PORTLAND HARBOR RI/FS

ROUND 2 SUBYEARLING CHINOOK TISSUE DATA REPORT

DRAFT

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LIST OF ACRONYMS

Axys	Axys Analytical Services
CAS	Columbia Analytical Services
CLP	Contract Laboratory Program
COI	chemical of interest
EDD	electronic data deliverable
EES	Ellis Environmental Services
EPA	U.S. Environmental Protection Agency
EQuIS	Environmental Quality Information System
FSP	field sampling plan
FSR	field sampling report
LWG	Lower Willamette Group
NOAA	National Oceanic Atmospheric Administration
PAHs	polycyclic aromatic hydrocarbons
PARCC	precision, accuracy, representativeness, completeness, comparability
PCBs	polychlorinated biphenyls
PCDD/F	polychlorinated dibenzo-*p*-dioxin/furan
QA	quality assurance
QC	quality control
QAPP	quality assurance project plan
RI/FS	remedial investigation and feasibility study
RM	river mile
SCRA	site characterization and risk assessment
SOP	standard operating procedure
SVOCs	semivolatile organic compounds
SDG	sample delivery group

1.0 INTRODUCTION

The remedial investigation and feasibility study (RI/FS) of the Portland Harbor Superfund Site includes several rounds of field sampling activities to investigate the nature and extent of contamination in the in-water portion of the Site, to assess potential risk to human health and the environment, and to develop cleanup alternatives. Round 1 chemical and biological sampling took place during the summer and fall of 2002 and included extensive fish and shellfish tissue and some surface sediment collections. These results as well as the results of physical studies that continued into the winter of 2004 (e.g., the February 2004 bathymetry survey) are described in the Round 1 Site Characterization Summary Report (Integral 2004a).

Round 2 sampling activities included collection of the following types of data:

- Physical system survey data
- Surface and subsurface sediment chemistry and physical data
- Tissue chemistry data
- Benthic toxicity data
- Surface water chemistry data
- Groundwater, transition zone water, and seep water chemistry data
- Preliminary natural attenuation sampling (e.g., radioisotope cores)

Results from each of these collection efforts are documented under separate cover.

This Round 2 Subyearling Chinook Tissue Data Report summarizes the results from a May 10-12, 2005 sample collection effort designed to supplement the Round 1 chinook tissue data set. A detailed description of the Round 2 subyearling chinook tissue collection is included in the field sampling report (FSR; Integral and Windward 2005).

Except where noted in the FSR (Integral and Windward 2005), all Round 2 subyearling chinook tissue collection field activities, including navigational positioning, sample collection, sample handling and processing, and data management, followed guidelines specified in the Portland Harbor RI/FS Field Sampling Plan for Subyearling Chinook Tissue Collection (Chinook Tissue FSP; Integral 2005a), the Round 2 Quality Assurance Project Plan (QAPP; Integral and Windward 2004); the Round 2 Quality Assurance Project Plan Addendum 4: Subyearling Chinook Tissue Collection (Integral 2005b); the Round 2 Quality Assurance Project Plan Supplement to Addendum 4: Subyearling Chinook Tissue Collection – Semivolatile Organic Compounds (Integral 2005c); and the Round 2 Health and Safety Plan (Integral 2004b).

1.1 ROUND 2 SAMPLING OBJECTIVES

The purpose of Round 2 sampling was to fill in data gaps for the RI and risk assessments as well as initiate data collection for the FS. This sampling effort was intended to supplement data related to potential exposure of juvenile chinook salmon (*Oncorhynchus tshawytscha*) to site-related contaminants. The objectives of this study were to:

- Determine the extent to which subyearling chinook salmon in the Portland Harbor area may accumulate chemicals of interest (COIs)
- Help estimate exposure of subyearling chinook by characterizing COI concentrations in stomach contents.

This data report presents and summarizes the results from the May 10-12, 2005 sampling event.

1.2 REPORT ORGANIZATION

The remaining sections of this document include a summary of the data collection activities (Section 2); details on the laboratory sample analyses, data quality reviews, and data management (Section 3); the chemical and taxonomic results (Section 4); and references (Section 5).

Supporting information is provided in the following three appendices:

- **Appendix A**: SCRA (site characterization and risk assessment) Database, Excel Flat File Format (on CD)
- **Appendix B**: Data Quality Summary
- **Appendix C**: Data Validation Reports (on CD only).

2.0 DATA COLLECTION ACTIVITIES

This section summarizes the Round 2 subyearling chinook tissue collection activities during the May 10 through May 12, 2005 sampling event. Station navigation and positioning, record keeping, and sample handling and storage details are presented in the FSR (Integral and Windward 2005). Two site reconnaissance surveys were undertaken on April 11 and May 9, 2005, prior to initiation of the Round 2 subyearling chinook tissue collection, as described in the FSR (Integral and Windward 2005).

Round 2 subyearling chinook tissue collection and processing generally followed the procedures specified in the Chinook Tissue FSP (Integral 2005a) and associated QAPP and QAPP addenda (Integral and Windward 2004; Integral 2005b,c). Deviations from the FSP and QAPP are discussed in the FSR (Integral and Windward 2005) and summarized in Sections 2.3 and 3.5 in this data report.

In addition to the fish tissue samples collected by the Lower Willamette Group (LWG), National Oceanic and Atmospheric Administration (NOAA) collected fish at Stations T01 and T02 for stomach content analysis. NOAA performed the dissection and provided LWG with the stomach contents for analysis.

2.1 FISH SAMPLE COLLECTION

Subyearling chinook tissue samples were collected at four target locations in the Willamette River from river mile (RM) 2 to RM 18 (Figure 2-1). All stations identified in the FSP, including three stations within the study area and one station upriver from the initial study area, were sampled (Table 2-1). One station (T03) was occupied twice on subsequent days to collect enough fish to generate field replicates for chemical analyses (Table 2-2).

Fish sample collection was performed by Ellis Ecological Services (EES) using a 100-foot-long pole-seine for beach seining. The total number of fish collected was counted, and only target subyearling chinook salmon was sorted into buckets and then transferred to the fish-processing team. The processing team measured the fish fork lengths. Fish within the 50- and 80-mm target length were maintained alive in a large cooler filled with river water; all other fish were returned to the river.

The beach seining continued until 95 fish had been captured, to obtain three 30-fish composite sample replicates for chemical analyses, and at least five additional fish for taxonomical analyses of stomach contents. The live juvenile subyearling chinook were transported to the LWG's Portland field laboratory for further sample processing.

A detailed description of the fish sample collection is provided in the FSR (Integral and Windward 2005).

2.2 FISH DISSECTION AND SAMPLE PROCESSING

Dissection of the fish was conducted under the supervision of Dr. Robert Ellis (EES), an experienced fisheries biologist. In the field laboratory, each juvenile subyearling fish was measured and weighed using standard clean procedures (EPA 2000).

Once weighed, the internal organs were removed and the stomach was carefully separated from the other organs in a stainless-steel pan. The stomach contents were then recorded, scraped out, weighed, and composite samples were frozen and stored at -20°C until analyzed. The remaining organs and the stomach tissue (i.e., empty, scraped out stomach) were returned to the body cavity and included in the whole-body chemistry analysis.

At Stations T01, T02, and T04 more than 90 fish were collected, and each of the three replicates consisted of 30 fish. At Station T03, only 72 fish were collected. These fish were processed in the laboratory as they arrived from the field under the assumption that 90 fish would be collected. At the end of the field effort, the 72 fish were redistributed among the three replicates so that the whole-body weight in each replicate was close to 60 grams. The number of fish per replicate was 24, 21, and 27, respectively. Once packaged, the whole-body fish samples were frozen and stored at -20°C until homogenized and analyzed.

Taxonomic identification of prey items in the stomach contents was performed on randomly selected fish from the three stations where more than 90 fish were collected. Length measurements were performed on the fish as above, the fish were weighed, and the information was recorded. The stomach contents were scraped out, placed in a glass vial, and preserved. NOAA collected additional fish from Stations T01 and T02, performed the fish dissection, and provided LWG with the stomach content samples for analysis.

A detailed description of the fish dissection and sample processing is provided in the FSR (Integral and Windward 2005).

3.0 LABORATORY ANALYSIS AND DATA MANAGEMENT

This section describes the laboratory methods used to analyze the fish tissue samples. Any deviations from the analytical methods detailed in the QAPP are described below. The data management subsection describes the data validation process from receipt of the laboratory data package to the generation of a final validated electronic data deliverable (EDD). Furthermore, it describes how the SCRA database was compiled into a series of compatible Excel tables, which were then distributed to the SCRA data users. The data validation reports are provided as Appendix C.

3.1 CHEMICAL AND TAXONOMICAL ANALYSES

The following subsections describe the analyses conducted and the laboratories responsible for the analyses.

3.1.1 Fish Tissue Samples

Two laboratories conducted the chemical analyses of subyearling chinook tissue samples. Columbia Analytical Services (CAS; Kelso, Washington) conducted the sample homogenization and the analyses for percent lipids, percent moisture, total metals, butyltin compounds, organochlorine pesticides, and SVOCs in whole-body tissue. Axys Analytical Services, Ltd. (Axys; Sydney, B.C., Canada) performed the sample homogenization of the stomach content samples and conducted the analyses for dioxins and furans and PCB congeners (full list of 209 congeners) in whole-body tissue, and organochlorine pesticides, PCB congeners, and PAHs in stomach contents. Laboratory methods for whole-body and stomach content samples are summarized in Table 3-1.

3.1.2 Taxonomical Analysis

EcoAnalysts Inc (Moscow, Idaho) performed taxonomical identification of 20 fish stomach samples collected at sampling Stations T01, T02, and T04. The number of fish stomach samples per station was as follows: six samples at Station T01, eight samples at Station T02, and six samples at Station T04.

3.2 DATA VALIDATION

As required by the Round 2 QAPP (Integral and Windward 2004), approximately 10% of the subyearling chinook tissue data were fully validated, and the remaining data were subjected to Level 3 data validation, which includes the evaluation and assessment of the sample results and applicable quality control results reported by the laboratory. The data validation subcontractor for the Round 2 subyearling chinook tissue data was EcoChem, Inc. (EcoChem) located in Seattle, WA. The

first data package for each analytical method was additionally submitted to the U.S Environmental Protection Agency (EPA) for data validation by EPA's QA Office.

The inorganic, organic, PCB congener, and polychlorinated dibenzo-*p*-dioxin/furan (PCDD/F) data were validated in accordance with guidance specified by the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic and Organic Data Review*, by EPA Region 10 standard operating procedures (SOPs) for validation of PCB congener data and PCDD/F data (EPA 1994, 1995, 1996, 1999), and by *Guidance on Environmental Data Verification and Validation* (EPA 2002). Modifications were made to the Functional Guidelines to accommodate quality assurance/quality control (QA/QC) requirements of the non-Contract Laboratory Program (CLP) methods that were used for this project. Data qualifiers were assigned during data validation if applicable control limits were not met, in accordance with the EPA data validation guidelines and the quality control requirements included in the referenced methods. The data validation qualifiers and definitions are summarized in Table 3-2.

The following laboratory deliverables were reviewed during Level 3 and full data validation:

- The case narrative discussing analytical problems (if any) and procedures.
- Chain-of-custody documentation and laboratory sample receipt logs.
- Instrument calibration results.
- Method blank results.
- Results for laboratory quality control samples required by the referenced method, including laboratory control sample/laboratory control sample duplicate analyses, matrix spike/matrix spike duplicate analyses, surrogate recoveries, and other method specific quality control samples (e.g., serial dilutions for inductively coupled plasma analyses).
- Results for field quality control samples (i.e., equipment blanks, field duplicates, and field split samples).
- Analytical results for the surface water samples.
- For data packages subjected to full validation, in addition to review and assessment of the documentation identified above, the validation included verification of reported concentrations for the field and QC samples, verification of intermediate transcriptions, and review of instrument data such as mass spectra to verify analyte identification procedures.

After completing the data validation activities for each subyearling chinook tissue sample type, a data quality report and a tabular summary of qualified data were generated by EcoChem. The EcoChem data quality reports are included in Appendix B. EcoChem chemists added data validation qualifiers that were

assigned during validation to the laboratory report forms and to the laboratory EDDs. The revised EDDs and the hard-copy data validation reports were submitted as the project deliverable. The revised EDDs were then incorporated into the project database, as described in Section 3.5.

3.3 DATA QUALITY AND USABILITY

Data generated in the field and at the laboratories were verified and validated according to the criteria and procedures described in the Round 2 QAPP Addendum 4 (Integral 2005c). Data quality and usability were evaluated based on the results of the data validation and the data quality objectives for the Round 2 data. The performance criteria in the QAPP included project analytical goals for precision, accuracy, representativeness, completeness, and comparability (PARCC) of the Round 2 data.

The precision, accuracy, representativeness, and comparibility of the data were assessed during data validation, as described in the Round 2 QAPP. Completeness is calculated by comparing the total number of acceptable data (nonrejected data) to the total number of data points generated. Completeness for the Round 2 subyearling chinook tissue chemistry data was greater than 99% overall, which exceeds the QAPP completeness objective of 95%. Completeness for the Round 2 data is summarized by parameter group in Table 3-3. Completeness ranged from 94 to 100% for the various parameter groups.

The Ecochem validation report (Appendix A) provides detailed information on the data quality issues and data validation qualifiers for each parameter group for each laboratory data package. Qualified chemistry data for stomach content and fish tissue samples are included in Table 4-1. A complete list of qualified results with reason codes is provided in the data validation reports in Appendix C.

3.3.1 Field Quality Control Samples

Quality control samples were prepared in the field and at the laboratories to monitor the bias and precision of the sample collection and analysis procedures. Field QC samples for this study were limited to one rinsate blank for fish dissection equipment (Table 3-4). Field replication was incorporated into the sampling design. Field splits were not collected because of fish catch limits.

It should be noted that at Station T03, only 72 fish were collected. These fish were processed in the laboratory as they arrived from the field under the assumption that 90 fish would be collected. At the end of the field effort, the 72 fish were redistributed among the three replicates so that the whole-body weight in each replicate was close to 60 grams. The number of fish per replicate was 24, 21, and 27, respectively (see Table 3-3 in Integral and Windward 2005).

3.3.2 Summary of Qualified Data

Selected data not meeting the data quality criteria were qualified as undetected, estimated, tentatively identified, or rejected during validation, in accordance with the QAPP. A tabular summary of the results, with the data qualifiers, is included in Table 4-1. A complete list of qualified results with reason codes is provided in Appendix A (on CD). Data qualified as undetected are usable for all intended purposes. Data qualified as estimated or tentatively identified are usable for all intended purposes, with the knowledge that these data may be less precise or less accurate than unqualified data. Rejected data are not usable for any purpose. Concentrations associated with rejected data have been removed from the database, and an "R" qualifier is retained to flag the results that were removed.

3.4 DATA MANAGEMENT

Once the laboratories completed their internal QA/QC checks, they exported the analytical data (sample, test, batch, and result information) into comma-delimited text files with data columns arranged in an order that was recognized by the project's Environmental Quality Information System (EQuIS) database. These EDDs were e-mailed to Integral where they were checked for proper EQuIS structure and appended with specific information that was unknown by the labs, such as sampling location, composite information, and field replicate and split information. If any problems were found in the structure of the EDDs, then the laboratory was notified and asked to correct the problem and resubmit the EDD. Each emailed EDD transmission, with the original, unaltered EDD attachment, was stored to document and track the laboratories' delivery of electronic data to Integral.

When the EDD was corrected and complete, they were checked electronically by loading them into the temporary section of Integral's Lower Willamette Group (LWG) project database. In the process of loading, EQuIS checked the EDDs for correct lookup codes (such as for analytes, test methods, and sample matrices); proper relationships for results, tests, batches, and samples (to ensure all results matched with a test, tests with samples, and sample/test pairs with batches); and that all derived samples (such as replicates, splits, and matrix spikes) had corresponding parent samples.

In addition to these checks, EQuIS also checked "less important" characteristics, such as date and time formats and text field lengths, to ensure consistency throughout the database. Any error prevents the EDD from loading until the error is corrected. If errors were found that were related to the way the laboratory reported the data or constructed the EDD, then the laboratory was notified and asked to correct the problem and resubmit the EDD. If errors were related to Excel automatically formatting date and time fields, for example, then the error was corrected and steps were taken to avoid repeats of the problem (such as changing

default settings in the software). Successfully loaded EDDs were saved to document and track the data that were loaded into Integral's LWG project database.

Each verified and accurate EDD was provided to the Round 2 data validation contractor (EcoChem, Seattle, WA) for data review and validation. These EDDs were also stored in a temporary section of the project database, where they could be queried and examined, if desired, until validation was complete. As EcoChem completed validation of the data by sample delivery group (SDG) or small groups of SDGs, the validator qualifiers and reason codes were applied to the data in the temporary section of the database. The validated data were then merged into the permanent project database. During the merging process, all previously performed electronic checks were repeated to ensure nothing was incorrectly modified with the application of the validation results.

Several queries were set up in the permanent project database to translate the data structure to a form compatible with NOAA's Query Manager. The data translation included creating station and sample identifiers, converting the sample type code, and changing the date format. The translated data were imported into an Access file provided by NOAA that contained template tables for the Query Manager structure.

Integral's LWG project database contains all of the data reported by the analytical laboratories. This includes field and lab replicates, lab dilutions, results for the same analyte from multiple analytical methods (SW8270 and SW8270-SIM, for example), and laboratory QA samples such as matrix spikes, surrogates, and method blanks. The data handling rules described in *Guidelines for Data Averaging and Treatment of Non-detected Values for the Round 1 Database* (Kennedy Jenks et al. 2004) were used to create a data set for the SCRA data users that was simpler: the data set contained only one result per analyte per sample and excluded all of the laboratory QA results. This involved creating a SCRA database that excluded lab QA results, contained only the most appropriate dilution result and analytical method for each analyte, and contained the average of replicates. Excluding the lab QA results was a simple database querying step. Selection of the most appropriate dilution was either done by the reporting laboratory or by the data validator. Selection of the most appropriate analytical method was described in the guidelines document and was accomplished by flagging the appropriate method in the project database.

The guidelines document described the rules used for averaging data and carrying qualifiers. Because it was the most data manipulation intensive procedure, the data were divided into subgroups and approximately 40% of each subgroup was verified. If any problems were found with the averaging, then the 100% of the subgroup was verified and problems were corrected. The preliminary SCRA database was compiled into a series of database-compatible Excel tables and distributed to the SCRA data users.

3.5 LABORATORY DEVIATIONS FROM THE QAPP

This section discusses laboratory deviations from the Round 2 QAPP (Integral and Windward 2004) and addenda (Integral 2005b,c). Deviations from the Chinook Tissue FSP (Integral 2005a) were included in the FSR (Integral and Windward 2005).

Samples were analyzed as described in the Round 2 QAPP (Integral and Windward 2004) and addenda (Integral 2005b,c). For selected whole-body samples, the total homogenized mass was less than 50 grams. Subsamples for chemical analysis were generated in order of priority defined in the Chinook Tissue FSP (Integral 2005a) and QAPP (Integral 2005b,c), in consultation with EPA. Selected samples were not analyzed for a parameter group, or were analyzed with a smaller subsample than the aliquot specified in the QAPP Addendum 4, which resulted in elevated detection limits for these results. The parameter groups that had elevated detection limits or were not analyzed due to limited tissue sample mass are identified in Appendix B, Table B-8.

4.0 ROUND 2 RESULTS

Round 2 results for chinook tissue chemistry and taxonomic analysis are provided in this section.

4.1 SUMMARY OF CHEMISTRY RESULTS

Chinook tissue samples were collected at four locations (see Figure 2-1) during the May 10-12, 2005, sampling event. Table 4-1 summarizes all the results for chemical analyses of stomach content and whole-body tissue samples collected.

4.2 SUMMARY OF TAXONOMIC RESULTS

Table 4-2 summarizes the results for taxonomical analyses of 20 fish stomach samples collected at the three sampling stations T01, T02, and T04 (see Figure 2-1). A total of 36 prey organisms were identified in the 20 subyearling chinook stomachs. The most commonly identified prey organisms belonged to six taxonomical groups. Cladocera (daphnids) accounted for 57.5% of all prey organisms identified in the stomachs. The high percentage was to a large extent driven by one juvenile chinook having eaten 358 daphnids out of 906 identified prey organisms. Daphnids were found in 30% of the 20 stomachs. Chironomids (blood worms) were identified in 60% of the stomachs and accounted for 8.9% of all identified organisms. The other four commonly identified organisms included Coleoptera (beetles, 12.6% of all identified organisms), Nematocera (long-horned flies, 5.1% of all identified organisms), and Psocoptera (wood lice, 2.8% of all

identified organisms). The developmental stages of the insects identified in all stomach contents samples were 73% larvae, 2% pupae, and 25% adults.

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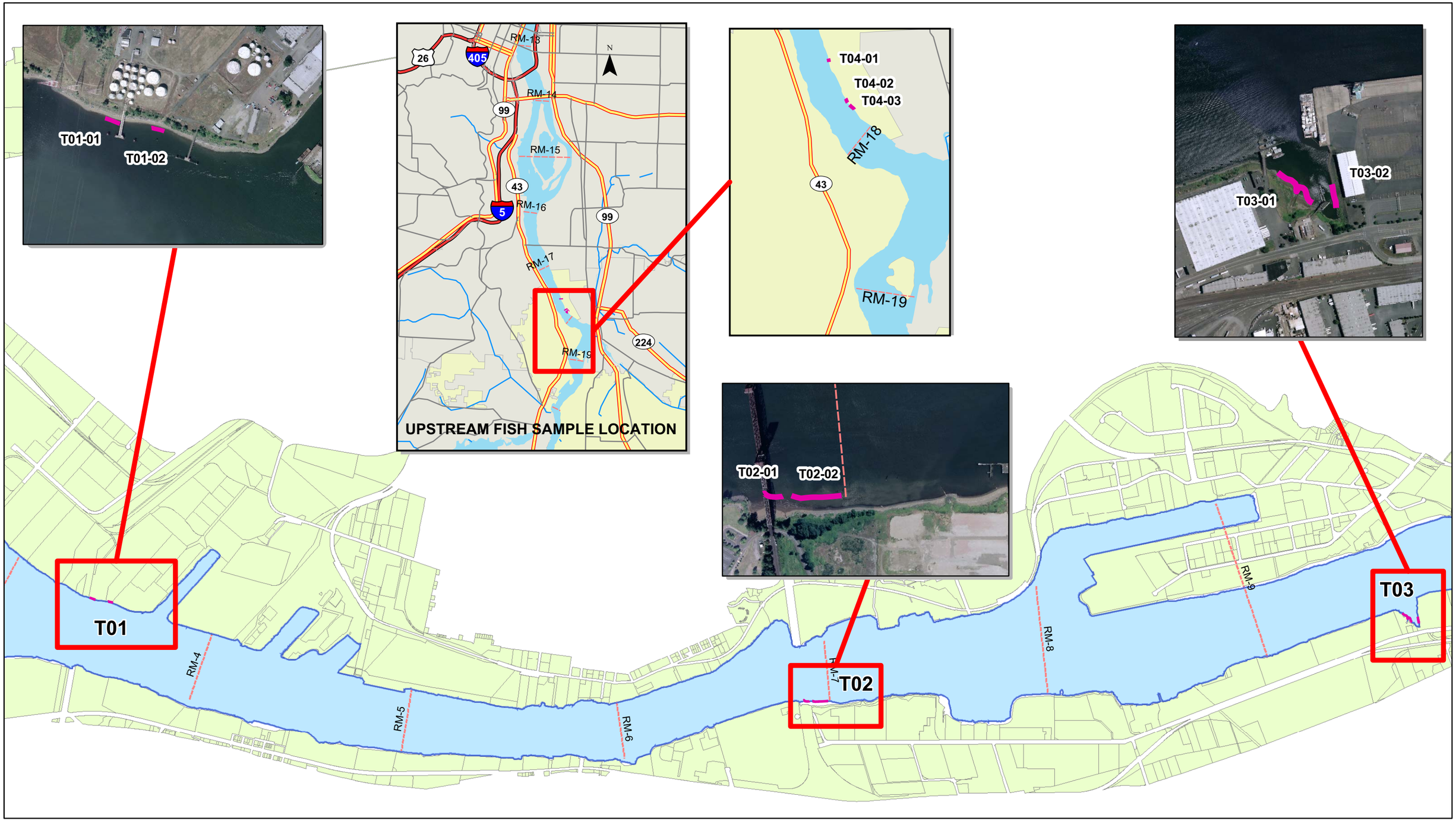

LWG Lower Willamette Group

integral consulting inc

FEATURE SOURCES: Metro RLIS; US Army Corps of Engineers information.

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Fish Sampling Locations

Actual Locations

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Figure 2-1
Portland Harbor RI/FS
Round 2 Subyearling Chinook Tissue Data Report
Subyearling Chinook Tissue Collection Sample Locations

Table 2-1. Subyearling Chinook Tissue Sampling Stations and Sampling Methods.

Station ID[1]	River Mile	Sampling Station Description	Beach Seine
LW2-T01	Mile 3-4	Downstream Study Area-East Bank	X
LW2-T02	Mile 6-7	Midstream Study Area-West Bank	X
LW2-T03	Mile 9-10	Upstream Study Area-West Bank	X
LW2-T04*	Mile 17-18	Upriver Reference- East Bank	X

Notes:
[1] Field replicates were collected at all stations.
* Actual sampling station is 1,684 m downstream of target station.

Table 2-2. Subyearling Chinook Tissue Samples Collected, Dates Sampled, and Analyses Conducted[1].

		Stomach Contents				Whole Body								
Date Sampled	**Sample ID**	**PAHs**	**PCB Congeners (full 209)**	**Organo-chlorine Pesticides**	**Taxonomy**	**Percent Lipids**	**Percent Moisture**	**Total Metals**	**Butyltin Compounds**	**Organo-chlorine Pesticides**	**PAHs**	**SVOCs**	**Dioxin Furans**	**PCB Congeners (full 209)**
5/10/05	**LW2-T01-SCW-1**					x	x	x	x	x	x	x	x	x
5/10/05	**LW2-T01-SCW-2**					x	x	x	x	x	x	x	x	x
5/10/05	**LW2-T01-SCW-3**					x	x	x	x	x	x	x	x	x
5/10/05	**LW2-T01-SCG**	x	x	x	x									
5/10/05	**LW2-T02-SCW-1**					x	x	x	IS[2]	x	x	IS[2]	x	x
5/10/05	**LW2-T02-SCW-2**					x	x	x	x	x	x	IS[2]	x	x
5/10/05	**LW2-T02-SCW-3**					x	x	x	x	x	x	IS[2]	x	x
5/10/05	**LW2-T02-SCG**	x	x	x	x									
5/11-12/05	**LW2-T03-SCW-1**					x	x	x	x	x	x	x	x	x
5/11-12/05	**LW2-T03-SCW-2**					x	x	x	x	x	x	IS[2]	x	x
5/11-12/05	**LW2-T03-SCW-3**					x	x	x	x	x	x	x	x	x
5/11-12/05	**LW2-T03-SCG**	x	x	x	x									
5/12/05	**LW2-T04-SCW-1**					x	x	x	x	x	x	x	x	x
5/12/05	**LW2-T04-SCW-2**					x	x	x	x	x	x	x	x	x
5/12/05	**LW2-T04-SCW-3**					x	x	x	x	x	x	x	x	x
5/12/05	**LW2-T04-SCG**	x	x	x	x									
5/12/05	**LW2-T901***							x	x	x	x	x	x	x
5/14/05	**LW2-T01-NOAA SC**	x	x	x										
5/14/05	**LW2-T02-NOAA SC**	x	x	x										

Notes:
[1] Field samples were collected in triplicates at all stations.
* Field lab dissecting tools and tray rinsate.
[2] Insufficient Sample - Analysis not conducted because limited sample mass available.

Table 3-1. Laboratory Methods for Fish Tissue Samples.

