West Point Flooding Event Dungeness Crab Tissue Report

February 2020

King County

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Acronyms and Units of Measurement

µg/kg................microgram/kilogram
µg/L..................micrograms/liter
BDE...................brominated diphenyl ethers
cm/s..................centimeters per second
CS0...................combined sewer overflow
dw.....................dry weight
EBO...................emergency bypass outfall
EPA....................Environmental Protection Agency
ft.........................feet
g..........................gram
GC/MS..............gas chromatograph/mass spectroscopy
GC/MS-SIM ....gas chromatography/mass spectrometry- selected ion monitoring
hrs.....................hours
in. ....inch
KCEL.................King County Environmental Laboratory
LIMS.................laboratory information management system
LLOQ.................lower limit of quantitation
m........................meter
MG.....................million gallons
MGD..................million gallons per day
MLLW...............mean lower low water
mm....................millimeters

NOAA................National Oceanic and Atmospheric Administration
NPDES..............National Pollutant Discharge Elimination System
PAH...................polycyclic aromatic hydrocarbon
PBDEs ....polybrominated diphenyl ethers
PCBs..................polychlorinated biphenyls
QA/QC………..quality assurance/quality control
SAP....................sampling and analysis plan
SIM ....selected ion monitoring
SUNA ....Submersible Ultraviolet Nitrate Analyzer
WDFW ....Washington Department of Fish and Wildlife
WDOH..............Washington State Department of Health
ww.....................wet weight

EXECUTIVE SUMMARY

What happened at West Point?

The West Point Treatment Plant (West Point) experienced equipment failure in the winter of 2017. The resulting flooding on February 9, 2017, severely damaged the plant's mechanical and electrical systems. To avoid further damage, West Point discharged 244 million gallons of untreated stormwater and sewage through a shallow-water emergency bypass outfall during two separate events on February 9 and 15–16, 2017. The bypasses consisted of approximately 85–90% stormwater and 10–15% wastewater. West Point operated with reduced treatment until secondary treatment processes were restored on April 27, 2017. Thereafter, all effluent discharged from West Point received full secondary treatment and in May 10, 2017, West Point began meeting all National Pollutant Discharge Elimination System permit limits. After the initial overflow event, King County mobilized to evaluate the potential impacts of the emergency discharge and the period of reduced treatment (herein referred to as West Point flooding event) on the marine environment, leading to series of monitoring efforts and reports.

What is this report about?

This report presents the chemistry data for Dungeness crab (*Metacarcinus magister*) tissues collected from two areas in King County marine waters. This document is one of six that collectively evaluate the potential impacts of the West Point flooding event on water quality, subtidal and intertidal sediments, clams, zooplankton, crab, and English sole. Key findings will be synthesized in a final summary report.

The key monitoring questions motivating this effort were:

1. Did effluent discharged during the West Point flooding event lead to a substantive increase in contaminant concentrations in crab muscle and hepatopancreas tissues?
2. Would the current seafood consumption advisories for crab issued by the Washington State Department of Health likely change following the West Point flooding event?

Where were crabs collected and why?

Dungeness crab were collected in 2017 from two areas:

- Shilshole Bay Marina (Shilshole), which was chosen to represent the area north of the West Point outfall.
- North Elliott Bay, which was chosen to represent the area near the Elliott West Wet Weather Treatment Station (Elliott West) discharge outfall; Elliott West was operating at higher than normal volumes while West Point was being repaired.

Both areas were also selected because crab tissue data were available before the West Point flooding event that could be used to help interpret the 2017 tissue data. Crab tissues from these two areas are monitored as part of the County's Marine Tissue Monitoring Program that began in 2014. Therefore, the 2017 observations could be compared with crab tissues collected from the two areas before and after the West Point flooding event.

- Before: crab were collected from Elliott Bay area in 2012 and 2014, and from the Shilshole area in 2014.
- After: crab were collected from the Elliott Bay and Shilshole areas in 2018.

Were crab tissue concentrations impacted by the event?

Metals, polychlorinated biphenyls (PCBs), and polybrominated diphenyl ethers (PBDEs) were detected in muscle and hepatopancreas tissues of crab collected in 2017; polycyclic aromatic hydrocarbons were not detected. Metal concentrations in crab from North Elliott Bay in 2017 were not higher than levels detected in 2012 and 2014 tissue data. At the Shilshole area, concentrations in 2017 were higher than they were in 2014 for arsenic, chromium, copper, and zinc in muscle tissue and arsenic, chromium, lead, nickel and zinc in hepatopancreas tissues. Analysis of three years of tissue data (2014, 2017, and 2018) from Shilshole suggests the West Point flooding event may have influenced concentrations of chromium and possibly copper in crab muscle tissues, and chromium, lead, and nickel in crab hepatopancreas tissues for a short-term period. PCB levels in crab tissue collected from both sampling areas in 2017 were not substantially higher than the levels observed prior to the West Point flooding event. PBDE data analysis was limited due to no comparable historic data; however, PBDE concentrations were higher in 2018 than in 2017, suggesting the West Point flooding event did not lead to increases in crab tissues. Overall, the lack of long-term contaminant crab tissue datasets limit the ability to definitively attribute changes in contaminant tissue concentrations to an event like the West Point flooding event.

Would Washington State Department of Health crab consumption advisories for people likely have changed because of the event?

No, the crab tissue data collected after the West Point flooding event would not have resulted in a change to the existing seafood consumption advisory for crab anglers. This is based on a comparison of the data to seafood advisory screening levels established by the Washington State Department of Health.

What were the overall findings?

During the period of reduced treatment at West Point, concentrations of some metals and organic chemicals measured in West Point effluent increased relative to levels typically observed under full secondary treatment. Six of the metals observed at higher concentrations in effluent during the period of reduced treatment were also elevated in crab collected from the Shilshole area in May 2017 compared to historic tissue data. The data analysis suggested four of these metals may have been influenced by the West Point flooding event. As was observed for effluent concentrations, the increases in crab tissues were temporary. While the increase in crab tissue metal concentrations may have been influenced by West Point discharges, overall data variability and the limited historic data make it difficult to conclude this definitively. In addition, co-occurring factors such as heavier than normal rainfall between February and April 2017 likely increased stormwater pollutant inputs to areas of Puget Sound during this period, which may have contributed to variability in contaminant concentrations in crab tissues.

1.0 INTRODUCTION

This report presents the chemistry results for Dungeness crab (*Metacarcinus magister*) tissue data collected as part of the West Point Treatment Plant (West Point) flooding event monitoring response. The objective of this monitoring effort was to evaluate if effluent discharges during the flooding event resulted in substantive increases in contaminant concentrations in Dungeness crab tissue following these events when compared to historical data. Crabs were collected from two areas (Shilshole Bay and North Elliott Bay) in 2017 to assess if there were substantive increases in tissue concentrations of metals and organic compounds when compared to crab tissue data collected by the Washington Department of Fish and Wildlife (WDFW) in 2012 (Carey et al., 2014) and King County in 2014 (King County, 2016a) and 2018.

The monitoring effort was designed to follow past sampling approaches and locations that may have been influenced by West Point discharges. Historical crab tissue data were not available for the area in the immediate vicinity of West Point. Therefore, the Shilshole Bay area was selected by King County because of (1) the availability of crab tissue data collected in 2014 and (2) reasonably close proximity to West Point compared to other locations King County has previously collected crab for contaminant tissue analysis. North Elliott Bay area was sampled for both opportunistic reasons by WDFW and because crab tissue data collected in 2012 and 2014 existed in this area. The Shilshole area is located north of West Point and the North Elliott Bay area is south of West Point as well as near the Elliott West Wet Weather Treatment Station (Elliott West) outfall. Elliott West was operating at higher than normal volumes while West Point was being repaired. Additional information on the selection of sampling sites is provided in Section 3.1. Overall, it was recognized the lack of available long-term contaminant crab tissue datasets for these areas limit the ability to definitively attribute changes in contaminant tissue concentrations to an event like West Point flooding event because of environmental variability.

Section 2 presents a summary of the flooding event and associated monitoring efforts. The remainder of the report summarizes the crab sampling and analytical methods (Section 3), data analysis methods (Section 4) and discussion of results (Section 5) followed by summary of overall findings (Section 6). Appendices with supporting information are also included. This report is one of several documents providing results for the various monitoring activities conducted following the West Point flooding event.

2.0 PROJECT BACKGROUND

This section summarizes the West Point flooding event and associated monitoring response conducted by King County. A more detailed description of the monitoring response and water quality in Puget Sound's Central Basin waters is provided in the *West Point Flooding Event Water Quality Summary Report* (King County, 2018a).

2.1 West Point Treatment Plant Characteristics

West Point is located near the west side of Magnolia Bluff, adjacent to Seattle's Discovery Park (Figure 1). This regional treatment plant serves a combined system that receives both wastewater and stormwater. The plant began providing primary wastewater treatment in 1966 and was upgraded to provide secondary treatment in late 1995. The average annual secondary treatment volume of the plant is 95 million gallons per day (MGD), with an average wet-weather flow of 133 MGD and a peak wet-weather capacity of 440 MGD. Secondary treatment at West Point consists of screening, grit removal, primary sedimentation, air-activated sludge, secondary sedimentation, disinfection by chlorination, and anaerobic digestion of solids. Secondary treated effluent is dechlorinated prior to discharge.

Treated effluent from West Point is discharged to the Central Basin. Effluent is discharged through a marine outfall point approximately 3,600 feet (ft) (914 meters [m]) offshore to the west of West Point at a bottom depth of -240 ft (-73 m) referenced to mean lower low water (MLLW). Effluent exits the outfall through a multi-port diffuser that spans 610 ft (186 m) pipe. The diffuser produces rapid mixing of effluent with seawater. In addition to the main outfall, the plant has an emergency bypass outfall (EB0) located about 525 ft (160 m) offshore on the north side of West Point (Figure 1). The discharge point is at the bottom at an approximate water depth of -40 ft (-12 m) MLLW.

2.2 West Point Flooding Event

Early in the morning of February 9, 2017, an emergency bypass event occurred due to equipment failure and subsequent flooding of West Point during peak inflows. This bypass lasted approximately 18 hours (hrs) and resulted in the release of 186 MG of untreated stormwater and wastewater into Puget Sound through the EBO. A smaller bypass event occurred during February 15–16 resulting in 58 MG of untreated discharge passing through the EBO. In total, about 244 MG of untreated flows were discharged via the EBO.

To put the volume of untreated flow bypassed in context, the discharge of 244 MG from the EBO was higher than historical February untreated combined sewer overflow (CSO) discharges. Over the previous 10-year period (2007-2016) the average February CSO discharge from all of the CSOs in the King County system was 52 MG. During this 10-year period, February CSO discharge volumes have ranged from none during several years to a maximum of 214 MG (in 2014). The total volume of untreated discharge from King County CSOs in February 2017 was 749 MG as a result of record rainfall and the West Point

incident. The total EBO bypass flow of 244 MG was smaller than the total annual untreated CSO discharge of 1.7 billion gallons in 2017, as well as the average annual CSO volume of 918 MG for the last ten years.

Following the February 9 flooding event, West Point operated using reduced treatment while efforts to restore secondary treatment processes were underway. This included some solids settling, screening, disinfection, and dechlorination. The event severely damaged mechanical and electrical systems necessary to provide heat to the secondary system biological treatment, which essentially crippled West Point's ability to handle solids. During the restoration process, inflows to West Point during storm events were carefully managed to protect recovery of the biological treatment processes and prevent further damage to the plant. This resulted in the need to rely on three King County wet weather treatment stations (Alki, Carkeek, and Elliott West) to reduce flows conveyed to West Point. To a lesser degree, additional flows during storm events were routed to King County's Brightwater and the City of Edmonds wastewater treatment plants. Additionally, untreated overflows from the combined system were exacerbated due to reduced operations at West Point, particularly during the emergency bypass events, as well as during storm events that required management of peak inflows to West Point. It is not possible to estimate the magnitude of additional CSO discharges that resulted while West Point repairs were underway relative to typical discharges that would have occurred during heavy rainfall events had the plant been fully operational.

Restoration of West Point's primary and secondary treatment processes was completed by the end of April 2017, and after April 27 all wastewater received full secondary treatment. However, recovery of the solids handling processes was still ongoing, which resulted in discharge of higher levels of suspended solids than normal. This affected West Point's ability to consistently meet its National Pollutant Discharge Elimination System (NPDES) permit limits for total suspended solids, carbonaceous biochemical oxygen demand, and residual chlorine through May 9. In addition, from late March through mid-June, recovery of the solids handling processes was partially managed by conveyance of a portion of the solids produced at West Point to South Plant for additional treatment. The additional solids treatment at South Plant did not affect the ability of the plant to meet its NPDES permit requirements, but did result in an increase (approximately 10%) in effluent ammonia levels at South Plant compared to typical concentration. West Point began meeting all NPDES permit limits on May 10, 2017. The current NPDES permit can be accessed at http://www.kingcounty.gov/depts/dnrp/wtd/system/npdes.aspx.

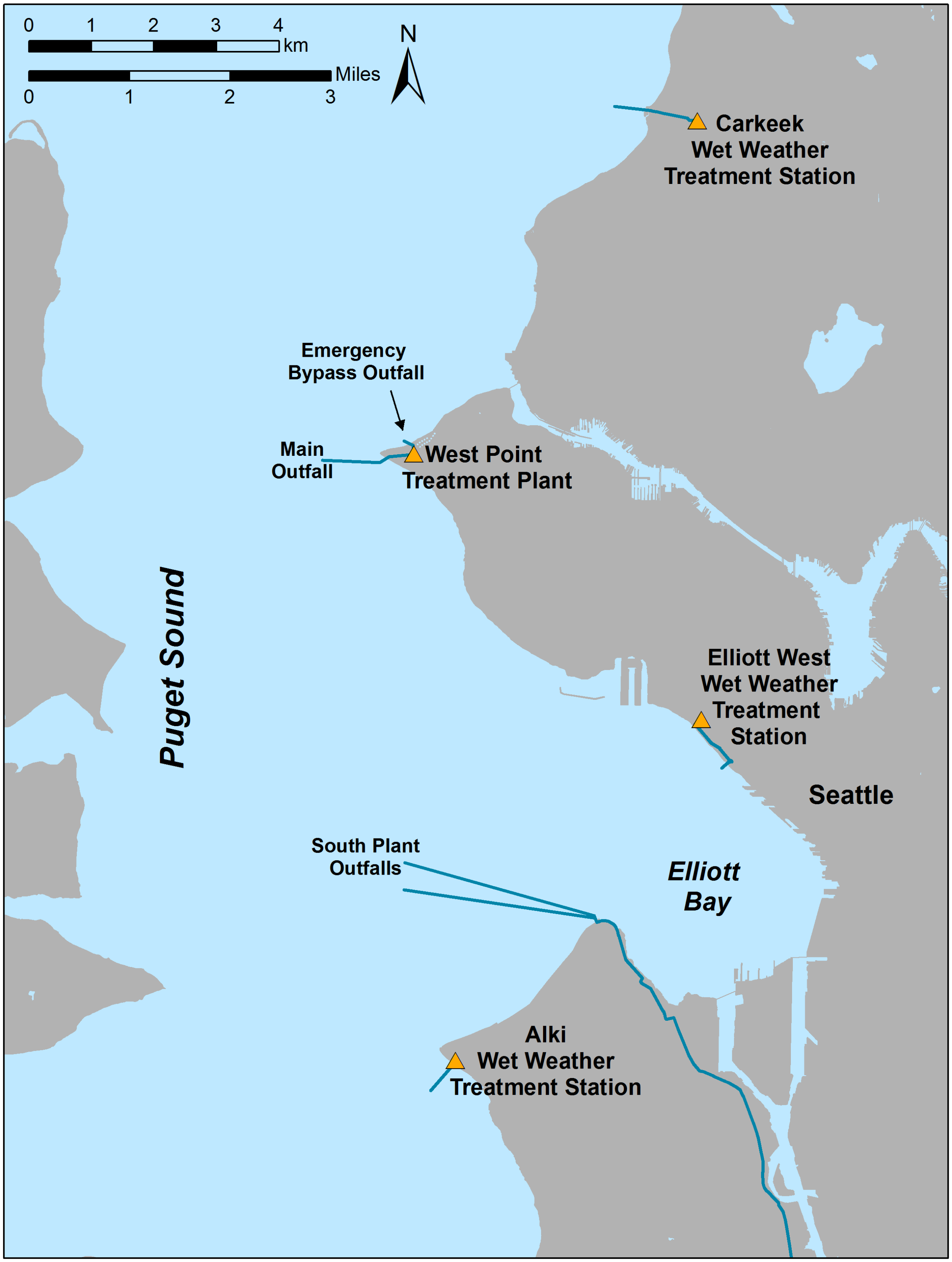

Figure 1. Location of West Point Wastewater Treatment Plant, nearby treatment stations and associated outfalls.

2.3 Response Monitoring

Less than eight hours after the emergency bypass began at West Point on February 9, King County posted warning signs and closed nearby beaches as a precautionary measure. Fecal indicator bacteria samples were collected from four beaches in the vicinity of West Point for 13 consecutive days, except February 14 at Carkeek Park and Golden Gardens. Sampling ended on February 21 when bacteria levels were safe for water contact and beaches reopened.

Following an initial sampling response to monitor fecal indicator bacteria at nearby beaches, King County developed and implemented a monitoring plan to conduct additional sampling. Sampling beyond existing effluent NPDES permit requirements was included as well as receiving waters monitoring in addition to the long-term Marine Water Quality Monitoring Program. The objectives of these sampling efforts were to:

- assess West Point effluent quality over time as repairs were made to the plant,
- evaluate any observed changes in West Point effluent quality in context of historical conditions,
- assess potential short-term changes to Puget Sound receiving waters following untreated discharges and during the period of reduced treatment,
- compare receiving water results to applicable Washington State Water Quality Standards for Marine Surface Waters and historical conditions, and
- assess potential for any effects on biological and sediment quality.

The first four objectives above were addressed in the West Point Flooding Event Water Quality Summary Report (King County, 2018a).

To address the last objective, subtidal and intertidal sediments as well as butter clam, Dungeness crab, zooplankton, and English sole tissues were collected for analysis of chemical constituents, and benthic infauna abundance and community structure were assessed. When finalized the results from these monitoring efforts will be presented in separate reports, and presented in context of each other, as well as water quality data in a final West Point flooding event summary report.

2.3.1 Effluent Monitoring

King County conducts routine effluent monitoring as required by the NPDES permit for each wastewater treatment facility. Samples analyzed for priority pollutant metals and organic chemicals are typically collected twice per year, once during the wet season and once during the dry season. However, 12 additional effluent samples were collected from February 9 to June 30, 2017, for the analysis of metals, while 7 samples were analyzed for organic chemicals. Acute and chronic toxicity tests were also conducted in March and April while the plant was being restored. Results from these sampling efforts can be found in *West Point Flooding Event Water Quality Summary Report* (King County, 2018a) and are summarized in Section 2.4.

2.3.2 Puget Sound Central Basin Monitoring

King County collected and analyzed surface waters, sediments, and tissues from four types of marine organisms as part of the response monitoring to the West Point flooding event. A summary of the types of monitoring conducted is provided below and more detail is provided in *West Point Flooding Event Water Quality Summary Report* (King County, 2018a).

2.3.2.1 Surface Water

During the West Point restoration period, water quality monitoring of Puget Sound (e.g., bacteria, physical parameters, and nutrients) was expanded beyond the existing routine monthly/bimonthly monitoring to assess potential changes in water quality. The routine long-term monitoring program helps provide an understanding of water quality within the Puget Sound Central Basin (see 2017 annual work plan [King County, 2016b]). Additional monitoring during the restoration period included:

- increased sampling frequency from bimonthly to weekly at a subset of four offshore long-term monitoring stations,
- the addition of a new (fifth) offshore monitoring station sampled weekly near the EBO,
- increased sampling and analysis frequency for bacteria from monthly to weekly at a subset of six beach stations,
- expanded nitrate monitoring in the water column at all offshore stations using a Submersible Ultraviolet Nitrate Analyzer (SUNA), and
- the measurement of metal concentrations in the water column at four stations.

2.3.2.2 Sediment

King County also collected and analyzed marine sediments and benthic organisms near West Point's main outfall to identify potential adverse effects to sediment-dwelling organisms. These sediment monitoring efforts are detailed in the associated Sampling and Analysis Plans (SAPs) (King County, 2017b, c, e). A remotely operated vehicle[1] inspection of subtidal sediments near the EBO was also conducted shortly after the second release event to look for any indication of deposition from the release. Since no evidence was found, the County modeled the outfall discharges to determine the potential for the release to create any sediment quality concerns. Results of the intertidal and subtidal sediment monitoring efforts are presented in separate data reports and will be finalized along with other monitoring efforts in a final West Point flooding event summary report.

2.3.2.3 Tissue

King County collected marine organism tissues in the Central Basin for chemical analysis to evaluate if discharges during the incident were associated with an increase in tissue

[1] Remotely operated vehicle is unoccupied, highly maneuverable underwater vehicle operated by someone at the water surface.

contaminant levels. These sampling efforts include collection of butter clams, Dungeness crab (described in this report), zooplankton, and English sole. The sampling efforts are detailed in project SAPs (King County, 2017a,b,d). The results of the other tissue monitoring efforts are presented in separate data reports and will be presented in context of each other, as well as the water quality data in a final West Point flooding event summary report.

2.4 Summary of Water Quality Results

The results of effluent and receiving water monitoring during the first half of 2017 were presented as part of the *West Point Flooding Event Water Quality Summary Report* (King County, 2018a). The February 9 flooding of West Point resulted in changes to effluent characteristics from February 9 through May 9. The largest impact observed was an increase in bacteria levels at Seattle area beaches following the two untreated emergency discharge events in February. No other substantial water quality impacts were observed near the West Point outfall.

Increased loadings of effluent metals to Puget Sound during the period of reduced treatment did not appear to measurably affect water column concentrations. Given these monitoring results and observations, effluent discharged during the period of reduced treatment did not result in observable exceedances in marine water quality standards in receiving waters, which are intended to be protective of aquatic life.

2.5 Tidal Currents at the West Point Outfall

Currents near the West Point outfall is one factor that influence how effluent is transported within, and out of, Puget Sound. Understanding tidal currents at West Point outfall can help to explain if crab sampled at Shilshole could be exposed to effluent from West Point. Amplitudes of tidal currents in the Central Basin are about 50 centimeters per second (cm/s) on average. Typical tidal dispersion of the West Point effluent from the main outfall is depicted in Figure 2. Estuarine circulation is important for transporting water masses and is typically up to about 10 cm/s, but can be higher during storms and bottom saltwater intrusion from Admiralty Inlet (King County, 2009). Mixing occurs near the outfall due to a combination of density differences, tidal currents, and the momentum of the discharge through diffusers. Currents may affect physical properties of sediment around the outfall, as well as effluent transport.

Currents were previously assessed in the vicinity of the West Point outfall for a five-week period beginning in February 2003. Current meters were deployed at multiple depths and locations were chosen to measure both nearshore and deep water currents that may affect effluent transport. Results showed that tidal currents along the parallel transect aligned with the outfall flowed predominantly in the southwest/northeast directions, corresponding to semi-diurnal tides (Figure 2). In addition, a clockwise eddy can form to the north of West Point during ebb tides, recirculating some water masses (Lincoln, 1976; King County, 2005). Tidal currents at an offshore station west of the outfall flowed in a more north/south direction. Currents at depths of 100-m and greater had a wider distribution of direction and

aligned more towards the southwest/northeast than the currents at shallower depths. The 90th percentile current speeds ranged between 30 and 50 cm/s, including at depths greater than 100-m. Current direction is influenced by the topography near West Point as the shoreline is approached. A detailed description of the methods and results are provided in West Point Treatment Plant Marine Outfall Current Meter Analysis (King County, 2005).

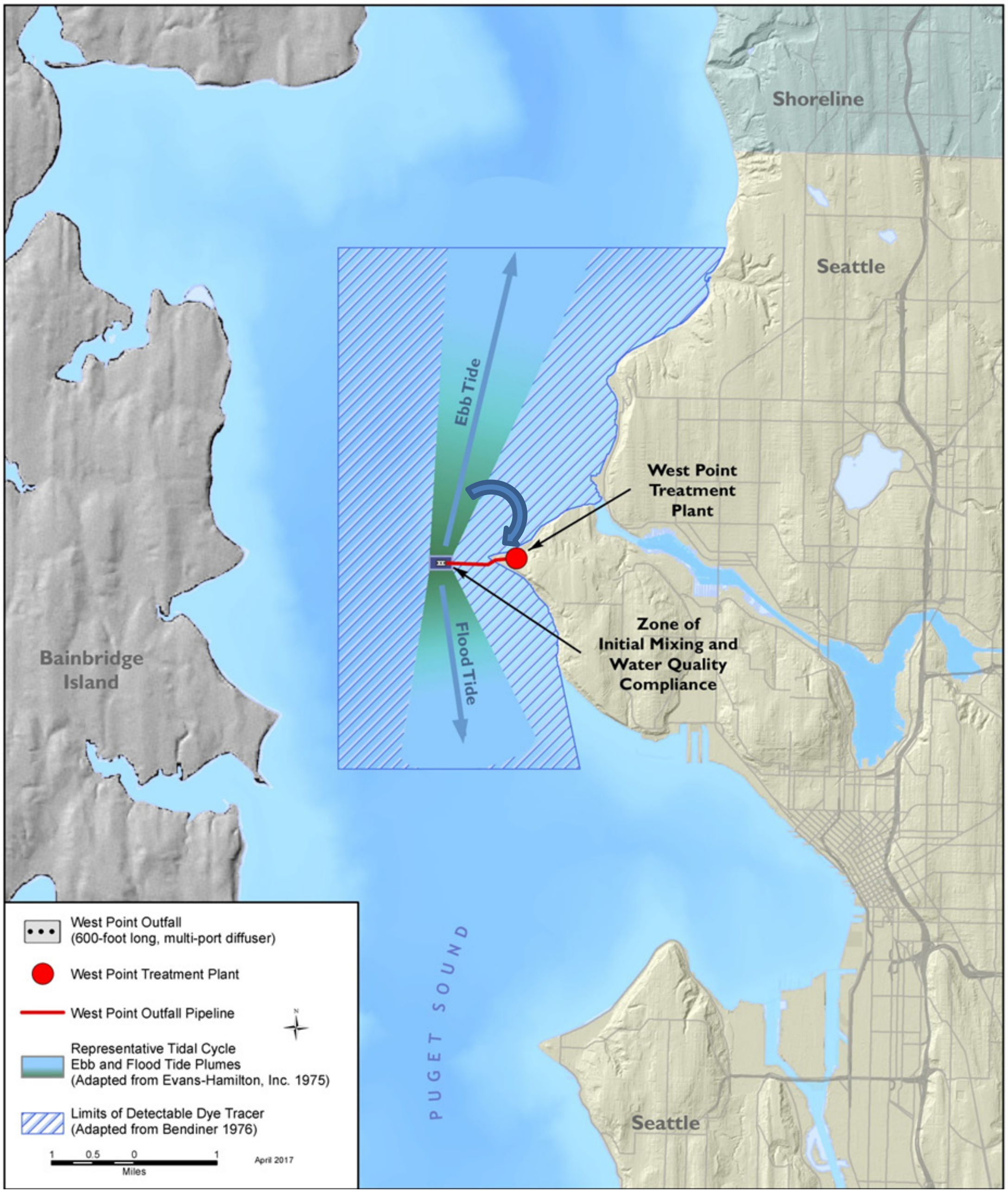

Figure 2. Typical winter and spring dispersion of the West Point treatment plant effluent over a tidal cycle. Blue box representsextent of the detectable dye tracer released from the main outfall in prior tracing studies (Bendliner, 1976). A clockwise eddy forming to the north of West Point also has been observed in current data during ebb tides (Lincoln, 1976; King County, 2005).

3.0 SAMPLING AND ANALYTICAL METHODS

This section presents information on crab sampling methods, sample processing, and analytical laboratory methods. More detailed information describing the sampling and analytical methods can be found in the SAP (King County, 2017a).

3.1 Sampling Locations

Crabs were collected from four sampling locations. Two locations were north of West Point in Shilshole Bay and two locations were south of West Point in Elliott Bay (Table 1; Figure 3). Sampling in the immediate vicinity of the West Point outfall was attempted by WDFW in 2017 while trawling for English sole, but no Dungeness crabs were collected. The Shilshole Bay sampling locations were selected based on their potential to be impacted by the West Point outfall and availability of historical contaminant data for crab. These two sampling locations north of West Point are along the western shoreline of the Ballard neighborhood at Shilshole Bay Marina: Shilshole Bay Marina North and South, as detail in the SAP. These two locations are referred to as the Shilshole area in this report. The two sampling locations south of West Point in Elliott Bay were Smith Cove and Myrtle Edwards Park. Crab were collected from the two Elliott Bay locations in collaboration with WDFW; locations were selected by WDFW based on their proximity to the Elliott West outfall, as well as the availability of historical crab data. Of these two locations, Myrtle Edwards Park is closest to the Elliott West outfall. These two sampling locations are referred to as North Elliott Bay in this report.

Table 1. Sampling locations, locator ID names and general coordinates for each sampling area.

Sampling Area	Sampling Location	Locator ID	General Location Coordinates*	
			X	Y
Shilshole	Shilshole North	CB-SHMarina-N	1253476	254630
	Shilshole South	CB-SHMarina-S	1251797	250856
North Elliott Bay	Smith Cove	EB-SMITHCOVE	1259823	232700
	Myrtle Edwards	MYRTLEED_TRAWL	1259886	230473

* Coordinates represent approximate sampling locations. See Appendix A for specific pot deployment coordinates. Coordinates are in State Plane North NAD83 US Survey Feet. Coordinates for Myrtle Edwards represent the midpoint of three trawls used to collect crab at this location (see Section 3.2).

3.2 Sample Collection

Crab were collected from the Shilshole area in May and September 2017 and from North Elliott Bay area in May 2017. Collection of crab at the two Elliott Bay locations was not described in the SAP because WDFW planned to collect crab from both locations under their program work. However, at the request of WDFW, the King County Environmental Laboratory (KCEL) collected crab from the Smith Cove location by the same methods used

at the Shilshole area locations. Samples were only collected in May 2017 because WDFW had only planned one sampling event at Smith Cove. WDFW collected crab opportunistically at the Myrtle Edwards location in May 2017 as part of their Puget Sound Ecosystem Monitoring Program's routine biennial monitoring.

Figure 3. West Point flooding event crab sampling locations.

The KCEL Field Sciences Unit and WDFW staff targeted hard-shell, male Dungeness crab at all sampling locations. The target size was a carapace width greater than 6 in. (152.4 mm), which is a quarter inch less than legal size (Figure 4). Crab carapace width measurements were made in the field using a crab gauge to ensure the appropriate size was being retained.

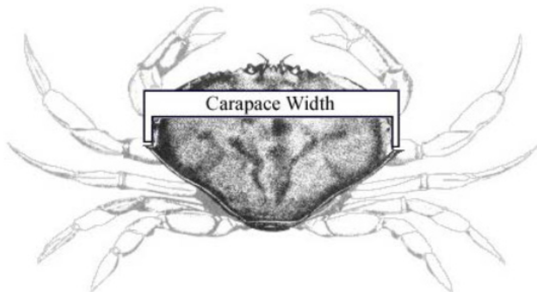

Figure 4. Location of crab carapace width measurements (WDFW 2012).

Dungeness crabs were collected at Shilshole North, Shilshole South, and Smith Cove using standard recreational crab pots. Crab pots were baited with geoduck. Two crab pots were deployed at each location for an overnight soak, and subsequent pot soaks ranged from approximately 0.5–7.5 hrs before retrieval.

Crab were collected from the Myrtle Edwards with a 400-mm mesh Eastern trawl. Male Dungeness crab of target size were retained when collected in the trawl. A more detailed description of the Standard Operating Procedure for WDFW's trawling can be found in Quinnell and Niewolny (2013).

Following collection, crab retained for analysis were placed in sealed plastic bags. To optimize protection of the natural shell and membrane, crab with damaged shells were not retained. All bagged crab were placed on ice in coolers for no more than 12 hrs after collection. Crab were stored at -18 °C ± 2 at the KCEL until processing and homogenization[2]. A total of 43 crabs were collected in May 2017 and 30 in September 2017 (Table 2). Size and weight measurements of retained crabs were conducted at the KCEL; the mean size of crab collected in May and September were comparable (Table 2; see Appendix A for details).

[2] Based on discussions between King County and WDFW following sample collection efforts in 2017, it was decided King County would analyze all the crab tissues and report the data in one data report.

Table 2. Number of crab collected and retained in 2017 for analysis and crab size and mass by location and month sampled.

Sampling Location	Month Sampled	Number Collected	Mean Carapace Width (mm)	Mean Mass (g)
Shilshole North	May	15	170.4	802.88
	September	15	169.6	806.62
Shilshole South	May	15	170.9	793.99
	September	15	170.2	786.42
Smith Cove	May	6	173.8	824.90
Myrtle Edwards	May	7	163.0	672.71[a]
Mean	**May**	n/a	169.8	781.66[b]
Mean	**September**	n/a	169.9	796.87

[a] Based on frozen mass as received from WDFW
[b] Includes frozen mass from crab collected at Myrtle Edwards
n/a – not applicable

3.3 Sample Processing and Homogenization

Following the completion of each sampling event, crab were processed for homogenization and compositing. Once defrosted, each individual crab was dissected on a decontaminated high-density polyethylene cutting board covered in clean aluminum foil. Following collection of hepatopancreas tissue, muscle tissue for the composite was removed from the body, legs, and claws. Individual crab muscle and hepatopancreas tissues were collected with pre-cleaned stainless tweezers and a spatula, and then placed directly into separate pre-cleaned glass jars with a Teflon® septum. All muscle and hepatopancreas tissues sample jars were stored frozen (-18°C ± 2) for later homogenization.

Hepatopancreas samples were homogenized by hand using pre-cleaned high-density polyethylene spatulas. Muscle tissue samples were homogenized using a 30 × 150 mm slotted 316 stainless steel tissue cutter mounted to a PRO250 homogenizing motor (PRO Scientific Inc.).

Immediately following homogenization of individual samples, an aliquot of tissue was weighed out (nearest 0.1 gram [g]) and placed into the composite sample jar. This process was repeated for all individual tissue samples that comprised each composite sample. After homogenization and combining individual tissue aliquots into the composite, the whole composite sample was then homogenized and returned to frozen storage until analysis. Homogenization equipment was decontaminated between composite samples to prevent cross contamination.

To the extent possible, an equal mass of muscle or hepatopancreas tissue was removed from each individual crab homogenate to form composite samples. This was done to ensure that an individual crab did not bias results of the composite sample. On average, 132 g of muscle tissue from each crab was incorporated into the composite samples. The mass of hepatopancreas tissue per crab varied. To achieve sufficient composite sample mass for all

analyses, equal representation of individual crab within composite hepatopancreas samples was infrequently achieved. On average, 24.1 g of hepatopancreas tissue per crab was incorporated into each composite. Appendix A presents more detailed information on crab muscle and hepatopancreas composites samples. Table 3 presents the number of crab per muscle and hepatopancreas composite sample.

Table 3. Composite sample scheme for muscle and hepatopancreas tissue collected in 2017.

Month Sampled	Sampling Location	Crabs per Composite	No. of Composite Samples
May	***Muscle***		
	Shilshole North	3	5
	Shilshole South	3	5
	Smith Cove	3	2
	Myrtle Edwards	3	2
		Total	**14**
	Hepatopancreas		
	Shilshole North	5	3
	Shilshole South	5	3
	Smith Cove	5	1
	Myrtle Edwards	5	1
		Total	**8**
September	***Muscle***		
	Shilshole North	3	5
	Shilshole South	3[a]	5
		Total	**10**
	Hepatopancreas		
	Shilshole North	5	3
	Shilshole South	5[b]	3
		Total	**6**

[a] One muscle composite sample (L68827-6) included two crabs rather than three.
[b] One hepatopancreas composite sample (L68828-6) included four crabs rather than five.

3.4 Laboratory Analysis Methods

All crab samples were analyzed for conventional parameters, metals, mercury, PCB homologs, PBDEs, PAHs, and stable isotopes (Table 4). All analyses were conducted by the KCEL except stable isotopes, which were analyzed by the National Oceanic and Atmospheric Administration (NOAA) Northwest Fisheries Science Center. Table 5 summarizes the laboratory methods and KCEL Standard Operating Procedure for each analyte group. With the exception of stable isotopes, more detail describing analytical methods is presented in the SAP (King County, 2017a). Stable isotopes were analyzed using a different method than described in the SAP; more information on the method is included below.

Table 4. Summary of compounds in each analyte group.

Analyte Groups	Compounds
Conventional Parameters	Lipids, total solids
Metals	Arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc
Mercury	Mercury
PCB Homologs	Monochlorobiphenyls, dichlorobiphenyls, trichlorobiphenyls, tetrachlorobiphenyls, pentachlorobiphenyls, hexachlorobiphenyls, heptachlorobiphenyls, octachlorobiphenyls, nonachlorobiphenyls
PBDEs	TriBDE-17, triBDE-28/-33, tetraBDE-47, tetraBDE-66, tetraBDE-71, pentaBDE-85, pentaBDE-99, pentaBDE-100, hexaBDE-138, hexaBDE-153, hexaBDE-154, heptaBDE-183, heptaBDE-190, decaBDE-209
PAHs	2-methylnaphthalene, acenaphtene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b,j.k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene
Stable Isotopes	Carbon-13, carbon-12, nitrogen-15, nitrogen-14

Table 5. Summary of laboratory analysis methods.

Analytes	EPA or Standard Method	KCEL Standard Operating Procedure
Lipids	Gravimetric	740v2
Total Solids	SM2540-G	307
Metals (except mercury)	PSEP1997*SW846 6020B	623
Mercury	PSEP 1997*SW846 7471B	604
PCB Homologs	SW846 3540C * 680 SIM/1668c*	705/782
PBDEs	SW846 3540B and 3540C	705/781
PAHs	SW846 3550B * 8270D SIM	705/718/731v6
Stable isotopes	modified Bolton et al. (2017)	N/A

N/A = not applicable
SIM = selective ion monitoring
* PCB homolog method generally follows guidelines of EPA methods 680 and 1668c.

Stable isotope analysis for nitrogen and carbon was based on a modified Bolton et al. (2017) method. The method uses a Costech elemental analyzer attached to a Thermo Delta V isotope ratio mass spectrometer. Ratios of these isotopes (i.e., ^{15}N:^{14}N and ^{13}C:^{12}C) are expressed as measured deviations from the corresponding standard reference, atmospheric nitrogen, and Pee Dee Belemite limestone, respectively. Stable isotope ratios are expressed in δ notation as per mil (‰) by the following expression:

$\delta Z = [(Rsample/Rstandard) - 1$

where:

- Z is ^{15}N or ^{13}C,
- Rsample is the ratio $^{15}N/^{14}N$ or $^{13}C/^{12}C$ for the tissue sample, and
- Rstandard is the ratio $^{15}N/^{14}N$ or $^{13}C/^{12}C$ of the corresponding standard (atmospheric air and PeeDee Belemnite limestone, respectively).

Quality assurance measures for stable isotopes included analysis of both continuing calibration standards and a mussel tissue, and a standard reference material 1974c (National Institute of Standards and Technology, Gaithersburg, Maryland) with each sample batch.

3.5 SAP Deviations

The follow SAP deviations occurred:

- Geoduck were used to bait crab pots but was not listed as a potential bait in the SAP (King County, 2017a). This change is not expected to affect the outcome of the sampling or analytical results.
- The SAP calls for using approximately equal mass of hepatopancreas tissue per crab for composite samples. However, this was not feasible due to the need for sufficient composite tissue mass for analysis. The hepatopancreas mass in some individual crab was lower than others; therefore, equal mass contributions would have resulted in composite samples with insufficient mass for all analyses. Four hepatopancreas composite samples contained mass from individual crabs that differed by a factor of two to five. This unequal contribution of tissue can result in an unknown bias in the results if contamination levels between crabs is markedly different.
- One muscle and one hepatopancreas composite sample contained one less crab than the target number included in the other composite samples (Table 3). This occurred because a female crab was misidentified as male during collection. This female crab was not included in any composite samples. The unequal number of crabs per composite can result in unknown bias when comparing composite sample results.
- The method used for stable isotope analysis differed from that specified in the SAP. Crab muscle was analyzed at NOAA's Northwest Fisheries Science Center rather than the University of Washington's IsoLab using a different analytical method. This is the same laboratory and method WDFW uses and thus this allowed data from this effort to be comparable to WDFW's historical data. Use of this laboratory is not expected to affect data quality.

3.6 Data Quality Review

The data quality of the 2017 tissue data are summarized here. Appendix B present sample-specific results for this data set including lab qualifiers and Appendix C present the laboratory quality assurance/quality control (QA/QC) reports.

Analytical results for total solids, lipids, stable isotopes. PAHs and PCB homologs met all acceptable lab QA/QC limits. Analytical results for metals (including mercury) met all acceptable lab QA/QC limits, except as summarized here. Arsenic, copper, and zinc were detected in the method blanks; the data were not qualified because all reported sample results were greater than 10 times the observed method blank result. Results for arsenic, chromium, copper, nickel, selenium, and zinc were J flagged as estimated values because the laboratory control sample and its duplicate were above the precision control limits. The standard reference material and its duplicate were below control limits for chromium; however, no adjustments were made to the data because all other QC samples for accuracy were within laboratory limits. Mercury results for all samples were H flagged, indicating that they did not meet the holding time of 28 days. It is unlikely mercury results were biased because all samples were held frozen until analysis.

Analytical results for PBDEs met all acceptable lab QA/QC objectives, except for the following issues noted for method blanks, spike blanks, and matrix spike/matrix spike duplicate (MS/MSD) recoveries. The method blank associated with 14 samples had a detectable level of tetraBDE-47 and method blanks associated with 22 samples had a detectable level of pentaBDE-99; thus, these samples could have a high bias. Sample concentrations within five times the method blank concentration were B flagged, indicating they could be affected by lab contamination. Recovery was below laboratory limits for the decaBDE-209 spike blank and MS/MSD. Therefore, results for 14 samples were flagged with a "JG" and may be biased low.

4.0 DATA ANALYSIS METHODS

Contaminant data for crab collected in 2017 (i.e., those described in Section 3) were compared to data sets collected in years prior to and following the West Point flooding event. This data comparison was conducted to assess whether there was a substantive increase in contaminant concentrations in crab tissues collected in 2017 that may be attributed to the flooding event. This section describes the crab tissue datasets used in the data analyses, as well as the methods used to compare them.

4.1 Description of Datasets

Crab tissue data collected in May and September 2017 from the Shilshole area and in May 2017 from North Elliott Bay area, represent the primary datasets used in the data analysis. These data are presented in Appendix B.

The 2017 data set was compared with crab data collected in 2012, 2014, and 2018. WDFW collected Dungeness crab from throughout Puget Sound in 2012 to evaluate regional contaminant trends (Carey et al., 2014), including two sampling locations (Pier 91 and 89) in proximity to the North Elliott Bay area sampled for this effort (Smith Cove and Myrtle Edwards). As part of their Tissue Monitoring Program, King County collected Dungeness crab from the Shilshole area (North and South Shilshole Bay Marina locations) and at Pier 86, in proximity to the 2017 North Elliott Bay sampling locations in October 2014 (King County, 2016a) and in May 2018 (King County, 2018b). Full reporting of the 2018 data will be provided in a future data report (unpublished data at time of this report). Figure 5 shows all crab sampling locations by sampling event (i.e., same month and year).

Data from locations within each sampling area (Shilshole and North Elliott Bay) were combined for each sampling event to increase sample size for data analysis of each area (Table 6). Discussions with WFDW crab biologists suggested the distance between sampling locations within each area are within the Dungeness crab foraging range and that crab from these locations would be representative of the same population. Therefore, data from Shilshole Bay Marina north and south locations were combined and data from Smith Cove, Myrtle Edwards, Pier 86 Pier, Pier 89, and Pier 91 locations were combined (Table 6).

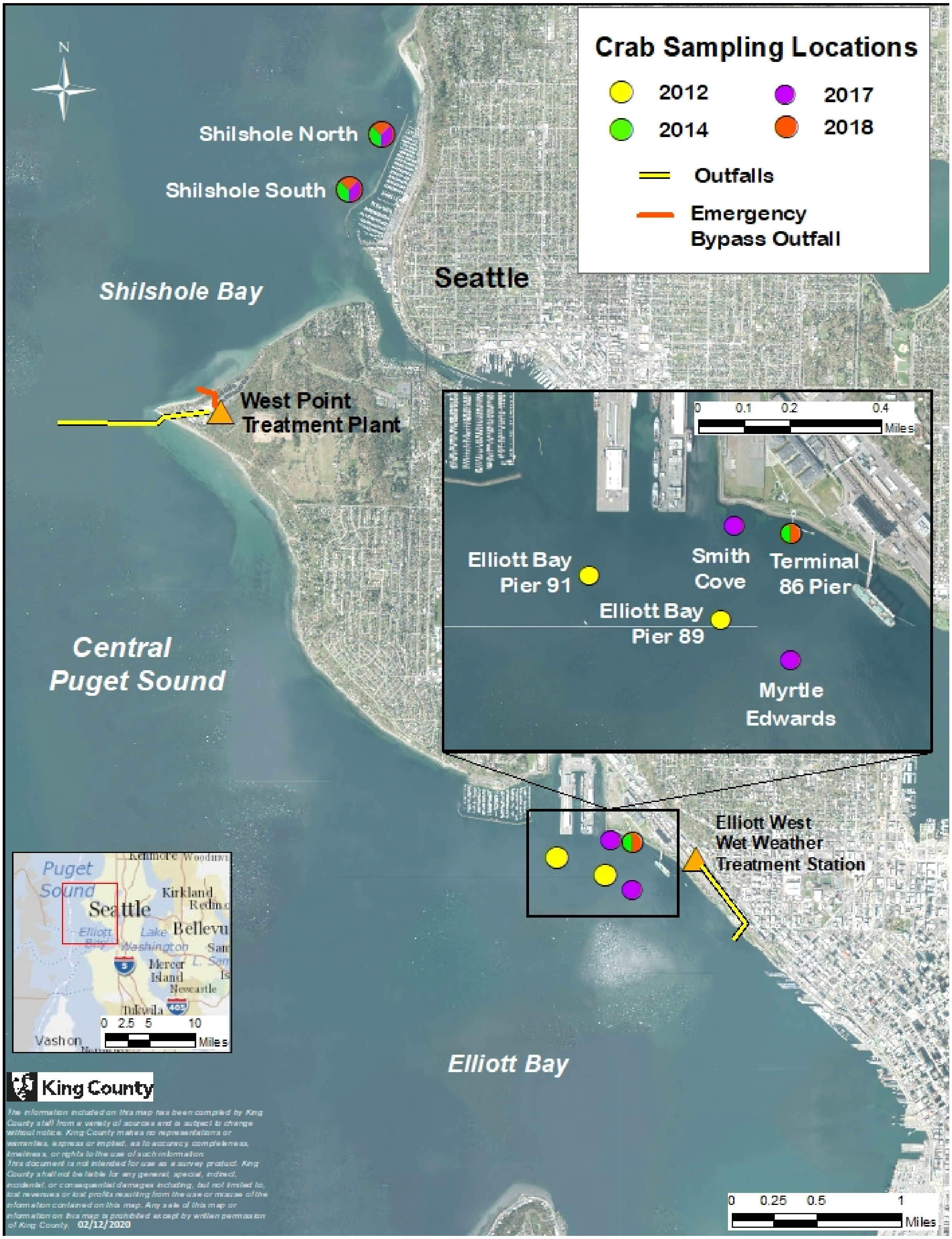

Figure 5. King County and WDFW crab sampling locations.

Table 6. Sampling location grouping, and sample numbers used for data analysis.

Sampling Area	Sampling Locations	Sampling Event	Number of Muscle Samples	Number of Hepatopancreas Samples
Shilshole	Shilshole North and South	Oct 2014[b]	6	4
	Shilshole North and South	May 2017	10	6
	Shilshole North and South	Sept 2017	10	6
	Shilshole [a]	May 2018[c]	5	3
North Elliott Bay	Pier 89 Pier 91	Jun/Jul 2012[c]	2	2
	Pier 86	Oct 2014[d]	5	2
	Smith Cove Myrtle Edwards	May 2017	4	2
	Pier 86	May 2018[c]	4	3

[a] In 2018, crab collected from Shilshole Marina area were combined to create composite muscle and hepatopancreas samples representing one Shilshole location (i.e., locations were not split by north and south marina locations) (King County, 2018b).
[b] King County (2016a)
[c] Unpublished King County data
[d] Carey et al. (2014)

4.2 Data Comparability

The months sampled each year, as well as sample collection and processing protocols, differed slightly between the King County and WDFW monitoring efforts (Table 6). These differences may affect the ability to discern differences in contaminant levels. WDFW analyzed muscle tissue from the claws and largest sections of the legs, whereas King County analyzed muscle tissue from claws, legs, and the crab body. There was no difference in hepatopancreas tissue collection.

Carapace size range of crab analyzed by King County (150 to 180 mm in 2014, 154 to 190.17 mm in 2017, and 158.2 to 188 mm in 2018) was smaller than those analyzed by WDFW (150 to 239 mm in 2012)[3] (Carey et al., 2014). These size differences may reflect an age difference of one to two years for the largest crab collected by WDFW compared to the largest crab collected by King County (Butler [1961], as cited by Velasquez and Rothaus [2018]). Potential age differences could affect comparability of concentrations of contaminants that biomagnify.

King County and WDFW used a similar number of crab per composite sample. WDFW included three to five crabs per muscle tissue composite, whereas King County included three crab[4] per muscle tissue composite. Both efforts included a greater number of individual crab hepatopancreas in composite samples to compensate for the smaller organ

[3] Range only reported in aggregate from five locations sampled by WDFW in 2012 to represent Elliott Bay urban embayment, not just the two sites at Pier 89 and Pier 91; size data were not reported on a sample or station basis.
[4] One composite sample consisted of two individual crabs.

tissue mass. WDFW included four to five, whereas King County included four (2014 and 2018) to five (2017) crabs per hepatopancreas composite. King County analyzed multiple composite samples per location, while WDFW only analyzed one composite sample per location. As a result, the King County data provide more information on intra-site variability.

Stable isotope analysis was conducted by the same laboratory for all monitoring efforts. WDFW and KCEL use different extraction and cleanup methods for lipid analysis, which can result in differences in lipid results.

Metal analyses in all monitoring efforts were performed by KCEL using the same analytical methods and extractions. Similar method detection limits and reporting detection limits for metals were achieved for all efforts. However, King County analyzed a larger number of metals than WDFW; WDFW analyzed arsenic, cadmium, copper, lead, mercury, and zinc.

The analytical methods for organic chemicals used by WDFW differed from methods used by King County. WDFW's samples for PCBs, PBDEs, and PAHs in 2012 were analyzed at NOAA's Northwest Fisheries Science Center using gas chromatograph/mass spectroscopy (GC/MS), according to Sloan et al. (2004). In brief, this method includes three steps: (1) accelerated solvent extraction of tissue using methylene chloride; (2) extract cleanup by silica/aluminum columns; and (3) size-exclusion high-performance liquid chromatography followed by GC/MS—selected ion monitoring (SIM) analysis (Carey et al., 2014). This method generates results for 40 PCB congeners, 11 PBDEs and 45 PAHs.

The KCEL PCB homolog method includes the following: (1) Soxhlet extraction with 100% methylene chloride as the solvent; (2) gel permeation chromatography followed by an anthropogenic isolation column cleanup; and (3) low-resolution method GC/MS—SIM that generates results for 10 homolog groups—mono- through deca-chlorobiphenyls. WDFW estimates total PCBs by summing detected concentrations[5] of 18 commonly detected congeners, and then multiplying the results by two (Lauenstein and Cantillo, 1993). KCEL's total PCB concentrations are based on the sum of detected homologs. Due to analytical and summation method differences, total PCBs concentrations between KCEL and WDFW's efforts are not directly comparable.

For PBDEs, KCEL uses a Soxhlet extraction with methylene chloride and gel permeation chromatography, tetrabutylammonium sulfite, alumina, and acid cleanups followed by GC/MS-negative chemical ionization that generates results for 15 PBDE congeners[6]. WDFW samples were analyzed by the same method as was used for PCBs, and generated results for 11 PBDE congeners. KCEL generates data for six PBDE that NOAA does not (BDE-7, -33, -71, -138, -190, and -209), and NOAA generates data for two congeners that KCEL does not (BDE-49 and -155). Only the detected congeners for both methods are included in the total PBDE concentrations. The KCEL's detection limits for PBDEs were also lower than NOAA's

[5] The detection limits were not provided in Cary et al 2014 for crab tissues using NOAA method; average detection limit for spot prawn was provided at 0.21 µg/kg.

[6] TriBDE-28/-33 are reported together because these two congeners co-elute.

Due to these analytical method differences, total PBDE concentrations between KCEL and WDFW's efforts are not directly comparable.

For PAHs, KCEL analyzes 16 compounds using EPA method SW-846 8270D gas chromatography/mass spectrometry- selected ion monitoring (GC/MS-SIM). The preparation method is a soxhlet technique following EPA method SW-846-3540C using methylene chloride as the extraction solvent. PAHs were detected in WDFW's 2012 samples with phenanthrene having highest detection frequency at 51% and other PAHs had a very low frequency of detection or were not detected. The average individual PAH detection limit in WDFW's crab muscle tissue samples was 0.31 µg.kg (Cary et al. 2014), which was order of magnitude lower than the KCEL detection limits in crab muscle tissue. The detected concentrations in WDFW's samples were less than the LLOQ values achieved for King County's 2017 data[7]. PAHs were not analyzed as part of King County's 2014 or 2018 sampling and analysis efforts.

4.3 Analysis Methods

Scatterplots were generated for the Shilshole and North Elliott Bay areas to visually present the data (see Appendix D). The Kruskal-Wallis and post-hoc Dunn's tests of ranks sums was used to determine if contaminant concentrations detected for each sampling event were different. These are nonparametric tests that do not require an assumption of normal distribution. The Dunn's test uses the rank sum and pooled variance from the Kruskal-Wallis test and tests whether two independent samples were selected from populations with the same underlying distribution. The null hypothesis is that the two samples were collected from populations with the same distribution, and the alternative hypothesis is that the two populations have different distributions, either tending to have lower or higher values. The distribution of contaminant concentrations for each monitoring period were compared pairwise (e.g., October 2014 vs. May 2017, October 2014 vs. September 2017, etc.). The Dunn's test was completed if the Kruskal-Wallis test revealed a p-value less than or equal to 0.05. To mitigate false discovery (i.e., Type I error), p-values were adjusted per Benjamini and Hochberg (1995). Statistical significance was evaluated at alpha=0.05. The "dunn.test" function in the "dunn.test" R package was used in R version 3.6.1 (Dinno, 2017).

Comparisons were conducted on Elliott Bay muscle tissue for the June/July 2012, October 2014, May 2017, and May 2018 data, as well as the Shilshole area muscle and hepatopancreas tissue for October 2014, May 2017, September 2017, and May 2018 data. Some parameters were not measured for a sampling event. In some cases, comparisons were limited by data availability for a specific location or timeframe. Because of the variability in total solids observed in crab tissues, statistical analyses were conducted on both wet weight (ww) and dry weight (dw) concentrations. Total PCB and total PBDE data

[7] While the LLOQ was above the detected PAH concentrations in the WDFW study, the KCEL method limit of detecting the presence of a PAH compound was below some of the WDFW PAH detections.

were also lipid-normalized[8] to assess the influence of lipid content on tissue concentrations and provide additional context for data interpretation.

4.4 Comparison to Seafood Advisory Screening Levels

The 2017 crab tissue data were also compared to Washington State Department of Health (WDOH) human health screening levels for seafood consumption advisories (McBride, 2018), similar to the approach used to evaluate crab contaminant data collected in 2011 and 2012 by WDFW (WDOH, 2016). Although other factors such as data sufficiency would be evaluated before WDOH would issue a seafood consumption advisory, comparison to these screening levels was used to gauge potential human health impacts from consumption of crab muscle and hepatopancreas tissues. The screening levels are based on two exposure scenarios: (1) general population eating 59.7 g per day of seafood, and (2) high seafood consumer population eating 175 g per day of seafood (Table 7). Sections 6.3, 6.4, and 6.5 present comparisons of these screening levels to mean tissue concentrations of metals, PCBs, and PBDEs, respectively.

Table 7. WDOH screening levels for seafood consumption advisories.

Compound	Units	General Population[a]	High Seafood Consumer[b]
Inorganic arsenic	mg/kg ww	0.352	0.120
Cadmium		1.17	0.400
Chromium (III)[c]		1759	600
Methylmercury		0.101	0.034
Nickel		23.5	8.00
Selenium		5.86	2.00
Silver		5.86	2.00
Zinc		352	120
Total PCBs	µg/kg ww	23	8
Total PBDEs		117	40

All screening levels are based on non-cancer health effects.
[a] Based on 59.7 g/d seafood consumption
[b] Based on 175 g/d seafood consumption
[c] Chromium was not analyzed by oxidation state, but chromium (III) is the most stable state of chromium in nature and the primary form present in plants and animals (FDA, 1993).

Note: WDOH does not use a standard screening level for lead, but uses a predicted blood lead level in children based on EPA's Integrated Exposure Uptake Biokinetic Model model. Because of the complexity of model analysis lead was not evaluated here.

[8] PCB and PBDE results were lipid-normalized by dividing wet weight concentrations by percent lipid content (µg/kg-lipid).

5.0 DATA ANALYSIS DISCUSSION

This section presents results of the crab tissue data analysis. Contaminant concentrations were evaluated for differences by sampling event (i.e., same month and year) to assess if tissue concentrations substantially increased in crab tissues because of the West Point flooding event. The analysis included comparisons between May 2017 and historic crab tissue data for both Shilshole and North Elliott Bay sampling areas. To further understand any observed differences between these datasets, crab tissue data collected in September 2017 and May 2018 from the Shilshole area and in May 2018 from the North Elliott Bay area were also assessed.

Potential increases in contaminant levels associated with the West Point flooding event were inferred from temporal contaminant patterns within a sampling area (i.e., Shilshole or North Elliott Bay) and considering a statistical data assessment. For example, a short- term increase in contaminant levels due to the West Point flooding event, with subsequent depuration, could be inferred if concentrations measured in May 2017 or both May and September 2017 were elevated compared to historic data (June 2012/October 2014) and data collected one-year post event (May 2018). A longer term effect from the West Point flooding, where crab did not depurate or metabolize contaminants, could be inferred if concentrations in samples collected in May and September 2017,as well as in May 2018 are elevated compared to historic data. Alternatively, either of these patterns could be due to interannual variability. In addition, seasonal variability could be inferred if concentrations in samples collected in the spring (May 2017 and May 2018) were different than samples compared to the fall (October 2014 and September 2017).

Other factors that could have influenced contaminant concentrations in crab tissue were the higher than normal rainfall and river flow inputs to the Puget Sound Central Basin in late winter and spring of 2017. As summarized in the *West Point Flooding Event Water Quality Summary Report* (King County, 2018a), the second highest total precipitation on record at Sea-Tac International Airport since 1948 occurred in February 2017. Cumulative precipitation was 28.4” from January through June 2017 and exceeded the historical 30-year average for this period by 9 inches. As a result, higher than normal river discharge increased freshwater inputs into Puget Sound for the first half of 2017. Generally, this increased freshwater input may increase estuarine exchange and vertical mixing at Admiralty Inlet (Babson et al., 2006), which will impact Puget Sound Central Basin marine conditions.

In addition, the heavier than normal rainfall conditions between February and April 2017 likely increased pollutant inputs from stormwater runoff to areas of Puget Sound, and thus, could have contributed to the variability of contaminant levels in crab tissue. Rainfall intensity, as well as temporary flow diversions within the combined sewer system to reduce the amount of stormwater received at West Point during the repair period, resulted in more wet weather treatment stations and to some extent CSO discharges than typical between February and April. A summary of flow modifications are described in the 2017 Annual CSO and Consent Decree Report (King County, 2018c).

5.1 Stable Isotopes

Stable carbon and nitrogen isotopes exist naturally in lighter and slightly heavier forms in different, but generally consistent proportions in nature. Normal biological processes, such as photosynthesis and carbohydrate formation, result in isotopic fractionation (i.e., selective release of lighter isotopes and retention of heavier isotopes; O'Leary, 1988, Schulze and Giese, 1993). This regular discrimination occurs during natural bio- and geo-chemical processes and can result in unique isotope "signatures" of carbon and nitrogen from different sources, which can then be reflected in the tissues of organisms that use these elements for biological purposes. Analysis of stable isotope ratios can help us understand whether the crab sampled were consuming diets at similar or different trophic levels (which can influence tissue concentrations), as well as to assist with characterization of different environmental sources of carbon and nitrogen.

Gradients of the carbon-13 stable isotope ratio ($\delta^{13}C$) are generally accepted as an indicator of marine versus terrestrial carbon input in diet (Hobson, 1999). $\delta^{13}C$ differs between freshwater and marine conditions, with freshwater (terrestrial-derived carbon sources) containing carbon more depleted in ^{13}C (i.e., negative) (Hobson 1999). Within marine environments, $\delta^{13}C$ can also be used to differentiate between two major sources of dietary carbon: nearshore (benthically-linked) vs pelagic (open water) food webs (Hobson, 1999). More depleted $\delta^{13}C$ levels are associated with pelagic production, while enriched (i.e., higher) levels are associated with nearshore production. WDFW has used levels of $\delta^{13}C$ in crab tissue as an independent estimator of the gradient from oceanic to estuarine conditions within Puget Sound ($\delta^{13}C$ increases from oceanic to estuarine conditions; Carey et al., 2014, West et al., 2011).

Nitrogen-15 stable isotope ratios ($\delta^{15}N$) are often used to estimate trophic level in food webs. With each increase in trophic level, the heavier Nitrogen-15 isotope is preferentially retained in an organism's tissues during digestion resulting in a greater proportion of the heavier isotope at the top of the food web. The ratio of nitrogen 15 increases in organisms higher in the food chain and, generally, differences of between 2 to 4‰ in $\delta^{15}N$ signify a change in trophic level (McCutchan et al., 2003, Perkins et al., 2014). WDFW has used $\delta^{15}N$ to estimate trophic level within Puget Sound as well (Carey et al., 2014, West et al., 2011).

In addition, stable isotopes were evaluated to investigate whether crab may have been exposed to carbon or nitrogen enriched in heavier isotopes due to a wastewater influence. Heavier nitrogen isotope ratios in crab have been used to identify sewage input in estuarine and coastal habitats (Connolly et al., 2013). Human sewage has a much heavier $\delta^{15}N$ signature relative to freshwater or marine surface waters (Cole et al., 2004; Heaton, 1986), presumably because of the high trophic level of humans (Cabana and Rasmussen, 1996). However, nitrogen isotope ratios can vary with other factors, such as freshwater inputs and other point sources (Hobson, 1999), which creates uncertainty in evaluating $\delta^{15}N$ signatures in crab for sewage tracing, especially with limited data.

$\delta^{13}C$ has also been used to trace sewage-derived organic matter, but this is most applicable for species that consume organic matter through filtration, such as mussels (Rogers, 2003).

In addition, variations in $\delta^{13}C$ can be difficult to separate from background changes in surrounding watersheds. Therefore, an increase in $\delta^{13}C$ in crab alone would not be a strong indicator of sewage exposure.

The $\delta^{13}C$ levels in crab from the North Elliott Bay and the Shilshole areas did not vary widely (Δ0.55 in mean levels from North Elliott Bay area; Δ0.4 in mean levels from Shilshole area; Figures 6 and 7, x-axis). Within each sampling area the isotope levels overlap, indicating no obvious shifts in dietary carbon source for the same trophic level between months/years; the mean values are within 1% of each other (Figures 6 and 7, y-axis). The $\delta^{15}N$ levels for May 2012 at North Elliott Bay are slightly lower than those measured in May 2017 and May 2018, but the data for 2017 and 2018 overlap. These data indicate there is temporal variability in $\delta^{15}N$. This finding, as well as the limited data, are not sufficient to indicate whether wastewater enrichment occurred in 2017. For the Shilshole area, some of the $\delta^{15}N$ values are slightly lower in September 2017 compared to May 2017 and May 2018; overall the data do not indicate enrichment in spring compared to summer due to the overlap in datasets.

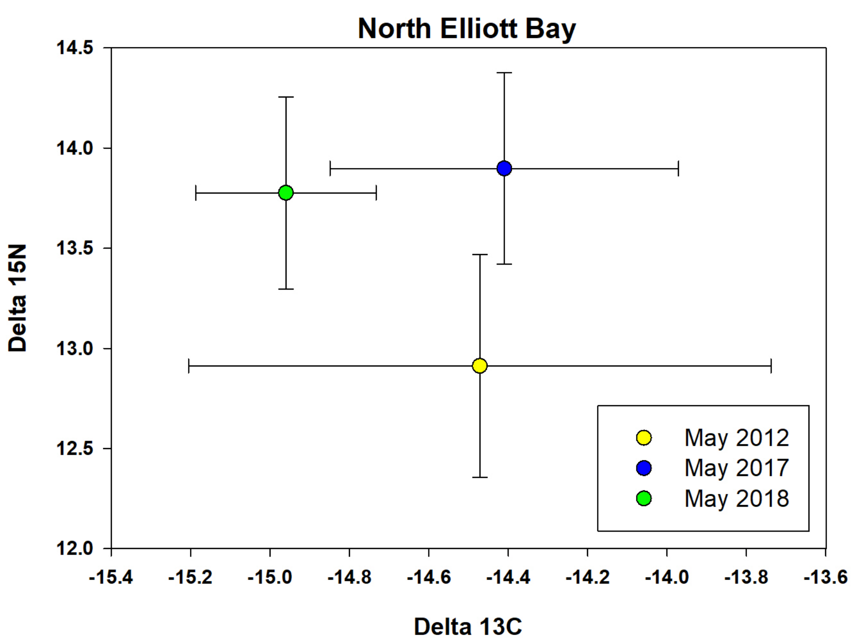

Figure 6. Stable isoptope results in crab muscle from North Elliott Bay sampling area.

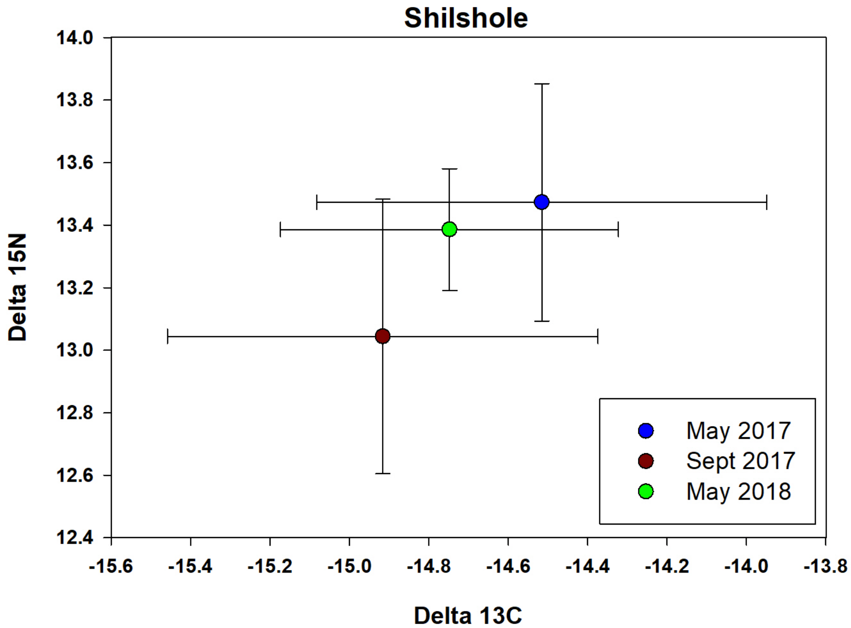

Figure 7. Stable isotope results in crab muscle from Shilshole sampling area.

The stable isotope data indicate that crab collected in North Elliott Bay and Shilshole over the different monitoring periods were consuming prey from the same trophic levels and did not exhibit shifts in dietary carbon sources. Thus, chemical concentration comparisons in crab tissues between different sampling periods (see Sections 5.3, 5.4, and 5.5) were not likely influenced by dietary factors.

5.2 Lipid Content

Hydrophobic organic contaminant concentrations are typically influenced by an organism's lipid content. Lipid-normalization of lipophilic organic contaminants helps facilitate comparison of these contaminants across seasonal lipid fluctuations. The range of lipid content in crab muscle was similar between all sampling events and locations and within the range of analytical variability (Figure 8). The range of lipid content in hepatopancreas tissue was greater than that observed in muscle tissue. Hepatopancreas lipid content in crab from the Shilshole area was generally higher and more variable than in crab collected in October 2014 and September 2017 compared to May 2017 and 2018, suggesting potential seasonal differences (Figure 9). However, seasonal variability in lipid context was not evident in muscle or hepatopancreas tissue data from the North Elliott Bay area (Figures 8 and 9).

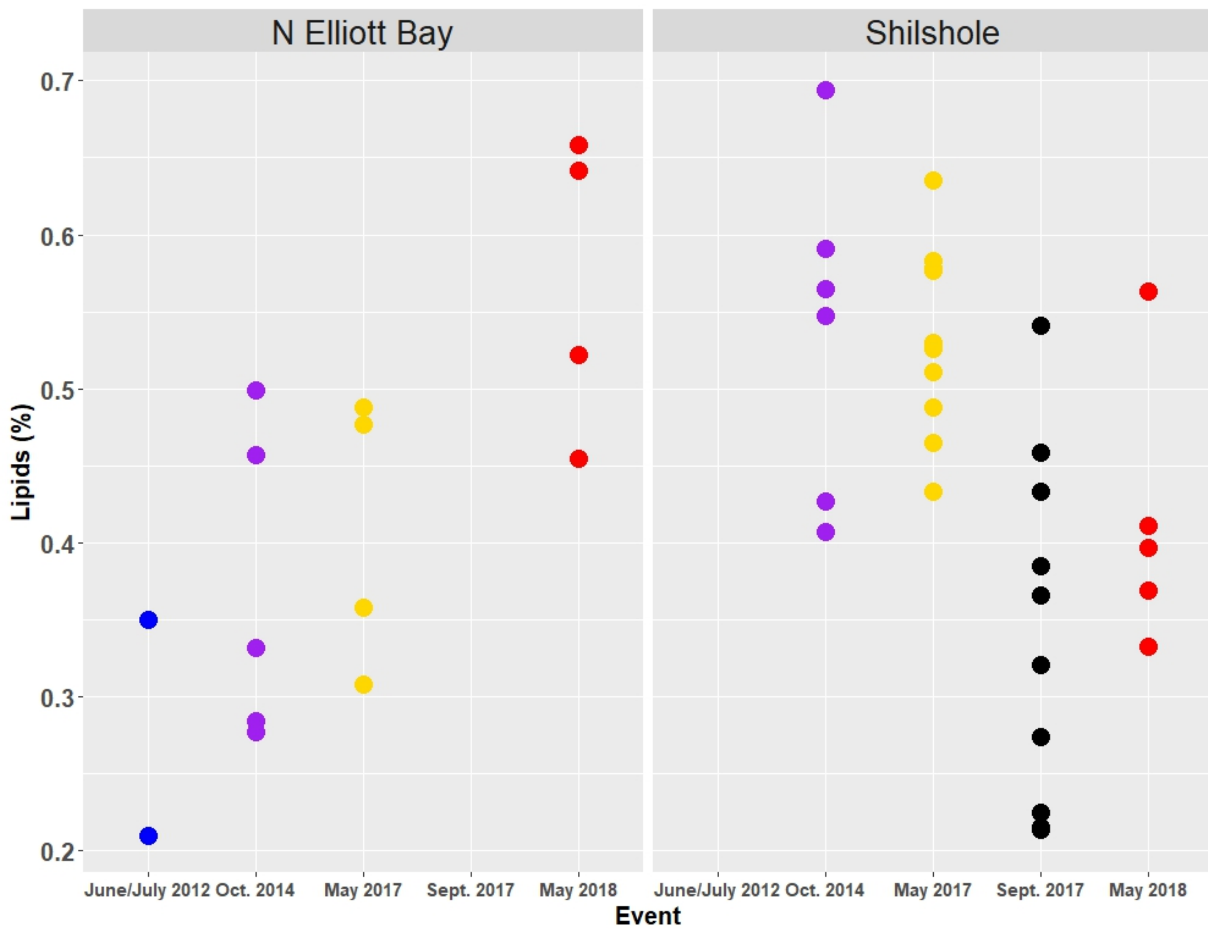

Figure 8. Lipid content (%) in crab muscle grouped by sampling location and event.

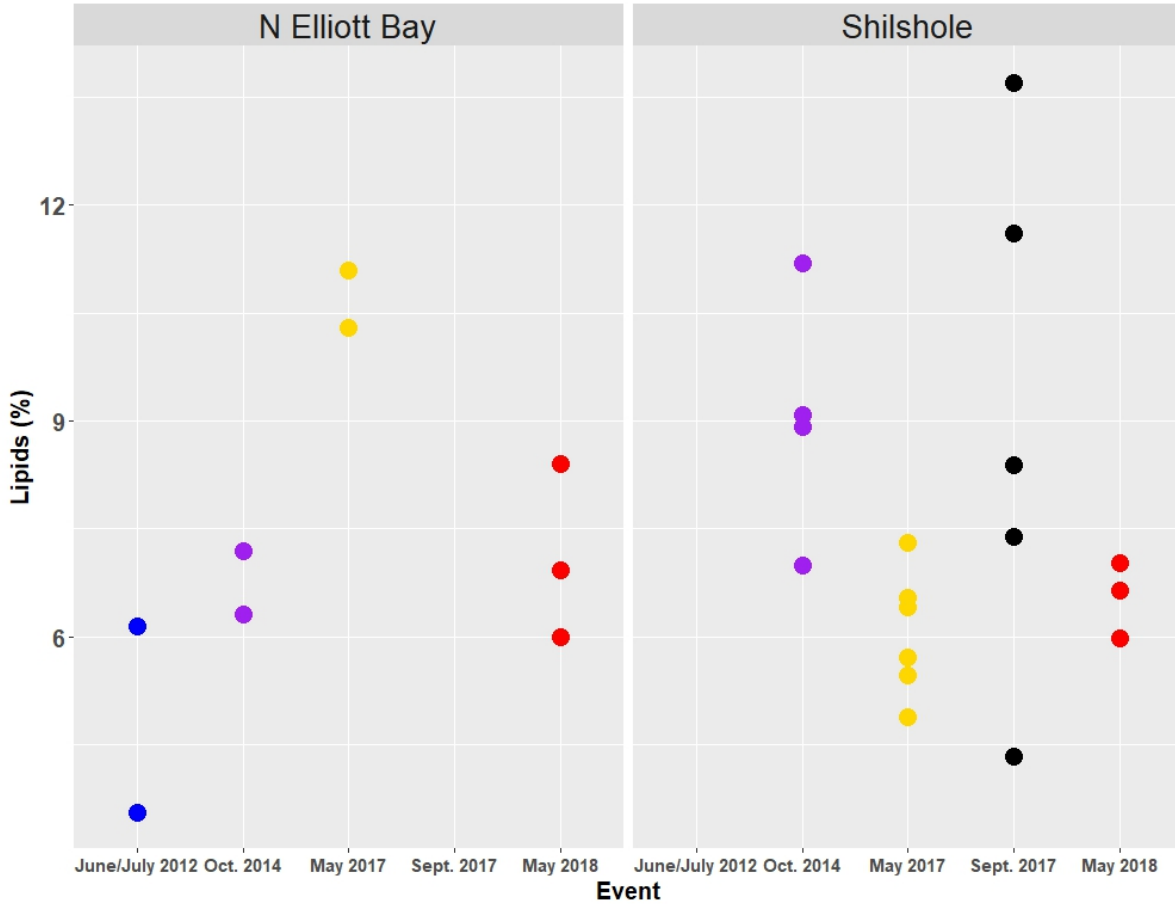

Figure 9. Lipid content (%) in crab hepatopancreas grouped by sampling location and event.

5.3 Metals

This section describes observed differences in metal concentrations in crab tissues on both a wet weight (ww) and dry weight (dw) basis. Appendix D presents scatterplots of all metals data for the North Elliott Bay and Shilshole areas. Appendix E presents results of the statistical analysis in tabular and graphical forms, as well as percentile data summaries of datasets evaluated statistically. This section also presents a comparison of muscle tissue data to WDOH seafood advisory screening values.

Except for cadmium (ww and dw) and zinc (ww) in muscle, all metal concentrations in muscle, and hepatopancreas tissue from the North Elliott Bay area[9], were similar across sampling events. Concentrations of cadmium (ww and dw) and zinc (ww) across all sampling events were statistically different based on the Kruskal-Wallis test. The post-hoc Dunn's test indicated no difference in distribution of the datasets for cadmium between May 2017 and October 2014 (Figure 10). Both October 2014 and May 2017 cadmium data were higher than July 2012 data and May 2017 data was higher than May 2018 data; however,

[9] Hepatopancreas sample sizes for North Elliott Bay were insufficient to make statistical comparisons.

limited cadmium data for 2012 and 2018 limit further discussions of these data. The post-hoc Dunn's test indicated no difference in distribution of the datasets for zinc between October 2014 and May 2017 but did indicate July 2012 data to be higher than both October 2014 and May 2017 data (see Appendix E). The analysis suggests there were no substantive increases in cadmium or zinc muscle tissue concentrations related to the West Point flooding event.

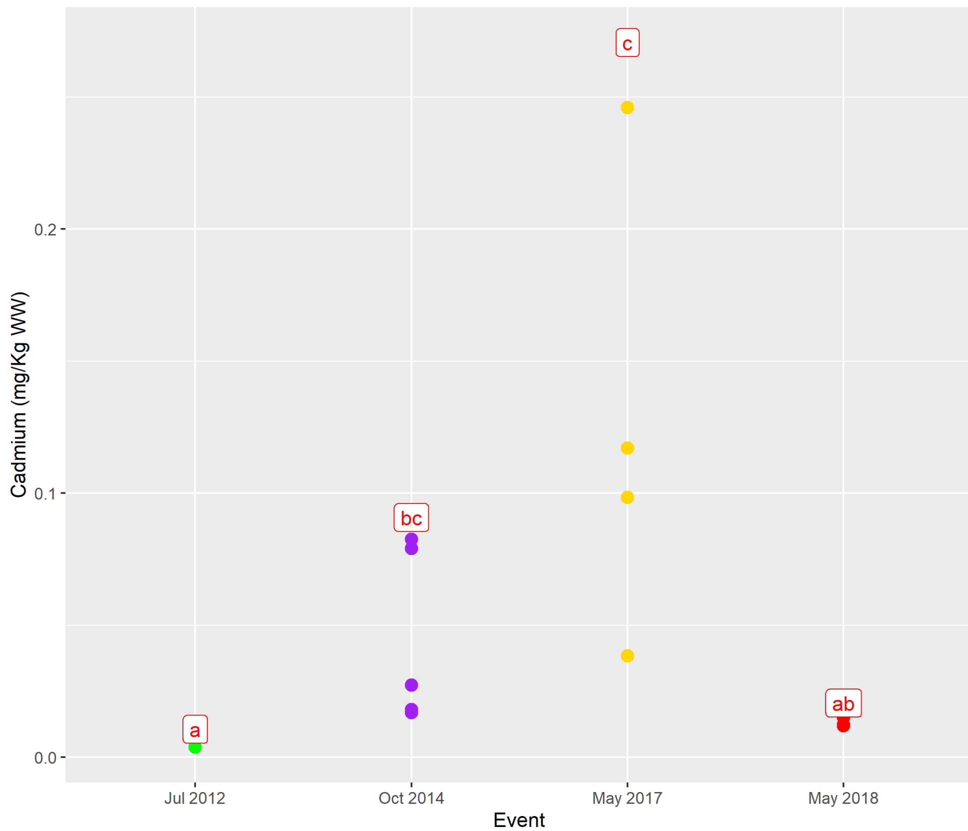

Figure 10. Cadmium concentrations (mg/kg ww) in crab muscle samples from North Elliott Bay. (Note different letters indicate statistical significance difference at $p < 0.05$.)

The following metals in crab muscle tissues from Shilshole showed statistical differences across all sampling event based on the Kruskal-Wallis test: arsenic, chromium, copper, lead (ww only), selenium[10] and zinc (dw only). Based on the post-hoc Dunn's test, data distributions of arsenic, chromium, and copper in muscle tissue were statistically different between the May 2017 and October 2014 sampling events, but lead, selenium, and zinc concentrations were not statistically different.

The lead results suggest a possible seasonal pattern (Figure 11); however this is uncertain because of the limited data available. A significant increase in selenium concentrations was observed in the May 2018 samples (Figure 12) and significant increase in zinc concentrations was observed the September 2017 samples (Figure 13). These results do

[10] Selenium was not elevated in West Point effluent during the period of reduced treatment (King County, 2018a).

not suggest that the West Point flooding event caused an increase in crab muscle tissue for these metals. Arsenic concentrations (ww and dw) were statistically higher in May 2018 samples compared to levels in both October 2014 and May 2017 samples (Figure 14). These results suggest that other arsenic sources or natural variability are influencing arsenic concentrations in muscle tissue.

