2014 to 2015 Water Quality Monitoring Report

Lake Merritt Monitoring
Oakland, California

Prepared for:

City of Oakland
Oakland, California 94610

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Subject: **2014 TO 2015 WATER QUALITY MONITORING REPORT**
Lake Merritt
Oakland, California

Dear Ms. Tuden:

Amec Foster Wheeler Environment & Infrastructure, Inc.(Amec Foster Wheeler) has prepared the subject Lake Merritt Water Quality Monitoring Report, 2014 through 2015, Oakland, California, as part of the Lake Merritt Water Quality Monitoring Program.

We appreciate the opportunity to provide our environmental consulting services to the City of Oakland. Please contact either of the undersigned at 510-663-4100 if you have any questions or require additional information.

Sincerely yours,
Amec Foster Wheeler Environment & Infrastructure, Inc.

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Enclosure

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2014 TO 2015 WATER QUALITY MONITORING REPORT

Lake Merritt Monitoring
Oakland, California

1.0 INTRODUCTION

Amec Foster Wheeler Environment & Infrastructure, Inc. ("Amec Foster Wheeler") was subcontracted by the City of Oakland (the "City") to monitor water quality in Lake Merritt (the "Lake") for one year, from July 2014 through June 2015. The purpose of the monitoring was two-fold: 1) assess the effect the channel widening conducted as part of the 12th Street Project improvements, has on dissolved oxygen (DO) levels and other water quality parameters in the Lake; 2) provide more monitoring data on DO levels in the Lake. This report summarizes the results of that monitoring.

2.0 BACKGROUND

The Lake, which is located near downtown Oakland (Figure 1), is a brackish urban lake comprising 145 acres of open water, surrounded by 110 acres in an highly urbanized 4000-acre watershed. The Lake was historically part of an tidal estuary, or saltwater lagoon with freshwater inputs from Glen Echo and Trestle Glen Arms and saltwater connectivity to Oakland estuary. Starting in 1869, human development restricted the tidal flow between the Lake and San Francisco Bay (the "Bay") including installation of two culverts and construction of flood control gates in the channel connecting the to the Bay. The water from the Lake can flow through the Lake Merritt Channel (LMC), a 3,500-linear-foot channel that hydraulically connects the Lake to the Oakland Estuary and the "Bay," or it can flow from the Bay into the Oakland Estuary and back through the LMC into the Lake.

Water flow between the Bay and the Lake is controlled by a tide gate operated by the Alameda County Flood Control and Water Conservation District (the "District"). The amount of gravity flow out of the Lake is dependent on water level elevation in the Lake and the tidal level in Oakland Inner Harbor.

When peak flood flows from heavy rain events coincide with high tide levels, the water level in the Lake rises to undesirable levels. Thereby flooding the lake shore and surrounding areas and backing-up the main storm drains which drain into the Lake. When this occurs, stormwater discharges from upstream inlets, manholes and moves by overland flow toward the Lake.

Based on information from Lake Merritt Flood Control Report (Brown and Caldwell, 1966), the District monitors weather and evaluates rain events and tidal levels to prevent flooding of the urban area around the Lake. During certain rain events, the District lowers the water level elevation in the Lake to + 1 feet (City of Oakland Datum) to increase storage capacity. During

this period, tide gates are closed during certain tides to prevent Bay water from entering the Lake (so that the Lake can maintain storage capacity) and opened so that water can flow out of the Lake once a critical water level is reached in the Lake from stormwater from the watershed. Pumps at the tide gate structure are used at times to assist in removing water from the Lake during large and numerous rain events. Typical tidal variation in the Bay is on the order of 5 to 6 feet, while water level in the Lake is limited to +3 to +2 feet during dry weather.

In 2012, the City completed the 12th Street Project, a Measure DD-funded project that removed box culverts, creating a 100-foot wide channel improving connectivity and flow between the Lake and the Estuary. Another channel-widening project at 10th street is currently under construction with an expected completion in 2017. This widening is expected to double the tidal water volume exchange in the Lake. Other water quality projects in the watershed include underground trash capture devices to remove litter from the storm drains, booms at prominent outfalls and green infrastructure projects around the Lake.

2.1 REGULATORY HISTORY

Since May 1999, the Lake has been on the U.S. Environmental Protection Agency's (EPA) list of impaired water bodies, which was created under Section 303(d) of the 1972 Clean Water Act. The 303(d) List identifies impaired water bodies that do not meet specified beneficial uses, as defined by water quality standards. When a water body is placed on the 303(d) List, an action plan, such as a Total Maximum Daily Load (TMDL) model, must be adopted to improve water quality.

The Water Board has local responsibility to oversee water quality plans for the Bay region, and promulgated water quality standards for the Bay (California Water Quality Objectives [WQOs]). Tidally influenced water bodies in the Bay (defined as those located downstream of the Carquinez Bridge) are considered impaired if they have DO levels below 5 milligrams per liter (mg/L). The Lake was placed on the 303(d) List because it fails to meet the standards for DO and has high levels of trash. The Water Board has allowed the City of Oakland to develop and implement plans to improve water quality in the Lake without the establishment of a formal TMDL.

2.1 PREVIOUS MONITORING

In May – December 2002 and January – June 2003 water quality monitoring in the Lake was conducted by Uribe & Associates (Uribe, 2002 and 2013). Samples were collected by a water quality sonde which recorded diurnal data (Temperature, DO and specific conductance) at one location (near the new boat house) at 1-foot from the bottom and 2-feet from the surface. This data was not used for analysis because the data was not obtainable from Uribe & Associates because they are no longer in business.

Prior monitoring efforts include Lake Merritt Institute (LMI) sampling events from September 2005 to September 2006. The results of that monitoring were summarized in a report submitted to LMI in January 2007 (Geomatrix, 2007). The report evaluated water quality at four locations in the Lake, and measured two points (1-foot below the surface and 1-foot from the bottom) per sampling location. This data set was used in statistical analysis in Section 7.0.

As part of the LMI study, one sampling event was conducted on March 1, 2007, where twenty eight locations were sampled in the Lake. During this sampling event many locations were sampled except Trestle Glen Arm due to migrating birds. Samples were collected from the surface at 1-foot intervals to the bottom. This data was used in this report as background conditions of the Lake prior to channel widening improvements.

Monitoring prior to the 12th Street Project was performed for a two week period in 2011 (November 23 through December 9, 2011) by AMEC (AMEC, 2012). AMEC monitoring followed the Lake Merritt Channel Monitoring Program (LMCMP) protocol (State Water Board, 2002; City of Oakland and Geomatrix, 2008)[1]. During this monitoring effort, three locations where sampled:

- Lake Merritt Channel Entrance (Oakland Harbor)
- Lake Merritt Channel (Mid-Channel)
- Lake Merritt Entrance

Vertical profiles of water quality were obtained from these locations. Depending on the depth of these locations Oakland Harbor, Mid Channel and Lake Merritt Entrance had 8, 3 and 2 measuring points in the vertical profile, respectively. The water quality report and results were completed in May 2012. Data from this monitoring was not used for comparison in this report because the data set is very small and limited to the channel.

2.2 WATER QUALITY PARAMETERS

Water quality parameters that are essential for understanding lake health are DO, percent oxygen saturation (POS), salinity, temperature, and pH; each of these parameters is explained briefly below.

2.2.1 Dissolved Oxygen

DO levels vary naturally in aquatic systems. Atmospheric oxygen is transferred into a water body through both diffusion and photosynthesis. DO levels will peak when the rate of photosynthesis is greatest, which usually occurs in the middle of the day. Conversely, DO levels will be at their lowest during the early morning hours, before photosynthesis begins. The consumption of DO occurs through the respiration of animals and through chemical reactions,

[1] A copy of the LMCMP can be obtained from the City or from the San Francisco Bay Regional Water Quality Control Board ("Water Board").

which are principally associated with the decay of organic matter. DO levels are typically lower at the bottom of a water body than at the surface because of the low light levels and high amount of decaying material near the bottom. Rainfall, input from tributaries and creeks, and tidal influx also impact the DO levels. Runoff from the watershed contains organic and inorganic matter (e.g., sulfates and iron). These compounds need oxygen to degrade, thereby decreasing the amount of DO available to the aquatic system.

Organic enrichment from nutrient pollution can have significant impacts on the level of DO in a water body. Excessive nutrients promote plant and algae growth, which can initially result in oxygen enrichment through increased photosynthesis. Once these plants die, however, their organic matter begins to decay and consume oxygen. As described above, this often results in lowered levels of DO, especially at the bottom of the water column where organic debris accumulates. DO levels below 4 mg/L may be an indication of the input of high organic matter or other waste with high biochemical oxygen demand, which can pollute tidally influenced lakes and induce high bacterial action (Beer, 1997).

The maximum amount of DO a body of water can hold (saturated solution) depends on several factors. DO solubility is affected by water temperature, atmospheric pressure and salinity. Cold water can dissolve more oxygen than warm water. As the temperature goes up, water releases some of its oxygen into the air. Water also holds less DO at higher elevations because there is less pressure. Solubility of DO also decreases as salinity increases.

Windy conditions also have the ability to affect DO by increasing mixing/turbulence. In general, wind has the ability mix the water column such that DO can be transported into deeper waters.

2.2.2 Percent Oxygen Saturation

POS is a measure of the intensity of photosynthetic activity. High photosynthetic activity occurs in the photic zone (region of sunlit upper water extending downward to where light dims to about 1 percent of that of the surface), where a high ratio of oxygen to organic matter can mean a high POS. In a water body with a POS level greater than 100, oxygen is being produced faster than organisms and decaying organic matter can consume it. If a water body has a POS of less than 100, respiration and organic decay is consuming oxygen faster than it is being produced.

2.2.3 Salinity/Stratification

Salinity is a measure of how much salt is contained in a unit of water. California coastal seawater is about 33 parts salt per thousand parts water by weight (defined as practical salinity units [psu]), while fresh water should have a salinity near zero (0) psu. If a tidally influenced lake has a salinity of 11 psu, one can deduce that the water is approximately two-thirds fresh water and one-third seawater. Because the salinity of the ocean is relatively

constant, most of the variability in salinity in a tidally influenced lake is the result of additions of fresh water through streams and tidal flux.

Salinity can also be affected by wind, evaporation, precipitation, and temperature. In some instances the density of water can vary such that the salinity on the bottom is much greater than at the surface. This occurs when fresh water flows into saline water. Since fresh water is less dense than saltwater, the less dense water has a tendency not to mix with the denser water, but rather to lie on top, and a halocline (vertical salinity gradient) can develop. This causes stratification, which can impede mixing of water. This occurs during the rainy season at the Lake because fresh water enters the Lake from the Glen Echo and Trestle Glen creeks and other stormwater outfalls.

2.2.4 Temperature

The water temperature in San Francisco Bay ranges spatially and temporally from 8 degrees Celsius (°C) to 23°C. Waters are warmest in August and September and coldest in December and January. Regions of the Bay with less exposure to the open ocean or restricted access to the Bay tend to be warmer. Temperature is an important parameter because it affects the concentration of DO available in water. In general, the higher the temperature, the lower the DO level is in the water.

2.2.5 pH

pH, which is the measure of the effective hydrogen ion concentration in water, affects chemical reactions and biological systems. The pH of seawater generally is consistent, typically about 8.2 (Riley, 1971). pH can be lower due to respiration from aquatic organisms at night/ and higher due to photosynthesis during the day. When photosynthesis is occurring at a high rate, bicarbonate ions (HCO_3) dissociate to replace lost carbon dioxide. As more carbon dioxide is removed, the concentration of carbonate ion (CO_3^{2-}) increases. As more CO_3^{2-} is formed, hydrolysis occurs, which replaces one of the two dissociated bicarbonate ions, yielding hydroxyl ions (OH^-) and increasing pH. According to the San Francisco Bay Regional Water Quality Control Board Basin Plan, the pH of water should fall within the range of 6.5–8.5.

3.0 LAKE WATER QUALITY MONITORING

For this monitoring report, five sampling locations were selected for monitoring water quality in the Lake, four within the Lake and one in the Oakland Harbor (Figure 2):

- Lake Merritt Channel Entrance, located in the Oakland Harbor at the entrance to the LMC
- LMI-15, located in the southern portion of the Lake
- LMI-19, located in the middle of the Lake
- LMI-29, located in the Glen Echo Arm of the Lake

- LMI-30, located in the Trestle Glen Arm of the Lake

The selected sampling locations are consistent with sampling locations monitored during the 2011 sampling effort.

Monitoring was performed twice a month from July 2014 through June 2015, during one high tide and one low tide event per month. Before each sampling event, an MPS 556 water quality meter, manufactured by YSI, Inc., in Yellow Springs, Ohio, was calibrated according to the manufacturer's directions for DO and salinity. Sampling locations in the Lake were accessed using a small motor boat. At each location, continuous water quality measurements were taken along the water column. The following parameters measured are noted below:

- Water temperature (°C)
- DO (mg/L)
- POS (%)
- pH
- Salinity (psu)

Other observations recorded during monitoring included tide gate position, tidal cycle, water observations (odor, clarity, and color), weather conditions, wind speed and direction, and Secchi disk measurements. The water quality measurements are included in Appendix A, and the water quality observations are included in Appendix B.

4.0 RESULTS AND DISCUSSION

The results of the July 2014 through June 2015 water quality monitoring activities at the Lake are discussed herein. The appendices, tables, and figures outlined below are referenced throughout the following sections:

- Appendix A contains July 2014 – June 2015 and September 2005 – September 2006 water quality data for the measured parameters listed above.
- Appendix B contains water quality observations conducted during monitoring.
- Appendix C (Figures C-1 through C-5) provides plots of DO over depth for each monitoring location. Figures C-6 and C-7 compares DO at one-foot from surface and one-foot from bottom for the July 2014 – June 2015 and September 2005 – September 2006 data and figures C-8 and C-9 compares DO at Glen Echo and Trestle Glen Arms with gates closed and open, respectively.
- Appendix D (Figures D-1 through D-5) provides plots of salinity over depth for each monitoring location.
- Appendix E provides weather information during the duration of sampling.
- Appendix F provides the weekly circular tide chart information obtained from the Alameda County Flood Control District (ACFCD) for the days water quality measurements were made.

- Appendix G figure shows high resolution sampling at many lake locations with depth on March 7, 2007.
- Appendix H contains statistical analyses and whisker box charts for null hypothesis testing.
- Table 1 summarizes the DO, salinity, POS, pH, and temperature results.
- Table 2 summarizes DO and salinity results during and after rainfall events.
- Figure 3 plots the DO over depth for all monitoring locations.
- Figure 4 plots the DO over time for all monitoring locations.

4.1 DISSOLVED OXYGEN

During the monitoring period, the annual Lake-wide average DO was 6.48 mg/L (Table 1). A statistical average was used to assess the overall condition of DO concentrations in the water column (from the surface to the bottom at two-foot intervals) because one measured point in the water column would not be representative. The annual average DO for the Lake Merritt Channel Entrance was 7.17 mg/L. Concentrations of DO were below the WQO of 5.0 mg/L in approximately 34% of the results collected in the Lake during the monitoring period. Approximately 21% and 20% of the results collected from LMI-15 (near the center of the Lake) and LMI-19, respectively, were below the WQO. Approximately 45% and 53% of the results collected from the Glen Echo Arm (LMI-29) and Trestle Glen Arm (LMI-30) were below the WQO during the monitoring period. Concentrations of DO were above the WQO for all results collected from the Channel Entrance during the monitoring period (Figure 3). These results suggest that DO is higher in areas of the Lake that are shallower and that receive more tidal flow and wind circulation. DO is lower in the areas of the Lake that are deeper and that receive more urban runoff through the storm drain outlets and the upstream creeks and where there is less circulation (LMI-29 and LMI-30).

All sampling locations except the Channel Entrance experienced DO below 5 mg/L; in general, DO begins to decrease at approximately 5 feet or less below the surface at LMI 29 and LMI-30 (Figure 3). In observing DO along depths for the Channel Entrance (Appendix Figure C-1) and the Lake (Appendix Figures C-2 through C-5), DO is generally higher at the Lake surface and lower toward the bottom of the Lake, which is typical of eutrophic conditions. This trend shown in 2014 – 2015 data set is consistent with trend observed during the September 2005 – September 2006 (Figures C-6 and C-7). Further comparison of data, from these two sampling points in the center and the Arms of the Lake when the tide gates were closed and open, exhibits the same trend (Figures C-8 and C-9) and higher DO at the Lake surface.

DO has little variability over depth in the Channel Entrance because it is not restricted from tidal cycles and has adequate circulation. DO was also observed to be affected by the seasons: lower DO was measured during the fall and rainy seasons from watershed inputs at LMI-29 and LMI-30 (Figure 4). LMI-15 and LMI-19 also experience during fall and rainy season

low DO, but not as consistently as LMI-29 and LMI-30. DO in the Lake is also affected by rainfall; this is discussed below in Section 4.6.

4.2 PERCENT OXYGEN SATURATION

Table 1 includes a summary of the POS results. During the monitoring period, the annual Lake-wide average POS was 81.0%. The annual average POS ranged from 70.1% to 93.6% in the Lake, with the lowest averages in the Glen Echo Arm (LMI-29) and the Trestle Glen Arm (LMI-30) of 70.1% and 72.6%, respectively. The annual average Channel Entrance POS was 89.7%.

The range of POS presented below shows the degree of photosynthetic and respiration activity in the Lake. The Lake has higher photosynthetic and respiration activity than the Channel Entrance because the Lake is eutrophic and allows the accumulation of organic and inorganic matter that affect water quality from less tidal exchange. Similar to DO concentrations, lower POS measurements correspond to deeper areas at all locations. The Channel Entrance DO concentrations are consistently above 5 mg/L, mainly due to water circulation, enabling a stable DO and POS regime. The large range in POS in the Lake is indicative of eutrophic conditions where lower DO levels are found at depth (where DO is consumed faster by organisms than it is produced by photosynthetic activity) and at times, very low DO levels of less than 1 mg/L can occur.

Location	Percent Oxygen Saturation Range
Channel Entrance	67.6–142.4
LMI-15	0.5–200
LMI-19	0.6–209
LMI-29	0.3–165.1
LMI-30	0.4–190.1

4.3 SALINITY AND STRATIFICATION

The annual average salinity Lake-wide and at the Channel Entrance was 28.58 psu and 29.79 psu, respectively. The Lake-wide salinity ranged from 8.1 psu to 38.5 psu, while the Channel Entrance salinity ranged from 22.4 to 38.2 psu (Table 1). As would be expected, the data indicate that salinity increases during the dry season with fewer rain events and decreases during the wet season due to dilution of saltwater. The Lake experiences the greatest salinity changes during the wet season, as shown on Appendix D figures. During rain events, fresh water from the watershed enters the Lake, then mixes and stratifies. In general, large rain events or a series of rain events results in stratification in the Lake. Smaller rain events cause less stratification.

During the winter and spring rainy season, the Lake often becomes stratified with a noticeable halocline. This stratification is controlled by the difference in density between fresh and salt water. As the water column becomes stratified, less mixing occurs between the surface and

bottom waters. Stratification during the rainy season may contribute to oxygen depletion in the bottom water of the Lake because it can prevent the DO that is created in the photic zone, where the water is less dense, from mixing with the denser bottom water, which has low DO. Salinity differences between the surface and bottom water of 2 to 3 ppu can affect mixing of the water column (Horne, 2006).[2]3 This stratification is observed from comparing the salinity plots for the Channel Entrance (Appendix Figure D-1) and the Lake (Appendix Figures D-2 through D-5). The Channel Entrance salinity over depth is generally in a straight line, suggesting little or no stratification. The Lake and Channel Entrance salinity over depth increases toward the bottom during rain events, suggesting occurrences of stratification, more so in the Lake.

4.4 TEMPERATURE

During the monitoring period, the Lake-wide average water temperature was 18.26°C and the Channel Entrance average temperature is 17.94°C (Table 1). The Lake-wide and Channel Entrance temperature ranges during the monitoring period were 10.23°C–24.28°C and 11.44°C–23.96°C, respectively. Overall, the Lake is warmer than the Channel Entrance. The warmer temperatures in the Lake translate to a lower concentration of DO available than at the Channel Entrance.

4.5 pH

The Lake-wide average pH during the monitoring period was 7.89, ranging from 6.76 to 8.82 by location (Table 1). The Channel entrance average pH was 7.94 during the monitoring period and ranged from 7.69 to 8.14. All locations in the Lake experienced elevated pH above 8.5. The pH for the Channel Entrance is within the WQO in the Basin Plan of between 6.5 and 8.5. However, pH in the Lake at times is above 8.5 and can be attributed to high rates of photosynthesis, as demonstrated in recorded POS values greater than 100 (Appendix A).

4.6 RAINFALL

A comparison of rainfall events (0.01 inches or more) with DO levels in the Lake suggests that stormwater runoff from the watershed is contributing to low DO levels (Table 2 and Figure 4). Contributing factors could be organic and inorganic matter (e.g., sulfates and iron) from the watershed. These compounds need oxygen to degrade, thereby decreasing the amount of DO available to the aquatic system. Appendix E is a compilation of rainfall events at Oakland International Airport (OIA) from July 2014 through June 2015. The OIA location, approximately 8 miles south of the Lake, was used only as a reliable weather station to monitor rainfall events. The OIA location may be too distant to be relevant to the Lake or its watershed for

[2] Personal communication with A. Horne at the Lake Merritt Technical Water Quality Committee Meeting, November 28, 2006.

accurate rainfall recording. Monitoring during a rain event and a day after a rain event appears to coincide with exceedances of the WQO for DO of at least 5.0 mg/L regardless of tide gate positioning (open or closed, see Table 2 and Statistical Analysis Section). It should be noted that rain events may or may not result in closure of the tide gates.

In general, rainfall can decrease oxygen levels by flushing oxygen-demanding organic and inorganic material from the watershed into the Lake. Stormwater runoff can contribute significantly to the depletion of DO. This observation has also been documented by researchers and resource managers who have studied other surface water bodies (Lee and Jones-Lee, 2004; Kennish, 1997). Stormwater may contain accumulated ferrous iron and sulfides, which, upon entering the Lake, come in contact with DO and are rapidly, abiotically oxidized to ferric iron and sulfate, a chemical process that consumes oxygen. In addition, sediment that has accumulated in the storm sewer can be released during high flow events. This sediment can contain biochemically oxidizable organics, such as ammonia and organic nitrogen, which can exert additional oxygen demand on the Lake. Thus, urban stormwater runoff can have significant adverse impacts on the Lake's oxygen resources many days after a rain event.

Rainfall can also stimulate stratification, thereby causing lower bottom DO levels. Conversely, rain events can increase DO levels by directly adding oxygen from the atmosphere and stimulating phytoplankton blooms.

Presented below is the cumulative rainfall prior to sampling and its effect on DO levels at the monitoring locations. In general, larger rainfall events promote lower DO levels in the Lake and produce larger DO ranges, likely due to decomposition of matter that enters the Lake.

Rain Event Duration Date	**Sampling Date**	**Total Rain (Inches)**	**LMI-15 Average/ Range DO (mg/L)**	**LMI-19 Average/ Range DO (mg/L)**	**LMI-29 Average/ Range DO (mg/L)**	**LMI-30 Average/ Range DO (mg/L)**
Nov. 10–13, 2015	Nov. 13, 2014	0.14	4.95 4.41–5.60	5.12 5.31–4.73	4.20 3.90–5.12	no access due to birds
Dec. 2–5, 2014	Dec. 5, 2014	2.72	3.65 6.14–0.73	4.18 0.91–8.12	3.33 0.22–6.58	3.24 0.1–8.2
Dec. 11–24, 2014	Dec. 26, 2014	6.02	3.86 0.04–15.15	4.59 0.06–15.9	1.64 0.06–7.88	5.08 0.07–14.29
Feb. 6–8, 2015	Feb. 9, 2015	1.93	7.78 3.31–9.62	6.11 3.05–10.73	3.99 0.25–9.32	3.97 0.03–10.5
April 5–8, 2015	April 9, 2015	0.64	9.23 8.49–9.59	7.99 7.68–8.25	5.23 1.11–7.97	4.78 3.67–7.50
June 10, 2015	June 11, 2015	0.18	6.26 3.88–8.95	5.63 2.20–4.93	3.12 2.20–4.93	4.50 1.72–13.32

4.7 TIDE GATE POSITION

Tide gate position during sampling events were observed in the field and confirmed with tide gate circular charts obtained from the District (Appendix F). The tide gate position (open or closed) is indicated in Table 1 for each monitoring event and is important to understand. A "closed" tide gate does not mean the gates are closed all the time. During flood control events, the gates are closed only during incoming tides, but are open during outgoing tides. This allows fresh rainwater to flow out during outgoing tides (gate open) while preventing saltier Bay water from entering on incoming tides (gates closed).

Tide gate position reduces the tidal prism and water circulation and impacts DO indirectly by controlling the salinity stratification. Exceedances of the DO WQO were observed when the tide gate was closed and open, as well as during rainy and non-rainy sampling events. Current operation schedule of the tide gates appears to limit the tidal prism and circulation into the Lake.

Operation of the tide gate in the flood control mode increases the likelihood of salinity stratification, which is associated with lower bottom DO levels. DO levels in the Lake would be expected to be impacted by the duration of gate closure and the duration of stratification, but such detailed data are not available, and such an analysis is beyond the scope of the report. However, available tide gate information was obtained from the District for the days of water quality sampling. This data was used to perform statistical analysis on the duration (48-hours preceding) of tide gates being opened, and tides gates being open and closed and presented in Section 4.9.

Given the multiple variables that control DO levels in the Lake (i.e., rainfall, plankton, stratification, season, and tide gate position), bimonthly sampling of four locations is too infrequent to determine a cause-and-effect relationship between tide gate position and DO levels. However water quality samples for chemical oxygen demand (COD) and biochemical oxygen demand (BOD) could be taken to estimate overall oxygen demand on the Lake system from runoff. Since the amount of water entering and leaving the Lake appears to be a key factor in controlling water quality, modeling the circulation may be essential to determine how much of the tidal prism is necessary to obtain higher DO levels.

4.8 COMPARISON TO 2007 HIGH-RESOLUTION MONITORING

In March 2007, a one day Lake-wide monitoring event was completed to collect high-resolution DO data throughout the Lake. DO measurements were collected at 22 monitoring locations throughout the Lake. Appendix G includes a plot of DO over depth for the Lake for the March 2007 monitoring and a plot of DO at foot below the surface and one-foot from the bottom during September 2005 to September 2006 monitoring. Comparing these results to the monitoring results from July 2014 through June 2015, DO is similarly higher toward the water

surface and lower with depth. It is expected that the DO levels will exhibit this trend spatially in the Lake.

4.9 STATISTICAL ANALYSIS

Statistical analysis were performed in ProUCL version 5 (United States Environmental Protection Agency issued freeware) for all data collected during 2014 – 2015 only.

Before performing statistical comparison tests, the data were subjected to exploratory data analysis (EDA). EDA is a diagnostic data evaluation step that allows the practitioner to understand data distributions and discern which statistical test(s) might be a good fit for the data. Each data set was tested for normality. Normality means the data sets are normally distributed about their respective mean values. None of the raw data sets were normally distributed. Several data transformations, including gamma and log (base 10) transformations, were performed and the transformed data were subsequently tested for normality. In no case (transformed or raw) were the data sets normally distributed.

Because normality was not achieved, it was concluded that the Student's two-sample t-test would not be a robust comparison test for these data sets. Instead, it was decided to pursue a nonparametric comparison test. The nonparametric test does not assume the data are normally distributed and are more robust when the data sets contain potential outliers.

A nonparametric hypothesis test, called the Wilcoxon-Mann-Whitney (WMW) test, was performed to test for differences between two data sets for the four null hypothesis proposed. The WMW tests whether or not sample observations from one sampled population consistently tend to be higher or lower or the same compared to the other sampled population. The test assumes the relative dispersion/shape of the two data sets are roughly the same but neither have to fit a known (normal) distribution. The shapes/dispersions of each data set were compared using box plots and were concluded sufficient for this test.

4.9.1 Null Hypothesis Testing

Data were organized to test multiple null hypothesizes presented below.

- There is no significant ($p < 0.05$) difference in measured DO concentrations pre (September 2005 to September 2006) - versus post- channel improvement.
- There is no significant ($p < 0.05$) difference in measured DO concentrations when the gates are open versus closed.
- There is no significant ($p < 0.05$) difference in DO concentrations measured in the arms of the lake versus the center of the Lake when the gates are closed (post channel improvements).
- There is no significant ($p< 0.05$) difference in DO concentrations measured in the arms versus center of the Lake when the gates are open (post channel improvements).

- There is no significant ($p < 0.05$) difference in DO concentrations measured when the tides gates were opened for 48 hours or more versus tide gates opened for less than 48 hours.
- There is no significant ($p < 0.05$) difference in DO concentrations measured in the arms of the Lake versus the center of the lake when the tides gates were opened for 48 hours or more.
- There is no significant ($p < 0.05$) difference in DO concentrations measured in the arms of the Lake versus the center of the lake when the tides gates were opened for less than 48 hours.

To summarize, results from the hypothesis testing is presented in the table below and the statistical test and whisker box plots are in Appendix H.

Null Hypothesis	Conclusion	Test	Data Sets	N	Mean	Median	Standard Deviation	Range	Supporting Graphics
1) There is no significant (p< 0.05) difference in measured DO concentrations pre- versus post-channel improvement.	accept null hypothesis	Wilcoxon-Mann-Whitney Test; Performed in ProUCL 5.0	2005 -2006 Data (1ft from top & 1ft from bottom)	328	7.903	7.33	4.042	0.43 - 20.1	Box Plot
			2014-2015 Data (1ft from top & 1ft from bottom)	472	7.761	7.61	3.924	0.05 - 18.49	
2) There is no significant (p < 0.05) difference in measured DO concentrations when the gates are open versus closed at time of sampling.	accept null hypothesis	Wilcoxon-Mann-Whitney Test; Performed in ProUCL 5.0	2014-2015 Data Open (all data)	1541	6.384	6.35	3.529	0.02 - 17.41	Box Plot
			2014-2015 Data Closed (all data)	789	6.688	5.95	3.545	0.07 - 18.49	
3) There is no significant (p < 0.05) difference in DO concentrations measured in the arms of the lake versus the center of the lake when the gates are closed (post channel improvements) at time of sampling.	reject null hypothesis	Wilcoxon-Mann-Whitney Test; Performed in ProUCL 5.0	2014-2015 Data Center (all data)	389	7.462	6.93	3.348	2 - 18.49	Box Plot
			2014-2015 Data Arms (all data)	399	5.95	5.29	3.566	0.08 - 14.65	
4) There is no significant (p< 0.05) difference in DO concentrations measured in the arms versus center of the lake when the gates are open (post channel improvements) at time of sampling.	reject null hypothesis	Wilcoxon-Mann-Whitney Test; Performed in ProUCL 5.0	2014-2015 Data Center (all data)	728	7.31	7.06	3.315	0.04 - 16.61	Box Plot
			2014-2015 Data Arms (all data)	813	5.555	5.61	3.51	0.02 - 17.41	
5) There is no significant (p< 0.05) difference in DO concentrations measured in the Lake when the tides gates were opened for 48 hours or more versus tide gates opened for less than 48 hours prior to sampling.	reject null hypothesis	Wilcoxon-Mann-Whitney Test; Performed in ProUCL 5.0	2014-2015 Data Gates open 48 hoursor more (all data)	1076	7.066	6.735	3.14	0.02 – 17.41	Box Plot
			2014-2015 Data Gates open less than 48 hours or more (all data)	1255	5.986	5.6	3.781	0 – 18.49	
6) There is no significant (p < 0.05) difference in DO concentrations measured in the arms of the lake versus the center of the lake when the gates are open for 48 hours or more at time of sampling.	reject null hypothesis	Wilcoxon-Mann-Whitney Test; Performed in ProUCL 5.0	2014-2015 Data Gates open (Center [all data])	504	8.09	7.6	2.590	3.2 – 16.6	Box Plot
			2014-2015 Data Gates open (Arms [all data])	572	6.16	5.97	3.301	0.02 – 17.41	
7) There is no significant (p < 0.05) difference in DO concentrations measured in the arms of the lake versus the center of the lake when the gates are open for less than 48 hours at time of sampling.	reject null hypothesis	Wilcoxon-Mann-Whitney Test; Performed in ProUCL 5.0	2014-2015 Data Gates open (Center [all data])	613	6.34	6.34	3.722	0.04 – 18.49	Box Plot
			2014-2015 Data Gates open (Arms [all data])	642	5.24	4.8	3.683	0 – 14.64	

5.0 SUMMARY

The water quality data collected from July 2014 through June 2015 imply that the Lake is reacting to inputs from the watershed. Average DO levels throughout the Lake were generally above the WQO of 5.0 mg/L and may address 303d listing, however discussions may be necessary with regulatory agencies to discuss this matter. Lower DO concentrations were encountered near the bottom of the Lake, with decreased DO in the deeper areas (Trestle Glen and Glen Echo Arms). Overall, DO was less in the Lake than in the Channel Entrance. POS data for the Lake suggest that across the water column, photosynthesis is increased near the Lake surface, and decay of organic waste and natural respiration is increased near the bottom of the Lake. The halocline was the greatest during rain events, and this density difference may inhibit mixing within the Lake.

In addition, runoff from the watershed appears to have increased the biochemical oxygen demand on the Lake. Overall, the Lake is warmer than the Channel Entrance. The pH in the Lake and the pH at the Channel Entrance were both within the WQO range of 6.5–8.5.

Tide Gate Analysis

From the statistical tests performed the following conclusions can be made.

- There is no significant difference in measured DO concentrations pre (September 2005 to September 2006) versus post- channel improvement from data collected in 2014 – 2015.
- There is no significant difference in measured DO concentrations when the gates are open versus closed at time of sampling.
- There is significant difference in DO concentrations measured in the arms of the lake versus the center of the lake when the gates are closed (post channel improvements).
- There is significant difference in DO concentrations measured in the arms versus center of the lake when the gates are open (post channel improvements).
- There is significant difference in DO concentrations measured in the Lake when the tides gates were opened for 48 hours or more versus tide gates opened for less than 48 hours.
- There is significant difference in DO concentrations measured in the arms of the lake versus the center of the lake when the gates are opened for 48 hours or more (post channel improvements).
- There is significant difference in DO concentrations measured in the arms of the lake versus the center of the lake when the gates are opened for less than 48 hours (post channel improvements).

The position of the tide gates (open or closed) at time of sampling appears to have little influence on the DO concentration in the Lake and Glen Echo and Trestle Glen Arms. However, the duration of the gates being opened appears to have an influence. The data

show that extended gate closures (at 48 hours or longer) promote eutrophic conditions throughout the entire Lake (i.e. center and arms) and that the arms of the Lake have lower DO than the Lake-wide mean. In general, the DO data show that destratifying the Lake and Arms by increasing circulation (i.e. open tide gates for 48 hours or more) may raise DO levels above 5 mg/L on a greater frequency.

The Lake is not a natural water body; historically, it was an estuary surrounded by marsh. While it remains tidally influenced, its water level is controlled by tide gates to Oakland Harbor and the Bay. The tide gates prevent flooding and, with the help of pumps, allow natural tidal flushing, which optimizes hydraulic conditions. In 2017, a culvert under 10th Street will be removed, extending the channel closer to the Bay. Doubling the volume and increasing the tidal exchange may improve water quality.

6.0 RECOMMENDATIONS

The City may want to explore having the District prioritize keeping the tide gates open as long as possible and provide flood control but improve water quality. Operating to improve water quality will mean more transfer of water from and into the Lake with more variation in the tidal prism than is currently allowed (District limits tidal prism to 1–2 feet) and minimizing the restrictions of tidal flow and circulation into the Lake. Increasing the variation and allowing larger water movement ranges will allow more stable pH, less DO and POS concentration variations and temperatures similar to LMC entrance, and flush out stormwater runoff that contain chemical constituents that consume DO in the Lake. Increased tidal prism may also lead to greater exposure of the Lake bottom in some areas, creating more tidal mudflats. Changes in Lake levels will also affect boating activities on the Lake. Further measurements may be needed by the City to confirm affects on water quality after completion of the channel widening at 10th Street anticipated in late 2016. Additionally, the City or District may want to consider modeling the dynamics of the Lake with tidal prisms to determine ideal durations to keep the gates open and closed to improve DO levels in the Lake.

Continue to minimize or reduce high-organic material to reduce oxygen load in the Lake.

Finally, the appropriateness of a DO standard of 5 mg/L may not be applicable for the Lake since it resembles an estuary lagoon with eutrophic condition and controlled water exchange.

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TABLES

TABLE 1

Water Quality Results Summary
Lake Merritt
Oakland, California

Sample Location	DO		Salinity	POS	pH	Temp.	DO	Salinity	POS	Range	
	Average (mg/L)	Below WQO (%)	Average (psu)	Average (%)	Average pH	Average (°C)	Range (mg/L	Range (psu)	Range (%)	Average pH	Average (°C)
Channel Entrance	7.17	0%	29.79	89.7	7.94	17.94	5.35 - 10.15	22.4 - 38.2	67.6 – 142.4	7.69 - 8.14	11.44 - 23.96
Lake-Wide	6.48	34%	28.58	81.0	7.89	18.26	0.03 - 18.49	8.1 - 38.5	0.3 - 209	6.76 - 8.82	10.23 - 24.28
LMI-15	7.21	21%	28.65	89.7	7.95	18.09	0.04 - 10.72	8.8 - 38.3	0.5 – 200	7.04 - 8.79	10.23 - 23.53
LMI-19	7.52	20%	28.45	93.6	7.99	18.15	0.05 - 18.49	9.2 - 38.5	0.6 – 209	7.01 - 8.82	10.55 - 23.48
LMI-29	5.62	45%	28.54	70.1	7.81	18.18	0.03 - 14.65	8.1 - 38.0	0.3 – 165.1	6.76 - 8.59	11.66 - 23.59
LMI-30	5.73	53%	28.68	72.6	7.84	18.63	0.03 - 17.41	9.1 - 37.8	0.4 – 190.1	6.89 - 8.60	11.70 - 24.28

Abbreviations
% = percent
°C = degree Celsius
DO = dissolved oxygen
mg/L = milligrams per liter
POS = percent oxygen saturation
psu = practical salinity units
WQO = water quality objective; 5 mg/L

TABLE 2

WATER QUALITY MONITORING RESULTS
SUMMARY OF RAINFALL EVENTS
Lake Merritt
Oakland, California

Monitoring Date	Date of Rainfall Event	Total Precipitation (in.)	Number of Days Prior to Monitoring Rainfall Occurred	Channel Entrance		LMI-15		LMI-19		LMI-29		LMI-30	
				Average DO (mg/L)	Average Salinity (psu)	Average DO (mg/L)	Average Salinity (psu)	Average DO (mg/L)	Average Salinity (psu)	Average DO (mg/L)	Average Salinity (psu)	Average DO (mg/L)	Average Salinity (psu)
7/22/2014	7/22/2014	0.01	0	9.31	NS[1]	NS[1]	NS[1]	7.96	NS[1]	8.84	NS[1]	9.83	NS[1]
10/23/2014	10/20/2014	0.01	3	5.82	32.41	6.14	31.82	5.57	32.31	5.24	31.95	3.19	32.45
11/13/2014	11/13/2014	0.20	0	6.45	32.00	4.95	28.41	5.12	31.28	4.20	31.62	NS[3]	NS[3]
12/5/2014	12/5/2014	0.10	0	6.28	27.05	3.65	26.22	4.18	24.01	3.33	23.05	3.24	25.10
12/26/2014	12/24/2014	0.02	2	7.72	24.27	3.86	21.19	4.59	20.33	1.64	22.30	5.08	21.24
2/9/2015	2/8/2015	0.99	1	7.53	25.14	7.78	25.55	6.11	22.96	3.99	23.85	3.97	23.74
3/11/2015	3/11/2015	0.02	0	8.47	26.83	7.46	26.44	7.28	26.97	4.53	26.43	6.83	26.41
4/9/2015	4/8/2015	0.01	1	8.02	26.94	9.23	26.29	7.99	25.64	5.23	26.62	4.78	25.86
6/11/2015	6/10/2015	0.18	1	6.62	30.87	6.26	30.73	5.63	30.77	3.12	30.95	4.50	30.88

Notes:
1. Salinity meter malfuction.
2. Cells highlighed in red are below 5 mg/L Basin Plan dissolved oxygen level.
3. Sample not collected during bird migration.

Abbreviations
NS = not sampled
DO = dissolved oxygen
in. = inches
mg/L = milligrams per liter
psu = practical salinity units

FIGURES

Street map from ESRI, 2007. Aerial image from NAIP, 2012.

N

0 0.5 1 Miles

SITE LOCATION MAP
Lake Merritt Channel
Water Quality Monitoring Locations
Oakland, California

amec foster wheeler

Date: 08/03/2015 | Project No. OD14170670.02

Figure 1

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Explanation

Sample Location

0 500 1,000 Feet

N

SAMPLE LOCATIONS
Lake Merritt Channel
Water Quality Monitoring Locations
Oakland, California

amec foster wheeler

Date: 08/03/2015 | Project No. OD14170670.02

Figure 2

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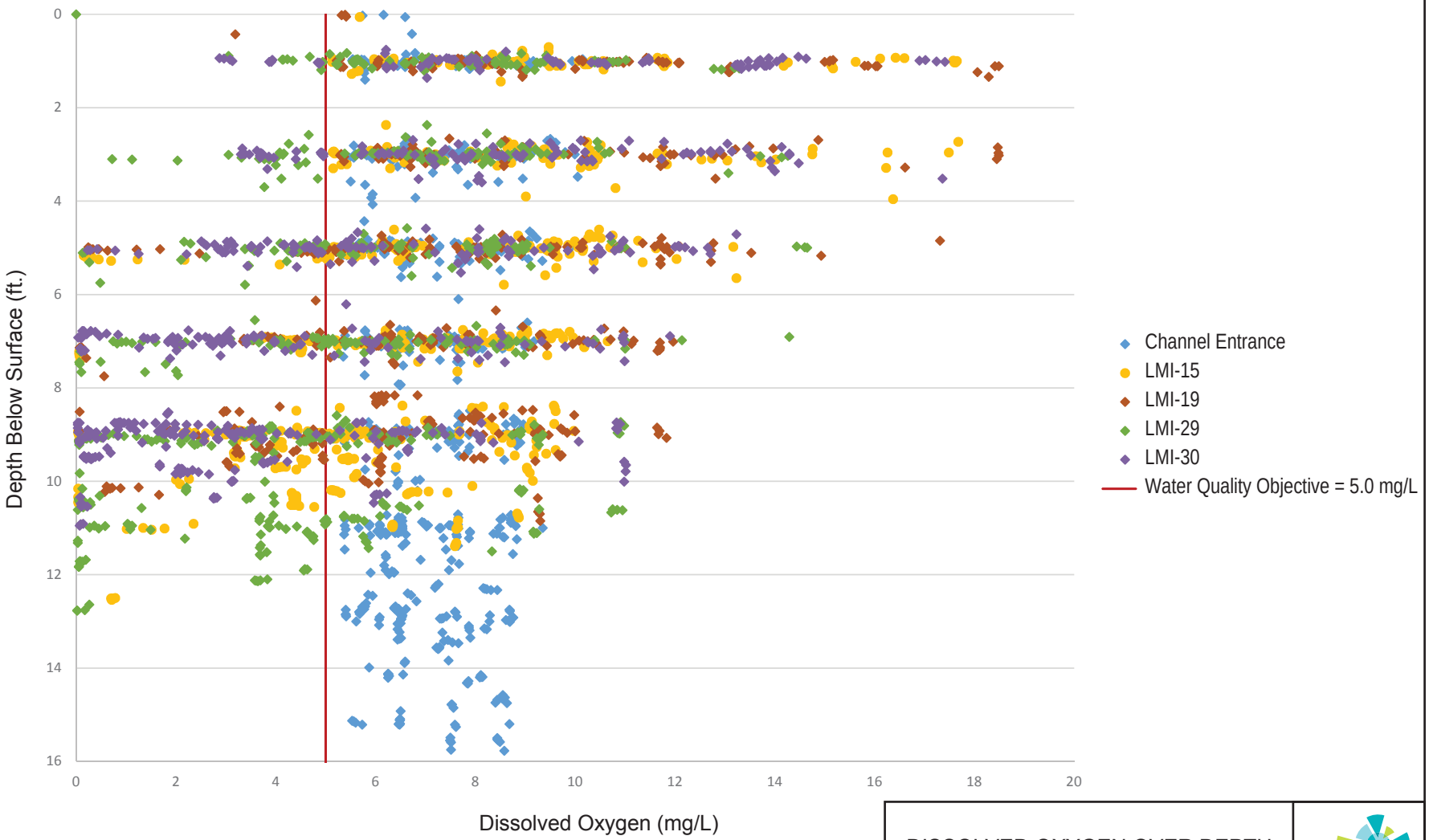

DISSOLVED OXYGEN OVER DEPTH
JULY 2014 THROUGH JUNE 2015
Lake Merritt
Water Quality Monitoring
Oakland, California

amec foster wheeler

Date: 08/13/2015 | Project No. OD14170670.02

Figure 3

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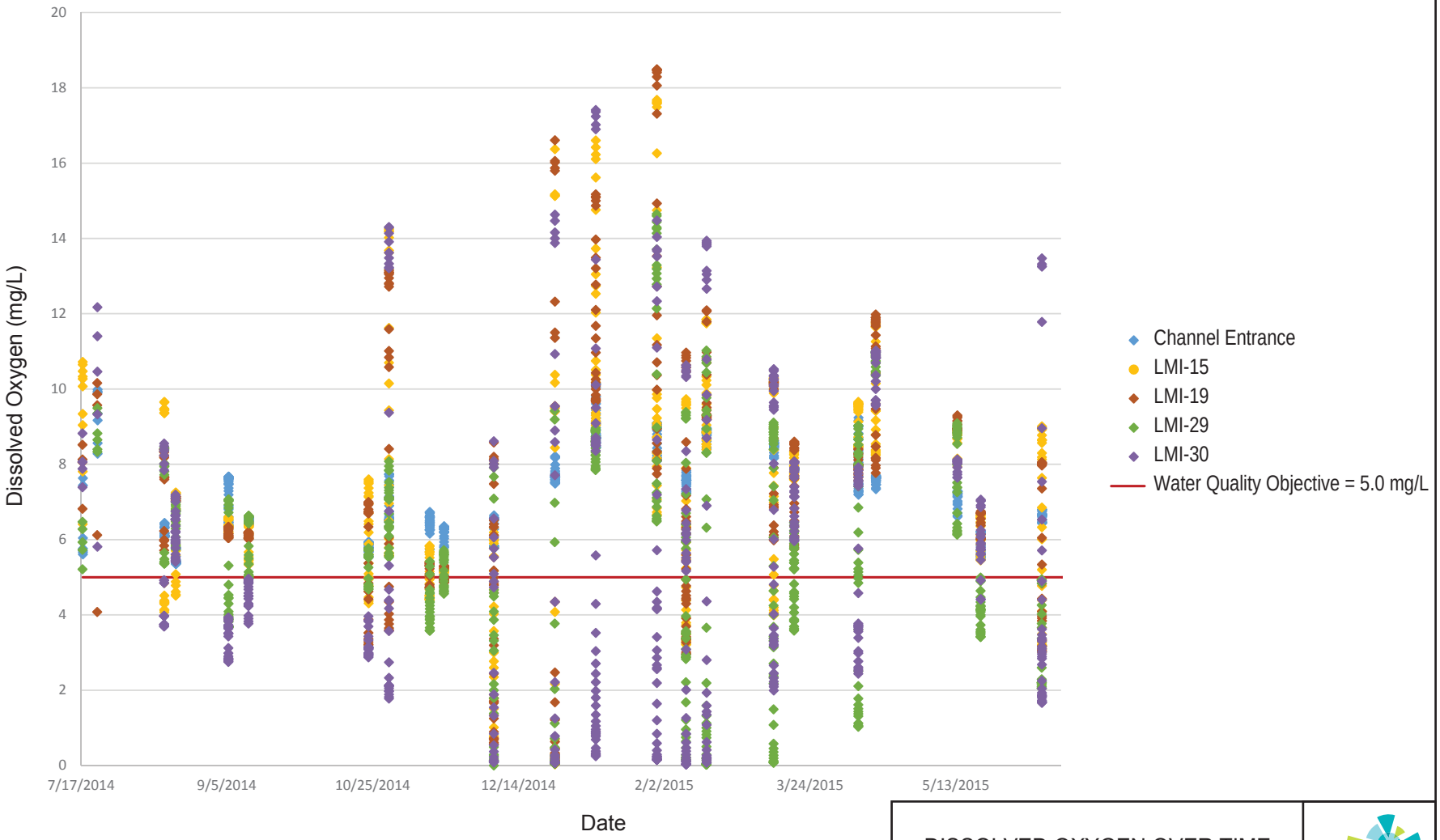

DISSOLVED OXYGEN OVER TIME
JULY 2014 THROUGH JUNE 2015
Lake Merritt
Water Quality Monitoring
Oakland, California

amec foster wheeler

Date: 08/13/2015 | Project No. OD14170670.02

Figure
4

APPENDIX A

Water Quality Monitoring Data

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
Channel Entrance	High	7/22/2014 15:30	23.95	1.0	9.94	141.7	7.96	--
Channel Entrance	High	7/22/2014 15:30	23.96	3.0	9.99	142.4	7.98	--
Channel Entrance	High	7/22/2014 15:30	23.69	5.0	9.9	141.1	7.96	--
Channel Entrance	High	7/22/2014 15:30	23.85	7.0	9.17	128.6	7.87	--
Channel Entrance	High	7/22/2014 15:30	22.76	9.0	8.56	119.7	7.85	--
Channel Entrance	High	7/22/2014 15:30	22.29	11.0	9.35	129.9	7.85	--
Channel Entrance	High	7/22/2014 15:30	22.19	13.0	8.28	114.7	7.81	--
LMI-15	High	7/22/2014 12:18	22.98	1.0	10.07	141.3	8.07	--
LMI-15	High	7/22/2014 12:18	22.84	3.0	10.27	144.0	8.09	--
LMI-15	High	7/22/2014 12:18	22.64	5.0	9.04	126.2	7.99	--
LMI-15	High	7/22/2014 12:18	22.58	7.0	7.81	108.8	7.90	--
LMI-15	High	7/22/2014 12:18	22.50	9.7	6.41	103.1	7.84	--
LMI-19	High	7/22/2014 11:45	23.15	1.0	10.16	143.1	8.07	--
LMI-19	High	7/22/2014 11:45	22.91	3.0	9.86	137.6	8.06	--
LMI-19	High	7/22/2014 11:45	22.89	5.0	9.57	134.1	8.03	--
LMI-19	High	7/22/2014 11:45	22.79	7.0	6.12	85.6	7.71	--
LMI-19	High	7/22/2014 11:45	22.81	8.4	4.08	57.1	7.7	--
LMI-29	High	7/22/2014 13:10	23.59	1.0	8.4	119.0	7.98	--
LMI-29	High	7/22/2014 13:10	23.2	3.0	8.65	121.9	7.98	--
LMI-29	High	7/22/2014 13:10	23.06	5.0	9.49	133.1	8.02	--
LMI-29	High	7/22/2014 13:10	22.95	7.0	8.82	123.7	8.00	--
LMI-29	High	7/22/2014 13:10	22.95	9.0	9.35	131.2	7.98	--
LMI-29	High	7/22/2014 13:10	22.98	11.5	8.33	116.7	7.98	--
LMI-30	High	7/22/2014 13:55	24.28	1.0	11.4	164.2	8.16	--
LMI-30	High	7/22/2014 13:55	23.96	3.0	12.17	173.8	8.17	--
LMI-30	High	7/22/2014 13:55	23.78	5.0	10.46	149.2	8.07	--
LMI-30	High	7/22/2014 13:55	23.38	7.0	9.33	132.1	7.89	--
LMI-30	High	7/22/2014 13:55	23.27	9.5	5.81	81.9	7.78	--
Channel Entrance	Low	7/17/2014 14:00	23.22	1.0	7.63	107.8	7.94	--
Channel Entrance	Low	7/17/2014 14:00	23.15	3.0	7.44	105.0	7.94	--
Channel Entrance	Low	7/17/2014 14:00	22.43	5.0	6.04	84.0	7.82	--
Channel Entrance	Low	7/17/2014 14:00	22.12	7.0	5.76	79.7	7.8	--
Channel Entrance	Low	7/17/2014 14:00	22.01	9.0	5.7	79.0	7.78	--
Channel Entrance	Low	7/17/2014 14:00	21.96	11.0	5.66	78.2	7.79	--
Channel Entrance	Low	7/17/2014 14:00	21.94	13.0	5.61	77.5	7.79	--
LMI-15	Low	7/17/2014 12:18	23.32	1.0	10.33	146.1	8.22	--
LMI-15	Low	7/17/2014 12:18	23.3	3.0	10.47	148.1	8.22	--
LMI-15	Low	7/17/2014 12:18	23.23	5.0	10.72	151.3	8.22	--
LMI-15	Low	7/17/2014 12:18	23.18	7.0	10.65	150.4	8.24	--
LMI-15	Low	7/17/2014 12:18	23.1	9.0	9.34	130.8	8.16	--
LMI-19	Low	7/17/14 11:00	23.36	1.0	8.13	115.0	8.11	--
LMI-19	Low	7/17/14 11:00	23.35	3.0	8.05	113.9	8.12	--
LMI-19	Low	7/17/14 11:00	23.26	5.0	8.52	120.4	8.14	--
LMI-19	Low	7/17/14 11:00	22.91	7.0	6.82	95.6	7.88	--
LMI-29	Low	7/17/14 11:30	23.26	1.0	6.28	8.9	7.92	--
LMI-29	Low	7/17/14 11:30	23.39	3.0	5.73	8.1	7.88	--
LMI-29	Low	7/17/14 11:30	23.34	5.0	6.47	9.1	7.93	--
LMI-29	Low	7/17/14 11:30	23.17	7.0	5.93	8.4	7.92	--
LMI-29	Low	7/17/14 11:30	23.11	9.0	5.21	7.4	7.87	--
LMI-30	Low	7/17/14 10:20	23.45	1.0	7.88	108.2	8.01	--
LMI-30	Low	7/17/14 10:20	24.07	3.0	8.82	126.8	8.15	--
LMI-30	Low	7/17/14 10:20	23.88	5.0	8.06	115.1	8.13	--
LMI-30	Low	7/17/14 10:20	23.79	7.0	8.07	114.8	8.11	--
LMI-30	Low	7/17/14 10:20	23.73	9.0	7.39	105.2	8.07	--
Channel Entrance	High	8/18/2014 12:16	22.27	1.0	5.72	82.2	7.94	38.2
Channel Entrance	High	8/18/2014 12:16	22.27	1.1	5.74	82.5	7.94	38.2
Channel Entrance	High	8/18/2014 12:17	22.27	1.0	5.77	82.9	7.94	38.2
Channel Entrance	High	8/18/2014 12:17	22.27	1.0	5.77	82.9	7.94	38.2
Channel Entrance	High	8/18/2014 12:17	22.31	3.7	5.79	83.1	7.92	38.1
Channel Entrance	High	8/18/2014 12:17	22.31	3.1	5.56	79.9	7.91	38.2
Channel Entrance	High	8/18/2014 12:17	22.31	3.1	5.47	78.6	7.91	38.2
Channel Entrance	High	8/18/2014 12:17	22.31	3.1	5.44	78.2	7.91	38.2
Channel Entrance	High	8/18/2014 12:18	22.32	3.1	5.43	78	7.91	38.2
Channel Entrance	High	8/18/2014 12:18	22.34	5.2	5.42	77.8	7.91	38.1
Channel Entrance	High	8/18/2014 12:18	22.34	5.1	5.38	77.4	7.91	38.2
Channel Entrance	High	8/18/2014 12:18	22.35	5.1	5.38	77.3	7.91	38.2
Channel Entrance	High	8/18/2014 12:18	22.36	5.1	5.37	77.1	7.91	38.2

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
Channel Entrance	High	8/18/2014 12:18	22.36	5.2	5.36	77	7.9	38.1
Channel Entrance	High	8/18/2014 12:19	22.36	7.3	5.35	76.9	7.91	38.1
Channel Entrance	High	8/18/2014 12:19	22.36	6.9	5.39	77.5	7.91	38.1
Channel Entrance	High	8/18/2014 12:19	22.36	7.1	5.39	77.5	7.91	38.2
Channel Entrance	High	8/18/2014 12:19	22.35	7.0	5.39	77.5	7.91	38.1
Channel Entrance	High	8/18/2014 12:19	22.36	7.1	5.4	77.6	7.91	38.2
Channel Entrance	High	8/18/2014 12:19	22.37	9.1	5.4	77.6	7.91	38.2
Channel Entrance	High	8/18/2014 12:20	22.37	9.2	5.38	77.3	7.91	38.1
Channel Entrance	High	8/18/2014 12:20	22.37	9.1	5.37	77.3	7.91	38.2
Channel Entrance	High	8/18/2014 12:20	22.37	9.0	5.37	77.2	7.91	38.1
Channel Entrance	High	8/18/2014 12:20	22.37	9.1	5.37	77.3	7.91	38.2
Channel Entrance	High	8/18/2014 12:20	22.36	11.5	5.38	77.4	7.91	38.1
Channel Entrance	High	8/18/2014 12:20	22.36	10.8	5.39	77.4	7.91	38.1
Channel Entrance	High	8/18/2014 12:21	22.35	11.1	5.37	77.2	7.91	38.1
Channel Entrance	High	8/18/2014 12:21	22.36	11.0	5.38	77.4	7.91	38.1
Channel Entrance	High	8/18/2014 12:21	22.36	11.0	5.4	77.6	7.91	38.1
Channel Entrance	High	8/18/2014 12:21	22.36	12.8	5.4	77.6	7.91	38.2
Channel Entrance	High	8/18/2014 12:21	22.36	12.9	5.41	77.7	7.91	38.1
Channel Entrance	High	8/18/2014 12:21	22.36	12.9	5.4	77.6	7.91	38.1
Channel Entrance	High	8/18/2014 12:22	22.36	12.9	5.4	77.6	7.91	38.1
LMI-15	High	8/18/2014 10:12	22.88	1.0	7.22	104.9	8.11	38.3
LMI-15	High	8/18/2014 10:12	22.89	1.0	7.24	105.1	8.11	38.3
LMI-15	High	8/18/2014 10:13	22.89	1.0	7.24	105.1	8.11	38.2
LMI-15	High	8/18/2014 10:13	22.89	1.0	7.24	105.1	8.11	38.2
LMI-15	High	8/18/2014 10:13	22.94	3.1	7.25	105.2	8.11	38.2
LMI-15	High	8/18/2014 10:13	22.94	3.1	7.2	104.6	8.11	38.2
LMI-15	High	8/18/2014 10:13	22.96	3.0	7.2	104.6	8.11	38.2
LMI-15	High	8/18/2014 10:13	22.96	3.0	7.19	104.4	8.11	38.2
LMI-15	High	8/18/2014 10:14	22.95	5.1	7.08	102.8	8.08	38.1
LMI-15	High	8/18/2014 10:14	22.95	4.9	6.83	99.2	8.08	38.2
LMI-15	High	8/18/2014 10:14	22.96	5.0	6.78	98.4	8.09	38.2
LMI-15	High	8/18/2014 10:14	22.98	5.0	6.8	98.7	8.09	38.2
LMI-15	High	8/18/2014 10:14	22.89	7.0	6.49	94.2	7.99	38.1
LMI-15	High	8/18/2014 10:14	22.89	7.1	5.86	85	7.99	38.1
LMI-15	High	8/18/2014 10:15	22.9	7.0	5.7	82.6	7.99	38.1
LMI-15	High	8/18/2014 10:15	22.84	9.1	5.59	81.1	7.92	38.1
LMI-15	High	8/18/2014 10:15	22.81	9.0	5.08	73.6	7.9	38.1
LMI-15	High	8/18/2014 10:15	22.81	9.0	4.88	70.7	7.9	38.2
LMI-15	High	8/18/2014 10:15	22.8	9.3	4.78	69	7.88	37.6
LMI-15	High	8/18/2014 10:15	22.8	9.6	4.61	66.6	7.87	37.8
LMI-15	High	8/18/2014 10:16	22.8	9.6	4.54	65.6	7.87	37.8
LMI-15	High	8/18/2014 10:16	22.8	9.5	4.51	65.2	7.87	37.8
LMI-19	High	8/18/2014 9:51	22.36	1.2	7.14	102.9	8.11	38.5
LMI-19	High	8/18/2014 9:51	22.43	1.1	7.14	102.9	8.11	38.5
LMI-19	High	8/18/2014 9:51	22.47	1.1	7.08	102.1	8.1	38.5
LMI-19	High	8/18/2014 9:52	22.59	3.2	7	101.2	8.11	38.5
LMI-19	High	8/18/2014 9:52	22.63	3.0	7.03	101.7	8.11	38.4
LMI-19	High	8/18/2014 9:52	22.63	3.0	7.03	101.7	8.11	38.4
LMI-19	High	8/18/2014 9:52	22.74	3.0	7.03	101.8	8.11	38.4
LMI-19	High	8/18/2014 9:52	22.82	5.1	7	101.5	8.12	38.3
LMI-19	High	8/18/2014 9:52	22.85	4.8	7.08	102.7	8.12	38.3
LMI-19	High	8/18/2014 9:53	22.86	5.0	7.09	102.9	8.12	38.2
LMI-19	High	8/18/2014 9:53	22.93	5.0	7.09	102.9	8.12	38.2
LMI-19	High	8/18/2014 9:53	22.92	7.1	7.1	103.1	8.13	38.2
LMI-19	High	8/18/2014 9:53	22.95	7.0	7.14	103.7	8.13	38.2
LMI-19	High	8/18/2014 9:53	22.95	7.0	7.15	103.8	8.13	38.2
LMI-19	High	8/18/2014 9:53	22.95	7.0	7.15	103.8	8.13	38.2
LMI-19	High	8/18/2014 9:54	22.98	8.8	7.14	103.7	8.04	38
LMI-19	High	8/18/2014 9:54	22.99	8.7	7.1	102.9	8.1	37.7
LMI-19	High	8/18/2014 9:54	22.98	8.7	7.05	102.4	8.11	38.1
LMI-19	High	8/18/2014 9:54	22.99	8.7	7.07	102.3	8.1	37.4
LMI-19	High	8/18/2014 9:54	23	8.8	7.03	102.1	8.08	38.1
LMI-29	High	8/18/2014 10:55	22.71	1.0	6.77	97.3	8.15	37.2
LMI-29	High	8/18/2014 10:55	22.69	0.9	6.93	99.6	8.15	37.3
LMI-29	High	8/18/2014 10:55	22.67	1.0	6.99	100.5	8.15	37.2
LMI-29	High	8/18/2014 10:55	22.88	3.1	7.09	101.8	8.14	37.2
LMI-29	High	8/18/2014 10:55	22.99	3.0	6.89	99.9	8.14	38

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	High	8/18/2014 10:56	23.03	3.0	6.82	99	8.14	38
LMI-29	High	8/18/2014 10:56	23.04	3.0	6.79	98.6	8.14	38
LMI-29	High	8/18/2014 10:56	23.07	5.2	6.75	98.2	8.13	38
LMI-29	High	8/18/2014 10:56	23.07	5.0	6.74	98	8.14	38
LMI-29	High	8/18/2014 10:56	23.07	5.0	6.74	98	8.14	38
LMI-29	High	8/18/2014 10:56	23.08	5.0	6.77	98.4	8.14	38
LMI-29	High	8/18/2014 10:57	23.02	7.2	6.68	97.1	8.12	37.8
LMI-29	High	8/18/2014 10:57	22.98	7.1	6.48	94	8.11	37.8
LMI-29	High	8/18/2014 10:57	22.98	7.1	6.4	92.8	8.11	37.8
LMI-29	High	8/18/2014 10:57	22.98	7.1	6.36	92.1	8.11	37.8
LMI-29	High	8/18/2014 10:57	22.94	9.1	6.29	91.2	8.09	37.8
LMI-29	High	8/18/2014 10:57	22.93	9.0	6.07	88	8.08	37.9
LMI-29	High	8/18/2014 10:58	22.91	9.0	5.96	86.3	8.08	37.9
LMI-29	High	8/18/2014 10:58	22.9	9.0	5.91	85.5	8.08	37.8
LMI-29	High	8/18/2014 10:58	22.89	11.4	5.86	84.8	8.08	37.9
LMI-29	High	8/18/2014 10:58	22.89	11.3	5.82	84.3	8.08	37.8
LMI-29	High	8/18/2014 10:58	22.89	11.3	5.8	84	8.08	37.9
LMI-29	High	8/18/2014 10:58	22.88	11.2	5.75	83.3	8.08	37.9
LMI-30	High	8/18/2014 9:23	22.18	0.8	6.19	87.1	7.95	35.5
LMI-30	High	8/18/2014 9:24	22.22	0.8	6.21	87.7	7.96	35.6
LMI-30	High	8/18/2014 9:24	22.36	1.1	6.21	87.9	7.96	36
LMI-30	High	8/18/2014 9:24	22.51	1.2	6.22	88.7	8.04	36.8
LMI-30	High	8/18/2014 9:24	22.67	1.1	6.36	91	8.07	36.8
LMI-30	High	8/18/2014 9:24	22.94	2.7	6.75	97.2	8.11	37.2
LMI-30	High	8/18/2014 9:24	23.22	3.2	7.19	104.2	8.1	37.3
LMI-30	High	8/18/2014 9:25	23.27	3.1	7.16	104.1	8.07	37.2
LMI-30	High	8/18/2014 9:25	23.34	3.1	7.1	103.2	8.08	37.2
LMI-30	High	8/18/2014 9:25	23.4	3.1	7.09	103.1	8.09	37.2
LMI-30	High	8/18/2014 9:25	23.51	4.6	7.01	102.1	7.95	37.1
LMI-30	High	8/18/2014 9:25	23.52	5.0	5.92	86.3	7.95	37.1
LMI-30	High	8/18/2014 9:25	23.55	5.0	5.61	81.7	7.97	37
LMI-30	High	8/18/2014 9:26	23.56	5.0	5.49	80	7.97	37
LMI-30	High	8/18/2014 9:26	23.57	5.0	5.44	79.3	7.96	37
LMI-30	High	8/18/2014 9:26	23.59	6.2	5.41	78.9	7.99	37.1
LMI-30	High	8/18/2014 9:26	23.59	6.7	5.53	80.6	8.02	37
LMI-30	High	8/18/2014 9:26	23.6	7.4	5.78	84.2	8.02	37
LMI-30	High	8/18/2014 9:26	23.61	7.2	5.9	86.1	8.02	37
LMI-30	High	8/18/2014 9:27	23.6	7.0	5.96	87	8.03	37
LMI-30	High	8/18/2014 9:27	23.61	7.0	6	87.6	8.03	37
LMI-30	High	8/18/2014 9:27	23.6	9.2	6.06	88.2	8.05	36.4
LMI-30	High	8/18/2014 9:27	23.57	8.9	6.54	95.9	8.08	37.8
LMI-30	High	8/18/2014 9:27	23.57	8.9	6.54	95.9	8.07	37.8
LMI-30	High	8/18/2014 9:27	23.57	8.9	6.54	95.9	8.07	37.8
LMI-30	High	8/18/2014 9:28	23.57	8.9	6.54	95.9	8.07	37.8
LMI-30	High	8/18/2014 9:28	23.58	9.3	6.65	97.3	8.06	37.7
LMI-30	High	8/18/2014 9:28	23.57	9.3	6.63	97.1	8.07	37.8
LMI-30	High	8/18/2014 9:28	23.58	9.3	6.63	97.1	8.07	37.8
LMI-30	High	8/18/2014 9:28	23.57	9.4	6.65	97.5	8.07	37.8
Channel Entrance	Low	8/14/2014 13:57	22.83	1.1	6.44	92.2	7.98	36.3
Channel Entrance	Low	8/14/2014 13:58	22.82	1.1	6.44	92.2	7.97	36.3
Channel Entrance	Low	8/14/2014 13:58	22.8	1.0	6.42	91.9	7.97	36.3
Channel Entrance	Low	8/14/2014 13:58	22.77	1.1	6.39	91.5	7.97	36.3
Channel Entrance	Low	8/14/2014 13:59	22.63	3.1	6.31	90.1	7.97	36.4
Channel Entrance	Low	8/14/2014 13:59	22.58	3.1	6.32	90.2	7.96	36.4
Channel Entrance	Low	8/14/2014 13:59	22.59	3.1	6.33	90.3	7.96	36.4
Channel Entrance	Low	8/14/2014 13:59	22.58	3.1	6.34	90.4	7.96	36.3
Channel Entrance	Low	8/14/2014 14:00	22.44	5.1	6.17	87.8	7.96	36.4
Channel Entrance	Low	8/14/2014 14:01	22.44	5.1	6.17	87.8	7.96	36.4
Channel Entrance	Low	8/14/2014 14:01	22.42	5.1	6.17	87.8	7.95	36.4
Channel Entrance	Low	8/14/2014 14:01	22.41	5.1	6.18	87.9	7.96	36.4
Channel Entrance	Low	8/14/2014 14:02	22.23	7.0	6.11	86.7	7.95	36.4
Channel Entrance	Low	8/14/2014 14:02	22.22	7.1	6.12	86.7	7.95	36.4
Channel Entrance	Low	8/14/2014 14:02	22.21	7.1	6.12	86.7	7.95	36.4
Channel Entrance	Low	8/14/2014 14:02	22.18	7.1	6.11	86.6	7.95	36.4
Channel Entrance	Low	8/14/2014 14:03	22.16	9.2	6.08	86.1	7.94	36.4
Channel Entrance	Low	8/14/2014 14:03	22.15	9.1	6.09	86.2	7.95	36.4
Channel Entrance	Low	8/14/2014 14:03	22.14	9.0	6.08	86.1	7.95	36.4

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
Channel Entrance	Low	8/14/2014 14:03	22.13	9.1	6.07	85.9	7.94	36.4
Channel Entrance	Low	8/14/2014 14:04	22.13	11.0	6.08	86	7.94	36.4
Channel Entrance	Low	8/14/2014 14:04	22.13	10.9	6.08	86.1	7.95	36.4
Channel Entrance	Low	8/14/2014 14:04	22.13	11.2	6.1	86.3	7.94	36.4
Channel Entrance	Low	8/14/2014 14:04	22.13	11.0	6.09	86.1	7.94	36.4
Channel Entrance	Low	8/14/2014 14:07	22.11	13.1	6.07	85.8	7.95	36.4
Channel Entrance	Low	8/14/2014 14:07	22.12	13.0	6.07	85.9	7.95	36.5
Channel Entrance	Low	8/14/2014 14:07	22.11	12.9	6.08	86	7.95	36.4
LMI-15	Low	8/14/2014 11:52	23.53	0.7	9.47	137	8.26	36.2
LMI-15	Low	8/14/2014 11:52	23.52	0.8	9.47	137.1	8.26	36.2
LMI-15	Low	8/14/2014 11:52	23.52	1.1	9.44	136.6	8.26	36.2
LMI-15	Low	8/14/2014 11:52	23.5	1.0	9.46	136.8	8.26	36.2
LMI-15	Low	8/14/2014 11:53	23.19	2.9	9.37	135	8.25	36.4
LMI-15	Low	8/14/2014 11:53	23.18	3.0	9.36	134.8	8.25	36.4
LMI-15	Low	8/14/2014 11:53	23.16	3.1	9.36	134.8	8.25	36.4
LMI-15	Low	8/14/2014 11:54	23.12	4.9	9.65	138.8	8.25	36.4
LMI-15	Low	8/14/2014 11:54	23.12	4.9	9.65	138.8	8.25	36.4
LMI-15	Low	8/14/2014 11:54	23.11	5.2	9.65	138.8	8.25	36.4
LMI-15	Low	8/14/2014 11:55	22.85	7.0	4.85	69.4	7.85	36.4
LMI-15	Low	8/14/2014 11:55	22.85	7.0	4.51	64.5	7.87	36.4
LMI-15	Low	8/14/2014 11:55	22.81	7.0	4.29	61.4	7.84	36.4
LMI-15	Low	8/14/2014 11:56	22.6	9.3	4.14	59	7.85	36.4
LMI-15	Low	8/14/2014 11:56	22.58	9.2	4.12	58.7	7.84	36.4
LMI-15	Low	8/14/2014 11:56	22.58	9.2	4.07	58.1	7.85	36.4
LMI-15	Low	8/14/2014 11:57	22.57	10.3	4.32	58.9	7.06	31.1
LMI-15	Low	8/14/2014 11:57	22.57	10.3	4.32	59.7	7.05	31.1
LMI-15	Low	8/14/2014 11:57	22.58	10.3	4.34	60	7.04	31.2
LMI-15	Low	8/14/2014 11:57	22.57	10.4	4.35	60.3	7.04	31.6
LMI-15	Low	8/14/2014 11:57	22.56	10.4	4.38	60.8	7.04	32
LMI-19	Low	8/14/2014 11:27	23.34	1.1	8.34	120.4	8.24	36.3
LMI-19	Low	8/14/2014 11:27	23.34	1.1	8.34	120.4	8.24	36.3
LMI-19	Low	8/14/2014 11:28	23.31	1.1	8.32	120.1	8.24	36.3
LMI-19	Low	8/14/2014 11:29	23.18	3.0	8.38	120.7	8.24	36.4
LMI-19	Low	8/14/2014 11:29	23.2	3.0	8.4	120.9	8.24	36.4
LMI-19	Low	8/14/2014 11:29	23.2	2.9	8.41	121.1	8.24	36.4
LMI-19	Low	8/14/2014 11:30	23.12	5.1	8.18	117.6	8.23	36.4
LMI-19	Low	8/14/2014 11:30	23.12	5.4	8.24	118.5	8.22	36.4
LMI-19	Low	8/14/2014 11:31	23.11	5.1	8.21	118.1	8.2	36.4
LMI-19	Low	8/14/2014 11:31	23	7.0	6.23	89.5	7.96	36.5
LMI-19	Low	8/14/2014 11:31	23	7.0	5.84	83.8	7.96	36.5
LMI-19	Low	8/14/2014 11:31	22.99	7.0	5.71	81.9	7.96	36.4
LMI-19	Low	8/14/2014 11:32	23	8.9	6	81.4	7.05	26.8
LMI-19	Low	8/14/2014 11:32	23.01	8.9	5.97	81.1	7.03	26.8
LMI-19	Low	8/14/2014 11:33	23.02	8.9	5.97	81	7.01	26.8
LMI-19	Low	8/14/2014 12:27	23.13	1.0	7.6	109.2	8.14	36
LMI-19	Low	8/14/2014 12:27	23.12	1.0	7.66	109.9	8.14	36
LMI-19	Low	8/14/2014 12:27	23.12	1.0	7.65	109.9	8.14	36.1
LMI-19	Low	8/14/2014 12:27	23.11	1.0	7.66	109.9	8.14	36.1
LMI-29	Low	8/14/2014 12:28	22.94	3.0	8.01	114.8	8.16	36.2
LMI-29	Low	8/14/2014 12:28	22.94	3.0	7.96	114	8.15	36.3
LMI-29	Low	8/14/2014 12:28	22.94	3.1	7.94	113.8	8.15	36.2
LMI-29	Low	8/14/2014 12:29	22.94	3.0	7.95	113.9	8.15	36.2
LMI-29	Low	8/14/2014 12:30	22.8	4.8	8.38	119.8	8.18	36.3
LMI-29	Low	8/14/2014 12:30	22.8	5.0	8.41	120.2	8.18	36.3
LMI-29	Low	8/14/2014 12:30	22.8	5.0	8.44	120.6	8.18	36.2
LMI-29	Low	8/14/2014 12:31	22.78	4.9	8.43	120.4	8.18	36.2
LMI-29	Low	8/14/2014 12:31	22.8	6.7	8.02	116.3	8.15	36.3
LMI-29	Low	8/14/2014 12:31	22.8	7.1	8.02	114.7	8.13	36.3
LMI-29	Low	8/14/2014 12:31	22.79	7.0	7.81	111.7	8.13	36.3
LMI-29	Low	8/14/2014 12:32	22.8	7.1	7.72	110.5	8.13	36.3
LMI-29	Low	8/14/2014 12:32	22.81	9.2	5.65	80.9	8.01	36.4
LMI-29	Low	8/14/2014 12:32	22.81	8.9	5.48	78.4	8.01	36.4
LMI-29	Low	8/14/2014 12:32	22.81	9.3	5.42	77.5	8.01	36.4
LMI-29	Low	8/14/2014 12:33	22.82	8.7	5.4	77.3	8.01	36.4
LMI-29	Low	8/14/2014 12:33	22.83	10.8	5.37	75.6	7.95	33.3
LMI-29	Low	8/14/2014 12:33	22.83	10.7	5.37	75.6	7.97	33.3
LMI-29	Low	8/14/2014 12:33	22.84	10.7	5.37	75.5	7.98	33.3

