

# An Assessment of Little Bay Sediment and Water Quality in Relation to Indices of Seagrass Condition

University of Texas at Austin Marine Science Institute  
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City of Rockport  
Aransas County Navigation District  
Town of Fulton





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## Executive Summary

We measured a variety of water column and sediment parameters in Little Bay and its major tributary, Tule Creek, over the period from May 2008 to June 2010 in relation to seagrass (*Halodule wrightii*) condition indices. These measurements were collected in an attempt to better understand the Little Bay system and the factors that have contributed to the decline of seagrass distribution in the Bay. Although the contracted period of study was for one year (ending March 2010), we present hydrographic data that was collected starting May 2008.

We placed special emphasis on the measurement of dissolved inorganic nitrogen (DIN) levels in Little Bay and Tule Creek. Although concentrations of DIN (both nitrate and ammonium) in Tule Creek approached  $9.0 \text{ mg L}^{-1}$  (about  $650 \text{ } \mu\text{M}$ ), levels of DIN in Little Bay averaged from nearly undetectable to  $0.2 \text{ mg L}^{-1}$  ( $12 \text{ } \mu\text{M}$ ). The lower concentrations of DIN in Little Bay were similar to the reference site in Aransas Bay (and other sites in the Mission-Aransas Estuary) and likely reflect the low stream input from Tule Creek relative to the volume of the receiving waters of Little Bay.

The dominance of nitrate inputs to Tule Creek is indicative of anthropogenic inputs associated with both point and non-point sources. Stable nitrogen isotopic ratios ( $\delta^{15}\text{N}$ ) were used to identify wastewater sources of DIN. The average  $\delta^{15}\text{N}$  values of Tule Creek algae (8-10‰) were high (indicative of a wastewater signal) but extremely variable. In contrast, sediment  $\delta^{15}\text{N}$  values in Tule Creek were much more constrained and nearly half that of the algae (5‰). The  $\delta^{15}\text{N}$  values of benthic macroalgae in Little Bay were also very high (about 10‰) but average  $\delta^{15}\text{N}$  values for seagrasses and epiphytic algae were considerably less (4-7‰). These confounding results may reflect inputs of nitrogen from other non-point urban sources (e.g. fertilizer), bird guano, or from biogeochemical processes (e.g. denitrification).

Chlorophyll *a* concentrations were used to quantify the amount of phytoplankton present in seawater. Sustained phytoplankton blooms can potentially block light from reaching the bottom of Little Bay. During the course of this study, chlorophyll *a* concentrations were measured every other week. Concentrations ranged from  $1\text{-}40 \text{ } \mu\text{g L}^{-1}$ , but generally fell between  $5\text{-}20 \text{ } \mu\text{g L}^{-1}$ , a reflection of low to moderate levels of phytoplankton abundance. These chlorophyll levels alone were not sufficiently high to block the light needed on the bottom for photosynthesis.

Light values on the seabed at all sites always exceeded the minimum 18% surface irradiance required by *Halodule wrightii*. Although we observed blooms of macroalgae in Little Bay, these blooms were relatively short-lived during our period of study and did not appear to pose a significant threat to the existing seagrasses. However, it is likely that benthic macroalgal blooms are fueled by elevated concentrations of ammonium in sediment porewaters (average  $250 \text{ } \mu\text{M}$ ) that are significantly higher than reported elsewhere in seagrass beds along the Texas coast.

Data collected over the past two years indicate that there are no obvious biological or chemical mechanisms solely responsible for the decline of seagrasses in Little Bay. Despite inputs of anthropogenic nitrogen to Little Bay, DIN values in the Bay are not high relative to adjacent systems, and other indices of water quality (chlorophyll, TSS, percent surface irradiance) are within the ranges seen elsewhere on the Texas coast. The biomass and density of seagrasses in Little Bay are lower than at the reference site, but epiphytic biomass was also relatively low, and unlikely a cause of extensive seagrass mortality. The high concentrations of ammonium in sediment porewaters can potentially support benthic algal blooms, and drift macroalgae are known to suffocate grasses and produce bare patches in otherwise healthy beds. However, we observed no macroalgal blooms that lasted more than a month during the period of this study.

One interesting phenomenon observed during this study was the large drop in the salinity of Little Bay after extended periods of precipitation. The high salinities (>40 ppt) measured in summer 2009 dropped significantly to less than 20 ppt by December 2009 and have continued to remain less than or at 20 ppt through spring, summer, and fall 2010. Although there is little data on salinity tolerance of *Halodule wrightii*, this species is rarely observed in waters that are frequently below less than about 20 ppt. The freshening of Little Bay during periodic flood events may have contributed to the long-term decline in seagrass extent. The unprecedented decline in seagrass above-ground biomass that has apparently occurred in Lower Laguna Madre following months of lower salinities (<20 ppt) from tropical storms in fall 2010 (Joseph Kowalsk, per. comm.), lends some support to this hypothesis. The effect of the flooding events in Little Bay is exacerbated by the changes in water circulation and residence time that resulted from extensive shoreline alterations over the past few decades. It is very apparent from aerial imagery that Little Bay bears little hydrological resemblance to the natural system that existed prior to recent urban development.

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## **Introduction**

For the last several years, there is increasing concern for the disappearance of seagrass beds in Little Bay. The purpose of this study was to measure the ability of the system to maintain healthy seagrass beds. There are several important factors in determining the ability of Little Bay to support seagrass growth, which include light availability and appropriate values of sediment and water quality.

Locations of ten sites were chosen based on hydrological flow and previous sampling efforts by the City of Rockport Water Quality committee and the University of Texas Marine Science Institute. On 2/19/2009, the sampling plan was vetted through a group of stakeholders from University of Texas Marine Science Institute, Aransas County, Aransas County Navigation District, Coastal Bend Bays & Estuaries Program, and the City of Rockport.

The original scope of work called for ten sites to be sampled on a monthly basis for water quality, light attenuation, and phytoplankton, but we increased the sample frequency to every other week to ensure a better dataset. Measurements for water quality, light attenuation, and phytoplankton were also sampled after three rain events to determine non-point source inputs to the system. Measurements for water column nutrients were sampled at the ten sites after three rain events and three times during drought like conditions.

Three of the ten sites were also sampled on a quarterly basis to provide an assessment for the ability of the system to maintain healthy seagrass beds. Sites to be sampled on a quarterly basis include Tule Creek outfall, Connie Hagar, and Bayside Point (named Bayside barren in Mike Gill's study), all of which were sampled for seagrass parameters in the summer of 2007 by UTMSI. The Tule Creek outfall site was not sampled because it was absent of seagrass during this study, and a control site was added. Samples for seagrass assessment on the quarterly basis will occur in conjunction with a monthly sampling date for the above indicators. Factors affecting seagrass growth include seagrass density and percent cover, sediment pore water ammonium, isotopic analysis of nitrogen in seagrass blades and epiphytic algae. Additional measurements of nitrogen isotopic values were also taken in Tule Creek for sediment and macroalgae. These samples were outside the contracted scope of the project, but included to ensure a better dataset. Since light is one of the most important factors in supporting seagrass growth, a light meter was deployed to receive continuous measurements. Raw data for the study can be found in Appendix C.

## Sampling Locations

This study gathered discrete data from ten unique sampling points (Figure 1). Six of these sampling points were located within the boundaries of Little Bay and three of these locations sampled the lower section of Tule Creek. One study site was added outside of the boundaries of Little Bay on the shoreline of Rockport Beach Park. This site was regarded as a control site since it contained extensive seagrass patches and was used for comparison purposes. Of the six study sites within the Bay, only two of the sites (LB02 and LB03) contained seagrass



**Figure 1. Map of Little Bay and Tule Creek sampling locations.**



## **Recent Alterations in Hydrodynamic Processes**

A review of recent and historical aerial photographs has revealed significant changes to the terrestrial landscape surrounding Little Bay. The dramatic increase in development around Little Bay since the 1950's was concurrent with a decrease in the connectivity between Little Bay and Aransas Bay. The increase in development surrounding Little Bay provides large areas of impervious surfaces that limits filtration of rainwater in the soil and contributes to non-point source pollution. This is most evident in the development of Key Allegro as homes and roadways replaced wetland habitat (Figure 2). Through time, loss of this wetland habitat has transformed a natural filter and a sink for nutrients into a source of nutrients into Little Bay.

Decreased connectivity between Little Bay and Aransas Bay has undoubtedly increased the residence time of water within Little Bay, and promoted nutrient retention in the system. As a result, nutrient concentrations in the water column and underlying sediments within Little Bay are likely to increase in the absence of a physical export mechanism. In terms of seagrass proliferation, limited connectivity between Little Bay and Aransas Bay will inhibit recruitment of seagrass plants. Seagrasses reproduce sexually through the release of seeds and asexually through vegetative fragmentation. Both forms of reproduction are dependent on the physical transport of plant material within prevailing currents. The loss of connections between Aransas Bay and Little Bay thus acts to both retain nutrients within Little Bay and sufficiently inhibit recruitment of seagrasses. The potential to increase circulation within Little Bay was explored in greater detail in a technical report submitted by Naismith Engineering in December 2009.



**Figure 2. Photographic comparison of Little Bay in 1952 and 2005.**



## **Nitrogen Concentrations in Tule Creek and Little Bay**

Total dissolved inorganic nitrogen (DIN) in the form of ammonium and nitrate+nitrite was measured in the water column every three months and following three separate rain events. Sediment ammonium concentrations were also measured within the seagrass beds in Little Bay every three months. The comparison of nutrient concentrations between Tule Creek and Little Bay stations showed some very important differences. For example, the concentrations of DIN within Tule Creek were always high on average (63.3-636.8  $\mu\text{M}$ ; 0.9-8.9  $\text{mgL}^{-1}$ ), but the concentrations of DIN within Little Bay were always an order of magnitude less (0.9-8.9  $\mu\text{M}$ ; 0.01- 0.12  $\text{mgL}^{-1}$ ) (Figure 3). The large difference in concentrations suggest that although nitrogen is abundant in Tule Creek, the volume of water entering Little Bay from Tule Creek is either (1) too small to represent a significant nitrogen source or (2) reflects active rates of denitrification in Little Bay in which nitrogen is lost from the system as  $\text{N}_2$  gas. The first possibility is supported in the analysis of nutrient concentrations through time, as fluctuations in the nitrogen concentrations within Tule Creek were not emulated within Little Bay. Finally, no significant trends in nitrogen concentrations within Tule Creek or Little Bay were observed following rain events.

Overall, water column nitrogen concentrations within Little Bay are somewhat elevated, and this is most likely attributed to the nitrogen reserve within the sediments. An analysis of ammonium concentrations in vegetated sediments revealed high concentrations of ammonium. The concentrations of pore water ammonium in Little Bay are nearly double the concentrations of other local seagrass habitats (Figure 4).<sup>\*</sup> These concentrations suggest that there is considerable internal cycling of nitrogen within Little Bay and that the sediments are serving as a source of nitrogen to the overlying water column. As a result, the sediments within Little Bay are most likely responsible for the elevated concentrations of nitrogen within the water column.

Additional samples were collected outside the contracted scope of work for this project to determine the sources and fates of inorganic nitrogen, which was used to develop a nitrogen budget for Little Bay. This information can be found in Appendix A.

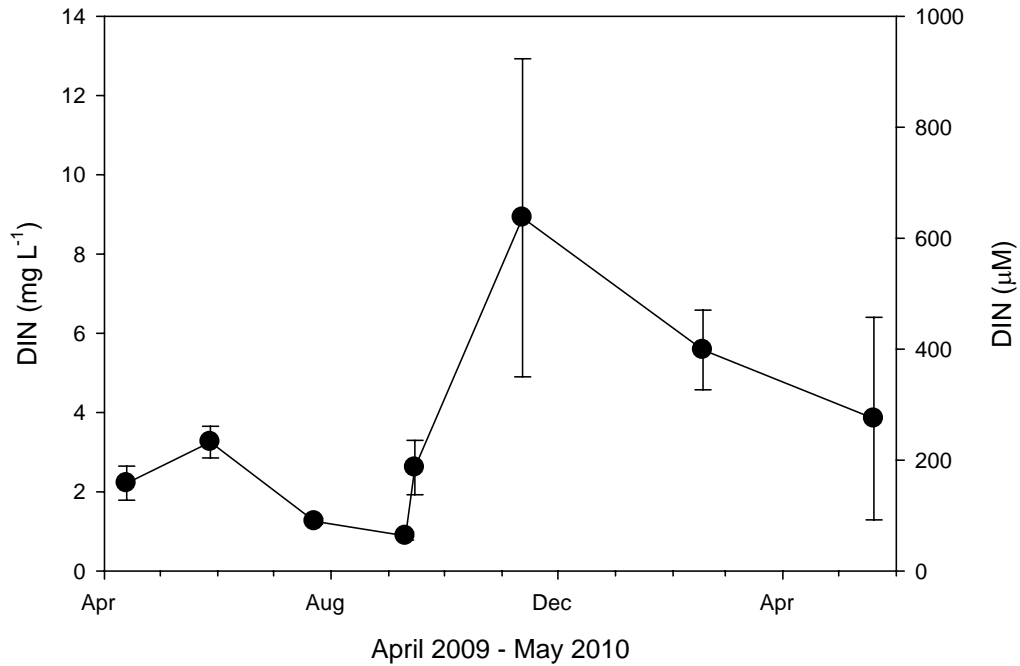


Figure 3a. Water column concentrations of DIN in Tule Creek. Each data point is the mean  $\pm$  SD of Sites 04, 09, and 11.

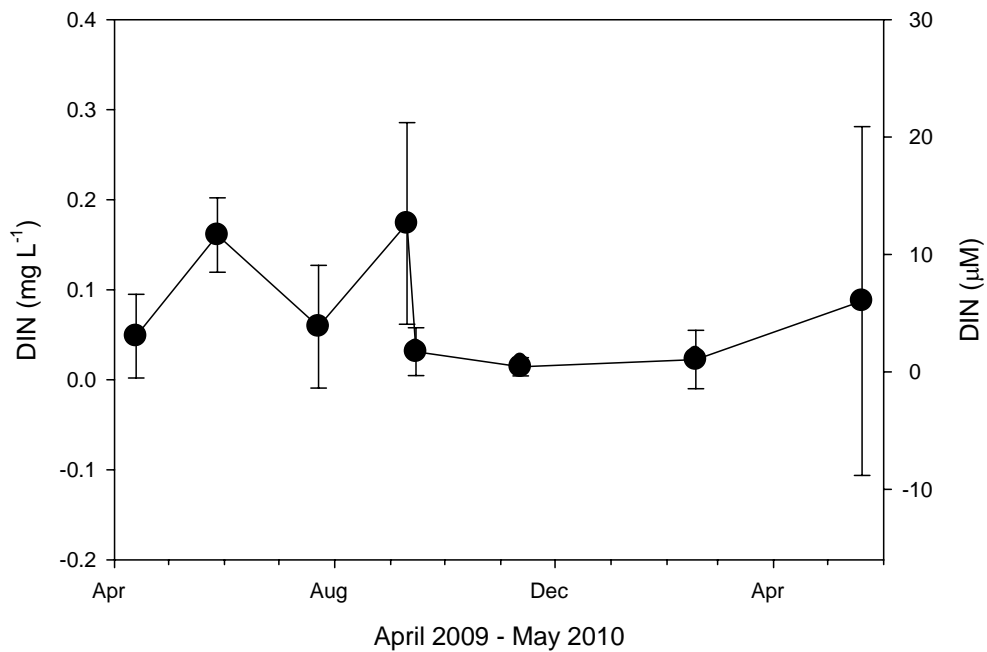
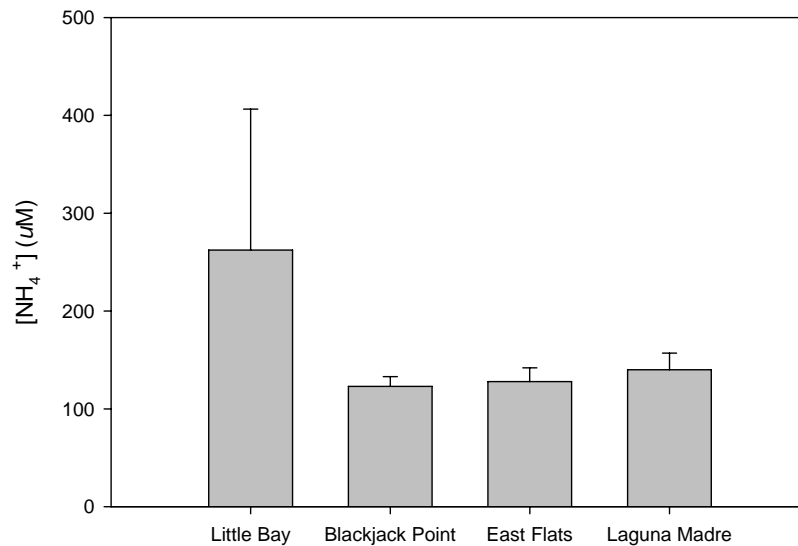


Figure 3b. Water column concentrations of DIN in Little Bay. Each data point is the mean  $\pm$  SD of Sites 01, 02, 03, 05, 06, 07, 08, and light sensor location.



**Figure 4. Comparison of Little Bay sediment ammonium concentrations to local seagrass beds. Values for Little Bay represent the mean  $\pm$  SD of Sites 02, 03, and 04 ( $n = 21$ ). Data from Blackjack Point, East Flats, and Laguna Madre from Dunton (1996).**

\*K.H. Dunton. 1996. Photosynthetic Production and Biomass of the Subtropical Seagrass *Halodule wrightii* Along an Estuarine Gradient. Estuaries. Vol 19. p 437-447.

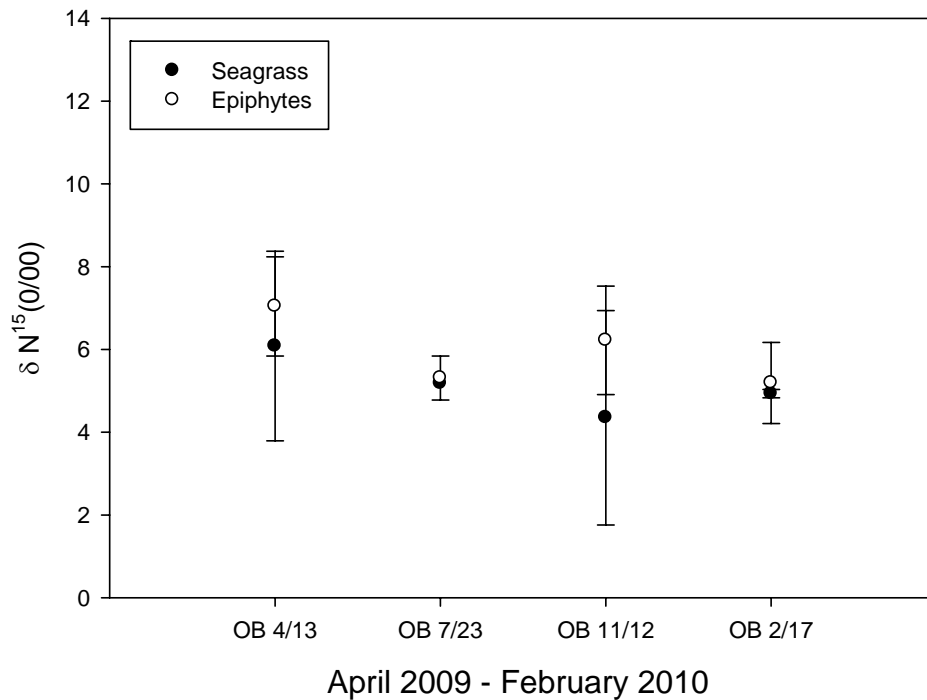
#### Isotopic Sampling in Tule Creek and Little Bay

Tissue samples of seagrasses and epiphytic algae were collected on four different sampling dates and used to identify potential nitrogen sources within Little Bay (Figure 5). We used stable nitrogen isotopic abundances ( $^{15}\text{N}$ ) to identify whether treated wastewater represented a significant source of inorganic nitrogen to the seagrasses in the bay. For this analysis, high  $\delta^{15}\text{N}$  values ( $>10\text{‰}$ ) indicate the presence of a wastewater nitrogen source. Other sources of anthropogenic nitrogen include fertilizer ( $0\text{‰}$ ). Seagrass and epiphytic algal tissues collected in Little Bay sampled during the course of this study revealed slightly enriched  $^{15}\text{N}$  values (4-7 $\text{‰}$ ) compared to local seagrass beds.

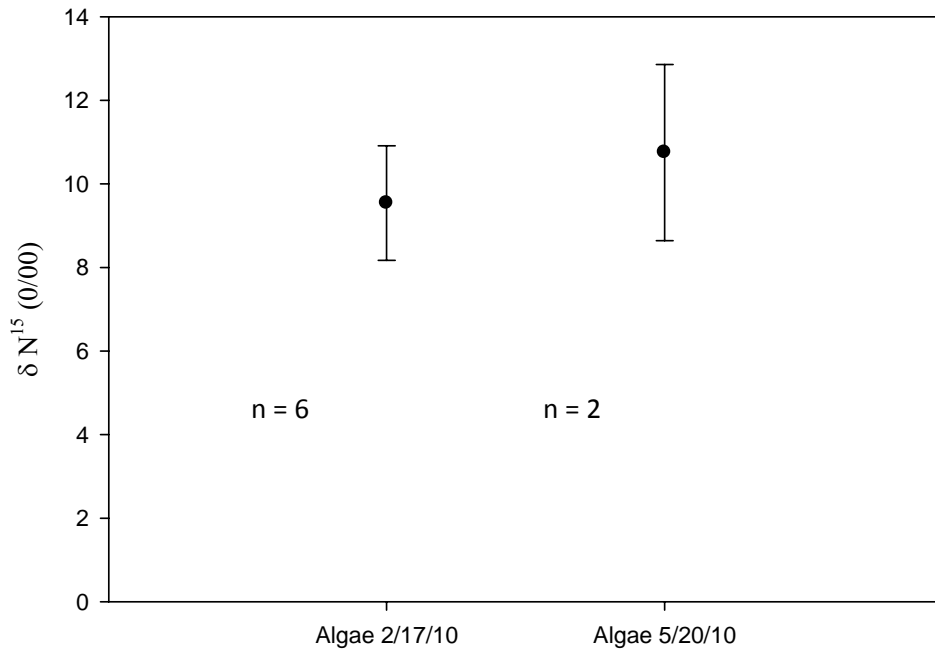
On two separate sampling dates, benthic macroalgae was collected synoptically with seagrass and epiphytic algal tissue for isotopic analysis. Macroalgal tissues showed a highly enriched isotopic ratio of nitrogen (Figure 6). Since these two sampling dates coincided with sampling dates for the seagrass and epiphytic tissues, it was peculiar that the benthic macroalgae differed so drastically from the other tissues. This discrepancy may be explained by comparing the sources of nitrogen for benthic macroalgae and the seagrasses. The macroalgae obtains almost all of its nitrogen from pore waters diffusing out of the sediments. Previous experiments have shown that  $^{15}\text{N}$  enriched nitrogen is left behind in these pore waters because of denitrification processes occurring within the sediment. Assimilation of the remaining  $^{15}\text{N}$  enriched nitrogen by the algae results in  $^{15}\text{N}$  enriched algal tissues that are equivalent to

wastewater  $\delta^{15}\text{N}$  values. Since seagrasses and epiphytic algae obtain a large portion of their nitrogen from the water column, the tissues from these organisms would not appear as enriched as the benthic macroalgae. As a result, although benthic macroalgae have a highly enriched isotopic ratio of nitrogen, this enrichment is most likely attributed to denitrification in the sediments.

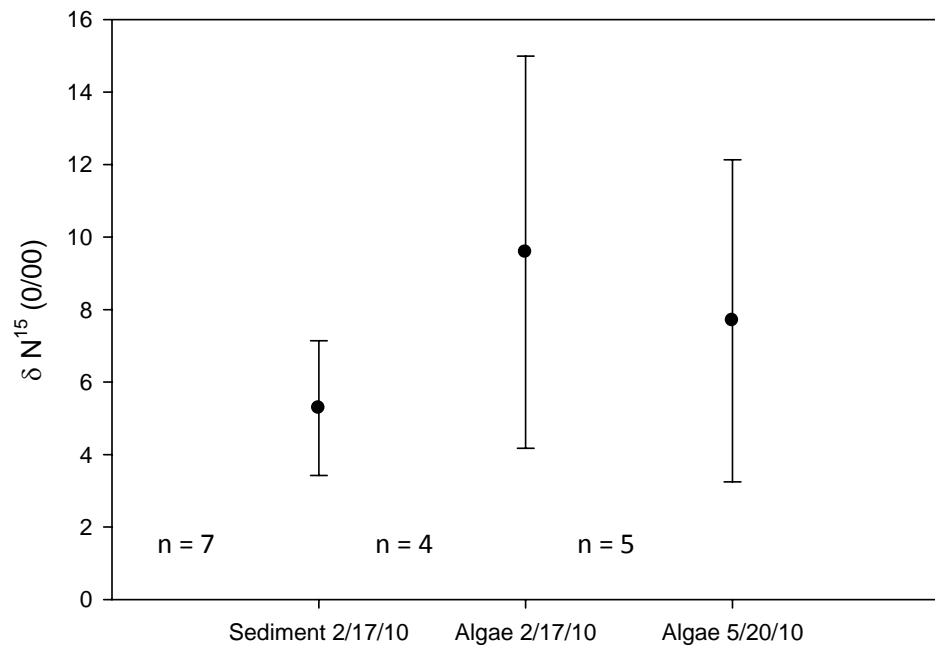
Sediment and macroalgal samples were also collected from within Tule Creek in an effort to identify nitrogen sources (Figure 7). Macroalgal samples within Tule Creek varied significantly, but on average showed significant  $^{15}\text{N}$  enrichment. In contrast, sediment  $\delta^{15}\text{N}$  values in Tule Creek were much more constrained and nearly half that of the algae (5‰). Algae are short-lived (life cycles of months), whereas sediments are more integrative of long term conditions. These apparent confounding results may indicate that Tule Creek is receiving a mixture of nitrogen sources which include  $^{15}\text{N}$ -enriched wastewater and  $^{15}\text{N}$ -depleted fertilizer nitrogen. Such mixing may explain the lack of a clear wastewater nitrogen signal in Tule Creek, despite the high apparent inputs of treated wastewater to the watershed.



**Figure 5. Nitrogen isotope values for seagrass and epiphytic tissue. Values represent the mean  $\pm$  SD of Sites 02 and 03 for each sampling date.**



**Figure 6. Nitrogen isotope values for benthic macroalgae taken within Little Bay. Values represent the mean  $\pm$  SD of all the samples taken for each date.**



**Figure 7. Nitrogen isotope values for sediment and algae taken from Tule Creek. Values represent the mean  $\pm$  SD of all the samples taken for each date.**

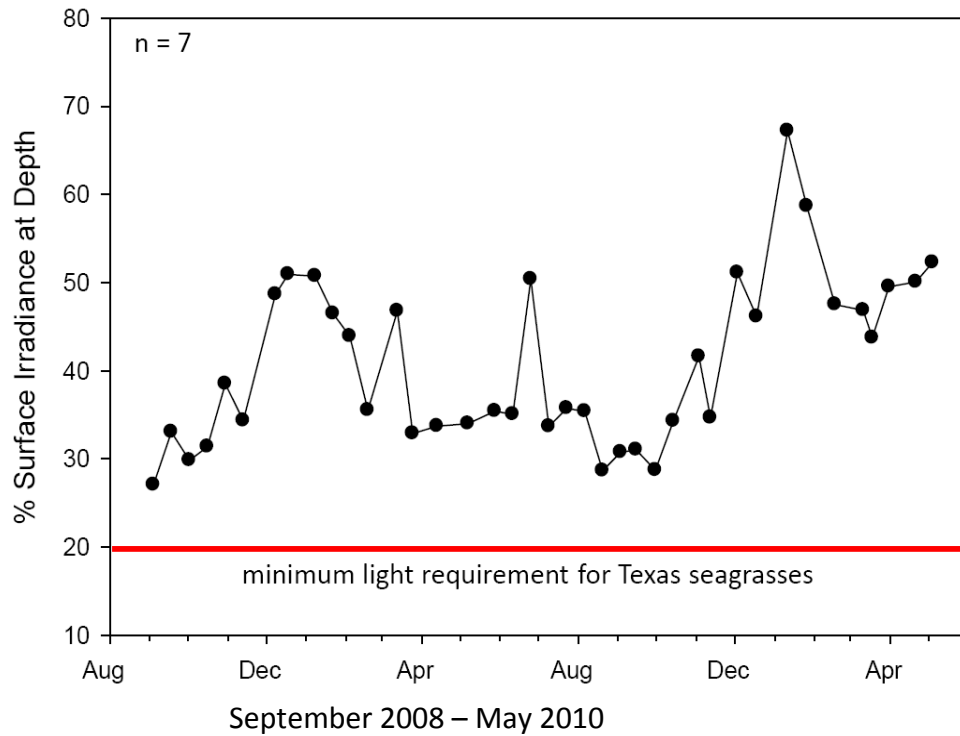
## **Water Transparency and the Seagrass Light Environment**

Light limitation is often implicated in the loss of seagrasses worldwide. In an effort to characterize the underwater light environment in Little Bay, continuous and discrete measurements of light were gathered throughout the study period. The absorption and scattering of light is mostly attributed to concentrations of chlorophyll and the amount of suspended solids present in the water column. These two parameters were also measured throughout the entire study period. Finally, even in the clearest waters, excessive amounts of epiphytic algae will block light from reaching the surface of the seagrass leaves. The amount of epiphytic algae present on the seagrass leaves in Little Bay was quantified on two separate sampling dates.

Both continuous and discrete measurements of the underwater light environment revealed that a sufficient amount of light is available for seagrasses in Little Bay (Figure 8). At all sampling locations and dates throughout this study, the amount of light reaching the sediment surface exceeded the minimum amount of light needed for Texas seagrass species. This is further substantiated by measurements of chlorophyll and total suspended solids, which were not present in high enough concentrations to inhibit the transmission of light to the sediment. Concentrations of chlorophyll  $\alpha$  ranged from 1-40  $\mu\text{gL}^{-1}$ , but generally fell between 5-20  $\mu\text{gL}^{-1}$  throughout the bay. Concentrations of total suspended solids were generally lower than 25  $\text{mgL}^{-1}$  and ranged from 3-55  $\text{mgL}^{-1}$ . Also, measurements of epiphytic biomass in all sampling locations on both sampling dates were not excessive. As a result, although Little Bay has elevated nitrogen levels, this nitrogen is not contributing to blooms of plankton that are of sufficient levels to block light from reaching seagrasses.

One noteworthy observation recorded during this study was the presence of an extensive macroalgal bloom drifting on the surface of the water. This bloom occurred in February and sufficiently inhibited light from reaching the seagrasses. Although the bloom decreased light transmission in the water column, it did not persist and likely had no long-lasting effects on the existing seagrass populations. It is important to document the extent and longevity of any future macroalgal blooms, as large persistent blooms could negatively impact existing seagrass beds through light limitation.





**Figure 8. Percent of surface irradiance at the sediment surface. Values represent the mean of Sites 01, 02, 03, 04, 05, 06, 07, and the light sensor location.**

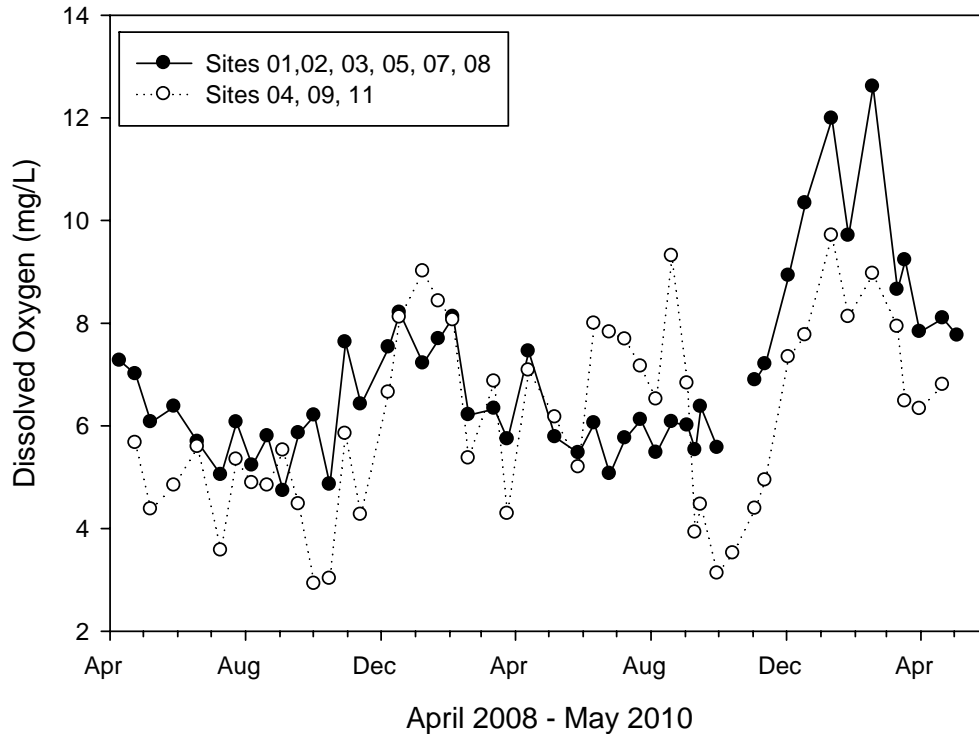
### **Measurements of Water Quality**

The quality of water is important to seagrasses condition. Extreme fluctuations in characteristics of water quality can cause stress and sometime death to seagrasses if it is sustained for long periods outside of the seagrass maximum and minimum ranges for growth. This study measured several parameters of water quality including dissolved oxygen, salinity, temperature, pH, and turbidity.

### Measurements of Dissolved Oxygen

In many eutrophic water bodies, decreases in the concentrations of dissolved oxygen will cause hypoxic conditions. Hypoxia forms when excess nutrient loads cause large increases in primary production. This organic matter then settles to bottom waters where it decomposes. The decomposition of the organic matter takes oxygen out of the water column. If oxygen concentrations become too depleted, seagrasses will become stressed. Hypoxia is most common during summer months, when the stratification of the water column inhibits mixing of oxygen rich surface waters with bottom waters. Dissolved oxygen was measured throughout the entire study period at both the surface and the bottom of the bay in all sampling locations. There was

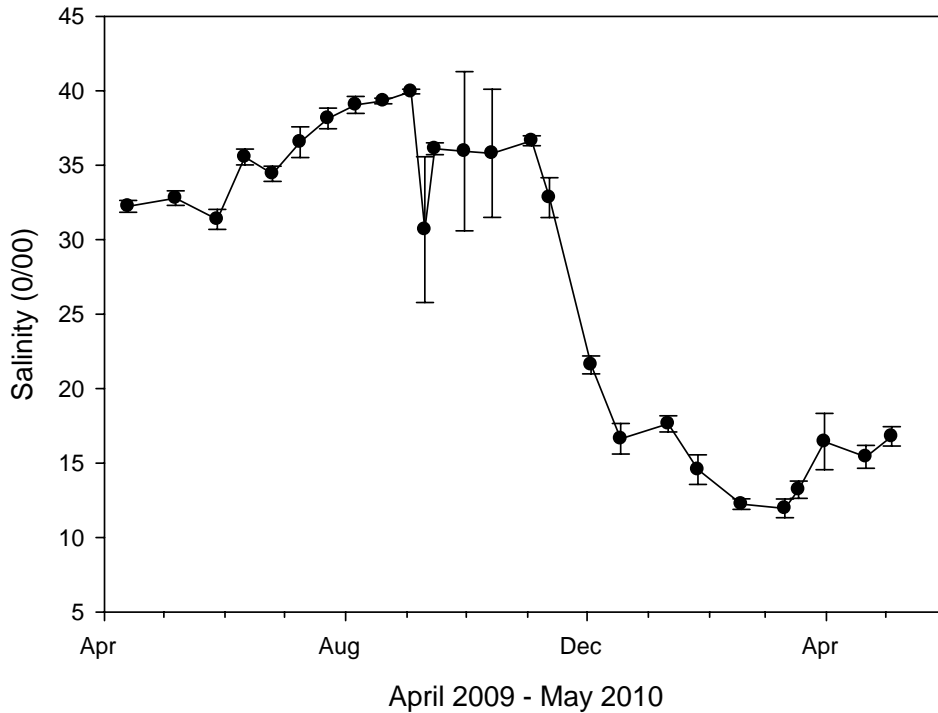
never a point throughout the study period that any of the sampling locations approached hypoxic conditions (Figure 9).