Analysis	Laboratory	Sample Preparation		Quantitative Analysis	
		Protocol	Procedure	Protocol	Procedure
Organochlorine Pesticides[1] (Whole-body samples)	CAS	EPA 3540C	Soxhlet extraction	EPA 8081A	GC/ECD
		EPA 3640A	Gel permeation chromatography		
		EPA 3620B	Florisil® cleanup		
Lipids (Whole-body samples)	CAS	EPA 3540C[1]	Soxhlet extraction	CAS SOP	Balance
Butyltin Compounds (Whole-body samples)	CAS	Krone et al. 1988	Solvent extraction	Krone et al. 1988	GC/FPD
		Krone et al. 1988	Derivatization		
Polycyclic Aromatic Hydrocarbons (Whole-body samples)	CAS	EPA 3540C	Soxhlet extraction	EPA 8270C SIM	GC/MS SIM
		EPA 3640A	Gel permeation chromatography		
		EPA 3620B	Florisil® cleanup		
Semivolatile Organic Compounds (Whole-body samples)	CAS	EPA 3540C	Soxhlet extraction	EPA 8270C SIM	GC/MS SIM
		EPA 3640A	Gel permeation chromatography		
Metals (Whole-body samples)	CAS				
Aluminum, antimony, arsenic, cadmium, copper, lead, nickel, silver, zinc		EPA 3050B/PSEP	Acid digestion	EPA 6020	ICP/MS
Chromium		EPA 3050B/PSEP	Acid digestion	EPA 6010B	ICP/AES
Selenium		EPA 3050B/PSEP	Acid digestion	EPA 7742	AAS
		EPA 7742	Hydride generation		
Mercury		EPA 7470	Acid digestion/oxidation	EPA 7471A	CVAA
Chlorinated Dioxins and Furans (Whole-body samples)	Axys	EPA 1613B	Soxhlet extraction	EPA 1613B	HRGC/HRMS
			Gel permeation chromatography		
			Layered Acid/Base SiO_3 column		
			1% deactivated basic Alumina		
			Carbon celite		

Table 3-1. Laboratory Methods for Fish Tissue Samples.

Analysis	Laboratory	Sample Preparation		Quantitative Analysis	
		Protocol	Procedure	Protocol	Procedure
PCB Congeners (Whole-body samples and stomach content samples)	Axys	EPA 1668A	Soxhlet extraction Acid silica gel Layered Acid/Base silica gel 1% deactivated basic Alumina Florisil® cleanup	EPA 1668A	HRGC/HRMS
Organochlorine Pesticides[1] (Stomach content samples)	Axys	EPA 3540C EPA 3640A EPA 3620B	Soxhlet extraction Gel permeation chromatography Florisil® cleanup	Axys SOP	HRGC/HRMS
Polycyclic Aromatic Hydrocarbons (Stomach content samples)	Axys	EPA 3540C EPA 3640A EPA 3630C	Soxhlet extraction Gel permeation chromatography Silica gel cleanup	Axys SOP	HRGC/HRMS

Notes:
[1] A portion of the pesticide extract will be used for lipids determination.

AAS - Atomic absorption spectrometry
CAS - Columbia Analytical Services
CVAA - cold vapor atomic absorption
EPA - U.S. Environmental Protection Agency
GC/ECD - gas chromatography/electron capture detection
GC/FPD - gas chromatography/flame photometric detection
GC/MS - gas chromatography/mass spectrometry
HRGC/HRMS - high resolution gas chromatography/high resolution mass spectrometry
ICP/AES - inductively coupled plasma/atomic emission spectrometry
ICP/MS - inductively coupled plasma - mass spectrometry
PSEP - Puget Sound Estuary Program
SIM - selected ion monitoring
SOP - standard operating procedure

Table 3-2. Data Validation Qualifiers and Definitions.

Data Qualifier	Definition
U	The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation limit.
J	The associated numerical value is an estimated quantity.
NJ	Presumptive evidence of the presence of the material at an estimated quantity.
UJ	The material was analyzed for, but was not detected. The sample quantitation limit is an estimated quantity.
T	Value is an average or a selected value (see Kennedy Jenks et al. 2004).

Table 3-3. Percent Completeness by Parameter Group.

Analysis	Total # of Data Points[1]	Number of Data Points		Completeness (%)
		Accepted	Rejected	
PCB Aroclors	126	126	0	100
Butyltins	44	44	0	100
Conventionals[2]	24	24	0	100
PCB Congeners	2880	2880	0	100
PCB Homologs	162	162	0	100
Dioxin/furan homologs	120	120	0	100
Dioxin/furans	181	181	0	100
Metals	144	144	0	100
PAHs	306	306	0	100
Pesticides	480	480	0	100
Phenols	40	40	0	100
Phthalates	48	48	0	100
SVOCs	120	120	0	100
Round 2 Chinook Tissue Sampling Project Total	**4675**	**4675**	**0**	**100**

Notes:

[1] Totals include field replicates and split samples and exclude field blanks.

[2] Includes Lipids and TS.

Table 3-4. Summary of Field QC Samples for Subyearling Chinook Tissue Collection Event.

Parameter	**Samples[1,2]**	**Field Rinsate Blanks[3]**	**Total Number of Samples**
Whole Body			
Percent Lipids	12		12
Percent Moisture	12		12
Total Metals	12	1	13
Butyltin Compounds	12	1	13
Organochlorine Pesticides	12	1	13
PAHs	12	1	13
SVOCs	12	1	13
Dioxins/Furans	12	1	13
PCB Congeners (all 209)	12	1	13
Stomach Contents[4]			
PAHs	5		5
PCB Congeners (all 209)	5		5
Organochlorine Pesticides	5		5
Taxonomy	20		20

Notes:

[1] Field QC samples are included in the three sample replicates per station and counted as total sample numbers.

[2] Field split samples were not collected because of fish catch limits.

[3] A field rinsate blank was collected at the end of the sampling event for all dissecting equipment.

[4] Includes two samples collected by NOAA at T01 and T02 for stomach content analysis.

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

Analysis/Analyte	CAS #	Sample ID Sample Date/Time X Coordinate Y Coordinate Units	LW2-T01 SC 5/10/05 13:30 7617314.805 718525.7315		LW2-T01-NOAA SC 5/14/05 17:40 7617314.805 718525.7315		LW2-T01-REP1 5/10/05 13:30 7617314.805 718525.7315		LW2-T01-REP2 5/10/05 14:30 7617314.805 718525.7315		LW2-T01-REP3 5/10/05 16:15 7617314.805 718525.7315		LW2-T02 SC 5/10/05 18:00 7626519.107 703755.7939	
Conventionals														
Total solids	TSO	percent	--		--		18		19.5		18.7		--	
Lipids	66455-18-3	percent	--		--		1.5		1.5		1.6		--	
Metals														
Aluminum, total	7429-90-5	mg/kg	--		--		5.418	JT	3.705		3.3286		--	
Antimony, total	7440-36-0	mg/kg	--		--		0.00144	UT	0.00429	U	0.00187	U	--	
Arsenic, total	7440-38-2	mg/kg	--		--		0.0522	T	0.0624		0.04862		--	
Cadmium, total	7440-43-9	mg/kg	--		--		0.01017	T	0.01248		0.011033		--	
Chromium, total	7440-47-3	mg/kg	--		--		0.054	UT	0.0585	U	0.0561	U	--	
Copper, total	7440-50-8	mg/kg	--		--		1.1178	T	0.87165		1.07151		--	
Lead, total	7439-92-1	mg/kg	--		--		0.0288	UT	0.02535	U	0.02618	U	--	
Mercury, total	7439-97-6	mg/kg	--		--		0.01134	J	0.01014	J	0.011407	J	--	
Nickel, total	7440-02-0	mg/kg	--		--		0.3078	T	0.2574		0.30668		--	
Selenium, total	7782-49-2	mg/kg	--		--		0.072	JT	0.1755		0.1496		--	
Silver, total	7440-22-4	mg/kg	--		--		0.00234	UT	0.002925	U	0.002992	U	--	
Zinc, total	7440-66-6	mg/kg	--		--		27.9	T	25.935		27.676		--	
Butyltins														
Butyltin ion	78763-54-9	ug/kg	--		--		1	U	1	U	0.98	U	--	
Dibutyltin ion	14488-53-0	ug/kg	--		--		1.1	U	0.85	U	0.77	U	--	
Tributyltin ion	36643-28-4	ug/kg	--		--		2.7		2.1	J	1.9	J	--	
Tetrabutyltin	1461-25-2	ug/kg	--		--		0.17	U	0.15	U	0.16	U	--	
PAHs														
2-Methylnaphthalene	91-57-6	ug/kg	14.2	U	15.6	U	4.5		6.9		5.8		14.5	U
Acenaphthene	83-32-9	ug/kg	12.3		7.35	J	0.87		1		0.93		6.65	J
Acenaphthylene	208-96-8	ug/kg	2	J	1.24	U	0.22	J	0.47	J	0.3	J	2.04	U
Anthracene	120-12-7	ug/kg	7.52		6.32	J	0.25	J	0.45	J	0.34	J	6.47	J
Fluorene	86-73-7	ug/kg	16.1		8.15	J	0.74		0.65		0.75		5.34	J
Naphthalene	91-20-3	ug/kg	29.3	U	38	U	2.9	U	5.1		3.3	U	38.8	UJ
Phenanthrene	85-01-8	ug/kg	103		46.6		1.8		1.5		1.9		53.8	
Dibenz(a,h)anthracene	53-70-3	ug/kg	0.93	U	0.57	U	0.12	U	0.12	U	0.19	J	0.905	J
Benz(a)anthracene	56-55-3	ug/kg	6.6		7.67	J	0.13	U	0.13	U	0.13	U	11.8	
Benzo(a)pyrene	50-32-8	ug/kg	2.26	J	3.31	U	0.13	U	0.13	U	0.13	U	5.82	U
Benzo(b)fluoranthene	205-99-2	ug/kg	--		--		0.26	J	0.18	J	0.32	J	--	
Benzo(g,h,i)perylene	191-24-2	ug/kg	6.04	J	4.01	U	0.18	U	0.18	U	0.18	U	5.65	U
Benzo(k)fluoranthene	207-08-9	ug/kg	7.12		5.2	J	0.14	U	0.33	J	0.18	J	7.04	J
Benzo(b+j)fluoranthene	BBJFLANTH	ug/kg	18		9.35	J	--		--		--		11.2	
Chrysene	218-01-9	ug/kg	42.4		22.2		0.2	U	0.2	U	0.94		29.4	
Fluoranthene	206-44-0	ug/kg	109	J	49.4	J	0.97		0.93		1.5		75.1	J
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	5	J	3.91	U	0.17	U	0.17	U	0.17	U	4.64	J
Pyrene	129-00-0	ug/kg	64.3	J	33.7	J	0.35	J	0.41	J	0.67		60.1	J
Low Molecular Weight PAH	LPAH	ug/kg	141	JT	68.4	JT	8.38	JT	16.1	JT	10	JT	72.3	JT
High Molecular Weight PAH	HPAH	ug/kg	261	JT	128	JT	1.58	JT	1.85	JT	3.8	JT	200	JT
Total PAHs	130498-29-2	ug/kg	402	JT	196	JT	9.96	JT	17.9	JT	13.8	JT	272	JT

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T01 SC		LW2-T01-NOAA SC		LW2-T01-REP1		LW2-T01-REP2		LW2-T01-REP3		LW2-T02 SC	
		Sample Date/Time	5/10/05 13:30		5/14/05 17:40		5/10/05 13:30		5/10/05 14:30		5/10/05 16:15		5/10/05 18:00	
		X Coordinate	7617314.805		7617314.805		7617314.805		7617314.805		7617314.805		7626519.107	
		Y Coordinate	718525.7315		718525.7315		718525.7315		718525.7315		718525.7315		703755.7939	
Analysis/Analyte	**CAS #**	**Units**												
SVOCs														
1,2,4-Trichlorobenzene	120-82-1	ug/kg	--		--		20	U	19	U	21	U	--	
1,2-Dichlorobenzene	95-50-1	ug/kg	--		--		24	U	23	U	25	U	--	
1,3-Dichlorobenzene	541-73-1	ug/kg	--		--		22	UJ	21	UJ	23	UJ	--	
1,4-Dichlorobenzene	106-46-7	ug/kg	--		--		22	UJ	21	UJ	23	UJ	--	
Benzyl alcohol	100-51-6	ug/kg	--		--		56	J	55	J	77	J	--	
Dibenzofuran	132-64-9	ug/kg	--		--		0.85		0.88		0.9		--	
Hexachlorobenzene	118-74-1	ug/kg	1.07		0.613		0.62	J	0.81	J	0.7	J	0.849	
Hexachlorobutadiene	87-68-3	ug/kg	0.0302	U	0.0412	J	1.1	U	1.1	U	1.1	U	0.16	U
Hexachloroethane	67-72-1	ug/kg	--		--		17	U	17	U	18	U	--	
N-Nitrosodiphenylamine	86-30-6	ug/kg	--		--		19	U	19	U	20	U	--	
Phenols														
2,4-Dimethylphenol	105-67-9	ug/kg	--		--		26	U	25	U	27	U	--	
2-Methylphenol	95-48-7	ug/kg	--		--		110	U	110	U	110	U	--	
4-Methylphenol	106-44-5	ug/kg	--		--		29	U	29	U	31	U	--	
Pentachlorophenol	87-86-5	ug/kg	--		--		400	J	60	U	64	U	--	
Phenol	108-95-2	ug/kg	--		--		38	J	33	U	35	U	--	
Phthalates														
Dimethyl phthalate	131-11-3	ug/kg	--		--		9.9	U	9.8	U	11	U	--	
Diethyl phthalate	84-66-2	ug/kg	--		--		19	U	18	U	20	U	--	
Dibutyl phthalate	84-74-2	ug/kg	--		--		31	U	33	J	48	J	--	
Butylbenzyl phthalate	85-68-7	ug/kg	--		--		220		190		190		--	
Di-n-octyl phthalate	117-84-0	ug/kg	--		--		26	U	25	U	27	U	--	
Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	--		--		110	U	110	U	110	U	--	
Pesticides														
2,4'-DDD	53-19-0	ug/kg	0.228	J	0.419	NJ	4.2		1.1	U	1.1	U	23.5	NJ
2,4'-DDE	3424-82-6	ug/kg	0.0542	J	0.0713	NJ	0.16	U	0.16	U	0.16	U	2.91	NJ
2,4'-DDT	789-02-6	ug/kg	0.21	J	0.208	J	4.4	U	2.9	NJ	2.5	NJ	6.42	J
4,4'-DDD	72-54-8	ug/kg	2.04		2.01	NJ	1	J	1.9		1.6		113	NJ
4,4'-DDE	72-55-9	ug/kg	9.16		4.96	NJ	8.7		9.1		8.6		144	NJ
4,4'-DDT	50-29-3	ug/kg	0.969		1.29	J	18		5.4		4.2		37.5	J
Total of 4,4'-DDD, -DDE, -DDT	PP_DDT3ISO	ug/kg	12.2	T	8.26	JT	27.7	JT	16.4	T	14.4	T	295	JT
Aldrin	309-00-2	ug/kg	0.00911	U	0.0355	U	0.45	U	0.16	U	0.16	U	0.0426	J
alpha-Hexachlorocyclohexane	319-84-6	ug/kg	0.0317	J	0.0322	J	0.34	U	0.34	U	0.33	U	0.0748	J
beta-Hexachlorocyclohexane	319-85-7	ug/kg	0.029	U	0.0598	U	1.1	U	1.1	U	0.33	U	0.215	J
delta-Hexachlorocyclohexane	319-86-8	ug/kg	0.0024	U	0.0072	U	0.23	U	0.23	U	0.22	U	0.0972	J
gamma-Hexachlorocyclohexane	58-89-9	ug/kg	0.0252	U	0.0435	U	0.18	U	0.18	U	1.1	U	0.128	J
cis-Chlordane	5103-71-9	ug/kg	0.183	J	0.309	J	0.12	U	0.12	U	0.29	U	1.39	
trans-Chlordane	5103-74-2	ug/kg	0.126	J	0.262	J	2.1	U	1.8	U	1.4	U	1.09	
Oxychlordane	27304-13-8	ug/kg	0.379	U	0.172	J	0.42	U	0.41	U	0.4	U	0.427	J
cis-Nonachlor	5103-73-1	ug/kg	0.124	J	0.137	J	17	U	0.27	U	1.1	U	0.416	J
trans-Nonachlor	39765-80-5	ug/kg	0.647		0.452	J	0.7	J	1.2		1.1	J	1.29	

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T01 SC		LW2-T01-NOAA SC		LW2-T01-REP1		LW2-T01-REP2		LW2-T01-REP3		LW2-T02 SC	
		Sample Date/Time	5/10/05 13:30		5/14/05 17:40		5/10/05 13:30		5/10/05 14:30		5/10/05 16:15		5/10/05 18:00	
		X Coordinate	7617314.805		7617314.805		7617314.805		7617314.805		7617314.805		7626519.107	
		Y Coordinate	718525.7315		718525.7315		718525.7315		718525.7315		718525.7315		703755.7939	
Analysis/Analyte	**CAS #**	**Units**												
Dieldrin	60-57-1	ug/kg	0.471	J	0.637	J	1.1	U	0.23	J	0.22	U	2.92	
alpha-Endosulfan	959-98-8	ug/kg	0.23	U	0.533	U	0.22	NJ	0.18	U	0.18	U	0.49	U
beta-Endosulfan	33213-65-9	ug/kg	0.224	U	0.52	U	1	U	1.1	U	0.82	U	0.439	U
Endosulfan sulfate	1031-07-8	ug/kg	0.414	J	0.782	U	0.21	UJ	0.2	UJ	0.2	UJ	0.68	J
Endrin	72-20-8	ug/kg	0.0066	U	0.0172	J	1.1	U	0.084	U	0.076	U	0.212	J
Endrin aldehyde	7421-93-4	ug/kg	0.0405	U	0.0166	U	3.5	U	1.1	U	1.1	U	0.0769	U
Endrin ketone	53494-70-5	ug/kg	0.0043	U	0.0095	U	3	U	0.43	U	0.41	U	0.0854	J
Heptachlor	76-44-8	ug/kg	0.00825	U	0.0128	U	0.33	U	0.43	U	0.39	J	0.293	U
Heptachlor epoxide	1024-57-3	ug/kg	0.0666	J	0.071	J	2.1	NJ	1.3		1.4	J	0.154	J
Methoxychlor	72-43-5	ug/kg	0.0184	U	0.0463	U	1.7	U	0.34	U	1.1	U	0.35	U
Toxaphene	8001-35-2	ug/kg	--		--		310	U	82	U	86	U	--	
Dioxins_Furans														
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	pg/g	--		--		0.296	U	0.276		0.275		--	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	pg/g	--		--		0.763	J	0.813	J	0.736	J	--	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	pg/g	--		--		0.283	U	0.297	J	0.306	J	--	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	pg/g	--		--		1.2		1.22		1.28		--	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	pg/g	--		--		0.451	J	0.423	J	0.448	J	--	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	pg/g	--		--		6.1		5.28		6.36		--	
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	pg/g	--		--		0.364		0.545		0.333		--	
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	pg/g	--		--		0.124	U	0.143	J	0.124	J	--	
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	pg/g	--		--		0.369	J	0.343	J	0.253	J	--	
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	pg/g	--		--		0.217	J	0.14	J	0.122	J	--	
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	pg/g	--		--		0.124	J	0.086	J	0.093	J	--	
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	pg/g	--		--		0.0594	U	0.0596	U	0.0535	U	--	
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	pg/g	--		--		0.132	J	0.119	J	0.135	J	--	
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	pg/g	--		--		1.14	J	0.63	J	0.652	J	--	
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	pg/g	--		--		0.084	J	0.0596	U	0.077	J	--	
Dioxin_Furan_Homolog														
Tetrachlorodibenzo-p-dioxin homologs	41903-57-5	pg/g	--		--		0.0594	U	0.276		0.275		--	
Pentachlorodibenzo-p-dioxin homologs	36088-22-9	pg/g	--		--		0.87		0.813		0.817		--	
Hexachlorodibenzo-p-dioxin homologs	34465-46-8	pg/g	--		--		2.79		2.93		3.79		--	
Heptachlorodibenzo-p-dioxin homologs	37871-00-4	pg/g	--		--		9.15		8.13		10.2		--	
Octachlorodibenzo-p-dioxin	3268-87-9	pg/g	--		--		19.4		17.6		20.8		--	
Tetrachlorodibenzofuran homologs	30402-14-3	pg/g	--		--		0.358		0.517		0.333		--	
Pentachlorodibenzofuran homologs	30402-15-4	pg/g	--		--		0.985		0.833		0.805		--	
Hexachlorodibenzofuran homologs	55684-94-1	pg/g	--		--		1.72		0.893		1.04		--	
Heptachlorodibenzofuran homologs	38998-75-3	pg/g	--		--		2.61		1.32		1.65		--	
Octachlorodibenzofuran	39001-02-0	pg/g	--		--		2.03	J	1.25	J	1.63	J	--	
Aroclors														
Aroclor 1016	12674-11-2	ug/kg	0.00171	U	0.00377	U	0.000519	U	0.00044	U	0.000541	U	0.00299	U
Aroclor 1221	11104-28-2	ug/kg	0.000597	U	0.00135	U	0.000235	U	0.000188	U	0.000214	U	0.00155	U
Aroclor 1232	11141-16-5	ug/kg	0.00151	U	0.00327	U	0.000202	U	0.000203	U	0.000188	U	0.00217	U
Aroclor 1242	53469-21-9	ug/kg	8.16	NJ	4.04	NJ	4.67	NJ	5.91	NJ	4.95	NJ	10.7	NJ
Aroclor 1248	12672-29-6	ug/kg	0.00502	U	0.00511	U	0.00903	U	0.0153	U	0.0115	U	0.00804	U

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T01 SC		LW2-T01-NOAA SC		LW2-T01-REP1		LW2-T01-REP2		LW2-T01-REP3		LW2-T02 SC	
		Sample Date/Time	5/10/05 13:30		5/14/05 17:40		5/10/05 13:30		5/10/05 14:30		5/10/05 16:15		5/10/05 18:00	
		X Coordinate	7617314.805		7617314.805		7617314.805		7617314.805		7617314.805		7626519.107	
		Y Coordinate	718525.7315		718525.7315		718525.7315		718525.7315		718525.7315		703755.7939	
Analysis/Analyte	**CAS #**	**Units**												
Aroclor 1254	11097-69-1	ug/kg	24.9	NJ	15.7	NJ	40.9	NJ	36.1	NJ	24	NJ	22.5	NJ
Aroclor 1260	11096-82-5	ug/kg	55.1	NJ	23.3	NJ	263	NJ	43.6	NJ	45	NJ	18.9	NJ
Total Aroclors	12767-79-2	ug/kg	88.2	JT	43	JT	309	JT	85.6	JT	74	JT	52.1	JT
PCB_Congeners														
PCB001	2051-60-7	pg/g	19.2		4.38	J	4.09		4.98		5.8		27.9	
PCB002	2051-61-8	pg/g	3.35		3.6	U	0.556	U	0.662		0.602		4.69	
PCB003	2051-62-9	pg/g	7.93	U	5.21	U	1.51		1.73		1.85		15.6	U
PCB004	13029-08-8	pg/g	84.6		23.7		49.2		52.7		54.7		124	
PCB005	16605-91-7	pg/g	3.02		3.49	U	1.97		1.47		1.78		4.99	U
PCB006	25569-80-6	pg/g	29.2		11.9		17.5		16.7		19.8		59.3	
PCB007	33284-50-3	pg/g	7.93		4.12	J	3.36		3.16		3.93		16.7	
PCB008	34883-43-7	pg/g	162		53.3		90.4		89.5		101		277	
PCB009	34883-39-1	pg/g	10.4		3.3	U	5.65		5.59		6.58		20.5	
PCB010	33146-45-1	pg/g	3.57		2.02	U	2		1.95		2.4		6.77	
PCB011	2050-67-1	pg/g	729		455		8.61		8.94		8.62		179	
PCB012 & 013	PCB012_013	pg/g	13.9		9.2	U	1.56		1.18		1.37		24.1	
PCB014	34883-41-5	pg/g	3.11	U	6.02	U	0.614	U	0.616	U	0.553	U	4.93	U
PCB015	2050-68-2	pg/g	203		100		14.8		11.5		12.8		278	
PCB016	38444-78-9	pg/g	75.1		56.4		65.6		62.1		65.1		192	
PCB017	37680-66-3	pg/g	152		89		108		127		113		280	
PCB018 & 030	PCB018_030	pg/g	216		155		158		178		166		452	
PCB019	38444-73-4	pg/g	37.3		36.7		48.1		49.5		45.4		62.8	
PCB020 & 028	PCB020_028	pg/g	1400		675		820		1110		864		1800	
PCB021 & 033	PCB021_033	pg/g	285		172		230		209		228		453	
PCB022	38444-85-8	pg/g	225		155		128		152		132		413	
PCB023	55720-44-0	pg/g	0.67	U	6.32	U	0.558		0.735		0.513		1.71	U
PCB024	55702-45-9	pg/g	3.6		1.83	J	2.78		3.51		2.95		8.37	
PCB025	55712-37-3	pg/g	51.9		35.3		35.7		44.1		35.7		86.6	
PCB026 & 029	PCB026_029	pg/g	106		86.8		92.7		121		94.2		200	
PCB027	38444-76-7	pg/g	18.3		21.7		15.7		16.8		15.5		46.7	
PCB031	16606-02-3	pg/g	941		461		487		592		521		1040	
PCB032	38444-77-8	pg/g	256		94.9		78.7		113		82.7		238	
PCB034	37680-68-5	pg/g	3.17		1.45	U	1.71		2.53		1.8		3.73	U
PCB035	37680-69-6	pg/g	14.5		6.8	U	0.74	U	0.743	U	0.667	U	13.2	
PCB036	38444-87-0	pg/g	5.3		1.73	U	0.578	U	0.58	U	0.52	U	1.01	U
PCB037	38444-90-5	pg/g	377		226		50.6		46.3		41		370	
PCB038	53555-66-1	pg/g	2.42	U	1.47	U	2.37		1.88	U	1.01	U	1.05	U
PCB039	38444-88-1	pg/g	4.35	U	3.53	J	5.53		8.21		5.48		7.58	
PCB040 & 041 & 071	PCB040_041_071	pg/g	480		550		454		720		386		823	
PCB042	36559-22-5	pg/g	229		196		178		295		153		424	
PCB043	70362-46-8	pg/g	24.3		22.1		30.9		44.8		26.8		45.9	
PCB044 & 047 & 065	PCB044_047_065	pg/g	1370		1090		1670		2020		1080		1730	
PCB045 & 051	PCB045_051	pg/g	97.5		106		153		127		91.4		221	
PCB046	41464-47-5	pg/g	17.5		29.3	U	14.6		18.5		12.3		58.5	
PCB048	70362-47-9	pg/g	147		129		175		263		160		266	
PCB049 & 069	PCB049_069	pg/g	884		1030		848		1300		651		1050	
PCB050 & 053	PCB050_053	pg/g	68.1		100		95.8		111		68.2		180	
PCB052	35693-99-3	pg/g	1190		1260		1440		2270		1090		2000	