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	Low	8/14/2014 12:33	22.84	10.8	5.36	75.4	7.98	33.3
LMI-30	Low	8/14/2014 10:28	23.11	1.0	8.23	118.2	8.24	36.3
LMI-30	Low	8/14/2014 10:29	23.13	1.0	8.01	115.1	8.21	36.2
LMI-30	Low	8/14/2014 10:29	23.19	1.0	7.84	112.8	8.28	36.4
LMI-30	Low	8/14/2014 10:29	23.39	3.0	8.55	123.5	8.23	36.4
LMI-30	Low	8/14/2014 10:30	23.4	3.0	8.48	122.5	8.22	36.4
LMI-30	Low	8/14/2014 10:30	23.43	3.0	8.4	121.5	8.2	36.3
LMI-30	Low	8/14/2014 10:30	23.43	3.0	8.35	120.7	8.2	36.4
LMI-30	Low	8/14/2014 10:31	23.48	5.1	4.92	71.1	7.97	36.4
LMI-30	Low	8/14/2014 10:31	23.49	5.1	4.92	71.1	7.97	36.4
LMI-30	Low	8/14/2014 10:31	23.49	5.1	4.85	70.2	7.99	36.3
LMI-30	Low	8/14/2014 10:31	23.5	5.1	4.85	70.2	8	36.3
LMI-30	Low	8/14/2014 10:33	23.5	7.0	3.97	57.4	7.92	36.4
LMI-30	Low	8/14/2014 10:33	23.5	7.0	3.97	57.4	7.92	36.4
LMI-30	Low	8/14/2014 10:33	23.5	7.0	3.97	57.5	7.92	36.4
LMI-30	Low	8/14/2014 10:33	23.5	7.0	3.98	57.6	7.92	36.4
LMI-30	Low	8/14/2014 10:34	23.52	9.1	3.75	53.6	7.88	34.5
LMI-30	Low	8/14/2014 10:34	23.52	9.1	3.7	53.6	7.89	36.4
LMI-30	Low	8/14/2014 10:34	23.52	9.1	3.71	53.7	7.89	36.4
LMI-30	Low	8/14/2014 10:34	23.52	9.1	3.69	53.4	7.89	36.3
LMI-30	Low	8/14/2014 10:36	23.52	9.6	3.75	52.3	6.95	30
LMI-30	Low	8/14/2014 10:36	23.52	9.6	3.74	52.3	6.94	30.2
LMI-30	Low	8/14/2014 10:36	23.53	9.6	3.75	52.4	6.94	30.2
Channel Entrance	High	9/5/2014 14:06	23.94	1.0	7.6	109.2	8.12	32.9
Channel Entrance	High	9/5/2014 14:06	23.94	1.1	7.61	109.2	8.12	33
Channel Entrance	High	9/5/2014 14:07	23.91	1.1	7.62	109.3	8.12	33
Channel Entrance	High	9/5/2014 14:07	23.84	1.1	7.63	109.3	8.12	33
Channel Entrance	High	9/5/2014 14:07	23.7	3.3	7.62	109.1	8.12	33
Channel Entrance	High	9/5/2014 14:07	23.66	3.0	7.67	109.6	8.12	33.1
Channel Entrance	High	9/5/2014 14:07	23.63	3.1	7.66	109.4	8.12	33.1
Channel Entrance	High	9/5/2014 14:07	23.64	3.0	7.67	109.6	8.12	33.1
Channel Entrance	High	9/5/2014 14:08	23.61	5.3	7.67	109.5	8.12	33.2
Channel Entrance	High	9/5/2014 14:08	23.57	5.0	7.66	109.3	8.11	33.1
Channel Entrance	High	9/5/2014 14:08	23.55	4.9	7.64	109.1	8.11	33.1
Channel Entrance	High	9/5/2014 14:08	23.55	4.9	7.62	108.7	8.11	33.1
Channel Entrance	High	9/5/2014 14:08	23.43	7.2	7.62	108.6	8.1	33.1
Channel Entrance	High	9/5/2014 14:08	23.39	6.9	7.47	106.3	8.1	33.1
Channel Entrance	High	9/5/2014 14:09	23.43	7.0	7.49	106.5	8.11	33.1
Channel Entrance	High	9/5/2014 14:09	23.43	6.9	7.54	107.3	8.11	33.1
Channel Entrance	High	9/5/2014 14:09	23.39	7.0	7.57	107.7	8.11	33.2
Channel Entrance	High	9/5/2014 14:09	23.34	8.9	7.47	106.2	8.1	33.1
Channel Entrance	High	9/5/2014 14:09	23.3	9.0	7.37	104.7	8.1	33.1
Channel Entrance	High	9/5/2014 14:09	23.15	9.0	7.29	103.3	8.09	33.1
Channel Entrance	High	9/5/2014 14:10	23.16	8.9	7.19	101.8	8.08	33.1
Channel Entrance	High	9/5/2014 14:10	23.11	10.9	7.05	99.9	8.07	33
Channel Entrance	High	9/5/2014 14:10	23.07	10.2	6.84	96.8	8.07	33.1
Channel Entrance	High	9/5/2014 14:10	23.13	10.0	6.8	96.2	8.07	33.1
Channel Entrance	High	9/5/2014 14:10	23.12	10.0	6.89	97.6	8.08	33.1
Channel Entrance	High	9/5/2014 14:10	22.98	11.7	6.9	97.7	8.06	33
Channel Entrance	High	9/5/2014 14:11	22.92	11.1	6.61	93.3	8.05	33
Channel Entrance	High	9/5/2014 14:11	22.94	11.1	6.51	91.8	8.05	33.1
Channel Entrance	High	9/5/2014 14:11	22.9	11.1	6.45	90.9	8.05	33
Channel Entrance	High	9/5/2014 14:11	22.91	11.0	6.45	91	8.05	33.1
Channel Entrance	High	9/5/2014 14:11	22.85	12.8	6.47	91.1	8.05	33
Channel Entrance	High	9/5/2014 14:11	22.83	12.7	6.4	90.2	8.04	33.1
Channel Entrance	High	9/5/2014 14:12	22.82	12.7	6.38	89.9	8.04	33.1
Channel Entrance	High	9/5/2014 14:12	22.82	12.7	6.37	89.7	8.04	33.1
LMI-15	High	9/5/2014 12:08	23.25	1.0	6.18	87.7	8.05	33.2
LMI-15	High	9/5/2014 12:08	23.25	1.0	6.18	87.7	8.05	33.3
LMI-15	High	9/5/2014 12:08	23.27	0.9	6.18	87.8	8.05	33.2
LMI-15	High	9/5/2014 12:08	23.28	2.4	6.21	88.1	8.05	33.2
LMI-15	High	9/5/2014 12:08	23.27	2.8	6.23	88.4	8.06	33.2
LMI-15	High	9/5/2014 12:09	23.28	3.3	6.29	89.3	8.06	33.2
LMI-15	High	9/5/2014 12:09	23.28	3.0	6.33	89.9	8.06	33.2
LMI-15	High	9/5/2014 12:09	23.29	3.0	6.34	90	8.06	33.2
LMI-15	High	9/5/2014 12:09	23.29	3.0	6.36	90.3	8.07	33.2
LMI-15	High	9/5/2014 12:09	23.3	3.0	6.37	90.5	8.06	33.2

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-15	High	9/5/2014 12:09	23.25	4.6	6.37	90.4	8.07	33.1
LMI-15	High	9/5/2014 12:10	23.25	5.2	6.52	92.5	8.07	33.2
LMI-15	High	9/5/2014 12:10	23.25	5.0	6.57	93.1	8.07	33.1
LMI-15	High	9/5/2014 12:10	23.25	5.0	6.57	93.2	8.07	33.1
LMI-15	High	9/5/2014 12:10	23.23	5.0	6.59	93.5	8.07	33.2
LMI-15	High	9/5/2014 12:10	23.21	5.1	6.6	93.6	8.07	33.1
LMI-15	High	9/5/2014 12:10	23.13	6.9	6.53	92.4	8.06	33.1
LMI-15	High	9/5/2014 12:11	23.12	7.1	6.54	92.6	8.06	33.1
LMI-15	High	9/5/2014 12:11	23.12	7.0	6.56	92.8	8.06	33.1
LMI-15	High	9/5/2014 12:11	23.13	7.1	6.59	93.2	8.07	33.2
LMI-15	High	9/5/2014 12:11	23.04	8.4	6.54	92.6	8.04	33.1
LMI-15	High	9/5/2014 12:11	23.01	8.9	6.39	90.3	8.04	33.1
LMI-15	High	9/5/2014 12:11	22.99	9.0	6.33	89.4	8.04	33.2
LMI-15	High	9/5/2014 12:12	22.99	9.0	6.31	89.1	8.04	33.1
LMI-15	High	9/5/2014 12:12	22.98	10.9	6.35	88.9	7.98	31.6
LMI-15	High	9/5/2014 12:12	22.98	10.9	6.34	88.6	7.96	31.5
LMI-15	High	9/5/2014 12:12	22.98	11.0	6.33	88.5	7.96	31.5
LMI-15	High	9/5/2014 12:12	22.97	11.0	6.34	88.6	7.96	31.4
LMI-19	High	9/5/2014 11:44	23.48	1.0	6.06	86.3	8.06	33.1
LMI-19	High	9/5/2014 11:44	23.47	1.1	6.04	86.1	8.06	33.1
LMI-19	High	9/5/2014 11:44	23.47	1.0	6.04	86	8.06	33.1
LMI-19	High	9/5/2014 11:45	23.47	1.0	6.04	86	8.06	33.1
LMI-19	High	9/5/2014 11:45	23.43	3.1	6.06	86.2	8.08	33.1
LMI-19	High	9/5/2014 11:45	23.42	3.0	6.14	87.4	8.07	33.1
LMI-19	High	9/5/2014 11:45	23.43	3.1	6.15	87.5	8.06	33.2
LMI-19	High	9/5/2014 11:45	23.42	3.0	6.11	86.9	8.07	33.1
LMI-19	High	9/5/2014 11:45	23.39	4.9	6.16	87.6	8.08	33.1
LMI-19	High	9/5/2014 11:46	23.39	5.0	6.23	88.6	8.08	33.1
LMI-19	High	9/5/2014 11:46	23.38	5.0	6.27	89.1	8.08	33.1
LMI-19	High	9/5/2014 11:46	23.38	5.0	6.28	89.2	8.08	33.2
LMI-19	High	9/5/2014 11:46	23.35	6.7	6.29	89.4	8.08	33.1
LMI-19	High	9/5/2014 11:46	23.34	6.9	6.31	89.7	8.08	33.1
LMI-19	High	9/5/2014 11:46	23.34	6.9	6.32	89.8	8.08	33.1
LMI-19	High	9/5/2014 11:47	23.34	7.0	6.34	90	8.08	33.1
LMI-19	High	9/5/2014 11:47	23.34	7.1	6.34	90.1	8.08	33.2
LMI-19	High	9/5/2014 11:47	23.32	9.2	6.28	89.3	8.07	33.1
LMI-19	High	9/5/2014 11:47	23.3	9.0	6.16	87.5	8.06	33.1
LMI-19	High	9/5/2014 11:47	23.3	9.0	6.1	86.6	8.06	33.1
LMI-19	High	9/5/2014 11:47	23.3	9.0	6.07	86.1	8.06	33.1
LMI-19	High	9/5/2014 11:48	23.3	9.6	6.04	86	8.05	33.7
LMI-19	High	9/5/2014 11:48	23.3	9.7	6.11	85.9	8.03	31.4
LMI-19	High	9/5/2014 11:48	23.31	9.8	6.1	85.8	7.97	31.3
LMI-19	High	9/5/2014 11:48	23.32	9.8	6.1	85.8	7.95	31.4
LMI-19	High	9/5/2014 11:48	23.32	9.8	6.09	85.7	7.95	31.4
LMI-29	High	9/5/2014 12:44	23.57	1.0	7.06	100.6	8.1	32.9
LMI-29	High	9/5/2014 12:44	23.56	1.0	7.05	100.5	8.1	32.9
LMI-29	High	9/5/2014 12:44	23.56	1.0	7.02	100	8.1	32.9
LMI-29	High	9/5/2014 12:44	23.48	2.4	7.03	100.1	8.1	32.9
LMI-29	High	9/5/2014 12:44	23.44	3.0	7.07	100.5	8.09	32.9
LMI-29	High	9/5/2014 12:45	23.43	3.1	6.93	98.5	8.08	32.9
LMI-29	High	9/5/2014 12:45	23.43	3.1	6.84	97.2	8.08	32.9
LMI-29	High	9/5/2014 12:45	23.34	5.6	6.72	95.5	7.99	32.9
LMI-29	High	9/5/2014 12:45	23.3	5.2	5.31	75.3	7.97	32.9
LMI-29	High	9/5/2014 12:45	23.27	4.9	4.8	68.1	7.96	32.9
LMI-29	High	9/5/2014 12:45	23.27	5.0	4.53	64.2	7.96	32.9
LMI-29	High	9/5/2014 12:46	23.27	5.0	4.46	63.2	7.96	32.9
LMI-29	High	9/5/2014 12:46	23.27	5.1	4.44	62.9	7.96	32.9
LMI-29	High	9/5/2014 12:46	23.25	7.2	4.3	60.9	7.94	32.9
LMI-29	High	9/5/2014 12:46	23.23	7.0	4.09	57.9	7.93	32.9
LMI-29	High	9/5/2014 12:46	23.21	7.0	4.01	56.7	7.93	32.9
LMI-29	High	9/5/2014 12:46	23.25	9.1	3.97	56.3	7.93	33
LMI-29	High	9/5/2014 12:47	23.25	8.8	3.92	55.6	7.93	33
LMI-29	High	9/5/2014 12:47	23.25	8.9	3.89	55.1	7.93	33
LMI-29	High	9/5/2014 12:47	23.25	8.8	3.88	55	7.93	33
LMI-29	High	9/5/2014 12:47	23.26	8.9	3.87	54.9	7.93	33
LMI-29	High	9/5/2014 12:47	23.3	11.5	3.82	54.2	7.91	33.1
LMI-29	High	9/5/2014 12:47	23.3	11.1	3.7	52.5	7.91	33

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	High	9/5/2014 12:47	23.32	10.9	3.67	52.1	7.91	33
LMI-29	High	9/5/2014 12:48	23.32	10.8	3.67	52.1	7.91	33.1
LMI-29	High	9/5/2014 12:48	23.32	10.8	3.69	52.4	7.91	33
LMI-29	High	9/5/2014 12:48	23.33	11.4	3.7	52.6	7.9	33
LMI-29	High	9/5/2014 12:48	23.34	11.6	3.69	52.4	7.86	33
LMI-29	High	9/5/2014 12:48	23.34	11.6	3.68	52.3	7.85	33
LMI-29	High	9/5/2014 12:48	23.34	11.4	3.68	52.3	7.85	33
LMI-30	High	9/5/2014 11:14	23.88	1.0	3.93	56.4	7.9	33.2
LMI-30	High	9/5/2014 11:14	23.88	1.0	3.93	56.4	7.9	33.2
LMI-30	High	9/5/2014 11:14	23.9	1.0	3.91	56.1	7.9	33.2
LMI-30	High	9/5/2014 11:14	23.92	1.0	3.87	55.5	7.9	33.2
LMI-30	High	9/5/2014 11:14	23.93	3.3	3.83	55	7.9	33.2
LMI-30	High	9/5/2014 11:15	23.91	3.0	3.73	53.5	7.89	33.2
LMI-30	High	9/5/2014 11:15	23.92	3.0	3.7	53.1	7.89	33.1
LMI-30	High	9/5/2014 11:15	23.93	3.0	3.68	52.8	7.89	33.2
LMI-30	High	9/5/2014 11:15	23.88	5.1	3.64	52.3	7.88	33.1
LMI-30	High	9/5/2014 11:15	23.88	5.0	3.51	50.3	7.88	33.1
LMI-30	High	9/5/2014 11:15	23.88	5.0	3.5	50.2	7.88	33.1
LMI-30	High	9/5/2014 11:16	23.88	5.0	3.51	50.3	7.88	33.1
LMI-30	High	9/5/2014 11:16	23.85	6.9	3.43	49.1	7.85	33
LMI-30	High	9/5/2014 11:16	23.84	7.1	3.12	44.7	7.85	33.1
LMI-30	High	9/5/2014 11:16	23.83	7.0	2.98	42.7	7.85	33.1
LMI-30	High	9/5/2014 11:16	23.82	7.0	2.9	41.6	7.85	33.1
LMI-30	High	9/5/2014 11:16	23.81	9.1	2.85	40.8	7.85	33.1
LMI-30	High	9/5/2014 11:17	23.8	9.0	2.84	40.7	7.85	33.1
LMI-30	High	9/5/2014 11:17	23.79	9.1	2.82	40.4	7.85	33.1
LMI-30	High	9/5/2014 11:17	23.79	9.1	2.82	40.4	7.85	33.1
LMI-30	High	9/5/2014 11:17	23.79	10.4	2.82	40.3	7.84	33.1
LMI-30	High	9/5/2014 11:17	23.79	10.4	2.78	39.6	7.83	32
LMI-30	High	9/5/2014 11:17	23.79	10.3	2.76	39.3	7.83	32.1
LMI-30	High	9/5/2014 11:18	23.79	10.4	2.75	39.2	7.84	32
Channel Entrance	Low	9/12/2014 12:05	22.81	1.0	6.55	92.1	8.06	32.8
Channel Entrance	Low	9/12/2014 12:05	22.81	1.0	6.58	92.5	8.06	32.8
Channel Entrance	Low	9/12/2014 12:06	22.81	1.0	6.61	92.9	8.06	32.8
Channel Entrance	Low	9/12/2014 12:06	22.81	1.0	6.61	93	8.06	32.8
Channel Entrance	Low	9/12/2014 12:06	22.58	3.2	6.58	92.4	8.06	32.9
Channel Entrance	Low	9/12/2014 12:06	22.56	2.8	6.58	92.2	8.06	32.9
Channel Entrance	Low	9/12/2014 12:06	22.55	2.8	6.56	91.9	8.06	32.9
Channel Entrance	Low	9/12/2014 12:06	22.52	3.0	6.55	91.8	8.06	33
Channel Entrance	Low	9/12/2014 12:07	22.37	5.4	6.54	91.5	8.07	32.9
Channel Entrance	Low	9/12/2014 12:07	22.31	4.9	6.58	91.8	8.07	32.9
Channel Entrance	Low	9/12/2014 12:07	22.35	5.0	6.57	91.7	8.07	32.9
Channel Entrance	Low	9/12/2014 12:07	22.33	5.0	6.58	91.8	8.07	32.9
Channel Entrance	Low	9/12/2014 12:07	22.22	7.5	6.55	91.3	8.06	32.9
Channel Entrance	Low	9/12/2014 12:07	22.2	6.8	6.48	90.2	8.06	33
Channel Entrance	Low	9/12/2014 12:08	22.18	7.1	6.46	90	8.06	33
Channel Entrance	Low	9/12/2014 12:08	22.18	7.1	6.47	90.1	8.06	33
Channel Entrance	Low	9/12/2014 12:08	22.13	9.4	6.46	89.9	8.06	33
Channel Entrance	Low	9/12/2014 12:08	22.13	8.9	6.42	89.4	8.06	33
Channel Entrance	Low	9/12/2014 12:08	22.11	9.1	6.41	89.1	8.06	33
Channel Entrance	Low	9/12/2014 12:08	22.13	9.1	6.39	88.8	8.05	33
Channel Entrance	Low	9/12/2014 12:09	22.09	11.1	6.39	88.8	8.06	33
Channel Entrance	Low	9/12/2014 12:09	22.09	11.0	6.43	89.4	8.06	33
Channel Entrance	Low	9/12/2014 12:09	22.09	11.0	6.47	89.9	8.06	33
Channel Entrance	Low	9/12/2014 12:09	22.08	12.8	6.47	90	8.06	33.1
Channel Entrance	Low	9/12/2014 12:09	22.09	13.2	6.48	90.1	8.07	33.1
Channel Entrance	Low	9/12/2014 12:09	22.09	13.0	6.5	90.4	8.07	33
Channel Entrance	Low	9/12/2014 12:10	22.06	15.1	6.49	90.2	8.07	33.1
Channel Entrance	Low	9/12/2014 12:10	22.08	15.1	6.49	90.2	8.07	33.1
Channel Entrance	Low	9/12/2014 12:10	22.09	15.1	6.48	90.1	8.07	33.1
Channel Entrance	Low	9/12/2014 12:10	22.09	15.1	6.49	90.2	8.07	33
LMI-15	Low	9/12/2014 10:11	22.82	1.0	6.35	89.4	8.04	32.9
LMI-15	Low	9/12/2014 10:11	22.83	1.0	6.36	89.4	8.04	32.9
LMI-15	Low	9/12/2014 10:11	22.84	1.0	6.34	89.2	8.04	32.9
LMI-15	Low	9/12/2014 10:11	22.76	1.0	6.34	89.1	8.04	32.9
LMI-15	Low	9/12/2014 10:11	22.7	3.1	6.39	89.6	8.04	33
LMI-15	Low	9/12/2014 10:11	22.67	3.0	6.44	90.4	8.05	33

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-15	Low	9/12/2014 10:12	22.65	3.0	6.47	90.8	8.05	33
LMI-15	Low	9/12/2014 10:12	22.57	5.3	6.45	90.4	8.04	33
LMI-15	Low	9/12/2014 10:12	22.55	4.9	6.41	89.7	8.04	33
LMI-15	Low	9/12/2014 10:12	22.55	5.0	6.39	89.5	8.04	33
LMI-15	Low	9/12/2014 10:12	22.54	5.0	6.37	89.2	8.04	33
LMI-15	Low	9/12/2014 10:12	22.45	7.2	6.33	88.6	8.02	33
LMI-15	Low	9/12/2014 10:13	22.44	6.8	6.2	86.7	8.02	33
LMI-15	Low	9/12/2014 10:13	22.41	7.0	6.16	86.1	8.02	33
LMI-15	Low	9/12/2014 10:13	22.39	7.0	6.14	85.8	8.02	33
LMI-15	Low	9/12/2014 10:13	22.35	9.3	6.05	84.5	7.99	33
LMI-15	Low	9/12/2014 10:13	22.34	8.9	5.67	79.2	7.97	33
LMI-15	Low	9/12/2014 10:13	22.33	8.9	5.54	77.2	7.97	33
LMI-15	Low	9/12/2014 10:14	22.32	8.9	5.47	76.3	7.97	33
LMI-15	Low	9/12/2014 10:14	22.31	9.5	5.45	75.3	7.93	31.4
LMI-15	Low	9/12/2014 10:14	22.31	9.5	5.38	74.3	7.9	31.3
LMI-15	Low	9/12/2014 10:14	22.32	9.5	5.35	73.9	7.89	31.4
LMI-15	Low	9/12/2014 10:14	22.31	9.5	5.33	73.7	7.88	31.4
LMI-19	Low	9/12/2014 9:51	22.36	1.1	6.03	83.8	8.01	33.2
LMI-19	Low	9/12/2014 9:51	22.36	1.1	6.03	84.3	8.01	33.2
LMI-19	Low	9/12/2014 9:51	22.38	1.1	6.05	84.6	8.01	33.2
LMI-19	Low	9/12/2014 9:52	22.4	1.1	6.04	84.5	8.01	33.2
LMI-19	Low	9/12/2014 9:52	22.4	2.9	6.04	84.4	8.02	33.1
LMI-19	Low	9/12/2014 9:52	22.4	3.0	6.09	85.1	8.02	33.1
LMI-19	Low	9/12/2014 9:52	22.4	3.1	6.12	85.6	8.02	33.2
LMI-19	Low	9/12/2014 9:52	22.42	3.0	6.15	86	8.02	33.1
LMI-19	Low	9/12/2014 9:52	22.4	5.0	6.16	86.2	8.02	33.1
LMI-19	Low	9/12/2014 9:53	22.39	5.0	6.18	86.4	8.02	33.1
LMI-19	Low	9/12/2014 9:53	22.39	5.0	6.19	86.6	8.02	33.1
LMI-19	Low	9/12/2014 9:53	22.38	5.0	6.19	86.5	8.02	33.1
LMI-19	Low	9/12/2014 9:53	22.38	7.0	6.2	86.6	8.02	33.1
LMI-19	Low	9/12/2014 9:53	22.38	7.0	6.18	86.4	8.02	33.1
LMI-19	Low	9/12/2014 9:53	22.38	6.9	6.19	86.4	8.02	33.1
LMI-19	Low	9/12/2014 9:54	22.37	6.9	6.17	86.3	8.02	33.1
LMI-19	Low	9/12/2014 9:54	22.37	7.0	6.17	86.2	8.02	33.1
LMI-19	Low	9/12/2014 9:54	22.36	8.3	6.16	86.1	8.02	33.1
LMI-19	Low	9/12/2014 9:54	22.36	9.1	6.07	84.8	8.01	33.1
LMI-19	Low	9/12/2014 9:54	22.36	9.0	6.03	84.2	8.01	33.1
LMI-19	Low	9/12/2014 9:54	22.36	9.0	6.02	84.1	8.01	33.1
LMI-19	Low	9/12/2014 9:55	22.36	9.0	6.01	83.9	8.02	33.1
LMI-19	Low	9/12/2014 9:55	22.36	9.6	6.08	84.1	7.99	31.5
LMI-19	Low	9/12/2014 9:55	22.36	9.5	6.12	84.4	8	31.1
LMI-19	Low	9/12/2014 9:55	22.36	9.5	6.13	84.6	8	31.1
LMI-19	Low	9/12/2014 9:55	22.36	9.5	6.12	84.5	8.01	31.2
LMI-29	Low	9/12/2014 10:44	22.13	1.1	6.59	91.5	8.05	32.9
LMI-29	Low	9/12/2014 10:44	22.13	1.1	6.58	91.4	8.05	32.8
LMI-29	Low	9/12/2014 10:44	22.13	1.1	6.6	91.6	8.05	32.8
LMI-29	Low	9/12/2014 10:45	22.09	2.6	6.6	91.6	8.05	32.8
LMI-29	Low	9/12/2014 10:45	22.07	3.0	6.62	91.8	8.05	32.8
LMI-29	Low	9/12/2014 10:45	22.08	3.0	6.63	91.9	8.05	32.8
LMI-29	Low	9/12/2014 10:45	22.08	3.0	6.63	92	8.05	32.8
LMI-29	Low	9/12/2014 10:45	22.01	4.6	6.63	91.9	8.04	32.8
LMI-29	Low	9/12/2014 10:45	22	4.9	6.52	90.3	8.04	32.8
LMI-29	Low	9/12/2014 10:46	22	5.0	6.48	89.7	8.03	32.8
LMI-29	Low	9/12/2014 10:46	21.96	5.0	6.45	89.3	8.03	32.8
LMI-29	Low	9/12/2014 10:46	21.92	7.3	6.43	89	8	32.8
LMI-29	Low	9/12/2014 10:46	21.91	7.0	5.83	80.6	7.98	32.9
LMI-29	Low	9/12/2014 10:46	21.91	7.0	5.59	77.4	7.98	32.9
LMI-29	Low	9/12/2014 10:46	21.91	7.0	5.5	76.1	7.98	32.9
LMI-29	Low	9/12/2014 10:47	21.91	8.8	5.35	74	7.96	32.9
LMI-29	Low	9/12/2014 10:47	21.9	9.1	5.14	71.1	7.96	32.9
LMI-29	Low	9/12/2014 10:47	21.9	9.0	5.07	70.1	7.96	32.9
LMI-29	Low	9/12/2014 10:47	21.9	9.0	5.03	69.5	7.96	32.9
LMI-29	Low	9/12/2014 10:47	21.87	10.8	5.01	69.3	7.88	32.9
LMI-29	Low	9/12/2014 10:47	21.88	10.9	5.03	68.3	7.86	30
LMI-29	Low	9/12/2014 10:48	21.89	10.9	5.01	68	7.86	30
LMI-29	Low	9/12/2014 10:48	21.89	10.9	4.99	67.8	7.86	30.1
LMI-29	Low	9/12/2014 10:48	21.89	10.9	4.97	67.7	7.85	30.1

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-30	Low	9/12/2014 9:25	22.28	1.0	4.84	67.4	7.91	33
LMI-30	Low	9/12/2014 9:25	22.29	1.0	4.88	68	7.91	33
LMI-30	Low	9/12/2014 9:25	22.3	1.0	4.87	67.9	7.92	33
LMI-30	Low	9/12/2014 9:25	22.31	1.1	4.87	67.9	7.92	33
LMI-30	Low	9/12/2014 9:25	22.29	3.0	4.91	68.4	7.92	32.9
LMI-30	Low	9/12/2014 9:26	22.27	3.0	4.95	69	7.92	33
LMI-30	Low	9/12/2014 9:26	22.28	3.0	4.95	69	7.92	33
LMI-30	Low	9/12/2014 9:26	22.27	3.0	4.95	69	7.91	33
LMI-30	Low	9/12/2014 9:26	22.29	4.8	4.83	67.3	7.91	33
LMI-30	Low	9/12/2014 9:26	22.29	5.0	4.75	66.2	7.9	33
LMI-30	Low	9/12/2014 9:26	22.29	5.0	4.68	65.3	7.89	33
LMI-30	Low	9/12/2014 9:27	22.27	6.9	4.58	63.8	7.89	33
LMI-30	Low	9/12/2014 9:27	22.26	7.1	4.5	62.7	7.89	33
LMI-30	Low	9/12/2014 9:27	22.26	7.1	4.5	62.7	7.89	33
LMI-30	Low	9/12/2014 9:27	22.25	7.1	4.5	62.7	7.9	33
LMI-30	Low	9/12/2014 9:27	22.2	9.0	4.43	61.7	7.88	32.9
LMI-30	Low	9/12/2014 9:27	22.19	9.0	4.3	59.8	7.88	32.9
LMI-30	Low	9/12/2014 9:28	22.18	9.0	4.26	59.2	7.88	33
LMI-30	Low	9/12/2014 9:28	22.18	9.6	4.23	58.8	7.86	33
LMI-30	Low	9/12/2014 9:28	22.18	9.5	3.98	55.4	7.86	33
LMI-30	Low	9/12/2014 9:28	22.18	9.6	3.9	54.3	7.85	33
LMI-30	Low	9/12/2014 9:28	22.18	9.6	3.83	53.3	7.85	33
LMI-30	Low	9/12/2014 9:28	22.18	9.6	3.77	52.4	7.85	33
Channel Entrance	High	10/23/2014 14:11	20.42	1.1	5.93	79.5	7.87	32.8
Channel Entrance	High	10/23/2014 14:11	20.43	1.0	5.93	79.5	7.87	32.8
Channel Entrance	High	10/23/2014 14:11	20.44	1.0	5.92	79.4	7.87	32.8
Channel Entrance	High	10/23/2014 14:11	20.45	1.0	5.93	79.5	7.87	32.8
Channel Entrance	High	10/23/2014 14:11	20.38	3.9	5.91	79.2	7.87	32.7
Channel Entrance	High	10/23/2014 14:11	20.35	4.1	5.94	79.5	7.87	32.7
Channel Entrance	High	10/23/2014 14:11	20.31	3.9	5.94	79.4	7.87	32.7
Channel Entrance	High	10/23/2014 14:12	20.31	3.0	5.92	79.2	7.87	32.7
Channel Entrance	High	10/23/2014 14:12	20.33	3.0	5.93	79.3	7.87	32.7
Channel Entrance	High	10/23/2014 14:12	20.34	3.1	5.93	79.4	7.87	32.7
Channel Entrance	High	10/23/2014 14:12	20.25	5.1	5.9	78.9	7.87	32.7
Channel Entrance	High	10/23/2014 14:12	20.23	5.0	5.86	78.2	7.86	32.7
Channel Entrance	High	10/23/2014 14:12	20.24	5.0	5.82	77.7	7.86	32.7
Channel Entrance	High	10/23/2014 14:13	20.17	7.7	5.78	77.1	7.87	32.7
Channel Entrance	High	10/23/2014 14:13	20.16	7.0	5.78	77.1	7.87	32.7
Channel Entrance	High	10/23/2014 14:13	20.15	6.8	5.79	77.2	7.87	32.7
Channel Entrance	High	10/23/2014 14:13	20.13	6.8	5.79	77.2	7.87	32.7
Channel Entrance	High	10/23/2014 14:13	20.12	9.8	5.79	77.1	7.87	32.7
Channel Entrance	High	10/23/2014 14:13	20.11	8.7	5.86	78	7.88	32.7
Channel Entrance	High	10/23/2014 14:14	20.11	8.8	5.88	78.3	7.88	32.7
Channel Entrance	High	10/23/2014 14:14	20.11	8.9	5.89	78.5	7.88	32.7
Channel Entrance	High	10/23/2014 14:14	20.06	12.0	5.9	78.6	7.88	32.7
Channel Entrance	High	10/23/2014 14:14	20.06	11.2	5.89	78.3	7.88	32.7
Channel Entrance	High	10/23/2014 14:14	20.06	10.9	5.88	78.3	7.88	32.7
Channel Entrance	High	10/23/2014 14:14	20.06	11.0	5.87	78.2	7.88	32.7
Channel Entrance	High	10/23/2014 14:15	20.04	14.0	5.87	78.2	7.87	32.7
Channel Entrance	High	10/23/2014 14:15	20.04	12.7	5.77	76.8	7.87	32.7
Channel Entrance	High	10/23/2014 14:15	20.05	12.7	5.73	76.2	7.86	32.7
Channel Entrance	High	10/23/2014 14:15	20.05	12.8	5.69	75.8	7.86	32.7
Channel Entrance	High	10/23/2014 14:15	20.05	12.8	5.68	75.6	7.86	32.7
Channel Entrance	High	10/23/2014 14:15	20.05	12.8	5.67	75.5	7.86	32.7
Channel Entrance	High	10/23/2014 14:16	20.04	15.2	5.73	75	7.84	29.8
Channel Entrance	High	10/23/2014 14:16	20.04	15.2	5.6	73.4	7.84	30
Channel Entrance	High	10/23/2014 14:16	20.05	15.1	5.56	72.9	7.84	30.3
Channel Entrance	High	10/23/2014 14:16	20.05	15.1	5.53	72.6	7.84	30.3
LMI-15	High	10/23/2014 13:20	20.86	1.1	7.6	102.4	7.93	32.3
LMI-15	High	10/23/2014 13:20	20.82	1.0	7.56	101.8	7.93	32.3
LMI-15	High	10/23/2014 13:20	20.75	1.1	7.52	101.2	7.93	32.3
LMI-15	High	10/23/2014 13:20	20.75	1.1	7.49	100.7	7.93	32.4
LMI-15	High	10/23/2014 13:20	20.53	3.1	7.37	98.8	7.92	32.4
LMI-15	High	10/23/2014 13:21	20.48	3.1	7.24	97	7.91	32.4
LMI-15	High	10/23/2014 13:21	20.48	3.1	7.16	95.9	7.91	32.4
LMI-15	High	10/23/2014 13:21	20.48	3.1	7.13	95.4	7.91	32.4
LMI-15	High	10/23/2014 13:21	20.31	5.0	6.95	92.8	7.88	32.4

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-15	High	10/23/2014 13:21	20.31	5.0	6.7	89.4	7.86	32.4
LMI-15	High	10/23/2014 13:21	20.28	5.0	6.49	86.6	7.86	32.5
LMI-15	High	10/23/2014 13:22	20.26	5.0	6.41	85.5	7.85	32.5
LMI-15	High	10/23/2014 13:22	20.17	6.9	6.19	82.4	7.82	32.5
LMI-15	High	10/23/2014 13:22	20.13	7.1	5.88	78.2	7.82	32.5
LMI-15	High	10/23/2014 13:22	20.13	7.1	5.71	75.9	7.81	32.5
LMI-15	High	10/23/2014 13:22	20.1	7.1	5.6	74.5	7.8	32.5
LMI-15	High	10/23/2014 13:22	20.04	9.1	5.37	71.4	7.78	32.6
LMI-15	High	10/23/2014 13:23	20.05	9.0	5.09	67.6	7.77	32.6
LMI-15	High	10/23/2014 13:23	20.06	9.0	5	66.4	7.76	32.6
LMI-15	High	10/23/2014 13:23	20.06	9.0	4.94	65.7	7.75	32.6
LMI-15	High	10/23/2014 13:23	20.04	10.6	4.77	61.9	7.61	28.7
LMI-15	High	10/23/2014 13:23	20.04	10.5	4.47	58.1	7.59	28.6
LMI-15	High	10/23/2014 13:23	20.05	10.5	4.37	56.8	7.6	28.6
LMI-15	High	10/23/2014 13:24	20.06	10.5	4.31	55.9	7.6	28.6
LMI-19	High	10/23/2014 12:17	20.39	1.0	7	93.5	7.88	32.4
LMI-19	High	10/23/2014 12:17	20.39	1.1	6.97	93	7.88	32.4
LMI-19	High	10/23/2014 12:17	20.35	1.0	6.96	92.8	7.88	32.4
LMI-19	High	10/23/2014 12:18	20.34	1.0	6.96	92.9	7.89	32.4
LMI-19	High	10/23/2014 12:18	20.22	3.1	6.93	92.3	7.87	32.4
LMI-19	High	10/23/2014 12:18	20.21	2.9	6.8	90.6	7.86	32.5
LMI-19	High	10/23/2014 12:18	20.17	2.8	6.74	89.6	7.86	32.5
LMI-19	High	10/23/2014 12:18	20.17	2.9	6.71	89.3	7.86	32.5
LMI-19	High	10/23/2014 12:18	20.08	5.2	6.69	88.9	7.86	32.5
LMI-19	High	10/23/2014 12:19	20.05	4.9	6.72	89.2	7.87	32.5
LMI-19	High	10/23/2014 12:19	20.06	4.9	6.74	89.5	7.87	32.5
LMI-19	High	10/23/2014 12:19	20.06	4.9	6.74	89.5	7.87	32.4
LMI-19	High	10/23/2014 12:19	20.04	7.4	6.34	84.1	7.77	32.6
LMI-19	High	10/23/2014 12:19	20.04	6.8	5.37	71.3	7.73	32.6
LMI-19	High	10/23/2014 12:19	20.04	7.0	4.84	64.3	7.72	32.6
LMI-19	High	10/23/2014 12:20	20.04	6.9	4.62	61.3	7.71	32.7
LMI-19	High	10/23/2014 12:20	20.04	9.3	4.42	58.7	7.67	32.7
LMI-19	High	10/23/2014 12:20	20.04	9.2	3.88	51.6	7.66	32.7
LMI-19	High	10/23/2014 12:20	20.05	8.7	3.52	46.7	7.65	32.7
LMI-19	High	10/23/2014 12:20	20.05	9.0	3.36	44.7	7.65	32.7
LMI-19	High	10/23/2014 12:20	20.05	9.4	3.28	43.1	7.63	30.8
LMI-19	High	10/23/2014 12:21	20.06	9.3	3.22	42.3	7.62	30.8
LMI-19	High	10/23/2014 12:21	20.05	9.4	3.2	42.1	7.63	30.8
LMI-29	High	10/23/2014 11:37	19.66	1.0	5.54	72.8	7.68	32
LMI-29	High	10/23/2014 11:37	19.65	1.0	5.55	73	7.68	32.1
LMI-29	High	10/23/2014 11:37	19.64	1.0	5.56	73.1	7.69	32.1
LMI-29	High	10/23/2014 11:37	19.65	1.1	5.58	73.3	7.69	32.1
LMI-29	High	10/23/2014 11:37	19.64	3.0	5.61	73.9	7.71	32.3
LMI-29	High	10/23/2014 11:38	19.64	3.0	5.71	75.1	7.71	32.4
LMI-29	High	10/23/2014 11:38	19.64	3.0	5.74	75.6	7.72	32.4
LMI-29	High	10/23/2014 11:38	19.64	3.0	5.77	75.9	7.72	32.4
LMI-29	High	10/23/2014 11:38	19.63	4.9	5.72	75.3	7.71	32.5
LMI-29	High	10/23/2014 11:38	19.63	5.2	5.6	73.7	7.71	32.5
LMI-29	High	10/23/2014 11:38	19.63	5.1	5.52	72.7	7.71	32.5
LMI-29	High	10/23/2014 11:39	19.6	7.3	5.26	69.3	7.68	32.5
LMI-29	High	10/23/2014 11:39	19.6	7.0	4.97	65.5	7.68	32.5
LMI-29	High	10/23/2014 11:39	19.6	6.9	4.81	63.3	7.67	32.5
LMI-29	High	10/23/2014 11:39	19.6	6.9	4.74	62.4	7.67	32.5
LMI-29	High	10/23/2014 11:39	19.55	9.1	4.69	61.6	7.68	32.4
LMI-29	High	10/23/2014 11:39	19.55	9.0	4.69	61.6	7.68	32.4
LMI-29	High	10/23/2014 11:40	19.53	9.0	4.68	61.6	7.68	32.4
LMI-29	High	10/23/2014 11:40	19.51	11.3	4.76	61.4	7.66	29.5
LMI-29	High	10/23/2014 11:40	19.52	11.2	4.75	61.3	7.66	29.5
LMI-29	High	10/23/2014 11:40	19.52	11.2	4.75	61.3	7.66	29.5
LMI-30	High	10/23/2014 12:52	20.87	0.9	2.87	38.7	7.57	32.5
LMI-30	High	10/23/2014 12:52	20.85	1.0	2.96	39.9	7.57	32.5
LMI-30	High	10/23/2014 12:52	20.84	1.0	3.08	41.5	7.58	32.5
LMI-30	High	10/23/2014 12:52	20.84	1.0	3.13	42.1	7.58	32.5
LMI-30	High	10/23/2014 12:52	20.64	2.9	3.33	44.8	7.65	32.4
LMI-30	High	10/23/2014 12:53	20.61	3.1	3.69	49.5	7.68	32.5
LMI-30	High	10/23/2014 12:53	20.61	3.1	3.86	51.8	7.69	32.5
LMI-30	High	10/23/2014 12:53	20.58	3.1	3.96	53.2	7.69	32.5

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-30	High	10/23/2014 12:53	20.4	4.9	3.83	51.3	7.64	32.4
LMI-30	High	10/23/2014 12:53	20.35	5.4	3.43	45.9	7.62	32.5
LMI-30	High	10/23/2014 12:53	20.31	5.1	3.15	42.1	7.61	32.5
LMI-30	High	10/23/2014 12:54	20.32	5.1	2.99	40	7.61	32.5
LMI-30	High	10/23/2014 12:54	20.32	5.1	2.93	39	7.6	32.5
LMI-30	High	10/23/2014 12:54	20.22	7.3	2.89	38.5	7.61	32.5
LMI-30	High	10/23/2014 12:54	20.22	7.1	2.92	38.9	7.61	32.5
LMI-30	High	10/23/2014 12:54	20.22	7.0	2.94	39.2	7.61	32.6
LMI-30	High	10/23/2014 12:54	20.22	7.0	2.96	39.4	7.61	32.6
LMI-30	High	10/23/2014 12:55	20.14	8.9	2.99	39.8	7.62	32.6
LMI-30	High	10/23/2014 12:55	20.14	9.0	3.09	41.1	7.62	32.6
LMI-30	High	10/23/2014 12:55	20.14	9.0	3.12	41.5	7.62	32.6
LMI-30	High	10/23/2014 12:55	20.14	9.0	3.13	41.7	7.62	32.6
LMI-30	High	10/23/2014 12:55	20.13	10.0	3.15	41.7	7.62	31.9
LMI-30	High	10/23/2014 12:55	20.13	10.0	3.12	41.4	7.61	32.2
LMI-30	High	10/23/2014 12:56	20.13	10.0	3.12	41.4	7.61	32.1
LMI-30	High	10/23/2014 12:56	20.13	10.0	3.11	41.3	7.61	32.2
Channel Entrance	Low	10/30/2014 15:19	19.68	1.0	7.73	102.4	7.98	32.4
Channel Entrance	Low	10/30/2014 15:19	19.68	1.0	7.73	102.5	7.98	32.4
Channel Entrance	Low	10/30/2014 15:19	19.68	1.0	7.73	102.5	7.98	32.4
Channel Entrance	Low	10/30/2014 15:19	19.66	1.0	7.74	102.5	7.98	32.4
Channel Entrance	Low	10/30/2014 15:19	19.59	3.0	7.68	101.7	7.95	32.4
Channel Entrance	Low	10/30/2014 15:20	19.56	3.0	7.57	100.2	7.94	32.4
Channel Entrance	Low	10/30/2014 15:20	19.52	2.9	7.47	98.8	7.94	32.4
Channel Entrance	Low	10/30/2014 15:20	19.52	2.9	7.39	97.7	7.93	32.4
Channel Entrance	Low	10/30/2014 15:20	19.36	4.8	7.15	94.3	7.9	32.4
Channel Entrance	Low	10/30/2014 15:20	19.3	4.9	6.9	90.8	7.89	32.4
Channel Entrance	Low	10/30/2014 15:20	19.28	5.0	6.74	88.7	7.88	32.5
Channel Entrance	Low	10/30/2014 15:21	19.24	5.0	6.66	87.6	7.88	32.5
Channel Entrance	Low	10/30/2014 15:21	19.23	6.9	6.6	86.8	7.88	32.5
Channel Entrance	Low	10/30/2014 15:21	19.23	7.0	6.57	86.3	7.88	32.5
Channel Entrance	Low	10/30/2014 15:21	19.23	7.1	6.55	86.1	7.88	32.5
Channel Entrance	Low	10/30/2014 15:21	19.23	7.0	6.54	86.1	7.88	32.5
Channel Entrance	Low	10/30/2014 15:21	19.16	9.0	6.53	85.8	7.88	32.5
Channel Entrance	Low	10/30/2014 15:22	19.16	9.0	6.54	85.9	7.88	32.6
Channel Entrance	Low	10/30/2014 15:22	19.15	9.0	6.53	85.8	7.88	32.6
Channel Entrance	Low	10/30/2014 15:22	19.15	9.0	6.52	85.7	7.88	32.6
Channel Entrance	Low	10/30/2014 15:22	19.14	11.0	6.53	85.7	7.88	32.6
Channel Entrance	Low	10/30/2014 15:22	19.15	11.0	6.53	85.8	7.88	32.6
Channel Entrance	Low	10/30/2014 15:22	19.15	11.0	6.52	85.6	7.88	32.6
Channel Entrance	Low	10/30/2014 15:23	19.15	11.0	6.52	85.6	7.88	32.6
Channel Entrance	Low	10/30/2014 15:23	19.11	12.9	6.51	85.5	7.88	32.6
Channel Entrance	Low	10/30/2014 15:23	19.12	13.0	6.51	85.5	7.88	32.6
Channel Entrance	Low	10/30/2014 15:23	19.13	13.0	6.51	85.5	7.88	32.6
Channel Entrance	Low	10/30/2014 15:23	19.13	13.0	6.51	85.5	7.88	32.6
Channel Entrance	Low	10/30/2014 15:23	19.1	14.9	6.5	85.4	7.87	32.6
Channel Entrance	Low	10/30/2014 15:24	19.1	15.2	6.49	85.2	7.87	32.6
Channel Entrance	Low	10/30/2014 15:24	19.1	15.2	6.48	85	7.87	32.6
Channel Entrance	Low	10/30/2014 15:24	19.1	15.2	6.47	84.9	7.87	32.6
Channel Entrance	Low	10/30/2014 15:24	19.1	15.2	6.46	84.9	7.87	32.6
LMI-15	Low	10/30/2014 13:21	20.34	1.1	14.18	189.9	8.34	32.2
LMI-15	Low	10/30/2014 13:21	20.26	1.0	14.19	190	8.34	32.2
LMI-15	Low	10/30/2014 13:22	20.24	1.0	14.23	190.4	8.34	32.3
LMI-15	Low	10/30/2014 13:22	20.24	1.0	14.26	190.7	8.34	32.3
LMI-15	Low	10/30/2014 13:22	19.95	3.1	14.02	187.1	8.3	32
LMI-15	Low	10/30/2014 13:22	19.79	3.1	13.68	181.4	8.29	32.1
LMI-15	Low	10/30/2014 13:22	19.71	3.0	13.62	180.4	8.29	32.2
LMI-15	Low	10/30/2014 13:23	19.66	5.0	13.17	174.2	8.17	32.2
LMI-15	Low	10/30/2014 13:23	19.61	5.0	11.62	153.6	8.1	32.2
LMI-15	Low	10/30/2014 13:23	19.53	5.0	10.7	141.3	8.08	32.2
LMI-15	Low	10/30/2014 13:23	19.5	5.0	10.15	133.9	8.08	32.3
LMI-15	Low	10/30/2014 13:23	19.42	6.9	9.43	124.3	7.98	32.3
LMI-15	Low	10/30/2014 13:23	19.39	7.0	8.14	107.3	7.93	32.4
LMI-15	Low	10/30/2014 13:24	19.37	7.0	7.44	98	7.91	32.4
LMI-15	Low	10/30/2014 13:24	19.34	7.0	6.96	91.6	7.89	32.4
LMI-15	Low	10/30/2014 13:24	19.3	9.1	6.5	85.5	7.85	32.5
LMI-15	Low	10/30/2014 13:24	19.3	9.0	6.02	79.2	7.83	32.4

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-15	Low	10/30/2014 13:24	19.28	8.9	5.79	76.2	7.82	32.5
LMI-15	Low	10/30/2014 13:24	19.26	8.9	5.65	74.3	7.82	32.5
LMI-15	Low	10/30/2014 13:25	19.25	8.8	5.57	73.3	7.82	32.5
LMI-15	Low	10/30/2014 13:25	19.24	9.8	5.62	72.7	7.81	29.8
LMI-15	Low	10/30/2014 13:25	19.24	9.9	5.58	72.2	7.81	29.9
LMI-15	Low	10/30/2014 13:25	19.24	9.9	5.57	72	7.8	29.9
LMI-15	Low	10/30/2014 13:25	19.25	9.9	5.57	72	7.79	29.9
LMI-19	Low	10/30/2014 13:03	20.18	1.2	13.05	174.4	8.28	32.2
LMI-19	Low	10/30/2014 13:03	20.17	1.2	13.09	174.8	8.27	32.2
LMI-19	Low	10/30/2014 13:03	20.15	1.1	13.11	175.1	8.27	32.2
LMI-19	Low	10/30/2014 13:03	20.13	1.2	13.08	174.6	8.28	32.2
LMI-19	Low	10/30/2014 13:03	19.88	3.5	12.81	170.7	8.26	32.1
LMI-19	Low	10/30/2014 13:03	19.81	2.9	13.15	174.4	8.27	32.2
LMI-19	Low	10/30/2014 13:04	19.77	3.0	12.95	171.6	8.26	32.2
LMI-19	Low	10/30/2014 13:04	19.77	3.0	12.79	169.4	8.26	32.2
LMI-19	Low	10/30/2014 13:04	19.68	5.3	12.72	168.4	8.16	32.1
LMI-19	Low	10/30/2014 13:04	19.64	5.0	11.59	153.3	8.1	32.2
LMI-19	Low	10/30/2014 13:04	19.64	5.0	11.01	145.6	8.12	32.2
LMI-19	Low	10/30/2014 13:04	19.64	5.0	10.84	143.3	8.12	32.2
LMI-19	Low	10/30/2014 13:05	19.59	6.7	10.58	139.9	7.97	32.4
LMI-19	Low	10/30/2014 13:05	19.59	6.3	8.41	111.2	7.88	32.4
LMI-19	Low	10/30/2014 13:05	19.59	7.0	7.12	94.2	7.82	32.4
LMI-19	Low	10/30/2014 13:05	19.59	7.0	6.33	83.7	7.8	32.4
LMI-19	Low	10/30/2014 13:05	19.59	7.0	6.06	80.2	7.79	32.4
LMI-19	Low	10/30/2014 13:05	19.58	7.0	5.89	77.9	7.79	32.4
LMI-19	Low	10/30/2014 13:06	19.59	8.9	4.75	62.8	7.7	32.5
LMI-19	Low	10/30/2014 13:06	19.59	9.4	4.35	57.3	7.67	31.7
LMI-19	Low	10/30/2014 13:06	19.59	9.5	4.03	53.1	7.66	31.8
LMI-19	Low	10/30/2014 13:06	19.59	9.3	3.87	51.1	7.65	32.1
LMI-19	Low	10/30/2014 13:06	19.59	9.4	3.76	49.7	7.58	32
LMI-19	Low	10/30/2014 13:06	19.59	9.2	3.65	48	7.54	31.5
LMI-19	Low	10/30/2014 13:07	19.6	9.3	3.6	47.3	7.52	31.5
LMI-19	Low	10/30/2014 13:07	19.6	9.2	3.58	47	7.51	31.5
LMI-29	Low	10/30/2014 12:36	19.92	1.0	7.06	93.6	7.81	31.8
LMI-29	Low	10/30/2014 12:36	19.87	0.9	7.06	93.6	7.82	31.9
LMI-29	Low	10/30/2014 12:36	19.86	1.0	7.08	93.8	7.82	31.9
LMI-29	Low	10/30/2014 12:36	19.82	1.0	7.09	93.9	7.83	31.9
LMI-29	Low	10/30/2014 12:36	19.7	2.7	7.12	94.1	7.84	31.9
LMI-29	Low	10/30/2014 12:36	19.61	3.2	7.24	95.5	7.85	31.9
LMI-29	Low	10/30/2014 12:37	19.55	3.1	7.31	96.4	7.86	31.9
LMI-29	Low	10/30/2014 12:37	19.53	3.1	7.38	97.2	7.86	31.9
LMI-29	Low	10/30/2014 12:37	19.33	5.4	7.53	99	7.89	31.8
LMI-29	Low	10/30/2014 12:37	19.3	4.9	7.83	102.7	7.89	31.9
LMI-29	Low	10/30/2014 12:37	19.32	5.0	7.95	104.2	7.9	31.9
LMI-29	Low	10/30/2014 12:37	19.28	5.0	8.08	106	7.91	31.9
LMI-29	Low	10/30/2014 12:38	19.15	7.2	7.85	102.8	7.85	31.9
LMI-29	Low	10/30/2014 12:38	19.14	7.0	7.11	93	7.82	32
LMI-29	Low	10/30/2014 12:38	19.11	6.9	6.69	87.4	7.8	32
LMI-29	Low	10/30/2014 12:38	19.09	7.0	6.46	84.4	7.8	32
LMI-29	Low	10/30/2014 12:38	19.02	9.1	6.35	82.9	7.81	32
LMI-29	Low	10/30/2014 12:38	19.01	9.0	6.36	83	7.81	32
LMI-29	Low	10/30/2014 12:39	19.02	9.0	6.33	82.7	7.81	32
LMI-29	Low	10/30/2014 12:39	19	9.0	6.29	82.2	7.8	32
LMI-29	Low	10/30/2014 12:39	19.01	10.8	6.09	79.5	7.77	32
LMI-29	Low	10/30/2014 12:39	19.01	10.9	5.77	75.3	7.77	32.1
LMI-29	Low	10/30/2014 12:39	19.02	10.8	5.64	73.7	7.76	32.1
LMI-29	Low	10/30/2014 12:39	19.02	10.8	5.57	72.7	7.76	32.1
LMI-29	Low	10/30/2014 12:40	19.02	10.8	5.53	72.2	7.76	32.1
LMI-30	Low	10/30/2014 13:53	20.22	1.1	13.21	176.7	8.28	32.3
LMI-30	Low	10/30/2014 13:53	20.21	1.2	13.33	178.2	8.28	32.3
LMI-30	Low	10/30/2014 13:53	20.17	1.1	13.48	180.2	8.28	32.3
LMI-30	Low	10/30/2014 13:53	20.17	1.1	13.62	182.1	8.29	32.3
LMI-30	Low	10/30/2014 13:54	20.13	3.1	13.91	185.8	8.3	32.3
LMI-30	Low	10/30/2014 13:54	20.13	2.8	14.14	188.8	8.3	32.3
LMI-30	Low	10/30/2014 13:54	20.11	3.0	14.3	190.9	8.29	32.3
LMI-30	Low	10/30/2014 13:54	20.1	3.0	14.29	190.7	8.3	32.3
LMI-30	Low	10/30/2014 13:54	19.98	4.7	13.23	176.2	8.13	32.2

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-30	Low	10/30/2014 13:55	19.94	5.0	9.37	124.6	7.81	32.1
LMI-30	Low	10/30/2014 13:55	19.87	4.9	6.76	89.8	7.71	32.1
LMI-30	Low	10/30/2014 13:55	19.85	5.0	5.31	70.5	7.65	32.1
LMI-30	Low	10/30/2014 13:55	19.76	5.0	4.67	61.9	7.63	32.1
LMI-30	Low	10/30/2014 13:55	19.68	5.0	4.39	58.2	7.62	32.2
LMI-30	Low	10/30/2014 13:56	19.68	4.9	4.17	55.2	7.65	32.2
LMI-30	Low	10/30/2014 13:56	19.67	5.0	4.37	57.9	7.68	32.2
LMI-30	Low	10/30/2014 13:56	19.42	6.9	3.57	47	7.55	32.1
LMI-30	Low	10/30/2014 13:56	19.38	7.1	2.74	36.1	7.51	32.1
LMI-30	Low	10/30/2014 13:56	19.38	7.1	2.33	30.6	7.49	32.2
LMI-30	Low	10/30/2014 13:56	19.36	7.1	2.13	28.1	7.48	32.2
LMI-30	Low	10/30/2014 13:57	19.33	7.1	1.98	26	7.47	32.2
LMI-30	Low	10/30/2014 13:57	19.26	8.6	1.82	23.9	7.46	32.1
LMI-30	Low	10/30/2014 13:57	19.25	9.0	1.78	23.4	7.47	32.2
LMI-30	Low	10/30/2014 13:57	19.24	9.0	1.89	24.8	7.48	32.2
LMI-30	Low	10/30/2014 13:57	19.23	9.0	1.97	25.9	7.48	32.2
LMI-30	Low	10/30/2014 13:57	19.19	9.7	2.05	26.7	7.47	31
LMI-30	Low	10/30/2014 13:58	19.2	9.7	2.1	27.2	7.46	30.1
LMI-30	Low	10/30/2014 13:58	19.2	9.7	2.11	27.4	7.46	30.1
LMI-30	Low	10/30/2014 13:58	19.19	9.7	2.13	27.6	7.46	30.1
Channel Entrance	High	11/18/2014 11:25	16.67	0.9	6.21	76.8	7.81	31.7
Channel Entrance	High	11/18/2014 11:25	16.67	0.9	6.2	76.7	7.81	31.7
Channel Entrance	High	11/18/2014 11:25	16.68	1.0	6.19	76.6	7.8	31.6
Channel Entrance	High	11/18/2014 11:25	16.69	1.0	6.19	76.5	7.8	31.6
Channel Entrance	High	11/18/2014 11:25	16.69	2.9	6.2	76.7	7.81	31.6
Channel Entrance	High	11/18/2014 11:25	16.69	2.9	6.26	77.4	7.81	31.6
Channel Entrance	High	11/18/2014 11:26	16.7	2.9	6.28	77.7	7.81	31.6
Channel Entrance	High	11/18/2014 11:26	16.69	4.9	6.33	78.3	7.81	31.6
Channel Entrance	High	11/18/2014 11:26	16.69	5.0	6.34	78.4	7.81	31.6
Channel Entrance	High	11/18/2014 11:26	16.69	4.9	6.35	78.5	7.81	31.6
Channel Entrance	High	11/18/2014 11:26	16.69	4.9	6.35	78.5	7.81	31.6
Channel Entrance	High	11/18/2014 11:27	16.66	7.0	6.34	78.4	7.81	31.6
Channel Entrance	High	11/18/2014 11:27	16.65	7.0	6.33	78.2	7.81	31.6
Channel Entrance	High	11/18/2014 11:27	16.66	7.0	6.31	78	7.81	31.6
Channel Entrance	High	11/18/2014 11:27	16.65	9.0	6.29	77.8	7.81	31.7
Channel Entrance	High	11/18/2014 11:27	16.65	9.0	6.28	77.6	7.81	31.6
Channel Entrance	High	11/18/2014 11:27	16.65	9.0	6.28	77.6	7.81	31.6
Channel Entrance	High	11/18/2014 11:28	16.59	11.1	6.2	76.5	7.79	31.6
Channel Entrance	High	11/18/2014 11:28	16.58	11.1	6.09	75.1	7.79	31.6
Channel Entrance	High	11/18/2014 11:28	16.56	11.1	6.03	74.4	7.78	31.6
Channel Entrance	High	11/18/2014 11:28	16.54	12.5	5.94	73.2	7.76	31.5
Channel Entrance	High	11/18/2014 11:28	16.55	12.4	5.85	72.1	7.76	31.6
Channel Entrance	High	11/18/2014 11:28	16.54	12.6	5.81	71.7	7.76	31.6
Channel Entrance	High	11/18/2014 11:29	16.53	12.7	5.79	71.4	7.76	31.6
LMI-15	High	11/18/2014 9:54	15.66	1.0	5.14	62.2	7.64	31.4
LMI-15	High	11/18/2014 9:54	15.66	1.0	5.14	62.1	7.64	31.3
LMI-15	High	11/18/2014 9:55	15.66	1.0	5.13	62.1	7.64	31.3
LMI-15	High	11/18/2014 9:55	15.66	1.0	5.13	62.1	7.63	31.4
LMI-15	High	11/18/2014 9:55	15.66	3.0	5.14	62.1	7.64	31.4
LMI-15	High	11/18/2014 9:55	15.66	2.9	5.16	62.5	7.64	31.4
LMI-15	High	11/18/2014 9:55	15.66	3.0	5.18	62.6	7.64	31.4
LMI-15	High	11/18/2014 9:55	15.66	3.0	5.18	62.7	7.64	31.4
LMI-15	High	11/18/2014 9:56	15.66	5.0	5.2	62.9	7.65	31.4
LMI-15	High	11/18/2014 9:56	15.66	5.0	5.22	63.2	7.65	31.4
LMI-15	High	11/18/2014 9:56	15.66	5.0	5.22	63.2	7.65	31.4
LMI-15	High	11/18/2014 9:56	15.66	5.0	5.23	63.3	7.65	31.4
LMI-15	High	11/18/2014 9:56	15.66	7.0	5.23	63.3	7.65	31.5
LMI-15	High	11/18/2014 9:56	15.67	7.0	5.21	63.1	7.65	31.5
LMI-15	High	11/18/2014 9:57	15.67	7.0	5.21	63	7.65	31.4
LMI-15	High	11/18/2014 9:57	15.67	7.0	5.2	62.9	7.65	31.4
LMI-15	High	11/18/2014 9:57	15.66	9.0	5.21	63	7.65	31.5
LMI-15	High	11/18/2014 9:57	15.67	9.0	5.21	63	7.65	31.5
LMI-15	High	11/18/2014 9:57	15.67	9.0	5.21	63.1	7.65	31.4
LMI-15	High	11/18/2014 9:57	15.67	9.0	5.22	63.2	7.65	31.5
LMI-15	High	11/18/2014 9:58	15.67	9.3	5.22	63.1	7.62	31.4
LMI-15	High	11/18/2014 9:58	15.67	10.3	5.3	62.8	7.61	28.1
LMI-15	High	11/18/2014 9:58	15.67	8.4	5.28	62.6	7.63	28

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-15	High	11/18/2014 9:58	15.68	10.2	5.22	61.7	7.32	27.7
LMI-15	High	11/18/2014 9:58	15.69	10.2	5.17	61.2	7.29	27.7
LMI-15	High	11/18/2014 9:58	15.7	10.2	5.14	60.9	7.28	27.7
LMI-15	High	11/18/2014 9:59	15.71	10.2	5.11	60.5	7.27	27.7
LMI-19	High	11/18/2014 10:13	15.87	1.0	5.22	63.4	7.64	31.4
LMI-19	High	11/18/2014 10:13	15.87	1.0	5.26	63.9	7.65	31.3
LMI-19	High	11/18/2014 10:14	15.87	1.0	5.28	64.1	7.65	31.3
LMI-19	High	11/18/2014 10:14	15.88	1.0	5.29	64.2	7.65	31.4
LMI-19	High	11/18/2014 10:14	15.82	3.0	5.29	64.3	7.65	31.3
LMI-19	High	11/18/2014 10:14	15.82	3.0	5.3	64.3	7.65	31.3
LMI-19	High	11/18/2014 10:14	15.8	3.0	5.31	64.4	7.65	31.3
LMI-19	High	11/18/2014 10:14	15.75	5.3	5.27	64	7.64	31.3
LMI-19	High	11/18/2014 10:15	15.75	5.0	5.04	61.1	7.62	31.3
LMI-19	High	11/18/2014 10:15	15.74	5.0	4.92	59.7	7.62	31.3
LMI-19	High	11/18/2014 10:15	15.74	5.0	4.88	59.1	7.62	31.3
LMI-19	High	11/18/2014 10:15	15.71	7.0	4.86	58.8	7.62	31.3
LMI-19	High	11/18/2014 10:15	15.71	7.0	4.87	58.9	7.62	31.3
LMI-19	High	11/18/2014 10:15	15.71	7.0	4.87	59	7.62	31.3
LMI-19	High	11/18/2014 10:16	15.71	6.9	4.87	58.9	7.62	31.3
LMI-19	High	11/18/2014 10:16	15.7	9.0	4.92	59.1	7.62	30.3
LMI-19	High	11/18/2014 10:16	15.7	9.0	4.92	59.6	7.63	31.3
LMI-19	High	11/18/2014 10:16	15.68	9.0	4.94	59.8	7.62	31.3
LMI-19	High	11/18/2014 10:16	15.68	9.0	4.93	59.7	7.62	31.3
LMI-19	High	11/18/2014 10:16	15.68	9.5	4.97	59.5	7.59	29.4
LMI-19	High	11/18/2014 10:17	15.69	9.5	4.94	59.2	7.58	29.5
LMI-19	High	11/18/2014 10:17	15.7	9.5	4.94	59.1	7.57	29.4
LMI-19	High	11/18/2014 10:17	15.71	9.2	4.93	59	7.56	29.3
LMI-29	High	11/18/2014 9:20	16.07	1.0	5.59	68	7.63	31.1
LMI-29	High	11/18/2014 9:20	16.07	1.0	5.61	68.3	7.64	31.1
LMI-29	High	11/18/2014 9:21	16.07	1.0	5.64	68.7	7.64	31.1
LMI-29	High	11/18/2014 9:21	16.07	1.0	5.68	69.2	7.64	31.1
LMI-29	High	11/18/2014 9:21	16.11	3.0	5.72	69.7	7.64	31.2
LMI-29	High	11/18/2014 9:21	16.12	3.0	5.66	69.1	7.63	31.2
LMI-29	High	11/18/2014 9:21	16.12	3.0	5.61	68.4	7.63	31.2
LMI-29	High	11/18/2014 9:21	16.12	3.0	5.59	68.2	7.63	31.2
LMI-29	High	11/18/2014 9:22	16.07	5.0	5.54	67.5	7.63	31.1
LMI-29	High	11/18/2014 9:22	16.07	5.0	5.48	66.8	7.63	31.2
LMI-29	High	11/18/2014 9:22	16.07	5.0	5.46	66.5	7.63	31.2
LMI-29	High	11/18/2014 9:22	16.07	5.0	5.44	66.3	7.63	31.2
LMI-29	High	11/18/2014 9:22	16.07	7.1	5.39	65.7	7.62	31.2
LMI-29	High	11/18/2014 9:22	16.07	7.0	5.18	63.1	7.61	31.2
LMI-29	High	11/18/2014 9:23	16.07	7.1	5.06	61.7	7.61	31.2
LMI-29	High	11/18/2014 9:23	16.07	7.0	4.99	60.8	7.61	31.2
LMI-29	High	11/18/2014 9:23	16.07	9.1	4.89	59.6	7.6	31.3
LMI-29	High	11/18/2014 9:23	16.07	9.1	4.79	58.4	7.6	31.3
LMI-29	High	11/18/2014 9:23	16.07	9.0	4.76	58	7.6	31.2
LMI-29	High	11/18/2014 9:23	16.07	9.1	4.74	57.8	7.6	31.3
LMI-29	High	11/18/2014 9:24	16.08	11.2	4.71	57.5	7.59	31.3
LMI-29	High	11/18/2014 9:24	16.09	11.1	4.66	56.8	7.59	31.3
LMI-29	High	11/18/2014 9:24	16.09	11.1	4.63	56.5	7.59	31.3
LMI-29	High	11/18/2014 9:24	16.1	11.1	4.62	56.4	7.59	31.3
LMI-29	High	11/18/2014 9:24	16.11	11.9	4.63	56.1	7.59	30.3
LMI-29	High	11/18/2014 9:24	16.11	11.9	4.58	55.6	7.58	30.4
LMI-29	High	11/18/2014 9:25	16.11	11.9	4.56	55.3	7.58	30.4
Channel Entrance	Low	11/13/2014 13:43	17.47	14.2	6.25	78.9	7.79	32.1
Channel Entrance	Low	11/13/2014 13:43	17.47	14.1	6.25	78.9	7.8	32.1
Channel Entrance	Low	11/13/2014 13:43	17.47	14.1	6.25	79	7.8	32.1
Channel Entrance	Low	11/13/2014 13:43	17.47	14.1	6.26	79.1	7.8	32.1
Channel Entrance	Low	11/13/2014 13:44	17.47	14.2	6.27	79.2	7.8	32.1
Channel Entrance	Low	11/13/2014 13:44	17.45	12.0	6.27	79.2	7.81	32.1
Channel Entrance	Low	11/13/2014 13:44	17.46	11.9	6.33	80	7.81	32.1
Channel Entrance	Low	11/13/2014 13:44	17.46	12.0	6.37	80.4	7.81	32.1
Channel Entrance	Low	11/13/2014 13:44	17.46	12.0	6.37	80.5	7.81	32.1
Channel Entrance	Low	11/13/2014 13:44	17.45	9.8	6.4	80.8	7.81	32.1
Channel Entrance	Low	11/13/2014 13:45	17.46	10.1	6.43	81.3	7.81	32.1
Channel Entrance	Low	11/13/2014 13:45	17.45	10.0	6.45	81.4	7.81	32.1
Channel Entrance	Low	11/13/2014 13:45	17.46	10.0	6.45	81.5	7.81	32.1

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
Channel Entrance	Low	11/13/2014 13:45	17.45	7.9	6.46	81.5	7.82	32.1
Channel Entrance	Low	11/13/2014 13:45	17.45	8.0	6.49	81.9	7.82	32.1
Channel Entrance	Low	11/13/2014 13:45	17.45	7.9	6.5	82.1	7.82	32.1
Channel Entrance	Low	11/13/2014 13:46	17.42	5.6	6.51	82.1	7.82	32
Channel Entrance	Low	11/13/2014 13:46	17.41	5.4	6.56	82.8	7.82	32
Channel Entrance	Low	11/13/2014 13:46	17.41	5.1	6.6	83.2	7.82	32
Channel Entrance	Low	11/13/2014 13:46	17.42	5.1	6.61	83.4	7.82	32
Channel Entrance	Low	11/13/2014 13:46	17.43	2.7	6.64	83.7	7.82	32
Channel Entrance	Low	11/13/2014 13:46	17.43	2.9	6.7	84.5	7.83	31.9
Channel Entrance	Low	11/13/2014 13:47	17.44	2.9	6.73	84.9	7.83	32
Channel Entrance	Low	11/13/2014 13:47	17.45	2.9	6.72	84.8	7.83	32
Channel Entrance	Low	11/13/2014 13:47	17.45	0.4	6.73	85	7.82	31.9
Channel Entrance	Low	11/13/2014 13:47	17.46	0.9	6.61	83.4	7.81	31.9
Channel Entrance	Low	11/13/2014 13:47	17.46	1.1	6.59	83.2	7.81	31.9
Channel Entrance	Low	11/13/2014 13:48	17.46	1.1	6.59	83.1	7.81	31.9
Channel Entrance	Low	11/13/2014 13:48	17.49	0.1	6.59	83.2	7.8	31.9
Channel Entrance	Low	11/13/2014 13:48	17.51	0.0	6.16	77.6	7.76	31.5
Channel Entrance	Low	11/13/2014 13:48	17.52	0.0	5.74	72.3	7.75	31.5
LMI-15	Low	11/13/2014 11:43	17.57	10.4	4.41	54.6	7.49	28.3
LMI-15	Low	11/13/2014 11:43	17.59	10.4	4.41	54.6	7.5	28.3
LMI-15	Low	11/13/2014 11:43	17.59	10.3	4.41	54.6	7.51	28.4
LMI-15	Low	11/13/2014 11:43	17.59	10.4	4.41	54.6	7.51	28.3
LMI-15	Low	11/13/2014 11:43	17.59	8.5	4.41	54.6	7.58	28.6
LMI-15	Low	11/13/2014 11:43	17.59	8.9	4.43	54.9	7.6	28.6
LMI-15	Low	11/13/2014 11:43	17.59	8.9	4.44	55.1	7.6	28.6
LMI-15	Low	11/13/2014 11:44	17.59	7.1	4.46	55.3	7.61	28.6
LMI-15	Low	11/13/2014 11:44	17.59	7.2	4.49	55.6	7.62	28.6
LMI-15	Low	11/13/2014 11:44	17.59	7.2	4.51	55.9	7.62	28.6
LMI-15	Low	11/13/2014 11:44	17.59	7.2	4.51	56	7.62	28.7
LMI-15	Low	11/13/2014 11:44	17.59	7.2	4.53	56.1	7.62	28.7
LMI-15	Low	11/13/2014 11:44	17.57	5.1	4.67	57.9	7.64	28.6
LMI-15	Low	11/13/2014 11:45	17.57	5.2	4.83	59.9	7.65	28.6
LMI-15	Low	11/13/2014 11:45	17.57	5.2	4.94	61.3	7.65	28.6
LMI-15	Low	11/13/2014 11:45	17.56	5.2	5.02	62.2	7.66	28.6
LMI-15	Low	11/13/2014 11:45	17.56	5.2	5.08	63	7.66	28.7
LMI-15	Low	11/13/2014 11:45	17.54	3.3	5.15	63.9	7.68	28.6
LMI-15	Low	11/13/2014 11:45	17.53	3.2	5.31	65.7	7.69	28.6
LMI-15	Low	11/13/2014 11:46	17.51	3.2	5.42	67.2	7.69	28.6
LMI-15	Low	11/13/2014 11:46	17.47	1.3	5.52	68.3	7.7	28.5
LMI-15	Low	11/13/2014 11:46	17.45	1.2	5.61	69.4	7.7	28.5
LMI-15	Low	11/13/2014 11:46	17.46	1.2	5.66	69.9	7.7	28.5
LMI-15	Low	11/13/2014 11:46	17.37	0.1	5.68	70.2	7.71	28.5
LMI-15	Low	11/13/2014 11:46	17.3	0.0	5.76	70.5	7.7	27.3
LMI-15	Low	11/13/2014 11:47	17.28	-0.1	5.82	71.1	7.69	27.3
LMI-15	Low	11/13/2014 11:47	17.27	-0.1	5.84	71.4	7.68	27.2
LMI-19	Low	11/13/2014 11:30	17.48	9.1	4.71	59.3	7.62	31.5
LMI-19	Low	11/13/2014 11:30	17.48	9.0	4.71	59.3	7.62	31.5
LMI-19	Low	11/13/2014 11:30	17.49	9.2	4.74	59.2	7.62	30.1
LMI-19	Low	11/13/2014 11:30	17.49	9.2	4.74	59.1	7.62	29.8
LMI-19	Low	11/13/2014 11:30	17.45	6.1	4.8	60.4	7.67	31.7
LMI-19	Low	11/13/2014 11:31	17.46	7.4	5.09	64.2	7.66	31.9
LMI-19	Low	11/13/2014 11:31	17.46	7.0	5.03	63.5	7.65	31.9
LMI-19	Low	11/13/2014 11:31	17.46	5.0	5.04	63.5	7.68	31.8
LMI-19	Low	11/13/2014 11:31	17.45	5.1	5.23	65.9	7.69	31.8
LMI-19	Low	11/13/2014 11:31	17.45	5.1	5.32	67.1	7.69	31.8
LMI-19	Low	11/13/2014 11:31	17.41	3.2	5.37	67.7	7.68	31.7
LMI-19	Low	11/13/2014 11:32	17.41	3.1	5.37	67.6	7.68	31.7
LMI-19	Low	11/13/2014 11:32	17.41	1.1	5.35	67.3	7.67	31.7
LMI-19	Low	11/13/2014 11:32	17.41	1.1	5.3	66.7	7.67	31.6
LMI-19	Low	11/13/2014 11:32	17.41	1.1	5.29	66.5	7.66	31.6
LMI-19	Low	11/13/2014 11:32	17.31	0.0	5.32	66.4	7.67	30.5
LMI-19	Low	11/13/2014 11:32	17.31	0.0	5.39	67.1	7.66	30.2
LMI-19	Low	11/13/2014 11:33	17.31	0.1	5.41	67.4	7.66	30.3
LMI-29	Low	11/13/2014 12:18	17.77	10.3	3.95	50.1	7.6	31.6
LMI-29	Low	11/13/2014 12:18	17.77	10.5	3.97	50.4	7.6	31.9
LMI-29	Low	11/13/2014 12:18	17.77	10.7	3.95	50	7.6	31.5
LMI-29	Low	11/13/2014 12:18	17.77	10.9	3.87	48.8	7.61	31.1