**Figure 9. Water column concentrations of dissolved oxygen for Little Bay sites (filled circles) and Tule Creek sites (empty circles). Values represent the mean of the sites for each sample date.**

### Measurements of Salinity

Salinity was measured at all Tule Creek and Little Bay sampling locations throughout the entire study period. Salinities within Tule Creek were always lower than in the bay, but were highly variable. Variations in the salinities of Tule Creek are presumably due to tidal exchange and the timing and extent of rain events. Salinity varied very little between sampling locations throughout Little Bay. During this past December, salinity dropped by more than 50% in the bay due to numerous rain events. This resulted in a very low salinity that persisted throughout the entire spring sampling at all locations (Figure 10). The freshening of Little Bay represents the most evident stressor to seagrasses observed during this study. Seagrass species in this area are able to thrive in hypersaline conditions, which are very common in South Texas estuaries. However, these grasses may become increasingly stressed under hyposaline conditions that occur after extensive rain events. It is possible that previous flood years have acted to decrease salinities in Little Bay for time periods long enough to eliminate populations of seagrasses.



**Figure 10. Salinity in Little Bay. Values represent the combined mean  $\pm$  SD for Sites 01, 02, 03, 05, 06, 07, 08, and the light sensor location.**

### Continuous Measurements of Water Quality

In addition to discrete measurements of water quality, a YSI datasonde was deployed in Little Bay from October 2009 to May 2010 in order to continuously measure water quality parameters. The deployment of this datasonde provided valuable data on the water quality of Little Bay at a fine temporal scale, which was used to validate the information obtained in the discrete measurements (Appendix B). For example, the large and sustained decrease in salinity observed with discrete measurements around Little Bay was also recorded with the datasonde. Similarly, continuous dissolved oxygen measurements provide sufficient evidence that hypoxia is not a concern within Little Bay. There was large increase in the pH of the water column during the spring of 2010, and this trend was more evident in the analysis of the continuous data. This increase in pH coincides with an increase in primary production occurring in the early spring months. As primary production rates increase, carbon is removed and oxygen is added to the water column, and the pH begins to rise. Since the continuous datasonde provided analogous results as the discrete sampling, the deployment of the datasonde represents a reliable measure of water quality within Little Bay at a much lower cost than a discrete sampling effort.

### Measurements of Seagrass Condition

Morphological observations of seagrasses within Little Bay were compared to seagrasses of the same species in Aransas Bay. Seagrasses in Little Bay had a lower shoot density and total biomass when compared to seagrasses in Aransas Bay (Figure 11). The shoot density and total biomass of seagrasses in Aransas Bay are similar to other local seagrass habitats. Given that the site in Aransas Bay was located in the Rockport Beach Park, there is evidence to suggest that healthy seagrass populations are thriving just outside the borders of Little Bay. Therefore, increasing connectivity from Little Bay to Aransas Bay may help in the expansion of healthy seagrass beds into the borders of Little Bay.

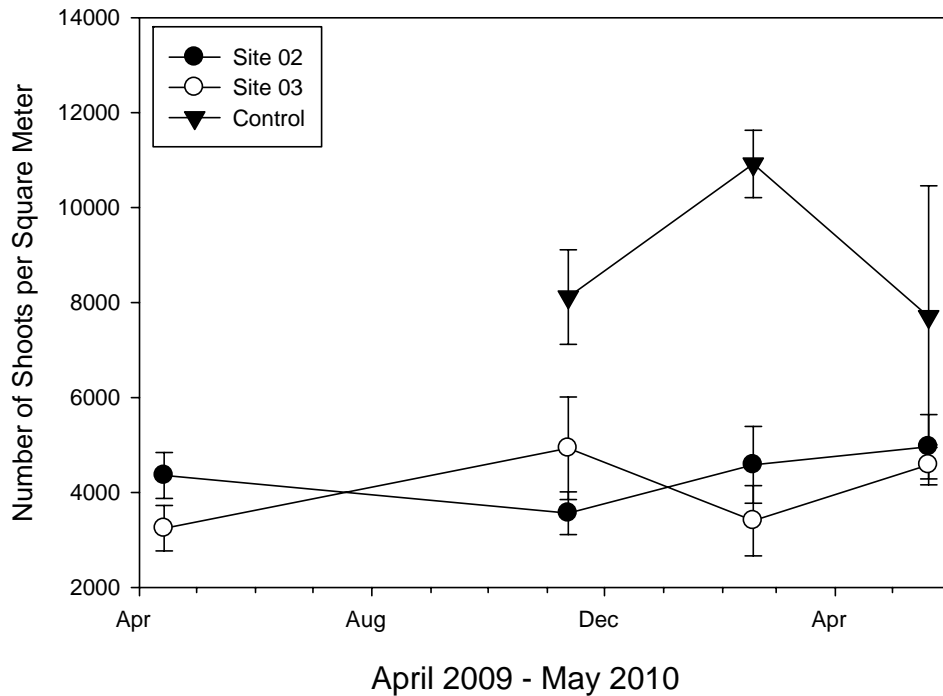
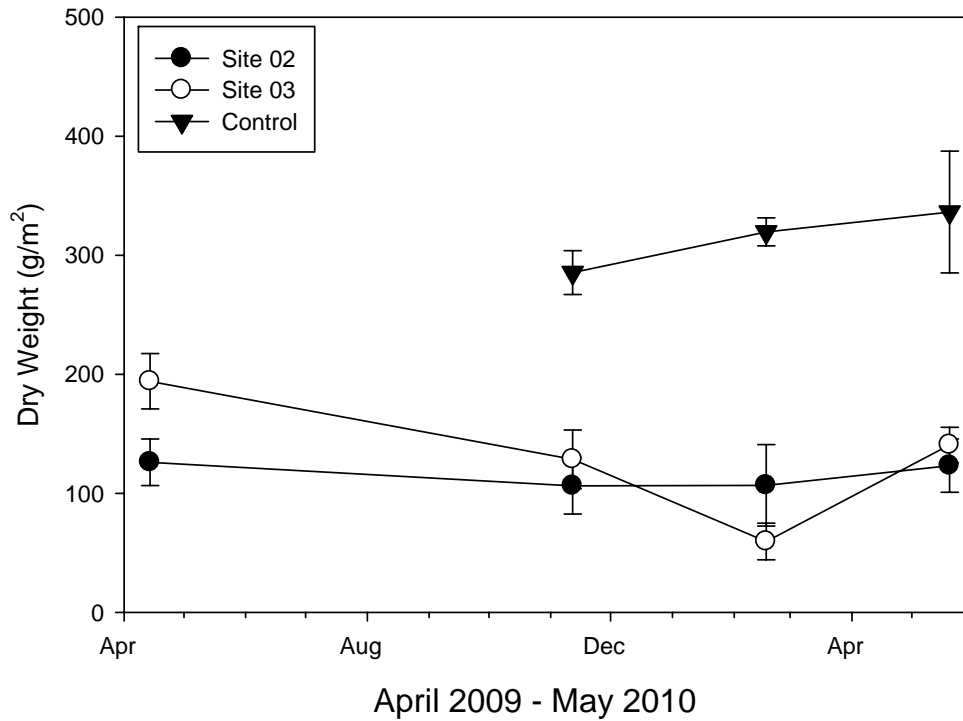


Figure 11a. Seagrass shoot density in Little Bay sites and reference location. Values represent the mean  $\pm$  SD of four replicate seagrass cores for each sample date.



**Figure 11b. Seagrass total biomass for Little Bay and reference locations. Values represent the mean  $\pm$  SD of four replicate seagrass cores for each sample date.**

#### Investigation of a *Halodule wrightii* (Shoalgrass) Seed Bank in Little Bay

To determine if a *Halodule wrightii* seed bank is present in Little Bay, a study was conducted in June 2010 at two experimental sites within Little Bay and one control site along the Rockport Beach Park on the periphery of the Bay. Four cores were taken at each of the three study sites: three within a *H. wrightii* bed and one at the shallow edge of the bed. Cores were sieved *in situ* and returned to The University of Texas Marine Science Institute for sorting. In each of the cores, the numbers of intact seeds, half seeds and partial (less than half) seeds were recorded. The cores contained zero intact and partial *H. wrightii* seeds. Two of the cores, one within a *H. wrightii* bed at the control site and one within a *H. wrightii* bed at an experimental site, each contained 1 half seed. These results suggest that there is likely no persistent *H. wrightii* seed bank in Little Bay.

## APPENDIX A

### Little Bay Nitrogen Budget: Sources and Fates of Inorganic-N

In February and May of 2010, water samples collected at additional stations for analysis of dissolved inorganic nitrogen concentrations along multiple sections of Tule and Sugar Creek. On both sampling dates, nitrogen concentrations were highest at the intersection of Tule Creek and Highway 35. In the February sampling, the lowest nitrogen concentration was observed at the head of Tule Creek, directly across the road from the wastewater treatment plant and upstream from the treated wastewater outfall (Figure A1). There was no water present in the creek to sample at this location during the May sampling effort. A significant source of nitrogen appears to enter Tule Creek prior to the intersection of Tule Creek and Highway 35.

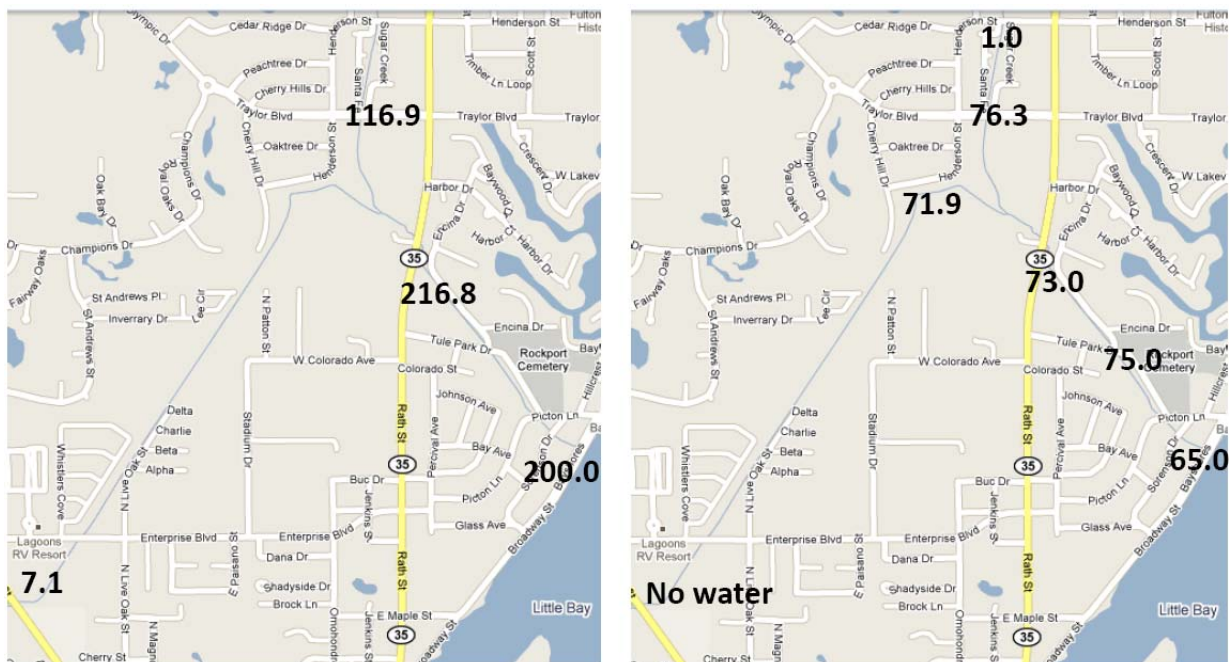


Figure A1. Nitrate + Nitrite ( $\mu\text{M}$ ) along Tule Creek in February (left) and May (right) 2010.

A summary of the inputs and reservoirs of inorganic-N in Little Bay reveals substantial storage of ammonium in the sediments (Figure A2). This reservoir of nitrogen within the underlying sediments represents the largest potential source of nitrogen to the water column that was measured during this study. Additional nitrogen sources that were not quantified during this study include precipitation and groundwater. Important nitrogen sinks that were not quantified during this study include denitrification and the export of nitrogen to Aransas Bay.



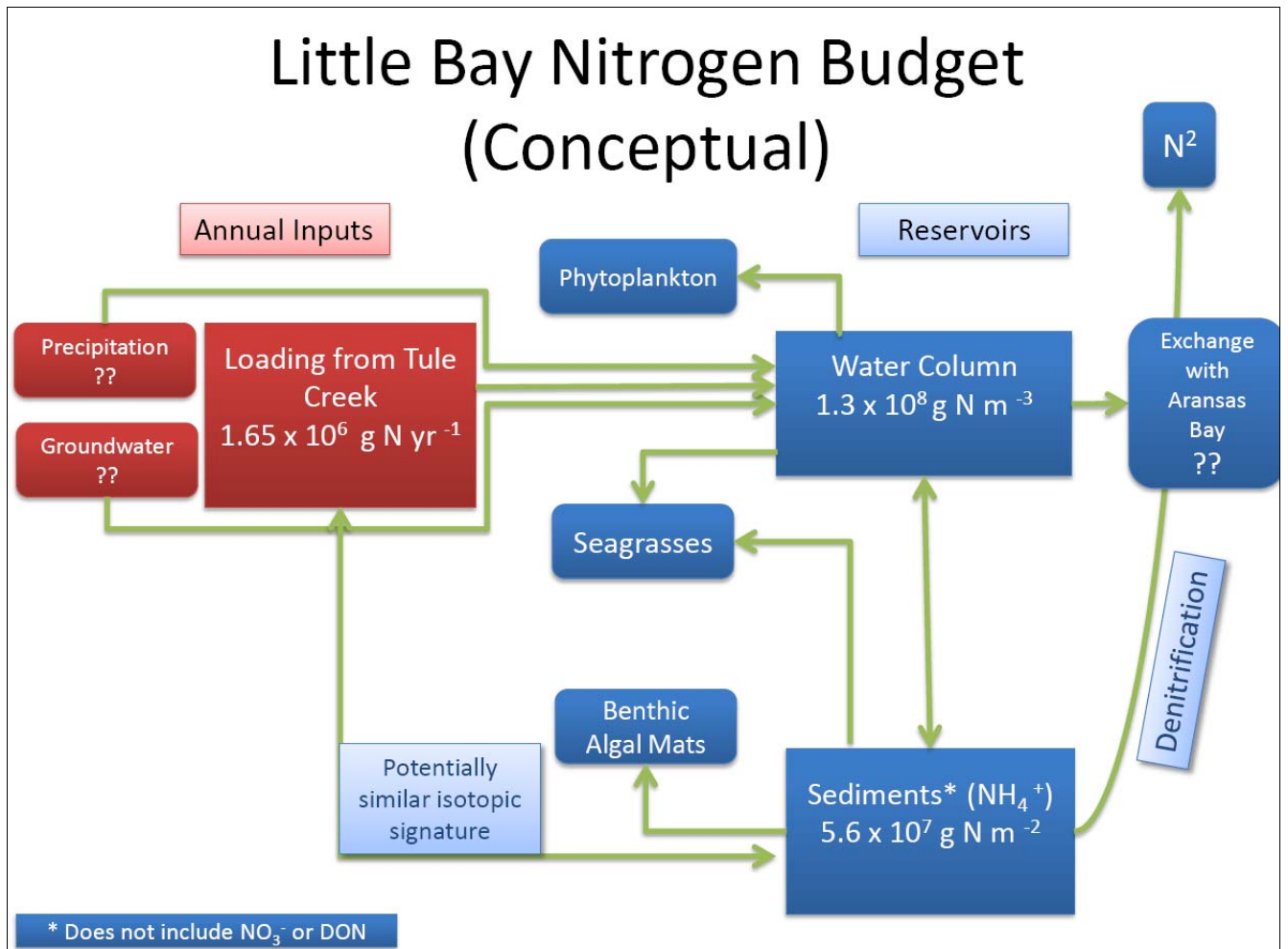
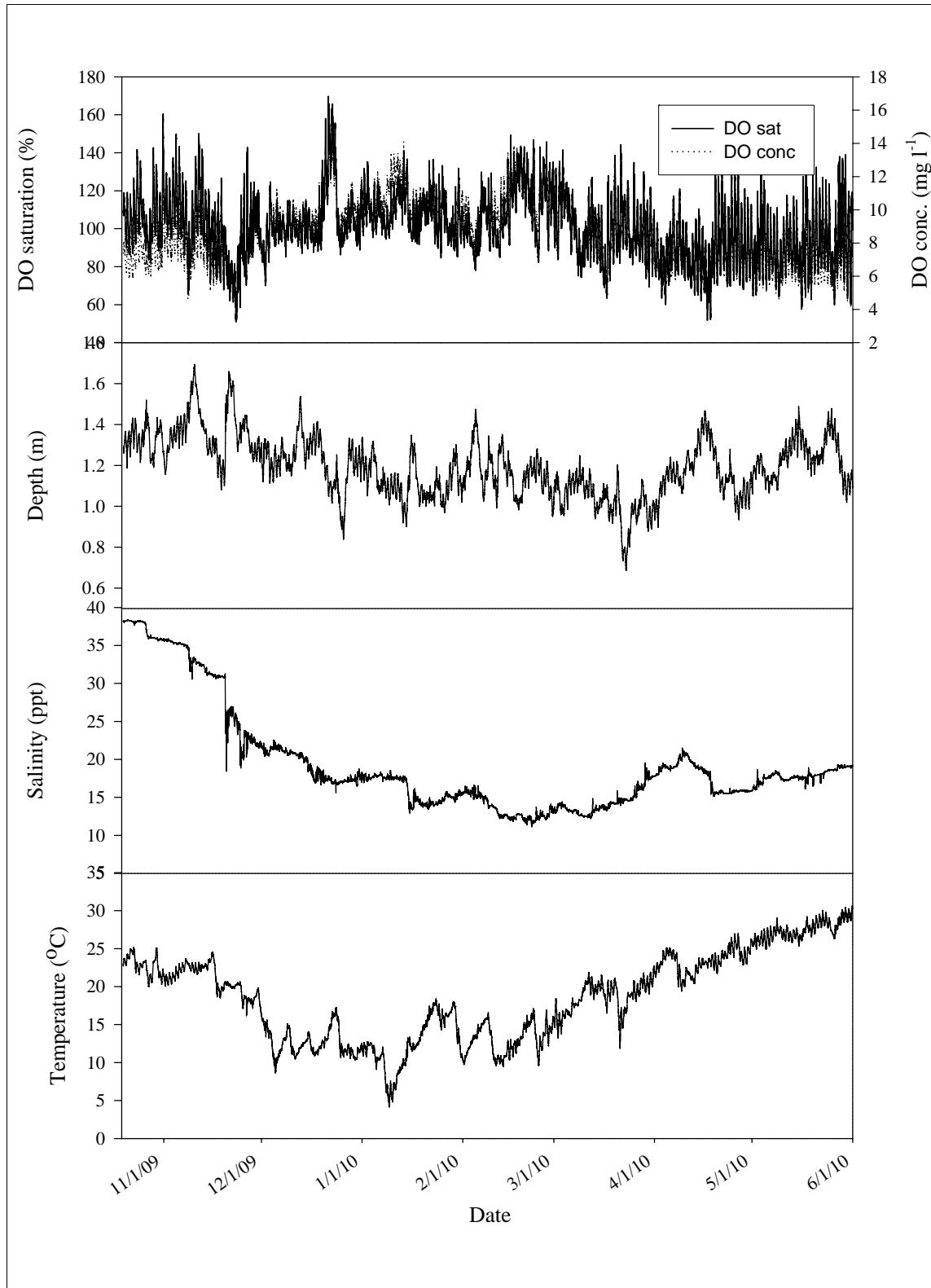
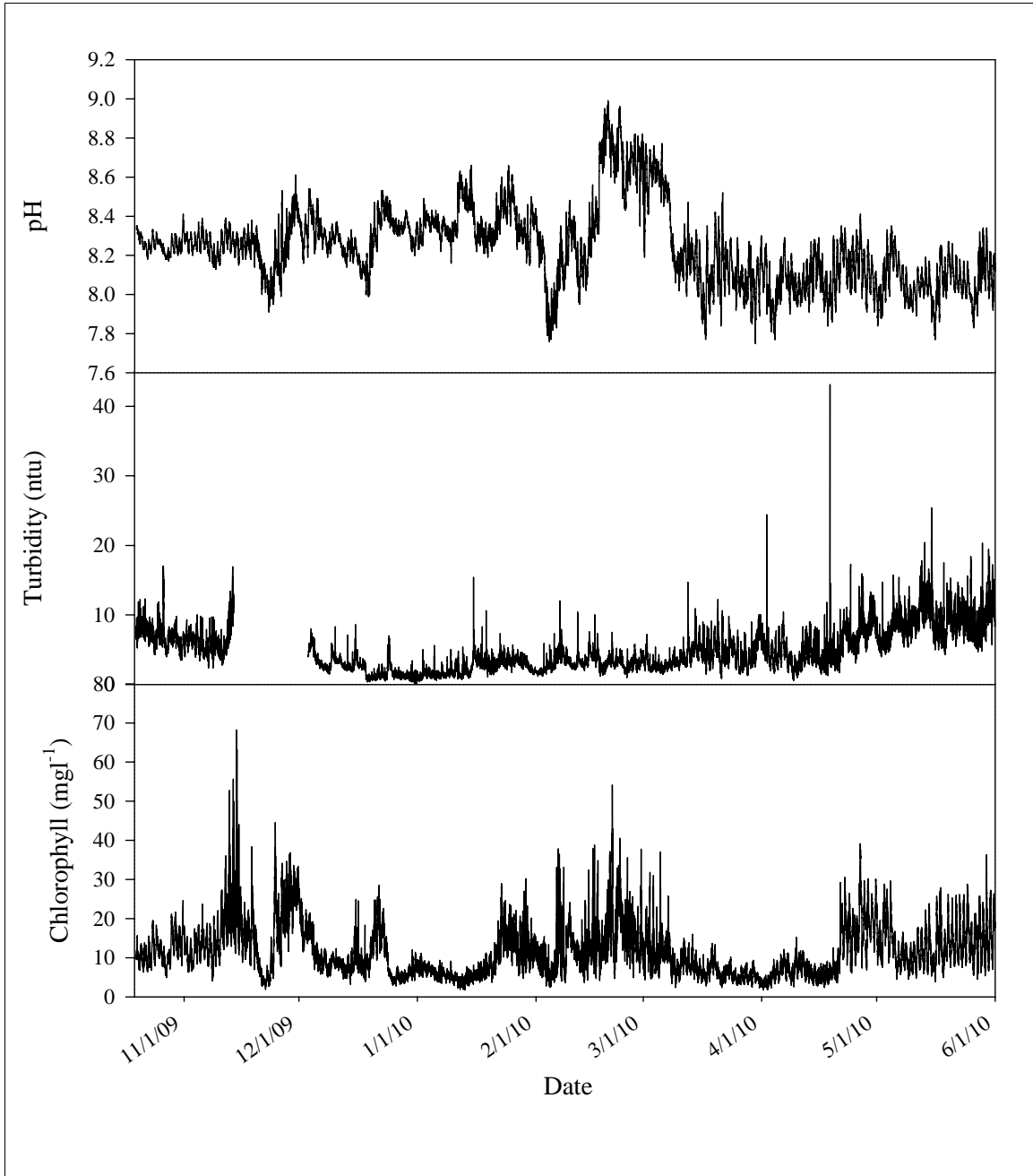


Figure A2. A conceptual nitrogen budget for Little Bay showing sources and reservoirs of inorganic-nitrogen.

APPENDIX B





**Figure B1. Continuous monitoring water parameters for Little Bay station during the period of deployment, 10/19/09 - 5/31/10.**

APPENDIX C Water quality parameters for discrete surface samples

Location/ID	LB01									
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
4/10/2008		-0.075	24.25	34.018	21.34	83.18	6.17	8.14		
4/24/2008		-0.001	25.34	34.303	21.52	88.13	6.41	7.94		
5/8/2008	9:28:25	0.008	24.90	32.821	20.51	82.85	6.10	8.19	11.6	11.9
5/29/2008	8:59:16	0.047	28.36	35.935	22.59	78.68	5.40	8.21	17.8	14.9
6/19/2008	9:05:23	0.098	29.20	42.265	27.03	75.33	4.99	8.22	21.4	14.7
7/10/2008	8:46:23	0.053	29.22	43.951	28.24	71.00	4.66	8.09	15.9	10.9
7/24/2008	9:42:22	0.012	26.94	41.353	26.44	87.18	6.00	8.11	15.7	8.0
8/7/2008	9:30:22	0.041	29.83	49.592	32.30	74.95	4.76	8.08	10.3	10.4
8/21/2008	9:13:23	0.038	28.63	50.226	32.81	80.30	5.18	7.88	17.9	14.8
9/4/2008	9:28:45	0.045	29.32	54.992	36.31	82.03	5.13	8.17	15.0	13.1
9/18/2008	8:42:15	0.056	23.74	51.440	33.82	92.65	6.46	8.19	7.4	14.2
10/2/2008	8:43:15	0.083	25.96	48.009	31.26	95.68	6.51	8.14	5.3	10.7
10/16/2008	8:47:45	0.085	26.42	46.126	29.88	85.58	5.82	8.17	6.6	13.0
10/30/2008	9:00:16	0.123	19.40	48.251	31.53	100.85	7.70	8.25	4.9	10.8
11/13/2008	9:15:55	0.008	22.44	45.892	29.79	89.63	6.54	8.18	6.6	14.8
12/8/2008	8:39:15	0.014	15.04	47.857	31.20	94.18	7.84	8.13	1.8	3.4
12/18/2008	8:42:15	0.057	13.97	49.414	32.31	107.20	9.06	8.16	0.1	4.3
1/8/2009	9:03:45	0.018	14.75	47.524	30.95	90.95	7.63	8.01	1.3	6.4
1/22/2009	8:53:45	0.072	14.01	47.858	31.18	87.80	7.46	8.11	1.2	3.7
2/4/2009	8:44:15	0.182	14.57	47.415	30.87	100.05	8.42	8.22	2.0	6.3
2/18/2009	8:56:15	-0.027	19.39	46.791	30.47	88.13	6.77	7.86	6.4	6.7
3/13/2009	8:54:15	0.055	15.72	47.736	31.13	88.25	7.25	8.00	6.2	7.9
3/25/2009	8:49:45	-0.023	22.54	47.861	31.22	80.70	5.83	8.01	11.6	9.9
4/13/2009	9:28:15	-0.019	22.42	49.626	32.51	99.48	7.15	8.12	9.5	22.7
5/7/2009	8:23:15	-0.015	27.09	50.504	33.06	77.33	5.11	8.06	14.2	14.8
5/28/2009	8:26:45	0.003	24.65	46.762	30.38	83.03	5.81	8.01	6.1	7.8
6/11/2009	9:07:45	-0.002	28.40	54.190	35.74	84.65	5.40	8.12	12.9	14.9
6/25/2009	8:45:16	0.008	29.91	52.989	34.80	72.65	4.54	8.09	9.6	10.7
7/9/2009	8:52:45	0.027	29.59	56.067	37.10	80.60	5.00	8.11	13.2	11.8
7/23/2009	7:59:15	0.028	29.13	57.880	38.48	80.68	5.01	8.13	13.7	14.3
8/6/2009	9:11:15	0.046	29.97	59.048	39.33	83.58	5.10	8.13	8.5	11.1
8/20/2009	9:25:46	-0.001	29.67	59.169	39.43	87.10	5.33	8.17	9.5	11.1
9/3/2009	9:12:46	0.031	28.19	60.105	40.20	77.60	4.84	7.86	8.2	12.0
9/10/2009	9:58:46	0.024	26.83	52.073	34.22	87.48	5.77	7.99	5.1	11.6
9/15/2009	11:26:32	-0.007	28.00	54.469	35.96	96.55	6.19	8.21	9.9	24.1
9/30/2009	11:04:31	0.027	28.30	57.235	38.02	77.75	4.90	8.13	9.5	14.9
10/14/2009	12:10:58	0.021	26.63	57.361	38.17	150.45	9.74	8.22	5.4	34.8
11/3/2009	11:02:34	0.116	21.21	55.426	36.82	104.98	7.52	8.29	2.9	14.0
11/12/2009	10:40:24	0.063	21.83	50.838	33.41	94.23	6.80	8.21	4.3	7.1
12/3/2009	12:23:45	0.058	13.69	33.374	20.93	119.13	10.86	8.51	6.9	24.7
12/18/2009	13:15:59	0.012	11.40	26.629	16.31	113.98	11.24	8.33	1.6	12.2
1/11/2010	12:45:36	0.154	7.93	28.544	17.49	119.33	12.64	8.71	1.5	6.2
1/26/2010	11:06:49	0.090	15.14	22.532	13.66	88.40	8.18	8.32	8.9	19.6
2/17/2010	11:53:44	0.142	12.39	20.077	12.01	129.83	12.86	8.84	1.8	8.3
3/11/2010	11:29:26	-0.085	20.59	20.601	12.35	106.88	8.94	8.16	2.2	10.2
3/18/2010	10:29:33	0.070	18.75	22.223	13.43	103.70	8.93	8.15	2.9	7.3
3/31/2010	10:06:14	0.042	20.52	28.740	17.77	86.50	7.01	7.92	9.3	4.4
4/21/2010	10:54:00	0.003	23.48	26.060	15.93	104.75	8.13	8.28	6.1	14.1
5/4/2010	12:06:48	0.035	26.42	27.968	17.17	82.38	6.03	7.94	8.1	11.9

APPENDIX C Water quality parameters for discrete surface samples

Park Point/LB02										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
4/10/2008		-0.016	24.20	34.283	21.53	85.78	6.36	8.15		
4/24/2008		0.050	25.17	34.390	21.59	96.65	7.05	8.01		
5/8/2008	9:52:42	0.030	24.96	32.861	20.53	89.40	6.58	8.20	8.8	12.6
5/29/2008	9:22:38	0.060	29.27	35.805	22.48	93.78	6.34	8.24	16.6	13.7
6/19/2008	9:26:22	0.040	29.44	41.953	26.80	79.05	5.22	8.21	11.0	10.8
7/10/2008	9:07:21	0.057	29.65	43.907	28.19	79.60	5.18	8.15	10.9	12.3
7/24/2008	10:07:45	0.028	27.35	44.227	28.49	88.20	5.96	8.11	14.3	9.0
8/7/2008	9:46:23	0.045	30.21	48.754	31.68	86.93	5.51	8.11	5.5	10.0
8/21/2008	9:43:38	0.032	28.73	49.487	32.26	92.93	6.01	7.91	9.8	13.3
9/4/2008	10:00:15	0.049	29.38	55.058	36.36	80.38	5.03	8.15	17.1	12.6
9/18/2008	9:11:15	0.055	23.72	51.723	34.03	93.13	6.48	8.21	10.5	15.5
10/2/2008	9:12:46	0.052	26.01	46.615	30.24	101.75	6.96	8.13	1.9	6.4
10/16/2008	9:16:16	0.094	26.60	46.037	29.81	86.90	5.90	8.16	5.9	10.4
10/30/2008	9:26:15	0.123	19.68	48.241	31.52	105.15	7.99	8.26	3.4	7.0
11/13/2008	9:32:17	-0.004	22.43	46.002	29.87	91.75	6.69	8.22	4.6	14.9
12/8/2008	8:56:15	0.011	15.00	47.916	31.25	97.53	8.12	8.14	1.1	4.7
12/18/2008	9:01:45	0.049	13.74	49.651	32.47	101.18	8.58	8.15	0.3	4.2
1/8/2009	9:30:45	0.015	14.96	47.502	30.95	92.40	7.72	8.05	0.1	3.8
1/22/2009	9:17:15	0.067	14.17	47.769	31.12	93.48	7.92	8.11	1.6	1.7
2/4/2009	9:10:25	0.182	14.97	47.751	31.13	106.50	8.88	8.23	1.3	5.3
2/18/2009	9:32:15	-0.028	19.54	46.876	30.53	87.25	6.69	7.87	6.3	5.3
3/13/2009	9:19:15	0.068	17.55	48.218	31.50	87.50	6.92	8.11	9.5	7.1
3/25/2009	9:10:15	-0.028	22.64	47.764	31.15	85.43	6.16	8.08	8.8	10.8
4/13/2009	9:57:15	-0.010	22.51	49.364	32.32	109.40	7.86	8.13	13.3	12.3
5/7/2009	8:46:45	-0.014	26.62	50.278	32.90	89.00	5.94	8.03	16.4	15.1
5/28/2009	9:01:44	0.025	25.49	47.916	31.20	83.58	5.74	8.04	6.9	9.9
6/11/2009	9:36:45	-0.001	28.49	54.207	35.75	98.18	6.25	8.13	22.9	12.4
6/25/2009	9:13:15	0.012	30.55	52.942	34.74	79.60	4.93	8.15	8.9	6.8
7/9/2009	9:15:15	0.021	29.60	56.021	37.07	86.40	5.36	8.13	11.6	11.1
7/23/2009	8:24:17	0.031	29.30	57.871	38.47	86.90	5.38	8.17	12.3	14.5
8/6/2009	9:33:16	0.052	30.31	58.894	39.20	87.83	5.33	8.19	11.4	9.6
8/20/2009	9:54:56	0.019	29.97	59.009	39.30	85.48	5.21	8.19	13.3	11.9
9/3/2009	9:40:36	0.032	28.80	59.580	39.78	91.48	5.66	8.22	7.4	5.8
9/10/2009	10:16:21	0.026	26.13	46.102	29.87	97.80	6.70	8.16	1.4	9.4
9/15/2009	11:44:34	0.002	28.30	54.514	35.99	135.50	8.64	8.37	4.8	13.8
9/30/2009	11:17:54	0.027	28.71	58.099	38.66	103.95	6.49	8.21	11.2	13.7
10/14/2009	12:25:18	0.078	28.13	57.272	38.06	165.83	10.48	8.28	6.8	20.1
11/3/2009	11:17:41	0.117	21.15	55.529	36.90	119.03	8.53	8.34	2.5	9.2
11/12/2009	10:57:43	0.055	22.53	49.340	32.30	119.68	8.59	8.30	4.7	6.5
12/3/2009	12:40:17	0.059	13.99	33.544	21.05	121.40	10.99	8.51	6.1	13.1
12/18/2009	13:28:31	0.011	12.29	27.218	16.73	119.93	11.56	8.38	2.5	8.2
1/11/2010	13:08:28	0.144	8.16	29.319	18.02	122.48	12.86	8.62	1.3	2.6
1/26/2010	12:14:08	0.092	15.86	25.128	15.36	126.00	11.36	8.57	2.5	8.9
2/17/2010	13:51:08	0.146	14.26	20.388	12.23	153.88	14.62	8.91	1.5	5.0
3/11/2010	11:41:48	-0.094	21.19	20.224	12.10	127.43	10.55	8.32	2.2	8.3
3/18/2010	10:47:08	0.065	19.14	22.880	13.86	103.20	8.79	8.08	2.5	5.8
3/31/2010	10:20:29	0.037	21.10	29.351	18.18	108.55	8.69	8.14	6.8	3.3
4/21/2010	10:47:28	-0.002	24.29	25.698	15.68	129.78	9.93	8.32	7.4	7.6
5/4/2010	12:24:08	0.034	27.22	28.107	17.25	118.68	8.55	8.21	8.2	10.9

