

Prepared for:
The Port of Los Angeles
San Pedro, California

The Port of Long Beach
Long Beach, California

Prepared By:
Ramboll Environ US Corporation
Irvine, California

In Association with:
Weston Solutions, Inc.
Carlsbad, California

Date
September, 2015

Project Number
04-33310A11

SAMPLING AND ANALYSIS REPORT FOR LOW DETECTION LIMIT WATER COLUMN STUDY PHASE 2



CONTENTS

1.	INTRODUCTION	1
1.1	Project Location	1
1.2	Project Team	1
2.	SAMPLE COLLECTION, HANDLING, AND SHIPPING	3
2.1	Sampling Design	3
2.2	Vessels and Divers	3
2.3	Navigation, Horizontal Positioning, and Water Depth	4
2.4	SPME Assembly Deployment	4
2.5	SPME Assembly Retrieval and SPME Fiber Handling and Shipping	5
2.6	Water Profile Sample Collection	5
2.7	Grab Sample Collection, Handling and Shipping	6
3.	ANALYSIS AND RESULTS	7
3.1	Event 1 –Water Grab Samples	7
3.2	Event 1 – Water Column Profile	7
3.3	Event 1 – SPME Samples	7
3.4	Event 2 –Water Grab Samples	8
3.5	Event 2 – Water Column Profile	9
3.6	Event 2 – SPME Samples	9
4.	QUALITY ASSURANCE AND QUALITY CONTROL	10
5.	REFERENCES	11

TABLES

Table 1:	Sample Locations and SPME Deployment Notes - Event 1
Table 2:	Sample Locations and SPME Deployment Notes - Event 2
Table 3:	Summary of Event 1 Grab Sample Results
Table 4:	Summary of Event 1 SPME Sample Results
Table 5:	Summary of Event 2 Grab Sample Results
Table 6:	Summary of Event 2 SPME Sample Results

LIST OF FIGURES

Figure 1:	Project and Sample Locations
-----------	------------------------------

LIST OF APPENDICES

- Appendix A: Field Notes and Logs
- Appendix A-1: Field Daily Investigation Logs
- Appendix A-2: Photo Logs
- Appendix A-3: Chains of Custody
- Appendix B: Data Tables
- Appendix B-1: Water Quality Data
- Appendix B-2: SPME Data
- Appendix C: Lab Reports
- Appendix C-1: Event 1 Lab Reports
- Appendix C-2: Event 2 Lab Reports
- Appendix D: Data Validation Report
- Appendix E: Electronic Data Deliverables (Provided Electronically)

P:\P\Port of Los Angeles, Environmental Services\04-33310A11 - PD 11 - LDL Study\Deliverables\Report\Final\LDL Phase 2 SAR (092915).docx

ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
Anchor	Anchor QEA, LLC
cm	centimeter
COC	Chain of Custody
CPR	cardio-pulmonary resuscitation
CTD	conductivity-temperature-depth
DDX	dichlorodiphenyltrichloroethane and its derivatives
DDD	dichlorodiphenyldichloroethylene
DDE	dichlorodiphenyldichloroethane
DDT	dichlorodiphenyltrichloroethane
DOC	dissolved organic carbon
EDD	electronic data deliverable
Eurofins	Eurofins Calscience, Inc
ft	feet
GPS	global positioning system
HASP	Health and Safety Plan
lbs	pounds
m	meter
mL	milliliter
MLLW	mean lower low water
MSI	Marine Science Institute
PCB	polychlorinated biphenyl
pdf	portable document format
PFD	personal flotation device
POC	particulate organic carbon
PQAPP	Programmatic Quality Assurance Project Plan
PRC	performance reference compound
QA/QC	Quality Assurance/Quality Control
Ramboll Environ	Ramboll Environ US Corporation
R/V	research vessel
SAP	Sampling and Analysis Plan

SAR	Sampling and Analysis Report
SPME	solid phase microextraction
SQO	Sediment Quality Objectives
TDI	Tierra Data, Inc.
TMDL	Total Maximum Daily Load
TOC	total organic carbon
TSS	total suspended solids
USEPA	United States Environmental Protection Agency
VHF	very high frequency
WAAS	Wide Area Augmentation System
Weston	Weston Solutions, Inc.
WGS84	World Geodetic System 1984
WRAP	Water Resources Action Plan

1. INTRODUCTION

Ramboll Environ US Corporation (Ramboll Environ, formerly ENVIRON International Corporation) in association with Weston Solutions, Inc. (Weston) have prepared this Sampling and Analysis Report (SAR) to provide results for Phase 2 of the low detection limit water column study to assess spatial variability in concentrations of polychlorinated biphenyls (PCBs) and dichlorodiphenyltrichloroethane and its derivatives (DDXs) in the water column throughout Los Angeles and Long Beach Harbor waters and Eastern San Pedro Bay during wet and dry seasons and across depths. The results of this study will be used to fill data gaps in the bioaccumulation model as part of a Sediment Quality Objective (SQO) Indirect Effects Tier III assessment for the Los Angeles/Long Beach Harbor as well as the Water Resources Action Plan (WRAP) Model to understand chemical fate and sediment transport mechanisms in the Los Angeles/Long Beach Harbor Watershed. These models will be utilized to achieve compliance with Harbor Toxics Total Maximum Daily Load (TMDL) fish tissue and sediment targets from the Final Basin Plan Amendment to the Water Quality Control Plan – Los Angeles Region to Incorporate the Total Maximum Daily Load for Toxic Pollutants in Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters (RWQCB, 2011).

This SAR details the collection and analysis efforts to obtain the PCB and DDX measurements in water (via solid phase microextraction, SPME), as well as surface water grab samples for additional chemical and physical analysis in support of the PCB and DDX measurements. The sampling was conducted in accordance with the Programmatic Quality Assurance Project Plan (PQAPP). As detailed below, the Ramboll Environ team conducted sampling in accordance with procedures outlined in Sampling and Analysis Plan (SAP): Low Detection Limit Water Column Study Phase 2, Greater Los Angeles and Long Beach Harbor Waters as prepared by Anchor OEA, LLC (Anchor; Anchor, 2014), and Supplemental Sampling and Analysis Plan for Low Detection Limit Water Column Study Phase 2 (ENVIRON and Weston, 2014).

1.1 Project Location

The Project location is the greater Los Angeles and Long Beach Harbor waters (Figure 1). The nearby areas are industrial, commercial, and residential use with a watershed that includes 21 municipalities and 1 million residents (RWQCB and USEPA, 2011). The Ports of Los Angeles and Long Beach covers 7,500 acres of land, and over 11,000 acres of land and water combined. Ship loading and unloading operation on the piers as well as marinas occupy the Inner Harbors. Discharges from the Dominguez Channel, Los Angeles River, and San Gabriel River flow to San Pedro Bay. The Dominguez Channel, Los Angeles River watershed and San Gabriel watershed are the focus of the Harbor Toxics TMDL, with a watershed that drains primarily underground storm drains over a dominantly urban area of approximately 133 square miles.

1.2 Project Team

- Ramboll Environ provided oversight of all field sampling and processing activities as well as data validation and reporting and coordinated with team members Weston (deployment of the SPME assemblies and collection of grab samples); Tierra Data (TDI) (vessel support and retrieval of SPME assemblies); Vista Analytical (SPME fiber analysis); and Eurofins Calscience Inc. (Eurofins) and the Marine Science Institute (MSI; water grab sample analysis)

- Weston coordinated field sampling and processing activities for water grab samples; provided vessel support for SPME assembly deployment and water grab sampling; designed and deployed SPME assembly moorings, conducted water profile and grab sampling, handling, and shipping; coordinated water grab sample analysis with Eurofins; and maintained water profile data.
- Eurofins filtered samples for dissolved organic carbon (DOC) analysis, shipped samples to MSI for DOC and total organic carbon (TOC) analysis, and performed DOC, total suspended solids (TSS), and particle size analyses of water grab samples for Event 1. Eurofins also archived samples for particulate organic carbon (POC) and TOC for Event 1. For Event 2, Eurofins performed TSS analysis and filtered and preserved samples for DOC before shipping samples to MSI for analysis of DOC, TOC and POC.
- MSI performed DOC, TOC, and POC analysis on water grab samples.
- Vista Analytical performed extraction and high-resolution PCB and DDX analysis of SPME fiber samples, and archived water grab samples for Event 2.
- TDI provided vessel and diver support for the SPME assembly retrievals.
- Anchor provided SPME assemblies. One scientist was on board to oversee the processing, handling and preparation of SPME fibers for shipment to Vista Analytical during retrieval for Event 1.

2. SAMPLE COLLECTION, HANDLING, AND SHIPPING

2.1 Sampling Design

The Phase 2 low detection limit water column study included two sampling events, one wet (Event 1) and one dry (Event 2) season event.

Each sampling event included measurement of freely-dissolved DDXs and PCBs in the water column at nine stations (Figure 1). At six stations, measurements were conducted at a mid-water column depth. At three stations, measurements were obtained at a mid-water column depth and a bottom water column depth (1 meter [m] above sediment). Thus, 12 primary measurements were conducted for each event. One field duplicate SPME assembly and grab sample were used for quality assurance/quality control (QA/QC) procedures. Sample location IDs, location descriptions, coordinates, deployment systems, mudline elevations, and sampling depths are shown for Event 1 and Event 2 in Tables 1 and 2, respectively. Field notes from all sampling events are provided in Appendix A-1.

Measurement of freely-dissolved DDXs and PCBs in the water column was conducted by deployment of SPME fibers in assemblies. SPME fibers were exposed to the water column for at least 28 days, during which the SPME fibers absorbed freely-dissolved PCBs and DDXs from the water column. After the exposure period was complete, the fibers were collected and analyzed by Vista Analytical Laboratories for PCBs by United States Environmental Protection Agency (USEPA) method 1668C and DDXs by USEPA method 1699. For Event 1, SPME assemblies were deployed on December 9 and 10, 2014 and retrieved on January 7 and 8, 2015 for a 29 day exposure time. For Event 2, the SPME assemblies were deployed on May 5 and 6, 2015 and retrieved June 15 and 16, 2015 for a 41 day exposure time. Event 2 was intended to represent the dry season sampling event; however, storm events that occurred shortly after deployment generated concerns that SPME sample results may not represent a true dry weather period exposure concentration. Since SPME samples represent a time integrated exposure over the deployment period, a decision was made to delay retrieval in order to better reflect dry weather exposure concentrations.

During both sampling events, water column profiles and water grab samples were obtained at each of the stations during SPME assembly deployment and retrieval. Water profiles at each station (one reading per meter of water depth) were obtained using a Seabird SBE 25 Sealogger conductivity-temperature-depth (CTD) logger. Water grab samples were obtained at the same depths of the SPME assembly deployment at each station using a 2.5 liter Kemmerer sampler. During the Event 2 retrieval, additional grab samples were obtained at mid-depth for each station and archived for potential future analysis of PCBs and DDXs.

2.2 Vessels and Divers

SPME assembly deployment, water profile measurements, and water grab sampling vessel support was provided by Weston. Weston's vessel, the research vessel (R/V) Water Line, is a 24-foot (ft) Radon Survey Vessel equipped with marine running lights, marine very high frequency (VHF) radio, signal flares, and personal flotation devices (PFDs) as per coast guard requirements. Vessel position was maintained via a Wide Area Augmentation System (WAAS) enabled global positioning system (GPS) unit.

SPME assembly retrieval vessel support was provided by TDI. TDI's vessel, the R/V Suzy II, is a 27-ft Wilson Survey Vessel equipped with marine running lights, marine VHF radio,

signal flares, and PFDs as per coast guard requirements. Vessel position was maintained via WAAS enabled GPS unit.

TDI also provided diver support for SPME assembly retrieval. All dives were completed by two American Academy of Underwater Scientist divers (EM385-1-1 compliant). All divers were certified by the TDI Dive Program or had documented scientific diving experience that meets the minimum requirements as specified in the TDI Safe Practices Manual for Scientific Diving. Divemasters had current cardio-pulmonary resuscitation (CPR) and First-Aid training certificates. A dedicated Captain for top side support was on board during all dive activities.

2.3 Navigation, Horizontal Positioning, and Water Depth

Differential GPS was used to navigate and position the vessel. The vessels were positioned as closely as possible to the target sampling location before sampling and SPME assembly deployment. The coordinates were recorded directly over the location of SPME deployment in latitude and longitude in decimal degrees (to five decimal places) in World Geodetic System 1984 (WGS84). Station location coordinates for Event 1 and Event 2 are provided in Table 1 and Table 2, respectively, and shown in Figure 1.

Water depth was measured at the sample location with an onboard, calibrated fathometer and confirmed with a leadline. The mudline elevation relative to mean lower low water (MLLW) datum was estimated by adding the measured depth and the tidal elevation. Vertical elevations measured to the nearest 0.01 ft relative to MLLW are reported in Tables 1 and 2.

2.4 SPME Assembly Deployment

Each SPME assembly consisted of SPME fibers contained in a copper mesh housing which was secured with twist ties within a larger protective stainless steel and second copper mesh housing. SPME assemblies and field QA/QC samples were prepared, labeled, and shipped by Anchor as described in Anchor (2014).

Two SPME assemblies were deployed at each location and water depth (ft MLLW) measured. One SPME assembly was for DDX and PCB primary sample analysis ("Primary Sample SPME") and contained twelve 33-centimeter (cm) SPME fibers. The other assembly contains two 24-cm SPME fibers that had been pre-spiked with PCB and DDX performance reference compounds (PRCs) ("PRC SPME"). Five ¹³C labeled PCBs (¹³C-PCB-8, -31, -79, -133 and -179) and four deuterated DDXs (4,4'- dichlorodiphenyldichloroethylene (DDE)-d8, 2,4'-DDE-d8, 4,4'- dichlorodiphenyldichloroethane (DDD)-d8, and 4,4'- dichlorodiphenyltrichloroethane (DDT)-d8) were used as PRCs for PCBs and DDXs, respectively. PRCs are analytically non-interfering chemicals used to determine the fraction of steady-state obtained by the SPME fiber during the deployment period, since absorption of PCBs and DDXs onto the fiber may not reach approximate steady state concentrations during the deployment. The PRC SPMEs are spiked with known amounts of PRC analytes and the reduction in this concentration over the exposure period is used to determine the fraction of steady state reached. The PRC-spiked SPME assembly was deployed on the same anchor line as the un-spiked primary sample SPME assembly or parallel to the primary assembly, but offset by approximately 0.5 ft (0.15m) to avoid uptake of released PRCs by clean, un-spiked fibers.

SPME assemblies were suspended in the water column with submerged mooring buoys. The submerged mooring buoys were placed in the water column at a depth equal to approximately 9.8 ft (3.0m) below the anticipated lowest sea level relative to MLLW during the period of deployment to ensure mooring buoys stay submerged during low tide events

and deeper than most recreational and commercial vessel traffic. The mooring buoys were of sufficient size to provide adequate buoyancy to ensure the SPME assembly was maintained at the target depth within the water column. At five stations, SPME assemblies were tied to private, secured docks or piers to ensure the assemblies remained at the target location. The remaining four stations were not tied to an existing structure but were anchored in the sediment using 90 pounds (lbs) of weight.

2.5 SPME Assembly Retrieval and SPME Fiber Handling and Shipping

Retrieval at the five stations with tie-offs (CS-01, IA-01, IB-01, FH-01, and LARE-01) was conducted from the boat by detaching the anchor line and pulling the assembly into the boat. Retrieval at the remaining stations was conducted with diver assistance. During Event 1, the use of acoustic releases was attempted, however retrieval via acoustic release was found to be problematic especially in those instances where the mooring assembly did not remain intact. Consequently, only diver assistance was used for Event 2.

SPME assemblies (one PRC SPME assembly, one primary sample SPME assembly) were untied from the anchor line, assemblies were disassembled, and fibers were removed from the assembly and photographed. Photo logs from Event 1 and Event 2 are included in Appendix A-2. Some photos from Event 1 are maintained by Anchor and not provided here. Any biofouling, color change, breakage, or loss of fiber was recorded. Fibers were then wiped with Kim wipes dampened with laboratory e-pure water provided by Vista.

For the 12 primary SPME samples and 1 field duplicate sample, 1 of the 2 PRC fibers was combined with 6 of the 12 un-spiked (primary sample) SPME fibers and transferred into a 60 milliliter (mL) ultra-clean amber glass vial and retained for PCB analysis. The remaining 1 PRC fiber and 6 un-spiked (primary sample) SPME fibers were transferred into another 60 mL vial and retained for DDX analysis. At three stations (LARE-01, REF-01, and IA-01), the PRC fibers were analyzed separately from the primary sample fibers for Event 1 (one PRC fiber in one vial for PCB analysis and one PRC fiber in a second vial for DDX analysis). For Event 2, the primary and PRC fibers were combined for all stations. A pre-cleaned ceramic column cutter provided by Anchor was used to cut the SPME fibers to appropriate lengths to fit into the amber vials. Lengths of SPME fibers were recorded and are provided in Tables 1 and 2.

Three PRC field blanks for PCB analysis and three PRC field blanks for DDX analysis were collected and analyzed to account for volatilization of PRCs from SPME fibers during deployment. Additionally, two SPME field blank fibers were exposed during each deployment to ambient air for five minutes to account for any potential adsorption of PCBs or DDXs onto SPME fibers during sampling, handling, and transport.

After SPME samples were placed in amber vials, closed and sealed with tape, vials were placed in protective bubble wrap bags and stored in a cooler on ice. Coolers were shipped over night to Vista via FedEx. All samples were shipped to Vista under Chain of Custody (COC). Copies of COCs are provided in Appendix A-3.

2.6 Water Profile Sample Collection

At each sample location, during deployment and retrieval of the SPME assemblies, in situ water quality parameters were measured using a Seabird SBE 25 Sealogger CTD logger equipped with sensors to measure depth, dissolved oxygen, transmissivity, pH, temperature, conductivity, and salinity. The Seabird SBE 25 Sealogger water quality profiler was calibrated one week prior to deployment and one week after deployment per the manufacturer's

recommendations. The instrument scanned all sensors at eight scans per second as the instrument was lowered through the water column. The data was stored in the unit's memory and was also recorded in real time on a field computer.

2.7 Grab Sample Collection, Handling and Shipping

At each sample location, during deployment and retrieval of the SPME assemblies, grab samples were collected using a 2.5 liter Kemmerer water sampler. Grab samples were collected at the same depth(s) that SPME assemblies were deployed. An equipment/rinse blank for the water grab sample was collected by filling the water sampling device with clean laboratory-provided water and then pouring directly into sampling bottles for TOC, DOC and POC analysis. Water grab samples were stored in coolers, on ice, until delivery in person to Eurofin's Garden Grove facility. Grab samples for archive during Event 2, were packaged on ice in coolers and shipped overnight to Vista via FedEx.

3. ANALYSIS AND RESULTS

3.1 Event 1 –Water Grab Samples

Event 1 water grab samples were collected on December 9 and 10 2014 during SPME assembly deployment and on January 8 2015 during SPME assembly retrieval. Grab sample dates and times are shown in Table 3. Water grab samples were submitted to Eurofins under COC and analyzed for:

- DOC (split samples) by Eurofins (method SM5310D) and MSI (methods outlined in Carlson et al. 2010);
- TOC by methods outlined in Carlson et al. 2010 by MSI;
- POC by method CHN EPA 440 by MSI;
- TSS by method SM 2540D by Eurofins;
- Particle size analysis was attempted by Eurofins, but due to low suspended solids content of the water samples analysis was not successful.
- Additional TOC and POC samples were archived by Eurofins

Results of all analyses are shown in Table 3. Miscommunication between Eurofins and MSI resulted in duplicate sample runs for each DOC sample, and these results have subsequently been treated as lab replicate samples. Additionally, the matrix spike/matrix spike duplicate TOC sample was not spiked due to lab error and was subsequently treated as a lab replicate. Concentrations shown in Table 3 were reported as blank corrected by the lab, or were corrected for filter blank concentrations as reported by MSI.

3.2 Event 1 – Water Column Profile

Water column parameters were taken with a Seabird SBE 25 Sealogger water quality profiler at the time of deployment and retrieval, and are reported in Appendix B-1.1 and Appendix B-1.2, respectively.

3.3 Event 1 – SPME Samples

SPME assemblies were deployed on December 9 and 10, 2014 and retrieved on January 7 and 8, 2015 following 29 days of exposure. Field blank and field blank PRC samples were submitted at the time of deployment. Dates and times of Event 1 SPME samples are shown in Table 4.

Some assemblies were unable to be recovered and/or were not retrieved from the deployed water depths (Table 1):

- At sample location CS-01 bottom depth, the shackle was lost at the top of the primary assembly; as a consequence the sampling depth was likely deeper than targeted.
- At sample location CP-01, the PRC assembly and mooring buoy were missing upon retrieval, and the primary sample SPME assembly was retrieved by diver from the sediment surface.
- At sample location SP-01, the top mooring buoy was absent upon retrieval and SPME assemblies were retrieved by diver from the sediment surface.
- At sample location ID IB-01, the field duplicate assembly was lost and could not be retrieved likely due to broken shackles meant to hold the assembly in place.

- At sample location ID LARE-01, the PRC assembly and top mooring buoy was missing upon retrieval; as a consequence of the loss of additional buoyancy, the sampling depth was likely deeper than initially targeted.
 - Due to PRC assembly loss at LARE-01, and additional PRC sample was created (CS-RW-01-S-M-PRC-20150107) at CS-01 mid-depth. Rather than combining the PRC and primary fibers as initially planned for this sample, the PRC fibers were placed into separate vials and analyzed as a unique PRC sample.

Fiber recovery from SPME assemblies was good, with minimal breakage of PRC fibers and minor breakage of primary fibers (primary fibers are longer than PRC and this may contribute to increased fiber breakage at the ends). SPME retrieval notes for Event 1 were maintained by Anchor and are not included here. SPME fibers from the primary assembly and the PRC assembly were combined into 60-ml sample vials as described above.

SPME fibers were analyzed for PCBs and PCB PRCs by USEPA 1668C and for DDXs and DDX PRCs by USEPA 1699. Results for PCB and DDX analyses are summarized in Table 4 and detailed in Appendix B-2.1.

3.4 Event 2 –Water Grab Samples

Water grab samples were collected from each station during deployment on May 5 and 6, 2015 and during retrieval on June 15, 2015. Water samples were submitted to Eurofins under chain of custody. Event 2 grab sample dates and times are shown in Table 5. Samples were filtered and preserved as needed by Eurofins before analysis of:

- TOC and DOC by methods outlined in Carlson et al. 2010 by MSI
- POC by method CHN EPA 440 by MSI
- TSS at Eurofins by method SM 2540D.
- It was determined not to attempt split sample analysis of DOC following review of Event 1 results. Results of DOC analysis provided by Eurofins were an order of magnitude higher and did not show the same level of precision as the MSI results, therefore it was determined to only have MSI perform DOC analysis for Event 2.
- Eurofins was unable to run particle size analysis in Event 1 due to a low volume of suspended solids, therefore it was determined not to request this analysis in Event 2.

Results of all analyses are shown in Table 5. Additionally during retrieval, water grab samples were collected at mid-depth for potential analysis of PCBs and DDXs, due to the potential for Event 2 SPME results to be unrepresentative of a dry weather event. As SPME samples integrate contaminant concentrations over a longer period of time, there was concern that rain events shortly after deployment would result in SPME sample results that were perhaps more indicative of wet weather conditions, rather than the dry weather conditions intended for this event. Consequently, a decision was made to collect discrete water grab samples following several weeks of dry weather conditions to be analyzed should the SPME results not be representative of a dry weather event. Water grab samples are being archived at Vista Analytical Laboratories.

3.5 Event 2 – Water Column Profile

Water column parameters were taken with a Seabird SBE 25 Sealogger water quality profiler at the time of deployment and retrieval, and are reported in Appendix B-1.3 and Appendix B-1.4, respectively.

3.6 Event 2 – SPME Samples

SPME assemblies were deployed on May 5 and 6, 2015 and retrieved on June 15 and 16, 2015, following 41 days of exposure. Field blank and field blank PRC samples were submitted at the time of deployment. All Event 2 SPME sample dates and times are shown in Table 6. All SPME assemblies were retrieved without loss of assembly or buoys. Biofouling was noted where present and occurred on most SPME assemblies.

Fiber recovery from SPME assemblies was good, with minimal breakage of PRC fibers and minor breakage of primary fibers. SPME fibers from the primary assembly and the PRC assembly were combined into 60-ml sample vials as described above.

SPME samples were shipped to Vista Analytical under COC and analyzed for PCBs and PCB PRCs by US EPA 1668C and for DDXs and DDX PRCs by US EPA 1699. Results for PCB and DDT analyses are summarized in Table 6 and detailed in Appendix B-2.2.

4. QUALITY ASSURANCE AND QUALITY CONTROL

QA/QC methods are detailed the Sampling and Analysis Plan (Anchor, 2014) and Supplemental Sampling and Analysis Plan (ENVIRON, 2014). Laboratory QA/QC included calibration, control samples, standard reference materials, replicates, matrix spikes, matrix spike duplicates, surrogate spikes, method blanks, and internal standards. QA/QC reports are provided by the analytical laboratories and included as Appendix C.

Data validation was performed by Ramboll Environ. Ramboll Environ's data validator performed data validation review based on procedures published by the EPA Contract Laboratory Program in their National Functional Guidelines for both organic and inorganic data review (USEPA 2014a; USEPA 2014b). Data validation reports are provided in Appendix D.

For Event 1, data qualifiers were added to Electronic Data Deliverables (EDDs) as provided by the lab based on the results of Ramboll Environ's review before providing EDDs to Anchor. For Event 2, all lab provided EDDs were sent to Anchor without modification, for uploading into the EQUIS database system. Anchor then provided an EDD for data validation to which the data qualifiers were added based on Ramboll Environ's data validation review. All validated data are provided as Electronic Data Deliverables (Appendix E).

5. REFERENCES

- Anchor (Anchor QEA, LLC). 2014. Sampling and Analysis Plan: Low Detection Limit Water Column Study Phase 2, Greater Los Angeles and Long Beach Harbor Waters. Prepared for Ports of Long Beach and Los Angeles. September.
- Carlson, C.A., Hansell, D.A., Nelson, N.B., Siegel, D.A., Smethie, W.M., Khatiwala, S., Meyers, M.M., Halewood, E., 2010. Dissolved organic carbon export and subsequent remineralization in the mesopelagic and bathypelagic realms of the North Atlantic basin. *Deep-Sea Res. II* 57, 1433-1445.
- ENVIRON and Weston (ENVIRON International Corporation and Weston Solutions, Inc.). 2014. Supplemental Sampling and Analysis Plan for Low Detection Limit Water Column Study Phase 2. December.
- RWQCB (Los Angeles Regional Water Quality Control Board). 2011. Final Basin Plan Amendment. Attachment A to Resolution No. R11-008. Amendment to the Water Quality Control Plan – Los Angeles Region to Incorporate the Total Maximum Daily Load for Toxic Pollutants in Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters. Adopted by the RWQCB on May 5, 2011.
- RWQCB and USEPA (Los Angeles Regional Water Quality Control Board and United States Environmental Protection Agency). 2011. Final Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants Total Maximum Daily Loads. May.
- USEPA 2014a. National Functional Guidelines for Superfund Organic Methods Data Review. OSWER 9355.0-132. EPA-540-R-014-002. August
- USEPA 2014b. National Functional Guidelines for Inorganic Superfund Data Review. OSWER 9335.0-131. EPA-540-R-013-001. August.

Sampling and Analysis Report for
Low Detection Limit Water Column Study Phase 2
Port of Los Angeles, San Pedro, California
Port of Long Beach, Long Beach, California

TABLES

Table 1. Sample Locations and SPME Deployment Notes - Event 1

The Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Sample Location ID	Location Description	Targeted Sampling Depth(s)	SPME Order on Assembly (top/bottom)	Deployment System	Deployment Date	Latitude	Longitude	Mudline Elevation (meters MLLW)	SPME Assembly Retrieval Notes
REF-01	Reference Station: San Pedro Shelf (just outside breakwater)	Mid-depth	PRC/1°	Diver	12/9/2014	33.7179167	-118.2073667	17.25	Both primary and PRC assemblies were retrieved.
OB-01	Long Beach Outer Harbor (Shallow Water Habitat Area)	Mid-depth	PRC/1°	Diver	12/9/2014	33.731133	-118.235267	8.96	Both primary and PRC assemblies were retrieved.
		Bottom (1 m above sediment)	PRC/1°						Both primary and PRC assemblies were retrieved.
SP-01	Eastern San Pedro Bay (west of the Alamitos Bay entrance channel)	Mid-depth	PRC/1°	Diver	12/9/2014	33.7369667	-118.1348333	8.82	Both primary and PRC assemblies were retrieved. (The thimble was bent on the mooring assembly and no buoys were present - potentially due to vessel traffic; sampling depth lower than target - both assemblies were on top of the sediment surface)
LARE-01	Los Angeles River Estuary (Harborlight Marina)	Mid-depth	Parallel	Tie off to dock	12/9/2014	33.7563	-118.1964833	2.60	Primary assembly was retrieved. (No hard hat buoy was present - potentially theft; sampling depth likely lower than target since hard hat buoy was not present)
CP-01	Cabrillo Pier vicinity	Mid-depth	Parallel	Diver	12/10/2014	33.7051667	-118.2713333	3.22	Primary assembly was retrieved. (The line was cut and the hard hat buoy was not present - potentially theft; sampling depth was lower than target - primary assembly was on top of the sediment surface)
FH-01	Fish Harbor (Dock off Berth 260)	Mid-depth	PRC/1°	Tie off to dock	12/10/2014	33.7360833	-118.2694167	5.40	Both primary and PRC assemblies were retrieved.
IA-01	Los Angeles Inner Harbor (Near Berth 225)	Mid-depth	PRC/1°	Tie off to dock	12/10/2014	33.7493667	-118.26905	9.25	Both primary and PRC assemblies were retrieved.
CS-01	Consolidated Slip (Tenant Dock)	Mid-depth	1°/PRC	Tie off to dock	12/10/2014	33.772233	-118.249600	8.20	Both primary and PRC assemblies were retrieved.
		Bottom (1 m above sediment)	PRC/1°						Both primary and PRC assemblies were retrieved. (No shackle was present on the top of the primary assembly that connects the assembly to the mooring line; therefore, sampling depth may have been lower than the target)
IB-01	Long Beach Inner Harbor (Channel 2 - off Pier C)	Mid-depth	Parallel	Tie off to piling	12/10/2014	33.771667	-118.219867	5.24	One primary assembly and two PRC assemblies were retrieved. (Note, two of each PRC and primary assemblies were deployed at this station and depth for the field duplicate. Shackle to shackle connections that held the SPME assemblies to the mooring line were broken on the missing assembly - potentially due to twisting/spinning of the assembly with each other and retrieval line)
		Bottom (1 m above sediment)	Parallel						Both primary and PRC assemblies were retrieved.

Notes:

1. PRC assemblies had a zip tie around the eyehook shaft.
2. Coordinates are in decimal degrees (NAD83).

Abbreviations:

1° = primary
m = meters
MLLW = mean lower low water
PRC = performance reference compound
SPME = solid phase microextraction

Table 2. Sample Locations and SPME Deployment Notes - Event 2

The Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Sample Location ID	Location Description	Targeted Sampling Depth(s)	SPME Order on Assembly (top/bottom)	Deployment / Retrieval System	Deployment Date	Latitude	Longitude	Mudline Elevation (meters MLLW)	Deployment and Retrieval Notes
REF-01	Reference Station: San Pedro Shelf (just outside breakwater)	Mid-depth	PRC/1°	Diver	5/5/2015	33.71791	-118.20729	17.30	Deployed at 8.6 m MLLW. Both assemblies retrieved.
OB-01	Long Beach Outer Harbor (Shallow Water Habitat Area)	Mid-depth	PRC/1°	Diver	5/5/2015	33.73117	-118.23515	9.00	Deployed at 4.5 and 8.0 m MLLW. Both assemblies retrieved.
		Bottom (1 m above sediment)	PRC/1°						
SP-01	Eastern San Pedro Bay (west of the Alamitos Bay entrance channel)	Mid-depth	PRC/1°	Diver	5/5/2015	33.73709	-118.13503	8.80	Deployed at 4.4 m MLLW. Both assemblies retrieved.
LARE-01	Los Angeles River Estuary (Harborlight Marina)	Mid-depth	Parallel	Tie off to dock	5/5/2015	33.75633	-118.19646	2.57	Tied to piling at 1.3 m MLLW. Both assemblies retrieved.
CP-01	Cabrillo Pier vicinity	Mid-depth	Parallel	Diver	5/6/2015	33.70520	-118.27134	3.25	Deployed at 1.6 m MLLW. Both assemblies retrieved.
FH-01	Fish Harbor (Dock off Berth 260)	Mid-depth	Parallel	Tie off to dock	5/6/2015	33.73608	-118.26943	5.40	Tied to piling at 2.7 m MLLW. Both assemblies retrieved.
IA-01	Los Angeles Inner Harbor (Near Berth 225)	Mid-depth	PRC/1°	Tie off to dock	5/5/2015	33.74932	-118.26901	9.30	Tied to ladder at 4.6 m MLLW. Both assemblies retrieved.
CS-01	Consolidated Slip (Tenant Dock)	Mid-depth	1°/PRC	Tie off to dock	5/5/2015	33.77221	-118.24962	8.20	Tied to piling at 4.1 and 7.2 m MLLW. Both assemblies retrieved.
		Bottom (1 m above sediment)	PRC/1°						
IB-01	Long Beach Inner Harbor (Channel 2 - off Pier C)	Mid-depth	1° / PRC (plus Duplicate)	Tie off to dock	5/5/2015	33.77172	-118.29184	5.30	Tied to piling at 2.65 and 4.3 m MLLW. Both assemblies retrieved.
		Bottom (1 m above sediment)	Parallel						

Notes:

1. PRC assemblies were labeled with Sharpie at deployment.
2. Coordinates are in decimal degrees (NAD83).

Abbreviations:

1° = primary
m = meters
MLLW = mean lower low water
PRC = performance reference compound
SPME = solid phase microextraction

Table 3. Summary of Event 1 Grab Sample ResultsThe Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Location ID	Depth(s) Targeted	Sample ID ^[1]	Sample Date	Sample Time	Total Suspended Solids (mg/L)	Dissolved Organic Carbon reported by Eurofins (mg/L)	Dissolved Organic Carbon reported by MSI ^[1,2] (mg/L)	Total Organic Carbon (mg/L) ^[2]	Particulate Organic Carbon (mg/L) ^[3]
CS-01	Mid-depth	CS-RW-01-G-M-20141210	12/10/2014	12:45	< 1.0	16	1.238	1.428	0.122
							1.336		
	Bottom	CS-RW-01-G-B-20141210	12/10/2014	14:00	4.8	16	1.198	1.389	0.172
							1.221		
Mid-depth	CS-RW-01-G-M-20150108	1/8/2015	12:05	< 1.0	15	1.029	1.273	0.131	
									Bottom
OB-01	Mid-depth	OB-RW-01-G-M-20141209	12/9/2014	9:45	< 1.0	16	1.305	1.326	0.180
							1.185		
	Bottom	OB-RW-01-G-B-20141209	12/9/2014	9:45	< 1.0	16	1.059	1.342	0.133
							1.434		
Mid-depth	OB-RW-01-G-M-20150108	1/8/2015	9:50	< 1.0	15	0.953	1.288	0.014	
Bottom	OB-RW-01-G-B-20150108	1/8/2015	9:45	2.2	15	0.982	1.294	0.029	
REF-01	Mid-depth	REF-RW-01-G-M-20141209	12/9/2014	8:40	< 1.0	15	0.961	1.230	0.057
		REF-RW-01-G-M-20150108	1/8/2015	8:00	< 1.0	15	1.327		
LARE-01	Mid-depth	LARE-RW-01-S-M-20141209	12/9/2014	13:00	2.0	17	1.488	1.495	0.319
		LARE-RW-01-G-M-20150108	1/8/2015	9:05	1.6	16	1.607		
SP-01	Mid-depth	SP-RW-01-G-M-20141209	12/9/2014	10:45	2.3	16	1.148	1.382	0.064
		SP-RW-01-G-M-20150108	1/8/2015	8:30	< 1.0	15	1.362		
CP-01	Mid-depth	CP-RW-01-G-M-20141210	12/10/2014	8:00	5.4	16	1.000	1.332	0.106
		CP-RW-01-G-M-20150108	1/8/2015	6:45	< 1.0	15	1.104		
	Mid-depth	CP-RW-01-G-M-20150108	1/8/2015	6:45	< 1.0	15	1.146	1.202	0.007

Table 3. Summary of Event 1 Grab Sample Results

The Ports of Los Angeles and Long Beach
 San Pedro and Long Beach, California

Location ID	Depth(s) Targeted	Sample ID ^[1]	Sample Date	Sample Time	Total Suspended Solids (mg/L)	Dissolved Organic Carbon reported by Eurofins (mg/L)	Dissolved Organic Carbon reported by MSI ^[1,2] (mg/L)	Total Organic Carbon (mg/L) ^[2]	Particulate Organic Carbon (mg/L) ^[3]
IA-01	Mid-depth	IA-RW-01-G-M-20141210	12/10/2014	11:40	< 1.0	16	1.103	1.361	0.104
		IA-RW-01-G-M-20150108	1/8/2015	12:50	< 1.0	15	1.195		
IB-01	Mid-depth	IB-RW-01-G-M-20141210	12/10/2014	14:00	1.8	15	1.160	1.428	0.124
		IB-RW-01-G-M-20141210	12/10/2014	14:00	1.2	NR	1.224		
	Mid-depth	IB-RW-1001-G-M-20141210	12/10/2014	14:00	1.2	NR	1.250	1.380	0.100
		IB-RW-1001-G-M-20141210	12/10/2014	14:00	1.2	NR	1.248		
	Bottom	IB-RW-01-G-B-20141210	12/10/2014	14:00	2.8	15	1.304	1.353	0.023
		IB-RW-01-G-B-20141210	12/10/2014	14:00	2.8	15	1.239		
	Mid-depth	IB-RW-01-G-M-20150108	1/8/2015	10:45	< 1.0	15	1.024	1.213	0.022
Mid-depth	IB-RW-1001-G-M-20150108	1/8/2015	10:45	< 1.0	NR	1.253	1.263	0.009	
Bottom	IB-RW-01-G-B-20150108	1/8/2015	10:35	< 1.0	16	1.014	1.268	0.015	
FH-01	Mid-depth	FH-RW-01-G-M-20141210	12/10/2014	10:05	< 1.0	16	1.168	1.378	0.300
		FH-RW-01-G-M-20141210	12/10/2014	10:05	< 1.0	16	1.154		
		FH-RW-01-G-M-20150108	1/8/2015	13:35	1.3	16	1.080	1.377	0.090
Equipment Blank		EB-20141209	12/9/2014	15:30	NR	NR	0.295	0.379	0.002
		EB-20141209	12/9/2014	15:30	NR	NR	0.202		
		EB-20150108	1/8/2015	14:30	NR	NR	0.111	0.36	0.001

Notes:

1: DOC samples for December event were run twice by MSI. Both values are reported here, with the second value considered a laboratory duplicate.