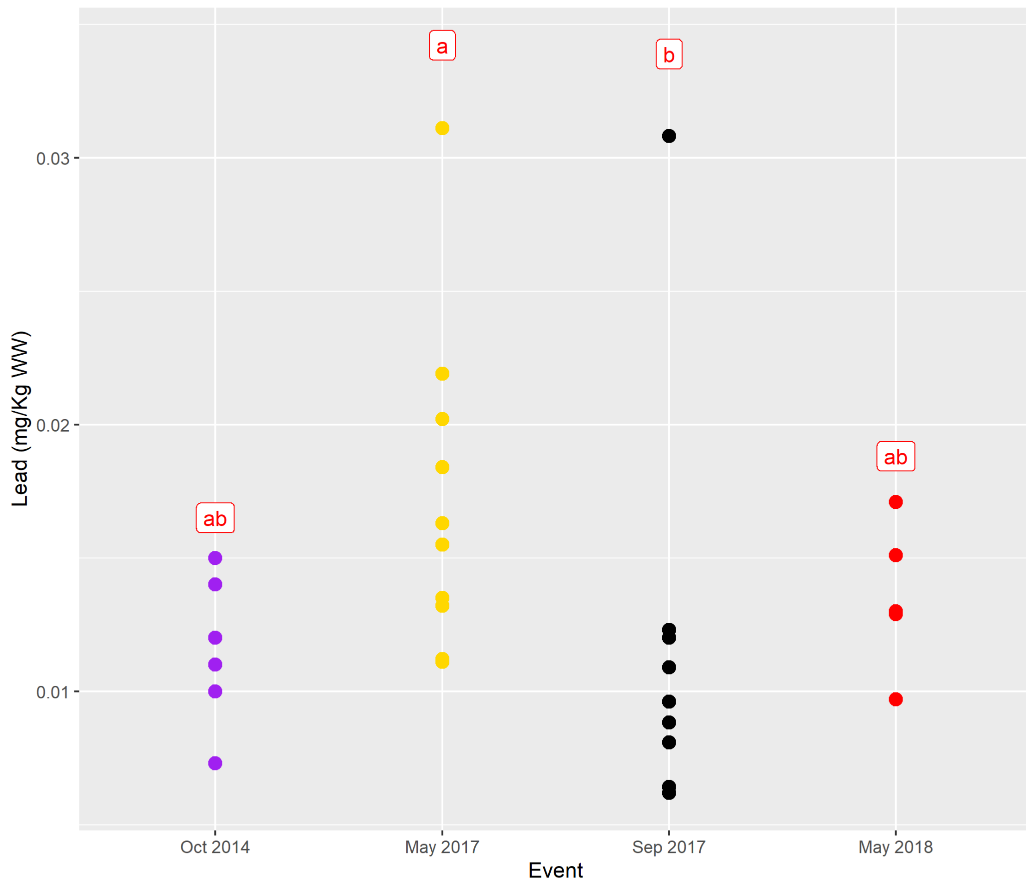

Figure 11. Lead concentrations (mg/kg ww) in crab muscle samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

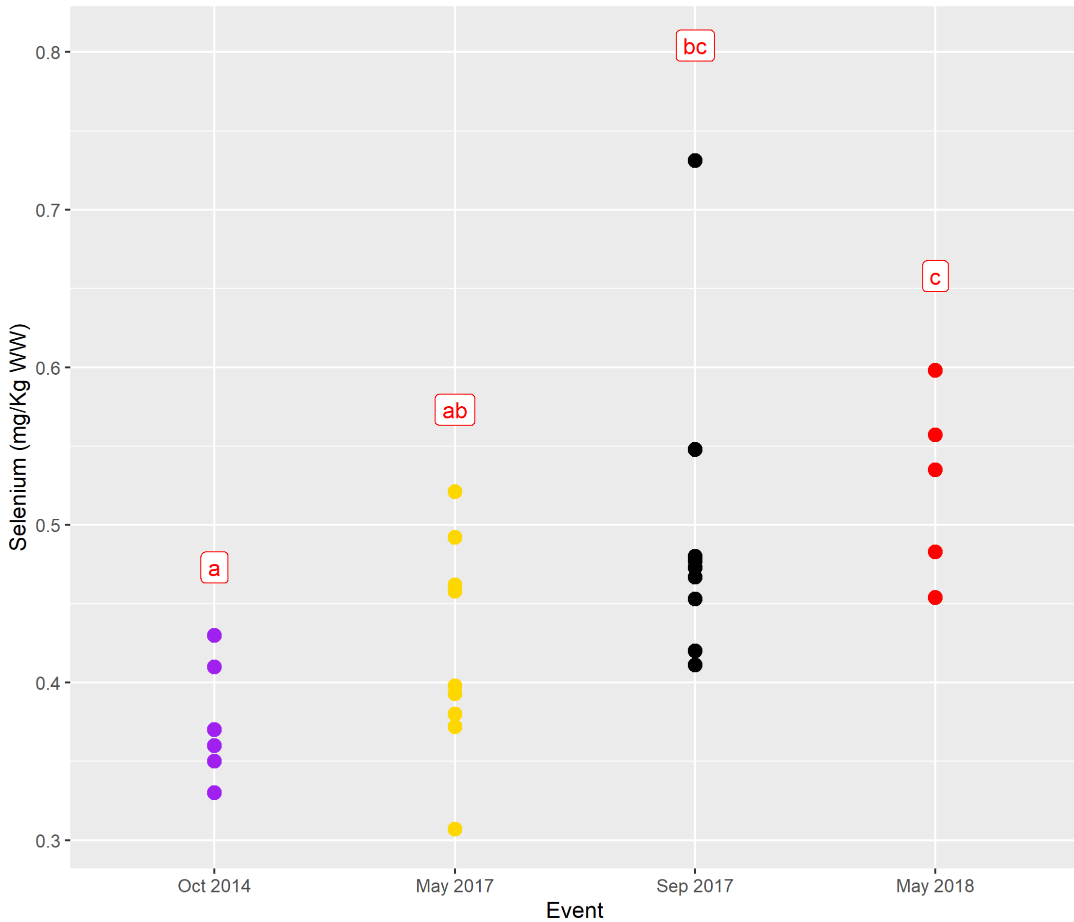

Figure 12. Selenium concentrations (mg/kg ww) in crab muscle samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

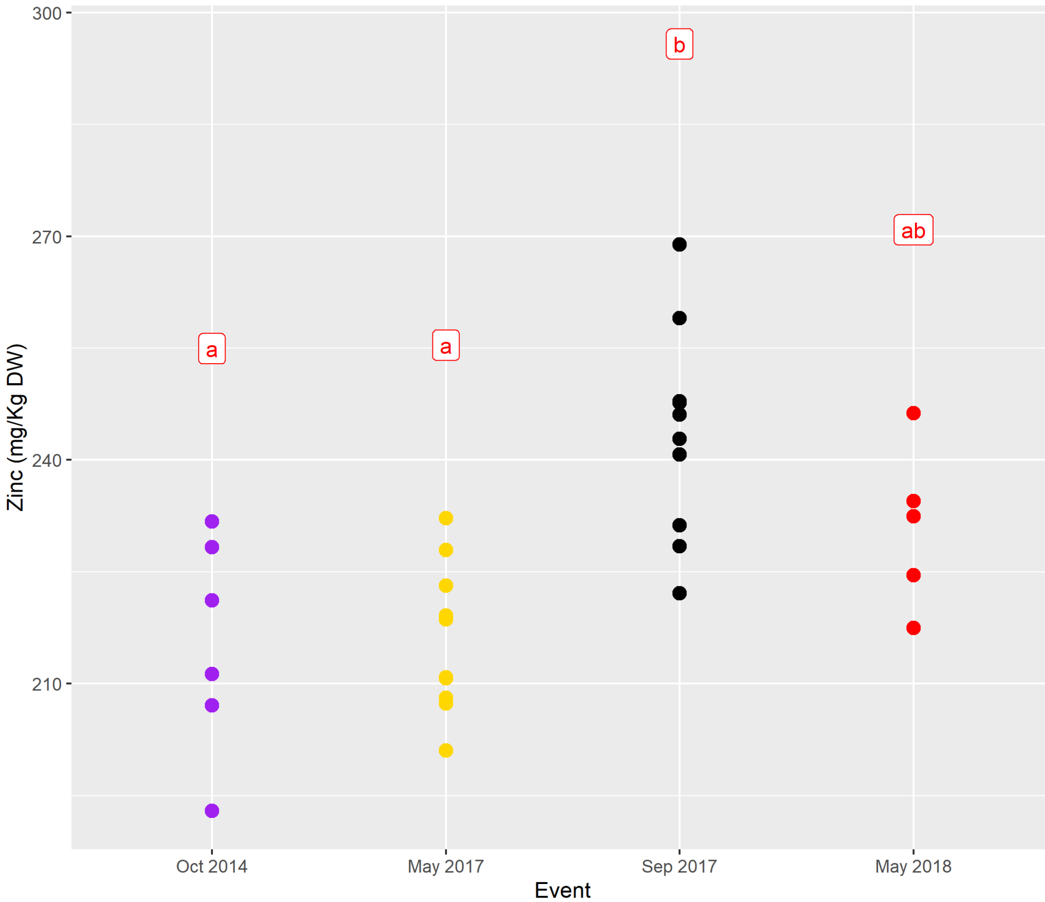

Figure 13. Zinc concentrations (mg/kg dw) in crab muscle samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

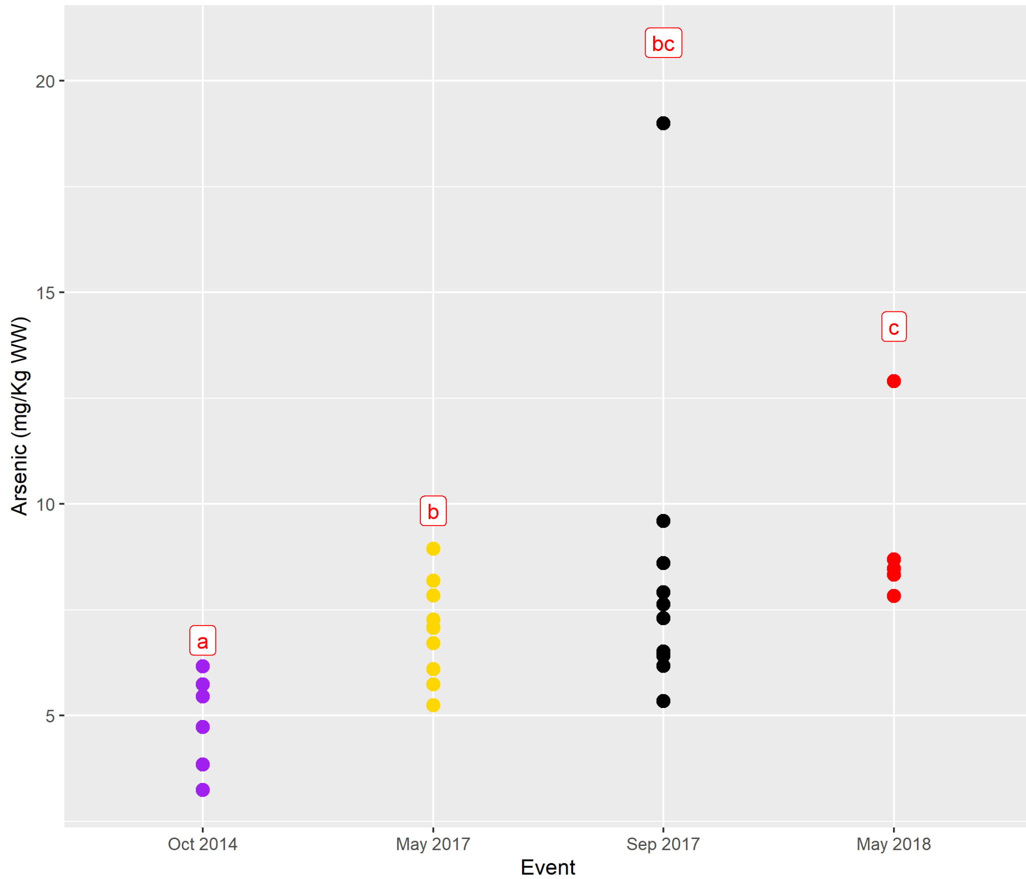

Figure 14. Arsenic concentrations (mg/kg ww) in crab muscle samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

Chromium concentrations in muscle tissue were also statistically higher in the May 2017 samples compared to the September 2017 samples, but were not different than levels in the May 2018 samples (see Figure 15). However, the limited number of samples collected in May 2018 could have influenced these results. There were no differences in muscle tissue copper concentrations between samples collected in May 2017 and September 2017 and May 2018; however, concentrations measured in September 2017 and May 2018 samples did not differ from levels measured in October 2014 samples on dry weight basis, but wet weight based concentrations were statistically different (Figures 16 and 17). The analysis suggest that the West Point flooding event could have influenced concentrations of chromium, and possibly copper, in crab muscle tissue. The apparent variability in the copper datasets makes this difficult to conclude for sure.

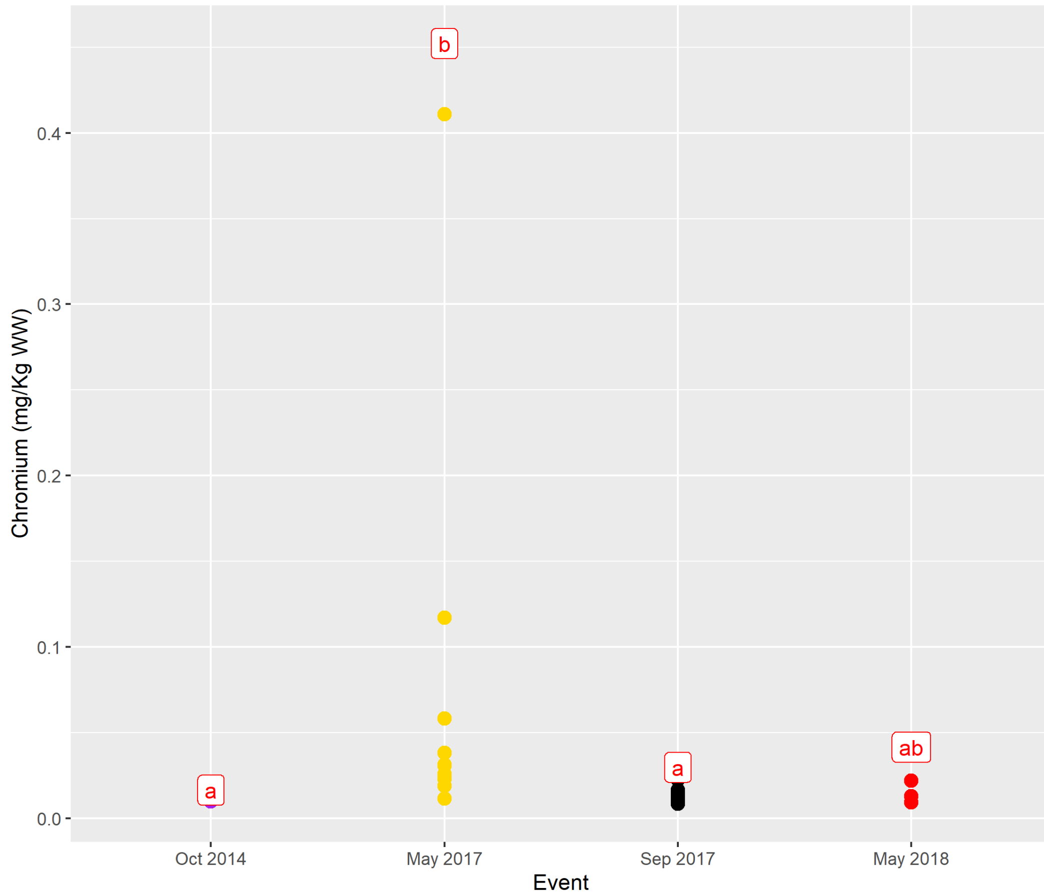

Figure 15. Chromium concentrations (mg/kg ww) in crab muscle samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

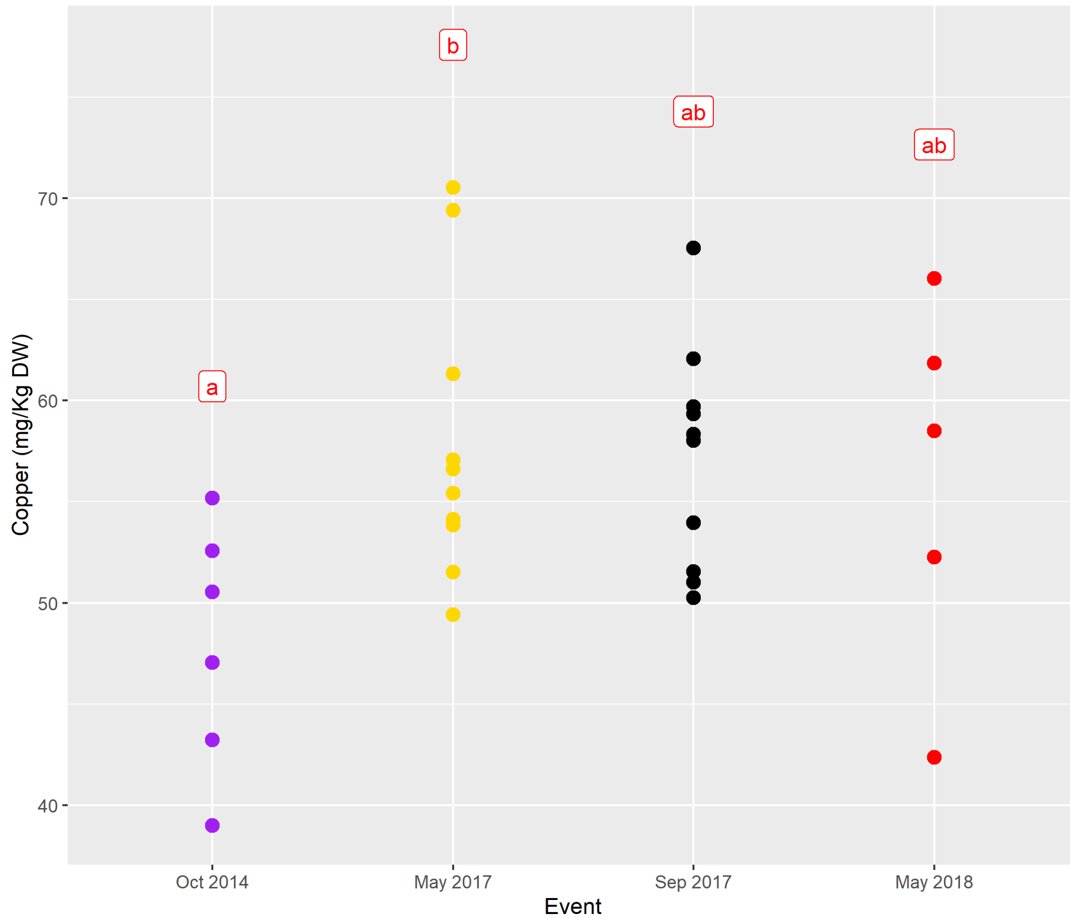

Figure 16. Copper concentrations (mg/kg dw) in crab muscle samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

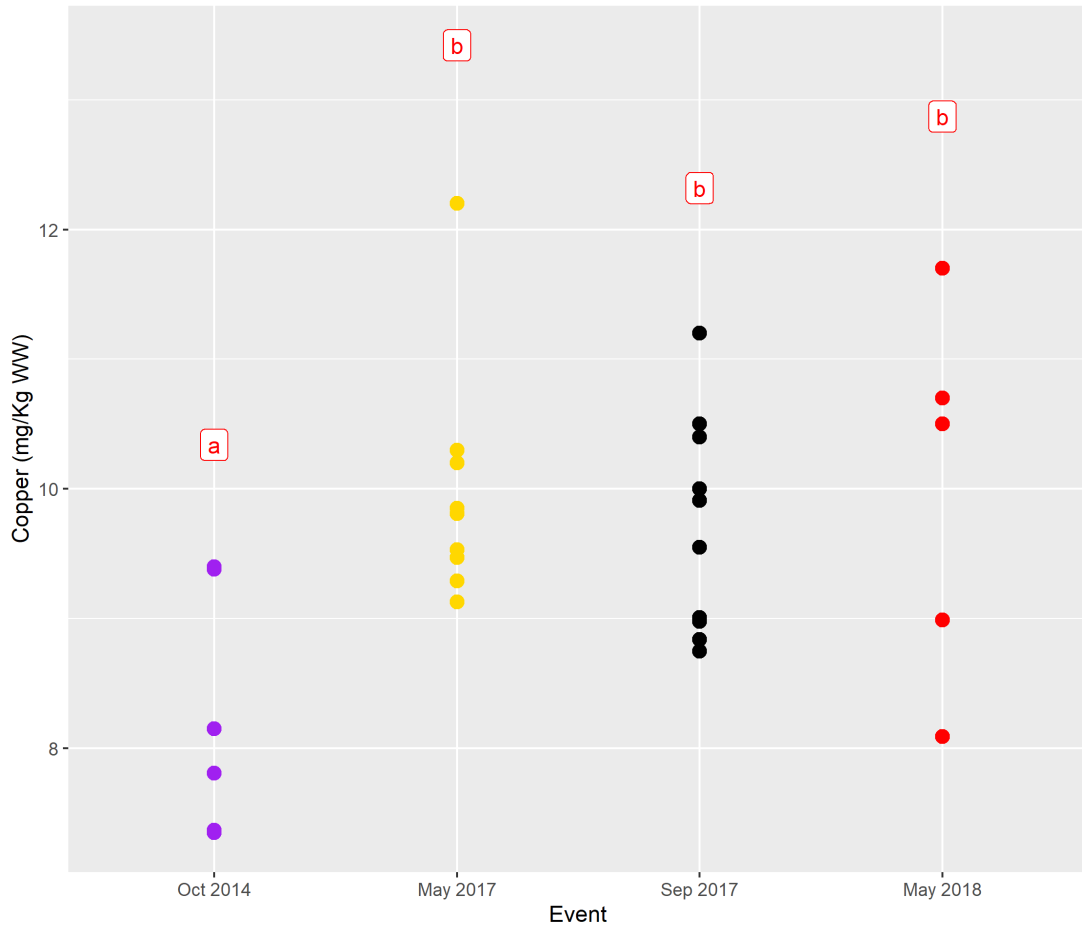

Figure 17. Copper concentrations (mg/kg ww) in crab muscle samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

The following metals in crab hepatopancreas tissues from Shilshole showed statistical differences across sampling events based on the Kruskal-Wallis test: arsenic, chromium, lead, nickel, selenium[11] and zinc (dw only). Based on the post-hoc Dunn's test, data distributions of arsenic (dw), chromium, lead, nickel and selenium, but not zinc, in hepatopancreas tissues were statistically different between May 2017 and October 2014.

Arsenic concentrations (ww) were not statistically different between samples collected in October 2014, May 2017, and September 2017 (Appendix E). However, arsenic concentrations (ww and dw) in samples collected in October 2014 were statistically lower than in May 2018 samples (Figure 18 and Appendix E). These data suggest that other arsenic sources or natural variability may be influencing arsenic concentrations in hepatopancreas tissues. Selenium concentrations suggest a possible seasonal variation because concentrations detected in May 2017 and May 2018 samples are not statistically

[11] Selenium was not elevated in West Point effluent during the period of reduced treatment (King County, 2018a).

different from each other and levels in both October 2014 and September 2017 samples are lower than either May period (often not significantly lower) (Figure 19).

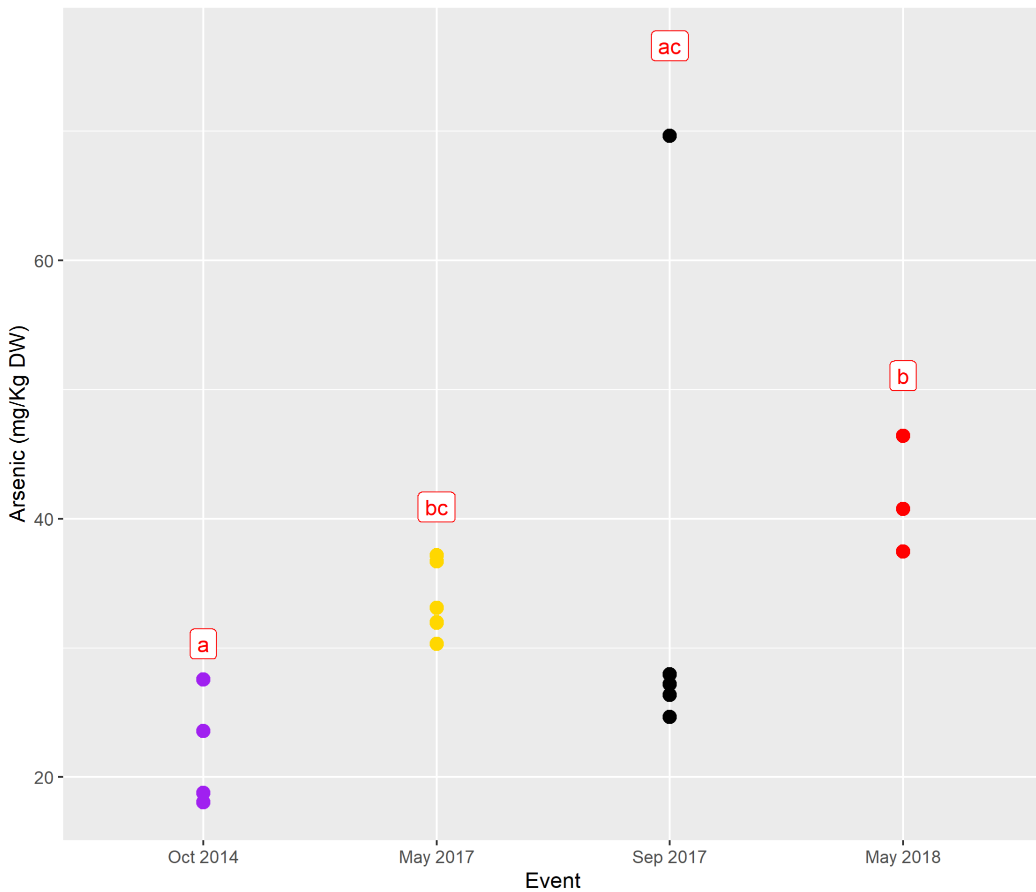

Figure 18. Arsenic concentrations (mg/kg dw) in crab hepatopancreas samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

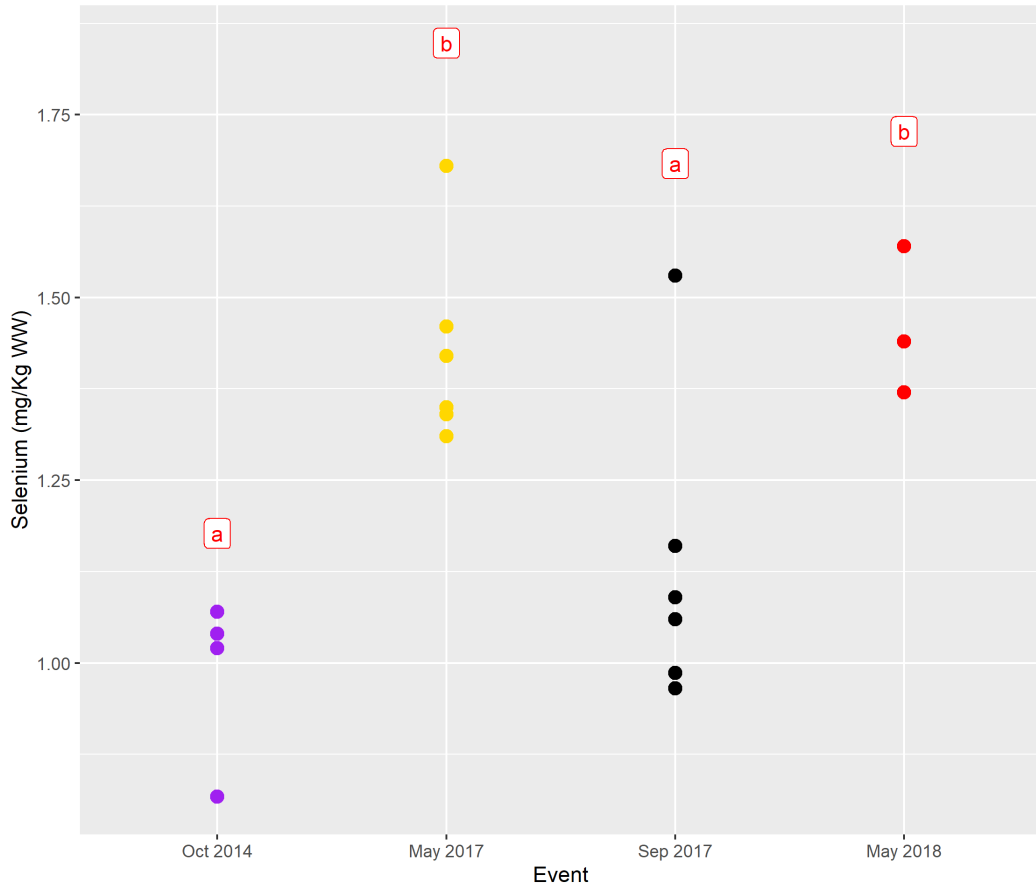

Figure 19. Selenium concentrations (mg/kg ww) in crab hepatopancreas samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

Chromium, lead and nickel concentrations were also statistically higher in May 2017 samples compared to September 2017 samples, but chromium and nickel concentrations in May 2017 samples were not significantly different than those collected in May 2018 (Figures 20, 21, and 22). The data suggests that concentrations of these three metals began to decrease following the May 2017 sampling event. However, the limited number of samples collected in May 2018 is likely influencing the results of this analysis. Overall, the West Point flooding event may have influenced chromium, lead, and nickel concentrations in crab hepatopancreas tissue collected from Shilshole for a short-term period.

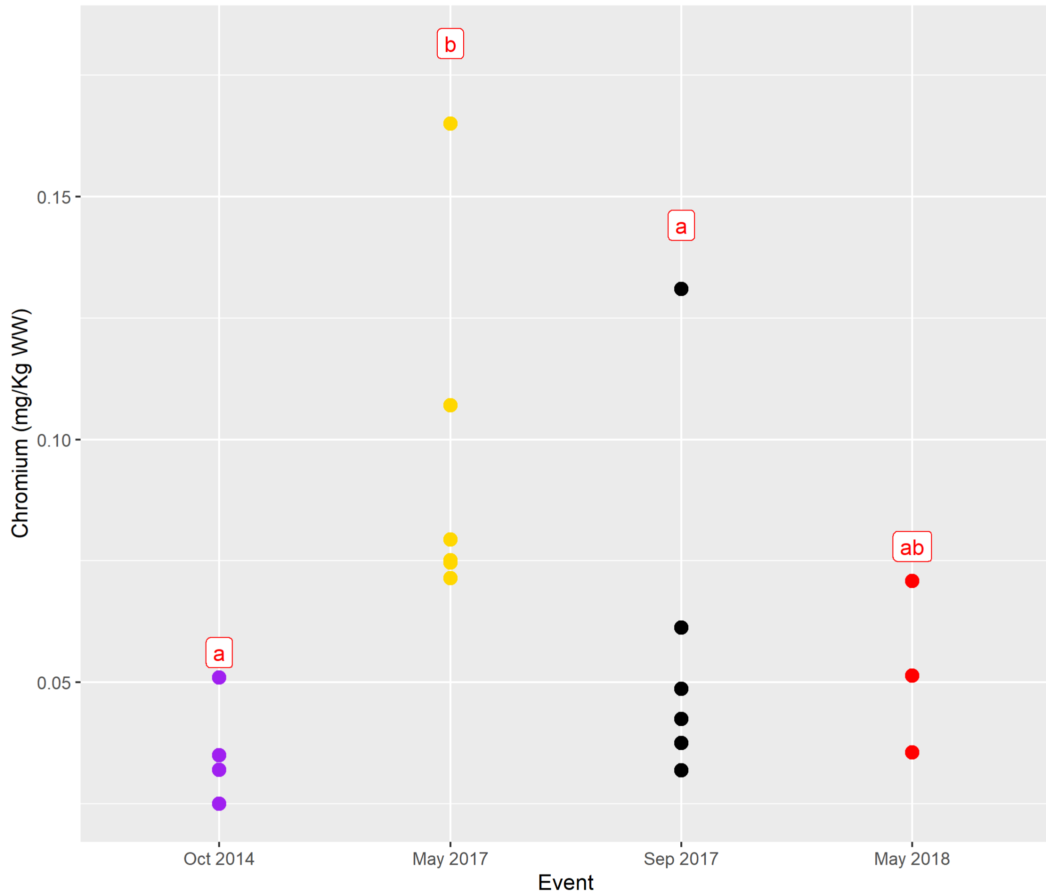

Figure 20. Chromium concentrations (mg/kg ww) in crab hepatopancreas samples from theShilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

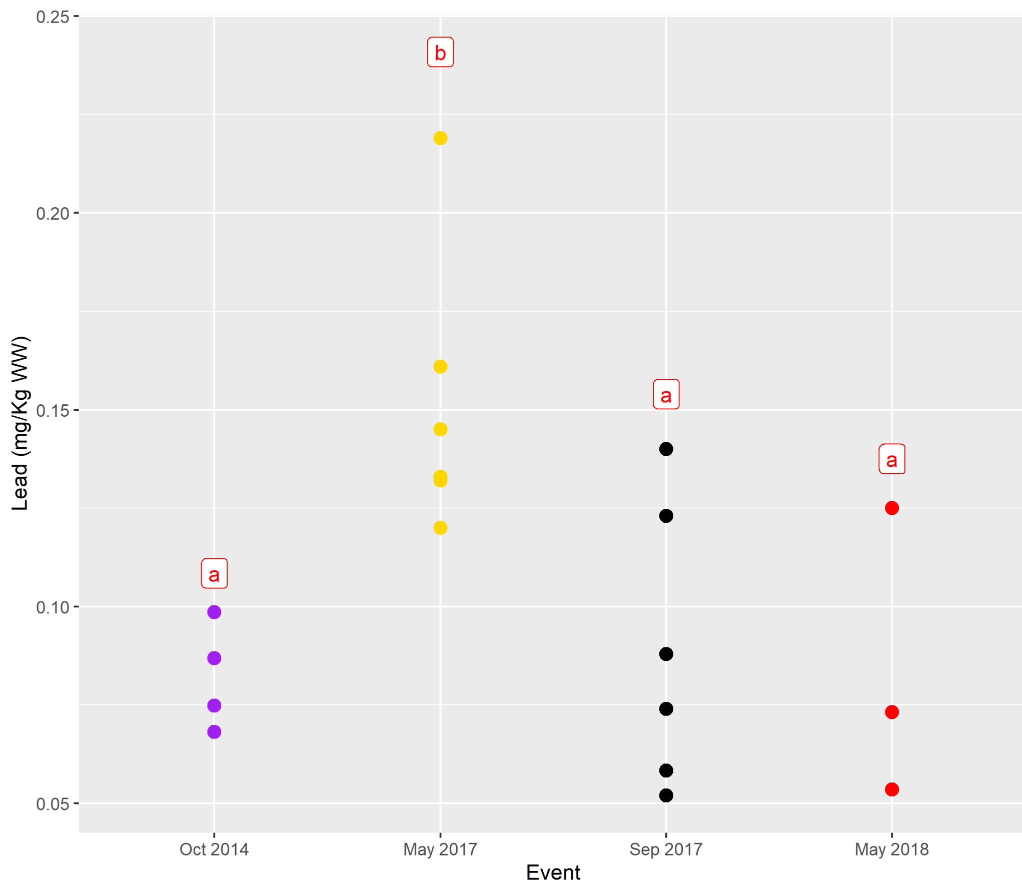

Figure 21. Lead concentrations (mg/kg ww) in crab hepatopancreas samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

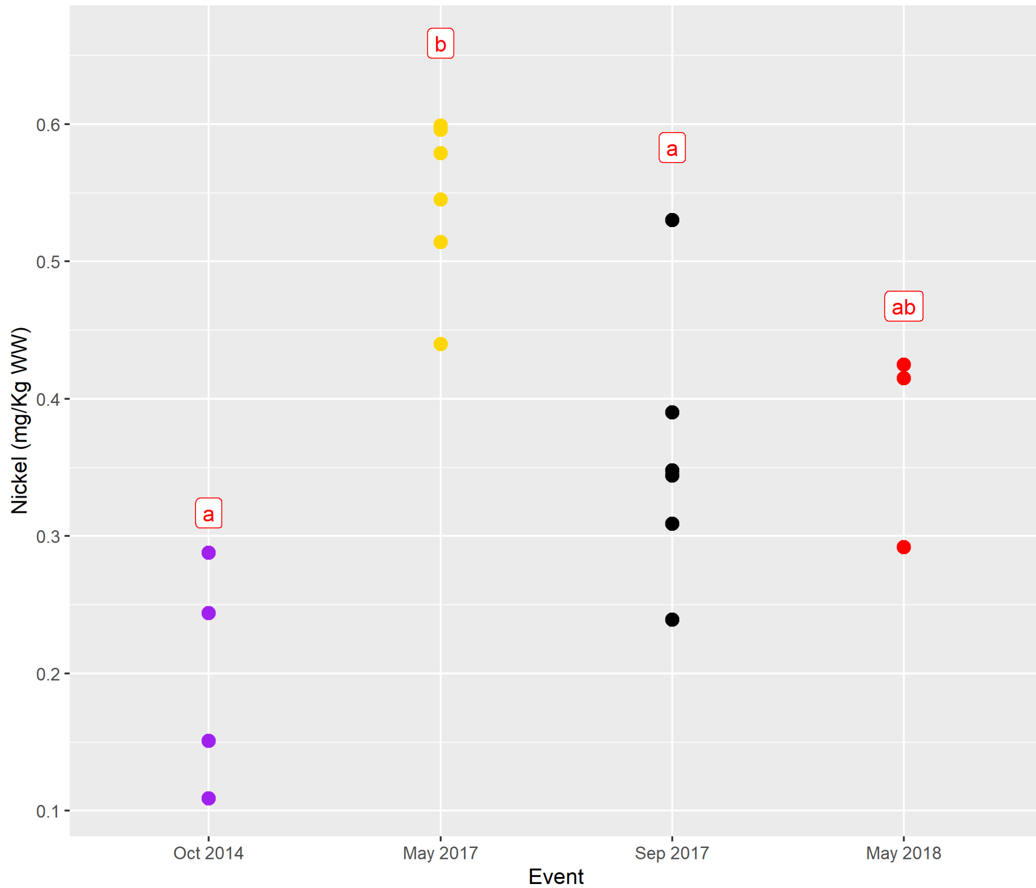

Figure 22. Nickel concentrations (mg/kg ww) in crab hepatopancreas samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

Except for cadmium in hepatopancreas tissues, mean metal concentrations[12] in crab from each sampling location in 2017 were below the WDOH seafood advisory screening levels.[13] Mean cadmium concentrations in hepatopancreas tissues from each sampling location exceeded the high seafood consumer screening level (0.400 mg/kg ww)[14]. In addition, mean hepatopancreas tissue cadmium concentrations at the Shilshole South location in September 2017 and Myrtle Edwards location in May 2017 exceeded the general population screening level (1.17 mg/kg ww). WDOH noted that cadmium levels in 2012

[12] The WDOH arsenic screening level is based on inorganic arsenic. Only total arsenic was measured in crab and the fraction of inorganic arsenic is unknown. However, as a conservative estimate, WDOH assumes that inorganic arsenic in Puget Sound shellfish represents approximately 1% of the total arsenic (ATSDR, 2015). An arsenic speciation study conducted by the Washington Department of Ecology indicated that inorganic arsenic represented less than 1% of total arsenic analyzed in all crabs (Ecology, 2002). Assuming 1% of total arsenic is inorganic arsenic, mean concentrations from all locations did not exceed WDOH screening levels.
[13] Mercury screening levels are based on methyl mercury and, therefore, are not comparable to total mercury data in crab tissues.
[14] The high seafood consumer level of 175 g/d is considered highly unlikely for crab hepatopancreas tissues; this consumption level was developed using data where consumers ate salmon at a high rate.

hepatopancreas tissues collected by WDFW in Marine Area 10[15] exceeded the seafood advisory screening levels (WDOH 2016). Therefore, exceedances observed in the 2017 data were not different than those previously observed in crab before the West Point flooding event occurred.

5.4 PCBs

PCB concentrations in muscle and hepatopancreas tissue collected by WDFW from North Elliott Bay in 2012 were higher than levels observed during all other sampling periods (Figures 23 and 24).[16] However, this observed difference could be an artifact of the different analytical methods (including number of PCB congeners analyzed) used by WDFW and King County (see Section 4.2). When the 2014, 2017, and 2018 muscle tissue datasets for PCBs were tested for statistical differences (on ww, dw, and lipid-normalized basis), no differences were found (Appendix E). The visual comparison of PCB concentrations in hepatopancreas tissue also indicates there are no differences in these datasets. Therefore, PCB concentrations in crab collected from North Elliott Bay did not appear to increase as a result of the West Point flooding event.

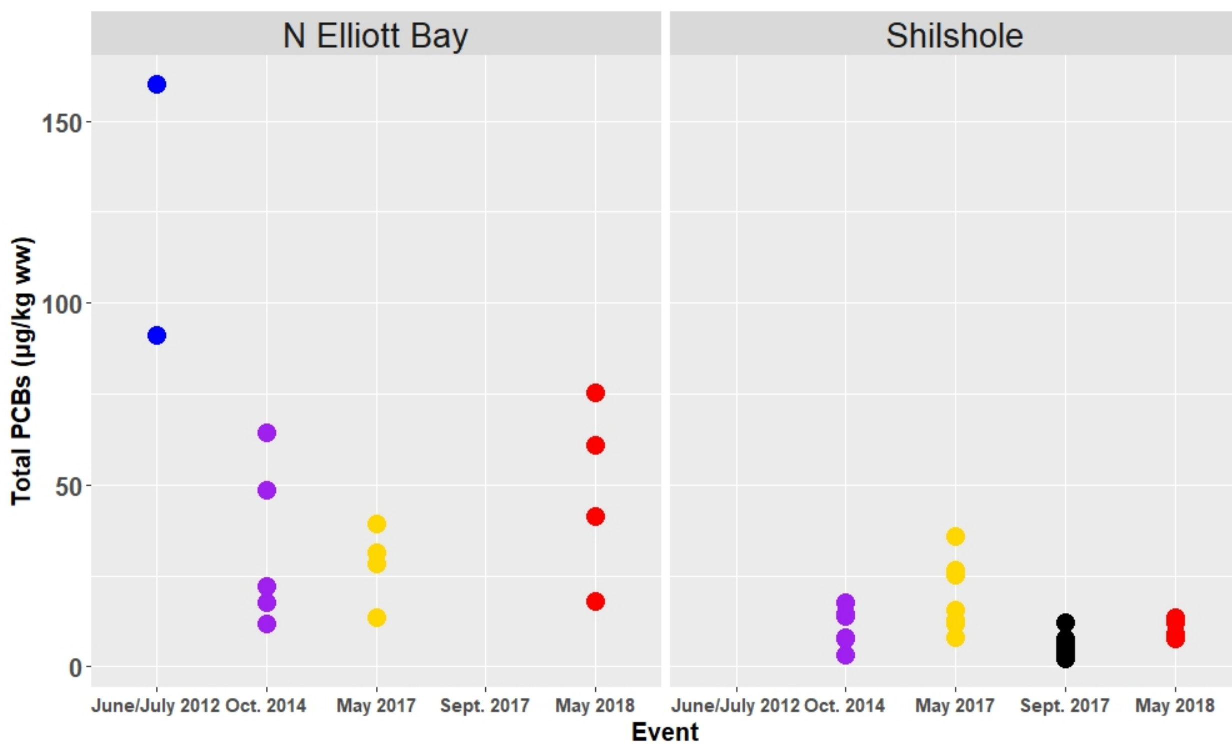

Figure 23. PCB concentrations (µg/kg ww) in crab muscle by sampling location and event. (Note June/July 2012 samples were analyzed with a different analytical method than the other samples.)

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[15] Marine Area 10 includes the Puget Sound Central Basin, including Elliott Bay and the Shilshole areas.

[16] Appendix D presents scatterplots of PCB data on a ww, dw, and lipid-normalized basis for North Elliott Bay and Shilshole areas.

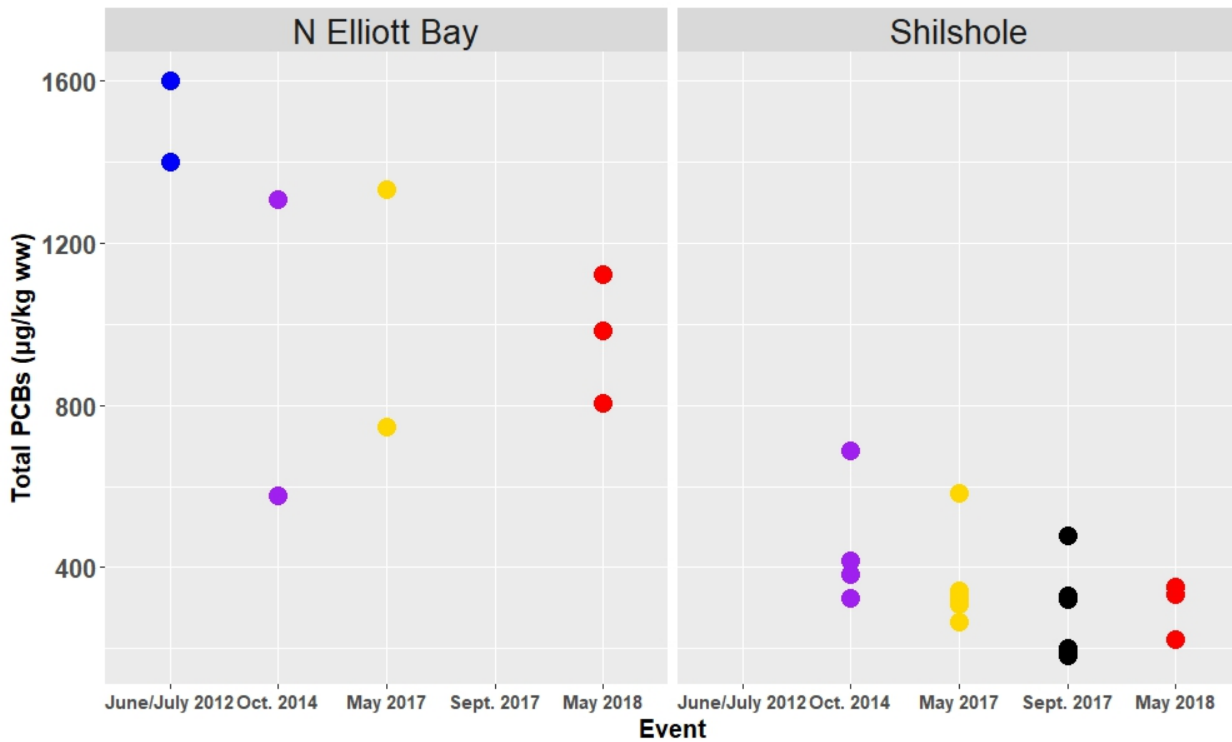

Figure 24. Total PCB concentrations (µg/kg ww) in crab hepatopancreas tisuse by sampling location and event. (Note a different analytical methods was used to analyze the June/July 2012 samples than the other samples.)

PCB concentrations in muscle tissue (ww and dw) and in hepatopancreas tissue (lipid-normalized) across all sampling events at the Shilshole area were statistically different based on the Kruskal-Wallis test (Appendix E). Based on the post-hoc Dunn's test, data distributions for each of these tissues were not statistically different between May 2017 and October 2014 (Figures 25 and 26). PCBs in the May 2017 muscle tissue (ww and dw) and lipid-normalized hepatopancreas tissue were statistically higher than levels in September 2017, but May 2017 data were not different than May 2018 data. The limited data for May 2018 is likely influencing the results of this analysis. The data distributions were not statistically different between October 2014 and May 2017 nor between the May 2017 and 2018 even though PCB concentrations in some muscle samples from the Shilshole area in May 2017 were higher than levels measured during other sampling months or years (Figure 25). If crab data are collected from the Shilshole area in the future, the results may provide further indications of whether the PCB pattern in the datasets are related to interannual variability, or if crab muscle tissue collected in May 2017 were likely influenced by the West Point flooding event.

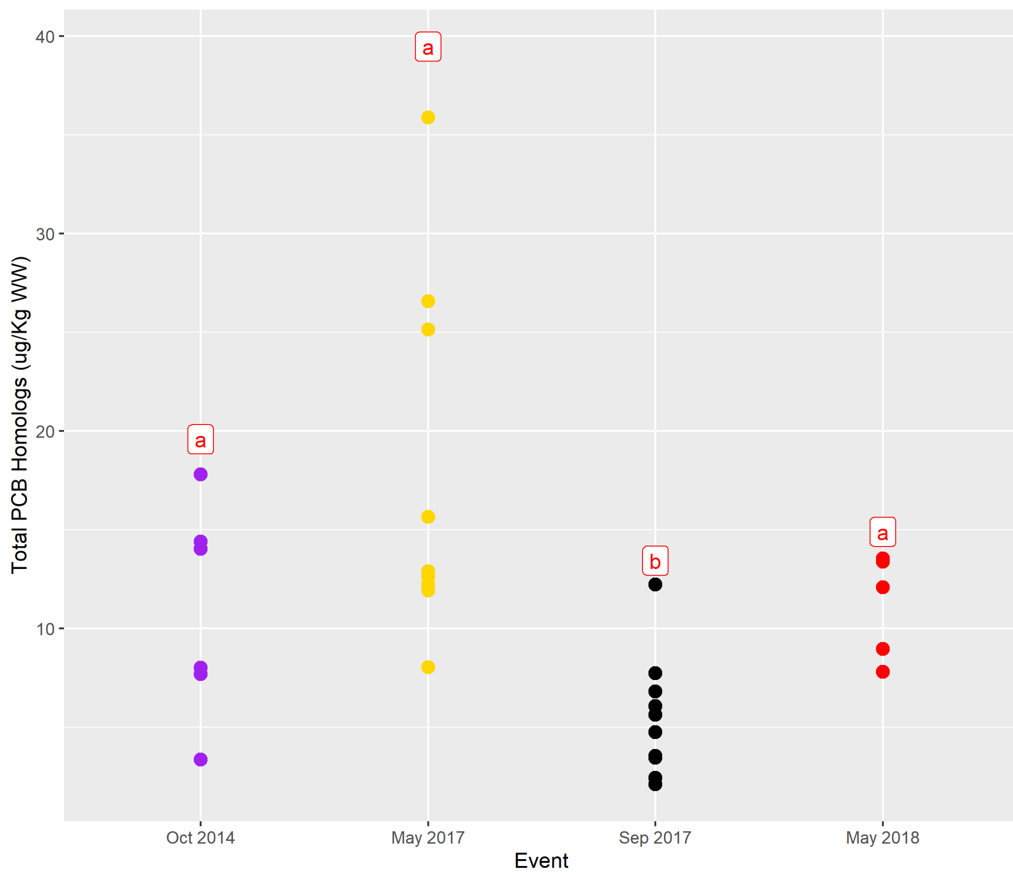

Figure 25. Total PCB concentrations (µg/kg ww) in crab muscle samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

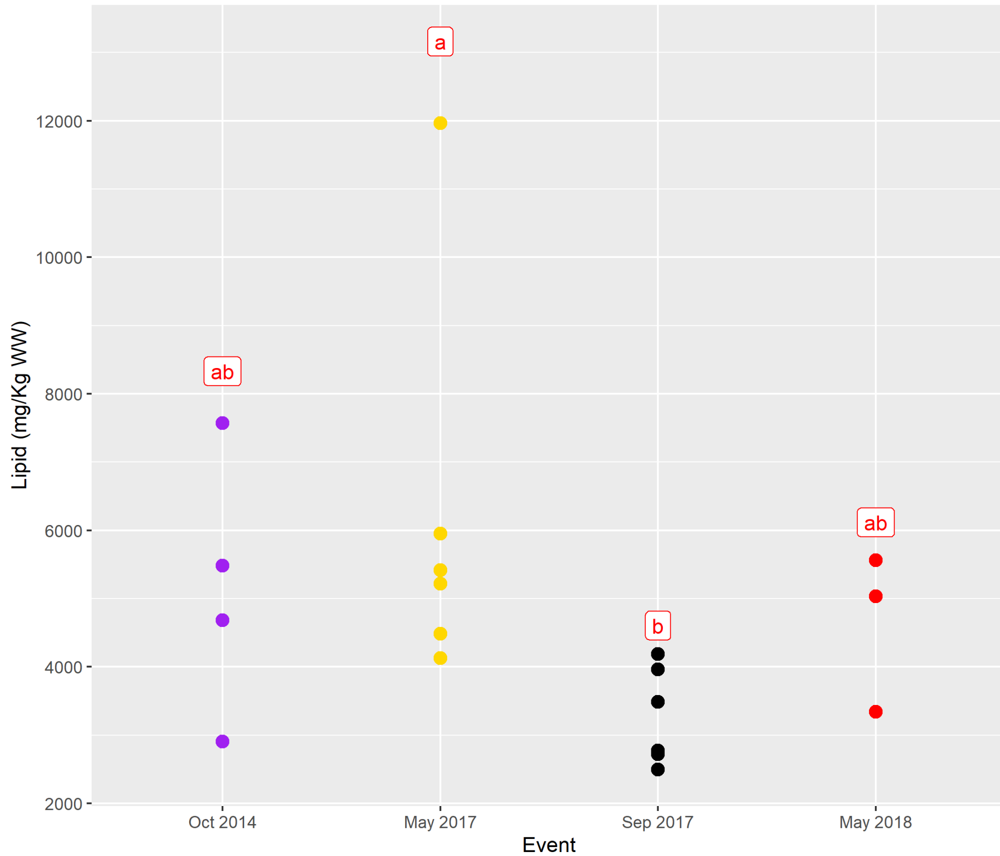

Figure 26. Total PCB concentrations (µg/kg-lipid) in crab hepatopancreas samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$).

Mean PCB concentrations in muscle tissue from both North Elliott Bay locations collected in May and September 2017, and at the Shilshole locations collected in May 2017 exceeded the WDOH high consumer seafood advisory screening level (8 µg/kg ww). Only one sample location, Myrtle Edwards in North Elliott Bay, had a mean PCB concentration in muscle that exceeded the WDOH general population seafood advisory screening level (23 µg/kg ww). All mean PCB concentrations in hepatopancreas tissues in 2017 exceeded both WDOH seafood advisory screening levels. This is consistent with findings by WDOH in their evaluation of WDFW's 2012 crab data (WDOH, 2016). WDOH found that total PCB concentrations exceeded both screening levels in muscle and hepatopancreas tissues from Elliott Bay, and PCB levels in hepatopancreas tissues exceeded both screening levels in Marine Area 10. A comparison of October 2014 crab tissue data to WDOH screening levels indicated similar findings to the May 2017 crab tissue data. Therefore, the 2017 PCB results are consistent with findings prior to the West Point flooding event.

5.5 PBDEs

Total PBDE concentrations (ww) in North Elliott Bay crab muscle samples were higher in 2012 compared to results for sampled collected in May of 2017 and 2018; the lowest levels were detected in May 2017 samples (Figure 27). A similar pattern was observed for PBDE levels in hepatopancreas tissue, except the 2017 and 2018 results were more similar to each other (Figure 28). This same finding was observed when data were assessed on a dw or lipid-normalized basis.[17] This observed difference could be an artifact of the different analytical methods (including the PBDE congeners analyzed) used by WDFW and King County (Section 4.2). Differences in the number and type of congeners analyzed and detected could have contributed to the observed differences.[18] For example, tetraBDE-49, which was the second most frequently detected congener in the 2012 data, was not analyzed as part of the method used by King County. In some cases, congeners analyzed by both laboratory methods were more frequently detected in 2012 samples (e.g., TriBDE-28 and pentaBDE-100). The 2017 and 2018 muscle tissue datasets for North Elliott Bay were tested for statistical differences (ww, dw, and lipid-normalized). Statistical analysis indicated that wet weight PBDE concentrations in samples collected in May 2018 were significantly higher than in samples collected in May 2017 (Appendix E and Figure 29). A visual comparison of PBDE concentrations in hepatopancreas tissue indicates no differences in these two datasets. There is very limited data and no comparable historic data to fully evaluate potential changes in PBDEs concentrations in crab from North Elliott Bay.

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17 Appendix D presents scatterplots of PBDE data on a ww, dw, and lipid-normalized basis for North Elliott Bay and Shilshole areas.

18 WDFW did not report frequency of detection of individual PBDE congeners for hepatopancreas samples; therefore, frequency of detection comparisons between 2012 and 2017 datasets could not be made.

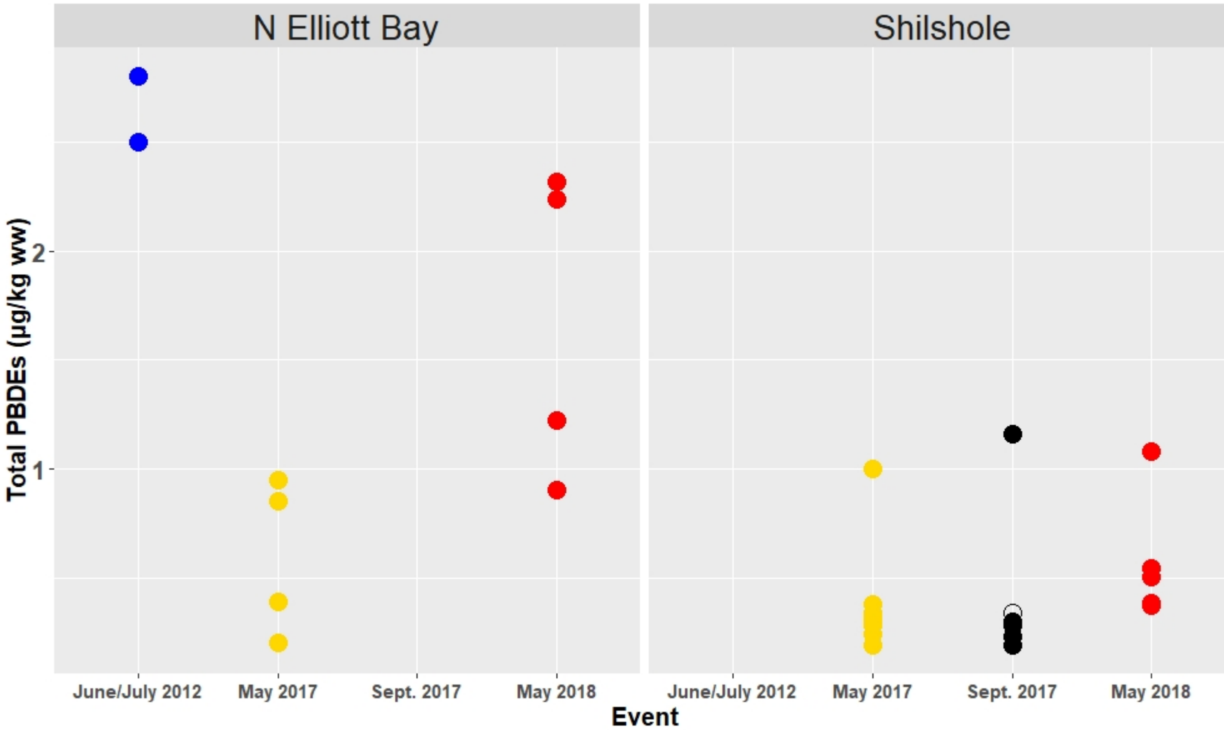

Figure 27. PBDE concentrations (µg/kg ww) in crab muscle by sampling location and event. (Note: a different analytical method was used to analyze June/July 2012 samplesthan was used for other samples; non-detect values are represented by half the LLOQ and displayed using hollow circles.)

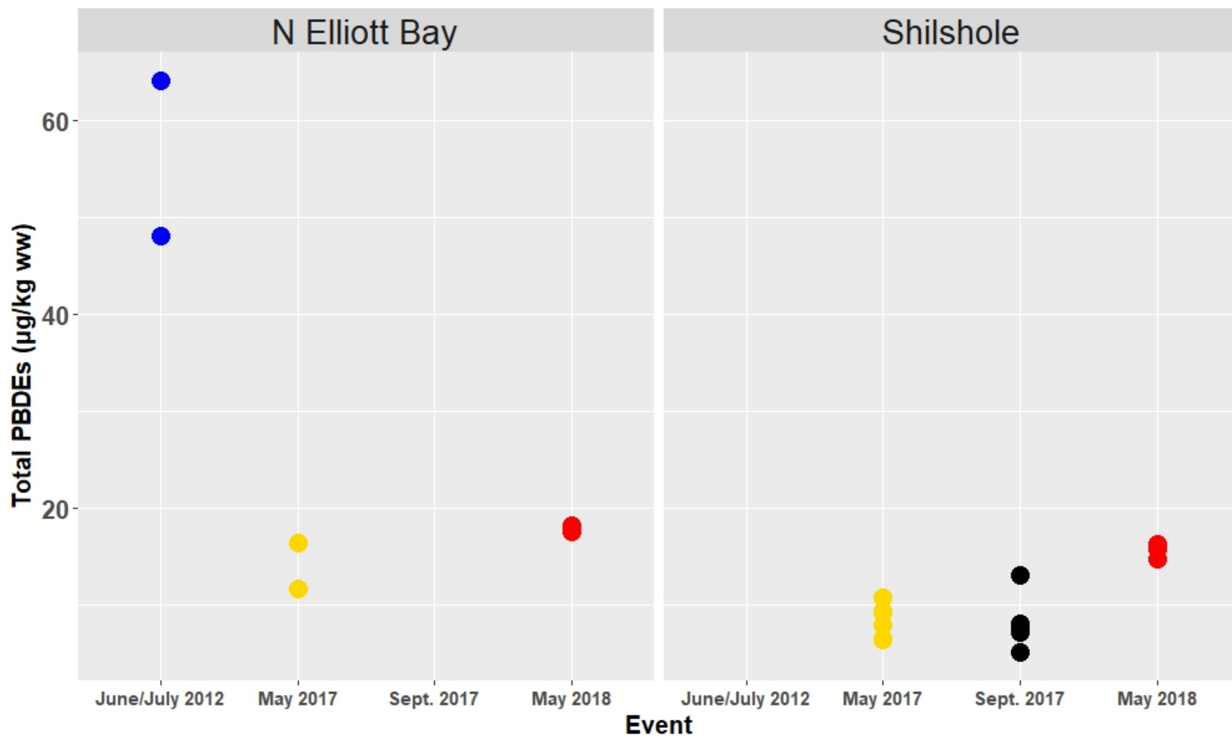

Figure 28. PBDE concentrations (µg/kg ww) in crab hepatopancreas by sampling location and event. (Note: a different analytical method was used to analyze June/July 2012 samples than was used for other samples.)

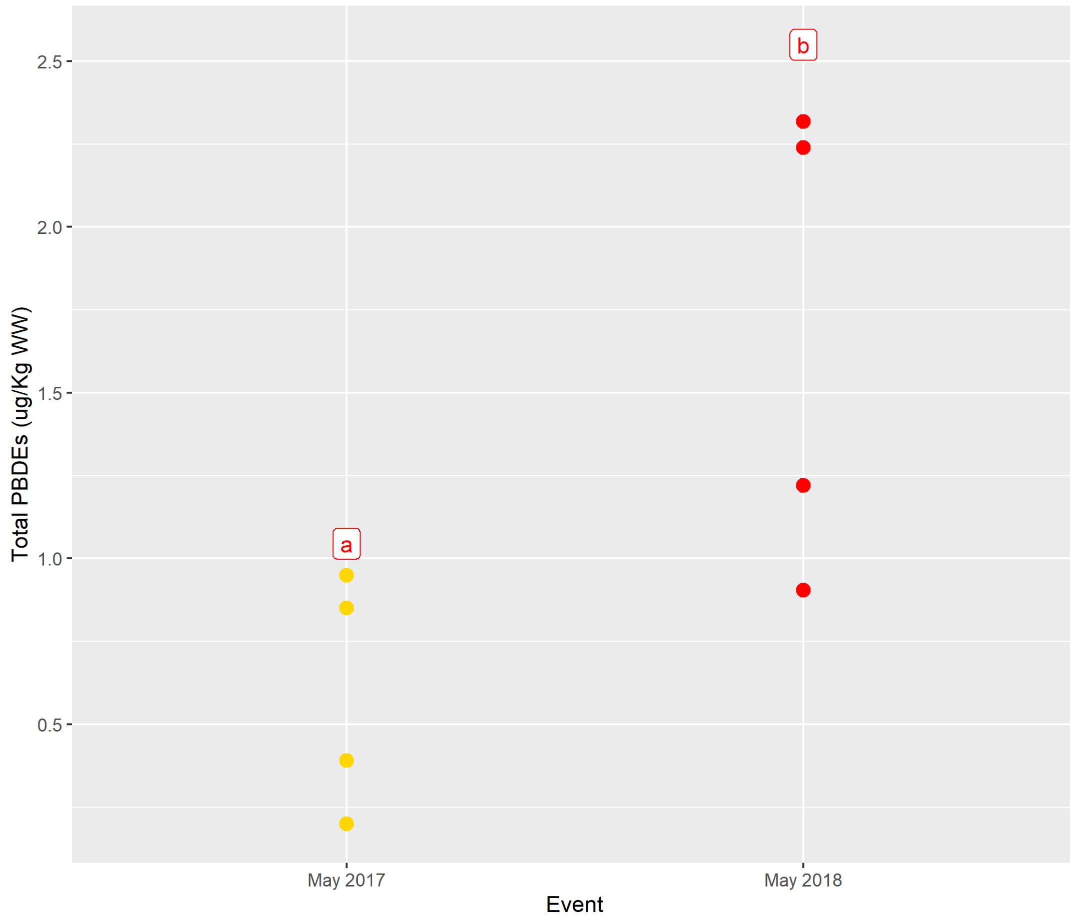

Figure 29. Total PBDE concentrations (µg/kg ww) in crab muscle samples from North Elliott Bay. (Note different letters indicate statistical significance difference at $p < 0.05$.)

Since no historical PBDE data from the Shilshole area were available only data for samples collected in 2017 (May and September) and 2018 (May) data were compared. Based on the Kruskal-Wallis test, significant differences in PBDE concentrations across all sampling events were found for both tissues types except for dry weight muscle tissue levels (Appendix E). The post-hoc Dunn's test indicated distributions of the May and September 2017 data were not significantly different from each other, but were significantly different and lower than the May 2018 data for both muscle and hepatopancreas tissues (Figures 30 and 31). However, when data for both tissue types were lipid-normalized, the May and September 2017 the data distributions were significantly different.

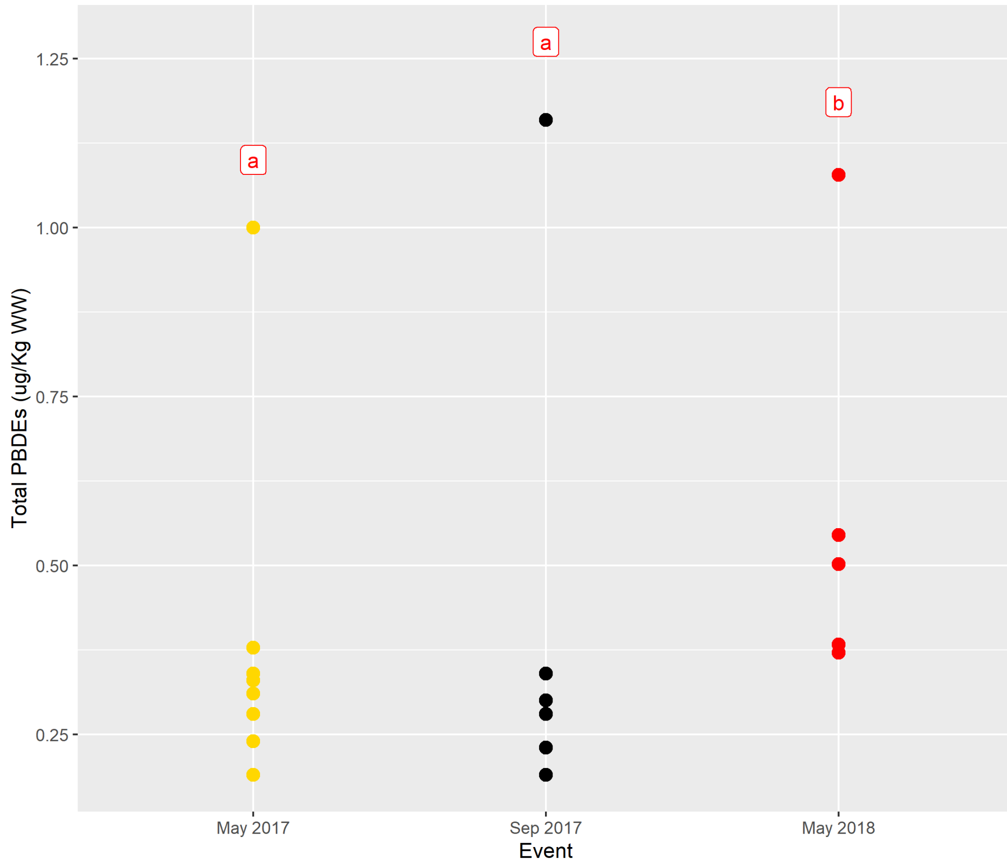

Figure 30. Total PBDE concentrations (µg/kg ww) in crab muscle samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

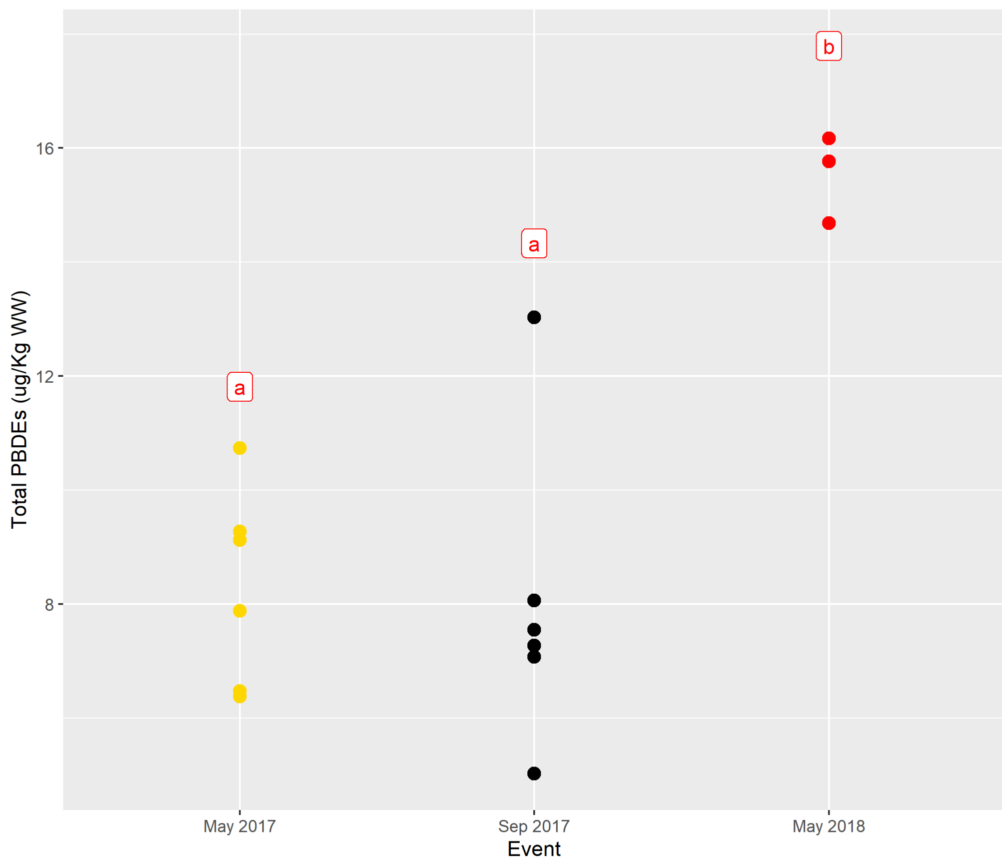

Figure 31. Total PBDE concentrations (µg/kg ww) in crab hepatopancreas samples from the Shilshole area. (Note different letters indicate statistical significance difference at $p < 0.05$.)

Overall, the limited PBDE data does not suggest that PBDE concentrations increased in either tissue type as a result of the West Point flooding event and any differences observed maybe due to interannual variability. If PDBE data for crab are collected from these areas in the future, it could provide more context to understand if the PBDE patterns observed in the 2017 and 2018 data datasets are related to interannual variability. Mean PBDE concentrations in Shilshole or North Elliott Bay crab tissues in 2017 did not exceed the WDOH seafood advisory screening levels.

5.6 PAHs

PAHs were not detected in any muscle or hepatopancreas samples in 2017.[19] The median lower limit of quantitation (LLOQ) for individual PAHs was 10 µg/kg ww with a laboratory information management system (LIMS) method detection limit of 2 µg/kg ww in muscle tissues. The median LLOQ for individual PAHs in hepatopancreas tissues was 167 µg/kg ww with a LIMS method detection limit of 33 µg/kg ww. No historic data from the Shilshole area were available for comparison and the historic WDFW data from North Elliott Bay had

[19] PAHs were not analyzed as part of King County's 2014 or 2018 sampling and analysis efforts.

detections below the LLOQ and thus were not comparable to the 2017 data (Section 4.2). The lack of historical data and detections of PAHs resulted in no assessment of PAHs in crab tissues related to the West Point flooding event.

5.7 Shared Key Findings between Crab Tissue Data and West Point Water Quality Monitoring Data

West Point effluent water quality monitoring samples were collected by King County between February 28 and June 20, 2017 at a higher frequency than routinely monitored (King County, 2018a). During the period of reduced treatment, concentrations of eight (arsenic, barium, chromium, copper, lead, mercury, nickel, and zinc) of the 14 metals analyzed[20] in West Point effluent were elevated to some degree during the period of reduced treatment compared to normal operating conditions (King County, 2018a). Of these, concentrations of chromium, copper, and lead were much higher during the period of reduced treatment compared to concentrations typically observed in effluent receiving full secondary treatment (King County, 2018a). PCBs or PAHs were not detected in effluent samples analyzed during this time. Mixing-zone analysis indicated only four metals (chromium, copper, lead, and zinc) showed a greater than 10% change compared to historic effluent data (King County, 2018a).

Most of the metals in either crab muscle or hepatopancreas tissues observed at higher concentrations in May 2017 relative to historic crab tissue data from the Shilshole area were also elevated to some degree in West Point effluent during period of reduced treatment. These include arsenic, chromium, copper, and zinc in muscle, and arsenic, chromium, lead, nickel, and zinc in hepatopancreas tissues. Of these metals, the data analysis suggested chromium and possibly copper in muscle tissues, and chromium, lead, and nickel in hepatopancreas tissues may have been influenced by the West Point flooding event. The increases in tissue were temporary, suggesting a short-term effect on crab tissues. However, it is difficult to definitively conclude the degree to which the West Point flooding event influenced metal concentrations in crab tissues from the Shilshole area because of the apparent interannual variability in the datasets, as well as availability of only one historic dataset.

[20] The 14 metals analyzed in effluent were antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc.

6.0 SUMMARY

Dungeness crab were collected in 2017 from two different areas within King County marine waters as part of the monitoring response related to the West Point flooding event. Crab were collected near the Shilshole Bay Marina, located north of West Point, and in north Elliott Bay near the Elliott West wet weather treatment station discharge outfall. This response monitoring focused on potential bioaccumulation of contaminants in crab tissues from untreated and reduced treatment West Point effluent discharges and increased discharges from the Elliott West facility. Crab muscle and hepatopancreas tissue were analyzed for total solids, lipids, stable isotopes, metals, PCBs, PBDEs, and PAHs. Limited historical data make it difficult to determine with high confidence the extent to which any observed changes are within seasonal, interannual, or expected variability for crab tissue concentrations in these areas. Despite this caveat, the following conclusions are made based on the available data.

The stable isotope data indicate that crab collected in both North Elliott Bay and Shilshole areas over the different monitoring events were consuming prey from the same trophic levels and did not exhibit a shift in dietary carbon sources. As a result, comparisons of chemical concentration in crab tissues would not likely be influenced by these factors.

Metal concentrations in crab muscle and hepatopancreas tissues from North Elliott Bay were not different from available historic data[21]. These results suggest the increased Elliott West discharges were unlikely to have affected metal concentrations in crab tissues.

At the Shilshole area, six metals had higher concentrations in crab tissues in May 2017 compared to data from October 2014. These include arsenic, chromium, copper and zinc in muscle tissue and arsenic, chromium, lead, nickel and zinc in hepatopancreas tissue. The same metals were also observed at higher concentrations in West Point effluent during the period of reduced treatment compared to concentrations typically observed during full secondary treatment. Analysis of three years of tissue data (2014, 2017, and 2018) suggests the West Point flooding event may have influenced concentrations of chromium and possibly copper in crab muscle tissues, and chromium, lead, and nickel in crab hepatopancreas tissues for a short-term period. However, due to the limited availability of historical data, as well as overall data variability, it is difficult to definitively conclude that the observed increases in either muscle or hepatopancreas tissue metal concentrations are related to the West Point flooding event. In addition, co-occurring factors such as heavier than normal rainfall and increased stormwater inputs to Puget Sound between February and April 2017 likely contributed to variability in contaminant concentrations in crab tissues.

PCB concentrations in crab muscle and hepatopancreas tissues from North Elliott Bay in 2017 were not different than tissue concentrations measured in 2014 and 2018. PCB concentrations in crab muscle from the Shilshole area were statistically different across all

[21] Statistical testing of North Elliott Bay crab hepatopancreas data was not conducted due to low sample size.

sampling events (2014, 2017, and 2018), but the data distributions were not statistically different between each of the following sampling events: October 2014 and May 2017 and May 2018. If future monitoring of PCBs in crab muscle tissues from the Shilshole area occurs, it would provide more data to help understand variability of PCBs in crab muscle tissues. PCB concentrations in hepatopancreas tissues collected in May 2017 were not significantly different than concentrations detected in October 2014 or May 2018. PCB Aroclors (detection limit of 0.05 µg/L) were not detected in West Point effluent during the period of reduced treatment. The tissue data suggest that the West Point flooding event or Elliott West effluent discharges during the same period did not result in substantive increases to PCB tissue concentrations in crab.

Total PBDE concentrations in crab from North Elliott Bay were highest in 2012 muscle and hepatopancreas samples compared to 2017 and 2018 samples; the lowest muscle tissue concentrations were detected in 2017. No historical PBDE data for the Shilshole area were available for comparison, but comparison of 2017 and 2018 data indicated that muscle and hepatopancreas tissue concentrations were higher in 2018 than 2017. PBDEs were not analyzed in West Point effluent. Overall, the limited data does not suggest an increase in PBDE concentrations in either tissue type as a result of the West Point flooding event, and any differences observed maybe due to interannual variability. If future monitoring of PBDEs in crab tissues occurs, it could help to further assess overall variability of PBDE levels in crab tissues.

PAH compounds were not detected in 2017 crab tissues or West Point effluent. In addition, there were no historical data available for comparison. Therefore, an assessment of PAHs in crab tissues from West Point flooding event could not be made.

When mean contaminant concentrations in crab tissue were compared to WDOH human health seafood advisory screening levels, all contaminants, except for cadmium and PCBs, were below screening levels. Concentrations of cadmium and PCBs in the hepatopancreas, and PCBs in muscle exceeded seafood advisory screening levels for both the general population and high seafood consumers. These findings are consistent with WDOH’s conclusions based on WDFW’s 2012 crab tissue data collected from Central Basin and Elliott Bay. Therefore, contaminant concentrations measured in crab tissues around the time of the West Point flooding event would not have changed existing WDOH health consumption advisories for crab.