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T01 SC		LW2-T01-NOAA SC		LW2-T01-REP1		LW2-T01-REP2		LW2-T01-REP3		LW2-T02 SC	
		Sample Date/Time	5/10/05 13:30		5/14/05 17:40		5/10/05 13:30		5/10/05 14:30		5/10/05 16:15		5/10/05 18:00	
		X Coordinate	7617314.805		7617314.805		7617314.805		7617314.805		7617314.805		7626519.107	
		Y Coordinate	718525.7315		718525.7315		718525.7315		718525.7315		718525.7315		703755.7939	
Analysis/Analyte	**CAS #**	**Units**												
PCB054	15968-05-5	pg/g	5.01		8.59		10.8		8.5		7.61		4.56	
PCB055	74338-24-2	pg/g	18.7		15.5	U	20.1		35.4		23.7		30.6	
PCB056	41464-43-1	pg/g	358		237		71.7		208		68.8		608	
PCB057	70424-67-8	pg/g	6.35		4.07	J	14.8		11.2		6.05		7.46	
PCB058	41464-49-7	pg/g	2.17	J	2.8	J	1.47	U	5.47		2.82		3.21	U
PCB059 & 062 & 075	PCB059_062_075	pg/g	93.6		130		147		141		88.5		168	
PCB060	33025-41-1	pg/g	338		191		313		592		285		568	
PCB061 & 070 & 074 & 076	PCB061_070_074_	pg/g	2400		1540		2110		3470		1890		2800	
PCB063	74472-34-7	pg/g	79.4		41.7		70.8		114		65.4		92.3	
PCB064	52663-58-8	pg/g	593		636		467		788		447		804	
PCB066	32598-10-0	pg/g	1280		825		1350		2520		1240		2060	
PCB067	73575-53-8	pg/g	35.8		21		39.3		42		25.5		44.4	
PCB068	73575-52-7	pg/g	18		7.65		1.71	U	14.4		10.5		8.39	
PCB072	41464-42-0	pg/g	17.2		28.7		21.4		22.4		13.7		12	
PCB073	74338-23-1	pg/g	4.79		5.14		17.4		10.7		9.34		10.9	U
PCB077	32598-13-3	pg/g	143		75.6		61.9		122		54.5		211	
PCB078	70362-49-1	pg/g	5.06	U	9.78	U	1.61	U	2.72	U	2.05	U	8.01	U
PCB079	41464-48-6	pg/g	15.9		13.4		40		37.3		21.6		17.6	
PCB080	33284-52-5	pg/g	8.78	U	17	U	1.73	U	2.42	U	1.82	U	13.9	U
PCB081	70362-50-4	pg/g	6.62	U	5.01	U	8.55	U	10.3	U	6.2	U	10.3	
PCB082	52663-62-4	pg/g	215		117		199		278		140		240	
PCB083 & 099	PCB083_099	pg/g	1830		1050		2810		2440		1720		1460	
PCB084	52663-60-2	pg/g	225		218		369		265		168		319	
PCB085 & 116 & 117	PCB085_116_117	pg/g	514		303		592		794		460		545	
PCB086 & 087 & 097 & 108 & 119 & 125	PCB086_087_097_	pg/g	1290		917		2300		2070		1280		1350	
PCB088 & 091	PCB088_091	pg/g	225		210		469		343		220		253	
PCB089	73575-57-2	pg/g	7.93	U	11.1		13.2		16.1		8.91		20.5	U
PCB090 & 101 & 113	PCB090_101_113	pg/g	2810		2930		7680		3970		2930		2240	
PCB092	52663-61-3	pg/g	429		386		1410		683		490		393	
PCB093 & 095 & 098 & 100 & 102	PCB093_095_098_	pg/g	1160		1120		3440		1530		1170		1260	
PCB094	73575-55-0	pg/g	8.14	U	12.2		35		11.5		8.8		8.09	U
PCB096	73575-54-9	pg/g	5.7		8.62		13.3		6.84		4.61		9.96	
PCB103	60145-21-3	pg/g	22.3		22.9		79.3		27.3		23.9		16.5	
PCB104	56558-16-8	pg/g	1.42	J	1.27	U	8.49		2.18		2.08		0.586	U
PCB105	32598-14-4	pg/g	1230		550		1310		1610		1060		1160	
PCB106	70424-69-0	pg/g	3.03	U	5.84	U	3.37	U	2.2	U	1.15	U	4.78	U
PCB107 & 124	PCB107_124	pg/g	128		109		122		131		89.8		102	
PCB109	74472-35-8	pg/g	286		113		278		278		201		172	
PCB110 & 115	PCB110_115	pg/g	2190		1920		4140		3110		2130		2090	
PCB111	39635-32-0	pg/g	6.78	U	1.54	J	8.83		3.81		4.24		1.96	J
PCB112	74472-36-9	pg/g	2.65	U	5.12	U	185		29.7		25		4.19	U
PCB114	74472-37-0	pg/g	80.3		33.3		90.5		119		72.9		76.7	
PCB118	31508-00-6	pg/g	3610		1630		4440		4060		3100		2520	
PCB120	68194-12-7	pg/g	21.9		10.3		33.1		15.7		15.7		9.68	
PCB121	56558-18-0	pg/g	5.3		2.35	J	11.4		3.21		3.87		1.74	U
PCB122	76842-07-4	pg/g	35.9		13.6		10.5		17.2		7.91		30.5	
PCB123	65510-44-3	pg/g	60.4		37.5		75.4		86		61.7		64.7	
PCB126	57465-28-8	pg/g	13.8		5.22	U	16.8		13.8		10.7		17	
PCB127	39635-33-1	pg/g	5.53		1.66	U	9.59		8.5		7.61		3.11	U

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T01 SC		LW2-T01-NOAA SC		LW2-T01-REP1		LW2-T01-REP2		LW2-T01-REP3		LW2-T02 SC	
		Sample Date/Time	5/10/05 13:30		5/14/05 17:40		5/10/05 13:30		5/10/05 14:30		5/10/05 16:15		5/10/05 18:00	
		X Coordinate	7617314.805		7617314.805		7617314.805		7617314.805		7617314.805		7626519.107	
		Y Coordinate	718525.7315		718525.7315		718525.7315		718525.7315		718525.7315		703755.7939	
Analysis/Analyte	**CAS #**	**Units**												
PCB128 & 166	PCB128_166	pg/g	767		351		1660		700		608		391	
PCB129 & 138 & 160 & 163	PCB129_138_160_	pg/g	7860		4010		26900		7380		6920		3450	
PCB130	52663-66-8	pg/g	411		165		847		312		287		163	
PCB131	61798-70-7	pg/g	24.9		21.2		92.3		29.7		21.7		20.7	
PCB132	38380-05-1	pg/g	811		726		4900		935		804		594	
PCB133	35694-04-3	pg/g	193		74		366		125		129		73.8	
PCB134 & 143	PCB134_143	pg/g	129		117		735		162		140		103	
PCB135 & 151 & 154	PCB135_151_154	pg/g	1190		1290		7550		1500		1400		940	
PCB136	38411-22-2	pg/g	224		278		1700		274		253		184	
PCB137	35694-06-5	pg/g	186		90.4		259		237		192		108	
PCB139 & 140	PCB139_140	pg/g	51.8		37.4		95.2		62		56.4		41.1	U
PCB141	52712-04-6	pg/g	1230		781		6660		1250		1170		598	
PCB142	41411-61-4	pg/g	2.48	U	4.79	U	4.96	U	1.88	U	1.85	U	3.93	U
PCB144	68194-14-9	pg/g	159		149		1060		205		191		107	
PCB145	74472-40-5	pg/g	0.28	J	0.985	J	1.54		0.49		0.534		0.616	J
PCB146	51908-16-8	pg/g	1680		736		4060		1220		1160		669	
PCB147 & 149	PCB147_149	pg/g	3200		3120		19700		3710		3340		2220	
PCB148	74472-41-6	pg/g	13.4		7.43		34.2		11		11.4		6.65	U
PCB150	68194-08-1	pg/g	3.29	U	3.99	J	21.4		4.89		4.79		3.1	J
PCB152	68194-09-2	pg/g	1.73	U	2.58	J	10.3		1.62		1.54		1.21	J
PCB153 & 168	PCB153_168	pg/g	8470		4470		31300		8130		8050		3820	
PCB155	33979-03-2	pg/g	2.66	U	0.936	U	5.58		2.18		2.3		0.769	U
PCB156 & 157	PCB156_157	pg/g	715		279		1690		608		553		306	
PCB158	74472-42-7	pg/g	661		354		2080		581		562		312	
PCB159	39635-35-3	pg/g	47.8		49.4		400		52.8		50.1		32.2	
PCB161	74472-43-8	pg/g	2.8	U	5.42	U	3.48	U	1.32	U	1.3	U	4.44	U
PCB162	39635-34-2	pg/g	25.3		12.3		35.3		21		17.9		12.6	
PCB164	74472-45-0	pg/g	356		257		1690		372		356		216	
PCB165	74472-46-1	pg/g	11		3.7	J	17.2		4.9		4.92		2.85	U
PCB167	52663-72-6	pg/g	329		140		684		252		232		134	
PCB169	32774-16-6	pg/g	5.35	U	1.94	U	49.2	U	10.1	U	11.5	U	1.41	U
PCB170	35065-30-6	pg/g	2610		997		12500		1920		1950		820	
PCB171 & 173	PCB171_173	pg/g	552		345		3480		464		467		227	
PCB172	52663-74-8	pg/g	617		252		2130		386		391		191	
PCB174	38411-25-5	pg/g	1180		1180		10400		1290		1170		703	
PCB175	40186-70-7	pg/g	93.1		40		404		66.1		68.8		35.4	
PCB176	52663-65-7	pg/g	95.3		113		1070		108		99.5		64.1	
PCB177	52663-70-4	pg/g	1460		708		7280		1080		961		483	
PCB178	52663-67-9	pg/g	656		325		2090		432		433		254	
PCB179	52663-64-6	pg/g	309		471		3030		367		334		227	
PCB180 & 193	PCB180_193	pg/g	6820		2720		31300		5410		5610		2270	
PCB181	74472-47-2	pg/g	13.4		7.13	U	37.3		11		10.7		19.4	
PCB182	60145-23-5	pg/g	8.36	U	8.18	U	25.1		9.41		8.78		6.9	
PCB183 & 185	PCB183_185	pg/g	1580		938		8900		1390		1440		685	
PCB184	74472-48-3	pg/g	1.28	U	1.22	J	2.53		1.59		1.59		1.27	U
PCB186	74472-49-4	pg/g	2.67	U	5.17	U	0.27	J	0.068	U	0.093	U	4.23	U
PCB187	52663-68-0	pg/g	3520		2460		14000		2900		2770		1510	
PCB188	74487-85-7	pg/g	4.61		2.09	U	8.9		3.14		3.16		1.96	J
PCB189	39635-31-9	pg/g	110		41.1		360		68.9		71.1		36.3	

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T01 SC		LW2-T01-NOAA SC		LW2-T01-REP1		LW2-T01-REP2		LW2-T01-REP3		LW2-T02 SC	
		Sample Date/Time	5/10/05 13:30		5/14/05 17:40		5/10/05 13:30		5/10/05 14:30		5/10/05 16:15		5/10/05 18:00	
		X Coordinate	7617314.805		7617314.805		7617314.805		7617314.805		7617314.805		7626519.107	
		Y Coordinate	718525.7315		718525.7315		718525.7315		718525.7315		718525.7315		703755.7939	
Analysis/Analyte	**CAS #**	**Units**												
PCB190	41411-64-7	pg/g	569		244		2490		393		395		181	
PCB191	74472-50-7	pg/g	108		44.2		478		78.1		83.3		35.7	
PCB192	74472-51-8	pg/g	6.22	U	12	U	1.23	U	1.23	U	1.1	U	9.84	U
PCB194	35694-08-7	pg/g	1370		405		4700		725		792		455	
PCB195	52663-78-2	pg/g	487		205		1980		254		269		153	
PCB196	42740-50-1	pg/g	620		220		2520		359		380		210	
PCB197 & 200	PCB197_200	pg/g	91.9		88.6		578		66.8		62.2		57.6	
PCB198 & 199	PCB198_199	pg/g	1560		727		4590		849		845		567	
PCB201	40186-71-8	pg/g	119		50.8		458		73.1		72		44.5	
PCB202	2136-99-4	pg/g	262		156		569		149		150		135	
PCB203	52663-76-0	pg/g	864		395		2930		528		518		307	
PCB204	74472-52-9	pg/g	0.523	U	0.21	U	0.839		0.381	U	0.294	J	0.739	U
PCB205	74472-53-0	pg/g	69.5		27.6		246		37.9		38.2		22.7	
PCB206	40186-72-9	pg/g	445		156		704		208		194		203	
PCB207	52663-79-3	pg/g	49.2		20.2		91.5		22.8		23		21.4	
PCB208	52663-77-1	pg/g	143		52.7		156		66.8		64.4		62.8	
PCB209	2051-24-3	pg/g	157		32.8		45.7		39.3		39.4		106	
Total PCB Congeners	1336-36-3	pg/g	87000		53800		277000		88200		72300		59800	
PCB_Homologs														
Monochlorobiphenyl	27323-18-8	pg/g	22.5		4.38		6.16		7.37		8.25		32.6	
Dichlorobiphenyl	25512-42-9	pg/g	1250		648		195		193		213		985	
Trichlorobiphenyl	25323-68-6	pg/g	4170		2270		2330		2840		2410		5660	
Tetrachlorobiphenyl	26914-33-0	pg/g	9910		8250		9810		15300		7970		14200	
Pentachlorobiphenyl	25429-29-2	pg/g	16400		11700		30100		21900		15400		14300	
Hexachlorobiphenyl	26601-64-9	pg/g	28700		17500		115000		28100		26500		14500	
Heptachlorobiphenyl	28655-71-2	pg/g	20300		10900		100000		16400		16300		7750	
Octachlorobiphenyl	55722-26-4	pg/g	5440		2280		18600		3040		3130		1950	
Nonachlorobiphenyl	53742-07-7	pg/g	637		229		952		298		282		287	
Total PCB Homologs		pg/g	86830		53781		276993		88078		72213		59665	

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T02-NOAA SC		LW2-T02-REP1		LW2-T02-REP2		LW2-T02-REP3		LW2-T03 SC		LW2-T03-REP1	
		Sample Date/Time	5/14/05 13:04		5/10/05 18:00		5/10/05 19:10		5/10/05 19:50		5/10/05 12:50		5/10/05 12:50	
		X Coordinate	7626519.107		7626519.107		7626519.107		7626519.107		7637229.949		7637229.949	
		Y Coordinate	703755.7939		703755.7939		703755.7939		703755.7939		694088.1142		694088.1142	
Analysis/Analyte	**CAS #**	**Units**												
Conventionals														
Total solids	TSO	percent	--		19.5		19.6		19.4		--		20.2	
Lipids	66455-18-3	percent	--		1.6		1.7		1.7		--		1.7	
Metals														
Aluminum, total	7429-90-5	mg/kg	--		9.3405		3.1752		3.3756		--		6.06	
Antimony, total	7440-36-0	mg/kg	--		0.00312	U	0.002156	U	0.00194	U	--		0.00202	U
Arsenic, total	7440-38-2	mg/kg	--		0.0663		0.05684		0.07178		--		0.04646	
Cadmium, total	7440-43-9	mg/kg	--		0.01911		0.012152		0.014744		--		0.011312	
Chromium, total	7440-47-3	mg/kg	--		0.0585	U	0.0588	U	0.0582	U	--		0.0606	U
Copper, total	7440-50-8	mg/kg	--		0.8073		0.82516		0.79152		--		0.75548	
Lead, total	7439-92-1	mg/kg	--		0.0741	U	0.0392	U	0.05626	U	--		0.02222	U
Mercury, total	7439-97-6	mg/kg	--		0.01131		0.011172	J	0.010864	J	--		0.01313	
Nickel, total	7440-02-0	mg/kg	--		0.28275		0.31556		0.24056		--		0.202	
Selenium, total	7782-49-2	mg/kg	--		0.273		0.1764		0.2328		--		0.1212	
Silver, total	7440-22-4	mg/kg	--		0.00273	U	0.00196	U	0.002522	U	--		0.001616	U
Zinc, total	7440-66-6	mg/kg	--		30.81		29.008		29.1		--		24.038	
Butyltins														
Butyltin ion	78763-54-9	ug/kg	--		--		2.6	J	4.6		--		1.6	U
Dibutyltin ion	14488-53-0	ug/kg	--		--		2	U	1.7	U	--		0.83	U
Tributyltin ion	36643-28-4	ug/kg	--		--		4.1	J	4.1		--		1.3	J
Tetrabutyltin	1461-25-2	ug/kg	--		--		0.29	U	0.25	U	--		0.16	U
PAHs														
2-Methylnaphthalene	91-57-6	ug/kg	41.5		4.3		4.3		4.3		12	U	5.6	
Acenaphthene	83-32-9	ug/kg	131		0.67		0.69		0.65		4.44	J	0.63	
Acenaphthylene	208-96-8	ug/kg	6.99	J	0.33	J	0.4	J	0.33	J	0.738	J	0.3	J
Anthracene	120-12-7	ug/kg	225		0.37	J	0.33	J	0.39	J	1.3	J	0.26	J
Fluorene	86-73-7	ug/kg	143		0.52		0.58		0.56		5.31	J	0.53	
Naphthalene	91-20-3	ug/kg	37.6	U	3.9		3.9		3.8		27.3	U	5.8	
Phenanthrene	85-01-8	ug/kg	862		1.4		1.3		1.4		33.9		0.88	
Dibenz(a,h)anthracene	53-70-3	ug/kg	2.68	J	0.2	J	0.12	U	0.12	U	0.486	U	0.12	U
Benz(a)anthracene	56-55-3	ug/kg	77.8		0.21	J	0.13	U	0.2	J	1.89	J	0.13	U
Benzo(a)pyrene	50-32-8	ug/kg	20.7		0.13	U	0.13	U	0.13	U	1.63	U	0.13	U
Benzo(b)fluoranthene	205-99-2	ug/kg	--		0.26	J	0.16	U	0.21	J	--		0.16	U
Benzo(g,h,i)perylene	191-24-2	ug/kg	7.3	J	0.18	U	0.18	U	0.19	U	2.44	U	0.18	U
Benzo(k)fluoranthene	207-08-9	ug/kg	23.8		0.15	J	0.2	J	0.16	J	1.95	J	0.14	U
Benzo(b+j)fluoranthene	BBJFLANTH	ug/kg	35.3		--		--		--		2.85	J	--	
Chrysene	218-01-9	ug/kg	97.7		0.28	J	0.2	U	0.35	J	6.97	J	0.2	U
Fluoranthene	206-44-0	ug/kg	475	J	1.1		0.7		1.1		20.5	J	0.37	U
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	8.51	J	0.17	U	0.17	U	0.17	U	1.86	U	0.17	U
Pyrene	129-00-0	ug/kg	301	J	0.74		0.46	J	0.77		15.7	J	0.29	U
Low Molecular Weight PAH	LPAH	ug/kg	1410	JT	11.5	JT	11.5	JT	11.4	JT	45.7	JT	14	JT
High Molecular Weight PAH	HPAH	ug/kg	1050	JT	2.94	JT	1.36	JT	2.79	JT	49.9	JT	0.37	UT
Total PAHs	130498-29-2	ug/kg	2460	JT	14.4	JT	12.9	JT	14.2	JT	95.5	JT	14	JT

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T02-NOAA SC		LW2-T02-REP1		LW2-T02-REP2		LW2-T02-REP3		LW2-T03 SC		LW2-T03-REP1	
		Sample Date/Time	5/14/05 13:04		5/10/05 18:00		5/10/05 19:10		5/10/05 19:50		5/10/05 12:50		5/10/05 12:50	
		X Coordinate	7626519.107		7626519.107		7626519.107		7626519.107		7637229.949		7637229.949	
		Y Coordinate	703755.7939		703755.7939		703755.7939		703755.7939		694088.1142		694088.1142	
Analysis/Analyte	**CAS #**	**Units**												
SVOCs														
1,2,4-Trichlorobenzene	120-82-1	ug/kg	--		--		--		--		--		110	U
1,2-Dichlorobenzene	95-50-1	ug/kg	--		--		--		--		--		130	U
1,3-Dichlorobenzene	541-73-1	ug/kg	--		--		--		--		--		120	UJ
1,4-Dichlorobenzene	106-46-7	ug/kg	--		--		--		--		--		120	UJ
Benzyl alcohol	100-51-6	ug/kg	--		--		--		--		--		72	UJ
Dibenzofuran	132-64-9	ug/kg	--		0.55		0.64		0.58		--		0.61	
Hexachlorobenzene	118-74-1	ug/kg	1.66		0.88	J	1.2		1	J	0.469		0.83	J
Hexachlorobutadiene	87-68-3	ug/kg	0.179	U	1.1	U	1.1	U	1.1	U	0.0308	U	1.1	U
Hexachloroethane	67-72-1	ug/kg	--		--		--		--		--		91	U
N-Nitrosodiphenylamine	86-30-6	ug/kg	--		--		--		--		--		110	U
Phenols														
2,4-Dimethylphenol	105-67-9	ug/kg	--		--		--		--		--		140	U
2-Methylphenol	95-48-7	ug/kg	--		--		--		--		--		570	U
4-Methylphenol	106-44-5	ug/kg	--		--		--		--		--		160	U
Pentachlorophenol	87-86-5	ug/kg	--		--		--		--		--		330	U
Phenol	108-95-2	ug/kg	--		--		--		--		--		190	U
Phthalates														
Dimethyl phthalate	131-11-3	ug/kg	--		--		--		--		--		55	U
Diethyl phthalate	84-66-2	ug/kg	--		--		--		--		--		100	U
Dibutyl phthalate	84-74-2	ug/kg	--		--		--		--		--		180	U
Butylbenzyl phthalate	85-68-7	ug/kg	--		--		--		--		--		160	J
Di-n-octyl phthalate	117-84-0	ug/kg	--		--		--		--		--		140	U
Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	--		--		--		--		--		570	U
Pesticides														
2,4'-DDD	53-19-0	ug/kg	5.02		9.7		12		13		0.0924	J	3.6	J
2,4'-DDE	3424-82-6	ug/kg	3.78		1.4	U	1.6	U	2.1	U	0.0289	J	1.5	U
2,4'-DDT	789-02-6	ug/kg	16.3		8.6		10		10		0.149	J	3	U
4,4'-DDD	72-54-8	ug/kg	22.8		110		120		130		0.528		1.2	J
4,4'-DDE	72-55-9	ug/kg	74		87		92		93		6.91		7	
4,4'-DDT	50-29-3	ug/kg	53.1		34		38		38		1.17		12	
Total of 4,4'-DDD, -DDE, -DDT	PP_DDT3ISO	ug/kg	150	T	231	T	250	T	261	T	8.61	T	20.2	JT
Aldrin	309-00-2	ug/kg	0.0333	U	1.2	U	0.16	U	0.16	U	0.00576	J	0.16	U
alpha-Hexachlorocyclohexane	319-84-6	ug/kg	0.0298	U	0.34	U	0.35	U	0.34	U	0.0319	U	0.34	U
beta-Hexachlorocyclohexane	319-85-7	ug/kg	0.0742	U	0.33	U	0.33	U	1.1	U	0.0225	U	0.33	U
delta-Hexachlorocyclohexane	319-86-8	ug/kg	0.023	U	0.22	U	0.26	U	1.1	U	0.00586	U	0.38	J
gamma-Hexachlorocyclohexane	58-89-9	ug/kg	0.0677	U	0.18	U	1.1	U	0.18	U	0.0194	U	1.1	U
cis-Chlordane	5103-71-9	ug/kg	0.891		0.85	NJ	0.59	NJ	0.73	U	0.358	J	0.24	J
trans-Chlordane	5103-74-2	ug/kg	0.7	J	3.1	U	2.8	U	2.7	U	0.13	J	2.9	
Oxychlordane	27304-13-8	ug/kg	0.663	U	0.41	U	0.42	U	0.41	U	0.868		0.42	U
cis-Nonachlor	5103-73-1	ug/kg	0.412	J	2.5	U	3.1	U	8.8	U	0.301	J	1.1	U
trans-Nonachlor	39765-80-5	ug/kg	1.37		1.2	U	1.3	U	1.8	U	1.32		0.78	J

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T02-NOAA SC		LW2-T02-REP1		LW2-T02-REP2		LW2-T02-REP3		LW2-T03 SC		LW2-T03-REP1	
		Sample Date/Time	5/14/05 13:04		5/10/05 18:00		5/10/05 19:10		5/10/05 19:50		5/10/05 12:50		5/10/05 12:50	
		X Coordinate	7626519.107		7626519.107		7626519.107		7626519.107		7637229.949		7637229.949	
		Y Coordinate	703755.7939		703755.7939		703755.7939		703755.7939		694088.1142		694088.1142	
Analysis/Analyte	**CAS #**	**Units**												
Dieldrin	60-57-1	ug/kg	1.58		2.1		1.2		1.1	J	1.8		0.32	U
alpha-Endosulfan	959-98-8	ug/kg	0.724	J	0.88	J	0.6	NJ	1.1	U	0.141	U	0.18	U
beta-Endosulfan	33213-65-9	ug/kg	0.561	U	0.43	U	1.2	U	1.6		0.198	U	0.26	U
Endosulfan sulfate	1031-07-8	ug/kg	0.713	J	0.99	J	0.96	J	1	J	0.232	J	0.21	UJ
Endrin	72-20-8	ug/kg	0.033	J	0.078	U	0.14	U	0.14	U	0.0172	U	1.1	U
Endrin aldehyde	7421-93-4	ug/kg	0.0286	U	1.1	U	1.1	U	1.1	U	0.0205	U	1.8	U
Endrin ketone	53494-70-5	ug/kg	0.0075	U	0.42	U	0.43	U	0.42	U	0.0055	U	1.4	U
Heptachlor	76-44-8	ug/kg	0.11	U	0.57	U	1.1	U	1.1	U	0.00687	U	1.1	U
Heptachlor epoxide	1024-57-3	ug/kg	0.312	J	1.6		1.4		0.93	U	0.159	J	1.9	J
Methoxychlor	72-43-5	ug/kg	0.0437	U	1.4	U	1.4	U	1.3	U	0.014	U	1.1	U
Toxaphene	8001-35-2	ug/kg	--		80	U	110	U	110	U	--		220	U
Dioxins_Furans														
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	pg/g	--		0.457		0.414		0.876		--		0.371	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	pg/g	--		0.619	J	0.569	J	2.29		--		0.868	J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	pg/g	--		0.249	J	0.19	U	0.393	J	--		0.34	J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	pg/g	--		6.91		1.09	J	2.22		--		1.66	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	pg/g	--		0.492	J	0.265	J	0.414	J	--		0.512	J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	pg/g	--		11.2		2.39		3.25		--		5.78	
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	pg/g	--		4.74		4.86		4.17		--		0.371	
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	pg/g	--		2.03		1.6		1.27		--		0.137	J
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	pg/g	--		1.85		1.35		1.14	J	--		0.329	J
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	pg/g	--		0.946	J	0.625	J	0.518	J	--		0.133	J
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	pg/g	--		0.346	J	0.19	J	0.179	J	--		0.112	J
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	pg/g	--		0.055	U	0.0565	U	0.0597	U	--		0.0565	U
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	pg/g	--		0.218	J	0.112	J	0.101	U	--		0.161	J
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	pg/g	--		0.755	J	0.288	J	0.377	J	--		0.651	J
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	pg/g	--		0.07	J	0.0565	U	0.0597	U	--		0.0565	U
Dioxin_Furan_Homolog														
Tetrachlorodibenzo-p-dioxin homologs	41903-57-5	pg/g	--		0.512		0.414		0.876		--		0.371	
Pentachlorodibenzo-p-dioxin homologs	36088-22-9	pg/g	--		0.619		0.627		2.29		--		0.954	
Hexachlorodibenzo-p-dioxin homologs	34465-46-8	pg/g	--		8.02		1.8		3.41		--		3.14	
Heptachlorodibenzo-p-dioxin homologs	37871-00-4	pg/g	--		12.4		3.23		4.48		--		7.83	
Octachlorodibenzo-p-dioxin	3268-87-9	pg/g	--		8.28		5.24		7.46		--		14.7	
Tetrachlorodibenzofuran homologs	30402-14-3	pg/g	--		4.5		4.46		3.95		--		0.343	
Pentachlorodibenzofuran homologs	30402-15-4	pg/g	--		4.27		3.35		2.78		--		1.14	
Hexachlorodibenzofuran homologs	55684-94-1	pg/g	--		2.05		1.21		1.06		--		1.47	
Heptachlorodibenzofuran homologs	38998-75-3	pg/g	--		1.18		0.521		0.78		--		1.44	
Octachlorodibenzofuran	39001-02-0	pg/g	--		0.602	J	0.432	J	0.703	J	--		0.941	J
Aroclors														
Aroclor 1016	12674-11-2	ug/kg	0.00365	U	0.000582	U	0.00071	U	0.00125	U	0.00246	U	0.000911	U
Aroclor 1221	11104-28-2	ug/kg	0.00176	U	0.000173	U	0.000184	U	0.000177	U	0.000891	U	0.00031	U
Aroclor 1232	11141-16-5	ug/kg	0.00276	U	0.000187	U	0.000192	U	0.000203	U	0.00154	U	0.000294	U
Aroclor 1242	53469-21-9	ug/kg	0.00406	U	10.3	NJ	8.77	NJ	13.1	NJ	11.4	NJ	7.42	NJ
Aroclor 1248	12672-29-6	ug/kg	42.2	NJ	0.0174	U	0.0157	U	0.0243	U	0.00577	U	0.00628	U