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	Low	11/13/2014 12:19	17.8	10.0	3.78	47.9	7.57	31.8
LMI-29	Low	11/13/2014 12:19	17.81	9.5	3.66	46.5	7.59	32
LMI-29	Low	11/13/2014 12:19	17.81	9.5	3.59	45.7	7.59	32
LMI-29	Low	11/13/2014 12:19	17.81	9.6	3.58	45.5	7.59	32
LMI-29	Low	11/13/2014 12:19	17.81	9.0	3.59	45.6	7.59	32
LMI-29	Low	11/13/2014 12:19	17.75	6.6	3.58	45.5	7.61	32
LMI-29	Low	11/13/2014 12:20	17.72	7.1	3.89	49.3	7.62	31.8
LMI-29	Low	11/13/2014 12:20	17.69	7.0	4.07	51.6	7.62	31.8
LMI-29	Low	11/13/2014 12:20	17.68	7.1	4.16	52.7	7.62	31.8
LMI-29	Low	11/13/2014 12:20	17.65	5.1	4.25	53.7	7.63	31.8
LMI-29	Low	11/13/2014 12:20	17.65	5.1	4.33	54.8	7.63	31.8
LMI-29	Low	11/13/2014 12:20	17.63	5.1	4.36	55.2	7.63	31.7
LMI-29	Low	11/13/2014 12:21	17.59	3.2	4.45	56.2	7.64	31.5
LMI-29	Low	11/13/2014 12:21	17.57	2.9	4.57	57.7	7.64	31.5
LMI-29	Low	11/13/2014 12:21	17.57	3.2	4.6	58.1	7.64	31.6
LMI-29	Low	11/13/2014 12:21	17.5	0.9	4.68	59	7.66	31.4
LMI-29	Low	11/13/2014 12:21	17.44	0.9	5.08	63.7	7.68	30.9
LMI-29	Low	11/13/2014 12:21	17.41	0.9	5.29	66.2	7.68	30.9
LMI-29	Low	11/13/2014 12:22	17.33	0.8	5.42	67.9	7.69	30.9
Channel Entrance	High	12/5/2014 14:06	16.23	1.4	5.79	67.9	7.7	23.6
Channel Entrance	High	12/5/2014 14:06	16.22	1.2	5.78	67.7	7.7	23.6
Channel Entrance	High	12/5/2014 14:06	16.2	1.3	5.77	67.6	7.7	23.6
Channel Entrance	High	12/5/2014 14:06	16.18	4.4	5.77	67.6	7.69	23.6
Channel Entrance	High	12/5/2014 14:06	16.16	3.0	5.82	68.2	7.7	23.8
Channel Entrance	High	12/5/2014 14:07	16.15	3.0	5.82	68.2	7.7	23.9
Channel Entrance	High	12/5/2014 14:07	16.14	3.0	5.83	68.4	7.7	23.9
Channel Entrance	High	12/5/2014 14:07	16.07	4.8	5.84	69.1	7.7	25.6
Channel Entrance	High	12/5/2014 14:07	16.06	4.9	6.09	72.5	7.73	26.7
Channel Entrance	High	12/5/2014 14:07	16.06	4.8	6.28	75	7.75	27.2
Channel Entrance	High	12/5/2014 14:08	15.99	7.2	6.43	77	7.77	27.5
Channel Entrance	High	12/5/2014 14:08	15.98	6.8	6.58	78.7	7.78	27.7
Channel Entrance	High	12/5/2014 14:08	15.98	6.8	6.64	79.4	7.78	27.7
Channel Entrance	High	12/5/2014 14:08	15.76	9.0	6.57	78.7	7.78	28.6
Channel Entrance	High	12/5/2014 14:08	15.71	9.0	6.54	78.4	7.78	28.7
Channel Entrance	High	12/5/2014 14:08	15.68	9.1	6.53	78.2	7.79	28.7
Channel Entrance	High	12/5/2014 14:09	15.63	11.4	6.54	78.2	7.79	28.8
Channel Entrance	High	12/5/2014 14:09	15.62	11.0	6.54	78.2	7.79	28.8
Channel Entrance	High	12/5/2014 14:09	15.63	10.9	6.54	78.2	7.79	28.8
Channel Entrance	High	12/5/2014 14:09	15.53	13.4	6.51	78	7.79	29.1
Channel Entrance	High	12/5/2014 14:09	15.53	12.9	6.53	78.2	7.79	29.3
Channel Entrance	High	12/5/2014 14:10	15.52	12.9	6.54	78.3	7.79	29.3
Channel Entrance	High	12/5/2014 14:10	15.45	14.1	6.55	78.4	7.8	29.2
Channel Entrance	High	12/5/2014 14:10	15.47	13.9	6.58	78.7	7.8	29.3
Channel Entrance	High	12/5/2014 14:10	15.45	13.9	6.59	78.8	7.8	29.3
LMI-15	High	12/5/2014 11:16	16.43	1.0	6.02	69	7.64	19.3
LMI-15	High	12/5/2014 11:16	16.36	1.0	5.98	68.8	7.66	20
LMI-15	High	12/5/2014 11:16	16.33	1.0	5.97	68.7	7.66	20.3
LMI-15	High	12/5/2014 11:16	16.31	1.0	5.99	68.8	7.66	20.2
LMI-15	High	12/5/2014 11:16	16.07	2.9	5.9	69.3	7.65	24.3
LMI-15	High	12/5/2014 11:16	15.98	3.0	6.19	72.6	7.68	24.5
LMI-15	High	12/5/2014 11:17	15.94	3.0	6.32	74.1	7.7	24.6
LMI-15	High	12/5/2014 11:17	16.07	4.9	6.11	72.5	7.65	26.4
LMI-15	High	12/5/2014 11:17	16.13	5.0	5.56	66.3	7.61	26.7
LMI-15	High	12/5/2014 11:17	16.14	5.0	5.16	61.5	7.6	26.8
LMI-15	High	12/5/2014 11:17	16.2	7.0	4.68	56.1	7.57	27.6
LMI-15	High	12/5/2014 11:17	16.24	7.0	4.22	50.7	7.54	27.9
LMI-15	High	12/5/2014 11:18	16.25	7.0	4.03	48.5	7.54	27.9
LMI-15	High	12/5/2014 11:18	16.34	9.0	3.57	43.2	7.48	28.7
LMI-15	High	12/5/2014 11:18	16.36	9.0	3	36.3	7.46	28.8
LMI-15	High	12/5/2014 11:18	16.38	9.0	2.77	33.6	7.45	28.8
LMI-15	High	12/5/2014 11:18	16.38	9.0	2.6	31.6	7.45	28.8
LMI-15	High	12/5/2014 11:18	16.47	10.9	2.35	28.5	7.41	29.2
LMI-15	High	12/5/2014 11:19	16.47	11.0	1.77	21.6	7.38	29.3
LMI-15	High	12/5/2014 11:19	16.52	11.0	1.51	18.4	7.37	29.4
LMI-15	High	12/5/2014 11:19	16.56	11.0	1.34	16.4	7.36	29.4
LMI-15	High	12/5/2014 11:19	16.58	11.0	1.01	12.4	7.34	29.4
LMI-15	High	12/5/2014 11:20	16.6	12.5	0.78	9.3	7.29	25.8

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-15	High	12/5/2014 11:20	16.6	12.5	0.74	8.8	7.29	25.8
LMI-15	High	12/5/2014 11:20	16.61	12.5	0.71	8.5	7.29	25.9
LMI-15	High	12/5/2014 11:20	16.61	12.5	0.7	8.4	7.28	25.8
LMI-19	High	12/5/2014 11:36	16.62	1.1	8.11	88.5	7.8	10.5
LMI-19	High	12/5/2014 11:36	16.61	1.1	8.14	88.8	7.79	10.6
LMI-19	High	12/5/2014 11:37	16.61	1.0	8.2	89.4	7.74	10.3
LMI-19	High	12/5/2014 11:37	16.6	1.0	8.02	89.4	7.72	14
LMI-19	High	12/5/2014 11:37	16.38	2.7	7.48	86.4	7.61	20.3
LMI-19	High	12/5/2014 11:37	16.18	3.0	6.51	76.5	7.63	23.8
LMI-19	High	12/5/2014 11:37	16.12	3.0	6.34	74.7	7.65	24.7
LMI-19	High	12/5/2014 11:37	16.07	2.9	6.33	74.2	7.68	24.1
LMI-19	High	12/5/2014 11:38	16.07	4.7	6.12	72.5	7.64	26
LMI-19	High	12/5/2014 11:38	16.09	5.1	5.53	65.9	7.62	26.6
LMI-19	High	12/5/2014 11:38	16.1	5.0	5.18	61.7	7.62	26.9
LMI-19	High	12/5/2014 11:38	16.07	5.0	4.99	59.4	7.62	26.9
LMI-19	High	12/5/2014 11:38	16.04	6.8	4.88	58.2	7.61	27
LMI-19	High	12/5/2014 11:38	16.03	7.1	4.82	57.5	7.61	27.1
LMI-19	High	12/5/2014 11:39	16.02	7.0	4.79	57.1	7.61	27.1
LMI-19	High	12/5/2014 11:39	16.2	9.1	4.59	55.1	7.53	28.2
LMI-19	High	12/5/2014 11:39	16.3	9.0	3.36	40.7	7.46	28.8
LMI-19	High	12/5/2014 11:39	16.36	9.0	2.44	29.5	7.42	28.7
LMI-19	High	12/5/2014 11:39	16.38	8.9	1.88	22.8	7.4	28.6
LMI-19	High	12/5/2014 11:39	16.39	8.9	1.7	20.6	7.39	28.6
LMI-19	High	12/5/2014 11:40	16.38	8.9	1.71	20.7	7.39	28.5
LMI-19	High	12/5/2014 11:40	16.4	8.9	1.79	21.7	7.39	28.5
LMI-19	High	12/5/2014 11:40	16.47	10.3	1.66	20	7.35	27.8
LMI-19	High	12/5/2014 11:40	16.53	10.1	1.25	15.3	7.33	29.2
LMI-19	High	12/5/2014 11:40	16.55	10.2	0.89	10.8	7.32	29.3
LMI-19	High	12/5/2014 11:40	16.55	10.1	0.72	8.8	7.3	29.3
LMI-19	High	12/5/2014 11:41	16.56	10.2	0.68	8.3	7.29	29.3
LMI-19	High	12/5/2014 11:41	16.56	10.1	0.61	7.5	7.29	29.3
LMI-19	High	12/5/2014 11:41	16.57	10.2	0.57	7	7.29	29.4
LMI-19	High	12/5/2014 11:41	16.29	7.8	0.56	6.9	7.43	28.8
LMI-19	High	12/5/2014 11:41	16.4	0.4	3.19	37.4	7.89	23.9
LMI-19	High	12/5/2014 11:41	16.49	-0.1	6.41	69.7	7.85	10.2
LMI-19	High	12/5/2014 11:42	16.47	0.0	8.58	87.6	8.12	0.1
LMI-29	High	12/5/2014 12:44	0	0.0	0	0	0	0
LMI-29	High	12/5/2014 12:44	16.92	12.6	0.26	3.1	6.79	28.3
LMI-29	High	12/5/2014 12:44	16.87	12.8	0.17	3.1	6.76	29.2
LMI-29	High	12/5/2014 12:44	16.75	10.6	0.14	1.8	6.95	29.1
LMI-29	High	12/5/2014 12:44	16.71	10.2	0.12	1.5	7.08	29.1
LMI-29	High	12/5/2014 12:45	16.69	10.5	0.29	3.5	7.17	29.1
LMI-29	High	12/5/2014 12:45	16.6	7.4	0.49	6	7.27	29
LMI-29	High	12/5/2014 12:45	16.56	7.7	1.38	16.7	7.34	27.6
LMI-29	High	12/5/2014 12:45	16.53	7.5	1.79	21.7	7.38	27.7
LMI-29	High	12/5/2014 12:45	16.52	7.6	2	24.2	7.4	27.7
LMI-29	High	12/5/2014 12:45	16.25	4.9	2.16	26	7.49	27.3
LMI-29	High	12/5/2014 12:46	16.25	5.4	3.46	41.2	7.54	26.4
LMI-29	High	12/5/2014 12:46	16.19	4.9	4.09	48.8	7.58	26.4
LMI-29	High	12/5/2014 12:46	16.16	5.0	4.49	53.4	7.59	26.4
LMI-29	High	12/5/2014 12:46	16.13	4.9	4.58	54.5	7.6	26.4
LMI-29	High	12/5/2014 12:46	16.22	2.6	4.66	55.5	7.59	26.4
LMI-29	High	12/5/2014 12:46	16.29	3.1	3.87	45.9	7.51	25.3
LMI-29	High	12/5/2014 12:47	16.31	3.1	3.31	39.4	7.5	25.7
LMI-29	High	12/5/2014 12:47	16.32	3.0	3.05	36.3	7.5	25.6
LMI-29	High	12/5/2014 12:47	16.33	0.9	3.05	35	7.84	19.9
LMI-29	High	12/5/2014 12:47	16.34	1.1	5.77	61.7	7.82	8.2
LMI-29	High	12/5/2014 12:47	16.34	1.1	7.09	75.9	7.79	8.1
LMI-29	High	12/5/2014 12:47	16.34	1.1	7.67	82	7.77	8.1
LMI-29	High	12/5/2014 12:48	16.34	1.1	7.91	84.5	7.76	8.1
LMI-29	High	12/5/2014 12:48	16.34	1.1	8	85.5	7.75	8.1
LMI-30	High	12/5/2014 12:06	16.83	0.8	8.61	93.6	7.81	9.1
LMI-30	High	12/5/2014 12:06	16.7	1.2	8.09	91.3	7.67	15.4
LMI-30	High	12/5/2014 12:07	16.74	0.9	7.92	87.4	7.84	12.2
LMI-30	High	12/5/2014 12:07	16.77	1.0	8	87.4	7.85	10.2
LMI-30	High	12/5/2014 12:07	16.36	2.9	6.56	77	7.63	23.1
LMI-30	High	12/5/2014 12:07	16.34	3.0	6.06	71.1	7.65	23.4

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Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-30	High	12/5/2014 12:07	16.31	3.0	5.76	67.6	7.66	23.5
LMI-30	High	12/5/2014 12:08	16.29	5.3	5.53	65.2	7.64	24.2
LMI-30	High	12/5/2014 12:08	16.28	5.4	5.09	60.2	7.63	25.1
LMI-30	High	12/5/2014 12:08	16.26	5.1	4.89	57.8	7.63	25
LMI-30	High	12/5/2014 12:08	16.37	7.3	4.73	56.4	7.5	26.4
LMI-30	High	12/5/2014 12:08	16.42	6.9	2.46	29.7	7.39	27.8
LMI-30	High	12/5/2014 12:09	16.43	7.0	1.89	22.8	7.36	27.7
LMI-30	High	12/5/2014 12:09	16.43	7.0	1.54	18.7	7.34	27.9
LMI-30	High	12/5/2014 12:09	16.55	9.2	1.32	16	7.27	28.5
LMI-30	High	12/5/2014 12:09	16.61	9.0	0.84	10.4	7.22	29.7
LMI-30	High	12/5/2014 12:09	16.62	9.1	0.54	6.7	7.17	29.7
LMI-30	High	12/5/2014 12:09	16.62	9.0	0.37	4.6	7.14	29.7
LMI-30	High	12/5/2014 12:10	16.68	10.5	0.22	2.6	7.09	28.5
LMI-30	High	12/5/2014 12:10	16.69	10.5	0.14	1.7	7.09	30.1
LMI-30	High	12/5/2014 12:10	16.7	10.5	0.12	1.4	7.09	30.1
LMI-30	High	12/5/2014 12:10	16.73	10.5	0.1	1.3	7.08	30.1
LMI-30	High	12/5/2014 12:10	16.74	10.5	0.1	1.2	7.07	30
LMI-30	High	12/5/2014 12:10	16.74	10.5	0.09	1.1	7.07	30
LMI-30	High	12/5/2014 12:11	16.77	10.3	0.08	1	7.06	30
Channel Entrance	Low	12/26/2014 12:49	13.68	1.0	8.17	90.3	7.78	23.4
Channel Entrance	Low	12/26/2014 12:49	13.65	1.0	8.21	90.7	7.79	23.4
Channel Entrance	Low	12/26/2014 12:49	13.63	1.0	8.21	90.7	7.8	23.5
Channel Entrance	Low	12/26/2014 12:49	13.61	3.0	8.19	90.5	7.78	23.7
Channel Entrance	Low	12/26/2014 12:49	13.58	3.0	7.99	88.6	7.77	24.2
Channel Entrance	Low	12/26/2014 12:49	13.59	3.0	7.89	87.4	7.77	24.1
Channel Entrance	Low	12/26/2014 12:49	13.55	3.0	7.82	86.7	7.77	24.2
Channel Entrance	Low	12/26/2014 12:50	13.5	5.1	7.77	86.1	7.77	24.3
Channel Entrance	Low	12/26/2014 12:50	13.5	5.1	7.74	85.7	7.77	24.3
Channel Entrance	Low	12/26/2014 12:50	13.49	5.1	7.72	85.5	7.77	24.3
Channel Entrance	Low	12/26/2014 12:50	13.49	5.1	7.71	85.4	7.77	24.3
Channel Entrance	Low	12/26/2014 12:50	13.47	7.5	7.7	85.2	7.77	24.4
Channel Entrance	Low	12/26/2014 12:50	13.49	7.1	7.68	85	7.77	24.4
Channel Entrance	Low	12/26/2014 12:51	13.49	7.0	7.67	84.9	7.78	24.3
Channel Entrance	Low	12/26/2014 12:51	13.49	7.0	7.66	84.9	7.78	24.4
Channel Entrance	Low	12/26/2014 12:51	13.45	9.5	7.67	84.9	7.78	24.4
Channel Entrance	Low	12/26/2014 12:51	13.45	8.8	7.67	84.9	7.78	24.4
Channel Entrance	Low	12/26/2014 12:51	13.45	8.6	7.66	84.8	7.78	24.4
Channel Entrance	Low	12/26/2014 12:51	13.45	8.6	7.67	84.9	7.78	24.4
Channel Entrance	Low	12/26/2014 12:52	13.43	11.0	7.66	84.7	7.78	24.4
Channel Entrance	Low	12/26/2014 12:52	13.45	10.8	7.66	84.8	7.78	24.4
Channel Entrance	Low	12/26/2014 12:52	13.45	10.7	7.65	84.7	7.79	24.4
Channel Entrance	Low	12/26/2014 12:52	13.45	10.9	7.65	84.7	7.79	24.4
Channel Entrance	Low	12/26/2014 12:52	13.41	13.5	7.66	84.7	7.79	24.4
Channel Entrance	Low	12/26/2014 12:52	13.41	12.9	7.63	84.4	7.79	24.4
Channel Entrance	Low	12/26/2014 12:53	13.43	12.8	7.6	84.1	7.79	24.4
Channel Entrance	Low	12/26/2014 12:53	13.42	12.8	7.59	84	7.79	24.5
Channel Entrance	Low	12/26/2014 12:53	13.4	15.2	7.59	84	7.79	24.4
Channel Entrance	Low	12/26/2014 12:53	13.41	14.9	7.56	83.6	7.79	24.4
Channel Entrance	Low	12/26/2014 12:53	13.4	14.8	7.53	83.3	7.79	24.4
Channel Entrance	Low	12/26/2014 12:54	13.4	14.8	7.52	83.2	7.79	24.4
Channel Entrance	Low	12/26/2014 12:54	13.4	15.8	7.51	83.1	7.78	24.4
Channel Entrance	Low	12/26/2014 12:54	13.4	15.6	7.51	83	7.78	24.4
Channel Entrance	Low	12/26/2014 12:54	13.4	15.6	7.49	82.9	7.78	24.4
Channel Entrance	Low	12/26/2014 12:54	13.41	15.5	7.5	82.9	7.78	24.4
LMI-15	Low	12/26/2014 10:36	10.27	1.1	15.13	141.5	8.79	8.8
LMI-15	Low	12/26/2014 10:36	10.27	1.1	15.14	141.5	8.79	8.8
LMI-15	Low	12/26/2014 10:36	10.23	1.2	15.17	141.7	8.79	8.8
LMI-15	Low	12/26/2014 10:36	11.63	4.0	16.37	155.9	8.36	12
LMI-15	Low	12/26/2014 10:36	12.69	3.2	10.17	105.8	8.09	18.9
LMI-15	Low	12/26/2014 10:36	12.49	3.2	8.44	87.1	8.06	16.5
LMI-15	Low	12/26/2014 10:37	12.48	3.2	9.5	97.2	8.1	15.4
LMI-15	Low	12/26/2014 10:37	12.63	3.2	10.38	106.7	8.1	15.7
LMI-15	Low	12/26/2014 10:37	14.18	5.6	9.4	100.5	7.63	20.6
LMI-15	Low	12/26/2014 10:37	14.67	5.4	4.08	45.9	7.45	23.7
LMI-15	Low	12/26/2014 10:37	14.76	5.3	2.17	24.4	7.4	23.1
LMI-15	Low	12/26/2014 10:37	14.93	5.3	1.23	13.9	7.37	22.8
LMI-15	Low	12/26/2014 10:38	14.99	5.3	0.7	7.9	7.35	22.7

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WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-15	Low	12/26/2014 10:38	15.1	5.3	0.45	5.1	7.33	22.8
LMI-15	Low	12/26/2014 10:38	15.35	5.2	0.31	3.5	7.31	22.7
LMI-15	Low	12/26/2014 10:38	15.46	5.2	0.21	2.4	7.3	22.4
LMI-15	Low	12/26/2014 10:38	15.53	5.2	0.15	1.7	7.29	22.3
LMI-15	Low	12/26/2014 10:38	15.85	7.3	0.11	1.2	7.2	22.8
LMI-15	Low	12/26/2014 10:38	15.95	7.4	0.08	0.9	7.19	24.3
LMI-15	Low	12/26/2014 10:39	16.02	7.3	0.07	0.8	7.19	24
LMI-15	Low	12/26/2014 10:39	16.02	7.3	0.06	0.7	7.19	23.9
LMI-15	Low	12/26/2014 10:39	16.05	7.2	0.06	0.7	7.19	23.9
LMI-15	Low	12/26/2014 10:39	16.31	9.1	0.06	0.7	7.07	23.7
LMI-15	Low	12/26/2014 10:39	16.49	9.0	0.04	0.5	7.06	26.7
LMI-15	Low	12/26/2014 10:39	16.55	8.9	0.04	0.5	7.06	26.5
LMI-15	Low	12/26/2014 10:40	16.56	9.0	0.05	0.5	7.06	26.4
LMI-15	Low	12/26/2014 10:40	16.65	10.2	0.04	0.5	7.04	25.4
LMI-15	Low	12/26/2014 10:40	16.65	10.3	0.04	0.5	7.04	25.3
LMI-15	Low	12/26/2014 10:40	16.65	10.5	0.04	0.5	7.04	25.3
LMI-15	Low	12/26/2014 10:40	16.69	10.5	0.05	0.5	7.04	25.3
LMI-15	Low	12/26/2014 10:41	16.73	10.5	0.05	0.6	7.04	25.3
LMI-19	Low	12/26/2014 10:54	10.68	1.1	15.8	149.9	8.79	9.5
LMI-19	Low	12/26/2014 10:54	10.57	1.1	15.87	150.1	8.81	9.4
LMI-19	Low	12/26/2014 10:54	10.55	1.1	16.02	151.1	8.82	9.2
LMI-19	Low	12/26/2014 10:54	10.56	1.1	16.06	151.7	8.81	9.4
LMI-19	Low	12/26/2014 10:55	12.08	3.3	16.61	161.7	8.37	13.9
LMI-19	Low	12/26/2014 10:55	13.01	3.0	12.32	127.5	8.2	16.7
LMI-19	Low	12/26/2014 10:55	13.27	3.1	11.5	120	8.09	16.1
LMI-19	Low	12/26/2014 10:55	13.31	3.1	11.36	118.9	8.05	16.4
LMI-19	Low	12/26/2014 10:55	14.45	5.1	9.55	103.6	7.76	21
LMI-19	Low	12/26/2014 10:55	14.61	5.1	4.35	48.5	7.62	22.1
LMI-19	Low	12/26/2014 10:56	14.57	5.1	2.47	27.6	7.56	22.2
LMI-19	Low	12/26/2014 10:56	14.71	5.0	1.68	18.7	7.52	22.1
LMI-19	Low	12/26/2014 10:56	14.86	5.0	1.21	13.5	7.48	22.1
LMI-19	Low	12/26/2014 10:56	14.98	5.1	0.63	7	7.43	22.1
LMI-19	Low	12/26/2014 10:56	15.08	5.0	0.45	5	7.41	22.1
LMI-19	Low	12/26/2014 10:57	15.13	5.0	0.33	3.7	7.38	22
LMI-19	Low	12/26/2014 10:57	15.24	5.0	0.28	3.2	7.36	21.9
LMI-19	Low	12/26/2014 10:57	15.31	5.0	0.24	2.7	7.35	21.9
LMI-19	Low	12/26/2014 10:57	15.73	7.4	0.2	2.3	7.24	23.7
LMI-19	Low	12/26/2014 10:57	15.84	7.2	0.13	1.5	7.21	24.1
LMI-19	Low	12/26/2014 10:57	15.94	7.1	0.1	1.1	7.2	24
LMI-19	Low	12/26/2014 10:58	15.97	7.1	0.09	1	7.2	23.8
LMI-19	Low	12/26/2014 10:58	16.02	7.2	0.08	0.9	7.19	23.8
LMI-19	Low	12/26/2014 10:58	16.02	7.1	0.07	0.9	7.19	23.8
LMI-19	Low	12/26/2014 10:58	16.3	8.5	0.07	0.8	7.1	23.6
LMI-19	Low	12/26/2014 10:58	16.34	8.9	0.05	0.6	7.08	24.3
LMI-19	Low	12/26/2014 10:58	16.38	8.9	0.05	0.6	7.07	24.4
LMI-19	Low	12/26/2014 10:59	16.43	8.9	0.06	0.6	7.07	24.6
LMI-19	Low	12/26/2014 10:59	16.47	8.9	0.06	0.7	7.07	24.7
LMI-19	Low	12/26/2014 10:59	16.48	8.9	0.06	0.7	7.06	24.9
LMI-29	Low	12/26/2014 10:07	14.45	0.9	9.42	100.2	7.7	15
LMI-29	Low	12/26/2014 10:07	14.54	1.2	9.19	97.8	7.68	15.2
LMI-29	Low	12/26/2014 10:07	14.67	1.2	6.98	75.1	7.54	16
LMI-29	Low	12/26/2014 10:07	14.72	1.2	5.93	63.8	7.46	15.9
LMI-29	Low	12/26/2014 10:07	15.17	3.7	3.77	41.8	7.3	19.6
LMI-29	Low	12/26/2014 10:07	15.31	3.1	2.03	22.7	7.28	20
LMI-29	Low	12/26/2014 10:08	15.35	3.1	1.12	12.5	7.26	19.1
LMI-29	Low	12/26/2014 10:08	15.37	3.1	0.72	8.1	7.23	19
LMI-29	Low	12/26/2014 10:08	15.68	5.8	0.48	5.4	7.1	22.2
LMI-29	Low	12/26/2014 10:08	15.75	5.3	0.26	2.9	7.09	23.1
LMI-29	Low	12/26/2014 10:08	15.8	5.1	0.17	2	7.09	22.7
LMI-29	Low	12/26/2014 10:08	15.84	5.1	0.13	1.5	7.09	22.6
LMI-29	Low	12/26/2014 10:09	16.07	7.7	0.1	1.1	7.04	23.9
LMI-29	Low	12/26/2014 10:09	16.16	7.2	0.08	0.9	7.04	24.2
LMI-29	Low	12/26/2014 10:09	16.2	7.5	0.07	0.8	7.03	23.9
LMI-29	Low	12/26/2014 10:09	16.21	7.5	0.06	0.7	7.03	23.9
LMI-29	Low	12/26/2014 10:09	16.58	9.1	0.05	0.6	6.9	26.2
LMI-29	Low	12/26/2014 10:09	16.65	9.2	0.05	0.6	6.9	26.1
LMI-29	Low	12/26/2014 10:10	16.63	9.2	0.06	0.7	6.9	26.1

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	Low	12/26/2014 10:10	16.7	9.2	0.06	0.7	6.9	26.2
LMI-29	Low	12/26/2014 10:10	16.75	9.8	0.07	0.8	6.93	23.1
LMI-29	Low	12/26/2014 10:10	16.74	10.4	0.05	0.6	6.95	25.8
LMI-29	Low	12/26/2014 10:10	16.73	10.4	0.05	0.6	6.96	25.8
LMI-29	Low	12/26/2014 10:10	16.74	10.4	0.06	0.7	6.96	25.9
LMI-29	Low	12/26/2014 10:11	16.74	10.4	0.06	0.7	6.97	25.9
LMI-30	Low	12/26/2014 11:23	14.02	0.9	13.88	145.3	8.41	13.7
LMI-30	Low	12/26/2014 11:23	13.99	0.9	14.16	148.2	8.42	13.7
LMI-30	Low	12/26/2014 11:24	14.02	0.9	14.47	151.5	8.41	13.8
LMI-30	Low	12/26/2014 11:24	14	1.0	14.63	153.2	8.42	13.8
LMI-30	Low	12/26/2014 11:24	14.67	3.4	14	149.5	8.15	16.1
LMI-30	Low	12/26/2014 11:24	14.84	2.9	10.93	117.9	8.02	16
LMI-30	Low	12/26/2014 11:24	14.92	3.1	9.54	103.2	7.97	15.9
LMI-30	Low	12/26/2014 11:24	14.99	3.1	8.9	96.3	7.93	15.8
LMI-30	Low	12/26/2014 11:25	15.13	3.1	8.59	93.1	7.9	15.8
LMI-30	Low	12/26/2014 11:25	15.52	5.5	7.71	85.3	7.56	18.7
LMI-30	Low	12/26/2014 11:25	15.66	5.1	4.35	49.7	7.35	22.5
LMI-30	Low	12/26/2014 11:25	15.69	5.1	2.21	25.3	7.27	22.2
LMI-30	Low	12/26/2014 11:25	15.75	5.1	1.25	14.2	7.23	22.2
LMI-30	Low	12/26/2014 11:25	15.82	5.1	0.78	8.9	7.19	22.2
LMI-30	Low	12/26/2014 11:26	15.87	5.0	0.42	4.8	7.17	21.9
LMI-30	Low	12/26/2014 11:26	15.91	5.1	0.28	3.2	7.16	21.4
LMI-30	Low	12/26/2014 11:26	15.93	5.1	0.23	2.6	7.15	21.9
LMI-30	Low	12/26/2014 11:26	16.34	7.2	0.17	2	6.96	25.9
LMI-30	Low	12/26/2014 11:26	16.43	7.2	0.11	1.3	6.95	28.1
LMI-30	Low	12/26/2014 11:26	16.51	7.2	0.09	1	6.94	27.9
LMI-30	Low	12/26/2014 11:27	16.56	7.2	0.08	1	6.94	27.7
LMI-30	Low	12/26/2014 11:27	16.71	8.8	0.07	0.9	6.9	27.9
LMI-30	Low	12/26/2014 11:27	16.77	9.1	0.07	0.8	6.9	28.5
LMI-30	Low	12/26/2014 11:27	16.82	9.1	0.07	0.8	6.9	28.6
LMI-30	Low	12/26/2014 11:27	16.84	9.2	0.07	0.9	6.9	28.8
Channel Entrance	High	1/30/2015 11:20	13.75	1.1	9.08	103.3	8.14	26.8
Channel Entrance	High	1/30/2015 11:20	13.72	1.1	9.09	103.2	8.14	26.8
Channel Entrance	High	1/30/2015 11:20	13.7	1.1	9.09	103.3	8.14	26.9
Channel Entrance	High	1/30/2015 11:20	13.58	3.0	9.1	103.2	8.14	26.9
Channel Entrance	High	1/30/2015 11:21	13.53	3.0	9.1	103.1	8.14	27
Channel Entrance	High	1/30/2015 11:21	13.51	3.0	9.09	103	8.13	27
Channel Entrance	High	1/30/2015 11:21	13.49	4.9	9.06	102.6	8.13	27.1
Channel Entrance	High	1/30/2015 11:21	13.49	5.2	9.06	102.6	8.13	27.1
Channel Entrance	High	1/30/2015 11:21	13.46	5.0	9.04	102.4	8.13	27.1
Channel Entrance	High	1/30/2015 11:21	13.4	6.6	9.04	102.2	8.12	27.1
Channel Entrance	High	1/30/2015 11:22	13.4	7.1	9	101.8	8.12	27.1
Channel Entrance	High	1/30/2015 11:22	13.4	7.0	8.99	101.6	8.12	27.1
Channel Entrance	High	1/30/2015 11:22	13.39	7.0	8.99	101.6	8.12	27.1
Channel Entrance	High	1/30/2015 11:22	13.36	8.8	8.96	101.3	8.11	27.2
Channel Entrance	High	1/30/2015 11:22	13.36	8.9	8.9	100.6	8.11	27.2
Channel Entrance	High	1/30/2015 11:23	13.36	9.1	8.8	99.5	8.1	27.2
Channel Entrance	High	1/30/2015 11:23	13.31	10.8	8.73	98.8	8.08	27.4
Channel Entrance	High	1/30/2015 11:23	13.29	11.2	8.55	96.8	8.07	27.6
Channel Entrance	High	1/30/2015 11:23	13.27	11.1	8.43	95.3	8.06	27.6
Channel Entrance	High	1/30/2015 11:23	13.28	11.1	8.36	94.5	8.06	27.6
Channel Entrance	High	1/30/2015 11:23	13.23	12.9	8.29	93.8	8.04	27.7
Channel Entrance	High	1/30/2015 11:24	13.22	13.2	8.23	93.1	8.03	27.7
Channel Entrance	High	1/30/2015 11:24	13.23	13.2	8.18	92.4	8.03	27.7
Channel Entrance	High	1/30/2015 11:24	13.22	14.2	8.14	92	8.02	27.7
Channel Entrance	High	1/30/2015 11:24	13.22	14.2	8.12	91.8	8.02	27.7
Channel Entrance	High	1/30/2015 11:24	13.22	14.2	8.1	91.6	8.02	27.8
Channel Entrance	High	1/30/2015 11:24	13.22	14.2	8.11	91.6	8.02	27.7
Channel Entrance	High	1/30/2015 11:25	13.22	14.2	8.09	91.5	8.02	27.7
LMI-15	High	1/30/2015 9:38	13.81	1.0	17.58	198.8	8.77	25.9
LMI-15	High	1/30/2015 9:38	13.81	1.0	17.6	199.1	8.78	25.9
LMI-15	High	1/30/2015 9:39	13.81	1.0	17.62	199.3	8.78	25.9
LMI-15	High	1/30/2015 9:39	13.81	1.0	17.65	199.6	8.78	25.9
LMI-15	High	1/30/2015 9:39	13.81	2.7	17.68	200	8.77	25.9
LMI-15	High	1/30/2015 9:39	13.85	3.0	17.49	198.1	8.67	26.1
LMI-15	High	1/30/2015 9:39	13.89	3.0	16.26	184.3	8.57	26.2
LMI-15	High	1/30/2015 9:39	13.9	3.0	14.75	167.4	8.54	26.2

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-15	High	1/30/2015 9:40	13.86	5.7	13.23	150.2	8.45	26.3
LMI-15	High	1/30/2015 9:40	13.81	5.3	11.35	128.8	8.4	26.3
LMI-15	High	1/30/2015 9:40	13.81	4.9	9.86	111.8	8.35	26.4
LMI-15	High	1/30/2015 9:40	13.81	5.0	9.09	103	8.33	26.4
LMI-15	High	1/30/2015 9:40	13.8	4.9	8.7	98.7	8.32	26.4
LMI-15	High	1/30/2015 9:41	13.8	5.0	8.3	94.1	8.29	26.4
LMI-15	High	1/30/2015 9:41	13.67	6.8	8.16	92.5	8.31	26.3
LMI-15	High	1/30/2015 9:41	13.59	6.8	9.03	102.1	8.32	26.4
LMI-15	High	1/30/2015 9:41	13.59	6.9	9.47	106.9	8.32	26.5
LMI-15	High	1/30/2015 9:41	13.54	7.0	9.76	110.2	8.32	26.5
LMI-15	High	1/30/2015 9:41	13.49	8.9	9.97	112.5	8.3	26.5
LMI-15	High	1/30/2015 9:42	13.49	9.3	9.23	104.1	8.28	26.6
LMI-15	High	1/30/2015 9:42	13.48	9.2	8.72	98.5	8.27	26.6
LMI-15	High	1/30/2015 9:42	13.46	9.1	8.33	94	8.25	26.6
LMI-15	High	1/30/2015 9:42	13.45	10.1	7.94	89.6	8.22	26.7
LMI-15	High	1/30/2015 9:42	13.45	10.2	7.44	83.7	8.21	26.4
LMI-15	High	1/30/2015 9:42	13.44	10.2	7.06	79.5	8.2	26.2
LMI-15	High	1/30/2015 9:43	13.45	10.2	6.84	77	8.19	26.2
LMI-15	High	1/30/2015 9:43	13.45	10.2	6.73	75.7	8.19	26.2
LMI-15	High	1/30/2015 9:43	13.45	10.3	6.67	75	8.18	26.2
LMI-15	High	1/30/2015 9:43	13.45	10.3	6.63	74.6	8.18	26.2
LMI-19	High	1/30/2015 9:56	13.86	1.2	18.06	204.4	8.8	25.9
LMI-19	High	1/30/2015 9:56	13.85	1.3	18.29	207.1	8.81	25.9
LMI-19	High	1/30/2015 9:56	13.82	1.1	18.41	208.3	8.81	25.9
LMI-19	High	1/30/2015 9:56	13.81	1.1	18.49	209.2	8.81	25.9
LMI-19	High	1/30/2015 9:56	13.79	2.9	18.47	208.9	8.81	25.9
LMI-19	High	1/30/2015 9:57	13.79	3.0	18.48	208.9	8.81	25.9
LMI-19	High	1/30/2015 9:57	13.79	3.0	18.49	209	8.81	25.9
LMI-19	High	1/30/2015 9:57	13.78	3.1	18.45	208.6	8.81	25.9
LMI-19	High	1/30/2015 9:57	13.77	4.9	17.31	196.2	8.66	26.3
LMI-19	High	1/30/2015 9:57	13.71	5.2	14.93	169	8.57	26.3
LMI-19	High	1/30/2015 9:57	13.68	5.1	13.53	153	8.52	26.3
LMI-19	High	1/30/2015 9:58	13.67	5.1	12.73	143.9	8.49	26.3
LMI-19	High	1/30/2015 9:58	13.54	7.0	11.96	135.2	8.44	26.4
LMI-19	High	1/30/2015 9:58	13.52	7.0	11.17	126	8.4	26.5
LMI-19	High	1/30/2015 9:58	13.49	7.0	10.71	120.8	8.38	26.5
LMI-19	High	1/30/2015 9:58	13.47	7.0	10.37	117	8.36	26.6
LMI-19	High	1/30/2015 9:58	13.47	8.6	9.98	112.4	8.33	26.4
LMI-19	High	1/30/2015 9:59	13.49	8.5	8.94	100.7	8.32	26.3
LMI-19	High	1/30/2015 9:59	13.49	8.6	8.56	96.4	8.32	26.3
LMI-19	High	1/30/2015 9:59	13.5	8.6	8.33	93.8	8.31	26.2
LMI-19	High	1/30/2015 9:59	13.49	8.6	8.1	91.1	8.31	26.2
LMI-19	High	1/30/2015 9:59	13.49	8.6	7.89	88.8	8.31	26.2
LMI-19	High	1/30/2015 9:59	13.49	8.7	7.74	87.1	8.31	26.2
LMI-29	High	1/30/2015 9:06	13.61	1.2	13.29	149.7	8.49	25.9
LMI-29	High	1/30/2015 9:06	13.59	1.2	13.19	148.4	8.49	25.9
LMI-29	High	1/30/2015 9:07	13.59	1.2	12.93	145.5	8.48	25.8
LMI-29	High	1/30/2015 9:07	13.59	1.2	12.78	143.9	8.48	25.8
LMI-29	High	1/30/2015 9:07	13.59	3.4	13.07	147.1	8.54	25.9
LMI-29	High	1/30/2015 9:07	13.6	3.0	13.71	154.4	8.56	25.9
LMI-29	High	1/30/2015 9:07	13.6	3.1	14.14	159.2	8.57	25.9
LMI-29	High	1/30/2015 9:07	13.59	3.0	14.26	160.6	8.58	25.9
LMI-29	High	1/30/2015 9:08	13.61	5.0	14.44	162.7	8.59	26
LMI-29	High	1/30/2015 9:08	13.62	5.0	14.6	164.5	8.59	25.9
LMI-29	High	1/30/2015 9:08	13.62	5.0	14.65	165.1	8.59	26
LMI-29	High	1/30/2015 9:08	13.68	6.9	14.29	161.3	8.48	26.2
LMI-29	High	1/30/2015 9:08	13.68	7.0	12.14	137.3	8.4	26.3
LMI-29	High	1/30/2015 9:08	13.7	7.0	10.39	117.5	8.33	26.4
LMI-29	High	1/30/2015 9:09	13.72	7.0	8.98	101.7	8.28	26.4
LMI-29	High	1/30/2015 9:09	13.75	9.1	8.09	91.7	8.23	26.4
LMI-29	High	1/30/2015 9:09	13.76	9.0	7.49	84.9	8.21	26.4
LMI-29	High	1/30/2015 9:09	13.76	9.0	7.24	82.1	8.21	26.4
LMI-29	High	1/30/2015 9:09	13.77	9.0	7.11	80.6	8.2	26.4
LMI-29	High	1/30/2015 9:09	13.77	9.0	7.02	79.5	8.19	26.4
LMI-29	High	1/30/2015 9:10	13.77	10.5	6.87	77.9	8.12	26.3
LMI-29	High	1/30/2015 9:10	13.77	10.6	6.63	75.2	8.09	26.4
LMI-29	High	1/30/2015 9:10	13.77	10.6	6.56	74.3	8.08	26.4

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	High	1/30/2015 9:10	13.77	10.5	6.51	73.7	8.07	26.4
LMI-29	High	1/30/2015 9:10	13.77	10.5	6.48	73.5	8.06	26.4
LMI-30	High	1/30/2015 10:19	14	1.0	13.71	155.9	8.55	26.1
LMI-30	High	1/30/2015 10:19	13.98	1.0	13.67	155.4	8.54	26.1
LMI-30	High	1/30/2015 10:19	13.98	1.0	14.04	159.4	8.55	26
LMI-30	High	1/30/2015 10:19	13.99	3.2	14.48	164.9	8.53	26.4
LMI-30	High	1/30/2015 10:19	14	3.0	13.52	153.8	8.48	26.2
LMI-30	High	1/30/2015 10:20	14	3.0	12.72	144.8	8.47	26.3
LMI-30	High	1/30/2015 10:20	14	3.0	12.33	140.3	8.47	26.2
LMI-30	High	1/30/2015 10:20	13.92	5.1	11.1	126.3	8.34	26.2
LMI-30	High	1/30/2015 10:20	13.89	5.0	8.65	98.2	8.25	26.3
LMI-30	High	1/30/2015 10:20	13.87	5.1	7.19	81.7	8.17	26.3
LMI-30	High	1/30/2015 10:20	13.85	5.0	5.72	64.9	8.09	26.3
LMI-30	High	1/30/2015 10:21	13.83	5.0	4.62	52.4	8.05	26.3
LMI-30	High	1/30/2015 10:21	13.82	4.9	4.15	47.1	8.02	26.3
LMI-30	High	1/30/2015 10:21	13.82	5.0	4.17	47.3	8.01	26.3
LMI-30	High	1/30/2015 10:21	13.82	4.9	4.35	49.3	8	26.3
LMI-30	High	1/30/2015 10:21	13.81	7.2	4.19	47.5	7.97	26.4
LMI-30	High	1/30/2015 10:21	13.81	7.1	3.41	38.7	7.95	26.5
LMI-30	High	1/30/2015 10:22	13.81	6.9	3.06	34.7	7.93	26.5
LMI-30	High	1/30/2015 10:22	13.81	6.9	2.86	32.5	7.93	26.5
LMI-30	High	1/30/2015 10:22	13.81	6.9	2.67	30.3	7.92	26.5
LMI-30	High	1/30/2015 10:22	13.81	6.9	2.59	29.4	7.92	26.5
LMI-30	High	1/30/2015 10:22	13.81	9.1	2.56	29	7.54	26.4
LMI-30	High	1/30/2015 10:22	13.95	8.9	2.19	25.2	7.08	27.8
LMI-30	High	1/30/2015 10:23	13.95	8.9	1.64	18.9	7.02	27.9
LMI-30	High	1/30/2015 10:23	13.99	8.9	1.2	13.8	6.98	28.2
LMI-30	High	1/30/2015 10:23	14.04	8.9	0.84	9.7	6.97	28.3
LMI-30	High	1/30/2015 10:23	14.04	8.9	0.59	6.8	6.96	28.3
LMI-30	High	1/30/2015 10:23	14.09	9.0	0.4	4.6	6.95	28.4
LMI-30	High	1/30/2015 10:23	14.12	9.0	0.29	3.3	6.94	28.3
LMI-30	High	1/30/2015 10:24	14.15	8.9	0.23	2.7	6.94	28.3
LMI-30	High	1/30/2015 10:24	14.18	8.9	0.25	2.9	6.94	28.4
LMI-30	High	1/30/2015 10:24	14.19	9.0	0.24	2.7	6.94	28.4
LMI-30	High	1/30/2015 10:24	14.23	9.5	0.2	2.3	6.94	28.3
LMI-30	High	1/30/2015 10:24	14.24	9.5	0.18	2	6.94	28.3
LMI-30	High	1/30/2015 10:25	14.24	9.5	0.16	1.9	6.93	28.3
LMI-30	High	1/30/2015 10:25	14.25	9.5	0.16	1.8	6.93	28.3
LMI-30	High	1/30/2015 10:25	14.26	9.5	0.15	1.7	6.93	28.3
LMI-30	High	1/30/2015 10:25	14.27	9.5	0.15	1.7	6.93	28.3
LMI-30	High	1/30/2015 10:25	14.28	9.5	0.15	1.7	6.93	28.3
Channel Entrance	Low	1/9/2015 12:16	11.72	1.0	10.11	108.8	8.1	24.8
Channel Entrance	Low	1/9/2015 12:17	11.73	1.0	10.13	109	8.1	24.8
Channel Entrance	Low	1/9/2015 12:17	11.71	1.0	10.15	109.2	8.11	24.8
Channel Entrance	Low	1/9/2015 12:17	11.64	3.5	10.05	108.1	8.08	24.9
Channel Entrance	Low	1/9/2015 12:17	11.6	3.0	9.8	105.4	8.05	25
Channel Entrance	Low	1/9/2015 12:17	11.59	2.8	9.61	103.3	8.03	25.1
Channel Entrance	Low	1/9/2015 12:17	11.59	2.7	9.5	102.1	8.03	25
Channel Entrance	Low	1/9/2015 12:18	11.57	2.7	9.44	101.4	8.02	25
Channel Entrance	Low	1/9/2015 12:18	11.51	5.3	9.34	100.3	8.01	25.1
Channel Entrance	Low	1/9/2015 12:18	11.48	4.8	9.23	99	8.01	25.1
Channel Entrance	Low	1/9/2015 12:18	11.47	4.7	9.14	98	8	25.1
Channel Entrance	Low	1/9/2015 12:18	11.47	4.7	9.09	97.5	8	25.1
Channel Entrance	Low	1/9/2015 12:18	11.46	7.0	9.05	97	7.99	25.2
Channel Entrance	Low	1/9/2015 12:19	11.46	6.8	8.97	96.2	7.99	25.2
Channel Entrance	Low	1/9/2015 12:19	11.44	6.7	8.92	95.7	7.99	25.2
Channel Entrance	Low	1/9/2015 12:19	11.48	9.2	8.9	95.5	7.98	25.3
Channel Entrance	Low	1/9/2015 12:19	11.48	8.7	8.82	94.7	7.98	25.3
Channel Entrance	Low	1/9/2015 12:19	11.48	8.8	8.78	94.3	7.98	25.3
Channel Entrance	Low	1/9/2015 12:19	11.48	8.7	8.77	94.2	7.98	25.3
Channel Entrance	Low	1/9/2015 12:20	11.48	11.6	8.75	93.9	7.97	25.4
Channel Entrance	Low	1/9/2015 12:20	11.48	10.8	8.72	93.7	7.97	25.4
Channel Entrance	Low	1/9/2015 12:20	11.48	10.9	8.71	93.5	7.97	25.4
Channel Entrance	Low	1/9/2015 12:20	11.48	10.8	8.71	93.5	7.97	25.4
Channel Entrance	Low	1/9/2015 12:20	11.48	10.7	8.71	93.6	7.97	25.4
Channel Entrance	Low	1/9/2015 12:20	11.48	13.0	8.69	93.3	7.97	25.4
Channel Entrance	Low	1/9/2015 12:21	11.48	12.8	8.69	93.4	7.97	25.4

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
Channel Entrance	Low	1/9/2015 12:21	11.49	12.8	8.68	93.3	7.97	25.4
Channel Entrance	Low	1/9/2015 12:21	11.5	12.8	8.69	93.4	7.97	25.4
Channel Entrance	Low	1/9/2015 12:21	11.48	15.2	8.68	93.2	7.97	25.4
Channel Entrance	Low	1/9/2015 12:21	11.5	14.8	8.63	92.8	7.96	25.4
Channel Entrance	Low	1/9/2015 12:21	11.51	14.6	8.59	92.3	7.96	25.4
Channel Entrance	Low	1/9/2015 12:22	11.52	14.6	8.55	92	7.96	25.4
Channel Entrance	Low	1/9/2015 12:22	11.51	15.8	8.58	91.8	7.92	24.8
Channel Entrance	Low	1/9/2015 12:22	11.52	15.6	8.49	91.2	7.91	25.4
Channel Entrance	Low	1/9/2015 12:22	11.52	15.6	8.46	91	7.9	25.4
Channel Entrance	Low	1/9/2015 12:22	11.52	15.5	8.44	90.8	7.9	25.4
Channel Entrance	Low	1/9/2015 12:23	11.52	15.5	8.44	90.7	7.91	25.4
LMI-15	Low	1/9/2015 10:19	11.76	1.0	15.62	165.6	8.47	22.5
LMI-15	Low	1/9/2015 10:19	11.76	1.0	16.11	170.7	8.49	22.5
LMI-15	Low	1/9/2015 10:19	11.77	0.9	16.42	174	8.49	22.5
LMI-15	Low	1/9/2015 10:19	11.78	0.9	16.6	176	8.5	22.5
LMI-15	Low	1/9/2015 10:19	11.69	3.3	16.23	172.9	8.4	23.3
LMI-15	Low	1/9/2015 10:19	11.64	2.9	14.76	157.4	8.32	23.8
LMI-15	Low	1/9/2015 10:20	11.6	3.2	13.73	146.3	8.28	23.8
LMI-15	Low	1/9/2015 10:20	11.61	3.1	13.05	139.1	8.27	23.9
LMI-15	Low	1/9/2015 10:20	11.61	3.1	12.74	135.8	8.26	24
LMI-15	Low	1/9/2015 10:20	11.61	3.1	12.53	133.6	8.25	23.9
LMI-15	Low	1/9/2015 10:20	11.57	5.2	12.03	128.5	8.18	24.3
LMI-15	Low	1/9/2015 10:21	11.57	4.7	10.75	114.8	8.14	24.4
LMI-15	Low	1/9/2015 10:21	11.57	4.8	10.51	112.3	8.13	24.4
LMI-15	Low	1/9/2015 10:21	11.57	4.8	10.38	110.9	8.12	24.4
LMI-15	Low	1/9/2015 10:21	11.57	4.8	10.26	109.7	8.12	24.4
LMI-15	Low	1/9/2015 10:21	11.57	7.1	10.18	108.7	8.09	24.4
LMI-15	Low	1/9/2015 10:21	11.57	6.8	9.7	103.7	8.07	24.5
LMI-15	Low	1/9/2015 10:22	11.58	6.9	9.47	101.3	8.06	24.5
LMI-15	Low	1/9/2015 10:22	11.58	6.8	9.37	100.2	8.05	24.5
LMI-15	Low	1/9/2015 10:22	11.58	6.9	9.3	99.5	8.05	24.5
LMI-15	Low	1/9/2015 10:22	11.57	9.1	9.22	98.6	8.04	24.5
LMI-15	Low	1/9/2015 10:22	11.53	8.7	9.13	97.6	8.04	24.7
LMI-15	Low	1/9/2015 10:22	11.53	8.9	9.09	97.2	8.04	24.7
LMI-15	Low	1/9/2015 10:23	11.52	8.8	9.08	97.1	8.04	24.7
LMI-15	Low	1/9/2015 10:23	11.52	10.0	9.15	97.2	8.03	23.6
LMI-15	Low	1/9/2015 10:23	11.53	9.8	9.09	96.3	8.02	23.3
LMI-15	Low	1/9/2015 10:23	11.53	9.8	9.04	95.7	8.02	23.3
LMI-15	Low	1/9/2015 10:23	11.54	9.7	9.03	95.7	8.01	23.2
LMI-19	Low	1/9/2015 10:39	11.89	1.0	15	159.4	8.41	22.3
LMI-19	Low	1/9/2015 10:39	11.85	1.0	15.09	160.1	8.41	22.3
LMI-19	Low	1/9/2015 10:39	11.84	1.0	15.11	160.3	8.42	22.3
LMI-19	Low	1/9/2015 10:39	11.84	1.0	15.17	161	8.41	22.4
LMI-19	Low	1/9/2015 10:39	11.68	2.7	14.87	157.7	8.37	22.5
LMI-19	Low	1/9/2015 10:39	11.66	2.9	13.97	148	8.34	22.7
LMI-19	Low	1/9/2015 10:40	11.61	2.8	13.49	142.8	8.32	22.8
LMI-19	Low	1/9/2015 10:40	11.56	2.9	13.21	139.8	8.3	22.8
LMI-19	Low	1/9/2015 10:40	11.53	4.9	12.77	135.2	8.26	23.2
LMI-19	Low	1/9/2015 10:40	11.53	5.0	12.1	128.3	8.22	23.3
LMI-19	Low	1/9/2015 10:40	11.54	4.9	11.68	123.9	8.2	23.4
LMI-19	Low	1/9/2015 10:40	11.53	4.9	11.35	120.4	8.19	23.4
LMI-19	Low	1/9/2015 10:41	11.48	6.8	10.97	116.9	8.15	24.2
LMI-19	Low	1/9/2015 10:41	11.48	7.1	10.43	111.2	8.14	24.3
LMI-19	Low	1/9/2015 10:41	11.47	7.0	10.25	109.3	8.13	24.4
LMI-19	Low	1/9/2015 10:41	11.47	7.0	10.17	108.5	8.12	24.4
LMI-19	Low	1/9/2015 10:41	11.44	7.0	10.08	107.4	8.11	24.4
LMI-19	Low	1/9/2015 10:41	11.47	8.9	10	106.7	8.1	24.7
LMI-19	Low	1/9/2015 10:42	11.47	9.0	9.84	105	8.09	24.6
LMI-19	Low	1/9/2015 10:42	11.48	8.9	9.75	104.2	8.09	24.7
LMI-19	Low	1/9/2015 10:42	11.48	8.9	9.71	103.7	8.09	24.7
LMI-19	Low	1/9/2015 10:42	11.48	9.4	9.73	103.7	8.08	24.3
LMI-19	Low	1/9/2015 10:42	11.48	9.5	9.7	103.3	8.08	24.2
LMI-19	Low	1/9/2015 10:42	11.48	9.5	9.69	103.1	8.08	24.2
LMI-19	Low	1/9/2015 10:43	11.48	9.5	9.69	103.1	8.08	24.2
LMI-19	Low	1/9/2015 10:43	11.48	9.4	9.66	102.9	8.08	24.2
LMI-29	Low	1/9/2015 9:46	12.12	0.9	8.53	91.6	7.81	23.3
LMI-29	Low	1/9/2015 9:46	12.12	1.0	8.6	92.3	7.83	23.3

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	Low	1/9/2015 9:46	12.05	0.9	8.62	92.5	7.84	23.3
LMI-29	Low	1/9/2015 9:47	11.99	0.9	8.61	92.3	7.85	23.3
LMI-29	Low	1/9/2015 9:47	11.85	2.8	8.51	91.2	7.85	23.6
LMI-29	Low	1/9/2015 9:47	11.85	2.9	8.23	88.2	7.85	23.9
LMI-29	Low	1/9/2015 9:47	11.85	3.0	8.06	86.4	7.85	23.9
LMI-29	Low	1/9/2015 9:47	11.84	3.0	7.96	85.3	7.85	23.9
LMI-29	Low	1/9/2015 9:47	11.8	3.0	7.9	84.6	7.84	23.9
LMI-29	Low	1/9/2015 9:48	11.8	3.0	7.85	84	7.84	23.9
LMI-29	Low	1/9/2015 9:48	11.71	5.0	7.87	84.2	7.88	24
LMI-29	Low	1/9/2015 9:48	11.71	5.1	8.14	87	7.89	24.1
LMI-29	Low	1/9/2015 9:48	11.71	5.0	8.25	88.2	7.9	24.1
LMI-29	Low	1/9/2015 9:48	11.71	5.0	8.32	89	7.91	24.1
LMI-29	Low	1/9/2015 9:48	11.71	5.0	8.36	89.4	7.91	24.1
LMI-29	Low	1/9/2015 9:49	11.67	7.2	8.43	90.2	7.93	24.2
LMI-29	Low	1/9/2015 9:49	11.66	7.1	8.59	91.8	7.94	24.2
LMI-29	Low	1/9/2015 9:49	11.66	7.1	8.64	92.4	7.95	24.2
LMI-29	Low	1/9/2015 9:49	11.67	7.1	8.69	92.9	7.95	24.2
LMI-29	Low	1/9/2015 9:49	11.66	9.0	8.74	93.4	7.97	24.2
LMI-29	Low	1/9/2015 9:49	11.66	9.0	8.85	94.6	7.97	24.2
LMI-29	Low	1/9/2015 9:50	11.66	9.0	8.9	95.1	7.98	24.2
LMI-29	Low	1/9/2015 9:50	11.66	8.9	8.92	95.4	7.98	24.2
LMI-29	Low	1/9/2015 9:50	11.66	10.2	8.96	94.9	7.94	22.8
LMI-29	Low	1/9/2015 9:50	11.66	10.2	8.92	94.5	7.94	22.8
LMI-29	Low	1/9/2015 9:51	11.67	10.2	8.89	94.2	7.94	22.8
LMI-29	Low	1/9/2015 9:51	11.67	10.2	8.88	94.1	7.94	22.8
LMI-29	Low	1/9/2015 9:51	11.68	10.2	8.87	94.1	7.94	22.8
LMI-30	Low	1/9/2015 11:02	12.54	1.0	16.9	183.1	8.57	23.3
LMI-30	Low	1/9/2015 11:03	12.49	1.0	17.02	184.4	8.57	23.3
LMI-30	Low	1/9/2015 11:03	12.4	1.0	17.24	186.4	8.58	23.3
LMI-30	Low	1/9/2015 11:03	12.39	1.0	17.41	188.1	8.6	23.3
LMI-30	Low	1/9/2015 11:03	12.12	3.5	17.36	187.3	8.43	23.2
LMI-30	Low	1/9/2015 11:03	12.03	2.9	13.44	144.6	8.24	23.7
LMI-30	Low	1/9/2015 11:03	12.02	2.7	11.08	119.1	8.16	23.7
LMI-30	Low	1/9/2015 11:04	11.99	2.7	10.11	108.5	8.12	23.7
LMI-30	Low	1/9/2015 11:04	11.97	2.8	9.5	102	8.08	23.7
LMI-30	Low	1/9/2015 11:04	11.95	2.8	9.09	97.6	8.06	23.8
LMI-30	Low	1/9/2015 11:04	11.85	5.2	8.67	93.1	8.04	24.1
LMI-30	Low	1/9/2015 11:04	11.83	4.8	8.57	91.9	8.04	24.1
LMI-30	Low	1/9/2015 11:04	11.81	4.8	8.56	91.8	8.04	24.2
LMI-30	Low	1/9/2015 11:05	11.8	4.8	8.61	92.4	8.04	24.2
LMI-30	Low	1/9/2015 11:05	11.77	4.9	8.71	93.4	8.03	24.2
LMI-30	Low	1/9/2015 11:05	11.75	7.5	8.59	92	8.02	24.3
LMI-30	Low	1/9/2015 11:05	11.75	7.1	8.5	91.2	8.02	24.3
LMI-30	Low	1/9/2015 11:05	11.71	6.8	8.49	90.9	8.03	24.3
LMI-30	Low	1/9/2015 11:05	11.71	6.7	8.5	91.1	8.03	24.3
LMI-30	Low	1/9/2015 11:06	11.7	6.9	8.54	91.4	8.03	24.3
LMI-30	Low	1/9/2015 11:06	12.85	9.2	8.36	91.5	7.16	27.7
LMI-30	Low	1/9/2015 11:06	13.12	9.0	5.58	63	7.04	28.5
LMI-30	Low	1/9/2015 11:06	13.21	8.9	4.29	48.8	7	28.7
LMI-30	Low	1/9/2015 11:06	13.52	8.9	3.52	40.2	6.97	28.7
LMI-30	Low	1/9/2015 11:06	13.68	8.8	3.04	34.7	6.95	28.6
LMI-30	Low	1/9/2015 11:07	13.95	8.8	2.71	31.2	6.94	28.8
LMI-30	Low	1/9/2015 11:07	14.04	8.8	2.44	28.2	6.93	28.9
LMI-30	Low	1/9/2015 11:07	14.13	8.8	2.21	25.6	6.92	28.8
LMI-30	Low	1/9/2015 11:07	14.22	8.8	1.98	22.9	6.92	28.9
LMI-30	Low	1/9/2015 11:07	14.22	8.8	1.8	20.9	6.91	28.7
LMI-30	Low	1/9/2015 11:07	14.27	8.8	1.59	18.4	6.91	28.7
LMI-30	Low	1/9/2015 11:08	14.33	8.8	1.35	15.7	6.91	28.7
LMI-30	Low	1/9/2015 11:08	14.37	8.8	1.17	13.6	6.9	28.7
LMI-30	Low	1/9/2015 11:08	14.4	8.8	1.05	12.2	6.9	28.7
LMI-30	Low	1/9/2015 11:08	14.42	8.8	0.96	11.2	6.9	28.7
LMI-30	Low	1/9/2015 11:08	14.46	8.8	0.91	10.7	6.9	28.7
LMI-30	Low	1/9/2015 11:08	14.49	8.7	0.88	10.3	6.9	28.7
LMI-30	Low	1/9/2015 11:09	14.5	8.7	0.85	9.9	6.9	28.7
LMI-30	Low	1/9/2015 11:09	14.53	8.8	0.81	9.5	6.9	28.7
LMI-30	Low	1/9/2015 11:09	14.54	8.8	0.77	9	6.89	28.7
LMI-30	Low	1/9/2015 11:09	14.72	9.4	0.69	8	6.89	28.7

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-30	Low	1/9/2015 11:09	14.75	9.5	0.46	5.4	6.89	28.5
LMI-30	Low	1/9/2015 11:09	14.76	9.5	0.38	4.4	6.89	28.5
LMI-30	Low	1/9/2015 11:10	14.77	9.5	0.33	3.9	6.89	28.5
LMI-30	Low	1/9/2015 11:10	14.8	9.5	0.3	3.5	6.89	28.5
LMI-30	Low	1/9/2015 11:10	14.81	9.5	0.28	3.3	6.89	28.4
LMI-30	Low	1/9/2015 11:10	14.85	9.5	0.26	3.1	6.89	28.5
LMI-30	Low	1/9/2015 11:10	14.85	9.5	0.25	2.9	6.89	28.4
Channel Entrance	High	2/16/2015 11:59	17.01	1.1	8.77	105.7	8.1	25.6
Channel Entrance	High	2/16/2015 12:00	16.92	1.1	8.83	106.3	8.09	25.6
Channel Entrance	High	2/16/2015 12:00	16.75	1.1	8.88	106.7	8.08	25.6
Channel Entrance	High	2/16/2015 12:00	16.56	1.1	8.95	107.1	8.08	25.8
Channel Entrance	High	2/16/2015 12:00	16.33	3.5	8.95	106.8	8.08	25.8
Channel Entrance	High	2/16/2015 12:00	16.29	3.1	8.97	106.8	8.07	25.9
Channel Entrance	High	2/16/2015 12:00	16.29	3.0	8.93	106.4	8.07	25.9
Channel Entrance	High	2/16/2015 12:01	16.23	3.0	8.93	106.3	8.07	25.9
Channel Entrance	High	2/16/2015 12:01	16.03	5.2	8.94	106.1	8.06	26
Channel Entrance	High	2/16/2015 12:01	16.02	5.1	8.92	105.8	8.06	26
Channel Entrance	High	2/16/2015 12:01	16.02	5.1	8.91	105.6	8.06	26
Channel Entrance	High	2/16/2015 12:01	15.98	5.1	8.9	105.4	8.06	26.1
Channel Entrance	High	2/16/2015 12:01	15.84	7.0	8.88	105	8.06	26.1
Channel Entrance	High	2/16/2015 12:02	15.84	7.0	8.86	104.7	8.05	26.1
Channel Entrance	High	2/16/2015 12:02	15.84	7.0	8.84	104.5	8.05	26.1
Channel Entrance	High	2/16/2015 12:02	15.71	9.2	8.83	104.3	8.05	26.1
Channel Entrance	High	2/16/2015 12:02	15.7	9.0	8.85	104.3	8.05	26.2
Channel Entrance	High	2/16/2015 12:02	15.67	9.0	8.84	104.1	8.05	26.2
Channel Entrance	High	2/16/2015 12:02	15.62	11.2	8.83	104	8.05	26.2
Channel Entrance	High	2/16/2015 12:03	15.61	11.0	8.81	103.7	8.04	26.2
Channel Entrance	High	2/16/2015 12:03	15.62	10.9	8.79	103.4	8.04	26.2
Channel Entrance	High	2/16/2015 12:03	15.57	12.9	8.76	103	8.04	26.3
Channel Entrance	High	2/16/2015 12:03	15.57	13.0	8.67	102	8.03	26.3
Channel Entrance	High	2/16/2015 12:03	15.57	13.0	8.61	101.3	8.03	26.3
Channel Entrance	High	2/16/2015 12:03	15.49	14.7	8.53	100.3	8.02	26.2
Channel Entrance	High	2/16/2015 12:04	15.48	14.7	8.44	99.1	8.02	26.3
Channel Entrance	High	2/16/2015 12:04	15.48	14.7	8.4	98.7	8.01	26.3
LMI-15	High	2/16/2015 10:19	15.4	1.1	11.75	135.6	8.37	24.2
LMI-15	High	2/16/2015 10:19	15.39	1.1	11.75	136	8.37	24.3
LMI-15	High	2/16/2015 10:19	15.39	1.1	11.78	136.3	8.37	24.2
LMI-15	High	2/16/2015 10:19	15.39	1.0	11.85	137	8.37	24.2
LMI-15	High	2/16/2015 10:19	15.36	3.2	11.84	136.9	8.33	24.2
LMI-15	High	2/16/2015 10:20	15.37	3.7	10.81	125.7	8.25	25.2
LMI-15	High	2/16/2015 10:20	15.34	2.7	10.23	118.8	8.24	25.1
LMI-15	High	2/16/2015 10:20	15.35	3.2	10.33	120	8.23	25.1
LMI-15	High	2/16/2015 10:20	15.35	3.3	10.11	117.6	8.21	25.2
LMI-15	High	2/16/2015 10:20	15.36	5.1	9.89	115	8.2	25.3
LMI-15	High	2/16/2015 10:21	15.39	5.1	9.6	111.7	8.19	25.3
LMI-15	High	2/16/2015 10:21	15.38	5.1	9.46	110.2	8.17	25.3
LMI-15	High	2/16/2015 10:21	15.39	5.0	9.31	108.4	8.17	25.3
LMI-15	High	2/16/2015 10:21	15.39	6.8	9.04	105.5	8.13	25.6
LMI-15	High	2/16/2015 10:21	15.39	7.1	8.69	101.5	8.1	25.8
LMI-15	High	2/16/2015 10:21	15.4	7.1	8.53	99.7	8.09	25.9
LMI-15	High	2/16/2015 10:22	15.4	7.0	8.47	99	8.08	25.9
LMI-15	High	2/16/2015 10:22	15.39	8.9	8.39	98.1	8.07	25.9
LMI-15	High	2/16/2015 10:22	15.39	9.1	8.54	99.8	8.07	25.9
LMI-15	High	2/16/2015 10:22	15.39	9.0	8.64	101.1	8.07	25.9
LMI-15	High	2/16/2015 10:22	15.39	9.0	8.69	101.5	8.07	25.9
LMI-15	High	2/16/2015 10:22	15.39	10.7	8.84	102.3	8.05	24.4
LMI-15	High	2/16/2015 10:23	15.39	10.7	8.86	102.6	8.05	24.5
LMI-15	High	2/16/2015 10:23	15.39	10.8	8.87	102.8	8.06	24.5
LMI-19	High	2/16/2015 10:33	16.24	1.0	12.09	142.3	8.38	24.2
LMI-19	High	2/16/2015 10:33	16.16	1.0	12.06	141.8	8.37	24.3
LMI-19	High	2/16/2015 10:34	16.11	1.1	12.08	141.9	8.37	24.3
LMI-19	High	2/16/2015 10:34	15.75	3.2	11.79	138.4	8.31	24.6
LMI-19	High	2/16/2015 10:34	15.62	3.0	10.98	128.2	8.27	24.9
LMI-19	High	2/16/2015 10:34	15.58	2.9	10.7	124.9	8.26	25
LMI-19	High	2/16/2015 10:34	15.57	5.2	10.38	121.2	8.21	25.3
LMI-19	High	2/16/2015 10:34	15.53	5.0	9.84	115	8.18	25.4
LMI-19	High	2/16/2015 10:35	15.5	5.0	9.63	112.6	8.17	25.5

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-19	High	2/16/2015 10:35	15.49	5.0	9.51	111.1	8.16	25.5
LMI-19	High	2/16/2015 10:35	15.44	7.1	9.43	110.2	8.14	25.7
LMI-19	High	2/16/2015 10:35	15.43	6.9	9.33	109	8.14	25.7
LMI-19	High	2/16/2015 10:35	15.41	6.9	9.3	108.6	8.13	25.7
LMI-19	High	2/16/2015 10:35	15.4	6.9	9.29	108.5	8.13	25.7
LMI-19	High	2/16/2015 10:36	15.4	10.4	9.25	108	8.12	25.7
LMI-19	High	2/16/2015 10:36	15.39	9.6	9.2	107.5	8.12	25.8
LMI-19	High	2/16/2015 10:36	15.39	9.0	9.2	107.4	8.12	25.7
LMI-19	High	2/16/2015 10:36	15.39	9.0	9.19	107.3	8.12	25.7
LMI-19	High	2/16/2015 10:36	15.39	8.8	9.19	107.2	8.12	25.7
LMI-19	High	2/16/2015 10:36	15.37	10.9	9.3	107.3	8.1	23.8
LMI-19	High	2/16/2015 10:37	15.37	10.7	9.29	107.1	8.08	23.8
LMI-19	High	2/16/2015 10:37	15.36	10.7	9.26	106.8	8.08	23.8
LMI-19	High	2/16/2015 10:37	15.37	10.7	9.26	106.8	8.07	23.8
LMI-29	High	2/16/2015 9:45	17.12	1.0	11.02	130.9	8.33	22.5
LMI-29	High	2/16/2015 9:45	17.01	1.0	10.86	128.6	8.33	22.6
LMI-29	High	2/16/2015 9:45	17	1.0	10.76	127.4	8.33	22.6
LMI-29	High	2/16/2015 9:45	16.99	1.0	10.69	126.5	8.33	22.6
LMI-29	High	2/16/2015 9:45	16.74	2.7	10.44	123.7	8.28	23.4
LMI-29	High	2/16/2015 9:46	16.74	3.0	9.77	115.9	8.25	24
LMI-29	High	2/16/2015 9:46	16.74	3.0	9.44	112.3	8.23	24.3
LMI-29	High	2/16/2015 9:46	16.69	3.0	9.31	110.6	8.22	24.4
LMI-29	High	2/16/2015 9:46	16.47	3.0	8.94	110.6	8.16	24.4
LMI-29	High	2/16/2015 9:46	16.41	4.9	8.31	98.7	8.13	25
LMI-29	High	2/16/2015 9:46	16.38	5.1	8.31	98.7	8.11	25
LMI-29	High	2/16/2015 9:46	16.36	5.1	8.31	98.7	8.11	25
LMI-29	High	2/16/2015 9:47	16.28	5.1	7.07	83.7	8.05	25.2
LMI-29	High	2/16/2015 9:47	16.07	7.3	6.32	74.8	7.92	25.4
LMI-29	High	2/16/2015 9:47	16.02	7.0	3.66	43.3	7.75	25.8
LMI-29	High	2/16/2015 9:47	16.03	7.0	2.19	26	7.74	25.8
LMI-29	High	2/16/2015 9:47	16.04	7.0	1.59	18.8	7.74	25.8
LMI-29	High	2/16/2015 9:48	16.03	7.0	1.32	15.6	7.74	25.8
LMI-29	High	2/16/2015 9:48	15.98	7.0	1.12	13.3	7.73	25.8
LMI-29	High	2/16/2015 9:48	15.98	7.0	1	11.8	7.71	25.8
LMI-29	High	2/16/2015 9:48	15.93	7.0	0.91	10.7	7.69	25.9
LMI-29	High	2/16/2015 9:48	15.9	7.1	0.82	9.7	7.65	25.9
LMI-29	High	2/16/2015 9:48	15.89	7.0	0.74	8.7	7.63	25.9
LMI-29	High	2/16/2015 9:49	15.69	9.1	0.5	5.9	7.58	26
LMI-29	High	2/16/2015 9:49	15.62	9.1	0.29	3.4	7.56	26.2
LMI-29	High	2/16/2015 9:49	15.58	9.1	0.21	3.4	7.51	26.2
LMI-29	High	2/16/2015 9:49	15.57	9.1	0.18	2.1	7.5	26.2
LMI-29	High	2/16/2015 9:49	15.53	9.1	0.18	2.1	7.48	26.2
LMI-29	High	2/16/2015 9:49	15.53	9.1	0.14	2.1	7.48	26.2
LMI-29	High	2/16/2015 9:50	15.44	11.8	0.05	0.6	7.29	26.2
LMI-29	High	2/16/2015 9:50	15.38	11.8	0.05	0.6	7.27	26.2
LMI-29	High	2/16/2015 9:50	15.38	11.8	0.05	0.6	7.27	26.2
LMI-29	High	2/16/2015 9:50	15.35	10.6	0.03	0.4	7.24	26.3
LMI-29	High	2/16/2015 9:51	15.34	11.3	0.03	0.4	7.24	26.3
LMI-29	High	2/16/2015 9:51	15.34	11.3	0.03	0.3	7.23	26.3
LMI-29	High	2/16/2015 9:51	15.32	12.8	0.02	0.3	6.95	26.1
LMI-29	High	2/16/2015 9:51	15.33	12.8	0.02	0.3	6.91	26.2
LMI-30	High	2/16/2015 10:55	17.03	1.1	13.79	164.3	8.56	23.6
LMI-30	High	2/16/2015 10:56	16.96	1.1	13.83	164.7	8.56	23.7
LMI-30	High	2/16/2015 10:56	16.92	1.1	13.87	165	8.56	23.7
LMI-30	High	2/16/2015 10:56	16.84	1.1	13.9	165.2	8.55	23.7
LMI-30	High	2/16/2015 10:56	16.62	3.3	13.94	165.5	8.51	23.7
LMI-30	High	2/16/2015 10:56	16.38	2.8	13.05	154.7	8.46	24.6
LMI-30	High	2/16/2015 10:57	16.24	2.9	12.9	152.1	8.47	24.4
LMI-30	High	2/16/2015 10:57	16.25	2.9	13.14	154.8	8.47	24.3
LMI-30	High	2/16/2015 10:57	16.25	5.0	12.66	149.7	8.34	25.1
LMI-30	High	2/16/2015 10:57	16.2	5.1	10.79	127.8	8.28	25.2
LMI-30	High	2/16/2015 10:57	16.2	5.1	9.85	116.7	8.22	25.4
LMI-30	High	2/16/2015 10:57	16.16	5.1	9.18	108.6	8.19	25.5
LMI-30	High	2/16/2015 10:58	16.16	5.1	8.7	103	8.17	25.5
LMI-30	High	2/16/2015 10:58	16.07	7.4	6.9	81.7	8.05	25.6
LMI-30	High	2/16/2015 10:58	16.05	7.1	4.36	51.6	7.97	25.7
LMI-30	High	2/16/2015 10:58	16.04	7.0	2.8	33.1	7.92	25.7