APPENDIX C Water quality parameters for discrete surface samples

Connie Hagar Parking Lot/LB03										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
4/10/2008										
4/24/2008		0.019	25.52	34.630	21.75	95.55	6.91	7.99		
5/8/2008	10:20:33	0.029	24.88	32.921	20.58	75.48	5.56	8.13	12.7	8.3
5/29/2008	9:49:22	0.067	27.69	35.970	22.63	67.55	4.68	8.10	9.3	5.1
6/19/2008	10:05:22	0.033	29.21	42.088	26.90	91.03	6.04	8.21	10.6	9.2
7/10/2008	9:25:23	0.048	29.07	43.081	27.62	69.13	4.56	8.05	15.7	8.2
7/24/2008	10:26:22	0.055	26.85	36.882	23.29	89.13	6.25	7.98	26.2	7.7
8/7/2008	10:01:22	0.043	29.50	48.816	31.75	76.13	4.88	8.02	11.1	8.1
8/21/2008	10:00:15	0.022	28.67	50.324	32.88	82.75	5.34	7.79	10.0	8.6
9/4/2008	10:36:31	0.005	28.88	54.770	36.16	71.48	4.51	8.08	19.5	8.9
9/18/2008	9:27:45	0.051	22.99	51.032	33.54	75.65	5.35	8.11	7.5	10.1
10/2/2008	9:42:15	0.065	25.95	46.961	30.50	67.83	4.64	8.04	10.4	7.7
10/16/2008	9:53:45	0.436	26.27	45.491	29.42	68.23	4.67	8.08	10.7	11.9
10/30/2008	10:22:15	0.131	20.27	48.155	31.45	91.83	6.90	8.23	2.8	6.3
11/13/2008	10:00:25	-0.001	21.92	45.352	29.40	93.50	6.91	8.17	4.9	16.7
12/8/2008	9:20:45	0.016	16.12	47.573	31.02	96.00	7.83	8.14	3.6	4.3
12/18/2008	9:28:15	0.061	14.75	48.842	31.91	87.95	7.33	8.09	1.4	3.1
1/8/2009	9:58:16	0.024	14.29	47.665	31.05	72.98	6.17	7.85	0.1	4.1
1/22/2009	9:56:45	0.077	13.39	47.740	31.07	92.95	8.01	8.14	0.4	1.6
2/4/2009	9:33:45	0.188	14.13	46.982	30.55	91.80	7.81	8.22	1.4	1.9
2/18/2009	9:56:45	-0.016	19.42	46.828	30.49	88.30	6.78	7.88	9.4	6.2
3/13/2009	9:42:45	0.056	14.70	46.090	29.92	81.65	6.90	7.99	2.7	5.5
3/25/2009	9:32:15	-0.031	22.34	47.689	31.10	79.70	5.78	7.98	13.3	12.3
4/13/2009	10:32:15	-0.011	22.71	49.637	32.52	97.00	6.93	8.06	6.5	7.2
5/7/2009	10:39:15	0.001	27.04	50.466	33.03	93.80	6.21	8.04	9.0	10.4
5/28/2009	10:10:45	0.013	25.91	49.047	32.02	78.13	5.30	7.93	7.8	8.5
6/11/2009	11:08:15	0.042	29.09	54.385	35.86	103.20	6.50	8.12	13.3	7.8
6/25/2009	10:31:45	0.009	30.48	52.985	34.78	75.80	4.70	7.97	8.8	4.9
7/9/2009	10:22:15	0.031	29.60	55.975	37.04	84.50	5.25	8.04	10.8	7.1
7/23/2009	10:58:15	0.039	30.17	57.857	38.43	95.50	5.83	8.10	8.2	5.8
8/6/2009	10:35:16	0.057	30.14	59.244	39.47	72.65	4.41	8.03	4.7	3.6
8/20/2009	11:47:36	0.004	30.83	59.537	39.67	108.75	6.53	8.12	9.3	4.3
9/3/2009	11:30:36	0.035	29.05	60.067	40.14	103.28	6.36	8.05	6.2	7.8
9/10/2009	10:38:31	0.021	27.22	50.913	33.35	66.03	4.35	8.01	9.9	7.8
9/15/2009	10:49:04	-0.005	28.51	54.306	35.83	93.05	5.92	8.25	9.5	7.5
9/30/2009	8:49:46	0.024	27.14	52.265	34.35	61.58	4.04	8.08	8.7	15.2
10/14/2009	11:30:21	0.020	28.02	56.980	37.84	100.00	6.34	8.06	5.8	6.7
11/3/2009	10:34:04	0.125	21.57	55.296	36.72	105.88	7.54	8.23	-0.9	5.0
11/12/2009	10:07:39	0.053	22.14	50.340	33.04	108.40	7.81	8.25	2.9	10.3
12/3/2009	11:49:28	0.059	14.73	33.693	21.17	120.68	10.75	8.43	3.5	6.9
12/18/2009	12:48:52	0.019	13.24	27.542	16.96	124.20	11.71	8.34	2.8	7.4
1/11/2010	12:09:08	0.166	9.35	27.002	16.51	161.53	16.65	8.59	1.5	3.5
1/26/2010	10:42:34	0.144	15.39	24.683	15.06	121.70	11.10	8.53	1.7	4.9
2/17/2010	11:37:08	0.138	13.80	19.913	11.92	161.18	15.50	9.02	2.8	3.5
3/11/2010	11:07:28	-0.097	20.69	20.566	12.33	86.45	7.22	8.06	3.5	5.8
3/18/2010	9:57:09	0.060	18.46	21.398	12.89	148.95	12.94	8.56	1.0	3.5
3/31/2010	9:40:33	0.043	19.92	28.290	17.47	126.25	10.37	8.22	1.7	4.9
4/21/2010	10:14:28	0.006	23.78	25.314	15.43	89.00	6.89	8.23	5.7	14.5
5/4/2010	11:39:24	0.038	27.92	27.295	16.69	148.40	10.60	8.33	12.5	9.4



APPENDIX C Water quality parameters for discrete surface samples

Tule Creek Outfall/LB04										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
4/10/2008		0.003	26.44	33.823	21.17	113.65	8.12	8.20		
4/24/2008		0.038	25.46	34.715	21.81	86.80	6.29	7.92		
5/8/2008	10:39:38	0.046	24.97	32.533	20.31	71.93	5.30	8.10	23.6	9.6
5/29/2008	10:07:23	0.051	28.71	34.534	21.61	80.35	5.51	8.14	8.1	3.8
6/19/2008	10:29:23	0.078	28.77	41.632	26.59	82.60	5.53	8.02	7.7	5.2
7/10/2008	9:39:22	0.057	28.61	35.714	22.46	67.80	4.64	7.98	8.9	6.6
7/24/2008	10:39:22	0.044	26.87	22.577	13.58	78.45	5.81	7.76	39.2	10.5
8/7/2008	10:16:38	0.078	29.12	46.933	30.39	67.98	4.41	7.87	7.5	3.8
8/21/2008	10:12:30	0.005	28.44	19.086	11.31	87.85	6.41	7.53	9.5	4.6
9/4/2008	11:01:15	-0.001	30.07	53.223	34.97	79.78	4.97	8.07	14.1	12.0
9/18/2008	9:40:05	0.054	23.31	44.859	29.04	70.28	5.07	8.07	11.7	10.2
10/2/2008	10:06:14	0.060	26.50	37.158	23.49	42.58	3.00	7.73	3.5	4.9
10/16/2008	10:15:15	0.085	26.33	9.655	5.41	28.95	2.27	7.56	1.3	10.0
10/30/2008	11:11:45	0.135	21.56	33.441	20.99	45.50	3.55	7.76	2.2	4.1
11/13/2008	10:23:15	-0.021	22.17	25.324	15.46	45.35	3.62	7.41	4.0	7.7
12/8/2008	9:42:45	0.005	16.91	40.973	26.29	93.38	7.72	7.89	3.8	3.6
12/18/2008	9:58:45	0.061	15.16	40.544	25.97	71.40	6.12	8.25	2.3	13.6
1/8/2009	10:19:26	0.022	15.84	19.226	11.48	61.50	5.68	7.67	3.8	6.7
1/22/2009	10:27:25	0.079	14.11	3.252	1.71	51.15	5.20	7.50	6.3	8.8
2/4/2009	9:49:15	0.193	15.91	26.462	16.25	67.20	6.02	7.89	9.7	3.5
2/18/2009	10:18:45	-0.014	20.26	26.902	16.53	58.65	4.82	7.63	17.6	7.9
3/13/2009	10:04:15	0.059	15.03	26.130	16.02	63.80	5.83	7.92	8.2	22.4
3/25/2009	9:53:16	-0.027	22.43	32.427	20.28	55.78	4.31	7.71	10.1	8.9
4/13/2009	10:59:15	-0.005	22.21	8.931	5.00	93.40	7.90	8.16	4.1	7.6
5/7/2009	10:55:15	-0.004	26.94	26.188	15.97	90.78	6.63	7.96	5.4	6.3
5/28/2009	10:43:45	0.015	25.39	8.317	4.62	48.35	3.87	7.58	10.0	13.3
6/11/2009	11:23:15	0.002	28.71	36.942	23.29	91.40	6.21	8.08	11.3	6.8
6/25/2009	11:04:45	0.012	30.36	13.386	7.66	75.95	5.47	8.02	6.1	4.5
7/9/2009	11:15:45	0.040	29.64	18.281	10.76	109.25	7.83	7.93	10.7	3.3
7/23/2009	0:41:45	0.042	30.48	16.607	9.68	80.23	5.70	7.77	8.4	5.6
8/6/2009	11:32:16	0.151	31.27	58.282	38.70	97.23	5.82	8.03	11.7	2.4
8/20/2009	12:13:56	0.010	29.81	34.144	21.32	100.48	6.78	8.01	7.5	4.1
9/3/2009	11:43:56	0.033	30.10	57.900	38.46	100.75	6.16	8.07	11.5	4.5
9/10/2009	10:53:49	0.024	26.15	1.914	0.97	55.80	4.49	7.80	10.0	9.9
9/15/2009	10:34:01	0.001	26.49	8.123	4.49	83.28	6.53	8.30	3.1	28.2
9/30/2009	10:46:49	0.022	27.87	8.096	4.47	35.80	2.74	8.01	6.3	26.0
10/14/2009	11:13:09	0.025	27.68	13.747	7.92	60.93	4.59	7.86	4.7	24.5
11/3/2009	10:17:29	0.121	20.40	11.789	6.75	56.40	4.89	8.03	-0.4	10.7
11/12/2009	9:51:19	0.056	21.04	7.236	4.00	48.95	4.27	7.61	4.6	9.8
12/3/2009	11:23:58	0.068	15.39	3.325	1.75	74.60	7.38	7.47	9.8	16.7
12/18/2009	12:32:35	0.021	14.96	2.168	1.12	79.08	7.93	7.56	7.6	23.4
1/11/2010	11:48:46	0.169	11.43	3.768	2.00	94.75	10.22	7.62	5.9	15.0
1/26/2010	10:29:19	0.100	15.12	3.259	1.72	81.10	8.08	7.65	6.8	18.7
2/17/2010	11:15:43	0.156	13.24	2.266	1.17	86.63	9.01	7.63	6.8	18.5
3/11/2010	10:13:33	-0.082	20.17	2.727	1.42	63.45	5.70	7.55	11.8	32.2
3/18/2010	9:35:29	0.067	17.19	2.231	1.15	62.45	5.97	7.50	5.1	15.4
3/31/2010	9:26:44	0.036	19.41	2.630	1.37	67.45	6.15	7.80	5.0	11.8
4/21/2010	9:58:17	0.029	22.35	4.483	2.41	115.45	9.89	8.01	7.6	19.3
5/4/2010	11:24:23	0.040	25.71	13.153	7.56	137.88	10.78	7.75	8.1	16.5

APPENDIX C Water quality parameters for discrete surface samples

Key Allegro Bridge/LB05										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
4/10/2008										
4/24/2008		0.021	25.26	34.030	21.34	90.05	6.56	7.99		
5/8/2008	11:06:39	-0.004	25.35	32.128	20.02	83.70	6.13	8.13	7.9	8.3
5/29/2008	10:30:23	0.057	29.04	34.989	21.92	99.60	6.78	8.18	11.5	12.9
6/19/2008	10:53:53	0.024	29.53	41.176	26.25	75.25	5.73	8.14	9.8	14.2
7/10/2008	9:56:22	0.047	29.42	41.866	26.74	79.85	5.26	8.15	7.4	18.2
7/24/2008	10:52:23	0.048	27.32	39.930	25.42	89.13	6.13	8.02	13.5	7.5
8/7/2008	10:38:52	0.048	30.07	46.572	30.10	85.80	5.49	8.09	4.1	12.3
8/21/2008	10:26:55	0.013	28.89	48.514	31.55	87.83	5.69	7.85	8.1	10.4
9/4/2008	11:25:05	0.013	29.57	54.675	36.06	88.88	5.55	8.10	13.8	7.6
9/18/2008	10:02:15	0.064	23.55	48.337	31.55	91.83	6.51	8.13	4.3	5.2
10/2/2008	10:29:15	0.057	26.43	45.010	29.07	96.05	6.57	8.06	2.1	2.9
10/16/2008	10:31:15	0.111	26.01	47.432	30.84	88.25	6.02	8.02	11.5	6.7
10/30/2008	11:52:45	0.129	21.07	46.920	30.55	105.40	7.85	8.16	2.5	7.7
11/13/2008	10:42:15	-0.007	22.11	47.283	30.80	95.83	6.99	8.14	7.6	7.2
12/8/2008	10:00:15	0.009	16.10	46.320	30.11	92.28	7.57	8.11	1.9	7.2
12/18/2008	10:14:45	0.067	13.79	49.467	32.34	98.80	8.38	8.10	0.0	3.3
1/8/2009	10:35:25	0.025	15.08	46.978	30.57	93.15	7.78	7.92	0.6	2.7
1/22/2009	11:05:15	0.079	15.13	47.274	30.78	99.90	8.32	8.01	1.5	6.2
2/4/2009	10:02:45	0.194	14.56	46.990	30.56	97.70	8.24	8.01	2.7	2.4
2/18/2009	10:38:15	-0.026	20.10	45.772	29.73	82.43	6.28	7.83	6.3	6.4
3/13/2009	10:20:16	0.060	16.83	47.521	30.99	80.10	6.45	8.07	15.2	7.9
3/25/2009	10:12:15	-0.024	22.42	47.480	30.94	81.53	5.91	8.03	7.9	6.8
4/13/2009	11:19:45	-0.008	22.67	48.819	31.92	102.00	7.32	8.11	11.1	13.3
5/7/2009	11:12:15	-0.005	27.37	49.966	32.65	79.28	5.23	8.04	10.1	11.6
5/28/2009	11:07:16	0.009	26.53	48.282	31.44	86.08	5.80	8.09	8.6	7.0
6/11/2009	11:38:45	0.012	28.54	53.951	35.56	96.13	6.12	8.06	11.6	14.5
6/25/2009	11:20:15	0.008	31.28	52.199	34.17	92.28	5.67	8.16	8.7	7.3
7/9/2009	11:27:15	0.032	30.22	55.050	36.32	98.23	6.06	8.08	6.6	9.6
7/23/2009	13:01:15	0.044	30.59	57.194	37.91	101.15	6.15	8.07	7.0	7.8
8/6/2009	11:46:26	0.058	31.22	58.847	39.13	97.55	5.84	8.12	4.9	7.8
8/20/2009	12:29:16	0.012	30.41	59.170	39.41	113.73	6.88	8.09	13.8	5.9
9/3/2009	11:53:51	0.031	29.72	59.691	39.83	104.70	6.39	8.12	5.0	8.7
9/10/2009	11:08:12	0.022	26.63	47.035	30.53	95.08	6.43	8.09	2.3	20.5
9/15/2009	10:15:56	0.002	28.20	54.526	36.00	92.53	5.91	8.25	2.4	15.5
9/30/2009	9:48:23	0.024	27.57	57.593	38.31	67.33	4.29	8.14	2.5	9.7
10/14/2009	10:58:59	0.029	27.72	53.132	34.98	121.53	7.87	8.14	0.8	11.4
11/3/2009	9:24:33	0.151	19.99	54.208	35.92	92.38	6.80	8.03	-2.6	3.3
11/12/2009	9:12:24	0.060	21.52	46.630	30.33	93.45	6.91	8.13	0.7	4.5
12/3/2009	10:36:30	0.072	14.09	35.360	22.31	94.75	8.49	8.21	6.2	11.0
12/18/2009	11:51:38	0.027	11.67	25.505	15.57	96.83	9.53	8.08	1.7	5.5
1/11/2010	10:40:26	0.224	6.75	28.179	17.19	103.08	11.25	8.14	7.1	3.9
1/26/2010	9:59:44	0.137	14.65	24.492	14.93	100.33	9.30	8.03	3.9	5.6
2/17/2010	9:44:33	0.152	11.89	20.010	11.96	120.38	12.06	8.47	6.4	23.1
3/11/2010	10:50:33	-0.086	19.51	19.809	11.84	92.40	7.91	7.91	4.7	12.6
3/18/2010	8:31:08	0.067	18.95	22.212	13.42	105.73	9.07	8.20	5.0	21.5
3/31/2010	8:34:54	0.031	19.61	24.611	15.00	78.48	6.58	8.42	4.5	4.8
4/21/2010	9:03:43	0.005	22.31	22.835	13.81	93.63	7.51	8.08	3.0	13.6
5/4/2010	10:02:04	0.044	25.80	27.060	16.57	96.48	7.16	8.16	7.6	27.4

APPENDIX C Water quality parameters for discrete surface samples

Middle Bay/LB06										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
4/10/2008										
4/24/2008										
5/8/2008										
5/29/2008										
6/19/2008										
7/10/2008										
7/24/2008										
8/7/2008										
8/21/2008										
9/4/2008										
9/18/2008										
10/2/2008										
10/16/2008										
10/30/2008										
11/13/2008										
12/8/2008										
12/18/2008										
1/8/2009										
1/22/2009										
2/4/2009										
2/18/2009										
3/13/2009										
3/25/2009										
4/13/2009	15:32:15	-0.01	25.030	49.72	32.53	128.15	8.80	8.068	10.4	10.0
5/7/2009	9:10:49	-0.01	27.430	50.48	33.03	84.63	5.57	8.080	8.8	12.7
5/28/2009	9:35:15	0.00	26.050	48.92	31.93	84.70	5.74	8.060	8.0	6.8
6/11/2009	10:09:45	0.02	28.670	54.19	35.73	91.28	5.79	8.120	11.4	12.2
6/25/2009	9:39:15	0.01	30.708	52.86	34.67	85.80	5.30	8.140	10.1	7.3
7/9/2009	9:35:15	0.03	29.823	55.83	36.92	93.88	5.81	8.150	9.3	12.7
7/23/2009	9:56:15	0.04	29.755	57.79	38.39	96.78	5.95	8.170	7.9	11.5
8/6/2009	9:55:36	0.05	30.393	58.67	39.03	93.90	5.70	8.210	9.0	6.8
8/20/2009	10:33:16	0.01	29.948	58.93	39.24	99.10	6.05	8.158	13.6	10.2
9/3/2009	10:04:56	0.03	29.000	59.79	39.93	94.85	5.85	8.195	10.5	11.7
9/10/2009	13:26:57	0.09	28.073	51.76	33.95	102.15	6.61	8.098	3.0	9.1
9/15/2009	12:08:00	-0.01	28.665	54.34	35.85	140.53	8.92	8.370	4.8	14.1
9/30/2009	11:40:12	0.03	28.968	57.94	38.53	107.95	6.71	8.230	6.7	12.3
10/14/2009	12:45:26	0.01	28.245	56.98	37.84	162.40	10.26	8.240	4.4	17.4
11/3/2009	11:30:43	0.11	21.430	55.22	36.66	130.33	9.31	8.370	-0.3	9.0
11/12/2009	11:19:09	0.05	22.300	48.68	31.82	118.40	8.56	8.250	0.8	6.3
12/3/2009	13:02:21	0.06	15.098	34.32	21.60	128.45	11.33	8.460	6.2	17.0
12/18/2009	13:47:39	0.03	12.805	27.16	16.69	118.38	11.29	8.320	2.4	10.4
1/11/2010	13:30:23	0.15	9.248	29.17	17.96	123.35	12.63	8.640	1.1	3.1
1/26/2010	12:01:19	0.09	16.950	24.57	14.98	141.98	12.55	8.670	2.8	8.4
2/17/2010	13:36:09	0.11	15.890	20.54	12.33	164.63	15.11	8.900	6.0	10.4
3/11/2010	11:58:34	-0.10	21.528	20.26	12.13	104.28	8.57	8.120	1.6	5.8
3/18/2010	11:04:18	0.06	19.920	21.78	13.13	121.48	10.24	8.270	5.1	5.1
3/31/2010	10:34:03	0.04	20.740	28.25	17.44	88.48	7.16	8.050	4.5	3.1
4/21/2010	11:08:05	-0.01	23.835	24.76	15.06	118.25	9.16	8.200	2.6	9.9
5/4/2010	12:38:18	0.02	27.393	27.81	17.04	112.58	8.10	8.170	5.3	7.1

APPENDIX C Water quality parameters for discrete surface samples

Allegro Marina Dock/LB07										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
4/10/2008		0.015	25.03	34.030	21.34	106.80	7.81	8.21		
4/24/2008		0.024	25.72	34.250	21.48	105.98	7.66	8.07		
5/8/2008	11:25:24	0.003	25.42	32.300	20.14	90.10	6.59	8.16	5.7	7.1
5/29/2008	10:50:23	0.116	29.19	35.388	22.19	116.68	7.92	8.25	8.6	21.3
6/19/2008	11:18:23	0.061	29.87	41.863	26.73	98.30	6.47	8.22	9.0	8.5
7/10/2008	10:12:23	0.106	29.44	43.107	27.63	75.13	4.93	8.11	8.3	13.8
7/24/2008	11:10:23	0.048	27.28	41.605	26.61	89.83	6.14	8.04	13.4	6.5
8/7/2008	10:51:22	0.045	30.00	48.438	31.46	86.48	5.50	8.08	6.5	14.1
8/21/2008	10:39:45	0.017	29.01	48.813	31.76	94.90	7.87	6.12	8.5	14.3
9/4/2008	11:49:15	0.009	30.38	54.824	36.15	90.78	5.59	8.18	8.6	12.8
9/18/2008	10:17:40	0.053	23.99	51.919	34.17	104.35	7.23	8.23	5.9	17.6
10/2/2008	10:50:55	0.042	27.42	47.430	30.80	105.18	7.00	8.14	3.1	11.1
10/16/2008	10:49:45	0.080	26.90	46.126	29.87	69.25	4.68	8.04	4.2	12.3
10/30/2008	12:12:15	0.140	20.89	47.981	31.32	113.63	8.45	8.25	4.0	8.4
11/13/2008	11:01:46	-0.011	23.23	46.780	30.42	101.40	7.27	8.21	3.5	22.3
12/8/2008	10:17:15	0.007	15.59	47.657	31.07	99.80	8.22	8.15	1.3	4.9
12/18/2008	10:34:15	0.061	14.08	49.877	32.65	101.23	8.52	8.12	0.1	7.3
1/8/2009	10:54:15	0.021	15.55	47.561	31.00	93.15	7.68	7.96	1.1	7.3
1/22/2009	11:29:45	0.074	15.48	46.266	30.06	94.50	7.85	8.04	2.0	1.8
2/4/2009	10:18:16	0.204	16.31	47.193	30.74	100.35	8.17	8.15	4.1	6.4
2/18/2009	10:57:51	-0.017	20.01	46.130	29.99	86.68	6.60	7.87	6.1	6.2
3/13/2009	10:41:46	0.062	17.08	47.746	31.15	84.38	6.75	8.09	6.7	7.9
3/25/2009	10:29:47	-0.017	22.62	47.605	31.03	77.55	5.60	8.01	6.7	8.8
4/13/2009	11:42:45	-0.007	22.69	49.503	32.42	114.85	8.22	8.21	6.3	19.6
5/7/2009	11:33:15	-0.008	27.69	50.408	32.97	93.28	6.11	8.08	8.9	15.2
5/28/2009	11:33:45	0.007	27.10	48.928	31.90	85.40	5.68	8.07	4.1	8.7
6/11/2009	11:55:45	0.055	28.76	54.166	35.71	91.70	5.81	8.08	13.2	16.3
6/25/2009	11:36:16	0.016	31.55	52.489	34.37	96.73	5.91	8.13	4.2	8.6
7/9/2009	11:44:15	0.039	30.30	55.790	36.87	107.25	6.59	8.15	7.1	10.5
7/23/2009	13:18:16	0.039	31.12	57.985	38.49	124.55	7.49	8.21	6.3	9.9
8/6/2009	12:00:15	0.055	31.22	59.068	39.30	108.43	6.48	8.17	6.5	7.0
8/20/2009	12:52:26	0.026	30.99	58.944	39.22	99.80	5.99	8.18	6.4	10.6
9/3/2009	12:10:21	0.050	29.67	59.832	39.94	110.93	6.77	8.18	6.0	10.6
9/10/2009	11:27:07	0.022	26.78	43.260	27.81	87.35	5.98	8.10	2.6	13.5
9/15/2009	9:57:02	0.020	27.86	54.285	35.83	112.65	7.24	8.30	2.4	25.6
9/30/2009	10:02:55	0.037	28.07	57.880	38.52	90.73	5.72	8.22	3.8	12.4
10/14/2009	10:40:57	0.025	27.57	54.160	35.75	120.68	7.80	8.14	1.3	14.8
11/3/2009	9:41:04	0.118	21.02	55.574	36.93	93.63	6.72	8.20	1.5	11.3
11/12/2009	9:30:23	0.060	22.26	51.240	33.70	112.93	8.08	8.24	3.0	14.0
12/3/2009	10:52:20	0.087	14.58	34.414	21.66	102.08	9.09	8.29	4.5	15.2
12/18/2009	12:04:55	0.185	12.24	27.181	16.70	100.93	9.75	8.12	1.4	7.9
1/11/2010	11:02:41	0.171	6.92	29.490	18.08	106.78	11.54	8.42	2.4	3.6
1/26/2010	10:11:44	0.090	15.94	23.963	14.58	128.28	11.61	8.56	3.7	28.4
2/17/2010	10:25:58	0.157	13.14	20.539	12.32	134.43	13.08	8.73	3.9	14.5
3/11/2010	9:55:43	-0.083	20.39	20.040	11.99	91.13	7.66	8.01	2.8	15.3
3/18/2010	8:48:28	0.067	18.54	22.112	13.36	100.65	8.70	8.17	2.0	10.3
3/31/2010	8:50:44	0.037	20.03	24.652	15.06	84.53	7.03	8.27	3.9	6.8
4/21/2010	9:22:42	0.004	23.29	24.977	15.21	117.43	9.18	8.24	2.3	24.3
5/4/2010	10:47:38	0.039	26.73	27.772	17.03	108.90	7.92	8.19	3.6	22.1

## APPENDIX C Water quality parameters for discrete surface samples

Traylor Ave. Bridge/LB08										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
4/10/2008		0.006	26.59	30.773	19.07	120.80	8.72	8.22		
4/24/2008		-0.005	26.38	32.438	20.22	103.40	7.44	8.05		
5/8/2008	11:45:54	0.006	26.14	30.640	18.99	74.95	5.45	8.02	10.2	12.7
5/29/2008	11:13:23	0.054	30.55	32.365	20.07	105.85	7.10	8.13	7.6	15.9
6/19/2008	11:42:36	0.033	31.39	37.220	23.41	86.85	5.65	8.10	9.0	15.8
7/10/2008	10:27:22	0.050	30.50	39.969	25.36	86.85	5.66	7.97	8.6	14.4
7/24/2008	11:29:23	0.066	27.95	24.085	14.55	81.95	5.92	7.93	8.7	12.9
8/7/2008	11:03:53	0.051	31.54	43.058	27.53	82.35	5.22	8.02	3.1	9.9
8/21/2008	10:53:25	0.006	29.97	45.626	29.42	72.85	4.69	7.74	5.1	20.6
9/4/2008	12:16:35	0.010	31.26	51.723	33.82	41.50	2.56	7.92	8.0	22.9
9/18/2008	10:35:45	0.064	26.17	50.934	33.40	46.35	3.11	7.87	7.6	15.3
10/2/2008	11:12:25	0.043	28.52	48.831	31.79	84.83	5.52	7.92	4.1	22.1
10/16/2008	11:09:35	0.077	27.45	46.290	29.97	30.60	2.05	7.84	5.2	12.7
10/30/2008	12:42:15	0.124	22.81	46.877	30.50	95.20	6.87	7.96	7.0	13.7
11/13/2008	11:20:15	-0.005	24.02	46.438	30.16	57.58	4.08	7.86	10.2	15.3
12/8/2008	10:38:15	0.007	16.97	46.182	30.02	69.03	5.57	7.88	5.7	16.2
12/18/2008	10:54:20	0.061	16.22	48.280	31.52	83.65	7.35	7.99	2.6	24.7
1/8/2009	11:16:45	0.023	17.53	47.011	30.62	79.35	6.31	7.77	2.5	9.5
1/22/2009	11:54:25	0.084	16.58	46.896	30.53	81.03	6.57	7.86	3.4	17.3
2/4/2009	10:39:15	0.198	16.57	46.086	29.94	88.30	7.19	8.01	6.7	15.9
2/18/2009	11:27:45	-0.023	20.26	45.367	29.43	54.48	4.14	7.60	5.9	6.6
3/13/2009	11:01:17	0.056	20.08	45.515	29.54	48.78	3.72	8.10	7.9	13.0
3/25/2009	10:50:45	-0.030	23.10	46.375	30.13	71.38	5.14	8.05	6.4	10.7
4/13/2009	12:05:15	-0.006	22.74	48.227	31.48	100.13	7.19	8.12	4.8	30.9
5/7/2009	11:57:15	-0.007	28.38	48.583	31.61	93.05	6.07	8.09	5.6	21.5
5/28/2009	12:07:45	0.009	29.69	46.887	30.34	69.93	4.50	8.02	4.8	8.5
6/11/2009	12:37:45	0.002	30.04	52.258	34.26	99.23	6.21	8.08	9.0	16.4
6/25/2009	12:05:15	0.008	32.83	51.067	33.28	76.60	4.61	8.04	4.0	10.9
7/9/2009	12:00:45	0.038	31.49	52.081	34.07	102.15	6.26	8.12	7.3	21.2
7/23/2009	13:28:46	0.039	32.26	55.385	36.49	114.33	6.83	8.16	6.2	27.6
8/6/2009	12:23:15	0.053	32.63	57.004	37.69	96.30	5.68	8.12	6.4	20.6
8/20/2009	13:13:06	0.008	32.14	58.765	39.03	109.93	6.49	8.13	5.0	20.5
9/3/2009	12:28:48	0.028	31.21	59.698	39.78	100.55	6.00	8.05	7.2	22.9
9/10/2009	11:51:26	0.019	28.47	32.696	20.36	56.55	3.92	8.01	4.2	27.5
9/15/2009	9:39:49	0.000	29.06	55.869	36.97	68.70	4.30	8.07	5.2	20.6
9/30/2009	10:17:57	0.025	27.55	36.755	23.18	115.08	7.98	8.31	3.9	38.7
10/14/2009	10:23:28	0.041	26.89	40.163	25.60	8.06	104.35	7.22	1.1	18.1
11/3/2009	9:13:30	0.118	21.80	54.915	36.43	59.20	4.21	7.92	1.1	9.7
11/12/2009	8:51:22	0.061	22.76	52.642	34.73	70.80	4.99	7.98	1.7	8.6
12/3/2009	10:20:49	0.074	17.48	35.772	22.63	40.05	3.34	7.72	9.1	4.2
12/18/2009	11:42:10	0.028	13.07	30.172	18.73	87.55	8.20	7.79	1.5	11.4
1/11/2010	10:18:21	0.186	9.64	29.093	17.92	68.50	6.95	7.85	4.1	6.1
1/26/2010	9:50:23	0.090	15.52	20.838	12.52	71.88	6.65	7.81	2.8	8.0
2/17/2010	9:25:53	0.152	13.08	21.627	13.03	77.38	7.51	7.83	6.5	15.3
3/11/2010	13:46:23	-0.112	24.45	17.757	10.48	122.20	9.61	8.20	2.4	26.9
3/18/2010	8:12:42	0.066	19.11	19.985	11.96	80.08	6.91	8.04	7.7	22.2
3/31/2010	8:22:04	0.031	20.67	21.416	12.89	87.50	7.28	8.28	7.7	22.8
4/21/2010	8:43:50	0.004	23.61	26.641	16.32	89.50	6.91	7.90	4.5	15.0
5/4/2010	9:46:13	0.044	26.91	25.211	15.32	85.60	6.27	8.37	7.9	41.9

## APPENDIX C Water quality parameters for discrete surface samples

Tule Park Rd. at Encina Dr./LB09										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
4/10/2008										
4/24/2008		-0.01	25.2525	3.06	1.59	70.80	5.77	7.53		
5/8/2008	12:09:23	-0.01	25.96	6.00	3.26	49.85	3.98	7.5125	10.5	12.6
5/29/2008	11:36:22	0.06	29.1825	4.78	2.54	71.38	5.40	7.5575	9.9	9.8
6/19/2008	12:14:24	0.07	30.71	6.16	3.32	77.08	5.75	7.745	10.8	7.7
7/10/2008	10:39:23	0.05	29.0275	5.51	2.96	40.23	3.04	7.3625	3.4	5.5
7/24/2008	11:48:28	0.05	27.3	1.34	0.67	59.88	4.73	7.485	6.1	13.9
8/7/2008	11:21:22	0.04	29.9725	3.29	1.71	80.25	6.01	7.6575	4.6	7.3
8/21/2008	11:04:35	0.01	29.325	2.98	1.54	68.65	5.20	7.5025	8.7	10.1
9/4/2008	12:29:45	-0.02	30.3975	10.56	5.93	98.25	7.14	7.875	5.0	8.7
9/18/2008	10:48:45	0.06	23.9825	15.37	8.96	53.23	4.26	7.52	2.0	7.7
10/2/2008	11:24:15	0.04	26.82	17.24	10.12	37.05	2.80	7.425	1.8	4.3
10/16/2008	11:25:15	0.09	25.76	6.64	3.62	41.78	3.34	7.71	2.8	14.1
10/30/2008	13:01:15	0.12	22.995	8.28	4.60	81.48	6.81	7.695	3.3	5.6
11/13/2008	11:44:45	-0.02	21.7425	6.63	3.64	59.18	5.10	7.54	5.7	6.6
12/8/2008	10:50:15	0.00	18.625	7.51	4.16	69.40	6.33	7.61	16.3	13.8
12/18/2008	11:09:45	0.06	17.99	7.84	4.37	114.90	10.61	8.62	6.1	59.3
1/8/2009	11:31:25	0.02	18.445	3.61	1.91	118.38	10.98	8.005	10.2	32.9
1/22/2009	12:08:15	0.07	18.2275	2.52	1.31	105.25	9.84	7.76	12.2	8.0
2/4/2009	10:51:45	0.20	16.0375	2.62	1.37	103.05	10.08	8.0675	12.0	11.1
2/18/2009	11:47:45	-0.02	21.8525	5.75	3.12	59.45	5.12	7.56	9.2	15.9
3/13/2009	11:21:45	0.06	14.185	4.47	2.40	75.73	7.66	8.0275	8.6	39.3
3/25/2009	11:03:15	-0.02	22.6275	6.24	3.40	51.75	4.39	7.525	5.9	10.6
4/13/2009	12:24:25	-0.01	25.2325	18.29	10.81	88.33	6.84	7.665	4.5	8.9
5/7/2009	12:10:45	-0.01	27.96	7.25	3.97	73.78	5.65	7.6925	5.6	9.7
5/28/2009	12:26:45	0.01	27.985	3.56	1.86	80.40	6.23	7.505	13.0	14.5
6/11/2009	12:49:47	0.00	30.0425	6.86	3.73	139.75	10.35	8.0725	7.2	9.4
6/25/2009	12:16:46	0.01	32.095	6.98	3.79	163.23	11.66	8.0275	7.4	18.8
7/9/2009	12:13:45	0.04	31.42	4.42	2.33	122.83	8.95	7.9575	4.5	5.9
7/23/2009	13:56:19	0.04	32.1325	4.94	2.62	110.83	7.97	8.07	7.9	6.5
8/6/2009	12:42:26	0.06	32.265	3.41	1.77	112.70	8.12	7.9475	6.8	6.5
8/20/2009	13:47:16	0.01	32.0475	16.61	9.65	89.28	6.19	7.905	1.3	7.1
9/3/2009	12:42:36	0.03	30.96	20.42	12.10	111.58	7.77	7.95	6.4	16.2
9/10/2009	12:17:15	0.02	26.11	0.88	0.43	44.58	3.60	7.94	6.0	10.2
9/15/2009	9:01:08	0.00	26.1375	6.78	3.70	39.28	3.11	7.3075	0.4	6.9
9/30/2009	10:27:04	0.03	27.995	3.84	2.02	41.80	3.23	7.7125	6.4	14.7
10/14/2009	10:07:30	0.03	27.8775	7.07	3.86	38.20	2.93	7.3225	5.3	9.4
11/3/2009	9:02:29	0.12	20.435	13.37	7.76	40.93	3.53	7.6375	2.4	8.2
11/12/2009	8:35:28	0.06	19.89	3.91	2.08	58.05	5.23	7.4275	3.9	10.3
12/3/2009	9:58:08	0.08	14.87	2.11	1.08	74.90	7.53	7.5825	10.9	18.5
12/18/2009	11:08:26	0.03	14.82	1.69	0.86	76.88	7.74	7.4325	7.8	23.5
1/11/2010	10:02:47	0.19	10.59	2.10	1.08	81.88	9.05	7.69	8.4	24.8
1/26/2010	9:42:49	0.09	15.11	1.99	1.02	81.03	8.10	7.5475	10.7	23.8
2/17/2010	9:09:48	0.15	12.6025	1.69	0.86	86.48	9.15	7.57	8.5	21.9
3/11/2010	13:39:03	-0.11	25.0825	2.13	1.08	115.40	9.47	7.685	9.2	22.1
3/18/2010	7:59:10	0.07	16.83	1.81	0.92	71.85	6.94	7.46	6.4	18.3
3/31/2010	8:09:18	0.03	19.025	2.02	1.04	72.73	6.70	7.62	6.5	15.1
4/21/2010	8:20:49	0.00	21.335	1.92	0.98	62.30	5.48	7.44	5.5	17.2
5/4/2010	9:37:34	0.04	24.4575	2.74	1.42	65.95	5.46	7.615	4.4	15.8