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T02-NOAA SC		LW2-T02-REP1		LW2-T02-REP2		LW2-T02-REP3		LW2-T03 SC		LW2-T03-REP1	
		Sample Date/Time	5/14/05 13:04		5/10/05 18:00		5/10/05 19:10		5/10/05 19:50		5/10/05 12:50		5/10/05 12:50	
		X Coordinate	7626519.107		7626519.107		7626519.107		7626519.107		7637229.949		7637229.949	
		Y Coordinate	703755.7939		703755.7939		703755.7939		703755.7939		694088.1142		694088.1142	
Analysis/Analyte	**CAS #**	**Units**												
Aroclor 1254	11097-69-1	ug/kg	0.0199	U	38	NJ	35.7	NJ	42.2	NJ	27.6	NJ	47.1	NJ
Aroclor 1260	11096-82-5	ug/kg	12.9	NJ	44.5	NJ	55.6	NJ	45.9	NJ	124	NJ	198	NJ
Total Aroclors	12767-79-2	ug/kg	55.1	JT	92.8	JT	100	JT	101	JT	163	JT	253	JT
PCB_Congeners														
PCB001	2051-60-7	pg/g	5.17		6.51		7.28		6.41		48.7		21.4	
PCB002	2051-61-8	pg/g	3.57	U	0.604		0.711		0.656		4.04	U	1.07	
PCB003	2051-62-9	pg/g	5.4		2.04		2.42		1.93		24.8		4.47	
PCB004	13029-08-8	pg/g	74.8		52.7		56.6		55.3		371		238	
PCB005	16605-91-7	pg/g	2.76	U	3.16		3.05		3.18		5.83	U	5.99	
PCB006	25569-80-6	pg/g	9.54		30.1		31.4		33.4		146		101	
PCB007	33284-50-3	pg/g	4.14	U	5.66		6.2		6.71		17.6		10.4	
PCB008	34883-43-7	pg/g	42.2		154		157		172		491		346	
PCB009	34883-39-1	pg/g	2.77	U	9.71		10.2		11.4		29.5		19.6	
PCB010	33146-45-1	pg/g	3.97		2.5		2.75		2.53		10.4		6.39	
PCB011	2050-67-1	pg/g	332		5.82		8.46		9.25		109		5.99	
PCB012 & 013	PCB012_013	pg/g	5.78	J	1.71		2.28		2.45		31.5		4.05	
PCB014	34883-41-5	pg/g	4.76	U	0.569	U	0.584	U	0.617	U	3.42	U	0.584	U
PCB015	2050-68-2	pg/g	67.2		15.1		18.6		16.7		395		32.8	
PCB016	38444-78-9	pg/g	356		148		127		134		226		135	
PCB017	37680-66-3	pg/g	534		229		204		274		453		319	
PCB018 & 030	PCB018_030	pg/g	789		377		348		454		647		403	
PCB019	38444-73-4	pg/g	67.3		61.7		56.3		68.6		136		208	
PCB020 & 028	PCB020_028	pg/g	1170		1950		1610		2470		1590		1070	
PCB021 & 033	PCB021_033	pg/g	113		440		382		535		353		300	
PCB022	38444-85-8	pg/g	280		284		239		315		322		195	
PCB023	55720-44-0	pg/g	5	U	1.26		1.14		1.53		0.966	U	0.495	
PCB024	55702-45-9	pg/g	6.02		9.25		8.47		8.58		8.37		6.38	
PCB025	55712-37-3	pg/g	59.7		64.4		55.9		78.7		114		75.7	
PCB026 & 029	PCB026_029	pg/g	91.9		199		180		270		231		160	
PCB027	38444-76-7	pg/g	50.5		42.6		37		48.9		63.8		50.8	
PCB031	16606-02-3	pg/g	576		946		805		1260		1070		652	
PCB032	38444-77-8	pg/g	289		273		235		312		294		233	
PCB034	37680-68-5	pg/g	1.81	U	4.43		3.91		5.35		2.98		2.33	
PCB035	37680-69-6	pg/g	4.76		0.686	U	0.704	U	0.744	U	9.36		0.704	U
PCB036	38444-87-0	pg/g	1.37	U	0.535	U	0.55	U	0.58	U	3.22	U	0.55	U
PCB037	38444-90-5	pg/g	121		56.9		57.2		66		336		57.3	
PCB038	53555-66-1	pg/g	3.71	U	2.43		2.29		3.27		0.96	U	1.25	
PCB039	38444-88-1	pg/g	14.1	U	12		11.6		16		5.16		4.12	
PCB040 & 041 & 071	PCB040_041_071	pg/g	1150		1240		1050		1410		531		547	
PCB042	36559-22-5	pg/g	783		567		452		610		269		231	
PCB043	70362-46-8	pg/g	63.9		65.2		64.7		95.1		19.7		23.7	
PCB044 & 047 & 065	PCB044_047_065	pg/g	3100		2630		2270		3170		2810		2480	
PCB045 & 051	PCB045_051	pg/g	422		293		268		334		479		521	
PCB046	41464-47-5	pg/g	70.7		59.3		50.2		60.3		46.5		31.9	
PCB048	70362-47-9	pg/g	536		439		373		547		154		124	
PCB049 & 069	PCB049_069	pg/g	1940		1640		1440		2050		1770		1460	
PCB050 & 053	PCB050_053	pg/g	273		221		203		271		338		389	
PCB052	35693-99-3	pg/g	3010		2990		2590		3670		1580		1660	

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T02-NOAA SC		LW2-T02-REP1		LW2-T02-REP2		LW2-T02-REP3		LW2-T03 SC		LW2-T03-REP1	
		Sample Date/Time	5/14/05 13:04		5/10/05 18:00		5/10/05 19:10		5/10/05 19:50		5/10/05 12:50		5/10/05 12:50	
		X Coordinate	7626519.107		7626519.107		7626519.107		7626519.107		7637229.949		7637229.949	
		Y Coordinate	703755.7939		703755.7939		703755.7939		703755.7939		694088.1142		694088.1142	
Analysis/Analyte	**CAS #**	**Units**												
PCB054	15968-05-5	pg/g	5.32		5.81		5.87		6.72		38.9		57.4	
PCB055	74338-24-2	pg/g	24.2		32.2		34.3		50.8		13.4		20.8	
PCB056	41464-43-1	pg/g	623		233		212		265		335		120	
PCB057	70424-67-8	pg/g	3.78		12		10.1		17.4		4.45		3.99	
PCB058	41464-49-7	pg/g	2.72	J	5.22		5.4		8.11		4.2		1.28	U
PCB059 & 062 & 075	PCB059_062_075	pg/g	223		241		211		298		105		100	
PCB060	33025-41-1	pg/g	455		927		711		978		258		249	
PCB061 & 070 & 074 & 076	PCB061_070_074_	pg/g	2350		4230		3570		5100		1710		1700	
PCB063	74472-34-7	pg/g	72.9		148		117		167		46.2		47.1	
PCB064	52663-58-8	pg/g	1100		1250		1040		1450		389		425	
PCB066	32598-10-0	pg/g	1880		3460		2760		3820		1170		1240	
PCB067	73575-53-8	pg/g	41.9		49.6		43.2		66.3		32.4		30.1	
PCB068	73575-52-7	pg/g	8.62		11.2		11.2		17.6		25.3		25.5	
PCB072	41464-42-0	pg/g	10.8		22.1		19.9		27.1		21.5		21.7	
PCB073	74338-23-1	pg/g	10.5	U	9.3		4.33		15.4		20.1		21.1	
PCB077	32598-13-3	pg/g	83.3		118		112		127		115		74.3	
PCB078	70362-49-1	pg/g	7.75	U	3.1	U	2.78	U	4.29	U	5.55	U	1.11	U
PCB079	41464-48-6	pg/g	20.7		35		35.7		48.8		20.3		33.8	
PCB080	33284-52-5	pg/g	13.4	U	2.75	U	2.48	U	3.84	U	9.64	U	1.65	U
PCB081	70362-50-4	pg/g	3.21	U	11.8	U	12.9	U	12	U	4.9	U	8.48	U
PCB082	52663-62-4	pg/g	290		349		312		310		184		300	
PCB083 & 099	PCB083_099	pg/g	1770		2420		2250		2730		2170		3420	
PCB084	52663-60-2	pg/g	390		412		375		405		342		400	
PCB085 & 116 & 117	PCB085_116_117	pg/g	667		859		750		883		450		831	
PCB086 & 087 & 097 & 108 & 119 & 125	PCB086_087_097_	pg/g	1700		2330		2210		2550		1280		2470	
PCB088 & 091	PCB088_091	pg/g	435		432		388		468		600		938	
PCB089	73575-57-2	pg/g	38.8		37.5		31		35.5		16.6		18.9	
PCB090 & 101 & 113	PCB090_101_113	pg/g	2450		3920		3820		4380		4410		7570	
PCB092	52663-61-3	pg/g	393		648		632		746		752		1270	
PCB093 & 095 & 098 & 100 & 102	PCB093_095_098_	pg/g	1740		1840		1730		2060		3010		4440	
PCB094	73575-55-0	pg/g	16.4		10.3		11		13.3		18.4		37.9	
PCB096	73575-54-9	pg/g	11.1		11.9		11.1		12.7		22.2		37.8	
PCB103	60145-21-3	pg/g	23.8		26.5		30.3		34.5		101		149	
PCB104	56558-16-8	pg/g	1.09	J	0.97		1.18		1.18		4.97	U	8.79	
PCB105	32598-14-4	pg/g	762		1590		1660		1860		744		1350	
PCB106	70424-69-0	pg/g	4.63	U	0.552	U	1.51	U	1.5	U	3.32	U	1.86	U
PCB107 & 124	PCB107_124	pg/g	64.1		120		122		131		88.5		142	
PCB109	74472-35-8	pg/g	133		266		309		316		187		354	
PCB110 & 115	PCB110_115	pg/g	2140		3450		3440		3750		2620		5290	
PCB111	39635-32-0	pg/g	1.93	U	4.74		4.44		4.28		7.7		13.7	
PCB112	74472-36-9	pg/g	4.05	U	23.9		0.689	U	18.1		2.9	U	2.29	U
PCB114	74472-37-0	pg/g	50.6		110		114		120		43.9		78.2	
PCB118	31508-00-6	pg/g	1730		3660		3810		4490		2220		4460	
PCB120	68194-12-7	pg/g	7.66		18		18.9		19.1		32.1		62.6	
PCB121	56558-18-0	pg/g	1.82	U	2.83		2.81		3.7		7.94		14.6	
PCB122	76842-07-4	pg/g	23.1		11.4		11.1		13.5		25.9		13.7	
PCB123	65510-44-3	pg/g	41.5		82.8		88.4		83.3		43.9		78.4	
PCB126	57465-28-8	pg/g	5		14.4		35.3		14.9		11.6		20.2	
PCB127	39635-33-1	pg/g	3.33	J	5.97		7.62		10.1		4.29		12.4	

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T02-NOAA SC		LW2-T02-REP1		LW2-T02-REP2		LW2-T02-REP3		LW2-T03 SC		LW2-T03-REP1	
		Sample Date/Time	5/14/05 13:04		5/10/05 18:00		5/10/05 19:10		5/10/05 19:50		5/10/05 12:50		5/10/05 12:50	
		X Coordinate	7626519.107		7626519.107		7626519.107		7626519.107		7637229.949		7637229.949	
		Y Coordinate	703755.7939		703755.7939		703755.7939		703755.7939		694088.1142		694088.1142	
Analysis/Analyte	**CAS #**	**Units**												
PCB128 & 166	PCB128_166	pg/g	337		648		865		864		1010		1790	
PCB129 & 138 & 160 & 163	PCB129_138_160_	pg/g	2890		6890		8150		8210		14600		24000	
PCB130	52663-66-8	pg/g	143		313		398		374		514		857	
PCB131	61798-70-7	pg/g	15.7		28.8		31.1		34.4		61.5		71.1	
PCB132	38380-05-1	pg/g	540		979		1000		1170		2710		3600	
PCB133	35694-04-3	pg/g	49.6		128		125		140		262		409	
PCB134 & 143	PCB134_143	pg/g	88.6		160		198		196		381		614	
PCB135 & 151 & 154	PCB135_151_154	pg/g	850		1530		1600		1890		5000		7360	
PCB136	38411-22-2	pg/g	141		261		267		332		960		1250	
PCB137	35694-06-5	pg/g	107		205		230		278		171		240	
PCB139 & 140	PCB139_140	pg/g	43.1		69.7		73.7		83.9		80.7		144	
PCB141	52712-04-6	pg/g	466		1230		1370		1380		3700		4510	
PCB142	41411-61-4	pg/g	2.19	U	3.4		2.41	U	1.35	U	2.72	U	1.9	U
PCB144	68194-14-9	pg/g	90.8		191		204		236		702		763	
PCB145	74472-40-5	pg/g	0.581	U	0.706	U	0.727		0.976		5	U	1.22	
PCB146	51908-16-8	pg/g	563		1270		1390		1430		2970		4500	
PCB147 & 149	PCB147_149	pg/g	1930		3870		4210		4720		12400		18100	
PCB148	74472-41-6	pg/g	6.93		14.6		13.8		16.2		29.7		64.4	
PCB150	68194-08-1	pg/g	3.19	J	4.56		5.17		6.06		21.6		48.4	
PCB152	68194-09-2	pg/g	1.87	U	1.25		1.56		1.92		5.65		12.6	
PCB153 & 168	PCB153_168	pg/g	2760		7470		8790		8670		17700		27800	
PCB155	33979-03-2	pg/g	1.07	U	1.63		1.76		2.02		2.47	J	5.65	
PCB156 & 157	PCB156_157	pg/g	199		517		749		656		504		1030	
PCB158	74472-42-7	pg/g	233		517		659		669		1080		1560	
PCB159	39635-35-3	pg/g	18.4		52.6		65.4		67.7		180		270	
PCB161	74472-43-8	pg/g	4.29	U	1.14	U	1.73	U	0.967	U	3.08	U	1.36	U
PCB162	39635-34-2	pg/g	7	U	19.8		25.3		20		26.3		38.1	
PCB164	74472-45-0	pg/g	141		349		398		421		944		1320	
PCB165	74472-46-1	pg/g	2.76	U	5.01		5.23		5.51		12		21.3	
PCB167	52663-72-6	pg/g	76.2		224		315		254		418		622	
PCB169	32774-16-6	pg/g	1.07	U	7.14	U	9.93	U	8.35	U	8.85	U	28.6	U
PCB170	35065-30-6	pg/g	598		1940		2200		2020		5340		9220	
PCB171 & 173	PCB171_173	pg/g	159		451		508		498		1480		2180	
PCB172	52663-74-8	pg/g	125		387		394		390		1060		1660	
PCB174	38411-25-5	pg/g	453		1340		1530		1550		4600		7100	
PCB175	40186-70-7	pg/g	23.4		66.7		82.6		76		204		314	
PCB176	52663-65-7	pg/g	38.5		106		110		133		429		564	
PCB177	52663-70-4	pg/g	364		1200		1120		1090		3030		6150	
PCB178	52663-67-9	pg/g	160		407		430		463		1170		1940	
PCB179	52663-64-6	pg/g	150		337		358		435		1310		2100	
PCB180 & 193	PCB180_193	pg/g	1530		5530		7140		5600		15000		23900	
PCB181	74472-47-2	pg/g	20.7		47.4		35.5		34.1		17.9		28.5	
PCB182	60145-23-5	pg/g	5.18		12.2		14.8		13.3		26		48.5	
PCB183 & 185	PCB183_185	pg/g	454		1440		1780		1560		4410		6590	
PCB184	74472-48-3	pg/g	1.53	U	2.14		2.36		2.38		4.73	U	3.61	
PCB186	74472-49-4	pg/g	0.712	U	0.79		0.603		0.563		2.93	U	0.356	J
PCB187	52663-68-0	pg/g	1510		3510		3790		3900		8210		15400	
PCB188	74487-85-7	pg/g	1.35	J	2.95		3.71		3.48		9.4		19.6	
PCB189	39635-31-9	pg/g	21.3		66.2		72.6		67.1		157		269	

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T02-NOAA SC		LW2-T02-REP1		LW2-T02-REP2		LW2-T02-REP3		LW2-T03 SC		LW2-T03-REP1	
		Sample Date/Time	5/14/05 13:04		5/10/05 18:00		5/10/05 19:10		5/10/05 19:50		5/10/05 12:50		5/10/05 12:50	
		X Coordinate	7626519.107		7626519.107		7626519.107		7626519.107		7637229.949		7637229.949	
		Y Coordinate	703755.7939		703755.7939		703755.7939		703755.7939		694088.1142		694088.1142	
Analysis/Analyte	**CAS #**	**Units**												
PCB190	41411-64-7	pg/g	123		412		501		443		1110		1970	
PCB191	74472-50-7	pg/g	24.2		79		91.6		85		225		337	
PCB192	74472-51-8	pg/g	9.52	U	1.14	U	0.105	U	1.23	U	6.82	U	1.17	U
PCB194	35694-08-7	pg/g	252		802		942		828		1980		3410	
PCB195	52663-78-2	pg/g	105		292		339		308		821		1440	
PCB196	42740-50-1	pg/g	130		382		479		450		1040		1730	
PCB197 & 200	PCB197_200	pg/g	30.7		77.2		83.2		90.5		243		355	
PCB198 & 199	PCB198_199	pg/g	354		933		995		1010		2120		3780	
PCB201	40186-71-8	pg/g	29.5		73.4		87.9		88.4		190		326	
PCB202	2136-99-4	pg/g	58.3		150		145		175		333		555	
PCB203	52663-76-0	pg/g	207		572		742		691		1460		2440	
PCB204	74472-52-9	pg/g	0.654	U	1.32		1.01		1.08		0.71	J	0.855	
PCB205	74472-53-0	pg/g	14.8		45.2		50.8		43		97.1		178	
PCB206	40186-72-9	pg/g	139		318		277		279		301		535	
PCB207	52663-79-3	pg/g	16		32.3		31.2		30.9		45.8		70.8	
PCB208	52663-77-1	pg/g	38.9		85.6		72.5		80.1		74.2		120	
PCB209	2051-24-3	pg/g	98		92.8		73.7		76.5		31.9		40.6	
Total PCB Congeners	1336-36-3	pg/g	57100		97100		100000		111000		162000		246000	
PCB_Homologs														
Monochlorobiphenyl	27323-18-8	pg/g	14.1		9.15		10.4		8.99		73.5		26.9	
Dichlorobiphenyl	25512-42-9	pg/g	535		281		296		313		1600		771	
Trichlorobiphenyl	25323-68-6	pg/g	4510		5100		4370		6320		5860		3880	
Tetrachlorobiphenyl	26914-33-0	pg/g	18200		20900		17700		24700		12300		11600	
Pentachlorobiphenyl	25429-29-2	pg/g	14900		22700		22200		25500		19400		33800	
Hexachlorobiphenyl	26601-64-9	pg/g	11700		27000		31100		32100		66500		101000	
Heptachlorobiphenyl	28655-71-2	pg/g	5770		17300		20200		18400		47800		79800	
Octachlorobiphenyl	55722-26-4	pg/g	1180		3330		3860		3680		8280		14200	
Nonachlorobiphenyl	53742-07-7	pg/g	194		435		381		390		421		725	
Total PCB Homologs		pg/g	57003		97055		100117		111412		162235		245803	

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

Analysis/Analyte	CAS #	Sample ID Sample Date/Time X Coordinate Y Coordinate Units	LW2-T03-REP2 5/12/05 16:25 7637229.949 694088.1142		LW2-T03-REP3 5/12/05 17:30 7637229.949 694088.1142		LW2-T04 SC 5/12/05 1:45 7649272.819 657288.3127		LW2-T04-REP1 5/12/05 13:35 7649272.819 657288.3127		LW2-T04-REP2 5/12/05 1:45 7649272.819 657288.3127		LW2-T04-REP3 5/12/05 14:35 7649272.819 657288.3127	
Conventionals														
Total solids	TSO	percent	19.7		19.5		--		19.3		19.9		19.5	
Lipids	66455-18-3	percent	1.8		1.8		--		1.8		1.8		1.9	
Metals														
Aluminum, total	7429-90-5	mg/kg	6.2252		10.179		--		13.4521		9.00475	T	12.09	
Antimony, total	7440-36-0	mg/kg	0.001576	U	0.00156	U	--		0.001544	U	0.001592	UT	0.00156	U
Arsenic, total	7440-38-2	mg/kg	0.06107		0.0585		--		0.05597		0.04776	T	0.0468	
Cadmium, total	7440-43-9	mg/kg	0.009653		0.0117		--		0.016405		0.007761	T	0.011115	
Chromium, total	7440-47-3	mg/kg	0.0591	U	0.0585	U	--		0.0579	U	0.0597	UT	0.0585	U
Copper, total	7440-50-8	mg/kg	0.78209		0.9282		--		0.92061		0.878585	T	0.95745	
Lead, total	7439-92-1	mg/kg	0.02364	U	0.0273	U	--		0.02509	U	0.00995	UT	0.00975	U
Mercury, total	7439-97-6	mg/kg	0.012411		0.01014	J	--		0.012738		0.009353	J	0.01287	
Nickel, total	7440-02-0	mg/kg	0.31914		0.2613		--		0.30108		0.408945	JT	0.2457	
Selenium, total	7782-49-2	mg/kg	0.1182		0.117		--		0.1158		0.2189	JT	0.1365	
Silver, total	7440-22-4	mg/kg	0.002364	U	0.001755	U	--		0.002702	U	0.002587	UT	0.00234	U
Zinc, total	7440-66-6	mg/kg	31.52		28.665		--		28.757		26.865	T	29.055	
Butyltins														
Butyltin ion	78763-54-9	ug/kg	5.4	J	1.5	U	--		1.1	U	1.1	U	0.18	U
Dibutyltin ion	14488-53-0	ug/kg	2.3	U	0.89	U	--		0.58	U	1	U	0.8	U
Tributyltin ion	36643-28-4	ug/kg	2	J	1.9	J	--		0.37	J	0.45	J	0.42	J
Tetrabutyltin	1461-25-2	ug/kg	0.38	U	0.16	U	--		0.15	U	0.16	U	0.16	U
PAHs														
2-Methylnaphthalene	91-57-6	ug/kg	5.5		6.9		6.15	U	3.4		3.3		4	
Acenaphthene	83-32-9	ug/kg	0.77		0.77		1.96	J	0.38	J	0.41	J	0.4	J
Acenaphthylene	208-96-8	ug/kg	0.35	J	0.35	J	0.764	J	0.19	J	0.15	J	0.27	J
Anthracene	120-12-7	ug/kg	0.24	J	0.3	J	1.78	J	0.15	J	0.17	J	0.2	J
Fluorene	86-73-7	ug/kg	0.64		0.64		2.07	U	0.36	J	0.39	J	0.41	J
Naphthalene	91-20-3	ug/kg	5		6.8		11	U	3	U	2.8	U	3.8	
Phenanthrene	85-01-8	ug/kg	1		1.1		23.5		0.84		0.62		0.69	
Dibenz(a,h)anthracene	53-70-3	ug/kg	0.12	U	0.15	J	0.207	U	0.27	J	0.21	J	0.32	J
Benz(a)anthracene	56-55-3	ug/kg	0.13	U	0.13	U	2.66		0.13	U	0.13	U	0.13	U
Benzo(a)pyrene	50-32-8	ug/kg	0.13	U	0.13	U	1.07	J	0.13	U	0.13	U	0.13	U
Benzo(b)fluoranthene	205-99-2	ug/kg	0.16	J	0.16	U	--		0.16	U	0.16	U	0.16	U
Benzo(g,h,i)perylene	191-24-2	ug/kg	0.18	U	0.18	U	2.3	U	0.18	U	0.18	U	0.18	U
Benzo(k)fluoranthene	207-08-9	ug/kg	0.14	U	0.14	U	1.86	J	0.14	U	0.14	U	0.14	U
Benzo(b+j)fluoranthene	BBJFLANTH	ug/kg	--		--		2.43		--		--		--	
Chrysene	218-01-9	ug/kg	0.2	U	0.2	U	8.01		0.2	U	0.2	U	0.2	U
Fluoranthene	206-44-0	ug/kg	0.46	J	0.46	J	24.3	J	0.61		0.37	U	0.37	U
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	0.17	U	0.17	U	1.27	U	0.17	U	0.17	U	0.17	U
Pyrene	129-00-0	ug/kg	0.31	J	0.35	J	19.1	J	0.49	J	0.29	U	0.29	U
Low Molecular Weight PAH	LPAH	ug/kg	13.5	JT	16.9	JT	28	JT	5.32	JT	5.04	JT	9.77	JT
High Molecular Weight PAH	HPAH	ug/kg	0.93	JT	0.96	JT	59.4	JT	1.37	JT	0.21	JT	0.32	JT
Total PAHs	130498-29-2	ug/kg	14.4	JT	17.8	JT	87.4	JT	6.69	JT	5.25	JT	10.1	JT

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

Analysis/Analyte	CAS #	Sample ID Sample Date/Time X Coordinate Y Coordinate Units	LW2-T03-REP2 5/12/05 16:25 7637229.949 694088.1142		LW2-T03-REP3 5/12/05 17:30 7637229.949 694088.1142		LW2-T04 SC 5/12/05 1:45 7649272.819 657288.3127		LW2-T04-REP1 5/12/05 13:35 7649272.819 657288.3127		LW2-T04-REP2 5/12/05 1:45 7649272.819 657288.3127		LW2-T04-REP3 5/12/05 14:35 7649272.819 657288.3127	
SVOCs														
1,2,4-Trichlorobenzene	120-82-1	ug/kg	--		140	U	--		21	U	21	U	23	U
1,2-Dichlorobenzene	95-50-1	ug/kg	--		170	U	--		25	U	25	U	27	U
1,3-Dichlorobenzene	541-73-1	ug/kg	--		150	UJ	--		23	UJ	23	UJ	25	UJ
1,4-Dichlorobenzene	106-46-7	ug/kg	--		150	UJ	--		23	UJ	23	UJ	25	UJ
Benzyl alcohol	100-51-6	ug/kg	--		200	J	--		57	J	31	J	39	J
Dibenzofuran	132-64-9	ug/kg	0.68		0.75		--		0.37	J	0.4	J	0.48	J
Hexachlorobenzene	118-74-1	ug/kg	0.74	J	0.88	J	0.767		0.57	J	1.1	J	1.2	J
Hexachlorobutadiene	87-68-3	ug/kg	1.1	U	1.1	U	0.00589	U	1.1	U	1.8	U	1.1	U
Hexachloroethane	67-72-1	ug/kg	--		120	U	--		18	U	18	U	19	U
N-Nitrosodiphenylamine	86-30-6	ug/kg	--		130	U	--		20	U	20	U	22	U
Phenols														
2,4-Dimethylphenol	105-67-9	ug/kg	--		180	U	--		28	U	27	U	30	U
2-Methylphenol	95-48-7	ug/kg	--		720	U	--		120	U	110	U	120	U
4-Methylphenol	106-44-5	ug/kg	--		210	U	--		32	U	31	U	34	U
Pentachlorophenol	87-86-5	ug/kg	--		420	U	--		65	U	64	U	70	U
Phenol	108-95-2	ug/kg	--		230	U	--		40	J	35	U	38	U
Phthalates														
Dimethyl phthalate	131-11-3	ug/kg	--		69	U	--		11	U	11	U	12	U
Diethyl phthalate	84-66-2	ug/kg	--		130	U	--		20	U	20	U	21	U
Dibutyl phthalate	84-74-2	ug/kg	--		220	U	--		34	U	52	J	50	J
Butylbenzyl phthalate	85-68-7	ug/kg	--		190	U	--		200		240		210	
Di-n-octyl phthalate	117-84-0	ug/kg	--		180	U	--		28	U	27	U	30	U
Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	--		720	U	--		120	U	140	J	140	J
Pesticides														
2,4'-DDD	53-19-0	ug/kg	2.6	NJ	5.1	NJ	0.0822	J	0.34	U	0.34	U	0.34	U
2,4'-DDE	3424-82-6	ug/kg	1.2	U	6.2	U	0.0317	J	0.16	U	0.84	U	0.93	U
2,4'-DDT	789-02-6	ug/kg	2.7	U	5.3	U	0.108		0.81	NJ	1.2	NJ	1	NJ
4,4'-DDD	72-54-8	ug/kg	1.5	J	1.4	J	0.478		0.69	U	1	J	0.88	U
4,4'-DDE	72-55-9	ug/kg	8.1		13		5.33		6.3		7.9		6.6	
4,4'-DDT	50-29-3	ug/kg	10		15		0.578		1.5		2.1		1.6	
Total of 4,4'-DDD, -DDE, -DDT	PP_DDT3ISO	ug/kg	19.6	JT	29.4	JT	6.39	T	7.8	T	11	JT	8.2	T
Aldrin	309-00-2	ug/kg	0.55	U	0.16	U	0.000169	U	0.16	U	0.16	U	0.17	U
alpha-Hexachlorocyclohexane	319-84-6	ug/kg	0.35	U	0.34	U	0.0165	J	0.34	U	0.34	U	0.34	U
beta-Hexachlorocyclohexane	319-85-7	ug/kg	0.34	U	0.37	U	0.00892	U	0.33	U	0.36	U	0.33	U
delta-Hexachlorocyclohexane	319-86-8	ug/kg	0.44	J	0.51	U	0.0014	U	0.23	U	0.22	U	0.23	U
gamma-Hexachlorocyclohexane	58-89-9	ug/kg	0.19	U	0.18	U	0.0221	U	0.18	U	0.18	U	0.49	U
cis-Chlordane	5103-71-9	ug/kg	0.23	J	0.26	J	0.267		0.56	J	0.34	J	0.37	J
trans-Chlordane	5103-74-2	ug/kg	2.4		4		0.151	J	0.56	NJ	0.73	NJ	0.51	NJ
Oxychlordane	27304-13-8	ug/kg	0.42	U	0.41	U	0.58		0.45	U	0.41	U	0.42	U
cis-Nonachlor	5103-73-1	ug/kg	1.1	U	1.1	U	0.244		1.1	U	0.26	U	0.27	U
trans-Nonachlor	39765-80-5	ug/kg	0.84	J	0.76	J	1.02		1.9		1	J	1.3	