2: TOC and DOC Data were reported as filter blank corrected by the lab.

3: POC data was not provided as blank corrected by the lab, but are presented here as blank corrected for filter blank concentration. The filter blank result for the March 9, 2015 (December samples) run was 0.0185 mg/L; filter blank result for the March 16, 2015 run (January samples) was 0.00628 mg/L.

Abbreviations:

DOC = Dissolved organic carbon

mg/L = milligrams per liter

MSI = Marine Science Institute

NR = Not reported

POC = Particulate organic carbon

TOC = Total organic carbon

Table 4. Summary of Event 1 SPME Sample Results

The Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Location ID	Depth(s) Targeted	Sample Type	Sample ID	Deployment Date	Deployment Time	Retrieval Date	Retrieval Time	Total Length of Primary Sample Fibers for PCB Analysis (cm)	Total Length of PRC Fibers for PCB Analysis (cm)
CS-01	Mid-depth	Sample	CS-RW-01-S-M-20150107	12/10/2014	12:45	1/7/2015	16:05	199.8	0.0
	Mid-depth	PRC	CS-01-RW-S-M-PRC-20150107	12/10/2014	14:00	1/7/2015	16:05	0.0	25.0
	Bottom	Sample	CS-RW-01-S-B-20150107	12/10/2014	14:00	1/7/2015	16:05	199.8	25.0
OB-01	Mid-depth	Sample	OB-RW-01-S-M-20150107	12/9/2014	9:45	1/7/2015	11:15	199.8	25.0
	Bottom	Sample	OB-RW-01-S-B-20150107	12/9/2014	9:45	1/7/2015	11:15	196.3	25.0
REF-01	Mid-depth	Sample	REF-RW-01-S-M-20150107	12/9/2014	8:40	1/7/2015	9:46	199.8	0.0
	Mid-depth	PRC	REF-RW-01-S-M-PRC-20150107	12/9/2014	8:40	1/7/2015	9:46	0.0	25.0
LARE-01	Mid-depth	Sample	LARE-RW-01-S-M-20150107	12/9/2014	13:00	1/7/2015	13:45	194.9	0.0
	Mid-depth	PRC	LARE-RW-01-S-M-PRC-20150107	12/9/2014	13:00	Not Retrieved			
SP-01	Mid-depth	Sample	SP-RW-01-S-M-20150107	12/9/2014	10:45	1/7/2015	12:45	199.6	25.0
CP-01	Mid-depth	Sample	CP-RW-01-S-M-20150107	12/10/2014	8:00	1/7/2015	8:39	200.00	0.0
IA-01	Mid-depth	Sample	IA-RW-01-S-M-20150108	12/10/2014	11:40	1/8/2015	8:30	193.1	0.0
	Mid-depth	PRC	IA-RW-01-S-M-PRC-20150108	12/10/2014	11:40	1/8/2015	8:30	0.0	25.0
IB-01	Mid-depth	Sample	IB-RW-01-S-M-20150107	12/10/2014	14:00	1/7/2015	15:30	199.4	50.0
	Mid-depth	Field Duplicate	IB-RW-1001-S-M-20150107	12/10/2014	14:00	Not Retrieved			
	Bottom	Sample	IB-RW-01-S-B-20150107	12/10/2014	14:00	1/7/2015	15:30	196.4	25.0
FH-01	Mid-depth	Sample	FH-RW-01-S-M-20150108	12/10/2014	10:05	1/8/2015	9:24	196.5	25.0
NA	NA	Field Blank	FB-20141209	12/9/2014	15:22	NA		200.0	0.0
NA	NA	PRC Field Blanks	FBPRC1-20141209	12/9/2014	15:41	NA		0.0	25.0
NA	NA	PRC Field Blanks	FBPRC2-20141209	12/9/2014	15:42	NA		0.0	25.0
NA	NA	PRC Field Blanks	FBPRC3-20141209	12/9/2014	15:42	NA		0.0	25.0
NA	NA	PRC Field Blanks	FBPRC4-20141209	12/9/2014	15:43	NA		0.0	0.0
NA	NA	PRC Field Blanks	FBPRC5-20141209	12/9/2014	15:43	NA		0.0	0.0
NA	NA	PRC Field Blanks	FBPRC6-20141209	12/9/2014	15:44	NA		0.0	0.0

Table 4. Summary of Event 1 SPME Sample Results

The Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Location ID	Total PCBs (pg/Sample)	PCB-PRCs (pg/Sample) [1]					Total Length of Primary Sample Fibers for DDX Analysis (cm)	Total Length of PRC Fibers for DDX Analysis (cm)	Total DDXs (pg/Sample)	DDX-PRCs (pg/Sample)			
		13C-PCB-8 [1]	13C-PCB-31 [1]	13C-PCB-79 [1]	13C-PCB-133 [1]	13C-PCB-178 [1]				4,4'-DDD (p,p'-DDD)-d8 [1]	4,4'-DDT (p,p'-DDT)-d8 [1]	2,4'-DDE (o,p'-DDE)-d8 [1]	4,4'-DDE (p,p'-DDE)-d8 [1]
CS-01	37400	ND	ND	ND	ND	ND	191.3	0.0	26830	7540	63700	46800	32700
	5010	20.1	382	2720	4170	4270	0.0	25.0	3077	11700	74600	47500	31600
	49400	10.5	406	3410	6230	6480	199.6	25.0	26936	143	1030	1010	331
OB-01	15900	28.2	1270	4390	7410	7190	199.6	25.0	33147	8490	66600	43300	36200
	16100	34	947	2990	4110	3830	199.5	25.0	32840	14800	88800	51100	33900
REF-01	9350	ND	ND	ND	ND	ND	198.0	0.0	40741	< 22.4	< 95.4	< 34.4	< 41.9
	1010	14.2	523	3130	6570	6560	0.0	25.0	4239	5020	48900	32300	32400
LARE-01	27500	ND	ND	ND	ND	ND	202.9	0.0	15232	< 4.74	< 11.5	11.0	10.6
		Not Retrieved											
SP-01	18800	8.29	594	3360	5380	5160	194.9	25.0	24291	4860	75900	53800	33700
CP-01	16600	ND	ND	ND	ND	ND	190.8	0.0	47359	< 3.82	< 24.9	43.5	44.9
IA-01	17700	ND	ND	9.33	ND	ND	188.7	0.0	17570	< 7.17	< 17.4	5.03	11.9
	2760	26.8	697	3060	4510	3930	0.0	25.0	2571	9780	43300	47400	53600
IB-01	37100	26.4	1120	6660	9740	9920	196.1	50.0	24530	17200	133000	87700	59500
		Not Retrieved											
	29200	25.8	681	3280	4180	3750	199.8	25.0	23113	13200	55200	37700	25800
FH-01	45500	30.9	908	4240	5270	4930	199.8	25.0	27853	9160	26200	35900	34900
NA	192.29	NR	NR	NR	NR	NR	200.0	0.0	11	5.70	ND	8.72	15.10
NA	42.22	4570	4210	6000	4340	3960	0.0	0.0	NR	NR	NR	NR	NR
NA	5.07	2990	3700	6320	4560	4330	0.0	0.0	NR	NR	NR	NR	NR
NA	45.65	4810	5100	7100	5800	5410	0.0	0.0	NR	NR	NR	NR	NR
NA	NR	NR	NR	NR	NR	NR	0.0	25.0	< 8.7	74200	55900	76500	72400
NA	NR	NR	NR	NR	NR	NR	0.0	25.0	25	95000	71400	89400	86900
NA	NR	NR	NR	NR	NR	NR	0.0	25.0	< 22.7	100000	76900	101000	98500

Notes:

- 1: Detection limits were not reported for PRCs.
- 2: Comments on biofouling maintained by Anchor QEA, LLC for Event 1.

Abbreviations:

cm: centimeter
 DDD: Dichlorodiphenyldichloroethane
 DDE: Dichlorodiphenyldichloroethylene
 DDMU: 1-chloro-2,2-6w(p-chlorophenyl)ethene
 DDT: Dichlorodiphenyltrichloroethane
 DDx: Dichlorodiphenyltrichloroethane and its derivatives

ND: Not detected
 NR: Not reported
 PCB: Polychlorinated biphenyl
 pg: picograms
 PRCs: Performance Reference Compounds
 SPME: Solid-phase micro extraction

Table 5. Summary of Event 2 Grab Sample Results

The Ports of Los Angeles and Long Beach

San Pedro and Long Beach, California

Location ID	Depth(s) Targeted	Sample ID	Sample Date	Sample Time	Total Suspended Solids (mg/L)	Dissolved Organic Carbon reported by MSI (mg/L) ^[1]	Total Organic Carbon (mg/L) ^[1]	Particulate Organic Carbon (mg/L) ^[2]
CS-01	Mid-depth	CS-RW-01-G-M-20150505	5/5/2015	13:25	2.3	1.039	1.690	0.713
	Bottom	CS-RW-01-G-B-20150505	5/5/2015	13:15	7.3	0.804	1.353	0.438
	Mid-depth	CS-RW-01-G-M-20150615	6/15/2015	12:10	2.4	1.089	1.577	0.395
	Bottom	CS-RW-01-G-B-20150615	6/15/2015	12:20	2.2	0.998	1.409	0.007
OB-01	Mid-depth	OB-RW-01-G-M-20150505	5/5/2015	10:40	< 1.0	0.888	1.302	0.450
	Bottom	OB-RW-01-G-B-20150505	5/5/2015	10:30	1.1	0.818	1.219	0.369
	Mid-depth	OB-RW-01-G-M-20150615	6/15/2015	9:50	< 1.0	0.916	1.495	0.405
	Bottom	OB-RW-01-G-B-20150615	6/15/2015	10:00	1.2	0.947	1.418	0.366
REF-01	Mid-depth	REF-RW-01-G-M-20150505	5/5/2015	8:00	2.7	0.768	1.072	0.274
		REF-RW-01-G-M-20150615	6/15/2015	7:30	< 1.0	0.966	1.337	0.265
LARE-01	Mid-depth	LARE-RW-01-G-M-20150505	5/5/2015	9:30	9.4	1.152	2.158	0.327
		LARE-RW-01-G-M-20150615	6/15/2015	9:05	4.8	1.786	2.873	0.335
SP-01	Mid-depth	SP-RW-01-G-M-20150505	5/5/2015	8:30	2.0	0.976	1.252	0.331
		SP-RW-01-G-M-20150615	6/15/2015	8:20	1.2	1.057	1.462	0.336
CP-01	Mid-depth	CP-RW-01-G-M-20150506	5/6/2015	7:30	3.7	0.749	1.112	0.179
	Mid-depth	CP-RW-01-G-M-20150615	6/15/2015	4:48	12	0.884	1.304	0.014
IA-01	Mid-depth	IA-RW-01-G-M-20150505	5/5/2015	14:30	3.3	0.826	1.197	0.092
		IA-RW-01-G-M-20150615	6/15/2015	12:55	3.3	0.877	1.354	0.220
IB-01	Mid-depth	IB-RW-01-G-M-20150505	5/5/2015	11:45	< 1.0	0.908	1.333	0.296
	Mid-depth	IB-RW-1001-G-M-20150505	5/5/2015	11:45	1.1	0.822	1.232	0.351
	Bottom	IB-RW-01-G-B-20150505	5/5/2015	11:35	2.6	0.889	1.206	0.191
	Mid-depth	IB-RW-01-G-M-20150615	6/15/2015	10:40	< 1.0	0.963	1.376	0.298
	Mid-depth	IB-RW-1001-G-M-20150615	6/15/2015	10:40	1.2	1.056	1.359	0.127
	Bottom	IB-RW-01-G-B-20150615	6/15/2015	10:50	2.8	0.912	1.367	0.282
FH-01	Mid-depth	FH-RW-01-G-M-20150506	5/6/2015	8:15	< 1.0	0.859	1.403	0.156
		FH-RW-01-G-M-20150615	6/15/2015	12:45	4.0	0.967	1.648	0.629
Equipment Blank		EB-20150505	5/5/2015	15:20	NR	0.00 ^[3]	0.171	0.012
		EB-20150615	6/15/2015	15:20	NR	0.074	0.387	0.021

Notes:

1: Concentrations were not reported by the lab as filter blank corrected, but are presented here as corrected values.

The filter blank result for the May 5th & 6th samples was 0.262 mg/L. Filter blank results for the June 15th samples was 0.076 mg/L.

2: Concentrations were not reported by the lab as filter blank corrected, but are presented here as corrected values.

Filter blank result for the May 5th & 6th samples was 0.01223 mg/L. Filter blank results for the June 15th samples was 0.015 mg/L.

3: The filter blank reported for May 5th, 2015 was greater than the equipment blank DOC sample (0.174 mg/L), therefore the result is reported as zero.

Abbreviations:

NR = Not reported

MSI = Marine Science Institute

mg/L = milligrams per liter

Table 6. Summary of Event 2 SPME Sample Results

The Ports of Los Angeles and Long Beach
 San Pedro and Long Beach, California

Location ID	Depth(s) Targeted	Sample Type	Sample ID	Deployment Date	Deployment Time	Retrieval Date	Retrieval Time	Comments/ Observations	Total Length of Primary Sample Fibers for PCB Analysis (cm)	Total Length of PRC Fibers for PCB Analysis (cm)
CS-01	Mid-depth	Sample	CS-RW-01-S-M-20150616	5/5/2015	13:25	6/16/2015	8:20	Slight biofouling	201.4	25.0
	Bottom	Sample	CS-RW-01-S-B-20150616	5/5/2015	13:25	6/16/2015	8:45	Slight biofouling	202.4	25.1
OB-01	Mid-depth	Sample	OB-RW-01-S-M-20150615	5/5/2015	10:30	6/15/2015	11:20	Slight biofouling	201.3	25.3
	Bottom	Sample	OB-RW-01-S-B-20150615	5/5/2015	10:30	6/15/2015	11:40	Slight biofouling	195.8	25.2
REF-01	Mid-depth	Sample	REF-RW-01-S-M-20150615	5/5/2015	8:00	6/15/2015	9:55	Slight biofouling	204.5	25.3
LARE-01	Mid-depth	Sample	LARE-RW-01-S-M-20150615	5/5/2015	9:30	6/15/2015	13:20	Very significant biofouling	201.8	25.3
SP-01	Mid-depth	Sample	SP-RW-01-S-M-20150615	5/5/2015	8:30	6/15/2015	12:30	Significant biofouling	203.9	26.0
CP-01	Mid-depth	Sample	CP-RW-01-S-M-20150615	5/6/2015	7:30	6/15/2015	8:10	Slight biofouling	192.3	25.2
IA-01	Mid-depth	Sample	IA-RW-01-S-M-20150615	5/5/2015	14:30	6/15/2015	16:15	Slight biofouling	204.3	25.3
IB-01	Mid-depth	Sample	IB-RW-01-S-M-20150615	5/5/2015	11:35	6/15/2015	14:50	Slight biofouling	202.2	24.8
	Mid-depth	Field Duplicate	IB-RW-1001-S-M-20150615	5/5/2015	11:35	6/15/2015	15:15	Slight biofouling	204.5	25.3
	Bottom	Sample	IB-RW-01-S-B-20150615	5/5/2015	11:35	6/15/2015	15:45	Slight biofouling	201.7	25.1
FH-01	Mid-depth	Sample	FH-RW-01-S-M-20150616	5/6/2015	8:15	6/16/2015	9:35	Slight biofouling	201.3	25.1
NA	NA	Field Blank	FB-20150506	5/6/2015	9:30			NA	200.0	0.0
NA	NA	PRC Field Blanks	FB PCR1-20150506	5/6/2015	9:45			NA	0.0	25.0
NA	NA	PRC Field Blanks	FB PCR2-20150506	5/6/2015	9:45			NA	0.0	25.0
NA	NA	PRC Field Blanks	FB PCR3-20150506	5/6/2015	9:45			NA	0.0	25.0
NA	NA	PRC Field Blanks	FB PCR4-20150506	5/6/2015	9:45			NA	0.0	0.0
NA	NA	PRC Field Blanks	FB PCR5-20150506	5/6/2015	9:45			NA	0.0	0.0
NA	NA	PRC Field Blanks	FB PCR6-20150506	5/6/2015	9:45			NA	0.0	0.0

Table 6. Summary of Event 2 SPME Sample Results

The Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Location ID	Total PCBs (pg/Sample)	PCB-PRCs (pg/Sample) ^[1]					Total Length of Primary Sample Fibers for DDX Analysis (cm)	Total Length of PRC Fibers for DDX Analysis (cm)	Total DDXs (pg/Sample)	DDX-PRCs (pg/Sample) ^[1]			
		13C-PCB-8 ^[1]	13C-PCB-31 ^[1]	13C-PCB-79 ^[1]	13C-PCB-133 ^[1]	13C-PCB-178 ^[1]				4,4'-DDD (p,p'-DDD)-d8 ^[1]	4,4'-DDT (p,p'-DDT)-d8 ^[1]	2,4'-DDE (o,p'-DDE)-d8 ^[1]	4,4'-DDE (p,p'-DDE)-d8 ^[1]
CS-01	46200	6.2	105	408	527	367	203.0	25.2	19727	1280	4750	4610	4320
	57500	11.5	190	831	956	751	202.3	25.1	17232	1970	10700	11200	11000
OB-01	21500	42.0	435	1040	794	573	201.4	25.3	31263	5020	14700	13900	12200
	15600	45.4	515	1570	1570	1150	201.9	25.2	25841	4830	15200	14900	12600
REF-01	8280	45.0	454	1450	1300	1010	200.2	25.1	19928	3560	12000	12000	9920
LARE-01	39300	15.5	412	1360	1340	1080	201.7	25.1	13811	1600	6460	11400	8900
SP-01	17600	ND	26	326	625	538	202.5	25.7	18790	146	4280	4580	4270
CP-01	18100	ND	60	623	1100	936	201.6	26.7	31784	367	5870	6220	6850
IA-01	32600	6.9	146	569	697	656	200.8	25.2	31561	1050	5020	5590	4790
IB-01	25700	15.3	182	715	790	673	203.1	26.8	20394	2060	10500	10400	10000
	27100	21.8	184	638	593	521	202.2	26.8	19976	2440	11300	12300	11300
	28100	4.8	120	659	860	755	202.0	25.2	21384	1060	9760	8910	9600
FH-01	45800	12.1	195	819	813	705	201.6	25.0	25944	3670	10700	9930	9030
NA	1650	< 3.79	< 31.4	< 10.3	< 4.96	< 12.9	200.0	0.0	< 64.8	< 6.67	< 11.7	< 9.93	< 13.0
NA	118	1320	1490	1390	1070	901	0.0	0.0	NR	NR	NR	NR	NR
NA	877	1300	1560	1590	1140	1030	0.0	0.0	NR	NR	NR	NR	NR
NA	160	1280	1690	1610	1270	1090	0.0	0.0	NR	NR	NR	NR	NR
NA	NR	NR	NR	NR	NR	NR	0.0	25.0	< 88.9	10700	11500	10200	8840
NA	NR	NR	NR	NR	NR	NR	0.0	25.0	< 77.3	11800	11800	11600	10000
NA	NR	NR	NR	NR	NR	NR	0.0	25.0	10.7	16900	20800	15400	15800

Notes:

1: Detection limits were not reported for PRCs.

Abbreviations:

cm: centimeter
 DDD: Dichlorodiphenyldichloroethane
 DDE: Dichlorodiphenyldichloroethylene
 DDMU: 1-chloro-2,2-6w(p-chlorophenyl)ethene
 DDT: Dichlorodiphenyltrichloroethane
 DDx: Dichlorodiphenyltrichloroethane and its derivatives

ND: Not detected
 NR: Not reported
 PCB: Polychlorinated biphenyl
 pg: picograms
 PRCs: Performance Reference Compounds
 SPME: Solid-phase micro extraction

FIGURES



Project and Sample Locations

Port of Los Angeles and Port of Long Beach
 San Pedro and Long Beach, California

Path: Z:\01_Projects\Port_of_Los_Angeles\03_GIS\LDL\Fig1\Project and Sample Locations.mxd

APPENDIX A
FIELD NOTES AND LOGS

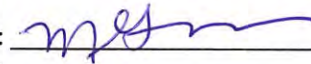
APPENDIX A-1
FIELD DAILY INVESTIGATION LOGS

FIELD INVESTIGATION DAILY LOG

PROJECT NAME: POLA/POLB LDL WC Study FIELD PERSON: M. Grover
 PROJECT NUMBER: 0433310A11 PROJECT MANAGER: D. Moore
 PROJECT LOCATION: San Pedro/Long Beach DATE: 12/9/14

DAILY SUMMARY: Deploy SPME Assemblies at Stations: REF-01, OB-01, SP-01, + LARE-01. Blank SPMEs.
 WEATHER CONDITIONS: 68°F, clear skies, 6 mph W
 VISITORS/SUBCONTRACTORS: Damon Owen and Nick, Weston Solutions, Inc.

MILITARY TIME	ACTIVITIES
6:00	Meet Damon and Nick at South Shores Boat Launch Ramp.
8:00	Depart boat ramp for REF-01
8:20	Arrive REF-01. Anchored boat on station. Weston obtained water samples then water quality profile. Damon Set up ^{mooring} SPME assembly with hard hat buoy, buoy, SPME assemblies (Weston maintaining notes on which is on top, PRC marked with zip tie), buoy, acoustic release, and anchor. Acoustic release is Sea tronics. 33°43.075, 118°12.442 (NAD83)
9:10	Depart REF-01.
9:40	Arrive OB-01. Diver retrieval. mid & bottom depths. Same as REF-01 and other stations unless otherwise specified, water samples and profile obtained while Damon prepares mooring assembly. 33°43.868, 118°14.116
10:40	Depart OB-01
11:11	Arrive SP-01. Diver retrieval. 33°44.218, 118°08.090.
12:15	Depart SP-01.
12:48	Arrive LARE-01. Tied to dock at corner by piling and phone. Water too shallow to deploy SPME assemblies

Prepared By (name/signature):  Date: 12/9/14
 Reviewed By (name/signature): _____ Date: _____



18100 Von Karman Ave., Suite 600
 Irvine, California 92612
 (949) 261-5151
 (949) 261-6202 (FAX)

FIELD INVESTIGATION DAILY LOG

PROJECT NAME: POLA/POLB LDE WC Study FIELD PERSON: M. Grover
 PROJECT NUMBER: 0433310A11 PROJECT MANAGER: D. Moore
 PROJECT LOCATION: San Pedro/Long Beach DATE: 12/9/14

DAILY SUMMARY: _____
 WEATHER CONDITIONS: _____ } See page 1.
 VISITORS/SUBCONTRACTORS: _____

MILITARY TIME	ACTIVITIES
	sequentially; therefore, the SPME assemblies were deployed parallel. Retrieval rope tied to anchor. Retrieval rope was tied to the dock.
	33°45.378, 118°11.789. Damon noted the fiber was broken.
14:53	Depart LARE-01. Return to South Shores Boat Ramp. Expose field blanks and place in vials. Place PRC field blank in vials. Place Length to mass determination fibers in vials.
16:58	Depart for Fedex at 555 East Ocean Boulevard, Long Beach. Last express drop off 5:30pm (7:30pm extended).
17:06	Fedex drop off - Head to hotel (Queen Mary). ^{also note:} Depth readings on Raymarine A10. Compared to lead line (used at every station) and found monitor 0.4m to less than lead line. GPS map 76CX Garmin. 7m accuracy.

Prepared By (name/signature): M. Grover Date: 12/9/14
 Reviewed By (name/signature): _____ Date: _____

FIELD INVESTIGATION DAILY LOG


PROJECT NAME: POLA/POLB LDL WC Study FIELD PERSON: M. Grover
 PROJECT NUMBER: 0433310A11 PROJECT MANAGER: D. Moore
 PROJECT LOCATION: San Pedro/Long Beach DATE: 12/10/14

DAILY SUMMARY: Deploy SPME assemblies (Stations: CP-01, CS-01, FH-01, IA-01, IB-01)

WEATHER CONDITIONS: 62°F, clear skies, 3 mph SSE

VISITORS/SUBCONTRACTORS: Damen Owen + Nick, Weston Solutions, Inc.

MILITARY TIME	ACTIVITIES
6:15	Meet at boat launch.
7:00	Depart for CP-01.
7:30	Arrive CP-01. Acoustic release. Parallel since water shallow. Close to Miprap. 33°42.310, 118°16.280.
9:05	Depart CP-01.
10:00	Arrive FH-01. Tied to piling at end of pier. Next to Sheriff's piers. Lift up by hand. Note: pinch points on shackles for all mooring assemblies. Piling is to the right of fish receiver when facing Sheriff's. Close Contact for building next door (SCMI - Southern California Marine Science Institute) is Carrie Wolf. 33°44.165, 118°16.165.
10:50	Depart FH-01
12:00	Arrive IA-01. Tied to ladder. Under bridge. 33°44.962, 118°16.143
12:40	Depart IA-01.
12:48	Arrive CS-01. Tied to piling at corner (next to fish receiver - receiver on left). Mid + bottom depths.


Prepared By (name/signature):  Date: 12/10/14
 Reviewed By (name/signature): _____ Date: _____

FIELD INVESTIGATION DAILY LOG

PROJECT NAME: POLA/POLB LDC WC Study FIELD PERSON: M. Grover
 PROJECT NUMBER: 0433310A11 PROJECT MANAGER: D. Moore
 PROJECT LOCATION: San Pedro/Long Beach DATE: 12/10/14

DAILY SUMMARY: _____
 WEATHER CONDITIONS: _____ } See page 1
 VISITORS/SUBCONTRACTORS: _____ }

MILITARY TIME	ACTIVITIES
	<u>33°46.334, 118°14.976.</u>
<u>14:20</u>	<u>Depart CS-01</u>
<u>14:30</u>	<u>Arrive IB-01. Tied to overhead beam on piling.</u>
	<u>Paralled since water too shallow.</u>
	<u>33°46.300, 118°13.192. Mid + bottom depths.</u>
<u>15:34</u>	<u>Left IB-01 for South Shores Boat Ramp.</u>
<u>16:58</u>	<u>Depart site for home.</u>

Prepared By (name/signature):  Date: 12/10/14
 Reviewed By (name/signature): _____ Date: _____

FIELD INVESTIGATION DAILY LOG

PROJECT NAME: POLA/POLB Phase 2 LDU WC Study FIELD PERSON: M. Grover
 PROJECT NUMBER: 0403310A11 PROJECT MANAGER: D. Moore
 PROJECT LOCATION: San Pedro / Long Beach DATE: 1/7/15

DAILY SUMMARY: <u>SPME Retrieval Event 1: CP-01, REF-01, OB-01, SP-01, LARE-01, IB-01, CS-01</u>	
WEATHER CONDITIONS: _____	
VISITORS/SUBCONTRACTORS: <u>Brent Mardian, Chris Clark, Casey: Tierra Data, Inc.</u> <u>Xiaoxia Lu; Anchor SEA LLC</u>	
MILITARY TIME	ACTIVITIES
7:00	meet team at Cabrillo Boat Ramp. Load boat. Conduct Health & Safety Meeting. Contact Port Police Watch Commander. The line that extends into the water for the acoustic release signal was not transferred from Weston to Tierra Data. Therefore, acoustic retrieval sites were retrieved by divers.
7:45	Depart boat ramp.
8:00	Arrive CP-01. The mooring assembly was cut likely in theft of the hard hat buoy. The primary sample SPME assembly was present but on the sediment surface with one small buoy attached (minor water column exposure). Divers took photos under water at all sites. PRC assembly ^{not present}
8:40	Depart CP-01.
9:10	Arrive REF-01. All SPME assemblies retrieved with minimal fiber breakage.
10:00	Depart REF-01.
10:15	Arrive OB-01. All SPME assemblies retrieved with minimal fiber breakage.
11:30	Depart OB-01.
12:00	Arrive SP-01. Hard hat buoy not present. Thimble bent.

Prepared By (name/signature): M. Grover Date: 1/7/15
 Reviewed By (name/signature): _____ Date: _____

FIELD INVESTIGATION DAILY LOG

PROJECT NAME: POLA/POLB Phase 2 LDL w/ Study FIELD PERSON: M. Grower
 PROJECT NUMBER: 0433310A11 PROJECT MANAGER: D. Moore
 PROJECT LOCATION: LA/LB DATE: 1/8/15

DAILY SUMMARY: _____
 WEATHER CONDITIONS: } See page 1
 VISITORS/SUBCONTRACTORS: _____

MILITARY TIME	ACTIVITIES
	Likely caught in boat propeller or "ran over". Mooring (spectra) not present. SPME assemblies present but in mud. No buoys attached.
12:55	Depart SP-01.
13:15	Arrive LARE-01. No buoys present. Primary sample SPME assembly present. PRC SPME assembly not present. Potentially theft. No time
13:30	Depart LARE-01. Break at pier near Parker Lighthouse. Bathroom in blue buildings with brown roofs.
14:55	Depart pier near Parker Lighthouse.
15:11	Arrive IB-01. It appears the shackle to shackle connections broke, potentially due to spinning. At mid-depth, two PRC SPME assemblies present and one primary PRC assembly. One ^{primary sample} SPME assembly lost due to shackle breakage. Retrieval line twisted with assemblies but appears to be water column exposure.
15:30	Depart IB-01.
16:00	Arrive CS-01. No shackle was present on top of bottom SPME assembly, & therefore exposure may

Prepared By (name/signature): _____ Date: _____
 Reviewed By (name/signature): _____ Date: _____



FIELD INVESTIGATION DAILY LOG

PROJECT NAME: PO1A/PO1B Phase 2 LCL WC Study FIELD PERSON: M. Groner
 PROJECT NUMBER: 0433310A11 PROJECT MANAGER: D. Moore
 PROJECT LOCATION: LA/LB DATE: 1/7/15

DAILY SUMMARY: _____
 WEATHER CONDITIONS: } See page 1
 VISITORS/SUBCONTRACTORS: _____

MILITARY TIME	ACTIVITIES
	have been at lower water column depth.
16:10	Depart CS-01.
17:30	Arrive Cabrillo Boat Ramp. Depart for FedEx.
19:15	Fedex sample cooler from 555 E. Ocean Blvd., Long Beach.

Prepared By (name/signature): _____ Date: _____
 Reviewed By (name/signature): _____ Date: _____



18100 Von Karman Ave., Suite 600
Irvine, California 92612
(949) 261-5151
(949) 261-6202 (FAX)

FIELD INVESTIGATION DAILY LOG

PROJECT NAME: POLA/POLB Phase 2 L-DLNE study FIELD PERSON: W. Groner
 PROJECT NUMBER: 0433310A11 PROJECT MANAGER: D. Moore
 PROJECT LOCATION: San Pedro/Long Beach DATE: 1/8/15

DAILY SUMMARY: SPME Retrieval Event 1: IA-01, FH-01
 WEATHER CONDITIONS: 66°F, overcast, 0 mph
 VISITORS/SUBCONTRACTORS: Brent Mardian & Chris Clark, Tierra Data, Xiaoxia Lu, Ancher DEA.

MILITARY TIME	ACTIVITIES
7:30	meet at Cabrillo Boat Ramp. Load boat. Conduct H+S meeting. Call Port Police.
8:00	Depart Cabrillo Boat Ramp
8:24	Arrive IA-01. SPME assemblies' condition good.
8:37	Depart IA-01.
9:21	Arrive FH-01. SPME assemblies' condition good.
9:24	Depart FH-01.
10:00	Arrive Cabrillo Boat Ramp.

Prepared By (name/signature): Date: 1/8/15
 Reviewed By (name/signature): _____ Date: _____



18100 Von Karman Ave., Suite 600
Irvine, California 92612
(949) 261-5151
(949) 261-6202 (FAX)

FIELD INVESTIGATION DAILY LOG

PROJECT NAME: POLA/POB LDL Study FIELD PERSON: J. Ardister
PROJECT NUMBER: 04 3330A11 PROJECT MANAGER: D. Moore
PROJECT LOCATION: San Pedro/Long Beach DATE: May 5 2015

DAILY SUMMARY: SPME Deployment + Water sampling
WEATHER CONDITIONS: Overcast
VISITORS/SUBCONTRACTORS: Nick + Damon (western)

MILITARY TIME	ACTIVITIES
05 45	Leave for site
06 45	On site Mob to vessel w/ Damon + Nick
07 10	Mob vessel, head to REF-01
07 40	Arrive at REF. Deploy water meter
08 00	Take grab sample at mid depth. Deploy SPME @ 8.6 m
08 20	On SP-01. Deploy water meter
08 30	Take grab sample + deploy SPME @ 4.4 m
08 55	Head to LARE-01
09 15	Dock @ LARE-01. Deploy water meter
09 30	Take grab samples + deploy SPME tied to dock @ 1.3 m
10 20	On station OB-01. Deploy water meter. Prep SPMEs
10 30	Take Bottom grab sample
10 40	Take mid-depth grab sample
10 45	Deploy SPME w/ mid + bottom SPMEs
11 25	On IB-01. Deploy water meter
11 35	Take bottom grab sample
11 45	Take Mid-depth + Mid-depth FD sample
11 55	Take ns/MSD + LR sample water
12 00	Deploy SPMEs
13 00	On station CS-01, deploy water meter

Prepared By (name/signature): [Signature] Date: 5/5/15
Reviewed By (name/signature): _____ Date: _____



18100 Von Karman Ave., Suite 600
Irvine, California 92612
(949) 261-5151
(949) 261-6202 (FAX)

FIELD INVESTIGATION DAILY LOG

PROJECT NAME: LDL Study FIELD PERSON: J. Arblaster
PROJECT NUMBER: 04 33310AU PROJECT MANAGER: D. Moore
PROJECT LOCATION: San Pedro/Long Beach DATE: 5 May 2015

DAILY SUMMARY: <u>LDL Deployment</u>	
WEATHER CONDITIONS: <u>Overcast.</u>	
VISITORS/SUBCONTRACTORS: <u>Weston.</u>	
MILITARY TIME	ACTIVITIES
13 15	Take bottom grab sample
13 25	Take mid depth sample #
13 30	Deploy SPME had to side of dock @ 4.1 9 4.2 m.
14 15	On IA-01. Deploy water meter
14 30	Take grab sample.
14 40	SPME deployed @ 4.2m, tied to ladder.
14 50	Head back to Caballo Marina.
16 30	Done QC'ing all samples → preping COCs. Head off site.