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-30	High	2/16/2015 10:58	16.03	6.9	1.93	22.9	7.9	25.7
LMI-30	High	2/16/2015 10:58	16.02	6.9	1.59	18.8	7.88	25.8
LMI-30	High	2/16/2015 10:59	16.02	7.0	1.43	16.9	7.87	25.7
LMI-30	High	2/16/2015 10:59	16.02	6.9	1.35	16	7.85	25.7
LMI-30	High	2/16/2015 10:59	15.96	8.9	1.08	12.8	7.79	26
LMI-30	High	2/16/2015 10:59	15.95	9.3	0.62	7.4	7.75	26.1
LMI-30	High	2/16/2015 10:59	15.95	9.1	0.41	4.8	7.73	26.2
LMI-30	High	2/16/2015 10:59	15.94	9.0	0.27	3.2	7.72	26.2
LMI-30	High	2/16/2015 11:00	15.94	9.0	0.22	2.6	7.71	26.2
LMI-30	High	2/16/2015 11:00	15.94	9.1	0.19	2.2	7.7	26.2
LMI-30	High	2/16/2015 11:00	15.93	9.1	0.17	2	7.7	26.2
LMI-30	High	2/16/2015 11:00	15.9	10.9	0.14	1.7	7.53	26.4
LMI-30	High	2/16/2015 11:00	15.88	10.9	0.09	1.1	7.36	26.2
LMI-30	High	2/16/2015 11:00	15.85	11.0	0.07	0.9	7.25	26.7
Channel Entrance	Low	2/9/2015 11:45	16.43	1.0	7.7	89.6	8.04	22.8
Channel Entrance	Low	2/9/2015 11:45	16.32	1.0	7.7	89.6	8.03	23
Channel Entrance	Low	2/9/2015 11:45	16.14	1.0	7.78	89.9	8.04	22.6
Channel Entrance	Low	2/9/2015 11:46	15.9	1.0	7.83	90	8.04	22.4
Channel Entrance	Low	2/9/2015 11:46	15.49	2.8	7.78	89.7	7.98	24.2
Channel Entrance	Low	2/9/2015 11:46	15.26	3.0	7.72	88.8	7.97	24.7
Channel Entrance	Low	2/9/2015 11:46	15.13	2.9	7.69	88.3	7.96	24.9
Channel Entrance	Low	2/9/2015 11:46	14.95	2.9	7.68	87.9	7.95	25
Channel Entrance	Low	2/9/2015 11:46	14.85	4.9	7.66	87.5	7.94	25.1
Channel Entrance	Low	2/9/2015 11:47	14.91	4.9	7.62	87	7.94	25.2
Channel Entrance	Low	2/9/2015 11:47	14.91	4.9	7.58	86.7	7.94	25.2
Channel Entrance	Low	2/9/2015 11:47	14.85	4.9	7.58	86.7	7.94	25.2
Channel Entrance	Low	2/9/2015 11:47	14.63	6.9	7.58	86.5	7.94	25.3
Channel Entrance	Low	2/9/2015 11:47	14.63	7.0	7.59	86.4	7.94	25.4
Channel Entrance	Low	2/9/2015 11:47	14.62	7.0	7.57	86.2	7.94	25.4
Channel Entrance	Low	2/9/2015 11:48	14.6	7.0	7.57	86.1	7.94	25.4
Channel Entrance	Low	2/9/2015 11:48	14.45	9.0	7.58	86.1	7.94	25.5
Channel Entrance	Low	2/9/2015 11:48	14.46	9.0	7.58	86.1	7.94	25.5
Channel Entrance	Low	2/9/2015 11:48	14.44	9.0	7.58	86	7.94	25.5
Channel Entrance	Low	2/9/2015 11:48	14.42	9.0	7.57	85.9	7.94	25.6
Channel Entrance	Low	2/9/2015 11:48	14.36	11.0	7.56	85.7	7.93	25.7
Channel Entrance	Low	2/9/2015 11:49	14.37	11.0	7.51	85.2	7.93	25.7
Channel Entrance	Low	2/9/2015 11:49	14.37	10.9	7.5	85	7.93	25.7
Channel Entrance	Low	2/9/2015 11:49	14.36	10.9	7.47	84.7	7.93	25.7
Channel Entrance	Low	2/9/2015 11:49	14.31	12.9	7.42	84.2	7.92	25.8
Channel Entrance	Low	2/9/2015 11:49	14.33	12.9	7.35	83.3	7.92	25.9
Channel Entrance	Low	2/9/2015 11:49	14.33	12.9	7.32	83	7.92	25.9
Channel Entrance	Low	2/9/2015 11:50	14.31	12.9	7.29	82.6	7.91	25.9
Channel Entrance	Low	2/9/2015 11:50	14.29	13.6	7.28	82.5	7.91	25.9
Channel Entrance	Low	2/9/2015 11:50	14.29	13.6	7.27	82.4	7.91	25.9
Channel Entrance	Low	2/9/2015 11:50	14.31	13.6	7.25	82.2	7.91	25.9
Channel Entrance	Low	2/9/2015 11:50	14.31	13.6	7.23	82	7.91	25.9
Channel Entrance	Low	2/9/2015 11:51	14.27	13.6	7.22	81.9	7.91	25.9
LMI-15	Low	2/9/2015 9:48	15.01	1.1	9.49	101	8.41	12.9
LMI-15	Low	2/9/2015 9:48	14.96	1.0	9.57	101.5	8.42	12.9
LMI-15	Low	2/9/2015 9:48	14.91	1.1	9.63	102.2	8.43	12.8
LMI-15	Low	2/9/2015 9:48	14.87	1.1	9.67	102.6	8.44	13
LMI-15	Low	2/9/2015 9:48	14.85	1.1	9.73	103	8.45	12.8
LMI-15	Low	2/9/2015 9:48	14.94	3.0	9.59	103.3	8.21	15.7
LMI-15	Low	2/9/2015 9:49	14.98	2.9	7.9	89.7	8.19	24
LMI-15	Low	2/9/2015 9:49	14.99	3.0	7.03	79.8	8.18	23.9
LMI-15	Low	2/9/2015 9:49	15.01	2.9	6.44	73.1	8.18	23.7
LMI-15	Low	2/9/2015 9:49	15.01	3.0	6.35	72.1	8.18	23.8
LMI-15	Low	2/9/2015 9:49	15.01	3.0	6.31	71.7	8.18	23.8
LMI-15	Low	2/9/2015 9:50	15.02	3.0	6.29	71.5	8.18	23.9
LMI-15	Low	2/9/2015 9:50	15.03	3.0	6.27	71.3	8.18	23.9
LMI-15	Low	2/9/2015 9:50	14.87	4.8	6.14	70.2	8.17	25
LMI-15	Low	2/9/2015 9:50	14.81	5.2	5.93	68	8.18	26.1
LMI-15	Low	2/9/2015 9:50	14.79	5.2	5.72	65.7	8.18	26.2
LMI-15	Low	2/9/2015 9:50	14.79	5.2	5.59	64.1	8.18	26.2
LMI-15	Low	2/9/2015 9:51	14.77	5.2	5.51	63.3	8.19	26.3
LMI-15	Low	2/9/2015 9:51	14.72	5.1	5.47	62.8	8.19	26.3
LMI-15	Low	2/9/2015 9:51	14.69	5.2	5.44	62.3	8.19	26.3

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-15	Low	2/9/2015 9:51	14.68	7.1	5.24	60.1	8.17	26.4
LMI-15	Low	2/9/2015 9:51	14.68	7.0	4.73	54.3	8.15	26.5
LMI-15	Low	2/9/2015 9:51	14.67	7.0	4.38	50.3	8.14	26.5
LMI-15	Low	2/9/2015 9:52	14.67	7.0	4.13	47.4	8.13	26.5
LMI-15	Low	2/9/2015 9:52	14.67	6.9	3.92	44.9	8.12	26.5
LMI-15	Low	2/9/2015 9:52	14.66	6.9	3.79	43.5	8.12	26.5
LMI-15	Low	2/9/2015 9:52	14.66	6.9	3.73	42.8	8.12	26.5
LMI-15	Low	2/9/2015 9:52	14.64	9.0	3.48	39.9	8.11	26.6
LMI-15	Low	2/9/2015 9:53	14.64	9.1	3.39	38.9	8.1	26.5
LMI-15	Low	2/9/2015 9:53	14.64	9.0	3.35	38.4	8.1	26.5
LMI-15	Low	2/9/2015 9:53	14.64	9.0	3.31	38	8.1	26.5
LMI-15	Low	2/9/2015 9:53	14.63	9.5	3.29	37.7	8.1	26.5
LMI-15	Low	2/9/2015 9:53	14.63	9.4	3.25	37.3	8.1	26.5
LMI-15	Low	2/9/2015 9:53	14.63	9.5	3.22	36.9	8.1	26.4
LMI-15	Low	2/9/2015 9:54	14.63	9.2	3.21	36.7	8.09	26.3
LMI-19	Low	2/9/2015 10:06	15.12	1.0	10.46	110.3	8.51	11.2
LMI-19	Low	2/9/2015 10:06	15.03	1.0	10.57	111.3	8.52	11.2
LMI-19	Low	2/9/2015 10:07	15	1.0	10.64	111.9	8.53	11.2
LMI-19	Low	2/9/2015 10:07	14.97	1.0	10.75	113	8.53	11.2
LMI-19	Low	2/9/2015 10:07	14.94	1.0	10.83	113.7	8.54	11.1
LMI-19	Low	2/9/2015 10:07	14.88	1.0	10.89	114.1	8.55	11.1
LMI-19	Low	2/9/2015 10:07	14.85	1.0	10.97	114.8	8.56	11.1
LMI-19	Low	2/9/2015 10:08	14.9	2.7	8.59	97	8.23	23.3
LMI-19	Low	2/9/2015 10:08	14.87	3.0	7.88	89.6	8.21	24.4
LMI-19	Low	2/9/2015 10:08	14.85	3.0	7.17	81.7	8.21	24.8
LMI-19	Low	2/9/2015 10:08	14.85	3.0	6.81	77.6	8.21	25
LMI-19	Low	2/9/2015 10:08	14.85	3.0	6.61	75.5	8.21	25.2
LMI-19	Low	2/9/2015 10:09	14.83	3.0	6.49	74	8.21	25.1
LMI-19	Low	2/9/2015 10:09	14.83	3.0	6.4	73	8.22	25.1
LMI-19	Low	2/9/2015 10:09	14.84	3.0	6.32	72.1	8.22	25.2
LMI-19	Low	2/9/2015 10:09	14.77	4.9	6.17	70.7	8.19	25.7
LMI-19	Low	2/9/2015 10:09	14.72	5.1	5.6	64.3	8.18	26.3
LMI-19	Low	2/9/2015 10:09	14.72	5.1	5.21	59.7	8.18	26.4
LMI-19	Low	2/9/2015 10:10	14.72	5.1	4.94	56.7	8.18	26.3
LMI-19	Low	2/9/2015 10:10	14.72	5.1	4.77	54.7	8.18	26.3
LMI-19	Low	2/9/2015 10:10	14.72	5.1	4.63	53.1	8.18	26.4
LMI-19	Low	2/9/2015 10:10	14.71	5.1	4.51	51.8	8.18	26.4
LMI-19	Low	2/9/2015 10:10	14.7	5.1	4.44	51	8.17	26.4
LMI-19	Low	2/9/2015 10:10	14.69	5.1	4.4	50.5	8.17	26.4
LMI-19	Low	2/9/2015 10:11	14.67	7.2	4.3	49.3	8.17	26.4
LMI-19	Low	2/9/2015 10:11	14.67	7.0	3.91	44.9	8.15	26.5
LMI-19	Low	2/9/2015 10:11	14.67	6.9	3.69	42.3	8.15	26.5
LMI-19	Low	2/9/2015 10:11	14.67	7.0	3.55	40.7	8.14	26.5
LMI-19	Low	2/9/2015 10:11	14.67	7.0	3.42	39.2	8.14	26.5
LMI-19	Low	2/9/2015 10:11	14.67	7.0	3.36	38.5	8.14	26.5
LMI-19	Low	2/9/2015 10:12	14.67	7.0	3.34	38.2	8.14	26.5
LMI-19	Low	2/9/2015 10:12	14.67	8.5	3.27	37.5	8.12	26.4
LMI-19	Low	2/9/2015 10:12	14.67	8.5	3.01	34.5	8.11	26.3
LMI-19	Low	2/9/2015 10:12	14.67	8.5	2.97	34.1	8.1	26.3
LMI-19	Low	2/9/2015 10:12	14.67	8.5	2.95	33.7	8.1	26.4
LMI-29	Low	2/9/2015 9:15	15.35	1.0	9.23	99.3	8.38	13.7
LMI-29	Low	2/9/2015 9:15	15.3	1.0	9.3	99.9	8.39	13.6
LMI-29	Low	2/9/2015 9:15	15.3	1.0	9.36	100.5	8.4	13.5
LMI-29	Low	2/9/2015 9:15	15.27	1.0	9.39	100.8	8.4	13.5
LMI-29	Low	2/9/2015 9:15	15.23	2.9	9.21	100	8.25	15.5
LMI-29	Low	2/9/2015 9:16	15.21	3.0	8.04	90.5	8.16	21.5
LMI-29	Low	2/9/2015 9:16	15.17	3.0	7.21	81.4	8.14	22.2
LMI-29	Low	2/9/2015 9:16	15.16	3.0	6.7	75.7	8.14	22.3
LMI-29	Low	2/9/2015 9:16	15.15	3.0	6.4	72.3	8.14	22.3
LMI-29	Low	2/9/2015 9:16	15.14	3.0	6.16	69.6	8.14	22.3
LMI-29	Low	2/9/2015 9:16	15.13	3.0	6.06	68.4	8.13	22.4
LMI-29	Low	2/9/2015 9:17	15.12	3.0	5.98	67.5	8.13	22.4
LMI-29	Low	2/9/2015 9:17	15.12	3.0	5.95	67.1	8.13	22.3
LMI-29	Low	2/9/2015 9:17	15.13	3.0	5.93	66.9	8.13	22.3
LMI-29	Low	2/9/2015 9:17	14.94	4.7	5.76	65.7	8.1	24.1
LMI-29	Low	2/9/2015 9:17	14.81	5.0	4.94	56.6	8.05	25.6
LMI-29	Low	2/9/2015 9:17	14.78	5.1	3.97	45.5	8.05	26

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	Low	2/9/2015 9:18	14.76	5.1	3.57	40.9	8.06	26
LMI-29	Low	2/9/2015 9:18	14.74	5.0	3.38	38.7	8.07	26
LMI-29	Low	2/9/2015 9:18	14.7	5.0	3.38	38.7	8.08	26
LMI-29	Low	2/9/2015 9:18	14.68	5.0	3.49	39.9	8.08	26.1
LMI-29	Low	2/9/2015 9:18	14.67	5.0	3.51	40.1	8.08	26.1
LMI-29	Low	2/9/2015 9:18	14.63	7.0	3.52	40.3	8.07	26.1
LMI-29	Low	2/9/2015 9:19	14.64	7.0	3.09	35.4	8.06	26.2
LMI-29	Low	2/9/2015 9:19	14.63	7.0	2.94	33.7	8.06	26.3
LMI-29	Low	2/9/2015 9:19	14.63	7.0	2.89	33	8.07	26.3
LMI-29	Low	2/9/2015 9:19	14.63	7.0	2.87	32.9	8.07	26.3
LMI-29	Low	2/9/2015 9:19	14.63	7.0	2.88	32.9	8.07	26.3
LMI-29	Low	2/9/2015 9:20	14.61	8.9	2.83	32.4	8.04	26.3
LMI-29	Low	2/9/2015 9:20	14.61	9.1	2.21	25.3	8	26.3
LMI-29	Low	2/9/2015 9:20	14.61	9.1	1.68	19.3	7.97	26.3
LMI-29	Low	2/9/2015 9:20	14.61	9.0	1.21	13.9	7.96	26.3
LMI-29	Low	2/9/2015 9:20	14.61	9.0	0.96	11	7.95	26.3
LMI-29	Low	2/9/2015 9:20	14.61	9.0	0.83	9.6	7.93	26.3
LMI-29	Low	2/9/2015 9:21	14.6	9.0	0.75	8.6	7.92	26.3
LMI-29	Low	2/9/2015 9:21	14.6	9.0	0.64	7.3	7.91	26.3
LMI-29	Low	2/9/2015 9:21	14.6	10.3	0.47	5.3	7.88	26.4
LMI-29	Low	2/9/2015 9:21	14.61	10.5	0.28	3.3	7.86	26.3
LMI-29	Low	2/9/2015 9:21	14.61	10.5	0.22	2.5	7.85	26.3
LMI-29	Low	2/9/2015 9:21	14.61	10.5	0.19	2.1	7.84	26.3
LMI-29	Low	2/9/2015 9:22	14.62	10.5	0.16	1.9	7.83	26.4
LMI-29	Low	2/9/2015 9:22	14.62	10.4	0.15	1.7	7.82	26.3
LMI-30	Low	2/9/2015 10:30	14.95	1.0	10.32	107.6	8.49	10.1
LMI-30	Low	2/9/2015 10:31	14.94	1.0	10.45	108.9	8.49	10
LMI-30	Low	2/9/2015 10:31	14.91	1.0	10.5	109.4	8.49	10
LMI-30	Low	2/9/2015 10:31	14.9	1.0	10.58	110.1	8.49	10
LMI-30	Low	2/9/2015 10:31	14.9	1.1	10.63	110.7	8.49	10
LMI-30	Low	2/9/2015 10:31	14.94	3.2	10.35	110.2	8.23	13.9
LMI-30	Low	2/9/2015 10:32	14.97	2.8	8.35	94.4	8.18	23.3
LMI-30	Low	2/9/2015 10:32	14.98	3.0	7.34	83.4	8.18	23.9
LMI-30	Low	2/9/2015 10:32	14.99	3.0	6.78	77.1	8.19	24.2
LMI-30	Low	2/9/2015 10:32	14.98	3.0	6.44	73.3	8.19	24.3
LMI-30	Low	2/9/2015 10:32	14.99	3.0	6.27	71.4	8.19	24.4
LMI-30	Low	2/9/2015 10:32	14.99	3.0	6.18	70.4	8.19	24.4
LMI-30	Low	2/9/2015 10:33	14.99	3.0	6.13	69.8	8.19	24.4
LMI-30	Low	2/9/2015 10:33	14.87	5.3	5.98	68.4	8.17	25.2
LMI-30	Low	2/9/2015 10:33	14.84	4.7	5.64	64.8	8.17	26.1
LMI-30	Low	2/9/2015 10:33	14.85	4.8	5.52	63.4	8.17	26.1
LMI-30	Low	2/9/2015 10:33	14.81	4.9	5.45	62.5	8.17	26.2
LMI-30	Low	2/9/2015 10:33	14.81	4.9	5.41	62.1	8.17	26.3
LMI-30	Low	2/9/2015 10:34	14.79	4.9	5.41	62.1	8.18	26.2
LMI-30	Low	2/9/2015 10:34	14.79	7.3	5.17	59.3	8.1	26.4
LMI-30	Low	2/9/2015 10:34	14.8	6.8	3.08	35.4	8.02	26.6
LMI-30	Low	2/9/2015 10:34	14.8	7.2	2.01	23.1	7.97	26.6
LMI-30	Low	2/9/2015 10:34	14.81	7.1	1.26	14.5	7.93	26.6
LMI-30	Low	2/9/2015 10:34	14.81	6.9	0.84	9.7	7.91	26.6
LMI-30	Low	2/9/2015 10:35	14.81	6.8	0.61	7.1	7.89	26.6
LMI-30	Low	2/9/2015 10:35	14.81	6.9	0.47	5.4	7.88	26.6
LMI-30	Low	2/9/2015 10:35	14.81	6.8	0.38	4.3	7.87	26.6
LMI-30	Low	2/9/2015 10:35	14.81	6.8	0.29	3.3	7.87	26.6
LMI-30	Low	2/9/2015 10:35	14.81	6.9	0.21	2.4	7.86	26.6
LMI-30	Low	2/9/2015 10:35	14.8	6.8	0.15	1.7	7.86	26.6
LMI-30	Low	2/9/2015 10:36	14.8	6.8	0.12	1.7	7.86	26.6
LMI-30	Low	2/9/2015 10:36	14.8	6.9	0.1	1.2	7.85	26.7
LMI-30	Low	2/9/2015 10:36	14.81	6.9	0.1	1.2	7.85	26.7
LMI-30	Low	2/9/2015 10:36	14.81	6.9	0.1	1.2	7.85	26.7
LMI-30	Low	2/9/2015 10:36	14.81	6.9	0.04	0.5	7.83	26.7
LMI-30	Low	2/9/2015 10:36	14.85	9.0	0.04	0.4	7.5	26.9
LMI-30	Low	2/9/2015 10:37	14.85	8.9	0.03	0.4	7.37	26.9
LMI-30	Low	2/9/2015 10:37	14.85	8.8	0.03	0.4	7.32	27
LMI-30	Low	2/9/2015 10:37	14.89	8.8	0.03	0.4	7.16	27
LMI-30	Low	2/9/2015 10:37	14.92	8.8	0.04	0.4	7.07	27.1
Channel Entrance	High	3/18/2015 13:11	18.08	1.2	7.88	97.8	8.03	27.3
Channel Entrance	High	3/18/2015 13:11	18.1	1.2	7.88	97.8	8.03	27.3

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
Channel Entrance	High	3/18/2015 13:11	18.08	1.2	7.89	98	8.03	27.3
Channel Entrance	High	3/18/2015 13:11	18.08	1.1	7.9	98	8.03	27.3
Channel Entrance	High	3/18/2015 13:11	17.76	3.7	7.85	97.2	8.03	27.2
Channel Entrance	High	3/18/2015 13:11	17.67	3.1	7.9	97.3	8.03	27.3
Channel Entrance	High	3/18/2015 13:12	17.67	3.1	7.9	97.3	8.03	27.4
Channel Entrance	High	3/18/2015 13:12	17.5	5.3	7.88	97	8.02	27.4
Channel Entrance	High	3/18/2015 13:12	17.4	5.1	7.87	96.7	8.02	27.4
Channel Entrance	High	3/18/2015 13:12	17.39	5.0	7.88	96.6	8.02	27.5
Channel Entrance	High	3/18/2015 13:12	17.37	5.0	7.87	96.5	8.02	27.5
Channel Entrance	High	3/18/2015 13:12	17.26	6.9	7.85	96.1	8.02	27.5
Channel Entrance	High	3/18/2015 13:13	17.18	7.0	7.88	96.3	8.02	27.6
Channel Entrance	High	3/18/2015 13:13	17.14	7.0	7.87	96.1	8.02	27.6
Channel Entrance	High	3/18/2015 13:13	17.14	7.0	7.87	96.1	8.02	27.6
Channel Entrance	High	3/18/2015 13:13	17.1	8.5	7.89	96.2	8.02	27.6
Channel Entrance	High	3/18/2015 13:13	17.1	9.3	7.88	96.1	8.01	27.6
Channel Entrance	High	3/18/2015 13:13	17.1	9.0	7.87	96.1	8.01	27.6
Channel Entrance	High	3/18/2015 13:14	17.09	9.0	7.88	96.2	8.01	27.6
Channel Entrance	High	3/18/2015 13:14	17.08	9.0	7.89	96.2	8.01	27.6
Channel Entrance	High	3/18/2015 13:14	17.01	11.2	7.87	96	8.01	27.6
Channel Entrance	High	3/18/2015 13:14	17	11.1	7.89	96.1	8.01	27.7
Channel Entrance	High	3/18/2015 13:14	16.98	11.1	7.89	96	8.01	27.7
Channel Entrance	High	3/18/2015 13:14	16.96	11.1	7.89	96.1	8.01	27.7
Channel Entrance	High	3/18/2015 13:15	16.96	13.4	7.9	96.2	8.01	27.7
Channel Entrance	High	3/18/2015 13:15	16.97	13.2	7.88	95.9	8.01	27.7
Channel Entrance	High	3/18/2015 13:15	16.96	13.1	7.87	95.8	8.01	27.7
Channel Entrance	High	3/18/2015 13:15	16.96	13.1	7.87	95.8	8.01	27.7
Channel Entrance	High	3/18/2015 13:15	16.96	14.3	7.86	95.7	8.01	27.7
Channel Entrance	High	3/18/2015 13:15	16.96	14.3	7.85	95.5	8.01	27.7
Channel Entrance	High	3/18/2015 13:16	16.96	14.3	7.84	95.4	8.01	27.7
Channel Entrance	High	3/18/2015 13:16	16.96	14.3	7.83	95.3	8.01	27.7
LMI-15	High	3/18/2015 11:39	18.68	0.9	8.34	104.4	8.09	26.8
LMI-15	High	3/18/2015 11:39	18.66	1.0	8.32	104.1	8.09	26.8
LMI-15	High	3/18/2015 11:39	18.46	1.1	8.27	103.4	8.08	26.8
LMI-15	High	3/18/2015 11:39	18.39	1.1	8.25	102.8	8.08	26.9
LMI-15	High	3/18/2015 11:39	18.21	3.1	8.17	101.8	8.07	27
LMI-15	High	3/18/2015 11:39	18.15	3.1	8.06	100	8.06	27
LMI-15	High	3/18/2015 11:39	18.12	3.0	7.97	98.9	8.05	27
LMI-15	High	3/18/2015 11:40	18.08	3.1	7.94	98.4	8.05	27.1
LMI-15	High	3/18/2015 11:40	17.9	4.9	7.86	97.2	8.04	27.2
LMI-15	High	3/18/2015 11:40	17.79	5.0	7.81	96.4	8.03	27.3
LMI-15	High	3/18/2015 11:40	17.74	5.0	7.79	96.1	8.03	27.3
LMI-15	High	3/18/2015 11:40	17.71	5.0	7.77	95.8	8.03	27.3
LMI-15	High	3/18/2015 11:40	17.65	6.8	7.75	95.4	8.02	27.3
LMI-15	High	3/18/2015 11:41	17.63	7.2	7.71	94.9	8.01	27.3
LMI-15	High	3/18/2015 11:41	17.63	7.2	7.68	94.5	8.01	27.4
LMI-15	High	3/18/2015 11:41	17.63	7.2	7.68	94.5	8.01	27.4
LMI-15	High	3/18/2015 11:41	17.57	8.9	7.68	94.4	8.01	27.4
LMI-15	High	3/18/2015 11:41	17.56	9.0	7.68	94.4	8.01	27.4
LMI-15	High	3/18/2015 11:41	17.55	9.0	7.67	94.3	8.01	27.4
LMI-15	High	3/18/2015 11:42	17.49	10.8	7.65	94	8	27.4
LMI-15	High	3/18/2015 11:42	17.5	11.0	7.65	93.7	8	27
LMI-15	High	3/18/2015 11:42	17.5	11.0	7.64	93.5	8	26.9
LMI-15	High	3/18/2015 11:42	17.49	11.0	7.62	93.2	8	26.8
LMI-15	High	3/18/2015 11:42	17.47	11.3	7.62	93	8	26.6
LMI-15	High	3/18/2015 11:42	17.47	11.4	7.6	92.8	8	26.6
LMI-15	High	3/18/2015 11:43	17.48	11.4	7.59	92.7	7.99	26.6
LMI-19	High	3/18/2015 11:53	19	1.0	8.37	105.2	8.07	26.5
LMI-19	High	3/18/2015 11:53	18.91	1.1	8.41	105.6	8.07	26.5
LMI-19	High	3/18/2015 11:53	18.75	1.1	8.44	105.9	8.07	26.6
LMI-19	High	3/18/2015 11:53	18.61	1.2	8.52	106.5	8.08	26.7
LMI-19	High	3/18/2015 11:53	18.45	2.7	8.53	106.4	8.08	26.7
LMI-19	High	3/18/2015 11:54	18.36	3.3	8.57	106.8	8.08	26.8
LMI-19	High	3/18/2015 11:54	18.26	3.2	8.6	106.9	8.08	26.9
LMI-19	High	3/18/2015 11:54	18.25	3.2	8.57	106.5	8.07	26.9
LMI-19	High	3/18/2015 11:54	18.14	4.7	8.54	106	8.06	26.9
LMI-19	High	3/18/2015 11:54	18.09	5.2	8.08	100.2	8.04	27.1
LMI-19	High	3/18/2015 11:54	18.08	5.1	7.87	97.5	8.03	27.2

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-19	High	3/18/2015 11:55	18.08	5.1	7.7	95.4	8.02	27.2
LMI-19	High	3/18/2015 11:55	18.03	5.0	7.62	94.5	8.01	27.2
LMI-19	High	3/18/2015 11:55	17.91	6.7	7.42	91.8	7.99	27.2
LMI-19	High	3/18/2015 11:55	17.9	6.9	7.15	88.3	7.98	27.2
LMI-19	High	3/18/2015 11:55	17.86	7.0	6.96	86	7.96	27.2
LMI-19	High	3/18/2015 11:55	17.85	7.0	6.84	84.4	7.96	27.2
LMI-19	High	3/18/2015 11:56	17.81	9.0	6.73	83	7.94	27.3
LMI-19	High	3/18/2015 11:56	17.8	9.1	6.5	80.2	7.92	27.3
LMI-19	High	3/18/2015 11:56	17.79	9.1	6.35	78.3	7.91	27.4
LMI-19	High	3/18/2015 11:56	17.77	9.1	6.23	76.8	7.9	27.3
LMI-19	High	3/18/2015 11:56	17.77	9.1	6.1	75.2	7.89	27.3
LMI-19	High	3/18/2015 11:56	17.77	10.0	6.06	74.2	7.87	26.4
LMI-19	High	3/18/2015 11:57	17.77	10.1	5.86	71.8	7.86	26.4
LMI-19	High	3/18/2015 11:57	17.77	10.0	5.79	71	7.85	26.4
LMI-19	High	3/18/2015 11:57	17.77	10.0	5.75	70.5	7.85	26.4
LMI-29	High	3/18/2015 11:07	19.22	1.1	5.22	65.7	7.74	25.9
LMI-29	High	3/18/2015 11:07	19.06	1.1	5.21	65.5	7.75	25.9
LMI-29	High	3/18/2015 11:07	18.92	1.1	5.24	65.6	7.74	25.9
LMI-29	High	3/18/2015 11:08	18.78	1.1	5.23	65.3	7.74	26
LMI-29	High	3/18/2015 11:08	18.7	3.0	5.38	67.2	7.76	26.5
LMI-29	High	3/18/2015 11:08	18.7	3.0	5.75	71.9	7.78	26.6
LMI-29	High	3/18/2015 11:08	18.61	3.0	6.05	75.6	7.8	26.7
LMI-29	High	3/18/2015 11:08	18.57	3.0	6.24	78	7.82	26.7
LMI-29	High	3/18/2015 11:08	18.49	2.9	6.37	79.5	7.83	26.7
LMI-29	High	3/18/2015 11:09	18.51	2.9	6.45	80.4	7.84	26.8
LMI-29	High	3/18/2015 11:09	18.39	5.0	6.46	80.4	7.84	26.7
LMI-29	High	3/18/2015 11:09	18.35	5.0	6.17	76.7	7.84	26.9
LMI-29	High	3/18/2015 11:09	18.34	5.0	5.98	74.4	7.84	26.9
LMI-29	High	3/18/2015 11:09	18.35	5.0	5.9	73.4	7.84	27
LMI-29	High	3/18/2015 11:09	18.3	5.0	5.82	72.5	7.84	27
LMI-29	High	3/18/2015 11:10	18.3	7.3	5.77	71.8	7.85	27.1
LMI-29	High	3/18/2015 11:10	18.3	7.1	5.62	70	7.84	27.1
LMI-29	High	3/18/2015 11:10	18.29	7.0	5.45	67.8	7.84	27.1
LMI-29	High	3/18/2015 11:10	18.3	7.0	5.38	66.9	7.84	27.1
LMI-29	High	3/18/2015 11:10	18.26	8.9	5.24	65.2	7.83	27.1
LMI-29	High	3/18/2015 11:10	18.25	9.0	4.82	59.9	7.81	27.1
LMI-29	High	3/18/2015 11:11	18.21	9.1	4.61	57.3	7.8	27.2
LMI-29	High	3/18/2015 11:11	18.21	9.1	4.57	56.8	7.8	27.2
LMI-29	High	3/18/2015 11:11	18.21	9.2	4.49	55.8	7.8	27.2
LMI-29	High	3/18/2015 11:11	18.18	11.0	4.42	54.9	7.79	27.2
LMI-29	High	3/18/2015 11:11	18.17	11.0	4.2	52.1	7.77	27.2
LMI-29	High	3/18/2015 11:11	18.17	11.0	4.06	50.4	7.76	27.2
LMI-29	High	3/18/2015 11:12	18.15	11.0	3.88	48.2	7.75	27.2
LMI-29	High	3/18/2015 11:12	18.16	11.0	3.84	47.7	7.75	27.2
LMI-29	High	3/18/2015 11:12	18.15	11.0	3.86	47.9	7.75	27.2
LMI-29	High	3/18/2015 11:12	18.14	12.1	3.83	47.5	7.61	26.9
LMI-29	High	3/18/2015 11:12	18.16	12.1	3.69	45.7	7.53	27
LMI-29	High	3/18/2015 11:12	18.16	12.1	3.64	45.2	7.5	27
LMI-29	High	3/18/2015 11:13	18.16	12.1	3.61	44.8	7.49	27
LMI-29	High	3/18/2015 11:13	18.16	12.1	3.58	44.5	7.47	27
LMI-30	High	3/18/2015 12:18	21.12	1.0	7.13	92.7	8.04	25.6
LMI-30	High	3/18/2015 12:18	20.85	1.0	7.13	92.7	8.04	25.6
LMI-30	High	3/18/2015 12:18	20.57	1.0	7.26	93.8	8.03	25.9
LMI-30	High	3/18/2015 12:18	20.35	1.0	7.29	93.9	8.03	26
LMI-30	High	3/18/2015 12:18	19.95	2.9	7.4	94.6	8.04	26.2
LMI-30	High	3/18/2015 12:18	19.69	3.1	7.64	97.3	8.05	26.3
LMI-30	High	3/18/2015 12:18	19.57	3.1	7.79	99	8.05	26.4
LMI-30	High	3/18/2015 12:19	19.5	3.0	7.89	100.1	8.05	26.5
LMI-30	High	3/18/2015 12:19	19.17	4.8	8.03	101.4	8.06	26.7
LMI-30	High	3/18/2015 12:19	19.06	5.1	8.05	101.6	8.05	26.8
LMI-30	High	3/18/2015 12:19	19.01	5.1	8.06	101.5	8.05	26.8
LMI-30	High	3/18/2015 12:19	19.01	5.1	8.07	101.7	8.05	26.9
LMI-30	High	3/18/2015 12:20	19.01	5.1	8.07	101.6	8.05	26.9
LMI-30	High	3/18/2015 12:20	18.77	7.0	8.04	101.2	8.04	26.8
LMI-30	High	3/18/2015 12:20	18.7	7.0	7.92	99.2	8.04	27
LMI-30	High	3/18/2015 12:20	18.64	7.0	7.85	98.3	8.03	27
LMI-30	High	3/18/2015 12:20	18.63	7.0	7.81	97.8	8.03	27

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-30	High	3/18/2015 12:20	18.47	8.9	7.69	96.2	8.01	27
LMI-30	High	3/18/2015 12:21	18.35	9.0	7.15	89.1	7.99	27
LMI-30	High	3/18/2015 12:21	18.26	8.9	6.83	85.1	7.98	27.1
LMI-30	High	3/18/2015 12:21	18.25	8.9	6.62	82.3	7.97	27.1
LMI-30	High	3/18/2015 12:21	18.26	8.9	6.47	80.4	7.97	27.1
LMI-30	High	3/18/2015 12:21	18.26	9.0	6.39	79.5	7.96	27.1
LMI-30	High	3/18/2015 12:21	18.2	9.0	6.33	78.6	7.96	27.2
LMI-30	High	3/18/2015 12:22	18.12	10.3	6.22	77.2	7.95	27.2
LMI-30	High	3/18/2015 12:22	18.12	10.3	6.08	75.4	7.95	27.2
LMI-30	High	3/18/2015 12:22	18.12	10.3	6.02	74.7	7.95	27.2
LMI-30	High	3/18/2015 12:22	18.11	10.3	5.99	74.3	7.95	27.2
LMI-30	High	3/18/2015 12:22	18.1	10.3	5.98	74.2	7.95	27.2
LMI-30	High	3/18/2015 12:22	18.1	10.5	5.96	74	7.94	27.2
Channel Entrance	Low	3/11/2015 12:43	17.26	1.1	8.38	101.6	8.12	26.5
Channel Entrance	Low	3/11/2015 12:43	17.19	1.0	8.4	101.7	8.12	26.6
Channel Entrance	Low	3/11/2015 12:43	17.08	1.1	8.42	101.8	8.12	26.6
Channel Entrance	Low	3/11/2015 12:43	17.02	1.0	8.45	102	8.12	26.7
Channel Entrance	Low	3/11/2015 12:43	16.95	3.6	8.46	102	8.12	26.7
Channel Entrance	Low	3/11/2015 12:43	16.92	3.1	8.47	102.1	8.12	26.8
Channel Entrance	Low	3/11/2015 12:44	16.92	3.0	8.48	102.2	8.12	26.7
Channel Entrance	Low	3/11/2015 12:44	16.83	5.5	8.5	102.3	8.12	26.8
Channel Entrance	Low	3/11/2015 12:44	16.81	5.0	8.53	102.6	8.12	26.8
Channel Entrance	Low	3/11/2015 12:44	16.79	5.0	8.54	102.7	8.12	26.8
Channel Entrance	Low	3/11/2015 12:44	16.78	5.0	8.54	102.6	8.12	26.8
Channel Entrance	Low	3/11/2015 12:44	16.74	7.2	8.54	102.6	8.12	26.8
Channel Entrance	Low	3/11/2015 12:45	16.74	7.1	8.57	102.9	8.13	26.8
Channel Entrance	Low	3/11/2015 12:45	16.73	7.1	8.58	103.1	8.13	26.8
Channel Entrance	Low	3/11/2015 12:45	16.69	9.5	8.58	103	8.13	26.8
Channel Entrance	Low	3/11/2015 12:45	16.65	8.8	8.61	103.3	8.13	26.9
Channel Entrance	Low	3/11/2015 12:45	16.66	9.0	8.64	103.6	8.13	26.9
Channel Entrance	Low	3/11/2015 12:45	16.64	9.0	8.63	103.5	8.13	26.9
Channel Entrance	Low	3/11/2015 12:46	16.59	11.2	8.58	102.9	8.12	26.9
Channel Entrance	Low	3/11/2015 12:46	16.58	10.8	8.55	102.4	8.12	26.9
Channel Entrance	Low	3/11/2015 12:46	16.58	10.8	8.5	101.9	8.12	26.9
Channel Entrance	Low	3/11/2015 12:46	16.57	11.0	8.49	101.7	8.12	26.9
Channel Entrance	Low	3/11/2015 12:46	16.57	11.0	8.47	101.4	8.12	26.9
Channel Entrance	Low	3/11/2015 12:46	16.5	12.3	8.44	101	8.11	26.9
Channel Entrance	Low	3/11/2015 12:47	16.46	12.3	8.31	99.3	8.1	27
Channel Entrance	Low	3/11/2015 12:47	16.47	12.3	8.23	98.4	8.1	27
Channel Entrance	Low	3/11/2015 12:47	16.45	12.3	8.19	98	8.1	27
Channel Entrance	Low	3/11/2015 12:47	16.43	12.3	8.16	97.5	8.1	27
LMI-15	Low	3/11/2015 11:05	17.54	1.1	10.19	124.1	8.26	26.3
LMI-15	Low	3/11/2015 11:05	17.53	1.1	10.19	124.1	8.26	26.3
LMI-15	Low	3/11/2015 11:06	17.5	1.1	10.23	124.4	8.26	26.3
LMI-15	Low	3/11/2015 11:06	17.42	1.1	10.27	124.8	8.28	26.4
LMI-15	Low	3/11/2015 11:06	17.32	2.7	10.24	124.3	8.29	26.3
LMI-15	Low	3/11/2015 11:06	17.28	3.3	10.28	124.6	8.29	26.3
LMI-15	Low	3/11/2015 11:06	17.27	3.0	10.28	124.5	8.3	26.3
LMI-15	Low	3/11/2015 11:07	17.28	2.9	10.3	124.8	8.3	26.4
LMI-15	Low	3/11/2015 11:07	17.18	4.7	10.29	124.5	8.3	26.3
LMI-15	Low	3/11/2015 11:07	17.13	5.0	10.16	122.7	8.29	26.4
LMI-15	Low	3/11/2015 11:07	17.1	5.0	10.06	121.4	8.28	26.4
LMI-15	Low	3/11/2015 11:07	17.09	4.9	9.99	120.5	8.28	26.4
LMI-15	Low	3/11/2015 11:07	17.1	6.8	9.89	119.4	8.24	26.5
LMI-15	Low	3/11/2015 11:08	17.1	6.9	8.99	108.6	8.18	26.6
LMI-15	Low	3/11/2015 11:08	17.11	6.9	8.38	101.3	8.14	26.6
LMI-15	Low	3/11/2015 11:08	17.12	7.0	7.77	94	8.1	26.6
LMI-15	Low	3/11/2015 11:08	17.12	6.9	7.43	89.8	8.09	26.6
LMI-15	Low	3/11/2015 11:08	17.1	6.9	7.15	86.4	8.08	26.6
LMI-15	Low	3/11/2015 11:08	17.1	8.7	6.99	84.5	8.03	26.6
LMI-15	Low	3/11/2015 11:09	17.1	9.1	6.01	72.7	7.97	26.7
LMI-15	Low	3/11/2015 11:09	17.1	9.0	5.48	66.3	7.94	26.7
LMI-15	Low	3/11/2015 11:09	17.1	9.0	5.07	61.3	7.91	26.8
LMI-15	Low	3/11/2015 11:09	17.1	9.0	4.79	58	7.89	26.8
LMI-15	Low	3/11/2015 11:09	17.1	8.9	4.64	56.1	7.87	26.7
LMI-15	Low	3/11/2015 11:09	17.1	9.0	4.41	53.3	7.85	26.7
LMI-15	Low	3/11/2015 11:10	17.1	9.0	4.39	53.1	7.85	26.7

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-15	Low	3/11/2015 11:10	17.1	9.8	4.41	53.2	7.84	26.2
LMI-15	Low	3/11/2015 11:10	17.1	9.7	4.2	50.7	7.83	26.1
LMI-15	Low	3/11/2015 11:10	17.1	9.7	4.12	49.6	7.82	26.1
LMI-15	Low	3/11/2015 11:10	17.1	9.7	4.06	48.9	7.82	26.1
LMI-15	Low	3/11/2015 11:10	17.1	9.7	4.02	48.5	7.81	26.1
LMI-15	Low	3/11/2015 11:11	17.1	9.7	3.99	48.1	7.81	26.1
LMI-19	Low	3/11/2015 11:21	17.54	1.2	10	121.8	8.31	26.3
LMI-19	Low	3/11/2015 11:21	17.48	1.0	10.08	122.6	8.32	26.4
LMI-19	Low	3/11/2015 11:22	17.45	1.0	10.13	123.1	8.32	26.4
LMI-19	Low	3/11/2015 11:22	17.45	1.0	10.15	123.4	8.32	26.4
LMI-19	Low	3/11/2015 11:22	17.39	2.7	10.18	123.6	8.32	26.4
LMI-19	Low	3/11/2015 11:22	17.36	3.1	10.2	123.8	8.32	26.4
LMI-19	Low	3/11/2015 11:22	17.34	3.1	10.18	123.5	8.33	26.4
LMI-19	Low	3/11/2015 11:22	17.34	3.1	10.18	123.4	8.33	26.4
LMI-19	Low	3/11/2015 11:22	17.28	4.9	10.15	123.1	8.33	26.4
LMI-19	Low	3/11/2015 11:23	17.28	5.0	10.14	122.8	8.32	26.4
LMI-19	Low	3/11/2015 11:23	17.27	5.0	10.11	122.5	8.32	26.4
LMI-19	Low	3/11/2015 11:23	17.27	5.0	10.1	122.3	8.32	26.4
LMI-19	Low	3/11/2015 11:23	17.21	7.1	9.95	120.4	8.27	26.3
LMI-19	Low	3/11/2015 11:23	17.21	7.0	8.69	105.3	8.2	26.6
LMI-19	Low	3/11/2015 11:23	17.19	7.0	7.91	95.9	8.14	26.7
LMI-19	Low	3/11/2015 11:24	17.17	6.9	7.22	87.4	8.11	26.6
LMI-19	Low	3/11/2015 11:24	17.16	6.9	6.88	83.3	8.1	26.6
LMI-19	Low	3/11/2015 11:24	17.15	7.0	6.93	83.9	8.08	26.6
LMI-19	Low	3/11/2015 11:24	17.16	8.2	6.84	82.6	8.04	26.3
LMI-19	Low	3/11/2015 11:24	17.18	8.2	6.38	77.1	8.02	26.4
LMI-19	Low	3/11/2015 11:24	17.18	8.2	6.21	75.1	8.01	26.3
LMI-19	Low	3/11/2015 11:25	17.18	8.2	6.12	74	8.01	26.3
LMI-19	Low	3/11/2015 11:25	17.18	8.2	6.06	73.3	8	26.3
LMI-19	Low	3/11/2015 11:25	17.19	8.2	5.98	72.3	7.99	26.3
LMI-29	Low	3/11/2015 10:33	17.59	1.1	8.4	101.8	7.96	25
LMI-29	Low	3/11/2015 10:33	17.5	1.1	8.54	103.2	8.01	25.2
LMI-29	Low	3/11/2015 10:33	17.31	1.1	8.62	104	8.05	25.3
LMI-29	Low	3/11/2015 10:34	17.32	1.1	8.71	104.9	8.07	25.4
LMI-29	Low	3/11/2015 10:34	17.1	3.0	8.79	105.9	8.1	25.5
LMI-29	Low	3/11/2015 10:34	17.07	2.8	8.93	107.5	8.13	25.8
LMI-29	Low	3/11/2015 10:34	16.96	2.9	9	108.2	8.15	25.9
LMI-29	Low	3/11/2015 10:34	16.91	2.9	9.06	108.6	8.15	25.9
LMI-29	Low	3/11/2015 10:34	16.92	5.4	9.11	109.4	8.16	26.1
LMI-29	Low	3/11/2015 10:35	16.94	5.1	8.96	107.9	8.16	26.4
LMI-29	Low	3/11/2015 10:35	16.94	5.1	8.86	106.6	8.16	26.4
LMI-29	Low	3/11/2015 10:35	16.95	5.1	8.85	106.5	8.16	26.4
LMI-29	Low	3/11/2015 10:35	16.87	7.0	8.65	104.1	8.12	26.4
LMI-29	Low	3/11/2015 10:35	16.88	7.0	7.9	95	8.1	26.4
LMI-29	Low	3/11/2015 10:35	16.87	7.0	7.41	89.2	8.08	26.5
LMI-29	Low	3/11/2015 10:36	16.92	8.9	7.05	84.9	8.04	26.6
LMI-29	Low	3/11/2015 10:36	16.92	9.0	6.06	73	8	26.7
LMI-29	Low	3/11/2015 10:36	16.92	9.0	5.3	63.9	7.94	26.7
LMI-29	Low	3/11/2015 10:36	16.92	9.0	4.64	56	7.91	26.7
LMI-29	Low	3/11/2015 10:36	16.93	9.0	4.25	51.3	7.9	26.7
LMI-29	Low	3/11/2015 10:36	16.93	8.9	4	48.2	7.88	26.7
LMI-29	Low	3/11/2015 10:37	16.92	8.9	3.68	44.4	7.85	26.7
LMI-29	Low	3/11/2015 10:37	16.92	8.9	3.43	41.4	7.85	26.7
LMI-29	Low	3/11/2015 10:37	16.93	9.0	3.31	40	7.85	26.7
LMI-29	Low	3/11/2015 10:37	16.92	9.0	3.38	40.8	7.83	26.7
LMI-29	Low	3/11/2015 10:37	16.92	9.2	3.14	37.9	7.8	26.7
LMI-29	Low	3/11/2015 10:38	16.92	9.2	2.71	32.6	7.77	26.7
LMI-29	Low	3/11/2015 10:38	16.92	9.2	2.43	29.2	7.75	26.7
LMI-29	Low	3/11/2015 10:38	16.92	9.2	2.37	28.5	7.75	26.7
LMI-29	Low	3/11/2015 10:38	16.92	9.2	2.33	28.1	7.75	26.7
LMI-29	Low	3/11/2015 10:38	16.88	11.2	2.18	26.3	7.7	26.6
LMI-29	Low	3/11/2015 10:38	16.87	11.0	1.49	17.9	7.61	26.7
LMI-29	Low	3/11/2015 10:39	16.87	11.0	1.08	13	7.55	26.7
LMI-29	Low	3/11/2015 10:39	16.84	11.0	0.58	7	7.41	26.7
LMI-29	Low	3/11/2015 10:39	16.85	11.0	0.45	5.5	7.36	26.7
LMI-29	Low	3/11/2015 10:39	16.84	11.0	0.36	4.4	7.33	26.7
LMI-29	Low	3/11/2015 10:39	16.83	11.0	0.27	3.2	7.32	26.8

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	Low	3/11/2015 10:40	16.83	11.7	0.19	2.3	7.27	26.7
LMI-29	Low	3/11/2015 10:40	16.83	11.7	0.12	1.5	7.24	26.7
LMI-29	Low	3/11/2015 10:40	16.83	11.7	0.1	1.2	7.23	26.8
LMI-29	Low	3/11/2015 10:40	16.83	11.8	0.08	1	7.21	26.8
LMI-29	Low	3/11/2015 10:40	16.83	11.7	0.08	0.9	7.2	26.8
LMI-29	Low	3/11/2015 10:40	16.83	11.7	0.07	0.9	7.19	26.8
LMI-30	Low	3/11/2015 11:45	18.25	0.9	9.45	116.6	8.28	26.2
LMI-30	Low	3/11/2015 11:45	18.19	1.0	9.54	117.5	8.29	26.2
LMI-30	Low	3/11/2015 11:45	18.17	1.0	9.51	117.2	8.29	26.2
LMI-30	Low	3/11/2015 11:45	18.12	1.0	9.56	117.7	8.3	26.2
LMI-30	Low	3/11/2015 11:45	17.99	3.0	9.64	118.6	8.31	26.3
LMI-30	Low	3/11/2015 11:46	17.99	2.9	9.95	122.2	8.32	26.4
LMI-30	Low	3/11/2015 11:46	17.95	3.1	10.12	124.3	8.33	26.4
LMI-30	Low	3/11/2015 11:46	17.92	3.2	10.24	125.7	8.33	26.4
LMI-30	Low	3/11/2015 11:46	17.91	3.1	10.33	126.7	8.34	26.4
LMI-30	Low	3/11/2015 11:46	17.81	5.2	10.35	127	8.34	26.4
LMI-30	Low	3/11/2015 11:46	17.77	5.1	10.48	128.2	8.34	26.5
LMI-30	Low	3/11/2015 11:47	17.76	5.1	10.51	128.7	8.34	26.5
LMI-30	Low	3/11/2015 11:47	17.74	5.1	10.53	128.8	8.34	26.5
LMI-30	Low	3/11/2015 11:47	17.63	7.2	10.5	128.4	8.33	26.4
LMI-30	Low	3/11/2015 11:47	17.58	7.1	10.36	126.4	8.32	26.5
LMI-30	Low	3/11/2015 11:47	17.58	7.0	10.27	125.3	8.31	26.6
LMI-30	Low	3/11/2015 11:47	17.58	7.0	10.24	124.9	8.31	26.5
LMI-30	Low	3/11/2015 11:48	17.46	9.2	10.07	122.7	8.24	26.4
LMI-30	Low	3/11/2015 11:48	17.41	9.0	8.02	97.5	8.14	26.6
LMI-30	Low	3/11/2015 11:48	17.37	9.0	6.79	82.6	8.07	26.6
LMI-30	Low	3/11/2015 11:48	17.35	8.9	6.01	73.1	8.02	26.6
LMI-30	Low	3/11/2015 11:48	17.31	8.9	5.28	64.1	7.98	26.6
LMI-30	Low	3/11/2015 11:48	17.28	9.0	4.81	58.3	7.94	26.6
LMI-30	Low	3/11/2015 11:49	17.26	9.0	4.02	48.8	7.91	26.6
LMI-30	Low	3/11/2015 11:49	17.23	9.0	3.65	44.3	7.88	26.6
LMI-30	Low	3/11/2015 11:49	17.22	9.0	3.46	41.9	7.87	26.7
LMI-30	Low	3/11/2015 11:49	17.21	9.0	3.37	40.8	7.86	26.6
LMI-30	Low	3/11/2015 11:49	17.21	8.9	3.29	39.9	7.86	26.7
LMI-30	Low	3/11/2015 11:49	17.21	9.0	3.22	39.1	7.86	26.7
LMI-30	Low	3/11/2015 11:50	17.19	9.8	3.18	38.6	7.84	26.8
LMI-30	Low	3/11/2015 11:50	17.19	9.9	2.66	32.1	7.82	26
LMI-30	Low	3/11/2015 11:50	17.19	9.8	2.45	29.6	7.81	26.1
LMI-30	Low	3/11/2015 11:50	17.19	9.8	2.33	28.1	7.79	26.1
LMI-30	Low	3/11/2015 11:50	17.19	9.8	2.23	26.9	7.77	26.1
LMI-30	Low	3/11/2015 11:50	17.18	9.8	2.15	26	7.75	26.1
LMI-30	Low	3/11/2015 11:51	17.18	9.8	2.09	25.2	7.74	26.1
LMI-30	Low	3/11/2015 11:51	17.17	9.8	1.99	24	7.73	26.1
Channel Entrance	High	4/15/2015 12:32	17.96	1.1	7.57	94.3	7.91	28.5
Channel Entrance	High	4/15/2015 12:33	17.86	1.0	7.57	94.1	7.91	28.6
Channel Entrance	High	4/15/2015 12:33	17.71	1.1	7.63	94.6	7.9	28.7
Channel Entrance	High	4/15/2015 12:33	17.61	3.3	7.65	94.8	7.9	28.8
Channel Entrance	High	4/15/2015 12:33	17.59	3.0	7.69	95.1	7.9	28.8
Channel Entrance	High	4/15/2015 12:33	17.59	3.0	7.66	94.8	7.9	28.8
Channel Entrance	High	4/15/2015 12:33	17.54	2.9	7.69	95.1	7.9	28.8
Channel Entrance	High	4/15/2015 12:34	17.33	6.1	7.66	94.6	7.9	28.8
Channel Entrance	High	4/15/2015 12:34	17.28	5.3	7.71	94.9	7.9	28.8
Channel Entrance	High	4/15/2015 12:34	17.23	5.2	7.69	94.6	7.89	28.8
Channel Entrance	High	4/15/2015 12:34	17.22	5.2	7.69	94.6	7.89	28.9
Channel Entrance	High	4/15/2015 12:34	17.04	7.8	7.64	93.9	7.89	28.9
Channel Entrance	High	4/15/2015 12:34	16.99	7.4	7.63	93.4	7.89	28.9
Channel Entrance	High	4/15/2015 12:35	17.01	7.2	7.63	93.3	7.89	29
Channel Entrance	High	4/15/2015 12:35	17.01	6.9	7.61	93.1	7.88	29
Channel Entrance	High	4/15/2015 12:35	16.88	9.3	7.58	92.8	7.88	29
Channel Entrance	High	4/15/2015 12:35	16.85	8.8	7.65	93.3	7.89	29
Channel Entrance	High	4/15/2015 12:35	16.83	9.0	7.65	93.4	7.89	29
Channel Entrance	High	4/15/2015 12:35	16.77	11.8	7.67	93.6	7.88	29
Channel Entrance	High	4/15/2015 12:36	16.74	11.4	7.65	93.3	7.88	29.1
Channel Entrance	High	4/15/2015 12:36	16.74	11.2	7.63	93	7.88	29.1
Channel Entrance	High	4/15/2015 12:36	16.74	11.1	7.62	92.9	7.88	29.1
Channel Entrance	High	4/15/2015 12:36	16.69	15.3	7.61	92.7	7.87	29.1
Channel Entrance	High	4/15/2015 12:36	16.68	13.4	7.45	90.7	7.87	29.1

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
Channel Entrance	High	4/15/2015 12:36	16.67	11.9	7.47	90.9	7.87	29.1
Channel Entrance	High	4/15/2015 12:37	16.65	11.7	7.52	91.6	7.87	29.1
Channel Entrance	High	4/15/2015 12:37	16.65	13.5	7.54	91.8	7.87	29.1
Channel Entrance	High	4/15/2015 12:37	16.65	13.8	7.46	90.7	7.86	29
Channel Entrance	High	4/15/2015 12:37	16.68	13.4	7.37	89.7	7.86	29.1
Channel Entrance	High	4/15/2015 12:37	16.69	13.2	7.34	89.3	7.86	29.1
LMI-15	High	4/15/2015 10:54	18.12	1.0	11.65	144.5	8.24	27.7
LMI-15	High	4/15/2015 10:55	18.09	0.9	11.65	144.5	8.25	27.7
LMI-15	High	4/15/2015 10:55	18.06	1.0	11.73	145.4	8.26	27.8
LMI-15	High	4/15/2015 10:55	18.01	1.0	11.79	146	8.26	27.8
LMI-15	High	4/15/2015 10:55	17.9	3.0	11.76	145.4	8.26	27.8
LMI-15	High	4/15/2015 10:55	17.83	3.0	11.73	144.9	8.26	27.8
LMI-15	High	4/15/2015 10:55	17.73	3.0	11.65	143.7	8.25	27.9
LMI-15	High	4/15/2015 10:56	17.53	4.9	11.26	138.8	8.2	28.2
LMI-15	High	4/15/2015 10:56	17.34	5.1	10.15	124.8	8.13	28.5
LMI-15	High	4/15/2015 10:56	17.23	5.0	9.42	115.5	8.08	28.6
LMI-15	High	4/15/2015 10:56	17.19	6.9	8.92	109.3	8.04	28.6
LMI-15	High	4/15/2015 10:56	17.19	6.9	8.54	104.6	8.02	28.7
LMI-15	High	4/15/2015 10:56	17.14	7.0	8.35	102.3	8.01	28.7
LMI-15	High	4/15/2015 10:57	17.13	7.0	8.27	101.3	8	28.7
LMI-15	High	4/15/2015 10:57	17.09	8.7	8.24	100.9	7.99	28.7
LMI-15	High	4/15/2015 10:57	17.1	8.8	8.31	101.8	8	28.9
LMI-15	High	4/15/2015 10:57	17.1	8.9	8.38	102.6	8.02	28.9
LMI-15	High	4/15/2015 10:57	17.13	9.4	8.48	103.8	8.04	28.9
LMI-15	High	4/15/2015 10:57	17.14	9.5	8.79	107.7	8.04	28.9
LMI-15	High	4/15/2015 10:58	17.15	9.4	9.17	112.4	8.05	28.9
LMI-15	High	4/15/2015 10:58	17.17	9.4	9.42	115.4	8.05	28.9
LMI-15	High	4/15/2015 10:58	17.17	9.3	9.61	117.8	8.05	28.9
LMI-19	High	4/15/2015 11:08	18.97	1.0	11.08	139.6	8.25	27.4
LMI-19	High	4/15/2015 11:08	18.74	0.9	11.43	143.6	8.26	27.5
LMI-19	High	4/15/2015 11:09	18.61	1.0	11.67	146.2	8.27	27.6
LMI-19	High	4/15/2015 11:09	18.57	1.0	11.83	147.9	8.28	27.7
LMI-19	High	4/15/2015 11:09	18.41	3.0	11.9	148.6	8.29	27.7
LMI-19	High	4/15/2015 11:09	18.27	3.0	11.91	148.2	8.29	27.7
LMI-19	High	4/15/2015 11:09	18.16	3.0	11.98	148.9	8.29	27.7
LMI-19	High	4/15/2015 11:09	18.01	5.1	11.89	147.3	8.29	27.7
LMI-19	High	4/15/2015 11:10	17.82	5.0	11.84	146.1	8.28	27.8
LMI-19	High	4/15/2015 11:10	17.75	5.0	11.79	145.4	8.28	27.9
LMI-19	High	4/15/2015 11:10	17.74	5.0	11.76	144.9	8.28	27.8
LMI-19	High	4/15/2015 11:10	17.82	7.0	11.7	144.4	8.22	28.2
LMI-19	High	4/15/2015 11:10	17.88	7.1	11.13	137.9	8.18	28.4
LMI-19	High	4/15/2015 11:11	17.9	7.0	10.42	129.2	8.14	28.4
LMI-19	High	4/15/2015 11:11	17.91	9.0	9.47	117.5	8.08	28.5
LMI-19	High	4/15/2015 11:11	17.94	9.0	8.78	109	8.06	28.7
LMI-19	High	4/15/2015 11:11	17.95	9.0	8.47	105.4	8.03	28.7
LMI-19	High	4/15/2015 11:11	17.95	9.0	8.16	101.5	8	28.7
LMI-19	High	4/15/2015 11:11	17.95	8.9	7.9	98.2	7.99	28.7
LMI-19	High	4/15/2015 11:12	17.99	9.5	7.77	96.6	7.99	28.7
LMI-19	High	4/15/2015 11:12	17.99	9.5	7.97	99.2	7.99	28.7
LMI-19	High	4/15/2015 11:12	18	9.5	8.11	100.9	7.99	28.7
LMI-19	High	4/15/2015 11:12	18.01	9.5	8.17	101.7	7.99	28.7
LMI-29	High	4/15/2015 10:30	18.36	1.0	10.46	130.2	8.08	27.7
LMI-29	High	4/15/2015 10:30	18.37	1.0	10.39	129.3	8.08	27.6
LMI-29	High	4/15/2015 10:31	18.36	1.0	10.35	128.9	8.09	27.7
LMI-29	High	4/15/2015 10:31	18.3	1.0	10.39	129.4	8.09	27.7
LMI-29	High	4/15/2015 10:31	18.26	2.9	10.47	130.2	8.1	27.6
LMI-29	High	4/15/2015 10:31	18.21	3.0	10.59	131.4	8.11	27.6
LMI-29	High	4/15/2015 10:31	18.17	3.0	10.68	132.4	8.12	27.6
LMI-29	High	4/15/2015 10:31	18.1	4.9	10.73	132.9	8.13	27.5
LMI-29	High	4/15/2015 10:32	18.08	5.0	10.84	134.2	8.14	27.5
LMI-29	High	4/15/2015 10:32	17.99	5.0	10.92	135	8.14	27.6
LMI-29	High	4/15/2015 10:32	17.97	5.0	10.99	135.8	8.15	27.6
LMI-29	High	4/15/2015 10:32	17.95	7.2	11	135.9	8.15	27.6
LMI-29	High	4/15/2015 10:32	17.95	7.0	11	135.9	8.15	27.6
LMI-29	High	4/15/2015 10:33	17.94	7.0	10.96	135.4	8.15	27.6
LMI-29	High	4/15/2015 10:33	17.9	8.8	10.98	135.5	8.16	27.6
LMI-29	High	4/15/2015 10:33	17.9	8.7	10.91	134.7	8.16	27.7

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	High	4/15/2015 10:33	17.9	9.0	10.85	133.9	8.16	27.6
LMI-29	High	4/15/2015 10:33	17.9	9.0	10.87	134.1	8.16	27.6
LMI-29	High	4/15/2015 10:33	17.9	9.0	10.89	134.4	8.16	27.7
LMI-29	High	4/15/2015 10:34	17.89	10.6	10.95	134	8.15	26.4
LMI-29	High	4/15/2015 10:34	17.9	10.6	10.84	133	8.15	26.7
LMI-29	High	4/15/2015 10:34	17.9	10.6	10.75	132.7	8.14	27.6
LMI-29	High	4/15/2015 10:34	17.9	10.7	10.72	132.3	8.14	27.6
LMI-30	High	4/15/2015 11:34	19.31	1.1	9.7	123.1	8.15	27.7
LMI-30	High	4/15/2015 11:34	19.32	1.1	9.7	123.1	8.15	27.7
LMI-30	High	4/15/2015 11:34	19.3	1.0	9.61	122	8.14	27.8
LMI-30	High	4/15/2015 11:34	19.31	1.0	9.56	121.3	8.14	27.8
LMI-30	High	4/15/2015 11:34	19.03	2.9	9.59	121.3	8.16	27.6
LMI-30	High	4/15/2015 11:34	18.97	2.9	10	126.1	8.18	27.6
LMI-30	High	4/15/2015 11:34	18.94	3.0	10.2	128.5	8.19	27.7
LMI-30	High	4/15/2015 11:35	18.79	5.5	10.37	130.6	8.2	27.7
LMI-30	High	4/15/2015 11:35	18.76	4.8	10.7	134.5	8.21	27.8
LMI-30	High	4/15/2015 11:35	18.74	5.0	10.88	136.6	8.22	27.8
LMI-30	High	4/15/2015 11:35	18.73	4.9	10.95	137.6	8.22	27.8
LMI-30	High	4/15/2015 11:35	18.71	4.9	10.97	137.7	8.22	27.8
LMI-30	High	4/15/2015 11:35	18.63	7.4	10.99	137.8	8.22	27.8
LMI-30	High	4/15/2015 11:36	18.61	7.0	10.98	137.6	8.22	27.9
LMI-30	High	4/15/2015 11:36	18.59	6.9	10.97	137.5	8.22	27.9
LMI-30	High	4/15/2015 11:36	18.57	6.9	10.95	137.3	8.22	27.9
LMI-30	High	4/15/2015 11:36	18.55	10.0	10.98	137.5	8.22	27.9
LMI-30	High	4/15/2015 11:36	18.54	8.8	10.9	136.5	8.22	28
LMI-30	High	4/15/2015 11:36	18.53	8.9	10.85	135.9	8.22	28
LMI-30	High	4/15/2015 11:37	18.53	8.7	10.83	135.6	8.21	28
LMI-30	High	4/15/2015 11:37	18.53	8.9	10.82	135.4	8.21	27.9
LMI-30	High	4/15/2015 11:37	18.52	9.8	11.01	135.3	8.2	24.9
LMI-30	High	4/15/2015 11:37	18.53	9.7	11.02	135.4	8.18	24.9
LMI-30	High	4/15/2015 11:37	18.54	9.6	10.98	135.1	8.16	24.9
Channel Entrance	Low	4/9/2015 12:53	18.52	1.0	9.03	112.3	8.03	26.2
Channel Entrance	Low	4/9/2015 12:53	18.51	1.0	9.16	114.1	8.03	26.3
Channel Entrance	Low	4/9/2015 12:53	18.43	1.0	9.24	115	8.03	26.3
Channel Entrance	Low	4/9/2015 12:53	17.99	3.0	9	111.8	8.02	26.3
Channel Entrance	Low	4/9/2015 12:54	17.86	3.0	8.82	108.7	8.02	26.5
Channel Entrance	Low	4/9/2015 12:54	17.72	3.0	8.71	107.1	8.01	26.6
Channel Entrance	Low	4/9/2015 12:54	17.65	3.0	8.65	106.2	8.01	26.6
Channel Entrance	Low	4/9/2015 12:54	17.36	5.1	8.52	104.4	8	26.6
Channel Entrance	Low	4/9/2015 12:54	17.17	5.1	8.45	103	7.99	26.8
Channel Entrance	Low	4/9/2015 12:54	17.05	5.1	8.36	101.7	7.99	26.8
Channel Entrance	Low	4/9/2015 12:55	17.04	5.1	8.3	100.8	7.98	26.9
Channel Entrance	Low	4/9/2015 12:55	16.92	7.2	8.14	98.9	7.97	26.9
Channel Entrance	Low	4/9/2015 12:55	16.92	7.2	8.05	97.6	7.97	27
Channel Entrance	Low	4/9/2015 12:55	16.92	7.2	8	97	7.96	27
Channel Entrance	Low	4/9/2015 12:55	16.89	7.1	7.97	96.6	7.96	27
Channel Entrance	Low	4/9/2015 12:55	16.87	7.1	7.95	96.3	7.96	27
Channel Entrance	Low	4/9/2015 12:56	16.69	9.4	7.85	95	7.95	27
Channel Entrance	Low	4/9/2015 12:56	16.64	9.2	7.68	92.7	7.94	27.2
Channel Entrance	Low	4/9/2015 12:56	16.61	9.1	7.56	91.2	7.93	27.2
Channel Entrance	Low	4/9/2015 12:56	16.6	9.1	7.49	90.3	7.93	27.2
Channel Entrance	Low	4/9/2015 12:56	16.56	9.2	7.46	89.9	7.92	27.2
Channel Entrance	Low	4/9/2015 12:56	16.43	11.5	7.41	89.2	7.92	27.3
Channel Entrance	Low	4/9/2015 12:57	16.42	11.2	7.36	88.5	7.91	27.3
Channel Entrance	Low	4/9/2015 12:57	16.4	11.0	7.31	88	7.91	27.4
Channel Entrance	Low	4/9/2015 12:57	16.42	11.0	7.29	87.7	7.91	27.3
Channel Entrance	Low	4/9/2015 12:57	16.41	11.0	7.28	87.6	7.91	27.3
Channel Entrance	Low	4/9/2015 12:57	16.35	12.2	7.26	87.4	7.9	27.3
Channel Entrance	Low	4/9/2015 12:57	16.35	12.2	7.21	86.6	7.9	27.4
Channel Entrance	Low	4/9/2015 12:58	16.37	12.3	7.19	86.4	7.9	27.4
LMI-15	Low	4/9/2015 11:14	18.43	1.0	8.45	104.5	7.93	25.4
LMI-15	Low	4/9/2015 11:14	18.3	1.4	8.51	105.1	7.94	25.5
LMI-15	Low	4/9/2015 11:14	18.12	0.9	8.53	105.1	7.96	25.4
LMI-15	Low	4/9/2015 11:15	18.12	1.0	8.48	104.1	7.96	25.3
LMI-15	Low	4/9/2015 11:15	18.12	1.1	8.46	104	7.97	25.5
LMI-15	Low	4/9/2015 11:15	18.09	1.1	8.48	104.2	7.97	25.6
LMI-15	Low	4/9/2015 11:15	18.03	3.2	8.72	107.4	7.98	26.2

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-15	Low	4/9/2015 11:15	17.99	2.8	9.13	112.7	8	26.5
LMI-15	Low	4/9/2015 11:15	17.98	2.9	9.39	115.8	8.02	26.6
LMI-15	Low	4/9/2015 11:16	17.97	3.0	9.53	117.6	8.03	26.6
LMI-15	Low	4/9/2015 11:16	17.97	3.0	9.61	118.6	8.03	26.6
LMI-15	Low	4/9/2015 11:16	17.96	3.0	9.66	119.2	8.04	26.6
LMI-15	Low	4/9/2015 11:16	17.72	5.4	9.62	118.5	8.04	26.4
LMI-15	Low	4/9/2015 11:16	17.59	4.9	9.57	117.2	8.04	26.4
LMI-15	Low	4/9/2015 11:16	17.54	4.9	9.48	115.9	8.03	26.4
LMI-15	Low	4/9/2015 11:17	17.46	4.9	9.45	115.4	8.03	26.5
LMI-15	Low	4/9/2015 11:17	17.42	7.3	9.44	115.3	8.03	26.7
LMI-15	Low	4/9/2015 11:17	17.39	6.9	9.52	116.2	8.03	26.6
LMI-15	Low	4/9/2015 11:17	17.41	6.8	9.6	117.1	8.03	26.7
LMI-15	Low	4/9/2015 11:17	17.41	6.8	9.63	117.5	8.04	26.7
LMI-15	Low	4/9/2015 11:17	17.26	8.8	9.58	116.8	8.03	26.6
LMI-15	Low	4/9/2015 11:18	17.21	8.5	9.61	116.9	8.03	26.7
LMI-15	Low	4/9/2015 11:18	17.2	8.4	9.59	116.6	8.03	26.7
LMI-15	Low	4/9/2015 11:18	17.19	8.4	9.57	116.4	8.02	26.7
LMI-19	Low	4/9/2015 11:30	19.46	1.0	7.57	94.5	7.97	23
LMI-19	Low	4/9/2015 11:30	19.01	1.0	7.65	94.7	7.96	23.2
LMI-19	Low	4/9/2015 11:30	18.68	1.0	7.72	95.4	7.96	24.2
LMI-19	Low	4/9/2015 11:30	18.61	1.0	7.77	96.1	7.95	24.6
LMI-19	Low	4/9/2015 11:30	18.29	3.0	7.95	98.6	7.96	25.9
LMI-19	Low	4/9/2015 11:30	18.17	3.0	8.26	102.2	7.97	26.1
LMI-19	Low	4/9/2015 11:30	18.08	3.0	8.41	103.8	7.98	26.2
LMI-19	Low	4/9/2015 11:31	17.76	5.2	8.4	103.6	7.98	26.2
LMI-19	Low	4/9/2015 11:31	17.63	4.9	8.29	101.6	7.97	26.3
LMI-19	Low	4/9/2015 11:31	17.5	5.0	8.19	100.1	7.96	26.4
LMI-19	Low	4/9/2015 11:31	17.49	5.0	8.11	99	7.96	26.4
LMI-19	Low	4/9/2015 11:31	17.39	7.1	7.99	97.4	7.95	26.6
LMI-19	Low	4/9/2015 11:31	17.36	6.9	7.89	96.2	7.94	26.7
LMI-19	Low	4/9/2015 11:32	17.28	6.9	7.85	95.7	7.94	26.7
LMI-19	Low	4/9/2015 11:32	17.36	7.1	7.86	95.9	7.94	26.8
LMI-19	Low	4/9/2015 11:32	17.36	8.7	7.97	96.4	7.94	25.3
LMI-19	Low	4/9/2015 11:32	17.38	8.6	7.99	96.7	7.93	25.5
LMI-19	Low	4/9/2015 11:32	17.4	8.7	7.99	96.9	7.93	25.5
LMI-19	Low	4/9/2015 11:32	17.39	8.5	8	97	7.92	25.5
LMI-29	Low	4/9/2015 10:44	16.16	0.9	7.93	92.6	7.74	23.1
LMI-29	Low	4/9/2015 10:44	15.96	1.0	7.94	92	7.77	22.3
LMI-29	Low	4/9/2015 10:44	15.9	1.0	8	92.2	7.79	22
LMI-29	Low	4/9/2015 10:44	15.84	1.0	8.01	92.2	7.8	22
LMI-29	Low	4/9/2015 10:44	16.44	2.6	8.23	96.3	7.77	24.8
LMI-29	Low	4/9/2015 10:45	17.03	3.2	8.31	100	7.79	26.6
LMI-29	Low	4/9/2015 10:45	17.3	3.0	8.52	103.6	7.83	26.8
LMI-29	Low	4/9/2015 10:45	17.41	3.1	8.67	105.7	7.85	26.8
LMI-29	Low	4/9/2015 10:45	17.72	5.0	8.8	108	7.88	27.3
LMI-29	Low	4/9/2015 10:45	17.7	4.9	8.94	110.2	7.9	27.3
LMI-29	Low	4/9/2015 10:45	17.77	5.0	9.02	111.1	7.92	27.3
LMI-29	Low	4/9/2015 10:46	17.86	4.9	9.03	111.5	7.93	27.3
LMI-29	Low	4/9/2015 10:46	17.94	7.0	8.66	107.2	7.9	27.3
LMI-29	Low	4/9/2015 10:46	17.9	7.1	7.41	91.7	7.87	27.3
LMI-29	Low	4/9/2015 10:46	17.91	7.0	6.85	84.7	7.82	27.3
LMI-29	Low	4/9/2015 10:46	17.95	7.0	6.19	76.6	7.79	27.3
LMI-29	Low	4/9/2015 10:46	17.95	7.0	5.73	70.9	7.77	27.3
LMI-29	Low	4/9/2015 10:47	17.96	7.0	5.39	66.7	7.76	27.3
LMI-29	Low	4/9/2015 10:47	17.99	7.0	5.14	63.6	7.75	27.3
LMI-29	Low	4/9/2015 10:47	18	7.0	4.97	61.6	7.74	27.2
LMI-29	Low	4/9/2015 10:47	18.03	6.9	4.85	60.2	7.74	27.2
LMI-29	Low	4/9/2015 10:47	18.04	7.0	5.05	62.7	7.74	27.2
LMI-29	Low	4/9/2015 10:47	18.03	8.6	5.22	64.7	7.73	27.2
LMI-29	Low	4/9/2015 10:48	17.91	9.2	3.61	44.7	7.67	27.2
LMI-29	Low	4/9/2015 10:48	17.9	9.2	2.51	31.1	7.64	27.2
LMI-29	Low	4/9/2015 10:48	17.9	9.1	2.11	26	7.62	27.3
LMI-29	Low	4/9/2015 10:48	17.9	9.1	1.78	22	7.6	27.3
LMI-29	Low	4/9/2015 10:48	17.9	9.1	1.61	19.9	7.59	27.3
LMI-29	Low	4/9/2015 10:48	17.89	9.2	1.51	18.7	7.57	27.3
LMI-29	Low	4/9/2015 10:49	17.89	9.1	1.43	17.7	7.56	27.3
LMI-29	Low	4/9/2015 10:49	17.89	9.1	1.37	17	7.55	27.3