APPENDIX C Water quality parameters for discrete surface samples

Light Sensor Location/LBLI										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
4/10/2008										
4/24/2008										
5/8/2008										
5/29/2008										
6/19/2008										
7/10/2008										
7/24/2008										
8/7/2008										
8/21/2008										
9/4/2008										
9/18/2008										
10/2/2008										
10/16/2008										
10/30/2008										
11/13/2008										
12/8/2008										
12/18/2008										
1/8/2009										
1/22/2009										
2/4/2009										
2/18/2009										
3/13/2009										
3/25/2009										
4/13/2009										
5/7/2009	9:54:45	0.006	27.40	50.512	33.05	88.38	5.81	8.09	10.2	13.6
5/28/2009	13:10:47	-0.001	29.00	48.662	31.65	122.20	7.89	8.10	7.6	5.7
6/11/2009	13:23:45	-0.006	29.33	54.251	35.76	106.98	6.72	8.15	12.6	11.3
6/25/2009	13:05:15	0.003	32.22	52.844	34.61	101.25	6.11	8.09	12.0	7.7
7/9/2009	10:50:15	0.039	29.96	55.931	36.99	92.90	5.74	8.13	11.2	11.5
7/23/2009	12:07:46	0.031	30.70	57.946	38.47	108.90	6.59	8.20	8.4	9.5
8/6/2009	11:02:56	0.050	31.55	59.046	39.27	114.75	6.82	8.22	14.5	8.4
8/20/2009	15:02:26	0.018	31.58	58.939	39.19	122.58	7.29	8.17	9.3	7.6
9/3/2009	10:26:56	0.035	29.17	59.893	40.00	93.90	5.78	8.17	9.6	12.2
9/10/2009	13:04:53	0.020	27.94	53.580	35.31	89.20	5.75	7.93	5.5	12.2
9/15/2009	12:42:52	0.009	29.07	55.103	36.40	114.48	7.19	8.23	7.1	11.4
9/30/2009	12:16:24	0.017	29.04	57.084	37.88	105.90	6.60	8.20	9.3	8.7
10/14/2009	13:15:37	0.005	27.56	57.383	38.16	164.70	10.50	8.27	3.3	14.3
11/3/2009	12:10:36	0.102	21.48	55.354	36.77	113.20	8.07	8.30	3.2	15.0
11/12/2009	13:10:28	0.036	22.84	50.659	33.27	125.50	8.91	8.27	2.7	10.7
12/3/2009	13:37:06	0.049	14.76	34.083	21.44	125.65	11.17	8.54	6.0	18.5
12/18/2009	14:20:29	0.004	12.90	25.178	15.37	131.30	12.60	8.42	2.1	11.4
1/11/2010	14:03:39	0.146	10.57	28.965	17.86	159.83	15.90	8.88	2.7	4.6
1/26/2010	11:37:24	0.094	14.91	25.204	15.40	108.60	9.99	8.48	5.4	7.2
2/17/2010	12:27:33	0.141	12.71	20.244	12.12	155.73	15.31	9.01	2.4	10.2
3/11/2010	12:47:18	-0.106	22.95	20.773	12.45	148.03	11.84	8.49	5.8	7.8
3/18/2010	11:31:19	0.065	20.13	22.577	13.65	136.15	11.40	8.39	8.8	6.7
3/31/2010	11:21:18	0.032	21.70	28.627	17.68	111.05	8.81	8.13	7.0	4.9
4/21/2010	11:41:48	-0.013	25.05	26.040	15.90	116.90	8.82	8.47	2.5	10.0
5/4/2010	13:19:39	0.020	28.07	28.131	17.25	131.35	9.33	8.24	15.6	10.0

APPENDIX C Water quality parameters for discrete surface samples

Control/LBCO										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
4/10/2008										
4/24/2008										
5/8/2008										
5/29/2008										
6/19/2008										
7/10/2008										
7/24/2008										
8/7/2008										
8/21/2008										
9/4/2008										
9/18/2008										
10/2/2008										
10/16/2008										
10/30/2008										
11/13/2008										
12/8/2008										
12/18/2008										
1/8/2009										
1/22/2009										
2/4/2009										
2/18/2009										
3/13/2009										
3/25/2009										
4/13/2009										
5/7/2009										
5/28/2009										
6/11/2009	10:42:45	0.000	28.78	52.916	34.78	112.70	7.18	8.34	9.8	3.1
6/25/2009	10:07:15	0.019	31.25	53.679	35.27	110.68	6.76	8.22	2.1	0.4
7/9/2009	10:08:15	0.081	29.82	56.838	37.67	111.38	6.87	8.22	5.7	1.3
7/23/2009	10:28:15	0.044	30.50	57.050	37.81	113.33	6.91	8.22	7.6	2.5
8/6/2009	10:20:16	0.055	31.11	58.031	38.52	104.58	6.29	8.21	4.4	1.5
8/20/2009	14:20:11	0.015	32.96	58.091	38.49	180.75	10.56	8.43	10.1	3.3
9/3/2009	11:13:25	0.054	29.69	59.511	39.69	116.43	7.11	8.21	2.5	3.6
9/10/2009	9:45:36	0.025	26.55	52.769	34.74	71.40	4.72	7.97	6.0	6.5
9/15/2009	11:11:13	0.024	27.66	58.339	38.88	144.75	9.18	8.34	3.8	3.1
9/30/2009	12:49:05	0.018	29.42	59.919	40.01	119.08	7.29	8.19	6.1	7.1
10/14/2009	11:56:49	0.024	28.86	58.228	38.75	188.88	11.76	8.47	-1.0	2.3
11/3/2009	10:52:29	0.113	20.77	55.083	36.57	115.68	8.36	8.32	-3.5	1.8
11/12/2009	10:26:33	0.061	21.36	47.047	30.64	122.95	9.10	8.31	0.1	2.0
12/3/2009	12:13:02	0.088	14.10	38.612	24.58	125.93	11.13	8.41	4.0	0.8
12/18/2009	13:04:58	0.002	13.10	28.860	17.84	111.03	10.45	8.18	1.9	11.4
1/11/2010	12:30:08	0.231	12.21	30.801	19.14	123.33	11.73	8.21	1.8	2.3
1/26/2010	10:59:07	0.091	15.03	29.448	18.26	104.30	9.40	7.98	3.0	9.8
2/17/2010	15:28:53	0.112	19.58	22.133	13.36	152.05	12.88	8.75	0.7	1.6
3/11/2010	11:20:53	-0.087	21.07	25.766	15.76	117.93	9.57	8.04	0.9	3.1
3/18/2010	10:17:44	0.066	19.38	24.516	14.94	109.53	9.23	8.04	2.1	3.4
3/31/2010	9:56:34	0.038	21.59	31.400	19.58	106.18	8.35	8.10	6.3	4.7
4/21/2010	10:40:03	0.002	24.57	23.062	13.93	127.83	9.84	8.30	1.2	4.9
5/4/2010	11:56:22	0.035	28.09	30.238	18.68	137.28	9.68	8.28	6.1	2.6

APPENDIX C Water quality parameters for discrete samples at depth

Location/ID		LB01								
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
04/10/08		0.698	24.22	34.110	21.41	85.83	6.37	8.15		
04/24/08		0.764	25.31	34.290	21.51	88.63	6.45	7.97		
05/08/08	9:31:30	0.821	24.89	32.823	20.51	78.85	5.81	8.18	15.6	11.0
05/29/08	9:03:15	0.879	28.35	35.907	22.57	75.68	5.19	8.21	19.5	13.8
06/19/08	9:07:23	0.815	29.24	42.377	27.11	73.48	4.86	8.22	30.6	16.1
07/10/08	8:50:22	1.057	29.26	44.097	28.34	73.13	4.79	8.10	17.5	10.3
07/24/08	9:45:18	1.250	26.94	41.406	26.48	85.78	5.90	8.09	21.2	7.6
08/07/08	9:32:53	0.782	29.84	49.701	32.38	78.43	4.98	8.11	19.2	11.3
08/21/08	9:15:25	0.896	28.63	50.352	32.90	79.55	5.13	7.89	32.3	13.6
09/04/08	9:30:45	1.052	29.30	54.988	36.31	80.83	5.06	8.17	17.4	13.2
09/18/08	8:44:23	1.018	23.73	51.444	33.83	91.05	6.35	8.19	7.7	14.7
10/02/08	8:45:15	1.209	25.95	48.016	31.26	94.98	6.47	8.15	3.8	9.6
10/16/08	8:49:15	1.338	26.44	46.134	29.88	85.15	5.80	8.17	6.5	12.6
10/30/08	9:04:45	1.185	19.39	48.286	31.55	105.38	8.04	8.27	8.6	11.8
11/13/08	9:17:15	1.132	22.43	45.896	29.79	88.88	6.49	8.19	7.3	13.4
12/08/08	8:40:46	0.653	15.07	47.908	31.24	93.18	7.75	8.12	2.1	3.5
12/18/08	8:44:15	1.028	13.66	49.582	32.42	107.53	9.13	8.17	0.3	2.6
01/08/09	9:05:45	0.605	14.56	47.552	30.97	88.23	7.43	8.01	2.8	6.2
01/22/09	8:54:45	0.582	13.91	47.875	31.19	91.80	7.82	8.11	1.7	2.9
02/04/09	8:46:05	0.603	14.58	47.486	30.92	100.18	8.43	8.23	2.2	5.9
02/18/09	8:58:15	0.935	19.31	46.859	30.52	86.43	6.65	7.85	10.0	5.8
03/13/09	8:55:45	0.915	15.73	47.768	31.15	87.60	7.19	8.00	6.7	8.0
03/25/09	8:51:15	1.171	22.53	47.869	31.22	79.90	5.77	8.01	12.3	9.8
04/13/09	9:32:25	1.051	22.40	49.665	32.54	98.13	7.05	8.13	10.6	22.1
05/07/09	8:24:46	1.087	27.11	50.505	33.06	77.15	5.10	8.07	16.9	14.1
05/28/09	8:29:33	1.013	25.35	48.044	31.30	75.80	5.21	7.98	12.8	7.2
06/11/09	9:11:25	0.896	28.41	54.196	35.75	84.95	5.42	8.12	16.8	15.1
06/25/09	8:46:45	0.892	29.88	52.934	34.76	70.30	4.40	8.09	11.8	10.2
07/09/09	8:54:15	0.895	29.60	55.964	37.03	79.98	4.97	8.12	14.5	12.5
07/23/09	8:00:15	0.855	29.13	57.907	38.50	79.15	4.91	8.15	14.3	14.8
08/06/09	9:12:45	0.960	30.03	59.049	39.33	81.73	4.98	8.18	9.2	11.9
08/20/09	9:27:26	1.090	29.61	59.230	39.48	82.48	5.05	8.17	14.3	13.1
09/03/09	9:17:16	0.991	28.14	60.035	40.14	71.10	4.44	8.05	15.8	11.9
09/10/09	10:02:24	1.195	28.38	58.443	38.93	56.08	3.51	7.96	14.2	8.5
09/15/09	11:27:38	1.091	27.94	54.495	35.98	92.38	5.93	8.20	9.9	22.7
09/30/09	11:06:09	1.146	27.99	57.377	38.14	68.95	4.37	8.12	18.1	10.6
10/14/09	12:12:17	1.077	26.01	57.488	38.28	127.05	8.31	8.13	12.3	26.9
11/03/09	11:04:13	1.109	21.12	55.420	36.82	103.95	7.46	8.29	4.3	13.7
11/12/09	10:41:19	1.309	21.72	50.933	33.48	92.83	6.72	8.22	8.5	8.5
12/03/09	12:24:25	1.053	13.70	33.367	20.93	119.55	10.90	8.50	7.4	24.9
12/18/09	13:16:47	1.143	11.29	27.465	16.87	111.50	10.98	8.27	3.3	11.4
01/11/10	12:46:46	0.932	7.71	28.637	17.54	121.10	12.89	8.70	2.3	5.3
01/26/10	11:07:18	0.863	15.13	25.146	15.37	87.55	8.01	8.32	9.7	19.3
02/17/10	11:54:10	0.924	12.43	20.082	12.01	130.15	12.89	8.83	2.1	8.0
03/11/10	11:30:08	0.822	20.24	20.604	12.36	103.93	8.75	8.13	3.3	10.5
03/18/10	10:30:14	0.839	18.34	22.180	13.40	98.18	8.52	8.07	3.4	8.0
03/31/10	10:09:00	0.799	20.21	28.725	17.77	80.28	6.55	7.87	10.0	4.8
04/21/10	10:55:23	0.924	23.21	26.040	15.93	105.50	8.23	8.29	11.5	14.7
05/04/10	12:07:19	1.005	26.02	27.961	17.17	79.80	5.88	7.93	9.2	12.2

## APPENDIX C Water quality parameters for discrete samples at depth

## Park Point/LB02

Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
04/10/08		0.421	24.20	34.350	21.58	84.55	6.27	8.14		
04/24/08		0.558	25.00	34.438	21.62	96.18	7.03	8.02		
05/08/08	9:56:39	0.574	24.98	32.878	20.54	88.08	6.48	8.20	12.3	13.3
05/29/08	9:26:22	0.760	29.18	35.814	22.49	88.80	6.02	8.22	21.4	17.0
06/19/08	9:28:22	0.639	29.51	42.756	27.37	79.08	5.20	8.21	10.6	11.2
07/10/08	9:09:23	0.711	29.51	44.172	28.39	84.58	5.52	8.14	8.6	10.6
07/24/08	10:09:52	0.715	27.46	45.426	29.35	88.93	5.97	8.10	15.6	5.9
08/07/08	9:48:22	0.591	30.10	48.983	31.85	84.70	5.37	8.11	6.7	12.6
08/21/08	9:45:23	0.400	28.68	49.558	32.32	91.00	5.89	7.91	10.7	16.5
09/04/08	10:02:45	0.612	29.38	55.045	36.35	80.28	5.02	8.15	17.4	11.9
09/18/08	9:12:35	0.641	23.74	51.717	34.03	92.28	6.42	8.21	10.9	14.6
10/02/08	9:14:15	0.592	25.94	46.707	30.31	100.70	6.89	8.13	1.8	7.1
10/16/08	9:17:45	0.673	26.60	46.034	29.81	86.33	5.86	8.16	5.2	10.5
10/30/08	9:27:45	0.764	19.66	48.240	31.52	105.28	8.00	8.25	3.5	8.7
11/13/08	9:33:15	0.623	22.44	46.025	29.89	91.40	6.67	8.22	4.9	15.1
12/08/08	8:57:15	0.513	14.90	47.909	31.24	97.60	8.14	8.14	1.0	4.6
12/18/08	9:03:15	0.629	13.11	49.704	32.49	103.83	8.92	8.17	0.1	3.9
01/08/09	9:31:55	0.374	14.90	47.503	30.94	94.43	7.89	8.04	0.2	4.4
01/22/09	9:18:15	0.492	14.17	47.814	31.15	94.20	7.98	8.10	1.7	3.7
02/04/09	9:11:15	0.678	14.98	47.718	31.10	106.40	8.87	8.23	1.3	5.9
02/18/09	9:33:15	0.561	19.53	46.869	30.52	86.80	6.65	7.86	7.0	5.5
03/13/09	9:20:15	0.482	17.52	48.195	31.48	87.25	6.91	8.11	9.7	7.1
03/25/09	9:11:15	0.347	22.64	47.769	31.15	85.38	6.16	8.08	9.5	11.0
04/13/09	9:58:15	0.384	22.52	49.382	32.33	110.23	7.91	8.14	13.0	13.1
05/07/09	8:48:15	0.576	26.57	50.309	32.93	88.30	5.89	8.03	18.2	13.3
05/28/09	9:03:15	0.593	25.69	48.277	31.46	80.15	5.47	8.04	9.5	9.2
06/11/09	9:38:15	0.385	28.48	54.207	35.75	98.25	6.26	8.13	32.4	15.3
06/25/09	9:14:45	0.583	30.55	52.945	34.75	79.40	4.92	8.15	11.1	7.9
07/09/09	9:16:15	0.443	29.19	56.016	37.08	86.90	5.43	8.07	13.7	10.5
07/23/09	8:25:15	0.441	29.21	57.880	38.48	85.30	5.29	8.17	14.4	14.9
08/06/09	9:34:16	0.447	30.30	58.916	39.22	88.00	5.34	8.19	16.3	11.0
08/20/09	9:56:06	0.393	29.92	58.989	39.29	99.15	6.05	8.19	14.2	10.4
09/03/09	9:42:36	0.393	28.78	59.581	39.78	93.35	5.78	8.22	10.3	7.6
09/10/09	10:17:59	0.460	28.12	56.071	37.15	78.90	5.01	8.05	15.2	10.0
09/15/09	11:45:17	0.383	28.32	54.520	35.99	136.13	8.68	8.37	5.5	16.0
09/30/09	11:18:52	0.352	28.64	58.103	38.67	103.65	6.48	8.21	11.0	13.4
10/14/09	12:25:59	0.471	27.70	57.274	38.07	162.48	10.35	8.26	9.5	21.7
11/03/09	11:18:17	0.457	21.16	55.521	36.89	119.53	8.56	8.34	3.3	10.3
11/12/09	10:58:09	0.379	22.29	49.928	32.73	116.68	8.39	8.28	4.0	6.9
12/03/09	12:40:51	0.288	14.02	33.539	21.05	122.00	11.04	8.51	6.3	13.5
12/18/09	13:28:59	0.355	12.08	27.282	16.76	121.35	11.75	8.37	2.5	8.5
01/11/10	13:08:59	0.498	8.07	29.312	18.01	123.68	13.01	8.62	1.4	2.8
01/26/10	12:14:34	0.360	15.87	25.120	15.35	127.23	11.47	8.57	2.6	9.8
02/17/10										
03/11/10	11:42:14	0.368	20.91	20.334	12.18	123.00	10.23	8.27	2.6	9.0
03/18/10	10:47:38	0.442	18.96	22.928	13.89	101.28	8.66	8.05	2.6	6.7
03/31/10	10:20:53	0.254	20.95	29.399	18.22	107.58	8.63	8.12	7.0	3.1
04/21/10	10:50:42	0.191	24.13	25.690	15.68	125.50	9.64	8.27	4.4	7.8
05/04/10	12:24:44	0.255	27.02	28.120	17.26	116.90	8.46	8.20	9.0	11.7

APPENDIX C Water quality parameters for discrete samples at depth

Connie Hagar Parking Lot/LB03

Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
04/10/08										
04/24/08		0.453	25.53	34.620	21.74	95.20	6.89	7.99		
05/08/08	10:23:24	0.308	24.91	32.912	20.57	75.38	5.55	8.13	11.6	8.2
05/29/08	9:52:43	0.335	27.71	35.961	22.63	67.50	4.68	8.11	9.0	5.1
06/19/08	10:07:22	0.249	29.23	42.084	26.90	90.93	6.03	8.21	13.3	10.9
07/10/08	9:27:22	0.370	29.10	43.086	27.62	69.23	4.56	8.05	17.3	9.6
07/24/08	10:28:52	0.542	26.86	36.730	23.18	88.08	6.18	7.96	29.9	8.0
08/07/08	10:02:52	0.219	29.51	48.810	31.74	76.18	4.87	8.02	8.8	7.6
08/21/08	10:01:15	0.173	28.68	50.320	32.87	82.28	5.31	7.79	10.0	9.4
09/04/08	10:37:45	0.249	28.88	54.748	36.14	71.33	4.50	8.08	20.3	10.1
09/18/08	9:29:15	0.427	23.03	51.150	33.62	75.45	5.33	8.12	6.9	9.9
10/02/08	9:43:46	0.437	25.95	46.961	30.50	68.15	4.66	8.04	10.7	9.0
10/16/08	9:54:55	0.076	26.25	45.447	29.39	67.10	4.59	8.07	10.0	12.3
10/30/08	10:23:25	0.426	20.30	48.146	31.45	91.55	6.88	8.21	2.7	6.5
11/13/08	10:01:45	0.380	21.93	45.364	29.41	92.95	6.86	8.17	5.1	17.7
12/08/08	9:24:15	0.165	16.12	47.586	31.03	96.15	7.85	8.14	3.9	4.3
12/18/08	9:29:45	0.291	14.72	48.844	31.91	89.20	7.44	8.09	1.6	3.6
01/08/09										
01/22/09										
02/04/09										
02/18/09	9:57:45	0.190	19.40	46.831	30.50	88.55	6.80	7.87	10.1	6.9
03/13/09	9:44:15	0.223	14.73	46.092	29.92	81.88	6.91	8.00	2.7	6.0
03/25/09	9:34:15	0.237	22.33	47.668	31.08	78.95	5.73	7.98	12.6	9.6
04/13/09	10:33:15	0.245	22.73	49.656	32.53	97.05	6.94	8.06	6.9	6.5
05/07/09	10:40:15	0.248	27.04	50.467	33.03	93.50	6.19	8.03	9.4	10.6
05/28/09	10:11:45	0.310	25.94	49.042	32.01	79.00	5.36	7.94	8.5	7.2
06/11/09	11:09:45	0.239	29.09	54.389	35.87	103.00	6.49	8.11	13.1	8.6
06/25/09	10:33:15	0.204	30.50	52.978	34.77	75.78	4.70	7.98	9.8	4.9
07/09/09	10:23:19	0.224	29.62	55.966	37.03	84.25	5.23	8.05	10.4	6.7
07/23/09	11:00:16	0.196	30.22	57.850	38.42	96.68	5.90	8.10	8.1	6.4
08/06/09	10:36:06	0.199	30.14	59.245	39.47	73.50	4.46	8.03	4.7	3.8
08/20/09	11:48:26	0.350	30.85	59.537	39.67	107.43	6.45	8.12	9.1	4.5
09/03/09	11:32:35	0.287	29.10	60.069	40.14	101.00	6.21	8.04	6.8	8.6
09/10/09	10:39:16	0.394	28.27	55.568	36.78	48.88	3.11	7.95	11.6	7.4
09/15/09	10:50:00	0.265	28.46	54.329	35.84	88.65	5.64	8.24	11.6	7.8
09/30/09	8:50:28	0.350	27.39	54.245	35.82	57.45	3.73	8.08	8.3	11.7
10/14/09	11:30:58	0.364	28.01	56.980	37.84	99.55	6.32	8.06	6.1	8.1
11/03/09	10:34:49	0.277	21.53	55.307	36.73	105.28	7.50	8.23	-0.8	5.0
11/12/09	10:08:08	0.302	22.08	50.393	33.08	108.90	7.85	8.25	2.8	10.3
12/03/09	11:49:49	0.187	14.70	33.763	21.21	120.58	10.74	8.43	3.5	6.9
12/18/09	12:49:40	0.386	13.24	27.540	16.95	123.90	11.68	8.34	2.7	7.0
01/11/10										
01/26/10										
02/17/10										
03/11/10	11:07:59	0.111	20.68	20.573	12.33	89.00	7.43	8.12	4.7	6.8
03/18/10	9:57:48	0.145	18.47	21.409	12.89	151.55	13.16	8.56	1.1	3.6
03/31/10	9:40:53	0.121	19.92	28.293	17.47	127.28	10.46	8.22	2.0	4.8
04/21/10	10:14:46	0.156	23.75	25.306	15.43	87.58	6.78	8.22	6.4	15.1
05/04/10	11:39:54	0.244	27.88	27.314	16.71	146.10	10.45	8.30	11.6	9.6

APPENDIX C Water quality parameters for discrete samples at depth

Tule Creek Outfall/LB04										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
04/10/08		0.393	26.41	33.805	21.16	112.98	8.06	8.20		
04/24/08		0.487	25.47	34.710	21.80	87.23	6.31	7.92		
05/08/08	10:41:08	0.420	24.95	32.742	20.45	71.90	5.30	8.11	23.8	8.2
05/29/08	10:09:23	0.319	28.53	35.734	22.45	83.13	5.69	8.16	7.1	4.2
06/19/08	10:31:23	0.379	28.83	41.659	26.61	82.48	5.52	8.03	10.4	4.9
07/10/08	9:41:22	0.567	28.57	41.955	26.83	68.73	4.59	8.03	13.7	7.2
07/24/08	10:41:22	0.712	27.02	39.408	25.06	89.45	6.19	7.94	60.1	10.3
08/07/08	10:18:52	0.382	29.13	48.155	31.28	70.90	4.58	7.91	8.3	4.9
08/21/08	10:13:35	0.314	28.47	49.777	32.48	85.25	5.53	7.64	11.4	5.7
09/04/08	11:02:45	0.372	30.16	53.650	35.28	75.33	4.68	8.08	11.8	8.4
09/18/08	9:41:37	0.486	23.65	50.872	33.41	77.38	5.41	8.12	8.4	12.4
10/02/08	10:07:45	0.573	26.81	46.651	30.25	59.68	4.03	7.98	13.8	6.1
10/16/08	10:17:15	0.632	26.59	45.878	29.70	66.60	4.53	8.01	11.6	9.6
10/30/08	11:13:15	0.407	21.07	47.553	31.01	93.85	6.97	8.18	6.2	5.0
11/13/08	10:24:45	0.324	22.10	46.241	30.05	82.25	6.03	8.05	9.9	10.6
12/08/08	9:44:15	0.211	16.49	47.053	30.64	95.00	7.71	8.07	1.6	3.6
12/18/08	10:00:15	0.307	14.70	48.962	32.00	93.15	7.77	8.06	2.5	4.0
01/08/09										
01/22/09										
02/04/09										
02/18/09	10:21:15	0.262	19.74	46.517	30.27	82.78	6.33	7.78	24.9	8.4
03/13/09	10:05:15	0.248	15.27	46.335	30.11	77.98	6.51	7.99	7.4	10.1
03/25/09	9:55:45	0.321	22.40	47.360	30.86	66.18	4.80	7.90	15.0	7.0
04/13/09	11:00:15	0.199	23.80	48.519	31.68	115.10	8.11	8.19	8.3	10.6
05/07/09	10:56:15	0.188	27.05	49.954	32.65	103.48	6.87	7.99	8.2	6.5
05/28/09	10:44:45	0.204	27.41	48.278	31.42	73.48	4.88	7.97	9.8	7.8
06/11/09	11:24:15	0.154	29.19	51.892	34.01	109.88	6.98	8.13	22.8	7.8
06/25/09	11:05:45	0.136	32.07	52.090	34.06	82.63	5.02	8.03	7.9	4.2
07/09/09										
07/23/09										
08/06/06										
08/20/09	12:15:16	0.082	30.91	55.310	36.49	116.28	7.09	8.02	16.6	5.0
09/03/09										
09/10/09	10:54:36	0.099	26.18	3.889	2.05	55.15	4.41	7.74	10.5	9.9
09/15/09	10:35:39	0.191	28.57	54.144	35.70	120.40	7.65	8.32	13.9	25.2
09/30/09	10:49:33	0.184	28.41	55.570	36.78	73.05	4.63	8.15	16.6	13.2
10/14/09	11:13:51	0.100	28.03	52.405	34.43	85.30	5.51	8.03	6.5	16.6
11/03/09	10:18:12	0.191	21.12	53.993	35.76	83.35	6.02	8.14	1.2	6.3
11/12/09	9:52:04	0.232	22.06	48.736	31.86	80.85	5.87	8.14	5.3	8.7
12/03/09	11:25:14	1.203	14.33	34.208	21.52	107.58	9.64	8.33	7.3	14.9
12/18/09	12:33:35	1.013	12.75	29.211	18.08	112.10	10.61	8.25	5.6	13.1
01/11/10	11:49:56	0.701	7.48	28.552	17.48	87.80	9.40	8.12	2.9	5.9
01/26/10	10:30:38	1.050	16.15	22.729	13.77	74.98	6.79	8.29	9.2	10.6
02/17/10	11:16:36	0.993	13.17	17.934	10.64	70.48	6.92	7.68	6.5	12.7
03/11/10	10:14:18	1.000	20.62	19.480	11.62	60.38	5.07	7.58	14.0	16.6
03/18/10	9:36:53	0.910	18.96	19.188	11.45	27.10	2.35	7.17	28.7	10.8
03/31/10	9:27:24	0.865	20.04	25.454	15.56	96.80	8.03	8.49	4.7	8.6
04/21/10	9:59:46	0.745	22.70	24.582	14.96	83.58	6.61	8.17	9.6	31.1
05/04/10	11:27:08	0.875	24.61	26.306	16.08	65.35	4.95	7.88	14.2	19.1

APPENDIX C Water quality parameters for discrete samples at depth

Key Allegro Bridge/LB05										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
04/10/08										
04/24/08		0.524	25.24	34.030	21.34	89.58	6.53	7.99		
05/08/08	11:08:25	0.573	24.93	32.137	20.04	75.08	5.55	8.11	17.4	8.5
05/29/08	10:33:20	0.696	28.80	35.242	22.10	92.58	6.32	8.15	18.3	10.3
06/19/08	10:55:22	0.597	29.52	41.165	26.24	68.70	4.55	8.14	16.5	10.3
07/10/08	9:58:37	0.818	29.44	41.876	26.75	77.70	5.12	8.15	7.3	17.7
07/24/08	10:54:22	0.998	27.26	40.080	25.53	86.88	5.98	8.02	14.5	6.7
08/07/08	10:40:34	0.515	30.06	46.808	30.27	81.15	5.19	8.08	8.9	11.5
08/21/08	10:27:55	0.500	28.90	48.605	31.61	88.30	5.71	7.86	7.9	9.4
09/04/08	11:27:40	0.783	29.58	54.666	36.06	90.78	5.67	8.11	14.8	7.1
09/18/08	10:04:45	0.975	23.98	49.862	32.66	84.48	5.90	8.13	7.2	10.9
10/02/08	10:30:55	0.745	26.42	45.017	29.08	94.60	6.47	8.05	2.5	3.7
10/16/08	10:32:45	1.017	25.98	47.453	30.85	88.93	6.06	8.03	11.8	5.8
10/30/08	11:54:15	0.919	20.84	47.288	30.82	107.05	7.99	8.16	3.2	7.2
11/13/08	10:43:45	0.784	22.13	47.327	30.83	96.45	7.04	8.14	9.0	7.4
12/08/08	10:01:45	0.458	16.05	46.396	30.16	91.80	7.54	8.10	2.0	6.4
12/18/08	10:16:15	0.819	13.40	50.235	32.89	100.78	8.58	8.15	1.0	4.8
01/08/09	10:36:25	0.497	15.08	47.063	30.63	93.80	7.83	7.91	0.9	2.5
01/22/09	11:06:15	0.519	14.80	47.425	30.89	99.68	8.35	8.00	1.7	4.8
02/04/09	10:03:45	0.702	14.59	47.045	30.60	98.40	8.30	8.02	3.8	2.6
02/18/09	10:40:15	0.735	19.73	46.503	30.26	84.70	6.48	7.85	11.8	4.8
03/13/09	10:21:45	0.824	16.84	47.551	31.01	81.13	6.53	8.09	14.5	7.8
03/25/09	10:13:47	0.999	22.37	47.925	31.27	83.73	6.07	8.05	22.9	12.5
04/13/09	11:24:25	0.906	22.61	48.971	32.03	107.53	7.72	8.12	17.0	14.0
05/07/09	11:13:15	0.885	27.38	49.986	32.67	80.20	5.29	8.05	11.0	11.0
05/28/09	11:08:15	0.858	26.24	48.482	31.60	83.13	5.62	8.08	15.0	9.8
06/11/09	11:40:15	0.741	28.54	53.956	35.56	96.63	6.15	8.06	11.9	14.5
06/25/09	11:21:14	0.836	31.13	52.215	34.19	88.30	5.43	8.15	13.7	8.6
07/09/09	11:28:15	0.809	30.22	55.058	36.33	98.50	6.08	8.08	6.7	11.7
07/23/09	13:02:15	0.729	30.28	57.458	38.12	106.38	6.50	8.12	9.7	11.7
08/06/09	11:48:36	0.784	30.90	58.878	39.17	103.50	6.22	8.14	13.4	13.1
08/20/09	12:30:26	1.007	30.37	59.169	39.41	100.68	6.10	8.10	7.0	10.8
09/03/09	11:54:56	0.887	29.71	59.693	39.83	103.93	6.34	8.14	7.1	12.3
09/10/09	11:09:31	1.047	28.69	58.842	39.22	76.40	4.75	8.07	8.5	9.8
09/15/09	10:17:50	1.011	29.28	56.278	37.27	86.65	5.40	8.18	11.3	19.1
09/30/09	9:49:18	1.038	27.62	57.974	38.60	74.80	4.75	8.17	8.0	10.9
10/14/09	11:00:33	0.980	26.57	55.615	36.86	105.63	6.90	8.07	4.8	11.8
11/03/09	9:26:10	1.020	20.01	54.199	35.91	90.70	6.67	8.03	-1.0	3.1
11/12/09	9:13:23	1.004	22.33	50.379	33.07	91.98	6.60	8.13	6.4	9.0
12/03/09	10:37:15	0.794	13.98	35.690	22.54	93.68	8.40	8.18	9.1	11.2
12/18/09	11:52:04	0.991	11.59	28.617	17.65	97.68	9.51	8.11	1.9	6.0
01/11/10	10:42:56	0.587	6.73	28.176	17.19	103.13	11.26	8.14	12.3	4.3
01/26/10	10:00:08	0.639	14.65	24.499	14.93	100.43	9.31	8.03	4.0	5.6
02/17/10	9:45:47	0.738	11.78	19.901	11.89	121.65	12.23	8.47	8.8	27.4
03/11/10	10:51:13	0.735	19.48	19.802	11.84	92.45	7.92	7.91	9.2	13.2
03/18/10	8:32:04	0.604	18.89	22.256	13.45	103.08	8.85	8.17	5.4	20.6
03/31/10	8:35:19	0.672	19.67	24.740	15.09	78.68	6.59	8.43	5.1	5.6
04/21/10	9:05:34	0.662	23.47	25.916	15.84	66.98	5.20	7.81	11.0	7.8
05/04/10	10:02:46	0.816	25.85	27.537	16.89	84.73	6.27	8.02	9.9	25.6

APPENDIX C Water quality parameters for discrete samples at depth

Middle Bay/LB06										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
04/10/08										
04/24/08										
05/08/08										
05/29/08										
06/19/08										
07/10/08										
07/24/08										
08/07/08										
08/21/08										
09/04/08										
09/18/08										
10/02/08										
10/16/08										
10/30/08										
11/13/08										
12/08/08										
12/18/08										
01/08/09										
01/22/09										
02/04/09										
02/18/09										
03/13/09										
03/25/09										
04/13/09	15:33:15	0.338	25.04	49.721	32.53	127.48	8.75	8.05	10.2	11.4
05/07/09	9:11:45	0.321	27.44	50.482	33.03	84.25	5.54	8.08	8.8	13.0
05/28/09	9:36:45	0.411	26.11	49.831	32.59	87.98	5.93	8.12	9.8	7.1
06/11/09	10:10:45	0.267	28.68	54.187	35.73	91.43	5.80	8.12	11.6	13.7
06/25/09	9:40:15	0.281	30.71	52.853	34.67	85.85	5.30	8.14	10.4	7.9
07/09/09	9:36:15	0.267	29.83	55.831	36.92	93.78	5.80	8.15	10.7	12.6
07/23/09	9:57:15	0.243	29.76	57.789	38.39	96.90	5.95	8.18	7.9	11.7
08/06/09	9:56:46	0.276	30.40	58.670	39.03	93.73	5.68	8.21	9.1	7.3
08/20/09	10:34:16	0.490	29.96	58.925	39.24	91.98	5.61	8.16	8.8	9.7
09/03/09	10:06:16	0.386	29.02	59.774	39.92	94.83	5.85	8.20	10.2	12.8
09/10/09	13:29:06	0.530	29.22	57.672	38.32	93.80	5.82	8.07	11.5	16.4
09/15/09	12:08:40	0.503	28.63	54.396	35.89	140.08	8.89	8.37	5.1	16.9
09/30/09	11:40:58	0.489	28.96	57.942	38.53	107.98	6.72	8.23	7.5	12.7
10/14/09	12:46:31	0.475	28.19	56.985	37.84	167.00	10.56	8.26	4.8	20.0
11/03/09	11:31:17	0.480	21.45	55.217	36.66	131.48	9.38	8.37	-0.2	10.1
11/12/09	11:19:39	0.611	22.36	49.597	32.49	129.65	9.33	8.32	1.7	9.8
12/03/09	13:02:44	0.298	15.10	34.310	21.60	128.83	11.36	8.46	6.5	18.9
12/18/09	13:48:18	0.485	12.37	27.927	17.20	121.68	11.68	8.33	3.4	11.0
01/11/10	13:30:48	0.250	9.21	29.180	17.97	124.78	12.79	8.63	1.2	2.8
01/26/10	12:01:38	0.194	16.95	24.566	14.98	141.93	12.55	8.67	2.4	8.4
02/17/10	13:36:39	0.215	15.90	20.542	12.33	184.50	16.93	8.90	5.3	8.6
03/11/10	11:59:03	0.237	21.38	20.336	12.18	104.83	8.64	8.13	1.8	6.7
03/18/10	11:04:43	0.166	19.93	21.773	13.12	121.80	10.27	8.27	5.0	4.7
03/31/10	10:34:23	0.174	20.76	28.248	17.44	88.88	7.19	8.06	4.7	3.2
04/21/10	11:08:13	0.309	23.84	24.740	15.05	118.60	9.19	8.20	2.4	9.9
05/04/10	12:38:39	0.337	27.40	27.809	17.05	112.75	8.11	8.17	5.3	7.1