Prepared By (name/signature): [Signature] Date: 5/5/15



18100 Von Karman Ave., Suite 600
 Irvine, California 92612
 (949) 261-5151
 (949) 261-6202 (FAX)

FIELD INVESTIGATION DAILY LOG

PROJECT NAME: LDL Study FIELD PERSON: J. Arkhaster
 PROJECT NUMBER: 04 33310A11 PROJECT MANAGER: D. Moore
 PROJECT LOCATION: San Pedro/Long Beach DATE: May 6 2015

DAILY SUMMARY: <u>LDL Deployment - Day 2</u>	
WEATHER CONDITIONS: <u>Overcast</u>	
VISITORS/SUBCONTRACTORS: <u>Western Sol'n</u>	
MILITARY TIME	ACTIVITIES
06 30	Head to pick up ice, meet Nick & Damon
07 05	Load up boat & depart.
07 20	Arrive @ CP-01, deploy water meter.
07 30	Take grab sample.
07 35	Deploy SPME @ 1.6 m; parallel.
08 00	Arrive @ FH-01
08 15	Take grab sample. Set up & deploy SPME tied to dock @ 2.7 m.
08 45	Head back to dock.
09 30	Expose FB SPMEs to air.
09 30	Take FB samples.
09 45	Take FBPCR samples. Head to warehouse for additional packing material for cooler, & to ship samples.
11 00	Arrive @ warehouse. Finish packing samples
11 20	Head to FedEx & ship samples
11 30	offsite. Head home.

Prepared By (name/signature): [Signature] Date: 5/6/15

FIELD INVESTIGATION DAILY LOG

PROJECT NAME: LDL Study FIELD PERSON: J. Arblester
 PROJECT NUMBER: 04 33310A11 PROJECT MANAGER: D. Moore
 PROJECT LOCATION: San Pedro / Long Beach Date: May 15 - June 15 2015

DAILY SUMMARY: LDL Retrieval - Day 1
 WEATHER CONDITIONS: Overcast, clearing up afternoon
 VISITORS/SUBCONTRACTORS: Tierra Date (Brent, Chris + Chase)

MILITARY TIME	ACTIVITIES
05 30	Depart for Cabrillo Boat Launch.
06 40	Pick up ice. Arrive @ CB Launch.
07 15	3 Launch boat, set up for diving. HOS tailgate.
08 00	On CP-01. Divers in to retrieve SPMEs.
08 10	CP-01 retrieved. Some biofouling. Clean + cut SPMEs + place in vials 59 + 60 for CP-01 (0810).
08 55	On REF-01. Divers in to retrieve @ 0911.
09 55	Finish processing SPMEs REF → some biofoul @ ends.
10 12	Mob to CB + retrieve assemblies.
10 55	Retrieved SPME. Process Mid-depth - sample 1120.
11 40	Finish processing bottom depth.
12 00	Mob to SP + retrieve SPME.
12 30	Finish processing SPME. Mob to LARE
13 20	LARE processed. stagnant Biofoul on all SPMEs today.
13 30	Mob to IB-01. Retrieved SPME + process see table. on way to IA-01.
14 50	Finish Done processing IB-01 + IB-1001 (FD)
15 45	Done processing IB-01 (Bottom). Mob to IA
16 15	Done processing IA-01 SPME.

Prepared By (name/signature): [Signature] Date: 6/15/15
 Reviewed By (name/signature): _____ Date: _____

FIELD INVESTIGATION DAILY LOG

PROJECT NAME: LDL Study
PROJECT NUMBER: 04 33310A11
PROJECT LOCATION: POLA/POLB

FIELD PERSON: J. Arblaster
PROJECT MANAGER: D. Moore
Date: 6/15/15

DAILY SUMMARY: LDL Retrieval - Day 1
WEATHER CONDITIONS: Clear. 80's
VISITORS/SUBCONTRACTORS: TDI

MILITARY TIME	ACTIVITIES
1700	Return to CB launch. Off load.
	Package simplex for shipment to Vista → head to FedEx.
18 15	Finish dropping samples off for shipment.
18 30	Returned to hotel.

Prepared By (name/signature): [Signature] Date: 6/15/15
Reviewed By (name/signature): _____ Date: _____

FIELD INVESTIGATION DAILY LOG

PROJECT NAME: LDL Study FIELD PERSON: J. Anblaster
 PROJECT NUMBER: 04 33310A11 PROJECT MANAGER: D. Moore
 PROJECT LOCATION: San Pedro/Long Beach Date: June 16, 2015

DAILY SUMMARY: SPME Retrieval - Day 2.
 WEATHER CONDITIONS: Overcast
 VISITORS/SUBCONTRACTORS: TDI - Brent & Chris.

MILITARY TIME	ACTIVITIES
0630	Leave for site, pick up ice
0700	Meet TDI @ Cabrillo Marina.
0710	Leave for CS-01
0755	Arrive @ CS-01 & retrieve SPME.
0830	Done processing SPME top (slight biofailings)
0845	Done processing bottom sample. Head to FH-01
	Ran out of Kim wipes, use paper towel w/ ultrapure H ₂ O.
0935	Done processing FH-01, head back to Marina.
1000	Arrive @ Marina. Package samples for shipment.
1020	Leave for FedEx
1100	Samples shipped. Head to warehouse.
1150	Done unloading equipment.

Prepared By (name/signature): [Signature] Date: 6/16/15
 Reviewed By (name/signature): _____ Date: _____

APPENDIX A-2
PHOTO LOGS



Photo 1: REF-01, mooring assembly: buoys, SPME assemblies (on rack), and anchor prior to deployment



Photo 2: REF-01, first buoys deployed (deployment continued in next photo)

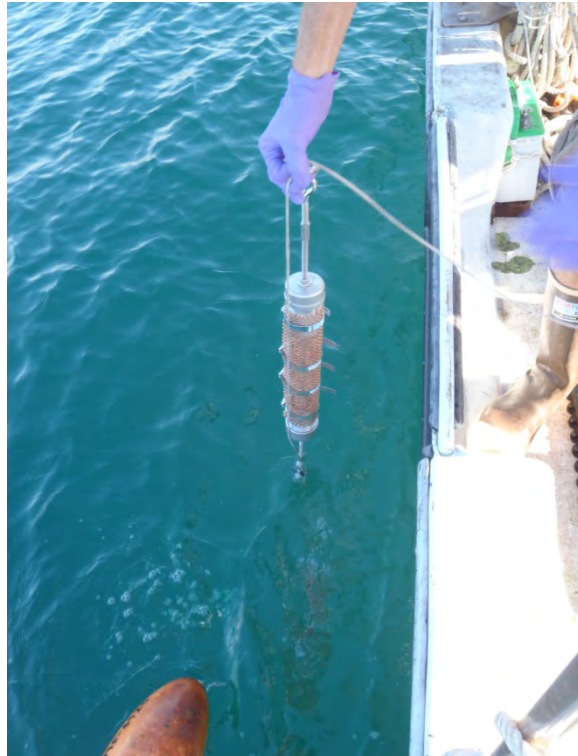


Photo 3: REF-01, then SPME fiber housing assemblies deployed (deployment continued in next photo)



Photo 4: REF-01, finally, additional buoy, acoustic release, and anchor deployed



Photo 5: REF-01, facing west



Photo 6: REF-01, facing northwest



Photo 7: REF-01, facing northeast



Photo 8: OB-01, mooring assembly: SPME assemblies (wrapped in foil) and buoys (anchor not shown on deck) prior to deployment



Photo 9: OB-01, SPME assemblies (without foil, as deployed) prior to deployment



Photo 10: OB-01, first buoys deployed, then SPME assemblies (deployment continued in next photo)

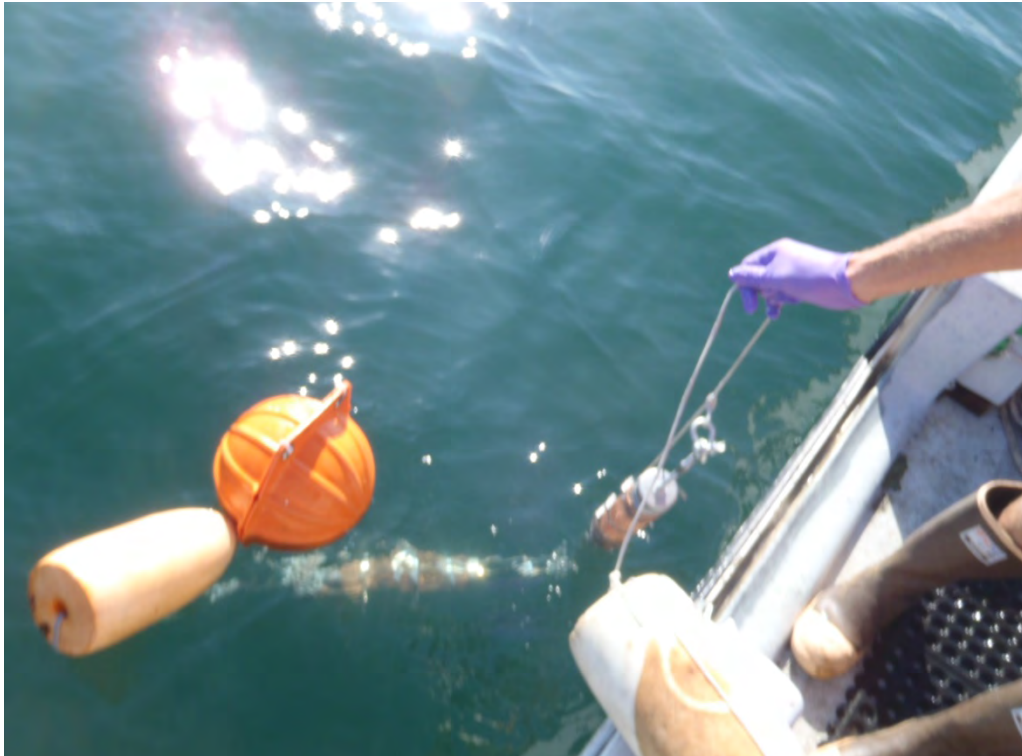


Photo 11: OB-01, SPME assemblies were deployed (deployment continued in next photo)

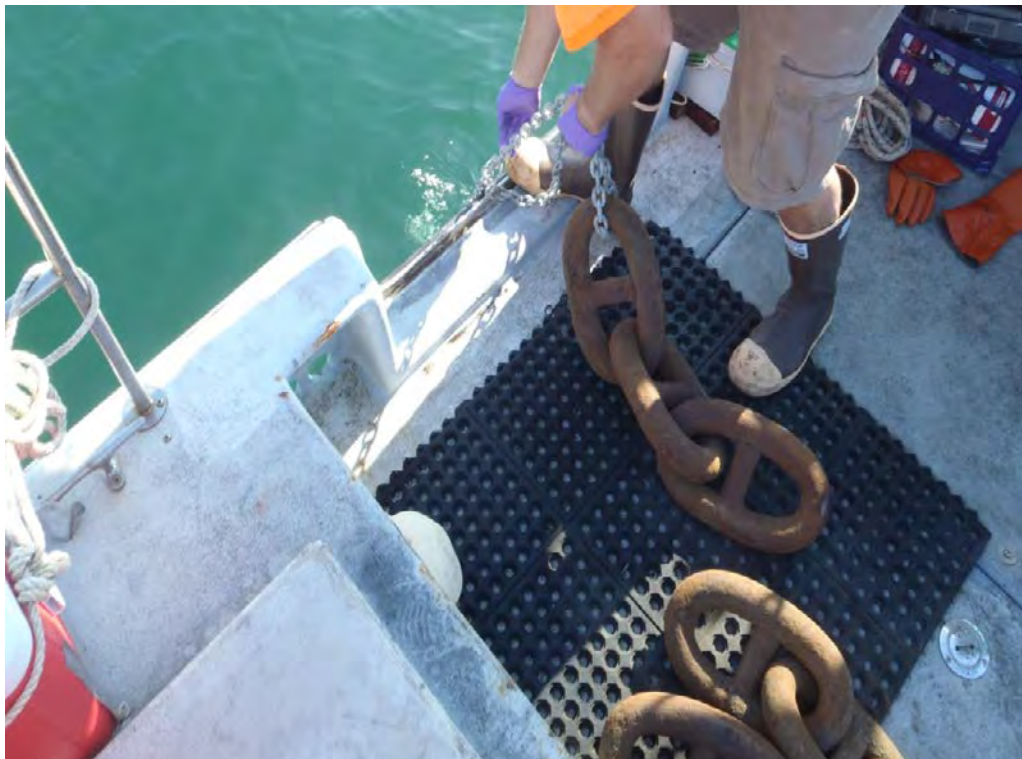


Photo 12: OB-01, finally, the anchor was deployed



Photo 13: OB-01, facing west



Photo 14: OB-01, facing north



Photo 15: OB-01, facing northeast



Photo 16: OB-01, facing east



Photo 17: SP-01, close-up of SPME fibers in the assembly



Photo 18: SP-01, first buoy deployed, then SPME assemblies (deployment continued in next photo)



Photo 19: SP-01, finally, anchor was deployed



Photo 20: SP-01, facing northwest



Photo 21: SP-01, facing northeast



Photo 22: SP-01, facing east



Photo 23: LARE-01, tie off to dock (photo taken prior to parallel reconfiguration for SPME assemblies)



Photo 24: LARE-01, SPME assemblies after parallel reconfiguration



Photo 25: CP-01, top to bottom of mooring assembly– hard hat buoy, then SPME assemblies, then buoys (continued on next photo)



Photo 26: CP-01, top to bottom of mooring assembly –buoys, then acoustic release (continued on next photo)

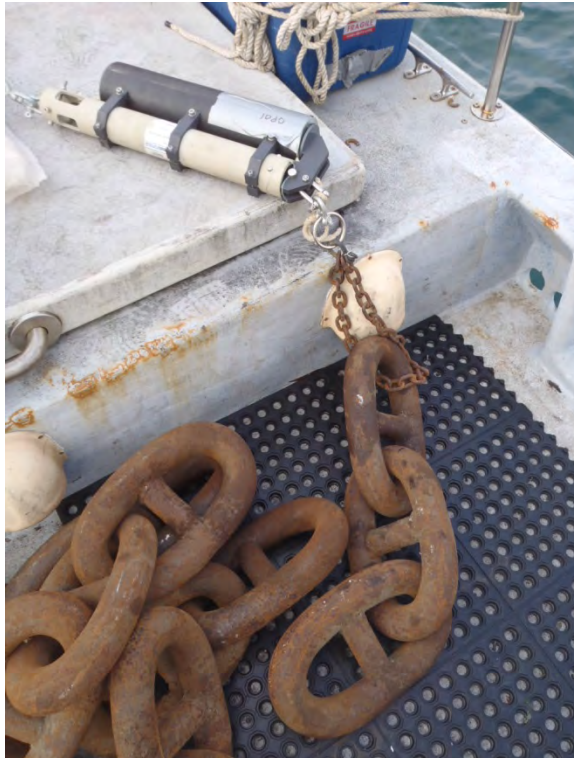


Photo 27: CP-01, top to bottom of mooring assembly –acoustic release, then anchor



Photo 28: CP-01, deployment (top to bottom shown)



Photo 29: CP-01, facing southeast



Photo 30: CP-01, facing south



Photo 31: CP-01, facing southwest



Photo 32: CP-01, facing northwest



Photo 33: FH-01, top to bottom of mooring assembly –hard hat buoy, then SPME assemblies (continued on next photo)



Photo 34: FH-01, top to bottom of mooring assembly –SPME assemblies (continued on next photo)

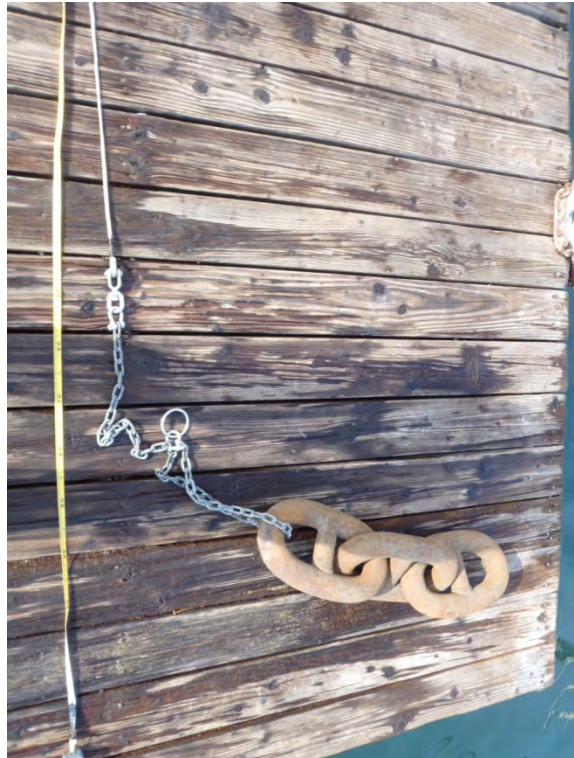


Photo 35: FH-01, top to bottom of mooring assembly – anchor

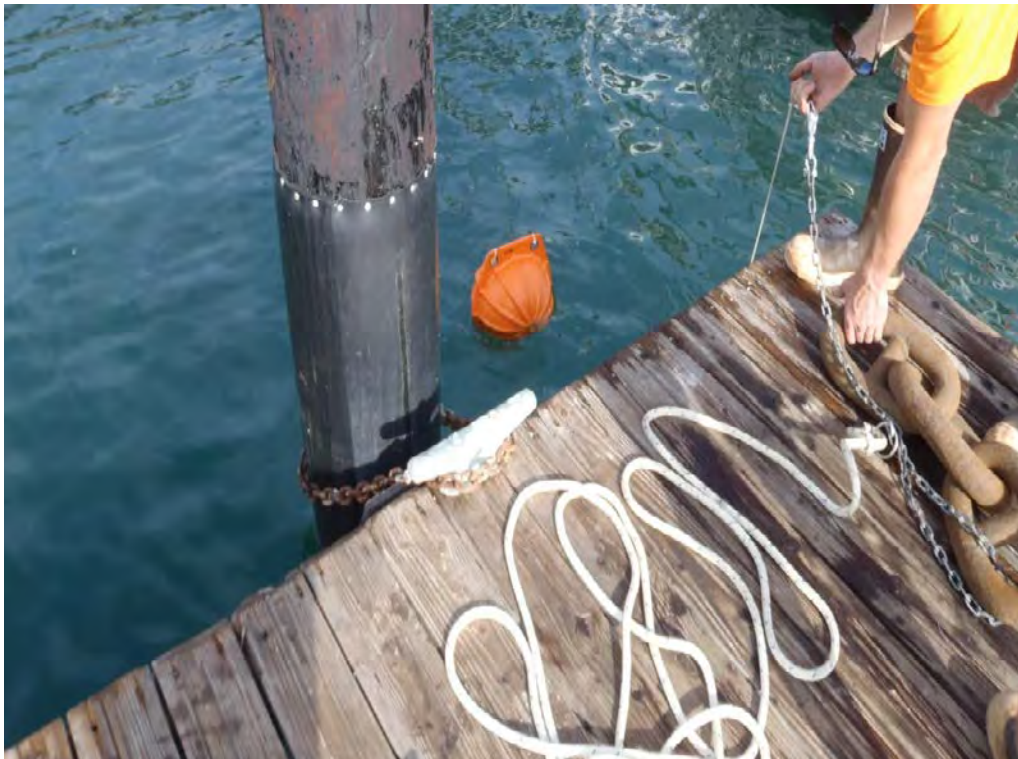


Photo 36: FH-01, retrieval line tied to anchor



Photo 37: FH-01, retrieval line tied to cleat of the piling



Photo 38: FH-01, facing west, facing SCMI (left) and sheriff building (right), retrieval line seen on cleat on piling at end of pier

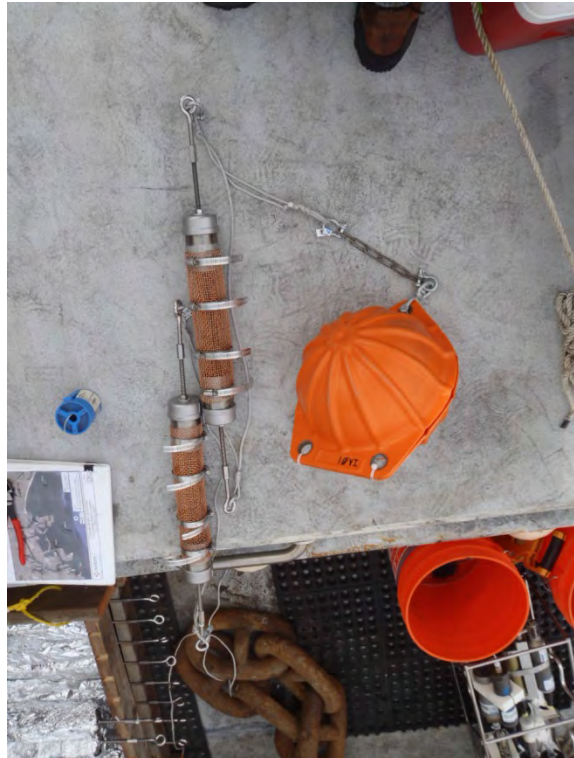


Photo 39: IA-01, top to bottom of mooring assembly – hard hat buoy, SPME assemblies, and anchor



Photo 40: IA-01, retrieval line tied to ladder



Photo 41: IA-01, ladder just north of Seaside Freeway 47 (Vincent Thomas Bridge), facing skyward (up)



Photo 42: IA-01, facing south



Photo 43: CS-01, mooring assembly prior to deployment



Photo 44: CS-01, facing northwest, retrieval line shown on right (line on the left is for the fish receiver)

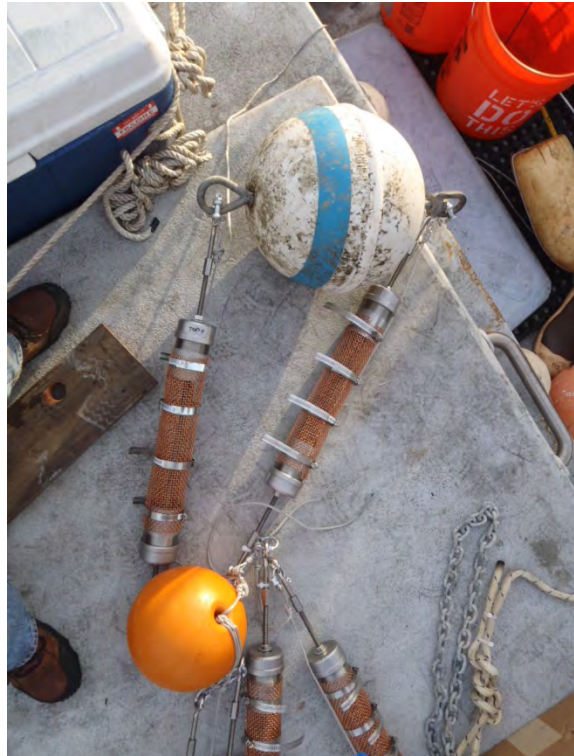


Photo 45: IB-01, top to bottom of mooring assembly prior to deployment (continued on next photo)



Photo 46: IB-01, top to bottom of mooring assembly prior to deployment (anchor not shown)



Photo 47: IB-01, facing northeast, retrieval line tied to overhead beam on piling



Photo 48: IB-01, facing northeast, retrieval line tied to overhead beam on piling

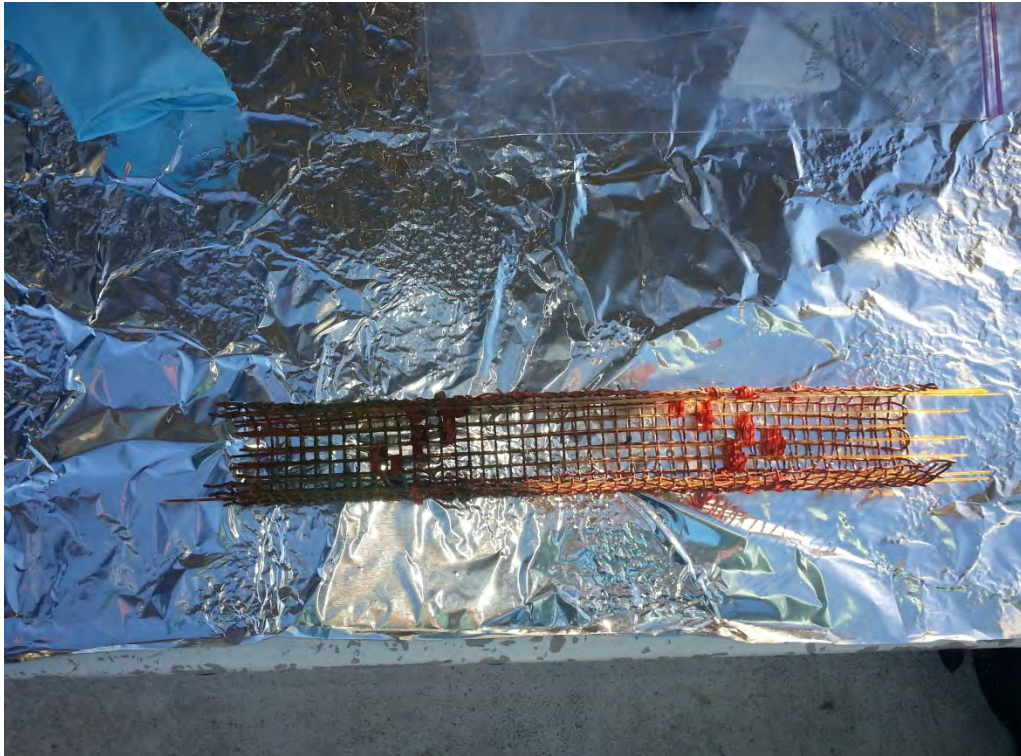


Photo 1: CP-01, Inner SPME fiber housing (primary sample fibers)



Photo 2: CP-01, acoustic release and SPME assembly



Photo 3: CP-01, buoys which were below the SPME assemblies, spectra line cut



Photo 4: REF-01 (primary sample on top of photo, PRC below in photo)



Photo 5: OB-01 Mid-depth (PRC on top and primary sample below in photo)



Photo 6: OB-01 Bottom depth (PRC on top and primary sample below in photo)

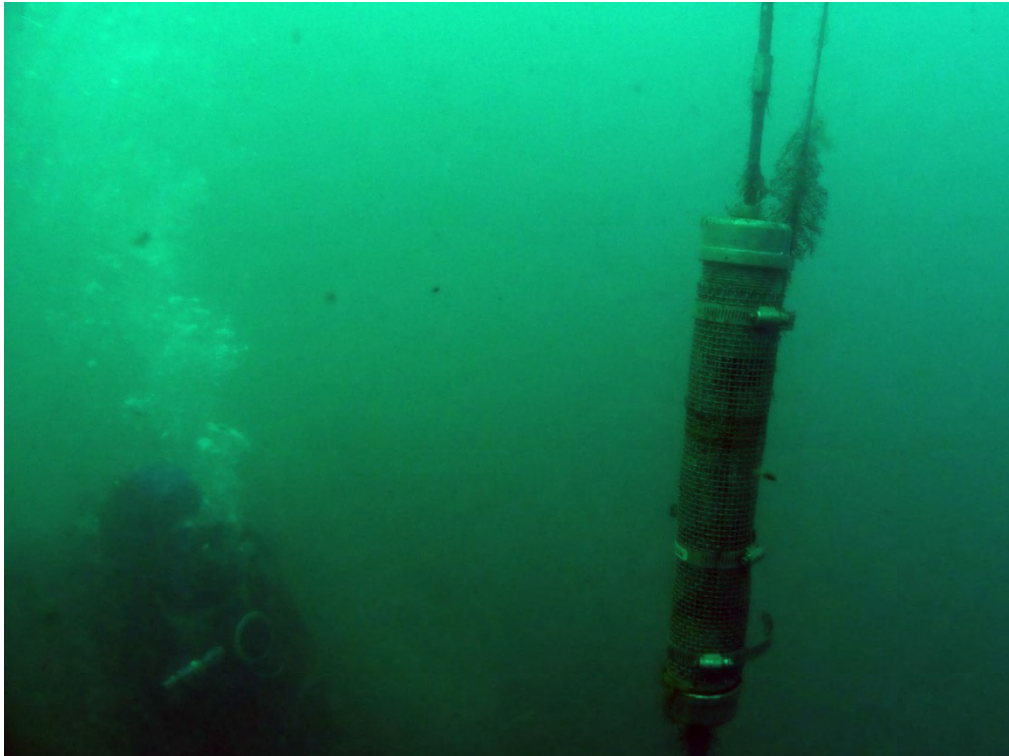


Photo 7: OB-01, SPME assembly underwater

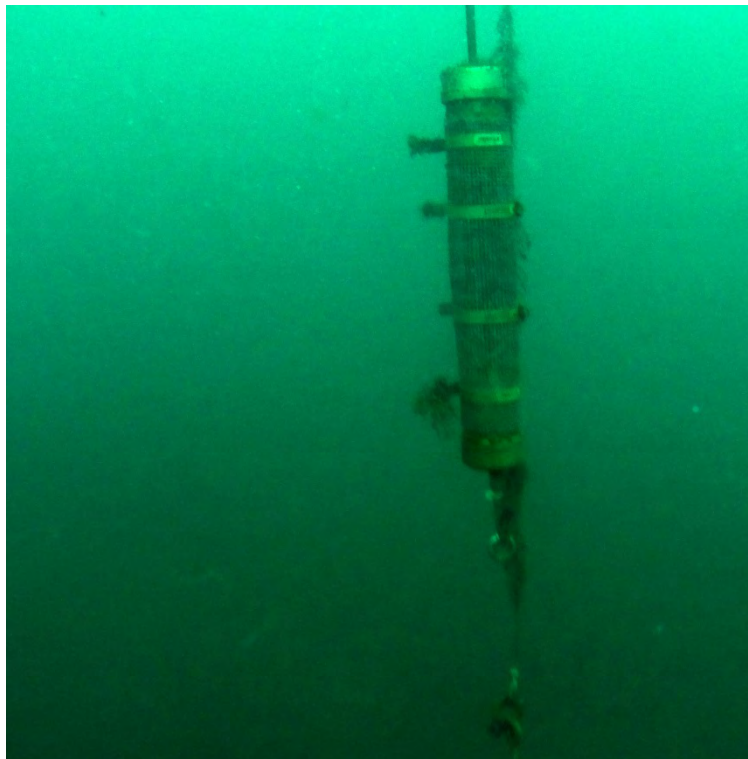


Photo 8: OB-01, SPME assembly underwater



Photo 9: SP-01 (Primary sample on top and PRC below in photo)



Photo 10: SP-01, thimble bent



Photo 11: SP-01, SPME assembly underwater



Photo 12: SP-01, SPME assembly underwater



Photo 13: LARE-01, primary sample assembly



Photo 14: IB-01, mid- depth (PRC on top and below in photo)



Photo 15: IB-01, mid- depth (primary sample)



Photo 16: IB-01, bottom depth (primary sample on top and PRC below in photo)



Photo 17: CS-01 mid- depth (hard hat buoy to primary sample to PRC)



Photo 18: CS-01, mid-depth (PRC)



Photo 19: CS-01, bottom depth (lobster buoy to PRC to primary sample)



Photo 20: CS-01, bottom depth (primary sample)



Photo 21: IA-01 (primary sample on top and PRC below in photo)



Photo 22: IA-01 (primary sample on top and PRC below in photo)



Photo 23: IA-01, Inner housing for fibers (PRC on top and primary sample below in photo)



Photo 24: FH-01 (primary sample on top and PRC below in photo)



Photo 1: REF-01 facing East



Photo 2: REF-01 facing West



Photo 3: REF-01 facing North



Photo 4: SP-01 facing North



Photo 5: SP-01 facing East



Photo 6: SP-01 facing West



Photo 7: SPME Assembly set up



Photo 8: LARE-01 location



Photo 9: LARE SPME Assembly (Parallel set up)



Photo 10: IB-01 Location



Photo 11: CS-01 Location



Photo 12: IA-01 Location



Photo 13: Signage at IA-01 location



Photo 14: CP-01 facing East



Photo 15: CP-01 facing North



Photo 16: CP-01 facing West



Photo 17: FH Location



Photo 1: CP-01 Assemblies



Photo 2: CP-01 Primary SPMEs (PRC SPME's not photographed)



Photo 3: CP-01 SPME's after cleaning



Photo 4: REF-01 PRC SPME's (Primary assembly not photographed)



Photo 5: OB-01 Mid-depth Primary SPME's (Primary and bottom depth not photographed)



Photo 6: SP-01 PRC SPME's (Primary SPMEs not photographed)



Photo 7: LARE-01 Primary SPME's (PRC SPMEs not photographed)



Photo 8: IB-01 Mid-depth Primary and PRC SPMEs



Photo 9: IB-1001 Mid-depth Primary and PCR SPMEs

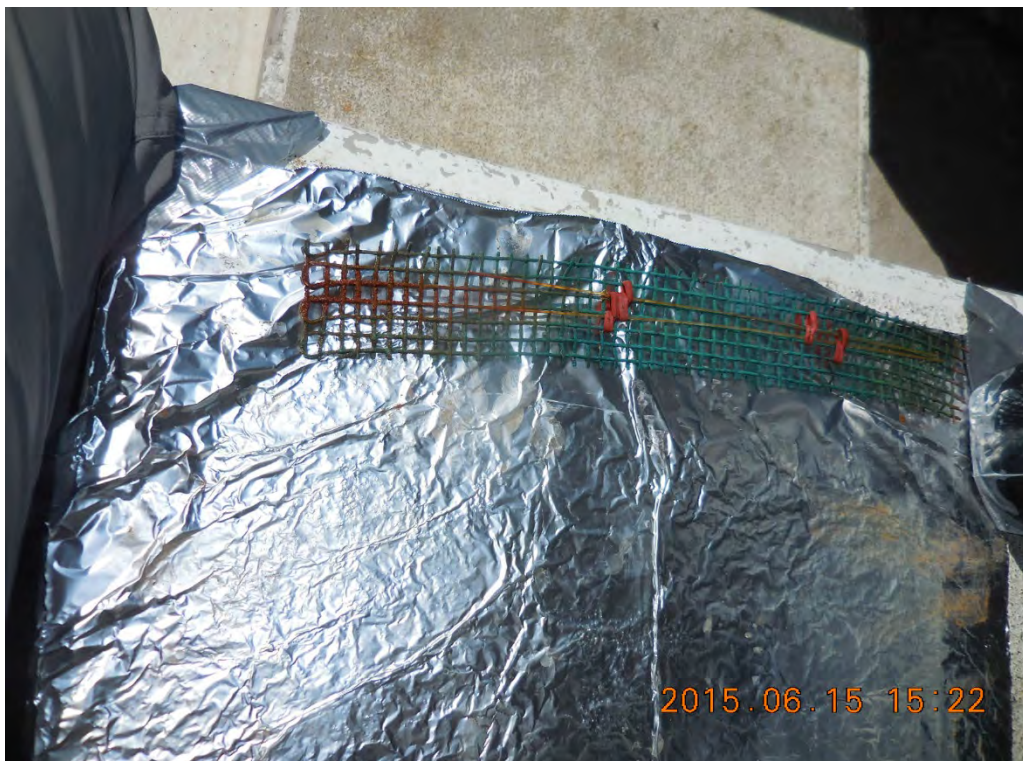


Photo 10: IB-01 Bottom depth PRC SPME



Photo 11: IB-01 Bottom depth SPMEs



Photo 12: IA-01 PCR and Primary SPMEs



Photo 13: CS-01 Assemblies



Photo 14: CS-01 Mid-depth PRC and Primary SPMEs



Photo 15: CS-01 Bottom depth PRC and Primary SPME's



Photo 16: FH-01 assemblies



Photo 17: FH-01 PRC and Primary SPME's

**APPENDIX A-3
CHAINS OF CUSTODY**

18100 Von Karman Ave., Suite 600 Irvine, CA 92612 (949) 261-5151 (949) 261-6202 (fax)
 707 Wilshire Blvd., Suite 4950 Los Angeles, Calif. 90017 (213) 943-6300 (213) 943-6301 (fax)
 1702 E Highland Avenue, Suite 412 Phoenix, AZ 85016 (602) 734-7700 (602) 734-7701 (fax)

MSA#: _____ WO#: _____

PROJECT NAME / FACILITY ID: POLYPOB Phase 2 LCL WC Study

FIELD PERSON: M. Grouer

PROJECT NUMBER: 0433310A11 DATE: 12-9-14

PROJECT MANAGER: D. Moore

PROJECT LOCATION: San Pedro / Long Beach, CA

LABORATORY: Vista Analytical

IS THIS A UST PROJECT OR IS EDF REQUIRED? Y N IF YES, GLOBAL ID #: _____

SAMPLER: <u>M. Grouer</u>	YEAR		SAMPLE DATE	SAMPLE TIME	SAMPLE DEPTH (ft)	AIR SAMPLE VOLUME (L)	MATRIX (A) AIR (S) SOIL (G) GAS (W) WATER	NUMBER OF CONTAINERS	FILTERED/UNFILTERED (F/U)	PRESERVATION (SEE KEY)	ANALYSIS REQUIRED	COMMENTS
	2014											
SIGNATURE: <u>M. Grouer</u>												
SAMPLE I.D. NUMBER												
FB-20141209			12/9	15:32	NA	NA	Fiber	1	U	NO	X	Contact
FB-20141209				15:31							X	David Moore at
FBPRC1-20141209				15:41							X	dmoore@environ.com
FBPRC2-20141209				15:42							X	
FBPRC3-20141209				15:43							X	
FBPRC4-20141209				15:43							X	
FBPRC5-20141209				15:43							X	
FBPRC10-20141209				15:44							X	
LENGTH-01-20141209				16:20							X	
LENGTH-02-20141209				16:27							X	
TOTAL	X	X	X									

RELINQUISHED BY: <u>M. Grouer</u>	TIME/DATE: <u>16:39/12-09-14</u>	RECEIVED BY:	TIME/DATE:	TURNAROUND TIME (CIRCLE ONE)	SAME DAY	72 HOURS
RELINQUISHED BY:	TIME/DATE:	RECEIVED BY:	TIME/DATE:		24 HOURS	5 DAYS
RELINQUISHED BY:	TIME/DATE:	RECEIVED BY:	TIME/DATE:	SAMPLE INTEGRITY	IF SEALED, SEAL INTEGRITY	
				INTACT: Y N Temp _____	INTACT: Y N	

H = HCL; N = HNO3; S = H2SO4; U = UNKNOWN; NO = NONE; O = OTHER



5817 Dryden Place, Ste 101 • Carlsbad, CA 92008 • (760) 795-6900, FAX 931-1580
 1340 Treat Blvd, Ste 210 • Walnut Creek, CA 94597 • (925) 948-2600, FAX 948-2601

CHAIN OF CUSTODY

36873

DATE 9 DEC 2014 PAGE 1 OF 1

PROJECT NAME / SURVEY / PROJECT NUMBER					CONTAINER TYPE / VOLUME	TOTAL NUMBER OF CONTAINER	ANALYSIS/TEST REQUESTED					PRESERVED HOW	FOR WESTON USE ONLY	
PROJECT MANAGER / CONTACT							TOC*	DOC*	POC**	TSS	Particle Size		SAMPLE TEMP. (°C) UPON RECEIPT	WESTON LAB ID
POLB/POLA Low Detection Limit Water Column Study Ph. 2														
Sheila Holt														
Weston Solutions														
See Above														
11 / /														
SITE ID (Location)	SAMPLE ID	DATE	TIME	MATRIX										
	Ref-RW-01-G-M-20141209	9.12.14	0840	SLT	G/Venose	7	X	X	X	X	X	1CL/1650µ		1
	0B-RW-01-G-M-20141209		0945			7								2
	0B-RW-01-G-B-20141209		0945			7								3
	SP-RW-01-G-M-20141209		1045			7								4
	LARE-RW-01-G-M-20141209		1300			7	↓	↓	↓	↓	↓			5
	EB-20141209		1530			3	X	X	X					6

<p>Sample Matrix Codes: FW=fresh water GW=ground water SLT=salt water SW=storm water WW=waste water SED=sediment A=air BIO=biologic SS=soil T=tissue O=other (specify) _____</p> <p>Container Code: G=glass P=plastic B=bags O=other _____</p> <p>Shipped By: <input type="checkbox"/> Courier <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> USPS <input type="checkbox"/> Client drop off <input type="checkbox"/> Other _____</p> <p>Turnaround Time: <input type="checkbox"/> 2-day <input type="checkbox"/> 5-day <input type="checkbox"/> 7-day <input type="checkbox"/> 10-day <input type="checkbox"/> 14-day <input type="checkbox"/> Standard <input type="checkbox"/> Other _____</p> <p>Reporting Requirements: <input type="checkbox"/> PDF <input type="checkbox"/> EDD <input type="checkbox"/> Hard Copy <input type="checkbox"/> Email <input type="checkbox"/> Other _____</p>	<p>SAMPLED BY: PRINT SIGNATURE Damon Owen </p> <p>COMMENTS / SPECIAL INSTRUCTIONS * DOC + POC to be filtered by Eurofins. 2 bottles for each analyte. Please ship 1-DOC + 1-POC to MSI after filter ** POC to be shipped to MST. * EB-20141209 - POC + DOC to be filtered by Eurofins - All EB-20141209 → MST</p>
---	---

RELINQUISHED BY				RECEIVED BY			
Print Name	Signature	Firm	Date/Time	Print Name	Signature	Firm	Date/Time
1. Damon Owen		Weston	9.12.14/1756	Denny Rawran		ECI	12/09/14 17.56
2. DENNY RAWRAN		ECI	12/09/14/18.45				
3.							
4.							
5.							
6.							