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	Low	4/9/2015 10:49	17.86	10.6	1.31	16.2	7.53	27.3
LMI-29	Low	4/9/2015 10:49	17.86	11.0	1.12	13.8	7.52	27.3
LMI-29	Low	4/9/2015 10:49	17.86	11.0	1.06	13.2	7.51	27.3
LMI-29	Low	4/9/2015 10:49	17.86	10.9	1.04	12.9	7.51	27.3
LMI-29	Low	4/9/2015 10:50	17.86	10.9	1.03	12.7	7.51	27.3
LMI-30	Low	4/9/2015 11:52	19.86	0.9	7.42	93	7.96	23.3
LMI-30	Low	4/9/2015 11:52	19.5	1.0	7.47	93.6	7.95	23.3
LMI-30	Low	4/9/2015 11:52	19.33	1.0	7.53	93.8	7.95	23.4
LMI-30	Low	4/9/2015 11:52	19.14	1.0	7.58	94.1	7.95	23.6
LMI-30	Low	4/9/2015 11:52	18.79	2.8	7.66	94.6	7.95	23.8
LMI-30	Low	4/9/2015 11:52	18.36	3.1	7.75	95.4	7.96	23.9
LMI-30	Low	4/9/2015 11:53	18.3	3.0	7.92	96.9	7.96	24
LMI-30	Low	4/9/2015 11:53	18.41	5.2	7.83	96.4	7.89	25.3
LMI-30	Low	4/9/2015 11:53	18.51	5.0	5.76	71.8	7.82	26.7
LMI-30	Low	4/9/2015 11:53	18.53	5.0	4.58	57.1	7.77	26.6
LMI-30	Low	4/9/2015 11:53	18.44	5.0	3.69	46	7.71	26.6
LMI-30	Low	4/9/2015 11:53	18.42	5.0	3.04	37.9	7.68	26.7
LMI-30	Low	4/9/2015 11:54	18.39	4.9	2.77	34.5	7.65	26.6
LMI-30	Low	4/9/2015 11:54	18.37	4.9	2.51	31.3	7.62	26.7
LMI-30	Low	4/9/2015 11:54	18.37	4.9	2.56	31.8	7.61	26.7
LMI-30	Low	4/9/2015 11:54	18.35	5.0	2.61	32.4	7.59	26.7
LMI-30	Low	4/9/2015 11:54	18.25	6.9	2.44	30.3	7.59	26.8
LMI-30	Low	4/9/2015 11:54	18.17	6.9	2.98	37	7.61	27.1
LMI-30	Low	4/9/2015 11:55	18.14	7.0	3.39	42.1	7.63	27.1
LMI-30	Low	4/9/2015 11:55	18.12	6.9	3.56	44.3	7.65	27.1
LMI-30	Low	4/9/2015 11:55	18.1	6.9	3.72	46.2	7.66	27.1
LMI-30	Low	4/9/2015 11:55	18.08	7.2	3.77	46.8	7.66	27.1
LMI-30	Low	4/9/2015 11:55	18.05	8.9	3.73	46.2	7.66	26.7
LMI-30	Low	4/9/2015 11:55	18.08	8.9	3.67	45.5	7.66	26.8
LMI-30	Low	4/9/2015 11:56	18.08	8.9	3.62	44.8	7.66	26.9
Channel Entrance	High	5/13/2015 11:36	18.21	1.1	7.18	90.8	7.95	29.7
Channel Entrance	High	5/13/2015 11:36	18.2	1.1	7.14	90.4	7.95	29.7
Channel Entrance	High	5/13/2015 11:36	18.19	0.9	7.13	90.2	7.96	29.7
Channel Entrance	High	5/13/2015 11:36	18.17	1.1	7.14	90.3	7.96	29.7
Channel Entrance	High	5/13/2015 11:36	18.12	3.4	7.15	90.4	7.96	29.7
Channel Entrance	High	5/13/2015 11:37	18.1	3.1	7.21	91	7.96	29.7
Channel Entrance	High	5/13/2015 11:37	18.1	3.1	7.24	91.5	7.97	29.7
Channel Entrance	High	5/13/2015 11:37	17.99	5.6	7.23	91.3	7.97	29.8
Channel Entrance	High	5/13/2015 11:37	17.99	5.3	7.28	91.7	7.97	29.7
Channel Entrance	High	5/13/2015 11:37	17.96	5.0	7.27	91.6	7.97	29.7
Channel Entrance	High	5/13/2015 11:37	17.95	5.0	7.28	91.7	7.97	29.7
Channel Entrance	High	5/13/2015 11:38	17.88	7.4	7.29	91.7	7.97	29.7
Channel Entrance	High	5/13/2015 11:38	17.89	7.1	7.27	91.5	7.97	29.7
Channel Entrance	High	5/13/2015 11:38	17.89	7.0	7.28	91.5	7.97	29.7
Channel Entrance	High	5/13/2015 11:38	17.81	9.3	7.23	90.9	7.97	29.7
Channel Entrance	High	5/13/2015 11:38	17.81	9.0	7.21	90.5	7.97	29.7
Channel Entrance	High	5/13/2015 11:38	17.81	8.9	7.17	90.1	7.97	29.7
Channel Entrance	High	5/13/2015 11:39	17.74	11.0	7.02	88	7.96	29.7
Channel Entrance	High	5/13/2015 11:39	17.73	10.9	6.97	87.4	7.96	29.7
Channel Entrance	High	5/13/2015 11:39	17.72	10.9	6.93	86.8	7.96	29.7
Channel Entrance	High	5/13/2015 11:39	17.68	12.6	6.82	85.4	7.95	29.6
Channel Entrance	High	5/13/2015 11:39	17.68	12.4	6.71	84	7.95	29.7
Channel Entrance	High	5/13/2015 11:40	17.68	12.4	6.64	83.1	7.95	29.6
Channel Entrance	High	5/13/2015 11:40	17.68	12.7	6.61	82.7	7.94	29.7
LMI-15	High	5/13/2015 10:00	18.73	1.0	8.77	112.1	8	29.6
LMI-15	High	5/13/2015 10:01	18.7	1.0	8.83	112.8	8.03	29.6
LMI-15	High	5/13/2015 10:01	18.67	1.0	8.85	112.9	8.06	29.6
LMI-15	High	5/13/2015 10:01	18.69	2.9	8.88	113.3	8.08	29.6
LMI-15	High	5/13/2015 10:01	18.68	3.0	8.88	113.4	8.09	29.6
LMI-15	High	5/13/2015 10:01	18.66	3.0	8.89	113.5	8.1	29.6
LMI-15	High	5/13/2015 10:01	18.66	4.7	8.86	113.1	8.11	29.6
LMI-15	High	5/13/2015 10:02	18.66	5.1	8.81	112.5	8.11	29.7
LMI-15	High	5/13/2015 10:02	18.65	5.0	8.78	112.1	8.11	29.7
LMI-15	High	5/13/2015 10:02	18.64	6.9	8.69	110.9	8.11	29.7
LMI-15	High	5/13/2015 10:02	18.64	7.1	8.68	110.7	8.12	29.6
LMI-15	High	5/13/2015 10:02	18.64	7.1	8.68	110.7	8.12	29.7
LMI-15	High	5/13/2015 10:02	18.68	8.4	8.57	108.5	8.08	28.4

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-15	High	5/13/2015 10:03	18.69	8.4	8.15	103.5	8.05	28.7
LMI-15	High	5/13/2015 10:03	18.7	8.4	8.01	101.7	8.03	28.7
LMI-15	High	5/13/2015 10:03	18.7	8.4	7.93	100.7	8.02	28.7
LMI-19	High	5/13/2015 10:14	18.57	1.2	8.92	113.7	8.17	29.7
LMI-19	High	5/13/2015 10:14	18.6	1.3	8.94	113.9	8.18	29.7
LMI-19	High	5/13/2015 10:15	18.62	1.3	8.95	114.1	8.18	29.7
LMI-19	High	5/13/2015 10:15	18.63	1.2	8.96	114.3	8.19	29.7
LMI-19	High	5/13/2015 10:15	18.64	2.8	8.95	114.2	8.19	29.6
LMI-19	High	5/13/2015 10:15	18.66	3.0	8.95	114.2	8.19	29.7
LMI-19	High	5/13/2015 10:15	18.66	3.0	8.94	114.1	8.19	29.7
LMI-19	High	5/13/2015 10:15	18.66	3.1	8.94	114.1	8.19	29.7
LMI-19	High	5/13/2015 10:16	18.64	4.8	8.93	113.9	8.2	29.6
LMI-19	High	5/13/2015 10:16	18.63	5.1	8.91	113.6	8.2	29.6
LMI-19	High	5/13/2015 10:16	18.63	5.1	8.9	113.5	8.2	29.6
LMI-19	High	5/13/2015 10:16	18.62	5.1	8.92	113.7	8.2	29.6
LMI-19	High	5/13/2015 10:16	18.61	6.7	8.95	114.2	8.2	29.6
LMI-19	High	5/13/2015 10:16	18.62	7.1	9.06	115.6	8.2	29.7
LMI-19	High	5/13/2015 10:17	18.61	7.1	9.15	116.6	8.21	29.6
LMI-19	High	5/13/2015 10:17	18.63	8.5	9.15	116.7	8.2	29.6
LMI-19	High	5/13/2015 10:17	18.64	8.9	9.24	117.8	8.14	29.6
LMI-19	High	5/13/2015 10:17	18.65	8.9	9.27	118.2	8.1	29.6
LMI-19	High	5/13/2015 10:17	18.66	8.9	9.3	118.5	8.07	29.6
LMI-29	High	5/13/2015 9:32	19.64	1.2	9.02	117.3	8.05	29.8
LMI-29	High	5/13/2015 9:33	19.59	0.8	8.92	115.9	8.06	29.6
LMI-29	High	5/13/2015 9:33	19.58	1.1	8.84	114.7	8.06	29.6
LMI-29	High	5/13/2015 9:33	19.6	1.1	8.82	114.6	8.07	29.6
LMI-29	High	5/13/2015 9:33	19.62	3.0	8.86	115.1	8.07	29.7
LMI-29	High	5/13/2015 9:33	19.61	3.0	8.97	116.6	8.08	29.7
LMI-29	High	5/13/2015 9:33	19.62	3.0	9.04	117.6	8.09	29.7
LMI-29	High	5/13/2015 9:34	19.63	3.0	9.09	118.1	8.09	29.7
LMI-29	High	5/13/2015 9:34	19.6	5.0	9	117	8.09	29.7
LMI-29	High	5/13/2015 9:34	19.59	5.0	8.78	114.1	8.09	29.7
LMI-29	High	5/13/2015 9:34	19.62	5.1	8.71	113.2	8.09	29.7
LMI-29	High	5/13/2015 9:34	19.68	7.0	8.54	111.1	8.07	29.8
LMI-29	High	5/13/2015 9:34	19.7	7.0	7.99	104.1	8.06	29.9
LMI-29	High	5/13/2015 9:35	19.69	7.0	7.51	97.9	8.05	29.9
LMI-29	High	5/13/2015 9:35	19.68	7.0	7.39	96.3	8.04	29.8
LMI-29	High	5/13/2015 9:35	19.7	6.9	7.38	96.2	8.04	29.8
LMI-29	High	5/13/2015 9:35	19.73	8.9	7.26	94.7	8.02	29.9
LMI-29	High	5/13/2015 9:35	19.74	9.1	6.71	87.5	8	29.9
LMI-29	High	5/13/2015 9:35	19.76	9.2	6.42	83.8	7.99	29.9
LMI-29	High	5/13/2015 9:36	19.77	9.1	6.32	82.4	7.98	29.8
LMI-29	High	5/13/2015 9:36	19.77	9.2	6.24	81.4	7.98	29.8
LMI-29	High	5/13/2015 9:36	19.77	10.5	6.21	81	7.97	29.8
LMI-29	High	5/13/2015 9:36	19.77	10.5	6.16	80.4	7.97	29.8
LMI-29	High	5/13/2015 9:36	19.77	10.5	6.13	80	7.96	29.9
LMI-30	High	5/13/2015 10:35	19.06	1.1	8.06	103.1	8.13	28.9
LMI-30	High	5/13/2015 10:35	19.02	1.1	8.06	103.1	8.13	28.9
LMI-30	High	5/13/2015 10:36	19.04	1.0	8.02	102.5	8.13	28.8
LMI-30	High	5/13/2015 10:36	19.18	2.8	8.01	102.5	8.13	28.9
LMI-30	High	5/13/2015 10:36	19.33	3.6	8.13	104.9	8.13	29.6
LMI-30	High	5/13/2015 10:36	19.32	3.6	8.04	103.9	8.14	29.6
LMI-30	High	5/13/2015 10:36	19.33	3.5	8.07	104.2	8.14	29.6
LMI-30	High	5/13/2015 10:36	19.43	4.6	8.08	104.5	8.14	29.6
LMI-30	High	5/13/2015 10:37	19.42	5.3	7.8	101.1	8.14	29.6
LMI-30	High	5/13/2015 10:37	19.46	5.1	7.73	100.1	8.14	29.6
LMI-30	High	5/13/2015 10:37	19.5	5.3	7.65	99.2	8.13	29.6
LMI-30	High	5/13/2015 10:37	19.41	7.4	7.65	99.1	8.14	29.4
LMI-30	High	5/13/2015 10:37	19.37	7.2	7.92	102.3	8.15	29.4
LMI-30	High	5/13/2015 10:38	19.37	7.4	8.08	104.4	8.16	29.5
LMI-30	High	5/13/2015 10:38	19.37	8.8	8.12	104.8	8.16	29.4
LMI-30	High	5/13/2015 10:38	19.37	9.0	8.11	104.8	8.17	29.5
LMI-30	High	5/13/2015 10:38	19.37	9.1	8.11	104.8	8.17	29.5
LMI-30	High	5/13/2015 10:38	19.37	9.1	8.1	104.7	8.17	29.5
Channel Entrance	Low	5/21/2015 11:48	17.5	1.0	5.57	69.7	7.76	29.9
Channel Entrance	Low	5/21/2015 11:49	17.47	1.0	5.54	69.3	7.75	29.8
Channel Entrance	Low	5/21/2015 11:49	17.46	1.0	5.53	69.1	7.75	29.9

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
Channel Entrance	Low	5/21/2015 11:49	17.38	3.6	5.5	68.7	7.74	29.9
Channel Entrance	Low	5/21/2015 11:49	17.37	2.8	5.56	69.4	7.74	29.8
Channel Entrance	Low	5/21/2015 11:49	17.36	3.0	5.59	69.7	7.74	29.8
Channel Entrance	Low	5/21/2015 11:49	17.27	5.2	5.59	69.8	7.73	29.8
Channel Entrance	Low	5/21/2015 11:50	17.23	4.9	5.67	70.5	7.73	29.8
Channel Entrance	Low	5/21/2015 11:50	17.23	5.0	5.7	70.9	7.73	29.8
Channel Entrance	Low	5/21/2015 11:50	17.2	4.9	5.72	71.1	7.73	29.8
Channel Entrance	Low	5/21/2015 11:50	17.12	7.1	5.75	71.4	7.74	29.8
Channel Entrance	Low	5/21/2015 11:50	17.12	6.9	5.82	72.2	7.74	29.8
Channel Entrance	Low	5/21/2015 11:50	17.1	6.9	5.84	72.5	7.74	29.8
Channel Entrance	Low	5/21/2015 11:51	16.98	9.0	5.9	73.1	7.74	29.8
Channel Entrance	Low	5/21/2015 11:51	16.97	8.9	6.01	74.4	7.75	29.8
Channel Entrance	Low	5/21/2015 11:51	16.93	9.1	6.06	75	7.75	29.8
Channel Entrance	Low	5/21/2015 11:51	16.91	9.0	6.14	75.9	7.75	29.8
Channel Entrance	Low	5/21/2015 11:51	16.83	11.8	6.17	76.3	7.76	29.8
Channel Entrance	Low	5/21/2015 11:51	16.83	11.1	6.21	76.6	7.76	29.9
Channel Entrance	Low	5/21/2015 11:52	16.79	10.7	6.22	76.8	7.76	29.9
Channel Entrance	Low	5/21/2015 11:52	16.78	11.1	6.22	76.7	7.77	29.9
Channel Entrance	Low	5/21/2015 11:52	16.78	11.6	6.21	76.6	7.77	29.9
Channel Entrance	Low	5/21/2015 11:52	16.77	11.6	6.2	76.5	7.77	29.9
Channel Entrance	Low	5/21/2015 11:52	16.77	11.9	6.2	76.5	7.77	29.9
LMI-15	Low	5/21/2015 10:14	17.01	1.1	6.7	83	7.7	29.8
LMI-15	Low	5/21/2015 10:14	17.03	1.1	6.66	82.5	7.7	29.8
LMI-15	Low	5/21/2015 10:14	17.04	1.0	6.64	82.2	7.71	29.8
LMI-15	Low	5/21/2015 10:14	17.06	1.0	6.63	82.2	7.71	29.8
LMI-15	Low	5/21/2015 10:15	17.08	3.2	6.59	81.7	7.72	29.8
LMI-15	Low	5/21/2015 10:15	17.1	3.2	6.58	81.6	7.72	29.8
LMI-15	Low	5/21/2015 10:15	17.1	3.1	6.57	81.5	7.72	29.8
LMI-15	Low	5/21/2015 10:15	17.1	5.1	6.56	81.3	7.72	29.8
LMI-15	Low	5/21/2015 10:15	17.1	5.1	6.47	80.3	7.72	29.8
LMI-15	Low	5/21/2015 10:15	17.1	5.1	6.43	79.8	7.72	29.8
LMI-15	Low	5/21/2015 10:16	17.12	7.1	6.35	78.8	7.72	29.8
LMI-15	Low	5/21/2015 10:16	17.13	7.1	6.12	75.9	7.71	29.8
LMI-15	Low	5/21/2015 10:16	17.12	7.1	5.97	74.1	7.71	29.8
LMI-15	Low	5/21/2015 10:16	17.14	9.1	5.87	72.8	7.7	29.9
LMI-15	Low	5/21/2015 10:16	17.15	9.0	5.7	70.8	7.69	29.9
LMI-15	Low	5/21/2015 10:16	17.15	9.0	5.62	69.8	7.69	29.8
LMI-15	Low	5/21/2015 10:17	17.18	9.5	5.57	69.1	7.68	29.8
LMI-15	Low	5/21/2015 10:17	17.18	9.5	5.49	68.3	7.68	29.8
LMI-15	Low	5/21/2015 10:17	17.19	9.5	5.47	67.9	7.68	29.8
LMI-15	Low	5/21/2015 10:17	17.19	9.6	5.45	67.8	7.67	29.8
LMI-19	Low	5/21/2015 10:29	17.29	1.2	6.75	83.9	7.78	29.5
LMI-19	Low	5/21/2015 10:29	17.28	1.1	6.72	83.6	7.78	29.5
LMI-19	Low	5/21/2015 10:29	17.27	1.0	6.71	83.4	7.78	29.5
LMI-19	Low	5/21/2015 10:29	17.26	1.0	6.71	83.4	7.78	29.5
LMI-19	Low	5/21/2015 10:29	17.23	3.3	6.7	83.3	7.78	29.5
LMI-19	Low	5/21/2015 10:30	17.21	3.1	6.7	83.2	7.78	29.6
LMI-19	Low	5/21/2015 10:30	17.22	3.1	6.7	83.2	7.78	29.5
LMI-19	Low	5/21/2015 10:30	17.21	3.1	6.71	83.3	7.78	29.6
LMI-19	Low	5/21/2015 10:30	17.21	5.0	6.68	83	7.78	29.6
LMI-19	Low	5/21/2015 10:30	17.23	5.1	6.55	81.4	7.77	29.7
LMI-19	Low	5/21/2015 10:30	17.23	5.1	6.45	80.2	7.77	29.7
LMI-19	Low	5/21/2015 10:31	17.23	7.5	6.38	79.4	7.76	29.8
LMI-19	Low	5/21/2015 10:31	17.24	6.9	6.14	76.3	7.76	29.8
LMI-19	Low	5/21/2015 10:31	17.24	7.1	6.06	75.4	7.75	29.8
LMI-19	Low	5/21/2015 10:31	17.24	7.1	6.02	74.9	7.75	29.8
LMI-19	Low	5/21/2015 10:31	17.26	8.3	6.01	74.8	7.74	29.8
LMI-19	Low	5/21/2015 10:31	17.27	8.4	6.02	74.9	7.74	29.8
LMI-19	Low	5/21/2015 10:32	17.27	8.3	6.01	74.7	7.73	29.8
LMI-29	Low	5/21/2015 9:48	17.87	1.0	4.34	54.8	7.6	30
LMI-29	Low	5/21/2015 9:48	17.9	1.0	4.23	53.4	7.59	30
LMI-29	Low	5/21/2015 9:48	17.93	1.0	4.15	52.4	7.59	30
LMI-29	Low	5/21/2015 9:49	17.93	1.0	4.13	52.1	7.58	30
LMI-29	Low	5/21/2015 9:49	17.93	3.5	4.11	51.9	7.58	30
LMI-29	Low	5/21/2015 9:49	17.9	3.2	4	50.4	7.57	30
LMI-29	Low	5/21/2015 9:49	17.9	3.0	4.08	51.5	7.57	30
LMI-29	Low	5/21/2015 9:49	17.9	3.0	4.14	52.2	7.56	30

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	Low	5/21/2015 9:49	17.9	3.0	4.16	52.5	7.56	30
LMI-29	Low	5/21/2015 9:50	17.88	5.3	4.22	53.2	7.56	29.9
LMI-29	Low	5/21/2015 9:50	17.86	5.0	4.64	58.5	7.57	29.9
LMI-29	Low	5/21/2015 9:50	17.86	4.9	4.89	61.6	7.58	30
LMI-29	Low	5/21/2015 9:50	17.86	4.9	4.99	62.8	7.58	29.9
LMI-29	Low	5/21/2015 9:50	17.86	7.1	4.92	61.9	7.58	29.9
LMI-29	Low	5/21/2015 9:50	17.86	7.1	4.47	56.3	7.57	30
LMI-29	Low	5/21/2015 9:51	17.86	7.1	4.25	53.5	7.56	30
LMI-29	Low	5/21/2015 9:51	17.86	7.1	4.13	52	7.56	30
LMI-29	Low	5/21/2015 9:51	17.86	9.4	3.96	49.9	7.55	30
LMI-29	Low	5/21/2015 9:51	17.86	9.0	3.73	47	7.54	30
LMI-29	Low	5/21/2015 9:51	17.86	9.0	3.61	45.4	7.54	30
LMI-29	Low	5/21/2015 9:51	17.86	9.0	3.56	44.8	7.53	30
LMI-29	Low	5/21/2015 9:52	17.86	9.0	3.53	44.4	7.53	30
LMI-29	Low	5/21/2015 9:52	17.85	10.4	3.49	43.9	7.52	29.9
LMI-29	Low	5/21/2015 9:52	17.86	10.4	3.43	43.2	7.52	30
LMI-29	Low	5/21/2015 9:52	17.86	10.4	3.42	43	7.51	30
LMI-29	Low	5/21/2015 9:52	17.85	10.4	3.41	42.9	7.51	29.9
LMI-30	Low	5/21/2015 10:51	16.66	1.1	6.91	84	7.83	28.1
LMI-30	Low	5/21/2015 10:52	16.87	1.4	7.03	86.1	7.84	28.7
LMI-30	Low	5/21/2015 10:52	16.85	1.1	7.06	86.7	7.84	28.7
LMI-30	Low	5/21/2015 10:52	16.69	1.0	7.03	85.9	7.85	28.2
LMI-30	Low	5/21/2015 10:52	17.32	3.5	6.86	84.5	7.82	29.7
LMI-30	Low	5/21/2015 10:52	17.52	2.8	5.73	71.7	7.79	29.8
LMI-30	Low	5/21/2015 10:52	17.56	3.0	4.92	61.5	7.77	29.8
LMI-30	Low	5/21/2015 10:53	17.63	2.9	4.41	55.2	7.75	29.8
LMI-30	Low	5/21/2015 10:53	17.59	5.4	4.42	55.3	7.75	29.6
LMI-30	Low	5/21/2015 10:53	17.58	5.0	5.46	68.4	7.77	29.6
LMI-30	Low	5/21/2015 10:53	17.59	5.0	5.91	74	7.77	29.6
LMI-30	Low	5/21/2015 10:53	17.64	5.0	6.14	76.9	7.78	29.6
LMI-30	Low	5/21/2015 10:53	17.64	7.1	6.25	78.3	7.78	29.7
LMI-30	Low	5/21/2015 10:54	17.65	6.9	6.07	76.1	7.78	29.7
LMI-30	Low	5/21/2015 10:54	17.66	7.0	5.87	73.6	7.78	29.7
LMI-30	Low	5/21/2015 10:54	17.67	7.0	5.79	72.5	7.77	29.7
LMI-30	Low	5/21/2015 10:54	17.68	8.7	5.74	71.9	7.77	29.6
LMI-30	Low	5/21/2015 10:54	17.68	8.8	5.63	70.5	7.76	29.7
LMI-30	Low	5/21/2015 10:55	17.68	8.8	5.61	70.3	7.76	29.6
Channel Entrance	High	6/11/2015 11:32	21.74	0.8	6.79	92.6	7.98	30.8
Channel Entrance	High	6/11/2015 11:32	21.69	1.0	6.78	92.5	7.97	30.8
Channel Entrance	High	6/11/2015 11:32	21.64	0.9	6.8	92.6	7.97	30.8
Channel Entrance	High	6/11/2015 11:32	21.42	3.9	6.8	92.5	7.96	30.9
Channel Entrance	High	6/11/2015 11:32	21.37	3.1	6.74	91.2	7.96	30.8
Channel Entrance	High	6/11/2015 11:32	21.3	3.0	6.67	90.3	7.95	30.8
Channel Entrance	High	6/11/2015 11:33	21.24	3.0	6.66	90	7.95	30.8
Channel Entrance	High	6/11/2015 11:33	21.06	5.3	6.62	89.3	7.95	30.8
Channel Entrance	High	6/11/2015 11:33	21.05	5.0	6.63	89.3	7.94	30.8
Channel Entrance	High	6/11/2015 11:33	21.06	4.9	6.64	89.5	7.94	30.8
Channel Entrance	High	6/11/2015 11:33	21.03	5.0	6.64	89.4	7.94	30.8
Channel Entrance	High	6/11/2015 11:33	20.93	7.2	6.67	89.7	7.94	30.9
Channel Entrance	High	6/11/2015 11:34	20.93	7.0	6.67	89.7	7.93	30.9
Channel Entrance	High	6/11/2015 11:34	20.92	6.9	6.67	89.6	7.93	30.9
Channel Entrance	High	6/11/2015 11:34	20.89	6.9	6.68	89.7	7.93	30.9
Channel Entrance	High	6/11/2015 11:34	20.75	9.3	6.67	89.5	7.93	30.9
Channel Entrance	High	6/11/2015 11:34	20.71	9.0	6.66	89.2	7.93	30.9
Channel Entrance	High	6/11/2015 11:34	20.7	8.9	6.67	89.3	7.93	30.9
Channel Entrance	High	6/11/2015 11:35	20.66	8.9	6.66	89.1	7.92	30.9
Channel Entrance	High	6/11/2015 11:35	20.59	11.3	6.6	88.3	7.92	30.9
Channel Entrance	High	6/11/2015 11:35	20.6	11.0	6.54	87.4	7.92	30.9
Channel Entrance	High	6/11/2015 11:35	20.58	10.9	6.52	87.1	7.92	30.9
Channel Entrance	High	6/11/2015 11:35	20.48	13.4	6.48	86.6	7.92	30.9
Channel Entrance	High	6/11/2015 11:35	20.4	12.7	6.46	86.1	7.91	30.9
Channel Entrance	High	6/11/2015 11:36	20.4	12.8	6.45	85.8	7.91	30.9
Channel Entrance	High	6/11/2015 11:36	20.35	13.4	6.44	85.8	7.91	30.9
Channel Entrance	High	6/11/2015 11:36	20.35	13.2	6.44	85.7	7.91	31
Channel Entrance	High	6/11/2015 11:36	20.35	13.1	6.44	85.7	7.91	31
LMI-15	High	6/11/2015 9:53	21.66	1.1	8.92	121.3	7.94	30.6
LMI-15	High	6/11/2015 9:53	21.65	0.8	8.94	121.5	7.95	30.6

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-15	High	6/11/2015 9:53	21.65	0.9	8.96	121.8	7.96	30.6
LMI-15	High	6/11/2015 9:53	21.64	0.9	8.98	122.1	7.96	30.6
LMI-15	High	6/11/2015 9:54	21.61	3.9	9.01	122.5	7.97	30.6
LMI-15	High	6/11/2015 9:54	21.59	2.8	8.77	119	7.97	30.6
LMI-15	High	6/11/2015 9:54	21.6	2.7	8.65	117.4	7.97	30.6
LMI-15	High	6/11/2015 9:54	21.59	2.8	8.64	117.3	7.97	30.6
LMI-15	High	6/11/2015 9:54	21.56	2.9	8.64	117.3	7.97	30.6
LMI-15	High	6/11/2015 9:54	21.48	5.8	8.57	116.3	7.97	30.6
LMI-15	High	6/11/2015 9:55	21.43	5.1	8.3	112.4	7.96	30.6
LMI-15	High	6/11/2015 9:55	21.42	5.0	8.19	110.9	7.96	30.6
LMI-15	High	6/11/2015 9:55	21.42	5.0	8.13	110.1	7.96	30.6
LMI-15	High	6/11/2015 9:55	21.3	7.7	7.64	103.3	7.94	30.6
LMI-15	High	6/11/2015 9:55	21.29	7.4	6.85	92.6	7.92	30.7
LMI-15	High	6/11/2015 9:55	21.27	7.2	6.33	85.5	7.9	30.7
LMI-15	High	6/11/2015 9:56	21.21	9.6	6.01	81.2	7.89	30.7
LMI-15	High	6/11/2015 9:56	21.22	9.1	5.2	70.2	7.86	30.8
LMI-15	High	6/11/2015 9:56	21.18	9.0	4.77	64.4	7.84	30.8
LMI-15	High	6/11/2015 9:56	21.15	9.0	4.39	59.3	7.83	30.9
LMI-15	High	6/11/2015 9:56	21.14	8.9	4.1	55.3	7.81	30.9
LMI-15	High	6/11/2015 9:56	21.14	8.9	3.84	51.7	7.79	30.9
LMI-15	High	6/11/2015 9:57	21.14	8.9	3.49	47.1	7.78	30.9
LMI-15	High	6/11/2015 9:57	21.15	8.9	3.34	45	7.77	30.9
LMI-15	High	6/11/2015 9:57	21.15	8.9	3.27	44.1	7.76	30.9
LMI-15	High	6/11/2015 9:57	21.14	8.9	3.21	43.4	7.75	30.9
LMI-15	High	6/11/2015 9:57	21.11	9.7	3.18	43	7.74	30.9
LMI-15	High	6/11/2015 9:57	21.12	9.5	3.19	43.1	7.73	30.9
LMI-15	High	6/11/2015 9:58	21.13	9.5	3.17	42.8	7.73	30.9
LMI-15	High	6/11/2015 9:58	21.13	9.4	3.16	42.6	7.72	30.9
LMI-19	High	6/11/2015 10:11	21.61	0.9	8.02	109	7.9	30.7
LMI-19	High	6/11/2015 10:11	21.62	1.1	8.02	109	7.9	30.6
LMI-19	High	6/11/2015 10:11	21.64	1.1	8.02	109	7.9	30.6
LMI-19	High	6/11/2015 10:11	21.64	1.0	8.02	109	7.91	30.6
LMI-19	High	6/11/2015 10:12	21.57	3.1	7.99	108.6	7.91	30.6
LMI-19	High	6/11/2015 10:12	21.55	3.0	8.05	109.3	7.91	30.7
LMI-19	High	6/11/2015 10:12	21.55	3.0	8.05	109.3	7.92	30.7
LMI-19	High	6/11/2015 10:12	21.53	5.1	8.05	109.3	7.92	30.7
LMI-19	High	6/11/2015 10:12	21.52	5.0	8.02	108.8	7.92	30.8
LMI-19	High	6/11/2015 10:12	21.51	5.0	7.97	108.2	7.92	30.8
LMI-19	High	6/11/2015 10:13	21.38	7.1	7.36	99.7	7.91	30.7
LMI-19	High	6/11/2015 10:13	21.33	7.0	6.05	81.9	7.88	30.8
LMI-19	High	6/11/2015 10:13	21.29	7.0	5.34	72.3	7.86	30.8
LMI-19	High	6/11/2015 10:13	21.27	7.0	4.83	65.3	7.85	30.8
LMI-19	High	6/11/2015 10:13	21.28	7.0	4.43	59.9	7.83	30.8
LMI-19	High	6/11/2015 10:13	21.28	7.0	4.09	55.3	7.81	30.8
LMI-19	High	6/11/2015 10:14	21.26	6.9	3.97	53.7	7.8	30.8
LMI-19	High	6/11/2015 10:14	21.24	7.0	3.91	52.9	7.79	30.8
LMI-19	High	6/11/2015 10:14	21.24	6.9	3.84	51.9	7.77	30.8
LMI-19	High	6/11/2015 10:14	21.19	9.3	3.66	49.5	7.76	30.8
LMI-19	High	6/11/2015 10:14	21.15	8.9	3.32	44.8	7.74	30.8
LMI-19	High	6/11/2015 10:14	21.16	8.9	3.17	42.7	7.73	30.9
LMI-19	High	6/11/2015 10:15	21.16	8.9	3.11	42	7.72	30.9
LMI-19	High	6/11/2015 10:15	21.15	9.7	3.07	41.4	7.71	30.9
LMI-19	High	6/11/2015 10:15	21.17	9.6	3.03	40.8	7.7	30.9
LMI-19	High	6/11/2015 10:15	21.17	9.6	3.01	40.6	7.7	30.9
LMI-29	High	6/11/2015 9:24	21.91	1.2	4.91	67.2	7.58	31
LMI-29	High	6/11/2015 9:24	21.91	1.2	4.91	67.2	7.58	31
LMI-29	High	6/11/2015 9:24	21.93	1.0	4.94	67.6	7.58	31
LMI-29	High	6/11/2015 9:24	21.94	1.0	4.93	67.5	7.59	31
LMI-29	High	6/11/2015 9:25	21.94	1.0	4.94	67.6	7.59	31
LMI-29	High	6/11/2015 9:25	21.95	3.5	4.84	66.2	7.59	31
LMI-29	High	6/11/2015 9:25	21.96	2.8	4.26	58.4	7.58	31
LMI-29	High	6/11/2015 9:25	21.97	3.1	4.02	55.1	7.57	31
LMI-29	High	6/11/2015 9:25	21.97	3.1	3.77	51.7	7.57	31
LMI-29	High	6/11/2015 9:25	21.98	3.1	3.66	50.2	7.56	31
LMI-29	High	6/11/2015 9:26	21.93	5.8	3.38	46.3	7.55	31
LMI-29	High	6/11/2015 9:26	21.91	5.2	2.6	35.5	7.53	31
LMI-29	High	6/11/2015 9:26	21.91	4.9	2.29	31.3	7.52	31

APPENDIX A

WATER QUALITY MONITORING DATA
Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	High	6/11/2015 9:26	21.91	5.3	2.1	28.8	7.51	31
LMI-29	High	6/11/2015 9:26	21.84	7.7	2.04	28	7.5	31
LMI-29	High	6/11/2015 9:26	21.82	7.1	2.06	28.1	7.5	30.9
LMI-29	High	6/11/2015 9:27	21.82	7.0	2.05	28	7.49	30.9
LMI-29	High	6/11/2015 9:27	21.82	7.1	2.06	28.2	7.49	30.9
LMI-29	High	6/11/2015 9:27	21.73	9.2	2.1	28.7	7.48	30.9
LMI-29	High	6/11/2015 9:27	21.73	9.0	2.16	29.4	7.48	30.9
LMI-29	High	6/11/2015 9:27	21.73	9.1	2.17	29.6	7.48	30.9
LMI-29	High	6/11/2015 9:27	21.72	9.0	2.19	29.9	7.48	30.9
LMI-29	High	6/11/2015 9:28	21.69	10.1	2.21	30	7.48	30.8
LMI-29	High	6/11/2015 9:28	21.68	10.2	2.2	30	7.48	30.9
LMI-29	High	6/11/2015 9:28	21.68	10.2	2.2	30	7.47	30.9
LMI-29	High	6/11/2015 9:28	21.67	10.2	2.2	30	7.47	30.9
LMI-30	High	6/11/2015 10:31	22.89	1.0	13.47	187.3	8.14	30.7
LMI-30	High	6/11/2015 10:31	22.9	1.1	13.32	185.2	8.15	30.7
LMI-30	High	6/11/2015 10:31	22.93	1.1	13.26	184.5	8.15	30.7
LMI-30	High	6/11/2015 10:31	22.94	1.1	13.25	184.4	8.16	30.7
LMI-30	High	6/11/2015 10:31	22.65	2.7	11.78	163.7	8.12	30.6
LMI-30	High	6/11/2015 10:31	22.55	3.0	8.96	124	8.06	30.8
LMI-30	High	6/11/2015 10:31	22.49	3.0	7.54	104.2	8.01	30.8
LMI-30	High	6/11/2015 10:32	22.45	3.0	6.53	90.1	7.98	30.8
LMI-30	High	6/11/2015 10:32	22.36	3.0	5.71	78.7	7.94	30.8
LMI-30	High	6/11/2015 10:32	22.29	3.0	4.9	67.5	7.91	30.9
LMI-30	High	6/11/2015 10:32	22.27	3.1	4.4	60.5	7.88	30.9
LMI-30	High	6/11/2015 10:32	22.22	2.9	3.62	49.8	7.83	30.9
LMI-30	High	6/11/2015 10:33	22.19	3.0	3.47	47.8	7.81	30.9
LMI-30	High	6/11/2015 10:33	22.18	3.0	3.38	46.5	7.79	30.9
LMI-30	High	6/11/2015 10:33	22.16	3.0	3.34	45.9	7.77	30.9
LMI-30	High	6/11/2015 10:33	22.15	3.0	3.3	45.3	7.76	30.9
LMI-30	High	6/11/2015 10:33	22.09	4.9	3.16	43.4	7.73	30.9
LMI-30	High	6/11/2015 10:34	22.05	4.9	3.1	42.6	7.72	30.9
LMI-30	High	6/11/2015 10:34	22.04	4.9	3.02	41.4	7.7	30.9
LMI-30	High	6/11/2015 10:34	22.02	5.1	2.96	40.6	7.69	30.9
LMI-30	High	6/11/2015 10:34	22	5.0	2.89	39.7	7.68	31
LMI-30	High	6/11/2015 10:34	22	5.0	2.84	38.9	7.67	31
LMI-30	High	6/11/2015 10:34	21.93	7.1	2.68	36.7	7.66	30.9
LMI-30	High	6/11/2015 10:35	21.91	6.8	2.25	30.8	7.64	30.9
LMI-30	High	6/11/2015 10:35	21.91	6.9	2.04	27.9	7.63	30.9
LMI-30	High	6/11/2015 10:35	21.88	6.9	1.93	26.4	7.62	31
LMI-30	High	6/11/2015 10:35	21.87	7.4	1.88	25.7	7.61	30.9
LMI-30	High	6/11/2015 10:35	21.87	7.0	1.84	25.2	7.6	31
LMI-30	High	6/11/2015 10:35	21.86	7.0	1.85	25.3	7.59	30.9
LMI-30	High	6/11/2015 10:36	21.84	8.5	1.85	25.2	7.58	30.9
LMI-30	High	6/11/2015 10:36	21.82	9.3	1.8	24.5	7.57	31
LMI-30	High	6/11/2015 10:36	21.82	9.0	1.73	23.7	7.56	30.9
LMI-30	High	6/11/2015 10:36	21.82	8.9	1.7	23.2	7.55	30.9
LMI-30	High	6/11/2015 10:36	21.81	8.9	1.69	23	7.55	30.9
LMI-30	High	6/11/2015 10:36	21.8	9.7	1.68	22.9	7.54	30.9
LMI-30	High	6/11/2015 10:37	21.8	9.7	1.67	22.8	7.54	31
LMI-30	High	6/11/2015 10:37	21.79	9.6	1.67	22.8	7.53	30.9
Channel Entrance	Low	6/18/2015 10:29	20.79	1.0	6.6	88.4	8.01	31.4
Channel Entrance	Low	6/18/2015 10:29	20.8	1.1	6.45	86.4	7.99	31.4
Channel Entrance	Low	6/18/2015 10:29	20.8	1.1	6.42	86	7.99	31.4
Channel Entrance	Low	6/18/2015 10:29	20.75	3.3	6.44	86.2	7.98	31.4
Channel Entrance	Low	6/18/2015 10:29	20.71	2.9	6.59	88.1	7.98	31.3
Channel Entrance	Low	6/18/2015 10:29	20.71	3.0	6.65	88.9	7.98	31.4
Channel Entrance	Low	6/18/2015 10:30	20.71	3.0	6.67	89.2	7.98	31.4
Channel Entrance	Low	6/18/2015 10:30	20.66	5.3	6.68	89.3	7.98	31.3
Channel Entrance	Low	6/18/2015 10:30	20.66	5.0	6.69	89.4	7.97	31.4
Channel Entrance	Low	6/18/2015 10:30	20.66	5.0	6.69	89.3	7.97	31.4
Channel Entrance	Low	6/18/2015 10:30	20.62	7.1	6.68	89.1	7.97	31.4
Channel Entrance	Low	6/18/2015 10:30	20.61	7.0	6.66	88.8	7.97	31.4
Channel Entrance	Low	6/18/2015 10:31	20.6	7.0	6.64	88.6	7.97	31.4
Channel Entrance	Low	6/18/2015 10:31	20.57	9.3	6.64	88.6	7.96	31.4
Channel Entrance	Low	6/18/2015 10:31	20.57	8.9	6.57	87.6	7.96	31.4
Channel Entrance	Low	6/18/2015 10:31	20.57	9.1	6.55	87.4	7.96	31.4
Channel Entrance	Low	6/18/2015 10:31	20.53	10.8	6.52	86.9	7.96	31.3

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WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
Channel Entrance	Low	6/18/2015 10:31	20.54	10.8	6.48	86.4	7.95	31.2
Channel Entrance	Low	6/18/2015 10:32	20.54	10.8	6.46	86	7.95	31.3
Channel Entrance	Low	6/18/2015 10:32	20.53	10.8	6.45	85.9	7.95	31.3
LMI-15	Low	6/18/2015 8:46	21.69	1.2	10.57	144.1	8.19	31.5
LMI-15	Low	6/18/2015 8:46	21.76	1.1	10.6	144.6	8.2	31.4
LMI-15	Low	6/18/2015 8:46	21.78	1.1	10.58	144.5	8.2	31.4
LMI-15	Low	6/18/2015 8:47	21.81	1.0	10.56	144.2	8.2	31.4
LMI-15	Low	6/18/2015 8:47	21.87	2.8	10.51	143.6	8.2	31.4
LMI-15	Low	6/18/2015 8:47	21.91	3.1	10.45	142.9	8.2	31.3
LMI-15	Low	6/18/2015 8:47	21.91	3.0	10.45	142.8	8.2	31.3
LMI-15	Low	6/18/2015 8:47	21.91	3.0	10.48	143.2	8.2	31.3
LMI-15	Low	6/18/2015 8:47	21.92	4.6	10.48	143.3	8.2	31.3
LMI-15	Low	6/18/2015 8:48	21.93	5.3	10.37	141.7	8.2	31.3
LMI-15	Low	6/18/2015 8:48	21.94	5.0	10.16	139	8.19	31.3
LMI-15	Low	6/18/2015 8:48	21.87	6.9	9.96	136.2	8.17	31.2
LMI-15	Low	6/18/2015 8:48	21.84	7.5	8.05	109.9	8.12	31.3
LMI-15	Low	6/18/2015 8:48	21.84	7.0	7.41	101.1	8.08	31.3
LMI-15	Low	6/18/2015 8:48	21.85	7.2	6.98	95.3	8.07	31.3
LMI-15	Low	6/18/2015 8:49	21.86	7.1	6.99	95.5	8.06	31.2
LMI-15	Low	6/18/2015 8:49	21.87	7.2	7.11	97.1	8.05	31.3
LMI-15	Low	6/18/2015 8:49	21.64	8.7	6.6	90	8.02	31.1
LMI-15	Low	6/18/2015 8:49	21.62	9.2	4.01	54.5	7.97	31.2
LMI-15	Low	6/18/2015 8:49	21.6	9.0	3.05	41.4	7.93	31.2
LMI-15	Low	6/18/2015 8:49	21.6	9.1	2.57	34.9	7.89	31.2
LMI-15	Low	6/18/2015 8:50	21.57	9.0	2.38	32.3	7.87	31.2
LMI-15	Low	6/18/2015 8:50	21.55	8.9	2.23	30.3	7.84	31.2
LMI-15	Low	6/18/2015 8:50	21.54	9.0	2.15	29.1	7.82	31.3
LMI-15	Low	6/18/2015 8:50	21.53	9.0	2.17	29.5	7.8	31.2
LMI-15	Low	6/18/2015 8:50	21.51	10.0	2.26	30.6	7.78	31.3
LMI-15	Low	6/18/2015 8:50	21.51	10.1	2.08	28.2	7.76	31.2
LMI-15	Low	6/18/2015 8:51	21.51	10.0	2	27.2	7.75	31.2
LMI-19	Low	6/18/2015 9:01	21.77	1.0	11.75	160.2	8.19	31.3
LMI-19	Low	6/18/2015 9:01	21.79	1.0	11.75	160.2	8.2	31.3
LMI-19	Low	6/18/2015 9:01	21.8	1.0	11.77	160.5	8.21	31.4
LMI-19	Low	6/18/2015 9:02	21.82	1.0	11.75	160.4	8.21	31.3
LMI-19	Low	6/18/2015 9:02	21.88	2.8	11.76	160.6	8.22	31.3
LMI-19	Low	6/18/2015 9:02	21.9	3.2	11.73	160.3	8.23	31.3
LMI-19	Low	6/18/2015 9:02	21.91	3.3	11.71	160	8.23	31.2
LMI-19	Low	6/18/2015 9:02	21.92	4.8	11.73	160.3	8.24	31.3
LMI-19	Low	6/18/2015 9:02	21.93	5.3	11.71	160.1	8.24	31.2
LMI-19	Low	6/18/2015 9:03	21.93	5.2	11.71	160.1	8.25	31.3
LMI-19	Low	6/18/2015 9:03	21.94	5.4	11.71	160.1	8.25	31.2
LMI-19	Low	6/18/2015 9:03	21.95	7.1	11.7	160	8.25	31.2
LMI-19	Low	6/18/2015 9:03	21.96	7.2	11.7	160	8.26	31.3
LMI-19	Low	6/18/2015 9:03	21.96	7.2	11.68	159.8	8.26	31.2
LMI-19	Low	6/18/2015 9:03	21.96	7.2	11.69	159.8	8.26	31.2
LMI-19	Low	6/18/2015 9:04	21.96	7.2	11.65	159.3	8.26	31.2
LMI-19	Low	6/18/2015 9:04	21.96	9.1	11.83	158.7	8.25	27.9
LMI-19	Low	6/18/2015 9:04	21.96	8.9	11.64	156.5	8.24	28.3
LMI-19	Low	6/18/2015 9:04	21.96	9.0	11.67	157.4	8.24	28.9
LMI-19	Low	6/18/2015 9:04	21.97	8.9	11.69	157.7	8.24	28.9
LMI-29	Low	6/18/2015 8:18	21.55	1.0	8.05	109.3	7.9	31.1
LMI-29	Low	6/18/2015 8:18	21.56	1.0	8.05	109.3	7.9	31.1
LMI-29	Low	6/18/2015 8:18	21.56	1.0	8.04	109.1	7.9	31.1
LMI-29	Low	6/18/2015 8:18	21.56	1.0	8.12	110.2	7.9	31.1
LMI-29	Low	6/18/2015 8:18	21.59	3.2	8.14	110.5	7.91	31.1
LMI-29	Low	6/18/2015 8:19	21.59	3.1	8.19	111.2	7.91	31.1
LMI-29	Low	6/18/2015 8:19	21.58	3.1	8.22	111.7	7.91	31.1
LMI-29	Low	6/18/2015 8:19	21.59	3.1	8.25	112	7.91	31.1
LMI-29	Low	6/18/2015 8:19	21.59	4.9	8.23	111.7	7.91	31.1
LMI-29	Low	6/18/2015 8:19	21.57	5.3	8.2	111.3	7.92	31.1
LMI-29	Low	6/18/2015 8:19	21.55	5.4	8.25	111.9	7.92	31.1
LMI-29	Low	6/18/2015 8:20	21.55	5.0	8.28	112.3	7.92	31.1
LMI-29	Low	6/18/2015 8:20	21.55	7.1	8.36	113.4	7.93	31.1
LMI-29	Low	6/18/2015 8:20	21.53	7.2	8.81	119.4	7.95	31.1
LMI-29	Low	6/18/2015 8:20	21.52	7.3	8.97	121.6	7.96	31.1
LMI-29	Low	6/18/2015 8:20	21.51	7.1	9.09	123.3	7.97	31.1

APPENDIX A

WATER QUALITY MONITORING DATA

Lake Merritt
Oakland, California

Sample Location	Tide	Date and Time	Temp. (°C)	Depth (ft. bs)	Dissolved Oxygen (mg/L)	Dissolved Oxygen Saturation (%)	pH (pH)	Salinity (psu)
LMI-29	Low	6/18/2015 8:20	21.51	8.8	9.18	124.6	7.98	31.1
LMI-29	Low	6/18/2015 8:21	21.49	9.1	9.23	125.1	7.99	31.1
LMI-29	Low	6/18/2015 8:21	21.49	9.2	9.27	125.8	7.99	31.2
LMI-29	Low	6/18/2015 8:21	21.48	9.1	9.31	126.2	8	31.1
LMI-29	Low	6/18/2015 8:21	21.47	10.6	9.28	125.8	8.01	31.1
LMI-29	Low	6/18/2015 8:21	21.44	11.1	9.23	125	8.01	31.1
LMI-29	Low	6/18/2015 8:22	21.43	11.1	9.17	124.2	8.02	31.1
LMI-29	Low	6/18/2015 8:22	21.42	11.1	9.16	124	8.02	31.1
LMI-30	Low	6/18/2015 9:27	22.37	1.0	11.35	155.5	8.31	30.3
LMI-30	Low	6/18/2015 9:27	22.39	0.9	11.47	157.1	8.31	30.3
LMI-30	Low	6/18/2015 9:28	22.39	1.0	11.49	157.5	8.32	30.2
LMI-30	Low	6/18/2015 9:28	22.39	1.0	11.48	157.3	8.32	30.2
LMI-30	Low	6/18/2015 9:28	22.45	3.1	11.73	161.2	8.33	30.8
LMI-30	Low	6/18/2015 9:28	22.49	3.0	12.24	168.6	8.33	30.9
LMI-30	Low	6/18/2015 9:28	22.52	3.0	12.52	172.7	8.34	31
LMI-30	Low	6/18/2015 9:28	22.54	2.9	12.71	175.3	8.35	31
LMI-30	Low	6/18/2015 9:29	22.54	5.1	12.71	175.5	8.35	31.1
LMI-30	Low	6/18/2015 9:29	22.54	5.1	12.36	170.6	8.35	31.1
LMI-30	Low	6/18/2015 9:29	22.54	5.0	12.2	168.3	8.34	31.1
LMI-30	Low	6/18/2015 9:29	22.54	5.0	12.09	166.8	8.34	31.1
LMI-30	Low	6/18/2015 9:29	22.55	5.0	12.07	166.5	8.34	31.1
LMI-30	Low	6/18/2015 9:29	22.55	5.0	12	165.6	8.34	31.1
LMI-30	Low	6/18/2015 9:30	22.54	6.9	11.9	164.3	8.32	31.1
LMI-30	Low	6/18/2015 9:30	22.54	6.8	10.52	145.3	8.28	31.2
LMI-30	Low	6/18/2015 9:30	22.54	7.1	9.8	135.3	8.25	31.2
LMI-30	Low	6/18/2015 9:30	22.54	7.1	8.99	124.1	8.21	31.2
LMI-30	Low	6/18/2015 9:30	22.54	7.3	8.25	113.9	8.18	31.1
LMI-30	Low	6/18/2015 9:30	22.53	7.0	7.63	105.3	8.14	31.1
LMI-30	Low	6/18/2015 9:31	22.53	6.9	7.31	100.9	8.12	31.1
LMI-30	Low	6/18/2015 9:31	22.53	6.8	7.25	100.1	8.11	31.1
LMI-30	Low	6/18/2015 9:31	22.51	8.9	7.32	101.1	8.09	31.1
LMI-30	Low	6/18/2015 9:31	22.46	9.1	5.95	82	8.04	31.1
LMI-30	Low	6/18/2015 9:31	22.43	9.1	5.09	70.1	8	31.1
LMI-30	Low	6/18/2015 9:31	22.42	9.1	3.18	43.7	7.95	31
LMI-30	Low	6/18/2015 9:32	22.43	9.0	2.57	35.4	7.91	31.2
LMI-30	Low	6/18/2015 9:32	22.4	9.0	2.35	32.4	7.88	31.1
LMI-30	Low	6/18/2015 9:32	22.4	9.0	2.12	29.3	7.86	31.2
LMI-30	Low	6/18/2015 9:32	22.4	8.9	1.99	27.5	7.83	31.2
LMI-30	Low	6/18/2015 9:32	22.39	8.9	1.89	26.1	7.81	31.2

Abbreviations

°C = degrees Celsius
ft. bs = feet below water surface
Ohm-cm = ohm centimeter
mm Hg = millimeters in Mercury
mg/L = milligrams per liter
µS/cm = micro Siemens per centimeter
mV = millivolts
psu = practical salinity units

APPENDIX B

Water Quality Observations

APPENDIX B

WATER QUALITY OBSERVATIONS
Lake Merritt
Oakland, California

Date	Location	Arrival Time	Departure Time	Gate Position (open or closed)	Tide	Site Odor	Water Odor	Water Clarity	Water Color	Sky Condition	Precipitation	Wind Direction	Beaufort Scale	Secchi Disk (ft.)
7/17/2014	LMI-15	12:18	12:36	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	NW	2	8
7/17/2014	LMI-19	11:00	11:15	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	SW	2	8
7/17/2014	LMI-29	11:30	11:52	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	NW	2	6
7/17/2014	LMI-30	10:20	10:48	Open	Low	None	None	Cloudy	Green	Overcast	None	SW	2	6
7/17/2014	LM-Channel Entrance	14:00	14:20	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	NW	2	8
7/22/2014	LMI-15	12:20	12:40	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	NW	2	6
7/22/2014	LMI-19	11:45	12:10	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	NW	1	8
7/22/2014	LMI-29	13:10	13:35	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	N	1	6
7/22/2014	LMI-30	13:55	14:15	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	NW	2	6
7/22/2014	LM-Channel Entrance	15:30	16:10	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	NW	2	9
8/14/2014	LMI-15	11:50	12:05	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	SW	2	9
8/14/2014	LMI-19	11:15	11:35	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	SW	1	9
8/14/2014	LMI-29	12:22	12:40	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	SW	1	6
8/14/2014	LMI-30	10:20	10:50	Open	Low	None	None	Cloudy	Green	Overcast	None	SW	1	9
8/14/2014	LM-Channel Entrance	13:50	14:20	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	NW	2	8
8/18/2014	LMI-15	10:00	10:20	Open	High	None	None	Cloudy	Green	Overcast	Foggy	NW	2	9
8/18/2014	LMI-19	9:47	10:00	Open	High	None	None	Cloudy	Green	Overcast	Foggy	NW	2	9
8/18/2014	LMI-29	10:45	11:05	Open	High	None	None	Cloudy	Green	Overcast	Foggy	NW	2	7
8/18/2014	LMI-30	9:20	9:35	Open	High	None	None	Cloudy	Green	Overcast	Foggy	NW	1	9
8/18/2014	LM-Channel Entrance	12:10	12:35	Open	High	None	None	Cloudy	Green	Overcast	None	NW	2	8
9/5/2015	LMI-15	12:00	12:15	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	W	2	6.5
9/5/2015	LMI-19	11:40	11:55	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	SW	2	6.5
9/5/2015	LMI-29	12:35	12:50	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	W	1	4.5
9/5/2015	LMI-30	11:05	11:25	Open	High	None	None	Cloudy	Green	Overcast	None	SW	1	6
9/5/2015	LM-Channel Entrance	14:00	14:25	Open	High	None	None	Cloudy	Green	Clear	None	W	2	11
9/12/2014	LMI-15	10:05	10:20	Open	Low	None	None	Cloudy	Green	Clear	None	W	2	6.5
9/12/2014	LMI-19	9:37	10:00	Open	Low	None	None	Cloudy	Green	Clear	None	W	1	7
9/12/2014	LMI-29	10:40	10:55	Open	Low	None	None	Cloudy	Green	Clear	None	W	1	5.5
9/12/2014	LMI-30	9:20	9:35	Open	Low	None	None	Cloudy	Green	Clear	None	w	1	7
9/12/2014	LM-Channel Entrance	12:00	12:20	Open	Low	None	None	Cloudy	Green	Clear	None	w	2	9.5
10/23/2014	LMI-15	13:15	13:30	Closed	High	None	None	Cloudy	Green	Partly Cloudy	None	SW	1	4.5
10/23/2014	LMI-19	12:15	12:30	Closed	High	None	None	Cloudy	Green	Partly Cloudy	None	SW	0	4.5
10/23/2014	LMI-29	11:30	11:50	Closed	High	None	None	Cloudy	Green	Partly Cloudy	None	SW	0	4.5
10/23/2014	LMI-30	12:50	13:00	Closed	High	None	None	Cloudy	Green	Partly Cloudy	None	SW	1	4.5
10/23/2014	LM-Channel Entrance	14:00	14:15	Closed	High	None	None	Cloudy	Green	Partly Cloudy	None	W	1	7.5
10/30/2014	LMI-15	13:17	13:30	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	NW	2	4
10/30/2014	LMI-19	13:00	13:15	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	W	1	4.2
10/30/2014	LMI-29	12:30	12:45	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	NW	0	4.5
10/30/2014	LMI-30	13:45	14:00	Open	Low	None	None	Cloudy	Green/Brown	Partly Cloudy	None	NW	1	2
10/30/2014	LM-Channel Entrance	15:10	15:25	Open	Low	None	None	Cloudy	Green	Overcast	None	W	2	8.5
11/13/2014	LMI-15	11:40	11:55	Closed	Low	None	None	Cloudy	Green	Overcast	None	N	1	5
11/13/2014	LMI-19	11:25	11:40	Closed	Low	None	None	Cloudy	Green	Overcast	None	NW	1	4.5
11/13/2014	LMI-29	12:10	12:30	Closed	Low	None	None	Cloudy	Green	Partly Cloudy	None	NW	1	4

APPENDIX B

WATER QUALITY OBSERVATIONS
Lake Merritt
Oakland, California

Date	Location	Arrival Time	Departure Time	Gate Position (open or closed)	Tide	Site Odor	Water Odor	Water Clarity	Water Color	Sky Condition	Precipitation	Wind Direction	Beaufort Scale	Secchi Disk (ft.)
11/13/2014	LMI-30	-	-	-	-	-	-	-	-	-	-	-	-	-
11/13/2014	LM-Channel Entrance	13:35	13:55	Closed	Low	None	None	Cloudy	Green	Overcast	Foggy	N	1	7
11/18/2014	LMI-15	9:48	10:05	Closed	High	None	None	Cloudy	Green	Partly Cloudy	None	N	0	6
11/18/2014	LMI-19	10:10	10:20	Closed	High	None	None	Cloudy	Green	Partly Cloudy	None	N	1	3.5
11/18/2014	LMI-29	9:20	9:35	Closed	High	None	None	Cloudy	Green	Partly Cloudy	None	-	0	3.5
11/18/2014	LMI-30	-	-	-	-	-	-	-	-	-	-	-	-	-
11/18/2014	LM-Channel Entrance	11:20	11:45	Closed	High	None	None	Cloudy	Green	Partly Cloudy	None	W	1	8
12/5/2014	LMI-15	11:10	11:25	Open	High	None	None	Cloudy	Green	Overcast	None	SW	3	4
12/5/2014	LMI-19	11:28	11:45	Open	High	None	None	Cloudy	Green	Overcast	None	SW	3	4
12/5/2014	LMI-29	12:25	12:35	Open	High	None	None	Cloudy	Green/Brown	Overcast	None	SW	4	4
12/5/2014	LMI-30	12:00	12:15	Open	High	None	None	Cloudy	Green/Brown	Overcast	None	S	3	4.5
12/5/2014	LM-Channel Entrance	14:00	14:20	Open	High	None	None	Cloudy	Green	Overcast	None	SW	4	3.5
12/26/2015	LMI-15	10:20	10:30	Open	Low	None	None	Cloudy	Green/Brown	Clear	None	N	4	3.5
12/26/2015	LMI-19	10:50	11:05	Open	Low	None	None	Cloudy	Green/Brown	Clear	None	N	3	3.5
12/26/2015	LMI-29	9:55	10:15	Open	Low	Sulfides	None	Cloudy	Brown"rust"	Clear	None	N	3	2
12/26/2015	LMI-30-	11:20	11:30	Open	Low	None	None	Cloudy	Brown"rust"	Clear	None	N	2	3
12/26/2015	LM-Channel Entrance	12:25	12:59	Open	Low	None	None	Clear	Green	Clear	None	N	1	6
1/9/2015	LMI-15	10:15	10:30	Open	Low	None	None	Cloudy	Green/Brown	Partly Cloudy	None	NA	0	4
1/9/2015	LMI-19	10:35	10:50	Open	Low	None	None	Cloudy	Green/Brown	Partly Cloudy	None	NA	0	5
1/9/2015	LMI-29	9:40	10:00	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	NA	0	5
1/9/2015	LMI-30	11:00	11:15	Open	Low	None	None	Cloudy	Green/Brown	Partly Cloudy	None	NW	1	2.5
1/9/2015	LM-Channel Entrance	12:15	12:35	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	NW	1	7
1/30/2015	LMI-15	9:35	9:48	Closed	High	None	None	Cloudy	Green	Partly Cloudy	None	SW	1	5.25
1/30/2015	LMI-19	9:55	10:05	Closed	High	None	None	Cloudy	Green/Brown	Partly Cloudy	None	SW	2	3.25
1/30/2015	LMI-29	9:00	9:15	Closed	High	None	None	Cloudy	Green/Brown	Overcast	None	SW	1	3.5
1/30/2015	LMI-30	10:15	10:30	Closed	High	None	none	Cloudy	Brown"rust"	Partly Cloudy	None	SW	2	2.4
1/30/2015	LM-Channel Entrance	11:25	11:35	Closed	High	None	None	Cloudy	Green	Partly Cloudy	None	SW	2	8.2
2/9/2015	LMI-15	9:45	9:55	Open	Low	None	None	Cloudy	Green/Brown	Partly Cloudy	None	SW	2	2.5
2/9/2015	LMI-19	10:05	10:18	Open	Low	none	None	Cloudy	Green	Partly Cloudy	None	SW	2	3
2/9/2015	LMI-29	9:10	9:30	Open	Low	Sulfides	None	Cloudy	Brown"rust"	Partly Cloudy	None	SW	2	2
2/9/2015	LMI-30	10:35	10:45	Open	Low	None	None	Cloudy	Brown"rust"	Partly Cloudy	None	SW	2	2
2/9/2015	LM-Channel Entrance	11:40	11:59	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	SW	2	4.5
2/16/2015	LMI-15	10:10	10:25	Open	High	None	None	Cloudy	Green	Clear	None	N	1	7
2/16/2015	LMI-19	10:25	10:35	Open	High	None	None	Cloudy	Green/Brown	Clear	None	NW	1	5
2/16/2015	LMI-29	9:40	10:00	Open	High	Sulfides	None	Cloudy	Green/Brown	Clear	None	N	1	3
2/16/2015	LMI-30-	10:50	11:10	Open	High	None	None	Cloudy	Green	Clear	None	NW	1	4
2/16/2015	LM-Channel Entrance	11:55	12:15	Open	High	None	None	Cloudy	Green	Hazy	None	NW	2	8
3/11/2015	LMI-15	11:00	11:15	Closed	Low	None	None	Cloudy	Green	Partly Cloudy	None	w	2	5
3/11/2015	LMI-19	11:20	11:30	Closed	Low	None	None	Cloudy	Green	Partly Cloudy	None	w	2	5
3/11/2015	LMI-29	10:30	10:45	Closed	Low	None	None	Cloudy	Green	Partly Cloudy	None	W	2	4
3/11/2015	LMI-30	11:45	11:55	Closed	Low	Sulfides	None	Cloudy	Green	Partly Cloudy	None	W	2	4.5
3/11/2015	LM-Channel Entrance	12:35	13:00	Closed	Low	None	None	Cloudy	Green	Partly Cloudy	None	W	1	6.5
3/18/2015	LMI-15	11:35	11:50	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	W	2	6

APPENDIX B

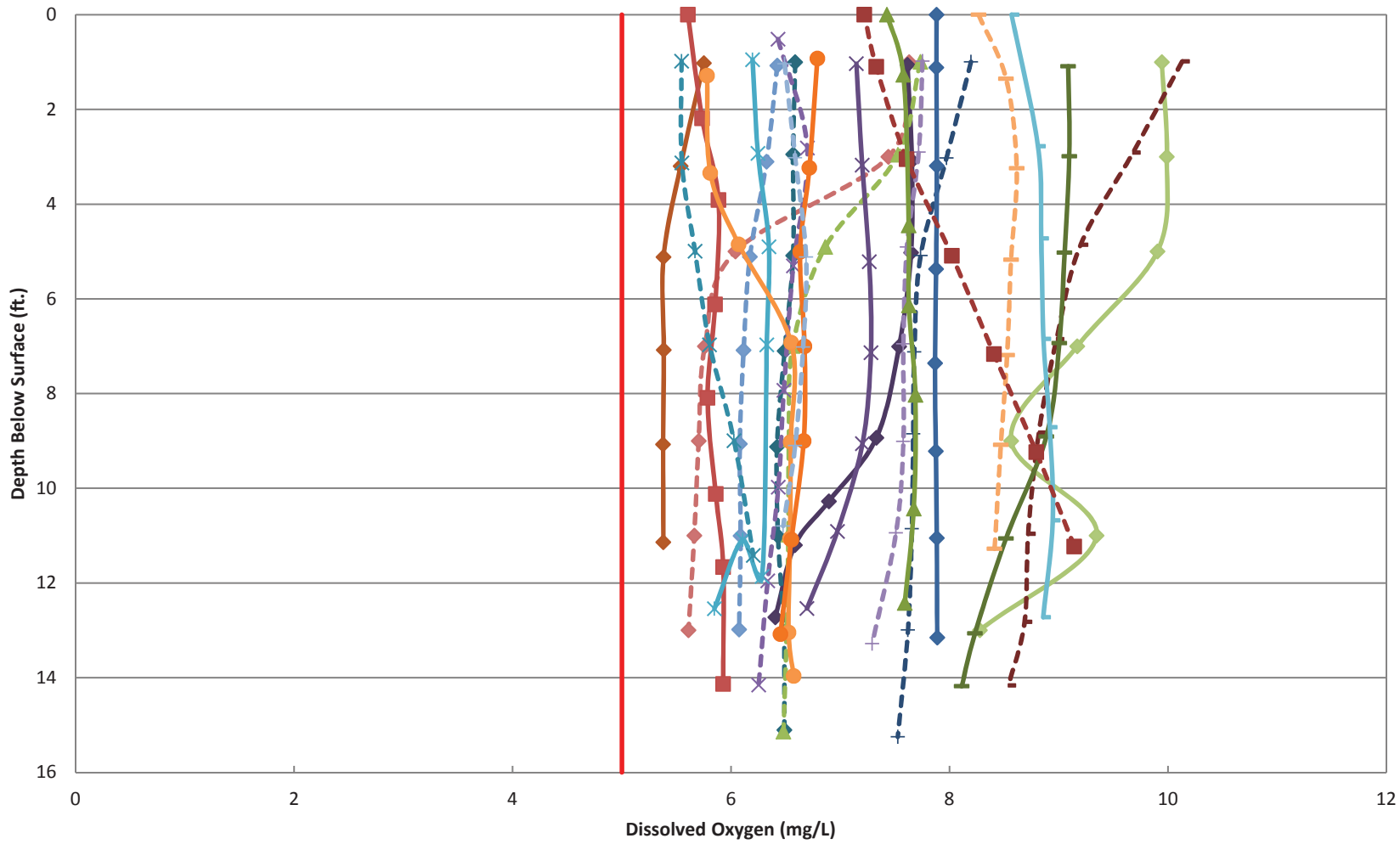
WATER QUALITY OBSERVATIONS
Lake Merritt
Oakland, California

Date	Location	Arrival Time	Departure Time	Gate Position (open or closed)	Tide	Site Odor	Water Odor	Water Clarity	Water Color	Sky Condition	Precipitation	Wind Direction	Beaufort Scale	Secchi Disk (ft.)
3/18/2015	LMI-19	11:50	12:00	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	W	2	5
3/18/2015	LMI-29	11:05	11:20	Open	High	Sulfides	None	Cloudy	Green	Clear	None	W	2	5
3/18/2015	LMI-30	12:15	12:25	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	W	1	4
3/18/2015	LM-Channel Entrance	13:07	13:26	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	W	2	7
4/9/2015	LMI-15	11:10	11:20	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	SW	1	7
4/9/2015	LMI-19	11:25	11:35	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	SW	2	7
4/9/2015	LMI-29	10:40	11:55	Open	Low	None	None	Cloudy	Green/Brown	Partly Cloudy	None	SW	1	7
4/9/2015	LMI-30	11:50	12:00	Open	Low	None	None	Cloudy	Green/Brown	Partly Cloudy	None	SW	3	7
4/9/2015	LM-Channel Entrance	12:45	13:00	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	SW	2	9
4/15/2015	LMI-15	10:45	11:05	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	N	2	7.5
4/15/2015	LMI-19	11:05	11:15	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	N	2	7
4/15/2015	LMI-29	10:26	10:40	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	N	1	5.5
4/15/2015	LMI-30	11:25	11:45	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	N	1	4.5
4/15/2015	LM-Channel Entrance	12:20	12:40	Open	High	None	None	Cloudy	Green	Partly Cloudy	None	N	2	6
5/13/2015	LMI-15	-	-	Closed	High	-	-	-	-	-	-	-	-	-
5/13/2015	LMI-19	10:12	10:20	Closed	High	None	None	Clear	Green	Partly Cloudy	None	W	4	9.5
5/13/2015	LMI-29	9:26	9:40	Closed	High	None	None	Clear	Green	Partly Cloudy	None	W	3	10
5/13/2015	LMI-30	10:33	10:45	Closed	High	None	None	Cloudy	Green	Partly Cloudy	None	W	4	8
5/13/2015	LM-Channel Entrance	9:57	10:05	Closed	High	None	None	Cloudy	Green	Partly Cloudy	None	W	4	9.5
5/21/2015	LMI-15	10:12	10:23	Open	Low	None	None	Cloudy	Green	Overcast	None	W	2	9.75
5/21/2015	LMI-19	10:27	10:35	Open	Low	None	None	Cloudy	Green	Overcast	None	SW	2	9
5/21/2015	LMI-29	9:45	9:57	Open	Low	None	None	Cloudy	Green	Overcast	None	W	1	6
5/21/2015	LMI-30	10:50	10:59	Open	Low	None	None	Cloudy	Green	Overcast	None	W	2	8
5/21/2015	LM-Channel Entrance	10:40	11:55	Open	Low	None	None	Cloudy	Green	Partly Cloudy	None	SW	2	5
6/11/2015	LMI-15	9:50	10:05	Closed	High	None	None	Cloudy	Green	Hazy	None	S	1	8
6/11/2015	LMI-19	10:10	10:20	Closed	High	None	None	Cloudy	Green	Clear	None	S	1	8
6/11/2015	LMI-29	9:21	9:35	Closed	High	None	None	Cloudy	Green/Brown	Hazy	None	S	1	6
6/11/2015	LMI-30	10:30	10:42	Closed	High	None	None	Cloudy	Brown"rust"	Hazy	None	S	1	1.5
6/11/2015	LM-Channel Entrance	11:30	11:45	Closed	High	None	None	Cloudy	Green	Clear	None	SW	2	8
6/18/2015	LMI-15	8:43	8:55	Closed	Low	None	None	Cloudy	Green	Partly Cloudy	None	S	2	5
6/18/2015	LMI-19	8:59	9:10	Closed	Low	None	None	Cloudy	Green	Partly Cloudy	None	S	2	5
6/18/2015	LMI-29	8:10	8:20	Closed	Low	None	None	Cloudy	Green	Partly Cloudy	None	S	2	6.5
6/18/2015	LMI-30	9:24	9:35	Closed	Low	None	None	Cloudy	Green/Brown	Partly Cloudy	None	S	2	4
6/18/2015	LM-Channel Entrance	10:25	10:40	Closed	Low	None	None	Cloudy	Green	Partly Cloudy	None	S	2	5

APPENDIX C

Plots of Dissolved Oxygen Versus Depth and July 2014 – June 2015 and September 2005 – September 2006

S:\OD14\170670\170670.02\15_0803_wqmr_fig_c-01.ai



Water Quality Objective
8/18/2014
10/30/2014
12/26/2014
2/16/2015
4/15/2015
6/18/2015
7/17/2014
9/05/2014
11/13/2014
1/9/2015
3/11/2015
5/13/2015
7/22/2014
9/12/2014
11/18/2014
1/30/2015
3/18/2015
5/21/2015
8/14/2014
10/23/2014
12/5/2014
2/9/2015
4/9/2015
6/11/2015

Solid Line Symbols = High Tide
Dashed Line Symbols = Low Tide

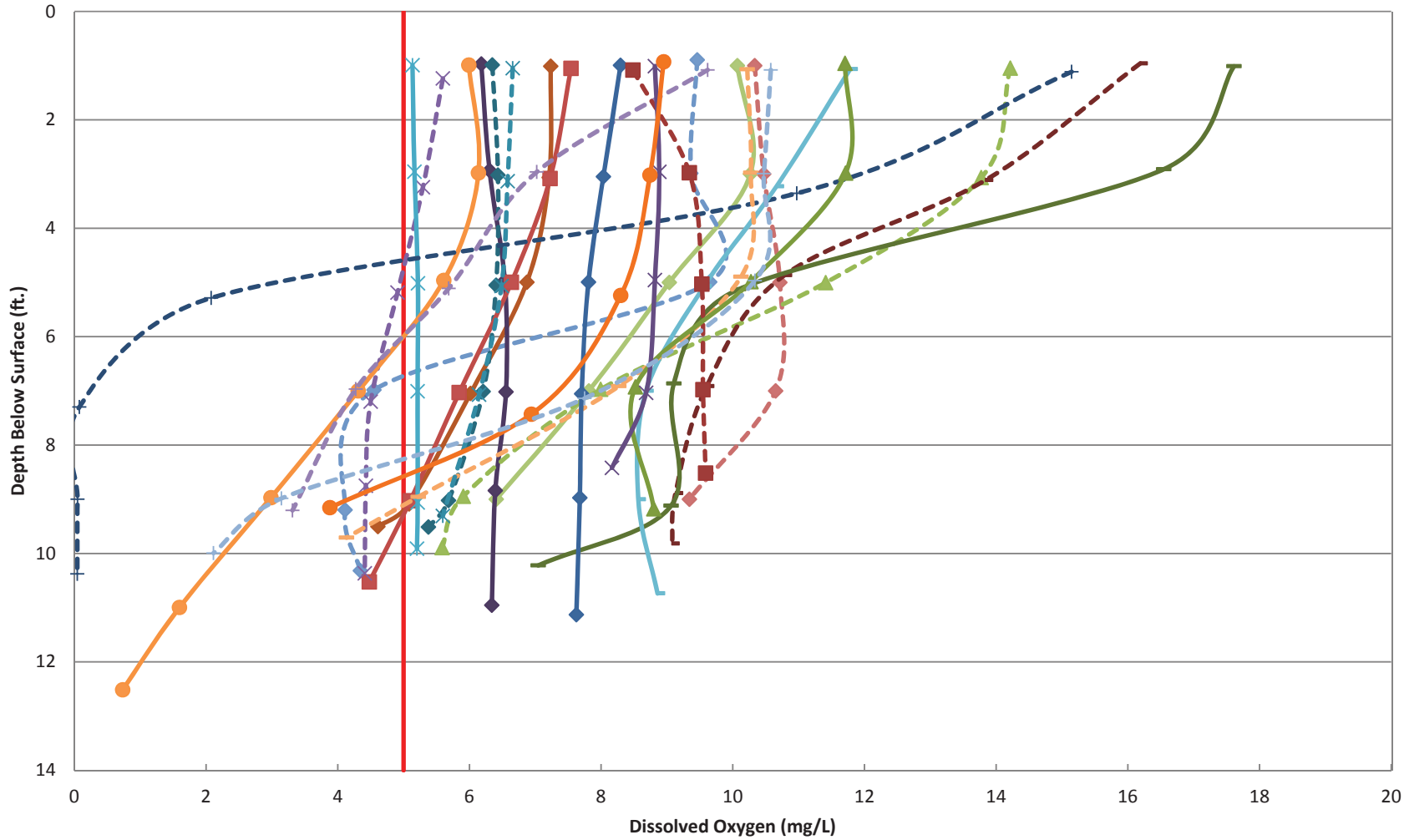
LAKE MERRITT CHANNEL ENTRANCE
DISSOLVED OXYGEN
Lake Merritt
Water Quality Monitoring
Oakland, California

amec foster wheeler

Date: 08/28/2015 | Project No. OD14170670.02

Figure
C-1

S:\OD14\170670\170670.02\15_0803_wqmr_fig_c-02.ai



Water Quality Objective
7/17/2014
7/22/2014
8/14/2014
8/18/2014
9/05/2014
9/12/2014
10/23/2014
10/30/2014
11/13/2014
11/18/2014
12/5/2014
12/26/2014
1/9/2015
1/30/2015
2/9/2015
2/16/2015
3/11/2015
3/18/2015
4/9/2015
4/15/2015
5/13/2015
5/21/2015
6/11/2015
6/18/2015