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Appendix A: 2017 Crab Sampling Data

Table A1. Elliott Bay/Puget Sound Dungeness Crab Compositing Scheme

								Whole Crab		Muscle	Hepatopancreas
Location	Locator	Collect Date	Crab Pot	Individual	Sex	Northing[a]	Easting[a]	Length (mm)	Mass (g)	LIMS Sample ID	LIMS Sample ID
Shilshole South	CB-SHMARINA-S	5/3/2017	A3	6	Male	252373	1251227	156	609.33		
Shilshole South	CB-SHMARINA-S	5/3/2017	A3	4	Male	252373	1251227	169	858.50	L67900-6	
Shilshole South	CB-SHMARINA-S	5/4/2017	B4	2	Male	254428	1252706	186	984.60		L67901-4
Shilshole South	CB-SHMARINA-S	5/3/2017	A3	2	Male	252373	1251227	157	589.00		
Shilshole South	CB-SHMARINA-S	5/4/2017	A4	5	Male	254579	1252771	177	838.50	L67900-7	
Shilshole South	CB-SHMARINA-S	5/4/2017	A4	2	Male	254579	1252771	180	883.30		
Shilshole South	CB-SHMARINA-S	5/3/2017	A3	8	Male	252373	1251227	157	617.91		
Shilshole South	CB-SHMARINA-S	5/4/2017	B4	1	Male	254428	1252706	173	780.38	L67900-8	L67901-5
Shilshole South	CB-SHMARINA-S	5/3/2017	A3	5	Male	252373	1251227	178	909.15		
Shilshole South	CB-SHMARINA-S	5/4/2017	A4	3	Male	254579	1252771	159	647.75		
Shilshole South	CB-SHMARINA-S	5/3/2017	A3	7	Male	252373	1251227	176	803.35	L67900-9	
Shilshole South	CB-SHMARINA-S	5/3/2017	A3	1	Male	252373	1251227	177.23	887.02		
Shilshole South	CB-SHMARINA-S	5/3/2017	A3	3	Male	252373	1251227	168	760.07		L67901-6
Shilshole South	CB-SHMARINA-S	5/4/2017	A4	1	Male	254579	1252771	173	863.80	L67900-10	
Shilshole South	CB-SHMARINA-S	5/4/2017	A4	4	Male	254579	1252771	177	877.15		
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	14	Male	252338	1251435	159.8	540.86		L68828-5
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	1	Male	252338	1251435	190.17	1157.95	L68827-6	L68828-6
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	8	Male	252338	1251435	161.98	704.56		
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	9	Male	252338	1251435	163.39	696.02		
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	7	Male	252338	1251435	185.17	1009.41	L68827-7	
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	10	Male	252338	1251435	162.25	707.04		
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	4	Male	252338	1251435	164.09	741.51		L68828-4
Shilshole South	CB-SHMARINA-S	9/27/2017	B1	1	Male	252547	1251621	183.89	910.85	L68827-8	
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	12	Male	252338	1251435	164.05	607.95		
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	13	Male	252338	1251435	164.43	698.45		
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	5	Male	252338	1251435	177.56	919.72	L68827-9	L68828-5
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	6	Male	252338	1251435	168.13	768.19		
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	2	Male	252338	1251435	168.22	801.83		
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	3	Male	252338	1251435	169.88	745.52	L68827-10	L68828-6
Shilshole South	CB-SHMARINA-S	9/27/2017	A1	11	Female	252338	1251435	159.45	622.91	b	b

Table A1. Elliott Bay/Puget Sound Dungeness Crab Compositing Scheme

								Whole Crab		Muscle	Hepatopancreas
Location	Locator	Collect Date	Crab Pot	Individual	Sex	Northing[a]	Easting[a]	Length (mm)	Mass (g)	LIMS Sample ID	LIMS Sample ID
Shilshole North	CB-SHMARINA-N	5/4/2017	A4 (A5)	2	Male	254579	1252771	160	628.78		
Shilshole North	CB-SHMARINA-N	5/4/2017	A4 (A5)	3	Male	254579	1252771	168	646.17	L67900-1	
Shilshole North	CB-SHMARINA-N	5/4/2017	C4	2	Male	254206	1252583	187	1112.29		L67901-1
Shilshole North	CB-SHMARINA-N	5/3/2017	D3	1	Male	254502	1252667	161	623.23		
Shilshole North	CB-SHMARINA-N	5/3/2017	C3	2	Male	254412	1252595	169	749.50	L67900-2	
Shilshole North	CB-SHMARINA-N	5/3/2017	C3	1	Male	254412	1252595	185	980.70		
Shilshole North	CB-SHMARINA-N	5/3/2017	D3	2	Male	254502	1252667	162	739.47		
Shilshole North	CB-SHMARINA-N	5/4/2017	D4 (D5)	1	Male	254026	1252435	170	816.61	L67900-3	L67901-2
Shilshole North	CB-SHMARINA-N	5/4/2017	A4 (A5)	1	Male	254579	1252771	177	881.52		
Shilshole North	CB-SHMARINA-N	5/4/2017	C4	1	Male	254206	1252583	163	696.07		
Shilshole North	CB-SHMARINA-N	5/4/2017	B4 (B5)	1	Male	254428	1252706	171	832.23	L67900-4	
Shilshole North	CB-SHMARINA-N	5/3/2017	C3	6	Male	254412	1252595	174	851.23		
Shilshole North	CB-SHMARINA-N	5/3/2017	C3	5	Male	254412	1252595	164	664.02		L67901-3
Shilshole North	CB-SHMARINA-N	5/3/2017	C3	4	Male	254412	1252595	172	895.80	L67900-5	
Shilshole North	CB-SHMARINA-N	5/3/2017	C3	3	Male	254412	1252595	173	925.62		
Shilshole North	CB-SHMARINA-N	9/27/2017	C2	1	Male	254050	1252464	158.04	700.99		
Shilshole North	CB-SHMARINA-N	9/27/2017	D1	5	Male	254050	1252464	166.24	780.02		
Shilshole North	CB-SHMARINA-N	9/27/2017	E1	1	Male	254243	1252567	182.32	983.75	L68827-1	
Shilshole North	CB-SHMARINA-N	9/27/2017	D2	1	Male	254050	1252464	166.52	730.78		
Shilshole North	CB-SHMARINA-N	9/27/2017	D1	6	Male	254050	1252464	178.04	918.22		L68828-1
Shilshole North	CB-SHMARINA-N	9/27/2017	D1	4	Male	254050	1252464	162.52	709.3	L68827-2	L68828-3
Shilshole North	CB-SHMARINA-N	9/27/2017	D1	8	Male	254050	1252464	161.82	721.83		
Shilshole North	CB-SHMARINA-N	9/27/2017	D1	3	Male	254050	1252464	166.59	755.06		
Shilshole North	CB-SHMARINA-N	9/27/2017	D1	9	Male	254050	1252464	180.55	993.73	L68827-3	
Shilshole North	CB-SHMARINA-N	9/27/2017	D1	10	Male	254050	1252464	160.15	683.86		
Shilshole North	CB-SHMARINA-N	9/27/2017	D1	1	Male	254050	1252464	168.31	763.02		L68828-2
Shilshole North	CB-SHMARINA-N	9/27/2017	E1	2	Male	254243	1252567	181.88	894.79	L68827-4	
Shilshole North	CB-SHMARINA-N	9/27/2017	D1	2	Male	254050	1252464	177.58	957.58		
Shilshole North	CB-SHMARINA-N	9/27/2017	E1	3	Male	254243	1252567	164.52	726.11		
Shilshole North	CB-SHMARINA-N	9/27/2017	D1	7	Male	254050	1252464	168.63	780.19	L68827-5	L68828-3

Table A1. Elliott Bay/Puget Sound Dungeness Crab Compositing Scheme											
								Whole Crab		Muscle	Hepatopancreas
Location	Locator	Collect Date	Crab Pot	Individual	Sex	Northing[a]	Easting[a]	Length (mm)	Mass (g)	LIMS Sample ID	LIMS Sample ID
Smith Cove	EB-SmithCove	5/3/2017	F3	2	Male	229671	1259752	166	574.42		c
Smith Cove	EB-SmithCove	5/4/2017	E4	1	Male	231568	1259737	167	718.23		
Smith Cove	EB-SmithCove	5/3/2017	E3	2	Male	231549	1259810	189	1072.08	L68854-1	
Smith Cove	EB-SmithCove	5/4/2017	F4	1	Male	231802	1259918	164	669.32		
Smith Cove	EB-SmithCove	5/3/2017	F3	1	Male	229671	1259752	174	834.87		
Smith Cove	EB-SmithCove	5/3/2017	E3	1	Male	231549	1259810	183	1080.48	L68854-2	L68854-5
								Frozen Weights			
Myrtle Edwards	MyrtleEd_Trawl	5/3/2017	Haul 7B	1	Male	230520	1259883	184.02	1054		L68854-6
Myrtle Edwards	MyrtleEd_Trawl	5/3/2017	Haul 7E	4	Male	230373	1259930	154	517.8		c
Myrtle Edwards	MyrtleEd_Trawl	5/3/2017	Haul 7E	3	Male	230373	1259930	160	696.3	L68854-3	
Myrtle Edwards	MyrtleEd_Trawl	5/3/2017	Haul 7B	2	Male	230520	1259883	183.44	821		
Myrtle Edwards	MyrtleEd_Trawl	5/3/2017	Haul 7A	5	Male	230519	1259901	154.38	513.2		
Myrtle Edwards	MyrtleEd_Trawl	5/3/2017	Haul 7A	6	Male	230519	1259901	158.01	614.5	L68854-4	L68854-6
Myrtle Edwards	MyrtleEd_Trawl	5/3/2017	Haul 7A	7	Male	230519	1259901	147.2	492.2	c	c
a = Trawl coordinates displayed for Myrtle Edwards are the centroids of the start and end coordinates reported by WDFW.											
b = Female Dungeness crab accidentally retained by field collection staff, not used in compositing and analysis.											
c = Not included in any composite											

Appendix B: Laboratory Data Reports for 2017 Crab Data

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Table B-1. 2017 Crab Tissue Sample Summary

Sampling Location	Month	Composite ID	Tissue Type	
			Muscle	Hepatopancreas
Shilshole North	May	L67900-1	X	
		L67900-2	X	
		L67900-3	X	
		L67900-4	X	
		L67900-5	X	
		L67901-1		X
		L67901-2		X
		L67901-3		X
	September	L68827-1	X	
		L68827-2	X	
		L68827-3	X	
		L68827-4	X	
		L68827-5	X	
		L68828-1		X
		L68828-2		X
		L68828-3		X
Shilshole South	May	L67900-6	X	
		L67900-7	X	
		L67900-8	X	
		L67900-9	X	
		L67900-10	X	
		L67901-4		X
		L67901-5		X
		L67901-6		X
	September	L68827-6	X	
		L68827-7	X	
		L68827-8	X	
		L68827-9	X	
		L68827-10	X	
		L68828-4		X
		L68828-5		X
		L68828-6		X
Smith Cove	May	L68854-1	X	
		L68854-2	X	
		L68854-5		X
Myrtle Edwards	May	L68854-3	X	
		L68854-4	X	
		L68854-6		X

Table B-2. May 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Project: 421093-100					Project: 421093-100					Project: 421093-100				
	Locator: CB-SHMARINA-N					Locator: CB-SHMARINA-N					Locator: CB-SHMARINA-N				
	Descrip: SHILSHOLE MARINA,					Descrip: SHILSHOLE MARINA,					Descrip: SHILSHOLE MARINA,				
	Sample: L67900-1					Sample: L67900-2					Sample: L67900-3				
	Matrix: TD SHELLFISH					Matrix: TD SHELLFISH					Matrix: TD SHELLFISH				
	ColDate: 6/1/17 0:00					ColDate: 6/1/17 0:00					ColDate: 6/1/17 0:00				
	TotalSolid: 16					TotalSolid: 16.8					TotalSolid: 17.3				
	WET Weight Basis					**WET Weight Basis**					**WET Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
CV SM2540-G															
Total Solids	16		0.005	0.01	%	16.8		0.005	0.01	%	17.3		0.005	0.01	%
ES NONE															
Sample Information	Dungeness Muscle A4(A5)-2,3, C4-2				none	Dungeness Muscle D3-1, C3-1,2				none	Dungeness Muscle A4(A5)-1, D3-2, D4(D5)-1				none
MT PSEP 1997*SW846 7471B															
Mercury, Total, CVAA	0.0542	H	0.00412	0.00412	mg/Kg	0.0595	H	0.00397	0.00397	mg/Kg	0.0468	H	0.00389	0.00389	mg/Kg
MT PSEP1997*SW846 6020B															
Arsenic, Total, ICP-MS	7.84		0.00205	0.00205	mg/Kg	8.19		0.002	0.002	mg/Kg	8.94		0.00194	0.00194	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00409	0.00409	mg/Kg		<QL	0.00401	0.00401	mg/Kg		<QL	0.00387	0.00387	mg/Kg
Cadmium, Total, ICP-MS	0.0275		0.00205	0.00205	mg/Kg	0.0374		0.002	0.002	mg/Kg	0.056		0.00194	0.00194	mg/Kg
Chromium, Total, ICP-MS	0.411		0.00818	0.00818	mg/Kg	0.117		0.00801	0.00801	mg/Kg	0.0259		0.00775	0.00775	mg/Kg
Copper, Total, ICP-MS	9.13		0.00818	0.00818	mg/Kg	10.3		0.00801	0.00801	mg/Kg	12.2		0.00775	0.00775	mg/Kg
Lead, Total, ICP-MS	0.0112		0.00409	0.00409	mg/Kg	0.0135		0.00401	0.00401	mg/Kg	0.0219		0.00387	0.00387	mg/Kg
Nickel, Total, ICP-MS	0.278		0.00409	0.00409	mg/Kg	0.105		0.00401	0.00401	mg/Kg	0.0561		0.00387	0.00387	mg/Kg
Selenium, Total, ICP-MS	0.492		0.0205	0.0205	mg/Kg	0.521		0.02	0.02	mg/Kg	0.461		0.0194	0.0194	mg/Kg
Silver, Total, ICP-MS	0.201		0.00164	0.00164	mg/Kg	0.188		0.0016	0.0016	mg/Kg	0.285		0.00155	0.00155	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00409	0.00409	mg/Kg		<QL	0.00401	0.00401	mg/Kg		<QL	0.00387	0.00387	mg/Kg
Zinc, Total, ICP-MS	35.7		0.0205	0.0205	mg/Kg	35.4		0.02	0.02	mg/Kg	36		0.0194	0.0194	mg/Kg
OR GRAVIMETRIC SOP 740v2															
Percent Lipids	0.433		0.05	0.1	%	0.465		0.05	0.1	%	0.488		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM															
Dichlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Heptachlorobiphenyls	1.66		0.19	0.375	ug/Kg	3.91		0.19	0.375	ug/Kg	3.97		0.19	0.375	ug/Kg
Hexachlorobiphenyls	5.89		0.13	0.25	ug/Kg	11.5		0.13	0.25	ug/Kg	11.3		0.13	0.25	ug/Kg
Monochlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Nonachlorobiphenyls		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg
Octachlorobiphenyls	0.3	<QL,J	0.19	0.375	ug/Kg	0.395		0.19	0.375	ug/Kg	0.667		0.19	0.375	ug/Kg
Pentachlorobiphenyls	4.05		0.13	0.25	ug/Kg	7.45		0.13	0.25	ug/Kg	8.67		0.13	0.25	ug/Kg
Tetrachlorobiphenyls	0.9		0.13	0.25	ug/Kg	1.76		0.13	0.25	ug/Kg	1.78		0.13	0.25	ug/Kg
Total PCB Homologs	12.9		0.06	0.125	ug/Kg	25.149		0.06	0.125	ug/Kg	26.574		0.06	0.125	ug/Kg
Trichlorobiphenyls	0.1	<QL,J	0.06	0.125	ug/Kg	0.134		0.06	0.125	ug/Kg	0.187		0.06	0.125	ug/Kg
OR SW846 3550B*SW846 8270D SIM															
2-Methylnaphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthylene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg
Benzo(g,h,i)perylene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Chrysene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Dibenzo(a,h)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluoranthene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluorene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Naphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Phenanthrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg

Table B-2. May 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

Project:	421093-100	Project:	421093-100	Project:	421093-100
Locator:	CB-SHMARINA-N	Locator:	CB-SHMARINA-N	Locator:	CB-SHMARINA-N
Descrip:	SHILSHOLE MARINA,	Descrip:	SHILSHOLE MARINA,	Descrip:	SHILSHOLE MARINA,
Sample:	L67900-1	Sample:	L67900-2	Sample:	L67900-3
Matrix:	TD SHELLFISH	Matrix:	TD SHELLFISH	Matrix:	TD SHELLFISH
ColDate:	6/1/17 0:00	ColDate:	6/1/17 0:00	ColDate:	6/1/17 0:00
TotalSolid:	16	TotalSolid:	16.8	TotalSolid:	17.3
WET Weight Basis		**WET Weight Basis**		**WET Weight Basis**	

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
OR SW8463540B*KC SOP 781 GCMS-NCI															
DecaBDE-209		<QL	0.25	0.5	ug/Kg		<QL	0.25	0.5	ug/Kg		<QL	0.25	0.5	ug/Kg
HeptaBDE-183		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HeptaBDE-190		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-138		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-153		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-154		<QL	0.022	0.044	ug/Kg		<QL	0.022	0.044	ug/Kg		<QL	0.022	0.044	ug/Kg
PentaBDE-100		<QL	0.056	0.112	ug/Kg		<QL	0.056	0.112	ug/Kg		<QL	0.056	0.112	ug/Kg
PentaBDE-85		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
PentaBDE-99		<QL	0.34	0.68	ug/Kg	0.66	<QL,J	0.34	0.68	ug/Kg		<QL	0.34	0.68	ug/Kg
TetraBDE-47	0.24	<QL,J	0.18	0.36	ug/Kg	0.34	<QL,J	0.18	0.36	ug/Kg	0.34	<QL,J	0.18	0.36	ug/Kg
TetraBDE-66		<QL	0.029	0.058	ug/Kg		<QL	0.029	0.058	ug/Kg		<QL	0.029	0.058	ug/Kg
TetraBDE-71		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
TriBDE-17		<QL	0.02	0.04	ug/Kg		<QL,JG	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
TriBDE-28/-33		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding time
<QL = less than limit of quantification
J = estimated value

Table B-2. May 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample 1	Sample 2	Sample 3
Project:	421093-100	421093-100	421093-100
Locator:	CB-SHMARINA-N	CB-SHMARINA-N	CB-SHMARINA-S
Descrip:	SHILSHOLE MARINA,	SHILSHOLE MARINA,	SHILSHOLE MARINA,
Sample:	L67900-4	L67900-5	L67900-6
Matrix:	TD SHELLFISH	TD SHELLFISH	TD SHELLFISH
ColDate:	6/1/17 0:00	6/1/17 0:00	6/1/17 0:00
TotalSolid:	17.5	17.7	19.8
	WET Weight Basis	**WET Weight Basis**	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
CV SM2540-G															
Total Solids	17.5		0.005	0.01	%	17.7		0.005	0.01	%	19.8		0.005	0.01	%
ES NONE															
Sample Information	Dungeness Muscle C3-6, C4-1, B4(B5)-1				none	Dungeness Muscle C3-3,4,5				none	Dungeness Muscle A3-4,6, B4-2				none
MT PSEP 1997*SW846 7471B															
Mercury, Total, CVAA	0.0649	H	0.004	0.004	mg/Kg	0.056	H	0.00414	0.00414	mg/Kg	0.047	H	0.00385	0.00385	mg/Kg
MT PSEP1997*SW846 6020B															
Arsenic, Total, ICP-MS	7.27		0.00194	0.00194	mg/Kg	7.07		0.00196	0.00196	mg/Kg	5.74		0.002	0.002	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00389	0.00389	mg/Kg		<QL	0.00392	0.00392	mg/Kg		<QL	0.00401	0.00401	mg/Kg
Cadmium, Total, ICP-MS	0.0229		0.00194	0.00194	mg/Kg	0.0243		0.00196	0.00196	mg/Kg	0.0111		0.002	0.002	mg/Kg
Chromium, Total, ICP-MS	0.0309		0.00777	0.00777	mg/Kg	0.023		0.00784	0.00784	mg/Kg	0.0114		0.00801	0.00801	mg/Kg
Copper, Total, ICP-MS	9.47		0.00777	0.00777	mg/Kg	9.81		0.00784	0.00784	mg/Kg	10.2		0.00801	0.00801	mg/Kg
Lead, Total, ICP-MS	0.0184		0.00389	0.00389	mg/Kg	0.0132		0.00392	0.00392	mg/Kg	0.0155		0.00401	0.00401	mg/Kg
Nickel, Total, ICP-MS	0.0474		0.00389	0.00389	mg/Kg	0.0388		0.00392	0.00392	mg/Kg	0.0181		0.00401	0.00401	mg/Kg
Selenium, Total, ICP-MS	0.398		0.0194	0.0194	mg/Kg	0.462		0.0196	0.0196	mg/Kg	0.307		0.02	0.02	mg/Kg
Silver, Total, ICP-MS	0.159		0.00155	0.00155	mg/Kg	0.179		0.00157	0.00157	mg/Kg	0.165		0.0016	0.0016	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00389	0.00389	mg/Kg		<QL	0.00392	0.00392	mg/Kg		<QL	0.00401	0.00401	mg/Kg
Zinc, Total, ICP-MS	36.9		0.0194	0.0194	mg/Kg	36.7		0.0196	0.0196	mg/Kg	39.8		0.02	0.02	mg/Kg
OR GRAVIMETRIC SOP 740v2															
Percent Lipids	0.53		0.05	0.1	%	0.578		0.05	0.1	%	0.583		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM															
Dichlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Heptachlorobiphenyls	1.78		0.19	0.375	ug/Kg	1.47		0.19	0.375	ug/Kg	0.957		0.19	0.375	ug/Kg
Hexachlorobiphenyls	6.85		0.13	0.25	ug/Kg	5.52		0.13	0.25	ug/Kg	4.7		0.13	0.25	ug/Kg
Monochlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Nonachlorobiphenyls		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg
Octachlorobiphenyls		<QL	0.19	0.375	ug/Kg		<QL	0.19	0.375	ug/Kg		<QL	0.19	0.375	ug/Kg
Pentachlorobiphenyls	5.59		0.13	0.25	ug/Kg	4.17		0.13	0.25	ug/Kg	5.17		0.13	0.25	ug/Kg
Tetrachlorobiphenyls	1.27		0.13	0.25	ug/Kg	0.954		0.13	0.25	ug/Kg	1.57		0.13	0.25	ug/Kg
Total PCB Homologs	15.646		0.06	0.125	ug/Kg	12.224		0.06	0.125	ug/Kg	12.621		0.06	0.125	ug/Kg
Trichlorobiphenyls	0.156		0.06	0.125	ug/Kg	0.11	<QL,J	0.06	0.125	ug/Kg	0.224		0.06	0.125	ug/Kg
OR SW846 3550B*SW846 8270D SIM															
2-Methylnaphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthylene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg
Benzo(g,h,i)perylene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Chrysene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Dibenzo(a,h)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluoranthene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluorene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Naphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Phenanthrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg

Table B-2. May 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample 1	Sample 2	Sample 3
Project:	421093-100	421093-100	421093-100
Locator:	CB-SHMARINA-N	CB-SHMARINA-N	CB-SHMARINA-S
Descrip:	SHILSHOLE MARINA,	SHILSHOLE MARINA,	SHILSHOLE MARINA,
Sample:	L67900-4	L67900-5	L67900-6
Matrix:	TD SHELLFISH	TD SHELLFISH	TD SHELLFISH
ColDate:	6/1/17 0:00	6/1/17 0:00	6/1/17 0:00
TotalSolid:	17.5	17.7	19.8
	WET Weight Basis	**WET Weight Basis**	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
OR SW8463540B*KC SOP 781 GCMS-NCI															
DecaBDE-209		<QL	0.25	0.5	ug/Kg		<QL	0.25	0.5	ug/Kg		<QL	0.25	0.5	ug/Kg
HeptaBDE-183		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HeptaBDE-190		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-138		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-153		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-154		<QL	0.022	0.044	ug/Kg		<QL	0.022	0.044	ug/Kg		<QL	0.022	0.044	ug/Kg
PentaBDE-100		<QL	0.056	0.112	ug/Kg		<QL	0.056	0.112	ug/Kg		<QL	0.056	0.112	ug/Kg
PentaBDE-85		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
PentaBDE-99		<QL	0.34	0.68	ug/Kg		<QL	0.34	0.68	ug/Kg		<QL,J	0.34	0.68	ug/Kg
TetraBDE-47	0.378		0.18	0.36	ug/Kg	0.33	<QL,J	0.18	0.36	ug/Kg	0.19	<QL,J	0.18	0.36	ug/Kg
TetraBDE-66		<QL	0.029	0.058	ug/Kg		<QL	0.029	0.058	ug/Kg		<QL	0.029	0.058	ug/Kg
TetraBDE-71		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
TriBDE-17		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
TriBDE-28/-33		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding tin
<QL = less than limit of quantification
J = estimated value

Table B-2. May 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample 1	Sample 2	Sample 3
Project:	421093-100	421093-100	421093-100
Locator:	CB-SHMARINA-S	CB-SHMARINA-S	CB-SHMARINA-S
Descrip:	SHILSHOLE MARINA,	SHILSHOLE MARINA,	SHILSHOLE MARINA,
Sample:	L67900-7	L67900-8	L67900-9
Matrix:	TD SHELLFISH	TD SHELLFISH	TD SHELLFISH
ColDate:	6/1/17 0:00	6/1/17 0:00	6/1/17 0:00
TotalSolid:	18.8	17.7	14.7
	WET Weight Basis	**WET Weight Basis**	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
CV SM2540-G															
Total Solids	18.8		0.005	0.01	%	17.7		0.005	0.01	%	14.7		0.005	0.01	%
ES NONE															
Sample Information	Dungeness Muscle A3-2, A4-2,5				none	Dungeness Muscle A3-5,8, B4-1				none	Dungeness Muscle A3-1,7, A4-3				none
MT PSEP 1997*SW846 7471B															
Mercury, Total, CVAA	0.0669	H	0.00399	0.00399	mg/Kg	0.0505	H	0.00391	0.00391	mg/Kg	0.0512	H	0.00412	0.00412	mg/Kg
MT PSEP1997*SW846 6020B															
Arsenic, Total, ICP-MS	6.71		0.00201	0.00201	mg/Kg	5.24		0.00201	0.00201	mg/Kg	6.1		0.00203	0.00203	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00403	0.00403	mg/Kg		<QL	0.00402	0.00402	mg/Kg		<QL	0.00406	0.00406	mg/Kg
Cadmium, Total, ICP-MS	0.0223		0.00201	0.00201	mg/Kg	0.0379		0.00201	0.00201	mg/Kg	0.058		0.00203	0.00203	mg/Kg
Chromium, Total, ICP-MS	0.0381		0.00805	0.00805	mg/Kg	0.0582		0.00805	0.00805	mg/Kg	0.019		0.00811	0.00811	mg/Kg
Copper, Total, ICP-MS	9.29		0.00805	0.00805	mg/Kg	9.53		0.00805	0.00805	mg/Kg	10.2		0.00811	0.00811	mg/Kg
Lead, Total, ICP-MS	0.0202		0.00403	0.00403	mg/Kg	0.0111		0.00402	0.00402	mg/Kg	0.0163		0.00406	0.00406	mg/Kg
Nickel, Total, ICP-MS	0.0354		0.00403	0.00403	mg/Kg	0.034		0.00402	0.00402	mg/Kg	0.0756		0.00406	0.00406	mg/Kg
Selenium, Total, ICP-MS	0.393		0.0201	0.0201	mg/Kg	0.458		0.0201	0.0201	mg/Kg	0.38		0.0203	0.0203	mg/Kg
Silver, Total, ICP-MS	0.168		0.00161	0.00161	mg/Kg	0.127		0.00161	0.00161	mg/Kg	0.23		0.00162	0.00162	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00403	0.00403	mg/Kg		<QL	0.00402	0.00402	mg/Kg		<QL	0.00406	0.00406	mg/Kg
Zinc, Total, ICP-MS	41.2		0.0201	0.0201	mg/Kg	38.7		0.0201	0.0201	mg/Kg	33.5		0.0203	0.0203	mg/Kg
OR GRAVIMETRIC SOP 740v2															
Percent Lipids	0.635		0.05	0.1	%	0.577		0.05	0.1	%	0.526		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM															
Dichlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Heptachlorobiphenyls	1.26		0.19	0.375	ug/Kg	0.752		0.19	0.375	ug/Kg	1.25		0.19	0.375	ug/Kg
Hexachlorobiphenyls	6.34		0.13	0.25	ug/Kg	3.43		0.13	0.25	ug/Kg	5.3		0.13	0.25	ug/Kg
Monochlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Nonachlorobiphenyls		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg
Octachlorobiphenyls		<QL	0.19	0.375	ug/Kg		<QL	0.19	0.375	ug/Kg		<QL	0.19	0.375	ug/Kg
Pentachlorobiphenyls	6.04		0.13	0.25	ug/Kg	3.14		0.13	0.25	ug/Kg	4.26		0.13	0.25	ug/Kg
Tetrachlorobiphenyls	1.75		0.13	0.25	ug/Kg	0.707		0.13	0.25	ug/Kg	0.98		0.13	0.25	ug/Kg
Total PCB Homologs	15.64		0.06	0.125	ug/Kg	8.029		0.06	0.125	ug/Kg	11.91		0.06	0.125	ug/Kg
Trichlorobiphenyls	0.25		0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg	0.12	<QL,J	0.06	0.125	ug/Kg
OR SW846 3550B*SW846 8270D SIM															
2-Methylnaphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthylene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg
Benzo(g,h,i)perylene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Chrysene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Dibenzo(a,h)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluoranthene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluorene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Naphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Phenanthrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg

Table B-2. May 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample 1	Sample 2	Sample 3
Project:	421093-100	421093-100	421093-100
Locator:	CB-SHMARINA-S	CB-SHMARINA-S	CB-SHMARINA-S
Descrip:	SHILSHOLE MARINA,	SHILSHOLE MARINA,	SHILSHOLE MARINA,
Sample:	L67900-7	L67900-8	L67900-9
Matrix:	TD SHELLFISH	TD SHELLFISH	TD SHELLFISH
ColDate:	6/1/17 0:00	6/1/17 0:00	6/1/17 0:00
TotalSolid:	18.8	17.7	14.7
	WET Weight Basis	**WET Weight Basis**	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
OR SW8463540B*KC SOP 781 GCMS-NCI															
DecaBDE-209		<QL	0.25	0.5	ug/Kg		<QL	0.25	0.5	ug/Kg		<QL	0.25	0.5	ug/Kg
HeptaBDE-183		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HeptaBDE-190		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-138		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-153		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-154		<QL	0.022	0.044	ug/Kg		<QL	0.022	0.044	ug/Kg		<QL	0.022	0.044	ug/Kg
PentaBDE-100		<QL	0.056	0.112	ug/Kg		<QL	0.056	0.112	ug/Kg		<QL	0.056	0.112	ug/Kg
PentaBDE-85		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
PentaBDE-99		<QL	0.34	0.68	ug/Kg		<QL	0.34	0.68	ug/Kg		<QL	0.34	0.68	ug/Kg
TetraBDE-47	0.28	<QL,J	0.18	0.36	ug/Kg	0.24	<QL,J	0.18	0.36	ug/Kg	0.31	<QL,J	0.18	0.36	ug/Kg
TetraBDE-66		<QL	0.029	0.058	ug/Kg		<QL	0.029	0.058	ug/Kg		<QL	0.029	0.058	ug/Kg
TetraBDE-71		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
TriBDE-17		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
TriBDE-28/-33		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding tim
<QL = less than limit of quantification
J = estimated value

Table B-2. May 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

Project:	421093-100
Locator:	CB-SHMARINA-S
Descrip:	SHILSHOLE MARINA,
Sample:	L67900-10
Matrix:	TD SHELLFISH
ColDate:	6/1/17 0:00
TotalSolid:	17.4

WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units
CV SM2540-G					
Total Solids	17.4		0.005	0.01	%
ES NONE					
Sample Information	Dungeness Muscle A3-3, A4-1,4				none
MT PSEP 1997*SW846 7471B					
Mercury, Total, CVAA	0.0763	H	0.00396	0.00396	mg/Kg
MT PSEP1997*SW846 6020B					
Arsenic, Total, ICP-MS	7.09		0.00203	0.00203	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00406	0.00406	mg/Kg
Cadmium, Total, ICP-MS	0.02		0.00203	0.00203	mg/Kg
Chromium, Total, ICP-MS	0.0314		0.00812	0.00812	mg/Kg
Copper, Total, ICP-MS	9.85		0.00812	0.00812	mg/Kg
Lead, Total, ICP-MS	0.0311		0.00406	0.00406	mg/Kg
Nickel, Total, ICP-MS	0.0361		0.00406	0.00406	mg/Kg
Selenium, Total, ICP-MS	0.372		0.0203	0.0203	mg/Kg
Silver, Total, ICP-MS	0.246		0.00162	0.00162	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00406	0.00406	mg/Kg
Zinc, Total, ICP-MS	40.4		0.0203	0.0203	mg/Kg
OR GRAVIMETRIC SOP 740v2					
Percent Lipids	0.511		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM					
Dichlorobiphenyls	0.096	<QL,J	0.06	0.125	ug/Kg
Heptachlorobiphenyls	2.81		0.19	0.375	ug/Kg
Hexachlorobiphenyls	10.6		0.13	0.25	ug/Kg
Monochlorobiphenyls		<QL	0.06	0.125	ug/Kg
Nonachlorobiphenyls		<QL	0.31	0.625	ug/Kg
Octachlorobiphenyls	0.19	<QL,J	0.19	0.375	ug/Kg
Pentachlorobiphenyls	13.5		0.13	0.25	ug/Kg
Tetrachlorobiphenyls	7.14		0.13	0.25	ug/Kg
Total PCB Homologs	35.886		0.06	0.125	ug/Kg
Trichlorobiphenyls	1.55		0.06	0.125	ug/Kg
OR SW846 3550B*SW846 8270D SIM					
2-Methylnaphthalene		<QL	5	25	ug/Kg
Acenaphthene		<QL	5	25	ug/Kg
Acenaphthylene		<QL	5	25	ug/Kg
Anthracene		<QL	10	50	ug/Kg
Benzo(a)anthracene		<QL	10	50	ug/Kg
Benzo(a)pyrene		<QL	10	50	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	30	150	ug/Kg
Benzo(g,h,i)perylene		<QL	10	50	ug/Kg
Chrysene		<QL	10	50	ug/Kg
Dibenzo(a,h)anthracene		<QL	10	50	ug/Kg
Fluoranthene		<QL	10	50	ug/Kg
Fluorene		<QL	10	50	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	10	50	ug/Kg
Naphthalene		<QL	5	25	ug/Kg
Phenanthrene		<QL	10	50	ug/Kg
Pyrene		<QL	10	50	ug/Kg

Table B-2. May 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

Project: 421093-100
Locator: CB-SHMARINA-S
Descrip: SHILSHOLE MARINA,
Sample: L67900-10
Matrix: TD SHELLFISH
ColDate: 6/1/17 0:00
TotalSolid: 17.4
WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units
OR SW8463540B*KC SOP 781 GCMS-NCI					
DecaBDE-209		<QL	0.25	0.5	ug/Kg
HeptaBDE-183		<QL	0.02	0.04	ug/Kg
HeptaBDE-190		<QL	0.02	0.04	ug/Kg
HexaBDE-138		<QL	0.02	0.04	ug/Kg
HexaBDE-153		<QL	0.02	0.04	ug/Kg
HexaBDE-154		<QL	0.022	0.044	ug/Kg
PentaBDE-100		<QL	0.056	0.112	ug/Kg
PentaBDE-85		<QL	0.02	0.04	ug/Kg
PentaBDE-99		<QL	0.34	0.68	ug/Kg
TetraBDE-47	0.34	<QL,J	0.18	0.36	ug/Kg
TetraBDE-66		<QL	0.029	0.058	ug/Kg
TetraBDE-71		<QL	0.02	0.04	ug/Kg
TriBDE-17		<QL	0.02	0.04	ug/Kg
TriBDE-28/-33		<QL	0.02	0.04	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding tin
<QL = less than limit of quantification
J = estimated value

Table B-3. May 2017 Shilshole Crab Hepatopancreas Tissue Laboratory Results

King County Environmental Lab Analytical Report

Project: 421093-100
Locator: CB-SHMARINA-N
Descrip: SHILSHOLE MARINA,
Sample: L67901-1
Matrix: TH ORGANS
ColDate: 6/1/17 0:00
TotalSolid: 12.5
WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units
CV SM2540-G					
Total Solids	12.5		0.005	0.01	%
ES NONE					
Sample Information	Dungeness Hepato A4(A5)-2,3, C3-2, C4-2, D3-1				
MT PSEP 1997*SW846 7471B					
Mercury, Total, CVAA	0.0369	H	0.00399	0.00399	mg/Kg
MT PSEP1997*SW846 6020B					
Arsenic, Total, ICP-MS	4.14		0.002	0.002	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00399	0.00399	mg/Kg
Cadmium, Total, ICP-MS	0.777		0.002	0.002	mg/Kg
Chromium, Total, ICP-MS	0.107		0.00799	0.00799	mg/Kg
Copper, Total, ICP-MS	22		0.00799	0.00799	mg/Kg
Lead, Total, ICP-MS	0.132		0.00399	0.00399	mg/Kg
Nickel, Total, ICP-MS	0.579		0.00399	0.00399	mg/Kg
Selenium, Total, ICP-MS	1.31		0.02	0.02	mg/Kg
Silver, Total, ICP-MS	0.51		0.0016	0.0016	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00399	0.00399	mg/Kg
Zinc, Total, ICP-MS	13.5		0.02	0.02	mg/Kg
OR GRAVIMETRIC SOP 740v2					
Percent Lipids	5.71		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM					
Dichlorobiphenyls		<QL	0.2	0.417	ug/Kg
Heptachlorobiphenyls	56.3		0.62	1.25	ug/Kg
Hexachlorobiphenyls	141		0.42	0.833	ug/Kg
Monochlorobiphenyls		<QL	0.2	0.417	ug/Kg
Nonachlorobiphenyls	1.5	<QL,J	1	2.08	ug/Kg
Octachlorobiphenyls	13.5		0.62	1.25	ug/Kg
Pentachlorobiphenyls	80.8		0.42	0.833	ug/Kg
Tetrachlorobiphenyls	14.3		0.42	0.833	ug/Kg
Total PCB Homologs	309.167		0.2	0.417	ug/Kg
Trichlorobiphenyls	0.667		0.2	0.417	ug/Kg
OR SW846 3550B*SW846 8270D SIM					
2-Methylnaphthalene		<QL	17	83.3	ug/Kg
Acenaphthene		<QL	17	83.3	ug/Kg
Acenaphthylene		<QL	17	83.3	ug/Kg
Anthracene		<QL	33	167	ug/Kg
Benzo(a)anthracene		<QL	33	167	ug/Kg
Benzo(a)pyrene		<QL	33	167	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	100	500	ug/Kg
Benzo(g,h,i)perylene		<QL	33	167	ug/Kg
Chrysene		<QL	33	167	ug/Kg
Dibenzo(a,h)anthracene		<QL	33	167	ug/Kg
Fluoranthene		<QL	33	167	ug/Kg
Fluorene		<QL	33	167	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	33	167	ug/Kg
Naphthalene		<QL	17	83.3	ug/Kg
Phenanthrene		<QL	33	167	ug/Kg

Project: 421093-100
Locator: CB-SHMARINA-N
Descrip: SHILSHOLE MARINA,
Sample: L67901-2
Matrix: TH ORGANS
ColDate: 6/1/17 0:00
TotalSolid: 14.9
WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units
CV SM2540-G					
Total Solids	14.9		0.005	0.01	%
ES NONE					
Sample Information	Dungeness Hepato A4(A5)-1, B4(B5)-1, C3-1, C4-1, D4(D5)-1				
MT PSEP 1997*SW846 7471B					
Mercury, Total, CVAA	0.0392	H	0.00389	0.00389	mg/Kg
MT PSEP1997*SW846 6020B					
Arsenic, Total, ICP-MS	5.54		0.002	0.002	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00401	0.00401	mg/Kg
Cadmium, Total, ICP-MS	0.669		0.002	0.002	mg/Kg
Chromium, Total, ICP-MS	0.0714		0.00801	0.00801	mg/Kg
Copper, Total, ICP-MS	18.8		0.00801	0.00801	mg/Kg
Lead, Total, ICP-MS	0.145		0.00401	0.00401	mg/Kg
Nickel, Total, ICP-MS	0.44		0.00401	0.00401	mg/Kg
Selenium, Total, ICP-MS	1.34		0.02	0.02	mg/Kg
Silver, Total, ICP-MS	0.45		0.0016	0.0016	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00401	0.00401	mg/Kg
Zinc, Total, ICP-MS	17.6		0.02	0.02	mg/Kg
OR GRAVIMETRIC SOP 740v2					
Percent Lipids	5.46		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM					
Dichlorobiphenyls		<QL	0.2	0.417	ug/Kg
Heptachlorobiphenyls	55.7		0.62	1.25	ug/Kg
Hexachlorobiphenyls	147		0.42	0.833	ug/Kg
Monochlorobiphenyls		<QL	0.2	0.417	ug/Kg
Nonachlorobiphenyls	1.2	<QL,J	1	2.08	ug/Kg
Octachlorobiphenyls	12.3		0.62	1.25	ug/Kg
Pentachlorobiphenyls	92.8		0.42	0.833	ug/Kg
Tetrachlorobiphenyls	15.1		0.42	0.833	ug/Kg
Total PCB Homologs	324.877		0.2	0.417	ug/Kg
Trichlorobiphenyls	0.777		0.2	0.417	ug/Kg
OR SW846 3550B*SW846 8270D SIM					
2-Methylnaphthalene		<QL	17	83.3	ug/Kg
Acenaphthene		<QL	17	83.3	ug/Kg
Acenaphthylene		<QL	17	83.3	ug/Kg
Anthracene		<QL	33	167	ug/Kg
Benzo(a)anthracene		<QL	33	167	ug/Kg
Benzo(a)pyrene		<QL	33	167	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	100	500	ug/Kg
Benzo(g,h,i)perylene		<QL	33	167	ug/Kg
Chrysene		<QL	33	167	ug/Kg
Dibenzo(a,h)anthracene		<QL	33	167	ug/Kg
Fluoranthene		<QL	33	167	ug/Kg
Fluorene		<QL	33	167	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	33	167	ug/Kg
Naphthalene		<QL	17	83.3	ug/Kg
Phenanthrene		<QL	33	167	ug/Kg

Project: 421093-100
Locator: CB-SHMARINA-N
Descrip: SHILSHOLE MARINA,
Sample: L67901-3
Matrix: TH ORGANS
ColDate: 6/1/17 0:00
TotalSolid: 16.4
WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units
CV SM2540-G					
Total Solids	16.4		0.005	0.01	%
ES NONE					
Sample Information	Dungeness Hepato B4(B5)-1, C3-3,4,5,6				
MT PSEP 1997*SW846 7471B					
Mercury, Total, CVAA	0.0389	H	0.00386	0.00386	mg/Kg
MT PSEP1997*SW846 6020B					
Arsenic, Total, ICP-MS	5.24		0.00203	0.00203	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00406	0.00406	mg/Kg
Cadmium, Total, ICP-MS	0.717		0.00203	0.00203	mg/Kg
Chromium, Total, ICP-MS	0.0794		0.00812	0.00812	mg/Kg
Copper, Total, ICP-MS	23		0.00812	0.00812	mg/Kg
Lead, Total, ICP-MS	0.133		0.00406	0.00406	mg/Kg
Nickel, Total, ICP-MS	0.596		0.00406	0.00406	mg/Kg
Selenium, Total, ICP-MS	1.68		0.0203	0.0203	mg/Kg
Silver, Total, ICP-MS	0.444		0.00162	0.00162	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00406	0.00406	mg/Kg
Zinc, Total, ICP-MS	18.2		0.0203	0.0203	mg/Kg
OR GRAVIMETRIC SOP 740v2					
Percent Lipids	6.54		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM					
Dichlorobiphenyls		<QL	0.2	0.417	ug/Kg
Heptachlorobiphenyls	55.6		0.62	1.25	ug/Kg
Hexachlorobiphenyls	153		0.42	0.833	ug/Kg
Monochlorobiphenyls		<QL	0.2	0.417	ug/Kg
Nonachlorobiphenyls	1.3	<QL,J	1	2.08	ug/Kg
Octachlorobiphenyls	12.3		0.62	1.25	ug/Kg
Pentachlorobiphenyls	99.4		0.42	0.833	ug/Kg
Tetrachlorobiphenyls	19		0.42	0.833	ug/Kg
Total PCB Homologs	341.491		0.2	0.417	ug/Kg
Trichlorobiphenyls	0.891		0.2	0.417	ug/Kg
OR SW846 3550B*SW846 8270D SIM					
2-Methylnaphthalene		<QL	17	83.3	ug/Kg
Acenaphthene		<QL	17	83.3	ug/Kg
Acenaphthylene		<QL	17	83.3	ug/Kg
Anthracene		<QL	33	167	ug/Kg
Benzo(a)anthracene		<QL	33	167	ug/Kg
Benzo(a)pyrene		<QL	33	167	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	100	500	ug/Kg
Benzo(g,h,i)perylene		<QL	33	167	ug/Kg
Chrysene		<QL	33	167	ug/Kg
Dibenzo(a,h)anthracene		<QL	33	167	ug/Kg
Fluoranthene		<QL	33	167	ug/Kg
Fluorene		<QL	33	167	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	33	167	ug/Kg
Naphthalene		<QL	17	83.3	ug/Kg
Phenanthrene		<QL	33	167	ug/Kg

Table B-3. May 2017 Shilshole Crab Hepatopancreas Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample 1	Sample 2	Sample 3
Project:	421093-100	421093-100	421093-100
Locator:	CB-SHMARINA-N	CB-SHMARINA-N	CB-SHMARINA-N
Descrip:	SHILSHOLE MARINA,	SHILSHOLE MARINA,	SHILSHOLE MARINA,
Sample:	L67901-1	L67901-2	L67901-3
Matrix:	TH ORGANS	TH ORGANS	TH ORGANS
ColDate:	6/1/17 0:00	6/1/17 0:00	6/1/17 0:00
TotalSolid:	12.5	14.9	16.4
	WET Weight Basis	**WET Weight Basis**	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
Pyrene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
OR SW8463540B*KC SOP 781 GCMS-NCI															
DecaBDE-209		<QL	0.83	1.67	ug/Kg		<QL	0.83	1.67	ug/Kg		<QL	0.83	1.67	ug/Kg
HeptaBDE-183		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HeptaBDE-190		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HexaBDE-138		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HexaBDE-153	0.138		0.067	0.133	ug/Kg	0.09	<QL,J	0.067	0.133	ug/Kg	0.136		0.067	0.133	ug/Kg
HexaBDE-154	0.323		0.073	0.147	ug/Kg	0.24		0.073	0.147	ug/Kg	0.416		0.073	0.147	ug/Kg
PentaBDE-100	0.65		0.19	0.373	ug/Kg	0.64		0.19	0.373	ug/Kg	1.33		0.19	0.373	ug/Kg
PentaBDE-85		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
PentaBDE-99	1.3	<QL,J	1.1	2.27	ug/Kg	1.3	<QL,J	1.1	2.27	ug/Kg	1.6	<QL,J	1.1	2.27	ug/Kg
TetraBDE-47	3.93		0.6	1.2	ug/Kg	4.01		0.6	1.2	ug/Kg	7.11		0.6	1.2	ug/Kg
TetraBDE-66		<QL	0.097	0.193	ug/Kg		<QL	0.097	0.193	ug/Kg		<QL	0.097	0.193	ug/Kg
TetraBDE-71		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
TriBDE-17		<QL	0.067	0.133	ug/Kg		<QL,JG	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
TriBDE-28/-33	0.135		0.067	0.133	ug/Kg	0.1	<QL,J	0.067	0.133	ug/Kg	0.147		0.067	0.133	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding time
<QL = less than limit of quantification
J = estimated value
G = potential low bias

Table B-3. May 2017 Shilshole Crab Hepatopancreas Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample L67901-4	Sample L67901-5	Sample L67901-6
Project:	421093-100	421093-100	421093-100
Locator:	CB-SHMARINA-S	CB-SHMARINA-S	CB-SHMARINA-S
Descrip:	SHILSHOLE MARINA,	SHILSHOLE MARINA,	SHILSHOLE MARINA,
Sample:	L67901-4	L67901-5	L67901-6
Matrix:	TH ORGANS	TH ORGANS	TH ORGANS
ColDate:	6/1/17 0:00	6/1/17 0:00	6/1/17 0:00
TotalSolid:	19.7	15.7	13.9
	WET Weight Basis	**WET Weight Basis**	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
CV SM2540-G															
Total Solids	19.7		0.005	0.01	%	15.7		0.005	0.01	%	13.9		0.005	0.01	%
ES NONE															
Sample Information	Dungeness Hepato A3-2,4,6, B4-2, A4-5					Dungeness Hepato A4-2,3, A3-5,8, B4-1					Dungeness Hepato A3-1,3,7, A4-1,4				
MT PSEP 1997*SW846 7471B															
Mercury, Total, CVAA	0.046	H	0.00398	0.00398	mg/Kg	0.0428	H	0.00402	0.00402	mg/Kg	0.0488	H	0.00404	0.00404	mg/Kg
MT PSEP1997*SW846 6020B															
Arsenic, Total, ICP-MS	5.97		0.00197	0.00197	mg/Kg	5.02		0.00201	0.00201	mg/Kg	5.1		0.00197	0.00197	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00394	0.00394	mg/Kg		<QL	0.00402	0.00402	mg/Kg		<QL	0.00394	0.00394	mg/Kg
Cadmium, Total, ICP-MS	0.837		0.00197	0.00197	mg/Kg	0.868		0.00201	0.00201	mg/Kg	0.927		0.00197	0.00197	mg/Kg
Chromium, Total, ICP-MS	0.0751		0.00789	0.00789	mg/Kg	0.0746		0.00803	0.00803	mg/Kg	0.165		0.00787	0.00787	mg/Kg
Copper, Total, ICP-MS	23.4		0.00789	0.00789	mg/Kg	33.1		0.00803	0.00803	mg/Kg	34.7		0.00787	0.00787	mg/Kg
Lead, Total, ICP-MS	0.12		0.00394	0.00394	mg/Kg	0.161		0.00402	0.00402	mg/Kg	0.219		0.00394	0.00394	mg/Kg
Nickel, Total, ICP-MS	0.514		0.00394	0.00394	mg/Kg	0.545		0.00402	0.00402	mg/Kg	0.599		0.00394	0.00394	mg/Kg
Selenium, Total, ICP-MS	1.35		0.0197	0.0197	mg/Kg	1.46		0.0201	0.0201	mg/Kg	1.42		0.0197	0.0197	mg/Kg
Silver, Total, ICP-MS	0.586		0.00158	0.00158	mg/Kg	0.451		0.00161	0.00161	mg/Kg	1.02		0.00157	0.00157	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00394	0.00394	mg/Kg		<QL	0.00402	0.00402	mg/Kg		<QL	0.00394	0.00394	mg/Kg
Zinc, Total, ICP-MS	20.1		0.0197	0.0197	mg/Kg	20.3		0.0201	0.0201	mg/Kg	15.8		0.0197	0.0197	mg/Kg
OR GRAVIMETRIC SOP 740v2															
Percent Lipids	7.3		0.05	0.1	%	6.41		0.05	0.1	%	4.88		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM															
Dichlorobiphenyls		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg
Heptachlorobiphenyls	46.6		0.62	1.25	ug/Kg	39.2		0.62	1.25	ug/Kg	71		0.62	1.25	ug/Kg
Hexachlorobiphenyls	135		0.42	0.833	ug/Kg	116		0.42	0.833	ug/Kg	212		0.42	0.833	ug/Kg
Monochlorobiphenyls		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg
Nonachlorobiphenyls	1.1	<QL,J	1	2.08	ug/Kg		<QL	1	2.08	ug/Kg	1.4	<QL,J	1	2.08	ug/Kg
Octachlorobiphenyls	9.65		0.62	1.25	ug/Kg	8.23		0.62	1.25	ug/Kg	14.1		0.62	1.25	ug/Kg
Pentachlorobiphenyls	108		0.42	0.833	ug/Kg	81.4		0.42	0.833	ug/Kg	211		0.42	0.833	ug/Kg
Tetrachlorobiphenyls	25.6		0.42	0.833	ug/Kg	18.7		0.42	0.833	ug/Kg	67.8		0.42	0.833	ug/Kg
Total PCB Homologs	327.29		0.2	0.417	ug/Kg	264.62		0.2	0.417	ug/Kg	583.85		0.2	0.417	ug/Kg
Trichlorobiphenyls	1.34		0.2	0.417	ug/Kg	1.09		0.2	0.417	ug/Kg	6.55		0.2	0.417	ug/Kg
OR SW846 3550B*SW846 8270D SIM															
2-Methylnaphthalene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	17	83.3	ug/Kg
Acenaphthene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	17	83.3	ug/Kg
Acenaphthylene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	17	83.3	ug/Kg
Anthracene		<QL	67	333	ug/Kg		<QL	67	333	ug/Kg		<QL	33	167	ug/Kg
Benzo(a)anthracene		<QL	67	333	ug/Kg		<QL	67	333	ug/Kg		<QL	33	167	ug/Kg
Benzo(a)pyrene		<QL	67	333	ug/Kg		<QL	67	333	ug/Kg		<QL	33	167	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	200	1000	ug/Kg		<QL	200	1000	ug/Kg		<QL	100	500	ug/Kg
Benzo(g,h,i)perylene		<QL	67	333	ug/Kg		<QL	67	333	ug/Kg		<QL	33	167	ug/Kg
Chrysene		<QL	67	333	ug/Kg		<QL	67	333	ug/Kg		<QL	33	167	ug/Kg
Dibenzo(a,h)anthracene		<QL	67	333	ug/Kg		<QL	67	333	ug/Kg		<QL	33	167	ug/Kg
Fluoranthene		<QL	67	333	ug/Kg		<QL	67	333	ug/Kg		<QL	33	167	ug/Kg
Fluorene		<QL	67	333	ug/Kg		<QL	67	333	ug/Kg		<QL	33	167	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	67	333	ug/Kg		<QL	67	333	ug/Kg		<QL	33	167	ug/Kg
Naphthalene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	17	83.3	ug/Kg
Phenanthrene		<QL	67	333	ug/Kg		<QL	67	333	ug/Kg		<QL	33	167	ug/Kg

Table B-3. May 2017 Shilshole Crab Hepatopancreas Tissue Laboratory Results

King County Environmental Lab Analytical Report

Project:	421093-100	Project:	421093-100	Project:	421093-100
Locator:	CB-SHMARINA-S	Locator:	CB-SHMARINA-S	Locator:	CB-SHMARINA-S
Descrip:	SHILSHOLE MARINA,	Descrip:	SHILSHOLE MARINA,	Descrip:	SHILSHOLE MARINA,
Sample:	L67901-4	Sample:	L67901-5	Sample:	L67901-6
Matrix:	TH ORGANS	Matrix:	TH ORGANS	Matrix:	TH ORGANS
ColDate:	6/1/17 0:00	ColDate:	6/1/17 0:00	ColDate:	6/1/17 0:00
TotalSolid:	19.7	TotalSolid:	15.7	TotalSolid:	13.9
WET Weight Basis		**WET Weight Basis**		**WET Weight Basis**	

Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Pyrene		<QL	67	333	ug/Kg		<QL	67	333	ug/Kg		<QL	33	167	ug/Kg
OR SW8463540B*KC SOP 781 GCMS-NCI															
DecaBDE-209		<QL	0.83	1.67	ug/Kg		<QL	0.83	1.67	ug/Kg		<QL	0.83	1.67	ug/Kg
HeptaBDE-183		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HeptaBDE-190		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HexaBDE-138		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HexaBDE-153	0.148		0.067	0.133	ug/Kg	0.169		0.067	0.133	ug/Kg	0.1	<QL,J	0.067	0.133	ug/Kg
HexaBDE-154	0.388		0.073	0.147	ug/Kg	0.398		0.073	0.147	ug/Kg	0.324		0.073	0.147	ug/Kg
PentaBDE-100	0.882		0.19	0.373	ug/Kg	0.89		0.19	0.373	ug/Kg	0.628		0.19	0.373	ug/Kg
PentaBDE-85		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
PentaBDE-99	2	<QL,J	1.1	2.27	ug/Kg	1.9	<QL,J	1.1	2.27	ug/Kg	1.2	<QL,J	1.1	2.27	ug/Kg
TetraBDE-47	5.61		0.6	1.2	ug/Kg	5.65		0.6	1.2	ug/Kg	5.51		0.6	1.2	ug/Kg
TetraBDE-66		<QL	0.097	0.193	ug/Kg		<QL	0.097	0.193	ug/Kg		<QL	0.097	0.193	ug/Kg
TetraBDE-71		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
TriBDE-17	0.092	<QL,J	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
TriBDE-28/-33	0.155		0.067	0.133	ug/Kg	0.12	<QL,J	0.067	0.133	ug/Kg	0.12	<QL,J	0.067	0.133	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding tim
<QL = less than limit of quantification
J = estimated value
G = potential low bias

Table B-4. September 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

Project:	421093-100	421093-100	421093-100
Locator:	CB-SHMARINA-N	CB-SHMARINA-N	CB-SHMARINA-N
Descrip:	SHILSHOLE MARINA,	SHILSHOLE MARINA,	SHILSHOLE MARINA,
Sample:	L68827-1	L68827-2	L68827-3
Matrix:	TD SHELLFISH	TD SHELLFISH	TD SHELLFISH
ColDate:	9/27/17 0:00	9/27/17 0:00	9/27/17 0:00
TotalSolid:	19	17.6	16.6
	WET Weight Basis	**WET Weight Basis**	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
CV SM2540-G															
Total Solids	19		0.005	0.01	%	17.6		0.005	0.01	%	16.6		0.005	0.01	%
ES NONE															
Sample Information	Dungeness Muscle C2-1, D1-5, E1-1				none	Dungeness Muscle D2-1, D1-4,6				none	Dungeness Muscle D1-3,8,9				none
MT PSEP 1997*SW846 7471B															
Mercury, Total, CVAA	0.0424	H	0.00385	0.00385	mg/Kg	0.0798	H	0.00397	0.00397	mg/Kg	0.0542	H	0.00399	0.00399	mg/Kg
MT PSEP1997*SW846 6020B															
Arsenic, Total, ICP-MS	6.41		0.00198	0.00198	mg/Kg	6.17		0.00198	0.00198	mg/Kg	9.6		0.00203	0.00203	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00397	0.00397	mg/Kg		<QL	0.00396	0.00396	mg/Kg		<QL	0.00405	0.00405	mg/Kg
Cadmium, Total, ICP-MS	0.0351		0.00198	0.00198	mg/Kg	0.0246		0.00198	0.00198	mg/Kg	0.0287		0.00203	0.00203	mg/Kg
Chromium, Total, ICP-MS	0.0127		0.00794	0.00794	mg/Kg	0.00918		0.00792	0.00792	mg/Kg	0.0166		0.0081	0.0081	mg/Kg
Copper, Total, ICP-MS	9.55		0.00794	0.00794	mg/Kg	8.98		0.00792	0.00792	mg/Kg	9.91		0.0081	0.0081	mg/Kg
Lead, Total, ICP-MS	0.00883		0.00397	0.00397	mg/Kg	0.0123		0.00396	0.00396	mg/Kg	0.0308		0.00405	0.00405	mg/Kg
Nickel, Total, ICP-MS	0.0426		0.00397	0.00397	mg/Kg	0.0367		0.00396	0.00396	mg/Kg	0.0331		0.00405	0.00405	mg/Kg
Selenium, Total, ICP-MS	0.478		0.0198	0.0198	mg/Kg	0.42		0.0198	0.0198	mg/Kg	0.477		0.0203	0.0203	mg/Kg
Silver, Total, ICP-MS	0.206		0.00159	0.00159	mg/Kg	0.154		0.00158	0.00158	mg/Kg	0.247		0.00162	0.00162	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00397	0.00397	mg/Kg		<QL	0.00396	0.00396	mg/Kg		<QL	0.00405	0.00405	mg/Kg
Zinc, Total, ICP-MS	47.1		0.0198	0.0198	mg/Kg	40.2		0.0198	0.0198	mg/Kg	43		0.0203	0.0203	mg/Kg
OR GRAVIMETRIC SOP 740v2															
Percent Lipids	0.366		0.05	0.1	%	0.274		0.05	0.1	%	0.214		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM															
Dichlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Heptachlorobiphenyls		<QL	0.19	0.375	ug/Kg	0.565		0.19	0.375	ug/Kg	0.558		0.19	0.375	ug/Kg
Hexachlorobiphenyls	1.69		0.13	0.25	ug/Kg	3.23		0.13	0.25	ug/Kg	2.39		0.13	0.25	ug/Kg
Monochlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Nonachlorobiphenyls		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg
Octachlorobiphenyls		<QL	0.19	0.375	ug/Kg		<QL	0.19	0.375	ug/Kg		<QL	0.19	0.375	ug/Kg
Pentachlorobiphenyls	1.4		0.13	0.25	ug/Kg	3.11		0.13	0.25	ug/Kg	2.18		0.13	0.25	ug/Kg
Tetrachlorobiphenyls	0.361		0.13	0.25	ug/Kg	0.812		0.13	0.25	ug/Kg	0.499		0.13	0.25	ug/Kg
Total PCB Homologs	3.451		0.06	0.125	ug/Kg	7.717		0.06	0.125	ug/Kg	5.627		0.06	0.125	ug/Kg
Trichlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
OR SW846 3550B*SW846 8270D SIM															
2-Methylnaphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthylene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg
Benzo(g,h,i)perylene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Chrysene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Dibenzo(a,h)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluoranthene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluorene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Naphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Phenanthrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg

Table B-4. September 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample 1	Sample 2	Sample 3
Project:	421093-100	421093-100	421093-100
Locator:	CB-SHMARINA-N	CB-SHMARINA-N	CB-SHMARINA-N
Descrip:	SHILSHOLE MARINA,	SHILSHOLE MARINA,	SHILSHOLE MARINA,
Sample:	L68827-1	L68827-2	L68827-3
Matrix:	TD SHELLFISH	TD SHELLFISH	TD SHELLFISH
ColDate:	9/27/17 0:00	9/27/17 0:00	9/27/17 0:00
TotalSolid:	19	17.6	16.6
	WET Weight Basis	**WET Weight Basis**	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
OR SW8463540C*KC SOP 781 GCMS-NCI															
DecaBDE-209		<QL,JG	0.25	0.5	ug/Kg		<QL,JG	0.25	0.5	ug/Kg		<QL,JG	0.25	0.5	ug/Kg
HeptaBDE-183		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HeptaBDE-190		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-138		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-153		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-154		<QL	0.022	0.044	ug/Kg		<QL	0.022	0.044	ug/Kg		<QL	0.022	0.044	ug/Kg
PentaBDE-100		<QL	0.056	0.112	ug/Kg		<QL	0.056	0.112	ug/Kg		<QL	0.056	0.112	ug/Kg
PentaBDE-85		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
PentaBDE-99		<QL	0.34	0.68	ug/Kg		<QL	0.34	0.68	ug/Kg		<QL	0.34	0.68	ug/Kg
TetraBDE-47		<QL	0.18	0.36	ug/Kg	0.28	<QL,J,B	0.18	0.36	ug/Kg		<QL	0.18	0.36	ug/Kg
TetraBDE-66		<QL	0.029	0.058	ug/Kg		<QL	0.029	0.058	ug/Kg		<QL	0.029	0.058	ug/Kg
TetraBDE-71		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
TriBDE-17		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
TriBDE-28/-33		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding time
<QL = less than limit of quantification
J = estimated value
B = detected in method blank and sample result is within 5 times the method blank value
JG = estimated value; probable low bias

Table B-4. September 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Project: 421093-100					Project: 421093-100					Project: 421093-100				
	Locator: CB-SHMARINA-N					Locator: CB-SHMARINA-N					Locator: CB-SHMARINA-S				
	Descrip: SHILSHOLE MARINA,					Descrip: SHILSHOLE MARINA,					Descrip: SHILSHOLE MARINA,				
	Sample: L68827-4					Sample: L68827-5					Sample: L68827-6				
	Matrix: TD SHELLFISH					Matrix: TD SHELLFISH					Matrix: TD SHELLFISH				
	ColDate: 9/27/17 0:00					ColDate: 9/27/17 0:00					ColDate: 9/27/17 0:00				
	TotalSolid: 16.7					TotalSolid: 18					TotalSolid: 19.4				
	WET Weight Basis					**WET Weight Basis**					**WET Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
CV SM2540-G															
Total Solids	16.7		0.005	0.01	%	18		0.005	0.01	%	19.4		0.005	0.01	%
ES NONE															
Sample Information	Dungeness Muscle D1-1,10, E1-2				none	Dungeness Muscle D1-2,7, E1-3				none	Dungeness Muscle A1-1,14				none
MT PSEP 1997*SW846 7471B															
Mercury, Total, CVAA	0.0548	H	0.00396	0.00396	mg/Kg	0.0471	H	0.00407	0.00407	mg/Kg	0.0612	H	0.00397	0.00397	mg/Kg
MT PSEP1997*SW846 6020B															
Arsenic, Total, ICP-MS	7.3		0.00203	0.00203	mg/Kg	7.91		0.00202	0.00202	mg/Kg	8.6		0.00202	0.00202	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00406	0.00406	mg/Kg		<QL	0.00403	0.00403	mg/Kg		<QL	0.00405	0.00405	mg/Kg
Cadmium, Total, ICP-MS	0.0255		0.00203	0.00203	mg/Kg	0.04		0.00202	0.00202	mg/Kg	0.0214		0.00202	0.00202	mg/Kg
Chromium, Total, ICP-MS	0.00971		0.00812	0.00812	mg/Kg	0.0128		0.00806	0.00806	mg/Kg	0.00851		0.00809	0.00809	mg/Kg
Copper, Total, ICP-MS	9.01		0.00812	0.00812	mg/Kg	10.5		0.00806	0.00806	mg/Kg	10		0.00809	0.00809	mg/Kg
Lead, Total, ICP-MS	0.00642		0.00406	0.00406	mg/Kg	0.00809		0.00403	0.00403	mg/Kg	0.0109		0.00405	0.00405	mg/Kg
Nickel, Total, ICP-MS	0.0349		0.00406	0.00406	mg/Kg	0.0212		0.00403	0.00403	mg/Kg	0.0239		0.00405	0.00405	mg/Kg
Selenium, Total, ICP-MS	0.467		0.0203	0.0203	mg/Kg	0.473		0.0202	0.0202	mg/Kg	0.548		0.0202	0.0202	mg/Kg
Silver, Total, ICP-MS	0.168		0.00162	0.00162	mg/Kg	0.269		0.00161	0.00161	mg/Kg	0.217		0.00162	0.00162	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00406	0.00406	mg/Kg		<QL	0.00403	0.00403	mg/Kg		<QL	0.00405	0.00405	mg/Kg
Zinc, Total, ICP-MS	41.1		0.0203	0.0203	mg/Kg	48.4		0.0202	0.0202	mg/Kg	46.7		0.0202	0.0202	mg/Kg
OR GRAVIMETRIC SOP 740v2															
Percent Lipids	0.225		0.05	0.1	%	0.215		0.05	0.1	%	0.433		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM															
Dichlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Heptachlorobiphenyls		<QL	0.19	0.375	ug/Kg		<QL	0.19	0.375	ug/Kg		<QL	0.19	0.375	ug/Kg
Hexachlorobiphenyls	1.48		0.13	0.25	ug/Kg	1.37		0.13	0.25	ug/Kg	1.2		0.13	0.25	ug/Kg
Monochlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Nonachlorobiphenyls		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg
Octachlorobiphenyls		<QL	0.19	0.375	ug/Kg		<QL	0.19	0.375	ug/Kg		<QL	0.19	0.375	ug/Kg
Pentachlorobiphenyls	1.67		0.13	0.25	ug/Kg	1.06		0.13	0.25	ug/Kg	0.897		0.13	0.25	ug/Kg
Tetrachlorobiphenyls	0.372		0.13	0.25	ug/Kg		<QL	0.13	0.25	ug/Kg		<QL	0.13	0.25	ug/Kg
Total PCB Homologs	3.522		0.06	0.125	ug/Kg	2.43		0.06	0.125	ug/Kg	2.097		0.06	0.125	ug/Kg
Trichlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
OR SW846 3550B*SW846 8270D SIM															
2-Methylnaphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthylene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg
Benzo(g,h,i)perylene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Chrysene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Dibenzo(a,h)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluoranthene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluorene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Naphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Phenanthrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg

Table B-4. September 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample 1	Sample 2	Sample 3
Project:	421093-100	421093-100	421093-100
Locator:	CB-SHMARINA-N	CB-SHMARINA-N	CB-SHMARINA-S
Descrip:	SHILSHOLE MARINA,	SHILSHOLE MARINA,	SHILSHOLE MARINA,
Sample:	L68827-4	L68827-5	L68827-6
Matrix:	TD SHELLFISH	TD SHELLFISH	TD SHELLFISH
ColDate:	9/27/17 0:00	9/27/17 0:00	9/27/17 0:00
TotalSolid:	16.7	18	19.4
	WET Weight Basis	**WET Weight Basis**	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
OR SW8463540C*KC SOP 781 GCMS-NCI															
DecaBDE-209		<QL,JG	0.25	0.5	ug/Kg		<QL,JG	0.25	0.5	ug/Kg		<QL,JG	0.25	0.5	ug/Kg
HeptaBDE-183		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HeptaBDE-190		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-138		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-153		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-154		<QL	0.022	0.044	ug/Kg		<QL	0.022	0.044	ug/Kg		<QL	0.022	0.044	ug/Kg
PentaBDE-100		<QL	0.056	0.112	ug/Kg		<QL	0.056	0.112	ug/Kg		<QL	0.056	0.112	ug/Kg
PentaBDE-85		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
PentaBDE-99		<QL	0.34	0.68	ug/Kg		<QL	0.34	0.68	ug/Kg		<QL	0.34	0.68	ug/Kg
TetraBDE-47		<QL	0.18	0.36	ug/Kg	0.23	<QL,J,B	0.18	0.36	ug/Kg		<QL	0.18	0.36	ug/Kg
TetraBDE-66		<QL	0.029	0.058	ug/Kg		<QL	0.029	0.058	ug/Kg		<QL	0.029	0.058	ug/Kg
TetraBDE-71		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
TriBDE-17		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
TriBDE-28/-33		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding tim
<QL = less than limit of quantification
J = estimated value
B = detected in method blank and sample result is w
JG = estimated value; probable low bias

Table B-4. September 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample L68827-7	Sample L68827-8	Sample L68827-9
Project:	421093-100	421093-100	421093-100
Locator:	CB-SHMARINA-S	CB-SHMARINA-S	CB-SHMARINA-S
Descrip:	SHILSHOLE MARINA,	SHILSHOLE MARINA,	SHILSHOLE MARINA,
Sample:	L68827-7	L68827-8	L68827-9
Matrix:	TD SHELLFISH	TD SHELLFISH	TD SHELLFISH
ColDate:	9/27/17 0:00	9/27/17 0:00	9/27/17 0:00
TotalSolid:	19.3	14.1	14.9
	WET Weight Basis	**WET Weight Basis**	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
CV SM2540-G															
Total Solids	19.3		0.005	0.01	%	14.1		0.005	0.01	%	14.9		0.005	0.01	%
ES NONE															
Sample Information	Dungeness Muscle A1-7,8,9				none	Dungeness Muscle A1-4,10, B1-1				none	Dungeness Muscle A1-5,12,13				none
MT PSEP 1997*SW846 7471B															
Mercury, Total, CVAA	0.155	H	0.00404	0.00404	mg/Kg	0.0359	H	0.00391	0.00391	mg/Kg	0.0258	H	0.00401	0.00401	mg/Kg
MT PSEP1997*SW846 6020B															
Arsenic, Total, ICP-MS	19		0.00203	0.00203	mg/Kg	7.63		0.002	0.002	mg/Kg	5.34		0.00196	0.00196	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00405	0.00405	mg/Kg		<QL	0.00401	0.00401	mg/Kg		<QL	0.00392	0.00392	mg/Kg
Cadmium, Total, ICP-MS	0.0567		0.00203	0.00203	mg/Kg	0.0297		0.002	0.002	mg/Kg	0.0534		0.00196	0.00196	mg/Kg
Chromium, Total, ICP-MS	0.0107		0.0081	0.0081	mg/Kg	0.0226		0.00802	0.00802	mg/Kg	0.0271		0.00783	0.00783	mg/Kg
Copper, Total, ICP-MS	11.2		0.0081	0.0081	mg/Kg	8.75		0.00802	0.00802	mg/Kg	8.84		0.00783	0.00783	mg/Kg
Lead, Total, ICP-MS	0.00961		0.00405	0.00405	mg/Kg	0.0109		0.00401	0.00401	mg/Kg	0.012		0.00392	0.00392	mg/Kg
Nickel, Total, ICP-MS	0.0212		0.00405	0.00405	mg/Kg	0.0406		0.00401	0.00401	mg/Kg	0.0523		0.00392	0.00392	mg/Kg
Selenium, Total, ICP-MS	0.731		0.0203	0.0203	mg/Kg	0.48		0.02	0.02	mg/Kg	0.411		0.0196	0.0196	mg/Kg
Silver, Total, ICP-MS	0.276		0.00162	0.00162	mg/Kg	0.191		0.0016	0.0016	mg/Kg	0.202		0.00157	0.00157	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00405	0.00405	mg/Kg		<QL	0.00401	0.00401	mg/Kg		<QL	0.00392	0.00392	mg/Kg
Zinc, Total, ICP-MS	47.8		0.0203	0.0203	mg/Kg	32.6		0.02	0.02	mg/Kg	33.1		0.0196	0.0196	mg/Kg
OR GRAVIMETRIC SOP 740v2															
Percent Lipids	0.541		0.05	0.1	%	0.459		0.05	0.1	%	0.321		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM															
Dichlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Heptachlorobiphenyls	0.702		0.19	0.375	ug/Kg	1.96		0.19	0.375	ug/Kg	0.484		0.19	0.375	ug/Kg
Hexachlorobiphenyls	3.43		0.13	0.25	ug/Kg	5.81		0.13	0.25	ug/Kg	2.22		0.13	0.25	ug/Kg
Monochlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Nonachlorobiphenyls		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg
Octachlorobiphenyls		<QL	0.19	0.375	ug/Kg		<QL	0.19	0.375	ug/Kg		<QL	0.19	0.375	ug/Kg
Pentachlorobiphenyls	2.26		0.13	0.25	ug/Kg	3.86		0.13	0.25	ug/Kg	1.73		0.13	0.25	ug/Kg
Tetrachlorobiphenyls	0.41		0.13	0.25	ug/Kg	0.58		0.13	0.25	ug/Kg	0.306		0.13	0.25	ug/Kg
Total PCB Homologs	6.802		0.06	0.125	ug/Kg	12.21		0.06	0.125	ug/Kg	4.74		0.06	0.125	ug/Kg
Trichlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
OR SW846 3550B*SW846 8270D SIM															
2-Methylnaphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthylene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg
Benzo(g,h,i)perylene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Chrysene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Dibenzo(a,h)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluoranthene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluorene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Naphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Phenanthrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg

Table B-4. September 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

Project: 421093-100
Locator: CB-SHMARINA-S
Descrip: SHILSHOLE MARINA,
Sample: L68827-7
Matrix: TD SHELLFISH
ColDate: 9/27/17 0:00
TotalSolid: 19.3
WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units
OR SW8463540C*KC SOP 781 GCMS-NCI					
DecaBDE-209		<QL,JG	0.25	0.5	ug/Kg
HeptaBDE-183		<QL	0.02	0.04	ug/Kg
HeptaBDE-190		<QL	0.02	0.04	ug/Kg
HexaBDE-138		<QL	0.02	0.04	ug/Kg
HexaBDE-153		<QL	0.02	0.04	ug/Kg
HexaBDE-154		<QL	0.022	0.044	ug/Kg
PentaBDE-100		<QL	0.056	0.112	ug/Kg
PentaBDE-85		<QL	0.02	0.04	ug/Kg
PentaBDE-99		<QL	0.34	0.68	ug/Kg
TetraBDE-47	0.3	<QL,J,B	0.18	0.36	ug/Kg
TetraBDE-66		<QL	0.029	0.058	ug/Kg
TetraBDE-71		<QL	0.02	0.04	ug/Kg
TriBDE-17		<QL	0.02	0.04	ug/Kg
TriBDE-28/-33		<QL	0.02	0.04	ug/Kg

Project: 421093-100
Locator: CB-SHMARINA-S
Descrip: SHILSHOLE MARINA,
Sample: L68827-8
Matrix: TD SHELLFISH
ColDate: 9/27/17 0:00
TotalSolid: 14.1
WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units
OR SW8463540C*KC SOP 781 GCMS-NCI					
DecaBDE-209		<QL,JG	0.25	0.5	ug/Kg
HeptaBDE-183		<QL	0.02	0.04	ug/Kg
HeptaBDE-190		<QL	0.02	0.04	ug/Kg
HexaBDE-138		<QL	0.02	0.04	ug/Kg
HexaBDE-153		<QL	0.02	0.04	ug/Kg
HexaBDE-154		<QL	0.022	0.044	ug/Kg
PentaBDE-100		<QL	0.056	0.112	ug/Kg
PentaBDE-85		<QL	0.02	0.04	ug/Kg
PentaBDE-99	0.909	B	0.34	0.68	ug/Kg
TetraBDE-47	0.25	<QL,J,B	0.18	0.36	ug/Kg
TetraBDE-66		<QL	0.029	0.058	ug/Kg
TetraBDE-71		<QL	0.02	0.04	ug/Kg
TriBDE-17		<QL	0.02	0.04	ug/Kg
TriBDE-28/-33		<QL	0.02	0.04	ug/Kg

Project: 421093-100
Locator: CB-SHMARINA-S
Descrip: SHILSHOLE MARINA,
Sample: L68827-9
Matrix: TD SHELLFISH
ColDate: 9/27/17 0:00
TotalSolid: 14.9
WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units
OR SW8463540C*KC SOP 781 GCMS-NCI					
DecaBDE-209		<QL,JG	0.25	0.5	ug/Kg
HeptaBDE-183		<QL	0.02	0.04	ug/Kg
HeptaBDE-190		<QL	0.02	0.04	ug/Kg
HexaBDE-138		<QL	0.02	0.04	ug/Kg
HexaBDE-153		<QL	0.02	0.04	ug/Kg
HexaBDE-154		<QL	0.022	0.044	ug/Kg
PentaBDE-100		<QL	0.056	0.112	ug/Kg
PentaBDE-85		<QL	0.02	0.04	ug/Kg
PentaBDE-99		<QL	0.34	0.68	ug/Kg
TetraBDE-47	0.19	<QL,J,B	0.18	0.36	ug/Kg
TetraBDE-66		<QL	0.029	0.058	ug/Kg
TetraBDE-71		<QL	0.02	0.04	ug/Kg
TriBDE-17		<QL	0.02	0.04	ug/Kg
TriBDE-28/-33		<QL	0.02	0.04	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding tim
<QL = less than limit of quantification
J = estimated value
B = detected in method blank and sample result is w
JG = estimated value; probable low bias

Table B-4. September 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

Project: 421093-100
Locator: CB-SHMARINA-S
Descrip: SHILSHOLE MARINA,
Sample: L68827-10
Matrix: TD SHELLFISH
ColDate: 9/27/17 0:00
TotalSolid: 15.4
WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units
CV SM2540-G					
Total Solids	15.4		0.005	0.01	%
ES NONE					
Sample Information	Dungeness Muscle A1-2,3,6				none
MT PSEP 1997*SW846 7471B					
Mercury, Total, CVAA	0.0575	H	0.00406	0.00406	mg/Kg
MT PSEP1997*SW846 6020B					
Arsenic, Total, ICP-MS	6.51		0.00203	0.00203	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00407	0.00407	mg/Kg
Cadmium, Total, ICP-MS	0.0758		0.00203	0.00203	mg/Kg
Chromium, Total, ICP-MS	0.014		0.00813	0.00813	mg/Kg
Copper, Total, ICP-MS	10.4		0.00813	0.00813	mg/Kg
Lead, Total, ICP-MS	0.00619		0.00407	0.00407	mg/Kg
Nickel, Total, ICP-MS	0.0527		0.00407	0.00407	mg/Kg
Selenium, Total, ICP-MS	0.453		0.0203	0.0203	mg/Kg
Silver, Total, ICP-MS	0.175		0.00163	0.00163	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00407	0.00407	mg/Kg
Zinc, Total, ICP-MS	37.4		0.0203	0.0203	mg/Kg
OR GRAVIMETRIC SOP 740v2					
Percent Lipids	0.385		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM					
Dichlorobiphenyls		<QL	0.06	0.125	ug/Kg
Heptachlorobiphenyls	0.659		0.19	0.375	ug/Kg
Hexachlorobiphenyls	3.07		0.13	0.25	ug/Kg
Monochlorobiphenyls		<QL	0.06	0.125	ug/Kg
Nonachlorobiphenyls		<QL	0.31	0.625	ug/Kg
Octachlorobiphenyls		<QL	0.19	0.375	ug/Kg
Pentachlorobiphenyls	2.05		0.13	0.25	ug/Kg
Tetrachlorobiphenyls	0.275		0.13	0.25	ug/Kg
Total PCB Homologs	6.054		0.06	0.125	ug/Kg
Trichlorobiphenyls		<QL	0.06	0.125	ug/Kg
OR SW846 3550B*SW846 8270D SIM					
2-Methylnaphthalene		<QL	1	5	ug/Kg
Acenaphthene		<QL	1	5	ug/Kg
Acenaphthylene		<QL	1	5	ug/Kg
Anthracene		<QL	2	10	ug/Kg
Benzo(a)anthracene		<QL	2	10	ug/Kg
Benzo(a)pyrene		<QL	2	10	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	6	30	ug/Kg
Benzo(g,h,i)perylene		<QL	2	10	ug/Kg
Chrysene		<QL	2	10	ug/Kg
Dibenzo(a,h)anthracene		<QL	2	10	ug/Kg
Fluoranthene		<QL	2	10	ug/Kg
Fluorene		<QL	2	10	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	2	10	ug/Kg
Naphthalene		<QL	1	5	ug/Kg
Phenanthrene		<QL	2	10	ug/Kg
Pyrene		<QL	2	10	ug/Kg

Table B-4. September 2017 Shilshole Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

Project: 421093-100
Locator: CB-SHMARINA-S
Descrip: SHILSHOLE MARINA,
Sample: L68827-10
Matrix: TD SHELLFISH
ColDate: 9/27/17 0:00
TotalSolid: 15.4
WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units
OR SW8463540C*KC SOP 781 GCMS-NCI					
DecaBDE-209		<QL,JG	0.25	0.5	ug/Kg
HeptaBDE-183		<QL	0.02	0.04	ug/Kg
HeptaBDE-190		<QL	0.02	0.04	ug/Kg
HexaBDE-138		<QL	0.02	0.04	ug/Kg
HexaBDE-153		<QL	0.02	0.04	ug/Kg
HexaBDE-154		<QL	0.022	0.044	ug/Kg
PentaBDE-100		<QL	0.056	0.112	ug/Kg
PentaBDE-85		<QL	0.02	0.04	ug/Kg
PentaBDE-99		<QL	0.34	0.68	ug/Kg
TetraBDE-47		<QL	0.18	0.36	ug/Kg
TetraBDE-66		<QL	0.029	0.058	ug/Kg
TetraBDE-71		<QL	0.02	0.04	ug/Kg
TriBDE-17		<QL	0.02	0.04	ug/Kg
TriBDE-28/-33		<QL	0.02	0.04	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding tim
<QL = less than limit of quantification
J = estimated value
B = detected in method blank and sample result is w
JG = estimated value; probable low bias

Table B-5. September 2017 Shilshole Crab Hepatopancreas Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Project:	421093-100				Project:	421093-100				Project:	421093-100			
	Locator:	CB-SHMARINA-N				Locator:	CB-SHMARINA-N				Locator:	CB-SHMARINA-N			
	Descrip:	SHILSHOLE MARINA,				Descrip:	SHILSHOLE MARINA,				Descrip:	SHILSHOLE MARINA,			
	Sample:	L68828-1				Sample:	L68828-2				Sample:	L68828-3			
	Matrix:	TH ORGANS				Matrix:	TH ORGANS				Matrix:	TH ORGANS			
	ColDate:	9/27/17 0:00				ColDate:	9/27/17 0:00				ColDate:	9/27/17 0:00			
	TotalSolid:	19.6				TotalSolid:	21				TotalSolid:	17.4			
	WET Weight Basis					**WET Weight Basis**					**WET Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
CV SM2540-G															
Total Solids	19.6		0.005	0.01	%	21		0.005	0.01	%	17.4		0.005	0.01	%
ES NONE															
Sample Information	Dungeness Hepato C2-1, D1-5,6, D2-1, E1-1				none	Dungeness Hepato D1-1,3,8,9,10				none	Dungeness Hepato D1-2,4,7, E1-2,3				none
MT PSEP 1997*SW846 7471B															
Mercury, Total, CVAA	0.0369	H	0.00394	0.00394	mg/Kg	0.0344	H	0.00399	0.00399	mg/Kg	0.03	H	0.00402	0.00402	mg/Kg
MT PSEP1997*SW846 6020B															
Arsenic, Total, ICP-MS	4.83		0.00124	0.00124	mg/Kg	5.71		0.00125	0.00125	mg/Kg	4.73		0.00124	0.00124	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00249	0.00249	mg/Kg		<QL	0.0025	0.0025	mg/Kg		<QL	0.00249	0.00249	mg/Kg
Cadmium, Total, ICP-MS	0.75		0.00124	0.00124	mg/Kg	0.665		0.00125	0.00125	mg/Kg	0.943		0.00124	0.00124	mg/Kg
Chromium, Total, ICP-MS	0.0425		0.00498	0.00498	mg/Kg	0.0487		0.00499	0.00499	mg/Kg	0.0319		0.00497	0.00497	mg/Kg
Copper, Total, ICP-MS	14.3		0.00498	0.00498	mg/Kg	25.8		0.00499	0.00499	mg/Kg	19.7		0.00497	0.00497	mg/Kg
Lead, Total, ICP-MS	0.123		0.00249	0.00249	mg/Kg	0.0583		0.0025	0.0025	mg/Kg	0.0879		0.00249	0.00249	mg/Kg
Nickel, Total, ICP-MS	0.348		0.00249	0.00249	mg/Kg	0.239		0.0025	0.0025	mg/Kg	0.39		0.00249	0.00249	mg/Kg
Selenium, Total, ICP-MS	1.09		0.0498	0.0498	mg/Kg	1.06		0.0499	0.0499	mg/Kg	0.986		0.0497	0.0497	mg/Kg
Silver, Total, ICP-MS	0.441		0.000995	0.000995	mg/Kg	0.55		0.000999	0.000999	mg/Kg	0.487		0.000994	0.000994	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00249	0.00249	mg/Kg		<QL	0.0025	0.0025	mg/Kg		<QL	0.00249	0.00249	mg/Kg
Zinc, Total, ICP-MS	17.6		0.0124	0.0124	mg/Kg	14.3		0.0125	0.0125	mg/Kg	14.1		0.0124	0.0124	mg/Kg
OR GRAVIMETRIC SOP 740v2															
Percent Lipids	13.7		0.05	0.1	%	11.6		0.05	0.1	%	8.38		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM															
Dichlorobiphenyls		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg
Heptachlorobiphenyls	66.7		0.62	1.25	ug/Kg	39.4		0.62	1.25	ug/Kg	48.5		0.62	1.25	ug/Kg
Hexachlorobiphenyls	200		0.42	0.833	ug/Kg	133		0.42	0.833	ug/Kg	145		0.42	0.833	ug/Kg
Monochlorobiphenyls		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg
Nonachlorobiphenyls	1.5	<QL,J	1	2.08	ug/Kg		<QL	1	2.08	ug/Kg	1.3	<QL,J	1	2.08	ug/Kg
Octachlorobiphenyls	14.1		0.62	1.25	ug/Kg	7.37		0.62	1.25	ug/Kg	11		0.62	1.25	ug/Kg
Pentachlorobiphenyls	156		0.42	0.833	ug/Kg	117		0.42	0.833	ug/Kg	105		0.42	0.833	ug/Kg
Tetrachlorobiphenyls	36.8		0.42	0.833	ug/Kg	23.9		0.42	0.833	ug/Kg	19.9		0.42	0.833	ug/Kg
Total PCB Homologs	477.59		0.2	0.417	ug/Kg	321.81		0.2	0.417	ug/Kg	331.87		0.2	0.417	ug/Kg
Trichlorobiphenyls	2.49		0.2	0.417	ug/Kg	1.14		0.2	0.417	ug/Kg	1.17		0.2	0.417	ug/Kg
OR SW846 3550B*SW846 8270D SIM															
2-Methylnaphthalene		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg
Acenaphthene		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg
Acenaphthylene		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg
Anthracene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Benzo(a)anthracene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Benzo(a)pyrene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	100	500	ug/Kg		<QL	100	500	ug/Kg		<QL	100	500	ug/Kg
Benzo(g,h,i)perylene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Chrysene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Dibenzo(a,h)anthracene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Fluoranthene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Fluorene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Naphthalene		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg
Phenanthrene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Pyrene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg

Table B-5. September 2017 Shilshole Crab Hepatopancreas Tissue Laboratory Results

King County Environmental Lab Analytical Report

Project: 421093-100
Locator: CB-SHMARINA-N
Descrip: SHILSHOLE MARINA,
Sample: L68828-1
Matrix: TH ORGANS
ColDate: 9/27/17 0:00
TotalSolid: 19.6
WET Weight Basis

Project: 421093-100
Locator: CB-SHMARINA-N
Descrip: SHILSHOLE MARINA,
Sample: L68828-2
Matrix: TH ORGANS
ColDate: 9/27/17 0:00
TotalSolid: 21
WET Weight Basis

Project: 421093-100
Locator: CB-SHMARINA-N
Descrip: SHILSHOLE MARINA,
Sample: L68828-3
Matrix: TH ORGANS
ColDate: 9/27/17 0:00
TotalSolid: 17.4
WET Weight Basis

	L68828-1					L68828-2					L68828-3				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
OR SW8463540C*KC SOP 781 GCMS-NCI															
DecaBDE-209		<QL	0.83	1.67	ug/Kg		<QL	0.83	1.67	ug/Kg		<QL	0.83	1.67	ug/Kg
HeptaBDE-183		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HeptaBDE-190		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HexaBDE-138		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HexaBDE-153	0.091	<QL,J	0.067	0.133	ug/Kg	0.1	<QL,J	0.067	0.133	ug/Kg	0.13	<QL,J	0.067	0.133	ug/Kg
HexaBDE-154	0.414		0.073	0.147	ug/Kg	0.272		0.073	0.147	ug/Kg	0.474		0.073	0.147	ug/Kg
PentaBDE-100	0.654		0.19	0.373	ug/Kg	0.718		0.19	0.373	ug/Kg	1.33		0.19	0.373	ug/Kg
PentaBDE-85		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
PentaBDE-99		<QL	1.1	2.27	ug/Kg		<QL	1.1	2.27	ug/Kg	1.6	<QL,J,B	1.1	2.27	ug/Kg
TetraBDE-47	6.09		0.6	1.2	ug/Kg	5.69		0.6	1.2	ug/Kg	9.14		0.6	1.2	ug/Kg
TetraBDE-66		<QL	0.097	0.193	ug/Kg		<QL	0.097	0.193	ug/Kg		<QL	0.097	0.193	ug/Kg
TetraBDE-71		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
TriBDE-17	0.11	<QL,J	0.067	0.133	ug/Kg	0.094	<QL,J	0.067	0.133	ug/Kg	0.13	<QL,J	0.067	0.133	ug/Kg
TriBDE-28/-33	0.195		0.067	0.133	ug/Kg	0.201		0.067	0.133	ug/Kg	0.224		0.067	0.133	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding time
<QL = less than limit of quantification
J = estimated value
B = detected in method blank and sample result is within 5 times the method blank value
JG = estimated value; probable low bias