WHITE - return to originator • YELLOW - lab • PINK - retained by originator

Return to Contents

* EB-20141209 POC + DOC to be filtered by Eurofins - All EB-20141209 → MST

page 13 of 17

THIS COB WAS RECEIVED FROM SHEILA HOLT (WESTON)
ON 12/11/14 @ 12:29pm - VIRENORA (ECI)



5817 Dryden Place, Ste 101 • Carlsbad, CA 92008 • (760) 795-6900, FAX 931-1580
 1340 Treat Blvd, Ste 210 • Walnut Creek, CA 94597 • (925) 948-2600, FAX 948-2601

CHAIN OF CUSTODY
36874

DATE 10 DEC 2014 PAGE 1 OF 1

PROJECT NAME / SURVEY / PROJECT NUMBER						CONTAINER TYPE / VOLUME	TOTAL NUMBER OF CONTAINER	ANALYSIS/TEST REQUESTED					PRESERVED HOW	FOR WESTON USE ONLY				
POLB/PAA Low Detection Limit Water Column Study Phase 2								TDC	DOC	POC	TSS	Particle Size		SAMPLE TEMP. (°C) UPON RECEIPT	WESTON LAB ID			
PROJECT MANAGER / CONTACT						DATE	TIME	MATRIX	PPG	Various	7	X	X	X	X	X	ICE	1
Sheila Holt																		
CLIENT						DATE	TIME	MATRIX	PPG	Various	7	X	X	X	X	X	ICE	2
Weston Solutions																		
ADDRESS						DATE	TIME	MATRIX	PPG	Various	7	X	X	X	X	X	ICE	3
See above																		
PHONE / FAX / EMAIL						DATE	TIME	MATRIX	PPG	Various	7	X	X	X	X	X	ICE	4
SITE ID (Location)	SAMPLE ID	DATE	TIME	MATRIX	PPG	Various	7	X	X	X	X	X	X	X	X	X	ICE	5
	CP-RW-01-G-M-20141210	12/11/14	0800	SLT	PPG	Various	7	X	X	X	X	X	X	X	X	X	ICE	6
	FH-RW-01-G-M-20141210		1005				7											7
	IA-RW-01-G-M-20141210		1140				7											8
	CS-RW-01-G-M-20141210		1245				7											
	CS-RW-01-G-B-20141210		1245				7											
	*IB-RW-01-G-M-20141210		1400				18											
	IB-RW-01-G-B-20141210		1400				7											
	IB-RW-1001-G-M-20141210		1400				4											

14-12-1034

Sample Matrix Codes: FW=fresh water GW=ground water SLT=salt water SW=storm water WW=waste water
SED=sediment A=air BIO=biologic SS=soil T=tissue O=other (specify) _____
Container Code: G=glass P=plastic B=bags O=other _____
Shipped By: Courier UPS FedEx USPS Client drop off Other _____
Turnaround Time: 2-day 5-day 7-day 10-day 14-day Standard Other _____
Reporting Requirements: PDF EDD Hard Copy Email Other _____

SAMPLED BY: PRINT
Damon Owen
Nick Cochran
SIGNATURE

COMMENTS/SPECIAL INSTRUCTIONS
* 11 extra bottles for QA samples for Eurofins anal MSI
see attached form for analysis. NO TDC archive sample for Eurofins was collected for dup.

RELINQUISHED BY				RECEIVED BY			
Print Name	Signature	Firm	Date/Time	Print Name	Signature	Firm	Date/Time
1. Damon Owen		Weston	12/11/14 1758				
2.							
3.							
4.							
5.							
6.							

18100 Von Karman Ave., Suite 600 Irvine, CA 92612 (949) 261-5151 (949) 261-6202 (fax)
 707 Wilshire Blvd., Suite 4950 Los Angeles, Calif. 90017 (213) 943-6300 (213) 943-6301 (fax)
 1702 E Highland Avenue, Suite 412 Phoenix, AZ 85016 (602) 734-7700 (602) 734-7701 (fax)

MSA#: _____ WO#: _____

PROJECT NAME / FACILITY ID: POLA/POLB Phase 2 DUVIC Study

FIELD PERSON: M. Cronin

PROJECT NUMBER: 0433310A11 DATE: 1/7/15

PROJECT MANAGER: R. Moore

PROJECT LOCATION: Cam Pools/Long Beach

LABORATORY: Vista Analytical

IS THIS A UST PROJECT OR IS EDF REQUIRED? Y N IF YES, GLOBAL ID #: _____

SAMPLER: <u>M. Cronin</u>	YEAR		SAMPLE DEPTH (ft)	AIR SAMPLE VOLUME (L)	MATRIX (A) AIR (S) SOIL (G) GAS (W) WATER	NUMBER OF CONTAINERS	FILTERED/UNFILTERED (F/U)	PRESERVATION (SEE KEY)	ANALYSIS REQUIRED	COMMENTS
	SAMPLE DATE	SAMPLE TIME								
SIGNATURE: <u>[Signature]</u>	2015									
SAMPLE I.D. NUMBER										
<u>CP-RW-01-S-M-20150107</u>	<u>1/7</u>	<u>8:39</u>	<u>NA</u>	<u>NA</u>	<u>Fiber</u>	<u>1</u>	<u>U</u>	<u>No</u>	<u>X</u>	<u>Vial 19</u>
<u>CP-RW-01-S-M-20150107</u>		<u>8:39</u>							<u>X</u>	<u>Vial 20</u>
<u>REF-RW-01-S-M-20150107</u>		<u>9:40</u>							<u>X</u>	<u>Vial 9</u>
<u>REF-RW-01-S-M-20150107</u>		<u>9:40</u>							<u>X</u>	<u>Vial 10</u>
<u>REF-RW-01-S-M-PRC-20150107</u>		<u>9:40</u>							<u>X</u>	<u>Vial 11</u>
<u>REF-RW-01-S-M-PRC-20150107</u>		<u>9:40</u>							<u>X</u>	<u>Vial 12</u>
<u>OB-RW-01-S-M-20150107</u>		<u>11:45</u>							<u>X</u>	<u>Vial 15</u>
<u>OB-RW-01-S-M-20150107</u>		<u>11:45</u>							<u>X</u>	<u>Vial 6</u>
<u>OB-RW-01-S-B-20150107</u>		<u>11:45</u>							<u>X</u>	<u>Vial 7</u>
<u>OB-RW-01-S-B-20150107</u>		<u>11:45</u>							<u>X</u>	<u>Vial 8</u>
<u>SP-RW-01-S-M-20150107</u>		<u>12:45</u>							<u>X</u>	<u>Vial 17</u>
<u>SP-RW-01-S-M-20150107</u>		<u>12:45</u>							<u>X</u>	<u>Vial 18</u>
<u>LARE-RW-01-S-M-20150107</u>		<u>13:45</u>							<u>X</u>	<u>Vial 13</u>
TOTAL	X	X	X			13			76	

RELINQUISHED BY: <u>[Signature]</u>	TIME/DATE: <u>1/7/15</u>	RECEIVED BY: _____	TIME/DATE: _____	TURNAROUND TIME (CIRCLE ONE)	SAME DAY 24 HOURS 48 HOURS	72 HOURS 5 DAYS NORMAL
RELINQUISHED BY: _____	TIME/DATE: _____	RECEIVED BY: _____	TIME/DATE: _____			
RELINQUISHED BY: _____	TIME/DATE: _____	RECEIVED BY: _____	TIME/DATE: _____	SAMPLE INTEGRITY	IF SEALED, SEAL INTEGRITY	
				INTACT: Y N Temp _____	INTACT: Y N	

H = HCL; N = HNO3; S = H2SO4; U = UNKNOWN; NO = NONE; O = OTHER



5817 Dryden Place, Ste 101 • Carlsbad, CA 92008 • (760) 795-6900, FAX 931-1580
 1340 Treat Blvd, Ste 210 • Walnut Creek, CA 94597 • (925) 948-2600, FAX 948-2601

CHAIN OF CUSTODY

36875

DATE BJW 2015 PAGE 1 OF 1

PROJECT NAME / SURVEY / PROJECT NUMBER					CONTAINER TYPE / VOLUME	TOTAL NUMBER OF CONTAINER	ANALYSIS/TEST REQUESTED					PRESERVED HOW	FOR WESTON USE ONLY	
PROJECT MANAGER / CONTACT							TOC	DOC	POC	TSS	Partic Size		SAMPLE TEMP. (°C) UPON RECEIPT	WESTON LAB ID
POLB/POLA Low Detection Limit Water Column Study Phase 2													15-01-0408	
Sheila Holt														
Weston Solutions														
See Above														
PHONE / FAX / EMAIL														
SITE ID (Location)	SAMPLE ID	DATE	TIME	MATRIX										
	CP-RW-01-G-M-20150108		0645	SLT	P+G/1000	7	X	X	X	X	X	ice		1
	REF-RW-01-G-M-20150108		0800											2
	SP-RW-01-G-M-20150108		0830											3
	LARE-RW-01-G-M-20150108		0905											4
	OB-RW-01-G-B-20150108		0945											5
	OB-RW-01-G-M-20150108		0950											6
	IB-RW-01-G-B-20150108		1035											7
	*IB-RW-01-G-M-20150108		1045			18								8
IB-RW-01-G-M-20150108														
	IB-RW-1001-G-M-20150108		1045			7						ice	9	
	CS-RW-01-G-B-20150108		1210			7							10	
	CS-RW-01-G-M-20150108		1205										11	
	IA-RW-01-G-M-20150108		1250										12	
	FH-RW-01-G-M-20150108		1335										13	
	EB-20150108		1430			3							14	
Sample Matrix Codes: FW=fresh water GW=ground water SLT=salt water SW=storm water WW=waste water SED=sediment A=air BIO=biologic SS=soil T=tissue O=other (specify) _____					SAMPLED BY: PRINT Damon Owen Nick Cochran					SIGNATURE 				
Container Code: G=glass P=plastic B=bags O=other _____					Shipped By: <input type="checkbox"/> Courier <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> USPS <input type="checkbox"/> Client drop off <input type="checkbox"/> Other _____					COMMENTS / SPECIAL INSTRUCTIONS * 11 extra bottles for QA samples for Eurotius + MSI Please see attached list for analyses				
Turnaround Time: <input type="checkbox"/> 2-day <input type="checkbox"/> 5-day <input type="checkbox"/> 7-day <input type="checkbox"/> 10-day <input type="checkbox"/> 14-day <input type="checkbox"/> Standard <input type="checkbox"/> Other _____					Reporting Requirements: <input type="checkbox"/> PDF <input type="checkbox"/> EDD <input type="checkbox"/> Hard Copy <input type="checkbox"/> Email <input type="checkbox"/> Other _____									
RELINQUISHED BY					RECEIVED BY									
Print Name	Signature	Firm	Date/Time	Print Name	Signature	Firm	Date/Time	Print Name	Signature	Firm	Date/Time			
1. Damon Owen		Weston	8 JAN 15 / 16 45	D. V. [unclear]		ECI	01/8/15 16 45							
2. P. [unclear]		ECI	01/08/15 18.10	Juan [unclear]		ECI	1/8/15 18/16							
3.														
4.														
5.														
6.														



5817 Dryden Place, Ste 101 • Carlsbad, CA 92008 • (760) 795-6900, FAX 931-1580
 1340 Treat Blvd, Ste 210 • Walnut Creek, CA 94597 • (925) 948-2600, FAX 948-2601

CHAIN OF CUSTODY

37108

DATE 5 May 2015 PAGE 1 OF 1

PROJECT NAME / SURVEY / PROJECT NUMBER					CONTAINER TYPE / VOLUME	TOTAL NUMBER OF CONTAINER	ANALYSIS/TEST REQUESTED				PRESERVED HOW	FOR WESTON USE ONLY	
PROJECT MANAGER / CONTACT							TOC	DOC	POC	TSS		SAMPLE TEMP. (°C) UPON RECEIPT	WESTON LAB ID
POLB / POLA LOW DETECTION LIMIT WATER COLUMN STUDY PHASE 2												15-05-0264	
SHEILA HOLT													
CLIENT													
WESTON SOLUTIONS													
ADDRESS													
SEE ABOVE													
PHONE / FAX / EMAIL													
SITE ID (Location)	SAMPLE ID	DATE	TIME	MATRIX									
1	REF-RW-01-G-M-20150505	5 May 15	0800	SLT	P+G / 1000	4	X	X	X	X	icc / 1000		
2	SP-RW-01-G-M-20150505		0830										
3	LARE-RW-01-G-M-20150505		0930										
4	OB-RW-01-G-M-20150505		1040										
5	OB-RW-01-G-B-20150505		1030										
6	IB-RW-01-G-M-20150505		1145			10*							
7	IB-RW-1001-G-M-20150505		1145			4							
8	IB-RW-01-G-B-20150505		1135										
9	CB-RW-01-G-B-20150505		1315										
10	CB-RW-01-G-M-20150505		1325										
11	IA-RW-01-G-M-20150505		1315										
12	EB-20150505		1520			3	X	X	X				

Sample Matrix Codes: FW=fresh water GW=ground water SLT=salt water SW=storm water WW=waste water

SED=sediment A=air BIO=biologic SS=soil T=tissue O=other (specify)

Container Code: G=glass P=plastic B=bags O=other

Shipped By: Courier UPS FedEx USPS Client drop off Other

Turnaround Time: 2-day 5-day 7-day 10-day 14-day Standard Other

Reporting Requirements: PDF EDD Hard Copy Email Other

SAMPLED BY: PRINT

Daman Owen

SIGNATURE

Nick Cochran / Jennifer Arblastek

COMMENTS / SPECIAL INSTRUCTIONS

*6 extra bottles for QA samples see attached. DOC tube filtered @ Eurofins + shipped to MSI

RELINQUISHED BY

RECEIVED BY

Print Name	Signature	Firm	Date/Time	Print Name	Signature	Firm	Date/Time
1. Daman Owen		Weston	5.5.15/1645	D. Vranoski		ECI	5/05/15 @ 16:45
2. P. Royce		ECI	5/05/15 @ 18:00	Yan Liao		ECI	5/5/15 18:00
3.							
4.							
5.							
6.							



5817 Dryden Place, Ste 101 • Carlsbad, CA 92008 • (760) 795-6900, FAX 931-1580
 1340 Treat Blvd, Ste 210 • Walnut Creek, CA 94597 • (925) 948-2600, FAX 948-2601

CHAIN OF CUSTODY

37109

DATE 6 May 2015 PAGE 1 OF 1

PROJECT NAME / SURVEY / PROJECT NUMBER
POLB/POLA Low Detection Limit Water Column *Sketch Phase 1?*
 PROJECT MANAGER / CONTACT
Sheila Holt
 CLIENT
Weston Solutions
 ADDRESS
See Above
 PHONE / FAX / EMAIL
" "

CONTAINER TYPE / VOLUME

TOTAL NUMBER OF CONTAINER

ANALYSIS/TEST REQUESTED

FOR WESTON USE ONLY

15-05-0305

SITE ID (Location)	SAMPLE ID	DATE	TIME	MATRIX		TOC	DOC	POC	TSS	PRESERVED HOW	SAMPLE TEMP. (°C) UPON RECEIPT	WESTON LAB ID
	CP-RW-01-G-M-20150506	5 May 15	07:00	SLT	<i>plastic various</i>	X	X	X	X	ice/16.50g		1
	FH-RW-01-G-M-20150506	<u>5</u>	08:15	<u>SLT</u>	<u>plastic</u>	X	X	X	X	<u>plastic</u>		2

Sample Matrix Codes: FW=fresh water GW=ground water SLT=salt water SW=storm water WW=waste water
 SED=sediment A=air BIO=biologic SS=soil T=tissue O=other (specify) _____
 Container Code: G=glass P=plastic B=bags O=other _____
 Shipped By: Courier UPS FedEx USPS Client drop off Other _____
 Turnaround Time: 2-day 5-day 7-day 10-day 14-day Standard Other _____
 Reporting Requirements: PDF EDD Hard Copy Email Other _____

SAMPLED BY: PRINT Damon Owen / Nick Cochran SIGNATURE Nick Cochran
Jennifer Arblast
 COMMENTS / SPECIAL INSTRUCTIONS
DOC to be filtered @ Eurofins + shipped to MSI.

RELINQUISHED BY				RECEIVED BY			
Print Name	Signature	Firm	Date/Time	Print Name	Signature	Firm	Date/Time
1. Nick Cochran	<i>Nick Cochran</i>	Weston	5/6/15 1045	PRECY SORIANO	<i>Precky Soriano</i>	ESI	5/6/15 1045
2.							
3.							
4.							
5.							
6.							

18100 Von Karman Ave., Suite 600 Irvine, CA 92612 (949) 261-5151 (949) 261-6202 (fax)

707 Wilshire Blvd., Suite 4950 Los Angeles, Calif. 90017 (213) 943-6300 (213) 943-6301 (fax)

1702 E Highland Avenue, Suite 412 Phoenix, AZ 85016 (602) 734-7700 (602) 734-7701 (fax)

MSA#: _____ WO#: _____

PROJECT NAME / FACILITY ID: POLA/ROLB LDL Phase 2

FIELD PERSON: J. Arblaster

PROJECT NUMBER: 04-010001 DATE: May 6 2015

PROJECT MANAGER: D. Moore

PROJECT LOCATION: 3000110 / Eng. Beach

LABORATORY: Vista

IS THIS A UST PROJECT OR IS EDF REQUIRED? Y N IF YES, GLOBAL ID #: _____

SAMPLER: <u>J. Arblaster</u>	YEAR		SAMPLE DEPTH (ft)	AIR SAMPLE VOLUME (L)	MATRIX (A) AIR (S) SOIL (G) GAS (W) WATER	NUMBER OF CONTAINERS	FILTERED/UNFILTERED (F/U)	PRESERVATION (SEE KEY)	ANALYSIS REQUIRED <u>EPA 1668B DUX+TKS EPA 1699</u>											COMMENTS						
	SAMPLE DATE	SAMPLE TIME																								
SIGNATURE: <u>[Signature]</u>																										
SAMPLE I.D. NUMBER	SAMPLE DATE	SAMPLE TIME	SAMPLE DEPTH (ft)	AIR SAMPLE VOLUME (L)	MATRIX (A) AIR (S) SOIL (G) GAS (W) WATER	NUMBER OF CONTAINERS	FILTERED/UNFILTERED (F/U)	PRESERVATION (SEE KEY)	ANALYSIS REQUIRED																COMMENTS	
<u>FB-20150506</u>	<u>5/6</u>	<u>9:30</u>	<u>-</u>	<u>-</u>	<u>SPE</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>X</u>																<u>Vial 77</u>	
<u>FB-20150506</u>		<u>9:50</u>																							<u>Vial 78</u>	
<u>FBPCR1-20150506</u>		<u>0945</u>																							<u>Vial 79</u>	
<u>FBPCR2-20150506</u>		<u>0945</u>																							<u>Vial 80</u>	
<u>FBPCR3-20150506</u>		<u>0945</u>																							<u>Vial 81</u>	
<u>FBPCR4-20150506</u>		<u>0945</u>																							<u>Vial 82</u>	
<u>FBPCR5-20150506</u>		<u>0945</u>																							<u>Vial 83</u>	
<u>FBPCR6-20150506</u>		<u>0945</u>																							<u>Vial 84</u>	
TOTAL	X	X	X																							

RELINQUISHED BY: <u>[Signature]</u>	TIME/DATE: <u>12:00 5/6/15</u>	RECEIVED BY:	TIME/DATE:	TURNAROUND TIME (CIRCLE ONE)	SAME DAY	72 HOURS
RELINQUISHED BY:	TIME/DATE:	(COMPANY):	TIME/DATE:		24 HOURS	5 DAYS
RELINQUISHED BY:	TIME/DATE:	(COMPANY):	TIME/DATE:	SAMPLE INTEGRITY	IF SEALED, SEAL INTEGRITY	
		(COMPANY):		INTACT: Y N Temp _____	INTACT: Y N	

H = HCL; N = HNO3; S = H2SO4; U = UNKNOWN; NO = NONE; O = OTHER

18100 Von Karman Ave., Suite 600 Irvine, CA 92612 (949) 261-5151 (949) 261-6202 (fax)

707 Wilshire Blvd., Suite 4950 Los Angeles, Calif. 90017 (213) 943-6300 (213) 943-6301 (fax)

1702 E Highland Avenue, Suite 412 Phoenix, AZ 85016 (602) 734-7700 (602) 734-7701 (fax)

PROJECT NAME / FACILITY ID: PCA/POLIS LDL

PROJECT NUMBER: 0433510 A11 DATE: June 15/2015

PROJECT LOCATION: _____

IS THIS A UST PROJECT OR IS EDF REQUIRED? Y N IF YES, GLOBAL ID #: _____

MSA#: _____ WO#: _____

FIELD PERSON: J. Schenker

PROJECT MANAGER: D. Moore

LABORATORY: Vista

SAMPLER:	YEAR	SAMPLE DATE	SAMPLE TIME	SAMPLE DEPTH (ft)	AIR SAMPLE VOLUME (L)	MATRIX (A) AIR (S) SOIL (G) GAS (M) WATER	NUMBER OF CONTAINERS	FILTERED/UNFILTERED (F/U)	PRESERVATION (SEE KEY)	ANALYSIS REQUIRED										COMMENTS		
1B-RW-01-S-M-20150615	15	6/15	1450	-	-	W	1	-	-	X	X										Vial 64	
1B-RW-101-S-M-20150615	15	6/15	1515							X												" 65
1B-RW-1001-S-M-20150615	15	6/15	1515							X												" 66
1B-RW-01-S-B-20150615	15	6/15	1545							X												" 67
1B-RW-01-S-B-20150615	15	6/15	1545							X												" 68
1A-RW-01-S-M-20150615	15	6/15	1615							X												" 61
1A-RW-01-S-M-20150615	15	6/15	1615							X												" 62
TOTAL	X	X	X																			

RELINQUISHED BY: <u>[Signature]</u>	TIME/DATE: <u>15/6/15</u>	RECEIVED BY: _____	TIME/DATE: _____	TURNAROUND TIME (CIRCLE ONE)	SAME DAY 24 HOURS 48 HOURS	72 HOURS 5 DAYS NORMAL
RELINQUISHED BY: _____	TIME/DATE: _____	(COMPANY): _____	RECEIVED BY: _____			
RELINQUISHED BY: _____	TIME/DATE: _____	(COMPANY): _____	RECEIVED BY: _____	TIME/DATE: _____	SAMPLE INTEGRITY	IF SEALED, SEAL INTEGRITY
				INTACT: Y N Temp _____	INTACT: Y N	

H = HCL; N = HNO3; S = H2SO4; U = UNKNOWN; NO = NONE; O = OTHER



5817 Dryden Place, Ste 101 • Carlsbad, CA 92008 • (760) 795-6900, FAX 931-1580
 1340 Treat Blvd, Ste 210 • Walnut Creek, CA 94597 • (925) 948-2600, FAX 948-2601

CHAIN OF CUSTODY

37172

DATE 15 June 2015 PAGE 1 OF 1

PROJECT NAME / SURVEY / PROJECT NUMBER POLYB-D Low Detecting Limit Water Column Study						CONTAINER TYPE / VOLUME	TOTAL NUMBER OF CONTAINER Archive	ANALYSIS/TEST REQUESTED						FOR WESTON USE ONLY																																													
PROJECT MANAGER / CONTACT D Moore								<table border="1"> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>																																																SAMPLE TEMP. (°C) UPON RECEIPT		WESTON LAB ID	
CLIENT ENVIRO																																																											
ADDRESS Irvine, Ca.																																																											
PHONE / FAX / EMAIL						PRESERVED HOW ICC																																																					

SITE ID (Location)	SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE / VOLUME	TOTAL NUMBER OF CONTAINER	ANALYSIS/TEST REQUESTED	PRESERVED HOW	SAMPLE TEMP. (°C) UPON RECEIPT	WESTON LAB ID
	REF-RW-01-G-M-20150615	15 JUN 15	0730	SLT	G/16	2	X	ICC		
	SP-RW-01-G-M-20150615		0820							
	LARE-RW-01-G-M-20150615		0905							
	OB-RW-01-G-M-20150615		0950							
	CS-RW-01-G-M-20150615		1040							
	CS-RW-01-G-M-20150615		1210							
	IA-RW-01-G-M-20150615		1255							
	FA-RW-01-G-M-20150615		1345							
	CP-RW-01-G-M-20150615		1420							

Sample Matrix Codes: FW=fresh water GW=ground water SLT=salt water SW=storm water WW=waste water
 SED=sediment A=air BIO=biologic SS=soil T=tissue O=other (specify) _____

Container Code: G=glass P=plastic B=bags O=other _____

Shipped By: Courier UPS FedEx USPS Client drop off Other _____

Turnaround Time: 2-day 5-day 7-day 10-day 14-day Standard Other _____

Reporting Requirements: PDF EDD Hard Copy Email Other _____

SAMPLED BY: PRINT **Damon Owey** SIGNATURE
Uick Cochran

COMMENTS / SPECIAL INSTRUCTIONS

RELINQUISHED BY				RECEIVED BY			
Print Name	Signature	Firm	Date/Time	Print Name	Signature	Firm	Date/Time
1. Damon Owey		Weston	15 JUN 15 / 1500	Jem Arbitrage		Environ	15/6/15 1500
2. J. Arbitrage		Environ	15/6/15 / 1730				
3.							
4.							
5.							
6.							



5817 Dryden Place, Ste 101 • Carlsbad, CA 92008 • (760) 795-6900, FAX 931-1580
 1340 Treat Blvd, Ste 210 • Walnut Creek, CA 94597 • (925) 948-2600, FAX 948-2601

CHAIN OF CUSTODY

37168

DATE 15 Jun 2015 PAGE 1 OF 1

PROJECT NAME / SURVEY / PROJECT NUMBER					PHASE	CONTAINER TYPE / VOLUME	TOTAL NUMBER OF CONTAINER	ANALYSIS/TEST REQUESTED				PRESERVED HOW	FOR WESTON USE ONLY	
PROJECT MANAGER / CONTACT								TDC	DOC	POC	TSS		SAMPLE TEMP. (°C) UPON RECEIPT	WESTON LAB ID
POLA / POLB LOW DETECTION LIMIT WATER COLUMN STUDY												15-06-1223		
CLIENT														
ADDRESS														
PHONE / FAX / EMAIL														
SITE ID (Location)	SAMPLE ID	DATE	TIME	MATRIX										
	REF-RW-01-G-M-20150615	6-15-15	0930	SLT	P+G	4	X	X	X	X	1cc / 1/250ml		1	
	SP-RW-01-G-M-20150615		0820										2	
	LARE-RW-01-G-M-20150615		0905										3	
	OB-RW-01-G-M-20150615		0950										4	
	OB-RW-01-G-B-20150615		1000										5	
	IB-RW-01-G-M-20150615		1040			10*							6	
	IB-RW-01-G-B-20150615		1050			4							7	
	IB-RW-1001-G-M-20150615		1040										8	
	CS-RW-01-G-M-20150615		1210										9	
	CS-RW-01-G-B-20150615		1220										10	
	IA-RW-01-G-M-20150615		1255										11	
	FH-RW-01-G-M-20150615		1345										12	
	CP-RW-01-G-M-20150615		1420										13	
	EB-RW-01-EB-20150615		1520			3							14	
Sample Matrix Codes: FW=fresh water GW=ground water SLT=salt water SW=storm water WW=waste water SED=sediment A=air BIO=biologic SS=soil T=tissue O=other (specify) _____					SAMPLED BY: PRINT Damon Ornel Nick Cochran					SIGNATURE 				
Container Code: G=glass P=plastic B=bags O=other _____					COMMENTS / SPECIAL INSTRUCTIONS IB-RW-01-G-M-20150615 - extra volume for MS/MSD + Lab Rep. DOC+POC will be filtered & analyzed prior to shipping to MST									
Shipped By: <input type="checkbox"/> Courier <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> USPS <input type="checkbox"/> Client drop off <input type="checkbox"/> Other _____					RECEIVED BY Print Name: PRECY SERRANO Signature: Firm: WESTON Date/Time: 6/15/15 1750									
Turnaround Time: <input type="checkbox"/> 2-day <input type="checkbox"/> 5-day <input type="checkbox"/> 7-day <input type="checkbox"/> 10-day <input type="checkbox"/> 14-day <input type="checkbox"/> Standard <input type="checkbox"/> Other _____														
Reporting Requirements: <input type="checkbox"/> PDF <input type="checkbox"/> EDD <input type="checkbox"/> Hard Copy <input type="checkbox"/> Email <input type="checkbox"/> Other _____														
RELINQUISHED BY Print Name: Nick Cochran Signature: Firm: Weston Date/Time: 6-15-15 1750														



CHAIN-of-CUSTODY

№ 11489

- 18100 Von Karman Ave., Suite 600 Irvine, CA 92612 (949) 261-5151 (949) 261-6202 (fax)
- 707 Wilshire Blvd., Suite 4950 Los Angeles, Calif. 90017 (213) 943-6300 (213) 943-6301 (fax)
- 1702 E Highland Avenue, Suite 412 Phoenix, AZ 85016 (602) 734-7700 (602) 734-7701 (fax)

MSA#: _____ WO#: _____

PROJECT NAME / FACILITY ID: PCA/PCLB LDL Study

FIELD PERSON: J. Anderson

PROJECT NUMBER: 04 53510 All DATE: June 16 2015

PROJECT MANAGER: D. Moore

PROJECT LOCATION: San Pedro

LABORATORY: Vista

IS THIS A UST PROJECT OR IS EDF REQUIRED? Y N IF YES, GLOBAL ID #: _____

SAMPLER: <u>JA</u>	YEAR		SAMPLE DATE	SAMPLE TIME	SAMPLE DEPTH (ft)	AIR SAMPLE VOLUME (L)	MATRIX (A) AIR (S) SOIL (G) GAS (W) WATER	NUMBER OF CONTAINERS	FILTERED/UNFILTERED (F/U)	PRESERVATION (SEE KEY)	ANALYSIS REQUIRED							COMMENTS	
											<u>1668A</u>	<u>H₂O₂ + PRCs</u>	<u>1647</u>	<u>DITE + PRCs</u>					
SIGNATURE: <u>[Signature]</u>																			
SAMPLE I.D. NUMBER																			
<u>CS-RW-01-S-M-20150616</u>			<u>6/16</u>	<u>0800</u>	<u>-</u>	<u>-</u>	<u>S</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>X</u>								<u>S = SPME Vial 45</u>
<u>CS-RW-01-S-M-20150616</u>				<u>0820</u>								<u>X</u>							<u>Vial 46</u>
<u>CS-RW-01-S-B-20150616</u>				<u>0145</u>							<u>X</u>								<u>Vial 47</u>
<u>CS-RW-01-S-B-20150616</u>				<u>0145</u>								<u>X</u>							<u>Vial 48</u>
<u>FH-RW-01-S-M-20150616</u>				<u>0935</u>							<u>X</u>								<u>Vial 69</u>
<u>FH-RW-01-S-M-20150616</u>				<u>0935</u>								<u>X</u>							<u>Vial 70</u>
TOTAL			<u>X</u>	<u>X</u>	<u>X</u>														

RELINQUISHED BY: _____	TIME/DATE: <u>1020 6/16/15</u>	RECEIVED BY: _____	TIME/DATE: _____	TURNAROUND TIME (CIRCLE ONE)	SAME DAY	72 HOURS
RELINQUISHED BY: _____	TIME/DATE: _____	(COMPANY): _____	TIME/DATE: _____		24 HOURS	5 DAYS
RELINQUISHED BY: _____	TIME/DATE: _____	(COMPANY): _____	TIME/DATE: _____	SAMPLE INTEGRITY	IF SEALED, SEAL INTEGRITY	
		(COMPANY): _____	TIME/DATE: _____	INTACT: Y N Temp _____	INTACT: Y N	