Solid Line Symbols = High Tide
Dashed Line Symbols = Low Tide

LMI-15 DISSOLVED OXYGEN
Lake Merritt
Water Quality Monitoring
Oakland, California

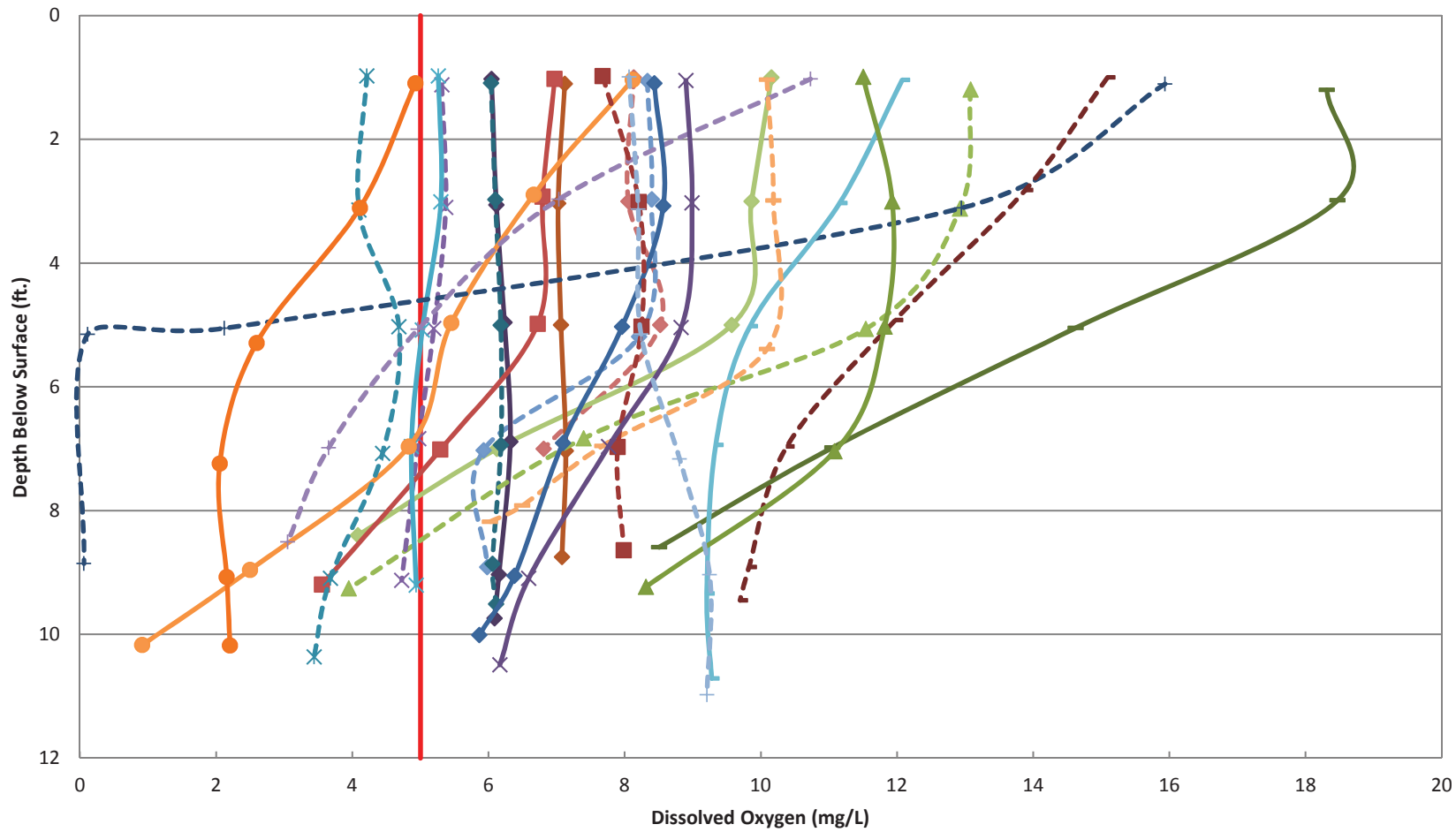
amec foster wheeler

Date: 08/28/2015

Project No. OD14170670.02

Figure
C-2

S:\OD14\170670\170670.02\15_0803_wqmr_fig_c-03.ai



Water Quality Objective
7/17/2014
7/22/2014
8/14/2014
8/18/2014
9/05/2014
9/12/2014
10/23/2014
10/30/2014
11/13/2014
11/18/2014
12/5/2014
12/26/2014
1/9/2015
1/30/2015
2/9/2015
2/16/2015
3/11/2015
3/19/2015
4/9/2015
4/15/2015
5/13/2015
5/21/2015
6/11/2015
6/18/2015

Solid Line Symbols = High Tide
Dashed Line Symbols = Low Tide

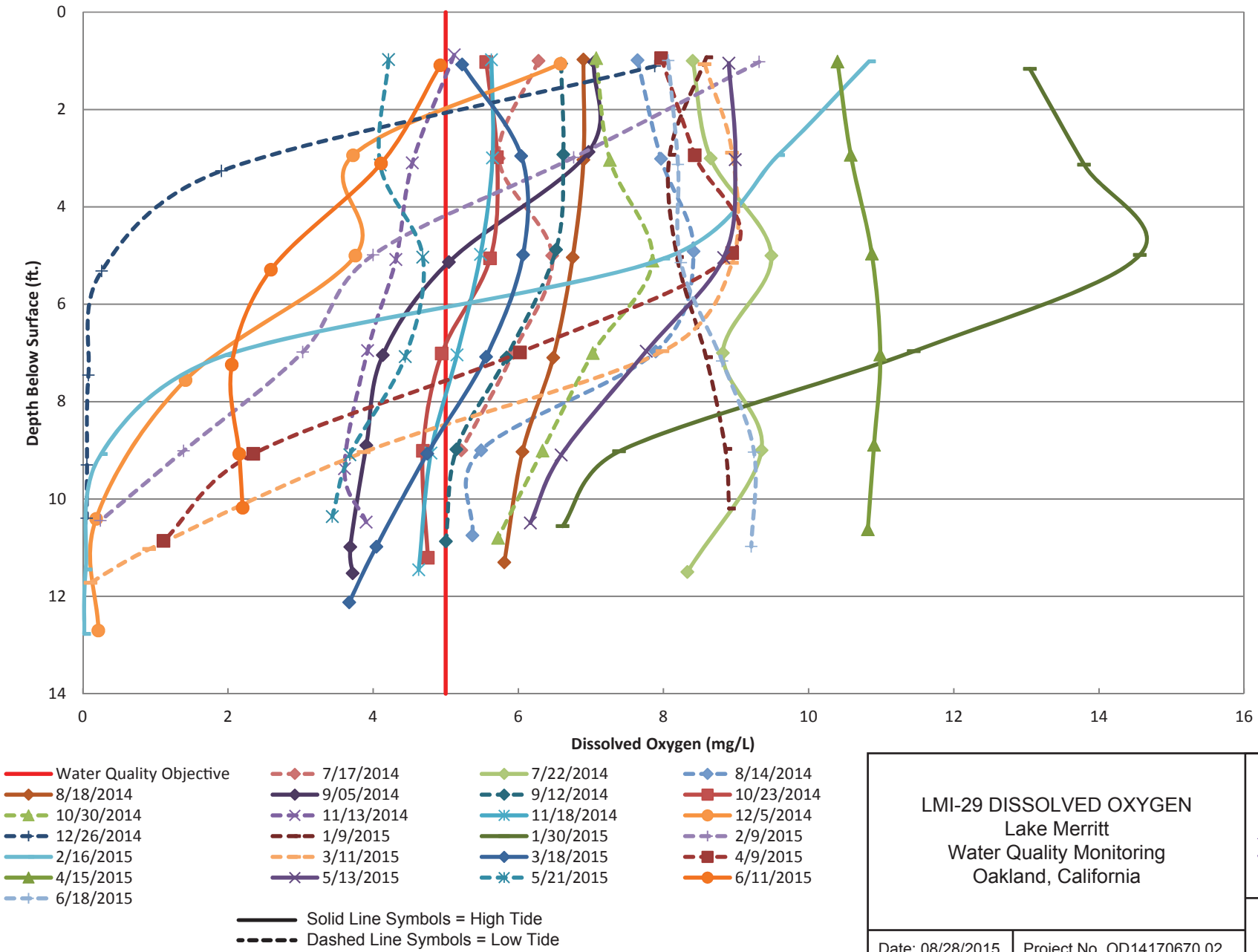
LMI-19 DISSOLVED OXYGEN
Lake Merritt
Water Quality Monitoring
Oakland, California

amec foster wheeler

Date: 08/28/2015 | Project No. OD14170670.02

Figure
C-3

S:\OD14\170670\170670.02\15_0803_wqmr_fig_c-04.ai



LMI-29 DISSOLVED OXYGEN
Lake Merritt
Water Quality Monitoring
Oakland, California

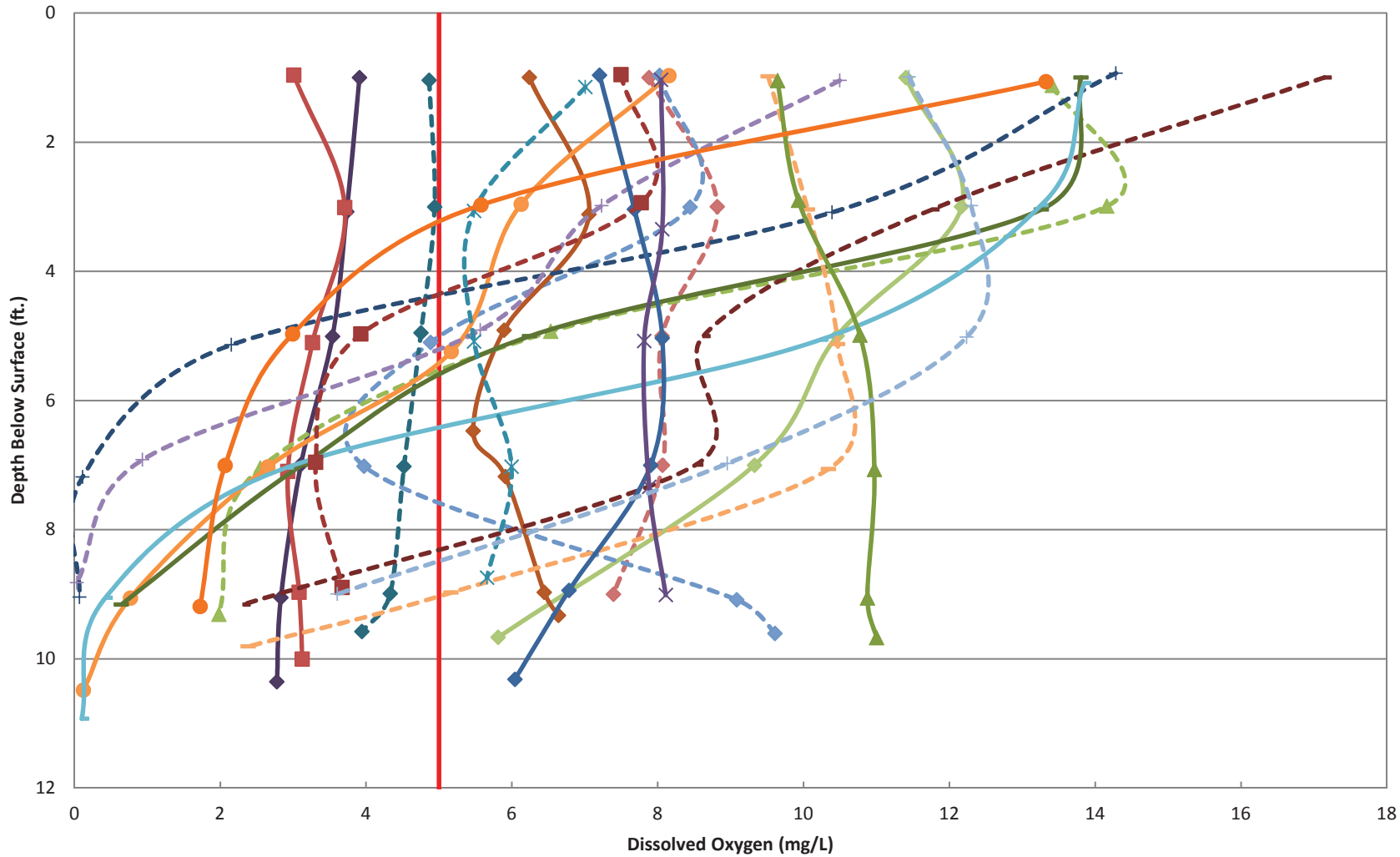
amec foster wheeler

Date: 08/28/2015

Project No. OD14170670.02

Figure
C-4

S:\OD14\170670\170670.02\15_0803_wqmr_fig_c-05.ai



Water Quality Objective
7/17/2014
7/22/2014
8/14/2014
8/18/2014
9/05/2014
9/12/2014
10/23/2014
10/30/2014
12/5/2014
12/26/2014
1/9/2015
1/30/2015
2/9/2015
2/16/2015
3/11/2015
3/18/2015
4/9/2015
4/15/2015
5/13/2015
5/21/2015
6/11/2015
6/18/2015

Solid Line Symbols = High Tide
Dashed Line Symbols = Low Tide

Note:
1. Monitoring was not conducted on November 13, 2014 and November 18, 2014 because LMI-30 was inaccessible.

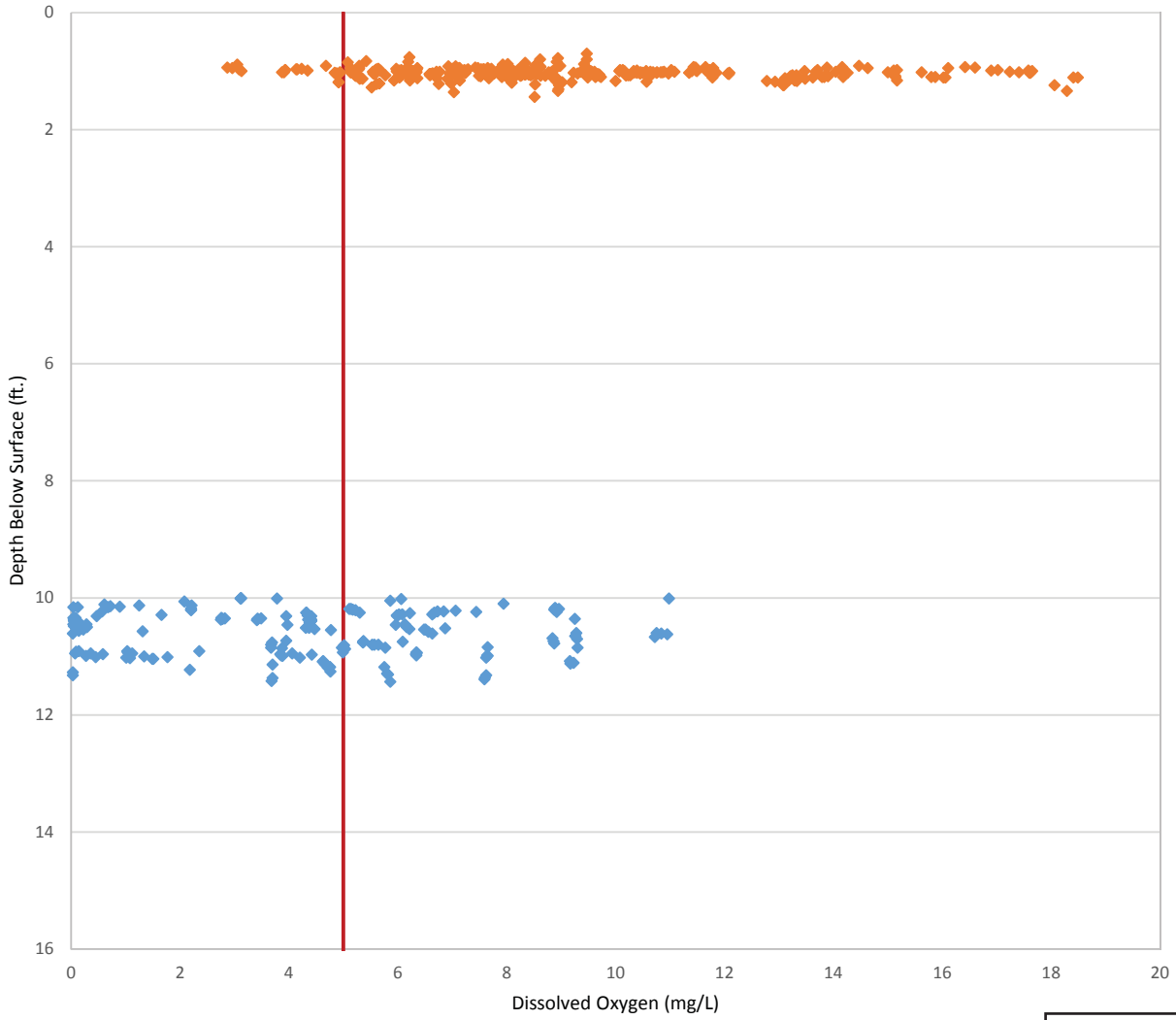
LMI-30 DISSOLVED OXYGEN
Lake Merritt
Water Quality Monitoring
Oakland, California

amec foster wheeler

Date: 08/28/2015 | Project No. OD14170670.02

Figure
C-5

S:\OD14\170670\170670.02\15_0803_wqmr_fig_c-06.ai



1 ft from surface

1 ft from bottom

Water Quality Objective = 5.0 mg/L

2014-2015 STUDY MEASUREMENTS
1 FOOT FROM SURFACE AND BOTTOM
Lake Merritt
Water Quality Monitoring
Oakland, California

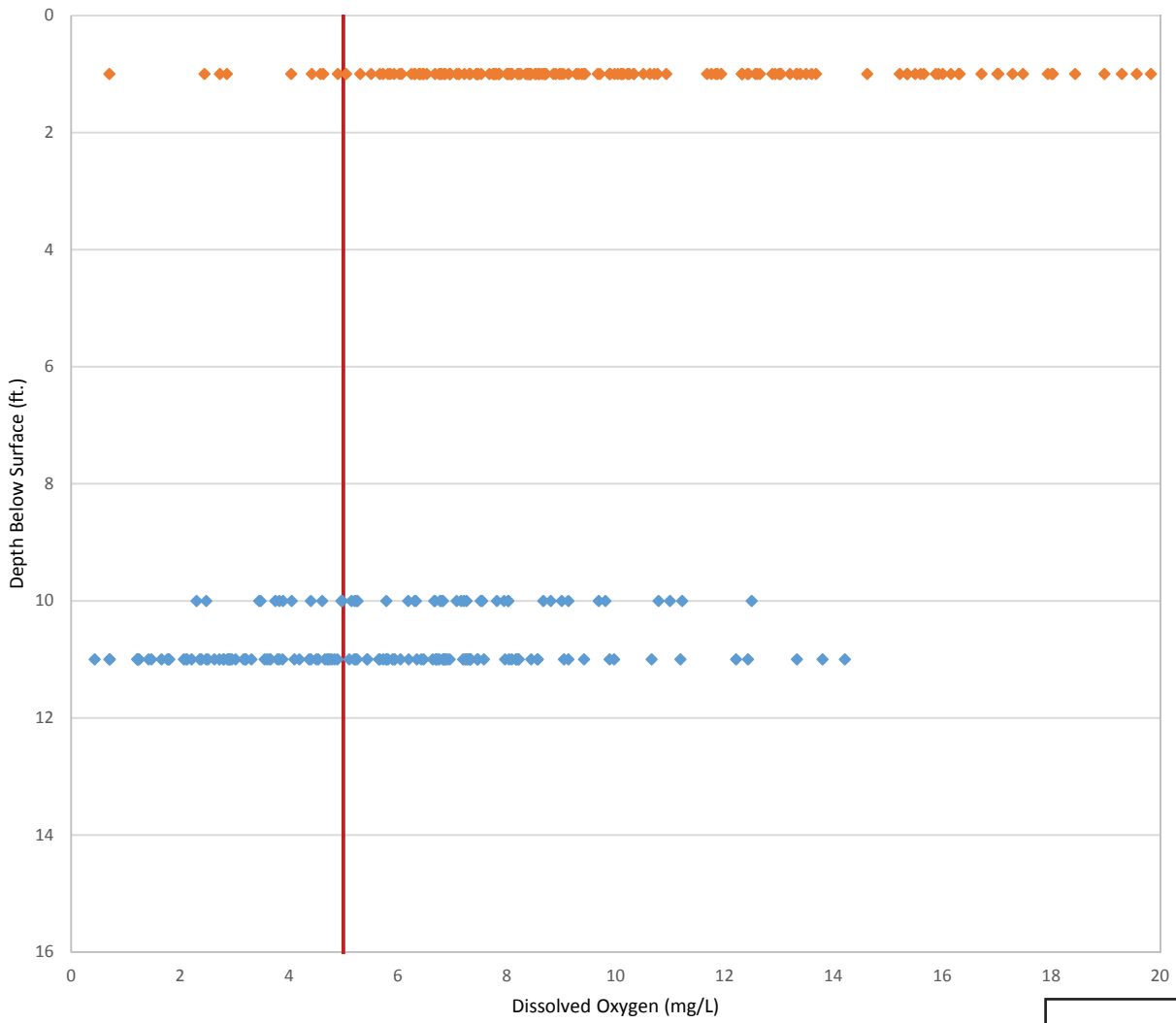
amec foster wheeler

Date: 05/16/2016

Project No. OD14170670.02

Figure
C-6

S:\OD14\170670\170670.02\15_0803_wqmr_fig_c-07.ai



1 ft from surface

1 ft from bottom

Water Quality Objective = 5.0 mg/L

2005-2006 STUDY MEASUREMENTS
1 FOOT FROM SURFACE AND BOTTOM
Lake Merritt
Water Quality Monitoring
Oakland, California

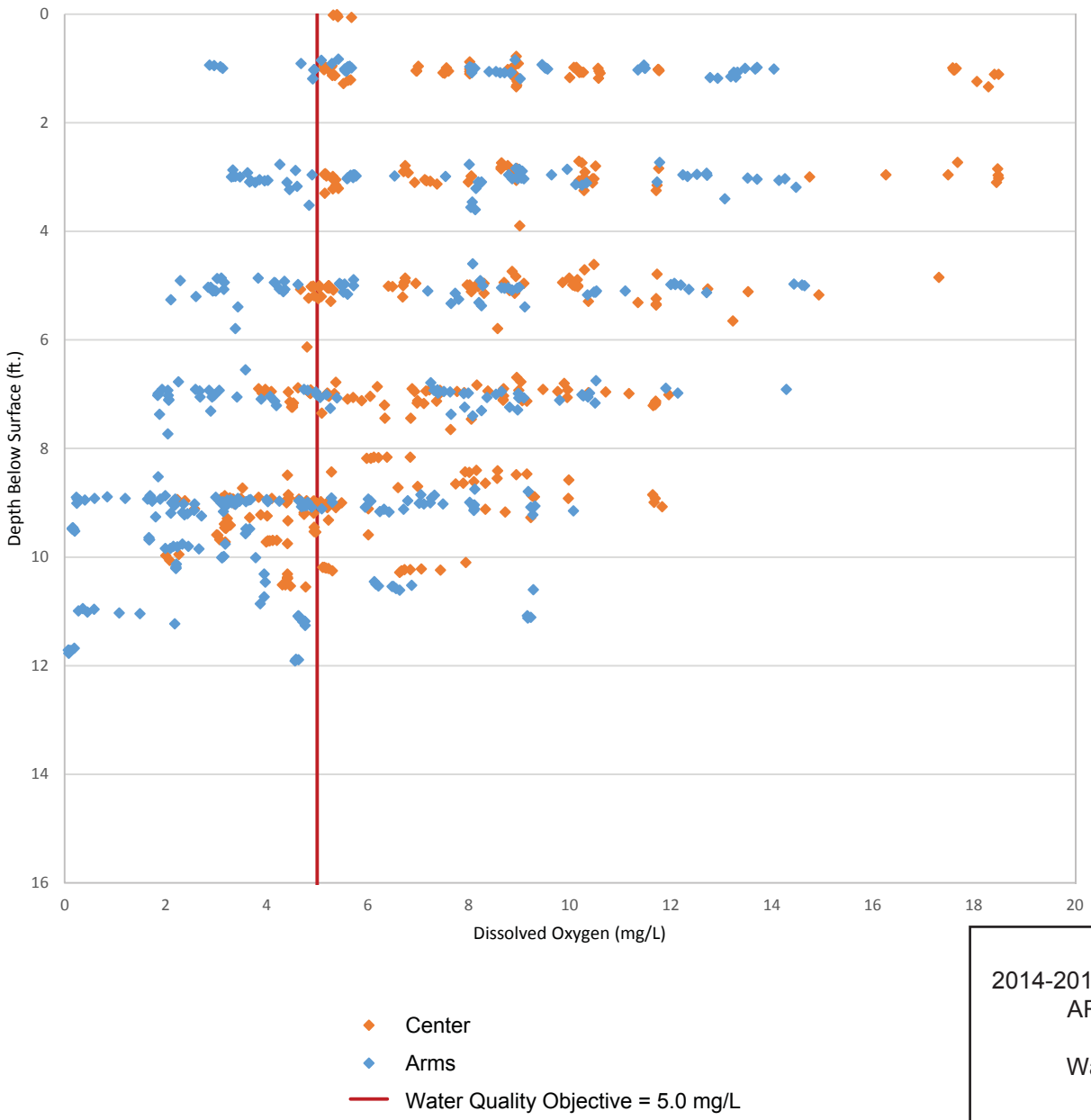
amec foster wheeler

Date: 05/16/2016

Project No. OD14170670.02

Figure
C-7

S:\OD14\170670\170670.02\15_0803_wqmr_fig_c-08.ai



Notes:
Center is LMI 15 and LMI 19
Arms is LMI 29 and LMI 30

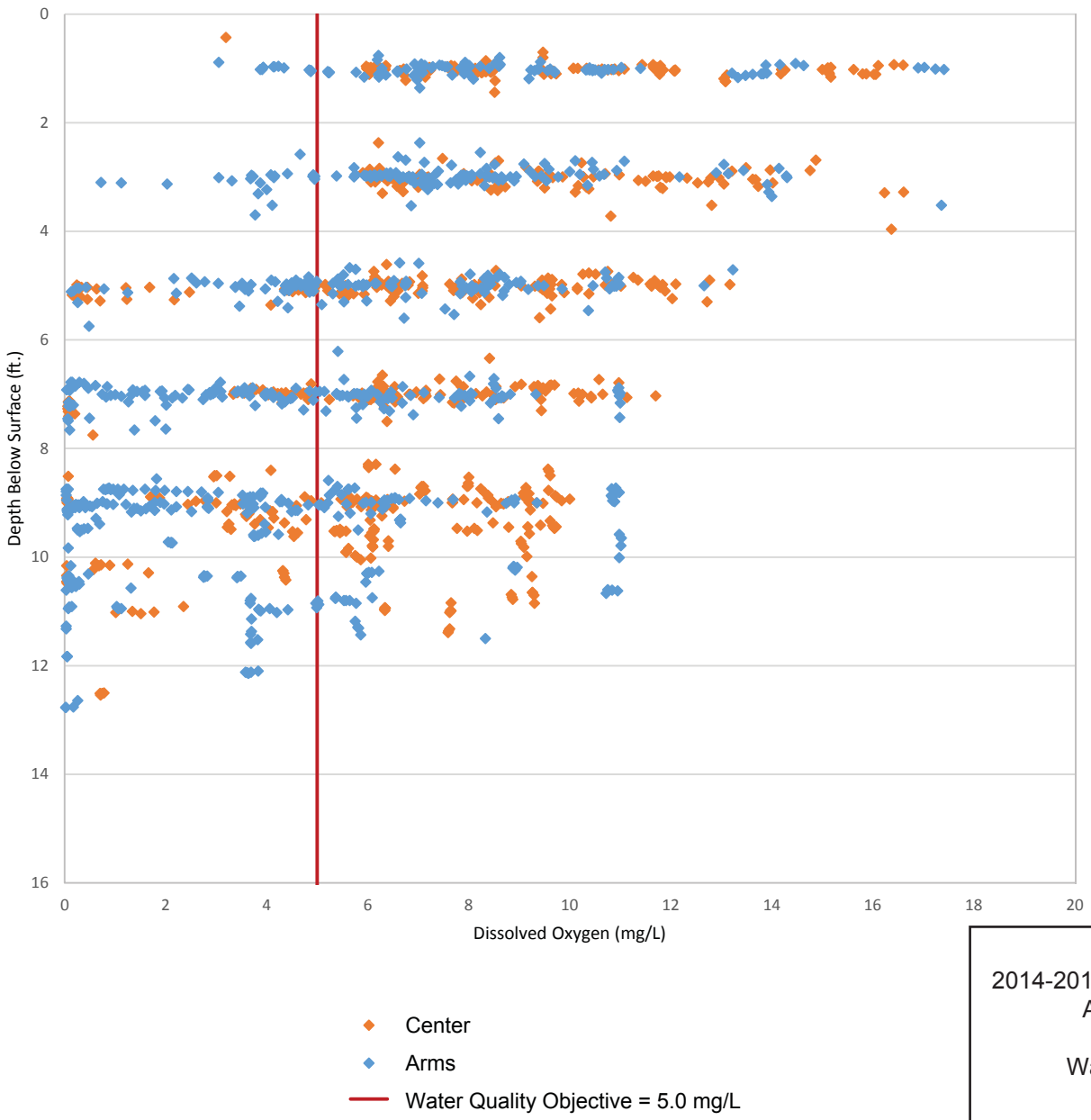
2014-2015 STUDY CENTER VERSUS ARMS GATES CLOSED
Lake Merritt
Water Quality Monitoring
Oakland, California

amec foster wheeler

Date: 05/16/2016 | Project No. OD14170670.02

Figure
C-8

S:\OD14\170670\170670.02\15_0803_wqmr_fig_c-09.ai



Notes:
Center is LMI 15 and LMI 19
Arms is LMI 29 and LMI 30

2014-2015 STUDY CENTER VERSUS ARMS GATES OPEN
Lake Merritt
Water Quality Monitoring
Oakland, California

amec foster wheeler

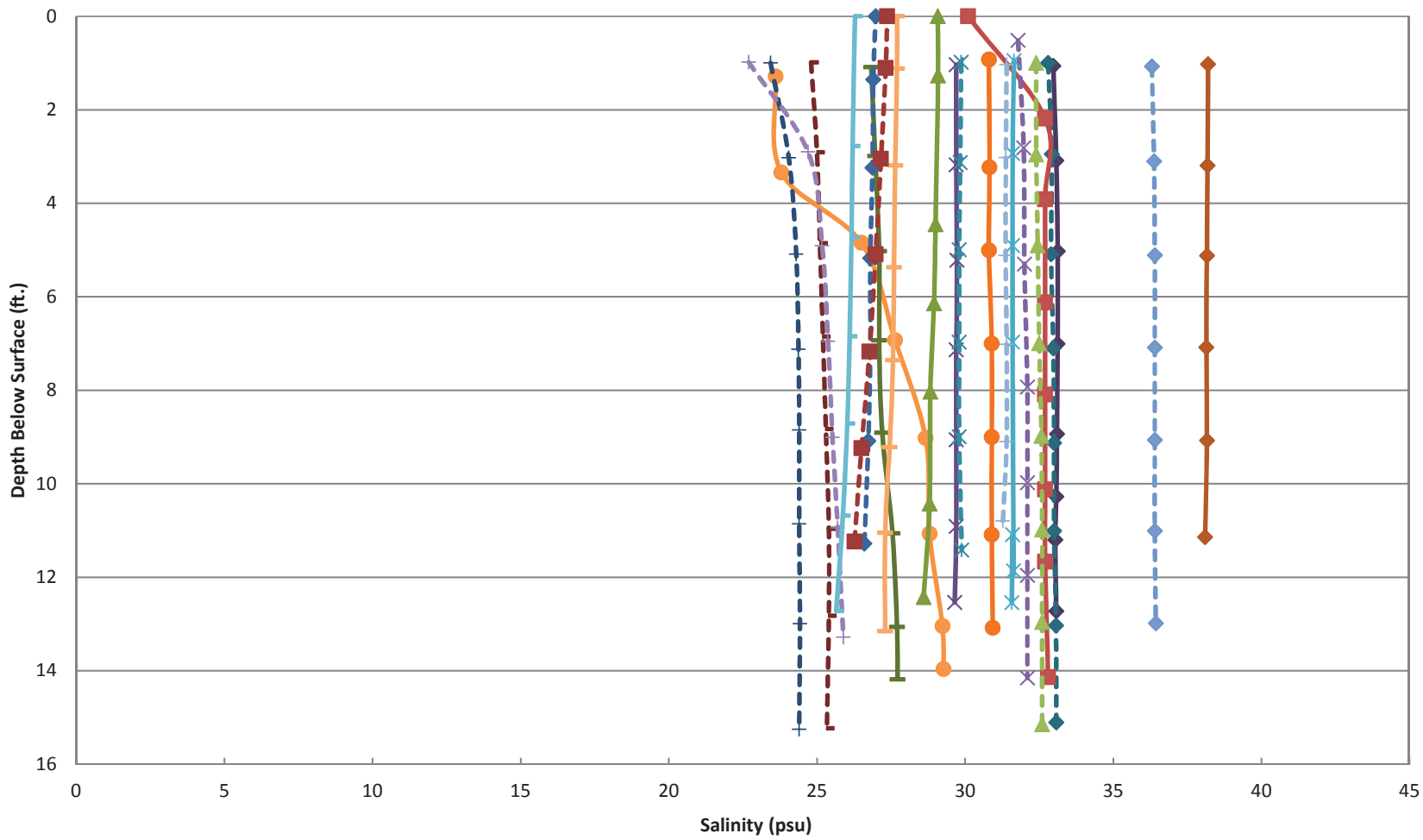
Date: 05/16/2016 | Project No. OD14170670.02

Figure
C-9

APPENDIX D

Plots of Salinity Versus Depth

S:\OD14\170670\170670.02\15_0803_wqmr_fig_d-01.ai



8/14/2014 8/18/2014 9/05/2014 9/12/2014 10/23/2014 10/30/2014
11/13/2014 11/18/2014 12/5/2014 12/26/2014 1/9/2015 1/30/2015
2/9/2015 2/16/2015 3/11/2015 3/18/2015 4/9/2015 4/15/2015
5/13/2015 5/21/2015 6/11/2015 6/18/2015

Solid Line Symbols = High Tide
Dashed Line Symbols = Low Tide

Note:
1. Salinity results were not collected on July 17 and July 22, 2014, because the water quality meter used did not include a salinity probe.

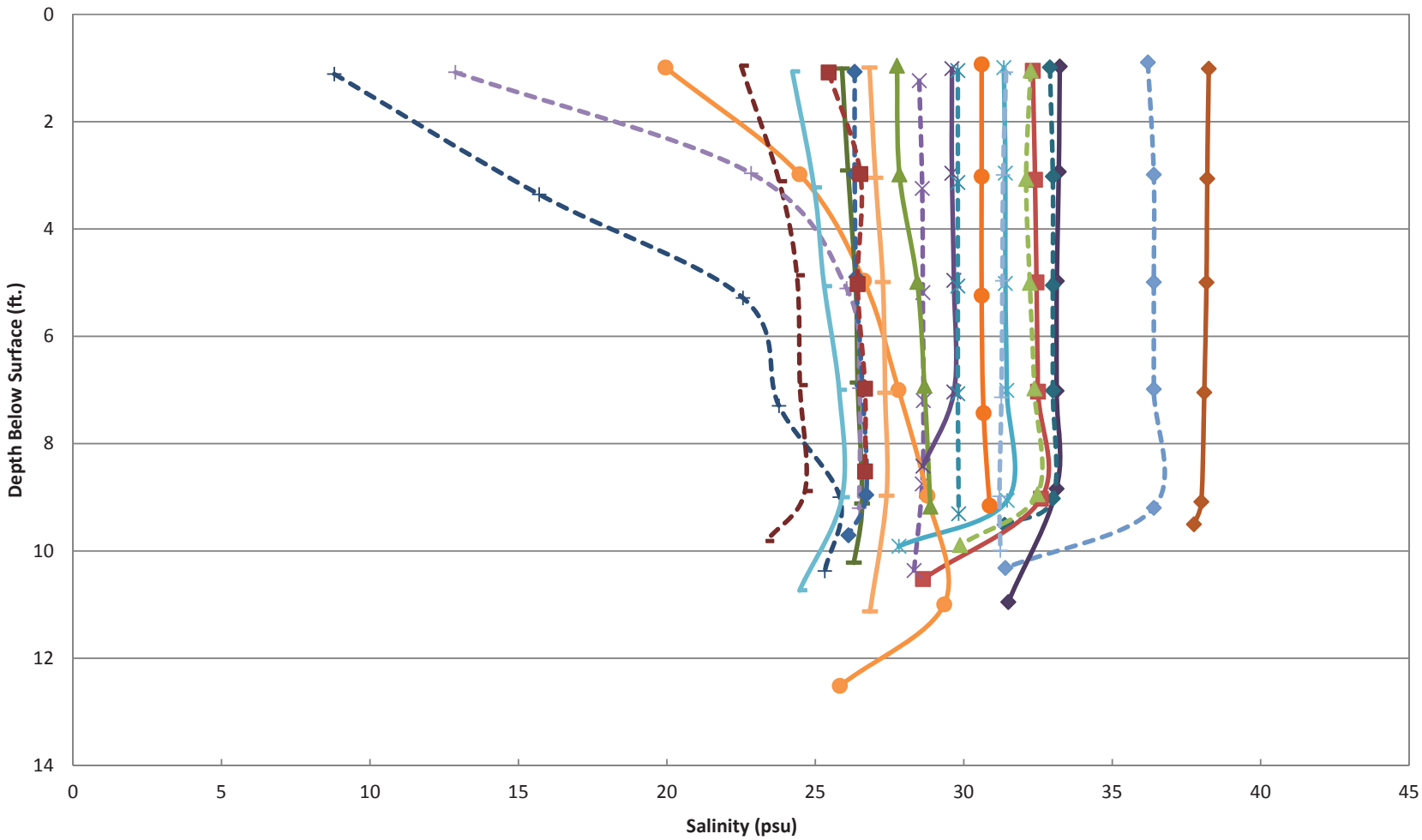
LAKE MERRITT CHANNEL
ENTRANCE SALINITY
Lake Merritt
Water Quality Monitoring
Oakland, California

amec foster wheeler

Date: 08/28/2015 | Project No. OD14170670.02

Figure
D-1

S:\OD14\170670\170670.02\15_0803_wqmr_fig_d-02.ai



8/14/2014 8/18/2014 9/05/2014 9/12/2014 10/23/2014 10/30/2014
11/13/2014 11/18/2014 12/5/2014 12/26/2014 1/9/2015 1/30/2015
2/9/2015 2/16/2015 3/11/2015 3/18/2015 4/9/2015 4/15/2015
5/13/2015 5/21/2015 6/11/2015 6/18/2015

Solid Line Symbols = High Tide
Dashed Line Symbols = Low Tide

Note:
1. Salinity results were not collected on July 17 and July 22, 2014, because the water quality meter used did not include a salinity probe.

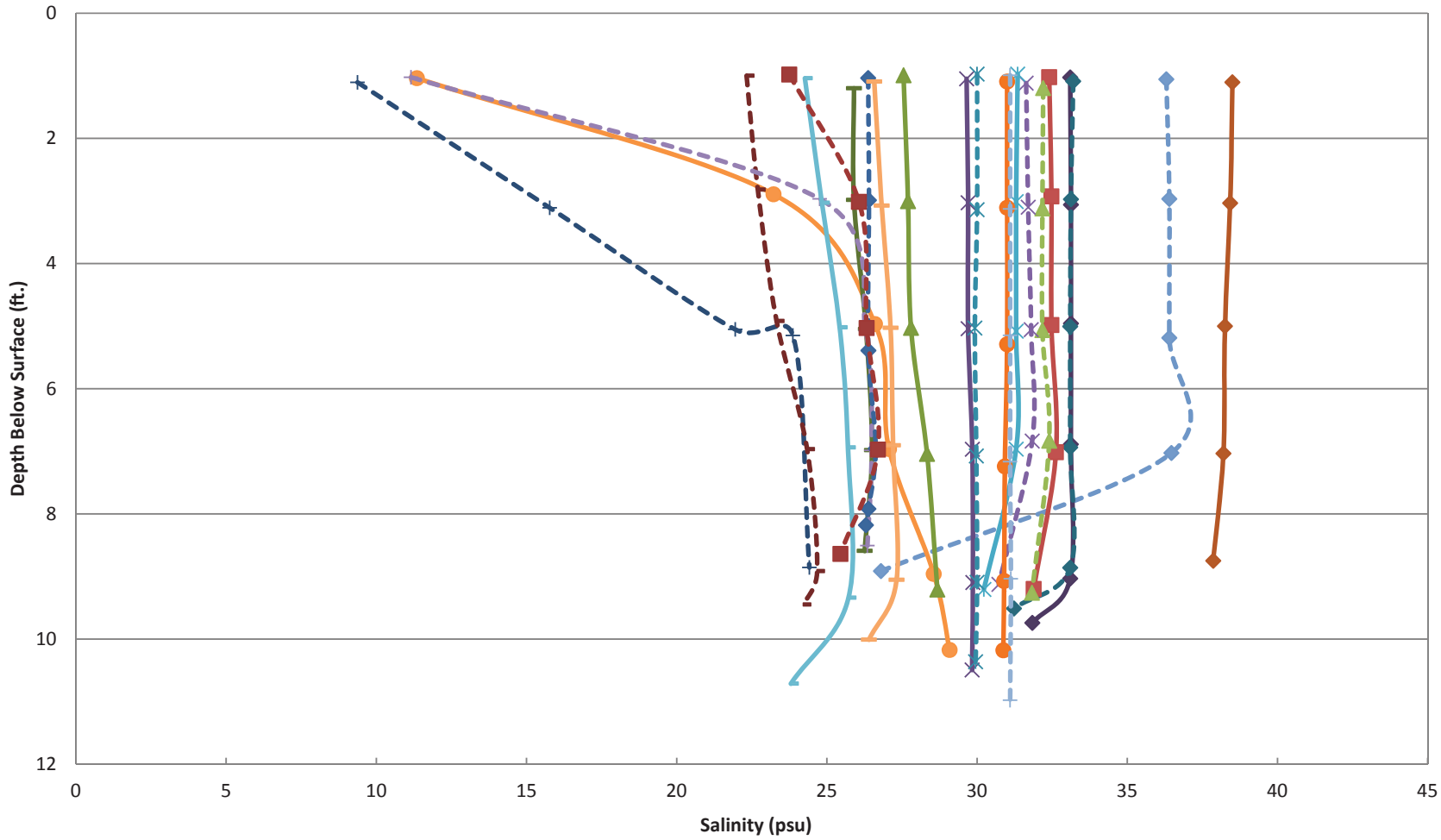
LMI-15 SALINITY
Lake Merritt
Water Quality Monitoring
Oakland, California

amec foster wheeler

Date: 08/28/2015 | Project No. OD14170670.02

Figure
D-2

S:\OD14\170670\170670.02\15_0803_wqmr_fig_d-03.ai



8/14/2014
8/18/2014
9/05/2014
9/12/2014
10/23/2014
10/30/2014
11/13/2014
11/18/2014
12/5/2014
12/26/2014
1/9/2015
1/30/2015
2/9/2015
2/16/2015
3/11/2015
3/19/2015
4/9/2015
4/15/2015
5/13/2015
5/21/2015
6/11/2015
6/18/2015

Solid Line Symbols = High Tide

Dashed Line Symbols = Low Tide

Note:
1. Salinity results were not collected on July 17 and July 22, 2014, because the water quality meter used did not include a salinity probe.

LMI-19 SALINITY
Lake Merritt
Water Quality Monitoring
Oakland, California

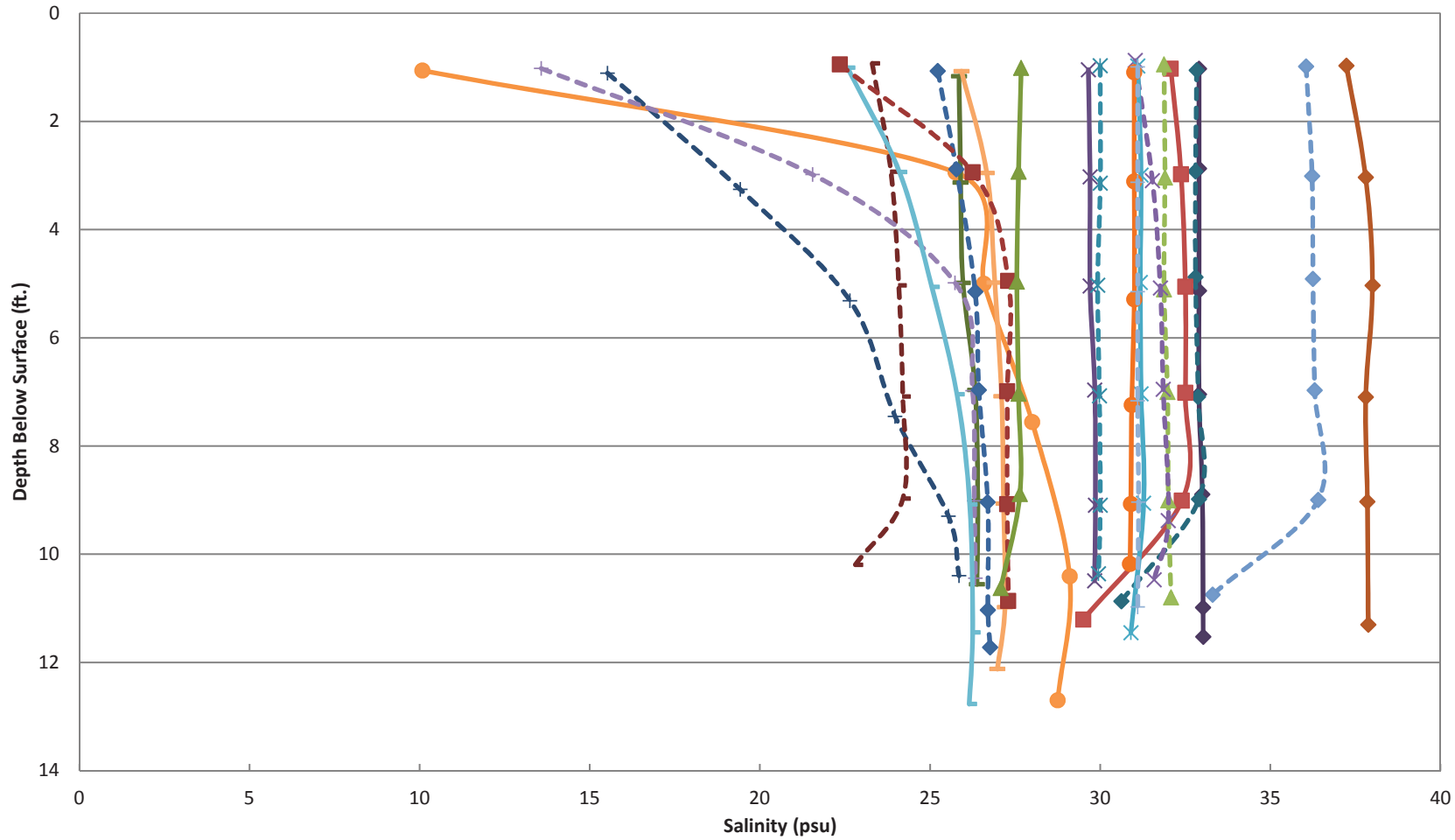
amec foster wheeler

Date: 08/28/2015

Project No. OD14170670.02

Figure
D-3

S:\OD14\170670\170670.02\15_0803_wqmr_fig_d-04.ai



8/14/2014 8/18/2014 9/05/2014 9/12/2014 10/23/2014 10/30/2014
11/13/2014 11/18/2014 12/5/2014 12/26/2014 1/9/2015 1/30/2015
2/9/2015 2/16/2015 3/11/2015 3/18/2015 4/9/2015 4/15/2015
5/13/2015 5/21/2015 6/11/2015 6/18/2015

Solid Line Symbols = High Tide

Dashed Line Symbols = Low Tide

Note:
1. Salinity results were not collected on July 17 and July 22, 2014, because the water quality meter used did not include a salinity probe.

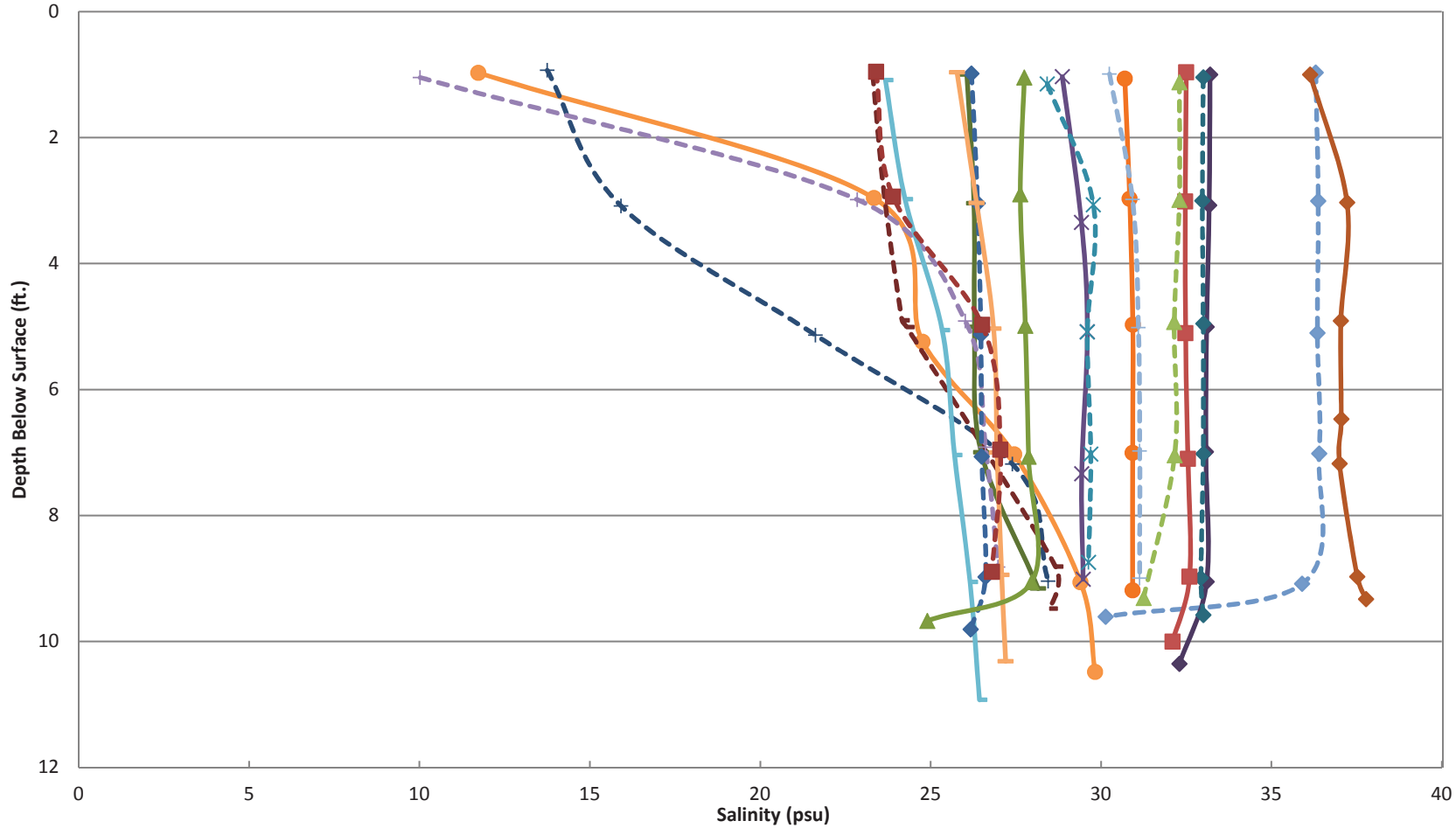
LMI-29 SALINITY
Lake Merritt
Water Quality Monitoring
Oakland, California

amec foster wheeler

Date: 08/28/2015 | Project No. OD14170670.02

Figure
D-4

S:\OD14\170670\170670.02\15_0803_wqmr_fig_d-05.ai



8/14/2014 8/18/2014 9/05/2014 9/12/2014 10/23/2014 10/30/2014 12/5/2014
12/26/2014 1/9/2015 1/30/2015 2/9/2015 2/16/2015 3/11/2015 3/18/2015
4/9/2015 4/15/2015 5/13/2015 5/21/2015 6/11/2015 6/18/2015

Solid Line Symbols = High Tide

Dashed Line Symbols = Low Tide

Note:

1. Salinity results were not collected on July 17 and July 22, 2014, because the water quality meter used did not include a salinity probe.
2. Monitoring was not conducted on November 13, 2014 and November 18, 2014 because LMI-30 was inaccessible.

LMI-30 SALINITY
Lake Merritt
Water Quality Monitoring
Oakland, California

amec foster wheeler

Date: 08/28/2015 | Project No. OD14170670.02

Figure
D-5

APPENDIX E

Weather Information

APPENDIX E

HISTORICAL WEATHER FOR THE OAKLAND INTERNATIONAL AIRPORT JULY 2014 TO JUNE 2015

Lake Merritt

Oakland, California

Day	Temperature (°F)			Dew Point (°F)			Humidity (%)			Sea Level Pressure (in.)			Visibility (mi.)			Wind (mph)			Precipitation (in.)	Events
	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	high	sum	
July 2014																				
1	72	64	56	55	54	53	93	73	53	29.87	29.83	29.8	10	10	10	21	10	29	0	
2	70	64	57	55	54	53	86	72	57	29.92	29.88	29.85	10	10	10	21	11	23	0	
3	69	62	54	54	52	52	86	71	55	29.96	29.92	29.9	10	10	10	18	10	25	0	
4	67	61	54	54	52	51	93	76	58	30.02	29.97	29.91	10	10	9	21	9	24	0	
5	72	63	53	54	53	51	93	73	53	30.09	30.04	30.02	10	10	10	18	7	32	0	
6	70	62	53	53	52	51	93	73	53	30.07	30.01	29.95	10	10	10	21	10	25	0	
7	70	62	54	55	54	52	93	76	59	29.94	29.9	29.85	10	10	10	23	9	35	0	
8	68	63	57	55	54	54	93	78	63	29.93	29.91	29.86	10	10	10	18	9	28	0	
9	71	64	57	56	55	54	93	77	61	29.96	29.91	29.87	10	10	10	20	8	23	0	
10	73	67	60	56	55	54	84	71	57	29.95	29.92	29.88	10	10	10	18	9	22	0	
11	72	67	61	56	54	52	84	69	53	30.08	30.01	29.94	10	10	10	22	13	25	0	
12	70	64	58	55	54	53	80	69	57	30.1	30.07	30.04	10	10	6	23	12	25	T	
13	71	65	58	56	54	53	86	74	61	30.05	29.99	29.89	10	9	6	16	8	21	T	
14	76	67	57	58	55	52	87	70	53	29.94	29.9	29.86	10	10	9	24	9	30	0	
15	77	68	59	61	58	55	90	73	56	30.01	29.97	29.92	10	10	10	20	11	23	0	
16	74	68	62	59	57	56	90	74	57	30.04	30	29.98	10	10	10	23	14	28	0	
17	73	68	63	57	56	55	78	68	57	30.02	29.99	29.97	10	10	10	21	13	24	0	
18	71	67	63	57	56	55	84	73	61	30.03	29.99	29.95	10	10	10	20	12	23	0	
19	72	67	62	58	56	55	84	71	57	29.97	29.96	29.94	10	10	10	20	10	24	0	
20	73	68	62	59	58	57	84	73	61	30	29.97	29.93	10	10	10	20	11	25	0	
21	74	69	63	60	58	56	78	68	57	30.07	30.03	29.98	10	10	10	20	11	22	0	
22	76	70	63	58	57	55	78	64	50	30.12	30.07	30.04	10	10	10	21	10	30	0.01	Rain
23	76	70	63	60	58	56	78	68	57	30.15	30.1	30.05	10	10	10	20	9	23	0	
24	83	73	62	59	57	54	84	63	42	30.05	29.96	29.85	10	10	10	17	7	20	0	
25	90	75	60	59	56	45	84	53	22	29.89	29.86	29.83	10	10	8	18	8	22	0	
26	77	69	61	58	56	55	78	66	53	29.96	29.92	29.88	10	10	9	21	11	23	0	
27	78	70	61	58	57	56	84	67	50	30	29.96	29.93	10	10	9	23	11	25	0	
28	72	67	61	57	56	55	84	71	57	30.06	30.03	29.99	10	10	10	21	10	24	0	
29	76	68	60	58	56	55	84	67	50	30.06	30.03	29.99	10	10	10	20	11	22	0	
30	73	66	59	57	56	55	84	71	57	30.02	29.99	29.95	10	10	10	21	11	24	0	
31	71	65	59	57	56	55	87	72	57	30	29.95	29.89	10	10	9	17	9	22	0	
August 2014																				
1	72	65	58	59	56	54	90	74	57	29.94	29.91	29.88	10	9	7	18	9	22	0	
2	68	64	60	56	55	54	84	76	67	29.97	29.94	29.91	10	10	9	18	10	23	0	
3	69	65	61	56	55	54	84	72	59	29.98	29.95	29.93	10	10	10	18	11	29	0	
4	73	67	61	56	55	54	84	71	57	30.01	29.98	29.94	10	10	10	17	10	21	0	
5	74	68	62	59	57	55	84	71	57	30.08	30.03	30.01	10	10	10	20	7	26	T	
6	78	69	60	61	59	55	87	71	54	30.03	30	29.96	10	10	10	20	8	36	T	Rain
7	69	65	60	56	55	54	84	73	61	29.99	29.96	29.92	10	10	8	18	7	29	0	

APPENDIX E

HISTORICAL WEATHER FOR THE OAKLAND INTERNATIONAL AIRPORT JULY 2014 TO JUNE 2015

Lake Merritt

Oakland, California

Day	Temperature (°F)			Dew Point (°F)			Humidity (%)			Sea Level Pressure (in.)			Visibility (mi.)			Wind (mph)			Precipitation (in.)	Events
	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	high	sum	
8	73	66	58	55	54	52	84	69	53	29.94	29.92	29.88	10	9	7	20	11	28	0	
9	67	63	59	55	54	53	80	74	67	30	29.96	29.91	10	10	9	21	12	31	T	
10	73	67	60	56	55	54	84	71	57	30.02	29.98	29.94	10	10	10	22	9	36	T	
11	73	67	61	57	56	55	84	69	53	29.97	29.94	29.9	10	10	10	18	9	22	0	
12	74	68	61	56	55	53	78	66	53	30	29.96	29.93	10	10	10	20	10	31	0	
13	75	68	60	57	55	54	84	69	53	30.02	29.97	29.94	10	10	10	21	9	24	0	
14	73	66	59	57	56	55	84	71	57	29.98	29.95	29.9	10	10	10	20	9	26	0	
15	74	66	58	57	56	54	87	70	53	30.02	29.98	29.95	10	10	8	18	9	39	0	
16	73	67	60	57	56	55	84	73	61	30.06	30.01	29.97	10	10	10	20	9	23	0	
17	72	65	58	57	55	54	84	73	61	30.05	30	29.93	10	10	10	21	10	24	0	
18	68	64	60	57	55	55	84	76	68	29.93	29.88	29.84	10	10	9	22	11	28	T	
19	74	67	60	57	56	55	84	71	57	29.88	29.85	29.81	10	10	9	21	10	23	T	Rain
20	73	68	62	57	56	55	84	71	57	29.94	29.9	29.86	10	10	10	18	10	28	0	
21	75	68	61	59	57	56	84	71	57	29.97	29.94	29.91	10	10	10	20	8	23	0	
22	75	69	62	59	57	55	90	74	57	29.95	29.93	29.91	10	10	10	21	8	28	0	
23	75	68	60	56	55	53	78	64	49	29.97	29.91	29.86	10	10	10	16	9	20	0	
24	74	67	59	56	55	54	84	69	53	29.92	29.87	29.82	10	10	10	21	11	23	0	
25	72	68	63	56	55	54	73	63	53	29.96	29.89	29.85	10	10	10	18	11	24	0	
26	75	69	62	57	55	53	78	64	49	30.03	29.99	29.95	10	10	10	18	9	23	0	
27	77	68	59	59	57	55	84	69	54	30.07	30.04	30	10	10	8	21	9	22	0	
28	75	68	60	59	57	55	90	74	57	30.08	30.03	29.94	10	10	10	20	9	22	0	
29	72	67	61	58	57	55	84	75	66	29.98	29.94	29.9	10	10	10	21	7	24	T	
30	77	68	59	60	58	56	87	71	54	29.93	29.9	29.87	10	10	10	18	8	21	0	Fog
31	76	69	61	59	57	54	84	69	54	29.95	29.9	29.85	10	10	10	17	8	28	0	
September 2014																				
1	83	70	57	58	56	52	86	64	42	29.86	29.82	29.76	10	10	8	16	7	20	0	
2	72	66	60	58	57	55	84	73	61	29.87	29.82	29.79	10	10	7	21	8	-	0	
3	76	69	61	57	56	55	84	69	53	29.81	29.76	29.72	10	10	10	21	8	24	0	
4	74	68	61	57	57	56	84	71	57	29.81	29.76	29.72	10	10	8	22	8	25	0	
5	72	66	60	57	56	54	84	71	57	29.92	29.87	29.81	10	9	7	18	8	32	0	
6	72	66	60	55	54	52	84	69	53	29.98	29.93	29.89	10	9	7	17	9	30	0	
7	72	66	60	54	53	45	78	66	53	29.92	29.87	29.82	10	10	10	18	10	28	0	
8	68	64	59	52	51	50	72	64	55	29.96	29.9	29.86	10	10	10	18	12	22	0	
9	72	65	57	56	53	52	87	72	57	30.01	29.96	29.91	10	10	10	17	7	21	0	
10	82	68	54	59	56	51	93	66	39	29.96	29.9	29.83	10	9	5	16	5	20	0	
11	83	70	57	59	57	50	90	62	33	29.91	29.87	29.82	10	8	2	20	7	22	0	
12	77	67	57	59	56	54	87	69	50	29.91	29.85	29.8	10	9	6	15	8	23	0	
13	75	67	59	59	57	55	84	71	57	29.87	29.83	29.78	10	10	9	22	8	33	0	
14	74	67	60	57	56	55	84	69	53	29.87	29.84	29.81	10	10	9	18	8	28	0	
15	77	70	62	58	56	53	84	64	43	29.94	29.9	29.85	10	10	10	18	9	49	0	
16	78	68	58	60	57	54	87	67	47	29.95	29.89	29.81	10	10	8	18	7	21	0	

APPENDIX E

HISTORICAL WEATHER FOR THE OAKLAND INTERNATIONAL AIRPORT JULY 2014 TO JUNE 2015

Lake Merritt

Oakland, California

Day	Temperature (°F)			Dew Point (°F)			Humidity (%)			Sea Level Pressure (in.)			Visibility (mi.)			Wind (mph)			Precipitation (in.)	Events
	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	high	sum	
17	77	69	61	64	58	55	84	67	50	29.83	29.8	29.75	10	10	9	21	9	29	T	Rain
18	78	70	61	65	62	58	87	71	54	29.9	29.84	29.78	10	10	6	20	9	29	T	Rain
19	73	66	59	61	60	59	93	79	64	29.93	29.9	29.86	10	10	8	23	7	31	0	
20	71	67	63	60	59	57	90	79	68	29.95	29.92	29.89	10	10	10	20	9	23	0	
21	69	67	64	59	58	57	78	72	66	30.02	29.99	29.94	10	10	10	22	11	28	0	
22	75	69	63	58	57	55	78	66	53	30.04	30	29.96	10	10	10	18	9	21	0	
23	75	69	63	63	59	57	87	76	64	30.02	29.97	29.93	10	10	7	18	8	23	T	Rain
24	77	71	65	63	62	60	87	74	60	29.97	29.94	29.89	10	9	5	20	9	26	0.01	Rain
25	72	65	58	59	57	56	100	79	57	30.02	29.96	29.91	10	8	2	21	6	24	0.43	Rain
26	73	67	60	59	57	54	90	72	53	30.01	29.96	29.9	10	10	10	25	9	29	0	
27	71	63	55	59	56	52	93	75	57	29.94	29.89	29.84	10	10	10	18	9	24	0	
28	72	67	61	57	56	55	84	73	61	29.96	29.89	29.83	10	10	10	15	7	17	0	
29	69	63	57	57	56	55	90	77	63	30.05	29.99	29.96	10	10	8	20	8	28	0	
30	73	65	57	58	57	54	90	74	57	30.05	29.95	29.85	10	10	9	16	7	18	0	
October 2014																				
1	83	68	53	60	51	40	93	58	22	29.98	29.9	29.85	10	10	8	15	4	31	0	
2	87	70	52	61	48	42	72	51	29	30.04	29.99	29.94	10	10	9	14	6	18	0	
3	89	72	55	59	49	42	72	47	21	30.1	30.04	29.99	10	10	10	15	5	20	0	
4	92	74	55	55	46	40	73	46	19	30.04	29.99	29.92	10	10	10	14	4	17	0	
5	88	71	53	57	52	45	84	55	26	29.97	29.92	29.87	10	10	10	15	5	35	0	
6	83	68	52	60	55	50	93	65	36	29.94	29.9	29.84	10	10	7	15	6	62	0	Fog
7	73	62	51	58	54	50	96	77	57	29.95	29.9	29.86	10	9	2	18	7	21	0	Fog
8	75	64	52	59	55	51	93	73	53	29.93	29.89	29.85	10	9	7	16	5	17	0	
9	66	62	57	56	55	53	93	80	67	30.01	29.96	29.92	10	10	10	17	9	20	0	
10	66	61	56	55	54	52	93	80	67	30.08	30.03	30	10	10	10	18	9	28	0	
11	73	64	55	57	54	52	93	71	49	30.08	30.02	29.97	10	10	9	13	6	15	0	
12	86	69	51	62	51	31	93	53	13	29.99	29.95	29.89	10	10	10	13	4	18	0	
13	83	67	50	56	46	34	87	53	19	29.97	29.93	29.91	10	10	8	17	6	33	0	
14	72	65	58	57	55	54	87	70	53	29.95	29.89	29.83	10	10	8	26	9	32	0	
15	71	63	54	57	55	53	86	72	57	30.04	29.97	29.86	10	10	9	21	8	28	T	Rain
16	71	61	51	56	51	45	93	68	42	30.05	29.99	29.95	10	10	10	18	6	22	0	
17	73	62	51	57	50	47	89	65	41	29.98	29.95	29.92	10	10	10	12	4	17	0	
18	75	65	54	58	54	49	84	64	43	30	29.94	29.88	10	10	10	17	6	28	0	
19	71	63	55	61	57	52	93	80	66	29.93	29.9	29.87	10	10	9	20	7	22	0	
20	70	62	54	59	55	51	78	68	57	30.06	29.97	29.91	10	9	2	18	9	22	0.01	Rain
21	70	60	49	53	49	43	83	60	37	30.11	30.06	30.02	10	10	10	20	7	36	0	
22	71	60	49	57	52	46	86	72	57	30.09	30.05	30.02	10	10	10	15	5	17	0	
23	72	64	55	59	56	53	93	75	57	30.08	30.02	29.97	10	10	10	14	4	15	0.01	Fog
24	71	64	56	57	54	50	83	71	59	29.98	29.94	29.89	10	10	10	18	9	26	0	
25	70	65	60	59	56	54	90	76	61	30.14	30.02	29.89	10	10	4	25	13	30	0.23	Rain
26	69	60	50	55	49	43	93	66	39	30.18	30.12	30.06	10	10	10	18	7	21	0	

APPENDIX E

HISTORICAL WEATHER FOR THE OAKLAND INTERNATIONAL AIRPORT JULY 2014 TO JUNE 2015

Lake Merritt

Oakland, California

Day	Temperature (°F)			Dew Point (°F)			Humidity (%)			Sea Level Pressure (in.)			Visibility (mi.)			Wind (mph)			Precipitation (in.)	Events
	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	high	sum	
27	67	57	47	52	48	42	86	69	52	30.08	30.05	30.01	10	10	10	12	4	14	0	
28	71	60	48	55	50	45	93	70	47	30.13	30.09	30.06	10	10	10	15	6	17	0	Fog
29	77	64	50	58	53	49	89	63	36	30.12	30.06	29.98	10	10	10	15	4	17	0	
30	71	63	54	57	53	47	84	74	63	29.96	29.92	29.89	10	10	10	16	6	26	0	
31	64	61	57	58	54	49	87	80	72	29.91	29.84	29.73	10	8	2	18	8	24	0.32	Rain
November 2014																				
1	64	56	48	51	48	44	83	72	60	30.04	29.9	29.75	10	10	10	22	9	24	0	
2	66	55	44	50	45	42	93	71	48	30.17	30.13	30.05	10	10	10	21	4	24	0	
3	66	55	44	52	46	40	86	63	40	30.27	30.22	30.17	10	10	10	15	5	16	0	
4	69	58	46	54	49	44	93	68	42	30.33	30.27	30.23	10	10	7	12	4	14	0	Fog
5	72	60	48	54	49	43	77	61	44	30.23	30.15	30.08	10	10	10	7	3	8	0	
6	72	61	50	56	52	46	93	69	44	30.22	30.19	30.14	10	10	7	13	4	15	0	
7	70	60	50	58	54	48	100	81	61	30.24	30.18	30.1	10	5	0	13	4	15	0.01	Fog
8	72	61	50	59	53	48	100	79	57	30.13	30.08	30.01	10	7	0	8	2	20	0	Fog
9	70	59	48	57	53	46	100	81	61	30.02	29.92	29.83	10	10	6	15	4	17	0	Fog
10	65	56	47	57	52	46	100	86	72	29.86	29.83	29.8	10	5	0	16	5	18	0.01	Fog
11	66	62	58	54	49	47	80	68	56	29.98	29.92	29.86	10	10	10	15	9	21	0	
12	66	61	56	49	46	44	64	56	48	30.04	29.99	29.97	10	10	4	10	4	16	0.11	Rain
13	64	60	55	59	56	50	93	86	78	30.08	30.01	29.93	10	7	1	17	7	22	0.2	Rain
14	65	57	49	58	53	49	96	82	67	30.12	30.09	30.07	10	9	4	16	6	20	0	Fog
15	64	55	46	54	49	44	93	78	63	30.19	30.14	30.09	10	10	10	8	3	13	0	
16	65	56	47	46	32	19	93	56	18	30.27	30.23	30.18	10	10	10	15	5	28	0	
17	67	57	47	42	36	25	77	50	22	30.25	30.17	30.11	10	10	10	16	6	22	0	
18	62	54	46	45	41	36	66	55	43	30.14	30.1	30.05	10	10	9	13	5	20	0	
19	61	57	52	57	51	41	93	75	57	30.14	30.06	30	10	8	2	22	6	25	0.15	Rain
20	59	55	51	55	53	49	100	93	86	30.12	30.06	29.99	10	5	0	15	4	21	0.66	Fog , Rain
21	61	56	51	54	51	48	96	83	69	30.14	30.09	30.04	10	9	6	9	4	31	0	
22	65	59	53	61	54	45	93	80	66	30.25	30.12	30.06	10	7	1	20	10	23	0.26	Rain
23	62	52	42	47	43	39	83	66	48	30.35	30.3	30.25	10	10	10	8	2	18	0	
24	62	51	40	47	41	36	83	63	42	30.42	30.37	30.32	10	10	10	7	2	21	0	
25	73	57	41	52	44	38	83	71	58	30.47	30.4	30.33	10	10	8	13	4	15	0	
26	65	55	45	52	46	40	86	73	60	30.32	30.26	30.2	10	9	6	10	3	37	0	
27	65	54	42	51	47	42	93	78	63	30.19	30.12	30.06	9	6	0	12	2	28	0	Fog
28	62	52	42	52	49	42	100	84	67	30.06	29.98	29.87	10	6	1	13	6	17	T	Fog , Rain
29	64	59	54	55	53	49	93	83	72	29.87	29.82	29.75	10	10	6	14	7	18	0.08	Rain
30	60	56	52	58	54	51	100	88	75	30.03	29.88	29.74	10	9	4	16	4	31	0.32	Rain
December 2014																				
1	66	60	53	57	55	52	100	84	67	30.12	30.04	29.96	10	10	7	15	4	17	T	Rain
2	61	58	54	56	54	52	100	90	80	29.95	29.77	29.69	10	8	2	21	9	25	1.18	Rain
3	64	61	58	59	57	55	93	86	78	29.89	29.78	29.71	10	7	2	35	12	41	1.43	Rain

APPENDIX E

HISTORICAL WEATHER FOR THE OAKLAND INTERNATIONAL AIRPORT JULY 2014 TO JUNE 2015

Lake Merritt

Oakland, California

Day	Temperature (°F)			Dew Point (°F)			Humidity (%)			Sea Level Pressure (in.)			Visibility (mi.)			Wind (mph)			Precipitation (in.)	Events
	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	high	sum	
4	65	60	55	58	56	55	100	87	73	30.02	29.94	29.88	10	8	0	14	5	20	0.01	Fog , Rain
5	67	60	53	58	56	53	100	87	73	30.08	30.03	29.99	10	9	3	23	8	28	0.1	Rain
6	66	62	57	59	57	55	93	86	78	30.23	30.18	30.09	10	10	7	16	6	20	0.11	Fog , Rain
7	64	58	52	57	54	52	100	86	72	30.22	30.18	30.14	10	8	4	12	3	21	0.01	Fog
8	68	60	51	56	53	50	96	80	63	30.19	30.16	30.13	10	10	10	9	4	12	0	
9	65	59	53	57	54	51	93	83	73	30.22	30.15	30.08	10	8	4	12	2	31	0	Fog
10	64	59	54	56	54	53	100	86	72	30.08	29.94	29.73	10	6	0	32	10	39	T	Fog , Rain
11	64	57	50	57	53	48	93	80	67	29.7	29.63	29.52	10	6	1	36	14	45	3.12	Rain
12	56	53	49	51	48	46	96	87	77	30.09	29.87	29.68	10	9	4	9	3	10	0.48	Rain
13	57	52	46	48	46	44	100	86	72	30.24	30.18	30.09	10	10	7	8	3	25	0	
14	61	54	47	48	45	43	89	72	55	30.15	30.06	29.99	10	10	7	14	6	16	0.19	Rain
15	56	53	49	51	48	46	93	85	77	29.98	29.9	29.84	10	8	2	23	14	31	1.09	Rain
16	61	56	50	52	49	46	93	80	67	29.96	29.91	29.83	10	9	2	21	11	24	0.65	Rain
17	59	54	49	51	49	46	93	83	72	30.09	30.03	29.95	10	10	6	17	8	22	0.13	Rain
18	61	56	51	51	49	48	89	81	72	30.2	30.13	30.07	10	10	8	13	6	15	T	Rain
19	57	56	54	54	52	50	93	85	77	30.17	30.14	30.11	10	8	1	23	12	30	0.25	Rain
20	60	57	54	56	54	52	100	89	78	30.26	30.19	30.13	10	7	2	13	4	16	T	Rain
21	64	60	55	58	56	54	100	92	84	30.33	30.28	30.25	10	6	0	13	6	24	0.09	Fog , Rain
22	63	57	51	56	54	50	100	89	78	30.3	30.25	30.19	10	4	0	8	3	24	0	Fog
23	65	56	47	55	51	46	100	84	67	30.23	30.17	30.13	10	9	6	9	3	14	0	Fog
24	61	55	48	54	49	36	100	80	59	30.12	30.05	29.97	10	7	0	28	11	33	0.02	Fog , Rain
25	59	52	45	38	35	26	70	50	30	30.16	30.11	30.06	10	10	10	20	10	26	0	
26	60	50	39	34	30	26	67	49	30	30.27	30.19	30.1	10	10	10	17	7	23	0	
27	55	47	38	38	34	30	82	62	41	30.39	30.34	30.27	10	10	10	12	5	13	0	
28	55	47	39	48	41	36	86	75	64	30.37	30.29	30.24	10	10	9	10	4	14	0	
29	55	49	42	46	42	37	92	76	59	30.24	30.18	30.12	10	10	7	13	3	16	0	Fog
30	55	47	38	37	23	14	82	53	24	30.25	30.16	30.11	10	10	10	41	17	53	0	
31	59	48	36	36	17	5	67	41	15	30.27	30.17	30.07	10	10	10	21	7	28	0	
January 2015																				
1	56	47	38	27	20	14	54	37	20	30.18	30.13	30.07	10	10	10	23	8	28	0	
2	50	41	32	36	30	25	76	64	52	30.23	30.18	30.13	10	10	9	8	4	10	0	
3	53	43	32	38	34	28	82	66	50	30.33	30.26	30.2	10	10	8	12	2	14	0	
4	54	45	35	42	37	33	85	72	59	30.44	30.38	30.32	10	8	6	14	3	17	0	
5	56	46	36	43	38	32	85	68	50	30.39	30.32	30.23	10	9	6	8	3	9	0	
6	59	49	38	44	39	36	92	72	51	30.29	30.22	30.17	10	8	5	8	2	12	0	
7	64	51	38	47	42	37	92	69	46	30.23	30.15	30.08	10	10	8	8	2	9	0	
8	61	52	42	48	45	38	92	76	60	30.1	30.05	30.01	10	8	5	8	2	9	0	
9	63	55	46	50	47	45	96	74	52	30.04	30	29.97	10	7	3	9	4	12	0	
10	60	54	47	52	49	45	93	83	72	30.05	30	29.96	10	7	4	8	3	10	0	Fog
11	57	50	42	50	46	42	96	87	77	30.18	30.09	30.02	10	6	0	8	3	25	0	Fog
12	57	49	41	50	46	41	96	87	77	30.28	30.22	30.19	10	7	0	8	2	10	0	Fog