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T03-REP2		LW2-T03-REP3		LW2-T04 SC		LW2-T04-REP1		LW2-T04-REP2		LW2-T04-REP3	
		Sample Date/Time	5/12/05 16:25		5/12/05 17:30		5/12/05 1:45		5/12/05 13:35		5/12/05 1:45		5/12/05 14:35	
		X Coordinate	7637229.949		7637229.949		7649272.819		7649272.819		7649272.819		7649272.819	
		Y Coordinate	694088.1142		694088.1142		657288.3127		657288.3127		657288.3127		657288.3127	
Analysis/Analyte	**CAS #**	**Units**												
Dieldrin	60-57-1	ug/kg	0.55	U	1.1	U	0.905		0.65	J	0.84	J	0.72	J
alpha-Endosulfan	959-98-8	ug/kg	0.19	U	0.18	U	0.449		1.1	U	0.3	U	0.18	U
beta-Endosulfan	33213-65-9	ug/kg	0.26	U	1.1	U	0.25	J	0.26	U	1.1	U	1.1	U
Endosulfan sulfate	1031-07-8	ug/kg	0.21	UJ	0.2	UJ	0.891		0.34	J	0.24	UJ	0.32	UJ
Endrin	72-20-8	ug/kg	1.1	U	1.1	U	0.00503	J	0.14	J	0.24	J	0.4	U
Endrin aldehyde	7421-93-4	ug/kg	0.19	U	1.1	U	0.0224	U	0.61	NJ	0.19	U	0.25	NJ
Endrin ketone	53494-70-5	ug/kg	1.1	U	1.5	U	0.0015	U	1.1	U	1.3	U	1.1	U
Heptachlor	76-44-8	ug/kg	1.2		0.76	J	0.0025	U	0.33	U	0.33	U	0.33	U
Heptachlor epoxide	1024-57-3	ug/kg	1.5		2		0.11	J	0.36	U	1.2	NJ	0.73	J
Methoxychlor	72-43-5	ug/kg	1.1	U	1.2	U	0.0545	U	0.34	U	0.34	U	0.34	U
Toxaphene	8001-35-2	ug/kg	180	U	230	U	--		24	U	38	U	36	U
Dioxins_Furans														
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	pg/g	0.252		0.354	U	--		0.153	U	0.185	U	0.243	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	pg/g	0.657	J	1.06	J	--		0.301	J	0.365	J	0.701	J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	pg/g	0.345	J	0.429	J	--		0.082	U	0.096	J	0.131	J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	pg/g	1.58		2.69		--		0.317	U	0.344	J	0.563	J
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	pg/g	0.491	J	0.759	J	--		0.084	J	0.149	U	0.166	J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	pg/g	6.41		7.38		--		0.726	J	0.866	J	0.789	J
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	pg/g	0.312		0.541		--		0.21	J	0.297		0.26	
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	pg/g	0.077	J	0.254	J	--		0.054	U	0.079	J	0.071	J
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	pg/g	0.271	J	0.606	J	--		0.137	J	0.155	J	0.139	J
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	pg/g	0.14	J	0.215	J	--		0.054	U	0.0561	U	0.0537	U
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	pg/g	0.111	J	0.165	J	--		0.054	U	0.0561	U	0.0537	U
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	pg/g	0.0551	U	0.0577	U	--		0.054	U	0.0561	U	0.0537	U
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	pg/g	0.166	J	0.211	J	--		0.071	J	0.08	J	0.071	J
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	pg/g	0.759	J	0.721	J	--		0.14	J	0.147	U	0.138	U
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	pg/g	0.075	U	0.063	J	--		0.054	U	0.0561	U	0.0537	U
Dioxin_Furan_Homolog														
Tetrachlorodibenzo-p-dioxin homologs	41903-57-5	pg/g	0.252		0.0577	U	--		0.054	U	0.0561	U	0.243	
Pentachlorodibenzo-p-dioxin homologs	36088-22-9	pg/g	0.727		1.12		--		0.301		0.365		0.701	
Hexachlorodibenzo-p-dioxin homologs	34465-46-8	pg/g	3.11		4.57		--		0.25		0.551		1.08	
Heptachlorodibenzo-p-dioxin homologs	37871-00-4	pg/g	8.42		9.44		--		1.02		1.18		1.08	
Octachlorodibenzo-p-dioxin	3268-87-9	pg/g	15.7		18.3		--		2.36		2.45		2.08	J
Tetrachlorodibenzofuran homologs	30402-14-3	pg/g	0.473		0.554		--		0.212		0.307		0.251	
Pentachlorodibenzofuran homologs	30402-15-4	pg/g	1.96		1.39		--		0.206		0.597	U	0.371	
Hexachlorodibenzofuran homologs	55684-94-1	pg/g	1.85		1.83		--		0.212		0.216		0.071	
Heptachlorodibenzofuran homologs	38998-75-3	pg/g	2.07		1.63		--		0.263		0.0561	U	0.097	
Octachlorodibenzofuran	39001-02-0	pg/g	1.57	J	1	J	--		0.245	J	0.243	J	0.203	J
Aroclors														
Aroclor 1016	12674-11-2	ug/kg	0.000999	U	0.000964	U	0.00112	U	0.000311	U	0.000246	U	0.000232	U
Aroclor 1221	11104-28-2	ug/kg	0.00034	U	0.000343	U	0.000581	U	0.000161	U	0.000128	U	0.00012	U
Aroclor 1232	11141-16-5	ug/kg	0.000288	U	0.000317	U	0.000761	U	0.000205	U	0.000191	U	0.000183	U
Aroclor 1242	53469-21-9	ug/kg	6.14	NJ	9.31	NJ	0.87	NJ	0.646	NJ	0.91	NJ	0.757	NJ
Aroclor 1248	12672-29-6	ug/kg	0.00653	U	0.0112	U	0.00111	U	0.00225	U	0.00299	U	0.00277	U

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T03-REP2		LW2-T03-REP3		LW2-T04 SC		LW2-T04-REP1		LW2-T04-REP2		LW2-T04-REP3	
		Sample Date/Time	5/12/05 16:25		5/12/05 17:30		5/12/05 1:45		5/12/05 13:35		5/12/05 1:45		5/12/05 14:35	
		X Coordinate	7637229.949		7637229.949		7649272.819		7649272.819		7649272.819		7649272.819	
		Y Coordinate	694088.1142		694088.1142		657288.3127		657288.3127		657288.3127		657288.3127	
Analysis/Analyte	**CAS #**	**Units**												
Aroclor 1254	11097-69-1	ug/kg	32.1	NJ	64	NJ	4.87	NJ	5.98	NJ	10.3	NJ	7.87	NJ
Aroclor 1260	11096-82-5	ug/kg	103	NJ	126	NJ	3.43	NJ	5.45	NJ	9.14	NJ	6.54	NJ
Total Aroclors	12767-79-2	ug/kg	141	JT	199	JT	9.17	JT	12.1	JT	20.4	JT	15.2	JT
PCB_Congeners														
PCB001	2051-60-7	pg/g	26.2		24.1		8.67		7.43		7.81		7.68	
PCB002	2051-61-8	pg/g	1.26		1.22		1.47	U	0.598		0.649		0.586	
PCB003	2051-62-9	pg/g	5.17		4.74		3.65		1.69		1.92		1.8	
PCB004	13029-08-8	pg/g	196		214		30.6		31.4		34.1		33.3	
PCB005	16605-91-7	pg/g	4.68		6.43		1.2	U	0.726		0.823	U	0.805	U
PCB006	25569-80-6	pg/g	66.5		87.3		9.13		6.97		7.57		6.86	
PCB007	33284-50-3	pg/g	9.83		11.7		2.57		1.51		1.61		1.56	
PCB008	34883-43-7	pg/g	254		341		40.4		30.6		32.9		29.8	
PCB009	34883-39-1	pg/g	17		21.1		3.54		2.49		2.66		2.48	
PCB010	33146-45-1	pg/g	5.36		5.64		1.25		1.2		1.21		1.19	
PCB011	2050-67-1	pg/g	5.02		5.61		334		46.8		24.7		29.7	
PCB012 & 013	PCB012_013	pg/g	3.3		3.71		2.6		1.28	U	1.05		0.853	J
PCB014	34883-41-5	pg/g	0.569	U	0.596	U	1.15	U	0.558	U	0.58	U	0.555	U
PCB015	2050-68-2	pg/g	27.2		31.3		17.3		4.41		4.85		4.31	
PCB016	38444-78-9	pg/g	98.4		136		14.6		8.98		10.6		9.8	
PCB017	37680-66-3	pg/g	300		380		24.6		16.2		21.9		18.7	
PCB018 & 030	PCB018_030	pg/g	297		424		39.5		28.6		34.5		32	
PCB019	38444-73-4	pg/g	115		158		5.23		5.53		7.48		5.89	
PCB020 & 028	PCB020_028	pg/g	915		1470		129		99.6		158		122	
PCB021 & 033	PCB021_033	pg/g	237		367		21.8		15.7		23.3		18.7	
PCB022	38444-85-8	pg/g	148		243		20.6		11.9		15.6		12.9	
PCB023	55720-44-0	pg/g	0.432	J	0.787	U	1.21	U	0.0965	U	0.08	J	0.103	J
PCB024	55702-45-9	pg/g	4.51		6.11		0.462	U	0.567		0.579		0.503	
PCB025	55712-37-3	pg/g	73.4		99.6		6.95		4.62		6.4		5.39	
PCB026 & 029	PCB026_029	pg/g	147		208		15.5		12.3		19.9		14.8	
PCB027	38444-76-7	pg/g	35.4		51.7		2.93		2.32		3.14		2.66	
PCB031	16606-02-3	pg/g	582		869		81		56.6		77.7		68.7	
PCB032	38444-77-8	pg/g	169		242		14.9		10.9		15.6		11.9	
PCB034	37680-68-5	pg/g	2.16		3.45		0.421	J	0.333	J	0.527		0.489	
PCB035	37680-69-6	pg/g	0.687	U	0.719	U	2.51		0.107	U	0.699	U	0.0673	U
PCB036	38444-87-0	pg/g	0.536	U	0.561	U	1.63		0.0948	U	0.0669	U	0.061	J
PCB037	38444-90-5	pg/g	49.8		92.8		26.1		5.34		6.98		6.56	
PCB038	53555-66-1	pg/g	0.623		1.25	U	0.223	U	0.206	U	0.225	U	0.218	U
PCB039	38444-88-1	pg/g	3.11		5.48		0.796	J	0.784		1.18		0.822	
PCB040 & 041 & 071	PCB040_041_071	pg/g	456		722		44.4		45.6		90.8		66.2	
PCB042	36559-22-5	pg/g	143		273		36.2		20.4		40.9		33.3	
PCB043	70362-46-8	pg/g	17.9		29		2.52		3.84		6.87		5.33	
PCB044 & 047 & 065	PCB044_047_065	pg/g	2800		3660		166		156		296		215	
PCB045 & 051	PCB045_051	pg/g	562		789		12.6		11.2		20.4		14.9	
PCB046	41464-47-5	pg/g	19.9		32.5		3.01		1.78		3.45		2.64	
PCB048	70362-47-9	pg/g	103		172		19.6		17.4		34.8		26.3	
PCB049 & 069	PCB049_069	pg/g	1560		2230		126		103		206		150	
PCB050 & 053	PCB050_053	pg/g	318		512		12.2		9.98		19.3		13.5	
PCB052	35693-99-3	pg/g	1350		2560		241		209		403		275	

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T03-REP2		LW2-T03-REP3		LW2-T04 SC		LW2-T04-REP1		LW2-T04-REP2		LW2-T04-REP3	
		Sample Date/Time	5/12/05 16:25		5/12/05 17:30		5/12/05 1:45		5/12/05 13:35		5/12/05 1:45		5/12/05 14:35	
		X Coordinate	7637229.949		7637229.949		7649272.819		7649272.819		7649272.819		7649272.819	
		Y Coordinate	694088.1142		694088.1142		657288.3127		657288.3127		657288.3127		657288.3127	
Analysis/Analyte	**CAS #**	**Units**												
PCB054	15968-05-5	pg/g	40.1		81.6		0.54	U	0.744		1.64		0.622	
PCB055	74338-24-2	pg/g	18.9		29.7		2.77		3.74		6.83		6.25	
PCB056	41464-43-1	pg/g	93.5		206		46.7		14.5		26.8		18.2	
PCB057	70424-67-8	pg/g	3.82		6.6		0.587	J	0.77		1.28		1.09	
PCB058	41464-49-7	pg/g	1.25	U	5.4		0.514	J	0.671		1.34	U	0.91	
PCB059 & 062 & 075	PCB059_062_075	pg/g	82.5		129		11.6		11.8		21		16.8	
PCB060	33025-41-1	pg/g	184		348		45		43.5		86		63.7	
PCB061 & 070 & 074 & 076	PCB061_070_074_	pg/g	1440		2610		370		342		610		463	
PCB063	74472-34-7	pg/g	43.5		75.3		11.2		10.6		21.6		15	
PCB064	52663-58-8	pg/g	286		541		73.9		65.9		125		96.4	
PCB066	32598-10-0	pg/g	974		1870		251		243		444		341	
PCB067	73575-53-8	pg/g	31.6		50		4		2.97		5.36		4.42	
PCB068	73575-52-7	pg/g	35		41.7		3.28		3.01		4.81		3.97	
PCB072	41464-42-0	pg/g	24.4		34.8		3.1		3.28		6.11		4.62	
PCB073	74338-23-1	pg/g	34.6		49.9		0.679	U	1.29		2.08		2.17	
PCB077	32598-13-3	pg/g	53.9		96.9		17.4		13.2		20.4		18.1	
PCB078	70362-49-1	pg/g	1.15	U	1.97	U	1.87	U	0.908	U	0.942	U	0.903	U
PCB079	41464-48-6	pg/g	27.7		62.7		4.32		5.86		10.6		6.65	
PCB080	33284-52-5	pg/g	1.61	U	1.76	U	3.24	U	1.57	U	1.63	U	1.57	U
PCB081	70362-50-4	pg/g	5.18	U	10.8	U	0.712	U	1.43	U	1.97	U	2.24	U
PCB082	52663-62-4	pg/g	138		365		33.5		34.4		70.4		47.3	
PCB083 & 099	PCB083_099	pg/g	2600		4670		358		438		731		581	
PCB084	52663-60-2	pg/g	184		474		45.8		42.2		90.1		57	
PCB085 & 116 & 117	PCB085_116_117	pg/g	451		1070		113		135		230		180	
PCB086 & 087 & 097 & 108 & 119 & 125	PCB086_087_097_	pg/g	1410		3340		251		309		559		403	
PCB088 & 091	PCB088_091	pg/g	721		1140		46.4		46.5		95.1		61.8	
PCB089	73575-57-2	pg/g	8.89		19.3		1.66		1.97	U	4.52		2.89	
PCB090 & 101 & 113	PCB090_101_113	pg/g	4170		8060		483		567		1020		733	
PCB092	52663-61-3	pg/g	805		1430		77.2		101		173		126	
PCB093 & 095 & 098 & 100 & 102	PCB093_095_098_	pg/g	2110		3810		202		227		438		285	
PCB094	73575-55-0	pg/g	46.8		48.2		0.989		1.22	U	1.99		2.1	U
PCB096	73575-54-9	pg/g	35.8		56.5		0.853	J	0.837		1.81		1.15	
PCB103	60145-21-3	pg/g	165		192		2.72		3.02		6.02		3.9	
PCB104	56558-16-8	pg/g	9.73		17.2		0.119	J	0.176	U	0.254	J	0.135	J
PCB105	32598-14-4	pg/g	780		1930		224		297		503		384	
PCB106	70424-69-0	pg/g	2.79	U	2.21	U	1.11	U	1.14	U	1.69	U	1.58	U
PCB107 & 124	PCB107_124	pg/g	78.4		186		19.6		20.4		31.4		27.6	
PCB109	74472-35-8	pg/g	245		438		48.9		60.3		102		78.4	
PCB110 & 115	PCB110_115	pg/g	2170		5110		440		542		914		662	
PCB111	39635-32-0	pg/g	14.2		15.5		0.409	U	0.895	U	1.23		1.54	U
PCB112	74472-36-9	pg/g	1.86	U	2.52	U	0.976	U	0.881	U	1.05	U	1.52	U
PCB114	74472-37-0	pg/g	49.6		108		14.7		18.6		33.8		25.6	
PCB118	31508-00-6	pg/g	2500		5880		631		833		1430		1080	
PCB120	68194-12-7	pg/g	61.6		67.1		2.73		4.14		5.69		4.79	
PCB121	56558-18-0	pg/g	18.1		20.9		0.414	U	0.895	U	1.06	U	1.54	U
PCB122	76842-07-4	pg/g	6.94		16.3		5.2		2.62		4		2.75	
PCB123	65510-44-3	pg/g	42.5		102		12.9		17.2		27.8		20.3	
PCB126	57465-28-8	pg/g	11.9		19.6		2.84		3.12		4.02		4.54	
PCB127	39635-33-1	pg/g	7.11		15.5		1.02	U	2.02	U	2.76		2.6	

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T03-REP2		LW2-T03-REP3		LW2-T04 SC		LW2-T04-REP1		LW2-T04-REP2		LW2-T04-REP3	
		Sample Date/Time	5/12/05 16:25		5/12/05 17:30		5/12/05 1:45		5/12/05 13:35		5/12/05 1:45		5/12/05 14:35	
		X Coordinate	7637229.949		7637229.949		7649272.819		7649272.819		7649272.819		7649272.819	
		Y Coordinate	694088.1142		694088.1142		657288.3127		657288.3127		657288.3127		657288.3127	
Analysis/Analyte	**CAS #**	**Units**												
PCB128 & 166	PCB128_166	pg/g	784		1500		105		157		260		188	
PCB129 & 138 & 160 & 163	PCB129_138_160_	pg/g	11900		18200		856		1230		2000		1490	
PCB130	52663-66-8	pg/g	462		741		49.3		65		112		81.5	
PCB131	61798-70-7	pg/g	30.7		68.5		4.14		4.31		9.25		5.75	
PCB132	38380-05-1	pg/g	1460		2490		110		144		276		179	
PCB133	35694-04-3	pg/g	351		386		15.8		20.5		34.4		25.2	
PCB134 & 143	PCB134_143	pg/g	270		430		16.3		23.7		42.6		29.8	
PCB135 & 151 & 154	PCB135_151_154	pg/g	3970		5030		151		203		334		234	
PCB136	38411-22-2	pg/g	568		878		33.3		34.4		65.6		40.1	
PCB137	35694-06-5	pg/g	168		357		35.3		43		80.9		62	
PCB139 & 140	PCB139_140	pg/g	133		176		10.6		13.2		24.3		18.7	
PCB141	52712-04-6	pg/g	2250		3180		99.8		138		251		167	
PCB142	41411-61-4	pg/g	4.11	U	4.8	U	0.915	U	0.566	U	1.05	U	0.686	U
PCB144	68194-14-9	pg/g	351		536		17.4		24.1		47.9		31.1	
PCB145	74472-40-5	pg/g	0.627		1.53		0.122	U	0.109	J	0.251	J	0.177	J
PCB146	51908-16-8	pg/g	3060		3670		171		209		350		252	
PCB147 & 149	PCB147_149	pg/g	8870		13000		466		588		985		656	
PCB148	74472-41-6	pg/g	87.9		82.1		1.14	U	1.53		2.88		2.01	
PCB150	68194-08-1	pg/g	66.3		68.6		0.497	U	0.875		1.7		1.04	
PCB152	68194-09-2	pg/g	17.7		16.8		0.105	U	0.214	J	0.379	J	0.234	J
PCB153 & 168	PCB153_168	pg/g	15800		22000		842		1270		2120		1590	
PCB155	33979-03-2	pg/g	5.89		6.51		0.488	J	0.913		1.12		1.05	
PCB156 & 157	PCB156_157	pg/g	564		1070		83.8		111		196		147	
PCB158	74472-42-7	pg/g	802		1270		73.4		96.1		173		122	
PCB159	39635-35-3	pg/g	148		177		4.34	U	8.46		12.9		8.81	
PCB161	74472-43-8	pg/g	2.95	U	3.44	U	1.03	U	0.503	U	0.752	U	0.5	U
PCB162	39635-34-2	pg/g	26		40.6		4.3		4.93		7.67		6.05	
PCB164	74472-45-0	pg/g	628		897		42.1		60.6		93.1		64.5	
PCB165	74472-46-1	pg/g	25.8		27		0.36	U	0.856		1.35		0.874	
PCB167	52663-72-6	pg/g	314		526		36.2		46.1		77.2		57.9	
PCB169	32774-16-6	pg/g	17.9	U	17.7	U	0.316	U	1.49	U	2.33	U	1.79	U
PCB170	35065-30-6	pg/g	4490		5580		149		237		399		279	
PCB171 & 173	PCB171_173	pg/g	1050		1320		37.9		56.5		101		64.8	
PCB172	52663-74-8	pg/g	888		1060		35.9		50.1		82.5		59	
PCB174	38411-25-5	pg/g	3580		4180		103		170		266		172	
PCB175	40186-70-7	pg/g	161		201		6.84		8.98		16.2		10.9	
PCB176	52663-65-7	pg/g	272		356		9.6		14.1		28		16	
PCB177	52663-70-4	pg/g	3120		3430		85.7		148		249		160	
PCB178	52663-67-9	pg/g	1190		1290		44.7		65.3		100		73.6	
PCB179	52663-64-6	pg/g	1090		1300		43		51.8		84		53.5	
PCB180 & 193	PCB180_193	pg/g	12700		15600		424		673		1120		825	
PCB181	74472-47-2	pg/g	17.6		25.4		1.43	U	2.12	U	3.47		2.57	
PCB182	60145-23-5	pg/g	45.4		43.8		1.37		2.43		3.2		2.33	
PCB183 & 185	PCB183_185	pg/g	3350		4050		114		180		305		205	
PCB184	74472-48-3	pg/g	3.19		3.47		0.707	J	0.926		1.35		1.22	
PCB186	74472-49-4	pg/g	0.182	J	0.423	U	0.986	U	0.0647	U	0.061	J	0.0537	U
PCB187	52663-68-0	pg/g	7840		9700		394		538		724		527	
PCB188	74487-85-7	pg/g	23.1		22.7		0.542	J	0.687		1.09		0.763	
PCB189	39635-31-9	pg/g	147		181		6.74		8.98		15.2		11.2	

Table 4-1. Analytical Results for Stomach Content and Fish Tissue Samples.

		Sample ID	LW2-T03-REP2		LW2-T03-REP3		LW2-T04 SC		LW2-T04-REP1		LW2-T04-REP2		LW2-T04-REP3	
		Sample Date/Time	5/12/05 16:25		5/12/05 17:30		5/12/05 1:45		5/12/05 13:35		5/12/05 1:45		5/12/05 14:35	
		X Coordinate	7637229.949		7637229.949		7649272.819		7649272.819		7649272.819		7649272.819	
		Y Coordinate	694088.1142		694088.1142		657288.3127		657288.3127		657288.3127		657288.3127	
Analysis/Analyte	**CAS #**	**Units**												
PCB190	41411-64-7	pg/g	991		1180		35.4		55.6		90.2		63.4	
PCB191	74472-50-7	pg/g	180		221		6.6		9.9		17.5		11.6	
PCB192	74472-51-8	pg/g	1.14	U	1.19	U	2.29	U	0.0807	U	1.16	U	0.0537	U
PCB194	35694-08-7	pg/g	1950		2360		78.4		100		166		123	
PCB195	52663-78-2	pg/g	768		916		25.6		36.4		61.7		43.2	
PCB196	42740-50-1	pg/g	967		1190		37.4		47.1		87.9		59.4	
PCB197 & 200	PCB197_200	pg/g	205		251		9.66		11		19.4		12	
PCB198 & 199	PCB198_199	pg/g	2150		2600		132		139		219		165	
PCB201	40186-71-8	pg/g	198		249		10.4		11.6		21.7		14.6	
PCB202	2136-99-4	pg/g	355		428		30.5		32.1		45		34.4	
PCB203	52663-76-0	pg/g	1360		1760		82		92.3		149		116	
PCB204	74472-52-9	pg/g	0.471		0.777		0.156	U	0.133	J	0.223	U	0.165	U
PCB205	74472-53-0	pg/g	110		120		4.07		5.91		9.24		6.87	
PCB206	40186-72-9	pg/g	374		476		44.8		43.2		62.6		51.6	
PCB207	52663-79-3	pg/g	45.9		66.8		5.12		5.03		8.15		6.19	
PCB208	52663-77-1	pg/g	87.8		124		15.7		16.2		21.4		17.6	
PCB209	2051-24-3	pg/g	31.9		65.8		22.6		21.5		22		19.6	
Total PCB Congeners	1336-36-3	pg/g	136000		198000		10600		12800		21600		15800	
PCB_Homologs														
Monochlorobiphenyl	27323-18-8	pg/g	32.7		30		13.8		9.72		10.4		10.1	
Dichlorobiphenyl	25512-42-9	pg/g	589		728		442		126		111		110	
Trichlorobiphenyl	25323-68-6	pg/g	3180		4750		408		280		404		332	
Tetrachlorobiphenyl	26914-33-0	pg/g	10700		17200		1510		1340		2520		1860	
Pentachlorobiphenyl	25429-29-2	pg/g	18800		38600		3020		3700		6480		4770	
Hexachlorobiphenyl	26601-64-9	pg/g	53100		76700		3220		4500		7560		5460	
Heptachlorobiphenyl	28655-71-2	pg/g	41100		49700		1500		2270		3610		2540	
Octachlorobiphenyl	55722-26-4	pg/g	8050		9880		410		476		779		574	
Nonachlorobiphenyl	53742-07-7	pg/g	507		667		65.6		64.5		92.2		75.4	
Total PCB Homologs		pg/g	136059		198255		10589		12766		21567		15732	

Notes:
For all totals, zero is always used for non-detects. If any of the values going into a total are estimated (J qualified), then the total value is estimated (J qualified). If all analytes in a total are non-detects, then the highest detection limit is used for th etotal. A "T" qualifier is added to all results that are mathematically derived.
SC in sample name indicates stomach content, all other samples are whole-body tissue.
Coordinate system for geographic coordinates is Oregon State Plane NAD83 HARN/HPGN, Intl. Feet.
-- No data
J = Estimate
JT= Combined qualifier
N = Presumptive evidence of a compound
NJ = Combined qualifier
NJT = combined qualifier
T = Value is an average or selected value (see Kennedy Jenks et al. 2004)
U = Not detected at value shown
UJ = Combined qualifier
UJT = combined qualifier
UT = combined qualifier

Table 4-2. Taxonomical Results of Stomach Content Samples.

	Number of Prey Organisms																			
	LW2-T01[2]						LW2-T02[3]								LW2-T04[2]					
Taxonomical Group[1]	**Sample 1**	**Sample 2**	**Sample 3**	**Sample 4**	**Sample 5**	**Sample 6**	**Sample 1**	**Sample 2**	**Sample 3**	**Sample 4**	**Sample 5**	**Sample 6**	**Sample 7**	**Sample 8**	**Sample 1**	**Sample 2**	**Sample 3**	**Sample 4**	**Sample 5**	**Sample 6**
Ephemeroptera																				
Baetidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	2	0	0
Coleoptera																				
Carabidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Chrysomelidae	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coccinellidae	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	2	4	0	1	2	0	0	0	1	0	0	0	0	0	13	0	50	0	0	41
Hydrophilidae	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Diptera																				
Chironomidae	3	5	12	0	7	4	0	7	4	5	0	5	13	0	0	0	0	3	0	13
Brachycera	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	1	0	0	0	0
Ceratopogonidae	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0
Diptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Empididae	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Ephydridae	0	0	0	0	0	0	0	9	0	0	0	0	2	0	0	0	0	0	0	0
Muscomorpha	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Nematocera	0	0	0	0	0	0	0	0	3	0	2	0	8	15	0	12	1	0	5	0
Psychodidae	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Simuliidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Trichoptera																				
Trichoptera	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Insecta																				
Aphididae	2	1	0	0	1	0	0	0	0	0	1	1	1	1	0	1	0	0	0	2
Chalcidoidea	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0
Cicadellidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Collembola	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0
Entomobryidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Forficulidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1
Formicidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2
Homoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
Hymenoptera	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Ichneumonidae	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Psocoptera	0	0	0	0	0	0	0	0	0	1	1	1	6	3	0	8	0	0	2	3
Psyllidae	0	0	0	0	0	0	0	0	0	0	1	0	2	2	0	0	0	0	1	0
Raphidiidae	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Sminthuridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3
Thripidae	0	0	0	0	0	0	0	1	0	0	0	2	2	1	0	0	0	0	0	0
Annelida																				
Oligochaeta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Crustacea																				
Cladocera	0	0	0	0	0	0	0	0	0	358	0	0	61	0	0	42	0	11	30	19
Other Organisms																				
Araneae	0	1	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nematoda	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	2

Notes:

[1] The developmental stages of the insects identified in all stomach contents samples were 73% larvae, 2% pupae, and 25% adults.