H = HCL; N = HNO3; S = H2SO4; U = UNKNOWN; NO = NONE; O = OTHER

**APPENDIX B
DATA TABLES**

APPENDIX B-1
WATER QUALITY DATA

Appendix B-1.1: Water Quality Data - Event 1 Deployment

Port of Los Angeles Port of Long Beach

Los Angeles San Pedro, California

Date	Location ID	Time	Depth (m)	Temperature (°C)	Salinity (psu)	Dissolved Oxygen (mg/L)	Transmission (%)	pH (pH units)	Conductivity (mS/cm)
12/10/2014	CP-01	800	1	17.9004	33.0625	6.916	79.0852	8.08845	43.5273
12/10/2014	CP-01	800	2	17.9021	33.0624	6.90463	79.0105	8.08853	43.5291
12/10/2014	CP-01	800	3	17.901	33.0623	6.91985	78.9976	8.08854	43.5284
12/10/2014	CP-01	800	4	17.9002	33.0659	6.90258	79.1246	8.08851	43.5322
12/10/2014	CS-01	1245	1	18.5564	32.6261	6.00825	72.848	8.01972	43.6331
12/10/2014	CS-01	1245	2	18.5493	32.6376	5.98399	71.3823	8.02015	43.6404
12/10/2014	CS-01	1245	3	18.5151	32.7304	5.9765	70.212	8.02142	43.7192
12/10/2014	CS-01	1245	4	18.4679	32.8694	6.03483	66.9026	8.02564	43.8408
12/10/2014	CS-01	1245	5	18.4645	32.8772	6.05954	65.0955	8.03239	43.8474
12/10/2014	CS-01	1245	6	18.459	32.8844	6.07314	65.0525	8.0354	43.8511
12/10/2014	CS-01	1245	7	18.4542	32.8979	6.07463	64.8768	8.03682	43.8631
12/10/2014	CS-01	1245	8	18.4409	32.9305	6.05841	63.9374	8.03627	43.8897
12/10/2014	CS-01	1245	9	18.4308	32.9766	6.09923	63.6806	8.0393	43.9353
12/10/2014	FH-01	1005	1	18.3086	33.145	6.59499	70.499	8.07337	44.0154
12/10/2014	FH-01	1005	2	18.2923	33.144	6.59869	69.0513	8.07381	43.999
12/10/2014	FH-01	1005	3	18.2659	33.1449	6.56426	69.4169	8.07264	43.975
12/10/2014	FH-01	1005	4	18.2842	33.158	6.41998	70.244	8.06848	44.0086
12/10/2014	FH-01	1005	5	18.3277	33.1907	6.30207	69.0838	8.06263	44.0897
12/10/2014	FH-01	1005	6	18.3415	33.2331	5.73908	61.1634	8.05386	44.1537
12/10/2014	IA-01	1140	1	18.2489	32.8691	6.35523	78.6532	8.0467	43.6308
12/10/2014	IA-01	1140	2	18.2835	32.9238	6.4407	76.8242	8.04979	43.729
12/10/2014	IA-01	1140	3	18.2627	32.9495	6.47383	73.7232	8.05341	43.7401
12/10/2014	IA-01	1140	4	18.2331	32.9662	6.47807	71.9566	8.05374	43.7321
12/10/2014	IA-01	1140	5	18.2093	32.9777	6.49281	71.3668	8.05396	43.7235
12/10/2014	IA-01	1140	6	18.1718	33.0062	6.49622	72.2208	8.05636	43.7219
12/10/2014	IA-01	1140	7	18.1255	33.0544	6.52154	72.7725	8.05778	43.7351
12/10/2014	IA-01	1140	8	18.0808	33.0985	6.57274	72.0726	8.06448	43.7451
12/10/2014	IA-01	1140	9	18.0495	33.1261	6.6634	71.3332	8.06974	43.7481
12/10/2014	IA-01	1140	10	17.9972	33.165	6.74535	70.8328	8.07654	43.7445
12/10/2014	IA-01	1140	11	17.9851	33.1707	6.75665	70.241	8.07922	43.7398
12/10/2014	IB-01	1400	1	18.6039	32.9898	6.6239	72.6366	8.04873	44.1132
12/10/2014	IB-01	1400	2	18.6038	32.9899	6.60954	72.5789	8.04836	44.1137
12/10/2014	IB-01	1400	3	18.5901	32.9937	6.52483	72.252	8.04577	44.1056
12/10/2014	IB-01	1400	4	18.5466	33.0057	6.54795	71.9562	8.04585	44.0787
12/10/2014	IB-01	1400	5	18.5208	33.0145	6.43913	70.5956	8.04268	44.0649
12/10/2014	IB-01	1400	6	18.4715	33.0286	6.44933	69.7533	8.04034	44.0351
12/10/2014	IB-01	1400	7	18.4644	33.0311	6.44625	68.7625	8.0395	44.0314
12/9/2014	LARE-01	1300	1	18.725	32.9625	4.89043	56.3378	7.97437	44.1965
12/9/2014	LARE-01	1300	2	18.6569	33.2017	4.94518	49.5546	7.98039	44.4179
12/9/2014	LARE-01	1300	3	18.6025	33.302	5.14245	42.7652	7.98989	44.4857
12/9/2014	OB-01	945	1	18.3781	33.1528	7.15962	78.7943	8.12657	44.0913
12/9/2014	OB-01	945	2	18.3152	33.1524	7.18723	78.6776	8.12868	44.0309
12/9/2014	OB-01	945	3	18.3064	33.1628	7.19668	77.7451	8.13107	44.0352
12/9/2014	OB-01	945	4	18.2978	33.169	7.21573	77.6481	8.13144	44.0347

Appendix B-1.1: Water Quality Data - Event 1 Deployment

Port of Los Angeles Port of Long Beach

Los Angeles San Pedro, California

Date	Location ID	Time	Depth (m)	Temperature (°C)	Salinity (psu)	Dissolved Oxygen (mg/L)	Transmission (%)	pH (pH units)	Conductivity (mS/cm)
12/9/2014	OB-01	945	5	18.2796	33.1699	7.25182	77.5537	8.1334	44.0187
12/9/2014	OB-01	945	6	18.2706	33.1709	7.21682	77.8458	8.13287	44.0117
12/9/2014	OB-01	945	7	18.2644	33.1732	7.18236	78.1731	8.13091	44.009
12/9/2014	OB-01	945	8	18.2683	33.1758	7.15972	79.5896	8.12968	44.0162
12/9/2014	OB-01	945	9	18.2863	33.1875	7.11776	80.443	8.12984	44.0477
12/9/2014	OB-01	945	10	18.3298	33.2091	7.00266	78.9915	8.131	44.1154
12/9/2014	REF-01	840	1	18.1438	33.3699	7.36838	86.9499	8.1267	44.1234
12/9/2014	REF-01	840	2	18.1438	33.373	7.3659	87.1634	8.12747	44.1274
12/9/2014	REF-01	840	3	18.1481	33.3858	7.38325	87.2649	8.12745	44.1471
12/9/2014	REF-01	840	4	18.1549	33.4096	7.38385	87.6451	8.12903	44.1822
12/9/2014	REF-01	840	5	18.1603	33.4236	7.36917	88.2137	8.12936	44.2045
12/9/2014	REF-01	840	6	18.159	33.4272	7.37961	88.2284	8.13043	44.2079
12/9/2014	REF-01	840	7	18.1528	33.429	7.36906	88.2667	8.12947	44.2045
12/9/2014	REF-01	840	8	18.1496	33.4309	7.37528	88.5578	8.12977	44.2041
12/9/2014	REF-01	840	9	18.1399	33.4301	7.37202	88.6738	8.13	44.1942
12/9/2014	REF-01	840	10	18.118	33.4315	7.37383	88.4914	8.12865	44.1752
12/9/2014	REF-01	840	11	18.0661	33.4368	7.37912	89.1009	8.12865	44.1318
12/9/2014	REF-01	840	12	17.9624	33.4472	7.41853	90.6273	8.12825	44.0444
12/9/2014	REF-01	840	13	17.8551	33.4479	7.48658	93.6139	8.12893	43.9422
12/9/2014	REF-01	840	14	17.595	33.4428	7.50788	94.1501	8.12918	43.6862
12/9/2014	REF-01	840	15	17.4443	33.4286	7.45759	94.1916	8.12227	43.5251
12/9/2014	REF-01	840	16	17.2362	33.4239	7.45903	94.1828	8.11944	43.3205
12/9/2014	REF-01	840	17	16.7259	33.3822	7.4126	93.5165	8.11158	42.7843
12/9/2014	SP-01	1045	1	18.5732	33.0966	7.52591	78.7566	8.15128	44.2113
12/9/2014	SP-01	1045	2	18.4083	33.1543	7.52164	78.6264	8.154	44.1224
12/9/2014	SP-01	1045	3	18.3734	33.1607	7.55984	79.9695	8.15546	44.097
12/9/2014	SP-01	1045	4	18.352	33.1844	7.5147	80.7415	8.157	44.105
12/9/2014	SP-01	1045	5	18.383	33.2249	7.51015	82.0067	8.15736	44.1833
12/9/2014	SP-01	1045	6	18.3379	33.297	7.45162	84.465	8.15958	44.2261
12/9/2014	SP-01	1045	7	18.3682	33.4071	7.44392	86.4985	8.16026	44.3865
12/9/2014	SP-01	1045	8	18.4078	33.4631	7.49474	89.0401	8.16415	44.4918
12/9/2014	SP-01	1045	9	18.414	33.4694	7.47571	88.2481	8.16363	44.5055

Appendix B-1.2: Water Quality Data - Event 1 Retrieval

Port of Los Angeles Port of Long Beach

Los Angeles San Pedro, California

Date	Location ID	Time	Depth (m)	Temperature (°C)	Salinity (psu)	Dissolved Oxygen (mg/L)	Transmission (%)	pH (pH units)	Conductivity (mS/cm)
1/8/2015	CP-01	645	1	15.5707	33.2254	7.33261	86.8994	8.08114	41.503
1/8/2015	CP-01	645	2	15.5709	33.2254	7.32892	87.4833	8.0791	41.5036
1/8/2015	CP-01	645	3	15.5706	33.2251	7.30931	87.7648	8.07879	41.5034
1/8/2015	CP-01	645	4	15.5687	33.2248	7.30592	88.4581	8.07774	41.5018
1/8/2015	CS-01	1210	1	16.0588	32.9607	6.88469	84.0658	8.03629	41.665
1/8/2015	CS-01	1210	2	16.063	32.9912	6.82563	84.1833	8.03722	41.7038
1/8/2015	CS-01	1210	3	16.0531	32.9849	6.94554	83.862	8.0395	41.6878
1/8/2015	CS-01	1210	4	16.0241	33.0004	6.89662	83.7265	8.03752	41.6785
1/8/2015	CS-01	1210	5	16.0194	33.0286	6.84909	83.4493	8.03879	41.7064
1/8/2015	CS-01	1210	6	16.018	33.0328	6.91275	82.9682	8.04023	41.7102
1/8/2015	CS-01	1210	7	16.017	33.0439	6.90726	82.7629	8.03993	41.7222
1/8/2015	CS-01	1210	8	16.0138	33.0779	6.90242	82.5363	8.04095	41.7581
1/8/2015	CS-01	1210	9	15.9985	33.1064	7.01631	81.4197	8.04543	41.7764
1/8/2015	FH-01	1335	1	15.7807	33.3012	7.15423	74.6335	8.049	41.7866
1/8/2015	FH-01	1335	2	15.5912	33.3058	7.15251	74.7853	8.04928	41.6127
1/8/2015	FH-01	1335	3	15.5168	33.3036	7.12324	72.0385	8.05105	41.5404
1/8/2015	FH-01	1335	4	15.4983	33.303	7.08118	70.619	8.05145	41.5226
1/8/2015	FH-01	1335	5	15.4896	33.3019	7.07102	69.873	8.0507	41.5137
1/8/2015	FH-01	1335	6	15.4929	33.3015	7.04898	68.6768	8.04951	41.5166
1/8/2015	IA-01	1250	1	16.018	33.0773	7.20289	79.3289	8.06033	41.7584
1/8/2015	IA-01	1250	2	15.9688	33.0761	7.2533	80.2937	8.05994	41.7111
1/8/2015	IA-01	1250	3	15.8698	33.095	7.16951	82.0174	8.05835	41.6396
1/8/2015	IA-01	1250	4	15.8424	33.1236	7.22919	81.252	8.06048	41.6464
1/8/2015	IA-01	1250	5	15.8367	33.1451	7.26729	80.7382	8.06182	41.6656
1/8/2015	IA-01	1250	6	15.833	33.146	7.26432	80.0417	8.06244	41.6635
1/8/2015	IA-01	1250	7	15.8276	33.1482	7.25712	79.798	8.06329	41.6613
1/8/2015	IA-01	1250	8	15.8218	33.1512	7.26711	79.776	8.06321	41.6597
1/8/2015	IA-01	1250	9	15.8143	33.1546	7.27124	80.1585	8.06339	41.6569
1/8/2015	IA-01	1250	10	15.8105	33.1553	7.27327	80.8262	8.06366	41.6545
1/8/2015	IB-01	1035	1	16.1172	33.2099	7.3317	75.1989	8.02344	42.0021
1/8/2015	IB-01	1035	2	16.0883	33.2111	7.31089	75.0139	8.02668	41.9765
1/8/2015	IB-01	1035	3	16.0661	33.2124	7.29537	74.8263	8.02643	41.9574
1/8/2015	IB-01	1035	4	16.0354	33.2112	7.24407	75	8.02652	41.9275
1/8/2015	IB-01	1035	5	16.0017	33.2066	7.32222	75.3596	8.038	41.8909
1/8/2015	IB-01	1035	6	15.9699	33.2014	7.32014	75.3233	8.04478	41.8553
1/8/2015	IB-01	1035	7	15.9629	33.2012	7.3116	75.8328	8.047	41.8488
1/8/2015	LARE-01	905	1	15.8443	32.476	6.01473	48.3887	8.06137	40.9165
1/8/2015	LARE-01	905	2	15.8009	33.1318	6.21833	52.4982	8.06967	41.6155
1/8/2015	LARE-01	905	3	15.784	33.206	6.82765	53.369	8.09281	41.6836

Appendix B-1.2: Water Quality Data - Event 1 Retrieval

Port of Los Angeles Port of Long Beach

Los Angeles San Pedro, California

Date	Location ID	Time	Depth (m)	Temperature (°C)	Salinity (psu)	Dissolved Oxygen (mg/L)	Transmission (%)	pH (pH units)	Conductivity (mS/cm)
1/8/2015	LARE-01	905	4	15.7846	33.2049	6.73068	50.9667	8.1005	41.6831
1/8/2015	OB-01	945	1	15.7826	33.2839	8.12906	85.5962	8.151	41.7689
1/8/2015	OB-01	945	2	15.7788	33.2837	8.10371	85.631	8.15121	41.7654
1/8/2015	OB-01	945	3	15.7705	33.2836	8.11033	85.4977	8.1512	41.7579
1/8/2015	OB-01	945	4	15.7622	33.2833	8.12055	85.1129	8.15	41.7502
1/8/2015	OB-01	945	5	15.7575	33.2826	8.10358	84.1703	8.15058	41.7454
1/8/2015	OB-01	945	6	15.7508	33.2823	8.08187	83.9991	8.15033	41.7391
1/8/2015	OB-01	945	7	15.75	33.2825	8.08064	83.5495	8.14894	41.739
1/8/2015	OB-01	945	8	15.7493	33.2823	8.06146	82.8679	8.14921	41.7385
1/8/2015	OB-01	945	9	15.7476	33.2822	8.0776	82.2065	8.1478	41.7372
1/8/2015	OB-01	945	10	15.7469	33.2819	8.03349	79.1833	8.14734	41.7368
1/8/2015	REF-01	800	1	15.8803	33.3432	8.1112	92.6066	8.15178	41.9282
1/8/2015	REF-01	800	2	15.8814	33.3436	8.05891	93.3874	8.15216	41.9301
1/8/2015	REF-01	800	3	15.8839	33.3455	8.06681	93.6	8.15029	41.9351
1/8/2015	REF-01	800	4	15.8824	33.3455	8.05653	93.6016	8.15064	41.9341
1/8/2015	REF-01	800	5	15.8829	33.3459	8.07286	93.7797	8.15036	41.9353
1/8/2015	REF-01	800	6	15.8822	33.3457	8.06954	93.9129	8.14917	41.9348
1/8/2015	REF-01	800	7	15.8822	33.3453	8.0717	94.0103	8.14965	41.9349
1/8/2015	REF-01	800	8	15.8798	33.3447	8.06475	93.8123	8.15058	41.9324
1/8/2015	REF-01	800	9	15.8763	33.3455	8.06235	93.957	8.1506	41.9304
1/8/2015	REF-01	800	10	15.8667	33.3462	8.08119	94.2306	8.15005	41.9225
1/8/2015	REF-01	800	11	15.8588	33.3464	8.033	94.6585	8.14867	41.9156
1/8/2015	REF-01	800	12	15.8292	33.3474	8.00103	94.3103	8.14724	41.8891
1/8/2015	REF-01	800	13	15.822	33.3469	7.95703	94.5054	8.14419	41.8822
1/8/2015	REF-01	800	14	15.8212	33.3466	7.92836	93.9863	8.14145	41.8815
1/8/2015	REF-01	800	15	15.8212	33.3465	7.93891	93.6449	8.13971	41.8819
1/8/2015	REF-01	800	16	15.822	33.3465	7.925	93.5119	8.13977	41.883
1/8/2015	REF-01	800	17	15.8237	33.3463	7.89869	92.5013	8.13765	41.885
1/8/2015	SP-01	830	1	15.9672	33.2538	8.51309	86.516	8.18508	41.9098
1/8/2015	SP-01	830	2	15.9905	33.2631	8.50176	86.6858	8.18818	41.9427
1/8/2015	SP-01	830	3	16.0229	33.2809	8.43335	87.2259	8.18396	41.994
1/8/2015	SP-01	830	4	16.0586	33.3132	8.35041	88.7794	8.1803	42.0648
1/8/2015	SP-01	830	5	16.0659	33.3518	8.16694	91.0949	8.17294	42.1158
1/8/2015	SP-01	830	6	16.0691	33.3611	8.03505	92.3594	8.16371	42.1298
1/8/2015	SP-01	830	7	16.0718	33.3637	7.99781	92.3202	8.15946	42.1356
1/8/2015	SP-01	830	8	16.0618	33.3643	8.00843	92.777	8.15565	42.1273
1/8/2015	SP-01	830	9	16.0512	33.363	7.92392	91.382	8.15281	42.1162

Appendix B-1.3: Water Quality Data - Event 2 Deployment

Port of Los Angeles Port of Long Beach

Los Angeles San Pedro, California

Date	Location ID	Time	Depth (m)	Temperature (°C)	Salinity (psu)	Dissolved Oxygen (mg/L)	Transmission (%)	pH (pH units)	Conductivity (mS/cm)
5/6/2015	CP-01	730	1	14.3554	33.3426	7.58245	63.4891	8.01786	40.4885
5/6/2015	CP-01	730	2	14.3327	33.3459	7.55489	62.9776	8.01792	40.4712
5/6/2015	CP-01	730	3	14.1242	33.3603	7.36103	55.867	7.98948	40.2918
5/5/2015	CS-01	1325	1	16.262	33.1734	8.07863	43.5817	8.119	42.0979
5/5/2015	CS-01	1325	2	16.0877	33.2041	8.14517	41.8891	8.11971	41.9681
5/5/2015	CS-01	1325	3	15.8538	33.2372	7.9699	41.579	8.10277	41.7845
5/5/2015	CS-01	1325	4	15.5902	33.2438	7.67271	44.0698	8.07909	41.5433
5/5/2015	CS-01	1325	5	15.6167	33.2338	7.29296	42.2245	8.07213	41.5576
5/5/2015	CS-01	1325	6	15.5427	33.2398	7.39633	42.4373	8.07096	41.4948
5/5/2015	CS-01	1325	7	15.501	33.2405	7.24734	41.1106	8.06525	41.4567
5/5/2015	CS-01	1325	8	15.4668	33.2437	7.21881	41.058	8.064	41.4285
5/5/2015	CS-01	1325	9	15.4308	33.2461	7.17538	42.1393	8.06372	41.3976
5/6/2015	FH-01	815	1	15.9806	33.4079	8.14052	67.1254	8.12863	42.0963
5/6/2015	FH-01	815	2	15.624	33.4127	8.08611	64.2956	8.11093	41.7635
5/6/2015	FH-01	815	3	15.1406	33.3892	7.56382	59.9879	8.05788	41.2799
5/6/2015	FH-01	815	4	14.7723	33.3975	7.01231	56.8228	8.029	40.942
5/6/2015	FH-01	815	5	14.2293	33.3956	6.6408	53.9999	7.99344	40.4295
5/6/2015	FH-01	815	6	14.1343	33.3774	5.87222	29.7428	7.95458	40.3208
5/5/2015	IA-01	1430	1	15.8039	33.3833	7.20538	75.4224	8.10256	41.9008
5/5/2015	IA-01	1430	2	15.6093	33.5018	7.14127	75.735	8.09857	41.8491
5/5/2015	IA-01	1430	3	15.1529	33.8137	6.94555	75.3001	8.09127	41.7611
5/5/2015	IA-01	1430	4	14.7901	33.6753	6.82459	73.6472	8.07455	41.2638
5/5/2015	IA-01	1430	5	14.6865	33.4156	7.49304	69.6535	8.077	40.8813
5/5/2015	IA-01	1430	6	14.6539	33.3633	7.41293	68.2705	8.07539	40.7938
5/5/2015	IA-01	1430	7	14.6352	33.3565	7.33495	66.3178	8.07478	40.7691
5/5/2015	IA-01	1430	8	14.5846	33.4087	6.73102	65.3085	8.07474	40.7792
5/5/2015	IA-01	1430	9	14.5357	33.3819	6.80572	64.6423	8.07194	40.7043
5/5/2015	IB-01	1135	1	16.0668	33.3607	7.92425	76.6677	8.09418	42.125
5/5/2015	IB-01	1135	2	15.6781	33.3678	7.93712	77.5058	8.09247	41.7645
5/5/2015	IB-01	1135	3	15.3761	33.3576	7.90352	75.0383	8.09363	41.4676
5/5/2015	IB-01	1135	4	15.1531	33.3575	7.78866	76.4825	8.0766	41.2571
5/5/2015	IB-01	1135	5	14.9223	33.3544	7.45765	78.6865	8.0625	41.0364
5/5/2015	IB-01	1135	6	14.5168	33.3637	7.22879	78.0422	8.04986	40.6653
5/5/2015	IB-01	1135	7	14.3156	33.3447	6.99798	76.5413	8.039	40.4559
5/5/2015	LARE-01	930	1	15.2018	32.078	5.02449	40.932	7.93039	39.8781
5/5/2015	LARE-01	930	2	15.1007	32.7139	5.01612	39.3131	7.9197	40.4936
5/5/2015	LARE-01	930	3	15.0689	32.9939	5.14443	38.3848	7.921	40.7748
5/5/2015	OB-01	1030	1	15.1097	33.32	8.62892	73.6334	8.13845	41.1733
5/5/2015	OB-01	1030	2	14.9554	33.3308	8.62162	72.7222	8.14019	41.0402
5/5/2015	OB-01	1030	3	14.864	33.3225	8.61641	70.4352	8.13924	40.9455
5/5/2015	OB-01	1030	4	14.7661	33.3295	8.62605	70.5171	8.13724	40.8614
5/5/2015	OB-01	1030	5	14.572	33.3318	8.64043	68.6734	8.12125	40.6819
5/5/2015	OB-01	1030	6	14.5382	33.3253	8.31603	70.1276	8.10659	40.6434

Appendix B-1.3: Water Quality Data - Event 2 Deployment

Port of Los Angeles Port of Long Beach

Los Angeles San Pedro, California

Date	Location ID	Time	Depth (m)	Temperature (°C)	Salinity (psu)	Dissolved Oxygen (mg/L)	Transmission (%)	pH (pH units)	Conductivity (mS/cm)
5/5/2015	OB-01	1030	7	14.507	33.3224	8.21088	71.0606	8.10232	40.6114
5/5/2015	OB-01	1030	8	14.4439	33.327	8.15496	72.7987	8.09396	40.5575
5/5/2015	REF-01	800	1	13.7962	33.3246	7.98053	73.4355	8.95462 ^[1]	39.9454
5/5/2015	REF-01	800	2	13.6922	33.3316	7.98857	73.6276	8.9392	39.8561
5/5/2015	REF-01	800	3	13.6615	33.3246	7.85633	73.7544	8.91253	39.8204
5/5/2015	REF-01	800	4	13.6627	33.3237	7.77721	73.5173	8.89681	39.821
5/5/2015	REF-01	800	5	13.661	33.3245	7.79083	73.5866	8.87992	39.8207
5/5/2015	REF-01	800	6	13.656	33.324	7.78834	73.6968	8.865	39.8159
5/5/2015	REF-01	800	7	13.5736	33.3406	7.80055	73.7142	8.85229	39.7573
5/5/2015	REF-01	800	8	13.3944	33.3384	7.76459	70.6103	8.8255	39.5883
5/5/2015	REF-01	800	9	13.2208	33.349	7.62482	66.5721	8.799	39.4382
5/5/2015	REF-01	800	10	13.0592	33.3471	7.44052	59.7625	8.76958	39.2862
5/5/2015	REF-01	800	11	12.9782	33.356	7.27176	61.8301	8.75478	39.2209
5/5/2015	REF-01	800	12	12.8309	33.3692	7.24982	66.6064	8.73991	39.0983
5/5/2015	REF-01	800	13	12.6865	33.3642	7.1182	61.5472	8.71492	38.9594
5/5/2015	REF-01	800	14	12.6302	33.3604	6.90801	61.8867	8.69844	38.9037
5/5/2015	REF-01	800	15	12.6049	33.3599	6.87094	70.3186	8.68607	38.8801
5/5/2015	REF-01	800	16	12.3481	33.3985	6.86852	79.7456	8.66781	38.6829
5/5/2015	REF-01	800	17	11.6511	33.4168	6.84762	76.385	8.63113	38.0582
5/5/2015	SP-01	830	1	16.0316	33.0419	7.98791	53.7818	8.12429	41.7297
5/5/2015	SP-01	830	2	15.4631	33.2574	8.06961	55.0494	8.12413	41.4375
5/5/2015	SP-01	830	3	14.8162	33.2974	8.07939	58.9265	8.10406	40.8728
5/5/2015	SP-01	830	4	14.618	33.3319	7.98951	60.7778	8.09017	40.7247
5/5/2015	SP-01	830	5	14.2055	33.3443	7.81808	62.9683	8.07617	40.3515
5/5/2015	SP-01	830	6	14.1077	33.3393	7.80064	63.845	8.0715	40.2548
5/5/2015	SP-01	830	7	14.012	33.3403	7.77018	60.3191	8.06206	40.1667
5/5/2015	SP-01	830	8	13.7529	33.3517	7.51439	53.125	8.04054	39.9371

Notes:

1: pH values for REF-01 appear to indicate the data logger was not functioning correctly as pH does not typically change significantly with depth.

Appendix B-1.4: Water Quality Data - Event 2 Retrieval

Port of Los Angeles Port of Long Beach

Los Angeles San Pedro, California

Date	Location ID	Time	Depth (m)	Temperature (°C)	Salinity (psu)	Dissolved Oxygen (mg/L)	Transmission (%)	pH (pH units)	Conductivity (mS/cm)
6/15/2015	CP-01	1420	1	16.6071	33.2756	7.59385	43.0695	8.07125	42.542
6/15/2015	CP-01	1420	2	16.5893	33.2781	7.60217	43.3317	8.07333	42.5283
6/15/2015	CP-01	1420	3	16.4143	33.2935	7.61403	47.1813	8.0728	42.3799
6/15/2015	CP-01	1420	4	16.1696	33.2873	7.60526	46.011	8.06745	42.1409
6/15/2015	CS-01	1210	1	17.7275	32.971	7.12677	70.8985	8.02233	43.2543
6/15/2015	CS-01	1210	2	17.3569	33.1101	7.06057	69.8963	8.02026	43.0651
6/15/2015	CS-01	1210	3	17.1155	33.1653	6.9676	69.7923	8.0046	42.8998
6/15/2015	CS-01	1210	4	17.0208	33.1957	6.71481	70.271	7.99995	42.8453
6/15/2015	CS-01	1210	5	16.8379	33.2362	6.72026	71.4498	7.99779	42.7183
6/15/2015	CS-01	1210	6	16.8088	33.2362	6.58741	73.8176	7.99292	42.6909
6/15/2015	CS-01	1210	7	16.8143	33.2269	6.55084	73.9096	7.99261	42.6859
6/15/2015	CS-01	1210	8	16.7565	33.2376	6.56919	73.9632	7.99172	42.6437
6/15/2015	CS-01	1210	9	16.6798	33.2523	6.50784	73.7202	7.989	42.5879
6/15/2015	FH-01	1345	1	19.1531	33.3527	7.54422	65.9624	8.11553	45.0781
6/15/2015	FH-01	1345	2	17.7731	33.3617	7.75817	49.3289	8.07626	43.7575
6/15/2015	FH-01	1345	3	17.513	33.3283	6.88991	39.5582	8.06823	43.4691
6/15/2015	FH-01	1345	4	17.3141	33.3317	7.44675	40.4911	8.07729	43.2829
6/15/2015	FH-01	1345	5	16.9204	33.3367	7.15005	39.7893	8.04269	42.9127
6/15/2015	IA-01	1255	1	17.1181	33.2237	6.86152	71.9151	8.002	42.9692
6/15/2015	IA-01	1255	2	16.9118	33.2401	6.93007	70.2749	8.002	42.7918
6/15/2015	IA-01	1255	3	16.7478	33.2447	6.81814	65.0439	7.99875	42.6413
6/15/2015	IA-01	1255	4	16.6914	33.2465	6.77388	63.8313	7.99809	42.5902
6/15/2015	IA-01	1255	5	16.5584	33.2501	6.79314	61.1747	7.999	42.4682
6/15/2015	IA-01	1255	6	16.4856	33.2551	6.82017	66.2396	7.99632	42.4052
6/15/2015	IA-01	1255	7	16.4346	33.2531	6.80913	64.5391	7.99523	42.3548
6/15/2015	IA-01	1255	8	16.4009	33.2557	6.77696	68.4194	7.995	42.3262
6/15/2015	IA-01	1255	9	16.3782	33.2561	6.76848	71.4404	7.9952	42.3055
6/15/2015	IA-01	1255	10	16.3311	33.2568	6.77212	71.5443	7.99643	42.262
6/15/2015	IB-01	1040	1	17.5814	33.2938	6.8714	74.4919	7.78247	43.4935
6/15/2015	IB-01	1040	2	17.4731	33.3044	6.90201	74.5028	7.79336	43.4025
6/15/2015	IB-01	1040	3	17.3683	33.3052	6.93253	74.7638	7.78892	43.3035
6/15/2015	IB-01	1040	4	17.3274	33.3039	6.87279	74.8633	7.78014	43.2633
6/15/2015	IB-01	1040	5	17.2536	33.3018	6.87082	75.2375	7.78573	43.1907
6/15/2015	IB-01	1040	6	17.0586	33.3117	6.87323	75.5075	7.82214	43.0162
6/15/2015	LARE-01	905	1	18.5457	32.6747	5.42224	40.5358	7.96074	43.6809
6/15/2015	LARE-01	905	2	18.2204	32.977	5.60928	42.7952	7.95434	43.7317
6/15/2015	LARE-01	905	3	17.7734	33.1784	5.12704	46.191	7.92916	43.5429
6/15/2015	OB-01	950	1	17.4922	33.2436	8.57716	73.9566	8.16322	43.3495
6/15/2015	OB-01	950	2	17.386	33.2503	8.63543	70.6671	8.16088	43.2561
6/15/2015	OB-01	950	3	17.2404	33.2614	8.56406	70.8602	8.15224	43.1304
6/15/2015	OB-01	950	4	16.8286	33.2513	8.48363	74.2917	8.13306	42.7263

Appendix B-1.4: Water Quality Data - Event 2 Retrieval

Port of Los Angeles Port of Long Beach

Los Angeles San Pedro, California

Date	Location ID	Time	Depth (m)	Temperature (°C)	Salinity (psu)	Dissolved Oxygen (mg/L)	Transmission (%)	pH (pH units)	Conductivity (mS/cm)
6/15/2015	OB-01	950	5	16.6616	33.2744	8.20675	75.5658	8.12183	42.5941
6/15/2015	OB-01	950	6	16.4052	33.2855	8.10917	77.9489	8.11132	42.3634

Appendix B-1.4: Water Quality Data - Event 2 Retrieval

Port of Los Angeles Port of Long Beach
 Los Angeles San Pedro, California

Date	Location ID	Time	Depth (m)	Temperature (°C)	Salinity (psu)	Dissolved Oxygen (mg/L)	Transmission (%)	pH (pH units)	Conductivity (mS/cm)
6/15/2015	OB-01	950	7	16.3672	33.2812	7.97854	79.1054	8.10468	42.3228
6/15/2015	OB-01	950	8	16.3586	33.2808	7.93706	79.2648	8.104	42.3146
6/15/2015	OB-01	950	9	16.3497	33.2798	7.87704	79.6725	8.103	42.3054
6/15/2015	OB-01	950	10	16.2936	33.2891	7.85366	79.6219	8.10196	42.2631
6/15/2015	REF-01	730	1	16.1036	33.3218	8.01506	88.4072	8.11625	42.116
6/15/2015	REF-01	730	2	15.9885	33.3165	7.95536	86.5144	8.11455	42.0011
6/15/2015	REF-01	730	3	15.8988	33.3063	7.96145	85.485	8.11089	41.905
6/15/2015	REF-01	730	4	15.8794	33.3033	7.97179	85.4454	8.10948	41.8837
6/15/2015	REF-01	730	5	15.8136	33.3073	7.98151	85.4536	8.10685	41.8262
6/15/2015	REF-01	730	6	15.7088	33.3108	7.93456	85.434	8.10347	41.7314
6/15/2015	REF-01	730	7	15.556	33.3092	7.84596	85.5204	8.09354	41.5854
6/15/2015	REF-01	730	8	15.3894	33.3166	7.73609	87.0517	8.08536	41.4366
6/15/2015	REF-01	730	9	15.0372	33.3479	7.73892	88.2862	8.08813	41.1393
6/15/2015	REF-01	730	10	14.4744	33.3531	7.81426	87.7141	8.08218	40.6157
6/15/2015	REF-01	730	11	14.2151	33.3322	7.60728	86.3558	8.06935	40.3499
6/15/2015	REF-01	730	12	14.1685	33.3218	7.55736	87.2423	8.06281	40.2954
6/15/2015	REF-01	730	13	14.1635	33.315	7.48544	87.4911	8.06	40.2837
6/15/2015	REF-01	730	14	14.1618	33.3111	7.43531	87.8787	8.06	40.2784
6/15/2015	REF-01	730	15	13.8825	33.3435	7.47877	88.1598	8.05667	40.0526
6/15/2015	REF-01	730	16	13.343	33.3533	7.23371	88.8441	8.03721	39.5597
6/15/2015	REF-01	730	17	13.2382	33.324	6.99421	87.606	8.02429	39.4313
6/15/2015	SP-01	820	1	18.502	33.2516	8.24061	72.8737	8.16952	44.3276
6/15/2015	SP-01	820	2	17.7235	33.2509	8.26369	74.4744	8.16217	43.5799
6/15/2015	SP-01	820	3	17.6026	33.2681	8.38898	79.1908	8.154	43.4846
6/15/2015	SP-01	820	4	17.5779	33.269	8.21024	82.6886	8.14946	43.4624
6/15/2015	SP-01	820	5	17.558	33.2654	8.15749	84.3337	8.14721	43.4396
6/15/2015	SP-01	820	6	17.5348	33.2691	8.16588	83.9005	8.147	43.4222
6/15/2015	SP-01	820	7	17.1907	33.3034	8.14198	85.6058	8.14193	43.1333
6/15/2015	SP-01	820	8	16.9765	33.2852	7.93441	83.7778	8.12663	42.9081
6/15/2015	SP-01	820	9	16.0871	33.4146	8.00329	82.736	8.11626	42.2089

