. (mg/L)	Model Avg. (mg/L)
Site1(Sfc)	Layer 6	4/22/2008 9:44	4/15/2009 9:10	14	0.02	75.032	0.019	0.031
Site1(Bot)	Layer 1	4/22/2008 10:03	4/15/2009 9:14	15	0.034	32.851	0.037	0.018
Site2(Sfc)	Layer 6	4/22/2008 12:30	4/15/2009 11:47	14	0.021	46.71	0.021	0.031
Site2(Bot)	Layer 1	4/22/2008 12:39	10/16/2008 10:41	12	0.023	33.306	0.038	0.024
Site4(Sfc)	Layer 6	4/22/2008 12:06	4/15/2009 10:22	14	0.017	58.605	0.02	0.029
Site4(Bot)	Layer 1	4/22/2008 12:17	10/16/2008 12:29	12	0.026	34.561	0.039	0.024
Site6(Sfc)	Layer 6	4/22/2008 10:51	12/8/2008 12:00	13	0.021	28.253	0.051	0.063
Site8(Sfc)	Layer 6	4/22/2008 13:11	12/8/2008 10:56	13	0.013	36.921	0.027	0.035
Composite				107	0.022	43.732	0.031	0.032

Table 13 Calculated RMS errors for DOC calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (mg/L)	Relative RMS	Data Avg. (mg/L)	Model Avg. (mg/L)
Site1(Sfc)	Layer 6	5/21/2008 11:34	10/16/2008 11:05	4	0.499	92.356	5.22	4.871
Site1(Bot)	Layer 1	5/21/2008 12:04	10/16/2008 11:57	5	1.119	120.312	5.496	4.468
Site2(Sfc)	Layer 6	5/21/2008 14:14	10/16/2008 10:30	4	0.401	35.155	5.21	4.869
Site2(Bot)	Layer 1	5/21/2008 14:23	10/16/2008 10:41	4	0.955	217.111	5.35	4.475
Site4(Sfc)	Layer 6	5/21/2008 13:46	10/16/2008 12:19	4	0.664	265.509	5.355	4.912
Site4(Bot)	Layer 1	5/21/2008 13:55	10/16/2008 12:29	4	0.795	130.345	5.32	4.813
Site6(Sfc)	Layer 6	5/21/2008 12:46	10/16/2008 13:32	4	1.024	189.543	5.688	6.106
Site8(Sfc)	Layer 6	5/21/2008 14:58	10/16/2008 9:48	5	1.751	35.872	4.772	4.648
Composite				34	0.932	132.382	5.291	4.875

Table 14 Calculated RMS errors for POC calibration

Station ID	Layer	Start Date	End Date	# Pairs	RMS Error (mg/L)	Relative RMS	Data Avg. (mg/L)	Model Avg. (mg/L)
Site1(Sfc)	Layer 6	5/21/2008 11:34	10/16/2008 11:05	4	0.745	265.966	0.305	1
Site1(Bot)	Layer 1	7/9/2008 10:12	10/16/2008 11:57	4	0.2	50.039	0.295	0.462
Site2(Sfc)	Layer 6	5/21/2008 14:14	10/16/2008 10:30	4	0.806	116.791	0.415	1.074
Site2(Bot)	Layer 1	7/9/2008 12:13	10/16/2008 10:41	3	0.26	96.126	0.363	0.611
Site4(Sfc)	Layer 6	7/9/2008 13:32	10/16/2008 12:19	3	0.66	206.285	0.33	0.977
Site4(Bot)	Layer 1	5/21/2008 13:55	10/16/2008 12:29	4	0.374	36.676	0.458	0.55
Site6(Sfc)	Layer 6	7/9/2008 12:47	10/16/2008 13:32	3	1.533	589.542	0.19	1.643
Site8(Sfc)	Layer 6	6/18/2008 10:37	10/16/2008 9:48	4	0.8	94.11	0.555	1.175
Composite				29	0.657	170.006	0.371	0.922