[2] Samples collected 5/10/05.

[3] Samples collected 5/12/05.

PORTLAND HARBOR RI/FS

ROUND 2 SUBYEARLING CHINOOK TISSUE DATA REPORT

DRAFT

APPENDIX B

DATA QUALITY SUMMARY

DO NOT QUOTE OR CITE:
This document is currently under review by US EPA, and its federal, state, and tribal partners, and is subject to change in whole or in part.

March 31, 2006

Prepared for

The Lower Willamette Group

Prepared by

Integral Consulting Inc.

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LIST OF ACRONYMS

ACG	analytical concentration goal
EPA	U.S. Environmental Protection Agency
LWG	Lower Willamette Group
MDL	method detection limit
MRL	method reporting limit
NOAA	National Oceanic and Atmospheric Administration
PAHs	polycyclic aromatic hydrocarbons
PARCC	precision, accuracy, representativeness, completeness, comparability
PCB	polychlorinated biphenyl
PCDD/F	polychlorinated dibenzo-*p*-dioxin/furan
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RDL	reported detection limit
SOP	standard operating procedure
SVOCs	semivolatile organic compounds

1. INTRODUCTION

This report summarizes the data quality of the Round 2 subyearling chinook tissue samples collected during the May 10 through May 12, 2005 sampling event. Samples were collected and analyzed for organic, inorganic, and physical parameters according to the sample preparation and analytical procedures in the Round 2 Quality Assurance Project Plan (QAPP), QAPP Addendum 4: Subyearling Chinook Tissue Collection, and the Supplement to QAPP Addendum 4 (Integral and Windward 2004, Integral 2005a,b).

The laboratory methods of analysis for the surface, subsurface, and beach sediment samples are included in Table B-1. Where sufficient tissue mass was available, whole-body tissue samples were analyzed for metals, lipids, butyltin compounds, organochloride pesticides, polycyclic aromatic hydrocarbons (PAHs), semivolatile organic compounds (SVOCs), dioxins and furans, and polychlorinated biphenyl (PCB) congeners (full list of 209 congeners). Composited stomach contents were analyzed for organochlorine pesticides, PCB congeners (full list of 209 congeners), and PAHs. The analyses were conducted by the following laboratories (Table B-1):

- Axys Analytical Services, Ltd. (Sydney, B.C., Canada) performed the sample homogenization of the stomach content samples and conducted the analyses for dioxins and furans and PCB congeners (full list of 209 congeners) in whole-body tissue, and organochlorine pesticides, PCB congeners, and PAHs in stomach contents.
- Columbia Analytical Services (Kelso, Washington) conducted the sample homogenization and the analyses for percent lipids, percent moisture, total metals, butyltin compounds, organochlorine pesticides, and SVOCs in whole-body tissue.

Laboratory methods for whole-body and stomach content samples are summarized in Table B-1. The sample analyses were conducted according to the Round 2 QAPP and QAPP Addendum 4: Subyearling Chinook Tissue Collection. Deviations from the QAPP are noted in Section 3.6 of the main report.

2. DATA QUALITY AND USABILITY

Data generated in the field and at the laboratories were verified and validated according to the criteria and procedures described in the Round 2 QAPP (Integral and Windward 2004). Data quality and usability were evaluated based on the results of the data validation and the data quality objectives for the Round 2 subyearling chinook tissue data. The performance criteria in the QAPP included project analytical goals for precision, accuracy, representativeness, completeness, and comparability (PARCC) of the Round 2 data.

The precision, accuracy, representativeness, and comparability of the data were assessed during data validation, as described in the *Data Validation* section below and in the Round 2 QAPP. Completeness is calculated by comparing the total number of acceptable data (nonrejected data) to the total number of data points generated. Completeness for the Round 2 subyearling chinook tissue data is summarized by parameter group in Table B-2. Completeness was 100 percent for all parameter groups.

2.1. DATA VALIDATION

Data validation was conducted as required by the Round 2 QAPP and is summarized in Section 3.3 of the main report. The inorganic, organic, PCB congener, and polychlorinated dibenzo-*p*-dioxin/furan (PCDD/F) data were validated in accordance with guidance specified by the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic and Organic Data Review*, by U.S Environmental Protection Agency (EPA) Region 10 standard operating procedures (SOPs) for validation of PCB congener data and PCDD/F data (EPA 1994a, 1995, 1996, 1999a), and by *Guidance on Environmental Data Verification and Validation* (EPA 2002). Modifications were made to the Functional Guidelines to accommodate quality assurance/quality control (QA/QC) requirements of the non-Contract Laboratory Program methods that were used for this project.

Data validation was completed by EcoChem (Seattle, Washington). Approximately 10% of the data for each laboratory method were fully validated, as described in the Round 2 QAPP. Validation for the remaining data was based on review of the summary forms for sample and QC data. The following deliverables were reviewed during Level 3 and full data validation:

- The case narrative discussing analytical problems (if any) and procedures
- Chain-of-custody documentation and laboratory sample receipt logs
- Instrument calibration results
- Method blank results
- Results for laboratory quality control samples required by the referenced method including laboratory control sample/laboratory control sample duplicate

analyses, matrix spike/matrix spike duplicate analyses, surrogate recoveries, and other method specific quality control samples (e.g., serial dilutions for inductively coupled plasma analyses)

- Results for field quality control samples (i.e., equipment blanks, field duplicates, and field split samples)
- Analytical results for the tissue samples.

In addition to review and assessment of the documentation identified above, full validation included verification of reported concentrations of the results for field samples and QC samples, verification of intermediate transcriptions, and review of instrument data, such as mass spectra, to verify analyte identification procedures.

Data qualifiers were assigned during data validation if applicable control limits were not met, in accordance with the EPA data validation guidelines (EPA 1994a, 1995, 1996, 1999a) and the quality control requirements included in the referenced methods. The quality control limits for surrogate spikes, matrix spike/matrix spike duplicate samples, laboratory control samples, and ongoing precision and recovery for the Round 2 laboratories are summarized in Tables B-3 and B-4. The data validation qualifiers and definitions are summarized in Table B-5. Data quality reports and a tabular summary of qualified data generated by EcoChem are included in Appendix C of the main body of this report.

2.2. DATA QUALITY

The EcoChem data validation reports (Appendix C of main body) provide detailed information on the data quality issues and data validation qualifiers for each parameter group for each laboratory data package. A summary of the qualified data by parameter group, with the reasons for qualification, is included in Table B-6. A table of qualified data for the Round 2 subyearling chinook tissue is included in Appendix A of the main body of this report (provided on CD). This table includes original laboratory qualifiers, final qualifiers applied after validation, and reason codes for the qualifiers. A table of definitions for the qualifier reason codes is also provided in Appendix A.

The discussion below includes a comparison of the detection limits to the analyte concentration goals (ACGs) specified in QAPP Addendum 4 (Integral 2005a), followed by a summary of the qualified data for each parameter group and any limitations to the usability of the data.

2.2.1. Analytical Concentration Goals and Reported Detection Limits

Tissue data for Round 2 of the Portland Harbor RI/FS were reported to the method detection limit (MDL) in most cases. Sample-specific detection limits were reported for PCB congeners and PCDD/Fs, as specified in the respective method protocols (EPA methods 1668A and 1613B; EPA 1999b, 1994b). These detection limits are based on

the signal-to-noise ratio of the analytical system for each analyte and sample. MDLs and method reporting limits (MRLs) were elevated because of matrix interference or when results were restated as undetected during data validation because of possible sample contamination, as indicated by the presence of target analytes in an associated method blank or equipment blank.

The reported detection limit (RDL) is the collective term for the detection limit or reporting limit used to quantify nondetects, as applicable to each sample and analyte. Table B-7 provides the ACGs and MRLs included in the Round 2 QAPP Addendum 4 (Integral 2005a) and the minimum and maximum RDL attained by the laboratories for each analyte. Because of the limited tissue mass available for analysis, elevated detection limits were expected for selected parameter groups for the tissue samples where the subsample mass was reduced (Table B-8). Generally, for the results that were generated using the subsample mass identified in the QAPP, the detection limits reported by the laboratories for the tissue samples were equal to or less than the detection limit goals established in the QAPP.

2.2.2. Field Quality Control Samples

Quality control samples were prepared in the field and at the laboratories to monitor the bias and precision of the sample collection and analysis procedures. Field QC samples for this study were limited to one rinsate blank for fish dissection equipment. Field replication was incorporated into the sampling design. Field splits were not collected because of fish catch limits.

Aluminum and phenanthrene were detected in the fish dissection rinsate blank. No data were qualified during validation because the concentrations in the samples were greater than the action level (5 times the blank concentration) determined from the concentrations in the dissection blank.

As noted in Section 3.4.1 of the main text, at Station T03, only 72 fish were collected. These fish were processed in the laboratory as they arrived from the field under the assumption that 90 fish would be collected. At the end of the field effort, the 72 fish were redistributed among the three replicates so that the whole-body weight in each replicate was close to 60 grams. The number of fish per replicate was 24, 21, and 27, respectively (see Table 3-3 in Integral and Windward 2005).

Field replicate samples were incorporated into the sampling design for the whole-body samples. For each station, the catch was divided into three sample replicates with an approximate weight of 60 grams each. The field replicate results for subyearling chinook whole-body tissue are summarized in Table B-9a. Stomach content samples were collected by the Lower Willamette Group (LWG) and National Oceanic and Atmospheric Administration (NOAA) at two stations. The results from both sampling events were compared, as field replicates, to assess the variability of the results. The field replicate results for the chinook stomach content samples are summarized in Table B-9b.

The comparability of the stomach content replicate results was assessed by calculating the relative percent difference of the stomach content results from the two sampling events conducted by LWG and NOAA. The results are generally comparable for composite tissue samples collected in separate sampling events, with the exception of PAHs at Station T02, where PAHs are consistently higher in the NOAA sample compared to the study sample. The comparability of the whole-body replicate samples was assessed by calculating the relative standard deviation of the three replicate results at each station. The whole-body samples were comparable for Stations T02, T03, and T04 for all parameter groups. The PCB congener results for Station T01 showed more variation that the PCB congener results for the other three stations. Overall, the precision of the results is acceptable.

2.2.2.1. Summary of Qualified Data

Selected data not meeting the data quality criteria were qualified as undetected, estimated, or tentatively identified during validation, in accordance with the QAPP. A summary of the qualified data by parameter group, including the reasons for qualification, is included in Table B-6. A complete list of qualified results with reason codes is provided in Appendix C (on CD). Data qualified as undetected are usable for all intended purposes. Data qualified as estimated or tentatively identified are usable for all intended purposes, with the knowledge that these data may be less precise or less accurate than unqualified data. Rejected data are not usable for any purpose and have been flagged as “not reportable” in the database. None of the laboratory data from the subyearling chinook tissue samples were rejected during validation.

The precision and accuracy of the Round 2 subyearling chinook tissue data was acceptable. The completeness of the Round 2 sediment data was 100% (see Table B-2). The Round 2 subyearling chinook tissue data are usable for all project purposes. Overall, the data quality was acceptable and will meet program objectives and goals for the remedial investigation and feasibility study.

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Table B-1. Laboratory Methods of Analysis for Chinook Tissue Samples.

Analysis	Laboratory	Sample Preparation		Quantitative Analysis	
		Protocol	Procedure	Protocol	Procedure
Organochlorine Pesticides[1] (Whole-body samples)	CAS	EPA 3540C EPA 3640A EPA 3620B	Soxhlet extraction Gel permeation chromatography Florisil® cleanup	EPA 8081A	GC/ECD
Lipids (Whole-body samples)	CAS	EPA 3540C[1]	Soxhlet extraction	CAS SOP	Balance
Butyltin Compounds (Whole-body samples)	CAS	Krone et al. 1988 Krone et al. 1988	Solvent extraction Derivatization	Krone et al. 1988	GC/FPD
Polycyclic Aromatic Hydrocarbons (Whole-body samples)	CAS	EPA 3540C EPA 3640A EPA 3620B	Soxhlet extraction Gel permeation chromatography Florisil® cleanup	EPA 8270C SIM	GC/MS SIM
Semivolatile Organic Compounds (Whole-body samples)	CAS	EPA 3540C EPA 3640A	Soxhlet extraction Gel permeation chromatography	EPA 8270C SIM	GC/MS SIM
Metals (Whole-body samples)	CAS				
Aluminum, antimony, arsenic, cadmium, copper, lead, nickel, silver, zinc		EPA 3050B/PSEP	Acid digestion	EPA 6020	ICP/MS
Chromium		EPA 3050B/PSEP	Acid digestion	EPA 6010B	ICP/AES
Selenium		EPA 3050B/PSEP EPA 7742	Acid digestion Hydride generation	EPA 7742	AAS
Mercury		EPA 7470	Acid digestion/oxidation	EPA 7471A	CVAA
Chlorinated Dioxins and Furans (Whole-body samples)	Axys	EPA 1613B	Soxhlet extraction Gel permeation chromatography Layered Acid/Base SiO_3 column 1% deactivated basic Alumina Carbon celite	EPA 1613B	HRGC/HRMS

Table B-1. Laboratory Methods of Analysis for Chinook Tissue Samples.

Analysis	Laboratory	Sample Preparation		Quantitative Analysis	
		Protocol	Procedure	Protocol	Procedure
PCB Congeners (Whole-body samples and stomach content samples)	Axys	EPA 1668A	Soxhlet extraction Acid silica gel Layered Acid/Base silica gel 1% deactivated basic Alumina Florisil® cleanup	EPA 1668A	HRGC/HRMS
Organochlorine Pesticides[1] (Stomach content samples)	Axys	EPA 3540C EPA 3640A EPA 3620B	Soxhlet extraction Gel permeation chromatography Florisil® cleanup	Axys SOP	HRGC/HRMS
Polycyclic Aromatic Hydrocarbons (Stomach content samples)	Axys	EPA 3540C EPA 3640A EPA 3630C	Soxhlet extraction Gel permeation chromatography Silica gel cleanup	Axys SOP	HRGC/HRMS

Notes:
[1] A portion of the pesticide extract was used for lipids determination.

AAS - Atomic absorption spectrometry
CAS - Columbia Analytical Services
CVAA - cold vapor atomic absorption
EPA - U.S. Environmental Protection Agency
GC/ECD - gas chromatography/electron capture detection
GC/FPD - gas chromatography/flame photometric detection
GC/MS - gas chromatography/mass spectrometry
HRGC/HRMS - high resolution gas chromatography/high resolution mass spectrometry
ICP/AES - inductively coupled plasma/atomic emission spectrometry
ICP/MS - inductively coupled plasma - mass spectrometry
PSEP - Puget Sound Estuary Program
SIM - selected ion monitoring
SOP - standard operating procedure

Table B-2. Percent Completeness by Parameter Group.

Analysis	Total # of Data Points[1]	Number of Data Points		Completeness (%)
		Accepted	Rejected	
PCB Aroclors	126	126	0	100
Butyltins	44	44	0	100
Conventionals[2]	24	24	0	100
PCB Congeners	2880	2880	0	100
PCB Homologs	162	162	0	100
Dioxin/furan homologs	120	120	0	100
Dioxin/furans	181	181	0	100
Metals	144	144	0	100
PAHs	306	306	0	100
Pesticides	480	480	0	100
Phenols	40	40	0	100
Phthalates	48	48	0	100
SVOCs	120	120	0	100
Round 2 Chinook Tissue Sampling Project Total	**4675**	**4675**	**0**	**100**

Notes:

[1] Totals include field replicates and split samples and exclude field blanks.

[2] Includes lipids and total solids.

Table B-3. Laboratory Control Limits for Chinook Tissue Surrogate Samples.

Analysis	Percent Recovery
Semivolatile Organic Compounds	
2-Fluoro-1,1'-biphenyl	10 - 146
Nitrobenzene-d5	44 - 129
p-Terphenyl-d14	53 - 136
Volatile Organic Compounds	
^{13}C-1,2,3-Trichlorobenzene	20 - 130
^{13}C-Hexachlorobenzene	20 - 150
Phenols	
2,4,6-Tribromophenol	38 - 160
Phenol-d6	10 - 144
Butyltins	
Tripropyltin hydride	10 - 160
PCB Congeners	
^{13}C-2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	25 - 150
^{13}C-2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	25 - 150
^{13}C-2,2',3,3',4,4',5-Heptachlorobiphenyl	25 - 150
^{13}C-2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	25 - 150
^{13}C-2,2',3,3',5,5',6,6'-Octachlorobiphenyl	25 - 150
^{13}C-2,2',3,3',5,5',6-Heptachlorobiphenyl	30 - 135
^{13}C-2,2',3,4,4',5,5'-Heptachlorobiphenyl	25 - 150
^{13}C-2,2',3,4',5,6,6'-Heptachlorobiphenyl	25 - 150
^{13}C-2,2',4,4',6,6'-Hexachlorobiphenyl	25 - 150
^{13}C-2,2',4,6,6'-Pentachlorobiphenyl	25 - 150
^{13}C-2,2',6,6'-Tetrachlorobiphenyl	25 - 150
^{13}C-2,2',6-Trichlorobiphenyl	25 - 150
^{13}C-2,2'-Dichlorobiphenyl	25 - 150
^{13}C-2,3,3',4,4',5,5',6-Octachlorobiphenyl	25 - 150
^{13}C-2,3,3',4,4',5,5'-Heptachlorobiphenyl	25 - 150
^{13}C-2,3,3',4,4'-Pentachlorobiphenyl	25 - 150
^{13}C-2,3,3',5,5'-Pentachlorobiphenyl	30 - 135
^{13}C-2,3',4,4',5,5'-Hexachlorobiphenyl	25 - 150
^{13}C-2,3',4,4',5'-Pentachlorobiphenyl	25 - 150
^{13}C-2,3',4,4',5-Pentachlorobiphenyl	25 - 150
^{13}C-2,3,4,4',5-Pentachlorobiphenyl	25 - 150
^{13}C-2,4,4'-Trichlorobiphenyl	30 - 135

Table B-3. Laboratory Control Limits for Chinook Tissue Surrogate Samples.

Analysis	Percent Recovery
^{13}C-2-Chlorobiphenyl	15 - 150
^{13}C-3,3',4,4',5,5'-Hexachlorobiphenyl	25 - 150
^{13}C-3,3',4,4',5-Pentachlorobiphenyl	25 - 150
^{13}C-3,3',4,4'-Tetrachlorobiphenyl	25 - 150
^{13}C-3,4,4',5-Tetrachlorobiphenyl	25 - 150
^{13}C-3,4,4'-Trichlorobiphenyl	25 - 150
^{13}C-4,4'-Dichlorobiphenyl	25 - 150
^{13}C-4-Chlorobiphenyl	15 - 150
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	10 - 178
PCB156L & 157L	25 - 150
Dioxin/Furans	
^{13}C-1,2,3,4,6,7,8-Heptachlorodibenzofuran	28 - 143
^{13}C-1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	23 - 140
^{13}C-1,2,3,4,7,8,9-Heptachlorodibenzofuran	26 - 138
^{13}C-1,2,3,4,7,8-Hexachlorodibenzofuran	26 - 152
^{13}C-1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	32 - 141
^{13}C-1,2,3,6,7,8-Hexachlorodibenzofuran	26 - 123
^{13}C-1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	28 - 130
^{13}C-1,2,3,7,8,9-Hexachlorodibenzofuran	29 - 147
^{13}C-1,2,3,7,8-Pentachlorodibenzofuran	24 - 185
^{13}C-1,2,3,7,8-Pentachlorodibenzo-p-dioxin	25 - 181
^{13}C-2,3,4,6,7,8-Hexachlorodibenzofuran	28 - 136
^{13}C-2,3,4,7,8-Pentachlorodibenzofuran	21 - 178
^{13}C-2,3,7,8-Tetrachlorodibenzofuran	24 - 169
^{13}C-2,3,7,8-Tetrachlorodibenzo-p-dioxin	25 - 164
^{13}C-Octachlorodibenzo-p-dioxin	17 - 157
^{37}Cl-2,3,7,8-Tetrachlorodibenzo-p-dioxin	35 - 197
PAHs	
2-Methylnaphthalene-d10	30 - 120
Acenaphthylene-d8	20 - 120
Benz(a)anthracene-d12	30 - 120
Benzo(a)pyrene-d12	30 - 120
Benzo(b+k)fluoranthene-d12	30 - 120
Benzo(g,h,i)perylene-d12	30 - 120
Chrysene-d12	30 - 120
Dibenz(a,h)anthracene-d14	30 - 120
Fluoranthene-d10	44 - 112
Fluoranthene-d10	30 - 120

Table B-3. Laboratory Control Limits for Chinook Tissue Surrogate Samples.

Analysis	Percent Recovery
Fluorene-d10	47 - 97
Indeno(1,2,3-cd)pyrene-d12	30 - 120
Naphthalene-d8	15 - 120
Phenanthrene-d10	30 - 120
Organochlorine Pesticides	
^{13}C-2,4'-DDE	40 - 150
^{13}C-2,4'-DDT	40 - 150
^{13}C-4,4'-DDE	40 - 150
^{13}C-4,4'-DDT	40 - 150
^{13}C-Aldrin	30 - 200
^{13}C-alpha-Endosulfan	30 - 150
^{13}C-beta-Endosulfan	30 - 150
^{13}C-beta-Hexachlorocyclohexane	30 - 150
^{13}C-cis-Nonachlor	30 - 150
^{13}C-delta-Hexachlorocyclohexane	30 - 150
^{13}C-Dieldrin	30 - 150
^{13}C-Endrin	30 - 150
^{13}C-gamma-Hexachlorocyclohexane	30 - 150
^{13}C-Heptachlor	30 - 150
^{13}C-Heptachlor epoxide	30 - 150
^{13}C-Methoxychlor	30 - 150
^{13}C-Oxychlordane	30 - 200
^{13}C-trans-Chlordane	30 - 200
^{13}C-trans-Nonachlor	30 - 150
2,4,5,6-Tetrachloro-m-xylene	10 - 158

Table B-4. Laboratory Control Limits for Chinook Tissue Matrix Spike, Laboratory Control Samples, and Ongoing Precision and Recovery.

Analysis	Matrix Spike Recovery	Laboratory Control Sample Recovery	Type of Duplicate	Control Limit Relative Percent Difference
Metals				
Aluminum	60 - 130	53 - 181	LD	30
Antimony	70 - 130	88 - 109	LD	30
Arsenic	70 - 130	7.76 - 112	LD	30
Cadmium	70 - 130	15 - 112	LD	30
Chromium	60 - 130	23.4 - 110	LD	30
Copper	70 - 130	1.74 - 112	LD	30
Lead	59 - 130	0.02 - 109	LD	30
Mercury	--	2.58 - 115	--	--
Nickel	70 - 130	1.9 - 110	LD	30
Selenium	60 - 130	5.26 - 116	LD	30
Silver	67 - 130	0.9 - 112	LD	30
Zinc	60 - 130	20.3 - 116	LD	30
Butyltins				
Butyltin ion	--	10 - 143	LCSD	30
Dibutyltin ion	--	10 - 130	LCSD	30
Tetrabutyltin	--	10 - 117	LCSD	30
Tributyltin ion	--	23 - 129	LCSD	30
Conventionals				
Lipids	--	--	--	--
Total solids	--	--	--	--
Organochlorine Pesticides				
2,4'-DDD	--	35 - 157	LCSD	30
2,4'-DDE	--	42 - 146	LCSD	30
2,4'-DDT	--	39 - 156	LCSD	30
4,4'-DDD	--	49 - 132	LCSD	30
4,4'-DDE	--	52 - 130	LCSD	30
4,4'-DDT	--	53 - 136	LCSD	30
Aldrin	--	31 - 130	LCSD	30
alpha-Endosulfan	--	28 - 130	LCSD	30
alpha-Hexachlorocyclohexane	--	48 - 137	LCSD	30
beta-Endosulfan	--	35 - 130	LCSD	30
beta-Hexachlorocyclohexane	--	45 - 138	LCSD	30
cis-Chlordane	--	48 - 130	LCSD	30
cis-Nonachlor	--	46 - 132	LCSD	30
delta-Hexachlorocyclohexane	--	58 - 135	LCSD	30
Dieldrin	--	45 - 136	LCSD	30
Endosulfan sulfate	--	44 - 134	LCSD	30
Endrin	--	46 - 141	LCSD	30
Endrin aldehyde	--	12 - 130	LCSD	30
Endrin ketone	--	49 - 130	LCSD	30
gamma-Hexachlorocyclohexane	--	47 - 135	LCSD	30
Heptachlor	--	40 - 130	LCSD	30
Heptachlor epoxide	--	41 - 134	LCSD	30
Methoxychlor	--	47 - 139	LCSD	30
Oxychlordane	--	50 - 130	LCSD	30
Toxaphene	--	42 - 177	LCSD	30
trans-Chlordane	--	23 - 155	LCSD	30
trans-Nonachlor	--	48 - 130	LCSD	30
Semivolatile Organic Compounds				
1,2,4-Trichlorobenzene	--	10 - 108	LCSD	30
1,2-Dichlorobenzene	--	49 - 130	LCSD	30
1,3-Dichlorobenzene	--	47 - 130	LCSD	30
1,4-Dichlorobenzene	--	45 - 130	LCSD	30

Table B-4. Laboratory Control Limits for Chinook Tissue Matrix Spike, Laboratory Control Samples, and Ongoing Precision and Recovery.

Analysis	Matrix Spike Recovery	Laboratory Control Sample Recovery	Type of Duplicate	Control Limit Relative Percent Difference
Benzyl alcohol	--	61 - 130	LCSD	30
Dibenzofuran	--	10 - 191	LCSD	40
Hexachlorobenzene	--	30 - 130	LCSD	30
Hexachlorobutadiene	--	10 - 145	LCSD	30
Hexachloroethane	--	39 - 108	LCSD	30
N-Nitrosodiphenylamine	--	55 - 134	LCSD	30
Phenols				
2,4-Dimethylphenol	--	10 - 103	LCSD	30
2-Methylphenol	--	41 - 112	LCSD	30
4-Methylphenol	--	35 - 116	LCSD	30
Pentachlorophenol	--	45 - 120	LCSD	30
Phenol	--	52 - 116	LCSD	30
Phthalate Esters				
Bis(2-ethylhexyl) phthalate	--	36 - 161	LCSD	30
Butylbenzyl phthalate	--	51 - 145	LCSD	30
Dibutyl phthalate	--	54 - 152	LCSD	30
Diethyl phthalate	--	59 - 132	LCSD	30
Dimethyl phthalate	--	54 - 124	LCSD	30
Di-n-octyl phthalate	--	53 - 157	LCSD	30
Polycyclic Aromatic Hydrocarbons				
2-Methylnaphthalene	--	10 - 181	LCSD	40
Acenaphthene	--	41 - 130	LCSD	40
Acenaphthylene	--	44 - 140	LCSD	40
Anthracene	--	40 - 130	LCSD	40
Benz(a)anthracene	--	46 - 133	LCSD	40
Benzo(a)pyrene	--	49 - 144	LCSD	40
Benzo(b)fluoranthene	--	54 - 137	LCSD	40
Benzo(b+j)fluoranthene	--	70 - 130	--	--
Benzo(g,h,i)perylene	--	46 - 143	LCSD	40
Benzo(k)fluoranthene	--	54 - 145	LCSD	40
Chrysene	--	46 - 136	LCSD	40
Dibenz(a,h)anthracene	--	39 - 152	LCSD	40
Fluoranthene	--	41 - 141	LCSD	40
Fluorene	--	44 - 130	LCSD	40
Indeno(1,2,3-cd)pyrene	--	41 - 149	LCSD	40
Naphthalene	--	41 - 130	LCSD	40
Phenanthrene	--	45 - 130	LCSD	40
Pyrene	--	34 - 152	LCSD	40
Dioxin/Furans				
Heptachlorodibenzofuran homologs	--	--	--	--
Heptachlorodibenzo-p-dioxin homologs	--	--	--	--
Hexachlorodibenzofuran homologs	--	--	--	--
Hexachlorodibenzo-p-dioxin homologs	--	--	--	--
Octachlorodibenzofuran	--	63 - 170	--	--
Octachlorodibenzo-p-dioxin	--	78 - 144	--	--
Pentachlorodibenzofuran homologs	--	--	--	--
Pentachlorodibenzo-p-dioxin homologs	--	--	--	--
Tetrachlorodibenzofuran homologs	--	--	--	--
Tetrachlorodibenzo-p-dioxin homologs	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran	--	82 - 122	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	--	70 - 140	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran	--	78 - 138	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran	--	72 - 134	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	--	70 - 164	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran	--	84 - 130	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	--	76 - 134	--	--

Table B-4. Laboratory Control Limits for Chinook Tissue Matrix Spike, Laboratory Control Samples, and Ongoing Precision and Recovery.