APPENDIX B-2
SPME DATA

Appendix B-2.1: SPME Data - Event 1

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Units	Field Blank Samples							CP-RW-01-S-M-20150107	CS-01-RW-S-M-PRC-20150107	CS-RW-01-S-B-20150107
		FB-20141209	FBPRC1-20141209	FBPRC2-20141209	FBPRC3-20141209	FBPRC4-20141209	FBPRC5-20141209	FBPRC6-20141209			
Chlorinated Pesticides											
2,4'-DDE (o,p'-DDE)	pg/Sample	< 2.78	NR	NR	NR	< 3.05	< 3.27	< 3.01	5050	251	2250
4,4'-DDE (p,p'-DDE)	pg/Sample	< 11.4	NR	NR	NR	< 8.14	< 5.64	< 4.4	35400	1760	14800
2,4'-DDD (o,p'-DDD)	pg/Sample	< 2.23	NR	NR	NR	< 2.33	< 2.58	< 1.89	523	132	1230
2,4'-DDT (o,p'-DDT)	pg/Sample	< 4	NR	NR	NR	< 4.63	< 4.29	< 3.16	386	78	826
4,4'-DDD (p,p'-DDD)	pg/Sample	< 2.26	NR	NR	NR	< 2.62	< 2.42	< 1.78	1020	317	2840
4,4'-DDT (p,p'-DDT)	pg/Sample	11.40	NR	NR	NR	< 8.44	7.21	< 3.61	1450	343	3200
p,p'-DDMU	pg/Sample	< 6.53	NR	NR	NR	< 8.67	< 23.1	< 22.7	3530	196	1790
Total DDTs [2]	pg/Sample	11	NR	NR	NR	< 8.67	7	< 22.7	47359	3077	26936
4,4'-DDD (p,p'-DDD)-d8 [1]	pg/Sample	5.70	NR	NR	NR	74200	95000	100000	< 3.82	11700	143
4,4'-DDT (p,p'-DDT)-d8 [1]	pg/Sample	ND	NR	NR	NR	55900	71400	76900	< 24.9	74600	1030
2,4'-DDE (o,p'-DDE)-d8 [1]	pg/Sample	8.72	NR	NR	NR	76500	89400	101000	43.5	47500	1010
4,4'-DDE (p,p'-DDE)-d8 [1]	pg/Sample	15.10	NR	NR	NR	72400	86900	98500	44.9	31600	331
Polychlorinated Biphenyls											
PCB-1	pg/Sample	6.62	< 4.82	< 8.4	< 4.38	NR	NR	NR	< 4.56	< 5.31	< 4.67
PCB-2	pg/Sample	< 1.32	< 4.06	< 7.14	< 3.45	NR	NR	NR	< 4.41	< 5.07	< 4.68
PCB-3	pg/Sample	2.92	< 3.93	< 6.92	< 3.35	NR	NR	NR	< 4.4	< 5.06	< 4.67
PCB-4/10	pg/Sample	< 16	< 12.7	< 15.8	< 12.3	NR	NR	NR	< 4.55	< 6.04	21.6
PCB-5/8	pg/Sample	30.60	9.27	< 11.7	< 8.46	NR	NR	NR	46.5	< 4.85	60.0
PCB-6	pg/Sample	< 12.6	< 10.1	< 11.4	< 9.25	NR	NR	NR	< 3.51	< 4.98	15.6
PCB-7/9	pg/Sample	< 12.5	< 10	< 11.3	< 9.19	NR	NR	NR	< 3.46	< 4.92	< 4.25
PCB-11	pg/Sample	24.90	18.90	< 8.53	15.60	NR	NR	NR	134	21.80	179
PCB-12/13	pg/Sample	< 12.6	< 9.96	< 8.99	< 9.49	NR	NR	NR	< 3.32	< 4.4	< 4.08
PCB-14	pg/Sample	< 11.3	< 8.89	< 8.02	< 8.47	NR	NR	NR	< 2.86	< 3.79	< 3.51
PCB-15	pg/Sample	7.23	< 9.06	< 8.18	< 8.63	NR	NR	NR	15.9	< 3.87	36.0
PCB-16/32	pg/Sample	16.30	< 1.77	< 2.26	4.57	NR	NR	NR	152	50.3	482
PCB-17	pg/Sample	9.75	< 2.03	< 2.59	< 1.76	NR	NR	NR	83.4	19.6	196
PCB-18	pg/Sample	24.10	8.14	< 2.71	5.53	NR	NR	NR	181	44.8	435
PCB-19	pg/Sample	< 2.76	< 2.22	< 3.29	< 1.94	NR	NR	NR	25.0	10.1	79.1
PCB-20/21/33	pg/Sample	12.40	< 4.33	< 3.52	< 2.69	NR	NR	NR	110	29.9	255
PCB-22	pg/Sample	7.40	< 4.29	< 3.49	< 2.66	NR	NR	NR	73.8	24.8	260
PCB-23	pg/Sample	< 3.04	< 4.33	< 3.52	< 2.69	NR	NR	NR	< 2.54	< 2.91	< 4.2
PCB-24/27	pg/Sample	< 1.9	< 1.55	< 1.98	< 1.35	NR	NR	NR	22.5	9.43	73.6
PCB-25	pg/Sample	< 2.97	< 4.23	< 3.43	< 2.62	NR	NR	NR	28.4	7.71	58.9
PCB-26	pg/Sample	< 3.41	< 4.39	< 3.57	< 2.73	NR	NR	NR	38.6	13.1	122
PCB-28	pg/Sample	16.90	< 6.9	< 3.35	< 2.56	NR	NR	NR	349	64.7	562
PCB-29	pg/Sample	< 3	< 4.27	< 3.47	< 2.65	NR	NR	NR	< 2.54	< 2.91	< 4.21
PCB-30	pg/Sample	< 1.95	< 1.57	< 2.33	< 1.38	NR	NR	NR	< 1.84	< 1.93	< 2.05
PCB-31	pg/Sample	14.50	5.91	< 3.25	< 2.48	NR	NR	NR	195	32.9	303
PCB-34	pg/Sample	< 3.16	< 4.5	< 3.66	< 2.79	NR	NR	NR	< 2.36	< 2.71	10.7
PCB-35	pg/Sample	< 3.66	< 3.82	< 3.68	< 2.68	NR	NR	NR	7.21	< 3.05	11.7

Appendix B-2.1: SPME Data - Event 1

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Units	Field Blank Samples						CP-RW-01-S-M-20150107	CS-01-RW-S-M-PRC-20150107	CS-RW-01-S-B-20150107	
		FB-20141209	FBPRC1-20141209	FBPRC2-20141209	FBPRC3-20141209	FBPRC4-20141209	FBPRC5-20141209				FBPRC6-20141209
PCB-36	pg/Sample	< 3.66	< 3.82	< 3.68	< 2.68	NR	NR	NR	5.77	< 2.95	< 6.09378
PCB-37	pg/Sample	< 3.62	< 3.77	< 3.64	< 2.65	NR	NR	NR	37.3	10.8	92.2
PCB-38	pg/Sample	< 3.72	< 3.88	< 3.74	< 2.72	NR	NR	NR	8.76	< 4.84121	57.5
PCB-39	pg/Sample	< 3.54	< 3.7	< 3.57	< 2.6	NR	NR	NR	< 2.61	< 3.04	< 4.56
PCB-40	pg/Sample	< 4.34	< 6.58	< 4.72	< 3.59	NR	NR	NR	114	21.4	158
PCB-41/64/71/72	pg/Sample	5.75	< 4.11	< 2.95	< 2.24	NR	NR	NR	528	127	1210
PCB-42/59	pg/Sample	< 2.92	< 4.43	< 3.18	< 2.41	NR	NR	NR	216	43.5	335
PCB-43/49	pg/Sample	< 2.99	< 5.36	< 3.95	< 2.86	NR	NR	NR	685	220	2330
PCB-44	pg/Sample	< 5.19	< 5.74	< 4.11	< 3.12	NR	NR	NR	624	115	933
PCB-45	pg/Sample	< 4.02	< 6.17	< 4.54	< 3.29	NR	NR	NR	92.7	20.5	156
PCB-46	pg/Sample	< 4.08	< 6.27	< 4.61	< 3.34	NR	NR	NR	52.1	12.8	121
PCB-47	pg/Sample	6.70	< 4.76	< 3.41	< 2.59	NR	NR	NR	270	82.0	938
PCB-48/75	pg/Sample	< 2.73	< 4.13	< 2.96	< 2.25	NR	NR	NR	119	21.7	161
PCB-50	pg/Sample	< 3.2	< 4.77	< 3.94	< 2.71	NR	NR	NR	4.54	< 2.51	< 9.08317
PCB-51	pg/Sample	< 3.37	< 5.17	< 3.81	< 2.76	NR	NR	NR	85.1	144	1630
PCB-52/69	pg/Sample	< 5.76	< 4.66	< 3.43	< 2.49	NR	NR	NR	902	333	3520
PCB-53	pg/Sample	< 3.27	< 5.02	< 3.69	< 2.68	NR	NR	NR	180	120	1220
PCB-54	pg/Sample	< 2.59	< 3.85	< 3.18	< 2.19	NR	NR	NR	15.1	21.3	314
PCB-55	pg/Sample	< 2.4	< 3.58	< 2.32	< 1.95	NR	NR	NR	10.7	3.59	34.6
PCB-56/60	pg/Sample	< 2.45	< 3.65	< 2.37	< 1.99	NR	NR	NR	287	56.5	488
PCB-57	pg/Sample	< 2.53	< 3.78	< 2.44	< 1.96	NR	NR	NR	5.27	4.76	27.4
PCB-58	pg/Sample	< 2.56	< 3.82	< 2.46	< 1.98	NR	NR	NR	2.29	< 2.91	20.9
PCB-61/70	pg/Sample	6.22	< 3.9	< 2.51	< 2.03	NR	NR	NR	539	98.4	831
PCB-62	pg/Sample	< 2.75	< 4.17	< 2.99	< 2.27	NR	NR	NR	< 3.49	< 3.18	< 1.46
PCB-63	pg/Sample	< 2.53	< 3.77	< 2.43	< 1.96	NR	NR	NR	< 22.8723	< 3.16033	34.0
PCB-65	pg/Sample	< 2.67	< 4.04	< 2.9	< 2.2	NR	NR	NR	< 3.6	< 3.29	< 1.5
PCB-66/76	pg/Sample	< 2.48	< 3.71	< 2.39	< 1.92	NR	NR	NR	537	99.8	836
PCB-67	pg/Sample	< 2.63	< 3.92	< 2.53	< 2.04	NR	NR	NR	20.5	< 3.04	20.8
PCB-68	pg/Sample	< 2.39	< 3.63	< 2.6	< 1.98	NR	NR	NR	< 5.20887	< 2.69	12.8
PCB-73	pg/Sample	< 2.83	< 4.34	< 3.2	< 2.32	NR	NR	NR	< 2.78317	< 4.81189	52.8
PCB-74	pg/Sample	< 2.35	< 3.5	< 2.26	< 1.82	NR	NR	NR	267	43.4	394
PCB-77	pg/Sample	< 2.48	< 3.4	< 2.38	< 1.95	NR	NR	NR	33.9	< 8.99502	72.5
PCB-78	pg/Sample	< 2.57	< 3.75	< 2.54	< 1.9	NR	NR	NR	< 3.48	< 2.77	< 1.4
PCB-79	pg/Sample	< 2.37	< 3.53	< 2.29	< 1.92	NR	NR	NR	16.4	5.39	56.7
PCB-80	pg/Sample	< 2.08	< 3.11	< 2.02	< 1.69	NR	NR	NR	< 2.81	< 2.4	< 1.18
PCB-81	pg/Sample	< 2.3	< 3.36	< 2.27	< 1.7	NR	NR	NR	1.89	< 2.53	6.89
PCB-82	pg/Sample	< 5.73	< 7.34	< 5.77	< 4.85	NR	NR	NR	115	26.6	201
PCB-83	pg/Sample	< 4.01	< 5.21	< 4.02	< 3.32	NR	NR	NR	< 2.65	< 3.13	< 2.74
PCB-84/92	pg/Sample	< 5.06	< 6.31	< 5.34	8.09	NR	NR	NR	464	119	1040
PCB-85/116	pg/Sample	< 4.68	< 6.09	< 4.69	< 3.88	NR	NR	NR	147	27.9	229
PCB-86	pg/Sample	< 5.96	< 7.76	< 5.97	< 4.94	NR	NR	NR	6.06	< 5.03	< 7.97737
PCB-87/117/125	pg/Sample	< 3.91	< 5.09	< 3.92	< 3.24	NR	NR	NR	298	64.8	551
PCB-88/91	pg/Sample	< 5.79	< 7.7	< 6.19	< 4.79	NR	NR	NR	182	70.8	743

Appendix B-2.1: SPME Data - Event 1

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Units	Field Blank Samples						CP-RW-01-S-M-20150107	CS-01-RW-S-M-PRC-20150107	CS-RW-01-S-B-20150107	
		FB-20141209	FBPRC1-20141209	FBPRC2-20141209	FBPRC3-20141209	FBPRC4-20141209	FBPRC5-20141209				FBPRC6-20141209
PCB-89	pg/Sample	< 5.23	< 6.52	< 5.53	< 4.37	NR	NR	NR	14.9	< 3.95547	< 14.7095
PCB-90/101	pg/Sample	< 4.47	< 5.57	< 4.72	< 3.73	NR	NR	NR	1030	295	2860
PCB-93	pg/Sample	< 5.22	< 6.94	< 5.58	< 4.32	NR	NR	NR	< 4.11	< 4.67	< 4.08
PCB-94	pg/Sample	< 5.33	< 7.08	< 5.69	< 4.41	NR	NR	NR	10.1	14.1	136
PCB-95/98/102	pg/Sample	< 4.86	< 6.46	< 5.19	< 4.02	NR	NR	NR	951	360	3520
PCB-96	pg/Sample	< 4.03	< 5.52	< 4.84	< 3.43	NR	NR	NR	16.9	13.1	150
PCB-97	pg/Sample	< 4.88	< 6.35	< 4.89	< 4.04	NR	NR	NR	299	56.8	515
PCB-99	pg/Sample	< 4.13	< 5.15	< 4.36	< 3.45	NR	NR	NR	515	172	1660
PCB-100	pg/Sample	< 4.39	< 6.01	< 5.27	< 3.74	NR	NR	NR	17.6	27.7	307
PCB-103	pg/Sample	< 4.72	< 6.46	< 5.66	< 4.02	NR	NR	NR	< 22.2568	29.0	329
PCB-104	pg/Sample	< 3.5	< 4.79	< 4.2	< 2.98	NR	NR	NR	4.36	8.38	87.9
PCB-105	pg/Sample	< 5.12	< 5.56	< 5.05	< 5.11	NR	NR	NR	175	36.2	313
PCB-106/118	pg/Sample	< 3.44	< 4.48	< 3.62	< 2.85	NR	NR	NR	617	132	1060
PCB-107/109	pg/Sample	< 3.46	< 4.44	< 3.49	< 2.93	NR	NR	NR	50.2	10.7	96.0
PCB-108/112	pg/Sample	< 4.73	< 6.16	< 4.74	< 3.92	NR	NR	NR	46.8	11.0	79.3
PCB-110	pg/Sample	< 3.63	< 4.72	< 3.63	< 3	NR	NR	NR	879	208	1820
PCB-111/115	pg/Sample	< 3.48	< 4.52	< 4.53	8.40	NR	NR	NR	15.3	< 5.67941	31.7
PCB-113	pg/Sample	< 3.94	< 4.91	< 4.16	< 3.29	NR	NR	NR	< 2.91	< 3.34	14.0
PCB-114	pg/Sample	< 5.03	< 5.28	< 4.83	< 4.79	NR	NR	NR	8.04	< 3.72585	23.6
PCB-119	pg/Sample	< 3.54	< 4.61	< 3.55	< 2.93	NR	NR	NR	30.3	< 16.0027	187
PCB-120	pg/Sample	< 3.42	< 4.45	< 3.43	< 2.83	NR	NR	NR	4.95	< 2.62	10.9
PCB-121	pg/Sample	< 3.1	< 4.12	< 3.31	< 2.56	NR	NR	NR	< 2.48	< 2.82	< 2.46
PCB-122	pg/Sample	< 5.52	< 5.78	< 5.29	< 5.25	NR	NR	NR	< 5.65967	< 5.32	12.4
PCB-123	pg/Sample	< 3.47	< 4.45	< 3.5	< 2.94	NR	NR	NR	12.3	< 3.23	20.6
PCB-124	pg/Sample	< 3.2	< 4.1	< 3.22	< 2.71	NR	NR	NR	27.5	8.01	59.7
PCB-126	pg/Sample	< 5.89	< 6.6	< 5.64	< 5.6	NR	NR	NR	3.58	< 4.68	< 7.04852
PCB-127	pg/Sample	< 5.72	< 6.12	< 5.66	< 5.21	NR	NR	NR	< 1.28	< 4.48	< 4.49
PCB-128/162	pg/Sample	< 4.97	< 4.17	< 3.47	< 3.17	NR	NR	NR	78.1	16.8	133
PCB-129	pg/Sample	< 6.28	< 5.28	< 4.13	< 3.87	NR	NR	NR	21.6	< 5.54	39.6
PCB-130	pg/Sample	< 7.05	< 5.67	< 4.75	< 3.96	NR	NR	NR	41.0	< 7.68506	74.6
PCB-131	pg/Sample	< 6.25	< 4.97	< 4.33	< 3.72	NR	NR	NR	< 4.2	< 5.75	< 5.3
PCB-132/161	pg/Sample	< 5.13	< 4.08	< 3.56	< 3.05	NR	NR	NR	150	47.2	399
PCB-133/142	pg/Sample	< 6.04	< 4.81	< 4.19	< 3.6	NR	NR	NR	18.6	6.61	55.7
PCB-134/143	pg/Sample	< 6.16	< 4.9	< 4.27	< 3.67	NR	NR	NR	37.6	11.1	112
PCB-135	pg/Sample	< 4.09	< 9.48	< 4.92	< 3.8	NR	NR	NR	126	42.8	374
PCB-136	pg/Sample	< 2.94	< 6.81	< 3.54	< 2.73	NR	NR	NR	108	54.5	520
PCB-137	pg/Sample	< 5.58	< 4.48	< 3.76	< 3.13	NR	NR	NR	21.1	5.04	43.3
PCB-138/163/164	pg/Sample	< 4.74	< 3.98	5.07	< 2.92	NR	NR	NR	535	153	1380
PCB-139/149	pg/Sample	< 3.78	< 8.76	< 4.55	< 3.5	NR	NR	NR	598	260	2610
PCB-140	pg/Sample	< 4.06	< 9.41	< 4.89	< 3.77	NR	NR	NR	< 5.47	< 12.3	< 9.77
PCB-141	pg/Sample	< 6.13	< 4.93	< 4.13	< 3.44	NR	NR	NR	87.3	29.2	279
PCB-144	pg/Sample	< 3.89	< 9.01	< 4.68	< 3.61	NR	NR	NR	30.9	9.33	92.8
PCB-145	pg/Sample	< 2.92	< 6.76	< 3.51	< 2.71	NR	NR	NR	< 3.89	< 8.76	< 6.96
PCB-146/165	pg/Sample	< 4.94	< 3.93	< 3.42	< 2.94	NR	NR	NR	93.3	33.9	334
PCB-147	pg/Sample	< 3.85	< 8.92	< 4.63	< 3.57	NR	NR	NR	24.5	27.2	240
PCB-148	pg/Sample	< 4.31	< 9.97	< 5.18	< 3.99	NR	NR	NR	< 5.2	< 11.7	23.1
PCB-150	pg/Sample	< 3	< 6.94	< 3.61	< 2.78	NR	NR	NR	< 3.77	< 7.17216	64.9
PCB-151	pg/Sample	< 3.94	< 9.13	< 4.74	< 3.66	NR	NR	NR	174	95.5	995
PCB-152	pg/Sample	< 2.9	< 6.73	< 3.49	< 2.69	NR	NR	NR	< 3.64	< 8.2	39.8
PCB-153	pg/Sample	< 5.26	< 3.86	< 3.36	< 2.88	NR	NR	NR	552	212	2180
PCB-154	pg/Sample	< 3.61	< 8.36	< 4.34	< 3.35	NR	NR	NR	19.3	30.8	316

Appendix B-2.1: SPME Data - Event 1

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Units	Field Blank Samples						CP-RW-01-S-M-20150107	CS-01-RW-S-M-PRC-20150107	CS-RW-01-S-B-20150107	
		FB-20141209	FBPRC1-20141209	FBPRC2-20141209	FBPRC3-20141209	FBPRC4-20141209	FBPRC5-20141209				FBPRC6-20141209
PCB-155	pg/Sample	< 2.81	< 6.51	< 3.38	< 2.61	NR	NR	NR	< 3.55	< 7.97	6.78
PCB-156	pg/Sample	< 4.38	< 3.48	< 2.81	< 2.59	NR	NR	NR	32.0	8.49	69.8
PCB-157	pg/Sample	< 4.72	< 3.64	< 3	< 2.75	NR	NR	NR	7.92	< 4.15	13.9
PCB-158/160	pg/Sample	< 4.5	< 3.78	< 2.96	< 2.77	NR	NR	NR	50.7	14.7	127
PCB-159	pg/Sample	< 4.35	< 3.65	< 3.03	< 2.77	NR	NR	NR	< 2.76	< 3.68	< 3.59
PCB-166	pg/Sample	< 4.54	< 3.81	< 3.17	< 2.9	NR	NR	NR	3.04	< 3.94	< 3.84
PCB-167	pg/Sample	< 4.45	< 3.73	< 2.92	< 2.72	NR	NR	NR	18.9	4.58	38.2
PCB-168	pg/Sample	< 4.17	< 3.32	< 2.89	< 2.48	NR	NR	NR	< 2.62	< 3.57	9.26
PCB-169	pg/Sample	< 4.67	< 3.71	< 2.99	< 2.71	NR	NR	NR	< 3.33	< 4.93	< 4.32
PCB-170	pg/Sample	< 4.16	< 2.81	< 2.4	< 2.11	NR	NR	NR	55.6	< 15.7916	214
PCB-171	pg/Sample	< 4.26	< 2.82	< 2.36	< 2.15	NR	NR	NR	23.5	11.7	79.7
PCB-172	pg/Sample	< 4.58	< 3.02	< 2.53	< 2.31	NR	NR	NR	13.5	8.98	51.0
PCB-173	pg/Sample	< 4.82	< 3.19	< 2.67	< 2.44	NR	NR	NR	< 4.59	< 5.11	5.84
PCB-174	pg/Sample	< 4.18	< 2.76	< 2.32	< 2.11	NR	NR	NR	88.7	47.9	425
PCB-175	pg/Sample	< 4.38	< 2.89	< 2.41	< 2.18	NR	NR	NR	4.84	< 3.46	16.6
PCB-176	pg/Sample	< 3.12	< 2.05	< 1.72	< 1.55	NR	NR	NR	11.3	7.69	51.9
PCB-177	pg/Sample	< 4.51	< 2.98	< 2.5	< 2.28	NR	NR	NR	51.8	24.1	205
PCB-178	pg/Sample	< 4.53	< 2.98	< 2.49	< 2.26	NR	NR	NR	23.0	14.2	108
PCB-179	pg/Sample	< 3.25	< 2.14	< 1.79	< 1.62	NR	NR	NR	50.4	29.9	287
PCB-180	pg/Sample	< 3.92	< 2.59	< 2.17	< 1.98	NR	NR	NR	135	60.8	627
PCB-181	pg/Sample	< 4.11	< 2.72	< 2.28	< 2.08	NR	NR	NR	< 3.76	< 4.18	< 3.21
PCB-182/187	pg/Sample	< 4.18	< 2.76	< 2.3	< 2.09	NR	NR	NR	132	69.2	685
PCB-183	pg/Sample	< 3.92	< 2.58	< 2.16	< 1.95	NR	NR	NR	41.8	20.2	181
PCB-184	pg/Sample	< 3.43	< 2.26	< 1.89	< 1.71	NR	NR	NR	< 2.6	< 2.71	< 2.2
PCB-185	pg/Sample	< 4.17	< 2.75	< 2.31	< 2.11	NR	NR	NR	9.93	< 4.01	47.6
PCB-186	pg/Sample	< 3.33	< 2.19	< 1.83	< 1.66	NR	NR	NR	< 2.39	< 2.49	< 2.02
PCB-188	pg/Sample	< 3.02	< 1.99	< 1.66	< 1.51	NR	NR	NR	< 2.29	< 2.38	10.1
PCB-189	pg/Sample	< 2.91	< 1.86	< 1.57	< 1.4	NR	NR	NR	< 2.65	< 3.38	6.81
PCB-190	pg/Sample	< 3.1	< 2.09	< 1.78	< 1.57	NR	NR	NR	< 11.6745	6.60	49.2
PCB-191	pg/Sample	< 3.35	< 2.21	< 1.85	< 1.69	NR	NR	NR	4.79	< 3.03	11.9
PCB-192	pg/Sample	< 3.67	< 2.42	< 2.03	< 1.85	NR	NR	NR	< 2.92	< 3.24	< 2.49
PCB-193	pg/Sample	< 3.38	< 2.24	< 1.87	< 1.71	NR	NR	NR	10.5	< 5.15806	42.4
PCB-194	pg/Sample	< 2.79	< 2.54	< 2.54	3.46	NR	NR	NR	18.7	11.0	77.6
PCB-195	pg/Sample	< 2.9	< 2.64	< 2.64	< 2.41	NR	NR	NR	< 9.13141	< 4.19296	30.5
PCB-196/203	pg/Sample	< 6.2	< 4.44	< 3.64	< 2.95	NR	NR	NR	26.7	9.89	94.9
PCB-197	pg/Sample	< 4.47	< 3.2	< 2.62	< 2.12	NR	NR	NR	< 3.49	< 6.5	< 6.13
PCB-198	pg/Sample	< 6.45	< 4.61	< 3.78	< 3.06	NR	NR	NR	< 5.41	< 10.1	< 9.49
PCB-199	pg/Sample	< 6.58	< 4.71	< 3.86	< 3.12	NR	NR	NR	34.9	< 9.16543	109
PCB-200	pg/Sample	< 4.71	< 3.37	< 2.76	< 2.24	NR	NR	NR	< 3.94	< 7.33	< 17.0013
PCB-201	pg/Sample	< 4.35	< 3.11	< 2.55	< 2.07	NR	NR	NR	< 5.49155	< 6.92	19.3

Appendix B-2.1: SPME Data - Event 1

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Units	Field Blank Samples						CP-RW-01-S-M-20150107	CS-01-RW-S-M-PRC-20150107	CS-RW-01-S-B-20150107	
		FB-20141209	FBPRC1-20141209	FBPRC2-20141209	FBPRC3-20141209	FBPRC4-20141209	FBPRC5-20141209				FBPRC6-20141209
PCB-202	pg/Sample	< 4.61	< 3.3	< 2.7	< 2.19	NR	NR	NR	11.3	< 7.44	36.1
PCB-204	pg/Sample	< 4.82	< 3.45	< 2.83	< 2.29	NR	NR	NR	< 3.8	< 7.06	< 6.67
PCB-205	pg/Sample	< 2.46	< 2.24	< 2.24	< 2.04	NR	NR	NR	< 2.17	< 3.36	< 3.49028
PCB-206	pg/Sample	< 3.25	< 3.04	< 2.94	< 2.46	NR	NR	NR	< 6.16627	< 5.49	19.6
PCB-207	pg/Sample	< 2.08	< 1.9	< 1.68	< 1.59	NR	NR	NR	< 2.25	< 2.92	4.59
PCB-208	pg/Sample	< 1.98	< 1.81	< 1.6	< 1.52	NR	NR	NR	< 2.29	< 5.31072	5.20
PCB-209	pg/Sample	< 2	< 2.58	< 2.56	< 2.05	NR	NR	NR	6.27	< 8.40234	6.57
Total monoCB	pg/Sample	NR	NR	NR	NR	NR	NR	NR	< 4.56	< 5.31	< 4.68
Total diCB	pg/Sample	NR	NR	NR	NR	NR	NR	NR	197	21.8	313
Total triCB	pg/Sample	NR	NR	NR	NR	NR	NR	NR	1320	318	3000
Total tetraCB	pg/Sample	NR	NR	NR	NR	NR	NR	NR	5610	1600	15900
Total pentaCB	pg/Sample	NR	NR	NR	NR	NR	NR	NR	5940	1690	16100
Total hexaCB	pg/Sample	NR	NR	NR	NR	NR	NR	NR	2830	1060	10600
Total heptaCB	pg/Sample	NR	NR	NR	NR	NR	NR	NR	657	301	3110
Total octaCB	pg/Sample	NR	NR	NR	NR	NR	NR	NR	91.6	20.9	367
Total nonaCB	pg/Sample	NR	NR	NR	NR	NR	NR	NR	< 6.17	< 5.31	29.4
DecaCB	pg/Sample	NR	NR	NR	NR	NR	NR	NR	6.27	< 8.40	6.57
Total PCB	pg/Sample	192.29	42.22	5.07	45.65	NR	NR	NR	16600	5010	49400
13C-PCB-8 ^[1]	pg/Sample	NR	4570.00	2990.00	4810.00	NR	NR	NR	ND	20.1	10.5
13C-PCB-31 ^[1]	pg/Sample	NR	4210.00	3700.00	5100.00	NR	NR	NR	ND	382	406
13C-PCB-79 ^[1]	pg/Sample	NR	6000.00	6320.00	7100.00	NR	NR	NR	ND	2720	3410
13C-PCB-133 ^[1]	pg/Sample	NR	4340.00	4560.00	5800.00	NR	NR	NR	ND	4170	6230
13C-PCB-178 ^[1]	pg/Sample	NR	3960.00	4330.00	5410.00	NR	NR	NR	ND	4270	6480

Appendix B-2.1: SPME Data - Event 1

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Samples and PRC Samples											
	CS-RW-01-S-M-20150107	IB-RW-01-S-B-20150107	IB-RW-01-S-M-20150107	LARE-RW-01-S-M-20150107	OB-RW-01-S-B-20150107	OB-RW-01-S-M-20150107	REF-RW-01-S-M-20150107	REF-RW-01-S-M-PRC-20150107	SP-RW-01-S-M-20150107	FH-RW-01-S-M-20150108	IA-RW-01-S-M-20150108	IA-RW-01-S-M-PRC-20150108
Chlorinated Pesticides												
2,4'-DDE (o,p'-DDE)	2400	2860	2990	1220	4770	4170	4810	539	3150	3000	1980	373
4,4'-DDE (p,p'-DDE)	15300	15200	16100	9510	23100	24000	29400	3040	17000	22300	11000	1910
2,4'-DDD (o,p'-DDD)	1200	585	590	602	300	352	239	28.8	261	293	453	77.3
2,4'-DDT (o,p'-DDT)	610	298	290	168	< 2.18	< 7.27	48.3	< 7.75	76.5	22.8	287	< 8.08
4,4'-DDD (p,p'-DDD)	2910	1100	1210	1710	658	767	578	59.7	673	603	1120	211
4,4'-DDT (p,p'-DDT)	2470	760	1100	712	272	348	236	33.9	310	73.7	1200	< 39.7
p,p'-DDMU	1940	2310	2250	1310	3740	3510	5430	538	2820	1560	1530	< 368
Total DDTs [2]	26830	23113	24530	15232	32840	33147	40741	4239	24291	27853	17570	2571
4,4'-DDD (p,p'-DDD)-d8 [1]	7540	13200	17200	< 4.74	14800	8490	< 22.4	5020	4860	9160	< 7.17	9780
4,4'-DDT (p,p'-DDT)-d8 [1]	63700	55200	133000	< 11.5	88800	66600	< 95.4	48900	75900	26200	< 17.4	43300
2,4'-DDE (o,p'-DDE)-d8 [1]	46800	37700	87700	11.0	51100	43300	< 34.4	32300	53800	35900	5.03	47400
4,4'-DDE (p,p'-DDE)-d8 [1]	32700	25800	59500	10.6	33900	36200	< 41.9	32400	33700	34900	11.9	53600
Polychlorinated Biphenyls												
PCB-1	2.35	4.68	3.91	6.99	4.65	4.69	< 4.91	< 3.33	3.79	< 5.50	< 2.81	< 2.41
PCB-2	< 3.91	< 3.42	< 3	< 5.23	< 4.33	< 3.86	< 4.19	< 3.53	< 5.68	< 5.19	< 2.72	< 2.54
PCB-3	< 3.91	< 3.42	< 2.98	< 5.21	< 4.32	< 3.85	< 4.18	< 3.52	< 5.66	< 5.17	< 2.72	< 2.54
PCB-4/10	< 23.3433	25.2	28.5	49.1	24.6	30.2	< 4	< 5.29	22.9	54.5	19.0	< 4.56
PCB-5/8	51.2	67.0	57.5	205	86.0	104	37.2	< 11.9	120	74.5	44.8	< 8.58
PCB-6	13.4	16.1	12.2	46.7	19.1	20.8	< 2.98	< 4.36	18.0	21.1	9.81	< 8.81
PCB-7/9	< 3.14	< 8.47	< 3.1	16.1	< 3.05	< 3.54	< 2.94	< 4.31	< 4.92	< 4.19	< 5.04	< 8.70
PCB-11	160	145	142	141	158	186	84.9	< 22.7	172	83.0	181	22.2
PCB-12/13	< 3.14	< 7.65	< 3.14	< 4.59	< 2.86	< 3.42	< 2.62	< 4.32	< 4.62	< 3.99	< 9.74	< 8.78
PCB-14	< 2.7	< 6.59	< 2.71	< 3.95	< 2.46	< 2.94	< 2.26	< 3.72	< 3.98	< 3.43	< 8.39	< 7.56
PCB-15	31.5	28.0	26.8	25.0	< 20.3766	24.8	< 2.3	< 3.8	< 4.06	85.6	20.7	< 7.72
PCB-16/32	378	273	305	604	227	210	88.0	14.0	268	600	180	26.3
PCB-17	161	151	161	407	135	126	46.1	< 4.67	166	313	92.0	13.0
PCB-18	379	343	356	949	268	263	78.6	12.4	302	785	221	30.0
PCB-19	69.0	50.3	56.6	86.2	35.4	32.2	< 8.74687	< 5.26	32.2	145	34.1	< 3.46
PCB-20/21/33	249	149	144	480	146	176	79.6	11.2	213	234	129	19.1
PCB-22	203	94.6	92.6	263	81.3	92.9	38.1	5.26	93.2	149	84.5	11.5
PCB-23	< 3.42	< 3.3	< 1.75	< 2.88	< 2.52	< 1.91	< 1.76	< 1.95	< 3.72	< 3.85	< 2.49	< 2.02
PCB-24/27	58.5	47.2	50.6	78.6	31.8	27.5	9.03	< 3.44	31.8	110	29.3	< 3.79
PCB-25	< 43.3834	29.7	32.8	97.7	33.2	39.2	< 14.5211	< 2.34177	44.6	109	29.9	4.76
PCB-26	115	45.6	49.2	153	45.5	50.8	< 15.243	3.54	44.6	153	49.5	7.35
PCB-28	536	412	450	907	369	425	199	25.3	441	978	372	53.1
PCB-29	2.23	< 3.3	< 2.3473	< 5.13313	1.93	2.92	< 1.76	< 1.95	2.83	< 1.74	1.72	< 2.02
PCB-30	< 1.72	< 1.61	< 1.05	< 2.31	< 1.73	< 1.42	< 1.66	< 3.33	< 2.45	< 2.04	< 1.49	< 1.48
PCB-31	366	234	250	661	231	231	82.1	12.8	238	581	205	29.0
PCB-34	8.50	< 3.07	< 3.19261	7.75	< 3.06522	4.31	< 1.63	< 1.82	6.32	< 2.32	1.72	< 1.88
PCB-35	11.1	9.57	11.5	8.29	7.35	7.50	3.97	< 1.91	8.02	13.4	8.22	< 2.09