## APPENDIX C Water quality parameters for discrete samples at depth

Allegro Marina Dock/LB07										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
04/10/08		0.877	25.01	34.030	21.34	107.28	7.85	8.22		
04/24/08		1.327	25.67	34.250	21.48	100.63	7.28	8.06		
05/08/08	11:27:39	1.373	24.88	32.622	20.37	79.78	5.89	8.16	17.3	9.6
05/29/08	10:54:23	1.260	28.71	35.450	22.25	85.83	5.87	8.18	14.8	19.0
06/19/08	11:20:23	1.298	29.70	41.843	26.71	95.58	6.30	8.22	9.7	10.8
07/10/08	10:14:23	1.401	28.98	43.211	27.71	73.08	4.83	8.09	12.9	10.4
07/24/08	11:13:22	1.743	27.34	42.492	27.24	87.60	5.96	8.03	22.0	6.8
08/07/08	10:53:23	1.280	29.83	48.529	31.53	85.93	5.48	8.08	10.9	12.7
08/21/08	10:40:55	1.190	28.39	49.578	32.34	81.28	7.81	5.28	12.3	10.3
09/04/08	11:51:15	1.158	30.05	54.783	36.13	81.83	5.07	8.16	14.4	12.9
09/18/08	10:19:15	1.394	23.95	52.075	34.29	98.10	6.80	8.21	8.8	18.4
10/02/08	10:52:45	1.525	27.17	47.522	30.87	93.80	6.27	8.10	6.9	11.3
10/16/08	10:51:25	1.694	26.92	46.179	29.91	68.13	4.60	8.05	4.3	11.5
10/30/08	12:14:15	1.433	20.58	48.025	31.36	111.95	8.37	8.22	6.8	12.4
11/13/08	11:03:15	1.540	23.24	46.827	30.46	98.00	7.03	8.19	4.6	19.2
12/08/08	10:19:15	1.160	15.56	47.682	31.09	99.03	8.16	8.14	1.5	4.5
12/18/08	10:35:45	1.286	13.35	50.356	32.97	98.63	8.40	8.11	0.4	4.3
01/08/09	10:55:45	1.093	15.19	47.498	30.95	89.60	7.45	7.91	1.9	3.7
01/22/09	11:32:15	1.069	15.23	47.635	31.05	91.00	7.55	7.98	5.6	1.9
02/04/09	10:19:45	1.228	16.09	47.287	30.81	104.78	8.56	8.18	5.3	7.2
02/18/09	10:59:45	1.408	19.57	46.810	30.48	84.18	6.45	7.85	6.7	4.7
03/13/09	10:43:15	1.244	16.86	47.809	31.20	84.73	6.80	8.10	8.0	7.3
03/25/09	10:31:15	1.392	22.62	47.634	31.05	77.20	5.58	8.01	6.6	8.1
04/13/09	11:44:15	1.296	22.61	49.532	32.44	114.33	8.19	8.19	7.5	26.9
05/07/09	11:34:15	1.434	27.57	50.401	32.97	87.70	5.75	8.05	11.2	15.1
05/28/09	11:36:15	1.327	26.93	49.345	32.21	73.55	4.90	8.02	9.2	9.9
06/11/09	11:56:45	1.323	28.73	54.166	35.71	90.35	5.73	8.07	13.8	15.8
06/25/09	11:37:45	1.391	31.00	52.657	34.52	92.13	5.67	8.12	7.5	9.1
07/09/09	11:45:15	1.370	30.25	55.794	36.88	105.23	6.47	8.14	7.5	10.6
07/23/09	13:19:15	1.335	31.05	57.986	38.49	120.98	7.28	8.20	8.0	10.7
08/06/09	12:01:45	1.385	31.14	59.066	39.30	106.53	6.38	8.18	6.3	9.6
08/20/09	12:53:36	1.592	30.95	58.978	39.24	108.58	6.52	8.17	6.3	7.0
09/03/09	12:16:36	1.344	29.61	59.825	39.93	103.83	6.34	8.17	7.7	11.8
09/10/09	11:28:07	1.600	29.07	59.029	39.35	60.45	3.74	8.00	7.9	10.5
09/15/09	9:43:17	1.521	28.59	57.164	37.96	79.28	4.98	8.17	6.3	17.2
09/30/09	10:03:42	1.552	28.00	57.851	38.50	87.85	5.55	8.21	4.3	13.1
10/14/09	10:42:39	1.482	25.10	57.685	38.45	70.00	4.64	7.96	10.9	12.7
11/03/09	9:42:03	1.538	20.95	55.612	36.96	92.43	6.64	8.20	3.4	12.5
11/12/09	9:31:19	1.412	22.04	51.267	33.73	106.83	7.67	8.20	5.1	13.3
12/03/09	10:52:57	1.326	14.62	34.833	21.95	101.88	9.05	8.28	5.5	17.3
12/18/09	12:06:24	1.062	11.57	29.194	18.04	96.53	9.38	8.12	1.2	9.0
01/11/10	11:03:56	1.228	6.96	29.947	18.38	107.23	11.55	8.47	2.0	4.7
01/26/10	10:12:18	1.167	15.86	24.351	14.84	128.15	11.59	8.56	4.5	34.0
02/17/10	10:26:44	1.276	12.86	20.638	12.38	137.18	13.42	8.72	4.4	26.6
03/11/10	9:56:29	1.244	20.46	20.434	12.25	93.13	7.81	8.06	2.5	9.8
03/18/10	8:50:18	1.141	18.52	22.867	13.85	85.55	7.38	7.94	3.8	8.8
03/31/10	8:51:38	1.176	19.87	27.394	16.87	84.10	6.94	8.25	4.3	6.1
04/21/10	9:23:38	1.288	22.76	25.428	15.52	105.20	8.29	8.08	4.0	19.5
05/04/10	10:48:23	1.378	26.21	28.076	17.25	100.58	7.38	8.14	6.1	21.8

## APPENDIX C Water quality parameters for discrete samples at depth

Traylor Ave. Bridge/LB08										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
04/10/08		0.054	26.39	30.808	19.10	119.23	8.62	8.23		
04/24/08		0.264	26.39	32.440	20.22	101.70	7.31	8.05		
05/08/08	11:47:24	0.079	26.11	30.624	18.98	76.50	5.56	8.01	10.4	12.9
05/29/08	11:16:16	0.843	30.13	32.421	20.12	83.25	5.63	8.08	12.9	15.5
06/19/08	11:44:24	0.913	31.34	37.234	23.42	80.08	5.22	8.10	9.1	18.5
07/10/08	10:29:22	1.087	30.50	40.007	25.39	87.70	5.72	7.98	9.5	16.2
07/24/08	11:34:22	1.388	30.13	40.591	25.82	4.03	0.26	7.86	25.5	9.3
08/07/08	11:05:22	0.861	31.54	43.153	27.59	75.40	4.78	8.02	2.5	12.5
08/21/08	10:54:35	0.899	29.94	46.035	29.71	73.85	4.75	7.75	5.3	22.2
09/04/08	12:18:15	0.892	31.06	51.783	33.87	37.03	2.29	7.91	10.2	18.9
09/18/08	10:37:15	1.207	26.22	50.992	33.44	47.23	3.16	7.88	8.9	15.2
10/02/08	11:14:15	1.201	27.88	48.847	31.82	70.95	4.67	7.85	5.6	21.4
10/16/08	11:11:45	1.400	27.40	46.379	30.04	29.15	1.95	7.84	7.2	12.2
10/30/08	12:43:46	1.158	22.58	47.323	30.83	93.10	6.74	7.96	7.6	18.6
11/13/08	11:21:45	1.212	23.94	46.441	30.16	56.08	3.98	7.87	11.2	14.4
12/08/08	10:39:45	0.965	16.96	46.189	30.02	68.73	5.54	7.87	5.8	18.0
12/18/08	10:56:32	1.176	15.57	48.205	31.47	83.15	6.84	7.99	3.3	23.8
01/08/09	11:19:15	0.755	17.02	47.104	30.69	77.90	6.26	7.73	4.0	16.0
01/22/09	11:55:35	0.785	16.43	46.921	30.55	78.08	6.35	7.84	3.8	13.3
02/04/09	10:40:45	0.992	16.41	46.067	29.93	87.10	7.11	8.00	8.8	20.4
02/18/09	11:29:16	1.070	20.06	45.418	29.47	54.48	4.16	7.60	7.0	5.6
03/13/09	11:02:45	1.104	20.40	45.537	29.56	50.20	3.81	8.12	8.2	13.8
03/25/09	10:51:47	1.228	23.09	46.360	30.12	70.90	5.11	8.05	6.5	10.6
04/13/09	12:06:45	1.144	22.61	48.219	31.48	97.78	7.04	8.10	5.2	35.8
05/07/09	11:58:15	1.034	28.37	48.582	31.61	92.75	6.05	8.09	5.6	26.2
05/28/09	12:09:45	1.015	28.71	48.291	31.39	50.60	3.29	7.95	8.7	11.3
06/11/09	12:38:45	1.061	30.00	52.254	34.25	98.65	6.18	8.08	9.1	21.0
06/25/09	12:06:45	1.069	32.64	51.080	33.29	71.93	4.34	8.02	4.7	11.1
07/09/09	12:01:45	1.109	31.48	52.080	34.07	101.28	6.20	8.11	7.5	25.4
07/23/09	13:29:45	1.065	32.23	55.396	36.50	113.70	6.79	8.16	6.2	30.4
08/06/09	12:24:15	1.106	32.59	57.026	37.71	92.20	5.44	8.12	7.6	24.5
08/20/09	13:13:56	1.477	32.16	58.769	39.04	109.13	6.44	8.13	5.2	23.0
09/03/09	12:30:23	1.310	31.09	59.684	39.77	99.00	5.92	8.06	11.3	24.6
09/10/09	11:52:32	1.484	30.57	59.434	39.60	20.53	1.24	7.86	7.6	19.6
09/15/09	9:41:57	1.483	29.78	56.636	37.52	44.68	2.76	7.99	16.9	20.0
09/30/09	10:18:46	1.481	28.66	57.417	38.15	44.67	2.79	7.95	5.5	19.6
10/14/09	10:25:23	1.408	25.71	56.415	37.48	7.80	32.78	2.16	5.6	10.9
11/03/09	9:14:38	1.500	21.81	55.083	36.56	57.60	4.09	7.93	3.2	9.8
11/12/09	8:52:14	1.346	22.76	52.679	34.76	69.60	4.91	7.99	1.8	8.2
12/03/09	10:21:24	1.366	17.69	36.099	22.85	35.75	2.97	7.75	9.3	4.7
12/18/09	11:42:48	1.497	13.77	31.608	19.72	75.73	6.94	7.65	2.6	11.5
01/11/10	10:19:41	1.089	9.63	29.154	17.96	66.50	6.75	7.87	4.5	6.0
01/26/10	9:50:53	1.085	16.04	22.887	13.87	65.63	5.95	7.83	3.4	7.9
02/17/10	9:26:34	1.183	13.35	21.733	13.10	74.85	7.22	7.86	8.0	14.9
03/11/10	13:46:53	1.223	21.72	19.111	11.38	127.98	10.53	8.34	4.3	23.6
03/18/10	8:14:03	1.076	19.32	20.094	12.03	75.90	6.52	8.05	9.2	20.0
03/31/10	8:22:38	1.120	20.69	21.433	12.90	86.60	7.20	8.28	7.7	21.8
04/21/10	8:44:23	1.237	23.59	26.747	16.39	89.03	6.87	7.91	5.2	16.3
05/04/10	9:46:49	1.283	26.23	25.361	15.43	71.68	5.31	8.31	9.2	44.8

APPENDIX C Water quality parameters for discrete samples at depth

Tule Park Rd. at Encina Dr./LB09

Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
04/10/08										
04/24/08		0.297	25.59	26.630	16.32	27.35	2.04	7.51		
05/08/08	12:11:23	0.454	25.17	30.946	19.22	26.10	1.93	7.74	6.9	7.7
05/29/08	11:40:53	0.483	29.90	31.497	19.50	4.45	0.31	7.73	17.1	9.6
06/19/08	12:16:23	0.405	30.17	33.551	20.90	34.00	2.29	7.92	15.7	17.4
07/10/08	10:41:23	0.492	30.47	41.359	26.35	8.35	0.54	7.96	7.8	8.9
07/24/08	11:50:22	0.833	27.26	1.344	0.67	58.90	4.66	7.44	6.4	14.4
08/07/08	11:23:22	0.416	30.51	44.049	28.27	6.78	0.44	7.78	7.9	3.4
08/21/08	11:05:55	0.309	29.36	45.869	29.61	11.88	0.77	7.42	8.3	3.5
09/04/08	12:31:15	0.436	31.80	52.890	34.66	11.65	0.71	7.91	9.1	8.6
09/18/08	10:50:45	0.569	26.43	50.245	32.89	6.30	0.42	7.67	10.7	6.6
10/02/08	11:26:45	0.710	28.47	45.858	29.63	10.25	0.67	7.68	14.2	5.8
10/16/08	11:28:32	0.743	28.05	43.722	28.10	5.60	0.38	7.64	8.1	4.5
10/30/08	13:02:45	0.573	22.87	41.166	26.39	57.15	4.22	7.88	7.1	15.5
11/13/08	11:45:45	0.543	24.67	42.739	27.48	29.08	2.07	7.73	6.0	7.7
12/08/08	10:51:45	0.425	18.11	36.161	22.90	39.95	3.29	7.74	11.5	18.1
12/18/08	11:11:45	0.455	15.99	46.560	30.30	58.35	4.79	7.94	8.4	13.1
01/08/09										
01/22/09	12:09:45	0.190	18.31	2.509	1.30	105.08	9.81	7.73	11.9	8.2
02/04/09	10:52:49	0.383	15.96	2.516	1.31	96.55	9.46	7.92	9.4	10.3
02/18/09	11:49:15	0.421	20.87	43.604	28.16	31.25	2.37	7.45	18.0	13.8
03/13/09	11:23:15	0.448	19.50	39.692	25.38	18.95	1.50	7.56	10.4	16.2
03/25/09	11:04:45	0.583	23.06	45.855	29.75	26.53	1.92	7.65	6.7	10.5
04/13/09	12:25:45	0.414	24.59	46.505	30.20	107.93	7.57	8.03	12.6	15.4
05/07/09	12:11:45	0.505	27.51	45.763	29.59	41.85	2.80	7.67	7.8	11.2
05/28/09	12:28:15	0.526	27.02	42.563	27.30	50.43	3.45	7.72	20.7	11.5
06/11/09	12:51:16	0.571	29.82	44.476	28.60	25.58	1.66	7.78	28.5	8.8
06/25/09	12:18:15	0.535	32.06	38.658	24.40	21.10	1.35	7.68	33.7	8.8
07/09/09	12:16:45	0.519	31.87	37.767	23.78	6.48	0.42	7.64	27.2	6.4
07/23/09	13:58:19	0.505	31.52	28.129	17.18	37.43	2.51	7.67	16.2	6.8
08/06/09	12:43:36	0.481	30.66	13.982	8.02	45.95	3.29	7.74	7.0	8.0
08/20/09	13:48:26	0.637	31.30	52.156	34.14	116.10	7.13	7.96	10.0	25.2
09/03/09	12:43:46	0.604	30.82	44.211	28.38	47.68	3.04	7.76	16.4	15.1
09/10/09	12:19:24	0.654	26.12	0.901	0.44	42.80	3.46	7.72	6.4	10.6
09/15/09	9:02:34	0.674	29.89	52.176	34.20	16.93	1.06	7.65	7.5	9.0
09/30/09	10:28:47	0.605	28.28	47.602	30.90	23.25	1.53	7.87	15.5	14.6
10/14/09	10:08:54	0.439	27.17	53.060	34.94	22.63	1.48	7.77	8.5	7.1
11/03/09	9:03:43	0.605	22.99	52.945	34.95	33.78	2.37	7.90	9.7	9.5
11/12/09	8:36:23	0.743	23.72	48.337	31.55	38.53	2.72	7.83	9.5	10.1
12/03/09	9:58:49	0.738	14.89	2.100	1.08	73.68	7.40	7.56	11.0	18.6
12/18/09	11:09:10	0.898	14.81	1.693	0.86	76.13	7.67	7.43	7.8	24.0
01/11/10	10:05:51	0.783	10.59	2.100	1.08	80.93	8.95	7.64	12.2	25.3
01/26/10	9:43:19	0.506	15.04	1.987	1.02	78.45	7.86	7.52	10.2	23.7
02/17/10	9:10:23	0.774	12.49	1.692	0.86	84.93	9.00	7.57	8.7	22.6
03/11/10	13:39:29	0.567	24.80	2.130	1.09	115.58	9.53	7.68	11.4	22.9
03/18/10	7:59:44	0.505	16.84	1.806	0.92	70.65	6.82	7.45	6.6	17.4
03/31/10	8:09:43	0.532	19.03	2.005	1.03	71.70	6.61	7.60	6.5	15.0
04/21/10	8:24:04	0.605	22.23	8.108	4.51	34.65	2.94	7.22	9.4	22.0
05/04/10	9:38:18	0.708	26.64	23.865	14.43	32.28	2.39	7.27	5.4	11.4





APPENDIX C Water quality parameters for discrete samples at depth

Light Sensor Location/LBLI										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
04/10/08										
04/24/08										
05/08/08										
05/29/08										
06/19/08										
07/10/08										
07/24/08										
08/07/08										
08/21/08										
09/04/08										
09/18/08										
10/02/08										
10/16/08										
10/30/08										
11/13/08										
12/08/08										
12/18/08										
01/08/09										
01/22/09										
02/04/09										
02/18/09										
03/13/09										
03/25/09										
04/13/09										
05/07/09	9:55:45	0.454	27.40	50.512	33.05	88.10	5.80	8.08	10.8	13.0
05/28/09	13:12:15	0.753	27.27	49.118	32.03	99.73	6.61	7.99	8.1	8.6
06/11/09	13:09:45	0.397	29.34	54.252	35.76	106.90	6.71	8.15	13.3	13.6
06/25/09	13:06:15	0.451	31.92	52.856	34.63	99.28	6.02	8.09	17.1	9.2
07/09/09	10:51:15	0.463	29.97	55.939	36.99	92.48	5.71	8.13	10.5	11.4
07/23/09	12:08:46	0.330	30.70	57.945	38.47	111.53	6.75	8.20	9.7	9.8
08/06/09	11:03:56	0.409	31.06	59.026	39.27	100.05	6.00	8.18	14.7	10.4
08/20/09	15:03:48	0.475	31.55	58.961	39.20	120.98	7.20	8.16	10.0	20.5
09/03/09	10:28:56	0.486	28.88	59.912	40.03	81.50	5.04	8.14	15.4	16.5
09/10/09	13:06:10	0.799	28.52	56.683	37.60	72.13	4.54	7.97	11.3	13.3
09/15/09	12:43:22	0.583	29.03	55.127	36.42	113.20	7.12	8.22	8.2	13.0
09/30/09	12:17:00	0.538	28.96	56.999	37.82	105.20	6.57	8.20	8.1	9.2
10/14/09	13:16:18	0.436	27.55	57.378	38.15	165.18	10.54	8.27	3.7	17.5
11/03/09	12:11:16	0.581	21.32	55.301	36.73	113.40	8.11	8.29	4.6	13.1
11/12/09	13:11:04	0.535	22.80	50.683	33.28	125.48	8.92	8.26	4.7	10.6
12/03/09	13:37:45	0.333	14.37	34.022	21.39	124.43	11.15	8.50	8.4	19.4
12/18/09	14:20:53	0.439	12.37	26.650	16.35	130.30	12.57	8.40	2.1	11.1
01/11/10	14:04:09	0.283	9.76	29.125	17.94	157.90	15.98	8.79	2.6	4.4
01/26/10	11:37:44	0.213	14.88	25.199	15.40	108.75	10.01	8.48	6.5	7.2
02/17/10	12:27:56	0.245	12.67	20.243	12.12	161.70	15.92	9.02	8.1	8.1
03/11/10	12:47:41	0.218	22.37	20.697	12.40	141.78	11.46	8.41	7.3	8.8
03/18/10	11:31:43	0.286	20.12	22.481	13.59	139.20	11.66	8.41	12.2	8.7
03/31/10	11:21:43	0.249	21.50	28.622	17.68	106.35	8.47	8.06	6.2	4.2
04/21/10	11:42:48	0.273	24.90	26.090	15.94	137.50	10.40	8.43	9.5	14.0
05/04/10	13:19:14	0.251	28.01	28.118	17.24	135.93	9.67	8.25	16.0	10.3

APPENDIX C Water quality parameters for discrete samples at depth

Control/LBCO										
Date	Time (24hr)	Depth (m)	Temp. (°C)	Cond. (mS/cm)	Sal. (ppt)	DO (%)	DO (mg/L)	pH	Turbidity (NTU)	Chl a (µg/L)
04/10/08										
04/24/08										
05/08/08										
05/29/08										
06/19/08										
07/10/08										
07/24/08										
08/07/08										
08/21/08										
09/04/08										
09/18/08										
10/02/08										
10/16/08										
10/30/08										
11/13/08										
12/08/08										
12/18/08										
01/08/09										
01/22/09										
02/04/09										
02/18/09										
03/13/09										
03/25/09										
04/13/09										
05/07/09										
05/28/09										
06/11/09										
06/25/09										
07/09/09										
07/23/09										
08/06/09										
08/20/09	14:20:56	0.242	33.00	58.091	38.49	182.23	10.64	8.43	12.2	3.1
09/03/09	11:15:16	0.214	29.73	59.518	39.70	115.68	7.06	8.22	3.9	2.6
09/10/09	9:46:18	0.292	27.20	54.853	36.28	60.88	3.95	7.99	8.0	8.1
09/15/09										
09/30/09	12:49:54	0.344	29.43	59.911	40.00	119.73	7.33	8.19	7.6	7.3
10/14/09	11:57:28	0.125	28.90	58.224	38.75	188.53	11.72	8.47	-0.9	2.1
11/03/09	10:53:06	0.255	20.79	55.074	36.56	115.17	8.32	8.31	-2.7	1.6
11/12/09	10:27:29	0.404	21.39	47.048	30.64	125.03	9.25	8.32	0.2	2.3
12/03/09										
12/18/09	13:06:02	0.320	13.47	28.934	17.90	123.08	11.48	8.32	2.1	5.2
01/11/10										
01/26/10										
02/17/10										
03/11/10	11:21:16	0.015	21.08	25.766	15.76	118.00	9.58	8.03	0.9	2.7
03/18/10	10:18:09	0.104	19.39	24.515	14.94	109.63	9.24	8.04	1.5	3.2
03/31/10	9:56:57	0.046	21.63	31.371	19.56	107.58	8.45	8.10	7.0	3.2
04/21/10	10:40:43	0.058	24.60	23.113	13.96	130.68	10.05	8.32	3.3	5.4
05/04/10	11:57:03	0.163	28.09	30.228	18.67	137.63	9.70	8.27	6.8	2.0

SITE02	Density/m2	Density (SE)	Biomass (g/m2)	Biomass (SE)	Root:Shoot	R:S (SE)
4/14/2009	4360.8	483.1	126.1	19.6	4.55	2.3
11/12/2009	3565.1	450.2	106.22	23.64	5	2.75
2/17/2010	4583.7	808.6	106.7	34.24	3.56	2.3
5/20/2010	4965.6	675.7	123.28	22.3	2.64	2.64

SITE03	Density/m2	Density (SE)	Biomass (g/m2)	Biomass (SE)	Root:Shoot	R:S (SE)
4/14/2009	3246.8	477.8	194.1	23.2	5.06	2.88
11/12/2009	4933.8	1080.8	128.5	24.7	4.38	1.95
2/17/2010	3405.9	737.6	59.56	15.37	5.44	2.7
5/20/2010	4583.7	422.3	140.6	14.9	2.32	1.2

Control	Density/m2	Density (SE)	Biomass (g/m2)	Biomass (SE)	Root:Shoot	R:S (SE)
11/12/2009	8116.9	996.3	285.4	18.4	3.31	1.73
2/17/2010	10918	709.6	319.52	11.79	4.38	1.96
5/20/2010	7703.1	2755.2	336.2	51.11	3.5	2.24

\* Halodule was the only species present at all sampling locations and dates



Date	Site	Rep	A750	A664	A647	A630	664 corrected	647 corrected	630 corrected	filtered water	Vol. extraction	extraction	water column
4.13.09	LB01	1	-0.001	0.006	0.001	0.001	0.007	0.002	0.002	0.03	5	0.07971	13.29
4.13.09	LB01	2	-0.001	0.007	0.002	0.001	0.008	0.003	0.002	0.03	5	0.09002	15.00
4.13.09	LB02	1	0	0.007	0.001	0.001	0.007	0.001	0.001	0.03	5	0.08133	13.56
4.13.09	LB02	2	0	0.008	0.001	0.001	0.008	0.001	0.001	0.03	5	0.09318	15.53
4.13.09	LB03	1	-0.001	0.006	0.00	0.001	0.007	0.001	0.002	0.03	5	0.08125	13.54
4.13.09	LB03	2	-0.001	0.006	0	0.001	0.007	0.001	0.002	0.03	5	0.08125	13.54
4.13.09	LB04	1	-0.001	0.005	0.002	0.001	0.006	0.003	0.002	0.03	5	0.06632	11.05
4.13.09	LB04	2	0	0.005	0.002	0.001	0.005	0.002	0.001	0.03	5	0.05609	9.35
4.13.09	LB05	1	0	0.01	0.002	0.002	0.010	0.002	0.002	0.03	5	0.11526	19.21
4.13.09	LB05	2	-0.001	0.009	0.002	0.001	0.010	0.003	0.002	0.03	5	0.11372	18.95
4.13.09	LB06	1	-0.001	0.007	0.001	0	0.008	0.002	0.001	0.03	5	0.09164	15.27
4.13.09	LB06	2	0	0.009	0.002	0.002	0.009	0.002	0.002	0.03	5	0.10341	17.24
4.13.09	LB07	1	0.001	0.013	0.004	0.003	0.012	0.003	0.002	0.03	5	0.13742	22.90
4.13.09	LB07	2	0	0.012	0.004	0.003	0.012	0.004	0.003	0.03	5	0.13580	22.63
4.13.09	LB08	1	-0.001	0.01	0.002	0.002	0.011	0.003	0.003	0.03	5	0.12549	20.92
4.13.09	LB08	2	0	0.014	0.004	0.003	0.014	0.004	0.003	0.03	5	0.15950	26.58
4.13.09	LB09	1	-0.002	0.005	0.001	0.001	0.007	0.003	0.003	0.03	5	0.07809	13.02
4.13.09	LB09	2	0.003	0.009	0.006	0.006	0.006	0.003	0.003	0.03	5	0.06624	11.04
4.13.09	LB11	1	0.004	0.011	0.006	0.007	0.007	0.002	0.003	0.03	5	0.07963	13.27
4.13.09	LB11	2	0.002	0.008	0.005	0.005	0.006	0.003	0.003	0.03	5	0.06624	11.04
4.13.09	sensor	1	-0.001	0.006	0.001	0.001	0.007	0.002	0.002	0.03	5	0.07971	13.29
4.13.09	sensor	2	-0.001	0.007	0.002	0.001	0.008	0.003	0.002	0.03	5	0.09002	15.00
4.13.09	control	1	-0.001	0.002	0	0	0.003	0.001	0.001	0.03	5	0.03393	5.66
4.13.09	control	2	-0.001	0.002	0	0	0.003	0.001	0.001	0.03	5	0.03393	5.66
5.28.09	LB01	1	-0.032	-0.029	-0.035	-0.04	0.003	-0.003	-0.008	0.03	5	0.04081	6.80
5.28.09	LB01	2	0.003	0.009	0.003	0.002	0.006	0.000	-0.001	0.03	5	0.07118	11.86
5.28.09	LB02	1	0	0.007	0.002	0.001	0.007	0.002	0.001	0.03	5	0.07979	13.30
5.28.09	LB02	2	-0.001	0.006	0.001	0	0.007	0.002	0.001	0.03	5	0.07979	13.30
5.28.09	LB03	1	-0.001	0.004	0.001	0	0.005	0.002	0.001	0.03	5	0.05609	9.35
5.28.09	LB03	2	-0.001	0.004	0.001	0	0.005	0.002	0.001	0.03	5	0.05609	9.35
5.28.09	LB04	1	-0.001	0.017	0.004	0.002	0.018	0.005	0.003	0.03	5	0.20536	34.23
5.28.09	LB04	2	0.001	0.016	0.005	0.003	0.015	0.004	0.002	0.03	5	0.17143	28.57
5.28.09	LB05	1	-0.001	0.009	0.002	0.001	0.010	0.003	0.002	0.03	5	0.11372	18.95
5.28.09	LB05	2	0	0.006	0.001	0	0.006	0.001	0.000	0.03	5	0.06956	11.59
5.28.09	LB06	1	-0.001	0.006	0.001	0	0.007	0.002	0.001	0.03	5	0.07979	13.30
5.28.09	LB06	2	0	0.005	0.001	0.001	0.005	0.001	0.001	0.03	5	0.05763	9.61
5.28.09	LB07	1	-0.001	0.007	0.001	0	0.008	0.002	0.001	0.03	5	0.09164	15.27
5.28.09	LB07	2	0.008	0.017	0.015	0.014	0.009	0.007	0.006	0.03	5	0.09539	15.90
5.28.09	LB08	1	-0.001	0.005	0	0.001	0.006	0.001	0.002	0.03	5	0.06940	11.57



Date	Site	Rep	A750	A664	A647	A630	664 corrected	647 corrected	630 corrected	filtered water	Vol. extraction	extraction	water column
7.23.09	LB04	1											2.96
7.23.09	LB04	2											2.65
7.23.09	LB05	1											12.28
7.23.09	LB05	2											12.62
7.23.09	LB06	1											13.01
7.23.09	LB06	2											13.29
7.23.09	LB07	1											10.35
7.23.09	LB07	2											11.70
7.23.09	LB08	1											20.80
7.23.09	LB08	2											19.07
7.23.09	LB09	1											7.75
7.23.09	LB09	2											8.05
7.23.09	LB11	1											3.29
7.23.09	LB11	2											2.75
7.23.09	sensor	1											10.93
7.23.09	sensor	2											10.93
7.23.09	control	1											4.41
7.23.09	control	2											4.58
8.20.09	LB01	1	-0.001	0.007	0.002	0.001	0.008	0.003	0.002	0.03	5	0.09002	15.00
8.20.09	LB01	2	-0.001	0.006	0.001	0	0.007	0.002	0.001	0.03	5	0.07979	13.30
8.20.09	LB02	1	-0.001	0.004	0	0	0.005	0.001	0.001	0.03	5	0.05763	9.61
8.20.09	LB02	2	-0.001	0.003	0	-0.001	0.004	0.001	0.000	0.03	5	0.04586	7.64
8.20.09	LB03	1	-0.001	0.002	0	-0.001	0.003	0.001	0.000	0.03	5	0.03401	5.67
8.20.09	LB03	2	-0.001	0.002	-0.001	-0.001	0.003	0.000	0.000	0.03	5	0.03555	5.93
8.20.09	LB04	1	-0.001	0.001	0	-0.001	0.002	0.001	0.000	0.03	5	0.02216	3.69
8.20.09	LB04	2	-0.001	0.001	-0.001	-0.001	0.002	0.000	0.000	0.03	5	0.02370	3.95
8.20.09	LB05	1	-0.001	0.005	0.001	0	0.006	0.002	0.001	0.03	5	0.06794	11.32
8.20.09	LB05	2	-0.004	0.003	-0.001	-0.001	0.007	0.003	0.003	0.03	5	0.07809	13.02
8.20.09	LB06	1	-0.001	0.004	0.001	0	0.005	0.002	0.001	0.03	5	0.05609	9.35
8.20.09	LB06	2	0	0.003	0.001	0	0.003	0.001	0.000	0.03	5	0.03401	5.67
8.20.09	LB07	1	-0.001	0.003	0	0	0.004	0.001	0.001	0.03	5	0.04578	7.63
8.20.09	LB07	2	0	0.004	0.001	0	0.004	0.001	0.000	0.03	5	0.04586	7.64
8.20.09	LB08	1	0	0.012	0.004	0.003	0.012	0.004	0.003	0.03	5	0.13580	22.63
8.20.09	LB08	2	0	0.007	0.003	0.001	0.007	0.003	0.001	0.03	5	0.07825	13.04
8.20.09	LB09	1	0	0.004	0.001	0.001	0.004	0.001	0.001	0.03	5	0.04578	7.63
8.20.09	LB09	2	0	0.003	0.001	0	0.003	0.001	0.000	0.03	5	0.03401	5.67
8.20.09	LB11	1	0	0.005	0.001	0.001	0.005	0.001	0.001	0.03	5	0.05763	9.61
8.20.09	LB11	2	0	0.007	0.002	0.001	0.007	0.002	0.001	0.03	5	0.07979	13.30
8.20.09	sensor	1	0	0.005	0.02	0.001	0.005	0.020	0.001	0.03	5	0.02837	4.73

ran by Colt on Flouometer

Date	Site	Rep	A750	A664	A647	A630	664 corrected	647 corrected	630 corrected	filtered water	Vol. extraction	extraction	water column
8.20.09	sensor	2	0.001	0.005	0.002	0.002	0.004	0.001	0.001	0.03	5	0.04578	7.63
8.20.09	control	1	0.001	0.003	0.001	0.001	0.002	0.000	0.000	0.03	5	0.02370	3.95
8.20.09	control	2	0.001	0.002	0.001	0.001	0.001	0.000	0.000	0.03	5	0.01185	1.98
9.10.09	LB01	1	-0.002	0.029	0.013	0.006	0.031	0.015	0.008	0.07	5	0.34361	24.54
9.10.09	LB01	2	-0.003	0.02	0.008	0.003	0.023	0.011	0.006	0.07	5	0.25513	18.22
9.10.09	LB02	1	-0.003	0.016	0.005	0.002	0.019	0.008	0.005	0.1	5	0.21243	10.62
9.10.09	LB02	2	-0.002	0.015	0.005	0.002	0.017	0.007	0.004	0.1	5	0.19035	9.52
9.10.09	LB03	1	-0.003	0.008	0.002	0	0.011	0.005	0.003	0.06	5	0.12241	10.20
9.10.09	LB03	2	-0.005	0.009	0.003	0.002	0.014	0.008	0.007	0.05	5	0.15302	15.30
9.10.09	LB04	1	-0.003	0.004	0	-0.001	0.007	0.003	0.002	0.05	5	0.07817	7.82
9.10.09	LB04	2	-0.002	0.005	0.001	0	0.007	0.003	0.002	0.05	5	0.07817	7.82
9.10.09	LB05	1	-0.002	0.021	0.008	0.004	0.023	0.010	0.006	0.07	5	0.25667	18.33
9.10.09	LB05	2	0	0.025	0.01	0.007	0.025	0.010	0.007	0.07	5	0.28029	20.02
9.10.09	LB06	1	-0.001	0.018	0.007	0.004	0.019	0.008	0.005	0.1	5	0.21243	10.62
9.10.09	LB06	2	-0.002	0.016	0.005	0.003	0.018	0.007	0.005	0.1	5	0.20212	10.11
9.10.09	LB07	1	-0.003	0.025	0.008	0.005	0.028	0.011	0.008	0.9	5	0.31422	1.75
9.10.09	LB07	2	-0.002	0.024	0.0008	0.004	0.026	0.003	0.006	0.9	5	0.30331	1.69
9.10.09	LB08	1	-0.002	0.034	0.013	0.007	0.036	0.015	0.009	0.07	5	0.40278	28.77
9.10.09	LB08	2	-0.003	0.036	0.014	0.007	0.039	0.017	0.010	0.07	5	0.43517	31.08
9.10.09	LB09	1	-0.003	0.004	0.001	-0.001	0.007	0.004	0.002	0.07	5	0.07663	5.47
9.10.09	LB09	2	-0.002	0.006	0.002	0	0.008	0.004	0.002	0.07	5	0.08848	6.32
9.10.09	LB11	1	-0.003	0.005	0.001	-0.001	0.008	0.004	0.002	0.07	5	0.08848	6.32
9.10.09	LB11	2	-0.003	0.005	0.001	0	0.008	0.004	0.003	0.07	5	0.08840	6.31
9.10.09	sensor	1	-0.003	0.01	0.003	0.001	0.013	0.006	0.004	0.06	5	0.14449	12.04
9.10.09	sensor	2	-0.003	0.011	0.003	0.001	0.014	0.006	0.004	0.06	5	0.15634	13.03
9.10.09	control	1	-0.002	0.007	0.002	0.001	0.009	0.004	0.003	0.05	5	0.10025	10.03
9.10.09	control	2	-0.006	0.006	0	-0.001	0.012	0.006	0.005	0.05	5	0.13256	13.26
9.15.09	LB01	1	-0.001	0.024	0.007	0.004	0.025	0.008	0.005	0.04	5	0.28353	35.44
9.15.09	LB01	2	-0.001	0.03	0.009	0.006	0.031	0.010	0.007	0.05	5	0.35139	35.14
9.15.09	LB02	1	-0.001	0.015	0.004	0.002	0.016	0.005	0.003	0.04	5	0.18166	22.71
9.15.09	LB02	2	-0.001	0.014	0.003	0.002	0.015	0.004	0.003	0.04	5	0.17135	21.42
9.15.09	LB03	1	-0.001	0.01	0.002	0.001	0.011	0.003	0.002	0.05	5	0.12557	12.56
9.15.09	LB03	2	-0.001	0.011	0.003	0.001	0.012	0.004	0.002	0.05	5	0.13588	13.59
9.15.09	LB04	1	-0.001	0.024	0.006	0.004	0.025	0.007	0.005	0.05	5	0.28507	28.51
9.15.09	LB04	2	-0.001	0.018	0.004	0.002	0.019	0.005	0.003	0.05	5	0.21721	21.72
9.15.09	LB05	1	-0.001	0.017	0.004	0.003	0.018	0.005	0.004	0.05	5	0.20528	20.53
9.15.09	LB05	2	-0.001	0.018	0.005	0.003	0.019	0.006	0.004	0.05	5	0.21559	21.56
9.15.09	LB06	1	-0.001	0.021	0.006	0.004	0.022	0.007	0.005	0.05	5	0.24952	24.95