Table B-5. September 2017 Shilshole Crab Hepatopancreas Tissue Laboratory Results

King County Environmental Lab Analytical Report

Project:	421093-100	421093-100	421093-100
Locator:	CB-SHMARINA-S	CB-SHMARINA-S	CB-SHMARINA-S
Descrip:	SHILSHOLE MARINA,	SHILSHOLE MARINA,	SHILSHOLE MARINA,
Sample:	L68828-4	L68828-5	L68828-6
Matrix:	TH ORGANS	TH ORGANS	TH ORGANS
ColDate:	9/27/17 0:00	9/27/17 0:00	9/27/17 0:00
TotalSolid:	14.5	16.7	16
	WET Weight Basis	**WET Weight Basis**	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
CV SM2540-G															
Total Solids	14.5		0.005	0.01	%	16.7		0.005	0.01	%	16		0.005	0.01	%
ES NONE															
Sample Information	Dungeness Hepato A1-4,7,8,9,10				none	Dungeness Hepato A1-5,12,13,14, B1-1				none	Dungeness Hepato A1-1,2,3,6				none
MT PSEP 1997*SW846 7471B															
Mercury, Total, CVAA	0.0636	H	0.00387	0.00387	mg/Kg	0.0299	H	0.00399	0.00399	mg/Kg	0.0556	H	0.00393	0.00393	mg/Kg
MT PSEP1997*SW846 6020B															
Arsenic, Total, ICP-MS	10.1		0.00124	0.00124	mg/Kg	4.4		0.00125	0.00125	mg/Kg	4.47		0.00125	0.00125	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00248	0.00248	mg/Kg		<QL	0.0025	0.0025	mg/Kg		<QL	0.0025	0.0025	mg/Kg
Cadmium, Total, ICP-MS	1.81		0.00124	0.00124	mg/Kg	0.912		0.00125	0.00125	mg/Kg	1.09		0.00125	0.00125	mg/Kg
Chromium, Total, ICP-MS	0.0375		0.00496	0.00496	mg/Kg	0.131		0.00499	0.00499	mg/Kg	0.0613		0.005	0.005	mg/Kg
Copper, Total, ICP-MS	37.8		0.00496	0.00496	mg/Kg	9.61		0.00499	0.00499	mg/Kg	23.3		0.005	0.005	mg/Kg
Lead, Total, ICP-MS	0.074		0.00248	0.00248	mg/Kg	0.14		0.0025	0.0025	mg/Kg	0.052		0.0025	0.0025	mg/Kg
Nickel, Total, ICP-MS	0.309		0.00248	0.00248	mg/Kg	0.53		0.0025	0.0025	mg/Kg	0.344		0.0025	0.0025	mg/Kg
Selenium, Total, ICP-MS	1.53		0.0496	0.0496	mg/Kg	1.16		0.0499	0.0499	mg/Kg	0.965		0.05	0.05	mg/Kg
Silver, Total, ICP-MS	0.942		0.000992	0.000992	mg/Kg	0.309		0.000999	0.000999	mg/Kg	0.47		0.001	0.001	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00248	0.00248	mg/Kg		<QL	0.0025	0.0025	mg/Kg		<QL	0.0025	0.0025	mg/Kg
Zinc, Total, ICP-MS	15.4		0.0124	0.0124	mg/Kg	14.5		0.0125	0.0125	mg/Kg	12.5		0.0125	0.0125	mg/Kg
OR GRAVIMETRIC SOP 740v2															
Percent Lipids	4.33		0.05	0.1	%	7.39		0.05	0.1	%	7.39		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM															
Dichlorobiphenyls		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg
Heptachlorobiphenyls	34.2		0.62	1.25	ug/Kg	31.7		0.62	1.25	ug/Kg	29.2		0.62	1.25	ug/Kg
Hexachlorobiphenyls	81.1		0.42	0.833	ug/Kg	90		0.42	0.833	ug/Kg	83.1		0.42	0.833	ug/Kg
Monochlorobiphenyls		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg
Nonachlorobiphenyls		<QL	1	2.08	ug/Kg		<QL	1	2.08	ug/Kg		<QL	1	2.08	ug/Kg
Octachlorobiphenyls	6.73		0.62	1.25	ug/Kg	6.72		0.62	1.25	ug/Kg	6.28		0.62	1.25	ug/Kg
Pentachlorobiphenyls	49.4		0.42	0.833	ug/Kg	60.1		0.42	0.833	ug/Kg	55.6		0.42	0.833	ug/Kg
Tetrachlorobiphenyls	9.62		0.42	0.833	ug/Kg	11.8		0.42	0.833	ug/Kg	9.68		0.42	0.833	ug/Kg
Total PCB Homologs	181.33		0.2	0.417	ug/Kg	201.13		0.2	0.417	ug/Kg	184.505		0.2	0.417	ug/Kg
Trichlorobiphenyls	0.28	<QL,J	0.2	0.417	ug/Kg	0.81		0.2	0.417	ug/Kg	0.645		0.2	0.417	ug/Kg
OR SW846 3550B*SW846 8270D SIM															
2-Methylnaphthalene		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg
Acenaphthene		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg
Acenaphthylene		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg
Anthracene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Benzo(a)anthracene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Benzo(a)pyrene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	100	500	ug/Kg		<QL	100	500	ug/Kg		<QL	100	500	ug/Kg
Benzo(g,h,i)perylene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Chrysene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Dibenzo(a,h)anthracene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Fluoranthene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Fluorene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Naphthalene		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg
Phenanthrene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Pyrene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg

Table B-5. September 2017 Shilshole Crab Hepatopancreas Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample 1					Sample 2					Sample 3				
	Project: 421093-100					Project: 421093-100					Project: 421093-100				
	Locator: CB-SHMARINA-S					Locator: CB-SHMARINA-S					Locator: CB-SHMARINA-S				
	Descrip: SHILSHOLE MARINA,					Descrip: SHILSHOLE MARINA,					Descrip: SHILSHOLE MARINA,				
	Sample: L68828-4					Sample: L68828-5					Sample: L68828-6				
	Matrix: TH ORGANS					Matrix: TH ORGANS					Matrix: TH ORGANS				
	ColDate: 9/27/17 0:00					ColDate: 9/27/17 0:00					ColDate: 9/27/17 0:00				
	TotalSolid: 14.5					TotalSolid: 16.7					TotalSolid: 16				
	WET Weight Basis					**WET Weight Basis**					**WET Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
OR SW8463540C*KC SOP 781 GCMS-NCI															
DecaBDE-209		<QL	0.83	1.67	ug/Kg		<QL	0.83	1.67	ug/Kg		<QL	0.83	1.67	ug/Kg
HeptaBDE-183		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HeptaBDE-190		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HexaBDE-138		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HexaBDE-153		<QL	0.067	0.133	ug/Kg	0.079	<QL,J	0.067	0.133	ug/Kg	0.086	<QL,J	0.067	0.133	ug/Kg
HexaBDE-154	0.21		0.073	0.147	ug/Kg	0.252		0.073	0.147	ug/Kg	0.273		0.073	0.147	ug/Kg
PentaBDE-100	0.37	<QL,J	0.19	0.373	ug/Kg	0.642		0.19	0.373	ug/Kg	0.797		0.19	0.373	ug/Kg
PentaBDE-85		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
PentaBDE-99		<QL	1.1	2.27	ug/Kg	1.1	<QL,J,B	1.1	2.27	ug/Kg		<QL	1.1	2.27	ug/Kg
TetraBDE-47	4.17		0.6	1.2	ug/Kg	4.98		0.6	1.2	ug/Kg	6.6		0.6	1.2	ug/Kg
TetraBDE-66		<QL	0.097	0.193	ug/Kg		<QL	0.097	0.193	ug/Kg		<QL	0.097	0.193	ug/Kg
TetraBDE-71		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
TriBDE-17	0.134		0.067	0.133	ug/Kg	0.076	<QL,J	0.067	0.133	ug/Kg	0.1	<QL,J	0.067	0.133	ug/Kg
TriBDE-28/-33	0.147		0.067	0.133	ug/Kg	0.147		0.067	0.133	ug/Kg	0.212		0.067	0.133	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding tim
<QL = less than limit of quantification
J = estimated value
B = detected in method blank and sample result is w
JG = estimated value; probable low bias

Table B-6. May 2017 Elliott Bay Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample 1	Sample 2	Sample 3
Project:	421093-100	421093-100	421093-100
Locator:	EB-SMITHCOVE	EB-SMITHCOVE	MYRTLEED_TRAWL
Descrip:	CRAB POT LOCATIONS	CRAB POT LOCATIONS	WDFW TRAWL STATION
Sample:	L68854-1	L68854-2	L68854-3
Matrix:	TD SHELLFISH	TD SHELLFISH	TD SHELLFISH
ColDate:	5/3/17 0:00	5/3/17 0:00	5/3/17 0:00
TotalSolid:	16.7	19.6	18
	WET Weight Basis	**WET Weight Basis**	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
CV SM2540-G															
Total Solids	16.7		0.005	0.01	%	19.6		0.005	0.01	%	18		0.005	0.01	%
ES NONE															
Sample Information	Dungeness Muscle E3-2, E4-1, F3-2				none	Dungeness Muscle E3-1, F3-1, F4-1				none	Dungeness Muscle 7E-3,4, 7B-1				none
MT PSEP 1997*SW846 7471B															
Mercury, Total, CVAA	0.0821	H	0.00405	0.00405	mg/Kg	0.0827	H	0.00387	0.00387	mg/Kg	0.068	H	0.00396	0.00396	mg/Kg
MT PSEP1997*SW846 6020B															
Arsenic, Total, ICP-MS	8.67		0.00198	0.00198	mg/Kg	7.11		0.00197	0.00197	mg/Kg	12.4		0.00196	0.00196	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00397	0.00397	mg/Kg		<QL	0.00394	0.00394	mg/Kg		<QL	0.00393	0.00393	mg/Kg
Cadmium, Total, ICP-MS	0.0983		0.00198	0.00198	mg/Kg	0.117		0.00197	0.00197	mg/Kg	0.246		0.00196	0.00196	mg/Kg
Chromium, Total, ICP-MS	0.021		0.00794	0.00794	mg/Kg	0.0119		0.00787	0.00787	mg/Kg	0.0088		0.00786	0.00786	mg/Kg
Copper, Total, ICP-MS	12		0.00794	0.00794	mg/Kg	13		0.00787	0.00787	mg/Kg	10.1		0.00786	0.00786	mg/Kg
Lead, Total, ICP-MS	0.0226		0.00397	0.00397	mg/Kg	0.0127		0.00394	0.00394	mg/Kg	0.0179		0.00393	0.00393	mg/Kg
Nickel, Total, ICP-MS	0.0497		0.00397	0.00397	mg/Kg	0.0252		0.00394	0.00394	mg/Kg	0.0767		0.00393	0.00393	mg/Kg
Selenium, Total, ICP-MS	0.475		0.0198	0.0198	mg/Kg	0.525		0.0197	0.0197	mg/Kg	0.637		0.0196	0.0196	mg/Kg
Silver, Total, ICP-MS	0.205		0.00159	0.00159	mg/Kg	0.166		0.00157	0.00157	mg/Kg	0.219		0.00157	0.00157	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00397	0.00397	mg/Kg		<QL	0.00394	0.00394	mg/Kg		<QL	0.00393	0.00393	mg/Kg
Zinc, Total, ICP-MS	37		0.0198	0.0198	mg/Kg	44.1		0.0197	0.0197	mg/Kg	40.2		0.0196	0.0196	mg/Kg
OR GRAVIMETRIC SOP 740v2															
Percent Lipids	0.488		0.05	0.1	%	0.358		0.05	0.1	%	0.308		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM															
Dichlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Heptachlorobiphenyls	4.19		0.19	0.375	ug/Kg	0.964		0.19	0.375	ug/Kg	4.43		0.19	0.375	ug/Kg
Hexachlorobiphenyls	12		0.13	0.25	ug/Kg	5.33		0.13	0.25	ug/Kg	12.9		0.13	0.25	ug/Kg
Monochlorobiphenyls		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg		<QL	0.06	0.125	ug/Kg
Nonachlorobiphenyls		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg		<QL	0.31	0.625	ug/Kg
Octachlorobiphenyls	0.874		0.19	0.375	ug/Kg		<QL	0.19	0.375	ug/Kg	0.807		0.19	0.375	ug/Kg
Pentachlorobiphenyls	8.97		0.13	0.25	ug/Kg	5.73		0.13	0.25	ug/Kg	10.5		0.13	0.25	ug/Kg
Tetrachlorobiphenyls	2.13		0.13	0.25	ug/Kg	1.36		0.13	0.25	ug/Kg	2.49		0.13	0.25	ug/Kg
Total PCB Homologs	28.416		0.06	0.125	ug/Kg	13.601		0.06	0.125	ug/Kg	31.434		0.06	0.125	ug/Kg
Trichlorobiphenyls	0.252		0.06	0.125	ug/Kg	0.217		0.06	0.125	ug/Kg	0.307		0.06	0.125	ug/Kg
OR SW846 3550B*SW846 8270D SIM															
2-Methylnaphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Acenaphthylene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(a)pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg		<QL	6	30	ug/Kg
Benzo(g,h,i)perylene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Chrysene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Dibenzo(a,h)anthracene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluoranthene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Fluorene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Naphthalene		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg		<QL	1	5	ug/Kg
Phenanthrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg
Pyrene		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg		<QL	2	10	ug/Kg

Table B-6. May 2017 Elliott Bay Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample 1	Sample 2	Sample 3
Project:	421093-100	421093-100	421093-100
Locator:	EB-SMITHCOVE	EB-SMITHCOVE	MYRTLEED_TRAWL
Descrip:	CRAB POT LOCATIONS	CRAB POT LOCATIONS	WDFW TRAWL STATION
Sample:	L68854-1	L68854-2	L68854-3
Matrix:	TD SHELLFISH	TD SHELLFISH	TD SHELLFISH
ColDate:	5/3/17 0:00	5/3/17 0:00	5/3/17 0:00
TotalSolid:	16.7	19.6	18
	WET Weight Basis	**WET Weight Basis**	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
OR SW8463540C*KC SOP 781 GCMS-NCI															
DecaBDE-209		<QL,JG	0.25	0.5	ug/Kg		<QL,JG	0.25	0.5	ug/Kg		<QL,JG	0.25	0.5	ug/Kg
HeptaBDE-183		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HeptaBDE-190		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-138		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-153		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
HexaBDE-154		<QL	0.022	0.044	ug/Kg		<QL	0.022	0.044	ug/Kg		<QL	0.022	0.044	ug/Kg
PentaBDE-100		<QL	0.056	0.112	ug/Kg		<QL	0.056	0.112	ug/Kg		<QL	0.056	0.112	ug/Kg
PentaBDE-85		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
PentaBDE-99		<QL	0.34	0.68	ug/Kg	0.39	<QL,J,B	0.34	0.68	ug/Kg	0.59	<QL,J,B	0.34	0.68	ug/Kg
TetraBDE-47	0.2	<QL,J,B	0.18	0.36	ug/Kg		<QL	0.18	0.36	ug/Kg	0.26	<QL,J,B	0.18	0.36	ug/Kg
TetraBDE-66		<QL	0.029	0.058	ug/Kg		<QL	0.029	0.058	ug/Kg		<QL	0.029	0.058	ug/Kg
TetraBDE-71		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
TriBDE-17		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg
TriBDE-28/-33		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg		<QL	0.02	0.04	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding time
<QL = less than limit of quantification
J = estimated value
B = detected in method blank and sample result is within 5 times the method blank value
JG = estimated value; probable low bias

Table B-6. May 2017 Elliott Bay Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

Project:	421093-100
Locator:	MYRTLEED_TRAWL
Descrip:	WDFW TRAWL STATION
Sample:	L68854-4
Matrix:	TD SHELLFISH
ColDate:	5/3/17 0:00
TotalSolid:	17.5

WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units
CV SM2540-G					
Total Solids	17.5		0.005	0.01	%
ES NONE					
Sample Information	Dungeness Muscle 7A-5,6, 7B-2				none
MT PSEP 1997*SW846 7471B					
Mercury, Total, CVAA	0.108	H	0.00397	0.00397	mg/Kg
MT PSEP1997*SW846 6020B					
Arsenic, Total, ICP-MS	9.05		0.00201	0.00201	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00402	0.00402	mg/Kg
Cadmium, Total, ICP-MS	0.0383		0.00201	0.00201	mg/Kg
Chromium, Total, ICP-MS	0.0137		0.00803	0.00803	mg/Kg
Copper, Total, ICP-MS	11.8		0.00803	0.00803	mg/Kg
Lead, Total, ICP-MS	0.0344		0.00402	0.00402	mg/Kg
Nickel, Total, ICP-MS	0.0493		0.00402	0.00402	mg/Kg
Selenium, Total, ICP-MS	0.576		0.0201	0.0201	mg/Kg
Silver, Total, ICP-MS	0.211		0.00161	0.00161	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00402	0.00402	mg/Kg
Zinc, Total, ICP-MS	41.7		0.0201	0.0201	mg/Kg
OR GRAVIMETRIC SOP 740v2					
Percent Lipids	0.477		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM					
Dichlorobiphenyls		<QL	0.06	0.125	ug/Kg
Heptachlorobiphenyls	5.87		0.19	0.375	ug/Kg
Hexachlorobiphenyls	16.5		0.13	0.25	ug/Kg
Monochlorobiphenyls		<QL	0.06	0.125	ug/Kg
Nonachlorobiphenyls		<QL	0.31	0.625	ug/Kg
Octachlorobiphenyls	1.17		0.19	0.375	ug/Kg
Pentachlorobiphenyls	12.6		0.13	0.25	ug/Kg
Tetrachlorobiphenyls	2.89		0.13	0.25	ug/Kg
Total PCB Homologs	39.34		0.06	0.125	ug/Kg
Trichlorobiphenyls	0.31		0.06	0.125	ug/Kg
OR SW846 3550B*SW846 8270D SIM					
2-Methylnaphthalene		<QL	1	5	ug/Kg
Acenaphthene		<QL	1	5	ug/Kg
Acenaphthylene		<QL	1	5	ug/Kg
Anthracene		<QL	2	10	ug/Kg
Benzo(a)anthracene		<QL	2	10	ug/Kg
Benzo(a)pyrene		<QL	2	10	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	6	30	ug/Kg
Benzo(g,h,i)perylene		<QL	2	10	ug/Kg
Chrysene		<QL	2	10	ug/Kg
Dibenzo(a,h)anthracene		<QL	2	10	ug/Kg
Fluoranthene		<QL	2	10	ug/Kg
Fluorene		<QL	2	10	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	2	10	ug/Kg
Naphthalene		<QL	1	5	ug/Kg
Phenanthrene		<QL	2	10	ug/Kg
Pyrene		<QL	2	10	ug/Kg

Table B-6. May 2017 Elliott Bay Crab Muscle Tissue Laboratory Results

King County Environmental Lab Analytical Report

Project: 421093-100
Locator: MYRTLEED_TRAWL
Descrip: WDFW TRAWL STATION
Sample: L68854-4
Matrix: TD SHELLFISH
ColDate: 5/3/17 0:00
TotalSolid: 17.5
WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units
OR SW8463540C*KC SOP 781 GCMS-NCI					
DecaBDE-209		<QL,JG	0.25	0.5	ug/Kg
HeptaBDE-183		<QL	0.02	0.04	ug/Kg
HeptaBDE-190		<QL	0.02	0.04	ug/Kg
HexaBDE-138		<QL	0.02	0.04	ug/Kg
HexaBDE-153		<QL	0.02	0.04	ug/Kg
HexaBDE-154		<QL	0.022	0.044	ug/Kg
PentaBDE-100		<QL	0.056	0.112	ug/Kg
PentaBDE-85		<QL	0.02	0.04	ug/Kg
PentaBDE-99	0.63	<QL,J,B	0.34	0.68	ug/Kg
TetraBDE-47	0.32	<QL,J,B	0.18	0.36	ug/Kg
TetraBDE-66		<QL	0.029	0.058	ug/Kg
TetraBDE-71		<QL	0.02	0.04	ug/Kg
TriBDE-17		<QL	0.02	0.04	ug/Kg
TriBDE-28/-33		<QL	0.02	0.04	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding tim
<QL = less than limit of quantification
J = estimated value
B = detected in method blank and sample result is w
JG = estimated value; probable low bias

Table B-7. May 2017 Elliott Bay Crab Hepatopancreas Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample 1	Sample 2
Project:	421093-100	421093-100
Locator:	EB-SMITHCOVE	MYRTLEED_TRAWL
Descrip:	CRAB POT LOCATIONS	WDFW TRAWL STATION
Sample:	L68854-5	L68854-6
Matrix:	TH ORGANS	TH ORGANS
ColDate:	5/3/17 0:00	5/3/17 0:00
TotalSolid:	19.1	20.2
	WET Weight Basis	**WET Weight Basis**

Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
CV SM2540-G										
Total Solids	19.1		0.005	0.01	%	20.2		0.005	0.01	%
ES NONE										
Sample Information	Dungeness Hepato E3-1,2, E4-1, F3-1, F4-1				none	Dungeness Hepato 7A-5,6, 7B-1,2, 7E-3				none
MT PSEP 1997*SW846 7471B										
Mercury, Total, CVAA	0.0644	H	0.0039	0.0039	mg/Kg	0.1	H	0.00389	0.00389	mg/Kg
MT PSEP1997*SW846 6020B										
Arsenic, Total, ICP-MS	6.94		0.00124	0.00124	mg/Kg	8.87		0.00125	0.00125	mg/Kg
Beryllium, Total, ICP-MS		<QL	0.00249	0.00249	mg/Kg		<QL	0.0025	0.0025	mg/Kg
Cadmium, Total, ICP-MS	1.05		0.00124	0.00124	mg/Kg	2.57		0.00125	0.00125	mg/Kg
Chromium, Total, ICP-MS	0.0181		0.00497	0.00497	mg/Kg	0.0336		0.005	0.005	mg/Kg
Copper, Total, ICP-MS	35.2		0.00497	0.00497	mg/Kg	55.4		0.005	0.005	mg/Kg
Lead, Total, ICP-MS	0.157		0.00249	0.00249	mg/Kg	0.144		0.0025	0.0025	mg/Kg
Nickel, Total, ICP-MS	0.136		0.00249	0.00249	mg/Kg	0.309		0.0025	0.0025	mg/Kg
Selenium, Total, ICP-MS	1.01		0.0497	0.0497	mg/Kg	1.61		0.05	0.05	mg/Kg
Silver, Total, ICP-MS	0.58		0.000995	0.000995	mg/Kg	0.891		0.001	0.001	mg/Kg
Thallium, Total, ICP-MS		<QL	0.00249	0.00249	mg/Kg		<QL	0.0025	0.0025	mg/Kg
Zinc, Total, ICP-MS	14.5		0.0124	0.0124	mg/Kg	18.7		0.0125	0.0125	mg/Kg
OR GRAVIMETRIC SOP 740v2										
Percent Lipids	10.3		0.05	0.1	%	11.1		0.05	0.1	%
OR SW846 3540C*EPA 680 SIM										
Dichlorobiphenyls		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg
Heptachlorobiphenyls	114		0.62	1.25	ug/Kg	231		0.62	1.25	ug/Kg
Hexachlorobiphenyls	315		0.42	0.833	ug/Kg	583		0.42	0.833	ug/Kg
Monochlorobiphenyls		<QL	0.2	0.417	ug/Kg		<QL	0.2	0.417	ug/Kg
Nonachlorobiphenyls	3.66		1	2.08	ug/Kg	7.04		1	2.08	ug/Kg
Octachlorobiphenyls	25.2		0.62	1.25	ug/Kg	53.5		0.62	1.25	ug/Kg
Pentachlorobiphenyls	232		0.42	0.833	ug/Kg	379		0.42	0.833	ug/Kg
Tetrachlorobiphenyls	51.8		0.42	0.833	ug/Kg	71		0.42	0.833	ug/Kg
Total PCB Homologs	747.11		0.2	0.417	ug/Kg	1332.21		0.2	0.417	ug/Kg
Trichlorobiphenyls	4.15		0.2	0.417	ug/Kg	5.46		0.2	0.417	ug/Kg
OR SW846 3550B*SW846 8270D SIM										
2-Methylnaphthalene		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg
Acenaphthene		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg
Acenaphthylene		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg
Anthracene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Benzo(a)anthracene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Benzo(a)pyrene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Benzo(b,j,k)fluoranthene		<QL	100	500	ug/Kg		<QL	100	500	ug/Kg
Benzo(g,h,i)perylene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Chrysene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Dibenzo(a,h)anthracene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Fluoranthene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Fluorene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Indeno(1,2,3-Cd)Pyrene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Naphthalene		<QL	17	83.3	ug/Kg		<QL	17	83.3	ug/Kg
Phenanthrene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg
Pyrene		<QL	33	167	ug/Kg		<QL	33	167	ug/Kg

Table B-7. May 2017 Elliott Bay Crab Hepatopancreas Tissue Laboratory Results

King County Environmental Lab Analytical Report

	Sample 1	Sample 2
Project:	421093-100	421093-100
Locator:	EB-SMITHCOVE	MYRTLEED_TRAWL
Descrip:	CRAB POT LOCATIONS	WDFW TRAWL STATION
Sample:	L68854-5	L68854-6
Matrix:	TH ORGANS	TH ORGANS
ColDate:	5/3/17 0:00	5/3/17 0:00
TotalSolid:	19.1	20.2
	WET Weight Basis	**WET Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
OR SW8463540C*KC SOP 781 GCMS-NCI										
DecaBDE-209		<QL	0.83	1.67	ug/Kg		<QL	0.83	1.67	ug/Kg
HeptaBDE-183		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HeptaBDE-190		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HexaBDE-138		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
HexaBDE-153	0.14		0.067	0.133	ug/Kg	0.244		0.067	0.133	ug/Kg
HexaBDE-154	0.594		0.073	0.147	ug/Kg	0.607		0.073	0.147	ug/Kg
PentaBDE-100	1.41		0.19	0.373	ug/Kg	1.48		0.19	0.373	ug/Kg
PentaBDE-85		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
PentaBDE-99	1.5	<QL,J,B	1.1	2.27	ug/Kg	2.44	B	1.1	2.27	ug/Kg
TetraBDE-47	7.55		0.6	1.2	ug/Kg	11		0.6	1.2	ug/Kg
TetraBDE-66		<QL	0.097	0.193	ug/Kg	0.14	<QL,J	0.097	0.193	ug/Kg
TetraBDE-71		<QL	0.067	0.133	ug/Kg		<QL	0.067	0.133	ug/Kg
TriBDE-17	0.13	<QL,J	0.067	0.133	ug/Kg	0.169		0.067	0.133	ug/Kg
TriBDE-28/-33	0.276		0.067	0.133	ug/Kg	0.317		0.067	0.133	ug/Kg

Qual = Lab Qualifier
MDL = method detection limit
RDL = reported detection limit
H = sample exceeded the recommended holding time
<QL = less than limit of quantification
J = estimated value
B = detected in method blank and sample result is within 5 times the method blank value

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Appendix C: Laboratory Quality Assurance Reports for 2017 Crab Data

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WG152213 TOTAL SOLIDS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L67900-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	CVTOTS	SHELLFISH	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:46	WG152213-2,-3,-4,-5	
L67900-2	421093-100		CVTOTS	SHELLFISH	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:47		
L67900-3	421093-100		CVTOTS	SHELLFISH	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:47		
L67900-4	421093-100		CVTOTS	SHELLFISH	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:47		
L67900-5	421093-100		CVTOTS	SHELLFISH	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:47		
L67900-6	421093-100		CVTOTS	SHELLFISH	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:48		
L67900-7	421093-100		CVTOTS	SHELLFISH	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:48		
L67900-8	421093-100		CVTOTS	SHELLFISH	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:49		
L67900-9	421093-100		CVTOTS	SHELLFISH	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:49		
L67900-10	421093-100		CVTOTS	SHELLFISH	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:49		
L67901-1	421093-100		CVTOTS	ORGANS	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:50		
L67901-2	421093-100		CVTOTS	ORGANS	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:51		
L67901-3	421093-100		CVTOTS	ORGANS	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:51		
L67901-4	421093-100		CVTOTS	ORGANS	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:52		
L67901-5	421093-100		CVTOTS	ORGANS	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:52		
L67901-6	421093-100		CVTOTS	ORGANS	6/1/2017 0:00	6/5/2017 15:00	6/6/2017 10:53		
WG152213-1	MB		CVTOTS	OTHR SOLID		6/5/2017 15:00	6/6/2017 10:46	WG152213-1	MB1 06/05/17
WG152213-2	LD		CVTOTS	SHELLFISH		6/5/2017 15:00	6/6/2017 10:50	WG152213-2,-3,-4,-5	L67900-10
WG152213-3	LT		CVTOTS	SHELLFISH		6/5/2017 15:00	6/6/2017 10:50		WG152213-2 L67900-10
WG152213-4	LD		CVTOTS	ORGANS		6/5/2017 15:00	6/6/2017 10:51		L67901-3
WG152213-5	LT		CVTOTS	ORGANS		6/5/2017 15:00	6/6/2017 10:52		WG152213-4 L67901-3

WG152231 TOTAL MERCURY, CVAA

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L67900-11	421093-100	West Point EBO discharge sampling due to flooding	MTHG-MID	BLANK WTR	6/1/2017 0:00	6/6/2017 11:50	6/7/2017 12:13	WG152231-1,-2,-3,-4	
L67900-12	421093-100		MTHG-MID	BLANK WTR	6/1/2017 0:00	6/6/2017 11:50	6/7/2017 12:15		
WG152231-1	MB		MTHG-MID	BLANK WTR		6/6/2017 11:50	6/7/2017 12:04		MB
WG152231-2	SB		MTHG-MID	BLANK WTR		6/6/2017 11:50	6/7/2017 12:06		WG152231-1 HG-LMID
WG152231-3	MS		MTHG-MID	BLANK WTR		6/6/2017 11:50	6/7/2017 12:08		L67900-11 HG-LMID
WG152231-4	MSD		MTHG-MID	BLANK WTR		6/6/2017 11:50	6/7/2017 12:11		WG152231-3 L67900-11 HG-LMID-MSD

WG152743 TOTAL METALS, ICPMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L67900-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	MTICPMS-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 12:11	WG152743-1,-2,-3,-4,-5,-6,-7,-8,-9,-10	
L67900-2	421093-100		MTICPMS-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 12:14		
L67900-3	421093-100		MTICPMS-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 12:23		
L67900-4	421093-100		MTICPMS-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 12:33		
L67900-5	421093-100		MTICPMS-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 12:36		
L67900-6	421093-100		MTICPMS-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 12:39		
L67900-7	421093-100		MTICPMS-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 12:42		
L67900-8	421093-100		MTICPMS-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 12:45		
L67900-9	421093-100		MTICPMS-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 12:49		
L67900-10	421093-100		MTICPMS-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 12:52		
L67901-1	421093-100		MTICPMS-TISS-QL	ORGANS	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 13:01		
L67901-2	421093-100		MTICPMS-TISS-QL	ORGANS	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 13:04		
L67901-3	421093-100		MTICPMS-TISS-QL	ORGANS	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 13:07		
L67901-4	421093-100		MTICPMS-TISS-QL	ORGANS	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 13:11		
L67901-5	421093-100		MTICPMS-TISS-QL	ORGANS	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 13:20		
L67901-6	421093-100		MTICPMS-TISS-QL	ORGANS	6/1/2017 0:00	7/5/2017 8:00	7/10/2017 13:23		
WG152743-1	MB		MTICPMS-TISS-QL	TISS BLANK		7/5/2017 8:00	7/10/2017 11:52		METHOD BLANK
WG152743-2	SB		MTICPMS-TISS-QL	TISS BLANK		7/5/2017 8:00	7/10/2017 11:55		WG152743-1 MS-20
WG152743-3	SRM		MTICPMS-TISS-QL	ORGANS		7/5/2017 8:00	7/10/2017 11:58		TORT3
WG152743-4	SRMD		MTICPMS-TISS-QL	ORGANS		7/5/2017 8:00	7/10/2017 12:01		WG152743-3 TORT3
WG152743-5	LCS		MTICPMS-TISS-QL	SHELLFISH		7/5/2017 8:00	7/10/2017 12:04		MUSSEL
WG152743-6	LCSD		MTICPMS-TISS-QL	SHELLFISH		7/5/2017 8:00	7/10/2017 12:08		WG152743-5 MUSSEL
WG152743-7	LD		MTICPMS-TISS-QL	SHELLFISH		7/5/2017 8:00	7/10/2017 12:27		L67900-3 RPD-TISS
WG152743-8	MS		MTICPMS-TISS-QL	SHELLFISH		7/5/2017 8:00	7/10/2017 12:30		L67900-3 MS-20
WG152743-9	LD		MTICPMS-TISS-QL	ORGANS		7/5/2017 8:00	7/10/2017 13:14		L67901-4 RPD-TISS
WG152743-10	MS		MTICPMS-TISS-QL	ORGANS		7/5/2017 8:00	7/10/2017 13:17		L67901-4 MS-20

WG152756 TOTAL MERCURY, CVAA

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L67900-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	MTHG-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:14	WG152756-1,-10,-2,-3,-4,-5,-6,-7,-8,-9	
L67900-2	421093-100		MTHG-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:20		
L67900-3	421093-100		MTHG-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:22		
L67900-4	421093-100		MTHG-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:25		
L67900-5	421093-100		MTHG-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:27		
L67900-6	421093-100		MTHG-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:33		
L67900-7	421093-100		MTHG-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:35		
L67900-8	421093-100		MTHG-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:37		
L67900-9	421093-100		MTHG-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:40		
L67900-10	421093-100		MTHG-TISS-QL	SHELLFISH	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:42		
L67901-1	421093-100		MTHG-TISS-QL	ORGANS	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:48		
L67901-2	421093-100		MTHG-TISS-QL	ORGANS	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:50		
L67901-3	421093-100		MTHG-TISS-QL	ORGANS	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:52		
L67901-4	421093-100		MTHG-TISS-QL	ORGANS	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 13:59		
L67901-5	421093-100		MTHG-TISS-QL	ORGANS	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 14:05		
L67901-6	421093-100		MTHG-TISS-QL	ORGANS	6/1/2017 0:00	7/5/2017 13:00	7/6/2017 14:07		
WG152756-1	MB		MTHG-TISS-QL	TISS BLANK		7/5/2017 13:00	7/6/2017 13:10		MB
WG152756-2	SB		MTHG-TISS-QL	TISS BLANK		7/5/2017 13:00	7/6/2017 13:12		WG152756-1 HG-TISS
WG152756-3	LD		MTHG-TISS-QL	SHELLFISH		7/5/2017 13:00	7/6/2017 13:16		L67900-1 RPD-TISS
WG152756-4	MS		MTHG-TISS-QL	SHELLFISH		7/5/2017 13:00	7/6/2017 13:18		L67900-1 HG-TISS
WG152756-5	LCS		MTHG-TISS-QL	SHELLFISH		7/5/2017 13:00	7/6/2017 13:44		MUSSEL
WG152756-6	LCSD		MTHG-TISS-QL	SHELLFISH		7/5/2017 13:00	7/6/2017 13:46		WG152756-5 MUSSEL
WG152756-7	LD		MTHG-TISS-QL	ORGANS		7/5/2017 13:00	7/6/2017 14:01		L67901-4 RPD-TISS
WG152756-8	MS		MTHG-TISS-QL	ORGANS		7/5/2017 13:00	7/6/2017 14:03		L67901-4 HG-TISS
WG152756-9	SRM		MTHG-TISS-QL	ORGANS		7/5/2017 13:00	7/6/2017 14:09		TORT3
WG152756-10	SRMD		MTHG-TISS-QL	ORGANS		7/5/2017 13:00	7/6/2017 14:12		WG152756-9 TORT3

WG152946 TOTAL METALS, ICPMS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L67900-11	421093-100	West Point EBO discharge sampling due to flooding	MTICPMS	BLANK WTR	6/1/2017 0:00	7/17/2017 11:00	7/18/2017 16:17	WG152946-1,-2,-3,-4	
L67900-12	421093-100		MTICPMS	BLANK WTR	6/1/2017 0:00	7/17/2017 11:00	7/18/2017 16:20		
L67943-1	421195-260	Ravensdale Monthly GW	MTICPMS	GRND WTR	7/5/2017 9:25	7/17/2017 11:00	7/18/2017 16:30		
WG152946-1	MB		MTICPMS	BLANK WTR		7/17/2017 11:00	7/18/2017 16:11		METHOD BLANK
WG152946-2	SB		MTICPMS	BLANK WTR		7/17/2017 11:00	7/18/2017 16:14		WG152946-1 MS-20
WG152946-3	LD		MTICPMS	BLANK WTR		7/17/2017 11:00	7/18/2017 16:24		L67900-12 RPD-LIQ
WG152946-4	MS		MTICPMS	BLANK WTR		7/17/2017 11:00	7/18/2017 16:27		L67900-12 MS-20

WG152258 PBDE

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L67900-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORPBDE-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	6/20/2017 19:44	WG152258-1,-2,-3,-4,-5	
L67900-2	421093-100		ORPBDE-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	6/20/2017 20:12		
L67900-3	421093-100		ORPBDE-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	6/20/2017 20:40		
L67900-4	421093-100		ORPBDE-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	6/20/2017 21:07		
L67900-5	421093-100		ORPBDE-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	6/20/2017 21:35		
L67900-6	421093-100		ORPBDE-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	6/20/2017 22:03		
L67900-7	421093-100		ORPBDE-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	6/20/2017 22:30		
L67900-8	421093-100		ORPBDE-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	6/20/2017 22:58		
L67900-9	421093-100		ORPBDE-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	6/20/2017 23:26		
L67900-10	421093-100		ORPBDE-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	6/20/2017 23:53		
WG152258-1	MB		ORPBDE-QL	OTHR TISS		6/7/2017 17:00	6/20/2017 17:26		MB170607
WG152258-2	SB		ORPBDE-QL	OTHR TISS		6/7/2017 17:00	6/20/2017 17:54		WG152258-1
WG152258-3	MS		ORPBDE-QL	SHELLFISH		6/7/2017 17:00	6/20/2017 18:21		L67900-2
WG152258-4	MSD		ORPBDE-QL	SHELLFISH		6/7/2017 17:00	6/20/2017 18:49		WG152258-3 L67900-2
WG152258-5	LD		ORPBDE-QL	SHELLFISH		6/7/2017 17:00	6/20/2017 19:17		L67900-6

WG152259 PAH

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L67900-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORPAH-SIM-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	7/7/2017 13:38	WG152259-1,-2,-3,-4,-5	
L67900-2	421093-100		ORPAH-SIM-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	7/7/2017 14:12		
L67900-3	421093-100		ORPAH-SIM-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	7/7/2017 14:45		
L67900-4	421093-100		ORPAH-SIM-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	7/7/2017 15:19		
L67900-5	421093-100		ORPAH-SIM-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	7/7/2017 15:52		
L67900-6	421093-100		ORPAH-SIM-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	7/7/2017 16:26		
L67900-7	421093-100		ORPAH-SIM-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	7/7/2017 16:59		
L67900-8	421093-100		ORPAH-SIM-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	7/7/2017 17:33		
L67900-9	421093-100		ORPAH-SIM-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	7/7/2017 18:07		
L67900-10	421093-100		ORPAH-SIM-QL	SHELLFISH	6/1/2017 0:00	6/7/2017 17:00	7/6/2017 23:06		
WG152259-1	MB		ORPAH-SIM-QL	OTHR TISS		6/7/2017 17:00	7/6/2017 14:41		MB170607
WG152259-2	SB		ORPAH-SIM-QL	OTHR TISS		6/7/2017 17:00	7/6/2017 15:15		WG152259-1
WG152259-3	MS		ORPAH-SIM-QL	SHELLFISH		6/7/2017 17:00	7/7/2017 11:57		L67900-3
WG152259-4	MSD		ORPAH-SIM-QL	SHELLFISH		6/7/2017 17:00	7/7/2017 12:31		WG152259-3 L67900-3
WG152259-5	LD		ORPAH-SIM-QL	SHELLFISH		6/7/2017 17:00	7/7/2017 13:04		L67900-6

WG152391 PCB HOMOLOG

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L67900-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORPCB-HOMOLOG-QL	SHELLFISH	6/1/2017 0:00	6/13/2017 17:00	7/6/2017 19:25	WG152391-1,-2,-3,-4,-5	
L67900-2	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	6/1/2017 0:00	6/13/2017 17:00	7/7/2017 10:05		
L67900-3	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	6/1/2017 0:00	6/13/2017 17:00	7/7/2017 11:01		
L67900-4	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	6/1/2017 0:00	6/13/2017 17:00	7/7/2017 11:58		
L67900-5	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	6/1/2017 0:00	6/13/2017 17:00	7/7/2017 12:54		
L67900-6	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	6/1/2017 0:00	6/13/2017 17:00	7/7/2017 13:50		
L67900-7	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	6/1/2017 0:00	6/13/2017 17:00	7/7/2017 14:46		
L67900-8	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	6/1/2017 0:00	6/13/2017 17:00	7/7/2017 15:43		
L67900-9	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	6/1/2017 0:00	6/13/2017 17:00	7/7/2017 16:39		
L67900-10	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	6/1/2017 0:00	6/13/2017 17:00	7/7/2017 17:35		
WG152391-1	MB		ORPCB-HOMOLOG-QL	OTHR TISS		6/13/2017 17:00	7/6/2017 14:44		MB170613
WG152391-2	SB		ORPCB-HOMOLOG-QL	OTHR TISS		6/13/2017 17:00	7/6/2017 15:40		WG152391-1
WG152391-3	MS		ORPCB-HOMOLOG-QL	SHELLFISH		6/13/2017 17:00	7/6/2017 16:37		L67900-5
WG152391-4	MSD		ORPCB-HOMOLOG-QL	SHELLFISH		6/13/2017 17:00	7/6/2017 17:33		WG152391-3 L67900-5
WG152391-5	LD		ORPCB-HOMOLOG-QL	SHELLFISH		6/13/2017 17:00	7/6/2017 18:29		L67900-10

WG152393 LIPIDS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L67900-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORLIPIDS	SHELLFISH	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30	WG152393-1,-2	
L67900-2	421093-100		ORLIPIDS	SHELLFISH	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
L67900-3	421093-100		ORLIPIDS	SHELLFISH	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
L67900-4	421093-100		ORLIPIDS	SHELLFISH	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
L67900-5	421093-100		ORLIPIDS	SHELLFISH	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
L67900-6	421093-100		ORLIPIDS	SHELLFISH	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
L67900-7	421093-100		ORLIPIDS	SHELLFISH	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
L67900-8	421093-100		ORLIPIDS	SHELLFISH	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
L67900-9	421093-100		ORLIPIDS	SHELLFISH	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
L67900-10	421093-100		ORLIPIDS	SHELLFISH	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
WG152393-1	MB		ORLIPIDS	OTHR TISS		6/13/2017 8:00	6/15/2017 15:30		MB170613
WG152393-2	LD		ORLIPIDS	SHELLFISH		6/13/2017 8:00	6/15/2017 15:30		L67900-10

WG152291 PBDE

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L67901-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORPBDE-QL	ORGANS	6/1/2017 0:00	6/8/2017 17:00	6/21/2017 16:00	WG152291-1,-2,-3,-4,-5	
L67901-2	421093-100		ORPBDE-QL	ORGANS	6/1/2017 0:00	6/8/2017 17:00	6/21/2017 16:27		
L67901-3	421093-100		ORPBDE-QL	ORGANS	6/1/2017 0:00	6/8/2017 17:00	6/21/2017 16:55		
L67901-4	421093-100		ORPBDE-QL	ORGANS	6/1/2017 0:00	6/8/2017 17:00	6/21/2017 17:23		
L67901-5	421093-100		ORPBDE-QL	ORGANS	6/1/2017 0:00	6/8/2017 17:00	6/21/2017 17:50		
L67901-6	421093-100		ORPBDE-QL	ORGANS	6/1/2017 0:00	6/8/2017 17:00	6/21/2017 18:18		
WG152291-1	MB		ORPBDE-QL	OTHR TISS		6/8/2017 17:00	6/21/2017 13:13		MB170608
WG152291-2	SB		ORPBDE-QL	OTHR TISS		6/8/2017 17:00	6/21/2017 13:40		WG152291-1
WG152291-3	MS		ORPBDE-QL	ORGANS		6/8/2017 17:00	6/21/2017 14:08		L67901-2
WG152291-4	MSD		ORPBDE-QL	ORGANS		6/8/2017 17:00	6/21/2017 14:36		WG152291-3 L67901-2
WG152291-5	LD		ORPBDE-QL	ORGANS		6/8/2017 17:00	6/21/2017 15:03		L67901-6

WG152292 PAH

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L67901-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORPAH-SIM-QL	ORGANS	6/1/2017 0:00	6/8/2017 17:00	6/29/2017 15:39	WG152292-1,-2,-3,-4,-5	
L67901-2	421093-100		ORPAH-SIM-QL	ORGANS	6/1/2017 0:00	6/8/2017 17:00	6/29/2017 16:13		
L67901-3	421093-100		ORPAH-SIM-QL	ORGANS	6/1/2017 0:00	6/8/2017 17:00	6/29/2017 16:47		
L67901-4	421093-100		ORPAH-SIM-QL	ORGANS	6/1/2017 0:00	6/8/2017 17:00	6/30/2017 11:34		
L67901-5	421093-100		ORPAH-SIM-QL	ORGANS	6/1/2017 0:00	6/8/2017 17:00	6/30/2017 12:08		
L67901-6	421093-100		ORPAH-SIM-QL	ORGANS	6/1/2017 0:00	6/8/2017 17:00	6/29/2017 18:28		
WG152292-1	MB		ORPAH-SIM-QL	OTHR TISS		6/8/2017 17:00	6/29/2017 11:44		MB170608
WG152292-2	SB		ORPAH-SIM-QL	OTHR TISS		6/8/2017 17:00	6/29/2017 12:18		WG152292-1
WG152292-3	MS		ORPAH-SIM-QL	ORGANS		6/8/2017 17:00	6/29/2017 13:57		L67901-3
WG152292-4	MSD		ORPAH-SIM-QL	ORGANS		6/8/2017 17:00	6/29/2017 14:31		WG152292-3 L67901-3
WG152292-5	LD		ORPAH-SIM-QL	ORGANS		6/8/2017 17:00	6/29/2017 15:05		L67901-6

WG152392 PCB HOMOLOG

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L67901-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORPCB-HOMOLOG-QL	ORGANS	6/1/2017 0:00	6/13/2017 17:00	7/5/2017 15:03	WG152392-1,-2,-3,-4,-5	
L67901-2	421093-100		ORPCB-HOMOLOG-QL	ORGANS	6/1/2017 0:00	6/13/2017 17:00	7/6/2017 10:03		
L67901-3	421093-100		ORPCB-HOMOLOG-QL	ORGANS	6/1/2017 0:00	6/13/2017 17:00	7/6/2017 10:59		
L67901-4	421093-100		ORPCB-HOMOLOG-QL	ORGANS	6/1/2017 0:00	6/13/2017 17:00	7/6/2017 11:55		
L67901-5	421093-100		ORPCB-HOMOLOG-QL	ORGANS	6/1/2017 0:00	6/13/2017 17:00	7/6/2017 12:51		
L67901-6	421093-100		ORPCB-HOMOLOG-QL	ORGANS	6/1/2017 0:00	6/13/2017 17:00	7/6/2017 13:48		
WG152392-1	MB		ORPCB-HOMOLOG-QL	OTHR TISS		6/13/2017 17:00	7/5/2017 10:21		MB170613
WG152392-2	SB		ORPCB-HOMOLOG-QL	OTHR TISS		6/13/2017 17:00	7/5/2017 11:18		WG152392-1
WG152392-3	MS		ORPCB-HOMOLOG-QL	ORGANS		6/13/2017 17:00	7/5/2017 12:14		L67901-2
WG152392-4	MSD		ORPCB-HOMOLOG-QL	ORGANS		6/13/2017 17:00	7/5/2017 13:10		WG152392-3 L67901-2
WG152392-5	LD		ORPCB-HOMOLOG-QL	ORGANS		6/13/2017 17:00	7/5/2017 14:06		L67901-3

WG152394 LIPIDS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L67901-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORLIPIDS	ORGANS	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30	WG152394-1,-2	
L67901-2	421093-100		ORLIPIDS	ORGANS	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
L67901-3	421093-100		ORLIPIDS	ORGANS	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
L67901-4	421093-100		ORLIPIDS	ORGANS	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
L67901-5	421093-100		ORLIPIDS	ORGANS	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
L67901-6	421093-100		ORLIPIDS	ORGANS	6/1/2017 0:00	6/13/2017 8:00	6/15/2017 15:30		
WG152394-1	MB		ORLIPIDS	OTHR TISS		6/13/2017 8:00	6/15/2017 15:30		MB170613
WG152394-2	LD		ORLIPIDS	ORGANS		6/13/2017 8:00	6/15/2017 15:30		L67901-3

Workgroup: WG152213 TOTAL SOLIDS

MB:WG152213-1 Matrix: OTHR SOLID Listtype:CVTOTS Method:SM2540-G Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%		<MDL

LT:WG152213-3 LD:WG152213-2 L67900-10 Matrix: SHELLFISH Listtype:CVTOTS Method:SM2540-G Project:421093-100 Pkey:STD
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	17.4	17.6	17.7	1		0--25

LT:WG152213-5 LD:WG152213-4 L67901-3 Matrix: ORGANS Listtype:CVTOTS Method:SM2540-G Project:421093-100 Pkey:STD
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	16.4	16.4	16.5	0		0--25

Workgroup: WG152231 TOTAL MERCURY, CVAA

MB:WG152231-1 Matrix: BLANK WTR Listtype:MTHG-MID Method:EPA 245.1*SW846 7470A Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAA	0.05	0.1	ug/L		<MDL

SB:WG152231-2 MB:WG152231-1 Matrix: BLANK WTR Listtype:MTHG-MID Method:EPA 245.1*SW846 7470A Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.05	0.1	ug/L	<MDL	1	1.01	101		85--115

MSD:WG152231-4 MS:WG152231-3 L67900-11 Matrix: BLANK WTR Listtype:MTHG-MID Method:EPA 245.1*SW846 7470A Project:421093-100 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.05	0.1	ug/L	<MDL	1	1.04	104		75--125	1	1.03	103		0		0--20

Workgroup: WG152743 TOTAL METALS, ICPMS

MB:WG152743-1 Matrix: TISS BLANK Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Beryllium, Total, ICP-MS	0.00192	0.00385	mg/Kg		<QL
Chromium, Total, ICP-MS	0.00385	0.00769	mg/Kg		<QL
Nickel, Total, ICP-MS	0.00192	0.00385	mg/Kg		<QL
Copper, Total, ICP-MS	0.00385	0.00769	mg/Kg		<QL
Zinc, Total, ICP-MS	0.00962	0.0192	mg/Kg		<QL
Arsenic, Total, ICP-MS	0.000962	0.00192	mg/Kg		<QL
Selenium, Total, ICP-MS	0.00962	0.0192	mg/Kg		<QL
Silver, Total, ICP-MS	0.000769	0.00154	mg/Kg		<QL
Cadmium, Total, ICP-MS	0.000962	0.00192	mg/Kg		<QL
Thallium, Total, ICP-MS	0.00192	0.00385	mg/Kg		<QL
Lead, Total, ICP-MS	0.00192	0.00385	mg/Kg		<QL

SB:WG152743-2 MB:WG152743-1 Matrix: TISS BLANK Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.00192	0.00385	mg/Kg	<QL	0.192	0.182	95		85--115
Chromium, Total, ICP-MS	0.00385	0.00769	mg/Kg	<QL	0.962	0.992	103		85--115
Nickel, Total, ICP-MS	0.00192	0.00385	mg/Kg	<QL	0.962	0.973	101		85--115
Copper, Total, ICP-MS	0.00385	0.00769	mg/Kg	<QL	0.962	1	104		85--115
Zinc, Total, ICP-MS	0.00962	0.0192	mg/Kg	<QL	0.962	0.948	99		85--115
Arsenic, Total, ICP-MS	0.000962	0.00192	mg/Kg	<QL	0.962	0.936	97		85--115
Selenium, Total, ICP-MS	0.00962	0.0192	mg/Kg	<QL	0.192	0.186	97		85--115
Silver, Total, ICP-MS	0.000769	0.00154	mg/Kg	<QL	0.192	0.188	98		85--115
Cadmium, Total, ICP-MS	0.000962	0.00192	mg/Kg	<QL	0.192	0.185	96		85--115
Thallium, Total, ICP-MS	0.00192	0.00385	mg/Kg	<QL	0.192	0.207	108		85--115
Lead, Total, ICP-MS	0.00192	0.00385	mg/Kg	<QL	0.192	0.207	108		85--115

SRMD:WG152743-4 SRM:WG152743-3 Matrix: ORGANS Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project: Pkey:STD
(Std Reference Material Duplicate, Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit	True Value	SRMD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Chromium, Total, ICP-MS	0.0435	0.0435	mg/Kg	1.95	1.12	58	*	80--120	1.95	1.27	65	*	12		0--20
Nickel, Total, ICP-MS	0.0217	0.0217	mg/Kg	5.3	4.6	87		80--120	5.3	4.78	90		4		0--20
Copper, Total, ICP-MS	0.0435	0.0435	mg/Kg	497	453	91		80--120	497	453	91		0		0--20
Zinc, Total, ICP-MS	0.109	0.109	mg/Kg	136	129	95		80--120	136	130	96		1		0--20
Arsenic, Total, ICP-MS	0.0109	0.0109	mg/Kg	59.5	63.2	106		80--120	59.5	64.1	108		1		0--20
Selenium, Total, ICP-MS	0.109	0.109	mg/Kg	10.9	10.2	94		80--120	10.9	10.5	96		3		0--20
Cadmium, Total, ICP-MS	0.109	0.109	mg/Kg	42.3	42.6	101		80--120	42.3	44.1	104		4		0--20
Lead, Total, ICP-MS	0.0217	0.0217	mg/Kg	0.225	0.201	89		80--120	0.225	0.208	92		3		0--20

LCSD:WG152743-6 LCS:WG152743-5 Matrix: SHELLFISH Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project: Pkey:STD
(Lab Control Sample Duplicate, Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit	True Value	LCSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Chromium, Total, ICP-MS	0.0452	0.0452	mg/Kg	0.5	0.217	43	*	80--120	0.5	0.218	44	*	0		0--20
Nickel, Total, ICP-MS	0.0226	0.0226	mg/Kg	0.93	0.717	77	*	80--120	0.93	0.7	75	*	2		0--20
Copper, Total, ICP-MS	0.0452	0.0452	mg/Kg	4.02	3.87	96		80--120	4.02	3.79	94		2		0--20
Zinc, Total, ICP-MS	0.113	0.113	mg/Kg	137	132	96		80--120	137	132	96		0		0--20
Arsenic, Total, ICP-MS	0.0113	0.0113	mg/Kg	13.3	12.8	96		80--120	13.3	12.8	96		0		0--20
Selenium, Total, ICP-MS	0.113	0.113	mg/Kg	1.8	1.77	99		80--120	1.8	1.73	96		2		0--20
Cadmium, Total, ICP-MS	0.0113	0.0113	mg/Kg	0.82	0.789	96		80--120	0.82	0.789	96		0		0--20
Lead, Total, ICP-MS	0.0226	0.0226	mg/Kg	1.19	1.16	97		80--120	1.19	1.17	98		1		0--20

LD:WG152743-7 L67900-3 Matrix: SHELLFISH Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.00387	0.00387	mg/Kg	<QL	<QL			0--20
Chromium, Total, ICP-MS	0.00775	0.00775	mg/Kg	0.0259	0.036	32	*	0--20
Nickel, Total, ICP-MS	0.00387	0.00387	mg/Kg	0.0561	0.0588	5		0--20
Copper, Total, ICP-MS	0.00775	0.00775	mg/Kg	12.2	12.1	0		0--20
Zinc, Total, ICP-MS	0.0194	0.0194	mg/Kg	36	35.9	0		0--20
Arsenic, Total, ICP-MS	0.00194	0.00194	mg/Kg	8.94	8.9	0		0--20
Selenium, Total, ICP-MS	0.0194	0.0194	mg/Kg	0.461	0.452	2		0--20
Silver, Total, ICP-MS	0.00155	0.00155	mg/Kg	0.285	0.283	1		0--20
Cadmium, Total, ICP-MS	0.00194	0.00194	mg/Kg	0.056	0.0565	1		0--20
Thallium, Total, ICP-MS	0.00387	0.00387	mg/Kg	<QL	<QL			0--20
Lead, Total, ICP-MS	0.00387	0.00387	mg/Kg	0.0219	0.0361	49	*	0--20

MS:WG152743-8 L67900-3 Matrix: SHELLFISH Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project:421093-100 Pkey:STD
(Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.00387	0.00387	mg/Kg	<QL	0.197	0.177	90		75--125
Chromium, Total, ICP-MS	0.00775	0.00775	mg/Kg	0.0259	0.983	0.939	93		75--125
Nickel, Total, ICP-MS	0.00387	0.00387	mg/Kg	0.0561	0.983	0.964	92		75--125
Copper, Total, ICP-MS	0.00775	0.00775	mg/Kg	12.2	0.983	12.8		4xRule	75--125
Zinc, Total, ICP-MS	0.0194	0.0194	mg/Kg	36	0.983	37.1		4xRule	75--125
Arsenic, Total, ICP-MS	0.00194	0.00194	mg/Kg	8.94	0.983	9.67		4xRule	75--125
Selenium, Total, ICP-MS	0.0194	0.0194	mg/Kg	0.461	0.197	0.651	96		75--125
Silver, Total, ICP-MS	0.00155	0.00155	mg/Kg	0.285	0.197	0.452	85		75--125
Cadmium, Total, ICP-MS	0.00194	0.00194	mg/Kg	0.056	0.197	0.237	92		75--125
Thallium, Total, ICP-MS	0.00387	0.00387	mg/Kg	<QL	0.197	0.186	95		75--125
Lead, Total, ICP-MS	0.00387	0.00387	mg/Kg	0.0219	0.197	0.215	98		75--125

LD:WG152743-9 L67901-4 Matrix: ORGANS Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project:421093-100 Pkey:STD (Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.00394	0.00394	mg/Kg	<QL	<QL			0--20
Chromium, Total, ICP-MS	0.00789	0.00789	mg/Kg	0.0751	0.0638	16		0--20
Nickel, Total, ICP-MS	0.00394	0.00394	mg/Kg	0.514	0.514	0		0--20
Copper, Total, ICP-MS	0.00789	0.00789	mg/Kg	23.4	23.9	2		0--20
Zinc, Total, ICP-MS	0.0197	0.0197	mg/Kg	20.1	20.2	1		0--20
Arsenic, Total, ICP-MS	0.00197	0.00197	mg/Kg	5.97	6.02	1		0--20
Selenium, Total, ICP-MS	0.0197	0.0197	mg/Kg	1.35	1.36	0		0--20
Silver, Total, ICP-MS	0.00158	0.00158	mg/Kg	0.586	0.595	1		0--20
Cadmium, Total, ICP-MS	0.00197	0.00197	mg/Kg	0.837	0.854	2		0--20
Thallium, Total, ICP-MS	0.00394	0.00394	mg/Kg	<QL	<QL			0--20
Lead, Total, ICP-MS	0.00394	0.00394	mg/Kg	0.12	0.121	1		0--20

MS:WG152743-10 L67901-4 Matrix: ORGANS Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project:421093-100 Pkey:STD (Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.00394	0.00394	mg/Kg	<QL	0.205	0.196	96		75--125
Chromium, Total, ICP-MS	0.00789	0.00789	mg/Kg	0.0751	1.02	1.08	98		75--125
Nickel, Total, ICP-MS	0.00394	0.00394	mg/Kg	0.514	1.02	1.51	97		75--125
Copper, Total, ICP-MS	0.00789	0.00789	mg/Kg	23.4	1.02	24.5		4xRule	75--125
Zinc, Total, ICP-MS	0.0197	0.0197	mg/Kg	20.1	1.02	20.9		4xRule	75--125
Arsenic, Total, ICP-MS	0.00197	0.00197	mg/Kg	5.97	1.02	6.9		4xRule	75--125
Selenium, Total, ICP-MS	0.0197	0.0197	mg/Kg	1.35	0.205	1.55		4xRule	75--125
Silver, Total, ICP-MS	0.00158	0.00158	mg/Kg	0.586	0.205	0.766	88		75--125
Cadmium, Total, ICP-MS	0.00197	0.00197	mg/Kg	0.837	0.205	1.03		4xRule	75--125
Thallium, Total, ICP-MS	0.00394	0.00394	mg/Kg	<QL	0.205	0.211	103		75--125
Lead, Total, ICP-MS	0.00394	0.00394	mg/Kg	0.12	0.205	0.327	101		75--125

Workgroup: WG152756 TOTAL MERCURY, CVAA

MB:WG152756-1 Matrix: TISS BLANK Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAA	0.00192	0.00385	mg/Kg		<QL

SB:WG152756-2 MB:WG152756-1 Matrix: TISS BLANK Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.00192	0.00385	mg/Kg	<QL	0.192	0.186	96		85--115

LD:WG152756-3 L67900-1 Matrix: SHELLFISH Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.00412	0.00412	mg/Kg	0.0542	0.0539	1		0--20

MS:WG152756-4 L67900-1 Matrix: SHELLFISH Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project:421093-100 Pkey:STD
(Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.00412	0.00412	mg/Kg	0.0542	0.195	0.239	95		75--125

LCSD:WG152756-6 LCS:WG152756-5 Matrix: SHELLFISH Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project: Pkey:STD
(Lab Control Sample Duplicate, Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit	True Value	LCSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.0249	0.0249	mg/Kg	0.061	0.0576	94		74--104	0.061	0.0563	92		2		0--20

LD:WG152756-7 L67901-4 Matrix: ORGANS Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.00398	0.00398	mg/Kg	0.046	0.0459	0		0--20

MS:WG152756-8 L67901-4 Matrix: ORGANS Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project:421093-100 Pkey:STD
(Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.00398	0.00398	mg/Kg	0.046	0.193	0.224	93		75--125

SRMD:WG152756-10 SRM:WG152756-9 Matrix: ORGANS Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project: Pkey:STD
(Std Reference Material Duplicate, Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit	True Value	SRMD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.0242	0.0242	mg/Kg	0.292	0.269	92		80--120	0.292	0.272	93		1		0--20

Workgroup: WG152946 TOTAL METALS, ICPMS

MB:WG152946-1 Matrix: BLANK WTR Listtype:MTICPMS Method:EPA 200.8*SWD846 6020A Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Beryllium, Total, ICP-MS	0.1	0.5	ug/L		<MDL
Chromium, Total, ICP-MS	0.2	1	ug/L		<MDL
Nickel, Total, ICP-MS	0.1	0.5	ug/L		<MDL
Copper, Total, ICP-MS	0.2	2	ug/L		<MDL
Zinc, Total, ICP-MS	0.5	2.5	ug/L		<MDL
Arsenic, Total, ICP-MS	0.05	0.25	ug/L		<MDL
Selenium, Total, ICP-MS	0.5	1	ug/L		<MDL
Silver, Total, ICP-MS	0.04	0.2	ug/L		<MDL
Cadmium, Total, ICP-MS	0.05	0.25	ug/L		<MDL
Thallium, Total, ICP-MS	0.1	0.2	ug/L		<MDL
Lead, Total, ICP-MS	0.1	0.5	ug/L		<MDL

SB:WG152946-2 MB:WG152946-1 Matrix: BLANK WTR Listtype:MTICPMS Method:EPA 200.8*SWD846 6020A Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.9	95		85--115
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	19.6	98		85--115
Nickel, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.9	100		85--115
Copper, Total, ICP-MS	0.2	2	ug/L	<MDL	20	19.1	96		85--115
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	19.7	99		85--115
Arsenic, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.1	96		85--115
Selenium, Total, ICP-MS	0.5	1	ug/L	<MDL	20	19.1	96		85--115
Silver, Total, ICP-MS	0.04	0.2	ug/L	<MDL	20	19	95		85--115
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	18.7	93		85--115
Thallium, Total, ICP-MS	0.1	0.2	ug/L	<MDL	20	20.1	100		85--115
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.6	98		85--115

LD:WG152946-3 L67900-12 Matrix: BLANK WTR Listtype:MTICPMS Method:EPA 200.8*SWD846 6020A Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			0--20
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	<MDL			0--20
Nickel, Total, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			0--20
Copper, Total, ICP-MS	0.2	2	ug/L	<MDL	0.24			0--20
Zinc, Total, ICP-MS	0.5	2.5	ug/L	0.74	0.76			0--20
Arsenic, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			0--20
Selenium, Total, ICP-MS	0.5	1	ug/L	<MDL	<MDL			0--20
Silver, Total, ICP-MS	0.04	0.2	ug/L	<MDL	<MDL			0--20
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			0--20
Thallium, Total, ICP-MS	0.1	0.2	ug/L	<MDL	<MDL			0--20
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			0--20

MS:WG152946-4 L67900-12 Matrix: BLANK WTR Listtype:MTICPMS Method:EPA 200.8*SWD846 6020A Project:421093-100 Pkey:STD
(Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	17.5	87		75--125
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	20.2	101		75--125
Nickel, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.6	103		75--125
Copper, Total, ICP-MS	0.2	2	ug/L	<MDL	20	19.8	99		75--125
Zinc, Total, ICP-MS	0.5	2.5	ug/L	0.74	20	20.5	99		75--125
Arsenic, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.3	97		75--125
Selenium, Total, ICP-MS	0.5	1	ug/L	<MDL	20	18.9	95		75--125
Silver, Total, ICP-MS	0.04	0.2	ug/L	<MDL	20	19.2	96		75--125
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	18.9	95		75--125
Thallium, Total, ICP-MS	0.1	0.2	ug/L	<MDL	20	18.1	91		75--125
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	17.7	89		75--125

Workgroup: WG152258 PBDE

MB:WG152258-1 Matrix: OTHR TISS Listtype:ORPBDE-QL Method:SW8463540B*KC SOP 781 GCMS-NCI Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
TriBDE-17	0.02	0.04	ug/Kg		<QL
TriBDE-28/-33	0.02	0.04	ug/Kg		<QL
TetraBDE-71	0.02	0.04	ug/Kg		<QL
TetraBDE-47	0.18	0.36	ug/Kg		<QL
TetraBDE-66	0.029	0.058	ug/Kg		<QL
PentaBDE-100	0.056	0.112	ug/Kg		<QL
PentaBDE-99	0.34	0.68	ug/Kg		<QL
PentaBDE-85	0.02	0.04	ug/Kg		<QL
HexaBDE-154	0.022	0.044	ug/Kg		<QL
HexaBDE-153	0.02	0.04	ug/Kg		<QL
HexaBDE-138	0.02	0.04	ug/Kg		<QL
HeptaBDE-183	0.02	0.04	ug/Kg		<QL
HeptaBDE-190	0.02	0.04	ug/Kg		<QL
DecaBDE-209	0.25	0.5	ug/Kg		<QL

SB:WG152258-2 MB:WG152258-1 Matrix: OTHR TISS Listtype:ORPBDE-QL Method:SW8463540B*KC SOP 781 GCMS-NCI Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
TriBDE-17	0.02	0.04	ug/Kg	<QL	5	3.34	67		50--150
TriBDE-28/-33	0.02	0.04	ug/Kg	<QL	5	3.5	70		50--150
TetraBDE-71	0.02	0.04	ug/Kg	<QL	5	3.55	71		50--150
TetraBDE-47	0.18	0.36	ug/Kg	<QL	5	3.87	77		50--150
TetraBDE-66	0.029	0.058	ug/Kg	<QL	5	4.23	85		50--150
PentaBDE-100	0.056	0.112	ug/Kg	<QL	5	4.65	93		50--150
PentaBDE-99	0.34	0.68	ug/Kg	<QL	5	5.15	103		50--150
PentaBDE-85	0.02	0.04	ug/Kg	<QL	5	4.7	94		50--150
HexaBDE-154	0.022	0.044	ug/Kg	<QL	5	4.71	94		50--150
HexaBDE-153	0.02	0.04	ug/Kg	<QL	5	4.85	97		50--150
HexaBDE-138	0.02	0.04	ug/Kg	<QL	5	4.98	100		50--150
HeptaBDE-183	0.02	0.04	ug/Kg	<QL	5	4.92	98		50--150
HeptaBDE-190	0.02	0.04	ug/Kg	<QL	5	4.36	87		50--150
DecaBDE-209	0.25	0.5	ug/Kg	<QL	25	10.8	43		40--150

MSD:WG152258-4 MS:WG152258-3 L67900-2 Matrix: SHELLFISH Listtype:ORPBDE-QL Method:SW8463540B*KC SOP 781 GCMS-NCI Project:421093-100 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
TriBDE-17	0.02	0.04	ug/Kg	<QL	5	2.9	58	*	68--120	5	2.72	54	*	7		0--40
TriBDE-28/-33	0.02	0.04	ug/Kg	<QL	5	2.96	59		20--150	5	2.77	55		7		0--40
TetraBDE-71	0.02	0.04	ug/Kg	<QL	5	3.18	64		63--110	5	2.94	59	*	8		0--40
TetraBDE-47	0.18	0.36	ug/Kg	0.34	5	3.62	66		20--150	5	3.39	61		6		0--40
TetraBDE-66	0.029	0.058	ug/Kg	<QL	5	3.76	75		71--130	5	3.55	71		6		0--40
PentaBDE-100	0.056	0.112	ug/Kg	<QL	5	4.44	89		20--150	5	4.12	82		7		0--40
PentaBDE-99	0.34	0.68	ug/Kg	0.66	5	4.32	73		20--150	5	4.03	67		7		0--40
PentaBDE-85	0.02	0.04	ug/Kg	<QL	5	4.99	100		74--134	5	4.68	94		6		0--40
HexaBDE-154	0.022	0.044	ug/Kg	<QL	5	4.54	91		76--127	5	4.19	84		8		0--40
HexaBDE-153	0.02	0.04	ug/Kg	<QL	5	4.8	96		78--123	5	4.38	88		9		0--40
HexaBDE-138	0.02	0.04	ug/Kg	<QL	5	5.11	102		81--123	5	4.68	94		9		0--40
HeptaBDE-183	0.02	0.04	ug/Kg	<QL	5	5.07	101		83--128	5	4.68	94		8		0--40
HeptaBDE-190	0.02	0.04	ug/Kg	<QL	5	5.25	105		20--150	5	4.83	97		8		0--40
DecaBDE-209	0.25	0.5	ug/Kg	<QL	25	17.4	69		20--150	25	15.3	61		13		0--40

LD:WG152258-5 L67900-6 Matrix: SHELLFISH Listtype:ORPBDE-QL Method:SW8463540B*KC SOP 781 GCMS-NCI Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
TriBDE-17	0.02	0.04	ug/Kg	<QL	<QL			0--40
TriBDE-28/-33	0.02	0.04	ug/Kg	<QL	<QL			0--40
TetraBDE-71	0.02	0.04	ug/Kg	<QL	<QL			0--40
TetraBDE-47	0.18	0.36	ug/Kg	0.19	0.18			0--40
TetraBDE-66	0.029	0.058	ug/Kg	<QL	<QL			0--40
PentaBDE-100	0.056	0.112	ug/Kg	<QL	<QL			0--40
PentaBDE-99	0.34	0.68	ug/Kg	<QL	0.83	200	*	0--40
PentaBDE-85	0.02	0.04	ug/Kg	<QL	<QL			0--40
HexaBDE-154	0.022	0.044	ug/Kg	<QL	<QL			0--40
HexaBDE-153	0.02	0.04	ug/Kg	<QL	<QL			0--40
HexaBDE-138	0.02	0.04	ug/Kg	<QL	<QL			0--40
HeptaBDE-183	0.02	0.04	ug/Kg	<QL	<QL			0--40
HeptaBDE-190	0.02	0.04	ug/Kg	<QL	<QL			0--40
DecaBDE-209	0.25	0.5	ug/Kg	<QL	<QL			0--40

Surrogate:	;' HexaBDE
(Lab Limits)	37--137
L67900-1	80
L67900-2	80
L67900-3	91
L67900-4	90
L67900-5	93
L67900-6	89
L67900-7	93
L67900-8	90
L67900-9	97
L67900-10	94
WG152258-1	85
WG152258-2	97
WG152258-3	93
WG152258-4	93
WG152258-5	75

Workgroup: WG152259 PAH

MB:WG152259-1 Matrix: OTHR TISS Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
2-Methylnaphthalene	1	5	ug/Kg		<QL
Naphthalene	1	5	ug/Kg		<QL
Acenaphthylene	1	5	ug/Kg		<QL
Acenaphthene	1	5	ug/Kg		<QL
Fluorene	2	10	ug/Kg		<QL
Phenanthrene	2	10	ug/Kg		<QL
Anthracene	2	10	ug/Kg		<QL
Fluoranthene	2	10	ug/Kg		<QL
Pyrene	2	10	ug/Kg		<QL
Benzo(a)anthracene	2	10	ug/Kg		<QL
Chrysene	2	10	ug/Kg		<QL
Benzo(b,j,k)fluoranthene	6	30	ug/Kg		<QL
Benzo(a)pyrene	2	10	ug/Kg		<QL
Indeno(1,2,3-Cd)Pyrene	2	10	ug/Kg		<QL
Dibenzo(a,h)anthracene	2	10	ug/Kg		<QL
Benzo(g,h,i)perylene	2	10	ug/Kg		<QL

SB:WG152259-2 MB:WG152259-1 Matrix: OTHR TISS Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
2-Methylnaphthalene	1	5	ug/Kg	<QL	250	132	53		20--150
Naphthalene	1	5	ug/Kg	<QL	250	138	55		20--150
Acenaphthylene	1	5	ug/Kg	<QL	250	141	56		20--150
Acenaphthene	1	5	ug/Kg	<QL	250	143	57		20--150
Fluorene	2	10	ug/Kg	<QL	250	165	66		20--150
Phenanthrene	2	10	ug/Kg	<QL	250	144	58		20--150
Anthracene	2	10	ug/Kg	<QL	250	145	58		20--150
Fluoranthene	2	10	ug/Kg	<QL	250	160	64		20--150
Pyrene	2	10	ug/Kg	<QL	250	158	63		20--150
Benzo(a)anthracene	2	10	ug/Kg	<QL	250	147	59		20--150
Chrysene	2	10	ug/Kg	<QL	250	165	66		20--150
Benzo(b,j,k)fluoranthene	6	30	ug/Kg	<QL	750	490	65		20--150
Benzo(a)pyrene	2	10	ug/Kg	<QL	250	146	59		20--150
Indeno(1,2,3-Cd)Pyrene	2	10	ug/Kg	<QL	250	153	61		20--150
Dibenzo(a,h)anthracene	2	10	ug/Kg	<QL	250	159	63		20--150
Benzo(g,h,i)perylene	2	10	ug/Kg	<QL	250	106	43		20--150

MSD:WG152259-4 MS:WG152259-3 L67900-3 Matrix: SHELLFISH Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project:421093-100 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2-Methylnaphthalene	1	5	ug/Kg	<QL	250	146	58		20--150	250	151	60		3		0--35
Naphthalene	1	5	ug/Kg	<QL	250	133	53		20--150	250	141	56		6		0--35
Acenaphthylene	1	5	ug/Kg	<QL	250	153	61		20--150	250	153	61		0		0--35
Acenaphthene	1	5	ug/Kg	<QL	250	153	61		20--150	250	154	62		1		0--35
Fluorene	2	10	ug/Kg	<QL	250	206	83		20--150	250	210	84		2		0--35
Phenanthrene	2	10	ug/Kg	<QL	250	153	61		20--150	250	157	63		3		0--35
Anthracene	2	10	ug/Kg	<QL	250	158	63		20--150	250	167	67		5		0--35
Fluoranthene	2	10	ug/Kg	<QL	250	151	60		20--150	250	156	62		3		0--35
Pyrene	2	10	ug/Kg	<QL	250	102	41		20--150	250	125	50		20		0--35
Benzo(a)anthracene	2	10	ug/Kg	<QL	250	145	58		20--150	250	156	62		7		0--35
Chrysene	2	10	ug/Kg	<QL	250	153	61		20--150	250	157	63		3		0--35
Benzo(b,j,k)fluoranthene	6	30	ug/Kg	<QL	750	545	73		20--150	750	555	74		2		0--35
Benzo(a)pyrene	2	10	ug/Kg	<QL	250	125	50		20--150	250	123	49		2		0--35
Indeno(1,2,3-Cd)Pyrene	2	10	ug/Kg	<QL	250	77.5	31		20--150	250	88	35		13		0--35
Dibenzo(a,h)anthracene	2	10	ug/Kg	<QL	250	85.6	34		20--150	250	96.9	39		12		0--35
Benzo(g,h,i)perylene	2	10	ug/Kg	<QL	250	48.9	20		20--150	250	53.8	22		10		0--35

LD:WG152259-5 L67900-6 Matrix: SHELLFISH Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
2-Methylnaphthalene	1	5	ug/Kg	<QL	<QL			0--35
Naphthalene	1	5	ug/Kg	<QL	<QL			0--35
Acenaphthylene	1	5	ug/Kg	<QL	<QL			0--35
Acenaphthene	1	5	ug/Kg	<QL	<QL			0--35
Fluorene	2	10	ug/Kg	<QL	<QL			0--35
Phenanthrene	2	10	ug/Kg	<QL	<QL			0--35
Anthracene	2	10	ug/Kg	<QL	<QL			0--35
Fluoranthene	2	10	ug/Kg	<QL	<QL			0--35
Pyrene	2	10	ug/Kg	<QL	<QL			0--35
Benzo(a)anthracene	2	10	ug/Kg	<QL	<QL			0--35
Chrysene	2	10	ug/Kg	<QL	<QL			0--35
Benzo(b,j,k)fluoranthene	6	30	ug/Kg	<QL	<QL			0--35
Benzo(a)pyrene	2	10	ug/Kg	<QL	<QL			0--35
Indeno(1,2,3-Cd)Pyrene	2	10	ug/Kg	<QL	<QL			0--35
Dibenzo(a,h)anthracene	2	10	ug/Kg	<QL	<QL			0--35
Benzo(g,h,i)perylene	2	10	ug/Kg	<QL	<QL			0--35

Surrogate: (Lab Limits)	2-Fluoro biphenyl 20--150	d14-Ter phenyl 20--150
L67900-1	56	58
L67900-2	60	62
L67900-3	64	66
L67900-4	59	67
L67900-5	60	66
L67900-6	61	66
L67900-7	62	66
L67900-8	64	65
L67900-9	59	67
L67900-10	60	63
WG152259-1	57	66
WG152259-2	56	65
WG152259-3	62	63
WG152259-4	63	68
WG152259-5	59	64

Workgroup: WG152391 PCB HOMOLOG

MB:WG152391-1 Matrix: OTHR TISS Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Monochlorobiphenyls	0.06	0.125	ug/Kg		<QL
Dichlorobiphenyls	0.06	0.125	ug/Kg		<QL
Trichlorobiphenyls	0.06	0.125	ug/Kg		<QL
Tetrachlorobiphenyls	0.13	0.25	ug/Kg		<QL
Pentachlorobiphenyls	0.13	0.25	ug/Kg		<QL
Hexachlorobiphenyls	0.13	0.25	ug/Kg		<QL
Heptachlorobiphenyls	0.19	0.375	ug/Kg		<QL
Octachlorobiphenyls	0.19	0.375	ug/Kg		<QL
Nonachlorobiphenyls	0.31	0.625	ug/Kg		<QL
Total PCB Homologs	0.31	0.625	ug/Kg		<QL
Decachloro biphenyl	0.31	0.625	ug/Kg		<QL

SB:WG152391-2 MB:WG152391-1 Matrix: OTHR TISS Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Monochlorobiphenyls	0.06	0.125	ug/Kg	<QL	50	28.2	56		23--103
Dichlorobiphenyls	0.06	0.125	ug/Kg	<QL	50	32.2	64		26--109
Trichlorobiphenyls	0.06	0.125	ug/Kg	<QL	50	35.5	71		31--112
Tetrachlorobiphenyls	0.13	0.25	ug/Kg	<QL	100	70.7	71		33--109
Pentachlorobiphenyls	0.13	0.25	ug/Kg	<QL	100	84.5	84		47--121
Hexachlorobiphenyls	0.13	0.25	ug/Kg	<QL	100	85.5	86		47--128
Heptachlorobiphenyls	0.19	0.375	ug/Kg	<QL	150	137	91		52--126
Octachlorobiphenyls	0.19	0.375	ug/Kg	<QL	150	150	100		56--131
Decachloro biphenyl	0.31	0.625	ug/Kg	<QL	250	258	103		50--150

MSD:WG152391-4 MS:WG152391-3 L67900-5 Matrix: SHELLFISH Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project:421093-100 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Monochlorobiphenyls	0.06	0.125	ug/Kg	<QL	50	26.6	53		34--112	50	31.2	62		16		0--35
Dichlorobiphenyls	0.06	0.125	ug/Kg	<QL	50	36	72		42--123	50	36.8	74		2		0--35
Trichlorobiphenyls	0.06	0.125	ug/Kg	0.11	50	39.1	78		44--131	50	39.4	79		1		0--35
Tetrachlorobiphenyls	0.13	0.25	ug/Kg	0.954	100	78.4	77		44--126	100	79.3	78		1		0--35
Pentachlorobiphenyls	0.13	0.25	ug/Kg	4.17	100	87.7	84		29--130	100	89.6	85		2		0--35
Hexachlorobiphenyls	0.13	0.25	ug/Kg	5.52	100	90.4	85		22--150	100	92.1	87		2		0--35
Heptachlorobiphenyls	0.19	0.375	ug/Kg	1.47	150	137	90		54--137	150	140	92		2		0--35
Octachlorobiphenyls	0.19	0.375	ug/Kg	<QL	150	147	98		60--135	150	150	100		2		0--35
Decachloro biphenyl	0.31	0.625	ug/Kg	<QL	250	251	100		50--150	250	258	103		3		0--35

LD:WG152391-5 L67900-10 Matrix: SHELLFISH Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Monochlorobiphenyls	0.06	0.125	ug/Kg	<QL	<QL			0--35
Dichlorobiphenyls	0.06	0.125	ug/Kg	0.096	0.09			0--35
Trichlorobiphenyls	0.06	0.125	ug/Kg	1.55	1.58	2		0--35
Tetrachlorobiphenyls	0.13	0.25	ug/Kg	7.14	7.55	6		0--35
Pentachlorobiphenyls	0.13	0.25	ug/Kg	13.5	14.9	10		0--35
Hexachlorobiphenyls	0.13	0.25	ug/Kg	10.6	11.8	11		0--35
Heptachlorobiphenyls	0.19	0.375	ug/Kg	2.81	3.52	22		0--35
Octachlorobiphenyls	0.19	0.375	ug/Kg	0.19	0.22			0--35
Nonachlorobiphenyls	0.31	0.625	ug/Kg	<QL	<QL			0--35
Total PCB Homologs	0.06	0.125	ug/Kg	35.886	39.66	10		0--35

Surrogate: (Lab Limits)	2,4,5,6-Tetra chloro m-xylene 32--112
L67900-1	63
L67900-2	57
L67900-3	58
L67900-4	67
L67900-5	67
L67900-6	47
L67900-7	52
L67900-8	60
L67900-9	64
L67900-10	61
WG152391-1	53
WG152391-2	55
WG152391-3	62
WG152391-4	66
WG152391-5	60

Workgroup: WG152393 LIPIDS

MB:WG152393-1 Matrix: OTHR TISS Listtype:ORLIPIDS Method:GRAVIMETRIC SOP 740v2 Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Percent Lipids	0.05	0.1	%		<MDL

LD:WG152393-2 L67900-10 Matrix: SHELLFISH Listtype:ORLIPIDS Method:GRAVIMETRIC SOP 740v2 Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Percent Lipids	0.05	0.1	%	0.511	0.511	0		0--20

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4xRule indicates no MS/MSD recovery was calculated due to the 4x rule.