Appendix B-2.1: SPME Data - Event 1

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Samples and PRC Samples											
	CS-RW-01-S-M-20150107	IB-RW-01-S-B-20150107	IB-RW-01-S-M-20150107	LARE-RW-01-S-M-20150107	OB-RW-01-S-B-20150107	OB-RW-01-S-M-20150107	REF-RW-01-S-M-20150107	REF-RW-01-S-M-PRC-20150107	SP-RW-01-S-M-20150107	FH-RW-01-S-M-20150108	IA-RW-01-S-M-20150108	IA-RW-01-S-M-PRC-20150108
PCB-36	5.13	6.34	< 5.75647	3.73	6.00	7.41	5.72	< 1.85	8.24	< 3.74	3.61	< 2.02
PCB-37	87.7	65.3	68.5	64.2	34.0	44.8	17.2	< 1.78	13.9	133	47.5	6.85
PCB-38	36.2	18.1	19.5	27.5	15.6	8.57	6.05	< 1.93	18.9	42.5	6.83	< 1.25
PCB-39	< 3.2	< 2.88	< 1.93	< 2.98	1.27	< 1.98	< 1.74	< 1.9	< 4.05	2.01	< 2.50	< 2.08
PCB-40	156	125	138	254	96.2	104	63.1	10.2	118	315	102	14.4
PCB-41/64/71/72	1010	571	665	1200	440	484	284	40.2	596	1620	521	79.2
PCB-42/59	301	219	269	462	180	208	124	14.2	243	652	198	33.2
PCB-43/49	1600	711	827	1230	629	659	380	47.6	725	1970	648	104
PCB-44	933	661	786	1460	504	568	306	40.4	662	1850	597	94.0
PCB-45	158	107	125	260	77.1	85.7	39.9	< 4.17957	87.1	271	92.1	16.8
PCB-46	118	61.7	77.8	125	43.6	46.0	25.6	< 3.51	51.2	162	55.6	9.43
PCB-47	621	289	321	498	252	259	180	21.8	304	809	253	40.1
PCB-48/75	162	133	153	314	125	117	78.6	9.94	173	327	104	16.8
PCB-50	7.84	4.71	3.97	7.92	3.54	< 3.10489	< 2.95	< 3.12	3.11	< 9.34	3.97	< 2.95
PCB-51	986	74.2	83.0	112	45.5	48.8	27.4	< 3.60696	59.3	149	129	20.2
PCB-52/69	2340	989	1160	1630	701	733	362	45.8	751	2650	949	157
PCB-53	901	201	241	321	119	141	60.0	7.25	132	461	213	34.0
PCB-54	173	12.7	16.0	9.14	6.00	6.40	< 2.20355	< 2.37	5.23	18.2	21.7	3.46
PCB-55	29.7	13.9	< 13.9616	17.1	11.4	< 6.26482	7.07	< 1.92	13.1	33.7	10.6	2.58
PCB-56/60	437	321	335	519	233	253	171	20.6	311	916	273	44.5
PCB-57	15.1	< 4.33547	6.29	7.89	< 3.38307	4.08	< 2.16247	< 2.12	6.48	11.1	2.88	< 2.16
PCB-58	6.98	3.13	3.90	4.12	3.41	3.06	3.34	< 2.09	3.55	7.61	2.71	< 2.13
PCB-61/70	773	533	610	946	467	493	296	37.4	560	1580	528	79.5
PCB-62	< 2.34	< 1.59	< 1.57	< 3.2	< 2.58	< 1.98	< 2.05	< 2.24	< 3.23	< 4.23	< 3.06	< 2.31
PCB-63	26.3	23.5	28.0	45.3	22.5	23.3	< 14.9038	< 2.04	30.4	63.8	21.5	4.01
PCB-65	< 2.41	< 1.63	< 1.63	< 3.3	< 2.66	< 2.04	< 2.11	< 2.31	< 3.33	< 4.36	< 3.15	< 2.39
PCB-66/76	748	559	648	800	516	506	361	45.1	621	1680	502	75.7
PCB-67	25.4	16.5	21.8	33.5	17.3	18.1	11.8	< 2.18	17.5	47.0	17.3	2.88
PCB-68	12.4	6.85	< 7.23241	13.2	7.07	6.08	8.47	< 1.89	8.42	16.3	5.70	1.23
PCB-73	26.8	< 3.4967	< 2.72009	< 3.33	< 1.50813	2.63	1.70	< 2.36	4.15	5.95	4.61	< 2.35
PCB-74	348	244	281	437	222	235	160	20.5	267	814	233	36.2
PCB-77	69.0	37.8	51.2	36.7	25.1	26.0	19.2	< 2.03	24.9	129	37.2	5.26
PCB-78	< 2.27	< 0.774	< 3.9	< 3.06	< 2.54	< 1.87	< 2	< 2.13	< 2.89	< 3.86	< 2.92	< 2.22
PCB-79	43.8	23.3	27.8	21.8	21.2	< 11.7041	10.4	< 2.04	25.7	51.2	< 13.3	2.85
PCB-80	< 1.98	< 0.75	< 3.43	< 2.47	< 2.19	< 1.56	< 1.7	< 1.79	< 2.53	< 3.32	< 2.47	< 1.81
PCB-81	5.42	3.78	4.11	5.24	3.42	< 1.16793	< 1.82	< 1.95	3.69	6.42	1.50	< 2.75
PCB-82	183	140	167	167	99.7	86.2	58.7	< 5.47	122	356	117	19.5
PCB-83	< 2.28	< 4.27	< 4.56	< 4.29	< 4.21	< 3.81	< 2.63	< 3.23	< 4.24	< 5.27	1.18	< 3.37
PCB-84/92	827	659	764	603	422	388	230	33.9	458	1220	479	83.5
PCB-85/116	213	187	202	196	150	131	95.8	11.3	182	460	150	25.9
PCB-86	< 3.66	< 6.86	< 7.34	< 6.91	< 6.78	< 6.13	< 4.23	< 5.2	< 6.83	< 8.88	< 7.18	< 5.42
PCB-87/117/125	496	450	539	393	251	230	140	16.8	295	874	331	51.6
PCB-88/91	533	226	264	245	182	162	117	13.5	214	538	188	34.0

Appendix B-2.1: SPME Data - Event 1

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Samples and PRC Samples												
	CS-RW-01-S-M-20150107	IB-RW-01-S-B-20150107	IB-RW-01-S-M-20150107	LARE-RW-01-S-M-20150107	OB-RW-01-S-B-20150107	OB-RW-01-S-M-20150107	REF-RW-01-S-M-20150107	REF-RW-01-S-M-PRC-20150107	SP-RW-01-S-M-20150107	FH-RW-01-S-M-20150108	IA-RW-01-S-M-20150108	IA-RW-01-S-M-PRC-20150108	
PCB-89	19.4	18.9	19.6	23.9	< 9.29375	10.2	< 8.47319	< 4.87	< 15.6125	44.3	< 12.2	< 2.52	
PCB-90/101	2200	1960	2500	1160	976	871	557	63.6	1090	2970	1150	187	
PCB-93	< 3.42	< 6.14	< 6.55	< 5.97	< 6.17	< 5.85	< 3.75	< 4.69	< 6.4	< 8.19	< 6.81	< 4.74	
PCB-94	84.5	< 11.5938	14.7	13.8	< 7.3693	8.99	6.05	< 4.41	10.9	26.3	11.4	3.19	
PCB-95/98/102	2520	1680	2150	1250	853	713	425	< 48.1432	868	2450	1030	165	
PCB-96	84.7	21.3	21.1	26.1	12.6	10.8	8.75	< 3.44	15.9	41.1	19.7	2.69	
PCB-97	444	384	461	363	296	254	175	21.9	353	943	313	50.4	
PCB-99	1200	652	734	524	534	473	368	43.2	685	1460	519	83.8	
PCB-100	179	14.6	< 17.2671	8.76	9.53	< 7.979	6.67	< 3.9	9.84	24.4	< 19.4	3.02	
PCB-103	199	30.5	31.9	19.2	19.3	19.4	11.8	< 3.88	22.6	43.2	33.1	4.44	
PCB-104	51.7	< 3.79	< 3.79	< 3.51	< 3.66	< 3.31	< 2.34	< 2.96	< 4.03	< 5.00	5.48	< 2.78	
PCB-105	279	233	276	231	167	152	105	13.7	195	601	196	34.3	
PCB-106/118	1000	906	1090	671	597	533	363	46.4	696	1860	659	102	
PCB-107/109	78.5	68.6	81.4	61.2	55.1	51.5	37.4	5.59	75.2	144	51.7	6.92	
PCB-108/112	73.4	61.8	69.4	59.9	< 42.2135	41.5	29.2	< 3.82	58.1	142	50.5	9.60	
PCB-110	1610	1510	1840	1210	809	718	454	53.7	930	2720	1010	163	
PCB-111/115	21.9	16.6	19.6	16.7	< 3.77	12.7	4.64	< 4.25661	12.9	48.2	15.1	6.35	
PCB-113	5.22	< 4.66	3.83	4.05	< 4.62	5.91	3.42	< 3.62	3.60	< 5.90	4.61	< 3.67	
PCB-114	18.2	13.8	18.4	14.4	8.90	10.1	4.92	< 3.48	10.7	29.7	< 7.33	< 3.32	
PCB-119	124	36.7	40.4	26.5	36.7	27.5	28.4	< 18.2847	39.8	65.3	33.7	5.73	
PCB-120	9.98	9.79	11.8	4.34	3.71	4.26	4.44	< 2.7	5.30	8.23	4.01	< 2.82	
PCB-121	< 2.06	< 3.7	< 3.95	< 3.6	< 3.72	< 3.52	< 2.26	< 2.83	< 3.86	< 4.94	< 4.11	< 2.86	
PCB-122	8.28	< 5.37	8.27	8.96	4.03	6.27	3.58	< 4.14	6.83	17.6	6.13	< 3.96	
PCB-123	17.2	14.6	18.9	< 13.9601	13.5	9.77	< 8.29495	< 3.24	17.9	38.0	< 11.3	< 3.40	
PCB-124	48.4	48.7	59.8	< 31.0208	28.3	24.7	15.9	< 3.12	29.8	76.6	31.7	5.51	
PCB-126	7.43	7.61	< 8.2219	5.26	< 3.01	2.70	< 2.10908	< 3.9	5.86	9.83	3.50	< 3.88	
PCB-127	< 3.11	< 5.4	< 5.01	< 1.45	< 2.78	< 1.6	< 2.8	< 3.58	< 3.07	< 2.98	< 1.89	< 3.60	
PCB-128/162	117	149	189	94.5	75.9	72.2	57.7	7.36	106	187	85.8	15.0	
PCB-129	31.2	39.3	48.7	25.8	19.1	19.0	13.7	< 4.38	26.9	45.6	27.2	< 4.20	
PCB-130	57.3	74.9	115	46.9	39.2	37.5	30.6	4.16	49.4	97.6	44.1	8.47	
PCB-131	< 5.7	< 9.38	< 7.45	< 5.45	< 5.15	< 4.67	< 2.05	< 4.48	< 3.61	< 4.75	< 2.62	< 3.44	
PCB-132/161	290	443	623	207	138	144	92.2	11.7	178	344	188	32.6	
PCB-133/142	< 39.6286	< 33.9158	53.1	19.1	21.0	17.6	19.1	9.87	< 4.16	< 21.4661	38.9	21.1	5.93
PCB-134/143	85.2	88.4	128	43.5	35.2	33.6	25.3	4.59	43.7	< 70.2	45.4	< 7.49	
PCB-135	277	291	366	98.8	107	99.2	69.5	< 7.79	119	196	125	18.0	
PCB-136	370	351	480	120	108	96.5	61.4	< 5.44	109	211	129	19.4	
PCB-137	< 36.2857	23.0	27.8	24.5	16.1	19.8	11.3	< 1.67743	21.8	51.9	21.4	3.11	
PCB-138/163/164	1070	1600	2290	637	565	560	390	44.5	666	1140	592	102	
PCB-139/149	1790	1790	2530	610	590	552	354	46.6	630	1180	683	109	
PCB-140	6.61	6.14	< 9.88	< 8.54	6.96	< 7.18	< 2.92117	< 7.99	9.00	< 8.37	3.78	3.40	
PCB-141	217	339	521	117	79.5	79.8	41.2	6.45	82.5	167	95.7	16.6	
PCB-144	70.7	117	176	42.8	28.1	28.9	14.6	< 7.26	27.2	65.4	43.7	< 2.56	
PCB-145	< 2.75	< 8.1	< 7.03	< 6.08	< 4.99	< 5.11	< 3.69	< 5.68	< 7.52	< 5.37	< 4.96	< 3.14	
PCB-146/165	241	236	324	91.4	103	99.9	71.8	10.6	131	191	107	19.7	
PCB-147	152	28.5	31.1	< 16.8827	< 16.7314	19.0	< 10.0444	< 7.97	23.4	49.8	26.2	4.50	
PCB-148	9.61	< 10.8	< 9.4	< 8.13	< 6.67	< 6.83	2.21	< 7.6	< 10.1	< 7.18	< 6.64	< 4.20	
PCB-150	33.9	< 7.85	9.05	< 5.89	< 4.83	< 4.95	< 3.57	< 5.51	< 7.29	< 7.18	< 4.27	< 3.05	
PCB-151	659	603	845	186	177	165	92.0	< 10.3162	177	330	211	36.4	
PCB-152	25.6	< 7.58	< 6.57	< 5.68	< 4.66	< 4.78	< 3.45	< 5.32	< 7.03	< 5.02	< 2.60	< 2.94	
PCB-153	1490	1780	2560	563	606	584	405	48.7	699	1050	597	103	
PCB-154	190	26.8	< 26.0364	8.72	22.6	14.6	13.3	< 6.98	< 19.4826	34.4	27.1	< 4.47	

Appendix B-2.1: SPME Data - Event 1

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Samples and PRC Samples											
	CS-RW-01-S-M-20150107	IB-RW-01-S-B-20150107	IB-RW-01-S-M-20150107	LARE-RW-01-S-M-20150107	OB-RW-01-S-B-20150107	OB-RW-01-S-M-20150107	REF-RW-01-S-M-20150107	REF-RW-01-S-M-PRC-20150107	SP-RW-01-S-M-20150107	FH-RW-01-S-M-20150108	IA-RW-01-S-M-20150108	IA-RW-01-S-M-PRC-20150108
PCB-155	< 4.68157	< 7.39	< 6.42	< 5.54	< 4.55	< 4.66	< 3.36	< 5.17	< 6.84	< 4.91	< 4.53	< 2.87
PCB-156	57.8	85.8	123	37.9	34.0	33.7	24.6	3.03	40.3	81.7	34.5	5.22
PCB-157	11.4	10.6	15.6	10.8	8.16	9.93	6.71	< 3.33	9.77	22.2	10.2	1.90
PCB-158/160	99.9	151	208	64.5	45.2	45.7	32.3	3.21	54.0	116	59.6	9.80
PCB-159	< 3.75	< 6.27	< 4.65	< 3.8	< 3.56	< 3.13	< 1.37	< 3.05	< 2.4	< 3.26	< 1.69	< 2.48
PCB-166	< 4.02	< 6.71	< 4.98	3.09	< 3.81	< 3.35	< 1.46	< 3.26	2.44	< 3.42	< 1.81	< 2.65
PCB-167	30.5	44.1	60.0	20.8	17.9	17.5	12.6	< 3.14	21.3	39.7	18.9	3.47
PCB-168	5.68	< 5.85	< 4.65	< 3.39	< 3.21	< 2.91	< 1.28	< 2.79	< 2.25	< 2.96	1.85	< 2.14
PCB-169	< 4.58	< 7.71	< 4.39	< 5.08	< 4.2	< 3.85	< 1.56	< 3.8	< 3.07	< 3.78	< 2.25	< 3.16
PCB-170	156	299	451	85.7	72.9	74.5	47.4	6.24	79.5	98.8	59.8	13.5
PCB-171	53.6	103	145	29.8	24.9	< 23.8234	16.5	< 3.55	31.0	38.2	22.6	4.92
PCB-172	32.8	50.2	66.1	23.0	17.3	< 13.5786	8.34	< 3.82	23.1	21.5	13.2	4.26
PCB-173	6.24	11.0	< 11.088	< 6.71	< 4.95	< 3.99	< 3.18	< 4.68	< 6.44	< 3.63	< 4.99	< 5.11
PCB-174	296	443	598	147	113	112	64.9	< 7.38576	124	148	101	21.1
PCB-175	15.3	15.9	21.7	< 5.27695	< 3.9873	5.57	< 2.34	< 3.45	3.87	< 5.66	6.15	< 3.15
PCB-176	40.5	52.7	74.3	15.4	14.4	14.9	7.85	< 2.48	13.0	22.4	13.9	< 2.27
PCB-177	154	249	321	75.4	73.5	75.5	51.8	< 6.40145	88.3	87.8	61.0	< 8.26
PCB-178	81.3	69.1	110	29.7	32.1	28.2	21.8	< 3.36	35.0	41.4	24.1	3.89
PCB-179	195	190	273	63.6	64.5	63.9	42.7	< 5.56753	64.1	89.0	62.4	8.93
PCB-180	443	734	1060	216	174	189	97.7	16.4	169	256	155	< 23.6
PCB-181	< 4.01	< 1.49	< 3.66	< 5.49	< 4.05	< 3.27	< 2.6	< 3.83	< 5.27	< 2.97	< 4.08	< 4.18
PCB-182/187	470	461	636	157	167	169	120	16.4	191	246	142	21.7
PCB-183	140	214	316	59.7	60.1	58.4	30.6	< 2.95	62.1	81.8	52.4	10.1
PCB-184	< 2.82	< 1.02	< 2.75	< 3.43	< 2.84	< 2.29	< 1.83	< 2.7	< 3.31	< 2.27	< 2.81	< 2.47
PCB-185	32.5	48.2	60.9	17.0	13.4	9.61	4.96	< 3.68	12.9	16.7	9.22	< 4.02
PCB-186	< 2.58	< 0.935	< 2.52	< 3.15	< 2.61	< 2.11	< 1.68	< 2.48	< 3.04	< 2.09	< 2.58	< 2.26
PCB-188	5.34	< 0.896	< 2.41	< 3.02	< 2.5	< 2.02	< 1.61	< 2.38	< 2.91	2.58	< 2.47	< 2.17
PCB-189	< 4.88107	9.41	15.3	< 4.33	< 2.52484	< 2.99599	2.65	< 3.12	< 3.92	3.07	< 2.86	< 2.79
PCB-190	36.8	59.2	89.4	17.4	14.0	16.3	9.39	< 2.98	< 16.4298	20.8	< 11.3	< 2.86
PCB-191	9.91	11.5	16.5	3.70	< 2.93	4.21	< 1.88	< 2.78	< 3.82	4.13	2.76	< 3.03
PCB-192	< 3.11	< 1.15	< 2.84	< 4.26	< 3.14	< 2.54	< 2.02	< 2.98	< 4.1	< 2.31	< 3.17	< 3.25
PCB-193	29.3	31.3	45.3	14.1	8.17	12.8	< 8.11364	< 2.79	14.1	16.1	10.5	< 3.05
PCB-194	50.4	67.5	93.6	29.0	25.7	29.3	17.4	5.84	28.9	34.4	15.3	5.08
PCB-195	< 20.0234	31.9	45.7	11.0	11.1	11.9	< 7.14893	< 3.3	12.0	< 9.14	7.77	< 3.05
PCB-196/203	70.1	71.9	125	32.3	42.2	37.3	< 21.595	< 6.88	37.9	50.5	22.4	< 7.28
PCB-197	< 6.24	< 2.75987	< 5.72185	< 5.82	< 4.17	< 5.22	< 4.83	< 4.88	< 8.27	< 5.33	< 6.02	< 5.17
PCB-198	< 9.66	< 8.56	< 10.4	< 9	< 6.45	< 8.08	< 7.47	< 7.56	< 12.8	< 8.25	< 9.31	< 8.00
PCB-199	76.8	69.5	114	34.6	45.0	36.6	< 28.3481	< 7.69	45.2	66.1	28.0	< 8.14
PCB-200	10.5	12.2	16.9	< 3.84719	5.86	8.02	< 5.44	< 5.51	< 9.33	< 8.73	< 6.79	< 5.83
PCB-201	12.3	11.2	19.2	< 6.19	< 4.44	7.71	< 5.14	< 5.2	< 8.83	9.36	4.66	< 5.50

Appendix B-2.1: SPME Data - Event 1

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Samples and PRC Samples											
	CS-RW-01-S-M-20150107	IB-RW-01-S-B-20150107	IB-RW-01-S-M-20150107	LARE-RW-01-S-M-20150107	OB-RW-01-S-B-20150107	OB-RW-01-S-M-20150107	REF-RW-01-S-M-20150107	REF-RW-01-S-M-PRC-20150107	SP-RW-01-S-M-20150107	FH-RW-01-S-M-20150108	IA-RW-01-S-M-20150108	IA-RW-01-S-M-PRC-20150108
PCB-202	25.7	< 20.8027	< 27.3135	14.6	13.6	15.3	< 5.52	< 5.57	< 14.5028	< 17.3	< 8.06	< 5.92
PCB-204	< 6.76	< 6	< 7.32	< 6.32	< 4.52	< 5.67	< 5.24	< 5.31	< 8.98	< 5.79	< 6.53	< 5.61
PCB-205	< 3.87	2.91	4.88	< 2.64	< 2.68	2.61	< 2.06	< 2.33	< 1.16202	< 2.16	< 1.45	< 2.16
PCB-206	16.6	18.2	25.7	15.0	17.9	16.6	< 11.0818	< 4.66	< 13.1721	19.1	8.75	< 3.44
PCB-207	3.53	< 3.82	3.07	< 3.4	< 2.84	< 1.92	< 2.24	< 2.69	< 3.13	< 2.45	< 2.46	< 2.66
PCB-208	4.84	8.19	8.96	7.27	5.94	< 5.74845	< 4.19878	< 2.72	4.20	< 7.60	4.33	< 2.70
PCB-209	5.50	10.7	< 9.54635	9.29	< 5.94577	7.16	< 4.64572	< 3.26	< 8.56	7.58	< 3.54	< 3.65
Total monoCB	2.35	4.68	3.91	6.99	4.65	4.69	< 4.91	< 3.53	3.79	< 5.50	< 2.81	< 2.54
Total diCB	256	281	267	483	288	365	122	< 22.7	333	319	276	22.2
Total triCB	2660	1930	2050	4800	1670	1750	653	84.4	1930	4350	1500	201
Total tetraCB	12000	5940	6890	10800	4770	5030	2980	361	5810	16600	5530	878
Total pentaCB	12500	9350	11400	7300	5520	4960	3220	328	6420	17200	6420	1050
Total hexaCB	7390	8280	11700	3070	2840	2750	1830	191	3230	5640	3200	518
Total heptaCB	2200	3050	4300	955	850	834	526	39.0	912	1190	737	88.3
Total octaCB	246	267	419	121	144	149	17.4	5.84	124	160	78.2	5.08
Total nonaCB	25.0	26.4	37.8	22.3	23.8	16.6	< 15.3	< 4.66	4.20	19.1	13.1	< 3.44
DecaCB	5.50	10.7	< 9.55	9.29	< 5.95	7.16	< 4.65	< 3.26	< 8.56	7.58	< 3.54	< 3.65
Total PCB	37400	29200	37100	27500	16100	15900	9350	1010	18800	45500	17700	2760
13C-PCB-8 ^[1]	ND	25.8	26.4	ND	34.0	28.2	ND	14.2	8.29	30.9	ND	26.8
13C-PCB-31 ^[1]	ND	681	1120	ND	947	1270	ND	523	594	908	ND	697
13C-PCB-79 ^[1]	ND	3280	6660	ND	2990	4390	ND	3130	3360	4240	9.33	3060
13C-PCB-133 ^[1]	ND	4180	9740	ND	4110	7410	ND	6570	5380	5270	ND	4510
13C-PCB-178 ^[1]	ND	3750	9920	ND	3830	7190	ND	6560	5160	4930	ND	3930

Notes:

- 1: Detection limits not reported for Performance Reference Compounds (PRCs)
- 2: Total DDTs is the sum of detected DDX congeners only. If all congeners were below detection limits, the highest detection limit is reported.
- 3: Validation qualifiers are not presented in table

Abbreviations:

PCB: Polychlorinated biphenyl
 DDD: Dichlorodiphenyldichloroethane
 DDE: Dichlorodiphenyldichloroethylene
 DDT: Dichlorodiphenyltrichloroethane
 DDMU: 1-chloro-2,2-6w(p-chlorophenyl)ethene
 pg: picograms
 NR: Not Reported
 ND: Not detected above method detection limit
 PCR: Performance Reference Compounds

Appendix B-2.2: SPME Data - Event 2

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Units	Field Blank Samples							CP-RW-01-S-M-20150615	CS-RW-01-S-M-20150616	CS-RW-01-S-B-20150616
		FB-20150506	FB PCR1-20150506	FB PCR2-20150506	FB PCR3-20150506	FB PCR4-20150506	FB PCR5-20150506	FB PCR6-20150506			
Chlorinated Pesticides											
2,4'-DDE (o,p'-DDE)	pg/Sample	< 4.49	NM	NM	NM	< 6.16	< 5.36	< 5.01	3700	1570	1520
4,4'-DDE (p,p'-DDE)	pg/Sample	< 5.41	NM	NM	NM	< 8.21	< 7.29	< 6.45	24200	11900	9750
2,4'-DDD (o,p'-DDD)	pg/Sample	< 7.43	NM	NM	NM	< 9.63	< 9.18	< 7.56	306	1130	1080
2,4'-DDT (o,p'-DDT)	pg/Sample	< 11.3	NM	NM	NM	< 15.0	< 12.1	< 11.4	24.5	45.3	35.7
4,4'-DDD (p,p'-DDD)	pg/Sample	< 7.97	NM	NM	NM	< 10.6	< 8.53	10.7	711	3330	3190
4,4'-DDT (p,p'-DDT)	pg/Sample	< 11.3	NM	NM	NM	< 15.8	< 14.1	< 12.2	72.2	172	186
p,p'-DDMU	pg/Sample	< 64.8	NM	NM	NM	< 88.9	< 77.3	< 72.3	2770	1580	1470
Total DDTs	pg/Sample	< 64.8	NM	NM	NM	< 88.9	< 77.3	10.7	31784	19727	17232
4,4'-DDD (p,p'-DDD)-d8 ^[1]	pg/Sample	< 6.67	NM	NM	NM	10700	11800	16900	367	1280	1970
4,4'-DDT (p,p'-DDT)-d8 ^[1]	pg/Sample	< 11.7	NM	NM	NM	11500	11800	20800	5870	4750	10700
2,4'-DDE (o,p'-DDE)-d8 ^[1]	pg/Sample	< 9.93	NM	NM	NM	10200	11600	15400	6220	4610	11200
4,4'-DDE (p,p'-DDE)-d8 ^[1]	pg/Sample	< 13.0	NM	NM	NM	8840	10000	15800	6850	4320	11000
Polychlorinated Biphenyls											
PCB-1	pg/Sample	48.9	4.27	5.88	5.51	NM	NM	NM	3.11	7.57	< 4.50
PCB-2	pg/Sample	6.48	< 1.89	< 2.92	< 2.47	NM	NM	NM	< 2.55	2.68	< 1.67
PCB-3	pg/Sample	28.1	2.38	3.73	2.84	NM	NM	NM	< 2.54	3.04	2.64
PCB-4/10	pg/Sample	52.6	< 11.5	7.95	< 6.26	NM	NM	NM	19.4	58.3	44.4
PCB-5/8	pg/Sample	152	17.2	29.6	20.7	NM	NM	NM	75.9	171	155
PCB-6	pg/Sample	30.8	< 9.16	6.54	< 5.02	NM	NM	NM	19	41.3	40.1
PCB-7/9	pg/Sample	15.7	< 9.05	< 10.2	< 4.96	NM	NM	NM	< 7.82	16.8	12.6
PCB-11	pg/Sample	51.8	10.7	20.7	13.5	NM	NM	NM	183	370	284
PCB-12/13	pg/Sample	< 10.7	< 8.77	< 9.75	< 4.71	NM	NM	NM	< 5.92	< 6.24	11.5
PCB-14	pg/Sample	< 9.21	< 7.55	< 8.40	< 4.06	NM	NM	NM	< 5.10	< 0.538	< 4.56
PCB-15	pg/Sample	31.3	< 7.71	8.53	< 4.14	NM	NM	NM	22.4	64.7	54.3
PCB-16/32	pg/Sample	97.9	12.9	27.9	13.6	NM	NM	NM	192	525	556
PCB-17	pg/Sample	65.2	7.61	18.4	8.64	NM	NM	NM	104	223	222
PCB-18	pg/Sample	144	17.2	43.7	18.5	NM	NM	NM	229	546	523
PCB-19	pg/Sample	17.8	< 1.22	< 1.88	< 2.01	NM	NM	NM	30.1	103	98.1
PCB-20/21/33	pg/Sample	93.3	< 11.8	31.2	11.3	NM	NM	NM	155	354	371
PCB-22	pg/Sample	44.6	< 5.43	16.7	6.64	NM	NM	NM	91	251	261
PCB-23	pg/Sample	< 0.945	< 0.846	< 1.01	< 1.50	NM	NM	NM	< 1.74	0.662	< 1.95
PCB-24/27	pg/Sample	11.8	< 0.769	< 3.47	< 1.17	NM	NM	NM	28.7	81.5	87.1
PCB-25	pg/Sample	11.7	< 0.933	4.76	< 1.65	NM	NM	NM	40.9	87.6	95.4
PCB-26	pg/Sample	18.9	2.49	7.87	< 1.46	NM	NM	NM	58	211	256
PCB-28	pg/Sample	115	< 11.6	37.9	13.6	NM	NM	NM	447	810	711
PCB-29	pg/Sample	< 0.945	< 0.847	< 1.01	< 1.50	NM	NM	NM	2.01	2.72	3.48
PCB-30	pg/Sample	< 1.10	< 0.770	< 1.19	< 1.27	NM	NM	NM	< 1.55	< 0.813	< 0.967
PCB-31	pg/Sample	96.4	11.6	42.8	11.1	NM	NM	NM	248	495	508
PCB-34	pg/Sample	< 0.879	< 0.787	< 0.941	< 1.39	NM	NM	NM	3.05	7.63	8.73
PCB-35	pg/Sample	< 0.908	< 0.815	< 1.02	< 1.56	NM	NM	NM	10.2	20.4	17.9
PCB-36	pg/Sample	< 0.877	< 0.788	< 0.981	< 1.51	NM	NM	NM	8.12	6.63	5.66
PCB-37	pg/Sample	< 11.9	< 0.759	5.91	< 1.45	NM	NM	NM	42.6	114	108
PCB-38	pg/Sample	< 0.918	< 0.824	< 1.03	< 1.57	NM	NM	NM	6.79	18.3	25.9
PCB-39	pg/Sample	< 0.904	< 0.812	< 1.01	< 1.55	NM	NM	NM	< 1.69	1.98	1.53
PCB-40	pg/Sample	6.62	< 1.91	6.16	< 2.88	NM	NM	NM	116	198	195
PCB-41/64/71/72	pg/Sample	31.7	4.74	27.4	5.4	NM	NM	NM	544	1300	1530
PCB-42/59	pg/Sample	13.7	< 1.32	11.3	< 3.00	NM	NM	NM	233	367	365
PCB-43/49	pg/Sample	28.0	< 3.51	28	4.07	NM	NM	NM	723	2280	3200
PCB-44	pg/Sample	37.1	5.29	34.2	7.42	NM	NM	NM	676	1130	1130

Appendix B-2.2: SPME Data - Event 2

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Units	Field Blank Samples							CP-RW-01-S-M-20150615	CS-RW-01-S-M-20150616	CS-RW-01-S-B-20150616
		FB-20150506	FB PCR1-20150506	FB PCR2-20150506	FB PCR3-20150506	FB PCR4-20150506	FB PCR5-20150506	FB PCR6-20150506			
PCB-45	pg/Sample	9.62	< 1.62	< 4.74	< 2.46	NM	NM	NM	95.6	161	165
PCB-46	pg/Sample	3.43	< 1.77	< 2.83	< 2.70	NM	NM	NM	53.5	135	168
PCB-47	pg/Sample	20.5	3.93	15.3	6.08	NM	NM	NM	292	904	1180
PCB-48/75	pg/Sample	9.63	1.68	7.33	< 1.86	NM	NM	NM	130	171	194
PCB-50	pg/Sample	< 1.71	< 1.67	< 1.91	< 2.58	NM	NM	NM	5.36	13.4	17.5
PCB-51	pg/Sample	4.94	< 1.45	3.2	< 2.20	NM	NM	NM	66.7	1500	2490
PCB-52/69	pg/Sample	43.8	5.81	35.6	6.51	NM	NM	NM	981	3560	5100
PCB-53	pg/Sample	9.43	< 1.48	< 4.80	< 2.25	NM	NM	NM	180	1220	1890
PCB-54	pg/Sample	< 1.30	< 1.27	< 1.45	< 1.96	NM	NM	NM	12.5	316	472
PCB-55	pg/Sample	< 0.993	< 0.946	< 1.12	< 1.45	NM	NM	NM	10.6	21.3	27.7
PCB-56/60	pg/Sample	11.8	2.17	15.3	< 1.61	NM	NM	NM	291	522	515
PCB-57	pg/Sample	< 1.10	< 1.06	< 1.28	< 1.65	NM	NM	NM	4.53	16.7	21.7
PCB-58	pg/Sample	< 1.09	< 1.05	< 1.26	< 1.62	NM	NM	NM	2.8	4.66	9.42
PCB-61/70	pg/Sample	25.0	3.92	29.6	< 3.22	NM	NM	NM	598	919	899
PCB-62	pg/Sample	< 1.17	< 1.20	< 1.37	< 1.82	NM	NM	NM	< 2.01	< 2.28	< 3.44
PCB-63	pg/Sample	< 1.06	< 1.02	1.31	< 1.59	NM	NM	NM	26.8	35.0	36.6
PCB-65	pg/Sample	< 1.21	< 1.24	< 1.41	< 1.87	NM	NM	NM	< 2.07	< 2.35	< 3.55
PCB-66/76	pg/Sample	17.2	2.22	22.1	2.88	NM	NM	NM	564	863	873
PCB-67	pg/Sample	< 1.13	< 1.09	< 1.31	< 1.69	NM	NM	NM	22.7	37.5	34
PCB-68	pg/Sample	3.03	< 1.01	1.97	< 1.53	NM	NM	NM	7.5	15.8	19.3
PCB-73	pg/Sample	< 1.15	< 1.19	< 1.39	< 1.81	NM	NM	NM	< 3.27	53.8	< 3.49
PCB-74	pg/Sample	10.4	1.85	13.5	1.59	NM	NM	NM	268	423	409
PCB-77	pg/Sample	< 1.01	< 0.975	2.52	< 1.46	NM	NM	NM	35.5	67.7	67.2
PCB-78	pg/Sample	< 1.07	< 1.07	< 1.19	< 1.54	NM	NM	NM	< 1.79	< 2.04	< 3.05
PCB-79	pg/Sample	< 1.05	< 1.00	< 1.19	< 1.54	NM	NM	NM	17.6	33.3	37.9
PCB-80	pg/Sample	< 0.922	< 0.879	< 1.04	< 1.35	NM	NM	NM	< 1.51	< 1.71	< 2.62
PCB-81	pg/Sample	< 0.978	< 0.979	< 1.09	< 1.41	NM	NM	NM	2.36	3.62	3.82
PCB-82	pg/Sample	< 3.86	< 4.66	< 4.91	< 7.32	NM	NM	NM	120	154	169
PCB-83	pg/Sample	< 2.29	< 2.89	< 3.23	< 4.35	NM	NM	NM	< 4.63	< 1.78	< 2.24
PCB-84/92	pg/Sample	8.20	< 3.96	14.8	< 5.72	NM	NM	NM	512	901	1090
PCB-85/116	pg/Sample	< 2.73	< 3.45	< 3.86	< 5.19	NM	NM	NM	159	212	202
PCB-86	pg/Sample	< 3.68	< 4.65	< 5.20	< 7.00	NM	NM	NM	< 3.00	7.50	5.77
PCB-87/117/125	pg/Sample	6.75	< 3.02	10.2	< 4.54	NM	NM	NM	318	471	513
PCB-88/91	pg/Sample	5.48	< 4.11	5.29	< 6.29	NM	NM	NM	200	613	841
PCB-89	pg/Sample	< 3.39	< 4.26	< 4.53	< 6.15	NM	NM	NM	13.6	20.5	21.9
PCB-90/101	pg/Sample	24.6	< 3.52	26	< 5.08	NM	NM	NM	1140	2500	3040
PCB-93	pg/Sample	< 3.53	< 4.35	< 4.88	< 6.65	NM	NM	NM	< 7.39	< 2.71	< 3.50
PCB-94	pg/Sample	< 3.31	< 4.09	< 4.59	< 6.25	NM	NM	NM	12.9	113	183
PCB-95/98/102	pg/Sample	22.5	< 3.59	23	< 5.48	NM	NM	NM	1020	2870	4010
PCB-96	pg/Sample	< 2.50	< 3.15	< 3.60	< 4.94	NM	NM	NM	16.9	126	202
PCB-97	pg/Sample	< 4.25	< 3.70	8.38	< 5.57	NM	NM	NM	320	429	445
PCB-99	pg/Sample	8.21	< 3.40	12.4	< 4.91	NM	NM	NM	561	1390	1790
PCB-100	pg/Sample	< 2.83	< 3.57	< 4.08	< 5.60	NM	NM	NM	11.4	276	443
PCB-103	pg/Sample	< 2.82	< 3.56	< 4.06	< 5.57	NM	NM	NM	24.1	296	456
PCB-104	pg/Sample	< 2.16	< 2.72	< 3.11	< 4.27	NM	NM	NM	< 4.70	77.1	129
PCB-105	pg/Sample	1.76	< 1.15	6.42	< 1.78	NM	NM	NM	156	237	230
PCB-106/118	pg/Sample	7.21	< 2.63	16.6	< 3.82	NM	NM	NM	627	922	987
PCB-107/109	pg/Sample	< 2.14	< 2.59	< 2.73	< 4.07	NM	NM	NM	60.6	84.5	91.7
PCB-108/112	pg/Sample	< 2.70	< 3.41	< 3.82	< 5.14	NM	NM	NM	50.9	66.8	73.9
PCB-110	pg/Sample	15.3	< 2.82	27.9	< 4.25	NM	NM	NM	909	1600	1700
PCB-111/115	pg/Sample	< 2.05	< 2.59	< 2.89	< 3.89	NM	NM	NM	< 12.8	21.2	24.4
PCB-113	pg/Sample	< 2.52	< 3.17	< 3.36	< 4.57	NM	NM	NM	4.3	11.7	19.1
PCB-114	pg/Sample	< 1.37	< 1.15	< 1.63	< 1.84	NM	NM	NM	< 9.08	13.8	12.2
PCB-119	pg/Sample	< 2.02	< 2.55	< 2.86	< 3.85	NM	NM	NM	29.7	166	249
PCB-120	pg/Sample	< 1.91	< 2.42	< 2.70	< 3.64	NM	NM	NM	5.27	10.7	14.1
PCB-121	pg/Sample	< 2.13	< 2.62	< 2.94	< 4.01	NM	NM	NM	< 4.46	< 1.63	< 2.11
PCB-122	pg/Sample	< 1.63	< 1.37	< 1.94	< 2.19	NM	NM	NM	6.94	9.81	8.45
PCB-123	pg/Sample	< 2.29	< 2.77	< 2.91	< 4.34	NM	NM	NM	< 13.1	17.5	15.9
PCB-124	pg/Sample	< 2.20	< 2.66	< 2.80	< 4.17	NM	NM	NM	32.2	49.7	55.2