Date	Site	Rep	A750	A664	A647	A630	664 corrected	647 corrected	630 corrected	filtered water	Vol. extraction	extraction	water column
9.15.09	LB06	2	-0.001	0.016	0.004	0.003	0.017	0.005	0.004	0.05	5	0.19343	19.34
9.15.09	LB07	1	-0.001	0.026	0.008	0.005	0.027	0.009	0.006	0.05	5	0.30561	30.56
9.15.09	LB07	2	-0.001	0.028	0.008	0.005	0.029	0.009	0.006	0.05	5	0.32931	32.93
9.15.09	LB08	1	-0.001	0.029	0.008	0.006	0.030	0.009	0.007	0.06	5	0.34108	28.42
9.15.09	LB08	2	-0.001	0.032	0.009	0.006	0.033	0.010	0.007	0.06	5	0.37509	31.26
9.15.09	LB09	1	-0.001	0.007	0.001	0	0.008	0.002	0.001	0.06	5	0.09164	7.64
9.15.09	LB09	2	-0.001	0.011	0.002	0.001	0.012	0.003	0.002	0.06	5	0.13742	11.45
9.15.09	LB11	1	-0.001	0.006	0.001	0	0.007	0.002	0.001	0.07	5	0.07979	5.70
9.15.09	LB11	2	-0.001	0.018	0.004	0.003	0.019	0.005	0.004	0.07	5	0.21713	15.51
9.15.09	sensor	1	-0.001	0.015	0.004	0.002	0.016	0.005	0.003	0.05	5	0.18166	18.17
9.15.09	sensor	2	-0.001	0.014	0.004	0.002	0.015	0.005	0.003	0.05	5	0.16981	16.98
9.15.09	control	1	-0.001	0.007	0.001	0	0.008	0.002	0.001	0.05	5	0.09164	9.16
9.15.09	control	2	-0.001	0.006	0.001	0	0.007	0.002	0.001	0.05	5	0.07979	7.98
10.14.09	LB01	1	0.004	0.025	0.013	0.009	0.021	0.009	0.005	0.03	5	0.23459	39.10
10.14.09	LB01	2	0.004	0.026	0.014	0.009	0.022	0.010	0.005	0.03	5	0.24490	40.82
10.14.09	LB02	1	0.004	0.02	0.009	0.007	0.016	0.005	0.003	0.03	5	0.18166	30.28
10.14.09	LB02	2	0.004	0.019	0.009	0.007	0.015	0.005	0.003	0.03	5	0.16981	28.30
10.14.09	LB03	1	vial broke							5.05	5	0.00000	0.00
10.14.09	LB03	2	0.004	0.01	0.006	0.005	0.006	0.002	0.001	0.04	5	0.06794	8.49
10.14.09	LB04	1	0.004	0.009	0.005	0.005	0.005	0.001	0.001	0.04	5	0.05763	7.20
10.14.09	LB04	2	0.006	0.012	0.009	0.009	0.006	0.003	0.003	0.04	5	0.06624	8.28
10.14.09	LB05	1	0.001	0.008	0.003	0.003	0.007	0.002	0.002	0.04	5	0.07971	9.96
10.14.09	LB05	2	0.009	0.009	0.005	0.004	0.000	-0.004	-0.005	0.04	5	0.00656	0.82
10.14.09	LB06	1	0.004	0.02	0.009	0.007	0.016	0.005	0.003	0.04	5	0.18166	22.71
10.14.09	LB06	2	0.005	0.02	0.008	0.009	0.015	0.003	0.004	0.04	5	0.17281	21.60
10.14.09	LB07	1	0.003	0.01	0.005	0.005	0.007	0.002	0.002	0.04	5	0.07971	9.96
10.14.09	LB07	2	0.003	0.012	0.006	0.005	0.009	0.003	0.002	0.04	5	0.10187	12.73
10.14.09	LB08	1	0.006	0.017	0.01	0.009	0.011	0.004	0.003	0.04	5	0.12395	15.49
10.14.09	LB08	2	0.005	0.015	0.009	0.007	0.010	0.004	0.002	0.04	5	0.11218	14.02
10.14.09	LB09	1	0.004	0.007	0.005	0.004	0.003	0.001	0.000	0.04	5	0.03401	4.25
10.14.09	LB09	2	0.001	0.006	0.005	0.008	0.005	0.004	0.007	0.04	5	0.05253	6.57
10.14.09	LB11	1	0.004	0.005	0.004	0.004	0.001	0.000	0.000	0.04	5	0.01185	1.48
10.14.09	LB11	2	0.004	0.007	0.005	0.004	0.003	0.001	0.000	0.04	5	0.03401	4.25
10.14.09	sensor	1	0.006	0.022	0.011	0.009	0.016	0.005	0.003	0.04	5	0.18166	22.71
10.14.09	sensor	2	0.003	0.018	0.008	0.006	0.015	0.005	0.003	0.04	5	0.16981	21.23
10.14.09	control	1	0.006	0.009	0.007	0.007	0.003	0.001	0.001	0.04	5	0.03393	4.24
10.14.09	control	2	0.003	0.005	0.004	0.003	0.002	0.001	0.000	0.04	5	0.02216	2.77
11.12.09	LB01	1	0.006	0.011	0.009	0.009	0.005	0.003	0.003	0.03	5	0.05439	9.07
11.12.09	LB01	2	0.005	0.008	0.004	0.004	0.003	-0.001	-0.001	0.03	5	0.03717	6.20

Date	Site	Rep	A750	A664	A647	A630	664 corrected	647 corrected	630 corrected	filtered water	Vol. extraction	extraction	water column
11.12.09	LB02	1	0.006	0.005	0.003	0.003	-0.001	-0.003	-0.003	0.04	5	-0.00699	-0.87
11.12.09	LB02	2	0.007	0.012	0.008	0.006	0.005	0.001	-0.001	0.04	5	0.05779	7.22
11.12.09	LB03	1	0.034	0.033	0.018	0.011	-0.001	-0.016	-0.023	0.04	5	0.01463	1.83
11.12.09	LB03	2	0.004	0.013	0.006	0.006	0.009	0.002	0.002	0.04	5	0.10341	12.93
11.12.09	LB04	1	0.003	0.009	0.005	0.004	0.006	0.002	0.001	0.04	5	0.06794	8.49
11.12.09	LB04	2	0.003	0.009	0.005	0.004	0.006	0.002	0.001	0.04	5	0.06794	8.49
11.12.09	LB05	1	0.003	0.006	0.004	0.004	0.003	0.001	0.001	0.04	5	0.03393	4.24
11.12.09	LB05	2	0.003	0.005	0.003	0.003	0.002	0.000	0.000	0.04	5	0.02370	2.96
11.12.09	LB06	1	0.003	0.009	0.005	0.004	0.006	-0.003	0.001	0.04	5	0.07487	9.36
11.12.09	LB06	2	0.004	0.009	0.005	0.005	0.005	0.001	0.001	0.04	5	0.05763	7.20
11.12.09	LB07	1	0.003	0.012	0.006	0.005	0.009	0.003	0.002	0.04	5	0.10187	12.73
11.12.09	LB07	2	0.005	0.015	0.009	0.009	0.010	0.004	0.004	0.04	5	0.11202	14.00
11.12.09	LB08	1	0.005	0.014	0.01	0.01	0.009	0.005	0.005	0.04	5	0.09855	12.32
11.12.09	LB08	2	0.007	0.011	0.007	0.006	0.004	0.000	-0.001	0.04	5	0.04748	5.94
11.12.09	LB09	1	0.007	0.016	0.012	0.012	0.009	0.005	0.005	0.04	5	0.09855	12.32
11.12.09	LB09	2	0.001	0.007	0.004	0.004	0.006	0.003	0.003	0.04	5	0.06624	8.28
11.12.09	LB11	1	0.003	0.01	0.005	0.005	0.007	0.002	0.002	0.04	5	0.07971	9.96
11.12.09	LB11	2	0.005	0.011	0.006	0.006	0.006	0.001	0.001	0.04	5	0.06948	8.69
11.12.09	sensor	1	0.005	0.015	0.008	0.007	0.010	0.003	0.002	0.04	5	0.11372	14.22
11.12.09	sensor	2	0.004	0.012	0.006	0.005	0.008	0.002	0.001	0.04	5	0.09164	11.46
11.12.09	control	1	0.003	0.005	0.003	0.003	0.002	0.000	0.000	0.04	5	0.02370	2.96
11.12.09	control	2	0.004	0.005	0.004	0.004	0.001	0.000	0.000	0.04	5	0.01185	1.48
12/3/2009	LB01	1	0	0.019	0.005	0.004	0.019	0.005	0.004	0.04	5	0.21713	27.14
12/3/2009	LB01	2	0.001	0.021	0.006	0.005	0.020	0.005	0.004	0.04	5	0.22898	28.62
12/3/2009	LB02	1	0.001	0.019	0.006	0.005	0.018	0.005	0.004	0.04	5	0.20528	25.66
12/3/2009	LB02	2	0.001	0.021	0.006	0.005	0.020	0.005	0.004	0.04	5	0.22898	28.62
12/3/2009	LB03	1	0	0.01	0.003	0.002	0.010	0.003	0.002	0.04	5	0.11372	14.22
12/3/2009	LB03	2	0.001	0.01	0.003	0.003	0.009	0.002	0.002	0.04	5	0.10341	12.93
12/3/2009	LB04	1	0.001	0.007	0.003	0.002	0.006	0.002	0.001	0.04	5	0.06794	8.49
12/3/2009	LB04	2	0.001	0.007	0.002	0.002	0.006	0.001	0.001	0.04	5	0.06948	8.69
12/3/2009	LB05	1	0.001	0.011	0.003	0.003	0.010	0.002	0.002	0.04	5	0.11526	14.41
12/3/2009	LB05	2	0.001	0.011	0.004	0.003	0.010	0.003	0.002	0.04	5	0.11372	14.22
12/3/2009	LB06	1	0.001	0.019	0.006	0.005	0.018	0.005	0.004	0.04	5	0.20528	25.66
12/3/2009	LB06	2	0	0.019	0.006	0.005	0.019	0.006	0.005	0.04	5	0.21551	26.94
12/3/2009	LB07	1	0	0.014	0.004	0.003	0.014	0.004	0.003	0.04	5	0.15950	19.94
12/3/2009	LB07	2	0	0.016	0.004	0.004	0.016	0.004	0.004	0.04	5	0.18312	22.89
12/3/2009	LB08	1	0	0.006	0.002	0.002	0.006	0.002	0.002	0.04	5	0.06786	8.48
12/3/2009	LB08	2	0.001	0.006	0.002	0.002	0.005	0.001	0.001	0.04	5	0.05763	7.20
12/3/2009	LB09	1	0	0.008	0.003	0.002	0.008	0.003	0.002	0.04	5	0.09002	11.25

Date	Site	Rep	A750	A664	A647	A630	664 corrected	647 corrected	630 corrected	filtered water	Vol. extraction	extraction	water column
12/3/2009	LB09	2	0	0.007	0.002	0.002	0.007	0.002	0.002	0.04	5	0.07971	9.96
12/3/2009	LB11	1	0.001	0.014	0.004	0.004	0.013	0.003	0.003	0.04	5	0.14919	18.65
12/3/2009	LB11	2	0	0.014	0.004	0.003	0.014	0.004	0.003	0.04	5	0.15950	19.94
12/3/2009	sensor	1	0	0.017	0.005	0.004	0.017	0.005	0.004	0.04	5	0.19343	24.18
12/3/2009	sensor	2	0	0.017	0.004	0.004	0.017	0.004	0.004	0.04	5	0.19497	24.37
12/3/2009	control	1	0	0.001	0.001	0.001	0.001	0.001	0.001	0.04	5	0.01023	1.28
12/3/2009	control	2	-0.001	0	-0.001	0	0.001	0.000	0.001	0.04	5	0.01177	1.47
1/11/2010	LB01	1	0	0.004	0.001	0.001	0.004	0.001	0.001	0.05	5	0.04578	4.58
1/11/2010	LB01	2	0.001	0.003	0.001	0.001	0.002	0.000	0.000	0.05	5	0.02370	2.37
1/11/2010	LB02	1	0	0.002	0.001	0	0.002	0.001	0.000	0.05	5	0.02216	2.22
1/11/2010	LB02	2	0	0.001	0	0	0.001	0.000	0.000	0.05	5	0.01185	1.19
1/11/2010	LB03	1	0	0.002	0.001	0	0.002	0.001	0.000	0.05	5	0.02216	2.22
1/11/2010	LB03	2	0	0.004	0.001	0	0.004	0.001	0.000	0.05	5	0.04586	4.59
1/11/2010	LB04	1	0	0.018	0.005	0.003	0.018	0.005	0.003	0.05	5	0.20536	20.54
1/11/2010	LB04	2	0.001	0.017	0.006	0.004	0.016	0.005	0.003	0.05	5	0.18166	18.17
1/11/2010	LB05	1	0.001	0.002	0.001	0.001	0.001	0.000	0.000	0.05	5	0.01185	1.19
1/11/2010	LB05	2	0	0.002	0.001	0	0.002	0.001	0.000	0.05	5	0.02216	2.22
1/11/2010	LB06	1	0	0.001	0.001	0	0.001	0.001	0.000	0.05	5	0.01031	1.03
1/11/2010	LB06	2	0	0.002	0.001	0	0.002	0.001	0.000	0.05	5	0.02216	2.22
1/11/2010	LB07	1	0	0.004	0.002	0.001	0.004	0.002	0.001	0.05	5	0.04424	4.42
1/11/2010	LB07	2	0	0.004	0.001	0.001	0.004	0.001	0.001	0.05	5	0.04578	4.58
1/11/2010	LB08	1	0	0.006	0.002	0.001	0.006	0.002	0.001	0.05	5	0.06794	6.79
1/11/2010	LB08	2	0	0.007	0.003	0.002	0.007	0.003	0.002	0.05	5	0.07817	7.82
1/11/2010	LB09	1	0	0.02	0.006	0.004	0.020	0.006	0.004	0.05	5	0.22744	22.74
1/11/2010	LB09	2	0	0.023	0.006	0.004	0.023	0.006	0.004	0.05	5	0.26299	26.30
1/11/2010	LB11	1	0	0.018	0.005	0.003	0.018	0.005	0.003	0.05	5	0.20536	20.54
1/11/2010	LB11	2	0	0.016	0.004	0.003	0.016	0.004	0.003	0.05	5	0.18320	18.32
1/11/2010	sensor	1	0	0.006	0.002	0.001	0.006	0.002	0.001	0.05	5	0.06794	6.79
1/11/2010	sensor	2	0	0.008	0.002	0.002	0.008	0.002	0.002	0.05	5	0.09156	9.16
1/11/2010	control	1	0	0.001	0	0	0.001	0.000	0.000	0.05	5	0.01185	1.19
1/11/2010	control	2	0	0.001	0	0	0.001	0.000	0.000	0.05	5	0.01185	1.19
2/17/2010	LB01	1	0.006	0.011	0.008	0.008	0.005	0.002	0.002	0.05	5	0.05601	5.60
2/17/2010	LB01	2	0.005	0.009	0.006	0.006	0.004	0.001	0.001	0.05	5	0.04578	4.58
2/17/2010	LB02	1	0.006	0.012	0.008	0.009	0.006	0.002	0.003	0.05	5	0.06778	6.78
2/17/2010	LB02	2	0.003	0.006	0.004	0.004	0.003	0.001	0.001	0.05	5	0.03393	3.39
2/17/2010	LB03	1	0.005	0.011	0.007	0.007	0.006	0.002	0.002	0.05	5	0.06786	6.79
2/17/2010	LB03	2	0.006	0.011	0.008	0.009	0.005	0.002	0.003	0.05	5	0.05593	5.59
2/17/2010	LB04	1	0.003	0.011	0.005	0.004	0.008	0.002	0.001	0.05	5	0.09164	9.16
2/17/2010	LB04	2	0.003	0.013	0.005	0.003	0.010	0.002	0.000	0.05	5	0.11542	11.54

Date	Site	Rep	A750	A664	A647	A630	664 corrected	647 corrected	630 corrected	filtered water	Vol. extraction	extraction	water column
2/17/2010	LB05	1	0.006	0.024	0.01	0.011	0.018	0.004	0.005	0.05	5	0.20674	20.67
2/17/2010	LB05	2	0.007	0.022	0.011	0.013	0.015	0.004	0.006	0.05	5	0.17111	17.11
2/17/2010	LB06	1	0.002	0.014	0.005	0.005	0.012	0.003	0.003	0.05	5	0.13734	13.73
2/17/2010	LB06	2	0.004	0.016	0.008	0.009	0.012	0.004	0.005	0.05	5	0.13564	13.56
2/17/2010	LB07	1	0.006	0.024	0.012	0.013	0.018	0.006	0.007	0.05	5	0.20350	20.35
2/17/2010	LB07	2	0.007	0.024	0.013	0.014	0.017	0.006	0.007	0.05	5	0.19165	19.17
2/17/2010	LB08	1	0.004	0.015	0.007	0.007	0.011	0.003	0.003	0.05	5	0.12549	12.55
2/17/2010	LB08	2	0.006	0.017	0.009	0.01	0.011	0.003	0.004	0.05	5	0.12541	12.54
2/17/2010	LB09	1	0.002	0.013	0.005	0.003	0.011	0.003	0.001	0.05	5	0.12565	12.57
2/17/2010	LB09	2	0.003	0.013	0.005	0.004	0.010	0.002	0.001	0.05	5	0.11534	11.53
2/17/2010	LB11	1	0.002	0.011	0.004	0.003	0.009	0.002	0.001	0.05	5	0.10349	10.35
2/17/2010	LB11	2	0.003	0.013	0.005	0.004	0.010	0.002	0.001	0.05	5	0.11534	11.53
2/17/2010	sensor	1	0.007	0.032	0.015	0.016	0.025	0.008	0.009	0.05	5	0.28321	28.32
2/17/2010	sensor	2	0.008	0.025	0.014	0.015	0.017	0.006	0.007	0.05	5	0.19165	19.17
2/17/2010	control	1	0.003	0.005	0.004	0.005	0.002	0.001	0.002	0.05	5	0.02200	2.20
2/17/2010	control	2	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.05	5	0.00000	0.00
3/18/2010	LB01	1	0.006	0.011	0.008	0.008	0.005	0.002	0.002	0.04	5	0.05601	7.00
3/18/2010	LB01	2	0.006	0.012	0.009	0.009	0.006	0.003	0.003	0.04	5	0.06624	8.28
3/18/2010	LB02	1	0.007	0.015	0.011	0.011	0.008	0.004	0.004	0.06	5	0.08832	7.36
3/18/2010	LB02	2	0.007	0.013	0.009	0.009	0.006	0.002	0.002	0.06	5	0.06786	5.66
3/18/2010	LB03	1	0.01	0.014	0.013	0.014	0.004	0.003	0.004	0.06	5	0.04246	3.54
3/18/2010	LB03	2	0.007	0.011	0.009	0.01	0.004	0.002	0.003	0.06	5	0.04408	3.67
3/18/2010	LB04	1	0.003	0.006	0.003	0.002	0.003	0.000	-0.001	0.03	5	0.03563	5.94
3/18/2010	LB04	2	0.003	0.007	0.003	0.003	0.004	0.000	0.000	0.03	5	0.04740	7.90
3/18/2010	LB05	1	0.008	0.023	0.013	0.013	0.015	0.005	0.005	0.04	5	0.16965	21.21
3/18/2010	LB05	2	0.007	0.025	0.013	0.013	0.018	0.006	0.006	0.04	5	0.20358	25.45
3/18/2010	LB06	1	0.007	0.014	0.011	0.011	0.007	0.004	0.004	0.06	5	0.07647	6.37
3/18/2010	LB06	2	0.008	0.013	0.011	0.011	0.005	0.003	0.003	0.06	5	0.05439	4.53
3/18/2010	LB07	1	0.007	0.021	0.012	0.013	0.014	0.005	0.006	0.08	5	0.15772	9.86
3/18/2010	LB07	2	0.007	0.021	0.011	0.012	0.014	0.004	0.005	0.08	5	0.15934	9.96
3/18/2010	LB08	1	0.004	0.037	0.012	0.011	0.033	0.008	0.007	0.06	5	0.37817	31.51
3/18/2010	LB08	2	0.008	0.046	0.019	0.018	0.038	0.011	0.010	0.06	5	0.43256	36.05
3/18/2010	LB09	1	0.003	0.008	0.004	0.003	0.005	0.001	0.000	0.03	5	0.05771	9.62
3/18/2010	LB09	2	0.004	0.009	0.004	0.003	0.005	0.000	-0.001	0.03	5	0.05933	9.89
3/18/2010	LB11	1	0.003	0.009	0.004	0.003	0.006	0.001	0.000	0.03	5	0.06956	11.59
3/18/2010	LB11	2	0.003	0.008	0.004	0.003	0.005	0.001	0.000	0.03	5	0.05771	9.62
3/18/2010	sensor	1	0.009	0.018	0.014	0.014	0.009	0.005	0.005	0.06	5	0.09855	8.21
3/18/2010	sensor	2	0.009	0.017	0.013	0.014	0.008	0.004	0.005	0.06	5	0.08824	7.35
3/18/2010	control	1	0.007	0.01	0.008	0.008	0.003	0.001	0.001	0.1	5	0.03393	1.70



Date	Site	Rep	A750	A664	A647	A630	664 corrected	647 corrected	630 corrected	filtered water	Vol. extraction	extraction	water column
3/18/2010	control	2	0.007	0.012	0.009	0.009	0.005	0.002	0.002	0.1	5	0.05601	2.80
4/21/2010	LB01	1	0.005	0.017	0.008	0.009	0.012	0.003	0.004	0.05	5	0.13726	13.73
4/21/2010	LB01	2	0.005	0.016	0.008	0.008	0.011	0.003	0.003	0.05	5	0.12549	12.55
4/21/2010	LB02	1	0.006	0.015	0.01	0.01	0.009	0.004	0.004	0.05	5	0.10017	10.02
4/21/2010	LB02	2	0.006	0.016	0.009	0.01	0.010	0.003	0.004	0.05	5	0.11356	11.36
4/21/2010	LB03	1	0.006	0.02	0.01	0.01	0.014	0.004	0.004	0.05	5	0.15942	15.94
4/21/2010	LB03	2	0.006	0.024	0.012	0.013	0.018	0.006	0.007	0.05	5	0.20350	20.35
4/21/2010	LB04	1	0.005	0.024	0.011	0.011	0.019	0.006	0.006	0.05	5	0.21543	21.54
4/21/2010	LB04	2	0.005	0.02	0.009	0.009	0.015	0.004	0.004	0.05	5	0.17127	17.13
4/21/2010	LB05	1	sample spilled, no values										
4/21/2010	LB05	2	0.006	0.021	0.011	0.01	0.015	0.005	0.004	0.05	5	0.16973	16.97
4/21/2010	LB06	1	0.007	0.019	0.012	0.012	0.012	0.005	0.005	0.05	5	0.13410	13.41
4/21/2010	LB06	2	0.006	0.017	0.009	0.009	0.011	0.003	0.003	0.05	5	0.12549	12.55
4/21/2010	LB07	1	0.007	0.047	0.017	0.019	0.040	0.010	0.012	0.05	5	0.45764	45.76
4/21/2010	LB07	2	0.007	0.029	0.013	0.015	0.022	0.006	0.008	0.05	5	0.25082	25.08
4/21/2010	LB08	1	0.007	0.03	0.013	0.013	0.023	0.006	0.006	0.05	5	0.26283	26.28
4/21/2010	LB08	2	0.008	0.028	0.015	0.015	0.020	0.007	0.007	0.05	5	0.22566	22.57
4/21/2010	LB09	1	0.003	0.015	0.005	0.004	0.012	0.002	0.001	0.05	5	0.13904	13.90
4/21/2010	LB09	2	0.003	0.016	0.006	0.004	0.013	0.003	0.001	0.05	5	0.14935	14.94
4/21/2010	LB11	1	0.004	0.012	0.006	0.005	0.008	0.002	0.001	0.05	5	0.09164	9.16
4/21/2010	LB11	2	0.007	0.015	0.011	0.011	0.008	0.004	0.004	0.05	5	0.08832	8.83
4/21/2010	sensor	1	0.006	0.018	0.009	0.01	0.012	0.003	0.004	0.05	5	0.13726	13.73
4/21/2010	sensor	2	0.006	0.019	0.011	0.011	0.013	0.005	0.005	0.05	5	0.14595	14.60
4/21/2010	control	1	0.006	0.011	0.007	0.007	0.005	0.001	0.001	0.05	5	0.05763	5.76
4/21/2010	control	2	0.005	0.01	0.007	0.007	0.005	0.002	0.002	0.05	5	0.05601	5.60
5/20/2010	LB01	1	0.002	0.01	0.004	0.003	0.008	0.002	0.001	0.04	5	0.09164	11.46
5/20/2010	LB01	2	0.007	0.019	0.012	0.011	0.012	0.005	0.004	0.04	5	0.13418	16.77
5/20/2010	LB02	1	0.002	0.013	0.005	0.003	0.011	0.003	0.001	0.04	5	0.12565	15.71
5/20/2010	LB02	2	0.002	0.016	0.006	0.004	0.014	0.004	0.002	0.04	5	0.15958	19.95
5/20/2010	LB03	1	0.005	0.011	0.005	0.005	0.006	0.000	0.000	0.04	5	0.07110	8.89
5/20/2010	LB03	2	0.002	0.008	0.003	0.002	0.006	0.001	0.000	0.04	5	0.06956	8.70
5/20/2010	LB04	1	0.002	0.009	0.004	0.002	0.007	0.002	0.000	0.04	5	0.07987	9.98
5/20/2010	LB04	2	0.002	0.008	0.003	0.002	0.006	0.001	0.000	0.04	5	0.06956	8.70
5/20/2010	LB05	1	0.002	0.011	0.005	0.003	0.009	0.003	0.001	0.05	5	0.10195	10.20
5/20/2010	LB05	2	0.002	0.013	0.005	0.003	0.011	0.003	0.001	0.05	5	0.12565	12.57
5/20/2010	LB06	1	0.002	0.014	0.005	0.004	0.012	0.003	0.002	0.05	5	0.13742	13.74
5/20/2010	LB06	2	0.002	0.012	0.005	0.003	0.010	0.003	0.001	0.05	5	0.11380	11.38
5/20/2010	LB07	1	0.002	0.013	0.005	0.003	0.011	0.003	0.001	0.05	5	0.12565	12.57
5/20/2010	LB07	2	0.002	0.013	0.005	0.003	0.011	0.003	0.001	0.05	5	0.12565	12.57

Date	Site	Rep	A750	A664	A647	A630	664 corrected	647 corrected	630 corrected	filtered water	Vol. extraction	extraction	water column
5/20/2010	LB 08	1	0.002	0.031	0.009	0.007	0.029	0.007	0.005	0.05	5	0.33247	33.25
5/20/2010	LB 08	2	0.002	0.031	0.009	0.007	0.029	0.007	0.005	0.05	5	0.33247	33.25
5/20/2010	LB 09	1	0.002	0.021	0.008	0.004	0.019	0.006	0.002	0.05	5	0.21575	21.58
5/20/2010	LB 09	2	0.002	0.019	0.007	0.003	0.017	0.005	0.001	0.05	5	0.19367	19.37
5/20/2010	LB 11	1	0.002	0.009	0.003	0.002	0.007	0.001	0.000	0.05	5	0.08141	8.14
5/20/2010	LB 11	2	0.002	0.008	0.003	0.002	0.006	0.001	0.000	0.05	5	0.06956	6.96
5/20/2010	sensor	1	0.002	0.016	0.006	0.005	0.014	0.004	0.003	0.05	5	0.15950	15.95
5/20/2010	sensor	2	0.002	0.015	0.006	0.004	0.013	0.004	0.002	0.05	5	0.14773	14.77
5/20/2010	control	1	0.001	0.005	0.001	0.001	0.004	0.000	0.000	0.05	5	0.04740	4.74
5/20/2010	control	2	0.001	0.005	0.002	0.001	0.004	0.001	0.000	0.05	5	0.04586	4.59

Date	Site	Rep	Filter dry wt. (g)	Filter w/ epiphytes (g)	Weight of Epiphytes (g)	Biomass (g/m <sup>2</sup> )	Blade width (cm)	Notes
11/12/2009	LBcontrol	1	0.034	0.0421	0.0080	8.89	0.1	9 blades, 10cm long each
11/12/2009	LBcontrol	2	0.033	0.0449	0.0123	13.67	0.1	9 blades, 10cm long each
11/12/2009	LBcontrol	3	0.033	0.0488	0.0161	17.89	0.1	9 blades, 10cm long each
11/12/2009	LBcontrol	4	0.036	0.0437	0.0077	8.56	0.1	9 blades, 10cm long each
11/12/2009	LB02	1	0.033	0.0421	0.0089	9.89	0.1	9 blades, 10cm long each
11/12/2009	LB02	2	0.034	0.0410	0.0071	7.89	0.1	9 blades, 10cm long each
11/12/2009	LB02	3	0.035	0.0457	0.0107	11.89	0.1	9 blades, 10cm long each
11/12/2009	LB02	4	0.034	0.0476	0.0140	15.56	0.1	9 blades, 10cm long each
11/12/2009	LB03	1	0.034	0.0483	0.0143	15.89	0.1	9 blades, 10cm long each
11/12/2009	LB03	2	0.035	0.0774	0.0425	47.22	0.1	9 blades, 10cm long each
11/12/2009	LB03	3	0.034	0.0549	0.0212	23.56	0.1	9 blades, 10cm long each
11/12/2009	LB03	4	0.034	0.0572	0.0228	25.33	0.1	9 blades, 10cm long each
5/20/2010	LBcontrol	1	0.038	0.0688	0.0309	51.50	0.1	6 Blades, 10cm each
5/20/2010	LBcontrol	2	0.038	0.0973	0.0590	98.33	0.1	6 Blades, 10cm each
5/20/2010	LBcontrol	3	0.038	0.0734	0.0355	59.17	0.1	6 Blades, 10cm each
5/20/2010	LBcontrol	4	0.037	0.0638	0.0264	44.00	0.1	6 Blades, 10cm each
5/20/2010	LB02	1	0.037	0.0434	0.0065	9.03	0.1	6 Blades, 10cm each
5/20/2010	LB02	2	0.038	0.0432	0.0052	8.67	0.1	6 Blades, 10cm each
5/20/2010	LB02	3	0.038	0.0443	0.0059	9.83	0.1	6 Blades, 10cm each
5/20/2010	LB02	4	0.038	0.0578	0.0196	32.67	0.1	6 Blades, 10cm each
5/20/2010	LB03	1	0.038	0.0736	0.0355	59.17	0.1	6 Blades, 10cm each
5/20/2010	LB03	2	0.038	0.0612	0.0234	39.00	0.1	6 Blades, 10cm each
5/20/2010	LB03	3	0.038	0.0591	0.0213	35.50	0.1	6 Blades, 10cm each
5/20/2010	LB03	4	0.037	0.0569	0.0196	32.67	0.1	6 Blades, 10cm each



Site Description	Date	Silicate (µM/L)	Orthophosphate (µM/L)	Ammonia (µM/L)	Ammonia (mg/L)	Nitrate/ Nitrite (µM/L)	Nitrate/ Nitrite (mg/L)	Total DIN (mg/L)	Total DIN (µm/L)
Tule Ck. Outfall (04)	4/13/2009			8.25	0.1155	184.61	2.58454	2.70004	192.86
Tule Ck. Outfall (04)	5/28/2009			31.53	0.44142	171.68	2.40352	2.84494	203.21
Tule Ck. Outfall (04)	7/23/2009			8.71	0.12194	77.32	1.08248	1.20442	86.03
Tule Ck. Outfall (04)	9/10/2009	101.79	17.76	4.74	0.06636	50.1	0.7014	0.76776	54.84
Tule Ck. Outfall (04)	9/15/2009	266.635	31.65	3.74	0.05236	127.59	1.78626	1.83862	131.33
Tule Ck. Outfall (04)	11/12/2009	133.1356	18.26	0.6218	0.0087052	349.055	4.88677	4.8954752	349.6768
Tule Ck. Outfall (04)	2/17/2010	164.4946	17.64	0.9709	0.0135926	392.72	5.49808	5.5116726	393.6909
Tule Ck. Outfall (04)	5/20/2010	137.1876	3.6526	0.407	0.005698	64.92	0.90888	0.914578	65.327
Key Allegro Bdg. (05)	4/13/2009			2.43	0.03402	8.28	0.11592	0.14994	10.71
Key Allegro Bdg. (05)	5/28/2009			5.21	0.07294	5.06	0.07084	0.14378	10.27
Key Allegro Bdg. (05)	7/23/2009			2.5	0.035	12.56	0.17584	0.21084	15.06
Key Allegro Bdg. (05)	9/10/2009	169.07	2.475	3.16	0.04424	6.585	0.09219	0.13643	9.745
Key Allegro Bdg. (05)	9/15/2009	233.03	0.785	3.015	0.04221	0.525	0.00735	0.04956	3.54
Key Allegro Bdg. (05)	11/12/2009	56.8639	0.3743	0.2265	0.003171	0.2988	0.0041832	0.0073542	0.5253
Key Allegro Bdg. (05)	2/17/2010	58.7069	0.4349			0.0945	0.001323	0.001323	0.0945
Key Allegro Bdg. (05)	5/20/2010	163.3419	1.9519	0.7448	0.0104272	39.72	0.55608	0.5665072	40.4648
Middle Bay (06)	4/13/2009			1.41	0.01974	0.67	0.00938	0.02912	2.08
Middle Bay (06)	5/28/2009			4.58	0.06412	4.66	0.06524	0.12936	9.24
Middle Bay (06)	7/23/2009			1.35	0.0189	0.19	0.00266	0.02156	1.54
Middle Bay (06)	9/10/2009	147.665	1.275	3.315	0.04641	3.005	0.04207	0.08848	6.32
Middle Bay (06)	9/15/2009	228.46	0.345	0.68	0.00952			0.00952	0.68
Middle Bay (06)	11/12/2009	77.6739	0.4179			0.9287	0.0130018	0.0130018	0.9287
Middle Bay (06)	2/17/2010	29.1537	0.5989	0.1279	0.0017906	0.8863	0.0124082	0.0141988	1.0142
Middle Bay (06)	5/20/2010	157.1725	0.4675	0.2165	0.003031	1.2242	0.0171388	0.0201698	1.4407
Key Allegro Mar. (07)	4/13/2009			1.44	0.02016	0.25	0.0035	0.02366	1.69
Key Allegro Mar. (07)	5/28/2009			5.36	0.07504	7.88	0.11032	0.18536	13.24
Key Allegro Mar. (07)	7/23/2009			1.29	0.01806	0.3	0.0042	0.02226	1.59
Key Allegro Mar. (07)	9/10/2009	146.215	3.01	4.325	0.06055	7.505	0.10507	0.16562	11.83
Key Allegro Mar. (07)	9/15/2009	267.14	0.91	2.235	0.03129	1.515	0.02121	0.0525	3.75
Key Allegro Mar. (07)	11/12/2009	84.8569	0.5581			0.7764	0.0108696	0.0108696	0.7764
Key Allegro Mar. (07)	2/17/2010	40.725	0.7073	0.0762	0.0010668	2.8031	0.0392434	0.0403102	2.8793
Key Allegro Mar. (07)	5/20/2010	159.7311	0.5215	0.3065	0.004291	1.3938	0.0195132	0.0238042	1.7003