Workgroup: WG152291 PBDE

MB:WG152291-1 Matrix: OTHR TISS Listtype:ORPBDE-QL Method:SW8463540B*KC SOP 781 GCMS-NCI Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
TriBDE-17	0.067	0.133	ug/Kg		<QL
TriBDE-28/-33	0.067	0.133	ug/Kg		<QL
TetraBDE-71	0.067	0.133	ug/Kg		<QL
TetraBDE-47	0.6	1.2	ug/Kg		<QL
TetraBDE-66	0.097	0.193	ug/Kg		<QL
PentaBDE-100	0.19	0.373	ug/Kg		<QL
PentaBDE-99	1.1	2.27	ug/Kg		<QL
PentaBDE-85	0.067	0.133	ug/Kg		<QL
HexaBDE-154	0.073	0.147	ug/Kg		<QL
HexaBDE-153	0.067	0.133	ug/Kg		<QL
HexaBDE-138	0.067	0.133	ug/Kg		<QL
HeptaBDE-183	0.067	0.133	ug/Kg		<QL
HeptaBDE-190	0.067	0.133	ug/Kg		<QL
DecaBDE-209	0.83	1.67	ug/Kg		<QL

SB:WG152291-2 MB:WG152291-1 Matrix: OTHR TISS Listtype:ORPBDE-QL Method:SW8463540B*KC SOP 781 GCMS-NCI Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
TriBDE-17	0.067	0.133	ug/Kg	<QL	16.7	12.1	73		50--150
TriBDE-28/-33	0.067	0.133	ug/Kg	<QL	16.7	12.6	75		50--150
TetraBDE-71	0.067	0.133	ug/Kg	<QL	16.7	12.7	76		50--150
TetraBDE-47	0.6	1.2	ug/Kg	<QL	16.7	13.7	82		50--150
TetraBDE-66	0.097	0.193	ug/Kg	<QL	16.7	15	90		50--150
PentaBDE-100	0.19	0.373	ug/Kg	<QL	16.7	16	96		50--150
PentaBDE-99	1.1	2.27	ug/Kg	<QL	16.7	17.4	104		50--150
PentaBDE-85	0.067	0.133	ug/Kg	<QL	16.7	16.7	100		50--150
HexaBDE-154	0.073	0.147	ug/Kg	<QL	16.7	16.3	98		50--150
HexaBDE-153	0.067	0.133	ug/Kg	<QL	16.7	16.8	101		50--150
HexaBDE-138	0.067	0.133	ug/Kg	<QL	16.7	17.6	106		50--150
HeptaBDE-183	0.067	0.133	ug/Kg	<QL	16.7	17.1	102		50--150
HeptaBDE-190	0.067	0.133	ug/Kg	<QL	16.7	15.3	92		50--150
DecaBDE-209	0.83	1.67	ug/Kg	<QL	83.3	47.8	57		40--150

MSD:WG152291-4 MS:WG152291-3 L67901-2 Matrix: ORGANS Listtype:ORPBDE-QL Method:SW8463540B*KC SOP 781 GCMS-NCI Project:421093-100 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
TriBDE-17	0.067	0.133	ug/Kg	<QL	16.7	10.5	63	*	68--120	16.7	10.1	60	*	4		0--40
TriBDE-28/-33	0.067	0.133	ug/Kg	0.1	16.7	10.6	63		20--150	16.7	10.2	60		4		0--40
TetraBDE-71	0.067	0.133	ug/Kg	<QL	16.7	11.3	68		63--110	16.7	10.8	65		5		0--40
TetraBDE-47	0.6	1.2	ug/Kg	4.01	16.7	16.7	76		20--150	16.7	15.4	68		8		0--40
TetraBDE-66	0.097	0.193	ug/Kg	<QL	16.7	13.5	81		71--130	16.7	12.8	77		5		0--40
PentaBDE-100	0.19	0.373	ug/Kg	0.64	16.7	15.7	90		20--150	16.7	14.9	86		5		0--40
PentaBDE-99	1.1	2.27	ug/Kg	1.3	16.7	15.9	88		20--150	16.7	14.2	77		11		0--40
PentaBDE-85	0.067	0.133	ug/Kg	<QL	16.7	16.9	101		74--134	16.7	16.4	98		3		0--40
HexaBDE-154	0.073	0.147	ug/Kg	0.24	16.7	15.7	93		76--127	16.7	15	89		5		0--40
HexaBDE-153	0.067	0.133	ug/Kg	0.09	16.7	16.5	98		78--123	16.7	15.6	93		5		0--40
HexaBDE-138	0.067	0.133	ug/Kg	<QL	16.7	17.6	106		81--123	16.7	16.3	98		8		0--40
HeptaBDE-183	0.067	0.133	ug/Kg	<QL	16.7	17.5	105		83--128	16.7	16.3	98		7		0--40
HeptaBDE-190	0.067	0.133	ug/Kg	<QL	16.7	18.5	111		20--150	16.7	17.4	104		6		0--40
DecaBDE-209	0.83	1.67	ug/Kg	<QL	83.3	67.8	81		20--150	83.3	64.3	77		5		0--40

LD:WG152291-5 L67901-6 Matrix: ORGANS Listtype:ORPBDE-QL Method:SW8463540B*KC SOP 781 GCMS-NCI Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
TriBDE-17	0.067	0.133	ug/Kg	<QL	<QL			0--40
TriBDE-28/-33	0.067	0.133	ug/Kg	0.12	0.11			0--40
TetraBDE-71	0.067	0.133	ug/Kg	<QL	<QL			0--40
TetraBDE-47	0.6	1.2	ug/Kg	5.51	4.62	18		0--40
TetraBDE-66	0.097	0.193	ug/Kg	<QL	<QL			0--40
PentaBDE-100	0.19	0.373	ug/Kg	0.628	0.571	10		0--40
PentaBDE-99	1.1	2.27	ug/Kg	1.2	<QL			0--40
PentaBDE-85	0.067	0.133	ug/Kg	<QL	<QL			0--40
HexaBDE-154	0.073	0.147	ug/Kg	0.324	0.262	21		0--40
HexaBDE-153	0.067	0.133	ug/Kg	0.1	0.088			0--40
HexaBDE-138	0.067	0.133	ug/Kg	<QL	<QL			0--40
HeptaBDE-183	0.067	0.133	ug/Kg	<QL	<QL			0--40
HeptaBDE-190	0.067	0.133	ug/Kg	<QL	<QL			0--40
DecaBDE-209	0.83	1.67	ug/Kg	<QL	<QL			0--40

Surrogate:	;' HexaBDE
(Lab Limits)	37--137
L67901-1	90
L67901-2	93
L67901-3	88
L67901-4	89
L67901-5	99
L67901-6	97
WG152291-1	51
WG152291-2	102
WG152291-3	105
WG152291-4	98
WG152291-5	84

Workgroup: WG152292 PAH

MB:WG152292-1 Matrix: OTHR TISS Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
2-Methylnaphthalene	3.3	16.7	ug/Kg		<QL
Naphthalene	3.3	16.7	ug/Kg		<QL
Acenaphthylene	3.3	16.7	ug/Kg		<QL
Acenaphthene	3.3	16.7	ug/Kg		<QL
Fluorene	6.7	33.3	ug/Kg		<QL
Phenanthrene	6.7	33.3	ug/Kg		<QL
Anthracene	6.7	33.3	ug/Kg		<QL
Fluoranthene	6.7	33.3	ug/Kg		<QL
Pyrene	6.7	33.3	ug/Kg		<QL
Benzo(a)anthracene	6.7	33.3	ug/Kg		<QL
Chrysene	6.7	33.3	ug/Kg		<QL
Benzo(b,j,k)fluoranthene	20	100	ug/Kg		<QL
Benzo(a)pyrene	6.7	33.3	ug/Kg		<QL
Indeno(1,2,3-Cd)Pyrene	6.7	33.3	ug/Kg		<QL
Dibenzo(a,h)anthracene	6.7	33.3	ug/Kg		<QL
Benzo(g,h,i)perylene	6.7	33.3	ug/Kg		<QL

SB:WG152292-2 MB:WG152292-1 Matrix: OTHR TISS Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
2-Methylnaphthalene	3.3	16.7	ug/Kg	<QL	833	424	51		20--150
Naphthalene	3.3	16.7	ug/Kg	<QL	833	441	53		20--150
Acenaphthylene	3.3	16.7	ug/Kg	<QL	833	445	53		20--150
Acenaphthene	3.3	16.7	ug/Kg	<QL	833	452	54		20--150
Fluorene	6.7	33.3	ug/Kg	<QL	833	544	65		20--150
Phenanthrene	6.7	33.3	ug/Kg	<QL	833	485	58		20--150
Anthracene	6.7	33.3	ug/Kg	<QL	833	475	57		20--150
Fluoranthene	6.7	33.3	ug/Kg	<QL	833	582	70		20--150
Pyrene	6.7	33.3	ug/Kg	<QL	833	569	68		20--150
Benzo(a)anthracene	6.7	33.3	ug/Kg	<QL	833	541	65		20--150
Chrysene	6.7	33.3	ug/Kg	<QL	833	579	69		20--150
Benzo(b,j,k)fluoranthene	20	100	ug/Kg	<QL	2500	1780	71		20--150
Benzo(a)pyrene	6.7	33.3	ug/Kg	<QL	833	495	59		20--150
Indeno(1,2,3-Cd)Pyrene	6.7	33.3	ug/Kg	<QL	833	554	66		20--150
Dibenzo(a,h)anthracene	6.7	33.3	ug/Kg	<QL	833	577	69		20--150
Benzo(g,h,i)perylene	6.7	33.3	ug/Kg	<QL	833	417	50		20--150

MSD:WG152292-4 MS:WG152292-3 L67901-3 Matrix: ORGANS Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project:421093-100 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2-Methylnaphthalene	17	83.3	ug/Kg	<QL	833	530	64		20--150	833	549	66		4		0--35
Naphthalene	17	83.3	ug/Kg	<QL	833	517	62		20--150	833	544	65		5		0--35
Acenaphthylene	17	83.3	ug/Kg	<QL	833	545	65		20--150	833	557	67		2		0--35
Acenaphthene	17	83.3	ug/Kg	<QL	833	547	66		20--150	833	559	67		2		0--35
Fluorene	33	167	ug/Kg	<QL	833	747	90		20--150	833	759	91		2		0--35
Phenanthrene	33	167	ug/Kg	<QL	833	565	68		20--150	833	570	68		1		0--35
Anthracene	33	167	ug/Kg	<QL	833	565	68		20--150	833	565	68		0		0--35
Fluoranthene	33	167	ug/Kg	<QL	833	528	63		20--150	833	533	64		1		0--35
Pyrene	33	167	ug/Kg	<QL	833	340	41		20--150	833	341	41		0		0--35
Benzo(a)anthracene	33	167	ug/Kg	<QL	833	531	64		20--150	833	528	63		1		0--35
Chrysene	33	167	ug/Kg	<QL	833	504	60		20--150	833	501	60		1		0--35
Benzo(b,j,k)fluoranthene	100	500	ug/Kg	<QL	2500	1780	71		20--150	2500	1790	72		1		0--35
Benzo(a)pyrene	33	167	ug/Kg	<QL	833	486	58		20--150	833	485	58		0		0--35
Indeno(1,2,3-Cd)Pyrene	33	167	ug/Kg	<QL	833	327	39		20--150	833	345	41		5		0--35
Dibenzo(a,h)anthracene	33	167	ug/Kg	<QL	833	341	41		20--150	833	354	42		4		0--35
Benzo(g,h,i)perylene	33	167	ug/Kg	<QL	833	179	22		20--150	833	182	22		1		0--35

LD:WG152292-5 L67901-6 Matrix: ORGANS Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
2-Methylnaphthalene	17	83.3	ug/Kg	<QL	<QL			0--35
Naphthalene	17	83.3	ug/Kg	<QL	<QL			0--35
Acenaphthylene	17	83.3	ug/Kg	<QL	<QL			0--35
Acenaphthene	17	83.3	ug/Kg	<QL	<QL			0--35
Fluorene	33	167	ug/Kg	<QL	<QL			0--35
Phenanthrene	33	167	ug/Kg	<QL	<QL			0--35
Anthracene	33	167	ug/Kg	<QL	<QL			0--35
Fluoranthene	33	167	ug/Kg	<QL	<QL			0--35
Pyrene	33	167	ug/Kg	<QL	<QL			0--35
Benzo(a)anthracene	33	167	ug/Kg	<QL	<QL			0--35
Chrysene	33	167	ug/Kg	<QL	<QL			0--35
Benzo(b,j,k)fluoranthene	100	500	ug/Kg	<QL	<QL			0--35
Benzo(a)pyrene	33	167	ug/Kg	<QL	<QL			0--35
Indeno(1,2,3-Cd)Pyrene	33	167	ug/Kg	<QL	<QL			0--35
Dibenzo(a,h)anthracene	33	167	ug/Kg	<QL	<QL			0--35
Benzo(g,h,i)perylene	33	167	ug/Kg	<QL	<QL			0--35

Surrogate: (Lab Limits)	2-Fluoro biphenyl 20--150	d14-Ter phenyl 20--150
L67901-1	61	68
L67901-2	66	73
L67901-3	64	80
L67901-4	61	64
L67901-5	64	71
L67901-6	67	86
WG152292-1	51	76
WG152292-2	53	73
WG152292-3	67	73
WG152292-4	69	74
WG152292-5	57	65

Workgroup: WG152392 PCB HOMOLOG

MB:WG152392-1 Matrix: OTHR TISS Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Monochlorobiphenyls	0.2	0.417	ug/Kg		<QL
Dichlorobiphenyls	0.2	0.417	ug/Kg		<QL
Trichlorobiphenyls	0.2	0.417	ug/Kg		<QL
Tetrachlorobiphenyls	0.42	0.833	ug/Kg		<QL
Pentachlorobiphenyls	0.42	0.833	ug/Kg		<QL
Hexachlorobiphenyls	0.42	0.833	ug/Kg		<QL
Heptachlorobiphenyls	0.62	1.25	ug/Kg		<QL
Octachlorobiphenyls	0.62	1.25	ug/Kg		<QL
Nonachlorobiphenyls	1	2.08	ug/Kg		<QL
Total PCB Homologs	1	2.08	ug/Kg		<QL
Decachloro biphenyl	1	2.08	ug/Kg		<QL

SB:WG152392-2 MB:WG152392-1 Matrix: OTHR TISS Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Monochlorobiphenyls	0.2	0.417	ug/Kg	<QL	167	98.4	59		23--103
Dichlorobiphenyls	0.2	0.417	ug/Kg	<QL	167	101	60		26--109
Trichlorobiphenyls	0.2	0.417	ug/Kg	<QL	167	111	67		31--112
Tetrachlorobiphenyls	0.42	0.833	ug/Kg	<QL	333	223	67		33--109
Pentachlorobiphenyls	0.42	0.833	ug/Kg	<QL	333	272	82		47--121
Hexachlorobiphenyls	0.42	0.833	ug/Kg	<QL	333	277	83		47--128
Heptachlorobiphenyls	0.62	1.25	ug/Kg	<QL	500	437	87		52--126
Octachlorobiphenyls	0.62	1.25	ug/Kg	<QL	500	475	95		56--131
Decachloro biphenyl	1	2.08	ug/Kg	<QL	833	793	95		50--150

MSD:WG152392-4 MS:WG152392-3 L67901-2 Matrix: ORGANS Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project:421093-100 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Monochlorobiphenyls	0.2	0.417	ug/Kg	<QL	167	106	63		34--112	167	110	66		4		0--35
Dichlorobiphenyls	0.2	0.417	ug/Kg	<QL	167	120	72		42--123	167	123	74		2		0--35
Trichlorobiphenyls	0.2	0.417	ug/Kg	0.777	167	128	76		44--131	167	131	78		3		0--35
Tetrachlorobiphenyls	0.42	0.833	ug/Kg	15.1	333	263	74		44--126	333	270	76		3		0--35
Pentachlorobiphenyls	0.42	0.833	ug/Kg	92.8	333	323	69		29--130	333	334	72		3		0--35
Hexachlorobiphenyls	0.42	0.833	ug/Kg	147	333	396	75		22--150	333	413	80		4		0--35
Heptachlorobiphenyls	0.62	1.25	ug/Kg	55.7	500	464	82		54--137	500	479	85		3		0--35
Octachlorobiphenyls	0.62	1.25	ug/Kg	12.3	500	454	88		60--135	500	472	92		4		0--35
Decachloro biphenyl	1	2.08	ug/Kg	<QL	833	767	92		50--150	833	793	95		3		0--35

LD:WG152392-5 L67901-3 Matrix: ORGANS Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Monochlorobiphenyls	0.2	0.417	ug/Kg	<QL	<QL			0--35
Dichlorobiphenyls	0.2	0.417	ug/Kg	<QL	<QL			0--35
Trichlorobiphenyls	0.2	0.417	ug/Kg	0.891	0.25	112	*	0--35
Tetrachlorobiphenyls	0.42	0.833	ug/Kg	19	5.05	116	*	0--35
Pentachlorobiphenyls	0.42	0.833	ug/Kg	99.4	38.2	89	*	0--35
Hexachlorobiphenyls	0.42	0.833	ug/Kg	153	61.5	85	*	0--35
Heptachlorobiphenyls	0.62	1.25	ug/Kg	55.6	21.7	88	*	0--35
Octachlorobiphenyls	0.62	1.25	ug/Kg	12.3	5.01	85	*	0--35
Nonachlorobiphenyls	1	2.08	ug/Kg	1.3	<QL			0--35
Total PCB Homologs	0.2	0.417	ug/Kg	341.491	131.71	89	*	0--35

Surrogate: (Lab Limits)	2,4,5,6-Tetra chloro m-xylene 32--112
L67901-1	68
L67901-2	65
L67901-3	67
L67901-4	61
L67901-5	61
L67901-6	73
WG152392-1	61
WG152392-2	55
WG152392-3	64
WG152392-4	66
WG152392-5	10 *

Workgroup: WG152394 LIPIDS

MB:WG152394-1 Matrix: OTHR TISS Listtype:ORLIPIDS Method:GRAVIMETRIC SOP 740v2 Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Percent Lipids	0.05	0.1	%		<MDL

LD:WG152394-2 L67901-3 Matrix: ORGANS Listtype:ORLIPIDS Method:GRAVIMETRIC SOP 740v2 Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Percent Lipids	0.05	0.1	%	6.54	7.03	7		0--20

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4xRule indicates no MS/MSD recovery was calculated due to the 4x rule.

WG154759 Total Solids

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68827-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	CVTOTS	SHELLFISH	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:14	WG154759-2,-3,-5,-6	
L68827-2	421093-100		CVTOTS	SHELLFISH	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:14		
L68827-3	421093-100		CVTOTS	SHELLFISH	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:15		
L68827-4	421093-100		CVTOTS	SHELLFISH	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:15		
L68827-5	421093-100		CVTOTS	SHELLFISH	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:15		
L68827-6	421093-100		CVTOTS	SHELLFISH	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:15		
L68827-7	421093-100		CVTOTS	SHELLFISH	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:16		
L68827-8	421093-100		CVTOTS	SHELLFISH	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:16		
L68827-9	421093-100		CVTOTS	SHELLFISH	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:16		
L68827-10	421093-100		CVTOTS	SHELLFISH	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:16		
L68828-1	421093-100		CVTOTS	ORGANS	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:18		
L68828-2	421093-100		CVTOTS	ORGANS	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:18		
L68828-3	421093-100		CVTOTS	ORGANS	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:19		
L68828-4	421093-100		CVTOTS	ORGANS	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:19		
L68828-5	421093-100		CVTOTS	ORGANS	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:19		
L68828-6	421093-100		CVTOTS	ORGANS	9/27/2017 0:00	10/24/2017 15:35	10/25/2017 10:20		
L68854-1	421093-100		CVTOTS	SHELLFISH	5/3/2017 0:00	10/24/2017 15:35	10/25/2017 10:16		
L68854-2	421093-100		CVTOTS	SHELLFISH	5/3/2017 0:00	10/24/2017 15:35	10/25/2017 10:17		
L68854-3	421093-100		CVTOTS	SHELLFISH	5/3/2017 0:00	10/24/2017 15:35	10/25/2017 10:17		
L68854-4	421093-100		CVTOTS	SHELLFISH	5/3/2017 0:00	10/24/2017 15:35	10/25/2017 10:17		
L68854-5	421093-100		CVTOTS	ORGANS	5/3/2017 0:00	10/24/2017 15:35	10/25/2017 10:17		
L68854-6	421093-100		CVTOTS	ORGANS	5/3/2017 0:00	10/24/2017 15:35	10/25/2017 10:17		
WG154759-1	MB		CVTOTS	OTHR SOLID		10/24/2017 15:35	10/25/2017 10:14	WG154759-1,-4	MB1 10/24/17
WG154759-2	LD		CVTOTS	SHELLFISH		10/24/2017 15:35	10/25/2017 10:15	WG154759-2,-3,-5,-6	L68827-2
WG154759-3	LT		CVTOTS	SHELLFISH		10/24/2017 15:35	10/25/2017 10:15		WG154759-2 L68827-2
WG154759-4	MB		CVTOTS	OTHR SOLID		10/24/2017 15:35	10/25/2017 10:18	WG154759-1,-4	MB2 10/24/17
WG154759-5	LD		CVTOTS	ORGANS		10/24/2017 15:35	10/25/2017 10:18	WG154759-2,-3,-5,-6	L68828-1
WG154759-6	LT		CVTOTS	ORGANS		10/24/2017 15:35	10/25/2017 10:18		WG154759-5 L68828-1

WG154730 Total Mercury, CVAA-Mid

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68154-5	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTHG-MID-DISS-QL	GRND WTR	10/18/2017 8:10	10/24/2017 11:45	10/25/2017 13:13	WG154730-1	
L68154-5	421422-CHGW		MTHG-MID-QL	GRND WTR	10/18/2017 8:10	10/24/2017 11:45	10/25/2017 13:11	WG154730-1,-2,-3,-4	
L68160-2	421422-CHGW		MTHG-MID-DISS-QL	GRND WTR	10/18/2017 9:35	10/24/2017 11:45	10/25/2017 13:17	WG154730-1	
L68160-2	421422-CHGW		MTHG-MID-QL	GRND WTR	10/18/2017 9:35	10/24/2017 11:45	10/25/2017 13:15	WG154730-1,-2,-3,-4	
L68160-4	421422-CHGW		MTHG-MID-DISS-QL	GRND WTR	10/18/2017 9:15	10/24/2017 11:45	10/25/2017 13:26	WG154730-1	
L68160-4	421422-CHGW		MTHG-MID-QL	GRND WTR	10/18/2017 9:15	10/24/2017 11:45	10/25/2017 13:23	WG154730-1,-2,-3,-4	
L68658-1	421422-CHGW		MTHG-MID-DISS-QL	GRND WTR	10/18/2017 10:40	10/24/2017 11:45	10/25/2017 13:30	WG154730-1	
L68658-1	421422-CHGW		MTHG-MID-QL	GRND WTR	10/18/2017 10:40	10/24/2017 11:45	10/25/2017 13:28	WG154730-1,-2,-3,-4	
L68868-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	MTHG-MID-QL	BLANK WTR	10/16/2017 8:30	10/24/2017 11:45	10/25/2017 13:32		Pre-Homogenization
L68868-2	421093-100		MTHG-MID-QL	BLANK WTR	10/16/2017 16:30	10/24/2017 11:45	10/25/2017 13:34		Post-Homogenization
L68868-3	421093-100		MTHG-MID-QL	BLANK WTR	10/17/2017 8:30	10/24/2017 11:45	10/25/2017 13:36		Pre-Homogenization
L68868-4	421093-100		MTHG-MID-QL	BLANK WTR	10/17/2017 16:30	10/24/2017 11:45	10/25/2017 13:38		Post-Homogenization
L68868-5	421093-100		MTHG-MID-QL	BLANK WTR	10/18/2017 8:30	10/24/2017 11:45	10/25/2017 13:40		Pre-Homogenization
L68868-6	421093-100		MTHG-MID-QL	BLANK WTR	10/18/2017 16:30	10/24/2017 11:45	10/25/2017 13:43		Post-Homogenization
L68868-7	421093-100		MTHG-MID-QL	BLANK WTR	10/19/2017 8:30	10/24/2017 11:45	10/25/2017 13:49		Pre-Homogenization
L68868-8	421093-100		MTHG-MID-QL	BLANK WTR	10/19/2017 12:45	10/24/2017 11:45	10/25/2017 13:51		Post-Homogenization
WG154730-1	MB		MTHG-MID-DISS-QL	BLANK WTR		10/24/2017 11:45	10/25/2017 13:02	WG154730-1	MB
WG154730-1	MB		MTHG-MID-QL	BLANK WTR		10/24/2017 11:45	10/25/2017 13:02	WG154730-1,-2,-3,-4	MB
WG154730-2	SB		MTHG-MID-QL	BLANK WTR		10/24/2017 11:45	10/25/2017 13:04		WG154730-1 HG-LMID
WG154730-3	MS		MTHG-MID-QL	GRND WTR		10/24/2017 11:45	10/25/2017 13:06		L68154-5 HG-LMID
WG154730-4	MSD		MTHG-MID-QL	GRND WTR		10/24/2017 11:45	10/25/2017 13:08		WG154730-3 L68154-5 HG-LMID-MSD

WG155512 Total Metals, ICPMS, Tissue

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68827-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	MTICPMS-TISS-QL	SHELLFISH	9/27/2017 0:00	12/18/2017 8:00	12/22/2017 9:30	WG155512-1,-2,-3,-4,-5,-6	
L68827-2	421093-100		MTICPMS-TISS-QL	SHELLFISH	9/27/2017 0:00	12/18/2017 8:00	12/22/2017 9:46		
L68827-3	421093-100		MTICPMS-TISS-QL	SHELLFISH	9/27/2017 0:00	12/18/2017 8:00	12/22/2017 9:50		
L68827-4	421093-100		MTICPMS-TISS-QL	SHELLFISH	9/27/2017 0:00	12/18/2017 8:00	12/22/2017 9:53		
L68827-5	421093-100		MTICPMS-TISS-QL	SHELLFISH	9/27/2017 0:00	12/18/2017 8:00	12/22/2017 9:56		
L68827-6	421093-100		MTICPMS-TISS-QL	SHELLFISH	9/27/2017 0:00	12/18/2017 8:00	12/22/2017 9:59		
L68827-7	421093-100		MTICPMS-TISS-QL	SHELLFISH	9/27/2017 0:00	12/18/2017 8:00	12/22/2017 10:03		
L68827-8	421093-100		MTICPMS-TISS-QL	SHELLFISH	9/27/2017 0:00	12/18/2017 8:00	12/22/2017 10:06		
L68827-9	421093-100		MTICPMS-TISS-QL	SHELLFISH	9/27/2017 0:00	12/18/2017 8:00	12/22/2017 10:09		
L68827-10	421093-100		MTICPMS-TISS-QL	SHELLFISH	9/27/2017 0:00	12/18/2017 8:00	12/22/2017 10:12		
L68854-1	421093-100		MTICPMS-TISS-QL	SHELLFISH	5/3/2017 0:00	12/18/2017 8:00	12/22/2017 10:16		
L68854-2	421093-100		MTICPMS-TISS-QL	SHELLFISH	5/3/2017 0:00	12/18/2017 8:00	12/22/2017 10:25		
L68854-3	421093-100		MTICPMS-TISS-QL	SHELLFISH	5/3/2017 0:00	12/18/2017 8:00	12/22/2017 10:29		
L68854-4	421093-100		MTICPMS-TISS-QL	SHELLFISH	5/3/2017 0:00	12/18/2017 8:00	12/22/2017 10:32		
WG155512-1	MB		MTICPMS-TISS-QL	TISS BLANK		12/18/2017 8:00	12/22/2017 9:07		METHOD BLANK
WG155512-2	SB		MTICPMS-TISS-QL	TISS BLANK		12/18/2017 8:00	12/22/2017 9:10		WG155512-1 MS-20
WG155512-3	LD		MTICPMS-TISS-QL	SHELLFISH		12/18/2017 8:00	12/22/2017 9:33		L68827-1 RPD-TISS
WG155512-4	MS		MTICPMS-TISS-QL	SHELLFISH		12/18/2017 8:00	12/22/2017 9:37		L68827-1 MS-20
WG155512-5	LCS		MTICPMS-TISS-QL	SHELLFISH		12/18/2017 8:00	12/22/2017 9:14		MUSSEL
WG155512-6	LCSD		MTICPMS-TISS-QL	SHELLFISH		12/18/2017 8:00	12/22/2017 9:17		WG155512-5 MUSSEL

WG155543 Total Metals, ICPMS, Tissue

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68828-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	MTICPMS-TISS-QL	ORGANS	9/27/2017 0:00	12/19/2017 9:20	12/27/2017 9:57	WG155543-1,-2,-3,-4,-5,-6	
L68828-2	421093-100		MTICPMS-TISS-QL	ORGANS	9/27/2017 0:00	12/19/2017 9:20	12/27/2017 10:00		
L68828-3	421093-100		MTICPMS-TISS-QL	ORGANS	9/27/2017 0:00	12/19/2017 9:20	12/27/2017 10:04		
L68828-4	421093-100		MTICPMS-TISS-QL	ORGANS	9/27/2017 0:00	12/19/2017 9:20	12/27/2017 10:07		
L68828-5	421093-100		MTICPMS-TISS-QL	ORGANS	9/27/2017 0:00	12/19/2017 9:20	12/27/2017 10:18		
L68828-6	421093-100		MTICPMS-TISS-QL	ORGANS	9/27/2017 0:00	12/19/2017 9:20	12/27/2017 10:21		
L68854-5	421093-100		MTICPMS-TISS-QL	ORGANS	5/3/2017 0:00	12/19/2017 9:20	12/27/2017 9:50		
L68854-6	421093-100		MTICPMS-TISS-QL	ORGANS	5/3/2017 0:00	12/19/2017 9:20	12/27/2017 9:53		
WG155543-1	MB		MTICPMS-TISS-QL	OTHR TISS		12/19/2017 9:20	12/27/2017 9:36		METHOD BLANK
WG155543-2	SB		MTICPMS-TISS-QL	OTHR TISS		12/19/2017 9:20	12/27/2017 9:39		WG155543-1 MS-20
WG155543-3	LD		MTICPMS-TISS-QL	ORGANS		12/19/2017 9:20	12/27/2017 10:25		L68828-6 RPD-TISS
WG155543-4	MS		MTICPMS-TISS-QL	ORGANS		12/19/2017 9:20	12/27/2017 10:28		L68828-6 MS-20
WG155543-5	SRM		MTICPMS-TISS-QL	ORGANS		12/19/2017 9:20	12/27/2017 9:43		TORT3
WG155543-6	SRMD		MTICPMS-TISS-QL	ORGANS		12/19/2017 9:20	12/27/2017 9:46		WG155543-5 TORT3

WG155633 Total Mercury, CVAA, Tissue

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68828-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	MTHG-TISS-QL	ORGANS	9/27/2017 0:00	12/22/2017 11:10	12/27/2017 14:33	WG155633-1,-2,-3,-4,-5,-6	
L68828-2	421093-100		MTHG-TISS-QL	ORGANS	9/27/2017 0:00	12/22/2017 11:10	12/27/2017 14:40		
L68828-3	421093-100		MTHG-TISS-QL	ORGANS	9/27/2017 0:00	12/22/2017 11:10	12/27/2017 14:42		
L68828-4	421093-100		MTHG-TISS-QL	ORGANS	9/27/2017 0:00	12/22/2017 11:10	12/27/2017 14:45		
L68828-5	421093-100		MTHG-TISS-QL	ORGANS	9/27/2017 0:00	12/22/2017 11:10	12/27/2017 14:47		
L68828-6	421093-100		MTHG-TISS-QL	ORGANS	9/27/2017 0:00	12/22/2017 11:10	12/27/2017 14:54		
L68854-5	421093-100		MTHG-TISS-QL	ORGANS	5/3/2017 0:00	12/22/2017 11:10	12/27/2017 14:56		
L68854-6	421093-100		MTHG-TISS-QL	ORGANS	5/3/2017 0:00	12/22/2017 11:10	12/27/2017 14:58		
WG155633-1	MB		MTHG-TISS-QL	TISS BLANK		12/22/2017 11:10	12/27/2017 14:28		MB
WG155633-2	SB		MTHG-TISS-QL	TISS BLANK		12/22/2017 11:10	12/27/2017 14:31		WG155633-1 HG-TISS
WG155633-3	LD		MTHG-TISS-QL	ORGANS		12/22/2017 11:10	12/27/2017 14:35		L68828-1 RPD-TISS
WG155633-4	MS		MTHG-TISS-QL	ORGANS		12/22/2017 11:10	12/27/2017 14:38		L68828-1 HG-TISS
WG155633-5	SRM		MTHG-TISS-QL	ORGANS		12/22/2017 11:10	12/27/2017 15:01		TORT3 M-17-022
WG155633-6	SRMD		MTHG-TISS-QL	ORGANS		12/22/2017 11:10	12/27/2017 15:03		WG155633-5 TORT3 M-17-022

WG155676 Total Mercury, CVAA, Tissue

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68827-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	MTHG-TISS-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 11:15	12/29/2017 12:55	WG155676-1,-2,-3,-4,-5,-6	
L68827-2	421093-100		MTHG-TISS-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 11:15	12/29/2017 12:57		
L68827-3	421093-100		MTHG-TISS-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 11:15	12/29/2017 13:04		
L68827-4	421093-100		MTHG-TISS-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 11:15	12/29/2017 13:06		
L68827-5	421093-100		MTHG-TISS-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 11:15	12/29/2017 13:08		
L68827-6	421093-100		MTHG-TISS-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 11:15	12/29/2017 13:11		
L68827-7	421093-100		MTHG-TISS-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 11:15	12/29/2017 13:17		
L68827-8	421093-100		MTHG-TISS-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 11:15	12/29/2017 13:20		
L68827-9	421093-100		MTHG-TISS-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 11:15	12/29/2017 13:22		
L68827-10	421093-100		MTHG-TISS-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 11:15	12/29/2017 13:24		
L68854-1	421093-100		MTHG-TISS-QL	SHELLFISH	5/3/2017 0:00	12/28/2017 11:15	12/29/2017 13:26		
L68854-2	421093-100		MTHG-TISS-QL	SHELLFISH	5/3/2017 0:00	12/28/2017 11:15	12/29/2017 13:28		
L68854-3	421093-100		MTHG-TISS-QL	SHELLFISH	5/3/2017 0:00	12/28/2017 11:15	12/29/2017 13:31		
L68854-4	421093-100		MTHG-TISS-QL	SHELLFISH	5/3/2017 0:00	12/28/2017 11:15	12/29/2017 13:33		
WG155676-1	MB		MTHG-TISS-QL	TISS BLANK		12/28/2017 11:15	12/29/2017 12:51		MB
WG155676-2	SB		MTHG-TISS-QL	TISS BLANK		12/28/2017 11:15	12/29/2017 12:53		WG155676-1 HG-TISS
WG155676-3	LD		MTHG-TISS-QL	SHELLFISH		12/28/2017 11:15	12/29/2017 12:59		L68827-2 RPD-TISS
WG155676-4	MS		MTHG-TISS-QL	SHELLFISH		12/28/2017 11:15	12/29/2017 13:02		L68827-2 HG-TISS
WG155676-5	LCS		MTHG-TISS-QL	SHELLFISH		12/28/2017 11:15	12/29/2017 13:35		MUSSEL M-15-007
WG155676-6	LCSD		MTHG-TISS-QL	SHELLFISH		12/28/2017 11:15	12/29/2017 13:37		WG155676-5 MUSSEL M-15-007

WG155722 Total Metals, ICPMS, Tissue

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68041-24	421250-800	Marine Fish Tissue Tox	MTICPMS-QL	BLANK WTR	6/20/2017 0:00	1/3/2018 8:00	1/3/2018 16:28	WG155722-1,-2,-3,-4	
L68041-25	421250-800		MTICPMS-QL	BLANK WTR	6/20/2017 0:00	1/3/2018 8:00	1/3/2018 16:31		
L68042-21	421250-800		MTICPMS-QL	BLANK WTR	7/24/2017 0:00	1/3/2018 8:00	1/3/2018 16:35		
L68042-22	421250-800		MTICPMS-QL	BLANK WTR	7/24/2017 0:00	1/3/2018 8:00	1/3/2018 16:39		
L68042-23	421250-800		MTICPMS-QL	BLANK WTR	8/21/2017 0:00	1/3/2018 8:00	1/3/2018 16:42		
L68042-24	421250-800		MTICPMS-QL	BLANK WTR	8/21/2017 0:00	1/3/2018 8:00	1/3/2018 16:46		
L68824-1	421235-850	Green River Fish Tissue Study	MTICPMS-QL	BLANK WTR	10/11/2017 0:00	1/3/2018 8:00	1/3/2018 15:52		
L68824-2	421235-850		MTICPMS-QL	BLANK WTR	10/11/2017 0:00	1/3/2018 8:00	1/3/2018 16:03		
L68824-3	421235-850		MTICPMS-QL	BLANK WTR	10/11/2017 0:00	1/3/2018 8:00	1/3/2018 16:06		
L68824-4	421235-850		MTICPMS-QL	BLANK WTR	10/11/2017 0:00	1/3/2018 8:00	1/3/2018 16:10		
L68824-5	421235-850		MTICPMS-QL	BLANK WTR	10/12/2017 0:00	1/3/2018 8:00	1/3/2018 16:13		
L68824-6	421235-850		MTICPMS-QL	BLANK WTR	10/12/2017 0:00	1/3/2018 8:00	1/3/2018 16:17		
L68868-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	MTICPMS-QL	BLANK WTR	10/16/2017 8:30	1/3/2018 8:00	1/3/2018 16:49		Pre-Homogenization
L68868-2	421093-100		MTICPMS-QL	BLANK WTR	10/16/2017 16:30	1/3/2018 8:00	1/3/2018 16:53		Post-Homogenization
L68868-3	421093-100		MTICPMS-QL	BLANK WTR	10/17/2017 8:30	1/3/2018 8:00	1/3/2018 16:57		Pre-Homogenization
L68868-4	421093-100		MTICPMS-QL	BLANK WTR	10/17/2017 16:30	1/3/2018 8:00	1/3/2018 17:00		Post-Homogenization
L68868-5	421093-100		MTICPMS-QL	BLANK WTR	10/18/2017 8:30	1/3/2018 8:00	1/3/2018 17:11		Pre-Homogenization
L68868-6	421093-100		MTICPMS-QL	BLANK WTR	10/18/2017 16:30	1/3/2018 8:00	1/3/2018 17:15		Post-Homogenization
L68868-7	421093-100		MTICPMS-QL	BLANK WTR	10/19/2017 8:30	1/3/2018 8:00	1/3/2018 17:18		Pre-Homogenization
L68868-8	421093-100		MTICPMS-QL	BLANK WTR	10/19/2017 12:45	1/3/2018 8:00	1/3/2018 17:22		Post-Homogenization
WG155722-1	MB		MTICPMS-QL	BLANK WTR		1/3/2018 8:00	1/3/2018 15:45		METHOD BLANK
WG155722-2	SB		MTICPMS-QL	BLANK WTR		1/3/2018 8:00	1/3/2018 15:48		WG155722-1 MS-20
WG155722-3	LD		MTICPMS-QL	BLANK WTR		1/3/2018 8:00	1/3/2018 15:55		L68824-1 RPD-LIQ
WG155722-4	MS		MTICPMS-QL	BLANK WTR		1/3/2018 8:00	1/3/2018 15:59		L68824-1 MS-20

WG154895 PAH, Tissue

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68828-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORPAH-SIM-QL	ORGANS	9/27/2017 0:00	11/2/2017 17:00	11/8/2017 16:27	WG154895-1,-2,-3,-4	
L68828-2	421093-100		ORPAH-SIM-QL	ORGANS	9/27/2017 0:00	11/2/2017 17:00	11/8/2017 16:59		
L68828-3	421093-100		ORPAH-SIM-QL	ORGANS	9/27/2017 0:00	11/2/2017 17:00	11/8/2017 17:31		
L68828-4	421093-100		ORPAH-SIM-QL	ORGANS	9/27/2017 0:00	11/2/2017 17:00	11/8/2017 18:03		
L68828-5	421093-100		ORPAH-SIM-QL	ORGANS	9/27/2017 0:00	11/2/2017 17:00	11/8/2017 18:35		
L68828-6	421093-100		ORPAH-SIM-QL	ORGANS	9/27/2017 0:00	11/2/2017 17:00	11/8/2017 19:07		
L68854-5	421093-100		ORPAH-SIM-QL	ORGANS	5/3/2017 0:00	11/2/2017 17:00	11/8/2017 19:39		
L68854-6	421093-100		ORPAH-SIM-QL	ORGANS	5/3/2017 0:00	11/2/2017 17:00	11/8/2017 20:11		
WG154895-1	MB		ORPAH-SIM-QL	OTHR TISS		11/2/2017 17:00	11/8/2017 13:05		MB171102
WG154895-2	SB		ORPAH-SIM-QL	OTHR TISS		11/2/2017 17:00	11/8/2017 13:37		WG154895-1
WG154895-3	MS		ORPAH-SIM-QL	ORGANS		11/2/2017 17:00	11/8/2017 14:47		L68828-2
WG154895-4	MSD		ORPAH-SIM-QL	ORGANS		11/2/2017 17:00	11/8/2017 15:19		WG154895-3 L68828-2

WG154896 PBDE, Tissue

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68828-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORPBDE-QL	ORGANS	9/27/2017 0:00	11/2/2017 17:00	11/14/2017 15:18	WG154896-1,-2,-3,-4,-5,-6	
L68828-2	421093-100		ORPBDE-QL	ORGANS	9/27/2017 0:00	11/2/2017 17:00	11/14/2017 15:46		
L68828-3	421093-100		ORPBDE-QL	ORGANS	9/27/2017 0:00	11/2/2017 17:00	11/14/2017 16:14		
L68828-4	421093-100		ORPBDE-QL	ORGANS	9/27/2017 0:00	11/2/2017 17:00	11/14/2017 16:41		
L68828-5	421093-100		ORPBDE-QL	ORGANS	9/27/2017 0:00	11/2/2017 17:00	11/14/2017 17:09		
L68828-6	421093-100		ORPBDE-QL	ORGANS	9/27/2017 0:00	11/2/2017 17:00	11/14/2017 17:37		
L68854-5	421093-100		ORPBDE-QL	ORGANS	5/3/2017 0:00	11/2/2017 17:00	11/14/2017 18:04		
L68854-6	421093-100		ORPBDE-QL	ORGANS	5/3/2017 0:00	11/2/2017 17:00	11/14/2017 18:32		
WG154896-1	MB		ORPBDE-QL	OTHR TISS		11/2/2017 17:00	11/14/2017 12:05		MB171102
WG154896-2	SB		ORPBDE-QL	OTHR TISS		11/2/2017 17:00	11/14/2017 12:32		WG154896-1
WG154896-3	MS		ORPBDE-QL	ORGANS		11/2/2017 17:00	11/14/2017 13:00		L68828-1
WG154896-4	MSD		ORPBDE-QL	ORGANS		11/2/2017 17:00	11/14/2017 13:28		WG154896-3 L68828-1
WG154896-5	SRM		ORPBDE-QL	FISH		11/2/2017 17:00	11/14/2017 14:23		
WG154896-6	SRMD		ORPBDE-QL	FISH		11/2/2017 17:00	11/14/2017 14:51		WG154896-5

WG155668 PBDE, Tissue

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68827-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORPBDE-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 17:17	WG155668-1,-2,-3,-4,-5,-6	
L68827-2	421093-100		ORPBDE-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 17:45		
L68827-3	421093-100		ORPBDE-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 18:13		
L68827-4	421093-100		ORPBDE-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 18:40		
L68827-5	421093-100		ORPBDE-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 19:08		
L68827-6	421093-100		ORPBDE-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 19:36		
L68827-7	421093-100		ORPBDE-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 20:03		
L68827-8	421093-100		ORPBDE-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 20:31		
L68827-9	421093-100		ORPBDE-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 20:59		
L68827-10	421093-100		ORPBDE-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 21:26		
L68854-1	421093-100		ORPBDE-QL	SHELLFISH	5/3/2017 0:00	12/28/2017 17:00	1/9/2018 21:54		
L68854-2	421093-100		ORPBDE-QL	SHELLFISH	5/3/2017 0:00	12/28/2017 17:00	1/9/2018 22:22		
L68854-3	421093-100		ORPBDE-QL	SHELLFISH	5/3/2017 0:00	12/28/2017 17:00	1/9/2018 22:49		
L68854-4	421093-100		ORPBDE-QL	SHELLFISH	5/3/2017 0:00	12/28/2017 17:00	1/9/2018 23:17		
WG155668-1	MB		ORPBDE-QL	OTHR TISS		12/28/2017 17:00	1/9/2018 14:31		MB171228
WG155668-2	SB		ORPBDE-QL	OTHR TISS		12/28/2017 17:00	1/9/2018 14:59		WG155668-1
WG155668-3	MS		ORPBDE-QL	SHELLFISH		12/28/2017 17:00	1/9/2018 15:26		L68827-1
WG155668-4	MSD		ORPBDE-QL	SHELLFISH		12/28/2017 17:00	1/9/2018 15:54		WG155668-3 L68827-1
WG155668-5	SRM		ORPBDE-QL	FISH		12/28/2017 17:00	1/9/2018 16:22		
WG155668-6	SRMD		ORPBDE-QL	FISH		12/28/2017 17:00	1/9/2018 16:50		WG155668-5

WG155669 PAH, Tissue

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68827-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORPAH-SIM-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 14:16	WG155669-1,-2,-3,-4	
L68827-2	421093-100		ORPAH-SIM-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 14:49		
L68827-3	421093-100		ORPAH-SIM-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 15:21		
L68827-4	421093-100		ORPAH-SIM-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 15:53		
L68827-5	421093-100		ORPAH-SIM-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 16:26		
L68827-6	421093-100		ORPAH-SIM-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 16:58		
L68827-7	421093-100		ORPAH-SIM-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 17:30		
L68827-8	421093-100		ORPAH-SIM-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 18:03		
L68827-9	421093-100		ORPAH-SIM-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 18:35		
L68827-10	421093-100		ORPAH-SIM-QL	SHELLFISH	9/27/2017 0:00	12/28/2017 17:00	1/9/2018 19:08		
L68854-1	421093-100		ORPAH-SIM-QL	SHELLFISH	5/3/2017 0:00	12/28/2017 17:00	1/9/2018 19:40		
L68854-2	421093-100		ORPAH-SIM-QL	SHELLFISH	5/3/2017 0:00	12/28/2017 17:00	1/9/2018 20:12		
L68854-3	421093-100		ORPAH-SIM-QL	SHELLFISH	5/3/2017 0:00	12/28/2017 17:00	1/9/2018 20:45		
L68854-4	421093-100		ORPAH-SIM-QL	SHELLFISH	5/3/2017 0:00	12/28/2017 17:00	1/9/2018 21:18		
WG155669-1	MB		ORPAH-SIM-QL	OTHR TISS		12/28/2017 17:00	1/9/2018 12:07		MB171228
WG155669-2	SB		ORPAH-SIM-QL	OTHR TISS		12/28/2017 17:00	1/9/2018 12:39		WG155669-1
WG155669-3	MS		ORPAH-SIM-QL	SHELLFISH		12/28/2017 17:00	1/9/2018 13:11		L68854-2
WG155669-4	MSD		ORPAH-SIM-QL	SHELLFISH		12/28/2017 17:00	1/9/2018 13:44		WG155669-3 L68854-2

WG155718 PCB Homolog, Tissue

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68827-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORPCB-HOMOLOG-QL	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/30/2018 15:51	WG155718-1,-2,-3,-4	
L68827-2	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/30/2018 16:47		
L68827-3	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/30/2018 17:43		
L68827-4	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/30/2018 18:40		
L68827-5	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/30/2018 19:36		
L68827-6	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/30/2018 20:33		
L68827-7	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/31/2018 10:02		
L68827-8	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/31/2018 10:58		
L68827-9	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/31/2018 11:55		
L68827-10	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/31/2018 12:51		
L68854-1	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	5/3/2017 0:00	1/4/2018 17:00	1/31/2018 13:47		
L68854-2	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	5/3/2017 0:00	1/4/2018 17:00	1/31/2018 14:44		
L68854-3	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	5/3/2017 0:00	1/4/2018 17:00	1/31/2018 15:40		
L68854-4	421093-100		ORPCB-HOMOLOG-QL	SHELLFISH	5/3/2017 0:00	1/4/2018 17:00	1/31/2018 16:36		
WG155718-1	MB		ORPCB-HOMOLOG-QL	OTHR TISS		1/4/2018 17:00	1/30/2018 12:05		MB180104
WG155718-2	SB		ORPCB-HOMOLOG-QL	OTHR TISS		1/4/2018 17:00	1/30/2018 13:02		WG155718-1
WG155718-3	MS		ORPCB-HOMOLOG-QL	SHELLFISH		1/4/2018 17:00	1/30/2018 13:58		L68827-1
WG155718-4	MSD		ORPCB-HOMOLOG-QL	SHELLFISH		1/4/2018 17:00	1/30/2018 14:54		WG155718-3 L68827-1

WG155719 PCB Homolog, Tissue

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68828-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORPCB-HOMOLOG-QL	ORGANS	9/27/2017 0:00	1/4/2018 17:00	2/1/2018 15:29	WG155719-1,-2,-3,-4	
L68828-2	421093-100		ORPCB-HOMOLOG-QL	ORGANS	9/27/2017 0:00	1/4/2018 17:00	2/1/2018 16:25		
L68828-3	421093-100		ORPCB-HOMOLOG-QL	ORGANS	9/27/2017 0:00	1/4/2018 17:00	2/1/2018 17:22		
L68828-4	421093-100		ORPCB-HOMOLOG-QL	ORGANS	9/27/2017 0:00	1/4/2018 17:00	2/1/2018 18:18		
L68828-5	421093-100		ORPCB-HOMOLOG-QL	ORGANS	9/27/2017 0:00	1/4/2018 17:00	2/1/2018 19:14		
L68828-6	421093-100		ORPCB-HOMOLOG-QL	ORGANS	9/27/2017 0:00	1/4/2018 17:00	2/1/2018 20:11		
L68854-5	421093-100		ORPCB-HOMOLOG-QL	ORGANS	5/3/2017 0:00	1/4/2018 17:00	2/2/2018 10:13		
L68854-6	421093-100		ORPCB-HOMOLOG-QL	ORGANS	5/3/2017 0:00	1/4/2018 17:00	2/2/2018 11:09		
WG155719-1	MB		ORPCB-HOMOLOG-QL	OTHR TISS		1/4/2018 17:00	2/1/2018 11:44		MB180104
WG155719-2	SB		ORPCB-HOMOLOG-QL	OTHR TISS		1/4/2018 17:00	2/1/2018 12:40		WG155719-1
WG155719-3	MS		ORPCB-HOMOLOG-QL	ORGANS		1/4/2018 17:00	2/1/2018 13:36		L68828-2
WG155719-4	MSD		ORPCB-HOMOLOG-QL	ORGANS		1/4/2018 17:00	2/1/2018 14:33		WG155719-3 L68828-2

WG155720 Percent Lipids

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68827-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORLIPIDS	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15	WG155720-1,-2,-3	
L68827-2	421093-100		ORLIPIDS	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68827-3	421093-100		ORLIPIDS	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68827-4	421093-100		ORLIPIDS	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68827-5	421093-100		ORLIPIDS	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68827-6	421093-100		ORLIPIDS	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68827-7	421093-100		ORLIPIDS	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68827-8	421093-100		ORLIPIDS	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68827-9	421093-100		ORLIPIDS	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68827-10	421093-100		ORLIPIDS	SHELLFISH	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68854-1	421093-100		ORLIPIDS	SHELLFISH	5/3/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68854-2	421093-100		ORLIPIDS	SHELLFISH	5/3/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68854-3	421093-100		ORLIPIDS	SHELLFISH	5/3/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68854-4	421093-100		ORLIPIDS	SHELLFISH	5/3/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
WG155720-1	MB		ORLIPIDS	OTHR TISS		1/4/2018 17:00	1/9/2018 6:15		MB180104
WG155720-2	LD		ORLIPIDS	SHELLFISH		1/4/2018 17:00	1/9/2018 6:15		L68827-1
WG155720-3	LD		ORLIPIDS	SHELLFISH		1/4/2018 17:00	1/9/2018 6:15		L68854-2

WG155721 Percent Lipids

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L68828-1	421093-100	West Point EBO discharge sampling due to flooding incident in February 2017	ORLIPIDS	ORGANS	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15	WG155721-1,-2	
L68828-2	421093-100		ORLIPIDS	ORGANS	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68828-3	421093-100		ORLIPIDS	ORGANS	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68828-4	421093-100		ORLIPIDS	ORGANS	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68828-5	421093-100		ORLIPIDS	ORGANS	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68828-6	421093-100		ORLIPIDS	ORGANS	9/27/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68854-5	421093-100		ORLIPIDS	ORGANS	5/3/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
L68854-6	421093-100		ORLIPIDS	ORGANS	5/3/2017 0:00	1/4/2018 17:00	1/9/2018 6:15		
WG155721-1	MB		ORLIPIDS	OTHR TISS		1/4/2018 17:00	1/9/2018 6:15		MB180104
WG155721-2	LD		ORLIPIDS	ORGANS		1/4/2018 17:00	1/9/2018 6:15		L68828-2

Workgroup: WG154759 Total Solids

MB:WG154759-1 Matrix: OTHR SOLID Listtype:CVTOTS Method:SM2540-G Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%		<MDL

LT:WG154759-3 LD:WG154759-2 L68827-2 Matrix: SHELLFISH Listtype:CVTOTS Method:SM2540-G Project:421093-100 Pkey:STD
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	17.6	17.6	17.4	1		0--25

MB:WG154759-4 Matrix: OTHR SOLID Listtype:CVTOTS Method:SM2540-G Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%		<MDL

LT:WG154759-6 LD:WG154759-5 L68828-1 Matrix: ORGANS Listtype:CVTOTS Method:SM2540-G Project:421093-100 Pkey:STD
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	19.6	20.2	20.6	2		0--25

Workgroup: WG154730 Total Mercury, CVAA-Mid

MB:WG154730-1 Matrix: BLANK WTR Listtype:MTHG-MID-DISS-QL Method:SW846 7470A Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Dissolved, CVAA	0.025	0.05	ug/L		<QL

MB:WG154730-1 Matrix: BLANK WTR Listtype:MTHG-MID-QL Method:SW846 7470A Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAA	0.025	0.05	ug/L		<QL

SB:WG154730-2 MB:WG154730-1 Matrix: BLANK WTR Listtype:MTHG-MID-QL Method:SW846 7470A Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.025	0.05	ug/L	<QL	1	1.01	101		85--115

MSD:WG154730-4 MS:WG154730-3 L68154-5 Matrix: GRND WTR Listtype:MTHG-MID-QL Method:SW846 7470A Project:421422-CHGW Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.05	0.05	ug/L	<QL	1	1.02	102		75--125	1	1.01	101		0		0--20

Workgroup: WG155512 Total Metals, ICPMS, Tissue

MB:WG155512-1 Matrix: TISS BLANK Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Beryllium, Total, ICP-MS	0.00192	0.00385	mg/Kg		<QL
Chromium, Total, ICP-MS	0.00385	0.00769	mg/Kg		<QL
Nickel, Total, ICP-MS	0.00192	0.00385	mg/Kg		<QL
Copper, Total, ICP-MS	0.00385	0.00769	mg/Kg	0.0048	<QL,J,B
Zinc, Total, ICP-MS	0.00962	0.0192	mg/Kg	0.0163	<QL,J,B
Arsenic, Total, ICP-MS	0.000962	0.00192	mg/Kg	0.00177	<QL,J,B
Selenium, Total, ICP-MS	0.00962	0.0192	mg/Kg		<QL
Silver, Total, ICP-MS	0.000769	0.00154	mg/Kg		<QL
Cadmium, Total, ICP-MS	0.000962	0.00192	mg/Kg		<QL
Thallium, Total, ICP-MS	0.00192	0.00385	mg/Kg		<QL
Lead, Total, ICP-MS	0.00192	0.00385	mg/Kg		<QL

SB:WG155512-2 MB:WG155512-1 Matrix: TISS BLANK Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.00192	0.00385	mg/Kg	<QL	0.769	0.766	100		85--115
Chromium, Total, ICP-MS	0.00385	0.00769	mg/Kg	<QL	0.769	0.817	106		85--115
Nickel, Total, ICP-MS	0.00192	0.00385	mg/Kg	<QL	0.769	0.812	106		85--115
Copper, Total, ICP-MS	0.00385	0.00769	mg/Kg	0.0048	0.769	0.792	103		85--115
Zinc, Total, ICP-MS	0.00962	0.0192	mg/Kg	0.0163	0.769	0.802	104		85--115
Arsenic, Total, ICP-MS	0.000962	0.00192	mg/Kg	0.00177	0.769	0.762	99		85--115
Selenium, Total, ICP-MS	0.00962	0.0192	mg/Kg	<QL	0.769	0.768	100		85--115
Silver, Total, ICP-MS	0.000769	0.00154	mg/Kg	<QL	0.769	0.753	98		85--115
Cadmium, Total, ICP-MS	0.000962	0.00192	mg/Kg	<QL	0.769	0.741	96		85--115
Thallium, Total, ICP-MS	0.00192	0.00385	mg/Kg	<QL	0.769	0.813	106		85--115
Lead, Total, ICP-MS	0.00192	0.00385	mg/Kg	<QL	0.769	0.777	101		85--115

LD:WG155512-3 L68827-1 Matrix: SHELLFISH Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.00397	0.00397	mg/Kg	<QL	<QL			0--20
Chromium, Total, ICP-MS	0.00794	0.00794	mg/Kg	0.0127	0.0114	11		0--20
Nickel, Total, ICP-MS	0.00397	0.00397	mg/Kg	0.0426	0.0396	7		0--20
Copper, Total, ICP-MS	0.00794	0.00794	mg/Kg	9.55	9.01	6		0--20
Zinc, Total, ICP-MS	0.0198	0.0198	mg/Kg	47.1	42.5	10		0--20
Arsenic, Total, ICP-MS	0.00198	0.00198	mg/Kg	6.41	5.87	9		0--20
Selenium, Total, ICP-MS	0.0198	0.0198	mg/Kg	0.478	0.434	10		0--20
Silver, Total, ICP-MS	0.00159	0.00159	mg/Kg	0.206	0.194	6		0--20
Cadmium, Total, ICP-MS	0.00198	0.00198	mg/Kg	0.0351	0.0334	5		0--20
Thallium, Total, ICP-MS	0.00397	0.00397	mg/Kg	<QL	<QL			0--20
Lead, Total, ICP-MS	0.00397	0.00397	mg/Kg	0.00883	0.00822	7		0--20

MS:WG155512-4 L68827-1 Matrix: SHELLFISH Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project:421093-100 Pkey:STD
(Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.00397	0.00397	mg/Kg	<QL	0.791	0.788	100		75--125
Chromium, Total, ICP-MS	0.00794	0.00794	mg/Kg	0.0127	0.791	0.811	101		75--125
Nickel, Total, ICP-MS	0.00397	0.00397	mg/Kg	0.0426	0.791	0.859	103		75--125
Copper, Total, ICP-MS	0.00794	0.00794	mg/Kg	9.55	0.791	10.5		4xRule	75--125
Zinc, Total, ICP-MS	0.0198	0.0198	mg/Kg	47.1	0.791	47.2		4xRule	75--125
Arsenic, Total, ICP-MS	0.00198	0.00198	mg/Kg	6.41	0.791	7.32		4xRule	75--125
Selenium, Total, ICP-MS	0.0198	0.0198	mg/Kg	0.478	0.791	1.37	113		75--125
Silver, Total, ICP-MS	0.00159	0.00159	mg/Kg	0.206	0.791	0.962	96		75--125
Cadmium, Total, ICP-MS	0.00198	0.00198	mg/Kg	0.0351	0.791	0.814	99		75--125
Thallium, Total, ICP-MS	0.00397	0.00397	mg/Kg	<QL	0.791	0.808	102		75--125
Lead, Total, ICP-MS	0.00397	0.00397	mg/Kg	0.00883	0.791	0.785	98		75--125

LCSD:WG155512-6 LCS:WG155512-5 Matrix: SHELLFISH Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project: Pkey:STD
(Lab Control Sample Duplicate, Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit	True Value	LCSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Chromium, Total, ICP-MS	0.0395	0.0395	mg/Kg	0.5	0.393	79	*	80--120	0.5	0.277	55	*	35	*	0--20
Nickel, Total, ICP-MS	0.0198	0.0198	mg/Kg	0.93	1.01	109		80--120	0.93	0.728	78	*	33	*	0--20
Copper, Total, ICP-MS	0.0395	0.0395	mg/Kg	4.02	5.09	127	*	80--120	4.02	3.8	94		29	*	0--20
Zinc, Total, ICP-MS	0.0988	0.0988	mg/Kg	137	193	141	*	80--120	137	139	101		33	*	0--20
Arsenic, Total, ICP-MS	0.00988	0.00988	mg/Kg	13.3	20	150	*	80--120	13.3	13.8	104		36	*	0--20
Selenium, Total, ICP-MS	0.0988	0.0988	mg/Kg	1.8	2.98	166	*	80--120	1.8	2.02	112		38	*	0--20
Cadmium, Total, ICP-MS	0.00988	0.00988	mg/Kg	0.82	0.944	115		80--120	0.82	0.79	96		18		0--20
Lead, Total, ICP-MS	0.0198	0.0198	mg/Kg	1.19	1.14	96		80--120	1.19	1.11	93		2		0--20

Workgroup: WG155543 Total Metals, ICPMS, Tissue

MB:WG155543-1 Matrix: OTHR TISS Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Beryllium, Total, ICP-MS	0.00121	0.00242	mg/Kg		<QL
Chromium, Total, ICP-MS	0.00242	0.00483	mg/Kg		<QL
Nickel, Total, ICP-MS	0.00121	0.00242	mg/Kg		<QL
Copper, Total, ICP-MS	0.00242	0.00483	mg/Kg		<QL
Zinc, Total, ICP-MS	0.00604	0.0121	mg/Kg		<QL
Arsenic, Total, ICP-MS	0.000604	0.00121	mg/Kg		<QL
Selenium, Total, ICP-MS	0.0242	0.0483	mg/Kg		<QL
Silver, Total, ICP-MS	0.000483	0.000966	mg/Kg		<QL
Cadmium, Total, ICP-MS	0.000604	0.00121	mg/Kg		<QL
Thallium, Total, ICP-MS	0.00121	0.00242	mg/Kg		<QL
Lead, Total, ICP-MS	0.00121	0.00242	mg/Kg		<QL

SB:WG155543-2 MB:WG155543-1 Matrix: OTHR TISS Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.00121	0.00242	mg/Kg	<QL	0.483	0.484	100		85--115
Chromium, Total, ICP-MS	0.00242	0.00483	mg/Kg	<QL	0.483	0.5	104		85--115
Nickel, Total, ICP-MS	0.00121	0.00242	mg/Kg	<QL	0.483	0.515	107		85--115
Copper, Total, ICP-MS	0.00242	0.00483	mg/Kg	<QL	0.483	0.501	104		85--115
Zinc, Total, ICP-MS	0.00604	0.0121	mg/Kg	<QL	0.483	0.495	102		85--115
Arsenic, Total, ICP-MS	0.000604	0.00121	mg/Kg	<QL	0.483	0.481	100		85--115
Selenium, Total, ICP-MS	0.0242	0.0483	mg/Kg	<QL	0.483	0.499	103		85--115
Silver, Total, ICP-MS	0.000483	0.000966	mg/Kg	<QL	0.483	0.476	98		85--115
Cadmium, Total, ICP-MS	0.000604	0.00121	mg/Kg	<QL	0.483	0.459	95		85--115
Thallium, Total, ICP-MS	0.00121	0.00242	mg/Kg	<QL	0.483	0.507	105		85--115
Lead, Total, ICP-MS	0.00121	0.00242	mg/Kg	<QL	0.483	0.494	102		85--115

LD:WG155543-3 L68828-6 Matrix: ORGANS Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.0025	0.0025	mg/Kg	<QL	<QL			0--20
Chromium, Total, ICP-MS	0.005	0.005	mg/Kg	0.0613	0.066	7		0--20
Nickel, Total, ICP-MS	0.0025	0.0025	mg/Kg	0.344	0.342	1		0--20
Copper, Total, ICP-MS	0.005	0.005	mg/Kg	23.3	23	1		0--20
Zinc, Total, ICP-MS	0.0125	0.0125	mg/Kg	12.5	12.5	0		0--20
Arsenic, Total, ICP-MS	0.00125	0.00125	mg/Kg	4.47	4.46	0		0--20
Selenium, Total, ICP-MS	0.05	0.05	mg/Kg	0.965	0.987	2		0--20
Silver, Total, ICP-MS	0.001	0.001	mg/Kg	0.47	0.461	2		0--20
Cadmium, Total, ICP-MS	0.00125	0.00125	mg/Kg	1.09	1.09	0		0--20
Thallium, Total, ICP-MS	0.0025	0.0025	mg/Kg	<QL	<QL			0--20
Lead, Total, ICP-MS	0.0025	0.0025	mg/Kg	0.052	0.0565	8		0--20

MS:WG155543-4 L68828-6 Matrix: ORGANS Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project:421093-100 Pkey:STD
(Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.0025	0.0025	mg/Kg	<QL	0.5	0.498	100		75--125
Chromium, Total, ICP-MS	0.005	0.005	mg/Kg	0.0613	0.5	0.553	98		75--125
Nickel, Total, ICP-MS	0.0025	0.0025	mg/Kg	0.344	0.5	0.835	98		75--125
Copper, Total, ICP-MS	0.005	0.005	mg/Kg	23.3	0.5	22.7		4xRule	75--125
Zinc, Total, ICP-MS	0.0125	0.0125	mg/Kg	12.5	0.5	12.8		4xRule	75--125
Arsenic, Total, ICP-MS	0.00125	0.00125	mg/Kg	4.47	0.5	5		4xRule	75--125
Selenium, Total, ICP-MS	0.05	0.05	mg/Kg	0.965	0.5	1.58	123		75--125
Silver, Total, ICP-MS	0.001	0.001	mg/Kg	0.47	0.5	0.891	84		75--125
Cadmium, Total, ICP-MS	0.00125	0.00125	mg/Kg	1.09	0.5	1.56	94		75--125
Thallium, Total, ICP-MS	0.0025	0.0025	mg/Kg	<QL	0.5	0.498	100		75--125
Lead, Total, ICP-MS	0.0025	0.0025	mg/Kg	0.052	0.5	0.534	96		75--125

SRMD:WG155543-6 SRM:WG155543-5 Matrix: ORGANS Listtype:MTICPMS-TISS-QL Method:PSEP1997*SW846 6020B Project: Pkey:STD
(Std Reference Material Duplicate, Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit	True Value	SRMD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Chromium, Total, ICP-MS	0.0391	0.0391	mg/Kg	1.95	0.912	47	*	80--120	1.95	0.969	50	*	6		0--20
Nickel, Total, ICP-MS	0.0195	0.0195	mg/Kg	5.3	4.61	87		80--120	5.3	4.69	88		2		0--20
Copper, Total, ICP-MS	0.0391	0.0391	mg/Kg	497	470	95		80--120	497	472	95		0		0--20
Zinc, Total, ICP-MS	0.0977	0.0977	mg/Kg	136	133	98		80--120	136	135	99		1		0--20
Arsenic, Total, ICP-MS	0.00977	0.00977	mg/Kg	59.5	68.4	115		80--120	59.5	69.7	117		2		0--20
Selenium, Total, ICP-MS	0.391	0.391	mg/Kg	10.9	11.4	104		80--120	10.9	11.4	104		0		0--20
Cadmium, Total, ICP-MS	0.00977	0.00977	mg/Kg	42.3	38.8	92		80--120	42.3	40	95		3		0--20
Lead, Total, ICP-MS	0.0195	0.0195	mg/Kg	0.225	0.201	89		80--120	0.225	0.197	88		2		0--20

Workgroup: WG155633 Total Mercury, CVAA, Tissue

MB:WG155633-1 Matrix: TISS BLANK Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAA	0.00192	0.00385	mg/Kg		<QL

SB:WG155633-2 MB:WG155633-1 Matrix: TISS BLANK Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.00192	0.00385	mg/Kg	<QL	0.192	0.196	102		85--115

LD:WG155633-3 L68828-1 Matrix: ORGANS Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.00394	0.00394	mg/Kg	0.0369	0.0352	5		0--20

MS:WG155633-4 L68828-1 Matrix: ORGANS Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project:421093-100 Pkey:STD
(Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.00394	0.00394	mg/Kg	0.0369	0.197	0.2	83		75--125

SRMD:WG155633-6 SRM:WG155633-5 Matrix: ORGANS Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project: Pkey:STD
(Std Reference Material Duplicate, Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit	True Value	SRMD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.0258	0.0258	mg/Kg	0.292	0.274	94		80--120	0.292	0.278	95		1		0--20

Workgroup: WG155676 Total Mercury, CVAA, Tissue

MB:WG155676-1 Matrix: TISS BLANK Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAA	0.00192	0.00385	mg/Kg		<QL

SB:WG155676-2 MB:WG155676-1 Matrix: TISS BLANK Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.00192	0.00385	mg/Kg	<QL	0.192	0.195	102		85--115

LD:WG155676-3 L68827-2 Matrix: SHELLFISH Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project:421093-100 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.00397	0.00397	mg/Kg	0.0798	0.0766	4		0--20

MS:WG155676-4 L68827-2 Matrix: SHELLFISH Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project:421093-100 Pkey:STD
(Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.00397	0.00397	mg/Kg	0.0798	0.199	0.274	98		75--125

LCSD:WG155676-6 LCS:WG155676-5 Matrix: SHELLFISH Listtype:MTHG-TISS-QL Method:PSEP 1997*SW846 7471B Project: Pkey:STD
(Lab Control Sample Duplicate, Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit	True Value	LCSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.0101	0.0101	mg/Kg	0.061	0.0555	91		74--104	0.061	0.0555	91		0		0--20

Workgroup: WG155722 Total Metals, ICPMS

MB:WG155722-1 Matrix: BLANK WTR Listtype:MTICPMS-QL Method:EPA 200.8 (MOD)*SW846 6020B Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Beryllium, Total, ICP-MS	0.05	0.1	ug/L		<QL
Vanadium, Total, ICP-MS	0.0375	0.075	ug/L		<QL
Chromium, Total, ICP-MS	0.1	0.2	ug/L		<QL
Nickel, Total, ICP-MS	0.05	0.1	ug/L		<QL
Copper, Total, ICP-MS	0.1	0.2	ug/L		<QL
Zinc, Total, ICP-MS	0.25	0.5	ug/L		<QL
Arsenic, Total, ICP-MS	0.025	0.05	ug/L		<QL
Selenium, Total, ICP-MS	0.25	0.5	ug/L		<QL
Molybdenum, Total, ICP-MS	0.25	0.5	ug/L		<QL
Silver, Total, ICP-MS	0.02	0.04	ug/L		<QL
Cadmium, Total, ICP-MS	0.025	0.05	ug/L		<QL
Antimony, Total, ICP-MS	0.15	0.3	ug/L		<QL
Barium, Total, ICP-MS	0.25	0.5	ug/L		<QL
Thallium, Total, ICP-MS	0.05	0.1	ug/L		<QL
Lead, Total, ICP-MS	0.05	0.1	ug/L		<QL

SB:WG155722-2 MB:WG155722-1 Matrix: BLANK WTR Listtype:MTICPMS-QL Method:EPA 200.8 (MOD)*SW846 6020B Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.05	0.1	ug/L	<QL	20	20.3	101		85--115
Vanadium, Total, ICP-MS	0.0375	0.075	ug/L	<QL	20	20.6	103		85--115
Chromium, Total, ICP-MS	0.1	0.2	ug/L	<QL	20	22	110		85--115
Nickel, Total, ICP-MS	0.05	0.1	ug/L	<QL	20	21.5	108		85--115
Copper, Total, ICP-MS	0.1	0.2	ug/L	<QL	20	21.4	107		85--115
Zinc, Total, ICP-MS	0.25	0.5	ug/L	<QL	20	21.2	106		85--115
Arsenic, Total, ICP-MS	0.025	0.05	ug/L	<QL	20	20	100		85--115
Selenium, Total, ICP-MS	0.25	0.5	ug/L	<QL	20	20.2	101		85--115
Molybdenum, Total, ICP-MS	0.25	0.5	ug/L	<QL	20	19.5	97		85--115
Silver, Total, ICP-MS	0.02	0.04	ug/L	<QL	20	20.5	103		85--115
Cadmium, Total, ICP-MS	0.025	0.05	ug/L	<QL	20	20.1	100		85--115
Antimony, Total, ICP-MS	0.15	0.3	ug/L	<QL	20	20.5	102		85--115
Barium, Total, ICP-MS	0.25	0.5	ug/L	<QL	20	21.4	107		85--115
Thallium, Total, ICP-MS	0.05	0.1	ug/L	<QL	20	21.8	109		85--115
Lead, Total, ICP-MS	0.05	0.1	ug/L	<QL	20	21.6	108		85--115

LD:WG155722-3 L68824-1 Matrix: BLANK WTR Listtype:MTICPMS-QL Method:EPA 200.8 (MOD)*SW846 6020B Project:421235-850 Pkey:STD (Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.1	0.1	ug/L	<QL	<QL			0--20
Vanadium, Total, ICP-MS	0.075	0.075	ug/L	<QL	<QL			0--20
Chromium, Total, ICP-MS	0.2	0.2	ug/L	<QL	<QL			0--20
Nickel, Total, ICP-MS	0.1	0.1	ug/L	<QL	<QL			0--20
Copper, Total, ICP-MS	0.2	0.2	ug/L	<QL	<QL			0--20
Zinc, Total, ICP-MS	0.5	0.5	ug/L	<QL	<QL			0--20
Arsenic, Total, ICP-MS	0.05	0.05	ug/L	<QL	<QL			0--20
Selenium, Total, ICP-MS	0.5	0.5	ug/L	<QL	<QL			0--20
Molybdenum, Total, ICP-MS	0.5	0.5	ug/L	<QL	<QL			0--20
Silver, Total, ICP-MS	0.04	0.04	ug/L	<QL	<QL			0--20
Cadmium, Total, ICP-MS	0.05	0.05	ug/L	<QL	<QL			0--20
Antimony, Total, ICP-MS	0.3	0.3	ug/L	<QL	<QL			0--20
Barium, Total, ICP-MS	0.5	0.5	ug/L	<QL	<QL			0--20
Thallium, Total, ICP-MS	0.1	0.1	ug/L	<QL	<QL			0--20
Lead, Total, ICP-MS	0.1	0.1	ug/L	<QL	<QL			0--20

MS:WG155722-4 L68824-1 Matrix: BLANK WTR Listtype:MTICPMS-QL Method:EPA 200.8 (MOD)*SW846 6020B Project:421235-850 Pkey:STD (Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Beryllium, Total, ICP-MS	0.1	0.1	ug/L	<QL	20	20.1	100		75--125
Vanadium, Total, ICP-MS	0.075	0.075	ug/L	<QL	20	20.5	102		75--125
Chromium, Total, ICP-MS	0.2	0.2	ug/L	<QL	20	21.6	108		75--125
Nickel, Total, ICP-MS	0.1	0.1	ug/L	<QL	20	20.9	105		75--125
Copper, Total, ICP-MS	0.2	0.2	ug/L	<QL	20	20.9	104		75--125
Zinc, Total, ICP-MS	0.5	0.5	ug/L	<QL	20	20.9	104		75--125
Arsenic, Total, ICP-MS	0.05	0.05	ug/L	<QL	20	19.8	99		75--125
Selenium, Total, ICP-MS	0.5	0.5	ug/L	<QL	20	20	100		75--125
Molybdenum, Total, ICP-MS	0.5	0.5	ug/L	<QL	20	19.6	98		75--125
Silver, Total, ICP-MS	0.04	0.04	ug/L	<QL	20	20.6	103		75--125
Cadmium, Total, ICP-MS	0.05	0.05	ug/L	<QL	20	19.9	100		75--125
Antimony, Total, ICP-MS	0.3	0.3	ug/L	<QL	20	20.1	100		75--125
Barium, Total, ICP-MS	0.5	0.5	ug/L	<QL	20	21.1	105		75--125
Thallium, Total, ICP-MS	0.1	0.1	ug/L	<QL	20	21.4	107		75--125
Lead, Total, ICP-MS	0.1	0.1	ug/L	<QL	20	21.5	107		75--125

Workgroup: WG154895 PAH, Tissue

MB:WG154895-1 Matrix: OTHR TISS Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
2-Methylnaphthalene	3.3	16.7	ug/Kg		<QL
Naphthalene	3.3	16.7	ug/Kg		<QL
Acenaphthylene	3.3	16.7	ug/Kg		<QL
Acenaphthene	3.3	16.7	ug/Kg		<QL
Fluorene	6.7	33.3	ug/Kg		<QL
Phenanthrene	6.7	33.3	ug/Kg		<QL
Anthracene	6.7	33.3	ug/Kg		<QL
Fluoranthene	6.7	33.3	ug/Kg		<QL
Pyrene	6.7	33.3	ug/Kg		<QL
Benzo(a)anthracene	6.7	33.3	ug/Kg		<QL
Chrysene	6.7	33.3	ug/Kg		<QL
Benzo(b,j,k)fluoranthene	20	100	ug/Kg		<QL
Benzo(a)pyrene	6.7	33.3	ug/Kg		<QL
Indeno(1,2,3-Cd)Pyrene	6.7	33.3	ug/Kg		<QL
Dibenzo(a,h)anthracene	6.7	33.3	ug/Kg		<QL
Benzo(g,h,i)perylene	6.7	33.3	ug/Kg		<QL

SB:WG154895-2 MB:WG154895-1 Matrix: OTHR TISS Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
2-Methylnaphthalene	3.3	16.7	ug/Kg	<QL	833	417	50		20--150
Naphthalene	3.3	16.7	ug/Kg	<QL	833	464	56		20--150
Acenaphthylene	3.3	16.7	ug/Kg	<QL	833	431	52		20--150
Acenaphthene	3.3	16.7	ug/Kg	<QL	833	478	57		20--150
Fluorene	6.7	33.3	ug/Kg	<QL	833	513	62		20--150
Phenanthrene	6.7	33.3	ug/Kg	<QL	833	564	68		20--150
Anthracene	6.7	33.3	ug/Kg	<QL	833	551	66		20--150
Fluoranthene	6.7	33.3	ug/Kg	<QL	833	675	81		20--150
Pyrene	6.7	33.3	ug/Kg	<QL	833	719	86		20--150
Benzo(a)anthracene	6.7	33.3	ug/Kg	<QL	833	640	77		20--150
Chrysene	6.7	33.3	ug/Kg	<QL	833	779	94		20--150
Benzo(b,j,k)fluoranthene	20	100	ug/Kg	<QL	2500	1880	75		20--150
Benzo(a)pyrene	6.7	33.3	ug/Kg	<QL	833	639	77		20--150
Indeno(1,2,3-Cd)Pyrene	6.7	33.3	ug/Kg	<QL	833	826	99		20--150
Dibenzo(a,h)anthracene	6.7	33.3	ug/Kg	<QL	833	834	100		20--150
Benzo(g,h,i)perylene	6.7	33.3	ug/Kg	<QL	833	508	61		20--150

MSD:WG154895-4 MS:WG154895-3 L68828-2 Matrix: ORGANS Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project:421093-100 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2-Methylnaphthalene	33	167	ug/Kg	<QL	833	623	75		20--150	833	634	76		2		0--35
Naphthalene	33	167	ug/Kg	<QL	833	538	65		20--150	833	555	67		3		0--35
Acenaphthylene	33	167	ug/Kg	<QL	833	575	69		20--150	833	565	68		2		0--35
Acenaphthene	33	167	ug/Kg	<QL	833	598	72		20--150	833	599	72		0		0--35
Fluorene	67	333	ug/Kg	<QL	833	748	90		20--150	833	724	87		3		0--35
Phenanthrene	67	333	ug/Kg	<QL	833	525	63		20--150	833	470	56		11		0--35
Anthracene	67	333	ug/Kg	<QL	833	556	67		20--150	833	491	59		12		0--35
Fluoranthene	67	333	ug/Kg	<QL	833	504	60		20--150	833	496	59		2		0--35
Pyrene	67	333	ug/Kg	<QL	833	440	53		20--150	833	402	48		9		0--35
Benzo(a)anthracene	67	333	ug/Kg	<QL	833	784	94		20--150	833	794	95		1		0--35
Chrysene	67	333	ug/Kg	<QL	833	447	54		20--150	833	354	43		23		0--35
Benzo(b,j,k)fluoranthene	200	1000	ug/Kg	<QL	2500	1640	66		20--150	2500	1670	67		2		0--35
Benzo(a)pyrene	67	333	ug/Kg	<QL	833	514	62		20--150	833	522	63		1		0--35
Indeno(1,2,3-Cd)Pyrene	67	333	ug/Kg	<QL	833	713	86		20--150	833	629	76		12		0--35
Dibenzo(a,h)anthracene	67	333	ug/Kg	<QL	833	718	86		20--150	833	613	74		16		0--35
Benzo(g,h,i)perylene	67	333	ug/Kg	<QL	833	337	40		20--150	833	270	33		21		0--35

Surrogate: (Lab Limits)	2-Fluoro biphenyl 20--150	d14-Ter phenyl 20--150
L68828-1	81	48
L68828-2	71	26
L68828-3	72	53
L68828-4	75	50
L68828-5	72	58
L68828-6	73	80
L68854-5	70	26
L68854-6	70	25
WG154895-1	59	91
WG154895-2	52	92
WG154895-3	73	81
WG154895-4	74	77

Workgroup: WG154896 PBDE, Tissue

MB:WG154896-1 Matrix: OTHR TISS Listtype:ORPBDE-QL Method:SW8463540C*KC SOP 781 GCMS-NCI Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
TriBDE-17	0.067	0.133	ug/Kg		<QL
TriBDE-28/-33	0.067	0.133	ug/Kg		<QL
TetraBDE-71	0.067	0.133	ug/Kg		<QL
TetraBDE-47	0.6	1.2	ug/Kg		<QL
TetraBDE-66	0.097	0.193	ug/Kg		<QL
PentaBDE-100	0.19	0.373	ug/Kg		<QL
PentaBDE-99	1.1	2.27	ug/Kg	2.31	B
PentaBDE-85	0.067	0.133	ug/Kg		<QL
HexaBDE-154	0.073	0.147	ug/Kg		<QL
HexaBDE-153	0.067	0.133	ug/Kg		<QL
HexaBDE-138	0.067	0.133	ug/Kg		<QL
HeptaBDE-183	0.067	0.133	ug/Kg		<QL
HeptaBDE-190	0.067	0.133	ug/Kg		<QL
DecaBDE-209	0.83	1.67	ug/Kg		<QL

SB:WG154896-2 MB:WG154896-1 Matrix: OTHR TISS Listtype:ORPBDE-QL Method:SW8463540C*KC SOP 781 GCMS-NCI Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
TriBDE-17	0.067	0.133	ug/Kg	<QL	16.7	13.2	79		50--150
TriBDE-28/-33	0.067	0.133	ug/Kg	<QL	16.7	13.4	81		50--150
TetraBDE-71	0.067	0.133	ug/Kg	<QL	16.7	13.7	82		50--150
TetraBDE-47	0.6	1.2	ug/Kg	<QL	16.7	13.5	81		50--150
TetraBDE-66	0.097	0.193	ug/Kg	<QL	16.7	14.5	87		50--150
PentaBDE-100	0.19	0.373	ug/Kg	<QL	16.7	15.6	93		50--150
PentaBDE-99	1.1	2.27	ug/Kg	2.31	16.7	17.3	104		50--150
PentaBDE-85	0.067	0.133	ug/Kg	<QL	16.7	15.9	96		50--150
HexaBDE-154	0.073	0.147	ug/Kg	<QL	16.7	16.3	98		50--150
HexaBDE-153	0.067	0.133	ug/Kg	<QL	16.7	16.6	100		50--150
HexaBDE-138	0.067	0.133	ug/Kg	<QL	16.7	17.1	103		50--150
HeptaBDE-183	0.067	0.133	ug/Kg	<QL	16.7	17.4	104		50--150
HeptaBDE-190	0.067	0.133	ug/Kg	<QL	16.7	8.65	52		50--150
DecaBDE-209	0.83	1.67	ug/Kg	<QL	83.3	23	28	*	40--150