Analysis	Matrix Spike Recovery	Laboratory Control Sample Recovery	Type of Duplicate	Control Limit Relative Percent Difference
1,2,3,7,8,9-Hexachlorodibenzofuran	--	78 - 130	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	--	64 - 162	--	--
1,2,3,7,8-Pentachlorodibenzofuran	--	80 - 134	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	--	70 - 142	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran	--	70 - 156	--	--
2,3,4,7,8-Pentachlorodibenzofuran	--	68 - 160	--	--
2,3,7,8-Tetrachlorodibenzofuran	--	75 - 158	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin	--	67 - 158	--	--
PCB Aroclors				
Aroclor 1016	--	--	--	--
Aroclor 1221	--	--	--	--
Aroclor 1232	--	--	--	--
Aroclor 1242	--	--	--	--
Aroclor 1248	--	--	--	--
Aroclor 1254	--	--	--	--
Aroclor 1260	--	--	--	--
PCB Homologs				
Dichlorobiphenyl	--	--	--	--
Heptachlorobiphenyl	--	--	--	--
Hexachlorobiphenyl	--	--	--	--
Monochlorobiphenyl	--	--	--	--
Nonachlorobiphenyl	--	--	--	--
Octachlorobiphenyl	--	--	--	--
Pentachlorobiphenyl	--	--	--	--
Tetrachlorobiphenyl	--	--	--	--
Trichlorobiphenyl	--	--	--	--
PCB Congeners				
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	--	50 - 150	--	--
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	--	50 - 150	--	--
2,2',3,3',4,4',5,5'-Octachlorobiphenyl	--	--	--	--
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	--	--	--	--
2,2',3,3',4,4',5,6'-Octachlorobiphenyl	--	--	--	--
2,2',3,3',4,4',5,6-Octachlorobiphenyl	--	--	--	--
2,2',3,3',4,4',5-Heptachlorobiphenyl	--	--	--	--
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	--	50 - 150	--	--
2,2',3,3',4,5,5'-Heptachlorobiphenyl	--	--	--	--
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	--	--	--	--
2,2',3,3',4,5',6'-Heptachlorobiphenyl	--	--	--	--
2,2',3,3',4,5',6-Heptachlorobiphenyl	--	--	--	--
2,2',3,3',4,5,6'-Heptachlorobiphenyl	--	--	--	--
2,2',3,3',4,5'-Hexachlorobiphenyl	--	--	--	--
2,2',3,3',4,6,6'-Heptachlorobiphenyl	--	--	--	--
2,2',3,3',4,6'-Hexachlorobiphenyl	--	--	--	--
2,2',3,3',4,6-Hexachlorobiphenyl	--	--	--	--
2,2',3,3',4-Pentachlorobiphenyl	--	--	--	--
2,2',3,3',5,5',6,6'-Octachlorobiphenyl	--	50 - 150	--	--
2,2',3,3',5,5',6-Heptachlorobiphenyl	--	--	--	--
2,2',3,3',5,5'-Hexachlorobiphenyl	--	--	--	--
2,2',3,3',5,6,6'-Heptachlorobiphenyl	--	--	--	--
2,2',3,3',6,6'-Hexachlorobiphenyl	--	--	--	--
2,2',3,3',6-Pentachlorobiphenyl	--	--	--	--
2,2',3,4,4',5,5',6-Octachlorobiphenyl	--	--	--	--
2,2',3,4,4',5,6,6'-Octachlorobiphenyl	--	--	--	--
2,2',3,4,4',5,6'-Heptachlorobiphenyl	--	--	--	--
2,2',3,4,4',5,6-Heptachlorobiphenyl	--	--	--	--
2,2',3,4,4',5-Hexachlorobiphenyl	--	--	--	--
2,2',3,4,4',6,6'-Heptachlorobiphenyl	--	--	--	--

Table B-4. Laboratory Control Limits for Chinook Tissue Matrix Spike, Laboratory Control Samples, and Ongoing Precision and Recovery.

Analysis	Matrix Spike Recovery	Laboratory Control Sample Recovery	Type of Duplicate	Control Limit Relative Percent Difference
2,2',3,4',5,5',6-Heptachlorobiphenyl	--	--	--	--
2,2',3,4',5,5'-Hexachlorobiphenyl	--	--	--	--
2,2',3,4,5,5'-Hexachlorobiphenyl	--	--	--	--
2,2',3,4',5,6,6'-Heptachlorobiphenyl	--	50 - 150	--	--
2,2',3,4,5,6,6'-Heptachlorobiphenyl	--	--	--	--
2,2',3,4',5,6'-Hexachlorobiphenyl	--	--	--	--
2,2',3,4,5',6-Hexachlorobiphenyl	--	--	--	--
2,2',3,4,5,6-Hexachlorobiphenyl	--	--	--	--
2,2',3,4',6,6'-Hexachlorobiphenyl	--	--	--	--
2,2',3,4,6,6'-Hexachlorobiphenyl	--	--	--	--
2,2',3,4,6'-Pentachlorobiphenyl	--	--	--	--
2,2',3,4'-Tetrachlorobiphenyl	--	--	--	--
2,2',3,5,5'-Pentachlorobiphenyl	--	--	--	--
2,2',3,5,6,6'-Hexachlorobiphenyl	--	--	--	--
2,2',3,5,6'-Pentachlorobiphenyl	--	--	--	--
2,2',3,5-Tetrachlorobiphenyl	--	--	--	--
2,2',3,6,6'-Pentachlorobiphenyl	--	--	--	--
2,2',3,6'-Tetrachlorobiphenyl	--	--	--	--
2,2',3-Trichlorobiphenyl	--	--	--	--
2,2',4,4',6,6'-Hexachlorobiphenyl	--	50 - 150	--	--
2,2',4,5',6-Pentachlorobiphenyl	--	--	--	--
2,2',4,5-Tetrachlorobiphenyl	--	--	--	--
2,2',4,6,6'-Pentachlorobiphenyl	--	50 - 150	--	--
2,2',4-Trichlorobiphenyl	--	--	--	--
2,2',5,5'-Tetrachlorobiphenyl	--	--	--	--
2,2',6,6'-Tetrachlorobiphenyl	--	50 - 150	--	--
2,2',6-Trichlorobiphenyl	--	50 - 150	--	--
2,2'-Dichlorobiphenyl	--	50 - 150	--	--
2,3,3',4,4',5,5',6-Octachlorobiphenyl	--	50 - 150	--	--
2,3,3',4,4',5,5'-Heptachlorobiphenyl	--	50 - 150	--	--
2,3,3',4,4',5',6-Heptachlorobiphenyl	--	--	--	--
2,3,3',4,4',5,6-Heptachlorobiphenyl	--	--	--	--
2,3,3',4,4',6-Hexachlorobiphenyl	--	--	--	--
2,3,3',4,4'-Pentachlorobiphenyl	--	50 - 150	--	--
2,3,3',4,5,5',6-Heptachlorobiphenyl	--	--	--	--
2,3,3',4',5,5'-Hexachlorobiphenyl	--	--	--	--
2,3,3',4,5,5'-Hexachlorobiphenyl	--	--	--	--
2,3,3',4',5',6-Hexachlorobiphenyl	--	--	--	--
2,3,3',4,5',6-Hexachlorobiphenyl	--	--	--	--
2,3,3',4',5'-Pentachlorobiphenyl	--	--	--	--
2,3,3',4,5-Pentachlorobiphenyl	--	--	--	--
2,3,3',4,6-Pentachlorobiphenyl	--	--	--	--
2,3,3',4'-Tetrachlorobiphenyl	--	--	--	--
2,3,3',4-Tetrachlorobiphenyl	--	--	--	--
2,3,3',5,5',6-Hexachlorobiphenyl	--	--	--	--
2,3,3',5,5'-Pentachlorobiphenyl	--	--	--	--
2,3,3',5,6-Pentachlorobiphenyl	--	--	--	--
2,3,3',5'-Tetrachlorobiphenyl	--	--	--	--
2,3,3',5-Tetrachlorobiphenyl	--	--	--	--
2,3',4,4',5,5'-Hexachlorobiphenyl	--	50 - 150	--	--
2,3',4,4',5'-Pentachlorobiphenyl	--	50 - 150	--	--
2,3',4,4',5-Pentachlorobiphenyl	--	50 - 150	--	--
2,3,4,4',5-Pentachlorobiphenyl	--	50 - 150	--	--
2,3',4,4'-Tetrachlorobiphenyl	--	--	--	--
2,3,4,4'-Tetrachlorobiphenyl	--	--	--	--
2,3',4,5,5'-Pentachlorobiphenyl	--	--	--	--
2,3',4,5',6-Pentachlorobiphenyl	--	--	--	--
2,3',4,5'-Tetrachlorobiphenyl	--	--	--	--
2,3',4,5-Tetrachlorobiphenyl	--	--	--	--
2,3,4',5-Tetrachlorobiphenyl	--	--	--	--

Table B-4. Laboratory Control Limits for Chinook Tissue Matrix Spike, Laboratory Control Samples, and Ongoing Precision and Recovery.

Analysis	Matrix Spike Recovery	Laboratory Control Sample Recovery	Type of Duplicate	Control Limit Relative Percent Difference
2,3,4',6-Tetrachlorobiphenyl	--	--	--	--
2,3',4-Trichlorobiphenyl	--	--	--	--
2,3,4'-Trichlorobiphenyl	--	--	--	--
2,3',5,5'-Tetrachlorobiphenyl	--	--	--	--
2,3',5',6-Tetrachlorobiphenyl	--	--	--	--
2,3',5'-Trichlorobiphenyl	--	--	--	--
2,3,5-Trichlorobiphenyl	--	--	--	--
2,3',6-Trichlorobiphenyl	--	--	--	--
2,3,6-Trichlorobiphenyl	--	--	--	--
2,3'-Dichlorobiphenyl	--	--	--	--
2,3-Dichlorobiphenyl	--	--	--	--
2,4',5-Trichlorobiphenyl	--	--	--	--
2,4',6-Trichlorobiphenyl	--	--	--	--
2,4'-Dichlorobiphenyl	--	--	--	--
2,4-Dichlorobiphenyl	--	--	--	--
2,5-Dichlorobiphenyl	--	--	--	--
2,6-Dichlorobiphenyl	--	--	--	--
2-Chlorobiphenyl	--	50 - 150	--	--
3,3',4,4',5,5'-Hexachlorobiphenyl	--	50 - 150	--	--
3,3',4,4',5-Pentachlorobiphenyl	--	50 - 150	--	--
3,3',4,4'-Tetrachlorobiphenyl	--	50 - 150	--	--
3,3',4,5,5'-Pentachlorobiphenyl	--	--	--	--
3,3',4,5'-Tetrachlorobiphenyl	--	--	--	--
3,3',4,5-Tetrachlorobiphenyl	--	--	--	--
3,3',4-Trichlorobiphenyl	--	--	--	--
3,3',5,5'-Tetrachlorobiphenyl	--	--	--	--
3,3',5-Trichlorobiphenyl	--	--	--	--
3,3'-Dichlorobiphenyl	--	--	--	--
3,4,4',5-Tetrachlorobiphenyl	--	50 - 150	--	--
3,4,4'-Trichlorobiphenyl	--	50 - 150	--	--
3,4',5-Trichlorobiphenyl	--	--	--	--
3,4,5-Trichlorobiphenyl	--	--	--	--
3,5-Dichlorobiphenyl	--	--	--	--
3-Chlorobiphenyl	--	--	--	--
4,4'-Dichlorobiphenyl	--	50 - 150	--	--
4-Chlorobiphenyl	--	50 - 150	--	--
PCB012 & 013	--	--	--	--
PCB018 & 030	--	--	--	--
PCB020 & 028	--	--	--	--
PCB021 & 033	--	--	--	--
PCB026 & 029	--	--	--	--
PCB040 & 041 & 071	--	--	--	--
PCB044 & 047 & 065	--	--	--	--
PCB045 & 051	--	--	--	--
PCB049 & 069	--	--	--	--
PCB050 & 053	--	--	--	--
PCB059 & 062 & 075	--	--	--	--
PCB061 & 070 & 074 & 076	--	--	--	--
PCB083 & 099	--	--	--	--
PCB085 & 116 & 117	--	--	--	--
PCB086 & 087 & 097 & 108 & 119 & 125	--	--	--	--
PCB088 & 091	--	--	--	--
PCB090 & 101 & 113	--	--	--	--
PCB093 & 095 & 098 & 100 & 102	--	--	--	--
PCB107 & 124	--	--	--	--
PCB110 & 115	--	--	--	--
PCB128 & 166	--	--	--	--
PCB129 & 138 & 160 & 163	--	--	--	--
PCB134 & 143	--	--	--	--
PCB135 & 151 & 154	--	--	--	--

Table B-4. Laboratory Control Limits for Chinook Tissue Matrix Spike, Laboratory Control Samples, and Ongoing Precision and Recovery.

Analysis	Matrix Spike Recovery	Laboratory Control Sample Recovery	Type of Duplicate	Control Limit Relative Percent Difference
PCB139 & 140	--	--	--	--
PCB147 & 149	--	--	--	--
PCB153 & 168	--	--	--	--
PCB156 & 157	--	50 - 150	--	--
PCB171 & 173	--	--	--	--
PCB180 & 193	--	--	--	--
PCB183 & 185	--	--	--	--
PCB197 & 200	--	--	--	--
PCB198 & 199	--	--	--	--
Polychlorinated biphenyls	--	--	--	--

Notes:
LD - laboratory duplicate
LCSD - laboratory control sample duplicate

Table B-5. Data Validation Qualifiers and Definitions.

Data Qualifier	Definition
U	The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation limit.
J	The associated numerical value is an estimated quantity.
NJ	Presumptive evidence of the presence of the material at an estimated quantity.
UJ	The material was analyzed for, but was not detected. The sample quantitation limit is an estimated quantity.

Table B-6. Summary of Qualified Data by Parameter Group for Chinook Tissue Samples.

Analyte Group	Number of Samples	Number of Data Points		Total # of Data Points	Detection and Qualification Frequencies (percent)		Reason for Qualification
		Detected	Undetected				
Peristaltic Samples							
Conventionals	12	24	0	24	100	detected	
					0	undetected	
Metals	12	96	48	144	67	detected	
					33	undetected	
					8	J	Pc, LB
					22	U	LB
Butyltins	11	14	30	44	32	detected	
					68	undetected	
					7	J	CC
					43	U	LB
PCB Aroclors	18	53	73	126	42	detected	
					58	undetected	
					42	NJ	Other
Organochlorine Pesticides	18	204	276	480	43	detected	
					58	undetected	
					4	J	LCSR, Ci, CC
					5	NJ	Ci, CC
					9	U	LB, PFP
					2	UJ	LCSR
Semivolatile Organic Compounds	18	38	82	120	32	detected	
					68	undetected	
					8	J	CC, LCSR
					4	U	LB, PFP
					14	UJ	LCSR
Phenols	8	3	37	40	8	detected	
					93	undetected	
Phthalate Esters	8	13	35	48	27	detected	
					73	undetected	
Polycyclic Aromatic Hydrocarbons	18	194	112	306	63	detected	
					37	undetected	
					4	J	LCSR
					9	U	LB, PFP
					0	UJ	LB, SSR

Table B-6. Summary of Qualified Data by Parameter Group for Chinook Tissue Samples.

Analyte Group	Number of Samples	Number of Data Points		Total # of Data Points	Detection and Qualification Frequencies (percent)		Reason for Qualification
		Detected	Undetected				
PCB Homologs	18	162	0	162	100	detected	
					0	undetected	
PCB Congeners	18	2543	337	2880	88	detected	
					12	undetected	
					4	U	LB, PFP
Dioxin/Furan Homologs	12	114	6	120	95	detected	
					5	undetected	
Dioxin/Furans	12	141	40	181	78	detected	
					22	undetected	
					8	U	PFP

Notes:

Includes replicates and splits, excludes field blanks.

The analyte groupings for SVOCs, phenols, PAHs, and phthalates are as defined in the Round 2 QAPP Addendum 1, Table A6-2 (see Integral 2004).

Reason for Qualification:

- LB - Lab blank contamination
- Pc - Precision (all replicates)
- CC - Compound confirmation
- LCSR - Laboratory control sample recoveries
- Ci - Calibration (initial)
- PFP - Potential false positive
- SSR - Surrogate spike recoveries
- Other - defined in validation report.

Table B-8. Juvenile Chinook Whole-body Samples with Limited Sample Mass.

Sample ID	Parameter Groups Not Analyzed	Reduced Sample Aliquot
T01-REP1	None	None
T01-REP2	None	None
T01-REP3	None	None
T02-REP1	Butyltins, SVOCs	None
T02-REP2	SVOCs	Butyltins
T02-REP3	SVOCs	Butyltins
T03-REP1	None	SVOCs
T03-REP2	SVOCs	Butyltins
T03-REP3	None	SVOCs
T04-REP1	None	None
T04-REP2	None	None
T04-REP3	None	None

Sample aliquots from QAPP Addendum 4 (Integral 2005a):

PCB congeners and dioxins/furans (10 g)
Organochlorine pesticides and lipids (10 g)
PAHs (10 g)
Mercury (5 g)
Other metals and percent moisture (5 g)
Butyltin compounds (5 g)
SVOCs by SIM (5 g)

Table B-9a. Field Replicate Results for Chinook Whole-body Tissue Samples.

	Location Name	**T01**				**T02**				**T03**				**T04**			
	Sample ID	LW2-T01-REP1	LW2-T01-REP2	LW2-T01-REP3	**Relative Standard Deviation**	LW2-T02-REP1	LW2-T02-REP2	LW2-T02-REP3	**Relative Standard Deviation**	LW2-T03-REP1	LW2-T03-REP2	LW2-T03-REP3	**Relative Standard Deviation**	LW2-T04-REP1	LW2-T04-REP2	LW2-T04-REP3	**Relative Standard Deviation**
	Sample Type Code	Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate	
	Parent Sample		LW2-T01-REP1	LW2-T01-REP1			LW2-T02-REP1	LW2-T02-REP1			LW2-T03-REP1	LW2-T03-REP1			LW2-T04-REP1	LW2-T04-REP1	
	Sample Date	05/10/2005	05/10/2005	05/10/2005		05/10/2005	05/10/2005	05/10/2005		05/10/2005	05/12/2005	05/12/2005		05/12/2005	05/12/2005	05/12/2005	
Chemical Name	**Unit**																
PCB Aroclors																	
Aroclor 1016	ug/kg	0.000519 U	0.00044 U	0.000541 U	**NA**	0.000582 U	0.00071 U	0.00125 U	**NA**	0.000911 U	0.000999 U	0.000964 U	**NA**	0.000311 U	0.000246 U	0.000232 U	**NA**
Aroclor 1221	ug/kg	0.000235 U	0.000188 U	0.000214 U	**NA**	0.000173 U	0.000184 U	0.000177 U	**NA**	0.00031 U	0.00034 U	0.000343 U	**NA**	0.000161 U	0.000128 U	0.00012 U	**NA**
Aroclor 1232	ug/kg	0.000202 U	0.000203 U	0.000188 U	**NA**	0.000187 U	0.000192 U	0.000203 U	**NA**	0.000294 U	0.000288 U	0.000317 U	**NA**	0.000205 U	0.000191 U	0.000183 U	**NA**
Aroclor 1242	ug/kg	4.67 NJ	5.91 NJ	4.95 NJ	**13**	10.3 NJ	8.77 NJ	13.1 NJ	**20**	7.42 NJ	6.14 NJ	9.31 NJ	**21**	0.646 NJ	0.91 NJ	0.757 NJ	**17**
Aroclor 1248	ug/kg	0.00903 U	0.0153 U	0.0115 U	**NA**	0.0174 U	0.0157 U	0.0243 U	**NA**	0.00628 U	0.00653 U	0.0112 U	**NA**	0.00225 U	0.00299 U	0.00277 U	**NA**
Aroclor 1254	ug/kg	40.9 NJ	36.1 NJ	24 NJ	**26**	38 NJ	35.7 NJ	42.2 NJ	**9**	47.1 NJ	32.1 NJ	64 NJ	**33**	5.98 NJ	10.3 NJ	7.87 NJ	**27**
Aroclor 1260	ug/kg	263 NJ	43.6 NJ	45 NJ	**108**	44.5 NJ	55.6 NJ	45.9 NJ	**12**	198 NJ	103 NJ	126 NJ	**35**	5.45 NJ	9.14 NJ	6.54 NJ	**27**
Total Aroclors	ug/kg	309 JT	85.6 JT	74 JT	**85**	92.8 JT	100 JT	101 JT	**5**	253 JT	141 JT	199 JT	**28**	12.1 JT	20.4 JT	15.2 JT	**26**
Butyltins																	
Butyltin ion	ug/kg	1 U	1 U	0.98 U	**NA**		2.6 J	4.6	**NA**	1.6 U	5.4 J	1.5 U	**NA**	1.1 U	1.1 U	0.18 U	**NA**
Dibutyltin ion	ug/kg	1.1 U	0.85 U	0.77 U	**NA**		2 U	1.7 U	**NA**	0.83 U	2.3 U	0.89 U	**NA**	0.58 U	1 U	0.8 U	**NA**
Tributyltin ion	ug/kg	2.7	2.1 J	1.9 J	**19**		4.1 J	4.1	**NA**	1.3 J	2 J	1.9 J	**22**	0.37 J	0.45 J	0.42 J	**10**
Tetrabutyltin	ug/kg	0.17 U	0.15 U	0.16 U	**NA**		0.29 U	0.25 U	**NA**	0.16 U	0.38 U	0.16 U	**NA**	0.15 U	0.16 U	0.16 U	**NA**
Conventionals																	
Total solids	percent	18	19.5	18.7	**4**	19.5	19.6	19.4	**1**	20.2	19.7	19.5	**2**	19.3	19.9	19.5	**2**
Lipids	percent	1.5	1.5	1.6	**4**	1.6	1.7	1.7	**3**	1.7	1.8	1.8	**3**	1.8	1.8	1.9	**3**
Dioxin/Furan Homologs																	
Tetrachlorodibenzo-p-dioxin homologs	pg/g	0.0594 U	0.276	0.275	**NA**	0.512	0.414	0.876	**41**	0.371	0.252	0.0577 U	**NA**	0.054 U	0.0561 U	0.243	**NA**
Pentachlorodibenzo-p-dioxin homologs	pg/g	0.87	0.813	0.817	**4**	0.619	0.627	2.29	**82**	0.954	0.727	1.12	**21**	0.301	0.365	0.701	**47**
Hexachlorodibenzo-p-dioxin homologs	pg/g	2.79	2.93	3.79	**17**	8.02	1.8	3.41	**73**	3.14	3.11	4.57	**23**	0.25	0.551	1.08	**67**
Heptachlorodibenzo-p-dioxin homologs	pg/g	9.15	8.13	10.2	**11**	12.4	3.23	4.48	**74**	7.83	8.42	9.44	**10**	1.02	1.18	1.08	**7**
Octachlorodibenzo-p-dioxin	pg/g	19.4	17.6	20.8	**8**	8.28	5.24	7.46	**22**	14.7	15.7	18.3	**11**	2.36	2.45	2.08 J	**8**
Tetrachlorodibenzofuran homologs	pg/g	0.358	0.517	0.333	**25**	4.5	4.46	3.95	**7**	0.343	0.473	0.554	**23**	0.212	0.307	0.251	**19**
Pentachlorodibenzofuran homologs	pg/g	0.985	0.833	0.805	**11**	4.27	3.35	2.78	**22**	1.14	1.96	1.39	**28**	0.206	0.597 U	0.371	**NA**
Hexachlorodibenzofuran homologs	pg/g	1.72	0.893	1.04	**36**	2.05	1.21	1.06	**37**	1.47	1.85	1.83	**12**	0.212	0.216	0.071	**50**
Heptachlorodibenzofuran homologs	pg/g	2.61	1.32	1.65	**36**	1.18	0.521	0.78	**40**	1.44	2.07	1.63	**19**	0.263	0.0561 U	0.097	**NA**
Octachlorodibenzofuran	pg/g	2.03 J	1.25 J	1.63 J	**24**	0.602 J	0.432 J	0.703 J	**24**	0.941 J	1.57 J	1 J	**30**	0.245 J	0.243 J	0.203 J	**10**
Dioxins & Furans																	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/g	0.296 U	0.276	0.275	**NA**	0.457	0.414	0.876	**44**	0.371	0.252	0.354 U	**NA**	0.153 U	0.185 U	0.243	**NA**
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	pg/g	0.763 J	0.813 J	0.736 J	**5**	0.619 J	0.569 J	2.29	**84**	0.868 J	0.657 J	1.06 J	**23**	0.301 J	0.365 J	0.701 J	**47**
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	pg/g	0.283 U	0.297 J	0.306 J	**NA**	0.249 J	0.19 U	0.393 J	**NA**	0.34 J	0.345 J	0.429 J	**13**	0.082 U	0.096 J	0.131 J	**NA**
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	pg/g	1.2	1.22	1.28	**3**	6.91	1.09 J	2.22	**91**	1.66	1.58	2.69	**31**	0.317 U	0.344 J	0.563 J	**NA**
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	pg/g	0.451 J	0.423 J	0.448 J	**3**	0.492 J	0.265 J	0.414 J	**30**	0.512 J	0.491 J	0.759 J	**25**	0.084 J	0.149 U	0.166 J	**NA**
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	pg/g	6.1	5.28	6.36	**10**	11.2	2.39	3.25	**87**	5.78	6.41	7.38	**12**	0.726 J	0.866 J	0.789 J	**9**
2,3,7,8-Tetrachlorodibenzofuran	pg/g	0.364	0.545	0.333	**28**	4.74	4.86	4.17	**8**	0.371	0.312	0.541	**29**	0.21 J	0.297	0.26	**17**
1,2,3,7,8-Pentachlorodibenzofuran	pg/g	0.124 U	0.143 J	0.124 J	**NA**	2.03	1.6	1.27	**23**	0.137 J	0.077 J	0.254 J	**58**	0.054 U	0.079 J	0.071 J	**NA**
2,3,4,7,8-Pentachlorodibenzofuran	pg/g	0.369 J	0.343 J	0.253 J	**19**	1.85	1.35	1.14 J	**25**	0.329 J	0.271 J	0.606 J	**45**	0.137 J	0.155 J	0.139 J	**7**
1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g	0.217 J	0.14 J	0.122 J	**32**	0.946 J	0.625 J	0.518 J	**32**	0.133 J	0.14 J	0.215 J	**28**	0.054 U	0.0561 U	0.0537 U	**NA**
1,2,3,6,7,8-Hexachlorodibenzofuran	pg/g	0.124 J	0.086 J	0.093 J	**20**	0.346 J	0.19 J	0.179 J	**39**	0.112 J	0.111 J	0.165 J	**24**	0.054 U	0.0561 U	0.0537 U	**NA**
1,2,3,7,8,9-Hexachlorodibenzofuran	pg/g	0.0594 U	0.0596 U	0.0535 U	**NA**	0.055 U	0.0565 U	0.0597 U	**NA**	0.0565 U	0.0551 U	0.0577 U	**NA**	0.054 U	0.0561 U	0.0537 U	**NA**
2,3,4,6,7,8-Hexachlorodibenzofuran	pg/g	0.132 J	0.119 J	0.135 J	**7**	0.218 J	0.112 J	0.101 U	**NA**	0.161 J	0.166 J	0.211 J	**15**	0.071 J	0.08 J	0.071 J	**7**
1,2,3,4,6,7,8-Heptachlorodibenzofuran	pg/g	1.14 J	0.63 J	0.652 J	**36**	0.755 J	0.288 J	0.377 J	**52**	0.651 J	0.759 J	0.721 J	**8**	0.14 J	0.147 U	0.138 U	**NA**
1,2,3,4,7,8,9-Heptachlorodibenzofuran	pg/g	0.084 J	0.0596 U	0.077 J	**NA**	0.07 J	0.0565 U	0.0597 U	**NA**	0.0565 U	0.075 U	0.063 J	**NA**	0.054 U	0.0561 U	0.0537 U	**NA**
Metals																	
Aluminum, total	mg/kg	5.418 JT	3.705	3.3286	**27**	9.3405	3.1752	3.3756	**66**	6.06	6.2252	10.179	**31**	13.4521	9.00475 T	12.09	**20**
Antimony, total	mg/kg	0.00144 UT	0.00429 U	0.00187 U	**NA**	0.00312 U	0.002156 U	0.00194 U	**NA**	0.00202 U	0.001576 U	0.00156 U	**NA**	0.001544 U	0.001592 UT	0.00156 U	**NA**
Arsenic, total	mg/kg	0.0522 T	0.0624	0.04862	**13**	0.0663	0.05684	0.07178	**12**	0.04646	0.06107	0.0585	**14**	0.05597	0.04776 T	0.0468	**10**
Cadmium, total	mg/kg	0.01017 T	0.01248	0.011033	**10**	0.01911	0.012152	0.014744	**23**	0.011312	0.009653	0.0117	**10**	0.016405	0.007761 T	0.011115	**37**
Chromium, total	mg/kg	0.054 UT	0.0585 U	0.0561 U	**NA**	0.0585 U	0.0588 U	0.0582 U	**NA**	0.0606 U	0.0591 U	0.0585 U	**NA**	0.0579 U	0.0597 UT	0.0585 U	**NA**
Copper, total	mg/kg	1.1178 T	0.87165	1.07151	**13**	0.8073	0.82516	0.79152	**2**	0.75548	0.78209	0.9282	**11**	0.92061	0.878585 T	0.95745	**4**
Lead, total	mg/kg	0.0288 UT	0.02535 U	0.02618 U	**NA**	0.0741 U	0.0392 U	0.05626 U	**NA**	0.02222 U	0.02364 U	0.0273 U	**NA**	0.02509 U	0.00995 UT	0.00975 U	**NA**
Mercury, total	mg/kg	0.01134 J	0.01014 J	0.011407 J	**7**	0.01131	0.011172 J	0.010864 J	**2**	0.01313	0.012411	0.01014 J	**13**	0.012738	0.009353 J	0.01287	**17**
Nickel, total	mg/kg	0.3078 T	0.2574	0.30668	**10**	0.28275	0.31556	0.24056	**13**	0.202	0.31914	0.2613	**22**	0.30108	0.408945 JT	0.2457	**26**
Selenium, total	mg/kg	0.072 JT	0.1755	0.1496	**41**	0.273	0.1764	0.2328	**21**	0.1212	0.1182	0.117	**2**	0.1158	0.2189 JT	0.1365	**35**
Silver, total	mg/kg	0.00234 UT	0.002925 U	0.002992 U	**NA**	0.00273 U	0.00196 U	0.002522 U	**NA**	0.001616 U	0.002364 U	0.001755 U	**NA**	0.002702 U	0.002587 UT	0.00234 U	**NA**
Zinc, total	mg/kg	27.9 T	25.935	27.676	**4**	30.81	29.008	29.1	**3**	24.038	31.52	28.665	**13**	28.757	26.865 T	29.055	**4**
PAHs																	
2-Methylnaphthalene	ug/kg	4.5	6.9	5.8	**21**	4.3	4.3	4.3	**0**	5.6	5.5	6.9	**13**	3.4	3.3	4	**11**
Acenaphthene	ug/kg	0.87	1	0.93	**7**	0.67	0.69	0.65	**3**	0.63	0.77	0.77	**11**	0.38 J	0.41 J	0.4 J	**4**
Acenaphthylene	ug/kg	0.22 J	0.47 J	0.3 J	**39**	0.33 J	0.4 J	0.33 J	**11**	0.3 J	0.35 J	0.35 J	**9**	0.19 J	0.15 J	0.27 J	**30**
Anthracene	ug/kg	0.25 J	0.45 J	0.34 J	**29**	0.37 J	0.33 J	0.39 J	**8**	0.26 J	0.24 J	0.3 J	**11**	0.15 J	0.17 J	0.2 J	**15**
Fluorene	ug/kg	0.74	0.65	0.75	**8**	0.52	0.58	0.56	**6**	0.53	0.64	0.64	**11**	0.36 J	0.39 J	0.41 J	**7**
Naphthalene	ug/kg	2.9 U	5.1	3.3 U	**NA**	3.9	3.9	3.8	**1**	5.8	5	6.8	**15**	3 U	2.8 U	3.8	**NA**
Phenanthrene	ug/kg	1.8	1.5	1.9	**12**	1.4	1.3	1.4	**4**	0.88	1	1.1	**11**	0.84	0.62	0.69	**16**

Table B-9a. Field Replicate Results for Chinook Whole-body Tissue Samples.