Site Description	Date	Silicate ( $\mu\text{M/L}$ )	Orthophosphate ( $\mu\text{M/L}$ )	Ammonia ( $\mu\text{M/L}$ )	Ammonia (mg/L)	Nitrate/ Nitrite ( $\mu\text{M/L}$ )	Nitrate/ Nitrite (mg/L)	Total DIN (mg/L)	Total DIN ( $\mu\text{M/L}$ )
Traylor Ave. Bridge (08)	4/13/2009			1.65	0.0231	0.26	0.00364	0.02674	1.91
Traylor Ave. Bridge (08)	5/28/2009			7.32	0.10248	2.68	0.03752	0.14	10
Traylor Ave. Bridge (08)	7/23/2009			2.07	0.02898	0.4	0.0056	0.03458	2.47
Traylor Ave. Bridge (08)	9/10/2009	127.64	4.785	3.275	0.04585	8.68	0.12152	0.16737	11.955
Traylor Ave. Bridge (08)	9/15/2009	250.53	2.11	5.705	0.07987		0.07987	0.07987	5.705
Traylor Ave. Bridge (08)	11/12/2009	91.6765	1.0569	0.3736	0.0052304	1.9006	0.0266084	0.0318388	2.2742
Traylor Ave. Bridge (08)	2/17/2010	93.0125	2.0849	0.4154	0.0058156	6.4254	0.0899556	0.0957712	6.8408
Traylor Ave. Bridge (08)	5/20/2010	159.3821	1.7228			0.4646	0.0065044	0.0065044	0.4646
Tule Park Rd. at Encina D	4/13/2009			14.4	0.2016	120.12	1.68168	1.88328	134.52
Tule Park Rd. at Encina D	5/28/2009			90.16	1.26224	170.19	2.38266	3.6449	260.35
Tule Park Rd. at Encina D	7/23/2009			11.66	0.16324	75.82	1.06148	1.22472	87.48
Tule Park Rd. at Encina D	9/10/2009	118.215	22.065	3.42	0.04788	62.43	0.87402	0.9219	65.85
Tule Park Rd. at Encina D	9/15/2009	245.265	31.65	8.235	0.11529	195.88	2.74232	2.85761	204.115
Tule Park Rd. at Encina D	11/12/2009	180.3796	47.76	1.7445	0.024423	921.025	12.89435	12.918773	922.7695
Tule Park Rd. at Encina D	2/17/2010	201.9517	22.68	0.8942	0.0125188	328.41	4.59774	4.6102588	329.3042
Tule Park Rd. at Encina D	5/20/2010	286.8179	46.8	1.2578	0.0176092	355.97	4.98358	5.0011892	357.2278
Tule Creek Underground	4/13/2009			15.37	0.21518	131.76	1.84464	2.05982	147.13
Tule Creek Underground	5/28/2009			64.75	0.9065	169	2.366	3.2725	233.75
Tule Creek Underground	7/23/2009			17.27	0.24178	78.24	1.09536	1.33714	95.51
Tule Creek Underground	9/10/2009	189.905	23.58	4.465	0.06251	64.8	0.9072	0.96971	69.265
Tule Creek Underground	9/15/2009	268.555	72.16	5.14	0.07196	219.12	3.06768	3.13964	224.26
Tule Creek Underground	11/12/2009	230.1205	36.24	1.3835	0.019369	636.495	8.91093	8.930299	637.8785
Tule Creek Underground	2/17/2010	286.9497	40.68	1.0029	0.0140406	471.48	6.60072	6.6147606	472.4829
Tule Creek Underground	5/20/2010	227.2788	38.46	1.4871	0.0208194	399.945	5.59923	5.6200494	401.4321
Light Sensor	4/13/2009								
Light Sensor	5/28/2009			4.61	0.06454	2.6	0.0364	0.10094	7.21
Light Sensor	7/23/2009			1.26	0.01764	6.58	0.09212	0.10976	7.84
Light Sensor	9/10/2009	240.93	2.965	15.24	0.21336	14.85	0.2079	0.42126	30.09
Light Sensor	9/15/2009	245.945	0.295	0.75	0.0105		0.0105	0.0105	0.75
Light Sensor	11/12/2009	81.5011	0.6765			0.2058	0.0028812	0.0028812	0.2058
Light Sensor	2/17/2010	27.6942	0.8312	0.0468	0.0006552	0.0764	0.0010696	0.0017248	0.1232
Light Sensor	5/20/2010	161.4671	0.4622	0.1282	0.0017948	0.18	0.00252	0.0043148	0.3082

Site Description	Date	Silicate (µM/L)	Orthophosphate (µM/L)	Ammonia (µM/L)	Ammonia (mg/L)	Nitrate/ Nitrite (µM/L)	Nitrate/ Nitrite (mg/L)	Total DIN (mg/L)	Total DIN (µm/L)
Little Bay Control Site	4/13/2009			1.56	0.02184	1.03	0.01442	0.03626	2.59
Little Bay Control Site	5/28/2009			2.04	0.02856	1.24	0.01736	0.04592	3.28
Little Bay Control Site	7/23/2009			1.71	0.02394	0.57	0.00798	0.03192	2.28
Little Bay Control Site	9/10/2009	111.535	0.645	1.705	0.02387	2.185	0.03059	0.05446	3.89
Little Bay Control Site	9/15/2009	276.33	0.25	0.715	0.01001			0.01001	0.715
Little Bay Control Site	11/12/2009	62.5556	0.2451	0.0455	0.000637	0.1028	0.0014392	0.0020762	0.1483
Little Bay Control Site	2/17/2010	31.0856	0.2222	0.0808		0.3948	0.0055272	0.0066584	0.4756
Little Bay Control Site	5/20/2010	97.4408	0.2141			0.3322	0.0046508	0.0046508	0.3322

## Tule Creek Nutrient Study

Site Description	Date	Ammonia (µM/L)	Nitrate/ Nitrite (µM/L)
LB04	2/22/2010	11.43	199.93
Traylor@Santa Fe	2/22/2010	5.28	116.94
Encina@35	2/22/2010	12.14	216.82
FM 2165	2/22/2010	1.67	7.13

Site Description	Date	Ammonia (µM/L)	Nitrate/ Nitrite (µM/L)
Tule@Picton	5/10/2010	12.79	75.02
Traylor@Santa Fe	5/10/2010	11.73	76.22
Henderson@Sugar	5/10/2010	3.86	1
Henderson Lot	5/10/2010	19.54	79.19
Encina@85	5/10/2010	15.87	72.94

## Seagrass Tissue

Date	Site	$\delta N_{15}$ (0/00)	$\delta C_{13}$ (0/00)
4/13/2009	LB02	4.46	-11.55
4/13/2009	LB03	7.7	-10.13
7/23/2009	LB02	5.18	-11.86
7/23/2009	LB03	5.18	-12.61
11/12/2009	LB02	6.18	-9.42
11/12/2009	LB03	2.52	-9.62
11/12/2009	Control	-1.04	-11.22
2/17/2010	LB02	4.87	-11.87
2/17/2010	LB03	5	-11.52
2/17/2010	Control	4.05	-13.04
4/13/2009	LB02	4.46	-11.55
7/23/2009	LB02	5.18	-11.86
11/12/2009	LB02	6.18	-9.42
2/17/2010	LB02	4.87	-11.87
4/13/2009	LB03	7.7	-10.13
7/23/2009	LB03	5.18	-12.61
11/12/2009	LB03	2.52	-9.62
2/17/2010	LB03	5	-11.52
11/12/2009	Control	-1.04	-11.22
2/17/2010	Control	4.05	-13.04

## Epiphytes

Date	Site	$\delta N_{15}$ (0/00)	$\delta C_{13}$ (0/00)
4/13/2009	LB02	6.12	-17.88
4/13/2009	LB03	7.96	-14.02
7/23/2009	LB02	5.68	-16.63
7/23/2009	LB03	4.93	-13.34
11/12/2009	LB02	5.29	-15.38
11/12/2009	LB03	7.14	-15.78
11/12/2009	Control	2.5	-12.79
2/17/2010	LB02	5.88	-16.46
2/17/2010	LB03	4.5	-17.61
2/17/2010	Control	5.5	-21.6
4/13/2009	LB02	6.12	-17.88
7/23/2009	LB02	5.68	-16.63
11/12/2009	LB02	5.29	-15.38
2/17/2010	LB02	5.88	-16.46
4/13/2009	LB03	7.96	-14.02
7/23/2009	LB03	4.93	-13.34
11/12/2009	LB03	7.14	-15.78
2/17/2010	LB03	4.5	-17.61
11/12/2009	Control	2.5	-12.79
2/17/2010	Control	5.5	-21.6

## Sediments

Date	Site	$\delta N_{15}$ (0/00)	$\delta C_{13}$ (0/00)
2/17/2010	LB02	3.55	-10.56
2/17/2010	LB03	7.63	-11.64
2/17/2010	LB04	6.17	-11.86
2/17/2010	Control	0.57	-16.4
2/17/2010	Encina @ 35	7.31	-18.14
2/17/2010	Tule @ Plant	-4.57	na
2/17/2010	Henderson @	6.47	-23.8
2/17/2010	Henerson @ S	3.53	-19.11
2/17/2010	Tule @ Pictor	4.63	-13.73
2/17/2010	Tule @ Pictor	6.16	-22.95
2/17/2010	Santa Fe	5.72	-21.99

## Algae

Date	Site	$\delta N_{15}$ (0/00)	$\delta C_{13}$ (0/00)
5/20/2010	LB02	11.66	-18.85
5/20/2010	LB04	12.25	-23.70
5/20/2010	DataLogger	8.33	-20.97
5/20/2010	Henderson	7.00	-30.27
5/20/2010	Henderson	4.74	-25.94
5/20/2010	Encina @ 35	4.86	-39.39
5/20/2010	Traylor	14.17	-24.00
2/17/2010	LB02	13.75	-15.03
2/17/2010	LB02	9.84	-16.56
2/17/2010	LB04	8.48	-24.55
2/17/2010	LB04	9.59	-21.37
2/17/2010	LB04	8.65	-25.93
2/17/2010	LB05	9.87	-24.31
2/17/2010	Encina @35	4.25	-40.73
2/17/2010	LB07	8.44	-21.99
2/17/2010	FM2165	9.42	-38.00
2/17/2010	Henderson	15.08	-27.54
2/17/2010	DataLogger	8.70	-21.67



## APPENDIX C

## Light parameters

Site Description	Date	Depth (m)	Secchi Depth	Chl ( $\mu\text{g/L}$ )	PAR Surface (Avg)	PAR Secchi Depth (Avg)	%Transmittance	Light Atten
Boat Ramp (01)	09/04/08	1.4	0.48	13.10	987.5	204.75	20.74	1.12
Boat Ramp (01)	09/18/08	1.4	0.50	14.18	643.5	167.18	25.98	1.00
Boat Ramp (01)	10/02/08	0.6	1.50	10.73	559.8	181.75	32.47	1.87
Boat Ramp (01)	10/16/08	1.7	0.75	13.00	77.5	15.94	20.57	0.93
Boat Ramp (01)	10/30/08	1.4	0.70	10.80	186.7	39.82	21.33	1.10
Boat Ramp (01)	11/13/08	1.5	0.80	14.80	228.3	63.00	27.60	0.86
Boat Ramp (01)	12/08/08	1.2	1.20	3.35	123.4	46.13	37.38	0.82
Boat Ramp (01)	12/18/08	1.3	1.25	4.33	188.4	71.45	37.93	0.78
Boat Ramp (01)	01/08/09	1.0	1.00	6.38	100.6	34.66	34.45	1.07
Boat Ramp (01)	01/22/09	0.9	0.90	6.38	110.7	39.68	35.84	1.14
Boat Ramp (01)	02/04/09	1.0	1.00	6.25	80.7	34.49	42.73	0.85
Boat Ramp (01)	02/18/09	1.3	0.90	6.70	174.8	42.60	24.37	1.13
Boat Ramp (01)	03/13/09	1.1	0.90	7.93	37.3	9.60	25.76	1.23
Boat Ramp (01)	03/25/09	1.3	0.65	9.85	86.9	30.58	35.21	0.84
Boat Ramp (01)	04/13/09	1.5	0.70	22.65	1133.0	132.50	11.69	1.43
Boat Ramp (01)	05/07/09	1.3	0.55	14.80	251.5	81.58	32.44	0.87
Boat Ramp (01)	05/28/09	1.4	0.80	7.78	133.7	32.82	24.55	1.00
Boat Ramp (01)	06/11/09	1.3	0.55	14.88	184.8	45.76	24.76	1.07
Boat Ramp (01)	06/25/09	1.2	0.50	10.73	864.8	385.70	44.60	0.67
Boat Ramp (01)	07/09/09	1.2	0.50	11.83	918.2	272.30	29.66	1.01
Boat Ramp (01)	07/23/09	1.2	0.50	14.28	272.9	48.91	17.92	1.43
Boat Ramp (01)	08/06/09	1.2	0.60	11.05	805.6	140.20	17.40	1.46
Boat Ramp (01)	08/20/09	1.4	0.50	11.10	1068.0	225.90	21.15	1.11
Boat Ramp (01)	09/03/09	1.3	0.50	11.95	881.1	164.20	18.64	1.29
Boat Ramp (01)	09/15/09	1.5	0.60	24.08	1512.0	258.90	17.12	1.18
Boat Ramp (01)	09/30/09	1.5	0.50	14.85	1643.0	275.00	16.74	1.23
Boat Ramp (01)	10/14/09	1.5	0.50	34.83	1611.0	371.00	23.03	0.98
Boat Ramp (01)	11/03/09	1.4	0.80	14.00	1556.0	245.00	15.75	1.32
Boat Ramp (01)	11/12/09	1.5	0.80	7.05	1141.0	125.00	10.96	1.47
Boat Ramp (01)	12/03/09	1.2	0.80	24.70	1635.0	1046.00	63.98	0.37
Boat Ramp (01)	12/18/09	1.5	1.50	12.23	1564.0	970.00	62.02	0.32
Boat Ramp (01)	01/11/10	1.2	1.20	6.15	NA	NA	NA	NA
Boat Ramp (01)	01/26/10	1.0	0.80	19.60	NA	NA	NA	NA
Boat Ramp (01)	02/17/10	1.1	1.10	8.25	NA	NA	NA	NA
Boat Ramp (01)	03/11/10	1.2	1.10	10.23	1755.0	153.60	8.75	2.03
Boat Ramp (01)	03/18/10	1.0	1.00	7.25	1857.0	209.60	11.29	2.18
Boat Ramp (01)	03/31/10	1.0	0.55	4.43	1831.0	245.10	13.39	2.01
Boat Ramp (01)	04/21/10	1.2	0.85	14.08	1964.0	572.30	29.14	1.03
Boat Ramp (01)	05/04/10	1.2	0.90	11.90	2358.0	644.40	27.33	1.08
Bayside Point (02)	09/04/08	1.0	0.58	12.60	1311.8	394.75	30.09	1.26
Bayside Point (02)	09/18/08	1.0	0.50	15.45	872.8	339.48	38.89	0.96
Bayside Point (02)	10/02/08	0.9	0.90	6.43	727.8	307.10	42.20	0.96
Bayside Point (02)	10/16/08	1.0	0.55	10.43	111.9	44.37	39.66	0.97
Bayside Point (02)	10/30/08	1.0	0.90	6.95	847.4	365.60	43.14	0.84
Bayside Point (02)	11/13/08	0.9	0.90	14.88	353.0	139.28	39.45	1.03
Bayside Point (02)	12/08/08	0.9	0.85	4.65	152.4	79.10	51.89	0.77
Bayside Point (02)	12/18/08	0.9	0.90	4.23	252.0	140.98	55.95	0.65
Bayside Point (02)	01/08/09	0.8	0.75	3.75	786.3	430.90	54.80	0.80
Bayside Point (02)	01/22/09	0.9	0.90	3.75	761.3	386.50	50.77	0.75
Bayside Point (02)	02/04/09	0.9	0.90	5.30	737.2	405.10	54.95	0.67
Bayside Point (02)	02/18/09	0.8	0.82	5.25	265.3	105.00	39.58	1.13
Bayside Point (02)	03/13/09	0.7	0.70	7.10	141.3	66.22	46.86	1.08

Site Description	Date	Depth (m)	Secchi Depth	Chl ( $\mu\text{g/L}$ )	PAR Surface (Avg)	PAR Secchi Depth (Avg)	%Transmittance	Light Atten
Bayside Point (02)	03/25/09	0.8	0.70	10.75	176.6	70.81	40.10	1.14
Bayside Point (02)	04/13/09	0.9	0.65	12.28	1242.0	365.10	29.40	1.36
Bayside Point (02)	05/07/09	0.9	0.50	15.08	389.4	123.00	31.59	1.25
Bayside Point (02)	05/28/09	0.9	0.70	9.88	1020.0	269.50	26.42	1.48
Bayside Point (02)	06/11/09	0.7	0.35	12.38	1536.0	517.30	33.68	1.55
Bayside Point (02)	06/25/09	0.8	0.65	6.78	1064.0	386.00	36.28	1.27
Bayside Point (02)	07/09/09	0.7	0.70	11.08	466.8	137.20	29.39	1.75
Bayside Point (02)	07/23/09	0.8	0.55	14.53	431.8	102.40	23.71	1.80
Bayside Point (02)	08/06/09	0.7	0.50	9.63	952.9	198.80	20.86	2.41
Bayside Point (02)	08/20/09	0.7	0.50	11.85	1375.0	282.20	20.52	2.26
Bayside Point (02)	09/03/09	0.5	0.50	5.75	1093.0	313.10	28.65	2.50
Bayside Point (02)	09/15/09	0.7	0.70	13.78	1595.0	600.00	37.62	1.40
Bayside Point (02)	09/30/09	0.6	0.40	13.73	1756.0	582.00	33.14	1.84
Bayside Point (02)	10/14/09	0.7	0.70	20.13	1561.0	573.00	36.71	1.43
Bayside Point (02)	11/03/09	0.6	0.60	9.18	1320.0	748.30	56.69	0.95
Bayside Point (02)	11/12/09	0.7	0.70	6.53	1142.0	678.80	59.44	0.74
Bayside Point (02)	12/03/09	0.5	0.45	13.08	1661.0	1172.00	70.56	0.77
Bayside Point (02)	12/18/09	0.6	0.60	8.23	1607.0	1049.00	65.28	0.71
Bayside Point (02)	01/11/10	0.6	0.60	2.60	1676.0	1082.00	64.56	0.73
Bayside Point (02)	01/26/10	0.6	0.55	8.93	1721.0	1423.00	82.68	0.35
Bayside Point (02)	02/17/10	0.2	0.20	5.00	NA	NA	NA	NA
Bayside Point (02)	03/11/10	0.5	0.45	8.28	1777.0	1437.00	80.87	0.47
Bayside Point (02)	03/18/10	0.7	0.65	5.78	2012.0	1310.00	65.11	0.66
Bayside Point (02)	03/31/10	0.4	0.40	3.33	2105.0	1807.00	85.84	0.38
Bayside Point (02)	04/21/10	0.4	0.40	7.58	2320.0	1971.00	84.96	0.41
Bayside Point (02)	05/04/10	0.5	0.45	10.90	2575.0	1718.00	66.72	0.90
Connie Hagar (03)	09/04/08	0.6	0.46	8.88	1542.0	468.60	30.39	2.05
Connie Hagar (03)	09/18/08	0.6	0.60	10.13	685.2	264.50	38.60	1.59
Connie Hagar (03)	10/02/08	0.7	0.53	7.68	954.9	293.55	30.74	1.73
Connie Hagar (03)	10/16/08	0.7	0.55	11.93	126.9	40.21	31.68	1.60
Connie Hagar (03)	10/30/08	0.6	0.55	6.25	1241.3	716.68	57.74	1.00
Connie Hagar (03)	11/13/08	0.6	0.60	16.65	204.2	93.44	45.75	1.30
Connie Hagar (03)	12/08/08	0.5	0.50	4.33	172.0	109.73	63.80	0.90
Connie Hagar (03)	12/18/08	0.5	0.45	3.05	404.4	313.95	77.64	0.56
Connie Hagar (03)	01/08/09	0.2	0.20	4.05	1125.0	828.50	73.64	1.53
Connie Hagar (03)	01/22/09	0.1	N/A	4.05	N/A	N/A		
Connie Hagar (03)	02/04/09	0.2	0.22	1.85	N/A	N/A		
Connie Hagar (03)	02/18/09	0.4	0.42	6.23	483.0	330.20	68.36	0.91
Connie Hagar (03)	03/13/09	0.4	0.40	5.45	64.6	54.59	84.56	0.42
Connie Hagar (03)	03/25/09	0.6	0.55	12.25	175.5	52.40	29.86	1.92
Connie Hagar (03)	04/13/09	0.5	0.50	7.18	1475.0	861.30	58.39	1.08
Connie Hagar (03)	05/07/09	0.6	0.55	10.40	1908.0	965.50	50.60	1.24
Connie Hagar (03)	05/28/09	0.6	0.60	8.48	1503.0	773.50	51.46	1.11
Connie Hagar (03)	06/11/09	0.5	0.50	7.75	726.6	327.40	45.06	1.59
Connie Hagar (03)	06/25/09	0.5	0.50	4.90	1428.0	897.70	62.86	0.93
Connie Hagar (03)	07/09/09	0.5	0.45	7.10	1591.0	882.60	55.47	1.31
Connie Hagar (03)	07/23/09	0.4	0.40	5.78	1463.0	944.90	64.59	1.09
Connie Hagar (03)	08/06/09	0.5	0.45	3.63	1053.0	772.10	73.32	0.69
Connie Hagar (03)	08/20/09	0.6	0.60	4.25	1581.0	590.10	37.32	1.64
Connie Hagar (03)	09/03/09	0.4	0.40	7.80	1592.0	991.80	62.30	1.18
Connie Hagar (03)	09/15/09	0.6	0.57	7.45	1569.0	587.80	37.46	1.72
Connie Hagar (03)	09/30/09	0.5	0.50	15.23	522.0	164.00	31.42	2.18

Site Description	Date	Depth (m)	Secchi Depth	Chl ( $\mu\text{g/L}$ )	PAR Surface (Avg)	PAR Secchi Depth (Avg)	%Transmittance	Light Atten
Connie Hagar (03)	10/14/09	0.6	0.60	6.73	1410.0	693.10	49.16	1.18
Connie Hagar (03)	11/03/09	0.5	0.50	4.98	1266.0	826.10	65.25	0.85
Connie Hagar (03)	11/12/09	0.5	0.50	10.28	992.5	550.80	55.50	1.18
Connie Hagar (03)	12/03/09	0.4	0.40	6.93	1762.0	1224.00	69.47	0.91
Connie Hagar (03)	12/18/09	0.6	0.60	7.40	1633.0	1234.00	75.57	0.47
Connie Hagar (03)	01/11/10	0.3	0.25	3.53	NA	NA	NA	NA
Connie Hagar (03)	01/26/10	0.3	0.30	4.88	1312.0	1015.00	77.36	0.86
Connie Hagar (03)	02/17/10	0.3	0.30	3.45	NA	NA	NA	NA
Connie Hagar (03)	03/11/10	0.4	0.35	5.83	2252.0	1790.00	79.48	0.66
Connie Hagar (03)	03/18/10	0.3	0.30	3.48	1728.0	1571.00	90.91	0.32
Connie Hagar (03)	03/31/10	0.2	0.20	4.93	1959.0	1716.00	87.60	0.66
Connie Hagar (03)	04/21/10	0.5	0.45	14.53	2137.0	1334.00	62.42	1.05
Connie Hagar (03)	05/04/10	0.4	0.40	9.43	2451.0	2035.00	83.03	0.47
Tule Ck. Outfall (04)	09/04/08	0.8	0.75	11.95	1727.3	411.85	23.84	1.91
Tule Ck. Outfall (04)	09/18/08	0.8	0.50	10.23	562.8	127.05	22.57	1.93
Tule Ck. Outfall (04)	10/02/08	0.8	0.62	4.85	1320.8	248.10	18.78	2.01
Tule Ck. Outfall (04)	10/16/08	1.0	0.55	10.00	166.5	51.93	31.20	1.23
Tule Ck. Outfall (04)	10/30/08	0.7	0.70	4.13	1442.5	574.95	39.86	1.31
Tule Ck. Outfall (04)	11/13/08	0.8	0.60	7.68	220.9	75.86	34.34	1.43
Tule Ck. Outfall (04)	12/08/08	0.5	0.48	3.63	110.6	75.06	67.87	0.81
Tule Ck. Outfall (04)	12/18/08	0.6	0.58	13.60	125.9	63.96	50.82	1.17
Tule Ck. Outfall (04)	01/08/09	0.3	0.28	6.65	1193.0	774.70	64.94	1.54
Tule Ck. Outfall (04)	01/22/09	0.2	0.23	6.65	1423.0	941.60	66.17	1.80
Tule Ck. Outfall (04)	02/04/09	0.3	0.28	3.48	N/A	N/A		
Tule Ck. Outfall (04)	02/18/09	0.6	0.48	7.93	594.5	163.50	27.50	2.35
Tule Ck. Outfall (04)	03/13/09	0.5	0.48	22.43	48.6	28.37	58.35	1.12
Tule Ck. Outfall (04)	03/25/09	0.6	0.58	8.85	184.4	58.83	31.90	1.97
Tule Ck. Outfall (04)	04/13/09	0.6	0.55	7.58	1986.0	948.40	47.75	1.34
Tule Ck. Outfall (04)	05/07/09	0.5	0.45	6.28	559.7	268.40	47.95	1.63
Tule Ck. Outfall (04)	05/28/09	0.5	0.48	13.28	1863.0	842.00	45.20	1.65
Tule Ck. Outfall (04)	06/11/09	0.4	0.40	6.80	834.4	424.40	50.86	1.69
Tule Ck. Outfall (04)	06/25/09	0.4	0.40	4.48	1661.0	1130.00	68.03	0.96
Tule Ck. Outfall (04)	07/09/09	0.3	0.30	4.18	NA	NA	NA	
Tule Ck. Outfall (04)	07/23/09	0.2	0.20	5.58	NA	NA	NA	NA
Tule Ck. Outfall (04)	08/06/09	0.1	0.10	2.35	NA	NA	NA	
Tule Ck. Outfall (04)	08/20/09	0.3	0.30	4.10	NA	NA	NA	NA
Tule Ck. Outfall (04)	09/03/09	0.2	0.20	4.48	NA	NA	NA	
Tule Ck. Outfall (04)	09/15/09	0.4	0.40	28.23	1420.0	646.50	45.53	1.97
Tule Ck. Outfall (04)	09/30/09	0.4	0.40	25.98	1738.0	734.40	42.26	2.15
Tule Ck. Outfall (04)	10/14/09	0.3	0.30	24.45	1453.0	776.70	53.45	2.09
Tule Ck. Outfall (04)	11/03/09	0.2	0.20	10.68	1195.0	743.10	62.18	2.38
Tule Ck. Outfall (04)	11/12/09	0.4	0.40	9.75	1035.0	535.40	51.73	1.65
Tule Ck. Outfall (04)	12/03/09	1.4	1.10	16.68	1424.0	308.50	21.66	1.09
Tule Ck. Outfall (04)	12/18/09	1.6	1.60	23.35	1516.0	198.90	13.12	1.27
Tule Ck. Outfall (04)	01/11/10	1.0	1.00	14.98	1744.0	700.80	40.18	0.91
Tule Ck. Outfall (04)	01/26/10	1.2	0.80	18.73	1375.0	206.50	15.02	1.65
Tule Ck. Outfall (04)	02/17/10	1.2	0.90	18.53	1731.0	280.40	16.20	1.58
Tule Ck. Outfall (04)	03/11/10	1.2	0.70	32.20	770.4	104.40	13.55	1.67
Tule Ck. Outfall (04)	03/18/10	1.0	0.75	15.43	1483.0	144.00	9.71	2.33
Tule Ck. Outfall (04)	03/31/10	1.2	1.20	11.83	1530.0	362.20	23.67	1.20
Tule Ck. Outfall (04)	04/21/10	1.2	0.60	19.28	1770.0	352.30	19.90	1.35
Tule Ck. Outfall (04)	05/04/10	1.1	0.70	16.48	2274.0	823.90	36.23	0.92

Site Description	Date	Depth (m)	Secchi Depth	Chl ( $\mu\text{g/L}$ )	PAR Surface (Avg)	PAR Secchi Depth (Avg)	%Transmittance	Light Atten
Key Allegro Bdg. (05)	09/04/08	1.0	0.60	7.63	1649.3	412.30	25.00	1.39
Key Allegro Bdg. (05)	09/18/08	1.3	0.75	5.15	491.4	149.30	30.38	0.95
Key Allegro Bdg. (05)	10/02/08	1.2	1.00	2.90	1194.0	280.00	23.45	1.21
Key Allegro Bdg. (05)	10/16/08	1.3	0.70	6.65	477.7	174.95	36.62	0.77
Key Allegro Bdg. (05)	10/30/08	1.2	1.00	7.70	1387.3	533.63	38.47	0.80
Key Allegro Bdg. (05)	11/13/08	1.3	0.80	7.15	463.3	112.15	24.21	1.13
Key Allegro Bdg. (05)	12/08/08	1.0	1.00	7.18	370.5	153.20	41.35	0.88
Key Allegro Bdg. (05)	12/18/08	1.1	1.10	3.28	359.5	176.00	48.95	0.65
Key Allegro Bdg. (05)	01/08/09	0.8	0.80	2.70	1246.0	494.80	39.71	1.15
Key Allegro Bdg. (05)	01/22/09	0.7	0.73	2.70	1485.0	669.60	45.09	1.09
Key Allegro Bdg. (05)	02/04/09	0.8	0.80	2.43	1057.0	583.10	55.17	0.74
Key Allegro Bdg. (05)	02/18/09	1.1	0.85	6.38	236.6	47.81	20.21	1.45
Key Allegro Bdg. (05)	03/13/09	1.1	0.55	7.90	95.3	31.77	33.33	1.05
Key Allegro Bdg. (05)	03/25/09	1.3	0.55	6.83	268.9	80.79	30.04	0.92
Key Allegro Bdg. (05)	04/13/09	1.1	0.50	13.30	1759.0	391.20	22.24	1.37
Key Allegro Bdg. (05)	05/07/09	1.2	0.60	11.60	517.8	133.40	25.76	1.18
Key Allegro Bdg. (05)	05/28/09	1.2	0.65	7.00	1835.0	458.30	24.98	1.16
Key Allegro Bdg. (05)	06/11/09	1.2	0.60	14.50	2262.0	689.70	30.49	0.99
Key Allegro Bdg. (05)	06/25/09	1.1	0.50	7.33	1542.0	772.80	50.12	0.63
Key Allegro Bdg. (05)	07/09/09	1.1	0.70	9.58	1643.0	475.80	28.96	1.13
Key Allegro Bdg. (05)	07/23/09	1.0	0.65	7.75	1820.0	317.00	17.42	1.75
Key Allegro Bdg. (05)	08/06/09	1.0	0.70	7.78	1710.0	539.80	31.57	1.15
Key Allegro Bdg. (05)	08/20/09	1.3	0.70	5.85	1914.0	346.90	18.12	1.37
Key Allegro Bdg. (05)	09/03/09	1.2	0.70	8.73	1611.0	399.20	24.78	1.16
Key Allegro Bdg. (05)	09/15/09	1.3	1.00	15.48	1173.0	168.10	14.33	1.49
Key Allegro Bdg. (05)	09/30/09	1.4	0.65	9.68	1056.0	154.60	14.64	1.42
Key Allegro Bdg. (05)	10/14/09	1.3	0.90	11.38	1420.0	279.00	19.65	1.25
Key Allegro Bdg. (05)	11/03/09	1.2	1.20	3.33	927.0	199.60	21.53	1.28
Key Allegro Bdg. (05)	11/12/09	1.4	1.40	4.50	804.8	88.00	10.93	1.58
Key Allegro Bdg. (05)	12/03/09	1.1	1.00	11.00	993.9	387.00	38.94	0.86
Key Allegro Bdg. (05)	12/18/09	1.3	1.30	5.53	1584.0	586.10	37.00	0.76
Key Allegro Bdg. (05)	01/11/10	0.9	0.90	3.85	1812.0	987.60	54.50	0.67
Key Allegro Bdg. (05)	01/26/10	0.9	0.90	5.63	1284.0	555.80	43.29	0.93
Key Allegro Bdg. (05)	02/17/10	0.9	0.80	23.10	1500.0	529.10	35.27	1.23
Key Allegro Bdg. (05)	03/11/10	1.0	1.00	12.63	1453.0	275.10	18.93	1.66
Key Allegro Bdg. (05)	03/18/10	0.9	0.90	21.50	1061.0	157.80	14.87	2.12
Key Allegro Bdg. (05)	03/31/10	0.9	0.90	4.75	1445.0	190.40	13.18	2.25
Key Allegro Bdg. (05)	04/21/10	1.0	0.75	13.60	1519.0	591.80	38.96	0.99
Key Allegro Bdg. (05)	05/04/10	1.0	0.80	27.38	2031.0	619.00	30.48	1.19
Middle Bay (06)	04/13/09	0.7	0.65	9.98	1747.0	655.30	37.51	1.51
Middle Bay (06)	05/07/09	0.7	0.60	12.73	1179.0	347.60	29.48	1.67
Middle Bay (06)	05/28/09	0.7	0.72	6.80	1338.0	562.70	42.06	1.20
Middle Bay (06)	06/11/09	0.6	0.55	12.20	1695.0	682.00	40.24	1.52
Middle Bay (06)	06/25/09	0.6	0.60	7.30	1127.0	576.50	51.15	1.12
Middle Bay (06)	07/09/09	0.6	0.55	12.65	459.1	163.60	35.63	1.88
Middle Bay (06)	07/23/09	0.5	0.50	11.53	1200.0	673.10	56.09	1.16
Middle Bay (06)	08/06/09	0.6	0.55	6.75	1043.0	490.60	47.04	1.37
Middle Bay (06)	08/20/09	0.8	0.55	10.20	1714.0	585.00	34.13	1.43
Middle Bay (06)	09/03/09	0.6	0.60	11.68	1100.0	324.70	29.52	2.03
Middle Bay (06)	09/15/09	0.8	0.70	14.10	1655.0	513.70	31.04	1.46
Middle Bay (06)	09/30/09	0.8	0.50	12.30	2027.0	715.70	35.31	1.30
Middle Bay (06)	10/14/09	0.8	0.70	17.43	1598.0	374.00	23.40	1.82