Appendix B-2.2: SPME Data - Event 2

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Units	Field Blank Samples							CP-RW-01-S-M-20150615	CS-RW-01-S-M-20150616	CS-RW-01-S-B-20150616
		FB-20150506	FB PCR1-20150506	FB PCR2-20150506	FB PCR3-20150506	FB PCR4-20150506	FB PCR5-20150506	FB PCR6-20150506			
PCB-126	pg/Sample	< 1.61	< 1.34	< 1.85	< 2.15	NM	NM	NM	3.09	4.56	5.41
PCB-127	pg/Sample	< 1.52	< 1.29	< 1.73	< 2.04	NM	NM	NM	< 3.63	< 1.40	< 3.82
PCB-128/162	pg/Sample	< 1.90	< 1.51	4.16	< 2.36	NM	NM	NM	71.4	104	112
PCB-129	pg/Sample	< 2.33	< 1.82	< 2.35	< 2.81	NM	NM	NM	20.4	34.0	33.4
PCB-130	pg/Sample	< 2.65	< 2.00	< 2.60	< 3.11	NM	NM	NM	< 34.2	59.2	74.7
PCB-131	pg/Sample	< 2.42	< 1.85	< 2.54	< 2.88	NM	NM	NM	< 4.34	< 2.74	< 2.40
PCB-132/161	pg/Sample	< 2.34	< 1.40	5.73	< 2.18	NM	NM	NM	148	309	336
PCB-133/142	pg/Sample	< 2.25	< 1.72	< 2.36	< 2.68	NM	NM	NM	19.8	51.4	61.3
PCB-134/143	pg/Sample	< 2.19	< 1.68	< 2.31	< 2.62	NM	NM	NM	40.2	82.7	104
PCB-135	pg/Sample	< 4.63	< 4.33	< 4.96	< 6.88	NM	NM	NM	167	297	404
PCB-136	pg/Sample	3.73	< 3.02	3.57	< 4.80	NM	NM	NM	124	398	556
PCB-137	pg/Sample	< 2.07	< 1.56	< 2.03	< 2.43	NM	NM	NM	21.9	35.7	44.7
PCB-138/163/164	pg/Sample	7.05	< 1.31	21.3	< 2.02	NM	NM	NM	542	1190	1370
PCB-139/149	pg/Sample	22.1	< 3.96	22.7	< 6.30	NM	NM	NM	728	2130	2890
PCB-140	pg/Sample	< 4.75	< 4.44	< 5.09	< 7.06	NM	NM	NM	< 7.37	8.50	12.7
PCB-141	pg/Sample	2.56	< 1.59	4.73	< 2.47	NM	NM	NM	79.8	235	281
PCB-144	pg/Sample	< 4.31	< 4.03	< 4.62	< 6.41	NM	NM	NM	< 32.0	82.3	109
PCB-145	pg/Sample	< 3.38	< 3.16	< 3.62	< 5.02	NM	NM	NM	< 5.24	< 1.54	< 1.73
PCB-146/165	pg/Sample	1.77	< 1.45	4.06	< 2.25	NM	NM	NM	102	285	347
PCB-147	pg/Sample	< 4.74	< 4.43	< 5.08	< 7.04	NM	NM	NM	< 28.3	201	317
PCB-148	pg/Sample	< 4.51	< 4.22	< 4.84	< 6.71	NM	NM	NM	< 7.01	16.1	30.9
PCB-150	pg/Sample	< 3.27	< 3.06	< 3.51	< 4.86	NM	NM	NM	< 5.08	49.5	77.7
PCB-151	pg/Sample	9.68	< 4.22	7.11	< 6.71	NM	NM	NM	216	789	1100
PCB-152	pg/Sample	< 3.16	< 2.95	< 3.38	< 4.69	NM	NM	NM	< 4.90	31.7	57.2
PCB-153	pg/Sample	14.3	< 1.82	20.3	< 2.04	NM	NM	NM	566	1840	2240
PCB-154	pg/Sample	< 4.15	< 3.88	< 4.44	< 6.16	NM	NM	NM	27	245	392
PCB-155	pg/Sample	< 3.08	< 2.88	< 3.30	< 4.58	NM	NM	NM	< 4.78	7.66	10.8
PCB-156	pg/Sample	< 1.63	< 1.24	2.63	< 1.94	NM	NM	NM	32.4	55.9	66.8
PCB-157	pg/Sample	< 1.71	< 1.27	< 1.67	< 2.01	NM	NM	NM	9.34	12.5	12.0
PCB-158/160	pg/Sample	< 1.56	< 1.22	2.78	< 1.89	NM	NM	NM	47.3	114	122
PCB-159	pg/Sample	< 1.61	< 1.28	< 1.58	< 2.00	NM	NM	NM	< 2.92	< 1.70	< 1.59
PCB-166	pg/Sample	< 1.72	< 1.37	< 1.70	< 2.14	NM	NM	NM	< 3.13	2.22	< 1.70
PCB-167	pg/Sample	< 1.67	< 1.26	< 1.68	< 1.95	NM	NM	NM	17.0	32.0	40.0
PCB-168	pg/Sample	< 1.51	< 1.15	< 1.58	< 1.80	NM	NM	NM	< 2.70	8.55	10.4
PCB-169	pg/Sample	< 2.05	< 1.46	< 1.94	< 2.31	NM	NM	NM	< 3.68	< 2.01	< 2.20
PCB-170	pg/Sample	< 1.96	< 1.31	5.2	< 2.03	NM	NM	NM	54	169	199
PCB-171	pg/Sample	< 1.94	< 1.27	< 1.94	< 1.92	NM	NM	NM	< 19.1	59.5	81.8
PCB-172	pg/Sample	< 2.09	< 1.37	< 2.09	< 2.06	NM	NM	NM	14.6	42.6	46.6
PCB-173	pg/Sample	< 2.56	< 1.68	< 2.56	< 2.53	NM	NM	NM	< 5.06	< 4.45	7.37
PCB-174	pg/Sample	< 7.60	< 1.44	< 6.63	< 2.17	NM	NM	NM	96.6	324	439
PCB-175	pg/Sample	< 1.74	< 1.27	< 1.89	< 1.80	NM	NM	NM	< 3.51	14.4	16.0
PCB-176	pg/Sample	< 1.25	< 0.917	< 1.36	< 1.29	NM	NM	NM	16	42.5	58.3
PCB-177	pg/Sample	< 2.23	< 1.46	< 4.84	< 2.21	NM	NM	NM	57.7	172	213
PCB-178	pg/Sample	< 1.69	< 1.24	< 1.84	< 1.75	NM	NM	NM	29	90.8	126
PCB-179	pg/Sample	9.86	< 0.959	< 5.25	< 1.35	NM	NM	NM	66.5	233	341
PCB-180	pg/Sample	9.28	< 1.28	17.1	< 1.93	NM	NM	NM	151	518	634
PCB-181	pg/Sample	< 2.09	< 1.37	< 2.10	< 2.07	NM	NM	NM	< 4.14	< 2.88	< 3.31
PCB-182/187	pg/Sample	16.2	< 1.17	11.3	< 1.66	NM	NM	NM	151	564	754
PCB-183	pg/Sample	4.70	< 1.09	4.93	< 1.54	NM	NM	NM	50.3	165	204
PCB-184	pg/Sample	< 1.36	< 0.997	< 1.48	< 1.41	NM	NM	NM	< 2.75	< 1.89	< 2.07
PCB-185	pg/Sample	< 2.01	< 1.32	< 2.01	< 1.99	NM	NM	NM	12	39.4	53.0
PCB-186	pg/Sample	< 1.25	< 0.916	< 1.36	< 1.29	NM	NM	NM	< 2.52	< 1.74	< 1.90
PCB-188	pg/Sample	< 1.19	< 0.877	< 1.30	< 1.24	NM	NM	NM	< 2.42	8.46	11.1
PCB-189	pg/Sample	< 1.73	< 1.07	< 1.59	< 1.64	NM	NM	NM	< 2.91	6.63	7.29

Appendix B-2.2: SPME Data - Event 2

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	Units	Field Blank Samples							CP-RW-01-S-M-20150615	CS-RW-01-S-M-20150616	CS-RW-01-S-B-20150616
		FB-20150506	FB PCR1-20150506	FB PCR2-20150506	FB PCR3-20150506	FB PCR4-20150506	FB PCR5-20150506	FB PCR6-20150506			
PCB-190	pg/Sample	< 1.46	< 0.973	< 1.41	< 1.51	NM	NM	NM	11.6	42.1	49.5
PCB-191	pg/Sample	< 1.52	< 0.996	< 1.52	< 1.50	NM	NM	NM	< 3.00	9.63	7.98
PCB-192	pg/Sample	< 1.63	< 1.07	< 1.63	< 1.61	NM	NM	NM	< 3.22	< 2.25	< 2.57
PCB-193	pg/Sample	< 1.53	< 1.00	< 1.53	< 1.51	NM	NM	NM	< 8.24	37.3	42.4
PCB-194	pg/Sample	3.06	< 1.35	< 3.74	< 1.82	NM	NM	NM	16.3	53.4	71.4
PCB-195	pg/Sample	< 2.35	< 1.53	< 2.22	< 2.07	NM	NM	NM	7.58	25.9	31.4
PCB-196/203	pg/Sample	6.20	< 3.08	6.19	< 4.24	NM	NM	NM	34.7	101	120
PCB-197	pg/Sample	< 2.86	< 2.19	< 2.98	< 3.01	NM	NM	NM	< 6.21	5.87	5.00
PCB-198	pg/Sample	< 4.43	< 3.39	< 4.61	< 4.66	NM	NM	NM	< 9.62	5.66	5.68
PCB-199	pg/Sample	8.07	< 3.44	7.21	< 4.74	NM	NM	NM	36.6	109	123
PCB-200	pg/Sample	< 3.23	< 2.47	< 3.36	< 3.39	NM	NM	NM	< 7.01	15.9	15.5
PCB-201	pg/Sample	< 3.05	< 2.33	< 3.17	< 3.20	NM	NM	NM	< 6.60	16.4	17.9
PCB-202	pg/Sample	5.88	< 2.51	< 3.41	< 3.45	NM	NM	NM	17.4	36.0	42.9
PCB-204	pg/Sample	< 3.11	< 2.38	< 3.24	< 3.27	NM	NM	NM	< 6.75	< 4.60	< 2.04
PCB-205	pg/Sample	< 1.66	< 1.08	< 1.57	< 1.46	NM	NM	NM	< 2.81	2.68	4.15
PCB-206	pg/Sample	< 4.09	< 2.74	< 2.95	< 3.69	NM	NM	NM	8.29	17.6	20.7
PCB-207	pg/Sample	< 1.67	< 1.20	< 1.39	< 1.71	NM	NM	NM	< 2.05	2.23	2.70
PCB-208	pg/Sample	< 1.69	< 1.21	< 1.41	< 1.73	NM	NM	NM	4.6	5.58	5.45
PCB-209	pg/Sample	< 3.22	< 2.41	< 2.69	< 3.11	NM	NM	NM	< 3.21	4.66	< 2.52
Total monoCB	pg/Sample	83.4	6.65	9.61	8.35	NM	NM	NM	3.11	13.3	2.64
Total diCB	pg/Sample	335	27.8	73.4	34.1	NM	NM	NM	319	721	602
Total triCB	pg/Sample	717	51.8	237	83.3	NM	NM	NM	1700	3860	3860
Total tetraCB	pg/Sample	286	31.6	255	34	NM	NM	NM	5960	16300	21000
Total pentaCB	pg/Sample	100	< 4.66	151	< 7.32	NM	NM	NM	6310	13700	17000
Total hexaCB	pg/Sample	61.1	< 1.82	99.1	< 7.06	NM	NM	NM	2980	8700	11200
Total heptaCB	pg/Sample	40.0	< 1.68	38.5	< 2.53	NM	NM	NM	710	2540	3290
Total octaCB	pg/Sample	23.2	< 3.44	13.4	< 4.74	NM	NM	NM	113	372	437
Total nonaCB	pg/Sample	< 4.09	< 2.74	< 2.95	< 3.69	NM	NM	NM	12.9	25.4	28.9
DecaCB	pg/Sample	< 3.22	< 2.41	< 2.69	< 3.11	NM	NM	NM	< 3.21	4.66	< 2.52
Total PCB	pg/Sample	1650	118	877	160	NM	NM	NM	18100	46200	57500
13C-PCB-8 ^[1]	pg/Sample	< 3.79	1320	1300	1280	NM	NM	NM	ND	6.24	11.5
13C-PCB-31 ^[1]	pg/Sample	< 31.4	1490	1560	1690	NM	NM	NM	59.5	105	190
13C-PCB-79 ^[1]	pg/Sample	< 10.3	1390	1590	1610	NM	NM	NM	623	408	831
13C-PCB-133 ^[1]	pg/Sample	< 4.96	1070	1140	1270	NM	NM	NM	1100	527	956
13C-PCB-178 ^[1]	pg/Sample	< 12.9	901	1030	1090	NM	NM	NM	936	367	751

Appendix B-2.2: SPME Data - Event 2

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	SPME Samples									
	IB-RW-01-S-B-20150615	IB-RW-01-S-M-20150615	IB-RW-1001-S-M-20150615	LARE-RW-01-S-M-20150615	OB-RW-01-S-B-20150615	OB-RW-01-S-M-20150615	REF-RW-01-S-M-20150615	SP-RW-01-S-M-20150615	FH-RW-01-S-M-20150616	IA-RW-01-S-M-20150615
Chlorinated Pesticides										
2,4'-DDE (o,p'-DDE)	2650	2550	2450	1010	3130	4270	2240	2330	2300	3490
4,4'-DDE (p,p'-DDE)	14800	14000	13700	8500	19000	22700	14400	13300	21300	21700
2,4'-DDD (o,p'-DDD)	384	359	370	670	223	240	151	195	229	795
2,4'-DDT (o,p'-DDT)	31.8	< 12.5	< 32.8	62.8	< 9.69	< 11.6	< 11.5	27.8	< 12.1	64.2
4,4'-DDD (p,p'-DDD)	927	851	907	2200	611	601	401	537	515	2130
4,4'-DDT (p,p'-DDT)	91.2	63.7	98.9	168	47.0	32.2	45.9	80.2	< 14.9	202
p,p'-DDMU	2500	2570	2450	1200	2830	3420	2690	2320	1600	3180
Total DDTs	21384	20394	19976	13811	25841	31263	19928	18790	25944	31561
4,4'-DDD (p,p'-DDD)-d8 ^[1]	1060	2060	2440	1600	4830	5020	3560	146	3670	1050
4,4'-DDT (p,p'-DDT)-d8 ^[1]	9760	10500	11300	6460	15200	14700	12000	4280	10700	5020
2,4'-DDE (o,p'-DDE)-d8 ^[1]	8910	10400	12300	11400	14900	13900	12000	4580	9930	5590
4,4'-DDE (p,p'-DDE)-d8 ^[1]	9600	10000	11300	8900	12600	12200	9920	4270	9030	4790
Polychlorinated Biphenyls										
PCB-1	4.6	4.06	3.78	6.32	4.63	6.63	2.97	3.15	9.25	3.23
PCB-2	< 2.53	1.58	< 2.51	< 2.21	< 5.78	2.52	< 3.14	< 2.46	2.43	< 1.38
PCB-3	< 2.52	1.44	< 2.50	< 3.11	< 5.77	< 2.82	< 3.14	< 2.45	3.8	2.09
PCB-4/10	34.9	29.7	33.2	70.3	25.7	34.3	12.6	19.3	104	33
PCB-5/8	139	111	131	294	135	177	62.1	84	264	138
PCB-6	36.9	27.9	31.5	78	28.2	37.7	11.3	19.4	75.4	31.6
PCB-7/9	< 7.29	9.46	< 7.96	28.3	< 13.4	15.4	< 7.58	< 8.60	26.8	11.8
PCB-11	334	317	338	312	254	299	183	274	358	300
PCB-12/13	8.59	< 6.87	6.71	9.06	< 11.1	< 10.7	< 6.53	< 7.21	20.1	< 8.57
PCB-14	< 6.74	< 7.79	< 7.61	< 4.13	< 9.54	< 9.18	< 5.62	< 6.21	< 5.34	< 7.38
PCB-15	38.1	30.8	33.1	37.2	20.8	29.3	7.91	10.9	120	38.6
PCB-16/32	333	282	304	784	226	315	123	192	576	314
PCB-17	192	165	180	528	128	193	70.8	121	333	175
PCB-18	426	370	391	1210	243	349	121	209	850	421
PCB-19	55.9	48.7	51.5	110	29	41.5	13.9	19.7	135	51.8
PCB-20/21/33	299	257	279	761	223	285	121	224	463	286
PCB-22	160	135	154	409	103	141	52.8	93.7	265	165
PCB-23	< 2.32	< 2.21	< 2.29	1.49	< 2.36	< 1.96	< 1.73	< 1.46	0.947	< 2.05
PCB-24/27	52.5	43.7	50	114	29	40.5	13.6	25.4	100	47.1
PCB-25	68.2	57.7	65.3	188	46.4	65.6	23	47.4	175	77.2
PCB-26	96.9	87.6	94	297	61.8	78	29.6	59.2	257	108
PCB-28	741	611	677	1520	472	630	233	448	1180	693
PCB-29	< 3.26	< 3.00	4.04	10.2	2.57	3.71	1.37	3.17	5.56	< 4.16
PCB-30	< 0.839	< 0.818	< 1.69	< 1.93	< 1.88	< 1.48	< 1.36	< 0.997	< 1.06	< 0.822
PCB-31	381	321	349	1100	258	370	133	240	928	406
PCB-34	3.73	4.98	4.76	14	< 3.46	< 4.86	2.87	5.54	5.83	3.96
PCB-35	19.4	18.3	19	15.9	< 10.8	12.6	7.11	12.4	26.6	17.1
PCB-36	11.3	11	< 8.44	6.42	< 6.90	6.5	5.64	11.8	5.91	7.99
PCB-37	75.2	70.5	68.6	107	46.2	51.3	22.9	33.1	140	68.9
PCB-38	9.39	6.61	6.4	19.4	6.26	8.83	4.09	7.84	16.6	9.27
PCB-39	1.26	< 2.12	< 1.54	2.61	< 2.11	1.85	< 1.66	1.19	2.34	1.29
PCB-40	167	157	165	383	106	151	60.9	124	330	185
PCB-41/64/71/72	741	692	739	1760	491	694	280	568	1670	900
PCB-42/59	317	298	307	697	210	300	119	249	669	367
PCB-43/49	957	882	923	1900	652	921	390	746	1920	1160
PCB-44	910	867	889	2200	585	810	311	669	1910	1100

Appendix B-2.2: SPME Data - Event 2

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	SPME Samples									
	IB-RW-01-S-B-20150615	IB-RW-01-S-M-20150615	IB-RW-1001-S-M-20150615	LARE-RW-01-S-M-20150615	OB-RW-01-S-B-20150615	OB-RW-01-S-M-20150615	REF-RW-01-S-M-20150615	SP-RW-01-S-M-20150615	FH-RW-01-S-M-20150616	IA-RW-01-S-M-20150615
PCB-45	140	116	134	342	76.1	113	42.7	87.4	257	152
PCB-46	72.8	64.3	73.4	178	43.6	65.3	27.5	52.7	149	91
PCB-47	366	362	369	753	272	351	158	322	763	462
PCB-48/75	179	163	176	478	131	179	72.4	155	363	195
PCB-50	< 5.14	< 5.13	4.82	13	< 3.75	6.27	2.56	4.91	9.55	6.38
PCB-51	75.6	68.5	79.3	137	44.1	64	30.4	51.1	150	180
PCB-52/69	1280	1190	1260	2600	745	1040	378	818	2610	1690
PCB-53	235	212	228	481	132	192	70.3	144	455	323
PCB-54	< 11.9	< 11.1	12.4	14.8	5.72	8.59	3.29	6.38	18.8	31.6
PCB-55	13.3	12	11.2	19	< 7.50	14.4	4.82	9.07	24.2	18.8
PCB-56/60	405	371	388	779	242	332	140	306	980	477
PCB-57	6.34	6.21	5.82	12.1	< 3.12	4.94	2.3	5.19	11.7	7.83
PCB-58	4.42	4.21	4.66	6.35	3.26	< 4.00	2.62	4.34	8.59	4.21
PCB-61/70	787	745	791	1350	500	676	258	612	1800	962
PCB-62	< 2.90	< 2.20	< 2.36	< 2.86	< 2.50	< 2.48	< 1.80	< 4.41	< 1.34	< 2.54
PCB-63	34.3	33.9	33.4	72.2	25.6	32.2	14.2	32.4	70.7	36.3
PCB-65	< 2.99	< 2.27	< 2.43	< 2.95	< 2.58	< 2.56	< 1.86	< 4.54	< 1.39	< 2.62
PCB-66/76	773	730	812	1180	506	695	291	632	1820	890
PCB-67	27.9	28.8	30.6	46	18.1	22	11.2	26.9	62.5	36.1
PCB-68	11.7	10.6	10.8	15.3	< 8.20	10.7	6.34	11.4	18.8	11.7
PCB-73	4.05	3.88	4.26	8.43	4.64	< 3.79	< 1.95	3.58	5.00	7.94
PCB-74	338	315	332	642	228	315	127	271	893	404
PCB-77	53.4	52.2	56	62.6	26.1	31	15.4	31.6	128	63.6
PCB-78	< 2.60	< 1.96	< 2.11	< 2.37	< 2.12	< 2.22	< 1.62	< 3.82	< 1.15	< 2.26
PCB-79	15.2	15.1	17.5	< 19.5	< 10.8	18.4	8.29	19.4	32.1	22.8
PCB-80	< 2.20	< 1.59	< 1.66	< 2.07	< 1.75	< 1.89	< 1.41	< 3.33	< 0.935	< 1.95
PCB-81	2.72	1.98	2.47	2.88	3.25	2.32	1.28	1.11	4.00	3.69
PCB-82	154	143	143	225	91.6	115	42.5	108	307	202
PCB-83	< 2.32	1.5	< 1.69	< 4.78	< 4.86	< 3.86	< 4.61	< 1.82	< 3.21	< 1.62
PCB-84/92	650	593	614	769	360	528	191	411	1060	900
PCB-85/116	203	210	189	279	128	180	71	160	421	267
PCB-86	< 3.73	3.78	< 4.46	10.5	< 7.81	5.29	< 7.42	< 2.94	12.7	8.55
PCB-87/117/125	416	398	407	530	220	312	100	234	778	578
PCB-88/91	247	229	237	306	156	224	86.5	189	479	350
PCB-89	19	< 16.8	21.2	36.8	12.8	< 11.7	7.05	13.8	37.7	21.8
PCB-90/101	1660	1540	1600	1560	848	1190	422	980	2660	2120
PCB-93	< 3.57	< 3.20	< 2.48	< 7.32	< 7.52	< 5.89	< 7.02	< 3.99	< 4.92	< 2.65
PCB-94	13.1	12.3	12.7	< 15.4	9.52	12	6.41	11.7	21.0	21.5
PCB-95/98/102	1360	1290	1330	1550	728	1030	351	765	2090	1850
PCB-96	16.7	< 17.1	21.4	31.3	10.2	16.7	8.41	14	29.5	29.2
PCB-97	422	407	408	496	259	352	123	293	802	573
PCB-99	745	688	706	724	479	663	272	602	1320	959
PCB-100	13.9	< 13.5	16.1	10.2	10.2	10.2	6.79	10.4	20.0	38.2
PCB-103	32.1	30.8	32.6	28.3	18.7	29.1	< 11.2	21.9	35.4	57.7
PCB-104	2.08	1.6	2.23	< 2.16	< 4.59	< 3.75	< 4.50	< 2.45	1.94	6.2
PCB-105	224	203	220	276	126	172	66.9	168	491	308
PCB-106/118	920	828	882	895	514	675	259	621	1690	1160
PCB-107/109	89.4	83.1	88.5	90.9	56.9	67.9	31	78.4	150	110
PCB-108/112	65	69.2	62.1	87	41.9	59.4	23.2	50.6	121	86.3
PCB-110	1310	1270	1230	1550	697	1000	327	787	2540	1830
PCB-111/115	18.2	14.6	16.9	28.4	10	12.1	4.61	8.44	37.3	19.9
PCB-113	3.55	3.62	3.48	5.28	4.53	4.38	< 4.77	3.36	5.45	< 1.80
PCB-114	10.7	9.23	8.11	18.3	5.04	9.3	4.16	9.62	26.1	16.2
PCB-119	43.9	40.6	45	42	28.4	36	15.6	32.4	69.2	55.5
PCB-120	7.93	5.9	7.56	4.2	5.56	7.48	3.71	7.24	8.26	7.8
PCB-121	< 2.15	< 1.93	< 1.50	< 4.41	< 4.54	< 3.55	< 4.23	< 2.40	< 2.97	< 1.60
PCB-122	7.97	6.91	7.2	11	< 3.84	7.25	3.27	7.49	17.9	11.2
PCB-123	16.9	16.2	14.3	20.1	< 12.2	12.8	6.97	12.5	34.4	21.1
PCB-124	41.7	39.4	39.1	49.2	25.3	31.4	< 9.13	30.7	70.3	54.3

Appendix B-2.2: SPME Data - Event 2

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	SPME Samples									
	IB-RW-01-S-B-20150615	IB-RW-01-S-M-20150615	IB-RW-1001-S-M-20150615	LARE-RW-01-S-M-20150615	OB-RW-01-S-B-20150615	OB-RW-01-S-M-20150615	REF-RW-01-S-M-20150615	SP-RW-01-S-M-20150615	FH-RW-01-S-M-20150616	IA-RW-01-S-M-20150615
PCB-126	6.7	6.46	< 4.28	6.85	< 1.48	< 2.02	< 1.77	5.65	8.06	5.19
PCB-127	< 3.75	< 3.55	< 3.81	< 3.08	< 3.25	< 2.34	< 2.36	< 3.85	< 1.56	< 3.07
PCB-128/162	128	109	116	113	62.9	78	35.1	81.1	174	143
PCB-129	30.8	30.1	29.3	37.5	15.3	19.8	6.58	22.6	40.6	43.2
PCB-130	72	63.4	61.9	58.5	34	46.5	18	< 35.3	80.9	75.2
PCB-131	< 4.79	< 4.26	< 3.40	< 3.58	< 4.97	< 3.08	< 3.48	< 3.13	< 1.56	< 2.70
PCB-132/161	309	279	270	235	125	166	65.3	141	300	302
PCB-133/142	29.8	29.5	28.4	29.7	15.4	22.9	11.1	20.2	35.4	36.1
PCB-134/143	65.6	54.3	53.8	52	< 25.8	43.2	15.1	33.4	70.7	74.4
PCB-135	212	192	212	158	123	147	56.1	124	192	234
PCB-136	211	195	215	177	118	151	49.1	117	192	254
PCB-137	24.5	22.3	25.1	36.4	18.2	21.2	5.42	18.2	48.1	44.4
PCB-138/163/164	1030	1000	1070	812	459	607	229	584	1070	1080
PCB-139/149	1300	1120	1250	1000	586	824	298	698	1170	1410
PCB-140	7.81	8.31	11.3	< 7.09	< 11.4	8.15	< 5.89	6.26	8.19	8.5
PCB-141	186	179	179	139	64.2	82.7	29.9	70.5	159	188
PCB-144	72.1	63	68.5	65.2	27.9	40.7	12.8	< 32.3	66.1	87.1
PCB-145	< 2.56	2.38	< 2.96	< 3.84	< 8.10	< 7.02	< 4.19	< 6.58	< 3.77	< 2.79
PCB-146/165	189	168	166	130	92.2	120	52.3	110	189	184
PCB-147	33.4	< 23.2	31.6	29	21.2	29.3	14.6	29.6	48.9	64.3
PCB-148	< 3.43	< 4.18	< 3.96	< 5.13	< 10.8	4.83	< 5.60	< 8.80	3.44	3.46
PCB-150	4.9	5.84	8.88	3.25	< 7.85	< 6.80	< 4.06	4.24	6.73	8.43
PCB-151	388	361	397	306	188	252	105	204	329	422
PCB-152	< 2.40	< 2.92	< 2.77	< 3.59	< 7.58	< 6.57	< 3.92	< 6.16	3.41	5.25
PCB-153	1140	1030	1130	738	528	672	263	584	1030	1130
PCB-154	28.5	27	28.6	21.1	24.5	24.6	10.6	23.8	28.3	50.1
PCB-155	< 2.34	< 2.85	< 2.70	3.31	< 7.39	< 6.40	< 3.82	< 6.01	< 1.70	2.1
PCB-156	66	58	61.7	52.5	24.3	33.2	13.3	34.2	73.1	67.4
PCB-157	12.3	14	15	13.2	6.36	7.34	< 4.14	10.5	20.5	15.4
PCB-158/160	94.1	89.9	95.2	85.1	34.3	50.9	17.7	46.2	106	111
PCB-159	< 2.93	< 2.75	< 2.35	< 2.26	< 3.37	< 2.16	< 2.36	< 2.24	< 1.07	< 1.74
PCB-166	< 3.13	< 2.94	< 2.52	< 2.42	< 3.61	< 2.31	< 2.53	< 2.88	5.15	< 2.66
PCB-167	32.6	29.9	31	24.8	14.7	18.5	7.59	19.4	38.7	32.7
PCB-168	< 2.99	< 2.65	< 2.12	< 2.23	< 3.10	< 1.92	< 2.17	< 1.95	3.74	< 1.68
PCB-169	< 3.58	< 3.58	< 3.19	< 1.62	< 4.58	< 3.01	< 3.05	< 2.67	< 1.31	< 2.27
PCB-170	177	146	172	101	56.2	70.5	24.6	58.5	84.8	108
PCB-171	59.7	56.4	56.8	40	19.3	< 23.8	9.85	21.7	33.4	38.9
PCB-172	32.7	31.3	31.6	22.8	11.3	17.7	7.8	16.7	17.9	18.6
PCB-173	4.2	7.7	< 3.78	5.41	< 5.61	< 4.68	< 3.62	2.85	< 1.35	< 3.60
PCB-174	254	242	232	170	93.1	120	47.2	87.7	154	199
PCB-175	10.8	10.5	10.7	8	5.31	5.55	< 2.57	< 3.17	8.92	7.92
PCB-176	37.1	31.3	< 33.6	20.9	17.5	18	7.76	12.2	23.4	27.1
PCB-177	160	140	133	92.6	58.3	75.4	31.6	70	87.3	111
PCB-178	61.9	51	50.2	37.3	26	34.8	18.9	29.1	38.9	47.7
PCB-179	141	124	135	87.9	68.3	82.5	44.7	64.9	97.2	130
PCB-180	436	373	417	268	144	185	64.3	145	243	283
PCB-181	< 3.60	< 3.03	< 3.09	< 3.42	< 4.59	< 3.83	< 2.96	< 3.92	< 1.11	< 3.04
PCB-182/187	343	281	331	< 196	138	195	86.1	156	250	289
PCB-183	134	113	131	80.7	47.7	56.6	24.8	48.4	79.9	101
PCB-184	< 2.59	< 1.91	< 2.22	2.58	< 2.85	< 2.29	< 2.01	< 2.48	< 0.728	< 2.14
PCB-185	25.2	25.9	20.1	21.2	< 10.4	16.8	7.41	8.14	18.0	22.4
PCB-186	< 2.38	< 1.75	< 2.04	< 2.01	< 2.62	< 2.10	< 1.85	< 2.28	< 0.668	< 1.97
PCB-188	1.73	< 1.42	< 1.95	< 1.93	< 2.51	< 2.01	< 1.77	< 2.18	1.31	< 2.47
PCB-189	< 3.69	3.74	5.44	3.78	< 3.13	3.09	< 2.10	< 1.46	3.50	< 4.06

Appendix B-2.2: SPME Data - Event 2

Ports of Los Angeles and Long Beach
San Pedro and Long Beach, California

Analyte	SPME Samples									
	IB-RW-01-S-B-20150615	IB-RW-01-S-M-20150615	IB-RW-1001-S-M-20150615	LARE-RW-01-S-M-20150615	OB-RW-01-S-B-20150615	OB-RW-01-S-M-20150615	REF-RW-01-S-M-20150615	SP-RW-01-S-M-20150615	FH-RW-01-S-M-20150616	IA-RW-01-S-M-20150615
PCB-190	40.4	32.2	36.8	22.1	12	12.5	5.84	12.8	15.4	23.6
PCB-191	7.02	5.45	7.43	5.34	3.83	3.47	2.75	< 2.99	4.16	< 4.32
PCB-192	< 2.79	< 2.35	< 2.40	< 2.66	< 3.57	< 2.97	< 2.30	< 3.04	< 0.861	< 2.36
PCB-193	< 20.8	19.3	21.4	14.9	8.64	10.8	5.91	11.7	12.1	16.5
PCB-194	44.1	35.6	43.3	28.9	19.2	23.9	10.2	< 17.1	29.6	30.1
PCB-195	18.6	17.2	17.7	12.2	8.49	10.8	< 4.02	< 6.18	11.9	12.8
PCB-196/203	74.6	57.5	75.7	56.1	32.7	< 38.8	15.3	37.4	48.8	54
PCB-197	< 2.13	3.33	4.04	< 2.50	< 5.90	< 4.38	< 4.58	< 3.39	< 2.19	< 2.49
PCB-198	< 2.93	2.87	< 3.26	< 4.91	< 9.13	< 6.78	< 7.09	< 5.25	< 3.39	< 3.85
PCB-199	92.3	72.1	77.8	59.9	45.3	56.2	< 17.9	35.7	59.3	57.6
PCB-200	8.25	6.03	8.04	7.24	< 6.65	6.07	< 5.17	5.67	7.14	< 7.85
PCB-201	14.7	10.6	10.7	11.7	< 6.28	6.37	5.2	7.47	12.0	10.1
PCB-202	29.4	22.3	24.9	21.2	< 18.4	< 16.5	11.3	17.5	29.3	19.3
PCB-204	< 2.31	< 2.09	< 2.29	< 3.45	< 6.41	< 4.76	< 4.98	< 3.68	< 2.38	< 2.70
PCB-205	< 2.57	2.76	< 2.48	< 1.72	< 2.81	< 2.34	< 1.75	< 3.30	< 2.14	1.99
PCB-206	25.3	16.6	24.5	< 15.8	11.5	13	5.3	7.89	20.6	12.4
PCB-207	< 3.26	< 2.72	3.22	2.52	< 3.06	< 2.36	< 1.84	< 2.43	< 2.56	< 1.76
PCB-208	11.8	8.31	12.2	8.3	< 3.78	6.49	2.15	3.84	7.49	4.96
PCB-209	12	11.2	13.1	8.82	< 5.77	< 4.94	< 3.38	< 2.68	4.87	5.29
Total monoCB	4.6	7.08	3.78	6.32	4.63	9.15	2.97	3.15	15.5	5.32
Total diCB	592	525	573	829	464	592	277	408	969	553
Total triCB	2930	2490	2700	7200	1870	2590	979	1750	5470	2850
Total tetraCB	7920	7400	7860	16100	5050	7050	2830	5960	17100	9780
Total pentaCB	8730	8140	8360	9640	4850	6760	2430	5640	15300	11700
Total hexaCB	5670	5140	5540	4320	2580	3470	1320	2980	5490	6080
Total heptaCB	1930	1690	1790	1000	709	908	389	746	1170	1420
Total octaCB	282	230	262	197	106	103	42.1	104	198	186
Total nonaCB	37.1	24.9	40	10.8	11.5	19.5	7.46	11.7	28.1	17.3
DecaCB	12	11.2	13.1	8.82	< 5.77	< 4.94	< 3.38	< 2.68	4.87	5.29
Total PCB	28100	25700	27100	39300	15600	21500	8280	17600	45800	32600
13C-PCB-8 ^[1]	4.76	15.3	21.8	15.5	45.4	42	45	ND	12.1	6.89
13C-PCB-31 ^[1]	120	182 ^[1]	184	412	515	435	454	26.4	195	146
13C-PCB-79 ^[1]	659	715 ^[1]	638	1360	1570	1040	1450	326	819	569
13C-PCB-133 ^[1]	860	790	593	1340	1570	794	1300	625	813	697
13C-PCB-178 ^[1]	755	673	521	1080	1150	573	1010	538	705	656

Notes:

- 1: Detection limits not reported for Performance Reference Compounds (PRCs)
- 2: Total DDTs is the sum of detected DDX congeners only. If all congeners were below detection limits, the highest detection limit is reported.
- 3: Validation qualifiers are not presented in table

Abbreviations:

PCB: Polychlorinated biphenyl
 DDD: Dichlorodiphenyldichloroethane
 DDE: Dichlorodiphenyldichloroethylene
 DDT: Dichlorodiphenyltrichloroethane
 DDMU: 1-chloro-2,2,6w(p-chlorophenyl)ethene
 pg: picograms
 NR: Not Reported
 ND: Not detected above method detection limit
 PCR: Performance Reference Compounds