APPENDIX E

HISTORICAL WEATHER FOR THE OAKLAND INTERNATIONAL AIRPORT JULY 2014 TO JUNE 2015

Lake Merritt

Oakland, California

Day	Temperature (°F)			Dew Point (°F)			Humidity (%)			Sea Level Pressure (in.)			Visibility (mi.)			Wind (mph)			Precipitation (in.)	Events
	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	high	sum	
13	66	55	43	48	43	37	100	69	37	30.23	30.18	30.12	10	6	0	16	3	21	0	Fog
14	59	49	39	47	43	36	93	78	62	30.3	30.22	30.16	10	7	4	12	3	13	0	
15	59	50	40	49	45	39	100	84	67	30.34	30.28	30.23	6	4	0	13	4	16	0	Fog
16	57	50	43	52	48	43	96	84	72	30.3	30.26	30.23	8	4	2	10	3	12	T	Fog , Rain
17	57	53	48	52	49	46	96	84	72	30.3	30.26	30.21	10	7	4	12	5	15	0	
18	65	57	49	55	52	48	100	87	73	30.34	30.29	30.26	10	5	0	13	4	14	0	Fog
19	63	55	47	54	50	45	93	77	60	30.32	30.25	30.18	10	9	4	14	5	16	0	
20	58	52	45	49	47	42	100	86	72	30.18	30.12	30.06	10	6	0	7	2	-	0	Fog
21	61	51	40	45	41	37	92	73	53	30.18	30.13	30.08	10	10	8	14	5	16	0	
22	60	51	41	46	42	36	89	73	57	30.35	30.28	30.19	10	9	6	14	6	18	0	
23	64	52	39	48	42	38	89	66	43	30.37	30.31	30.23	10	9	5	10	3	15	0	
24	69	58	46	47	44	37	93	63	33	30.24	30.17	30.1	10	9	7	22	7	26	0	
25	59	50	40	45	41	37	86	70	53	30.15	30.09	30.01	10	10	7	9	4	12	0	
26	61	51	41	49	44	38	92	72	51	30.05	30.01	29.97	10	10	9	9	3	14	0	
27	67	57	47	49	46	43	83	64	44	30.27	30.17	30.03	10	10	10	12	4	13	0	
28	63	53	43	51	46	42	93	73	52	30.28	30.22	30.17	10	10	6	9	3	12	0	Fog
29	64	53	42	51	48	41	96	81	65	30.17	30.12	30.07	10	8	6	8	3	14	0	Fog
30	62	54	46	52	48	44	100	87	67	30.06	29.99	29.91	10	8	5	16	5	17	0	Fog
31	73	59	44	48	40	28	100	61	22	30.06	29.97	29.91	10	10	7	15	4	20	0	Fog
February 2015																				
1	65	53	40	48	42	37	83	62	40	30.19	30.13	30.06	10	10	9	12	3	14	0	
2	65	54	43	51	47	41	100	83	65	30.2	30.14	30.09	10	8	6	9	3	12	0	
3	67	57	47	52	50	47	93	76	58	30.14	30.09	30.05	10	9	6	13	3	15	0	
4	64	55	46	53	50	45	100	86	72	30.09	30.06	30.02	10	6	0	15	5	17	0	Fog
5	63	56	48	50	48	46	89	75	60	30.05	29.98	29.9	10	10	8	28	6	35	0	
6	63	61	58	58	54	47	93	77	60	29.93	29.85	29.8	10	6	2	33	22	40	0.91	Rain
7	64	59	54	61	57	52	93	89	84	30.08	30.02	29.93	10	9	4	28	6	35	0.03	Rain
8	63	58	53	57	55	52	93	83	72	30.06	29.95	29.89	10	8	1	36	15	44	0.99	Rain
9	64	57	49	55	52	45	89	78	67	30.27	30.2	30.08	10	10	7	22	8	26	T	
10	63	54	44	50	45	41	93	71	49	30.23	30.17	30.1	10	10	10	12	4	14	0	Fog
11	64	53	42	50	46	41	96	78	60	30.19	30.15	30.11	10	10	10	8	3	10	0	
12	69	58	47	53	48	44	83	68	52	30.22	30.17	30.13	10	10	10	9	2	17	0	
13	70	58	46	54	50	43	89	70	51	30.17	30.1	30.06	10	10	10	10	3	13	0	
14	71	59	47	54	50	46	96	75	53	30.12	30.07	30.03	10	10	10	12	4	14	0	
15	70	58	45	52	47	41	93	67	40	30.06	30.01	29.97	10	10	10	9	3	13	0	
16	71	59	46	54	49	42	93	73	53	30.04	30	29.96	10	9	6	17	6	20	0	
17	58	56	53	51	49	45	93	80	66	30.19	30.13	30.04	10	8	4	10	6	13	T	
18	64	57	50	53	49	45	93	79	64	30.24	30.18	30.12	10	10	7	12	5	13	0	
19	61	56	50	52	51	50	96	84	72	30.17	30.13	30.06	10	8	4	14	5	17	0	
20	65	59	52	53	51	47	93	73	52	30.09	30.02	29.94	10	8	4	12	3	15	T	
21	68	57	46	51	47	39	93	67	40	29.98	29.91	29.84	10	10	9	17	5	21	0	

APPENDIX E

HISTORICAL WEATHER FOR THE OAKLAND INTERNATIONAL AIRPORT JULY 2014 TO JUNE 2015

Lake Merritt

Oakland, California

Day	Temperature (°F)			Dew Point (°F)			Humidity (%)			Sea Level Pressure (in.)			Visibility (mi.)			Wind (mph)			Precipitation (in.)	Events
	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	high	sum	
22	67	56	45	48	36	20	100	61	22	29.89	29.86	29.83	10	9	0	24	8	35	0	Fog
23	64	54	44	28	20	12	53	35	17	30.23	30.06	29.89	10	10	10	24	7	31	0	
24	64	50	36	49	37	22	89	58	27	30.37	30.31	30.25	10	10	10	12	5	17	0	Fog
25	65	55	45	50	45	41	93	70	46	30.31	30.23	30.1	10	10	8	17	5	20	0	
26	67	56	45	52	49	43	93	76	58	30.09	30.02	29.92	10	9	6	16	6	21	0	
27	63	56	48	50	46	42	80	68	56	29.92	29.83	29.74	10	10	10	38	19	45	0	
28	59	52	44	46	44	41	92	74	55	29.92	29.81	29.73	10	10	4	22	7	25	0.07	Rain , Thunderstorm
March 2015																				
1	63	54	44	47	41	33	92	64	36	30	29.95	29.91	10	10	10	17	7	21	0	
2	59	52	45	47	44	40	86	69	51	29.99	29.86	29.81	10	10	10	15	5	23	T	
3	64	53	42	47	43	39	89	71	52	30.06	30.01	29.97	10	10	10	16	5	18	0	
4	67	54	41	47	40	35	89	61	32	30.23	30.13	30.04	10	10	10	7	4	-	0	
5	70	56	42	47	41	36	76	57	37	30.35	30.28	30.24	10	10	10	13	4	-	0	
6	71	57	42	50	43	36	83	60	37	30.3	30.23	30.14	10	10	10	10	4	-	0	
7	71	58	45	52	46	41	89	65	41	30.14	30.08	30.01	10	10	10	13	6	30	0	
8	65	55	44	51	48	43	93	77	60	30.13	30.07	30.01	10	8	5	18	7	21	0	Fog
9	65	57	48	51	49	47	100	82	63	30.08	30.01	29.93	10	9	6	15	6	17	0	
10	63	56	48	52	50	46	100	86	72	30.03	29.96	29.93	10	5	0	25	5	29	0	Fog
11	65	58	51	56	51	43	100	72	44	30.26	30.14	30.01	10	10	8	15	5	17	0.02	Rain
12	73	60	46	54	51	46	100	72	44	30.29	30.22	30.14	10	10	10	14	5	15	0	
13	74	61	48	55	52	47	93	66	38	30.18	30.14	30.08	10	10	10	15	4	20	0	
14	80	66	52	57	52	44	93	66	38	30.12	30.05	29.96	10	10	10	13	5	15	0	
15	69	62	54	53	47	41	83	62	40	30.09	30.04	29.98	10	10	10	20	5	23	0	
16	68	61	53	54	50	46	83	66	48	30.06	30.03	30.01	10	10	10	13	5	14	0	
17	66	59	51	53	49	46	86	69	52	30.14	30.08	30.04	10	10	10	23	9	29	0	
18	68	58	48	51	48	45	93	71	48	30.08	30.05	30.01	10	10	10	17	6	21	0	
19	73	60	47	52	49	43	93	64	35	30.08	30.05	30	10	10	10	18	6	21	0	
20	66	57	48	52	48	41	93	71	49	30.17	30.11	30.06	10	10	10	18	6	22	0	
21	71	63	54	54	53	51	86	70	53	30.19	30.15	30.1	10	10	7	18	6	20	0	
22	66	60	54	56	52	48	93	78	63	30.2	30.16	30.13	10	10	9	18	9	29	0.02	Rain
23	64	59	53	54	49	42	93	71	48	30.32	30.25	30.2	10	10	10	21	10	29	0.05	
24	65	59	53	54	50	43	83	73	63	30.32	30.28	30.23	10	10	7	21	7	23	T	
25	72	60	48	53	50	46	93	70	47	30.25	30.2	30.16	10	10	10	16	6	22	0	
26	80	65	50	56	52	48	93	68	42	30.18	30.12	30.05	10	10	10	14	5	15	0	
27	64	58	52	54	52	49	96	82	67	30.18	30.14	30.09	10	10	10	21	9	23	0	Fog
28	74	61	48	55	49	46	93	69	44	30.2	30.14	30.08	10	10	10	24	6	26	0	
29	73	60	47	52	49	45	93	67	41	30.13	30.08	30.01	10	10	10	18	6	22	0	
30	65	56	47	51	48	44	89	75	60	30.08	30.05	30.02	10	10	7	21	8	23	0	
31	68	62	55	52	47	40	86	64	42	30.19	30.14	30.07	10	10	10	28	16	38	0	

APPENDIX E

HISTORICAL WEATHER FOR THE OAKLAND INTERNATIONAL AIRPORT JULY 2014 TO JUNE 2015

Lake Merritt

Oakland, California

Day	Temperature (°F)			Dew Point (°F)			Humidity (%)			Sea Level Pressure (in.)			Visibility (mi.)			Wind (mph)			Precipitation (in.)	Events
	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	high	sum	
April 2015																				
1	65	55	45	45	38	30	80	56	32	30.19	30.14	30.08	10	10	10	24	9	26	0	
2	69	59	48	45	38	29	80	52	24	30.21	30.17	30.13	10	10	10	22	10	26	0	
3	67	56	44	46	42	40	83	63	43	30.24	30.17	30.11	10	10	7	18	8	21	0	
4	64	54	43	47	41	38	93	67	40	30.12	30.05	29.97	10	10	10	26	11	32	0	
5	58	54	50	48	43	38	83	69	54	29.98	29.93	29.91	10	9	2	21	11	24	0.11	Rain
6	63	54	44	43	40	37	83	63	42	29.99	29.93	29.85	10	10	10	25	13	29	0	
7	61	55	48	48	45	40	93	72	51	30.06	29.88	29.77	10	8	4	30	15	40	0.52	Rain
8	63	55	47	50	44	38	86	65	43	30.19	30.13	30.07	10	10	10	16	8	20	0.01	Rain
9	67	55	43	47	43	36	92	63	34	30.09	30.02	29.96	10	10	10	17	6	20	0	
10	66	56	46	48	43	38	89	63	37	30.06	30.03	29.98	10	10	10	16	7	18	0	
11	72	60	47	52	48	43	93	70	47	30.1	30.05	30.01	10	10	10	20	7	23	0	
12	73	61	48	54	49	45	100	70	40	30.06	30.02	29.96	10	10	10	14	6	16	0	
13	62	56	50	50	47	45	89	72	55	30.17	30.09	30.02	10	10	7	29	15	36	0	
14	65	57	48	44	36	27	71	48	25	30.35	30.27	30.16	10	10	10	25	13	29	0	
15	71	59	47	46	39	31	72	50	28	30.23	30.12	30.01	10	10	10	22	8	25	0	
16	81	65	48	48	36	25	80	47	13	30.06	30.02	29.97	10	10	10	22	8	28	0	
17	72	60	48	48	45	40	86	63	40	30.1	30.06	30.02	10	10	10	20	7	23	0	
18	67	58	49	50	48	47	89	69	48	30.07	30.01	29.93	10	10	9	20	9	23	0	
19	63	56	49	50	49	48	93	77	60	29.99	29.95	29.9	10	9	6	20	9	23	0	
20	63	58	53	50	49	48	83	72	60	29.92	29.89	29.85	10	10	10	22	12	24	0	
21	61	57	53	49	48	48	83	74	64	29.93	29.88	29.86	10	10	10	21	14	25	T	
22	66	59	52	49	48	46	89	73	56	29.92	29.88	29.85	10	10	9	22	9	25	0	
23	64	58	52	49	46	45	83	70	56	29.91	29.88	29.86	10	10	7	22	10	24	0	
24	63	58	52	53	47	43	89	69	48	30.03	29.99	29.9	10	10	5	29	19	33	0.08	Rain
25	63	57	51	55	49	44	93	77	60	30.06	29.96	29.89	10	9	6	26	15	31	0.14	Rain
26	69	58	47	51	46	39	83	63	43	30.16	30.1	30.06	10	10	10	20	7	23	0	
27	81	66	50	55	51	47	89	64	38	30.06	30.01	29.94	10	10	10	22	9	25	T	
28	63	58	52	51	49	48	89	77	65	30.08	30.04	30.01	10	10	10	18	9	22	0	
29	66	59	51	48	47	45	89	69	48	30.04	29.99	29.91	10	9	6	20	8	23	0	
30	84	67	49	54	48	42	83	55	26	29.9	29.84	29.77	10	10	8	15	6	22	0	
May 2015																				
1	76	65	53	54	51	48	93	71	49	29.92	29.86	29.8	10	10	9	20	9	23	0	
2	65	59	52	50	49	47	89	75	60	29.91	29.88	29.84	10	10	10	20	9	24	0	
3	64	58	52	48	47	46	83	68	52	29.93	29.9	29.86	10	10	10	20	11	23	0	
4	59	55	51	47	46	45	83	73	62	30.01	29.97	29.93	10	10	7	20	11	23	0	
5	62	57	51	47	46	45	83	72	60	29.98	29.95	29.91	10	10	8	18	11	25	0	
6	66	58	50	47	46	44	83	68	52	29.92	29.86	29.81	10	10	7	17	9	20	0	
7	67	57	47	47	45	42	83	64	45	29.81	29.77	29.73	10	10	7	17	6	20	T	Rain
8	65	56	46	49	47	43	86	71	56	30.04	29.89	29.77	10	10	8	18	9	22	0	

APPENDIX E

HISTORICAL WEATHER FOR THE OAKLAND INTERNATIONAL AIRPORT JULY 2014 TO JUNE 2015

Lake Merritt

Oakland, California

Day	Temperature (°F)			Dew Point (°F)			Humidity (%)			Sea Level Pressure (in.)			Visibility (mi.)			Wind (mph)			Precipitation (in.)	Events
	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	high	sum	
9	63	58	52	49	48	46	83	72	60	30.12	30.09	30.06	10	10	10	21	11	23	0	
10	62	57	51	48	47	46	89	75	60	30.1	30.06	29.99	10	10	7	16	9	20	0	
11	62	57	52	49	47	45	83	72	60	29.99	29.95	29.87	10	10	7	28	14	31	0	
12	65	58	51	45	43	41	77	60	43	29.96	29.93	29.87	10	10	10	28	18	33	0	
13	63	57	51	48	44	42	77	63	48	29.99	29.95	29.91	10	10	10	21	12	24	0	
14	66	60	53	50	48	45	77	67	56	29.9	29.85	29.8	10	10	10	18	9	24	T	Rain
15	62	57	52	49	48	46	83	70	56	29.97	29.92	29.86	10	10	10	26	13	32	0	
16	61	57	53	49	48	47	83	74	64	30.04	30	29.95	10	10	10	18	12	26	0	
17	64	59	54	48	48	47	83	72	60	30.06	30.04	30.01	10	10	10	22	13	24	0	
18	60	57	54	49	48	46	77	72	67	30.12	30.08	30.04	10	10	10	22	13	25	0	
19	63	59	54	49	48	48	83	74	64	30.12	30.08	30.01	10	10	10	21	12	23	T	
20	68	61	54	52	49	48	86	75	64	30	29.98	29.95	10	10	5	16	11	21	T	Rain
21	66	60	54	54	52	51	93	78	63	29.99	29.95	29.93	10	9	4	18	10	21	T	Rain
22	62	59	56	52	51	48	83	74	64	30.08	30.02	29.98	10	10	10	21	12	23	0	
23	62	58	53	50	49	48	83	72	60	30.11	30.08	30.04	10	10	9	20	11	23	T	
24	61	57	52	50	49	48	89	78	67	30.06	30.02	29.98	10	10	9	20	11	24	T	
25	63	58	52	50	49	48	89	75	60	30.01	29.98	29.96	10	10	9	20	12	24	T	
26	65	59	53	50	49	48	89	73	56	30.03	30	29.98	10	10	7	18	11	24	T	Rain
27	63	58	53	50	49	48	89	75	60	30.04	30.02	30	10	10	10	21	12	24	0	
28	63	58	52	52	50	48	89	77	65	30.07	30.03	29.99	10	10	10	21	10	23	T	
29	62	57	52	50	49	48	89	79	69	30.02	29.99	29.95	10	10	10	18	10	22	T	
30	66	59	51	52	50	49	93	78	63	29.99	29.95	29.91	10	10	10	24	9	28	0	
31	65	59	52	50	48	46	89	73	56	29.99	29.95	29.92	10	10	7	24	11	28	0	
June 2015																				
1	73	65	57	55	53	50	87	68	49	30.06	30.03	29.97	10	9	2	21	10	24	T	Rain
2	65	61	56	55	53	51	93	78	63	30.08	30.04	29.98	10	10	10	20	11	25	0	
3	65	60	55	52	51	50	86	73	60	29.97	29.94	29.88	10	10	10	22	10	25	0	
4	70	62	53	51	50	48	83	67	51	29.87	29.84	29.81	10	10	9	17	9	26	0	
5	69	61	53	54	52	48	93	74	55	29.86	29.83	29.81	10	10	4	22	9	28	0	
6	71	64	56	55	54	53	93	75	57	29.94	29.89	29.85	10	10	10	22	9	28	0	
7	73	65	56	55	54	53	93	73	53	29.94	29.9	29.84	10	10	10	20	8	22	0	
8	88	72	56	57	55	53	87	59	31	29.88	29.84	29.75	10	10	10	20	8	23	0	
9	77	66	55	57	54	52	93	68	43	29.92	29.88	29.82	10	10	10	30	6	32	0	
10	70	64	58	63	58	55	97	88	78	29.94	29.9	29.87	10	9	4	15	6	17	0.18	Fog , Rain
11	73	65	57	59	56	54	100	81	61	29.92	29.88	29.82	10	8	1	20	8	23	0	
12	75	65	54	58	55	52	93	71	49	29.85	29.8	29.75	10	9	7	20	9	23	0	
13	72	65	57	57	55	52	93	77	61	29.79	29.77	29.75	10	9	6	21	9	25	0	
14	67	61	55	54	51	48	86	71	56	29.87	29.82	29.76	10	7	5	21	12	24	0	
15	62	58	54	51	50	48	89	78	67	29.97	29.91	29.86	10	9	5	21	11	24	0	
16	68	62	55	52	51	50	83	71	58	29.98	29.95	29.93	10	9	5	20	12	-	0	
17	69	61	53	52	51	48	89	70	51	29.95	29.93	29.91	10	9	4	23	9	25	0	

APPENDIX E

HISTORICAL WEATHER FOR THE OAKLAND INTERNATIONAL AIRPORT JULY 2014 TO JUNE 2015

Lake Merritt

Oakland, California

Day	Temperature (°F)			Dew Point (°F)			Humidity (%)			Sea Level Pressure (in.)			Visibility (mi.)			Wind (mph)			Precipitation (in.)	Events
	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	low	high	avg.	high	sum	
18	66	59	52	52	50	47	89	73	56	30.03	29.99	29.94	10	9	5	18	10	23	0	
19	71	62	52	53	50	48	89	69	49	30.01	29.99	29.95	10	10	7	18	9	21	0	
20	69	61	52	54	52	49	93	74	55	29.94	29.91	29.87	10	10	6	20	9	22	0	
21	67	62	56	52	50	48	86	69	52	30.05	30	29.91	10	9	6	22	12	25	0	
22	64	59	54	52	51	49	86	73	60	30.08	30.04	30.02	10	9	6	21	10	24	0	
23	70	62	53	52	50	48	86	69	51	30.03	29.99	29.94	10	9	6	21	9	24	0	
24	73	64	55	52	51	50	86	68	49	29.97	29.93	29.89	10	10	6	20	9	22	0	
25	79	68	56	57	53	50	83	63	43	29.92	29.89	29.86	10	10	7	18	7	21	0	
26	73	66	58	56	55	53	80	69	57	29.97	29.92	29.9	10	10	6	22	10	29	0	
27	74	66	58	57	55	53	86	70	53	30.02	29.98	29.95	10	10	10	17	9	20	0	
28	72	66	60	57	56	55	84	71	57	30.02	30	29.96	10	10	10	22	12	24	T	
29	73	65	57	56	54	52	86	72	57	30.04	29.99	29.93	10	10	10	16	10	21	0	
30	82	70	57	57	55	54	93	66	39	29.93	29.88	29.81	10	10	10	16	8	18	0	

Abbreviations

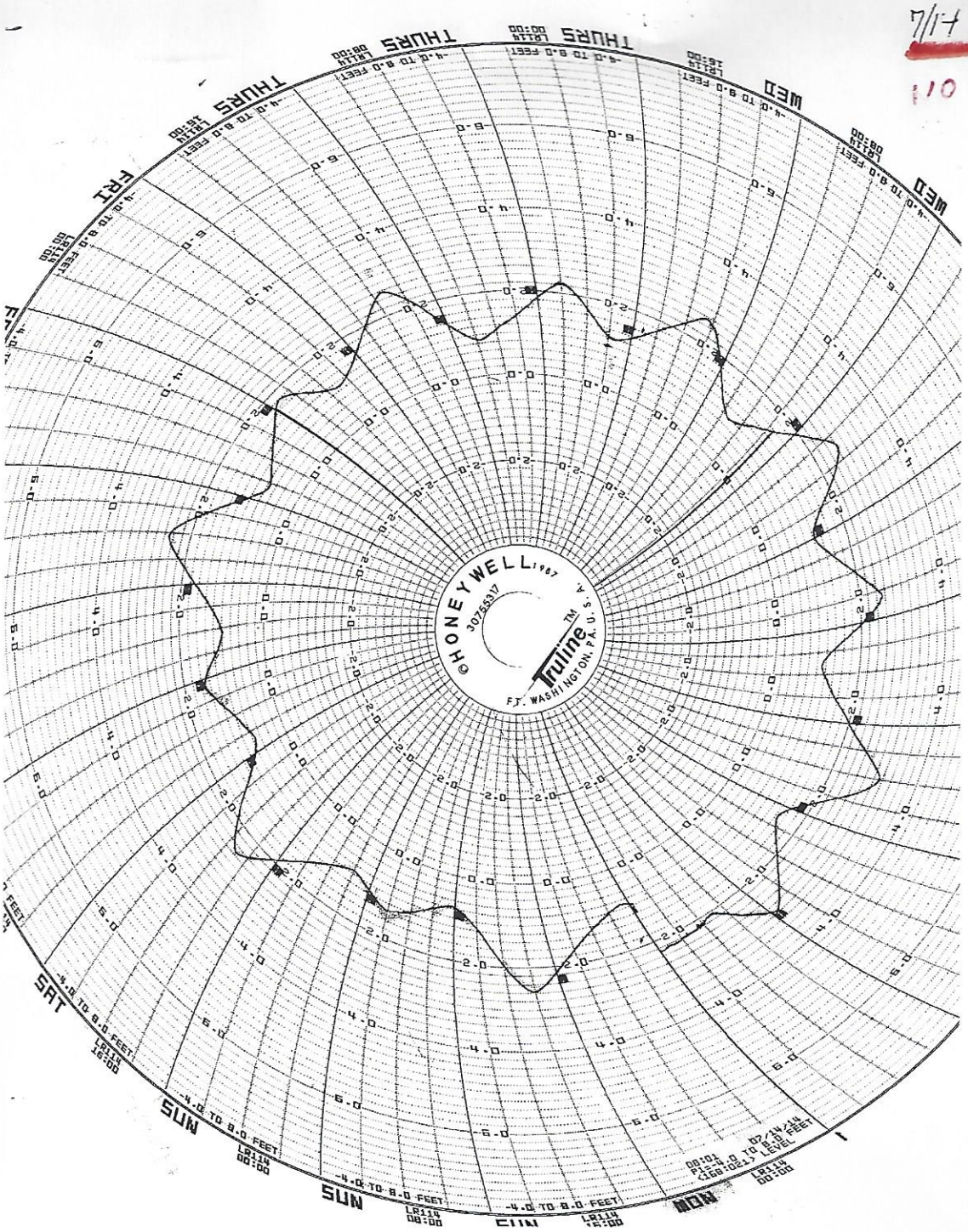
°F = degrees Fahrenheit
% = percentage
in. = inches
mi. = miles
mph = miles per hour

APPENDIX F

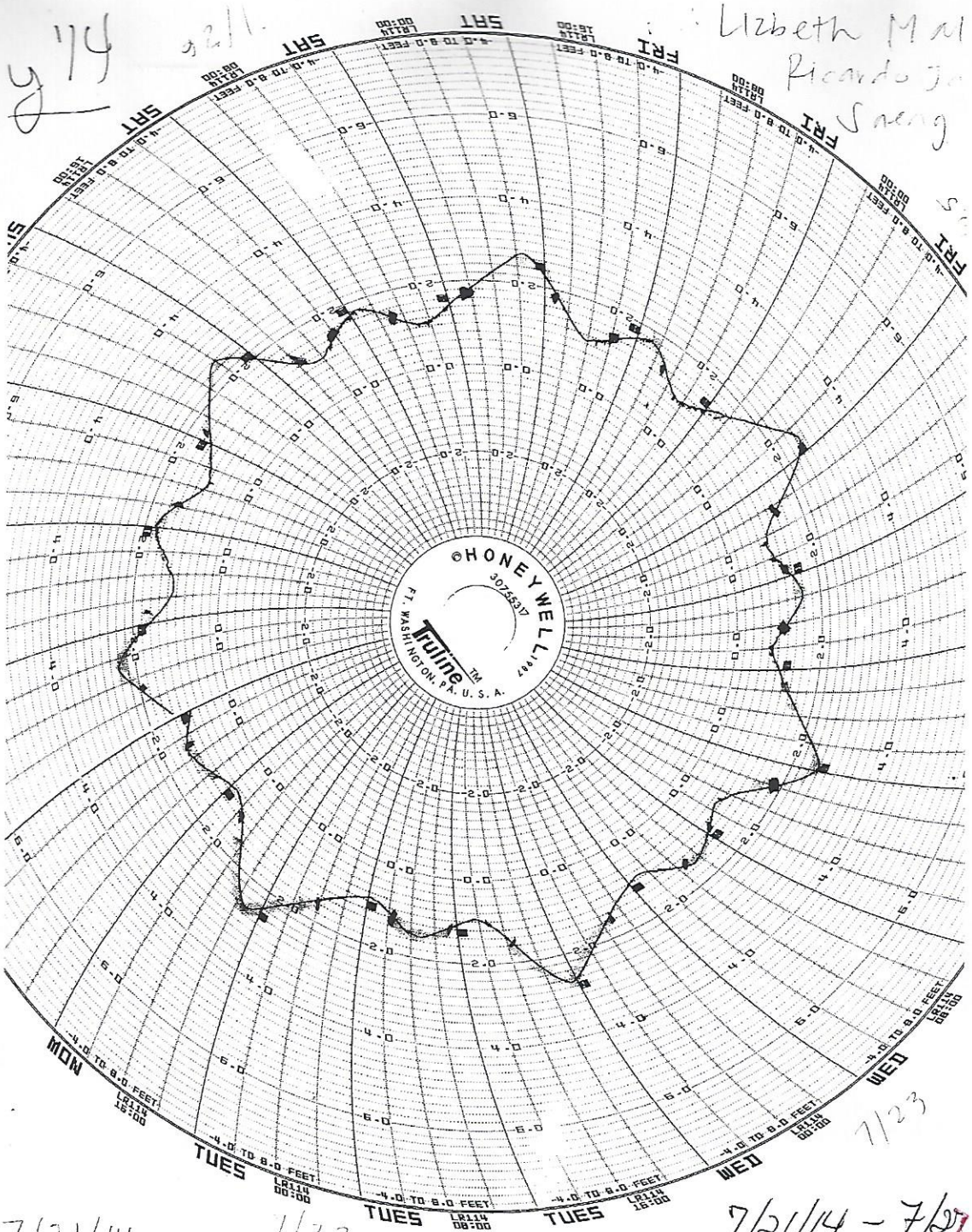
Alameda County Flood Control District Circular Tide Charts

7/14 - 7/20/14

110 CLOSURES



Lizbeth Mal
Ricardo Ja
Sneng



7/21/14
7/22
7/23

7/21/14 - 7/27/14

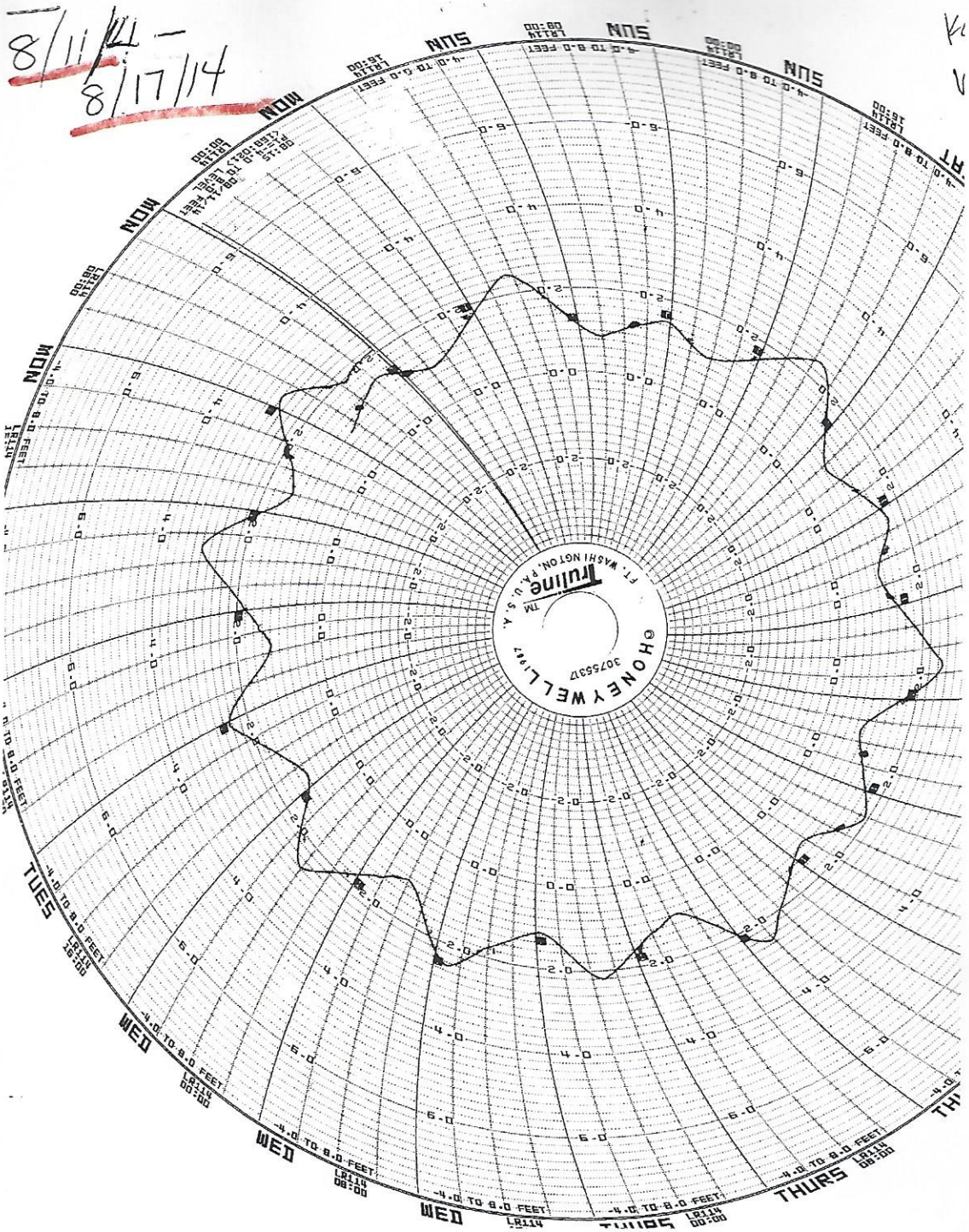
NO CLOSURES

7/21/14
7/27/14

did not notice any flat line portion of track
constant increase and decrease

the gates were never closed therefore
we unable to record further data.

8/11/14 – 8/17/14

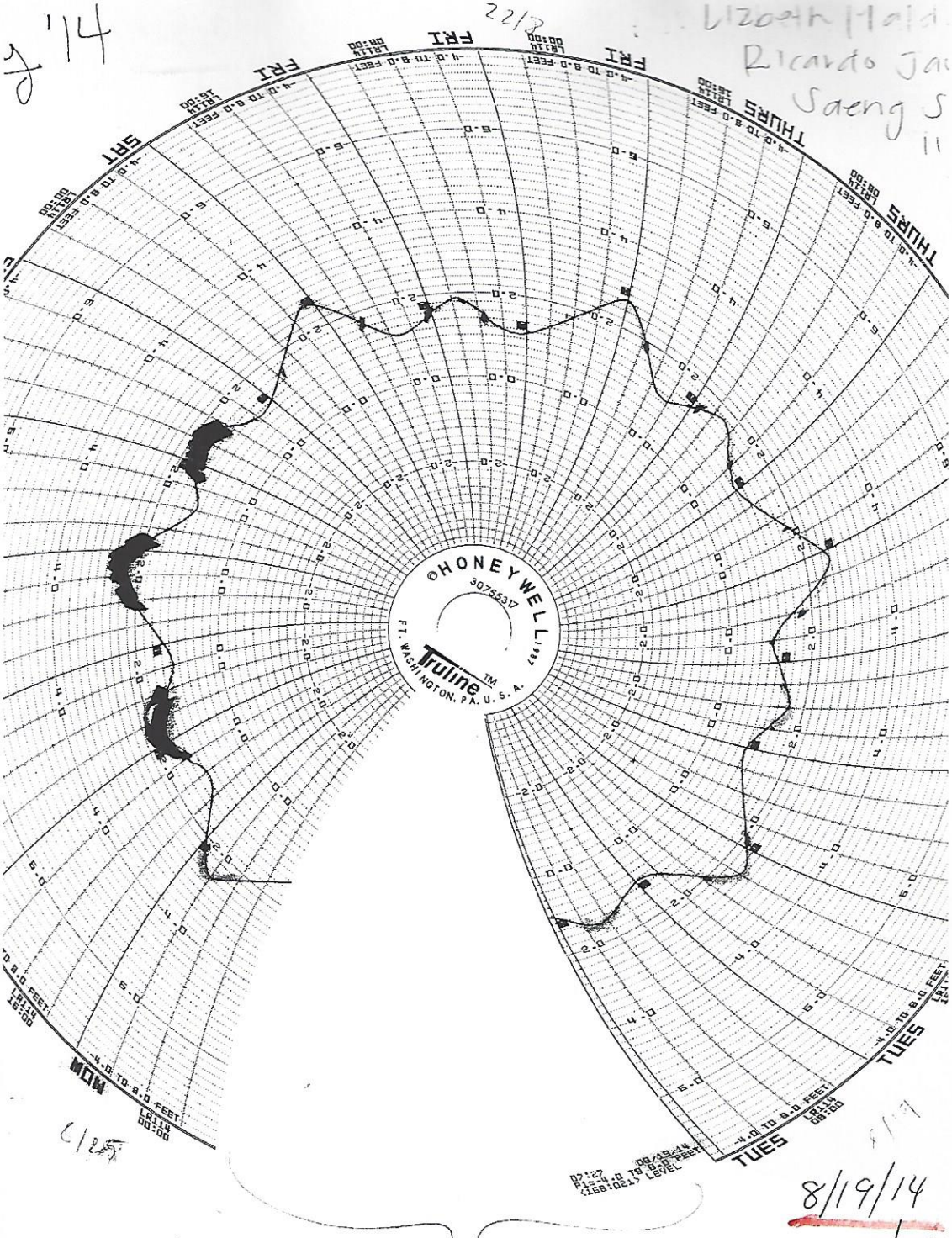


* NO closed days

* Start: Monday 8:00
Stop: Monday: 10:00

7/14

Elizabeth Hald
Ricardo Ja
Saeng S



8/19/14

8/24

t: 8/19/14
: 8/25/14

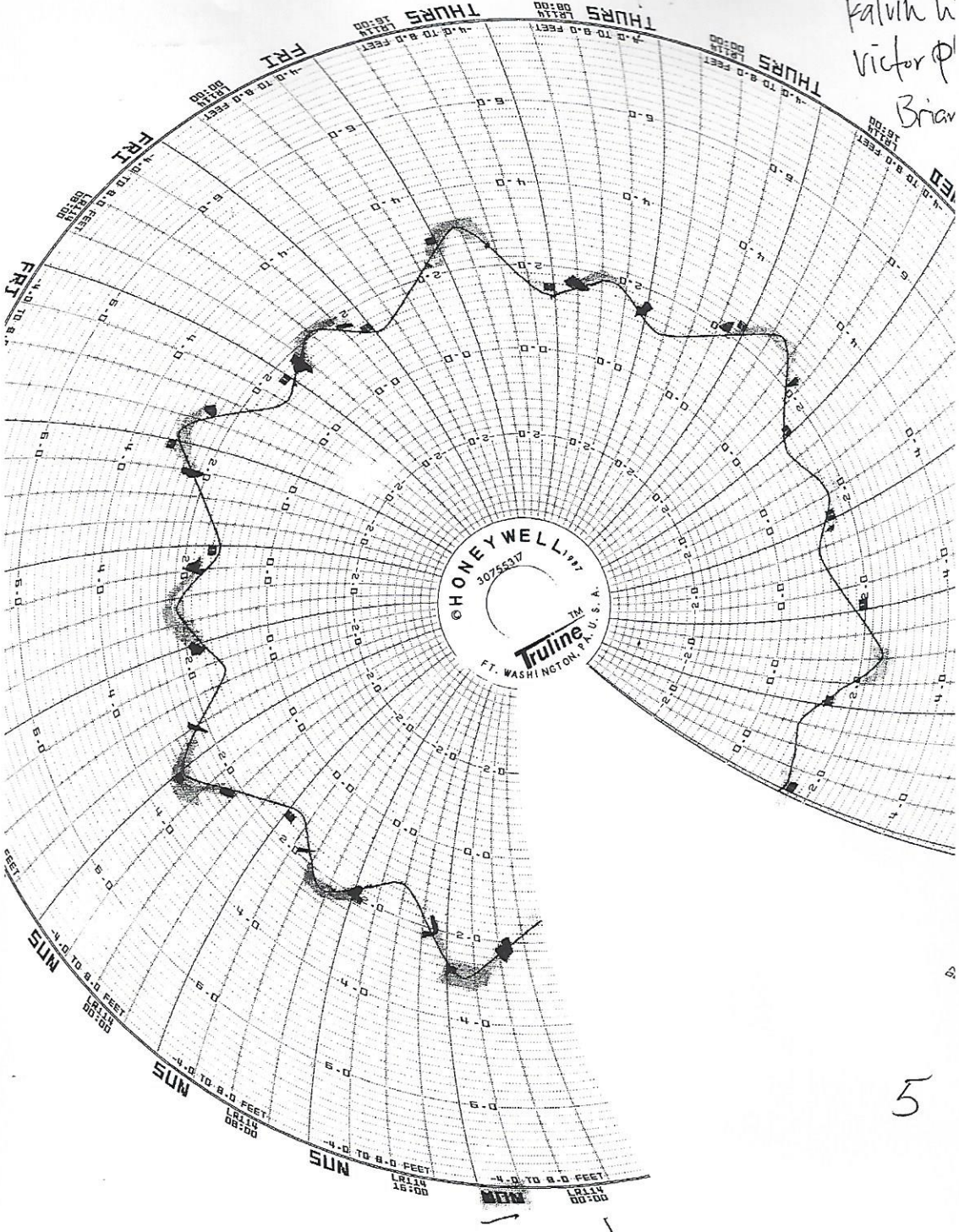
data was not collected! :(

— missing period
— no closures

We did not notice any flat line portion of
ne again it is a constant increase + decrea

tide gates were never closed therefore

Kalvin W
Victor P
Brian



5

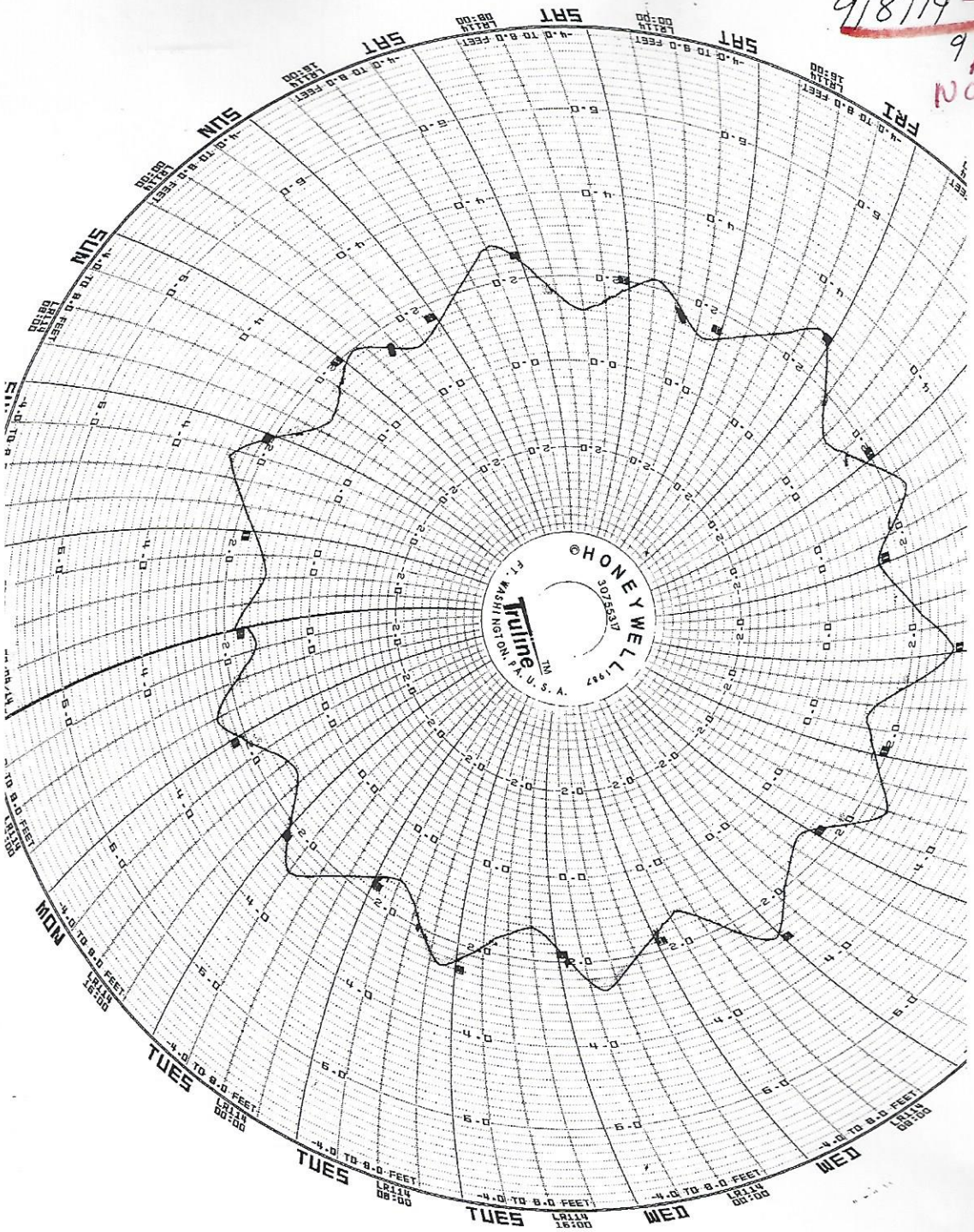
8/18 x

9/2/14

9/7/

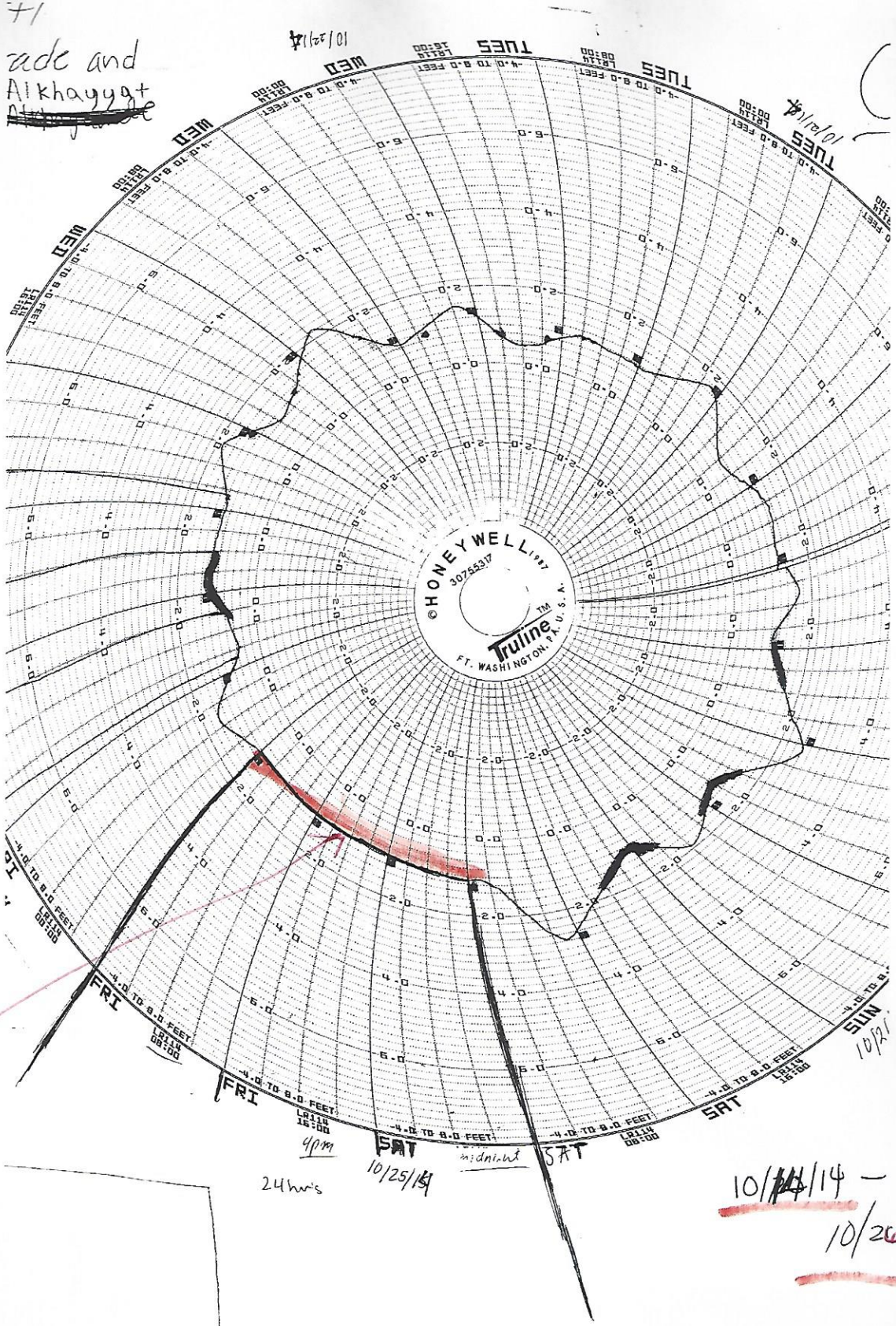
No closed days.

9/8/14 —
9/14/14
NO CLOSURES



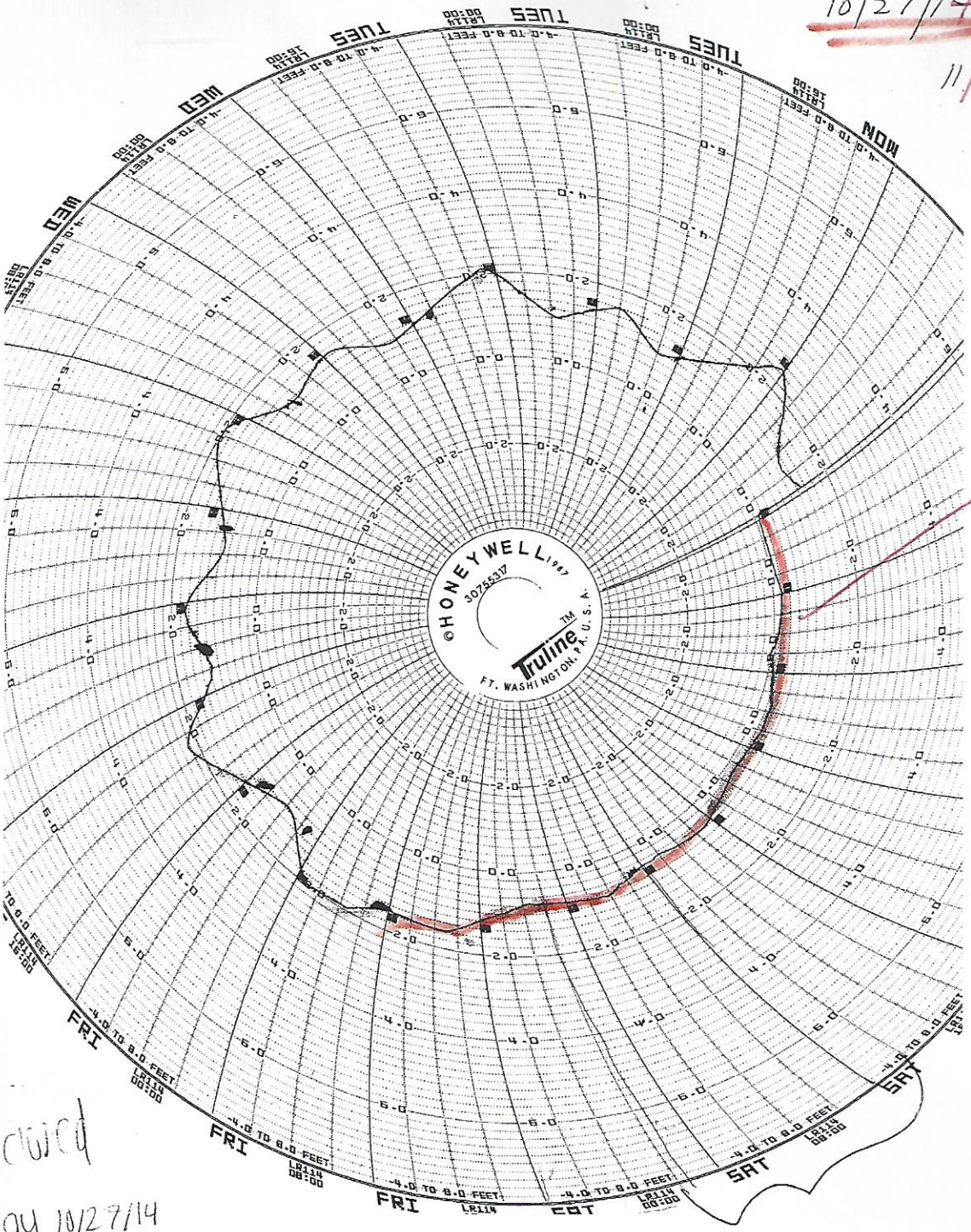
+1

ade and
Alkhayyat



dates that they closed the tide gates

10/27/14 –
11/12/14

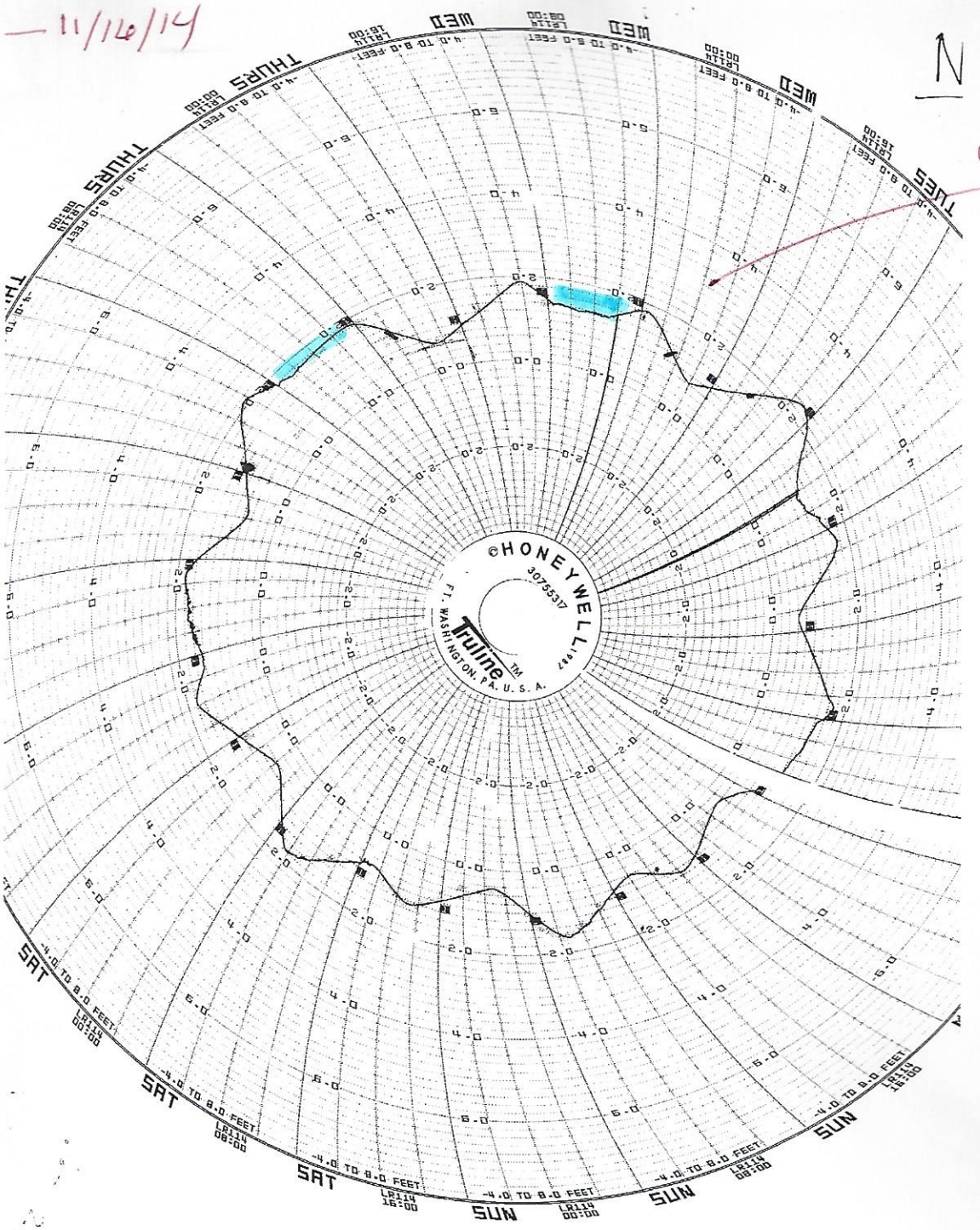


CLOSED

closed

ay 10/27/14
n to 8am
7. 11/1/14
4am to 8am
11. 11/1/14
2pm to 11pm

11/10/14 — 11/16/14



cbsed small periods?

11/12/14 Wed 0:00-16:00

used
high tide
low tide

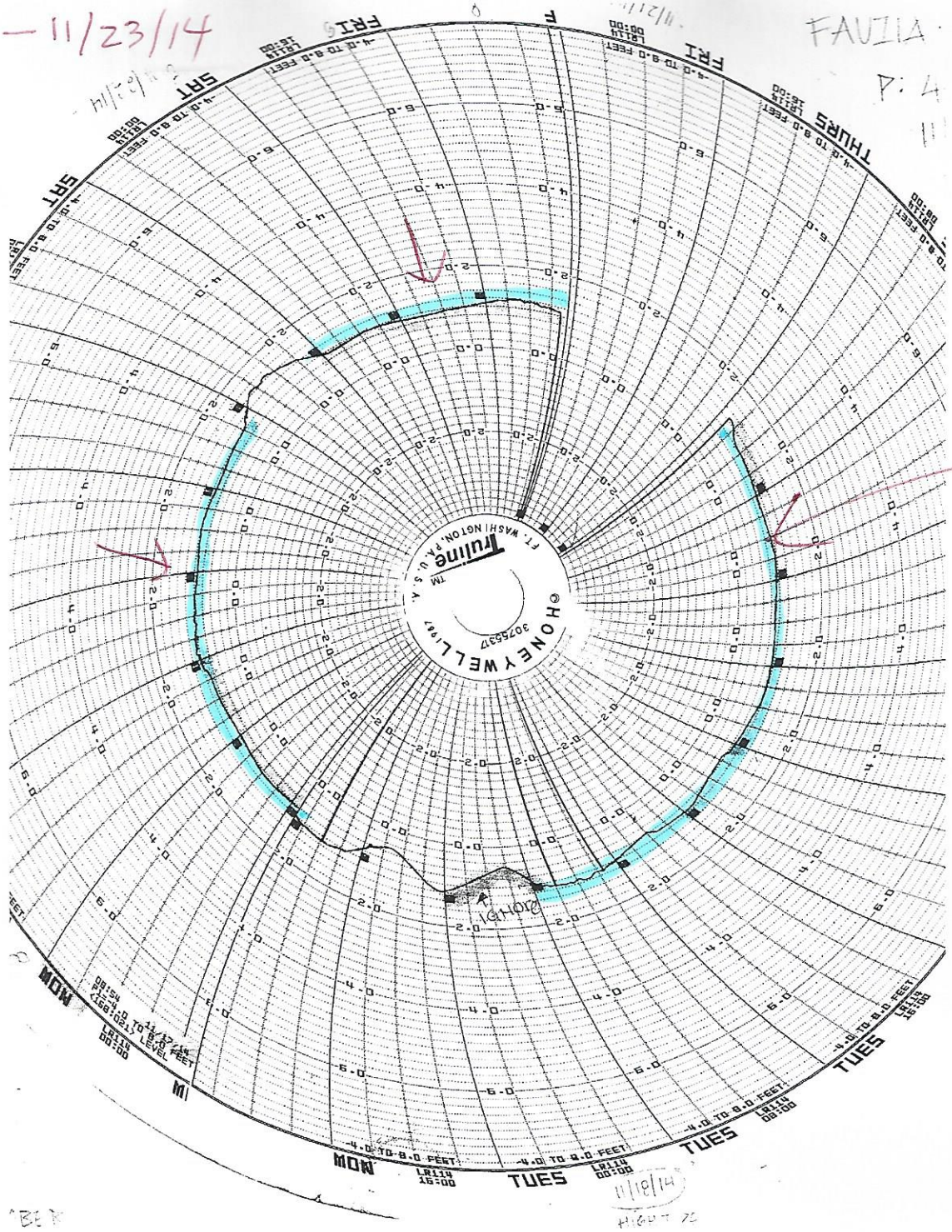
6 hrs

11/13/14 - 16ft - 2ft

11/17/14 — 11/23/14

FAUZIA

P: 4

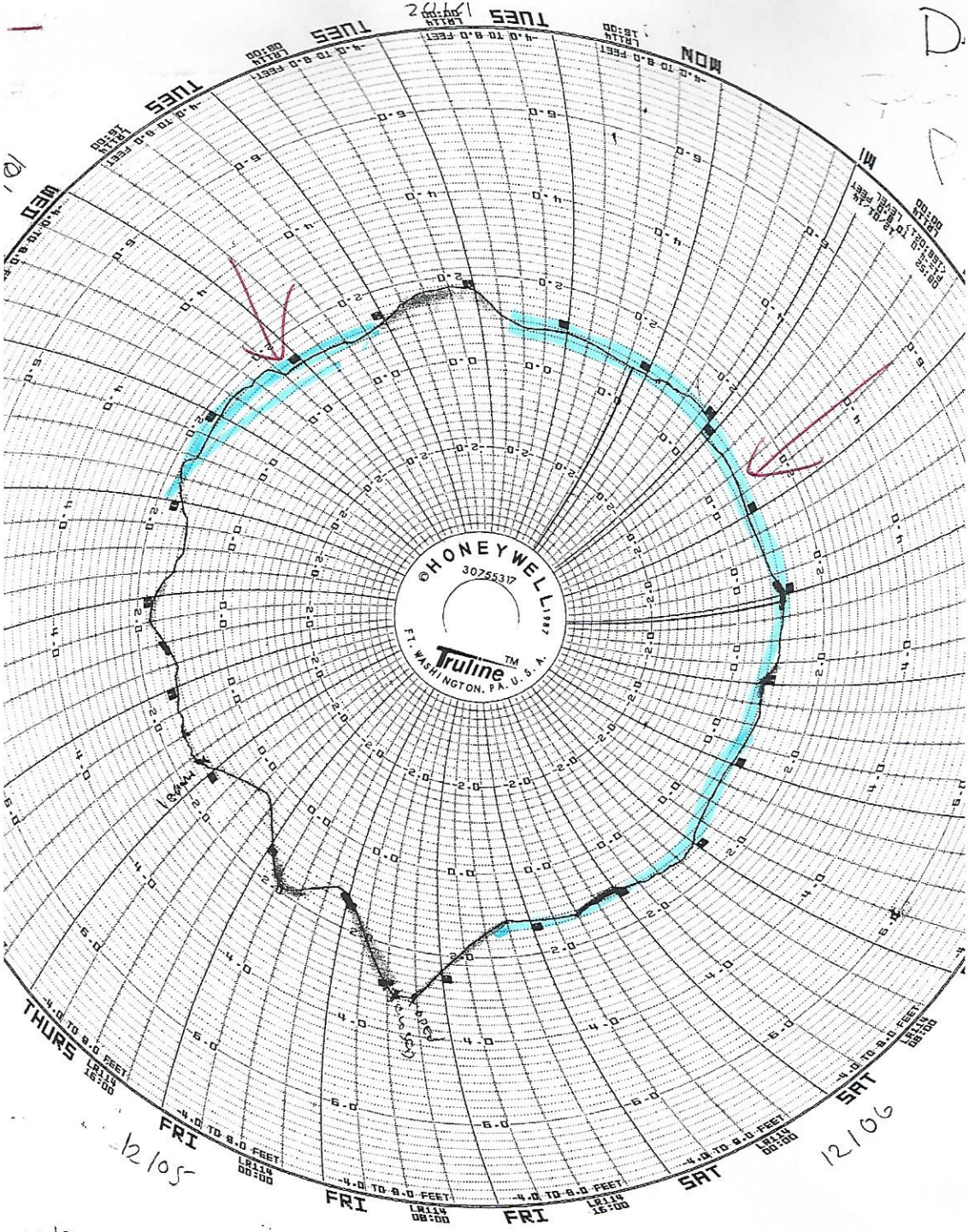


^BE

H DATA

GATES WERE CLOSED ON: 11/17/2014 FOR 8 HOURS
11/19/2014 FOR 24 HOURS
11/20/2014 FOR 14 HOURS
11/21/2014 FOR 16 HOURS
11/22/2014 FOR 16 HOURS
[illegible] HOURS

12/1/14 –
12/7/14



gate open

Tuesday 12 midnight – Tuesday 12 am

12/02

Wednesday 8am – Friday 4pm

12/03 12/05

gate close

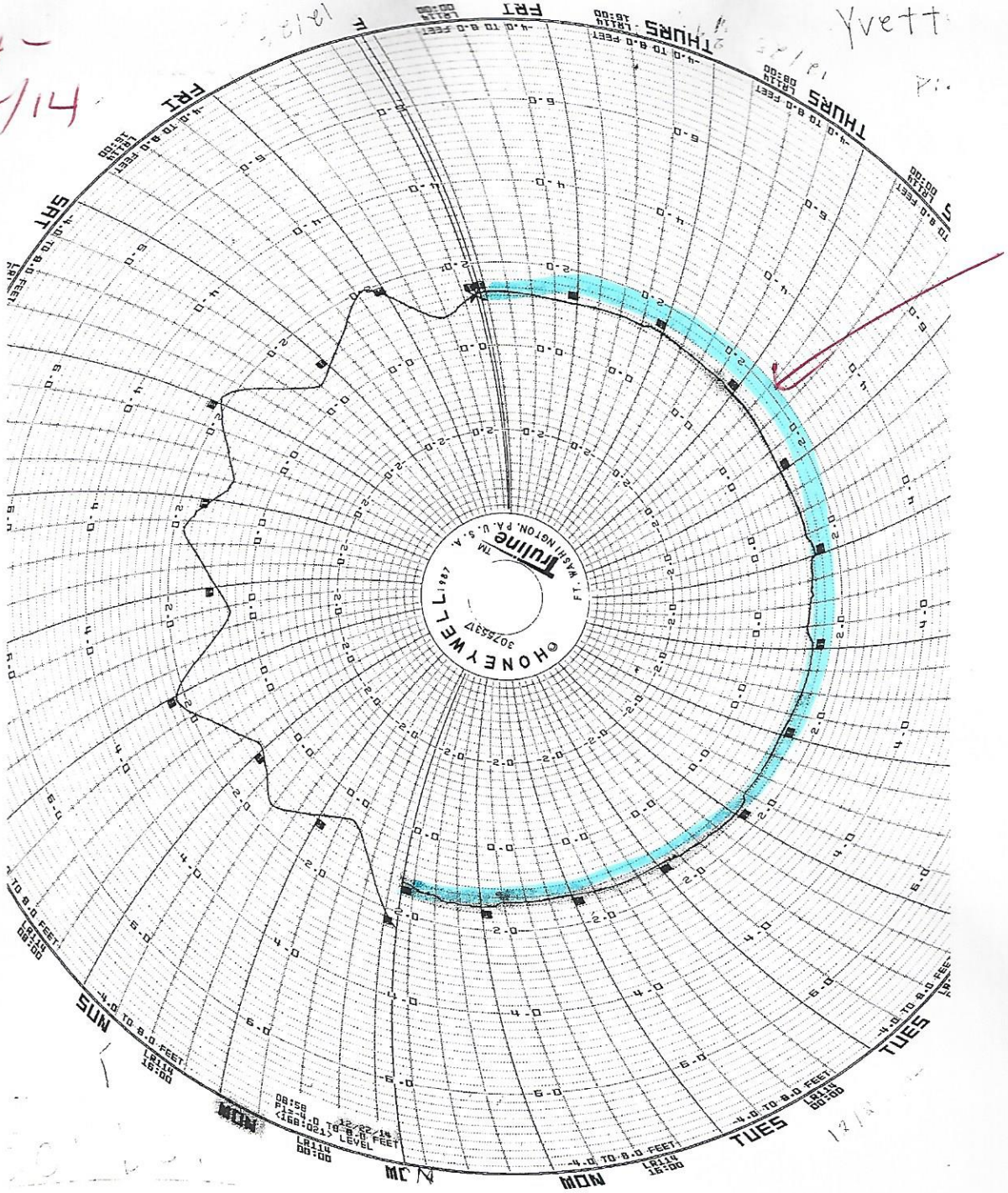
Friday 5pm – Tuesday 12 midnight

Low t

high t

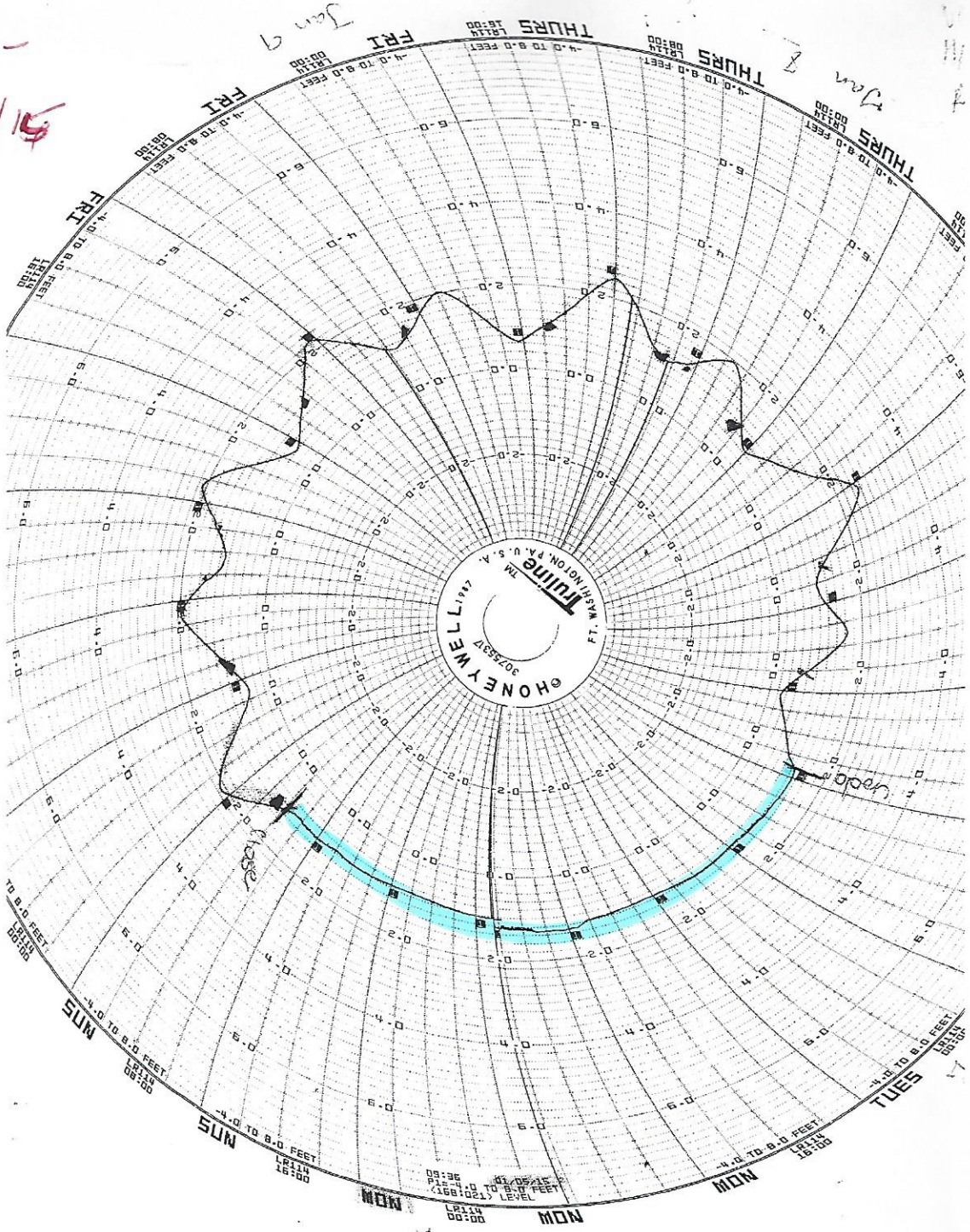
12/22/14 –
12/28/14

Yvett



... collected on 12/22/14 from Monday 12/22 ...
tide gates were ... Friday 12/26 at 10 am.
tide gates were closed ... of 90 ...
e sample was taken.
... closed for a ... period of time & when

1/5/15 –
1/11/15

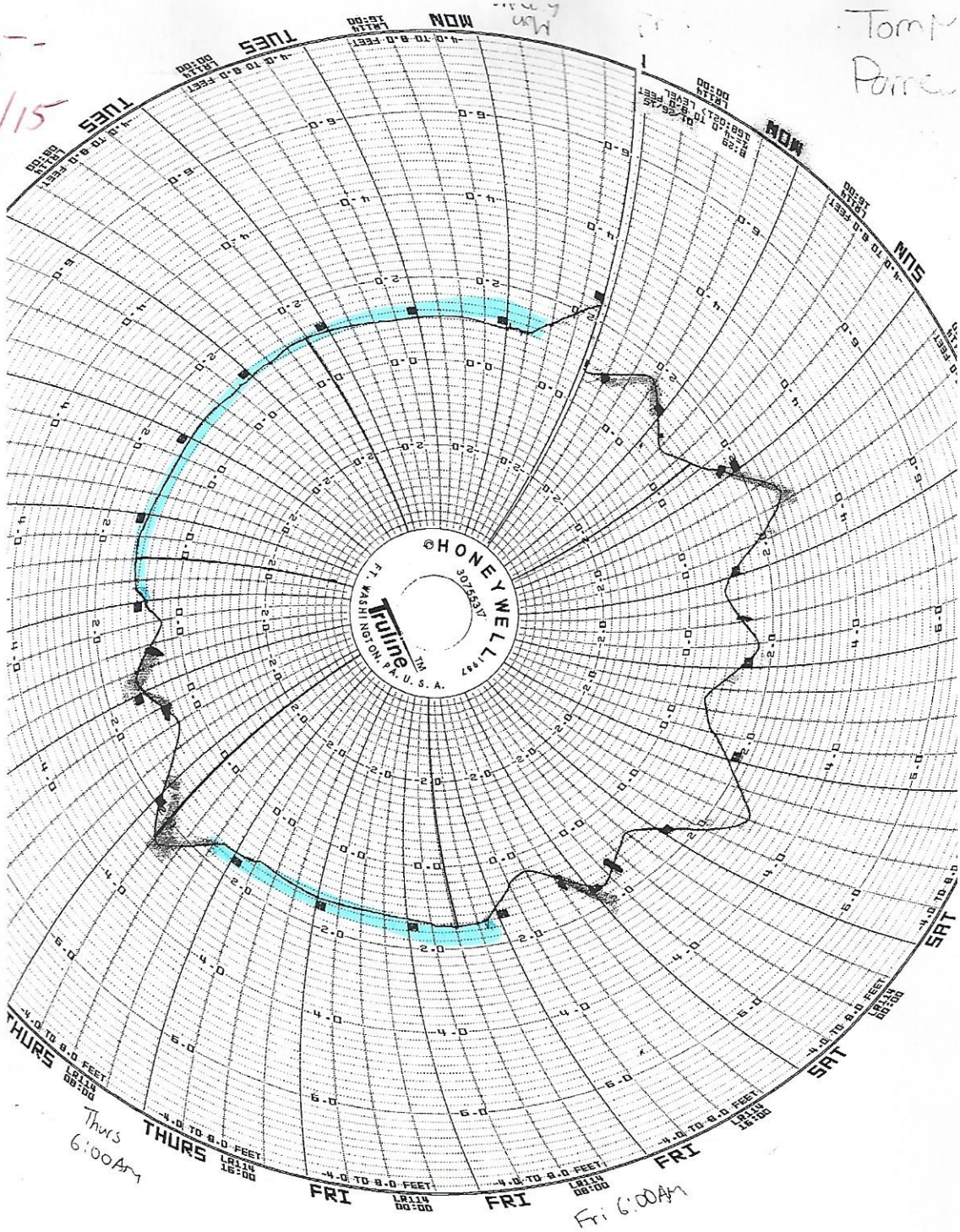


January 5

a gate was closed approximately 3 days. Sunday through Tuesday; it was closed for 72 hours straight.