MSD:WG154896-4 MS:WG154896-3 L68828-1 Matrix: ORGANS Listtype:ORPBDE-QL Method:SW8463540C*KC SOP 781 GCMS-NCI Project:421093-100 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
TriBDE-17	0.067	0.133	ug/Kg	0.11	16.7	12.2	73		68--120	16.7	12.3	73		1		0--40
TriBDE-28/-33	0.067	0.133	ug/Kg	0.195	16.7	12.1	72		20--150	16.7	12.2	72		1		0--40
TetraBDE-71	0.067	0.133	ug/Kg	<QL	16.7	12.5	75		63--110	16.7	12.5	75		0		0--40
TetraBDE-47	0.6	1.2	ug/Kg	6.09	16.7	17.8	70		20--150	16.7	18.8	76		5		0--40
TetraBDE-66	0.097	0.193	ug/Kg	<QL	16.7	13.4	81		71--130	16.7	13.4	81		0		0--40
PentaBDE-100	0.19	0.373	ug/Kg	0.654	16.7	15.2	87		20--150	16.7	15.3	88		1		0--40
PentaBDE-99	1.1	2.27	ug/Kg	<QL	16.7	12.3	74		20--150	16.7	12.6	76		2		0--40
PentaBDE-85	0.067	0.133	ug/Kg	<QL	16.7	14.7	88		74--134	16.7	14.5	87		1		0--40
HexaBDE-154	0.073	0.147	ug/Kg	0.414	16.7	15.1	88		76--127	16.7	15	88		0		0--40
HexaBDE-153	0.067	0.133	ug/Kg	0.091	16.7	14.9	89		78--123	16.7	14.8	88		0		0--40
HexaBDE-138	0.067	0.133	ug/Kg	<QL	16.7	15.5	93		81--123	16.7	15.4	92		1		0--40
HeptaBDE-183	0.067	0.133	ug/Kg	<QL	16.7	15.9	95		83--128	16.7	15.7	94		1		0--40
HeptaBDE-190	0.067	0.133	ug/Kg	<QL	16.7	16.8	101		20--150	16.7	16.5	99		1		0--40
DecaBDE-209	0.83	1.67	ug/Kg	<QL	83.3	68.4	82		20--150	83.3	65.4	79		5		0--40

SRMD:WG154896-6 SRM:WG154896-5 Matrix: FISH Listtype:ORPBDE-QL Method:SW8463540C*KC SOP 781 GCMS-NCI Project: Pkey:STD
(Std Reference Material Duplicate, Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit	True Value	SRMD Value	% Rec.	Qual	RPD	Qual	Lab Limit
TetraBDE-47	0.9	1.8	ug/Kg	73.3	48.5	66		50--150	73.3	49.4	67		2		0--40
TetraBDE-66	0.15	0.29	ug/Kg	1.85	1.69	91		50--150	1.85	1.75	94		3		0--40
PentaBDE-100	0.28	0.56	ug/Kg	17.1	16.6	97		50--150	17.1	17.2	100		3		0--40
PentaBDE-99	1.7	3.4	ug/Kg	19.2	17.5	91		50--150	19.2	18	94		3		0--40
HexaBDE-154	0.11	0.22	ug/Kg	6.88	9.4	137		50--150	6.88	9.55	139		2		0--40
HexaBDE-153	0.1	0.2	ug/Kg	3.83	4.11	107		50--150	3.83	4.14	108		1		0--40

Surrogate:	' HexaBDE
(Lab Limits)	37--137
L68828-1	90
L68828-2	83
L68828-3	85
L68828-4	90
L68828-5	80
L68828-6	84
L68854-5	82
L68854-6	81
WG154896-1	83
WG154896-2	75
WG154896-3	88
WG154896-4	87
WG154896-5	90
WG154896-6	91

Workgroup: WG155668 PBDE, Tissue

MB:WG155668-1 Matrix: OTHR TISS Listtype:ORPBDE-QL Method:SW8463540C*KC SOP 781 GCMS-NCI Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
TriBDE-17	0.02	0.04	ug/Kg		<QL
TriBDE-28/-33	0.02	0.04	ug/Kg		<QL
TetraBDE-71	0.02	0.04	ug/Kg		<QL
TetraBDE-47	0.18	0.36	ug/Kg	0.25	<QL,J,B
TetraBDE-66	0.029	0.058	ug/Kg		<QL
PentaBDE-100	0.056	0.112	ug/Kg		<QL
PentaBDE-99	0.34	0.68	ug/Kg	0.46	<QL,J,B
PentaBDE-85	0.02	0.04	ug/Kg		<QL
HexaBDE-154	0.022	0.044	ug/Kg		<QL
HexaBDE-153	0.02	0.04	ug/Kg		<QL
HexaBDE-138	0.02	0.04	ug/Kg		<QL
HeptaBDE-183	0.02	0.04	ug/Kg		<QL
HeptaBDE-190	0.02	0.04	ug/Kg		<QL
DecaBDE-209	0.25	0.5	ug/Kg		<QL,JG

SB:WG155668-2 MB:WG155668-1 Matrix: OTHR TISS Listtype:ORPBDE-QL Method:SW8463540C*KC SOP 781 GCMS-NCI Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
TriBDE-17	0.02	0.04	ug/Kg	<QL	5	4.99	100		50--150
TriBDE-28/-33	0.02	0.04	ug/Kg	<QL	5	5.16	103		50--150
TetraBDE-71	0.02	0.04	ug/Kg	<QL	5	4.77	95		50--150
TetraBDE-47	0.18	0.36	ug/Kg	0.25	5	5.09	102		50--150
TetraBDE-66	0.029	0.058	ug/Kg	<QL	5	5.34	107		50--150
PentaBDE-100	0.056	0.112	ug/Kg	<QL	5	5.33	107		50--150
PentaBDE-99	0.34	0.68	ug/Kg	0.46	5	5.92	118		50--150
PentaBDE-85	0.02	0.04	ug/Kg	<QL	5	5.26	105		50--150
HexaBDE-154	0.022	0.044	ug/Kg	<QL	5	5.2	104		50--150
HexaBDE-153	0.02	0.04	ug/Kg	<QL	5	5.14	103		50--150
HexaBDE-138	0.02	0.04	ug/Kg	<QL	5	5.21	104		50--150
HeptaBDE-183	0.02	0.04	ug/Kg	<QL	5	4.98	100		50--150
HeptaBDE-190	0.02	0.04	ug/Kg	<QL	5	2.72	54		50--150
DecaBDE-209	0.25	0.5	ug/Kg	<QL	25	5.67	23	*	40--150

MSD:WG155668-4 MS:WG155668-3 L68827-1 Matrix: SHELLFISH Listtype:ORPBDE-QL Method:SW8463540C*KC SOP 781 GCMS-NCI Project:421093-100 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
TriBDE-17	0.02	0.04	ug/Kg	<QL	5	3.94	79		68--120	5	3.46	69		13		0--40
TriBDE-28/-33	0.02	0.04	ug/Kg	<QL	5	4.04	81		20--150	5	3.52	70		14		0--40
TetraBDE-71	0.02	0.04	ug/Kg	<QL	5	4.03	81		63--110	5	3.46	69		15		0--40
TetraBDE-47	0.18	0.36	ug/Kg	<QL	5	4.11	82		20--150	5	3.58	72		14		0--40
TetraBDE-66	0.029	0.058	ug/Kg	<QL	5	4.46	89		71--130	5	3.86	77		15		0--40
PentaBDE-100	0.056	0.112	ug/Kg	<QL	5	4.68	94		20--150	5	4.01	80		15		0--40
PentaBDE-99	0.34	0.68	ug/Kg	<QL	5	3.87	77		20--150	5	4.55	91		16		0--40
PentaBDE-85	0.02	0.04	ug/Kg	<QL	5	4.98	100		74--134	5	4.21	84		17		0--40
HexaBDE-154	0.022	0.044	ug/Kg	<QL	5	4.71	94		76--127	5	3.95	79		17		0--40
HexaBDE-153	0.02	0.04	ug/Kg	<QL	5	4.68	94		78--123	5	4.01	80		15		0--40
HexaBDE-138	0.02	0.04	ug/Kg	<QL	5	4.73	95		81--123	5	4.04	81		16		0--40
HeptaBDE-183	0.02	0.04	ug/Kg	<QL	5	4.83	97		83--128	5	3.98	80	*	19		0--40
HeptaBDE-190	0.02	0.04	ug/Kg	<QL	5	3.39	68		20--150	5	1.91	38		56	*	0--40
DecaBDE-209	0.25	0.5	ug/Kg	<QL	25	2.32	9	*	20--150	25	4.04	16	*	54	*	0--40

SRMD:WG155668-6 SRM:WG155668-5 Matrix: FISH Listtype:ORPBDE-QL Method:SW8463540C*KC SOP 781 GCMS-NCI Project: Pkey:STD
(Std Reference Material Duplicate, Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit	True Value	SRMD Value	% Rec.	Qual	RPD	Qual	Lab Limit
TetraBDE-47	0.9	1.8	ug/Kg	73.3	46.6	64		50--150	73.3	43.8	60		6		0--40
TetraBDE-66	0.15	0.29	ug/Kg	1.85	1.65	89		50--150	1.85	1.53	82		8		0--40
PentaBDE-100	0.28	0.56	ug/Kg	17.1	15.3	89		50--150	17.1	14	82		9		0--40
PentaBDE-99	1.7	3.4	ug/Kg	19.2	19.1	100		50--150	19.2	15	78		24		0--40
HexaBDE-154	0.11	0.22	ug/Kg	6.88	8.48	123		50--150	6.88	7.68	112		10		0--40
HexaBDE-153	0.1	0.2	ug/Kg	3.83	3.6	94		50--150	3.83	3.22	84		11		0--40

Surrogate:	' HexaBDE
(Lab Limits)	37--137
L68827-1	89
L68827-2	85
L68827-3	57
L68827-4	88
L68827-5	87
L68827-6	86
L68827-7	84
L68827-8	49
L68827-9	37
L68827-10	80
L68854-1	82
L68854-2	58
L68854-3	64
L68854-4	78
WG155668-1	77
WG155668-2	88
WG155668-3	96
WG155668-4	62
WG155668-5	86
WG155668-6	79

Workgroup: WG155669 PAH, Tissue

MB:WG155669-1 Matrix: OTHR TISS Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
2-Methylnaphthalene	1	5	ug/Kg		<QL
Naphthalene	1	5	ug/Kg		<QL
Acenaphthylene	1	5	ug/Kg		<QL
Acenaphthene	1	5	ug/Kg		<QL
Fluorene	2	10	ug/Kg		<QL
Phenanthrene	2	10	ug/Kg		<QL
Anthracene	2	10	ug/Kg		<QL
Fluoranthene	2	10	ug/Kg		<QL
Pyrene	2	10	ug/Kg		<QL
Benzo(a)anthracene	2	10	ug/Kg		<QL
Chrysene	2	10	ug/Kg		<QL
Benzo(b,j,k)fluoranthene	6	30	ug/Kg		<QL
Benzo(a)pyrene	2	10	ug/Kg		<QL
Indeno(1,2,3-Cd)Pyrene	2	10	ug/Kg		<QL
Dibenzo(a,h)anthracene	2	10	ug/Kg		<QL
Benzo(g,h,i)perylene	2	10	ug/Kg		<QL

SB:WG155669-2 MB:WG155669-1 Matrix: OTHR TISS Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
2-Methylnaphthalene	1	5	ug/Kg	<QL	250	133	53		20--150
Naphthalene	1	5	ug/Kg	<QL	250	137	55		20--150
Acenaphthylene	1	5	ug/Kg	<QL	250	151	60		20--150
Acenaphthene	1	5	ug/Kg	<QL	250	169	68		20--150
Fluorene	2	10	ug/Kg	<QL	250	183	73		20--150
Phenanthrene	2	10	ug/Kg	<QL	250	162	65		20--150
Anthracene	2	10	ug/Kg	<QL	250	150	60		20--150
Fluoranthene	2	10	ug/Kg	<QL	250	182	73		20--150
Pyrene	2	10	ug/Kg	<QL	250	209	84		20--150
Benzo(a)anthracene	2	10	ug/Kg	<QL	250	163	65		20--150
Chrysene	2	10	ug/Kg	<QL	250	238	95		20--150
Benzo(b,j,k)fluoranthene	6	30	ug/Kg	<QL	750	527	70		20--150
Benzo(a)pyrene	2	10	ug/Kg	<QL	250	169	68		20--150
Indeno(1,2,3-Cd)Pyrene	2	10	ug/Kg	<QL	250	250	100		20--150
Dibenzo(a,h)anthracene	2	10	ug/Kg	<QL	250	248	99		20--150
Benzo(g,h,i)perylene	2	10	ug/Kg	<QL	250	204	82		20--150

MSD:WG155669-4 MS:WG155669-3 L68854-2 Matrix: SHELLFISH Listtype:ORPAH-SIM-QL Method:SW846 3550B*SW846 8270D SIM Project:421093-100 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2-Methylnaphthalene	1	5	ug/Kg	<QL	250	176	70		20--150	250	205	82		15		0--35
Naphthalene	1	5	ug/Kg	<QL	250	161	64		20--150	250	189	76		16		0--35
Acenaphthylene	1	5	ug/Kg	<QL	250	174	70		20--150	250	196	78		12		0--35
Acenaphthene	1	5	ug/Kg	<QL	250	190	76		20--150	250	214	86		12		0--35
Fluorene	2	10	ug/Kg	<QL	250	223	89		20--150	250	243	97		8		0--35
Phenanthrene	2	10	ug/Kg	<QL	250	189	75		20--150	250	210	84		11		0--35
Anthracene	2	10	ug/Kg	<QL	250	164	65		20--150	250	178	71		8		0--35
Fluoranthene	2	10	ug/Kg	<QL	250	171	69		20--150	250	196	78		13		0--35
Pyrene	2	10	ug/Kg	<QL	250	197	79		20--150	250	218	87		10		0--35
Benzo(a)anthracene	2	10	ug/Kg	<QL	250	182	73		20--150	250	205	82		12		0--35
Chrysene	2	10	ug/Kg	<QL	250	199	80		20--150	250	223	89		11		0--35
Benzo(b,j,k)fluoranthene	6	30	ug/Kg	<QL	750	550	73		20--150	750	635	85		14		0--35
Benzo(a)pyrene	2	10	ug/Kg	<QL	250	180	72		20--150	250	202	81		12		0--35
Indeno(1,2,3-Cd)Pyrene	2	10	ug/Kg	<QL	250	215	86		20--150	250	247	99		14		0--35
Dibenzo(a,h)anthracene	2	10	ug/Kg	<QL	250	211	84		20--150	250	243	97		14		0--35
Benzo(g,h,i)perylene	2	10	ug/Kg	<QL	250	174	69		20--150	250	188	75		8		0--35

Surrogate: (Lab Limits)	2-Fluoro biphenyl 20--150	d14-Ter phenyl 20--150
L68827-1	75	93
L68827-2	69	94
L68827-3	68	61
L68827-4	71	89
L68827-5	68	89
L68827-6	77	87
L68827-7	81	93
L68827-8	70	72
L68827-9	27	45
L68827-10	71	83
L68854-1	77	88
L68854-2	74	74
L68854-3	78	88
L68854-4	85	101
WG155669-1	47	89
WG155669-2	56	82
WG155669-3	75	89
WG155669-4	85	99

Workgroup: WG155718 PCB Homolog, Tissue

MB:WG155718-1 Matrix: OTHR TISS Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Monochlorobiphenyls	0.06	0.125	ug/Kg		<QL
Dichlorobiphenyls	0.06	0.125	ug/Kg		<QL
Trichlorobiphenyls	0.06	0.125	ug/Kg		<QL
Tetrachlorobiphenyls	0.13	0.25	ug/Kg		<QL
Pentachlorobiphenyls	0.13	0.25	ug/Kg		<QL
Hexachlorobiphenyls	0.13	0.25	ug/Kg		<QL
Heptachlorobiphenyls	0.19	0.375	ug/Kg		<QL
Octachlorobiphenyls	0.19	0.375	ug/Kg		<QL
Nonachlorobiphenyls	0.31	0.625	ug/Kg		<QL
Total PCB Homologs	0.31	0.625	ug/Kg		<QL
Decachloro biphenyl	0.31	0.625	ug/Kg		<QL

SB:WG155718-2 MB:WG155718-1 Matrix: OTHR TISS Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Monochlorobiphenyls	0.06	0.125	ug/Kg	<QL	50	26.9	54		23--103
Dichlorobiphenyls	0.06	0.125	ug/Kg	<QL	50	30.7	61		26--109
Trichlorobiphenyls	0.06	0.125	ug/Kg	<QL	50	36.1	72		31--112
Tetrachlorobiphenyls	0.13	0.25	ug/Kg	<QL	100	72.9	73		33--109
Pentachlorobiphenyls	0.13	0.25	ug/Kg	<QL	100	84.2	84		47--121
Hexachlorobiphenyls	0.13	0.25	ug/Kg	<QL	100	86.2	86		47--128
Heptachlorobiphenyls	0.19	0.375	ug/Kg	<QL	150	138	92		52--126
Octachlorobiphenyls	0.19	0.375	ug/Kg	<QL	150	147	98		56--131
Decachloro biphenyl	0.31	0.625	ug/Kg	<QL	250	239	96		50--150

MSD:WG155718-4 MS:WG155718-3 L68827-1 Matrix: SHELLFISH Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project:421093-100 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Monochlorobiphenyls	0.06	0.125	ug/Kg	<QL	50	36.2	72		34--112	50	35	70		3		0--35
Dichlorobiphenyls	0.06	0.125	ug/Kg	<QL	50	39.9	80		42--123	50	38.3	77		4		0--35
Trichlorobiphenyls	0.06	0.125	ug/Kg	<QL	50	41	82		44--131	50	39.7	79		3		0--35
Tetrachlorobiphenyls	0.13	0.25	ug/Kg	0.361	100	83.5	83		44--126	100	80.1	80		4		0--35
Pentachlorobiphenyls	0.13	0.25	ug/Kg	1.4	100	87.1	86		29--130	100	84.4	83		3		0--35
Hexachlorobiphenyls	0.13	0.25	ug/Kg	1.69	100	88.1	86		22--150	100	86	84		2		0--35
Heptachlorobiphenyls	0.19	0.375	ug/Kg	<QL	150	137	91		54--137	150	134	89		3		0--35
Octachlorobiphenyls	0.19	0.375	ug/Kg	<QL	150	144	96		60--135	150	139	93		3		0--35
Decachloro biphenyl	0.31	0.625	ug/Kg	<QL	250	225	90		50--150	250	222	89		1		0--35

Surrogate: (Lab Limits)	2,4,5,6-Tetra chloro m-xylene 32--112
L68827-1	74
L68827-2	78
L68827-3	77
L68827-4	67
L68827-5	68
L68827-6	69
L68827-7	63
L68827-8	76
L68827-9	68
L68827-10	63
L68854-1	65
L68854-2	77
L68854-3	77
L68854-4	75
WG155718-1	60
WG155718-2	63
WG155718-3	76
WG155718-4	73

Workgroup: WG155719 PCB Homolog, Tissue

MB:WG155719-1 Matrix: OTHR TISS Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Monochlorobiphenyls	0.2	0.417	ug/Kg		<QL
Dichlorobiphenyls	0.2	0.417	ug/Kg		<QL
Trichlorobiphenyls	0.2	0.417	ug/Kg		<QL
Tetrachlorobiphenyls	0.42	0.833	ug/Kg		<QL
Pentachlorobiphenyls	0.42	0.833	ug/Kg		<QL
Hexachlorobiphenyls	0.42	0.833	ug/Kg		<QL
Heptachlorobiphenyls	0.62	1.25	ug/Kg		<QL
Octachlorobiphenyls	0.62	1.25	ug/Kg		<QL
Nonachlorobiphenyls	1	2.08	ug/Kg		<QL
Total PCB Homologs	1	2.08	ug/Kg		<QL
Decachloro biphenyl	1	2.08	ug/Kg		<QL

SB:WG155719-2 MB:WG155719-1 Matrix: OTHR TISS Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project: Pkey:STD
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Monochlorobiphenyls	0.2	0.417	ug/Kg	<QL	167	106	64		23--103
Dichlorobiphenyls	0.2	0.417	ug/Kg	<QL	167	113	68		26--109
Trichlorobiphenyls	0.2	0.417	ug/Kg	<QL	167	119	72		31--112
Tetrachlorobiphenyls	0.42	0.833	ug/Kg	<QL	333	240	72		33--109
Pentachlorobiphenyls	0.42	0.833	ug/Kg	<QL	333	274	82		47--121
Hexachlorobiphenyls	0.42	0.833	ug/Kg	<QL	333	279	84		47--128
Heptachlorobiphenyls	0.62	1.25	ug/Kg	<QL	500	443	89		52--126
Octachlorobiphenyls	0.62	1.25	ug/Kg	<QL	500	476	95		56--131
Decachloro biphenyl	1	2.08	ug/Kg	<QL	833	782	94		50--150

MSD:WG155719-4 MS:WG155719-3 L68828-2 Matrix: ORGANS Listtype:ORPCB-HOMOLOG-QL Method:SW846 3540C*EPA 680 SIM Project:421093-100 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Monochlorobiphenyls	0.2	0.417	ug/Kg	<QL	167	120	72		34--112	167	128	76		6		0--35
Dichlorobiphenyls	0.2	0.417	ug/Kg	<QL	167	133	80		42--123	167	138	83		4		0--35
Trichlorobiphenyls	0.2	0.417	ug/Kg	1.14	167	143	85		44--131	167	146	87		2		0--35
Tetrachlorobiphenyls	0.42	0.833	ug/Kg	23.9	333	306	84		44--126	333	311	86		2		0--35
Pentachlorobiphenyls	0.42	0.833	ug/Kg	117	333	382	79		29--130	333	390	82		2		0--35
Hexachlorobiphenyls	0.42	0.833	ug/Kg	133	333	435	91		22--150	333	441	92		1		0--35
Heptachlorobiphenyls	0.62	1.25	ug/Kg	39.4	500	516	95		54--137	500	527	98		2		0--35
Octachlorobiphenyls	0.62	1.25	ug/Kg	7.37	500	511	101		60--135	500	524	103		3		0--35
Decachloro biphenyl	1	2.08	ug/Kg	<QL	833	816	98		50--150	833	833	100		2		0--35

Surrogate: (Lab Limits)	2,4,5,6-Tetra chloro m-xylene 32--112
L68828-1	81
L68828-2	80
L68828-3	82
L68828-4	75
L68828-5	84
L68828-6	82
L68854-5	69
L68854-6	70
WG155719-1	72
WG155719-2	64
WG155719-3	73
WG155719-4	81

Workgroup: WG155720 Percent Lipids

MB:WG155720-1 Matrix: OTHR TISS Listtype:ORLIPIDS Method:GRAVIMETRIC SOP 740v2 Project: Pkey:STD (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Percent Lipids	0.05	0.1	%		<MDL

LD:WG155720-2 L68827-1 Matrix: SHELLFISH Listtype:ORLIPIDS Method:GRAVIMETRIC SOP 740v2 Project:421093-100 Pkey:STD (Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Percent Lipids	0.05	0.1	%	0.366	0.349	5		0--20

LD:WG155720-3 L68854-2 Matrix: SHELLFISH Listtype:ORLIPIDS Method:GRAVIMETRIC SOP 740v2 Project:421093-100 Pkey:STD (Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Percent Lipids	0.05	0.1	%	0.358	0.346	3		0--20

Workgroup: WG155721 Percent Lipids

MB:WG155721-1 Matrix: OTHR TISS Listtype:ORLIPIDS Method:GRAVIMETRIC SOP 740v2 Project: Pkey:STD (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Percent Lipids	0.05	0.1	%		<MDL

LD:WG155721-2 L68828-2 Matrix: ORGANS Listtype:ORLIPIDS Method:GRAVIMETRIC SOP 740v2 Project:421093-100 Pkey:STD (Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Percent Lipids	0.05	0.1	%	11.6	11.5	1		0--20

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4xRule indicates no MS/MSD recovery was calculated due to the 4x rule.

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Appendix D: Crab Data Scatterplots

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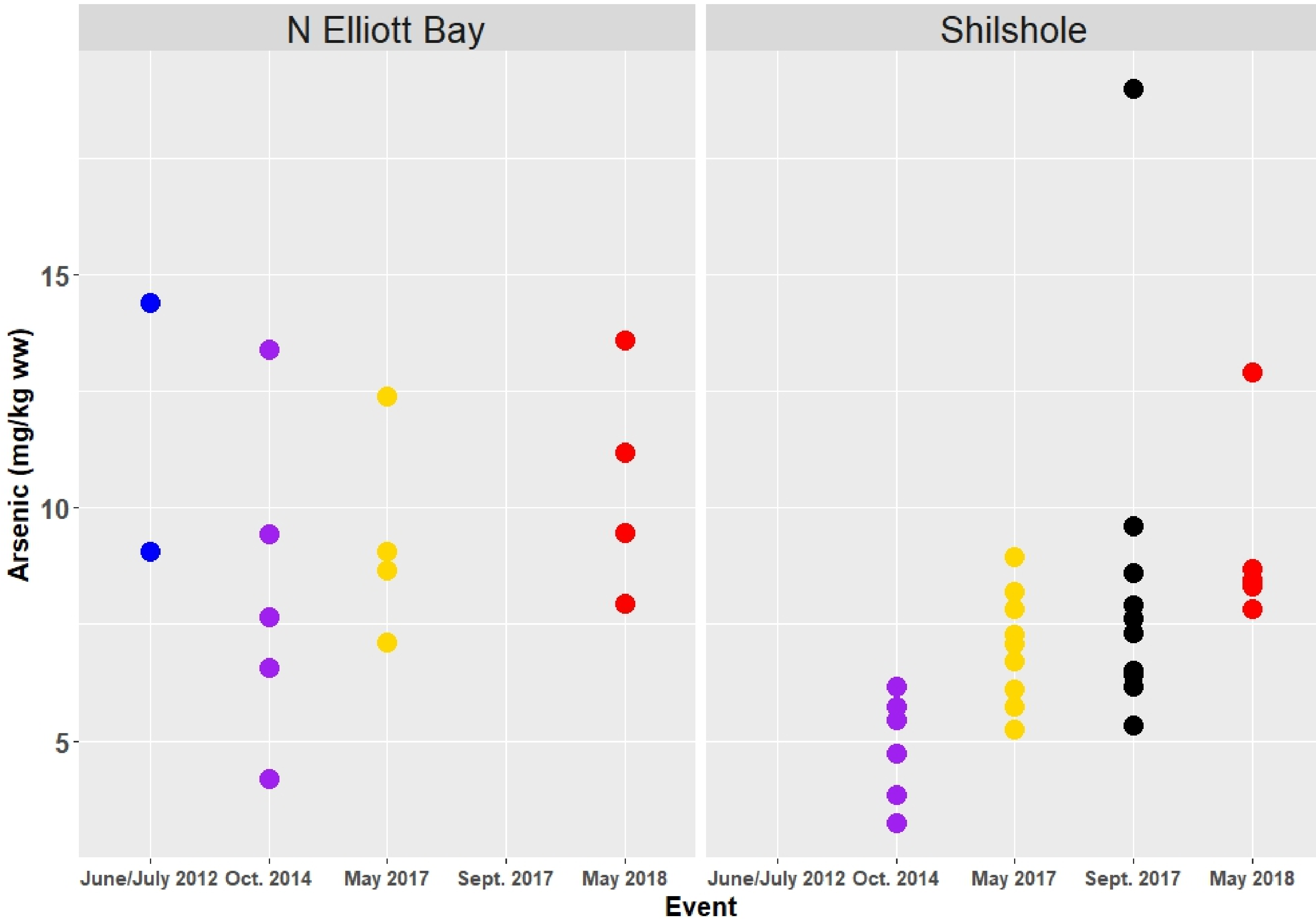
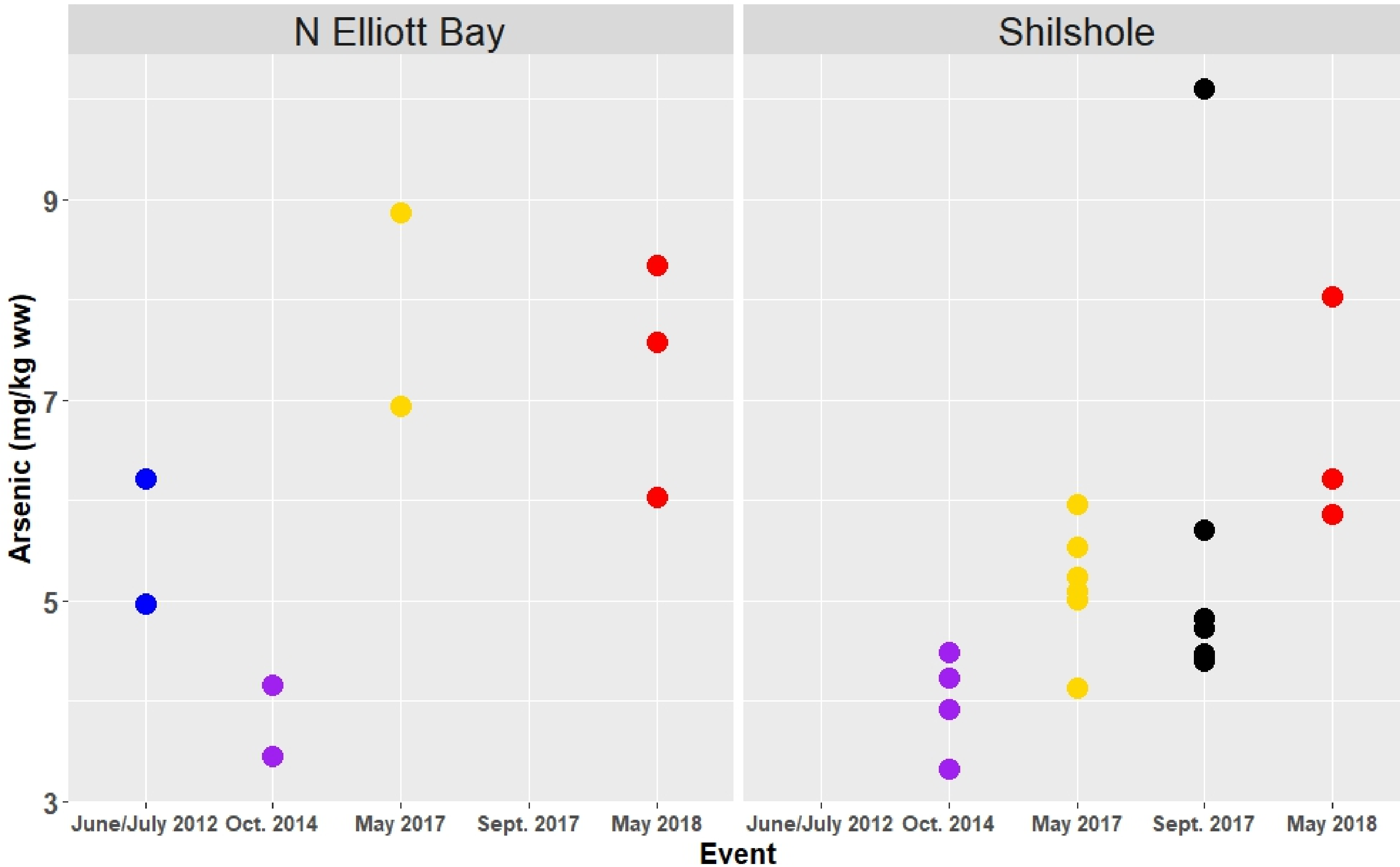
Circles on scatter plots represent sample-specific results by analyte. Analyte results are displayed by crab tissue type, either muscle or hepatopancreas. Results are plotted as wet weight (ww), dry weight (dw), and lipid-normalized (for PCBs and PBDEs only). Filled circles represent detected values. Hollow circles represent non-detect results, with sample-specific quantitation limits displayed graphically.

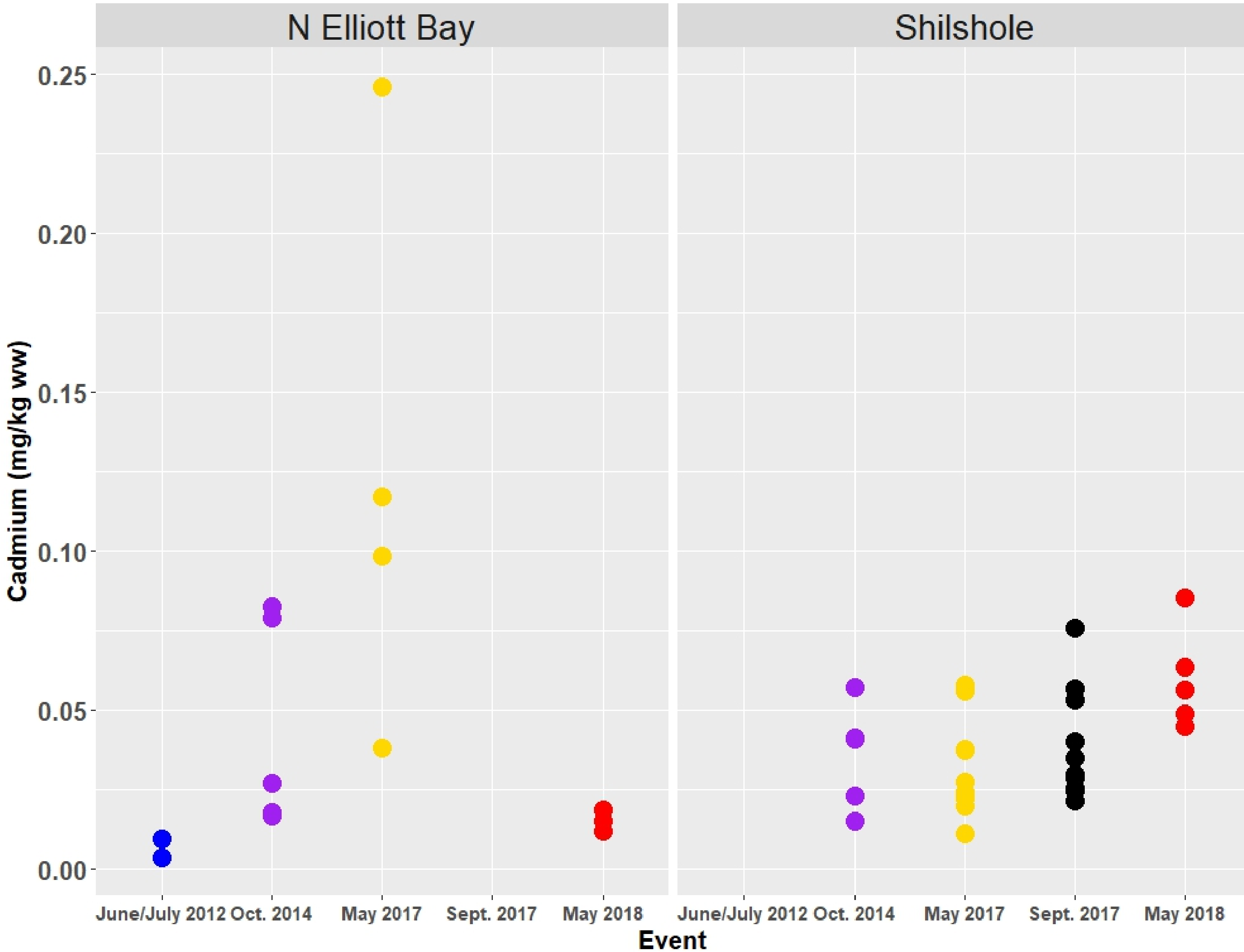
WET WEIGHT RESULTS



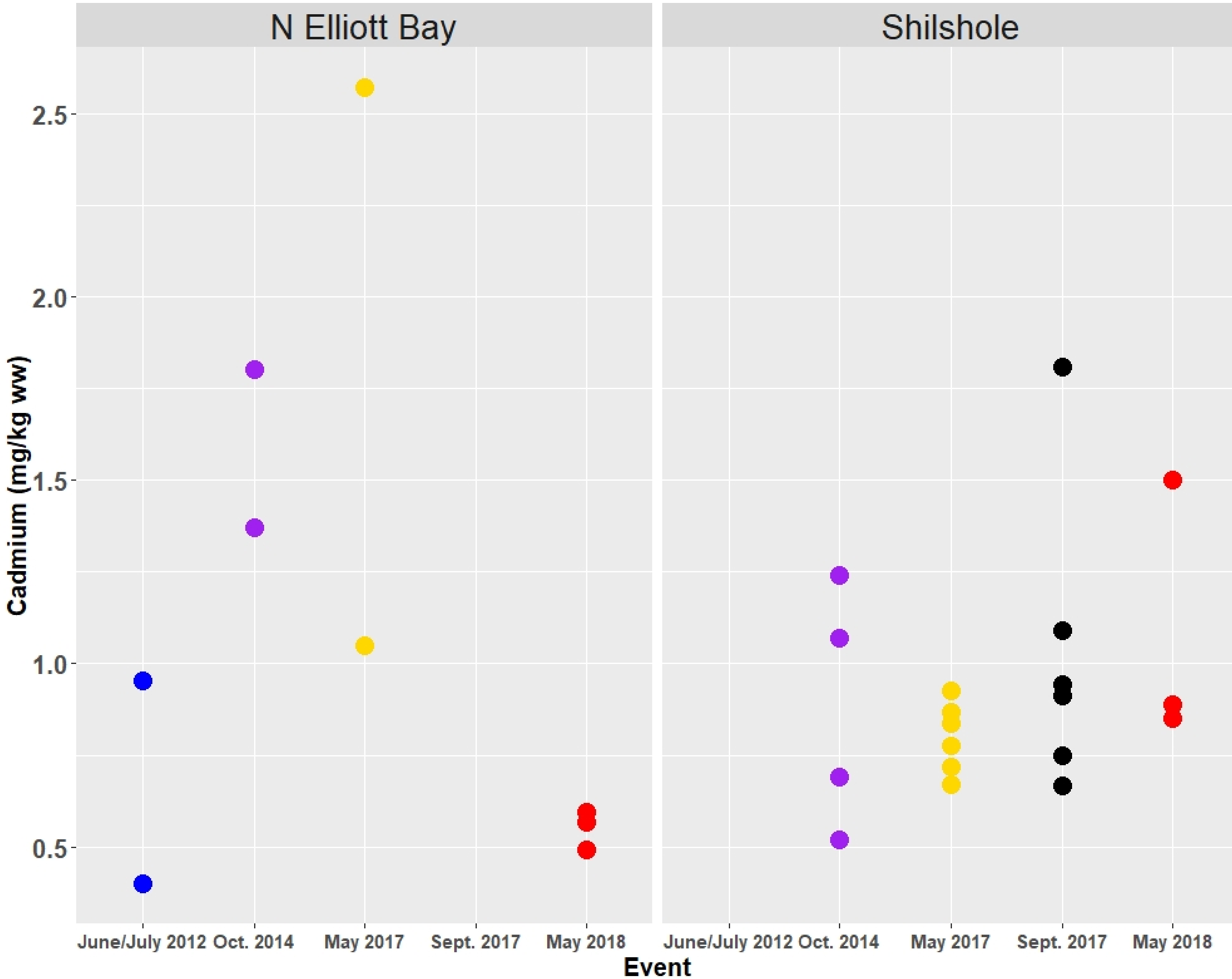
Arsenic (mg/kg ww) in muscle grouped by sampling location and collection period.



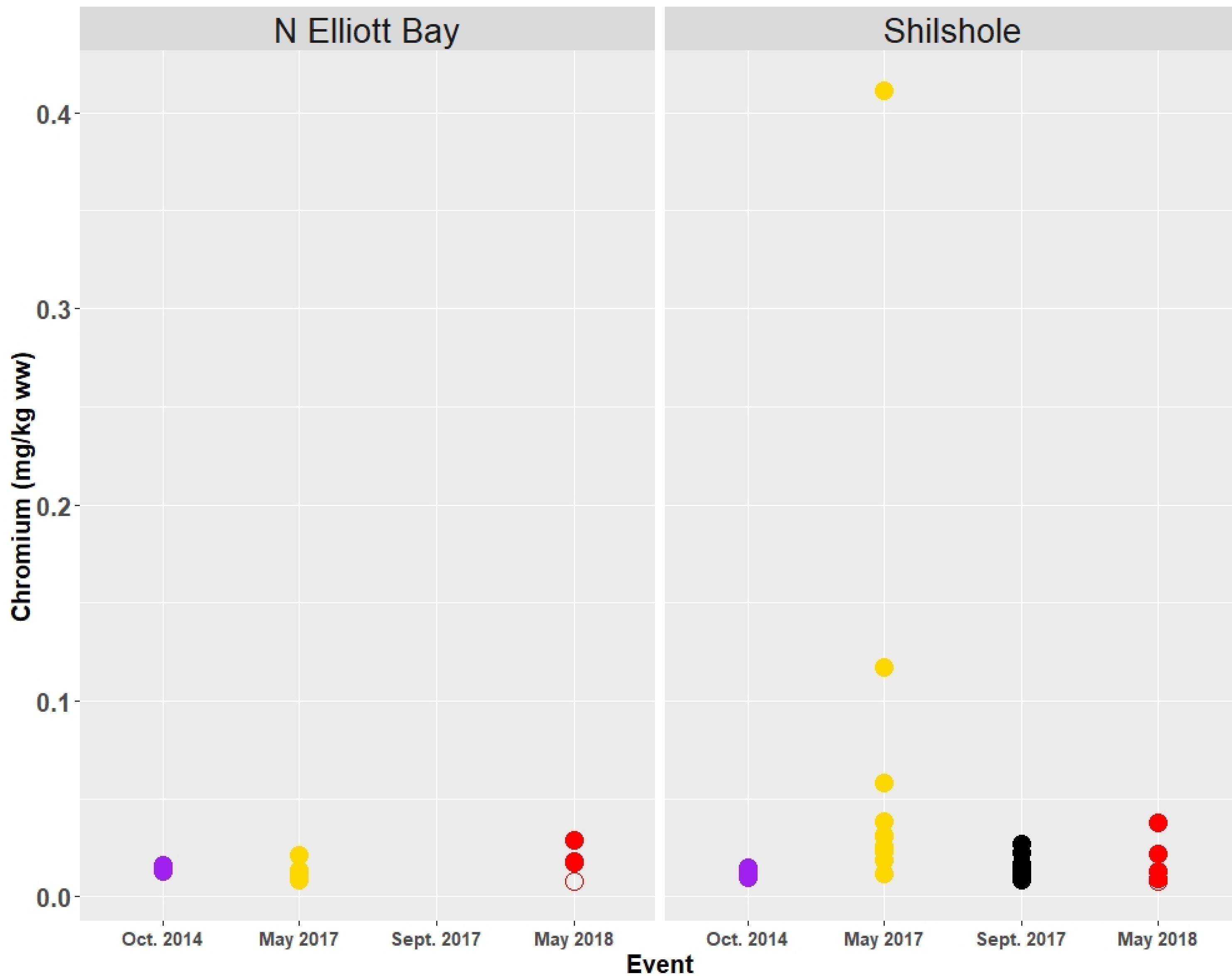
Arsenic (mg/kg ww) in hepatopancreas grouped by sampling location and collection period.



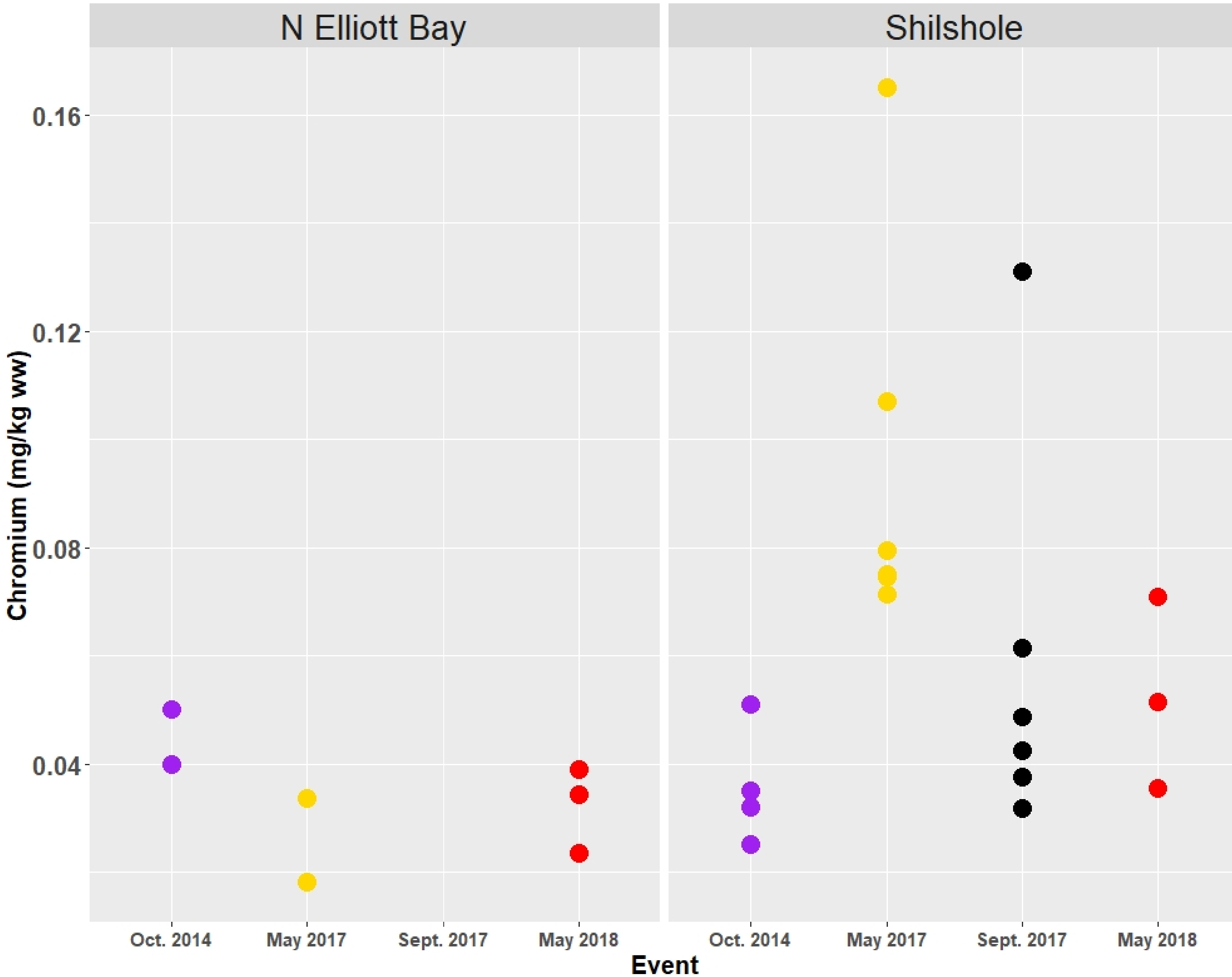
Cadmium (mg/kg ww) in muscle grouped by sampling location and collection period.



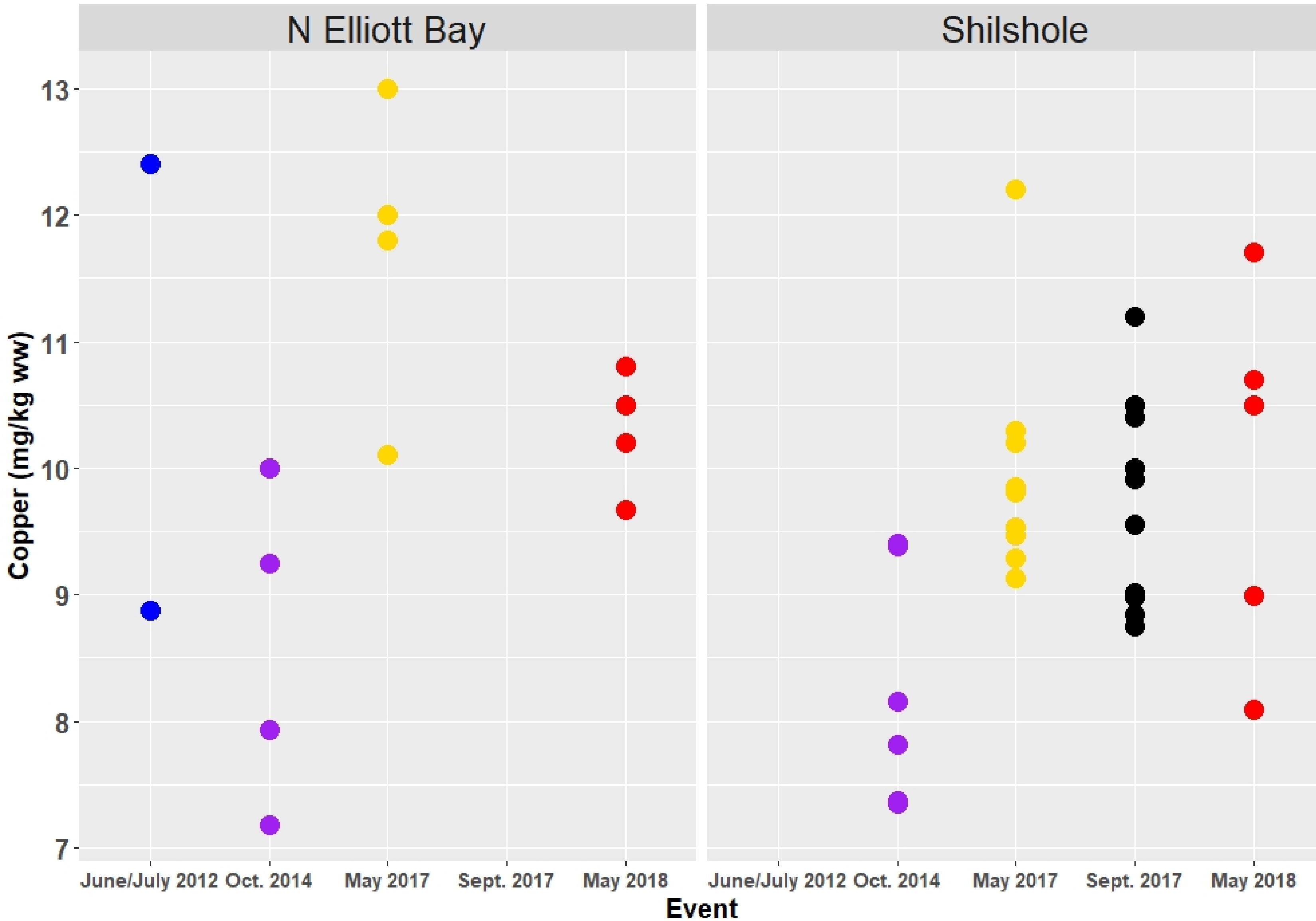
Cadmium (mg/kg ww) in hepatopancreas grouped by sampling location and collection period.



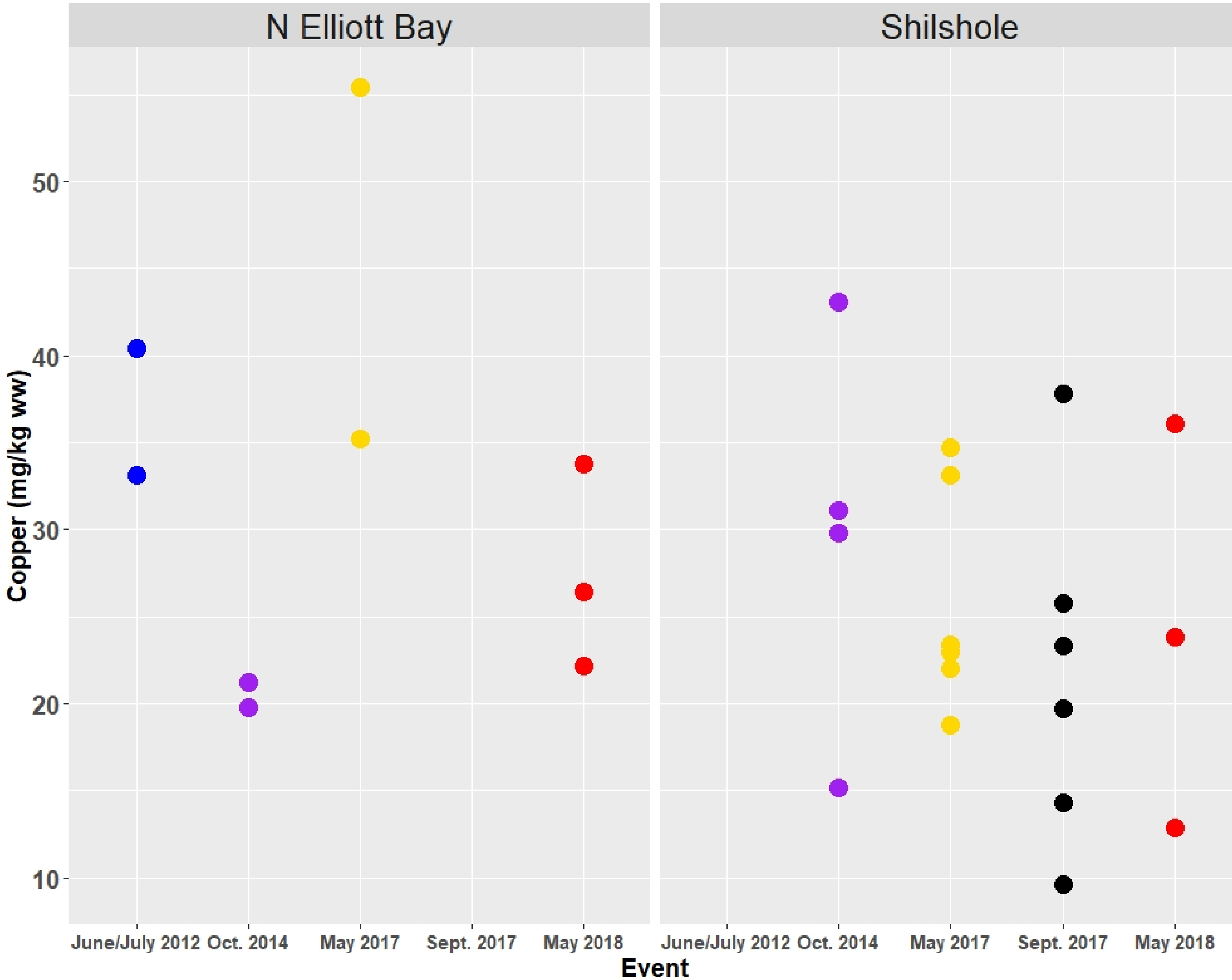
Chromium (mg/kg ww) in muscle grouped by sampling location and collection period.



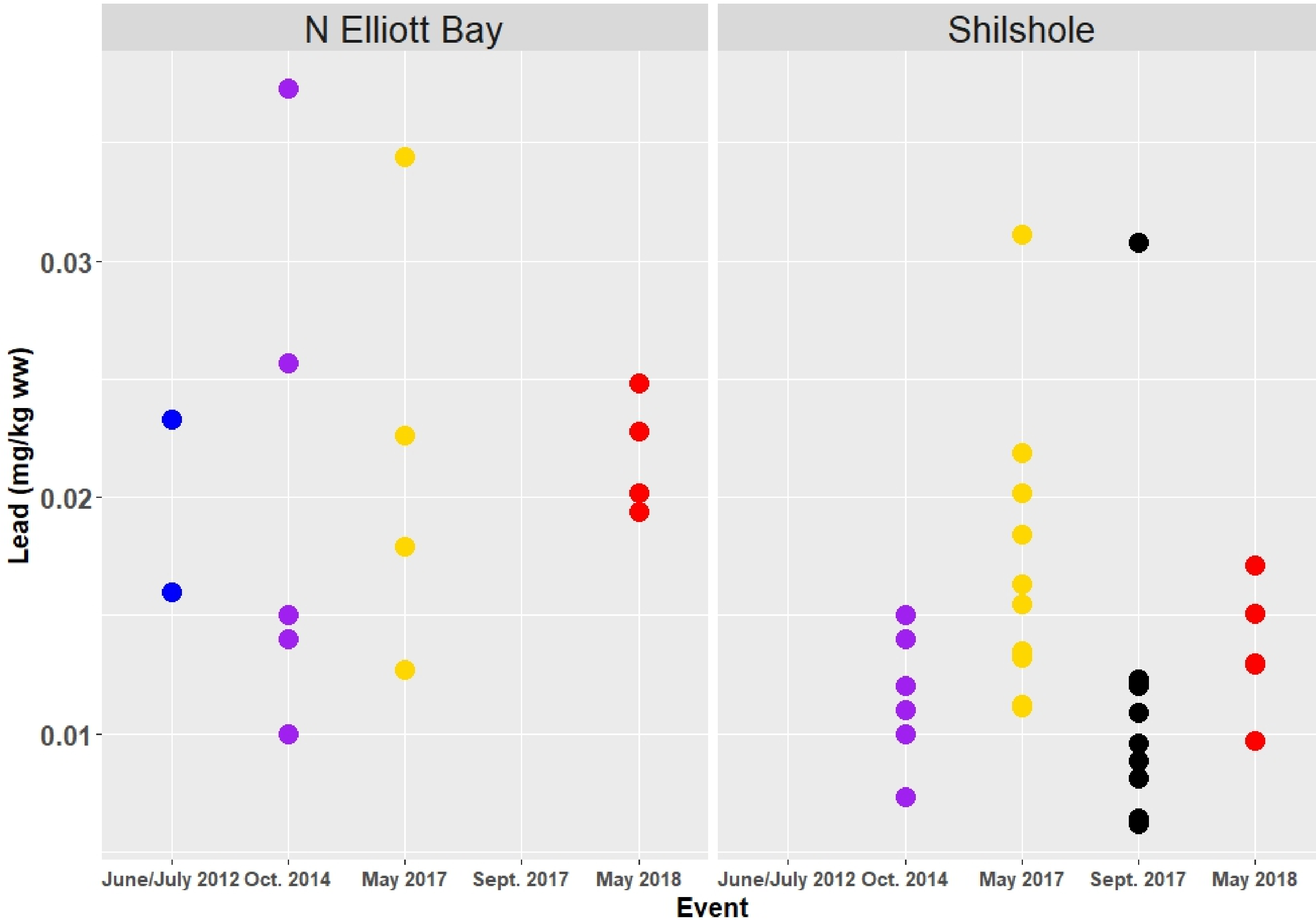
Chromium (mg/kg ww) in hepatopancreas grouped by sampling location and collection period.



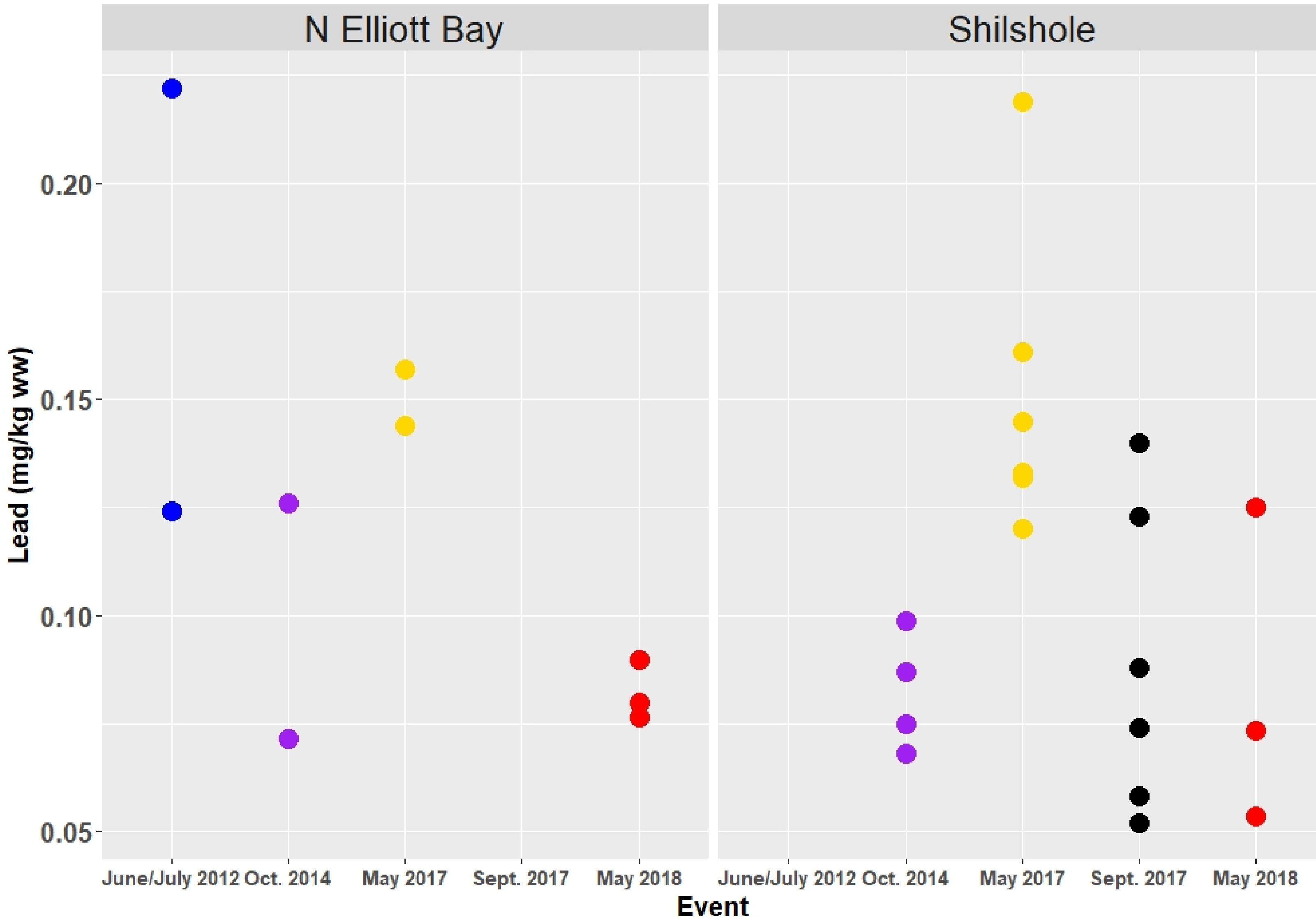
Copper (mg/kg ww) in muscle grouped by sampling location and collection period.



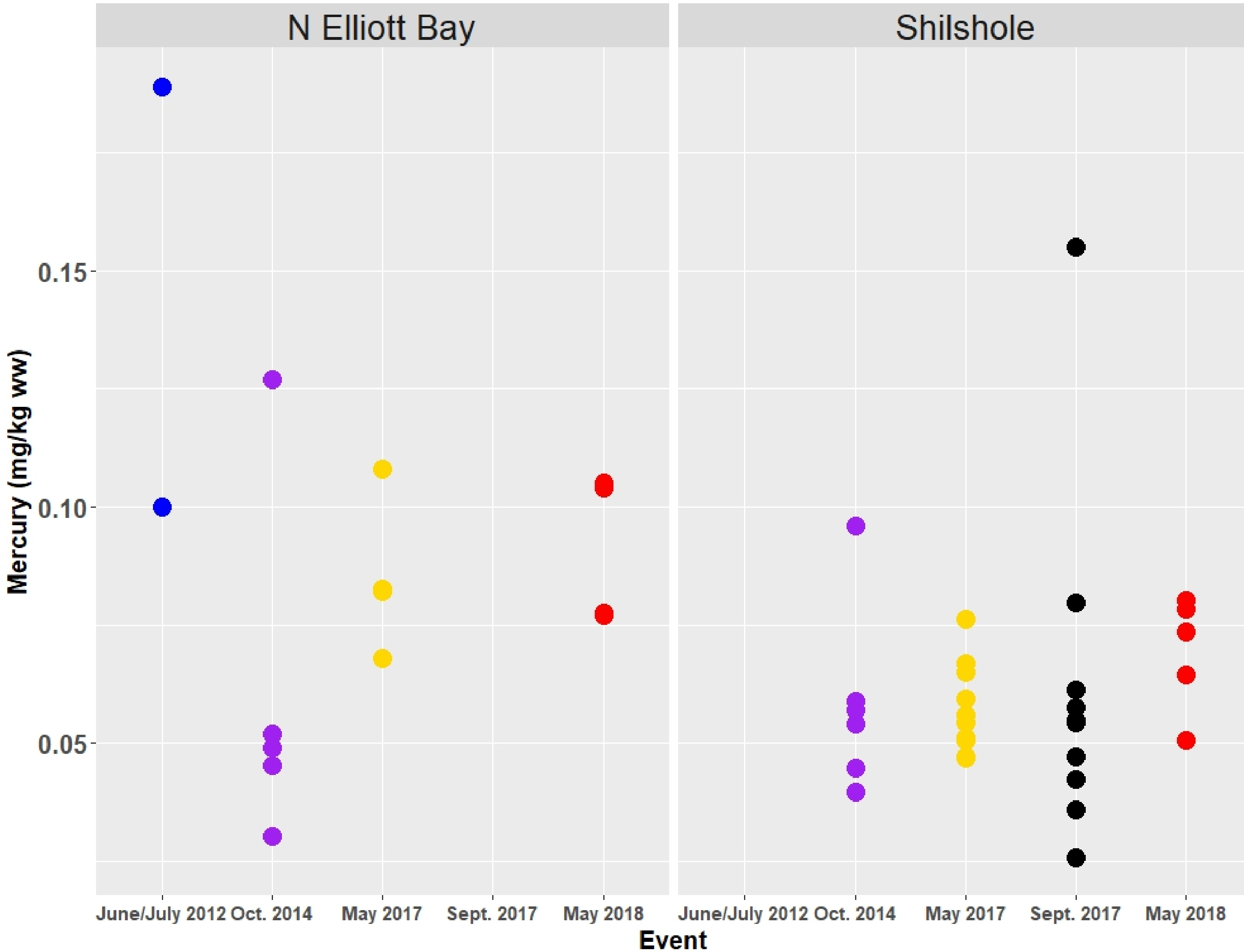
Copper (mg/kg ww) in hepatopancreas grouped by sampling location and collection period.



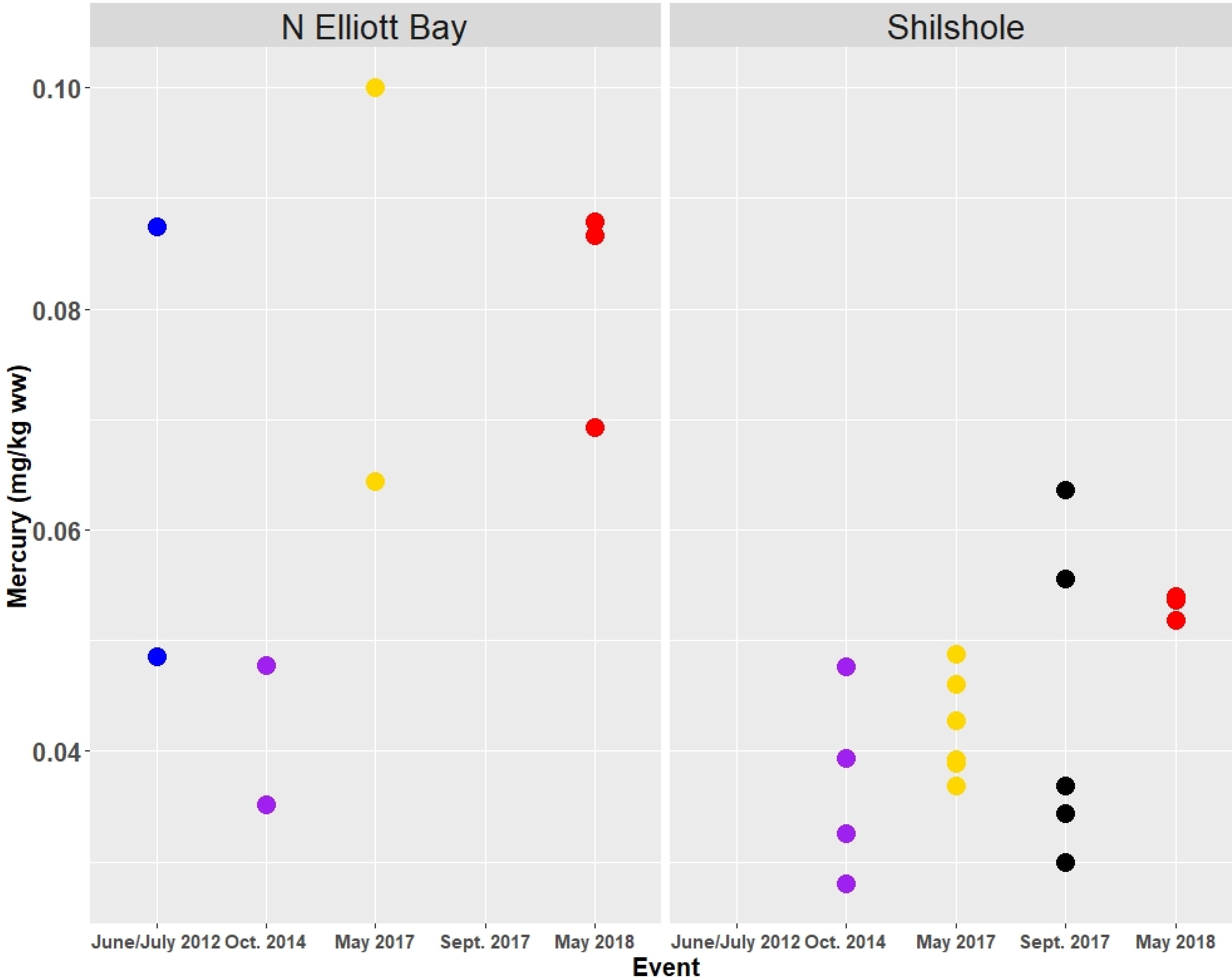
Lead (mg/kg ww) in muscle grouped by sampling location and collection period.



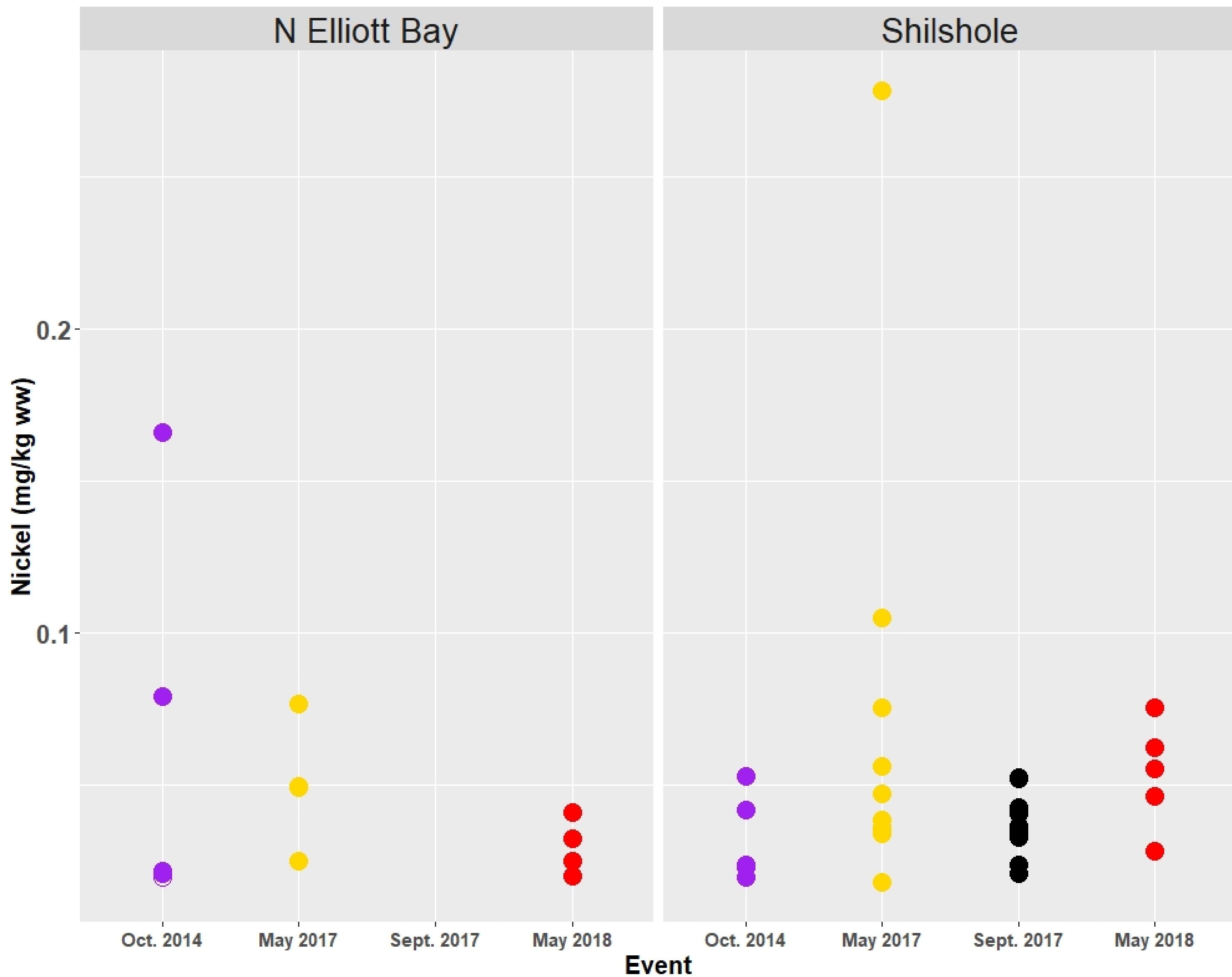
Lead (mg/kg ww) in hepatopancreas grouped by sampling location and collection period.



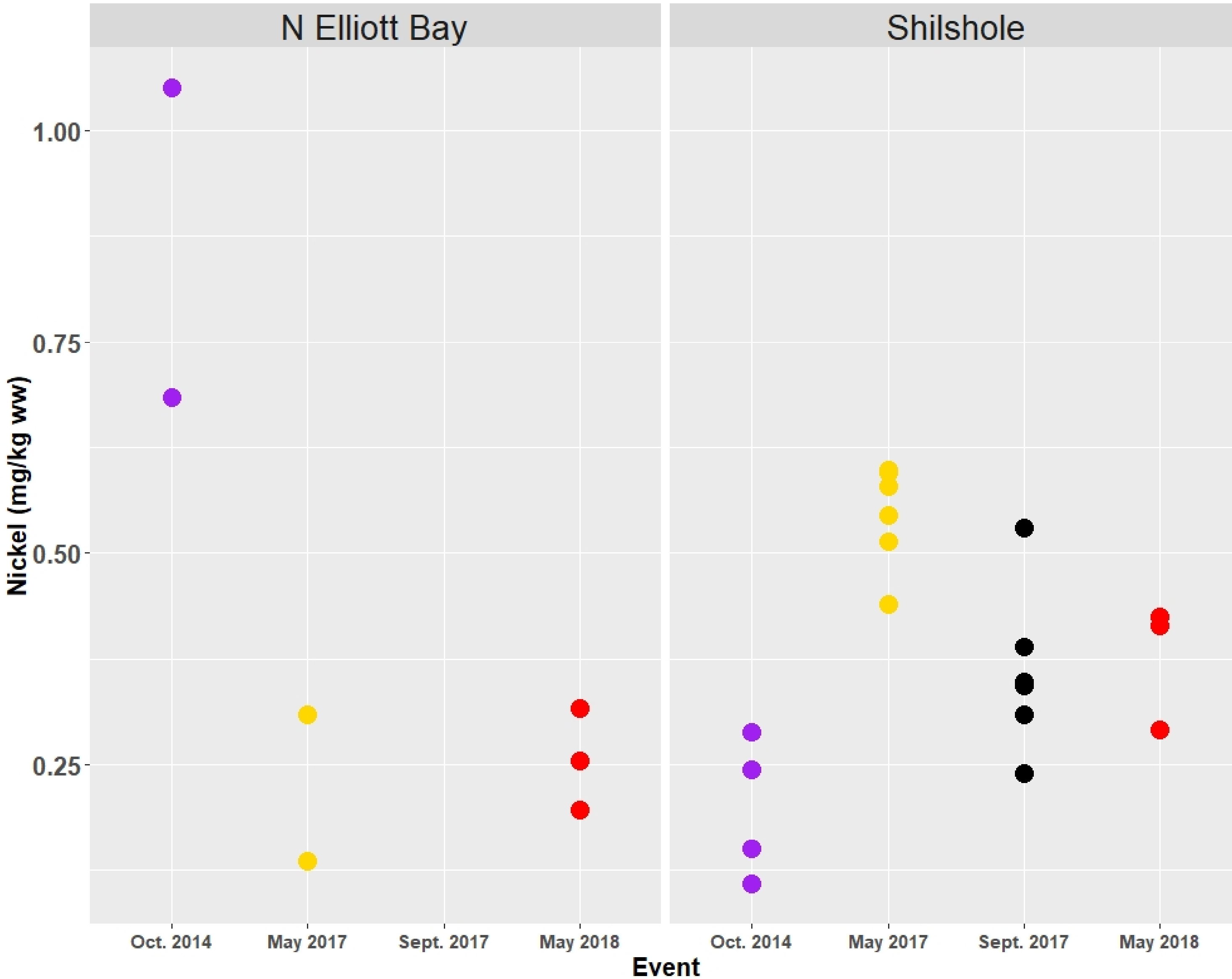
Mercury (mg/kg ww) in muscle grouped by sampling location and collection period.



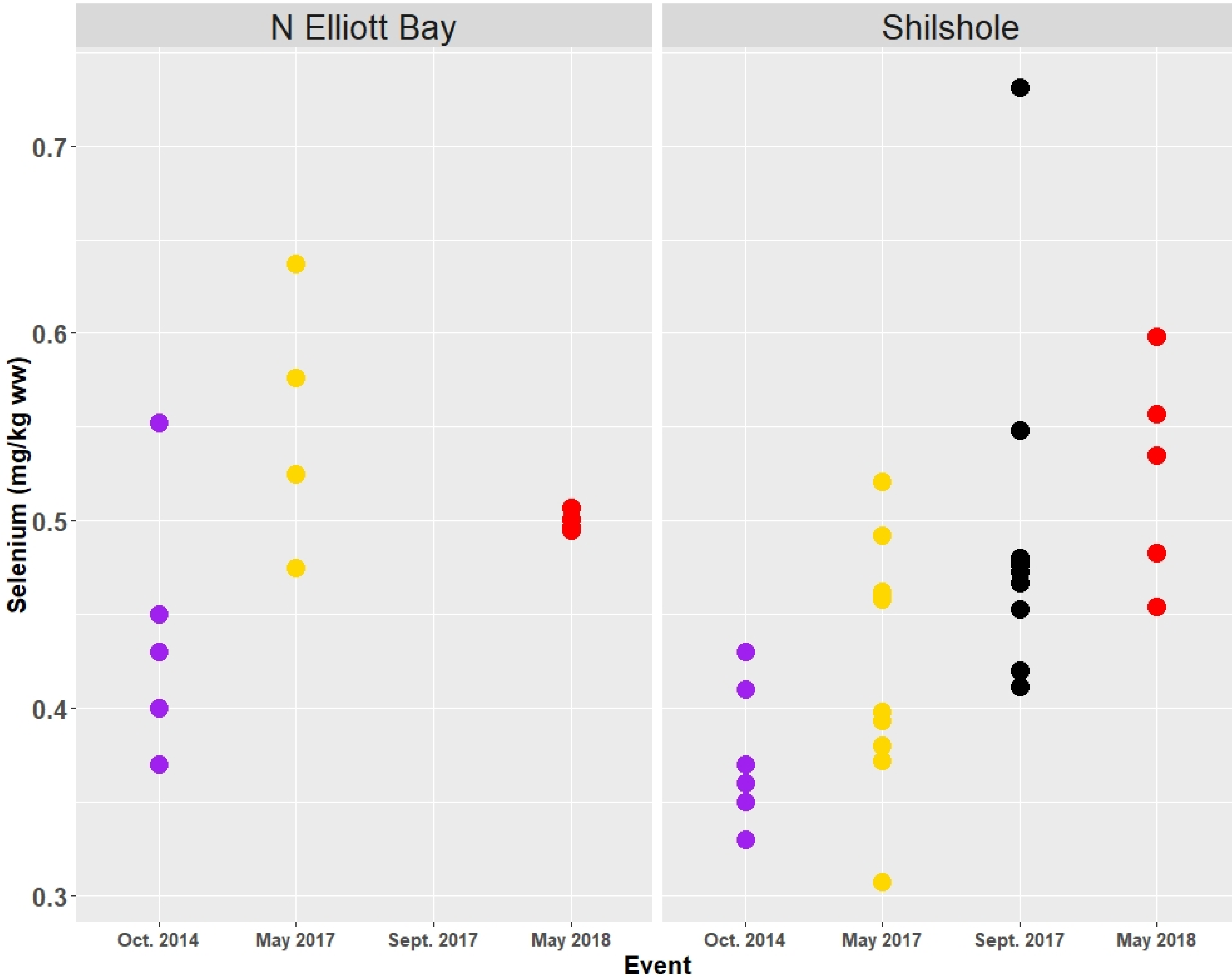
Mercury (mg/kg ww) in hepatopancreas grouped by sampling location and collection period.



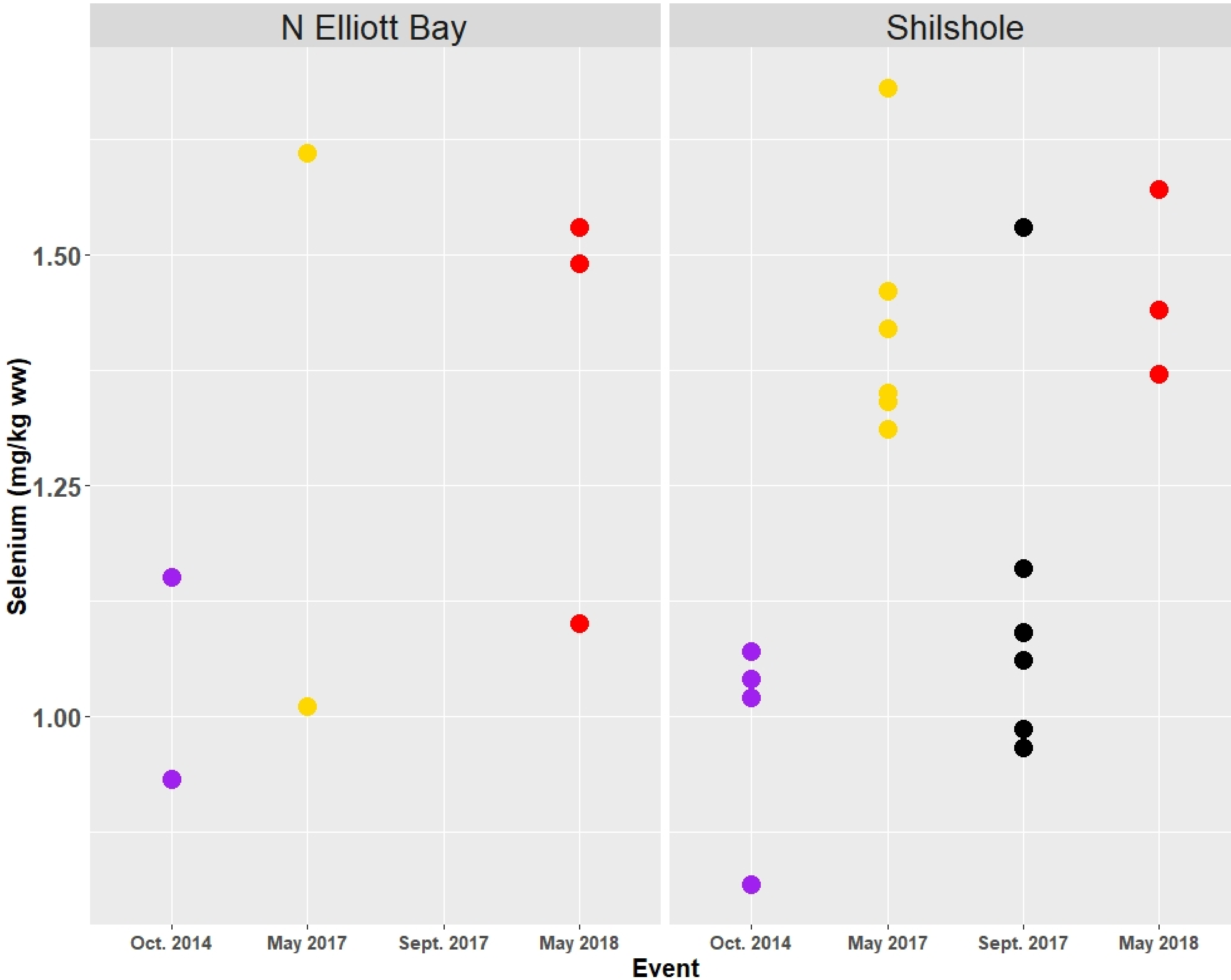
Nickel (mg/kg ww) in muscle grouped by sampling location and collection period.