Site Description	Date	Depth (m)	Secchi Depth	Chl ( $\mu\text{g/L}$ )	PAR Surface (Avg)	PAR Secchi Depth (Avg)	%Transmittance	Light Atten
Middle Bay (06)	11/03/09	0.6	0.60	9.00	1424.0	789.40	55.44	0.98
Middle Bay (06)	11/12/09	0.9	0.85	6.28	1466.0	455.60	31.08	1.37
Middle Bay (06)	12/03/09	0.5	0.50	16.98	1158.0	775.70	66.99	0.80
Middle Bay (06)	12/18/09	0.7	0.70	10.40	1546.0	689.10	44.57	1.15
Middle Bay (06)	01/11/10	0.3	0.30	3.08	1842.0	1692.00	91.86	0.28
Middle Bay (06)	01/26/10	0.3	0.25	8.43	1870.0	1567.00	83.80	0.71
Middle Bay (06)	02/17/10	0.4	0.35	10.38	2081.0	1794.00	86.21	0.42
Middle Bay (06)	03/11/10	0.6	0.55	5.80	2156.0	1526.00	70.78	0.63
Middle Bay (06)	03/18/10	0.4	0.36	5.05	2144.0	1798.00	83.86	0.49
Middle Bay (06)	03/31/10	0.4	0.40	3.08	2472.0	1820.00	73.62	0.77
Middle Bay (06)	04/21/10	0.6	0.55	9.85	2309.0	1724.00	74.66	0.53
Middle Bay (06)	05/04/10	0.6	0.55	7.10	2443.0	1793.00	73.39	0.56
Key Allegro Mar. (07)	09/04/08	1.8	0.60	12.75	1896.0	611.10	32.23	0.65
Key Allegro Mar. (07)	09/18/08	1.8	0.50	17.60	525.1	219.83	41.87	0.50
Key Allegro Mar. (07)	10/02/08	1.8	0.80	11.08	1399.8	438.00	31.29	0.66
Key Allegro Mar. (07)	10/16/08	2.0	0.75	12.28	576.6	164.18	28.47	0.63
Key Allegro Mar. (07)	10/30/08	1.7	0.85	8.43	1653.0	505.08	30.56	0.70
Key Allegro Mar. (07)	11/13/08	1.8	0.80	22.25	280.0	96.81	34.57	0.61
Key Allegro Mar. (07)	12/08/08	1.5	1.50	4.90	222.1	65.71	29.59	0.81
Key Allegro Mar. (07)	12/18/08	1.5	1.50	7.25	337.2	115.70	34.31	0.71
Key Allegro Mar. (07)	01/08/09	1.4	1.35	7.30	1221.0	449.40	36.81	0.74
Key Allegro Mar. (07)	01/22/09	1.3	1.25	7.30	1633.0	562.50	34.45	0.85
Key Allegro Mar. (07)	02/04/09	1.4	0.85	6.35	1200.0	274.00	22.83	1.05
Key Allegro Mar. (07)	02/18/09	1.8	1.00	6.18	511.8	169.00	33.02	0.63
Key Allegro Mar. (07)	03/13/09	1.6	0.90	7.85	130.1	41.27	31.72	0.74
Key Allegro Mar. (07)	03/25/09	1.8	0.90	8.78	442.7	133.30	30.11	0.67
Key Allegro Mar. (07)	04/13/09	1.7	0.70	19.55	1953.0	567.00	29.03	0.73
Key Allegro Mar. (07)	05/07/09	1.8	0.70	15.15	734.8	153.60	20.90	0.89
Key Allegro Mar. (07)	05/28/09	1.8	0.80	8.68	1966.0	586.00	29.81	0.67
Key Allegro Mar. (07)	06/11/09	1.7	0.60	16.25	2702.0	739.50	27.37	0.76
Key Allegro Mar. (07)	06/25/09	1.7	0.75	8.58	1687.0	652.70	38.69	0.58
Key Allegro Mar. (07)	07/09/09	1.2	0.70	10.53	1873.0	575.90	30.75	1.00
Key Allegro Mar. (07)	07/23/09	1.7	0.70	9.93	1987.0	549.70	27.66	0.78
Key Allegro Mar. (07)	08/06/09	1.8	0.85	6.98	1840.0	329.70	17.92	0.98
Key Allegro Mar. (07)	08/20/09	1.6	0.60	10.60	1692.0	647.80	38.29	0.60
Key Allegro Mar. (07)	09/03/09	1.8	0.70	10.55	1805.0	577.30	31.98	0.63
Key Allegro Mar. (07)	09/15/09	1.9	0.80	25.55	NA	NA	NA	NA
Key Allegro Mar. (07)	09/30/09	1.7	0.70	12.38	1200.0	225.70	18.81	0.98
Key Allegro Mar. (07)	10/14/09	1.6	1.10	14.75	1229.0	338.00	27.50	0.81
Key Allegro Mar. (07)	11/03/09	1.8	0.80	11.25	1020.0	247.50	24.26	0.79
Key Allegro Mar. (07)	11/12/09	1.8	0.90	14.00	1063.0	229.00	21.54	0.85
Key Allegro Mar. (07)	12/03/09	1.6	1.10	15.15	1638.0	389.10	23.75	0.93
Key Allegro Mar. (07)	12/18/09	1.0	0.85	7.90	1491.0	496.80	33.32	1.10
Key Allegro Mar. (07)	01/11/10	1.5	1.50	3.55	1837.0	NA	NA	NA
Key Allegro Mar. (07)	01/26/10	1.5	1.20	28.43	1441.0	314.10	21.80	1.02
Key Allegro Mar. (07)	02/17/10	1.5	1.10	14.50	1641.0	317.40	19.34	1.10
Key Allegro Mar. (07)	03/11/10	1.6	1.20	15.30	1320.0	380.20	28.80	0.80
Key Allegro Mar. (07)	03/18/10	1.2	1.20	10.25	1282.0	309.30	24.13	1.18
Key Allegro Mar. (07)	03/31/10	1.3	1.20	6.80	1426.0	252.20	17.69	1.33
Key Allegro Mar. (07)	04/21/10	1.5	0.95	24.25	1677.0	524.60	31.28	0.80
Key Allegro Mar. (07)	05/04/10	1.7	1.00	22.13	2179.0	755.60	34.68	0.62
Light Sensor	05/07/09	0.8	0.60	13.58	511.1	170.00	33.26	1.38

## APPENDIX C

## Light parameters

Site Description	Date	Depth (m)	Secchi Depth	Chl ( $\mu\text{g/L}$ )	PAR Surface (Avg)	PAR Secchi Depth (Avg)	%Transmittance	Light Atten
Light Sensor	05/28/09	1.0	0.70	5.73	2040.0	793.40	38.89	0.94
Light Sensor	06/11/09	0.8	0.60	11.30	2607.0	727.40	27.90	1.70
Light Sensor	06/25/09	0.8	0.50	7.73	1860.0	955.20	51.35	0.89
Light Sensor	07/09/09	0.7	0.60	11.50	1560.0	403.60	25.87	1.93
Light Sensor	07/23/09	0.7	0.60	9.53	1770.0	755.10	42.66	1.31
Light Sensor	08/06/09	0.6	0.52	8.38	1552.0	615.10	39.63	1.49
Light Sensor	08/20/09	0.8	0.60	7.55	1784.0	554.20	31.07	1.46
Light Sensor	09/03/09	0.7	0.60	12.23	1172.0	226.80	19.35	2.53
Light Sensor	09/15/09	0.9	0.60	11.40	1774.0	604.40	34.07	1.27
Light Sensor	09/30/09	0.9	0.70	8.70	1789.0	668.00	37.34	1.16
Light Sensor	10/14/09	1.0	0.70	14.30	1773.0	733.60	41.38	0.88
Light Sensor	11/03/09	0.7	0.70	14.98	1591.0	506.30	31.82	1.64
Light Sensor	11/12/09	0.9	0.90	10.68	1407.0	509.00	36.18	1.13
Light Sensor	12/03/09	0.6	0.60	18.50	1476.0	791.10	53.60	1.04
Light Sensor	12/18/09	0.8	0.80	11.38	1480.0	564.90	38.17	1.20
Light Sensor	01/11/10	0.4	0.40	4.58	872.7	741.40	84.95	0.41
Light Sensor	01/26/10	0.4	0.40	7.23	1844.0	1600.00	86.77	0.35
Light Sensor	02/17/10	0.4	0.40	10.18	1919.0	1545.00	80.51	0.54
Light Sensor	03/11/10	0.6	0.60	7.78	2167.0	1594.00	73.56	0.51
Light Sensor	03/18/10	0.5	0.45	6.73	2059.0	1029.00	49.98	1.54
Light Sensor	03/31/10	0.4	0.40	4.85	2440.0	1981.00	81.19	0.52
Light Sensor	04/21/10	0.6	0.60	10.00	2227.0	1320.00	59.27	0.87
Light Sensor	05/04/10	0.6	0.60	41.88	2601.0	1723.00	66.24	0.69
Little Bay Control Sit	06/11/09	0.4	0.35	3.08	880.3	485.30	55.13	1.70
Little Bay Control Sit	06/25/09	0.3	0.25	0.40	NA	NA	NA	NA
Little Bay Control Sit	07/09/09	0.4	0.35	1.30	NA	NA	NA	NA
Little Bay Control Sit	07/23/09	0.4	0.40	2.48	NA	NA	NA	NA
Little Bay Control Sit	08/06/09	0.3	0.30		NA	NA	NA	NA
Little Bay Control Sit	08/20/09	0.5	0.50	3.30	1962.0	1111.00	56.63	1.14
Little Bay Control Sit	09/03/09	0.5	0.50	3.63	NA	NA	NA	NA
Little Bay Control Sit	09/15/09	0.3	0.30	3.05	NA	NA	NA	NA
Little Bay Control Sit	09/30/09	0.6	0.60	7.13	1702.0	653.00	38.37	1.60
Little Bay Control Sit	10/14/09	0.4	0.40	2.25	1555.0	1140.00	73.31	0.78
Little Bay Control Sit	11/03/09	0.4	0.40	1.80	1532.0	996.50	65.05	1.08
Little Bay Control Sit	11/12/09	0.7	0.70	2.00	1046.0	540.60	51.68	0.94
Little Bay Control Sit	12/03/09	0.3	0.30	0.83	NA	NA	NA	NA
Little Bay Control Sit	12/18/09	0.6	0.55	11.35	1864.0	1445.00	77.52	0.46
Little Bay Control Sit	01/11/10	0.1	0.10	2.25	NA	NA	NA	NA
Little Bay Control Sit	01/26/10	0.2	0.20	9.80	NA	NA	NA	NA
Little Bay Control Sit	02/17/10	0.2	0.20	1.60	NA	NA	NA	NA
Little Bay Control Sit	03/11/10	0.4	0.35	3.10	2647.0	2321.00	87.68	0.38
Little Bay Control Sit	03/18/10	0.3	0.25	3.43	2240.0	2063.00	92.10	0.33
Little Bay Control Sit	03/31/10	0.3	0.25	4.73	2405.0	2273.00	94.51	0.23
Little Bay Control Sit	04/21/10	0.4	0.35	4.88	2455.0	2336.00	95.15	0.14
Little Bay Control Sit	05/04/10	0.4	0.40	15.75	2845.0	2505.00	88.05	0.32

DATE	SITE	REP	DRY GLASS FIBERFILTER WT.	mls. FILTERED	DRY FILTER W/FILTRATE	TSS mg/L	NOTES
4.13.09	LB 01	1	0.1138	500	0.1226	17.60	boat ramp/docks
4.13.09	LB 01	2	0.1084	400	0.1136	13.00	
4.13.09	LB 02	1	0.1193	400	0.1294	25.25	
4.13.09	LB 02	2	0.1191	350	0.1276	24.29	
4.13.09	LB 03	1	0.1129	600	0.1205	12.67	
4.13.09	LB 03	2	0.1134	650	0.1225	14.00	
4.13.09	LB 04	1	0.115	500	0.122	14.00	
4.13.09	LB 04	2	0.1187	700	0.1255	9.71	
4.13.09	LB 05	1	0.1137	500	0.122	16.60	
4.13.09	LB 05	2	0.1107	600	0.1203	16.00	
4.13.09	LB 06	1	0.1156	500	0.1278	24.40	
4.13.09	LB 06	2	0.1154	500	0.1218	12.80	
4.13.09	LB 07	1	0.1138	700	0.1211	10.43	
4.13.09	LB 07	2	0.1082	700	0.1162	11.43	
4.13.09	LB 08	1	0.1172	800	0.125	9.75	
4.13.09	LB 08	2	0.1203	800	0.1279	9.50	
4.13.09	LB 09	1	0.1133	1000	0.1201	6.80	
4.13.09	LB 09	2	0.1134	1000	0.1196	6.20	
4.13.09	LB 11	1	0.1196	1000	0.1276	8.00	
4.13.09	LB 11	2	0.1169	1000	0.1249	8.00	
4.13.09	control	1	0.1094	850	0.1265	20.12	
4.13.09	control	2	nd	nd	nd	nd	
4.13.09	Datalogger	1	0.1152	500	0.1352	40.00	
4.13.09	Datalogger	2	0.1193	500	0.1396	40.60	
5.28.09	LB 01	1	0.1196	1000	0.131	11.40	
5.28.09	LB 01	2	0.118	1000	0.1258	7.80	
5.28.09	LB 02	1	0.1171	950	0.1398	23.89	
5.28.09	LB 02	2	0.1127	600	0.1266	23.17	
5.28.09	LB 03	1	0.1185	1000	0.1295	11.00	
5.28.09	LB 03	2	0.1163	1000	0.1271	10.80	
5.28.09	LB 04	1	0.1131	600	0.1191	10.00	
5.28.09	LB 04	2	0.1133	600	0.1206	12.17	
5.28.09	LB 05	1	0.1149	900	0.1304	17.22	
5.28.09	LB 05	2	0.12	900	0.133	14.44	
5.28.09	LB 06	1	0.1168	1000	0.1294	12.60	
5.28.09	LB 06	2	0.1096	1000	0.1226	13.00	
5.28.09	LB 07	1	0.1205	1000	0.1296	9.10	
5.28.09	LB 07	2	0.1131	1000	0.1195	6.40	
5.28.09	LB 08	1	0.1171	1000	0.1243	7.20	
5.28.09	LB 08	2	0.1133	1000	0.1213	8.00	
5.28.09	LB 09	1	0.1149	500	0.1209	12.00	
5.28.09	LB 09	2	0.1135	500	0.1215	16.00	
5.28.09	LB 11	1	0.107	600	0.1165	15.83	
5.28.09	LB 11	2	0.118	500	0.1266	17.20	
5.28.09	control	1	0.1174	700	0.1258	12.00	
5.28.09	control	2	0.1145	700	0.1222	11.00	
5.28.09	Datalogger	1	0.1213	700	0.131	13.86	lots of detrital materia
5.28.09	Datalogger	2	0.12	700	0.1265	9.29	
6.25.09	LB 01	1	0.1285	500	0.1391	21.20	
6.25.09	LB 01	2	0.1275	500	0.138	21.00	
6.25.09	LB 02	1	0.1156	700	0.132	23.43	
6.25.09	LB 02	2	0.1074	700	0.1225	21.57	
6.25.09	LB 03	1	0.1188	1000	0.1364	17.60	

DATE	SITE	REP	DRY GLASS FIBERFILTER WT.	mls. FILTERED	DRY FILTER W/FILTRATE	TSS mg/L	NOTES
6.25.09	LB 03	2	0.116	1000	0.134	18.00	
6.25.09	LB 04	1	0.1107	1000	0.1303	19.60	
6.25.09	LB 04	2	0.1164	1000	0.1377	21.30	
6.25.09	LB 05	1	0.1167	650	0.1273	16.31	small jelly fish
6.25.09	LB 05	2	0.1192	650	0.1311	18.31	
6.25.09	LB 06	1	0.1131	700	0.1293	23.14	
6.25.09	LB 06	2	0.1102	600	0.1237	22.50	
6.25.09	LB 07	1	0.1134	1000	0.1232	9.80	
6.25.09	LB 07	2	0.1192	1000	0.1282	9.00	
6.25.09	LB 08	1	0.1147	1000	0.1237	9.00	
6.25.09	LB 08	2	0.1191	1000	0.1267	7.60	
6.25.09	LB 09	1	0.1192	1000	0.1264	7.20	
6.25.09	LB 09	2	0.1193	800	0.1245	6.50	
6.25.09	LB 11	1	0.119	1000	0.1236	4.60	
6.25.09	LB 11	2	0.1152	1000	0.1204	5.20	
6.25.09	control	1	0.112	1000	0.1197	7.70	
6.25.09	control	2	0.1079	1000	0.1143	6.40	
6.25.09	Datalogger	1	0.1141	700	0.1289	21.14	
6.25.09	Datalogger	2	0.1157	600	0.1294	22.83	
7.23.09	LB 01	1	0.121	400	0.13	22.50	
7.23.09	LB 01	2	0.116	200	0.12	20.00	
7.23.09	LB 02	1	0.124	200	0.127	15.00	
7.23.09	LB 02	2	0.119	200	0.123	20.00	
7.23.09	LB 03	1	0.12	400	0.124	10.00	
7.23.09	LB 03	2	0.108	400	0.112	10.00	
7.23.09	LB 04	1	0.109	700	0.113	5.71	
7.23.09	LB 04	2	0.122	700	0.131	12.86	
7.23.09	LB 05	1	0.108	400	0.111	7.50	
7.23.09	LB 05	2	0.113	400	0.116	7.50	
7.23.09	LB 06	1	0.12	400	0.124	10.00	
7.23.09	LB 06	2	0.109	400	0.114	12.50	
7.23.09	LB 07	1	0.124	400	0.128	10.00	
7.23.09	LB 07	2	0.119	400	0.122	7.50	
7.23.09	LB 08	1	0.107	400	0.109	5.00	
7.23.09	LB 08	2	0.11	400	0.112	5.00	
7.23.09	LB 09	1	0.113	400	0.117	10.00	
7.23.09	LB 09	2	0.116	250	0.117	4.00	
7.23.09	LB 11	1	0.114	600	0.115	1.67	
7.23.09	LB 11	2	0.122	800	0.122	0.00	
7.23.09	Control	1	0.122	500	0.125	6.00	
7.23.09	Control	2	0.119	500	0.139	40.00	
7.23.09	Datalogger	1	0.118	400	0.125	17.50	
7.23.09	Datalogger	2	0.111	300	0.113	6.67	
8.20.09	LB 01	1	0.1138	375	0.1256	31.47	boat ramp and docks v
8.20.09	LB 01	2	0.1245	400	0.1331	21.50	
8.20.09	LB 02	1	0.1231	400	0.1466	58.75	
8.20.09	LB 02	2	0.1071	500	0.1347	55.20	
8.20.09	LB 03	1	0.1115	900	0.1358	27.00	
8.20.09	LB 03	2	0.1208	900	0.1468	28.89	
8.20.09	LB 04	1	0.1177	700	0.146	40.43	
8.20.09	LB 04	2	0.1098	700	0.1337	34.14	
8.20.09	LB 05	1	0.11	750	0.1337	31.60	
8.20.09	LB 05	2	0.1245	700	0.1486	34.43	



DATE	SITE	REP	DRY GLASS FIBERFILTER WT.	mls. FILTERED	DRY FILTER W/FILTRATE	TSS mg/L	NOTES
8.20.09	LB 06	1	0.119	700	0.1458	38.29	
8.20.09	LB 06	2	0.1086	700	0.1353	38.14	
8.20.09	LB 07	1	0.1124	700	0.1331	29.57	
8.20.09	LB 07	2	0.1239	800	0.1459	27.50	
8.20.09	LB 08	1	0.1227	800	0.1469	30.25	
8.20.09	LB 08	2	0.1125	700	0.1341	30.86	
8.20.09	LB 09	1	0.1115	1000	0.1229	11.40	small pieces of grass a
8.20.09	LB 09	2	0.1217	1000	0.1292	7.50	small pieces of grass a
8.20.09	LB 11	1	0.1179	1000	0.1316	13.70	
8.20.09	LB 11	2	0.1072	1000	0.1207	13.50	
8.20.09	control	1	0.1238	1000	0.1552	31.40	
8.20.09	control	2	0.1129	1000	0.144	31.10	
8.20.09	Datalogger	1	0.1221	800	0.15	34.88	
8.20.09	Datalogger	2	0.1103	700	0.1353	35.71	
9.10.09	LB 01	1	0.1168	800	0.1462	36.75	rain event
9.10.09	LB 01	2	0.1219	800	0.1476	32.13	rain event
9.10.09	LB 02	1	0.1187	700	0.1457	38.57	rain event
9.10.09	LB 02	2	0.1061	700	0.1329	38.29	rain event
9.10.09	LB 03	1	0.1095	700	0.1372	39.57	rain event
9.10.09	LB 03	2	0.124	700	0.1509	38.43	rain event
9.10.09	LB 04	1	0.1196	700	0.1309	16.14	rain event
9.10.09	LB 04	2	0.1111	700	0.1215	14.86	rain event
9.10.09	LB 05	1	0.111	900	0.1378	29.78	rain event
9.10.09	LB 05	2	0.1189	900	0.1425	26.22	rain event
9.10.09	LB 06	1	0.1158	1000	0.1408	25.00	rain event
9.10.09	LB 06	2	0.1098	1000	0.13335	23.55	rain event
9.10.09	LB 07	1	0.1094	1000	0.1298	20.40	rain event
9.10.09	LB 07	2	0.1237	1000	0.1446	20.90	rain event
9.10.09	LB 08	1	0.1213	1000	0.1401	18.80	rain event
9.10.09	LB 08	2	0.1087	1000	0.128	19.30	rain event
9.10.09	LB 09	1	0.1266	1000	0.1336	7.00	rain event
9.10.09	LB 09	2	0.1162	1000	0.1231	6.90	rain event
9.10.09	LB 11	1	0.1073	1000	0.1156	8.30	rain event
9.10.09	LB 11	2	0.1114	1000	0.1203	8.90	rain event
9.10.09	control	1	0.1213	850	0.1461	29.18	rain event
9.10.09	control	2	0.1128	600	0.1266	23.00	rain event
9.10.09	Datalogger	1	0.1172	600	0.1365	32.17	rain event
9.10.09	Datalogger	2	0.1073	600	0.1254	30.17	rain event
9.15.09	LB 01	1	0.1155	500	0.1257	20.40	rain event
9.15.09	LB 01	2	0.1205	500	0.1298	18.60	rain event
9.15.09	LB 02	1	0.1226	500	0.1343	23.40	rain event
9.15.09	LB 02	2	0.1109	500	0.1187	15.60	rain event
9.15.09	LB 03	1	0.1172	800	0.1305	16.63	rain event
9.15.09	LB 03	2	0.1238	600	0.1346	18.00	rain event
9.15.09	LB 04	1	0.1244	800	0.1327	10.38	rain event
9.15.09	LB 04	2	0.1203	700	0.1286	11.86	rain event
9.15.09	LB 05	1	0.1111	800	0.1179	8.50	rain event
9.15.09	LB 05	2	0.113	800	0.1195	8.12	rain event
9.15.09	LB 06	1	0.1074	750	0.1178	13.87	rain event
9.15.09	LB 06	2	0.1103	750	0.1182	10.53	rain event
9.15.09	LB 07	1	0.1153	760	0.1234	10.66	rain event
9.15.09	LB 07	2	0.1202	750	0.1281	10.53	rain event
9.15.09	LB 08	1	0.1085	900	0.1195	12.22	rain event

DATE	SITE	REP	DRY GLASS FIBERFILTER WT.	mls. FILTERED	DRY FILTER W/FILTRATE	TSS mg/L	NOTES
9.15.09	LB 08	2	0.1196	800	0.1292	12.00	rain event
9.15.09	LB 09	1	0.1234	1000	0.1262	2.80	rain event
9.15.09	LB 09	2	0.1169	1000	0.1232	6.30	rain event
9.15.09	LB 11	1	0.1096	975	0.113	3.49	rain event
9.15.09	LB 11	2	0.1145	1000	0.1186	4.10	rain event
9.15.09	control	1	0.1257	990	0.1365	10.91	rain event
9.15.09	control	2	0.1096	980	0.1197	10.31	rain event
9.15.09	Datalogger	1	0.1058	500	0.1205	29.40	rain event
9.15.09	Datalogger	2	0.118	500	0.1277	19.40	rain event
10.14.09	LB 01	1	0.1308	350	0.1399	26.00	rained approx. 1.5 inch
10.14.09	LB 01	2	0.128	300	0.1357	25.67	
10.14.09	LB 02	1	0.1296	300	0.1365	23.00	
10.14.09	LB 02	2	0.1292	300	0.137	26.00	
10.14.09	LB 03	1	0.1291	300	0.1363	24.00	
10.14.09	LB 03	2	0.1294	300	0.137	25.33	
10.14.09	LB 04	1	0.1301	425	0.1359	13.65	
10.14.09	LB 04	2	0.1293	400	0.1382	22.25	
10.14.09	LB 05	1	0.1287	500	0.137	16.60	
10.14.09	LB 05	2	0.1295	500	0.1505	42.00	sm black specks on filter
10.14.09	LB 06	1	0.1297	320	0.1382	26.56	
10.14.09	LB 06	2	0.1291	320	0.1387	30.00	
10.14.09	LB 07	1	0.1302	500	0.1381	15.80	
10.14.09	LB 07	2	0.1287	500	0.1354	13.40	
10.14.09	LB 08	1	0.1303	400	0.1377	18.50	
10.14.09	LB 08	2	0.1295	400	0.1356	15.25	
10.14.09	LB 09	1	0.1296	400	0.1522	56.50	
10.14.09	LB 09	2	0.1292	400	0.1461	42.25	
10.14.09	LB 11	1	0.13	400	0.1393	23.25	
10.14.09	LB 11	2	0.131	400	0.1384	18.50	
10.14.09	control	1	0.131	500	0.1387	15.40	
10.14.09	control	2	0.1286	500	0.1365	15.80	
10.14.09	Datalogger	1	0.1305	300	0.1401	32.00	
10.14.09	Datalogger	2	0.1316	300	0.1389	24.33	
11.12.09	LB 01	1	0.1293	540	0.1382	16.48	
11.12.09	LB 01	2	0.1292	540	0.1377	15.74	
11.12.09	LB 02	1	0.1288	700	0.136	10.29	
11.12.09	LB 02	2	0.13	700	0.1342	6.00	
11.12.09	LB 03	1	0.1276	700	0.134	9.14	
11.12.09	LB 03	2	0.1292	700	0.1342	7.14	
11.12.09	LB 04	1	0.13	600	0.1367	11.17	
11.12.09	LB 04	2	0.1276	600	0.1341	10.83	
11.12.09	LB 05	1	0.1292	1000	0.1363	7.10	
11.12.09	LB 05	2	0.1311	1000	0.1374	6.30	
11.12.09	LB 06	1	0.1293	1000	0.1339	4.60	
11.12.09	LB 06	2	0.129	1000	0.1351	6.10	
11.12.09	LB 07	1	0.1288	600	0.1349	10.17	
11.12.09	LB 07	2	0.1289	600	0.1346	9.50	
11.12.09	LB 08	1	0.1295	1000	0.1366	7.10	
11.12.09	LB 08	2	0.1303	1000	0.1369	6.60	
11.12.09	LB 09	1	0.1303	500	0.1343	8.00	
11.12.09	LB 09	2	0.1297	500	0.1337	8.00	
11.12.09	LB 11	1	0.1302	600	0.1379	12.83	
11.12.09	LB 11	2	0.1295	600	0.1343	8.00	

DATE	SITE	REP	DRY GLASS FIBERFILTER WT.	mls. FILTERED	DRY FILTER W/FILTRATE	TSS mg/L	NOTES
11.12.09	control	1	0.13	1000	0.1354	5.40	
11.12.09	control	2	0.1292	1000	0.1363	7.10	
11.12.09	Datalogger	1	0.1288	825	0.1402	13.82	
11.12.09	Datalogger	2	0.1292	800	0.1382	11.25	
12.3.09	LB 01	1	0.1261	500	0.1352	18.20	
12.3.09	LB 01	2	0.1262	500	0.1328	13.20	
12.3.09	LB 02	1	0.1246	500	0.1342	19.20	
12.3.09	LB 02	2	0.1275	500	0.1323	9.60	
12.3.09	LB 03	1	0.1257	500	0.1319	12.40	
12.3.09	LB 03	2	0.1261	500	0.1319	11.60	
12.3.09	LB 04	1	0.1269	375	0.1318	13.07	
12.3.09	LB 04	2	0.1261	375	0.1313	13.87	
12.3.09	LB 05	1	0.1259	500	0.1334	15.00	
12.3.09	LB 05	2	0.126	500	0.1335	15.00	
12.3.09	LB 06	1	0.1222	500	0.1314	18.40	
12.3.09	LB 06	2	0.1256	420	0.1326	16.67	
12.3.09	LB 07	1	0.1257	550	0.1313	10.18	
12.3.09	LB 07	2	0.1267	500	0.131	8.60	
12.3.09	LB 08	1	0.126	350	0.1355	27.14	
12.3.09	LB 08	2	0.1265	320	0.1338	22.81	
12.3.09	LB 09	1	0.1267	325	0.1307	12.31	
12.3.09	LB 09	2	0.1271	325	0.1315	13.54	
12.3.09	LB 11	1	0.123	375	0.1282	13.87	
12.3.09	LB 11	2	0.1264	400	0.1323	14.75	
12.3.09	control	1	0.1296	850	0.14	12.24	
12.3.09	control	2	0.13	850	0.1375	8.82	
12.3.09	Datalogger	1	0.13	425	0.1379	18.59	
12.3.09	Datalogger	2	0.1303	350	0.1368	18.57	
01/11/10	LB 01	1	0.126	1000	0.1303	4.30	
01/11/10	LB 01	2	0.1273	900	0.1311	4.22	
01/11/10	LB 02	1	0.1302	1000	0.1337	3.50	
01/11/10	LB 02	2	0.1278	1000	0.1315	3.70	
01/11/10	LB 03	1	0.1253	1000	0.1289	3.60	
01/11/10	LB 03	2	0.1285	1000	0.1316	3.10	
01/11/10	LB 04	1	0.1296	550	0.1354	10.55	
01/11/10	LB 04	2	0.1272	600	0.1332	10.00	
01/11/10	LB 05	1	0.1304	675	0.1385	12.00	
01/11/10	LB 05	2	0.1259	850	0.136	11.88	
01/11/10	LB 06	1	0.1259	1000	0.1295	3.60	
01/11/10	LB 06	2	0.1291	1000	0.1325	3.40	
01/11/10	LB 07	1	0.1276	1000	0.1331	5.50	
01/11/10	LB 07	2	0.125	800	0.1305	6.88	
01/11/10	LB 08	1	0.1262	900	0.1321	6.56	
01/11/10	LB 08	2	0.1282	825	0.1351	8.36	
01/11/10	LB 09	1	0.1273	500	0.1349	15.20	
01/11/10	LB 09	2	0.1249	500	0.1327	15.60	
01/11/10	LB 11	1	0.125	500	0.1364	22.80	
01/11/10	LB 11	2	0.1263	500	0.131	9.40	
01/11/10	control	1	0.127	1000	0.1316	4.60	
01/11/10	control	2	0.1263	950	0.1307	4.63	
01/11/10	Datalogger	1	0.1285	1000	0.1356	7.10	
01/11/10	Datalogger	2	0.1231	1000	0.1291	6.00	
02/17/10	LB 01	1	0.1286	950	0.1331	4.74	

DATE	SITE	REP	DRY GLASS FIBERFILTER WT.	mls. FILTERED	DRY FILTER W/FILTRATE	TSS mg/L	NOTES
02/17/10	LB 01	2	0.1308	950	0.1352	4.63	
02/17/10	LB 02	1	0.1286	1000	0.1344	5.80	
02/17/10	LB 02	2	0.1293	1000	0.1355	6.20	
02/17/10	LB 03	1	0.1277	500	0.1314	7.40	
02/17/10	LB 03	2	0.1302	1000	0.1355	5.30	
02/17/10	LB 04	1	0.1293	400	0.1338	11.25	
02/17/10	LB 04	2	0.1293	500	0.1351	11.60	
02/17/10	LB 05	1	0.1278	500	0.1355	15.40	
02/17/10	LB 05	2	0.1285	500	0.1349	12.80	
02/17/10	LB 06	1	0.1282	500	0.134	11.60	
02/17/10	LB 06	2	0.1286	500	0.1341	11.00	
02/17/10	LB 07	1	0.13	500	0.1346	9.20	
02/17/10	LB 07	2	0.1271	500	0.1393	24.40	
02/17/10	LB 08	1	0.1284	500	0.1368	16.80	
02/17/10	LB 08	2	0.1292	850	0.1418	14.82	
02/17/10	LB 09	1	0.1296	500	0.1366	14.00	
02/17/10	LB 09	2	0.1305	500	0.1368	12.60	
02/17/10	LB 11	1	0.1287	500	0.1364	15.40	
02/17/10	LB 11	2	0.1259	750	0.14	18.80	
02/17/10	control	1	0.129	1000	0.1382	9.20	
02/17/10	control	2	0.1303	1000	0.1425	12.20	
02/17/10	Datalogger	1	0.1264	950	0.1358	9.89	
02/17/10	Datalogger	2	0.1276	1000	0.1372	9.60	
03/18/10	LB 01	1	0.1287	1000	0.1358	7.10	
03/18/10	LB 01	2	0.1305	1000	0.1378	7.30	
03/18/10	LB 02	1	0.1286	800	0.1351	8.13	
03/18/10	LB 02	2	0.1299	800	0.1366	8.38	
03/18/10	LB 03	1	0.1307	1000	0.1353	4.60	
03/18/10	LB 03	2	0.1295	1000	0.1337	4.20	
03/18/10	LB 04	1	0.1318	500	0.1343	5.00	
03/18/10	LB 04	2	0.1277	500	0.1321	8.80	
03/18/10	LB 05	1	0.1294	800	0.1443	18.63	
03/18/10	LB 05	2	0.129	800	0.1432	17.75	
03/18/10	LB 06	1	0.129	800	0.1354	8.00	
03/18/10	LB 06	2	0.1293	800	0.1372	9.87	
03/18/10	LB 07	1	0.128	700	0.1328	6.86	
03/18/10	LB 07	2	0.1299	700	0.1343	6.29	
03/18/10	LB 08	1	0.1288	430	0.1352	14.88	
03/18/10	LB 08	2	0.1298	430	0.1362	14.88	
03/18/10	LB 09	1	0.1282	600	0.1337	9.17	
03/18/10	LB 09	2	0.1286	600	0.1343	9.50	
03/18/10	LB 11	1	0.1305	500	0.1346	8.20	
03/18/10	LB 11	2	0.1294	500	0.1328	6.80	
03/18/10	control	1	0.1292	1000	0.1336	4.40	
03/18/10	control	2	0.129	1000	0.1334	4.40	
03/18/10	Datalogger	1	0.1302	570	0.1378	13.33	
03/18/10	Datalogger	2	0.129	570	0.1366	13.33	
04/21/10	LB 01	1	0.1256	450	0.1323	14.89	
04/21/10	LB 01	2	0.1241	450	0.1306	14.44	
04/21/10	LB 02	1	0.1266	500	0.1343	15.40	
04/21/10	LB 02	2	0.1239	500	0.1323	16.80	
04/21/10	LB 03	1	0.1252	500	0.1336	16.80	
04/21/10	LB 03	2	0.1266	500	0.1423	31.40	sample very thick diff

DATE	SITE	REP	DRY GLASS FIBERFILTER WT.	mls. FILTERED	DRY FILTER W/FILTRATE	TSS mg/L	NOTES
04/21/10	LB 04	1	0.1252	500	0.1314	12.40	
04/21/10	LB 04	2	0.1235	500	0.1295	12.00	
04/21/10	LB 05	1	0.1256	800	0.1318	7.75	
04/21/10	LB 05	2	0.1248	600	0.1287	6.50	
04/21/10	LB 06	1	0.1255	700	0.1321	9.43	
04/21/10	LB 06	2	0.1249	700	0.1317	9.71	
04/21/10	LB 07	1	0.1258	500	0.1312	10.80	
04/21/10	LB 07	2	0.126	500	0.1315	11.00	
04/21/10	LB 08	1	0.1258	500	0.1316	11.60	
04/21/10	LB 08	2	0.1255	500	0.1314	11.80	
04/21/10	LB 09	1	0.1247	500	0.1293	9.20	
04/21/10	LB 09	2	0.125	500	0.1289	7.80	
04/21/10	LB 11	1	0.1249	500	0.1289	8.00	
04/21/10	LB 11	2	0.1228	500	0.1266	7.60	
04/21/10	control	1	0.1244	1000	0.129	4.60	
04/21/10	control	2	0.1261	1000	0.1309	4.80	
04/21/10	Datalogger	1	0.1245	600	0.1304	9.83	
04/21/10	Datalogger	2	0.1248	600	0.1311	10.50	
05/20/10	LB 01	1	0.1246	550	0.138	24.36	
05/20/10	LB 01	2	0.1259	500	0.1379	24.00	
05/20/10	LB 02	1	0.1255	500	0.1384	25.80	
05/20/10	LB 02	2	0.1238	400	0.1356	29.50	reweighed
05/20/10	LB 03	1	0.1295	400	0.1368	18.25	reweighed
05/20/10	LB 03	2	0.129	400	0.1354	16.00	
05/20/10	LB 04	1	0.1255	400	0.1349	23.50	reweighed
05/20/10	LB 04	2	0.1261	500	0.1375	22.80	
05/20/10	LB 05	1	0.124	500	0.1329	17.80	reweighed
05/20/10	LB 05	2	0.1256	500	0.1337	16.20	
05/20/10	LB 06	1	0.127	550	0.1357	15.82	
05/20/10	LB 06	2	0.1266	450	0.1336	15.56	
05/20/10	LB 07	1	0.1244	450	0.1349	23.33	
05/20/10	LB 07	2	0.1253	400	0.1335	20.50	
05/20/10	LB 08	1	0.1266	400	0.1338	18.00	
05/20/10	LB 08	2	0.1296	400	0.1366	17.50	
05/20/10	LB 09	1	0.1307	400	0.1352	11.25	
05/20/10	LB 09	2	0.1302	400	0.1342	10.00	
05/20/10	LB 11	1	0.1296	400	0.134	11.00	
05/20/10	LB 11	2	0.1282	400	0.1325	10.75	
05/20/10	control	1	0.1276	500	0.1394	23.60	reweighed
05/20/10	control	2	0.1277	500	0.1415	27.60	
05/20/10	Datalogger	1	0.1283	400	0.1357	18.50	
05/20/10	Datalogger	2	0.1298	400	0.1376	19.50	