1/24/15 -
2/1/15

Tom P
Ponce

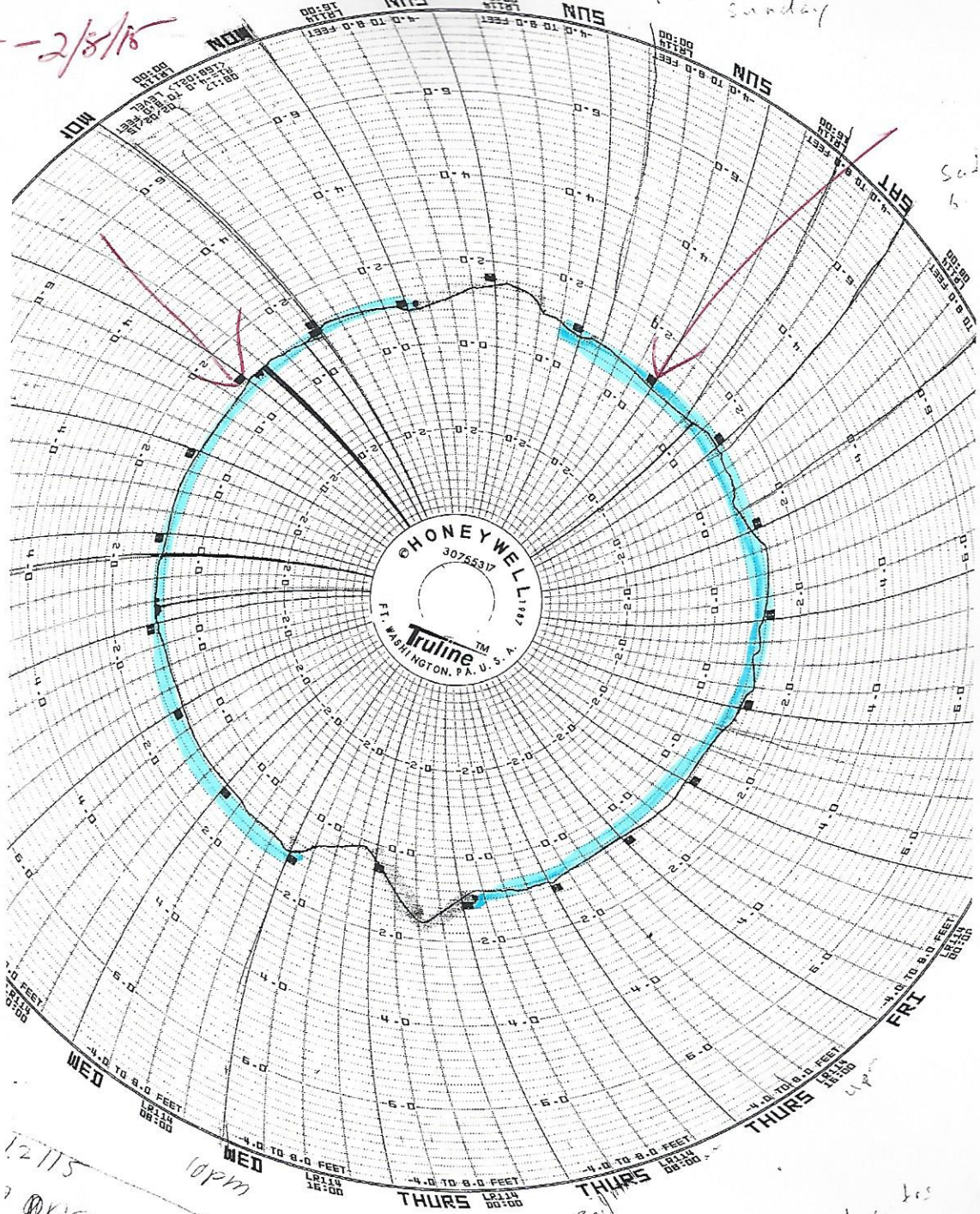


26/15 - Wed 1/28/15 - 48 hrs
JAM 6:00AM

/29/15 - Fri 1/30/15 - 24hrs
JAM 6:00AM

2/2/15 – 2/8/15

Saturday 4pm – 12am
Sunday



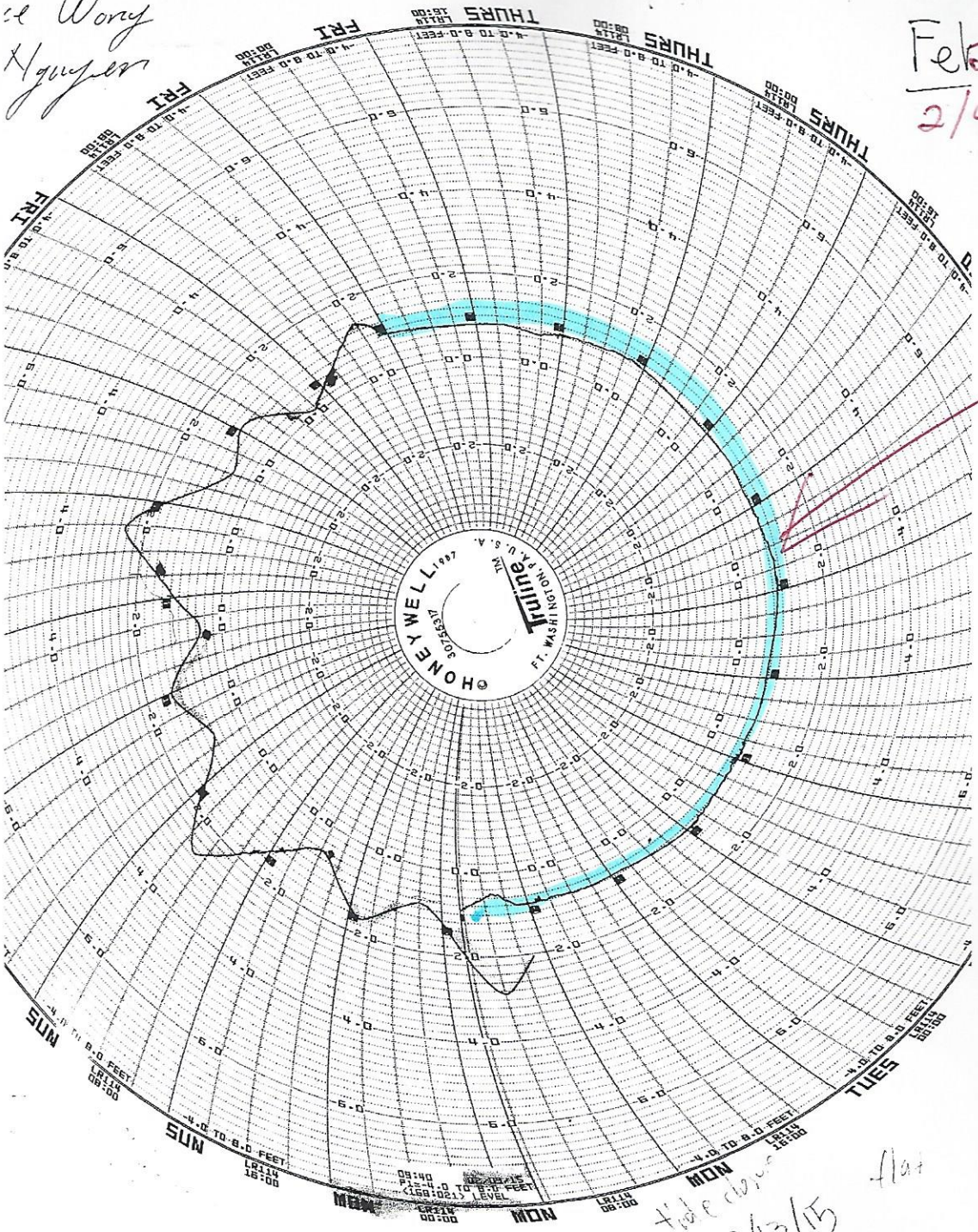
12/15
10pm
prv

Wed 2/4/15
@ 10pm

Thursday 2/5/15 Judge
closed from 3pm – 10pm
Friday 2/6/15

:e Worry
Hguyen

Feb
2/9/15 –
2/15/15

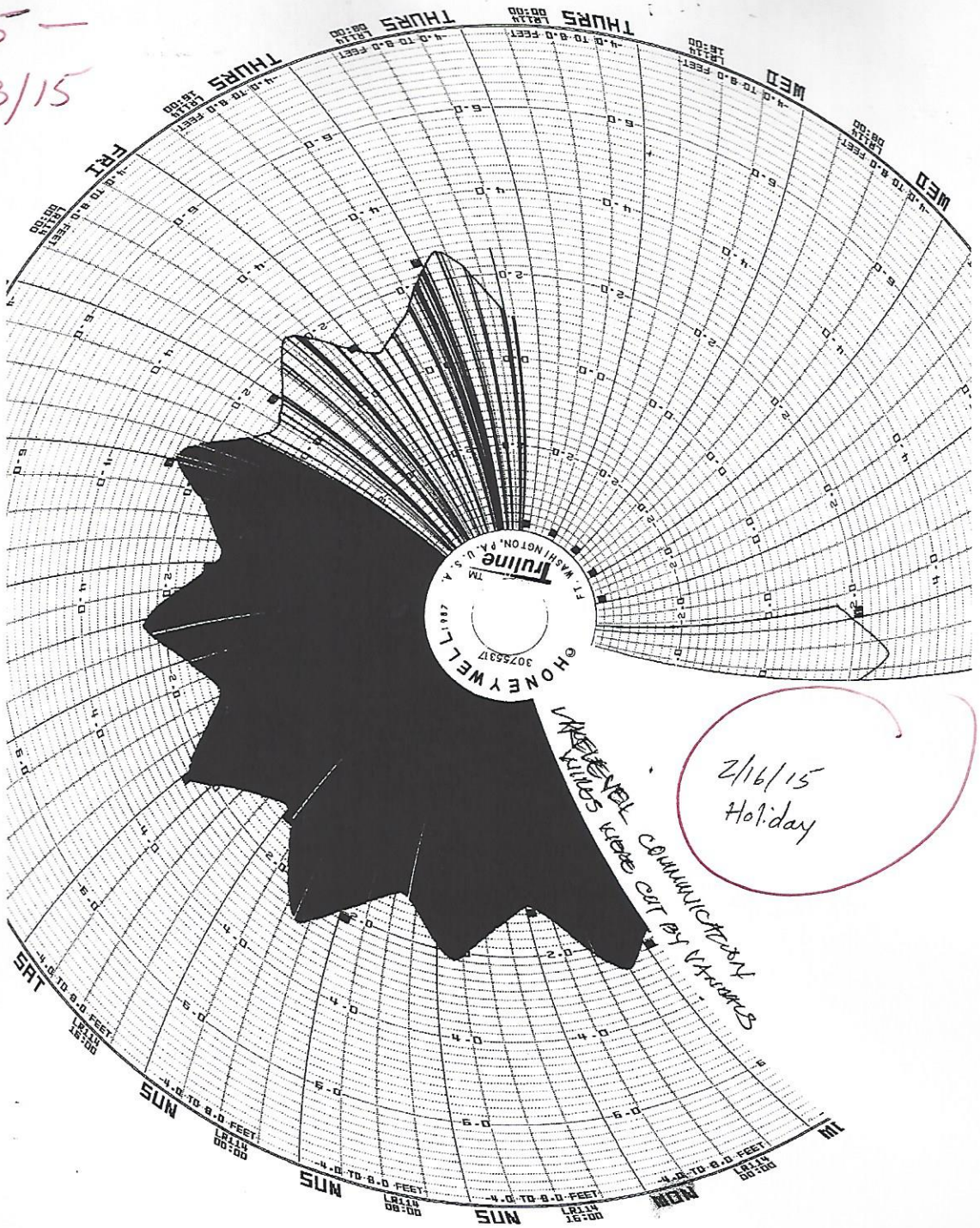


tide chart flat

mon - Fri 2/09/15 - 2/13/15
9 am
2 pm

Fri - mon tide app mon 2/
2/13/15 - 2/16/15
9 am - 12 pm

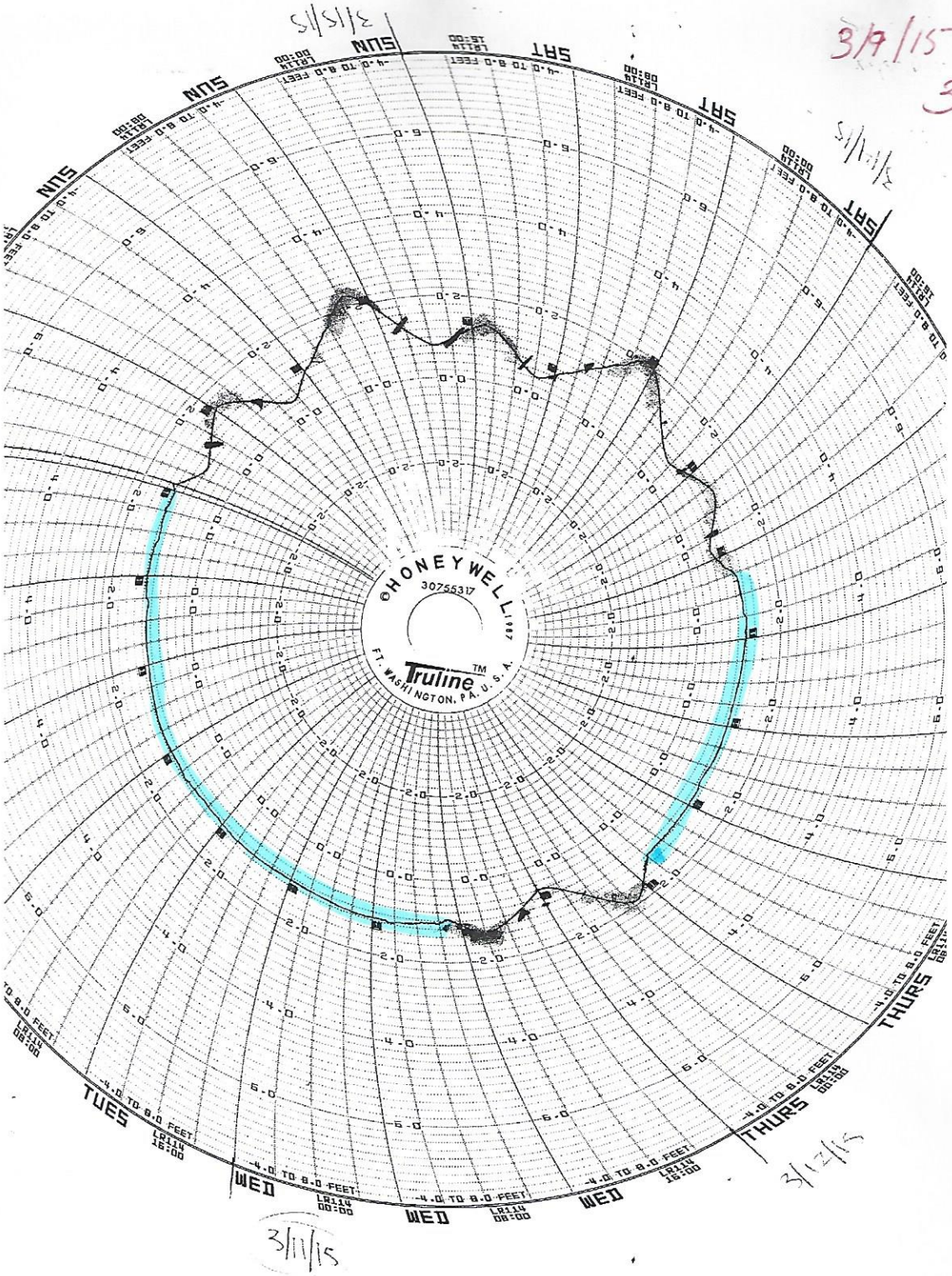
2/17/15 —
2/23/15



2/16/15
Holiday

Unusual communication
times were cut by vacuums

3/14/15 –
3/15/15



3/11/15

3/12/15

3/13/15

3/14/15

PARTS

115 Start 3/12/15

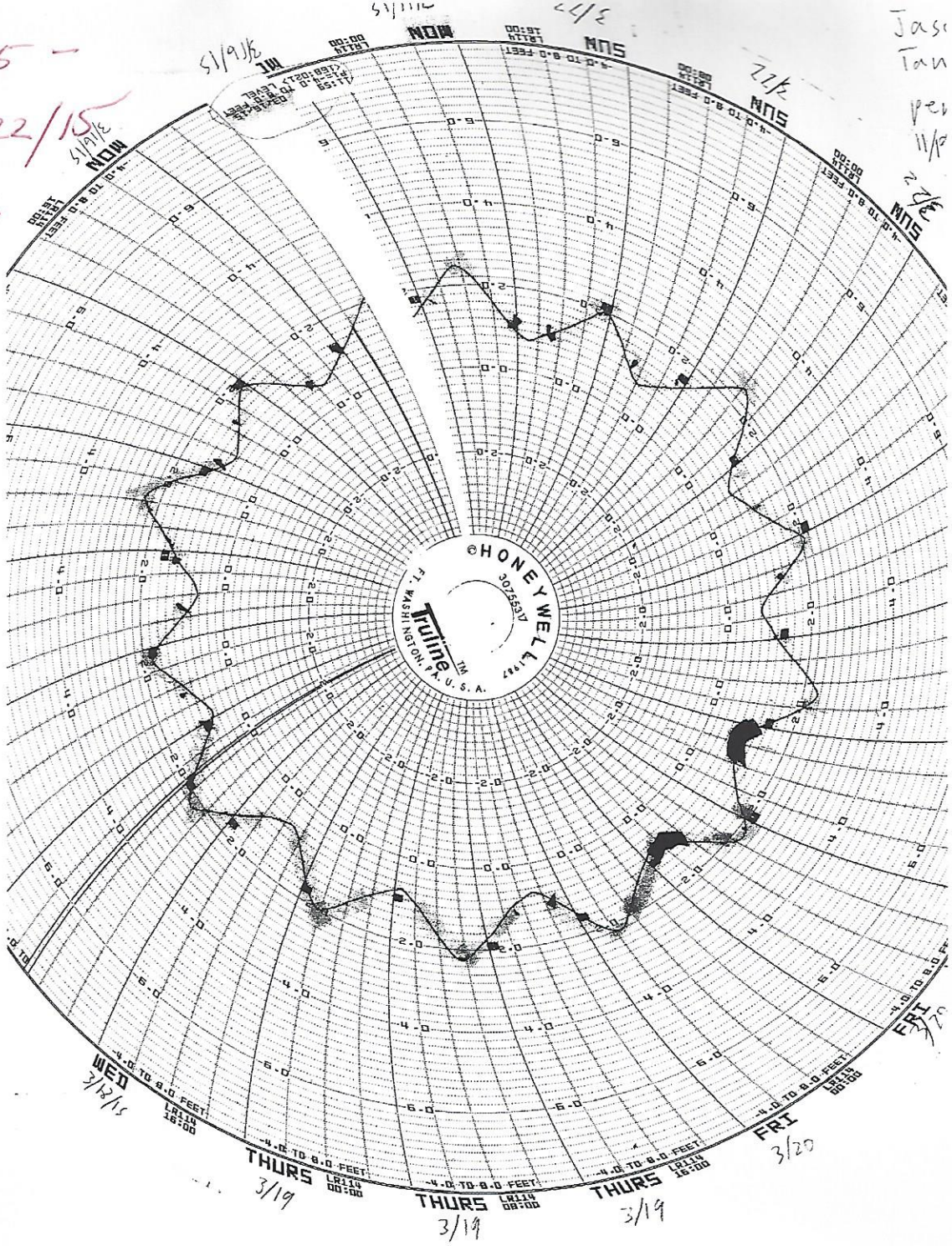
Stop 3/13/15

2 Days Due at 10am

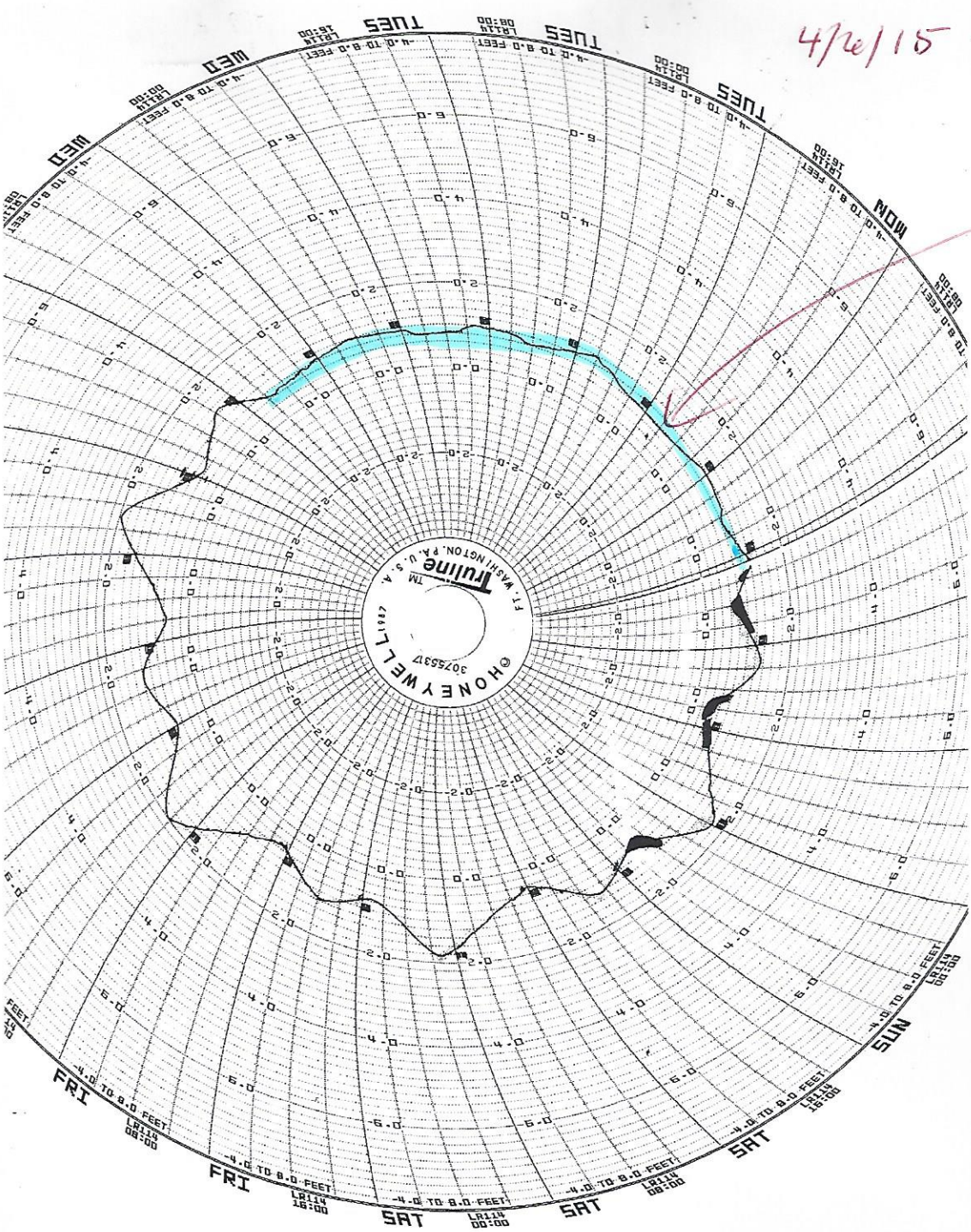
3/16/15 –

3/22/15

NO CLOSURES



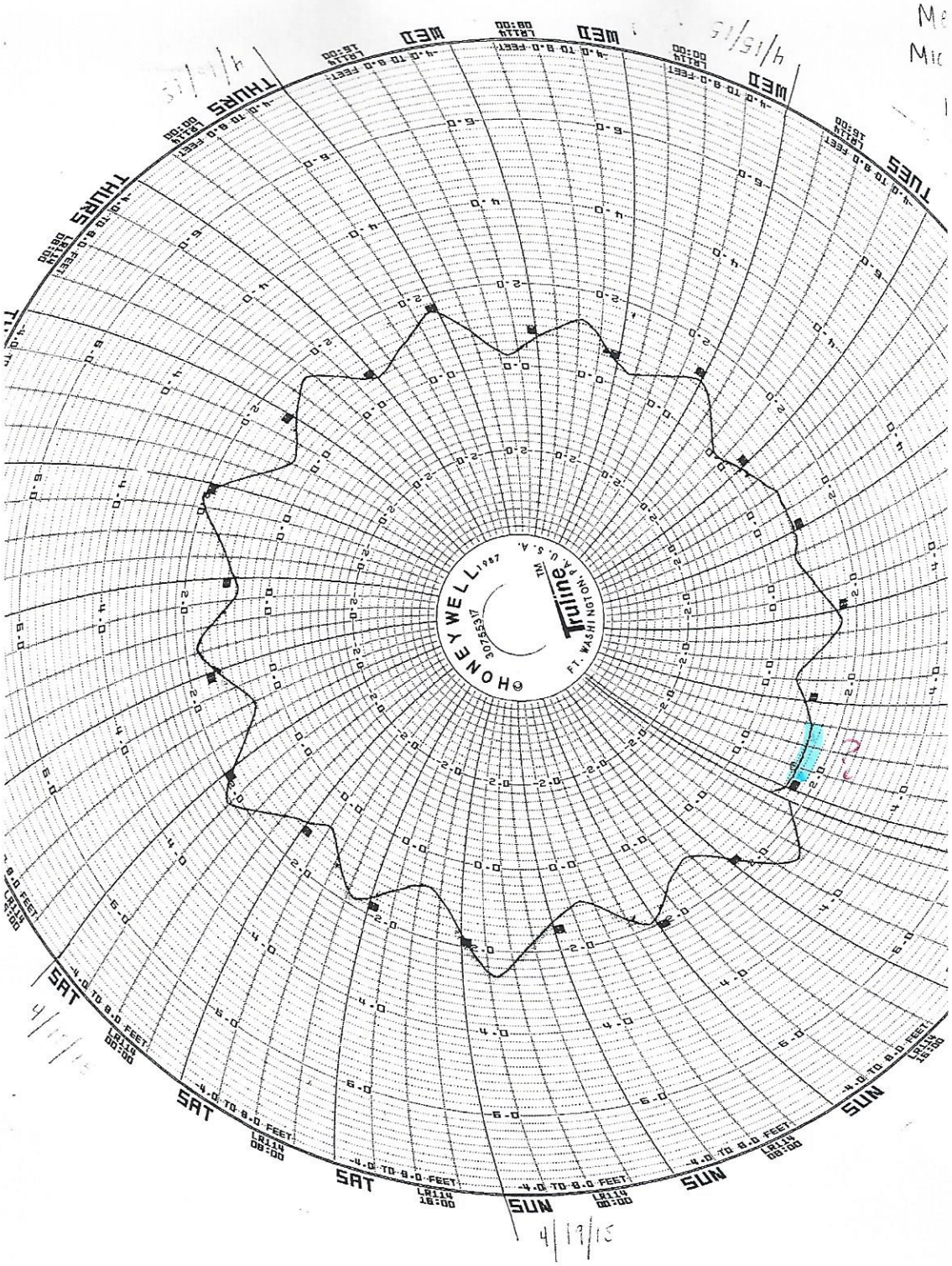
4/26/15 - 4/12/15


CLOSED
SUN
MON
TUES
WED
SAT
FRI
-4.0 TO 8.0 FEET
LR114
00:00
LR114
16:00
HONEYWELL
307553T
Truline
TM
WASHINGTON, P.A. U.S.A.
FT.

Me
Mic

4/13/15 -
4/19/15

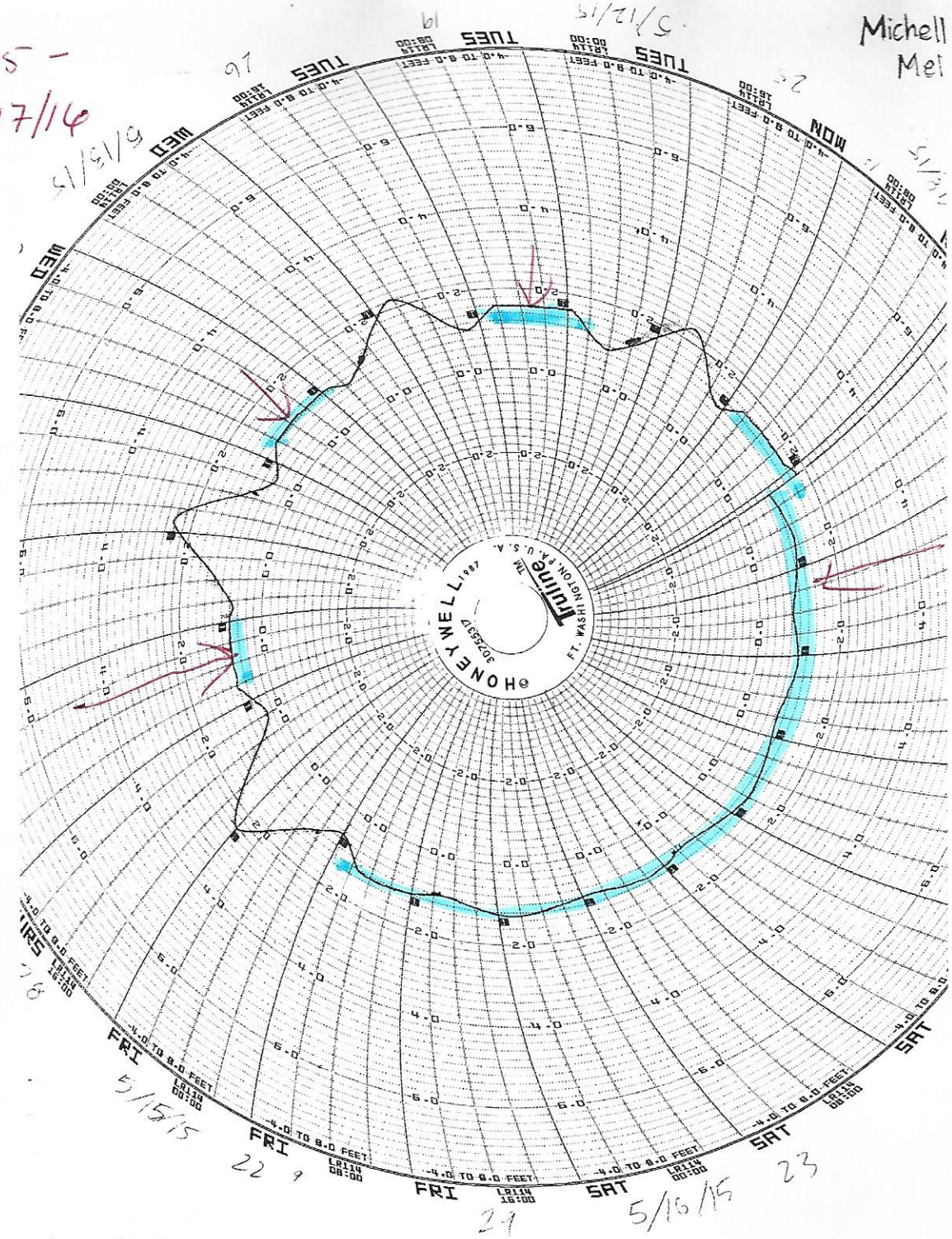
NO CLOSURES



art : 4/14/15
4 4/19/15
↳ open and closed [illegible] for only four hours
ing this week, the tide gate was closed for only four hours

5/11/15 -
5/17/14

Michell
Mel



Tide chart analysis # 22

: 5/15/15 9:00am
: 5/17/15 4:00pm
sion: 3 days (open and closed on [illegible])

The tides closed for a total of 88 hours

l Ranges:
... 1-2.3

5/18/15

HONEYWELL
307553V
©1981
Truline TM
FT. WASHINGTON, PA U.S.A.
SUN
MON
TUES
WED
THURS
FRI
SAT
-4.0 TO 8.0 FEET
LB114
00:00
LB114
16:00
05/18/15
0:135
FT:-8.0 TO 8.0 FEET
(160:02):LEVEL

©HONEYWELL 1987
307253J7
Truline TM
FT. WASHINGTON, PA. U.S.A.
SAT
SUN
MON
TUES
WED
THURS
FRI
-4.0 TO 8.0 FEET
LR114 00:00
LR114 16:00
51/80/20

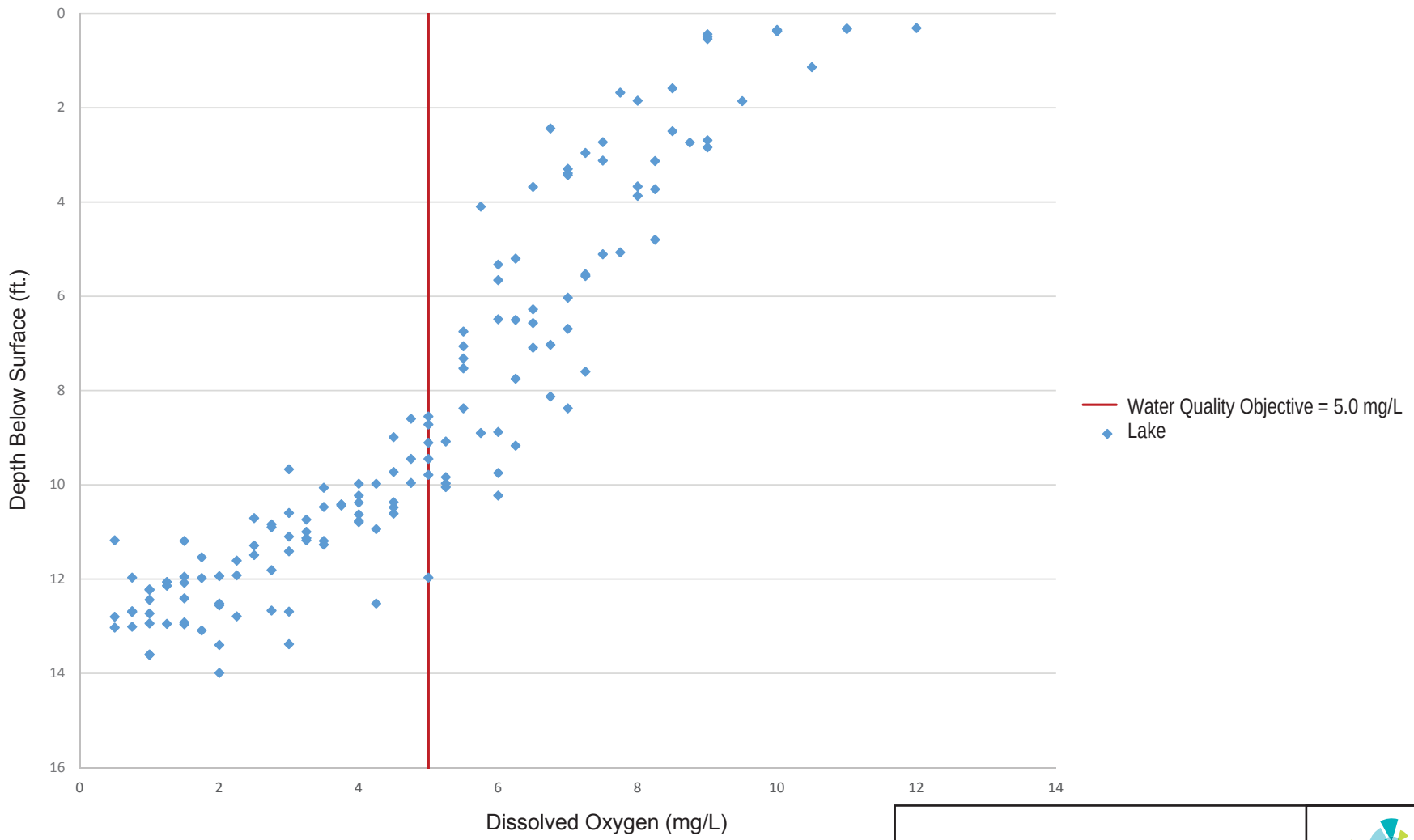
HONEYWELL 1987
307553T
Truline TM
WASHINGTON, PA. U.S.A.
FT.
THURS
FRI
SAT
SUN
MON
TUES
WED
-4.0 TO 8.0 FEET
LB113
00:00
LB113
08:00
LB113
16:00

5/15/90

APPENDIX G

High Resolution Sampling on March 1, 2007

\\oad-gis1\s-3000s$\OD14\170670\170670.02\15_0803_wqmr:_fig_f-01.aiGG-G



DISSOLVED OXYGEN OVER DEPTH
MARCH 1, 2007
Lake Merritt
Water Quality Monitoring
Oakland, California

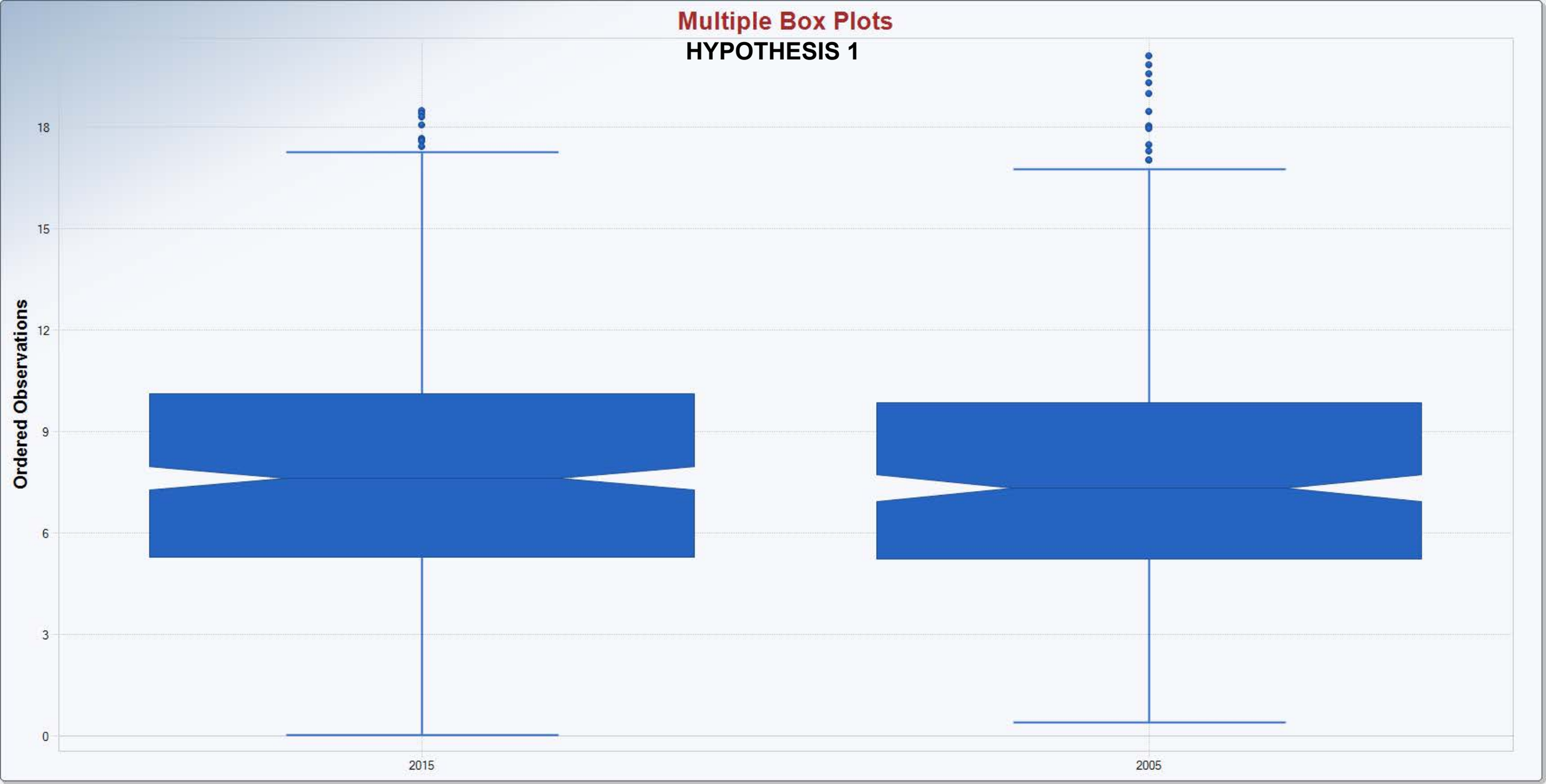
amec foster wheeler

Date: 08/13/2015 | Project No. OD14170670.02

Figure
G-1

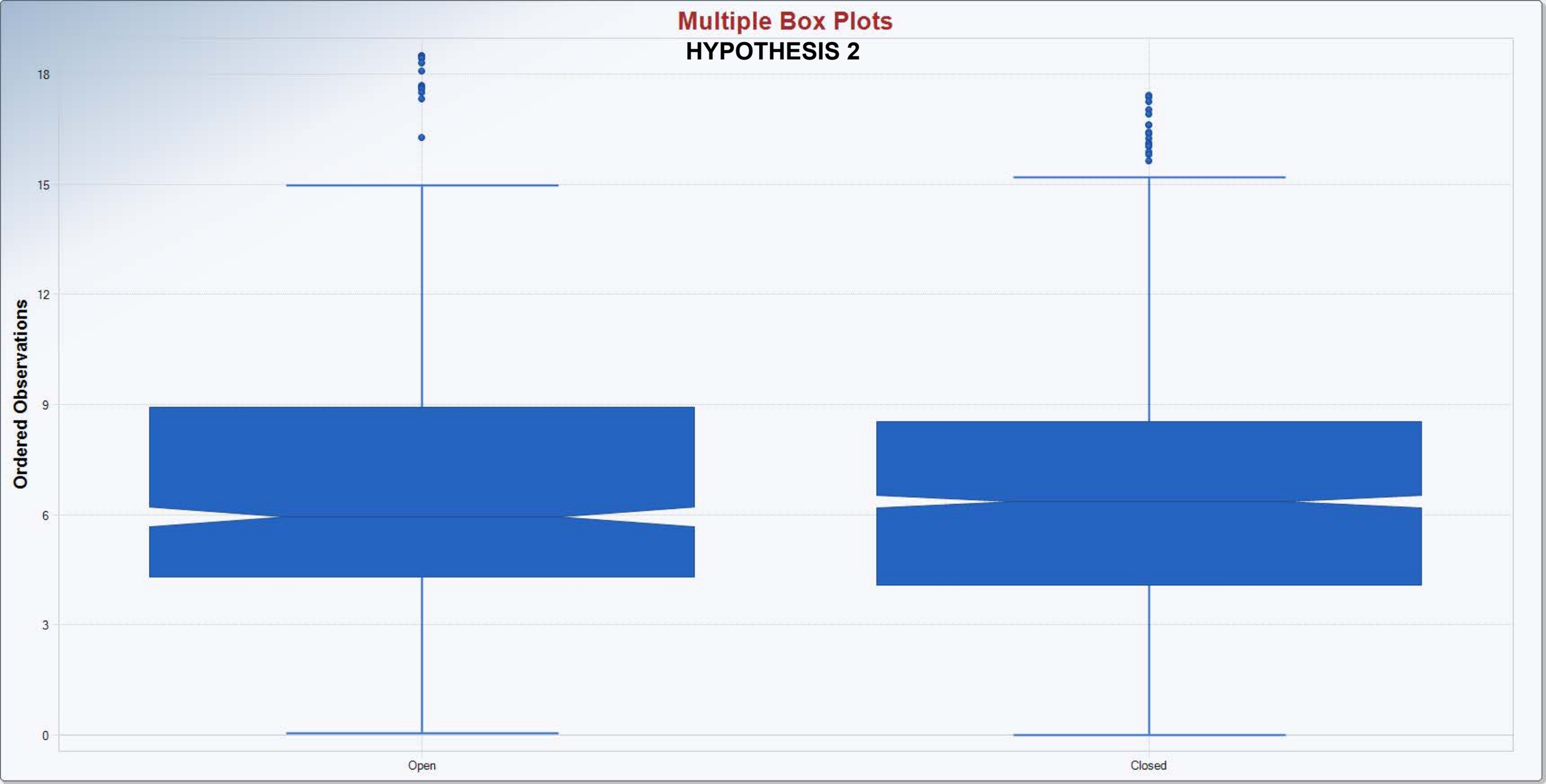
APPENDIX H

Statistical Analysis and Whisker Box Plots


Multiple Box Plots
HYPOTHESIS 1
Ordered Observations
18
15
12
9
6
3
0
2015
2005

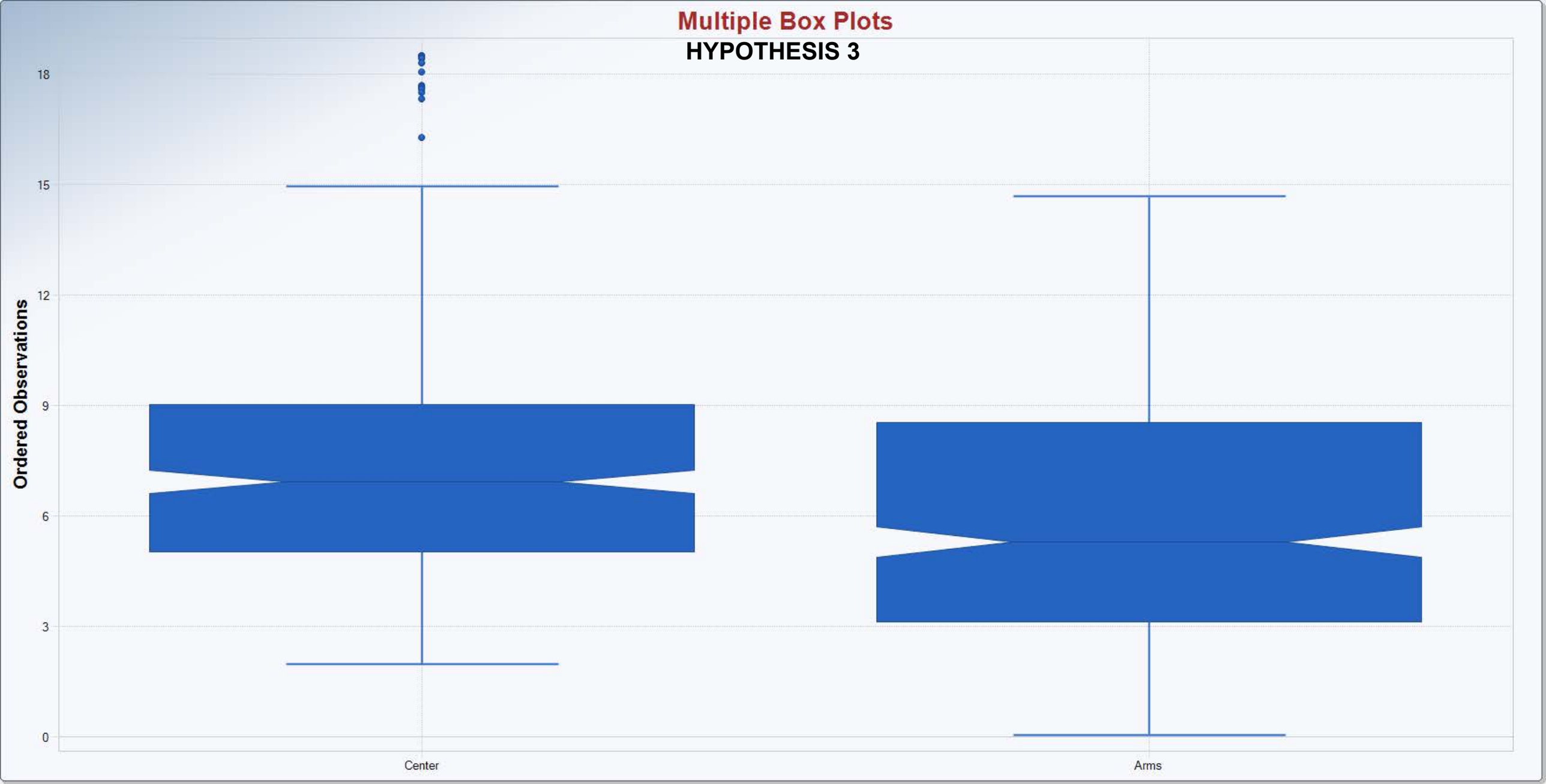
HYPOTHESIS 1

	A	B	C	D	E	F	G	H	I	J	K	L
1	Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs											
2												
3			User Selected Options									
4			Date/Time of Computation	4/10/2016 4:02:59 PM								
5			From File	WorkSheet.xls								
6			Full Precision	OFF								
7			Confidence Coefficient	95%								
8			Substantial Difference	0.000								
9			Selected Null Hypothesis	Sample 1 Mean/Median = Sample 2 Mean/Median (Two Sided Alternative)								
10			Alternative Hypothesis	Sample 1 Mean/Median <> Sample 2 Mean/Median								
11												
12												
13	Sample 1 Data: 2015											
14	Sample 2 Data: 2005											
15												
16				Raw Statistics								
17					Sample 1	Sample 2						
18				Number of Valid Observations	472	328						
19				Number of Distinct Observations	370	281						
20				Minimum	0.05	0.43						
21				Maximum	18.49	20.1						
22				Mean	7.761	7.903						
23				Median	7.61	7.325						
24				SD	3.924	4.042						
25				SE of Mean	0.181	0.223						
26												
27				Wilcoxon-Mann-Whitney (WMW) Test								
28												
29	H0: Mean/Median of Sample 1 = Mean/Median of Sample 2											
30												
31				Sample 1 Rank Sum W-Stat	189430							
32				WMW U-Stat	77802							
33				Standardized WMW U-Stat	0.123							
34				Mean (U)	77408							
35				SD(U) - Adj ties	3215							
36				Approximate U-Stat Critical Value (0.025)	-1.96							
37				Approximate U-Stat Critical Value (0.975)	1.96							
38				P-Value (Adjusted for Ties)	0.902							
39												
40	Conclusion with Alpha = 0.05											
41	Do Not Reject H0, Conclude Sample 1 = Sample 2											
42												
43	P-Value >= alpha (0.05)											
44												


Multiple Box Plots
HYPOTHESIS 2
Ordered Observations
18
15
12
9
6
3
0
Open
Closed

HYPOTHESIS 2

	A	B	C	D	E	F	G	H	I	J	K	L
1	Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs											
2												
3			User Selected Options									
4			Date/Time of Computation	4/10/2016 5:01:50 PM								
5			From File	WorkSheet.xls								
6			Full Precision	OFF								
7			Confidence Coefficient	95%								
8			Substantial Difference	0.000								
9			Selected Null Hypothesis	Sample 1 Mean/Median = Sample 2 Mean/Median (Two Sided Alternative)								
10			Alternative Hypothesis	Sample 1 Mean/Median <> Sample 2 Mean/Median								
11												
12												
13	Sample 1 Data: Open											
14	Sample 2 Data: Closed											
15												
16				Raw Statistics								
17					Sample 1	Sample 2						
18				Number of Valid Observations	789	1541						
19				Number of Distinct Observations	539	813						
20				Minimum	0.07	0.02						
21				Maximum	18.49	17.41						
22				Mean	6.688	6.384						
23				Median	5.95	6.35						
24				SD	3.545	3.529						
25				SE of Mean	0.126	0.0899						
26												
27				Wilcoxon-Mann-Whitney (WMW) Test								
28												
29	H0: Mean/Median of Sample 1 = Mean/Median of Sample 2											
30												
31				Sample 1 Rank Sum W-Stat	928191							
32				WMW U-Stat	616536							
33				Standardized WMW U-Stat	0.56							
34				Mean (U)	607925							
35				SD(U) - Adj ties	15368							
36				Approximate U-Stat Critical Value (0.025)	-1.96							
37				Approximate U-Stat Critical Value (0.975)	1.96							
38				P-Value (Adjusted for Ties)	0.575							
39												
40	Conclusion with Alpha = 0.05											
41		Do Not Reject H0, Conclude Sample 1 = Sample 2										
42												
43		P-Value >= alpha (0.05)										
44												

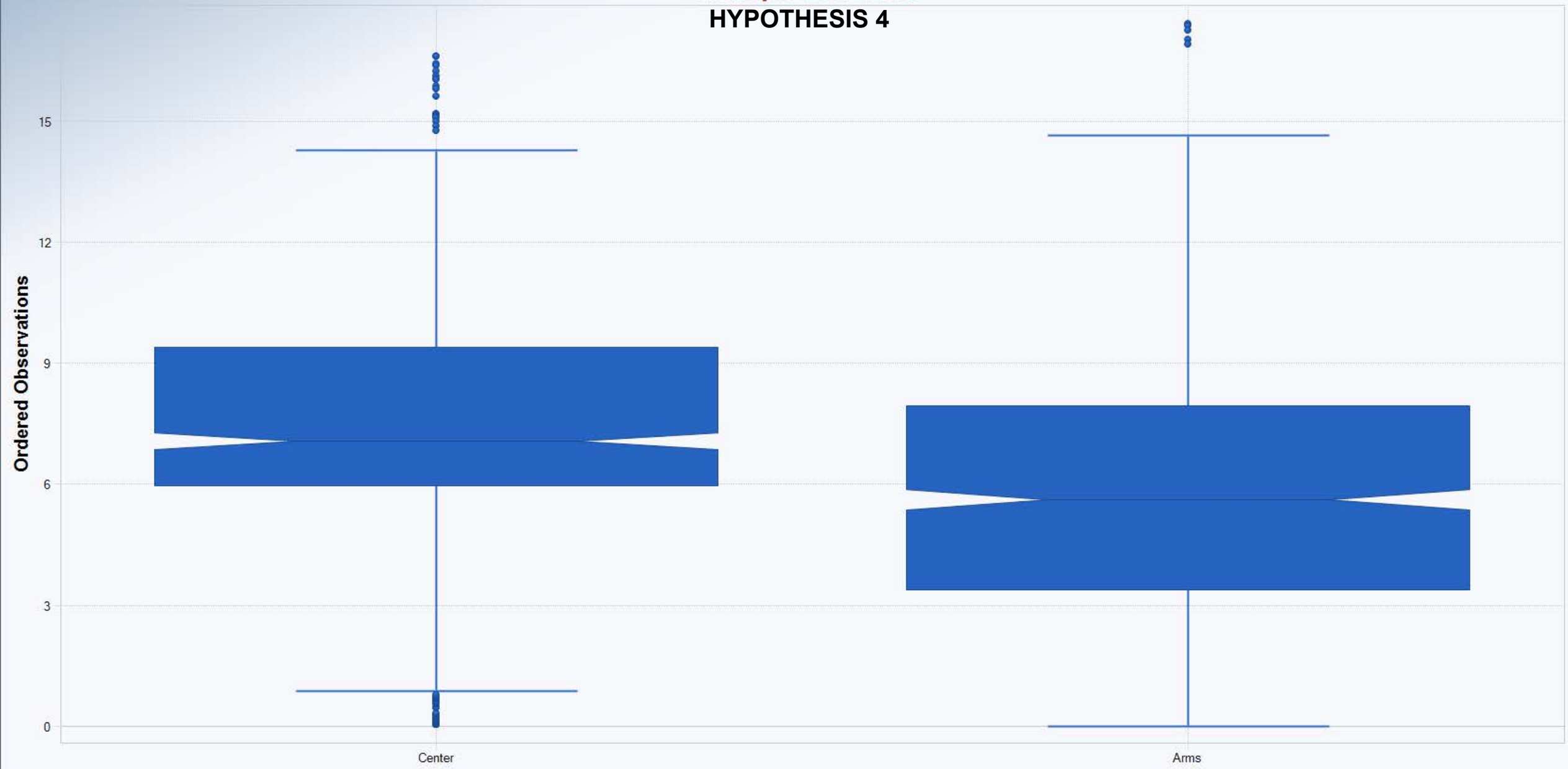

Multiple Box Plots
HYPOTHESIS 3
Ordered Observations
18
15
12
9
6
3
0
Center
Arms

HYPOTHESIS 3

	A	B	C	D	E	F	G	H	I	J	K	L
1	Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs											
2												
3			User Selected Options									
4			Date/Time of Computation	4/11/2016 10:24:54 AM								
5			From File	WorkSheet.xls								
6			Full Precision	OFF								
7			Confidence Coefficient	95%								
8			Substantial Difference	0.000								
9			Selected Null Hypothesis	Sample 1 Mean/Median = Sample 2 Mean/Median (Two Sided Alternative)								
10			Alternative Hypothesis	Sample 1 Mean/Median <> Sample 2 Mean/Median								
11												
12												
13	Sample 1 Data: Center											
14	Sample 2 Data: Arms											
15												
16				Raw Statistics								
17					Sample 1	Sample 2						
18				Number of Valid Observations	389	399						
19				Number of Distinct Observations	284	328						
20				Minimum	2	0.08						
21				Maximum	18.49	14.65						
22				Mean	7.462	5.95						
23				Median	6.93	5.29						
24				SD	3.348	3.566						
25				SE of Mean	0.17	0.179						
26												
27				Wilcoxon-Mann-Whitney (WMW) Test								
28												
29	H0: Mean/Median of Sample 1 = Mean/Median of Sample 2											
30												
31				Sample 1 Rank Sum W-Stat	173466							
32				WMW U-Stat	97611							
33				Standardized WMW U-Stat	6.262							
34				Mean (U)	77606							
35				SD(U) - Adj ties	3195							
36				Approximate U-Stat Critical Value (0.025)	-1.96							
37				Approximate U-Stat Critical Value (0.975)	1.96							
38				P-Value (Adjusted for Ties)	3.794E-10							
39												
40	Conclusion with Alpha = 0.05											
41	Reject H0, Conclude Sample 1 <> Sample 2											
42												
43	P-Value < alpha (0.05)											
44												

Multiple Box Plots

HYPOTHESIS 4

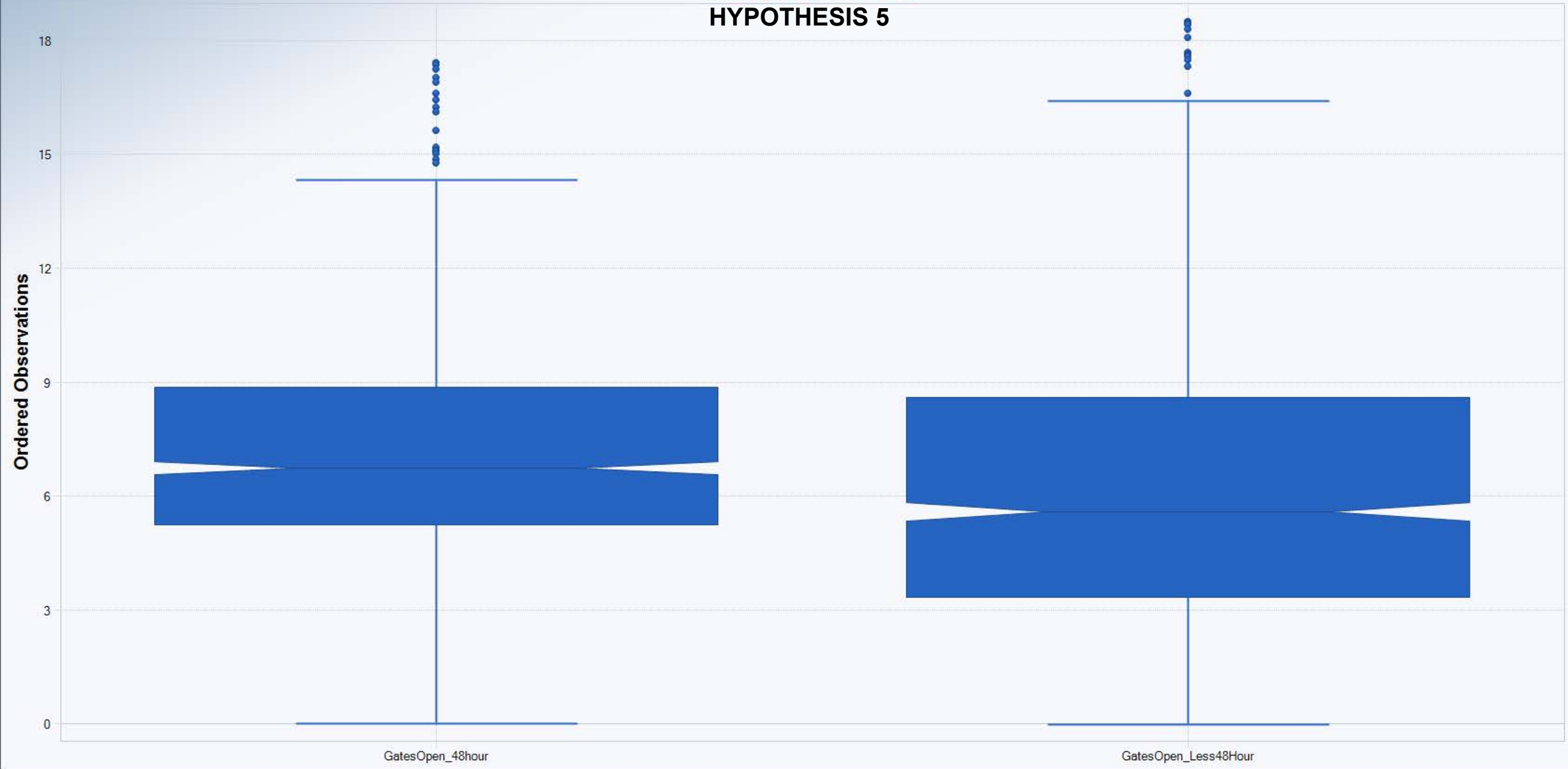


HYPOTHESIS 4

	A	B	C	D	E	F	G	H	I	J	K	L
1	Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs											
2												
3			User Selected Options									
4			Date/Time of Computation	4/10/2016 8:47:21 PM								
5			From File	WorkSheet.xls								
6			Full Precision	OFF								
7			Confidence Coefficient	95%								
8			Substantial Difference	0.000								
9			Selected Null Hypothesis	Sample 1 Mean/Median = Sample 2 Mean/Median (Two Sided Alternative)								
10			Alternative Hypothesis	Sample 1 Mean/Median <> Sample 2 Mean/Median								
11												
12												
13	Sample 1 Data: Center											
14	Sample 2 Data: Arms											
15												
16				Raw Statistics								
17					Sample 1	Sample 2						
18				Number of Valid Observations	728	813						
19				Number of Distinct Observations	468	547						
20				Minimum	0.04	0.02						
21				Maximum	16.61	17.41						
22				Mean	7.31	5.555						
23				Median	7.06	5.61						
24				SD	3.315	3.51						
25				SE of Mean	0.123	0.123						
26												
27				Wilcoxon-Mann-Whitney (WMW) Test								
28												
29	H0: Mean/Median of Sample 1 = Mean/Median of Sample 2											
30												
31				Sample 1 Rank Sum W-Stat	649738							
32				WMW U-Stat	384382							
33				Standardized WMW U-Stat	10.14							
34				Mean (U)	295932							
35				SD(U) - Adj ties	8721							
36				Approximate U-Stat Critical Value (0.025)	-1.96							
37				Approximate U-Stat Critical Value (0.975)	1.96							
38				P-Value (Adjusted for Ties)	3.586E-24							
39												
40	Conclusion with Alpha = 0.05											
41	Reject H0, Conclude Sample 1 <> Sample 2											
42												
43	P-Value < alpha (0.05)											
44												

Multiple Box Plots

HYPOTHESIS 5

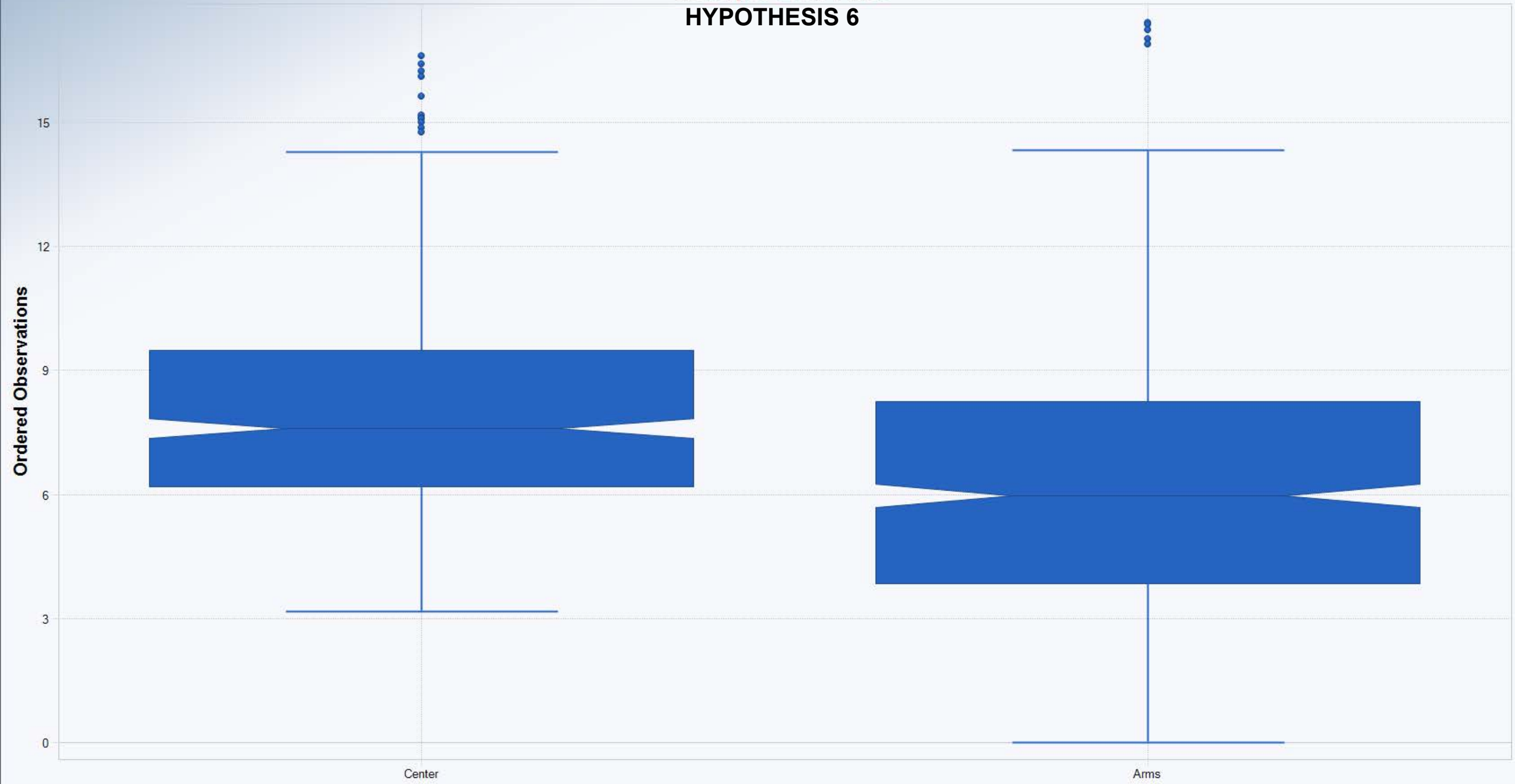


HYPOTHESIS 5

	A	B	C	D	E	F	G	H	I	J	K	L
1	Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs											
2												
3			User Selected Options									
4			Date/Time of Computation	5/9/2016 9:30:49 AM								
5			From File	WorkSheet.xls								
6			Full Precision	OFF								
7			Confidence Coefficient	95%								
8			Substantial Difference	0.000								
9			Selected Null Hypothesis	Sample 1 Mean/Median = Sample 2 Mean/Median (Two Sided Alternative)								
10			Alternative Hypothesis	Sample 1 Mean/Median <> Sample 2 Mean/Median								
11												
12												
13	Sample 1 Data: GatesOpen_48Hours											
14	Sample 2 Data: GatesOpen_Less48Hours											
15												
16				Raw Statistics								
17					Sample 1	Sample 2						
18				Number of Valid Observations	1076	1253						
19				Number of Distinct Observations	643	753						
20				Minimum	0.02	0						
21				Maximum	17.41	18.49						
22				Mean	7.066	5.988						
23				Median	6.735	5.6						
24				SD	3.14	3.781						
25				SE of Mean	0.0957	0.107						
26												
27				Wilcoxon-Mann-Whitney (WMW) Test								
28												
29	H0: Mean/Median of Sample 1 = Mean/Median of Sample 2											
30												
31				Sample 1 Rank Sum W-Stat	1383435							
32				WMW U-Stat	804009							
33				Standardized WMW U-Stat	8.028							
34				Mean (U)	674114							
35				SD(U) - Adj ties	16180							
36				Approximate U-Stat Critical Value (0.025)	-1.96							
37				Approximate U-Stat Critical Value (0.975)	1.96							
38				P-Value (Adjusted for Ties)	9.885E-16							
39												
40	Conclusion with Alpha = 0.05											
41	Reject H0, Conclude Sample 1 <> Sample 2											
42												
43	P-Value < alpha (0.05)											
44												

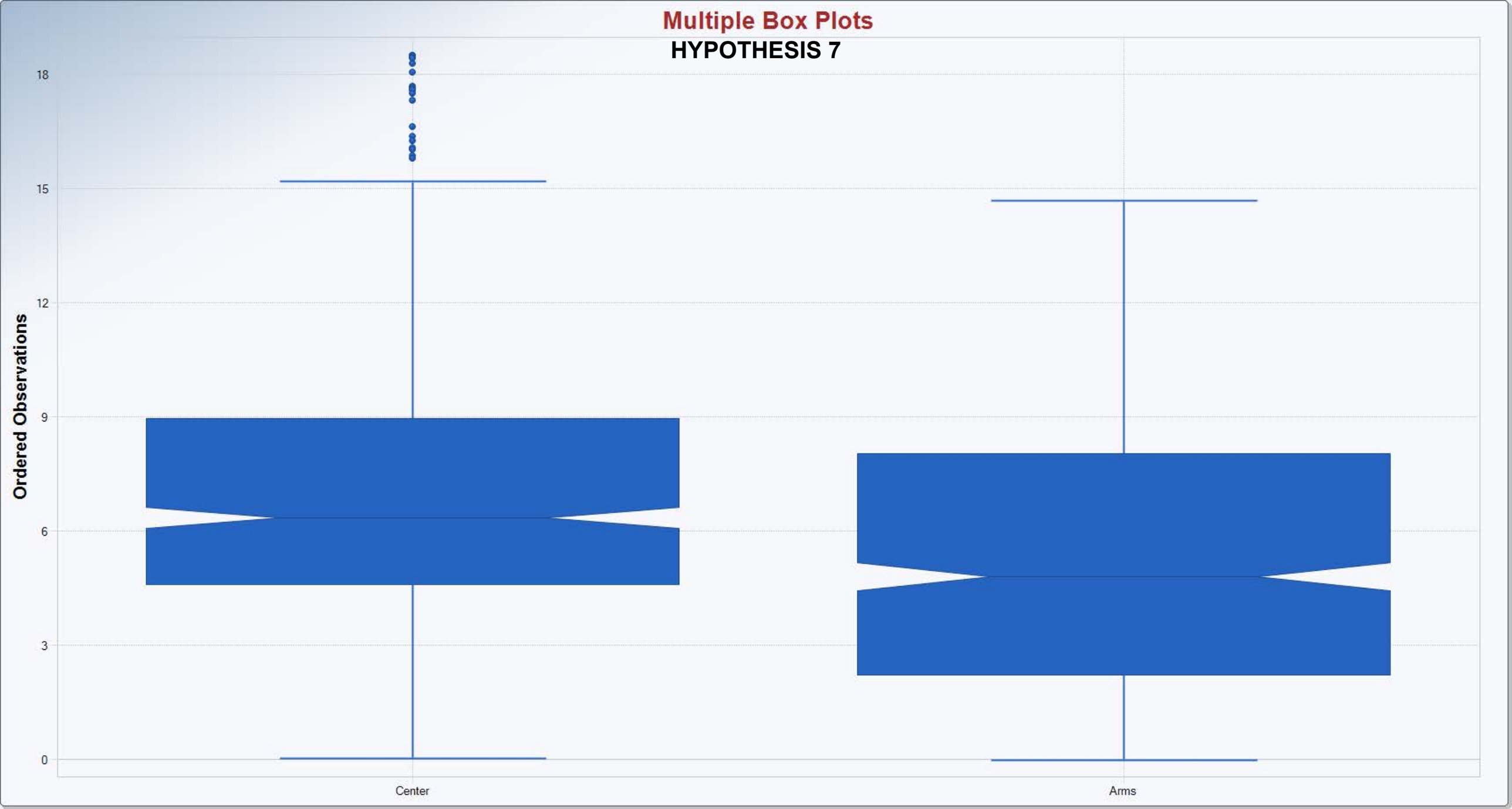
Multiple Box Plots

HYPOTHESIS 6



HYPOTHESIS 6

	A	B	C	D	E	F	G	H	I	J	K	L
1	Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs											
2												
3			User Selected Options									
4			Date/Time of Computation	7/11/2016 4:42:00 PM								
5			From File	WorkSheet.xls								
6			Full Precision	OFF								
7			Confidence Coefficient	95%								
8			Substantial Difference	0.000								
9			Selected Null Hypothesis	Sample 1 Mean/Median = Sample 2 Mean/Median (Two Sided Alternative)								
10			Alternative Hypothesis	Sample 1 Mean/Median <> Sample 2 Mean/Median								
11												
12												
13	Sample 1 Data: Center											
14	Sample 2 Data: Arms											
15												
16				Raw Statistics								
17					Sample 1	Sample 2						
18				Number of Valid Observations	504	572						
19				Number of Distinct Observations	334	426						
20				Minimum	3.2	0.02						
21				Maximum	16.6	17.41						
22				Mean	8.093	6.16						
23				Median	7.6	5.97						
24				SD	2.59	3.302						
25				SE of Mean	0.115	0.138						
26												
27				Wilcoxon-Mann-Whitney (WMW) Test								
28												
29	H0: Mean/Median of Sample 1 = Mean/Median of Sample 2											
30												
31				Sample 1 Rank Sum W-Stat	323921							
32				WMW U-Stat	196661							
33				Standardized WMW U-Stat	10.32							
34				Mean (U)	144144							
35				SD(U) - Adj ties	5087							
36				Approximate U-Stat Critical Value (0.025)	-1.96							
37				Approximate U-Stat Critical Value (0.975)	1.96							
38				P-Value (Adjusted for Ties)	5.464E-25							
39												
40	Conclusion with Alpha = 0.05											
41	Reject H0, Conclude Sample 1 <> Sample 2											
42												
43	P-Value < alpha (0.05)											
44												


Multiple Box Plots
HYPOTHESIS 7
Ordered Observations
18
15
12
9
6
3
0
Center
Arms

HYPOTHESIS 7

	A	B	C	D	E	F	G	H	I	J	K	L
1	Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs											
2												
3			User Selected Options									
4			Date/Time of Computation	7/11/2016 5:09:42 PM								
5			From File	WorkSheet.xls								
6			Full Precision	OFF								
7			Confidence Coefficient	95%								
8			Substantial Difference	0.000								
9			Selected Null Hypothesis	Sample 1 Mean/Median = Sample 2 Mean/Median (Two Sided Alternative)								
10			Alternative Hypothesis	Sample 1 Mean/Median <> Sample 2 Mean/Median								
11												
12												
13	Sample 1 Data: Center											
14	Sample 2 Data: Arms											
15												
16				Raw Statistics								
17					Sample 1	Sample 2						
18				Number of Valid Observations	613	642						
19				Number of Distinct Observations	444	472						
20				Minimum	0.04	0						
21				Maximum	18.49	14.65						
22				Mean	6.762	5.244						
23				Median	6.34	4.8						
24				SD	3.722	3.683						
25				SE of Mean	0.15	0.145						
26												
27				Wilcoxon-Mann-Whitney (WMW) Test								
28												
29	H0: Mean/Median of Sample 1 = Mean/Median of Sample 2											
30												
31				Sample 1 Rank Sum W-Stat	431685							
32				WMW U-Stat	243494							
33				Standardized WMW U-Stat	7.28							
34				Mean (U)	196773							
35				SD(U) - Adj ties	6418							
36				Approximate U-Stat Critical Value (0.025)	-1.96							
37				Approximate U-Stat Critical Value (0.975)	1.96							
38				P-Value (Adjusted for Ties)	3.346E-13							
39												
40	Conclusion with Alpha = 0.05											
41	Reject H0, Conclude Sample 1 <> Sample 2											
42												
43	P-Value < alpha (0.05)											
44												