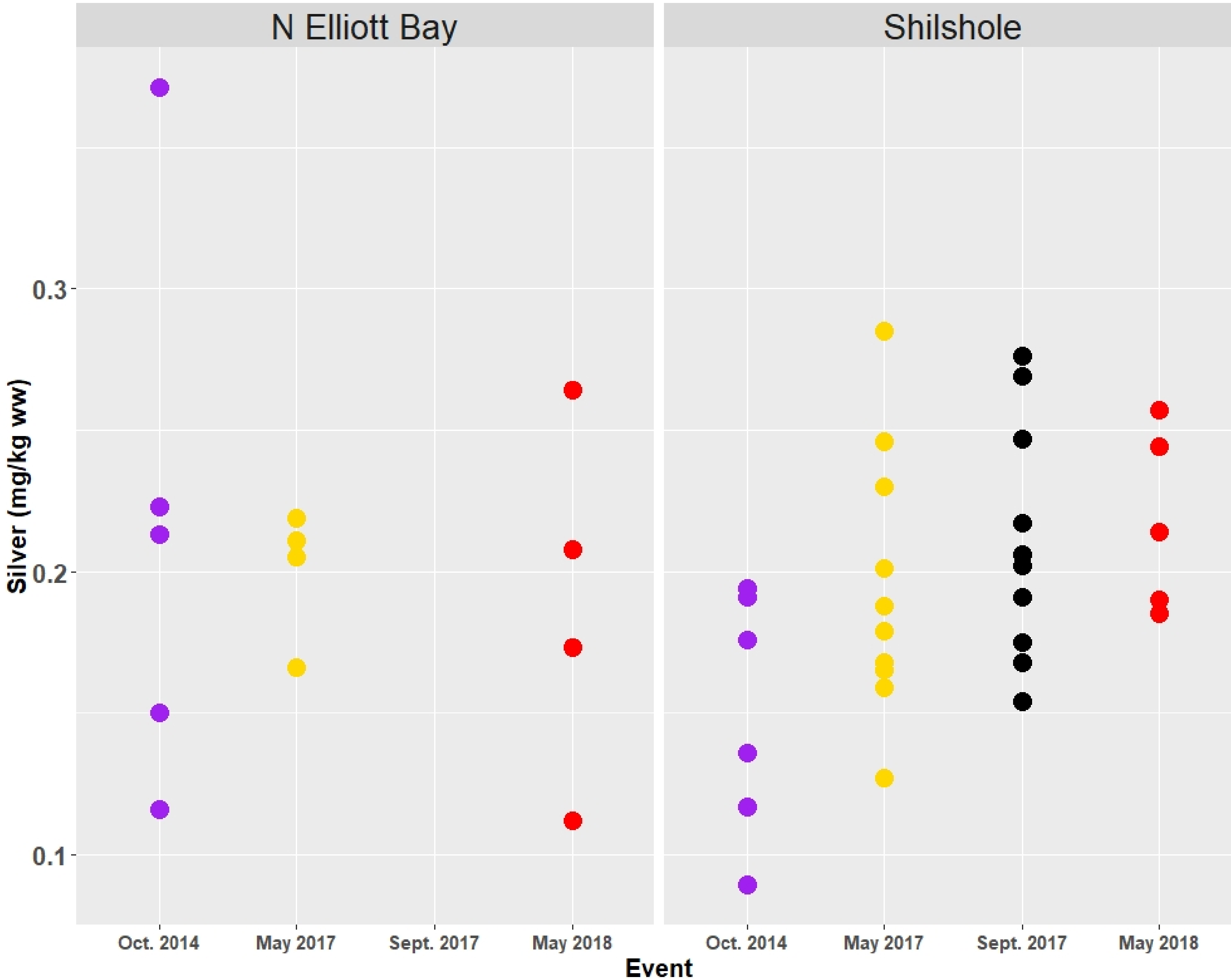
Nickel (mg/kg ww) in hepatopancreas grouped by sampling location and collection period.



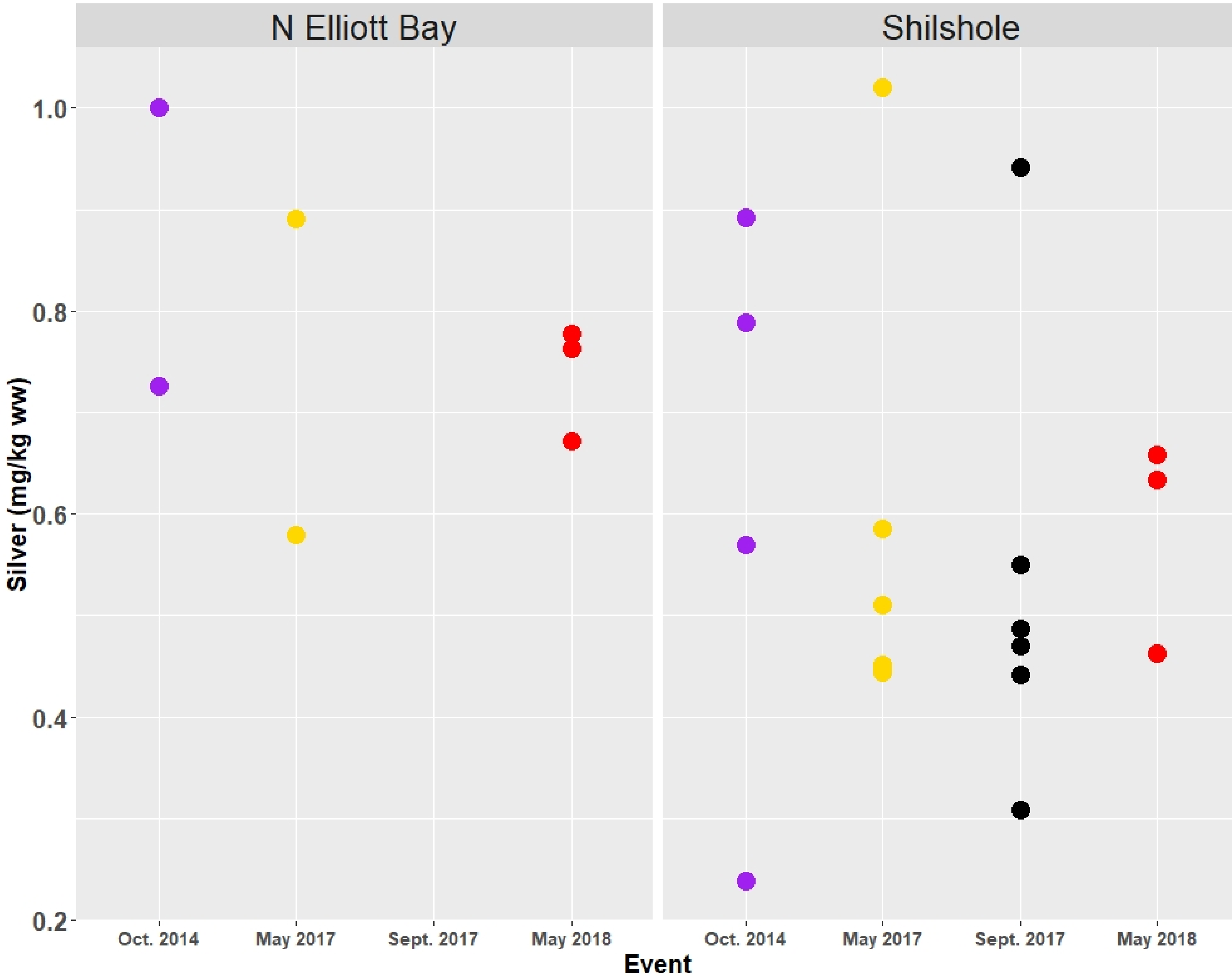
Selenium (mg/kg ww) in muscle grouped by sampling location and collection period.



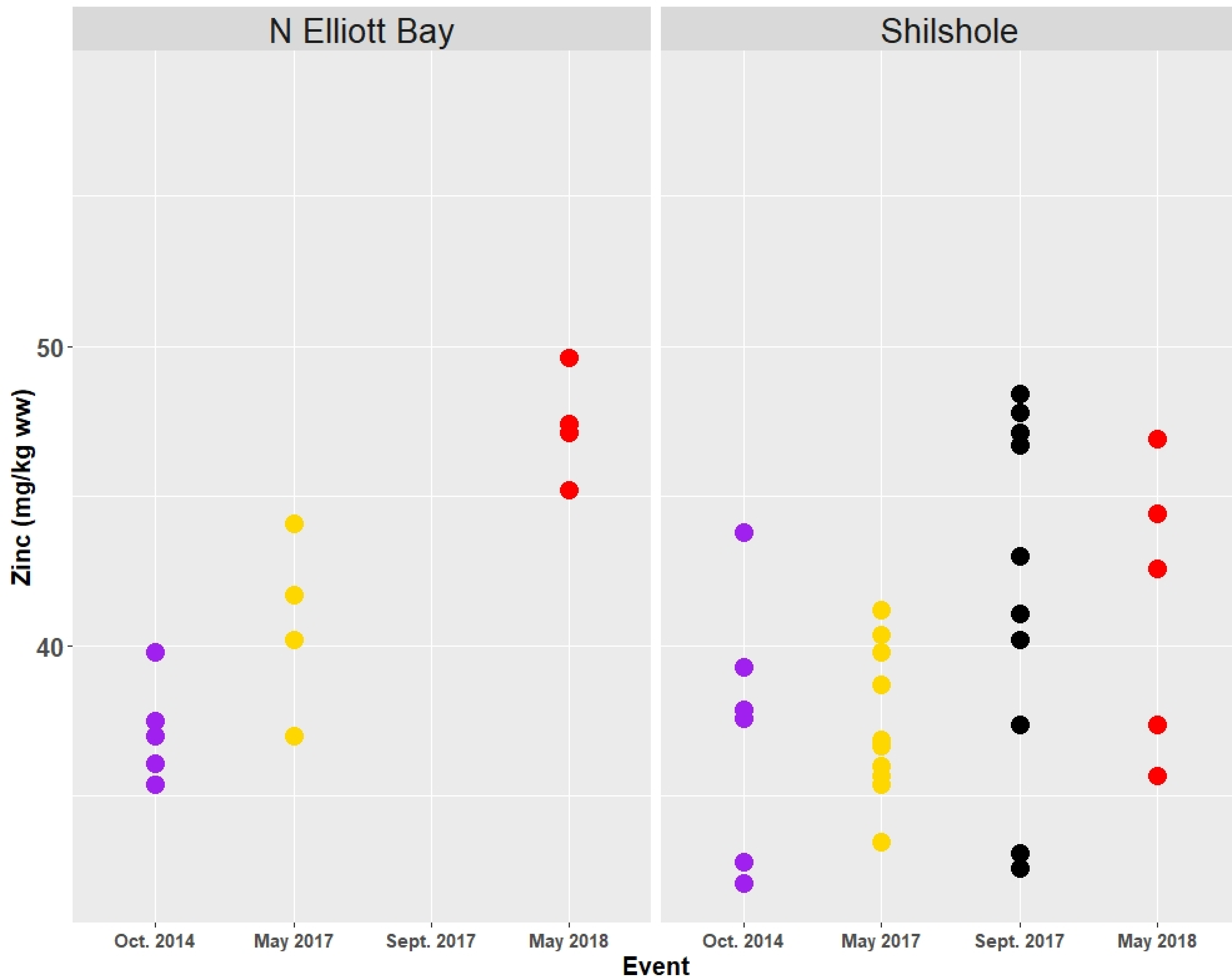
Selenium (mg/kg ww) in hepatopancreas grouped by sampling location and collection period.



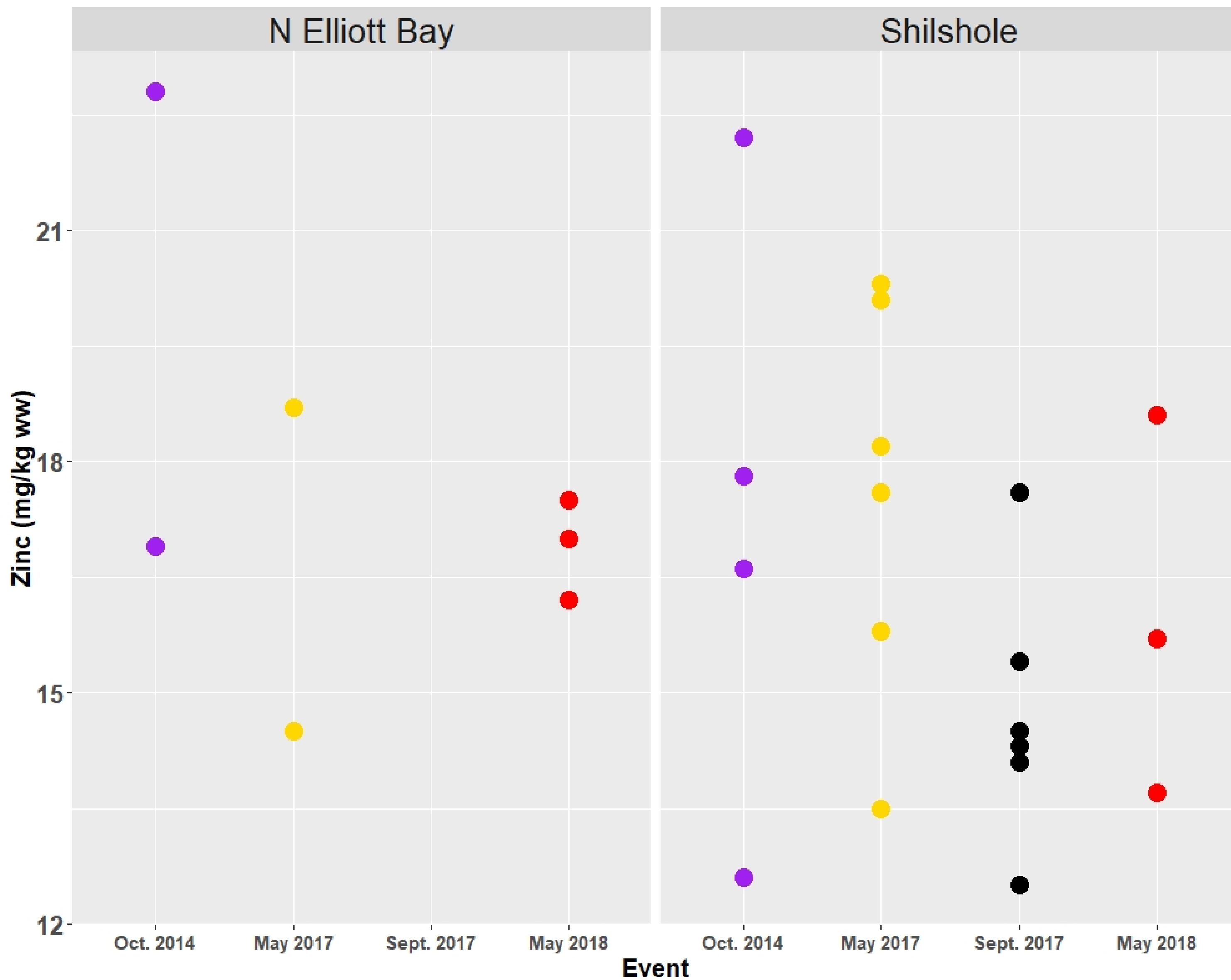
Silver (mg/kg ww) in muscle grouped by sampling location and collection period.



Silver (mg/kg ww) in hepatopancreas grouped by sampling location and collection period.

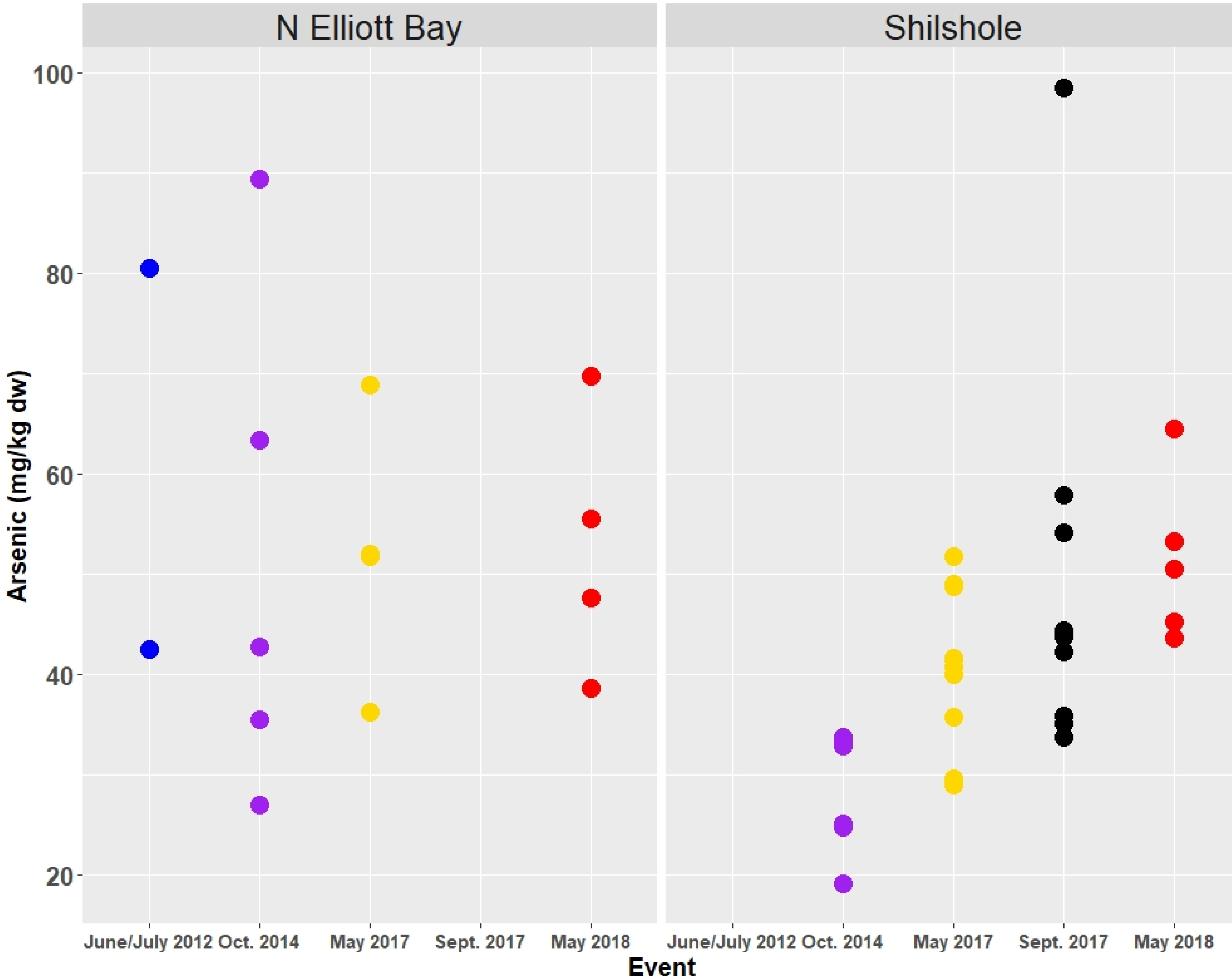


Zinc (mg/kg ww) in muscle grouped by sampling location and collection period.

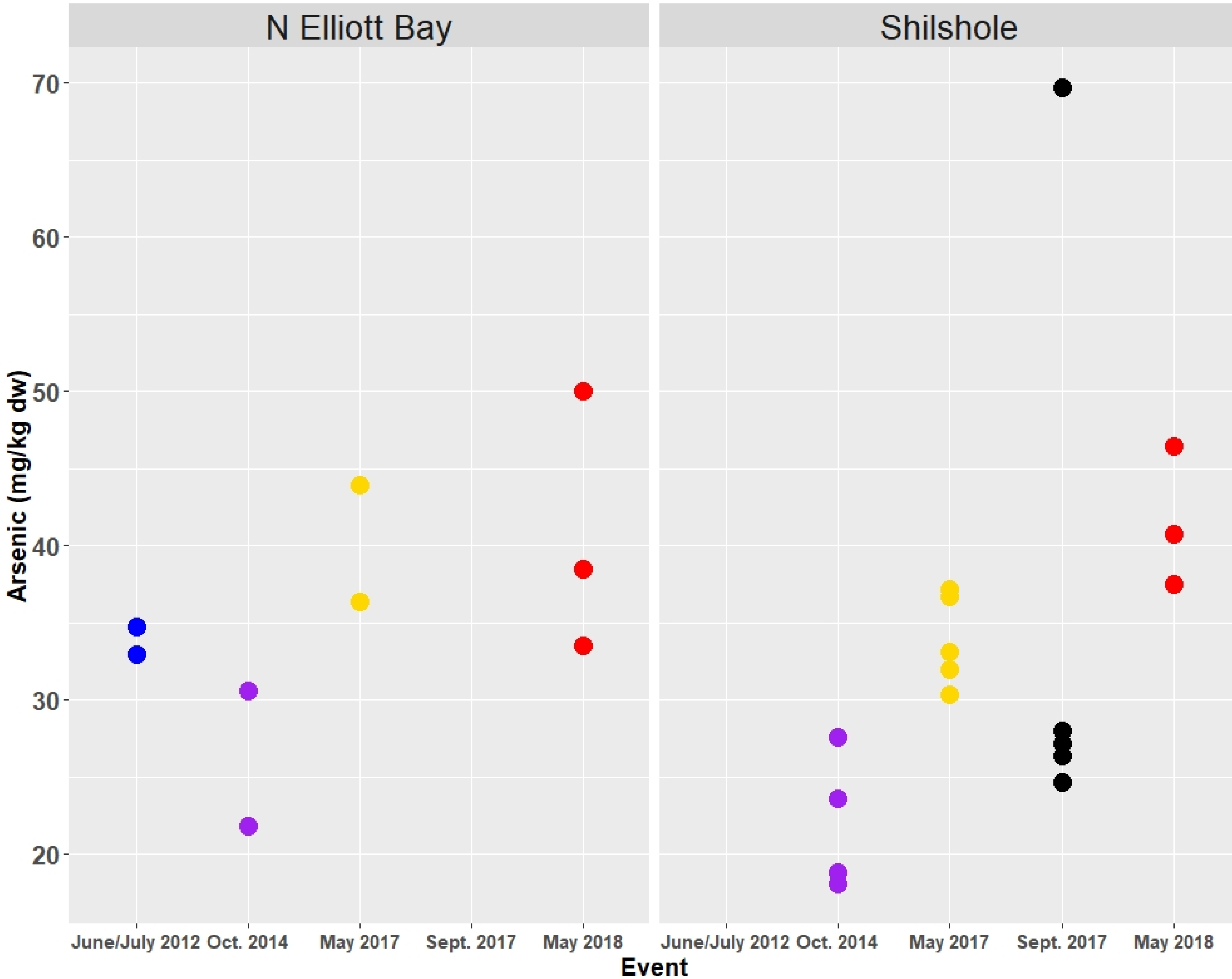


Zinc (mg/kg ww) in hepatopancreas grouped by sampling location and collection period.

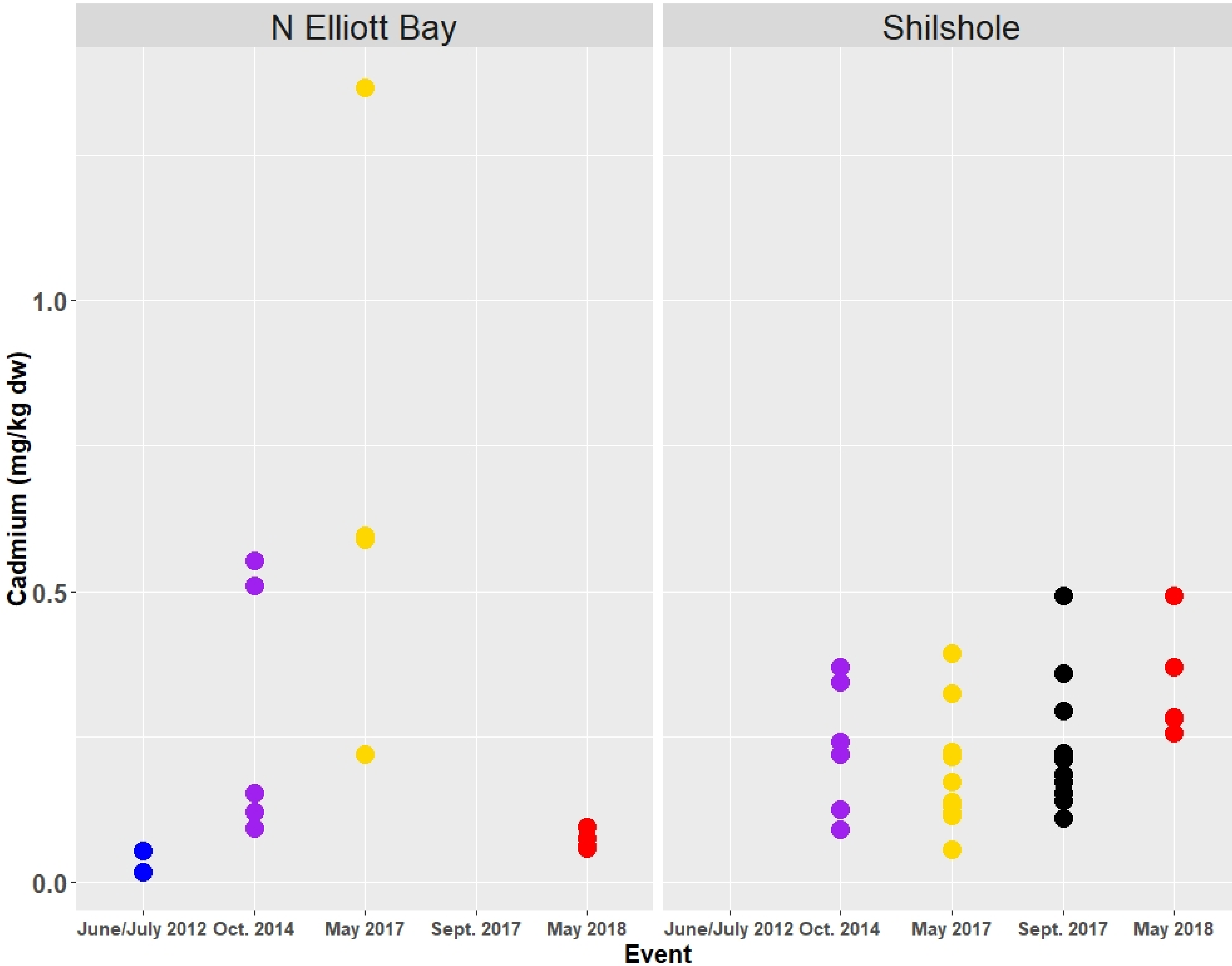
DRY WEIGHT RESULTS



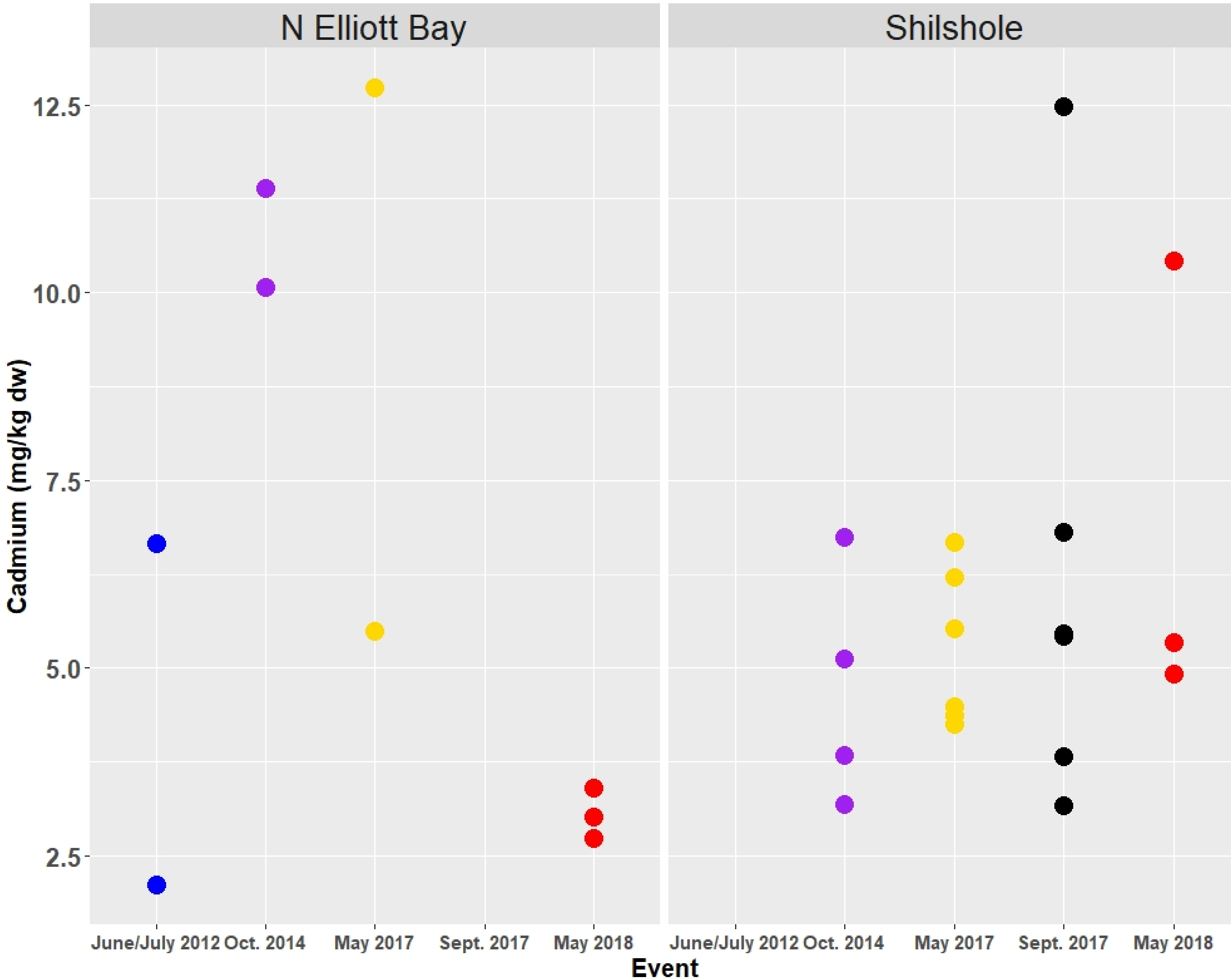
Arsenic (mg/kg dw) in muscle grouped by sampling location and collection period.



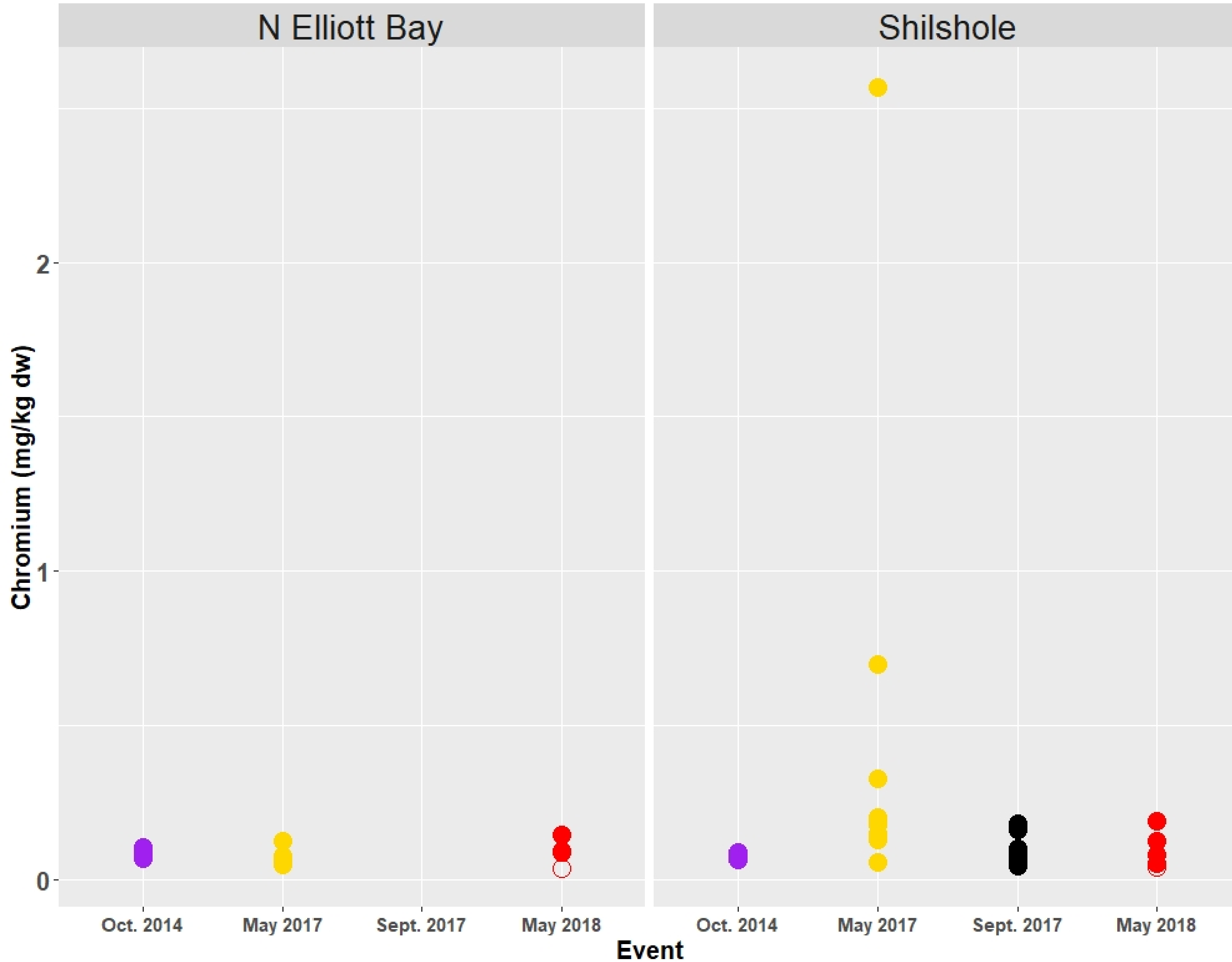
Arsenic (mg/kg dw) in hepatopancreas grouped by sampling location and collection period.



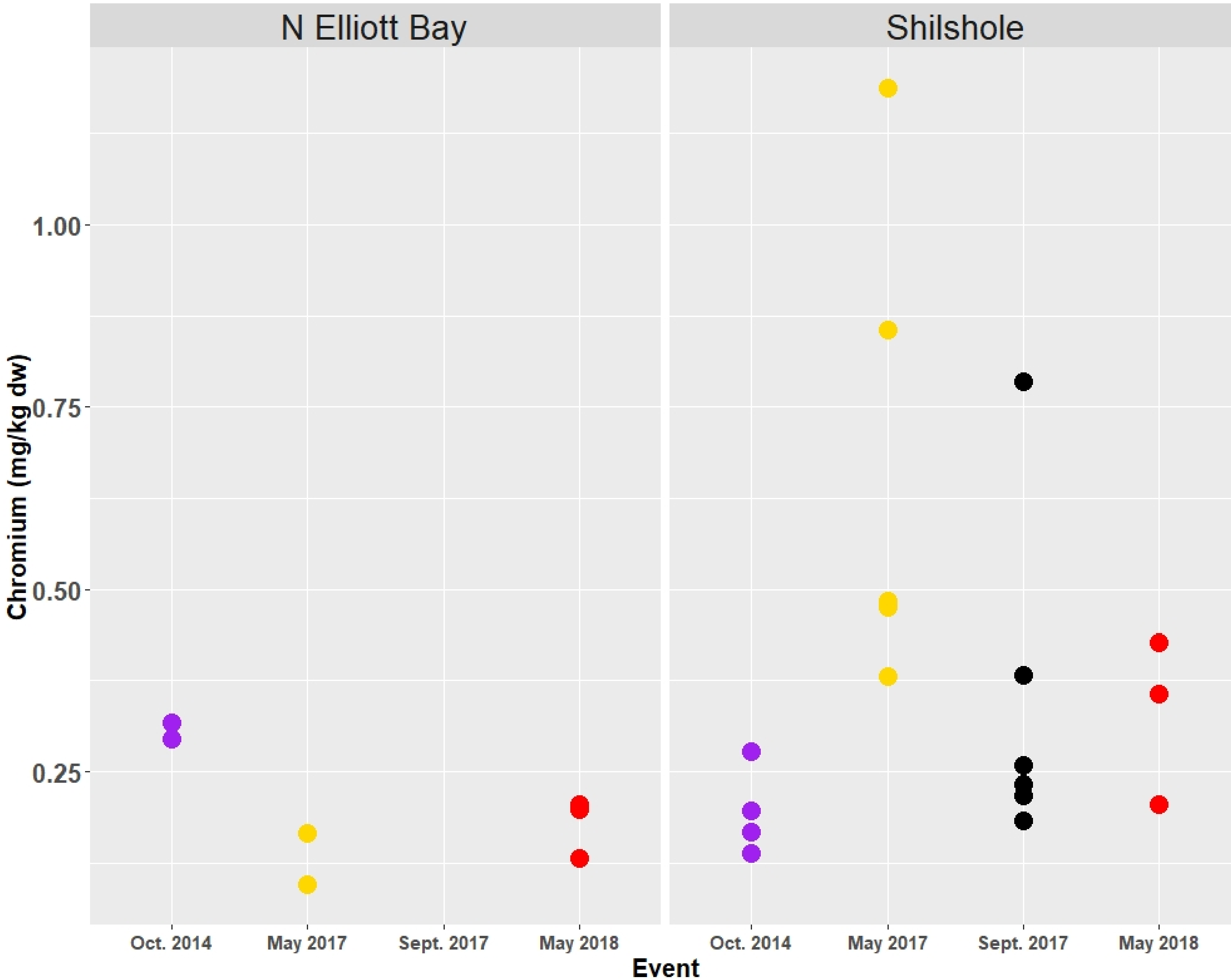
Cadmium (mg/kg dw) in muscle grouped by sampling location and collection period.



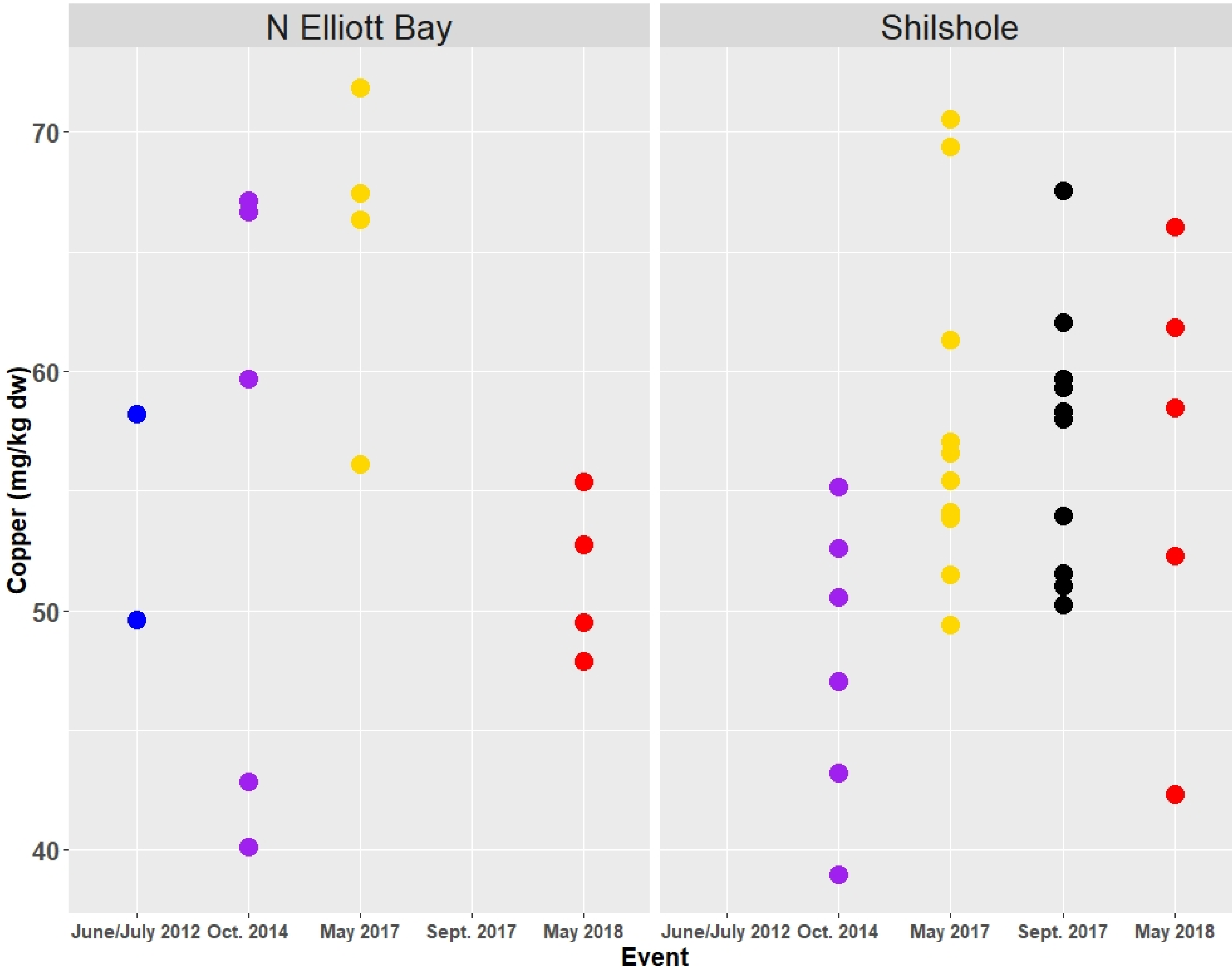
Cadmium (mg/kg dw) in hepatopancreas grouped by sampling location and collection period.



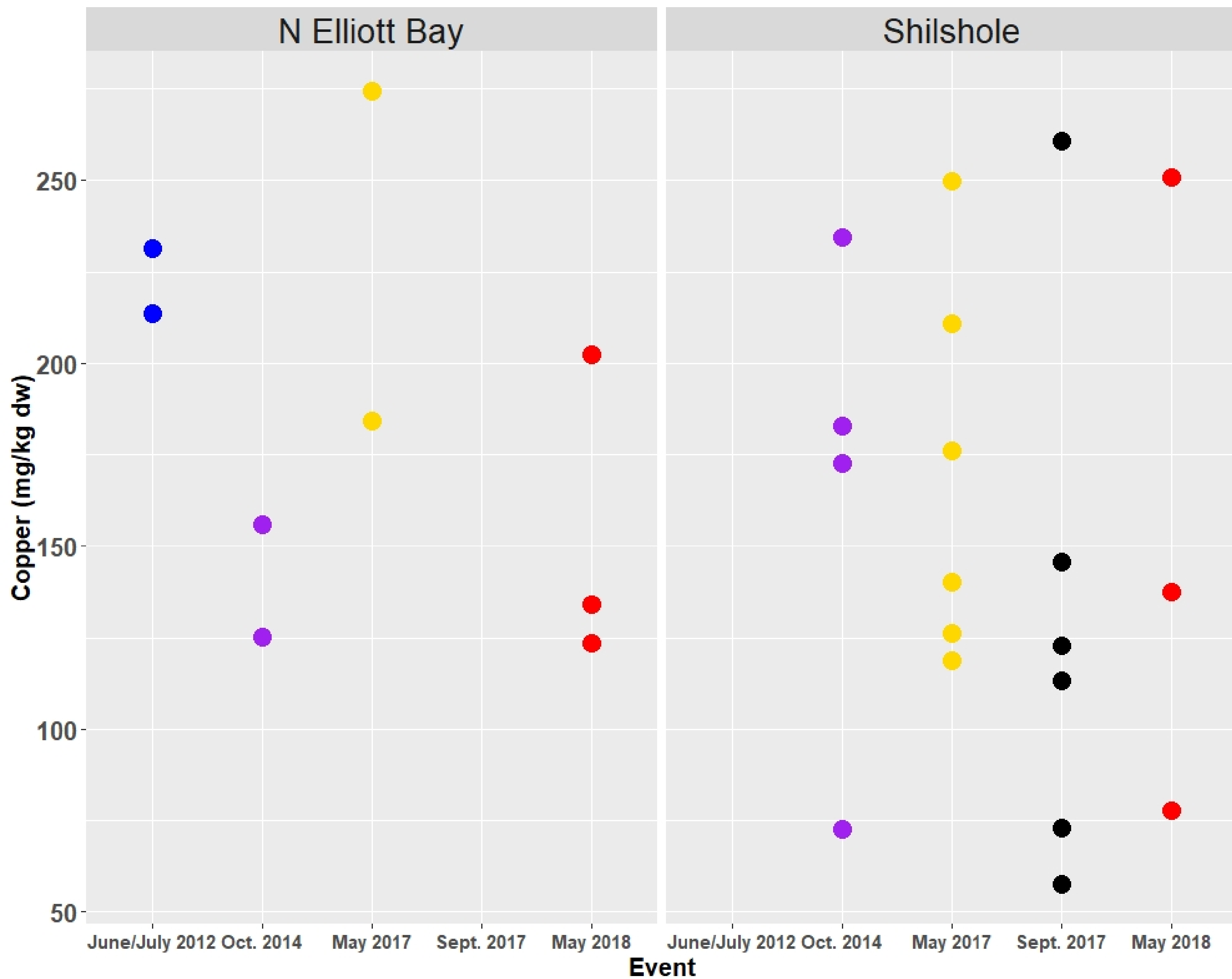
Chromium (mg/kg dw) in muscle grouped by sampling location and collection period.



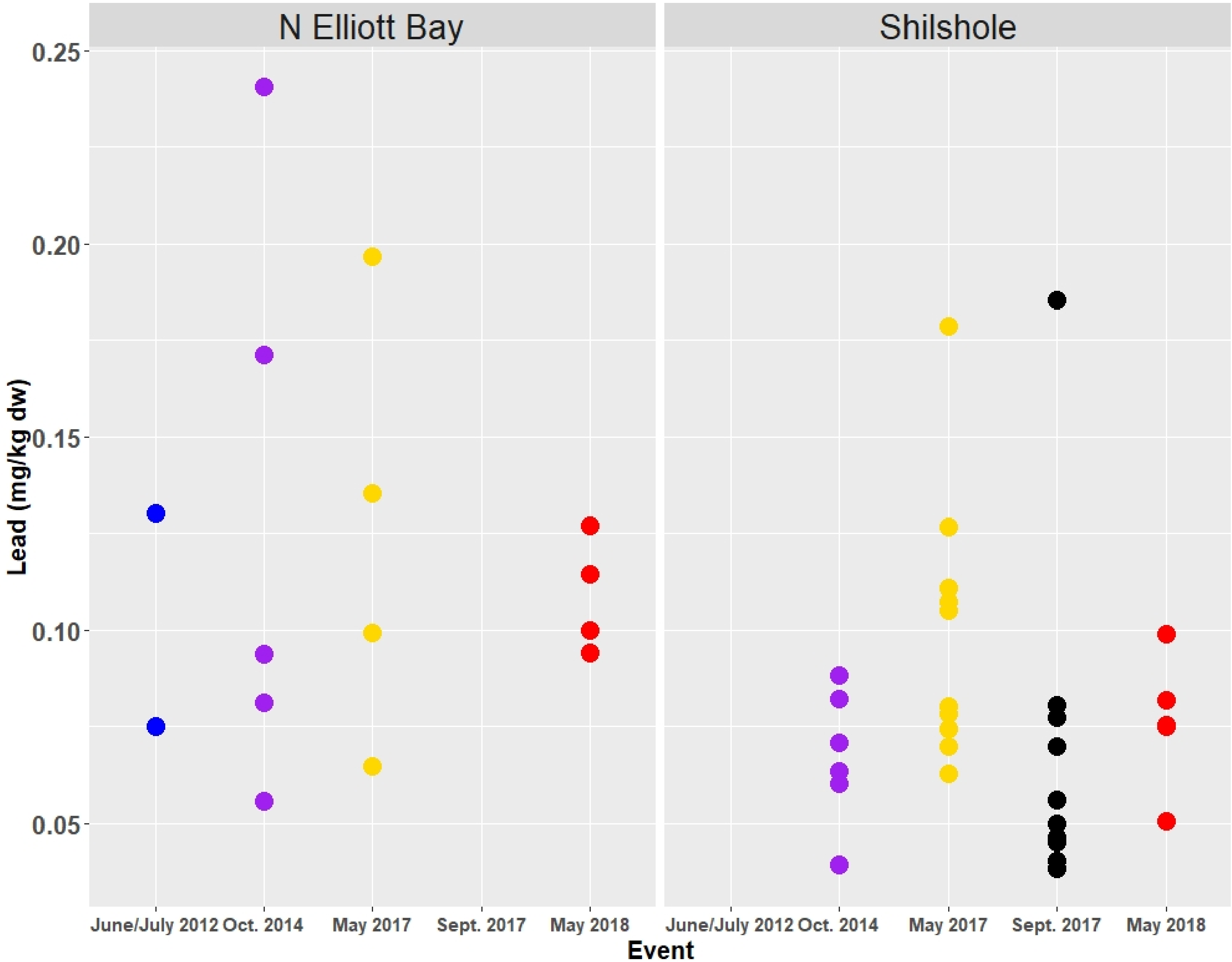
Chromium (mg/kg dw) in hepatopancreas grouped by sampling location and collection period.



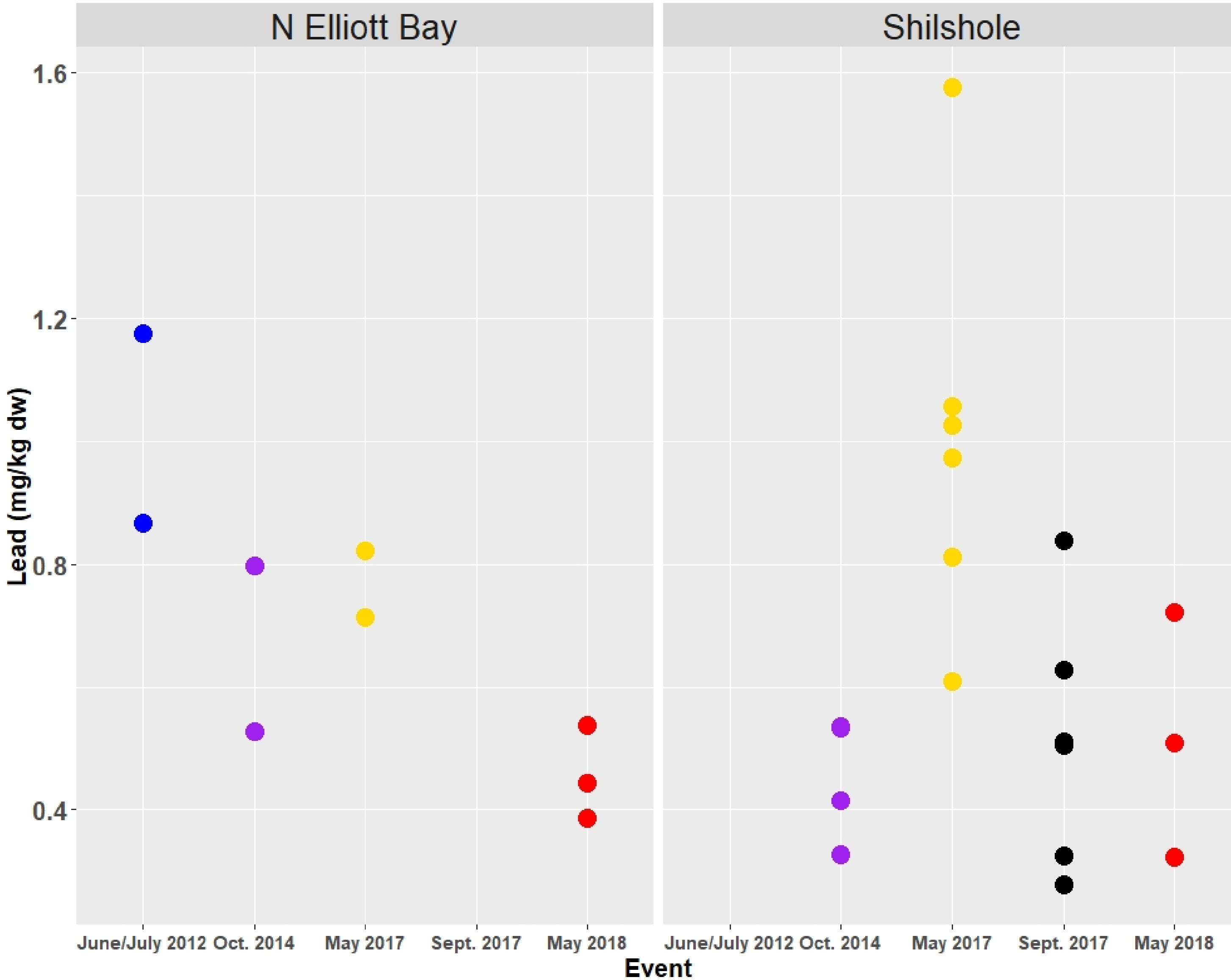
Copper (mg/kg dw) in muscle grouped by sampling location and collection period.



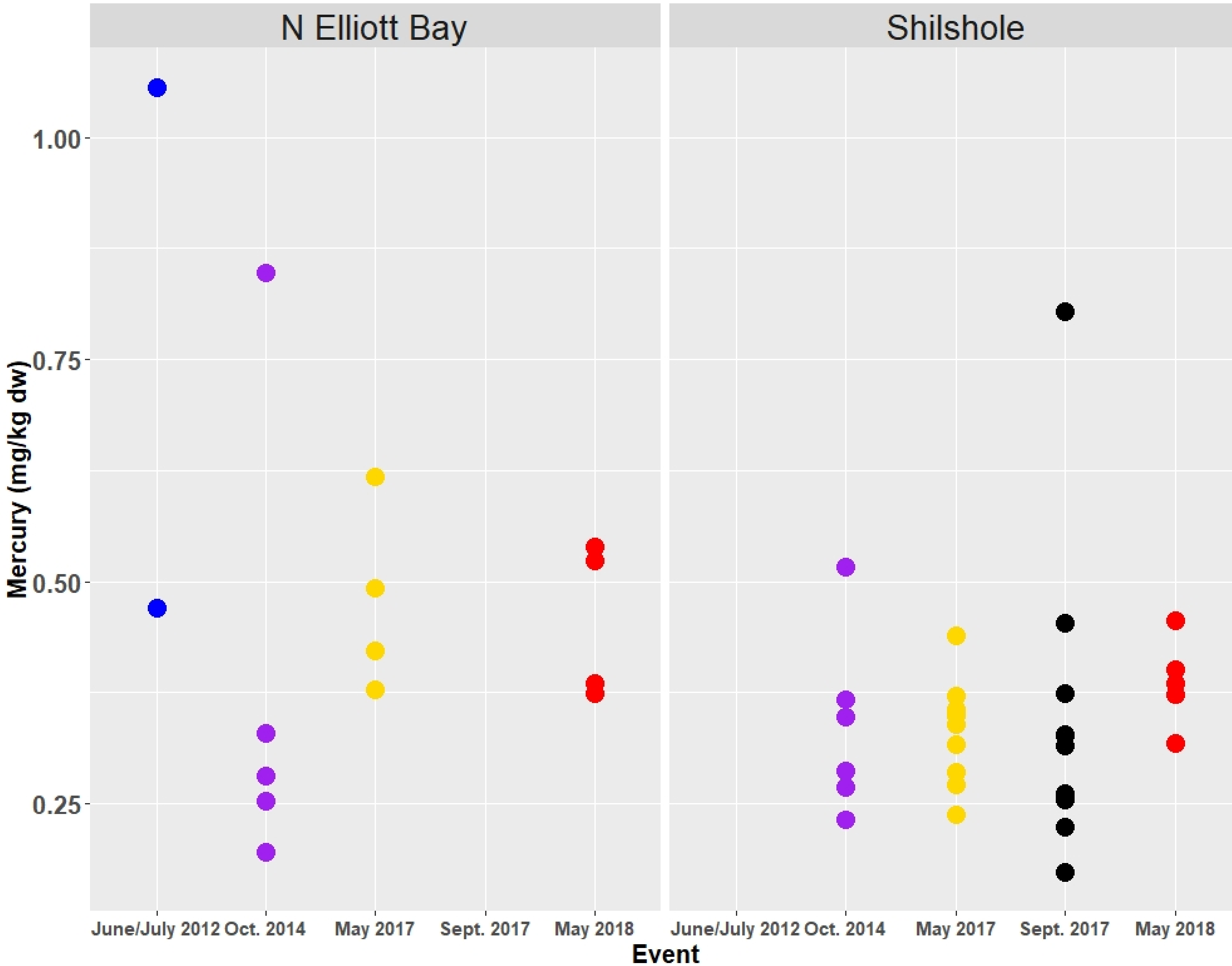
Copper (mg/kg dw) in hepatopancreas grouped by sampling location and collection period.



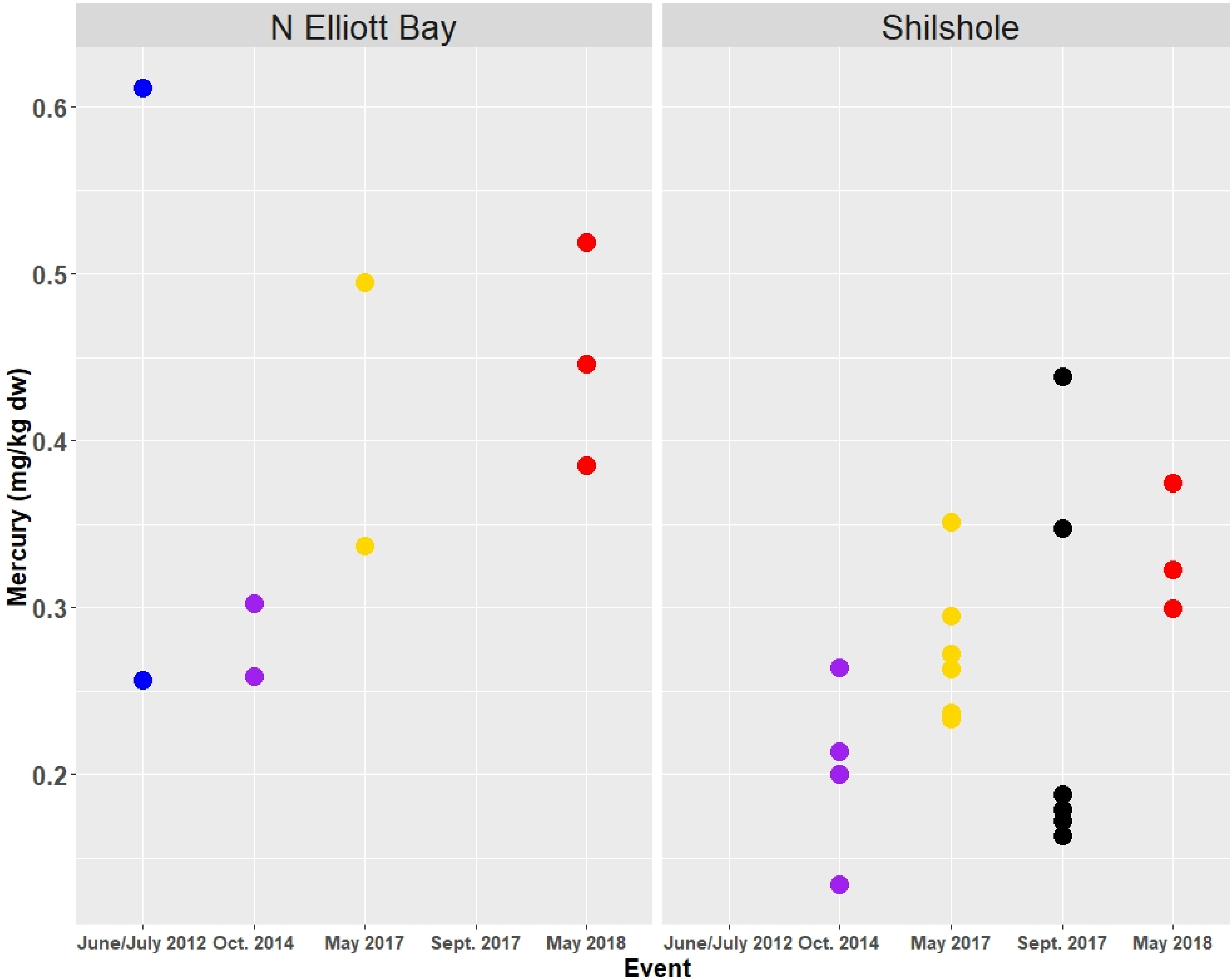
Lead (mg/kg dw) in muscle grouped by sampling location and collection period.



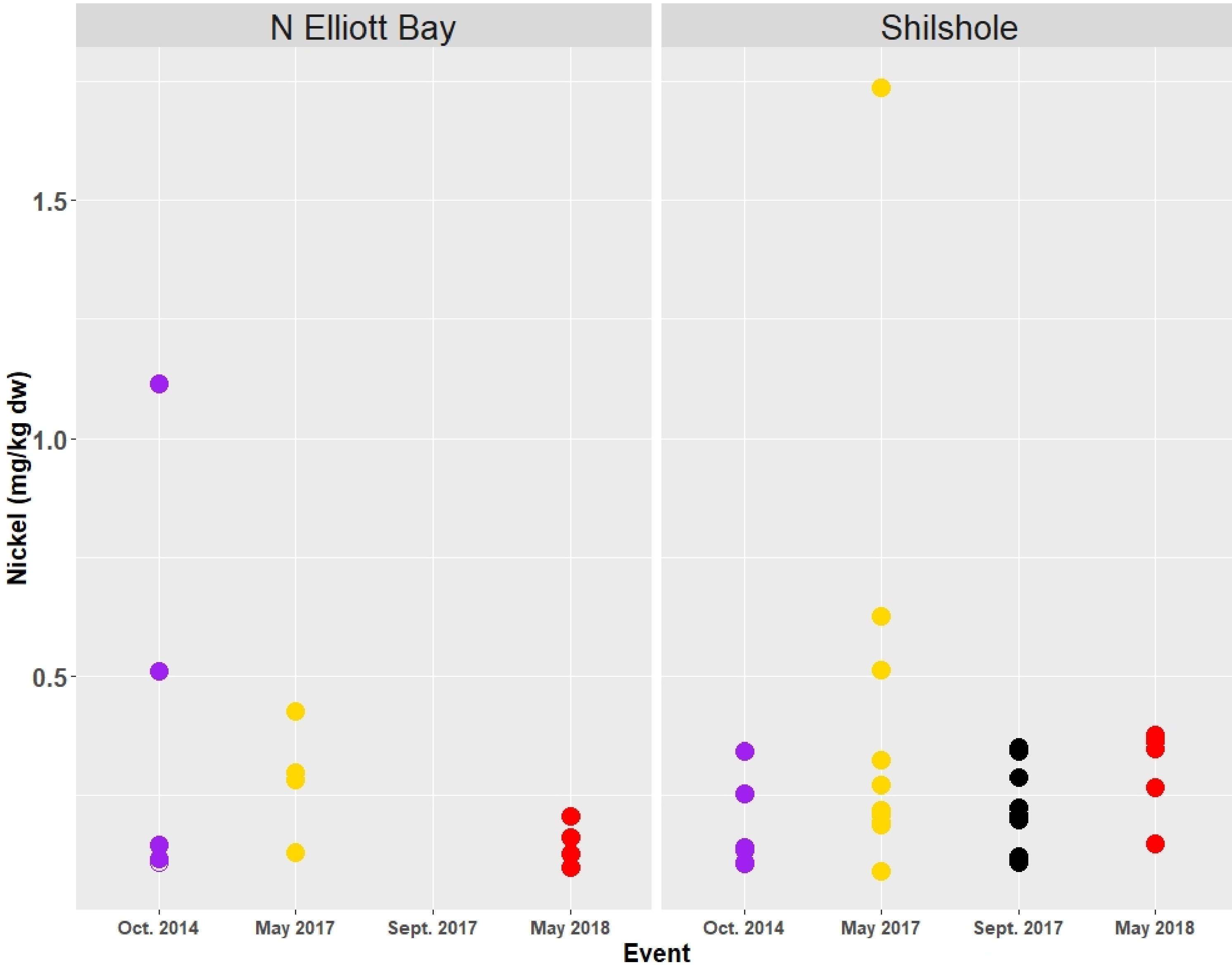
Lead (mg/kg dw) in hepatopancreas grouped by sampling location and collection period.



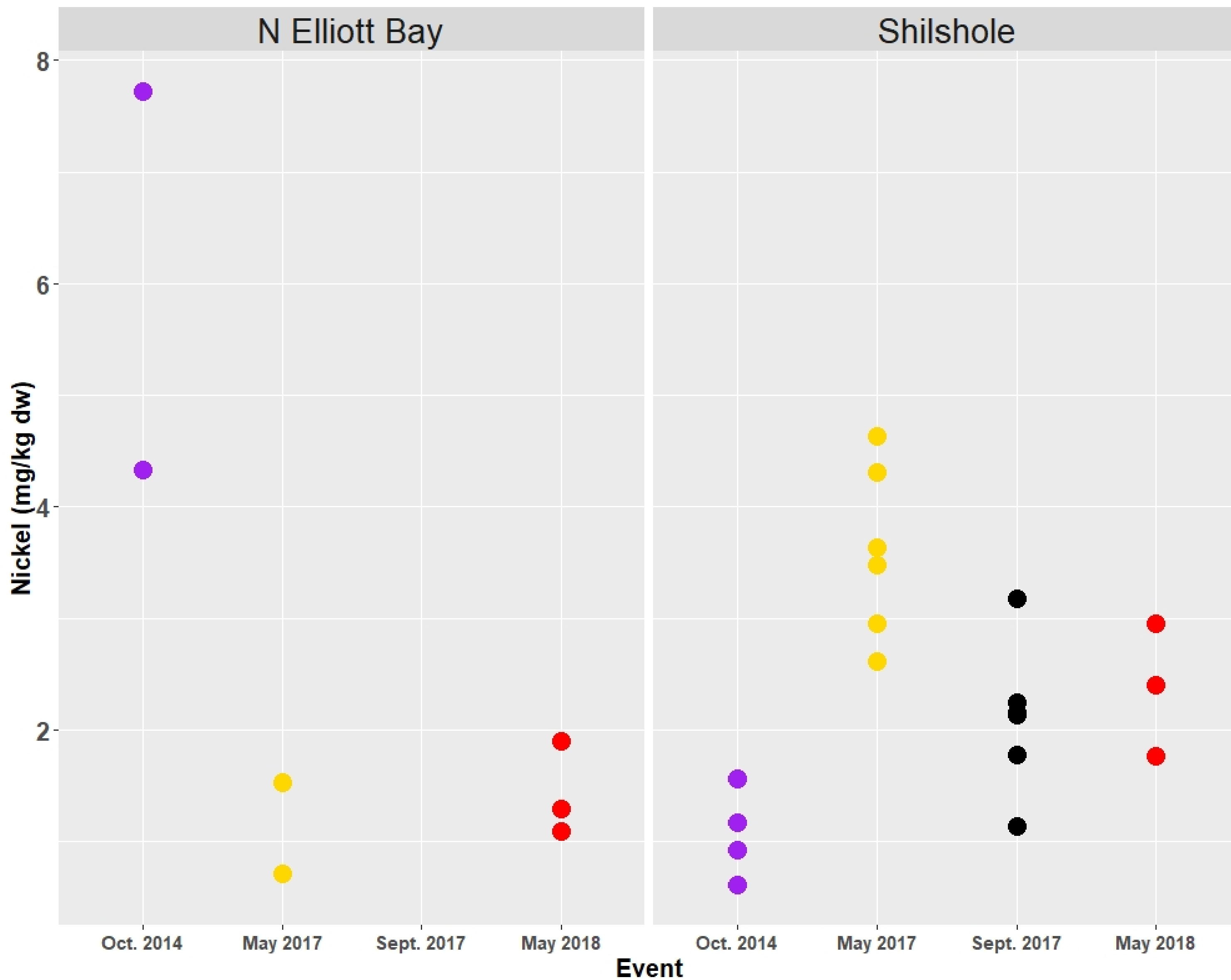
Mercury (mg/kg dw) in muscle grouped by sampling location and collection period.



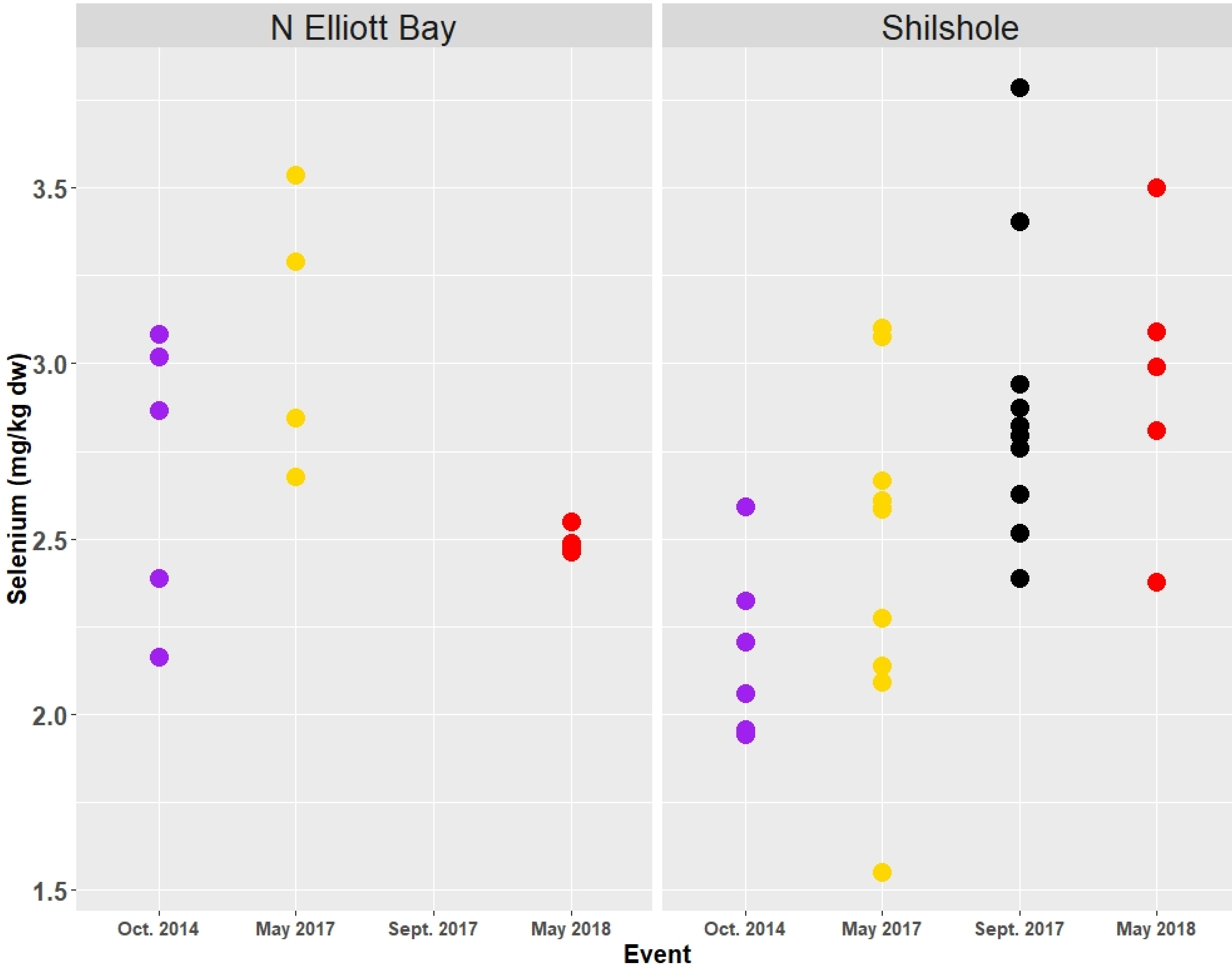
Mercury (mg/kg dw) in hepatopancreas grouped by sampling location and collection period.



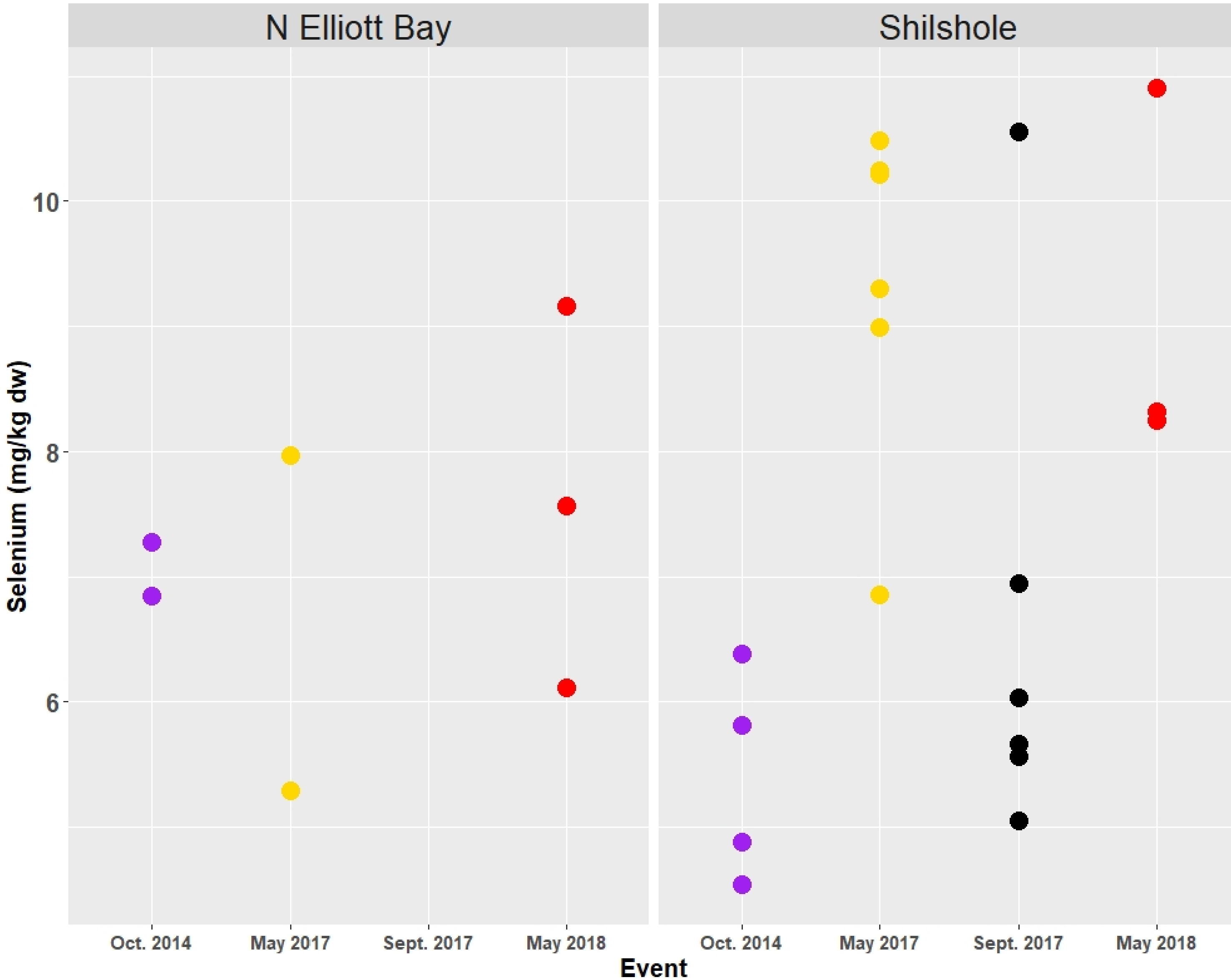
Nickel (mg/kg dw) in muscle grouped by sampling location and collection period.



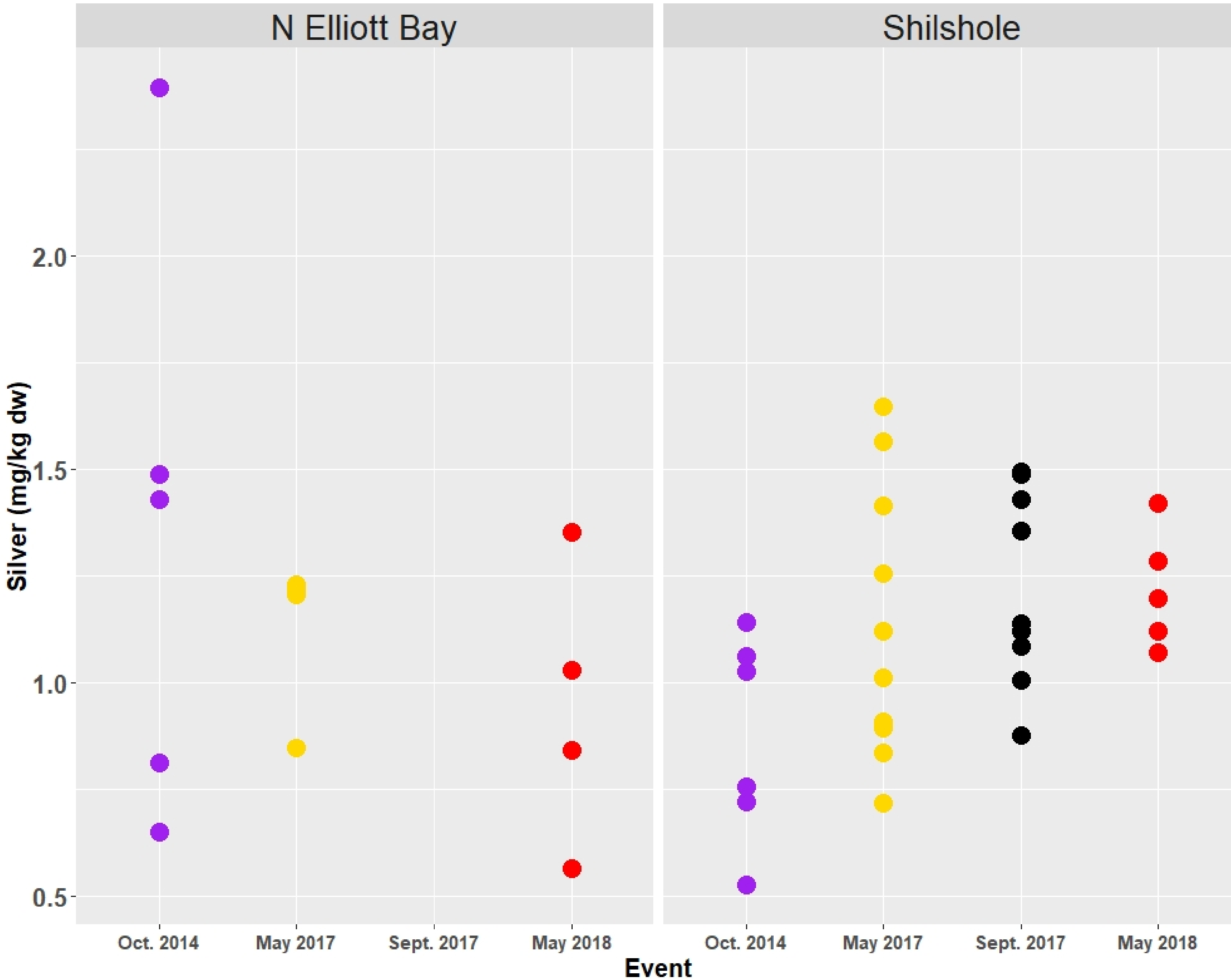
Nickel (mg/kg dw) in hepatopancreas grouped by sampling location and collection period.



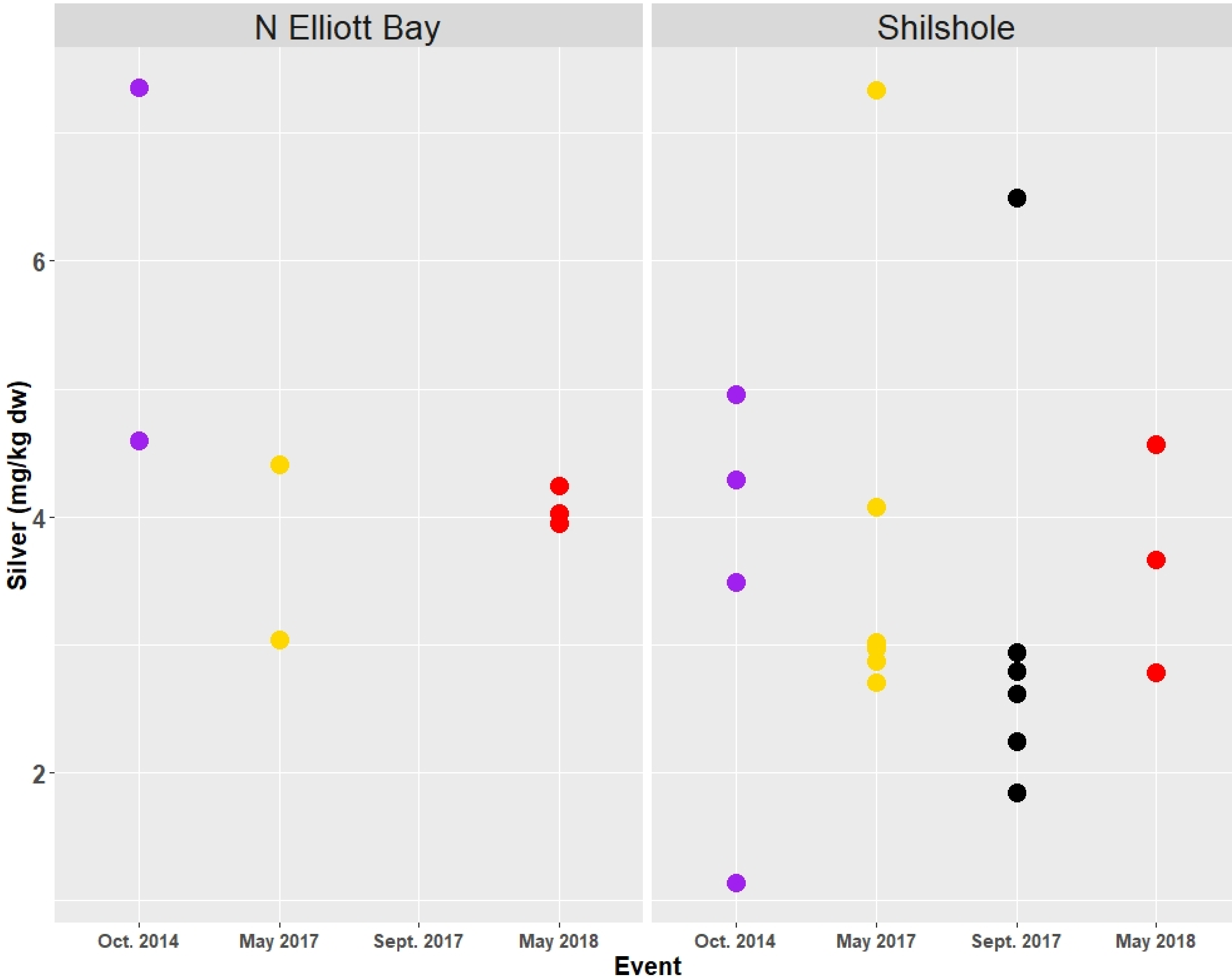
Selenium (mg/kg dw) in muscle grouped by sampling location and collection period.



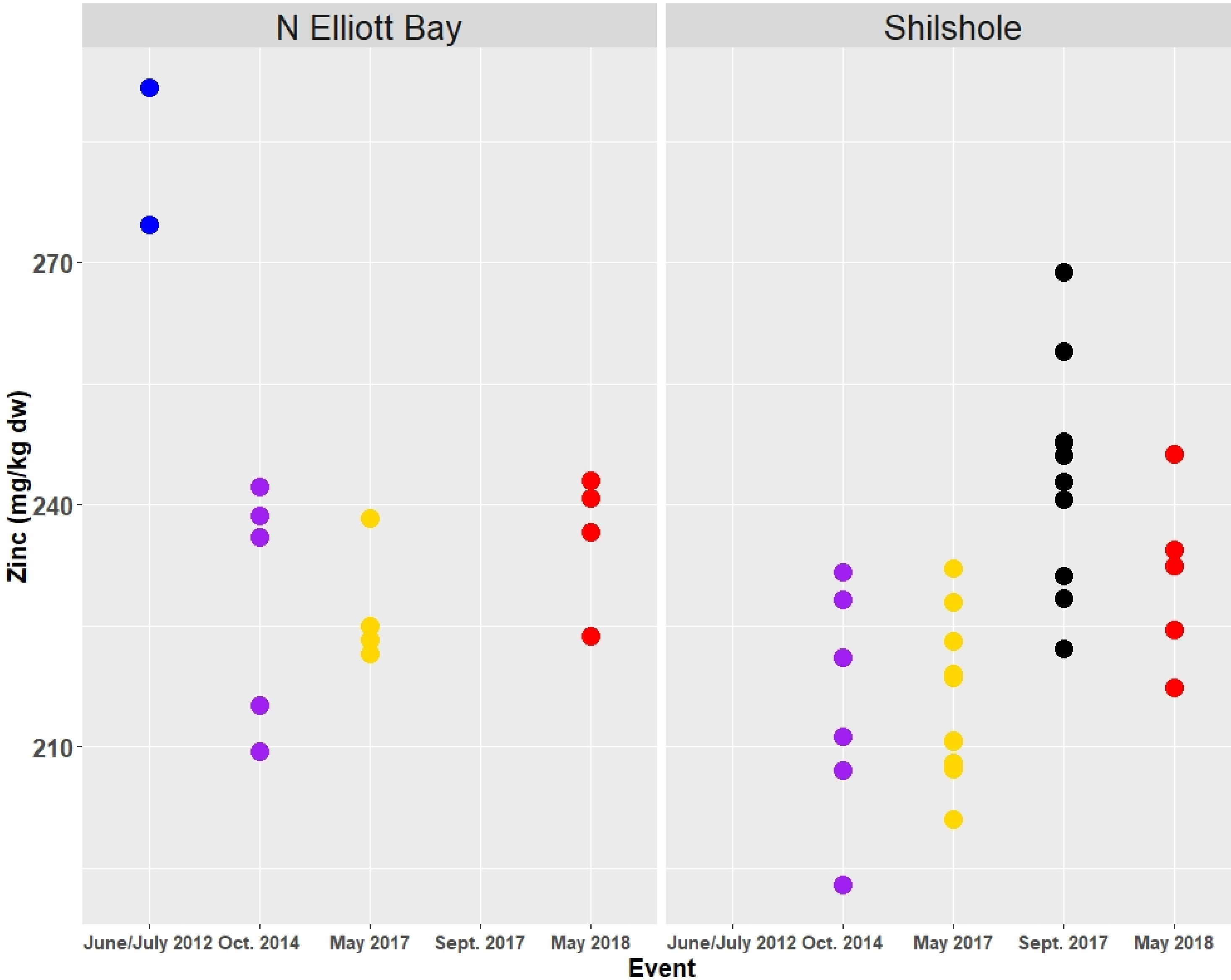
Selenium (mg/kg dw) in hepatopancreas grouped by sampling location and collection period.



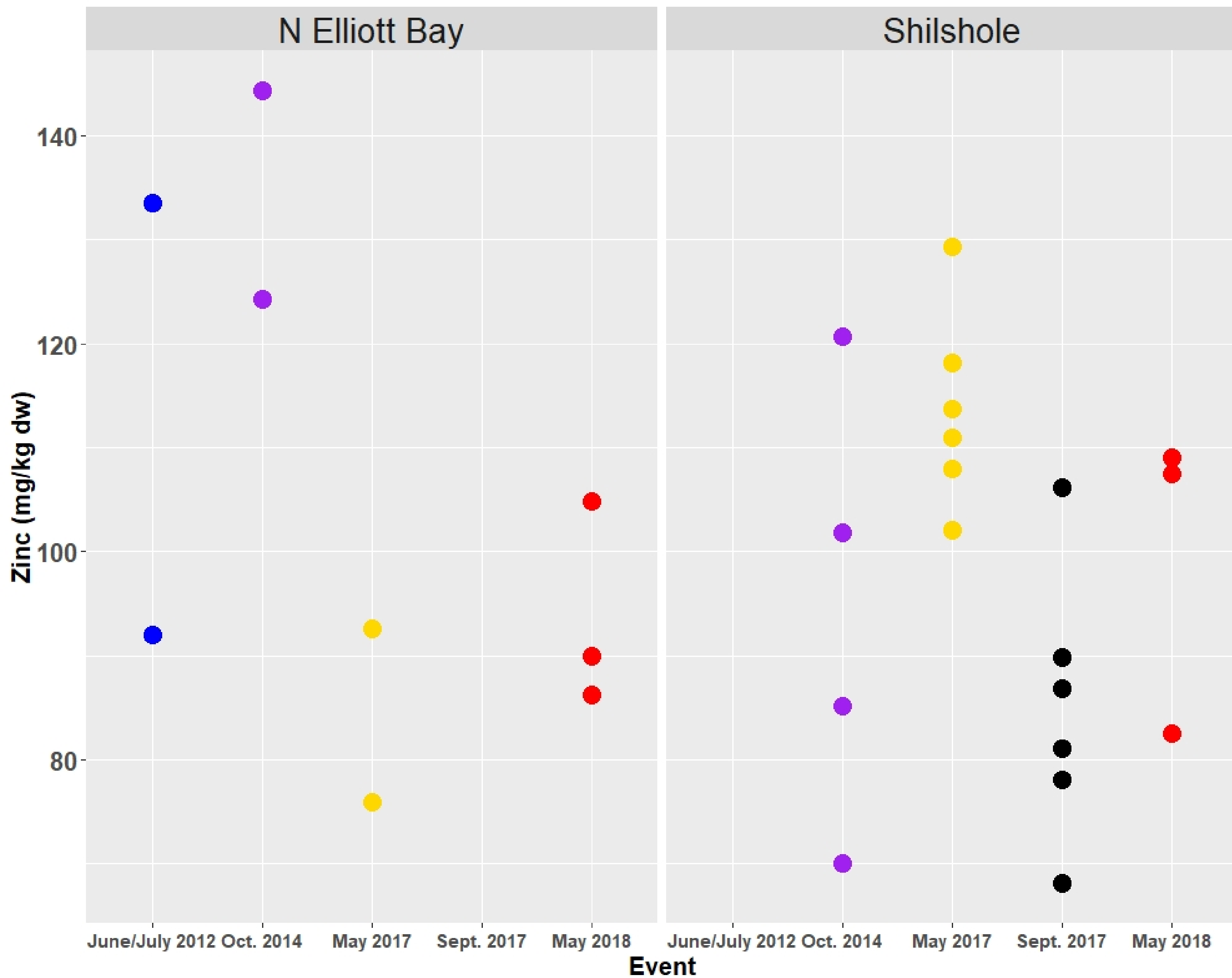
Silver (mg/kg dw) in muscle grouped by sampling location and collection period.



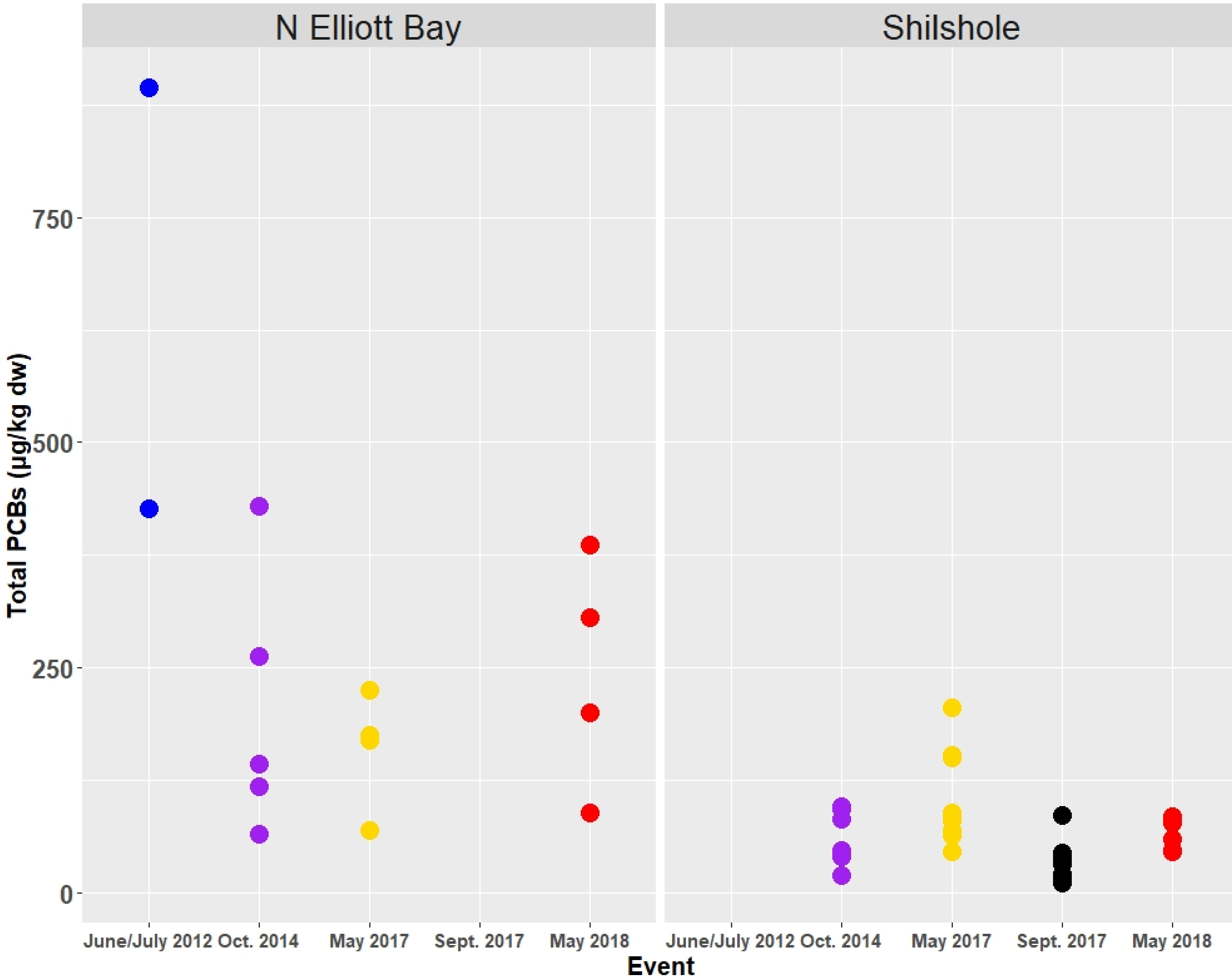
Silver (mg/kg dw) in hepatopancreas grouped by sampling location and collection period.



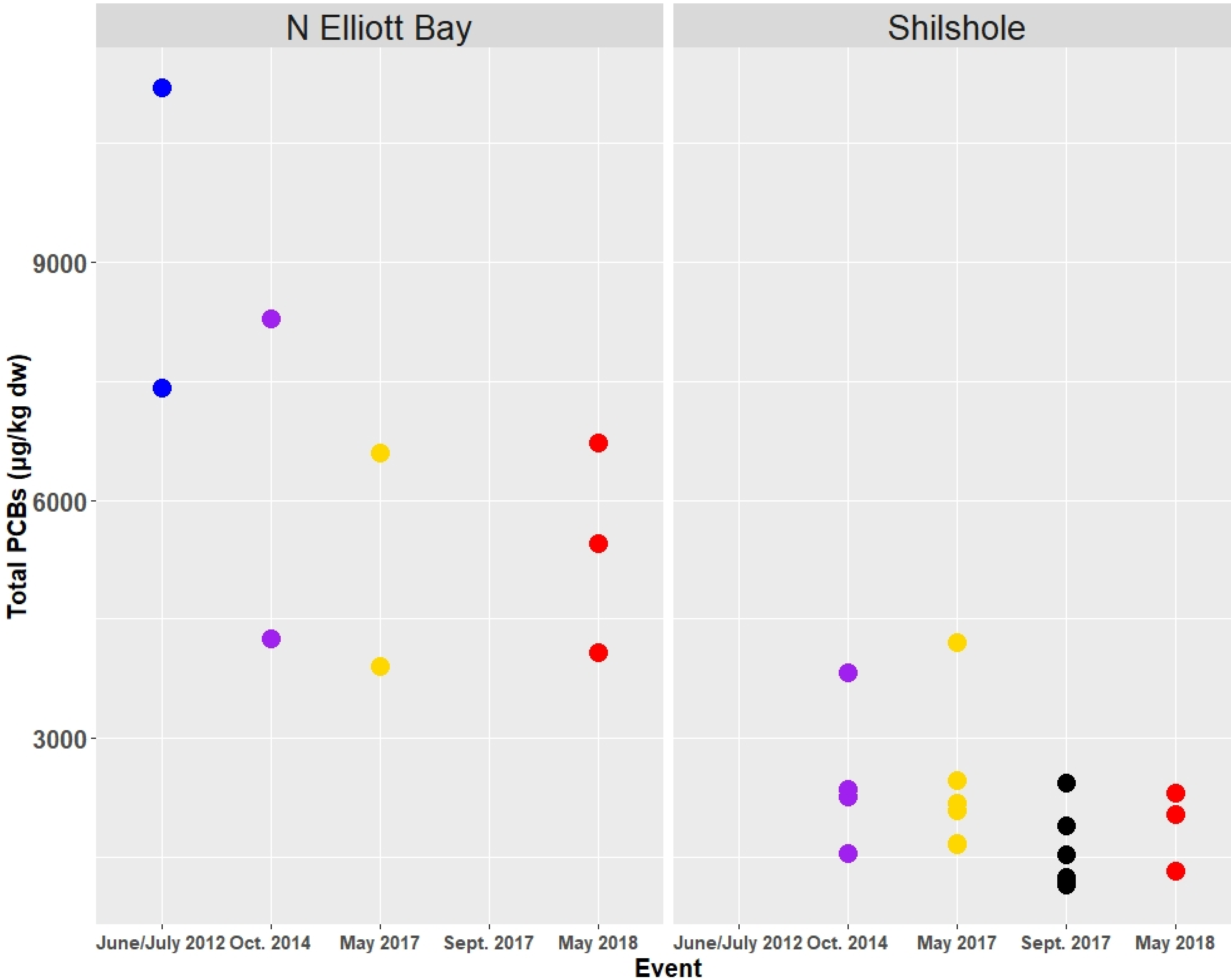
Zinc (mg/kg dw) in muscle grouped by sampling location and collection period.



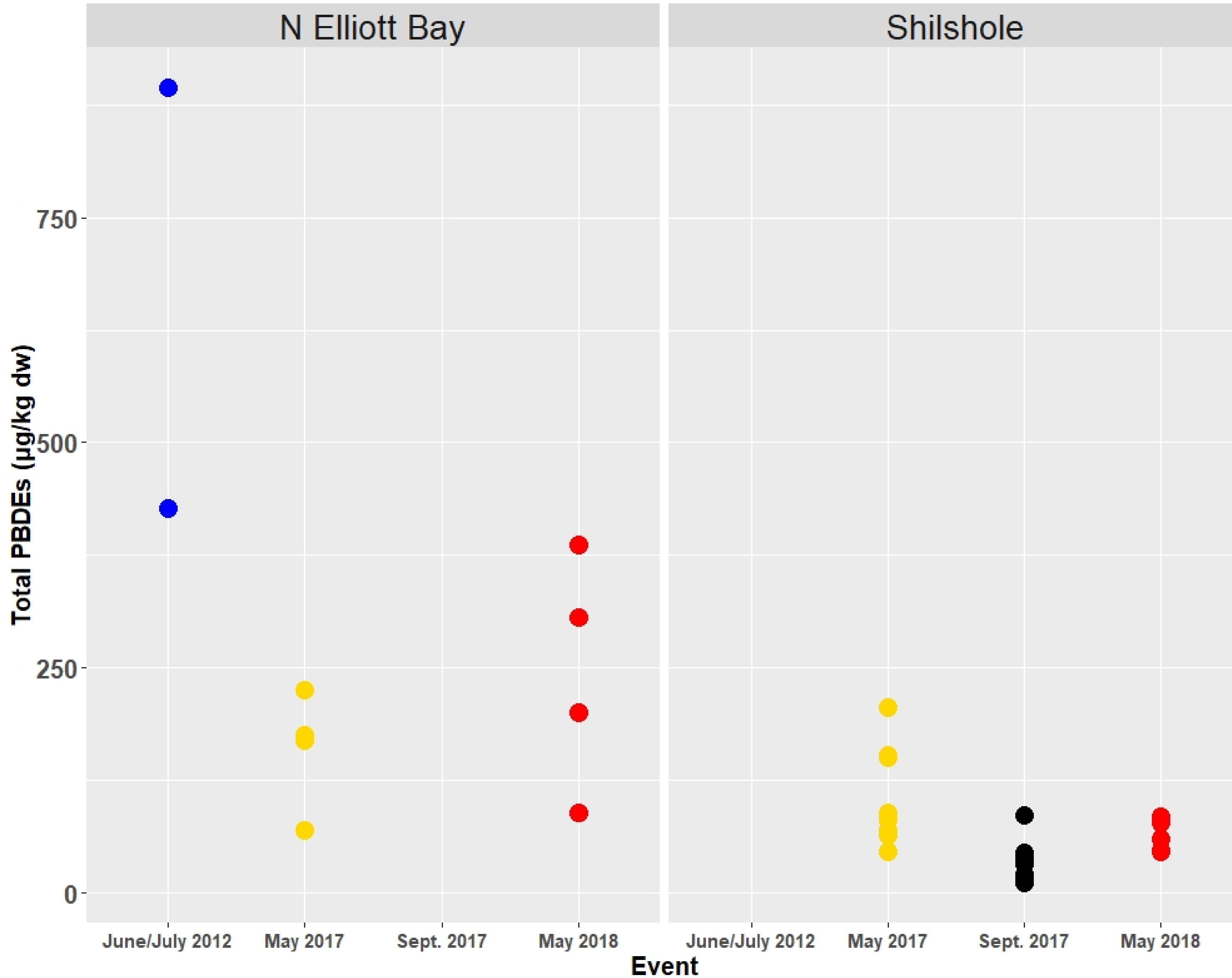
Zinc (mg/kg dw) in hepatopancreas grouped by sampling location and collection period.



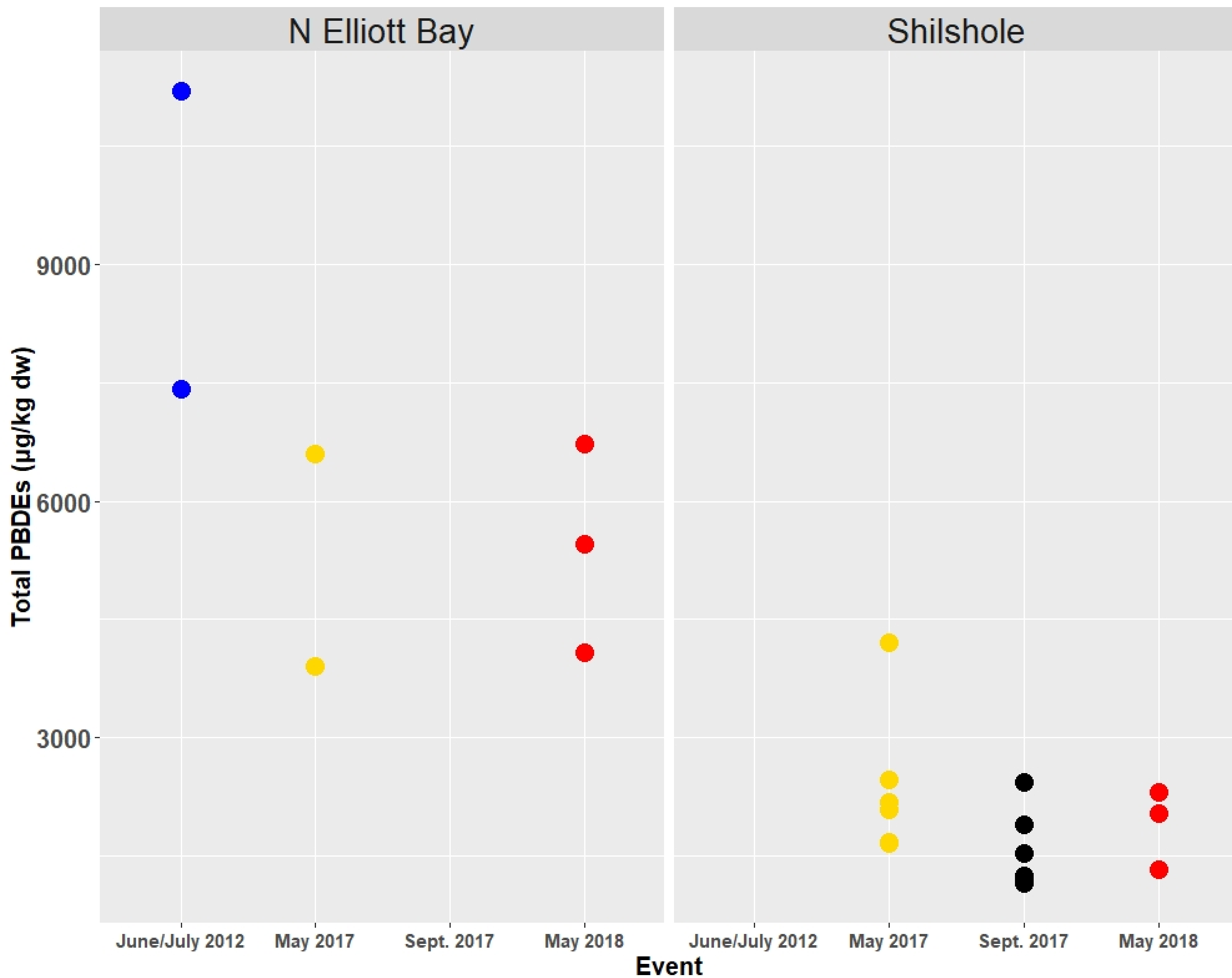
Total PCBs (µg/kg dw) in muscle grouped by sampling location and collection period.



Total PCBs (µg/kg dw) in hepatopancreas grouped by sampling location and collection period.

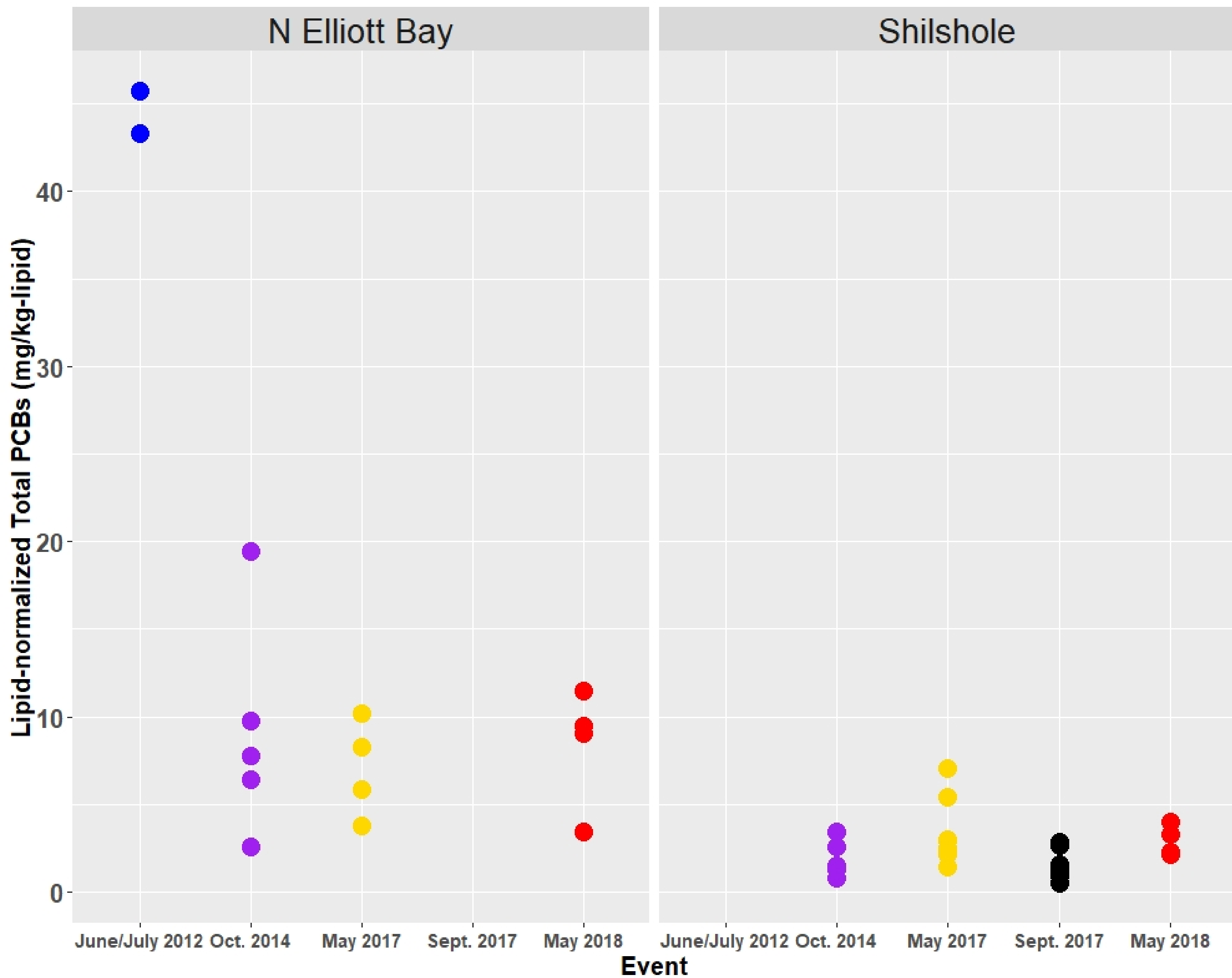


Total PBDEs (µg/kg dw) in muscle grouped by sampling location and collection period.

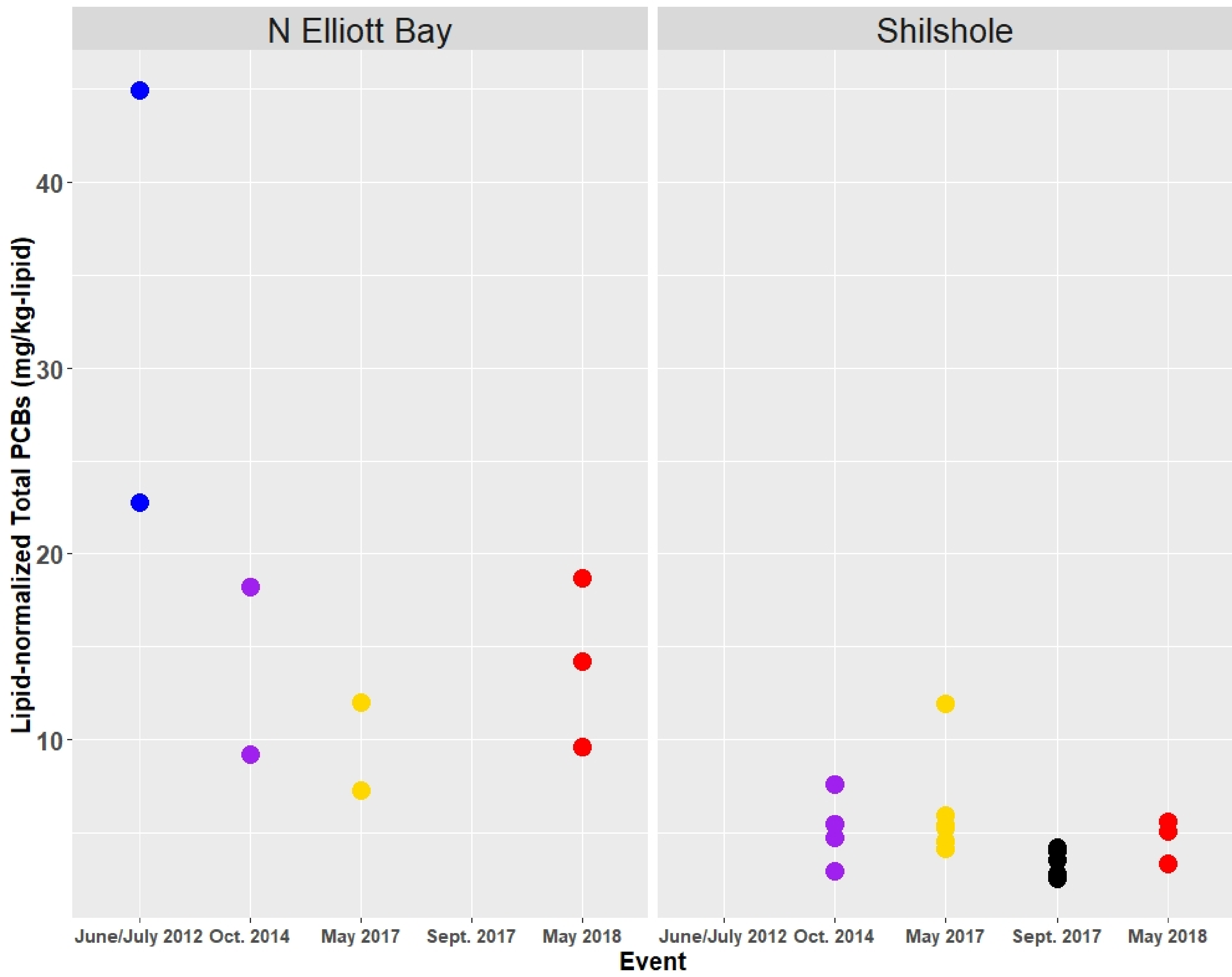


Total PBDEs (µg/kg dw) in hepatopancreas grouped by sampling location and collection period.

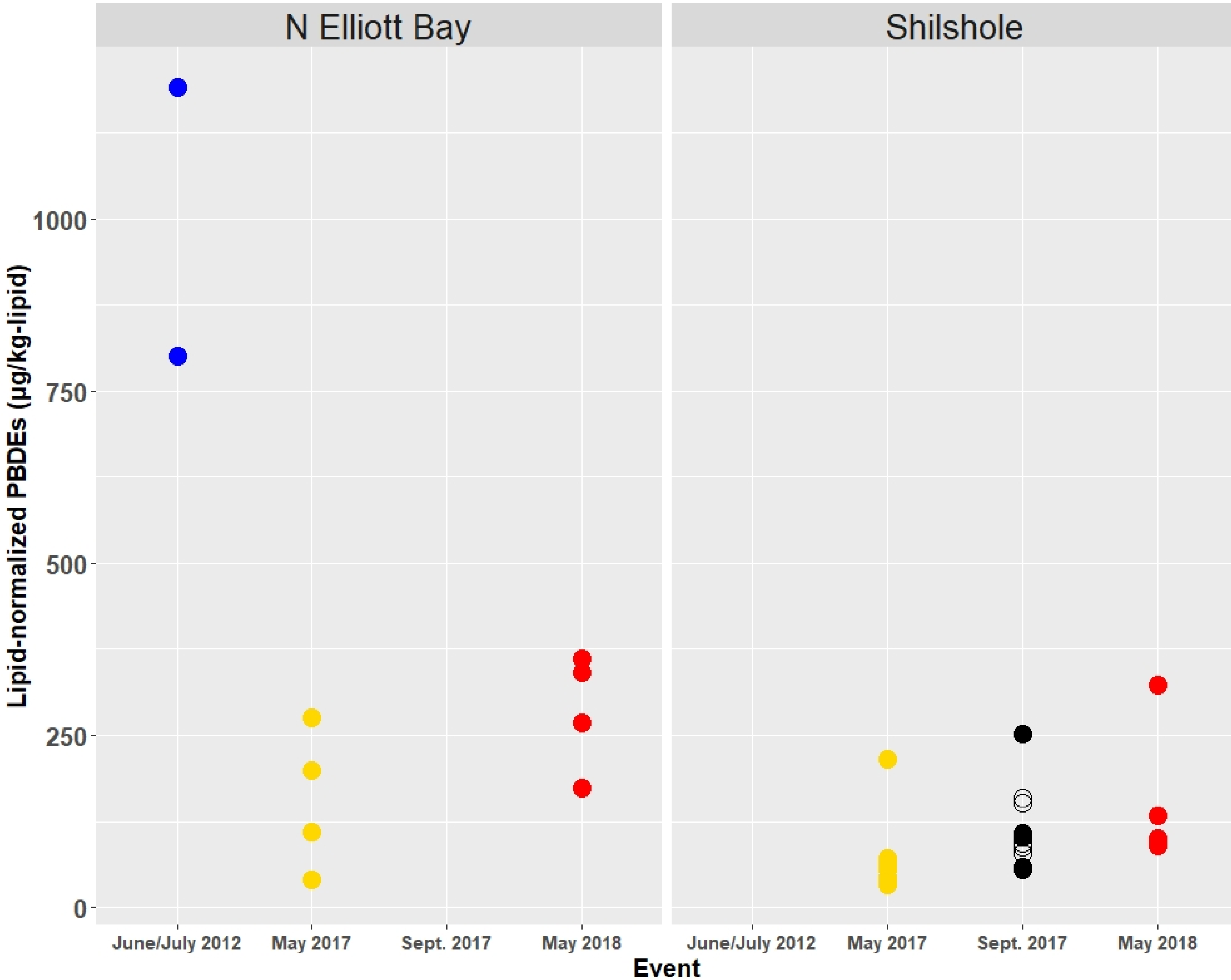
LIPID-NORMALIZED RESULTS



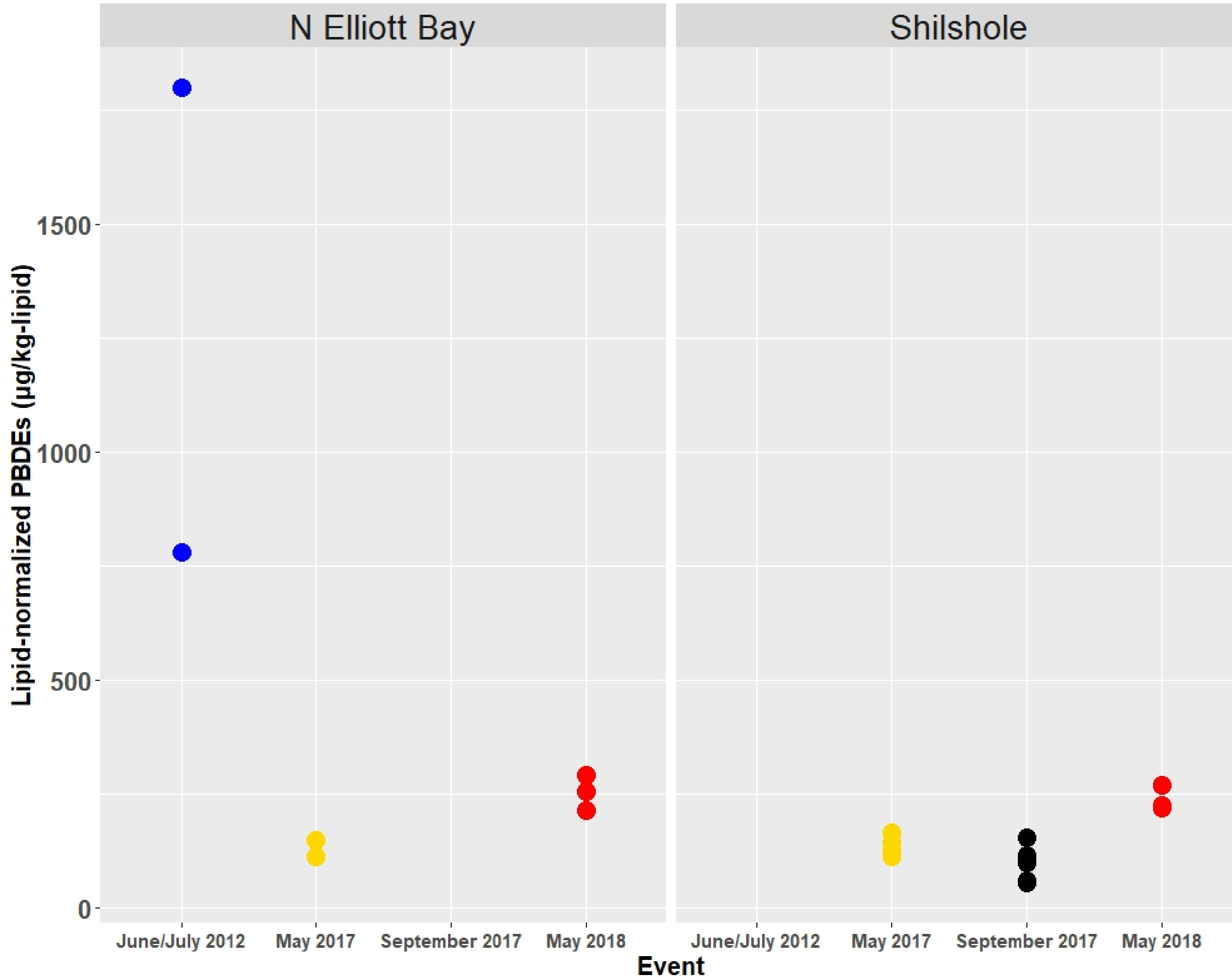
Lipid-normalized PCBs (mg/kg-lipid) in muscle grouped by sampling location and collection period.



Lipid-normalized PCBs (mg/kg-lipid) in hepatopancreas grouped by sampling location and collection period.



Lipid-normalized PBDEs (µg/kg-lipid) in muscle grouped by sampling location and collection period.



Lipid-normalized PBDEs (µg/kg-lipid) in hepatopancreas grouped by sampling location and collection period.

Appendix E: Statistical Data Analysis Results

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Table E-1. West Point Flooding Event Crab Tissue Monitoring Data with Kruskal-Wallis p-value Signficance.

		Month/	Sample		Percentiles							Kruskal-Wallis
Parameter	**Units**	**Year**	**Count**	**Min**	**25th**	**50th**	**75th**	**Max**	**Type**	**Area**	**Tissue**	**p value**
Arsenic, Total, ICP-MS	mg/kg	Jul-12	2	42.5	52.0	61.5	71.0	80.45	DW	N. Elliott Bay	Muscle	0.9134
Arsenic, Total, ICP-MS	mg/kg	Oct-14	5	26.9	35.5	42.7	63.4	89.33	DW	N. Elliott Bay	Muscle	
Arsenic, Total, ICP-MS	mg/kg	May-17	4	36.3	47.9	51.8	56.2	68.89	DW	N. Elliott Bay	Muscle	
Arsenic, Total, ICP-MS	mg/kg	May-18	4	38.6	45.3	51.5	59.0	69.74	DW	N. Elliott Bay	Muscle	
Cadmium, Total, ICP-MS	mg/kg	Jul-12	2	0.018	0.027	0.036	0.045	0.054	DW	N. Elliott Bay	Muscle	0.0085
Cadmium, Total, ICP-MS	mg/kg	Oct-14	5	0.091	0.121	0.152	0.510	0.554	DW	N. Elliott Bay	Muscle	
Cadmium, Total, ICP-MS	mg/kg	May-17	4	0.219	0.496	0.593	0.789	1.367	DW	N. Elliott Bay	Muscle	
Cadmium, Total, ICP-MS	mg/kg	May-18	4	0.058	0.061	0.069	0.079	0.093	DW	N. Elliott Bay	Muscle	
Chromium, Total, ICP-MS	mg/kg	Oct-14	5	0.070	0.073	0.094	0.097	0.107	DW	N. Elliott Bay	Muscle	0.4163
Chromium, Total, ICP-MS	mg/kg	May-17	4	0.049	0.058	0.070	0.090	0.126	DW	N. Elliott Bay	Muscle	
Chromium, Total, ICP-MS	mg/kg	May-18	4	0.091	0.091	0.091	0.118	0.146	DW	N. Elliott Bay	Muscle	
Copper, Total, ICP-MS	mg/kg	Jul-12	2	49.6	51.8	53.9	56.1	58.2	DW	N. Elliott Bay	Muscle	0.1618
Copper, Total, ICP-MS	mg/kg	Oct-14	5	40.1	42.9	59.7	66.7	67.1	DW	N. Elliott Bay	Muscle	
Copper, Total, ICP-MS	mg/kg	May-17	4	56.1	63.8	66.9	68.5	71.9	DW	N. Elliott Bay	Muscle	
Copper, Total, ICP-MS	mg/kg	May-18	4	47.9	49.1	51.1	53.4	55.4	DW	N. Elliott Bay	Muscle	
Lead, Total, ICP-MS	mg/kg	Jul-12	2	0.075	0.089	0.103	0.116	0.130	DW	N. Elliott Bay	Muscle	0.9665
Lead, Total, ICP-MS	mg/kg	Oct-14	5	0.056	0.081	0.094	0.171	0.241	DW	N. Elliott Bay	Muscle	
Lead, Total, ICP-MS	mg/kg	May-17	4	0.065	0.091	0.117	0.151	0.197	DW	N. Elliott Bay	Muscle	
Lead, Total, ICP-MS	mg/kg	May-18	4	0.094	0.099	0.107	0.118	0.127	DW	N. Elliott Bay	Muscle	
Mercury, Total, CVAA	mg/kg	Jul-12	2	0.469	0.616	0.763	0.909	1.056	DW	N. Elliott Bay	Muscle	0.2048
Mercury, Total, CVAA	mg/kg	Oct-14	5	0.195	0.253	0.281	0.329	0.847	DW	N. Elliott Bay	Muscle	
Mercury, Total, CVAA	mg/kg	May-17	4	0.378	0.411	0.457	0.523	0.617	DW	N. Elliott Bay	Muscle	
Mercury, Total, CVAA	mg/kg	May-18	4	0.374	0.382	0.454	0.527	0.538	DW	N. Elliott Bay	Muscle	
Nickel, Total, ICP-MS	mg/kg	Oct-14	5	0.117	0.139	0.328	0.661	1.114	DW	N. Elliott Bay	Muscle	0.3094
Nickel, Total, ICP-MS	mg/kg	May-17	4	0.129	0.243	0.290	0.330	0.426	DW	N. Elliott Bay	Muscle	
Nickel, Total, ICP-MS	mg/kg	May-18	4	0.099	0.121	0.144	0.172	0.207	DW	N. Elliott Bay	Muscle	
Selenium, Total, ICP-MS	mg/kg	Oct-14	5	2.16	2.39	2.87	3.02	3.08	DW	N. Elliott Bay	Muscle	0.1304
Selenium, Total, ICP-MS	mg/kg	May-17	4	2.68	2.80	3.07	3.35	3.54	DW	N. Elliott Bay	Muscle	
Selenium, Total, ICP-MS	mg/kg	May-18	4	2.46	2.48	2.48	2.50	2.55	DW	N. Elliott Bay	Muscle	

Table E-1. West Point Flooding Event Crab Tissue Monitoring Data with Kruskal-Wallis p-value Signficance.

		Month/	Sample		Percentiles							Kruskal-Wallis
Parameter	Units	Year	Count	Min	25th	50th	75th	Max	Type	Area	Tissue	p value
Silver, Total, ICP-MS	mg/kg	Oct-14	5	0.648	0.811	1.430	1.487	2.394	DW	N. Elliott Bay	Muscle	0.5223
Silver, Total, ICP-MS	mg/kg	May-17	4	0.847	1.116	1.211	1.219	1.228	DW	N. Elliott Bay	Muscle	
Silver, Total, ICP-MS	mg/kg	May-18	4	0.563	0.771	0.935	1.111	1.354	DW	N. Elliott Bay	Muscle	
Zinc, Total, ICP-MS	mg/kg	Jul-12	2	274.6	278.9	283.1	287.4	291.6	DW	N. Elliott Bay	Muscle	0.0926
Zinc, Total, ICP-MS	mg/kg	Oct-14	5	209.5	215.1	236.0	238.7	242.3	DW	N. Elliott Bay	Muscle	
Zinc, Total, ICP-MS	mg/kg	May-17	4	221.6	222.9	224.2	228.3	238.3	DW	N. Elliott Bay	Muscle	
Zinc, Total, ICP-MS	mg/kg	May-18	4	223.8	233.5	238.7	241.4	243.1	DW	N. Elliott Bay	Muscle	
Total PBDEs	µg/kg	May-17	4	1.20	1.79	3.36	4.90	5.43	DW	N. Elliott Bay	Muscle	0.0833
Total PBDEs	µg/kg	May-18	4	4.48	5.56	8.70	11.52	11.65	DW	N. Elliott Bay	Muscle	
Total PCB Homologs	µg/kg	Oct-14	5	65.51	118.9	142.7	262.8	429.79	DW	N. Elliott Bay	Muscle	0.6345
Total PCB Homologs	µg/kg	May-17	4	69.39	145.0	172.4	187.2	224.80	DW	N. Elliott Bay	Muscle	
Total PCB Homologs	µg/kg	May-18	4	88.56	172.3	252.8	325.7	386.35	DW	N. Elliott Bay	Muscle	
Arsenic, Total, ICP-MS	mg/kg	Jul-12	2	9.05	10.39	11.73	13.06	14.40	WW	N. Elliott Bay	Muscle	0.3582
Arsenic, Total, ICP-MS	mg/kg	Oct-14	5	4.17	6.57	7.65	9.44	13.40	WW	N. Elliott Bay	Muscle	
Arsenic, Total, ICP-MS	mg/kg	May-17	4	7.11	8.28	8.86	9.89	12.40	WW	N. Elliott Bay	Muscle	
Arsenic, Total, ICP-MS	mg/kg	May-18	4	7.95	9.08	10.33	11.80	13.60	WW	N. Elliott Bay	Muscle	
Cadmium, Total, ICP-MS	mg/kg	Jul-12	2	0.004	0.005	0.007	0.008	0.010	WW	N. Elliott Bay	Muscle	0.0103
Cadmium, Total, ICP-MS	mg/kg	Oct-14	5	0.017	0.018	0.027	0.079	0.083	WW	N. Elliott Bay	Muscle	
Cadmium, Total, ICP-MS	mg/kg	May-17	4	0.038	0.083	0.108	0.149	0.246	WW	N. Elliott Bay	Muscle	
Cadmium, Total, ICP-MS	mg/kg	May-18	4	0.012	0.012	0.014	0.016	0.019	WW	N. Elliott Bay	Muscle	
Chromium, Total, ICP-MS	mg/kg	Oct-14	5	0.013	0.013	0.014	0.015	0.016	WW	N. Elliott Bay	Muscle	0.0972
Chromium, Total, ICP-MS	mg/kg	May-17	4	0.009	0.011	0.013	0.016	0.021	WW	N. Elliott Bay	Muscle	
Chromium, Total, ICP-MS	mg/kg	May-18	4	0.018	0.018	0.018	0.024	0.029	WW	N. Elliott Bay	Muscle	
Copper, Total, ICP-MS	mg/kg	Jul-12	2	8.88	9.76	10.64	11.52	12.40	WW	N. Elliott Bay	Muscle	0.0615
Copper, Total, ICP-MS	mg/kg	Oct-14	5	7.18	7.93	9.25	10.00	10.00	WW	N. Elliott Bay	Muscle	
Copper, Total, ICP-MS	mg/kg	May-17	4	10.10	11.38	11.90	12.25	13.00	WW	N. Elliott Bay	Muscle	
Copper, Total, ICP-MS	mg/kg	May-18	4	9.67	10.07	10.35	10.58	10.80	WW	N. Elliott Bay	Muscle	
Lead, Total, ICP-MS	mg/kg	Jul-12	2	0.016	0.018	0.020	0.021	0.023	WW	N. Elliott Bay	Muscle	0.9222
Lead, Total, ICP-MS	mg/kg	Oct-14	5	0.010	0.014	0.015	0.026	0.037	WW	N. Elliott Bay	Muscle	
Lead, Total, ICP-MS	mg/kg	May-17	4	0.013	0.017	0.020	0.026	0.034	WW	N. Elliott Bay	Muscle	
Lead, Total, ICP-MS	mg/kg	May-18	4	0.019	0.020	0.022	0.023	0.025	WW	N. Elliott Bay	Muscle	

Table E-1. West Point Flooding Event Crab Tissue Monitoring Data with Kruskal-Wallis p-value Signficance.

		Month/	Sample		Percentiles							Kruskal-Wallis
Parameter	Units	Year	Count	Min	25th	50th	75th	Max	Type	Area	Tissue	p value
Mercury, Total, CVAA	mg/kg	Jul-12	2	0.100	0.122	0.145	0.167	0.189	WW	N. Elliott Bay	Muscle	0.1795
Mercury, Total, CVAA	mg/kg	Oct-14	5	0.030	0.045	0.049	0.052	0.127	WW	N. Elliott Bay	Muscle	
Mercury, Total, CVAA	mg/kg	May-17	4	0.068	0.079	0.082	0.089	0.108	WW	N. Elliott Bay	Muscle	
Mercury, Total, CVAA	mg/kg	May-18	4	0.077	0.078	0.091	0.104	0.105	WW	N. Elliott Bay	Muscle	
Nickel, Total, ICP-MS	mg/kg	Oct-14	5	0.021	0.022	0.051	0.101	0.166	WW	N. Elliott Bay	Muscle	0.3679
Nickel, Total, ICP-MS	mg/kg	May-17	4	0.025	0.043	0.050	0.056	0.077	WW	N. Elliott Bay	Muscle	
Nickel, Total, ICP-MS	mg/kg	May-18	4	0.020	0.024	0.029	0.035	0.041	WW	N. Elliott Bay	Muscle	
Selenium, Total, ICP-MS	mg/kg	Oct-14	5	0.370	0.400	0.430	0.450	0.552	WW	N. Elliott Bay	Muscle	0.0811
Selenium, Total, ICP-MS	mg/kg	May-17	4	0.475	0.513	0.551	0.591	0.637	WW	N. Elliott Bay	Muscle	
Selenium, Total, ICP-MS	mg/kg	May-18	4	0.495	0.497	0.499	0.503	0.507	WW	N. Elliott Bay	Muscle	
Silver, Total, ICP-MS	mg/kg	Oct-14	5	0.116	0.150	0.213	0.223	0.371	WW	N. Elliott Bay	Muscle	0.8750
Silver, Total, ICP-MS	mg/kg	May-17	4	0.166	0.195	0.208	0.213	0.219	WW	N. Elliott Bay	Muscle	
Silver, Total, ICP-MS	mg/kg	May-18	4	0.112	0.158	0.191	0.222	0.264	WW	N. Elliott Bay	Muscle	
Zinc, Total, ICP-MS	mg/kg	Jul-12	2	52.2	53.8	55.4	56.9	58.5	WW	N. Elliott Bay	Muscle	0.0073
Zinc, Total, ICP-MS	mg/kg	Oct-14	5	35.4	36.1	37.0	37.5	39.8	WW	N. Elliott Bay	Muscle	
Zinc, Total, ICP-MS	mg/kg	May-17	4	37.0	39.4	41.0	42.3	44.1	WW	N. Elliott Bay	Muscle	
Zinc, Total, ICP-MS	mg/kg	May-18	4	45.2	46.6	47.3	48.0	49.6	WW	N. Elliott Bay	Muscle	
Total PBDEs	µg/kg	May-17	4	0.200	0.343	0.620	0.875	0.950	WW	N. Elliott Bay	Muscle	0.0433
Total PBDEs	µg/kg	May-18	4	0.904	1.141	1.730	2.259	2.318	WW	N. Elliott Bay	Muscle	
Total PCB Homologs	µg/kg	Oct-14	5	11.73	17.71	22.12	48.61	64.47	WW	N. Elliott Bay	Muscle	0.3756
Total PCB Homologs	µg/kg	May-17	4	13.60	24.71	29.93	33.41	39.34	WW	N. Elliott Bay	Muscle	
Total PCB Homologs	µg/kg	May-18	4	17.89	35.41	51.01	64.42	75.34	WW	N. Elliott Bay	Muscle	
Total PCB Homologs (lipid)	µg/kg-lipid	Oct-14	5	2,566	6,394	7,789	9,741	19,418	WW	N. Elliott Bay	Muscle	0.8621
Total PCB Homologs (lipid)	µg/kg-lipid	May-17	4	3,799	5,317	7,035	8,737	10,206	WW	N. Elliott Bay	Muscle	
Total PCB Homologs (lipid)	µg/kg-lipid	May-18	4	3,427	7,656	9,267	9,963	11,450	WW	N. Elliott Bay	Muscle	

Table E-1. West Point Flooding Event Crab Tissue Monitoring Data with Kruskal-Wallis p-value Signficance.

		Month/	Sample		Percentiles							Kruskal-Wallis
Parameter	Units	Year	Count	Min	25th	50th	75th	Max	Type	Area	Tissue	p value
Arsenic, Total, ICP-MS	mg/kg	Oct-14	6	19.1	24.8	28.9	33.0	33.8	DW	Shilshole	Muscle	0.0017
Arsenic, Total, ICP-MS	mg/kg	May-17	10	29.0	36.8	41.1	46.9	51.7	DW	Shilshole	Muscle	
Arsenic, Total, ICP-MS	mg/kg	Sep-17	10	33.7	37.4	43.8	51.7	98.4	DW	Shilshole	Muscle	
Arsenic, Total, ICP-MS	mg/kg	May-18	5	43.6	45.2	50.5	53.3	64.5	DW	Shilshole	Muscle	
Cadmium, Total, ICP-MS	mg/kg	Oct-14	6	0.091	0.148	0.230	0.318	0.370	DW	Shilshole	Muscle	0.1205
Cadmium, Total, ICP-MS	mg/kg	May-17	10	0.056	0.122	0.155	0.220	0.395	DW	Shilshole	Muscle	
Cadmium, Total, ICP-MS	mg/kg	Sep-17	10	0.110	0.158	0.198	0.276	0.492	DW	Shilshole	Muscle	
Cadmium, Total, ICP-MS	mg/kg	May-18	5	0.257	0.283	0.283	0.369	0.492	DW	Shilshole	Muscle	
Chromium, Total, ICP-MS	mg/kg	Oct-14	6	0.065	0.066	0.071	0.078	0.088	DW	Shilshole	Muscle	0.0150
Chromium, Total, ICP-MS	mg/kg	May-17	10	0.058	0.135	0.179	0.297	2.569	DW	Shilshole	Muscle	
Chromium, Total, ICP-MS	mg/kg	Sep-17	10	0.044	0.056	0.069	0.098	0.182	DW	Shilshole	Muscle	
Chromium, Total, ICP-MS	mg/kg	May-18	5	0.054	0.074	0.104	0.142	0.189	DW	Shilshole	Muscle	
Copper, Total, ICP-MS	mg/kg	Oct-14	6	39.0	44.2	48.8	52.1	55.2	DW	Shilshole	Muscle	0.0709
Copper, Total, ICP-MS	mg/kg	May-17	10	49.4	53.9	56.0	60.2	70.5	DW	Shilshole	Muscle	
Copper, Total, ICP-MS	mg/kg	Sep-17	10	50.3	52.1	58.2	59.6	67.5	DW	Shilshole	Muscle	
Copper, Total, ICP-MS	mg/kg	May-18	5	42.4	52.3	58.5	61.8	66.0	DW	Shilshole	Muscle	
Lead, Total, ICP-MS	mg/kg	Oct-14	6	0.039	0.061	0.067	0.080	0.088	DW	Shilshole	Muscle	0.0566
Lead, Total, ICP-MS	mg/kg	May-17	10	0.063	0.076	0.093	0.110	0.179	DW	Shilshole	Muscle	
Lead, Total, ICP-MS	mg/kg	Sep-17	10	0.038	0.045	0.053	0.075	0.186	DW	Shilshole	Muscle	
Lead, Total, ICP-MS	mg/kg	May-18	5	0.051	0.075	0.076	0.082	0.099	DW	Shilshole	Muscle	
Mercury, Total, CVAA	mg/kg	Oct-14	6	0.232	0.273	0.317	0.362	0.517	DW	Shilshole	Muscle	0.2686
Mercury, Total, CVAA	mg/kg	May-17	10	0.237	0.293	0.344	0.355	0.439	DW	Shilshole	Muscle	
Mercury, Total, CVAA	mg/kg	Sep-17	10	0.173	0.256	0.321	0.362	0.803	DW	Shilshole	Muscle	
Mercury, Total, CVAA	mg/kg	May-18	5	0.318	0.372	0.385	0.401	0.456	DW	Shilshole	Muscle	
Nickel, Total, ICP-MS	mg/kg	Oct-14	6	0.106	0.135	0.141	0.253	0.342	DW	Shilshole	Muscle	0.2469
Nickel, Total, ICP-MS	mg/kg	May-17	10	0.091	0.196	0.245	0.467	1.738	DW	Shilshole	Muscle	
Nickel, Total, ICP-MS	mg/kg	Sep-17	10	0.110	0.142	0.209	0.272	0.351	DW	Shilshole	Muscle	
Nickel, Total, ICP-MS	mg/kg	May-18	5	0.148	0.268	0.348	0.363	0.377	DW	Shilshole	Muscle	
Selenium, Total, ICP-MS	mg/kg	Oct-14	6	1.94	1.98	2.13	2.29	2.59	DW	Shilshole	Muscle	0.0059
Selenium, Total, ICP-MS	mg/kg	May-17	10	1.55	2.17	2.59	2.65	3.10	DW	Shilshole	Muscle	
Selenium, Total, ICP-MS	mg/kg	Sep-17	10	2.39	2.66	2.81	2.92	3.79	DW	Shilshole	Muscle	
Selenium, Total, ICP-MS	mg/kg	May-18	5	2.38	2.81	2.99	3.09	3.50	DW	Shilshole	Muscle	

Table E-1. West Point Flooding Event Crab Tissue Monitoring Data with Kruskal-Wallis p-value Signficance.

		Month/	Sample		Percentiles							Kruskal-Wallis
Parameter	Units	Year	Count	Min	25th	50th	75th	Max	Type	Area	Tissue	p value
Silver, Total, ICP-MS	mg/kg	Oct-14	6	0.52	0.73	0.89	1.05	1.14	DW	Shilshole	Muscle	0.0938
Silver, Total, ICP-MS	mg/kg	May-17	10	0.72	0.90	1.07	1.37	1.65	DW	Shilshole	Muscle	
Silver, Total, ICP-MS	mg/kg	Sep-17	10	0.88	1.09	1.25	1.41	1.49	DW	Shilshole	Muscle	
Silver, Total, ICP-MS	mg/kg	May-18	5	1.07	1.12	1.19	1.29	1.42	DW	Shilshole	Muscle	
Zinc, Total, ICP-MS	mg/kg	Oct-14	6	193	208	216	227	232	DW	Shilshole	Muscle	0.0009
Zinc, Total, ICP-MS	mg/kg	May-17	10	201	209	215	222	232	DW	Shilshole	Muscle	
Zinc, Total, ICP-MS	mg/kg	Sep-17	10	222	234	244	248	269	DW	Shilshole	Muscle	
Zinc, Total, ICP-MS	mg/kg	May-18	5	217	225	232	235	246	DW	Shilshole	Muscle	
Total PBDEs	µg/kg	May-17	10	0.96	1.49	1.91	2.07	5.95	DW	Shilshole	Muscle	0.0689
Total PBDEs	µg/kg	Sep-17	10	1.28	1.56	1.77	2.05	8.22	DW	Shilshole	Muscle	
Total PBDEs	µg/kg	May-18	5	2.01	2.16	2.51	3.43	6.23	DW	Shilshole	Muscle	
Total PCB Homologs	µg/kg	Oct-14	6	20.1	42.2	64.7	90.3	95.7	DW	Shilshole	Muscle	0.0027
Total PCB Homologs	µg/kg	May-17	10	45.4	72.0	82.1	134.6	206.2	DW	Shilshole	Muscle	
Total PCB Homologs	µg/kg	Sep-17	10	10.8	18.9	32.9	38.3	86.6	DW	Shilshole	Muscle	
Total PCB Homologs	µg/kg	May-18	5	45.3	46.9	60.4	77.3	85.1	DW	Shilshole	Muscle	
Arsenic, Total, ICP-MS	mg/kg	Oct-14	6	3.24	4.06	5.09	5.67	6.16	WW	Shilshole	Muscle	0.0019
Arsenic, Total, ICP-MS	mg/kg	May-17	10	5.24	6.25	7.08	7.70	8.94	WW	Shilshole	Muscle	
Arsenic, Total, ICP-MS	mg/kg	Sep-17	10	5.34	6.44	7.47	8.43	19.00	WW	Shilshole	Muscle	
Arsenic, Total, ICP-MS	mg/kg	May-18	5	7.82	8.33	8.47	8.69	12.90	WW	Shilshole	Muscle	
Cadmium, Total, ICP-MS	mg/kg	Oct-14	6	0.015	0.028	0.041	0.053	0.057	WW	Shilshole	Muscle	0.0635
Cadmium, Total, ICP-MS	mg/kg	May-17	10	0.011	0.022	0.026	0.038	0.058	WW	Shilshole	Muscle	
Cadmium, Total, ICP-MS	mg/kg	Sep-17	10	0.021	0.026	0.032	0.050	0.076	WW	Shilshole	Muscle	
Cadmium, Total, ICP-MS	mg/kg	May-18	5	0.045	0.049	0.057	0.064	0.085	WW	Shilshole	Muscle	
Chromium, Total, ICP-MS	mg/kg	Oct-14	6	0.010	0.012	0.012	0.014	0.015	WW	Shilshole	Muscle	0.0073
Chromium, Total, ICP-MS	mg/kg	May-17	10	0.011	0.024	0.031	0.053	0.411	WW	Shilshole	Muscle	
Chromium, Total, ICP-MS	mg/kg	Sep-17	10	0.009	0.010	0.013	0.016	0.027	WW	Shilshole	Muscle	
Chromium, Total, ICP-MS	mg/kg	May-18	5	0.009	0.012	0.017	0.026	0.038	WW	Shilshole	Muscle	
Copper, Total, ICP-MS	mg/kg	Oct-14	6	7.35	7.48	7.98	9.07	9.40	WW	Shilshole	Muscle	0.0321
Copper, Total, ICP-MS	mg/kg	May-17	10	9.13	9.49	9.83	10.20	12.20	WW	Shilshole	Muscle	
Copper, Total, ICP-MS	mg/kg	Sep-17	10	8.75	8.99	9.73	10.30	11.20	WW	Shilshole	Muscle	
Copper, Total, ICP-MS	mg/kg	May-18	5	8.09	8.99	10.50	10.70	11.70	WW	Shilshole	Muscle	

Table E-1. West Point Flooding Event Crab Tissue Monitoring Data with Kruskal-Wallis p-value Signficance.

Parameter	Units	Month/ Year	Sample Count	Min	Percentiles 25th	50th	75th	Max	Type	Area	Tissue	Kruskal-Wallis p value
Lead, Total, ICP-MS	mg/kg	Oct-14	6	0.007	0.010	0.012	0.014	0.015	WW	Shilshole	Muscle	0.0109
Lead, Total, ICP-MS	mg/kg	May-17	10	0.011	0.013	0.016	0.020	0.031	WW	Shilshole	Muscle	
Lead, Total, ICP-MS	mg/kg	Sep-17	10	0.006	0.008	0.010	0.012	0.031	WW	Shilshole	Muscle	
Lead, Total, ICP-MS	mg/kg	May-18	5	0.010	0.013	0.013	0.015	0.017	WW	Shilshole	Muscle	
Mercury, Total, CVAA	mg/kg	Oct-14	6	0.040	0.047	0.056	0.058	0.096	WW	Shilshole	Muscle	0.3511
Mercury, Total, CVAA	mg/kg	May-17	10	0.047	0.051	0.055	0.064	0.076	WW	Shilshole	Muscle	
Mercury, Total, CVAA	mg/kg	Sep-17	10	0.026	0.044	0.055	0.060	0.155	WW	Shilshole	Muscle	
Mercury, Total, CVAA	mg/kg	May-18	5	0.051	0.064	0.074	0.079	0.080	WW	Shilshole	Muscle	
Nickel, Total, ICP-MS	mg/kg	Oct-14	6	0.020	0.023	0.024	0.042	0.053	WW	Shilshole	Muscle	0.1392
Nickel, Total, ICP-MS	mg/kg	May-17	10	0.018	0.036	0.043	0.071	0.278	WW	Shilshole	Muscle	
Nickel, Total, ICP-MS	mg/kg	Sep-17	10	0.021	0.026	0.036	0.042	0.053	WW	Shilshole	Muscle	
Nickel, Total, ICP-MS	mg/kg	May-18	5	0.028	0.046	0.055	0.063	0.075	WW	Shilshole	Muscle	
Selenium, Total, ICP-MS	mg/kg	Oct-14	6	0.33	0.35	0.37	0.40	0.43	WW	Shilshole	Muscle	0.0020
Selenium, Total, ICP-MS	mg/kg	May-17	10	0.31	0.38	0.43	0.46	0.52	WW	Shilshole	Muscle	
Selenium, Total, ICP-MS	mg/kg	Sep-17	10	0.41	0.46	0.48	0.48	0.73	WW	Shilshole	Muscle	
Selenium, Total, ICP-MS	mg/kg	May-18	5	0.45	0.48	0.54	0.56	0.60	WW	Shilshole	Muscle	
Silver, Total, ICP-MS	mg/kg	Oct-14	6	0.09	0.12	0.16	0.19	0.19	WW	Shilshole	Muscle	0.0981
Silver, Total, ICP-MS	mg/kg	May-17	10	0.13	0.17	0.18	0.22	0.29	WW	Shilshole	Muscle	
Silver, Total, ICP-MS	mg/kg	Sep-17	10	0.15	0.18	0.20	0.24	0.28	WW	Shilshole	Muscle	
Silver, Total, ICP-MS	mg/kg	May-18	5	0.19	0.19	0.21	0.24	0.26	WW	Shilshole	Muscle	
Zinc, Total, ICP-MS	mg/kg	Oct-14	6	32.1	34.0	37.8	39.0	43.8	WW	Shilshole	Muscle	0.1716
Zinc, Total, ICP-MS	mg/kg	May-17	10	33.5	35.8	36.8	39.5	41.2	WW	Shilshole	Muscle	
Zinc, Total, ICP-MS	mg/kg	Sep-17	10	32.6	38.1	42.1	47.0	48.4	WW	Shilshole	Muscle	
Zinc, Total, ICP-MS	mg/kg	May-18	5	35.7	37.4	42.6	44.4	46.9	WW	Shilshole	Muscle	
Total PBDEs	µg/kg	May-17	10	0.190	0.250	0.320	0.340	1.00	WW	Shilshole	Muscle	0.0222
Total PBDEs	µg/kg	Sep-17	10	0.190	0.285	0.340	0.340	1.16	WW	Shilshole	Muscle	
Total PBDEs	µg/kg	May-18	5	0.371	0.383	0.502	0.545	1.08	WW	Shilshole	Muscle	
Total PCB Homologs	µg/kg	Oct-14	6	3.34	7.76	11.01	14.30	17.79	WW	Shilshole	Muscle	0.0010
Total PCB Homologs	µg/kg	May-17	10	8.03	12.32	14.27	22.77	35.89	WW	Shilshole	Muscle	
Total PCB Homologs	µg/kg	Sep-17	10	2.10	3.47	5.18	6.62	12.21	WW	Shilshole	Muscle	
Total PCB Homologs	µg/kg	May-18	5	7.80	8.96	12.08	13.37	13.5	WW	Shilshole	Muscle	

Table E-1. West Point Flooding Event Crab Tissue Monitoring Data with Kruskal-Wallis p-value Signficance.

Parameter	Units	Month/ Year	Sample Count	Min	Percentiles 25th	50th	75th	Max	Type	Area	Tissue	Kruskal-Wallis p value
Total PBDEs (lipid)	µg/kg-lipid	May-17	10	32.6	46.9	58.0	68.9	215.1	WW	Shilshole	Muscle	0.0090
Total PBDEs (lipid)	µg/kg-lipid	Sep-17	10	55.5	81.0	97.5	140.1	252.5	WW	Shilshole	Muscle	
Total PBDEs (lipid)	µg/kg-lipid	May-18	5	89.2	96.5	100.5	132.6	323.7	WW	Shilshole	Muscle	
Total PCB Homologs (lipid)	µg/kg-lipid	Oct-14	6	781	1,340	2,005	2,560	3,444	WW	Shilshole	Muscle	0.0698
Total PCB Homologs (lipid)	µg/kg-lipid	May-17	10	1,392	2,190	2,708	4,801	7,023	WW	Shilshole	Muscle	
Total PCB Homologs (lipid)	µg/kg-lipid	Sep-17	10	484	1,162	1,521	2,365	2,816	WW	Shilshole	Muscle	
Total PCB Homologs (lipid)	µg/kg-lipid	May-18	5	2,113	2,145	2,256	3,294	4,016	WW	Shilshole	Muscle	
Arsenic, Total, ICP-MS	mg/kg	Oct-14	4	18.0	18.6	21.2	24.6	27.5	DW	Shilshole	Hepato	0.0085
Arsenic, Total, ICP-MS	mg/kg	May-17	6	30.3	32.0	32.5	35.8	37.2	DW	Shilshole	Hepato	
Arsenic, Total, ICP-MS	mg/kg	Sep-17	6	24.6	26.6	27.2	27.8	69.7	DW	Shilshole	Hepato	
Arsenic, Total, ICP-MS	mg/kg	May-18	3	37.5	39.1	40.8	43.6	46.4	DW	Shilshole	Hepato	
Cadmium, Total, ICP-MS	mg/kg	Oct-14	4	3.19	3.67	4.47	5.52	6.74	DW	Shilshole	Hepato	0.7853
Cadmium, Total, ICP-MS	mg/kg	May-17	6	4.25	4.40	5.01	6.04	6.67	DW	Shilshole	Hepato	
Cadmium, Total, ICP-MS	mg/kg	Sep-17	6	3.17	4.22	5.44	6.47	12.48	DW	Shilshole	Hepato	
Cadmium, Total, ICP-MS	mg/kg	May-18	3	4.92	5.13	5.34	7.88	10.42	DW	Shilshole	Hepato	
Chromium, Total, ICP-MS	mg/kg	Oct-14	4	0.14	0.16	0.18	0.22	0.28	DW	Shilshole	Hepato	0.0142
Chromium, Total, ICP-MS	mg/kg	May-17	6	0.38	0.48	0.48	0.76	1.19	DW	Shilshole	Hepato	
Chromium, Total, ICP-MS	mg/kg	Sep-17	6	0.18	0.22	0.25	0.35	0.78	DW	Shilshole	Hepato	
Chromium, Total, ICP-MS	mg/kg	May-18	3	0.21	0.28	0.36	0.39	0.43	DW	Shilshole	Hepato	
Copper, Total, ICP-MS	mg/kg	Oct-14	4	72.7	148	178	196	234	DW	Shilshole	Hepato	0.6606
Copper, Total, ICP-MS	mg/kg	May-17	6	119	130	158	202	250	DW	Shilshole	Hepato	
Copper, Total, ICP-MS	mg/kg	Sep-17	6	57.5	83.0	118	140	261	DW	Shilshole	Hepato	
Copper, Total, ICP-MS	mg/kg	May-18	3	77.7	108	138	194	251	DW	Shilshole	Hepato	
Lead, Total, ICP-MS	mg/kg	Oct-14	4	0.326	0.393	0.474	0.534	0.536	DW	Shilshole	Hepato	0.0240
Lead, Total, ICP-MS	mg/kg	May-17	6	0.609	0.852	0.999	1.048	1.576	DW	Shilshole	Hepato	
Lead, Total, ICP-MS	mg/kg	Sep-17	6	0.278	0.370	0.508	0.598	0.838	DW	Shilshole	Hepato	
Lead, Total, ICP-MS	mg/kg	May-18	3	0.322	0.415	0.508	0.615	0.723	DW	Shilshole	Hepato	
Mercury, Total, CVAA	mg/kg	Oct-14	4	0.134	0.183	0.207	0.227	0.264	DW	Shilshole	Hepato	0.1175
Mercury, Total, CVAA	mg/kg	May-17	6	0.234	0.244	0.268	0.290	0.351	DW	Shilshole	Hepato	
Mercury, Total, CVAA	mg/kg	Sep-17	6	0.164	0.174	0.184	0.308	0.439	DW	Shilshole	Hepato	
Mercury, Total, CVAA	mg/kg	May-18	3	0.299	0.311	0.323	0.349	0.375	DW	Shilshole	Hepato	

Table E-1. West Point Flooding Event Crab Tissue Monitoring Data with Kruskal-Wallis p-value Signficance.

Parameter	Units	Month/ Year	Sample Count	Min	Percentiles 25th	50th	75th	Max	Type	Area	Tissue	Kruskal-Wallis p value
Nickel, Total, ICP-MS	mg/kg	Oct-14	4	0.606	0.846	1.05	1.27	1.57	DW	Shilshole	Hepato	0.0039
Nickel, Total, ICP-MS	mg/kg	May-17	6	2.61	3.08	3.55	4.14	4.63	DW	Shilshole	Hepato	
Nickel, Total, ICP-MS	mg/kg	Sep-17	6	1.14	1.86	2.14	2.22	3.17	DW	Shilshole	Hepato	
Nickel, Total, ICP-MS	mg/kg	May-18	3	1.76	2.08	2.40	2.68	2.95	DW	Shilshole	Hepato	
Selenium, Total, ICP-MS	mg/kg	Oct-14	4	4.54	4.80	5.35	5.96	6.38	DW	Shilshole	Hepato	0.0222
Selenium, Total, ICP-MS	mg/kg	May-17	6	6.85	9.07	9.76	10.24	10.48	DW	Shilshole	Hepato	
Selenium, Total, ICP-MS	mg/kg	Sep-17	6	5.05	5.59	5.85	6.72	10.55	DW	Shilshole	Hepato	
Selenium, Total, ICP-MS	mg/kg	May-18	3	8.25	8.29	8.32	9.61	10.90	DW	Shilshole	Hepato	
Silver, Total, ICP-MS	mg/kg	Oct-14	4	1.14	2.90	3.89	4.45	4.96	DW	Shilshole	Hepato	0.5242
Silver, Total, ICP-MS	mg/kg	May-17	6	2.71	2.90	3.00	3.82	7.34	DW	Shilshole	Hepato	
Silver, Total, ICP-MS	mg/kg	Sep-17	6	1.85	2.34	2.71	2.90	6.50	DW	Shilshole	Hepato	
Silver, Total, ICP-MS	mg/kg	May-18	3	2.79	3.23	3.66	4.12	4.57	DW	Shilshole	Hepato	
Zinc, Total, ICP-MS	mg/kg	Oct-14	4	70.0	81.4	93.5	106.5	120.7	DW	Shilshole	Hepato	0.0367
Zinc, Total, ICP-MS	mg/kg	May-17	6	102.0	108.7	112.3	117.0	129.3	DW	Shilshole	Hepato	
Zinc, Total, ICP-MS	mg/kg	Sep-17	6	68.1	78.9	83.9	89.1	106.2	DW	Shilshole	Hepato	
Zinc, Total, ICP-MS	mg/kg	May-18	3	82.5	95.0	107.5	108.3	109.0	DW	Shilshole	Hepato	
Total PBDEs	µg/kg	May-17	6	42.8	48.3	54.3	57.8	65.5	DW	Shilshole	Hepato	0.0174
Total PBDEs	µg/kg	Sep-17	6	33.7	35.7	41.1	48.7	74.9	DW	Shilshole	Hepato	
Total PBDEs	µg/kg	May-18	3	88.5	89.8	91.1	101.7	112.3	DW	Shilshole	Hepato	
Total PCB Homologs	µg/kg	Oct-14	4	1,556	2,091	2,312	2,722	3,825	DW	Shilshole	Hepato	0.1549
Total PCB Homologs	µg/kg	May-17	6	1,661	1,785	2,131	2,400	4,200	DW	Shilshole	Hepato	
Total PCB Homologs	µg/kg	Sep-17	6	1,153	1,216	1,391	1,814	2,437	DW	Shilshole	Hepato	
Total PCB Homologs	µg/kg	May-18	3	1,337	1,690	2,042	2,176	2,310	DW	Shilshole	Hepato	
Arsenic, Total, ICP-MS	mg/kg	Oct-14	4	3.32	3.77	4.08	4.30	4.49	WW	Shilshole	Hepato	0.0215
Arsenic, Total, ICP-MS	mg/kg	May-17	6	4.14	5.04	5.17	5.47	5.97	WW	Shilshole	Hepato	
Arsenic, Total, ICP-MS	mg/kg	Sep-17	6	4.40	4.54	4.78	5.49	10.10	WW	Shilshole	Hepato	
Arsenic, Total, ICP-MS	mg/kg	May-18	3	5.87	6.05	6.22	7.13	8.03	WW	Shilshole	Hepato	
Cadmium, Total, ICP-MS	mg/kg	Oct-14	4	0.520	0.647	0.880	1.113	1.240	WW	Shilshole	Hepato	0.5314
Cadmium, Total, ICP-MS	mg/kg	May-17	6	0.669	0.732	0.807	0.860	0.927	WW	Shilshole	Hepato	
Cadmium, Total, ICP-MS	mg/kg	Sep-17	6	0.665	0.791	0.928	1.053	1.810	WW	Shilshole	Hepato	
Cadmium, Total, ICP-MS	mg/kg	May-18	3	0.851	0.869	0.887	1.194	1.500	WW	Shilshole	Hepato	

Table E-1. West Point Flooding Event Crab Tissue Monitoring Data with Kruskal-Wallis p-value Signficance.

		Month/	Sample		Percentiles							Kruskal-Wallis
Parameter	**Units**	**Year**	**Count**	**Min**	**25th**	**50th**	**75th**	**Max**	**Type**	**Area**	**Tissue**	**p value**
Chromium, Total, ICP-MS	mg/kg	Oct-14	4	0.025	0.030	0.034	0.039	0.051	WW	Shilshole	Hepato	0.0135
Chromium, Total, ICP-MS	mg/kg	May-17	6	0.071	0.075	0.077	0.100	0.165	WW	Shilshole	Hepato	
Chromium, Total, ICP-MS	mg/kg	Sep-17	6	0.032	0.039	0.046	0.058	0.131	WW	Shilshole	Hepato	
Chromium, Total, ICP-MS	mg/kg	May-18	3	0.036	0.044	0.051	0.061	0.071	WW	Shilshole	Hepato	
Copper, Total, ICP-MS	mg/kg	Oct-14	4	15.2	26.2	30.5	34.1	43.1	WW	Shilshole	Hepato	0.6981
Copper, Total, ICP-MS	mg/kg	May-17	6	18.8	22.3	23.2	30.7	34.7	WW	Shilshole	Hepato	
Copper, Total, ICP-MS	mg/kg	Sep-17	6	9.61	15.7	21.5	25.2	37.8	WW	Shilshole	Hepato	
Copper, Total, ICP-MS	mg/kg	May-18	3	12.9	18.4	23.8	30.0	36.1	WW	Shilshole	Hepato	
Lead, Total, ICP-MS	mg/kg	Oct-14	4	0.068	0.073	0.081	0.090	0.099	WW	Shilshole	Hepato	0.0295
Lead, Total, ICP-MS	mg/kg	May-17	6	0.120	0.132	0.139	0.157	0.219	WW	Shilshole	Hepato	
Lead, Total, ICP-MS	mg/kg	Sep-17	6	0.052	0.062	0.081	0.114	0.140	WW	Shilshole	Hepato	
Lead, Total, ICP-MS	mg/kg	May-18	3	0.054	0.063	0.073	0.099	0.125	WW	Shilshole	Hepato	
Mercury, Total, CVAA	mg/kg	Oct-14	4	0.028	0.031	0.036	0.041	0.048	WW	Shilshole	Hepato	0.1890
Mercury, Total, CVAA	mg/kg	May-17	6	0.037	0.039	0.041	0.045	0.049	WW	Shilshole	Hepato	
Mercury, Total, CVAA	mg/kg	Sep-17	6	0.030	0.031	0.036	0.051	0.064	WW	Shilshole	Hepato	
Mercury, Total, CVAA	mg/kg	May-18	3	0.052	0.053	0.054	0.054	0.054	WW	Shilshole	Hepato	
Nickel, Total, ICP-MS	mg/kg	Oct-14	4	0.109	0.141	0.198	0.255	0.288	WW	Shilshole	Hepato	0.0033
Nickel, Total, ICP-MS	mg/kg	May-17	6	0.440	0.522	0.562	0.592	0.599	WW	Shilshole	Hepato	
Nickel, Total, ICP-MS	mg/kg	Sep-17	6	0.239	0.318	0.346	0.380	0.530	WW	Shilshole	Hepato	
Nickel, Total, ICP-MS	mg/kg	May-18	3	0.292	0.354	0.415	0.420	0.425	WW	Shilshole	Hepato	
Selenium, Total, ICP-MS	mg/kg	Oct-14	4	0.82	0.97	1.03	1.05	1.07	WW	Shilshole	Hepato	0.0141
Selenium, Total, ICP-MS	mg/kg	May-17	6	1.31	1.34	1.39	1.45	1.68	WW	Shilshole	Hepato	
Selenium, Total, ICP-MS	mg/kg	Sep-17	6	0.97	1.00	1.08	1.14	1.53	WW	Shilshole	Hepato	
Selenium, Total, ICP-MS	mg/kg	May-18	3	1.37	1.41	1.44	1.51	1.57	WW	Shilshole	Hepato	
Silver, Total, ICP-MS	mg/kg	Oct-14	4	0.238	0.486	0.679	0.815	0.892	WW	Shilshole	Hepato	0.7682
Silver, Total, ICP-MS	mg/kg	May-17	6	0.444	0.450	0.481	0.567	1.020	WW	Shilshole	Hepato	
Silver, Total, ICP-MS	mg/kg	Sep-17	6	0.309	0.448	0.479	0.534	0.942	WW	Shilshole	Hepato	
Silver, Total, ICP-MS	mg/kg	May-18	3	0.463	0.549	0.634	0.646	0.658	WW	Shilshole	Hepato	
Zinc, Total, ICP-MS	mg/kg	Oct-14	4	12.6	15.6	17.2	18.9	22.2	WW	Shilshole	Hepato	0.2869
Zinc, Total, ICP-MS	mg/kg	May-17	6	13.5	16.3	17.9	19.6	20.3	WW	Shilshole	Hepato	
Zinc, Total, ICP-MS	mg/kg	Sep-17	6	12.5	14.2	14.4	15.2	17.6	WW	Shilshole	Hepato	
Zinc, Total, ICP-MS	mg/kg	May-18	3	13.7	14.7	15.7	17.2	18.6	WW	Shilshole	Hepato	

Table E-1. West Point Flooding Event Crab Tissue Monitoring Data with Kruskal-Wallis p-value Signficance.

		Month/	Sample		Percentiles							Kruskal-Wallis
Parameter	**Units**	**Year**	**Count**	**Min**	**25th**	**50th**	**75th**	**Max**	**Type**	**Area**	**Tissue**	**p value**
Total PBDEs	µg/kg	May-17	6	6.38	6.83	8.50	9.24	10.74	WW	Shilshole	Hepato	0.0317
Total PBDEs	µg/kg	Sep-17	6	5.03	7.13	7.42	7.94	13.03	WW	Shilshole	Hepato	
Total PBDEs	µg/kg	May-18	3	14.68	15.22	15.76	15.97	16.17	WW	Shilshole	Hepato	
Total PCB Homologs	µg/kg	Oct-14	4	325	369	401	485	688	WW	Shilshole	Hepato	0.1910
Total PCB Homologs	µg/kg	May-17	6	265	313	326	338	584	WW	Shilshole	Hepato	
Total PCB Homologs	µg/kg	Sep-17	6	181	189	261	329	478	WW	Shilshole	Hepato	
Total PCB Homologs	µg/kg	May-18	3	222	277	333	343	353	WW	Shilshole	Hepato	
Total PBDEs (lipid)	µg/kg-lipid	May-17	6	113	119	135	157	164	WW	Shilshole	Hepato	0.0084
Total PBDEs (lipid)	µg/kg-lipid	Sep-17	6	55.1	70.4	104	114	155	WW	Shilshole	Hepato	
Total PBDEs (lipid)	µg/kg-lipid	May-18	3	221	223	225	248	270	WW	Shilshole	Hepato	
Total PCB Homologs (lipid)	µg/kg-lipid	Oct-14	4	2,904	4,241	5,084	6,005	7,574	WW	Shilshole	Hepato	0.0400
Total PCB Homologs (lipid)	µg/kg-lipid	May-17	6	4,128	4,668	5,318	5,816	11,964	WW	Shilshole	Hepato	
Total PCB Homologs (lipid)	µg/kg-lipid	Sep-17	6	2,497	2,735	3,130	3,842	4,188	WW	Shilshole	Hepato	
Total PCB Homologs (lipid)	µg/kg-lipid	May-18	3	3,343	4,188	5,033	5,297	5,561	WW	Shilshole	Hepato	

Significant p values (≤ 0.05) are shaded

Type - DW (dry weight) or WW (wet weight)

N. Elliott Bay crab hepatopancreas tissues are not included due to insufficient number of samples.

Parameters with significant p values were further analyzed by post-hoc Dunn's test and results are shown graphically in Section 5.