	Location Name	**T01**				**T02**				**T03**				**T04**			
	Sample ID	LW2-T01-REP1	LW2-T01-REP2	LW2-T01-REP3	**Relative Standard Deviation**	LW2-T02-REP1	LW2-T02-REP2	LW2-T02-REP3	**Relative Standard Deviation**	LW2-T03-REP1	LW2-T03-REP2	LW2-T03-REP3	**Relative Standard Deviation**	LW2-T04-REP1	LW2-T04-REP2	LW2-T04-REP3	**Relative Standard Deviation**
	Sample Type Code	Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate	
	Parent Sample		LW2-T01-REP1	LW2-T01-REP1			LW2-T02-REP1	LW2-T02-REP1			LW2-T03-REP1	LW2-T03-REP1			LW2-T04-REP1	LW2-T04-REP1	
	Sample Date	05/10/2005	05/10/2005	05/10/2005		05/10/2005	05/10/2005	05/10/2005		05/10/2005	05/12/2005	05/12/2005		05/12/2005	05/12/2005	05/12/2005	
Chemical Name	**Unit**																
Low Molecular Weight PAH	ug/kg	8.38 JT	16.1 JT	10 JT	**35**	11.5 JT	11.5 JT	11.4 JT	**1**	14 JT	13.5 JT	16.9 JT	**12**	5.32 JT	5.04 JT	9.77 JT	**40**
Dibenz(a,h)anthracene	ug/kg	0.12 U	0.12 U	0.19 J	**NA**	0.2 J	0.12 U	0.12 U	**NA**	0.12 U	0.12 U	0.15 J	**NA**	0.27 J	0.21 J	0.32 J	**21**
Benz(a)anthracene	ug/kg	0.13 U	0.13 U	0.13 U	**NA**	0.21 J	0.13 U	0.2 J	**NA**	0.13 U	0.13 U	0.13 U	**NA**	0.13 U	0.13 U	0.13 U	**NA**
Benzo(a)pyrene	ug/kg	0.13 U	0.13 U	0.13 U	**NA**	0.13 U	0.13 U	0.13 U	**NA**	0.13 U	0.13 U	0.13 U	**NA**	0.13 U	0.13 U	0.13 U	**NA**
Benzo(b)fluoranthene	ug/kg	0.26 J	0.18 J	0.32 J	**28**	0.26 J	0.16 U	0.21 J	**NA**	0.16 U	0.16 J	0.16 U	**NA**	0.16 U	0.16 U	0.16 U	**NA**
Benzo(g,h,i)perylene	ug/kg	0.18 U	0.18 U	0.18 U	**NA**	0.18 U	0.18 U	0.19 U	**NA**	0.18 U	0.18 U	0.18 U	**NA**	0.18 U	0.18 U	0.18 U	**NA**
Benzo(k)fluoranthene	ug/kg	0.14 U	0.33 J	0.18 J	**NA**	0.15 J	0.2 J	0.16 J	**16**	0.14 U	0.14 U	0.14 U	**NA**	0.14 U	0.14 U	0.14 U	**NA**
Chrysene	ug/kg	0.2 U	0.2 U	0.94	**NA**	0.28 J	0.2 U	0.35 J	**NA**	0.2 U	0.2 U	0.2 U	**NA**	0.2 U	0.2 U	0.2 U	**NA**
Fluoranthene	ug/kg	0.97	0.93	1.5	**28**	1.1	0.7	1.1	**24**	0.37 U	0.46 J	0.46 J	**NA**	0.61	0.37 U	0.37 U	**NA**
Indeno(1,2,3-cd)pyrene	ug/kg	0.17 U	0.17 U	0.17 U	**NA**	0.17 U	0.17 U	0.17 U	**NA**	0.17 U	0.17 U	0.17 U	**NA**	0.17 U	0.17 U	0.17 U	**NA**
Pyrene	ug/kg	0.35 J	0.41 J	0.67	**36**	0.74	0.46 J	0.77	**26**	0.29 U	0.31 J	0.35 J	**NA**	0.49 J	0.29 U	0.29 U	**NA**
High Molecular Weight PAH	ug/kg	1.58 JT	1.85 JT	3.8 JT	**50**	2.94 JT	1.36 JT	2.79 JT	**37**	0.37 UT	0.93 JT	0.96 JT	**NA**	1.37 JT	0.21 JT	0.32 JT	**101**
Polycyclic Aromatic Hydrocarbons	ug/kg	9.96 JT	17.9 JT	13.8 JT	**29**	14.4 JT	12.9 JT	14.2 JT	**6**	14 JT	14.4 JT	17.8 JT	**14**	6.69 JT	5.25 JT	10.1 JT	**34**
Benzo(b+j)fluoranthene	ug/kg				**NA**				**NA**				**NA**				**NA**
PCB Congeners																	
PCB001	pg/g	4.09	4.98	5.8	**17**	6.51	7.28	6.41	**7**	21.4	26.2	24.1	**10**	7.43	7.81	7.68	**3**
PCB002	pg/g	0.556 U	0.662	0.602	**NA**	0.604	0.711	0.656	**8**	1.07	1.26	1.22	**8**	0.598	0.649	0.586	**5**
PCB003	pg/g	1.51	1.73	1.85	**10**	2.04	2.42	1.93	**12**	4.47	5.17	4.74	**7**	1.69	1.92	1.8	**6**
PCB004	pg/g	49.2	52.7	54.7	**5**	52.7	56.6	55.3	**4**	238	196	214	**10**	31.4	34.1	33.3	**4**
PCB005	pg/g	1.97	1.47	1.78	**15**	3.16	3.05	3.18	**2**	5.99	4.68	6.43	**16**	0.726	0.823 U	0.805 U	**NA**
PCB006	pg/g	17.5	16.7	19.8	**9**	30.1	31.4	33.4	**5**	101	66.5	87.3	**20**	6.97	7.57	6.86	**5**
PCB007	pg/g	3.36	3.16	3.93	**11**	5.66	6.2	6.71	**8**	10.4	9.83	11.7	**9**	1.51	1.61	1.56	**3**
PCB008	pg/g	90.4	89.5	101	**7**	154	157	172	**6**	346	254	341	**16**	30.6	32.9	29.8	**5**
PCB009	pg/g	5.65	5.59	6.58	**9**	9.71	10.2	11.4	**8**	19.6	17	21.1	**11**	2.49	2.66	2.48	**4**
PCB010	pg/g	2	1.95	2.4	**12**	2.5	2.75	2.53	**5**	6.39	5.36	5.64	**9**	1.2	1.21	1.19	**1**
PCB011	pg/g	8.61	8.94	8.62	**2**	5.82	8.46	9.25	**23**	5.99	5.02	5.61	**9**	46.8	24.7	29.7	**34**
PCB012 & 013	pg/g	1.56	1.18	1.37	**14**	1.71	2.28	2.45	**18**	4.05	3.3	3.71	**10**	1.28 U	1.05	0.853 J	**NA**
PCB014	pg/g	0.614 U	0.616 U	0.553 U	**NA**	0.569 U	0.584 U	0.617 U	**NA**	0.584 U	0.569 U	0.596 U	**NA**	0.558 U	0.58 U	0.555 U	**NA**
PCB015	pg/g	14.8	11.5	12.8	**13**	15.1	18.6	16.7	**10**	32.8	27.2	31.3	**10**	4.41	4.85	4.31	**6**
PCB016	pg/g	65.6	62.1	65.1	**3**	148	127	134	**8**	135	98.4	136	**17**	8.98	10.6	9.8	**8**
PCB017	pg/g	108	127	113	**8**	229	204	274	**15**	319	300	380	**13**	16.2	21.9	18.7	**15**
PCB018 & 030	pg/g	158	178	166	**6**	377	348	454	**14**	403	297	424	**18**	28.6	34.5	32	**9**
PCB019	pg/g	48.1	49.5	45.4	**4**	61.7	56.3	68.6	**10**	208	115	158	**29**	5.53	7.48	5.89	**16**
PCB020 & 028	pg/g	820	1110	864	**17**	1950	1610	2470	**22**	1070	915	1470	**25**	99.6	158	122	**23**
PCB021 & 033	pg/g	230	209	228	**5**	440	382	535	**17**	300	237	367	**22**	15.7	23.3	18.7	**20**
PCB022	pg/g	128	152	132	**9**	284	239	315	**14**	195	148	243	**24**	11.9	15.6	12.9	**14**
PCB023	pg/g	0.558	0.735	0.513	**19**	1.26	1.14	1.53	**15**	0.495	0.432 J	0.787 U	**NA**	0.0965 U	0.08 J	0.103 J	**NA**
PCB024	pg/g	2.78	3.51	2.95	**12**	9.25	8.47	8.58	**5**	6.38	4.51	6.11	**18**	0.567	0.579	0.503	**7**
PCB025	pg/g	35.7	44.1	35.7	**13**	64.4	55.9	78.7	**17**	75.7	73.4	99.6	**18**	4.62	6.4	5.39	**16**
PCB026 & 029	pg/g	92.7	121	94.2	**16**	199	180	270	**22**	160	147	208	**19**	12.3	19.9	14.8	**25**
PCB027	pg/g	15.7	16.8	15.5	**4**	42.6	37	48.9	**14**	50.8	35.4	51.7	**20**	2.32	3.14	2.66	**15**
PCB031	pg/g	487	592	521	**10**	946	805	1260	**23**	652	582	869	**21**	56.6	77.7	68.7	**16**
PCB032	pg/g	78.7	113	82.7	**21**	273	235	312	**14**	233	169	242	**19**	10.9	15.6	11.9	**19**
PCB034	pg/g	1.71	2.53	1.8	**22**	4.43	3.91	5.35	**16**	2.33	2.16	3.45	**26**	0.333 J	0.527	0.489	**23**
PCB035	pg/g	0.74 U	0.743 U	0.667 U	**NA**	0.686 U	0.704 U	0.744 U	**NA**	0.704 U	0.687 U	0.719 U	**NA**	0.107 U	0.699 U	0.0673 U	**NA**
PCB036	pg/g	0.578 U	0.58 U	0.52 U	**NA**	0.535 U	0.55 U	0.58 U	**NA**	0.55 U	0.536 U	0.561 U	**NA**	0.0948 U	0.0669 U	0.061 J	**NA**
PCB037	pg/g	50.6	46.3	41	**10**	56.9	57.2	66	**9**	57.3	49.8	92.8	**34**	5.34	6.98	6.56	**14**
PCB038	pg/g	2.37	1.88 U	1.01 U	**NA**	2.43	2.29	3.27	**20**	1.25	0.623	1.25 U	**NA**	0.206 U	0.225 U	0.218 U	**NA**
PCB039	pg/g	5.53	8.21	5.48	**24**	12	11.6	16	**18**	4.12	3.11	5.48	**28**	0.784	1.18	0.822	**24**
PCB040 & 041 & 071	pg/g	454	720	386	**34**	1240	1050	1410	**15**	547	456	722	**24**	45.6	90.8	66.2	**34**
PCB042	pg/g	178	295	153	**36**	567	452	610	**15**	231	143	273	**31**	20.4	40.9	33.3	**33**
PCB043	pg/g	30.9	44.8	26.8	**28**	65.2	64.7	95.1	**23**	23.7	17.9	29	**24**	3.84	6.87	5.33	**28**
PCB044 & 047 & 065	pg/g	1670	2020	1080	**30**	2630	2270	3170	**17**	2480	2800	3660	**20**	156	296	215	**32**
PCB045 & 051	pg/g	153	127	91.4	**25**	293	268	334	**11**	521	562	789	**23**	11.2	20.4	14.9	**30**
PCB046	pg/g	14.6	18.5	12.3	**21**	59.3	50.2	60.3	**10**	31.9	19.9	32.5	**25**	1.78	3.45	2.64	**32**
PCB048	pg/g	175	263	160	**28**	439	373	547	**19**	124	103	172	**27**	17.4	34.8	26.3	**33**
PCB049 & 069	pg/g	848	1300	651	**36**	1640	1440	2050	**18**	1460	1560	2230	**24**	103	206	150	**34**
PCB050 & 053	pg/g	95.8	111	68.2	**24**	221	203	271	**15**	389	318	512	**24**	9.98	19.3	13.5	**33**
PCB052	pg/g	1440	2270	1090	**38**	2990	2590	3670	**18**	1660	1350	2560	**34**	209	403	275	**33**
PCB054	pg/g	10.8	8.5	7.61	**18**	5.81	5.87	6.72	**8**	57.4	40.1	81.6	**35**	0.744	1.64	0.622	**55**
PCB055	pg/g	20.1	35.4	23.7	**30**	32.2	34.3	50.8	**26**	20.8	18.9	29.7	**25**	3.74	6.83	6.25	**29**
PCB056	pg/g	71.7	208	68.8	**68**	233	212	265	**11**	120	93.5	206	**42**	14.5	26.8	18.2	**32**
PCB057	pg/g	14.8	11.2	6.05	**41**	12	10.1	17.4	**29**	3.99	3.82	6.6	**32**	0.77	1.28	1.09	**25**
PCB058	pg/g	1.47 U	5.47	2.82	**NA**	5.22	5.4	8.11	**26**	1.28 U	1.25 U	5.4	**NA**	0.671	1.34 U	0.91	**NA**
PCB059 & 062 & 075	pg/g	147	141	88.5	**26**	241	211	298	**18**	100	82.5	129	**23**	11.8	21	16.8	**28**
PCB060	pg/g	313	592	285	**43**	927	711	978	**16**	249	184	348	**32**	43.5	86	63.7	**33**
PCB061 & 070 & 074 & 076	pg/g	2110	3470	1890	**34**	4230	3570	5100	**18**	1700	1440	2610	**32**	342	610	463	**28**
PCB063	pg/g	70.8	114	65.4	**32**	148	117	167	**18**	47.1	43.5	75.3	**31**	10.6	21.6	15	**35**
PCB064	pg/g	467	788	447	**34**	1250	1040	1450	**16**	425	286	541	**31**	65.9	125	96.4	**31**
PCB066	pg/g	1350	2520	1240	**42**	3460	2760	3820	**16**	1240	974	1870	**34**	243	444	341	**29**

Table B-9a. Field Replicate Results for Chinook Whole-body Tissue Samples.

	Location Name	**T01**				**T02**				**T03**				**T04**			
	Sample ID	LW2-T01-REP1	LW2-T01-REP2	LW2-T01-REP3	**Relative Standard Deviation**	LW2-T02-REP1	LW2-T02-REP2	LW2-T02-REP3	**Relative Standard Deviation**	LW2-T03-REP1	LW2-T03-REP2	LW2-T03-REP3	**Relative Standard Deviation**	LW2-T04-REP1	LW2-T04-REP2	LW2-T04-REP3	**Relative Standard Deviation**
	Sample Type Code	Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate	
	Parent Sample		LW2-T01-REP1	LW2-T01-REP1			LW2-T02-REP1	LW2-T02-REP1			LW2-T03-REP1	LW2-T03-REP1			LW2-T04-REP1	LW2-T04-REP1	
	Sample Date	05/10/2005	05/10/2005	05/10/2005		05/10/2005	05/10/2005	05/10/2005		05/10/2005	05/12/2005	05/12/2005		05/12/2005	05/12/2005	05/12/2005	
Chemical Name	**Unit**																
PCB067	pg/g	39.3	42	25.5	**25**	49.6	43.2	66.3	**22**	30.1	31.6	50	**30**	2.97	5.36	4.42	**28**
PCB068	pg/g	1.71 U	14.4	10.5	**NA**	11.2	11.2	17.6	**28**	25.5	35	41.7	**24**	3.01	4.81	3.97	**23**
PCB072	pg/g	21.4	22.4	13.7	**25**	22.1	19.9	27.1	**16**	21.7	24.4	34.8	**26**	3.28	6.11	4.62	**30**
PCB073	pg/g	17.4	10.7	9.34	**35**	9.3	4.33	15.4	**57**	21.1	34.6	49.9	**41**	1.29	2.08	2.17	**26**
PCB077	pg/g	61.9	122	54.5	**47**	118	112	127	**6**	74.3	53.9	96.9	**29**	13.2	20.4	18.1	**21**
PCB078	pg/g	1.61 U	2.72 U	2.05 U	**NA**	3.1 U	2.78 U	4.29 U	**NA**	1.11 U	1.15 U	1.97 U	**NA**	0.908 U	0.942 U	0.903 U	**NA**
PCB079	pg/g	40	37.3	21.6	**30**	35	35.7	48.8	**20**	33.8	27.7	62.7	**45**	5.86	10.6	6.65	**33**
PCB080	pg/g	1.73 U	2.42 U	1.82 U	**NA**	2.75 U	2.48 U	3.84 U	**NA**	1.65 U	1.61 U	1.76 U	**NA**	1.57 U	1.63 U	1.57 U	**NA**
PCB081	pg/g	8.55 U	10.3 U	6.2 U	**NA**	11.8 U	12.9 U	12 U	**NA**	8.48 U	5.18 U	10.8 U	**NA**	1.43 U	1.97 U	2.24 U	**NA**
PCB082	pg/g	199	278	140	**34**	349	312	310	**7**	300	138	365	**44**	34.4	70.4	47.3	**36**
PCB083 & 099	pg/g	2810	2440	1720	**24**	2420	2250	2730	**10**	3420	2600	4670	**29**	438	731	581	**25**
PCB084	pg/g	369	265	168	**38**	412	375	405	**5**	400	184	474	**43**	42.2	90.1	57	**39**
PCB085 & 116 & 117	pg/g	592	794	460	**27**	859	750	883	**9**	831	451	1070	**40**	135	230	180	**26**
PCB086 & 087 & 097 & 108 & 119 & 125	pg/g	2300	2070	1280	**28**	2330	2210	2550	**7**	2470	1410	3340	**40**	309	559	403	**30**
PCB088 & 091	pg/g	469	343	220	**36**	432	388	468	**9**	938	721	1140	**22**	46.5	95.1	61.8	**37**
PCB089	pg/g	13.2	16.1	8.91	**28**	37.5	31	35.5	**10**	18.9	8.89	19.3	**38**	1.97 U	4.52	2.89	**NA**
PCB090 & 101 & 113	pg/g	7680	3970	2930	**51**	3920	3820	4380	**7**	7570	4170	8060	**32**	567	1020	733	**30**
PCB092	pg/g	1410	683	490	**56**	648	632	746	**9**	1270	805	1430	**28**	101	173	126	**27**
PCB093 & 095 & 098 & 100 & 102	pg/g	3440	1530	1170	**60**	1840	1730	2060	**9**	4440	2110	3810	**35**	227	438	285	**34**
PCB094	pg/g	35	11.5	8.8	**78**	10.3	11	13.3	**14**	37.9	46.8	48.2	**13**	1.22 U	1.99	2.1 U	**NA**
PCB096	pg/g	13.3	6.84	4.61	**55**	11.9	11.1	12.7	**7**	37.8	35.8	56.5	**26**	0.837	1.81	1.15	**39**
PCB103	pg/g	79.3	27.3	23.9	**71**	26.5	30.3	34.5	**13**	149	165	192	**13**	3.02	6.02	3.9	**36**
PCB104	pg/g	8.49	2.18	2.08	**86**	0.97	1.18	1.18	**11**	8.79	9.73	17.2	**39**	0.176 U	0.254 J	0.135 J	**NA**
PCB105	pg/g	1310	1610	1060	**21**	1590	1660	1860	**8**	1350	780	1930	**42**	297	503	384	**26**
PCB106	pg/g	3.37 U	2.2 U	1.15 U	**NA**	0.552 U	1.51 U	1.5 U	**NA**	1.86 U	2.79 U	2.21 U	**NA**	1.14 U	1.69 U	1.58 U	**NA**
PCB107 & 124	pg/g	122	131	89.8	**19**	120	122	131	**5**	142	78.4	186	**40**	20.4	31.4	27.6	**21**
PCB109	pg/g	278	278	201	**18**	266	309	316	**9**	354	245	438	**28**	60.3	102	78.4	**26**
PCB110 & 115	pg/g	4140	3110	2130	**32**	3450	3440	3750	**5**	5290	2170	5110	**42**	542	914	662	**27**
PCB111	pg/g	8.83	3.81	4.24	**49**	4.74	4.44	4.28	**5**	13.7	14.2	15.5	**6**	0.895 U	1.23	1.54 U	**NA**
PCB112	pg/g	185	29.7	25	**114**	23.9	0.689 U	18.1	**NA**	2.29 U	1.86 U	2.52 U	**NA**	0.881 U	1.05 U	1.52 U	**NA**
PCB114	pg/g	90.5	119	72.9	**25**	110	114	120	**4**	78.2	49.6	108	**37**	18.6	33.8	25.6	**29**
PCB118	pg/g	4440	4060	3100	**18**	3660	3810	4490	**11**	4460	2500	5880	**40**	833	1430	1080	**27**
PCB120	pg/g	33.1	15.7	15.7	**47**	18	18.9	19.1	**3**	62.6	61.6	67.1	**5**	4.14	5.69	4.79	**16**
PCB121	pg/g	11.4	3.21	3.87	**74**	2.83	2.81	3.7	**16**	14.6	18.1	20.9	**18**	0.895 U	1.06 U	1.54 U	**NA**
PCB122	pg/g	10.5	17.2	7.91	**40**	11.4	11.1	13.5	**11**	13.7	6.94	16.3	**39**	2.62	4	2.75	**24**
PCB123	pg/g	75.4	86	61.7	**16**	82.8	88.4	83.3	**4**	78.4	42.5	102	**40**	17.2	27.8	20.3	**25**
PCB126	pg/g	16.8	13.8	10.7	**22**	14.4	35.3	14.9	**55**	20.2	11.9	19.6	**27**	3.12	4.02	4.54	**18**
PCB127	pg/g	9.59	8.5	7.61	**12**	5.97	7.62	10.1	**26**	12.4	7.11	15.5	**36**	2.02 U	2.76	2.6	**NA**
PCB128 & 166	pg/g	1660	700	608	**59**	648	865	864	**16**	1790	784	1500	**38**	157	260	188	**26**
PCB129 & 138 & 160 & 163	pg/g	26900	7380	6920	**83**	6890	8150	8210	**10**	24000	11900	18200	**34**	1230	2000	1490	**25**
PCB130	pg/g	847	312	287	**66**	313	398	374	**12**	857	462	741	**30**	65	112	81.5	**28**
PCB131	pg/g	92.3	29.7	21.7	**81**	28.8	31.1	34.4	**9**	71.1	30.7	68.5	**40**	4.31	9.25	5.75	**39**
PCB132	pg/g	4900	935	804	**105**	979	1000	1170	**10**	3600	1460	2490	**43**	144	276	179	**34**
PCB133	pg/g	366	125	129	**67**	128	125	140	**6**	409	351	386	**8**	20.5	34.4	25.2	**26**
PCB134 & 143	pg/g	735	162	140	**98**	160	198	196	**12**	614	270	430	**39**	23.7	42.6	29.8	**30**
PCB135 & 151 & 154	pg/g	7550	1500	1400	**101**	1530	1600	1890	**11**	7360	3970	5030	**32**	203	334	234	**27**
PCB136	pg/g	1700	274	253	**112**	261	267	332	**14**	1250	568	878	**38**	34.4	65.6	40.1	**36**
PCB137	pg/g	259	237	192	**15**	205	230	278	**16**	240	168	357	**37**	43	80.9	62	**31**
PCB139 & 140	pg/g	95.2	62	56.4	**29**	69.7	73.7	83.9	**10**	144	133	176	**15**	13.2	24.3	18.7	**30**
PCB141	pg/g	6660	1250	1170	**104**	1230	1370	1380	**6**	4510	2250	3180	**34**	138	251	167	**32**
PCB142	pg/g	4.96 U	1.88 U	1.85 U	**NA**	3.4	2.41 U	1.35 U	**NA**	1.9 U	4.11 U	4.8 U	**NA**	0.566 U	1.05 U	0.686 U	**NA**
PCB144	pg/g	1060	205	191	**103**	191	204	236	**11**	763	351	536	**38**	24.1	47.9	31.1	**36**
PCB145	pg/g	1.54	0.49	0.534	**69**	0.706 U	0.727	0.976	**NA**	1.22	0.627	1.53	**41**	0.109 J	0.251 J	0.177 J	**40**
PCB146	pg/g	4060	1220	1160	**77**	1270	1390	1430	**6**	4500	3060	3670	**19**	209	350	252	**27**
PCB147 & 149	pg/g	19700	3710	3340	**105**	3870	4210	4720	**10**	18100	8870	13000	**35**	588	985	656	**29**
PCB148	pg/g	34.2	11	11.4	**70**	14.6	13.8	16.2	**8**	64.4	87.9	82.1	**16**	1.53	2.88	2.01	**32**
PCB150	pg/g	21.4	4.89	4.79	**92**	4.56	5.17	6.06	**14**	48.4	66.3	68.6	**18**	0.875	1.7	1.04	**36**
PCB152	pg/g	10.3	1.62	1.54	**112**	1.25	1.56	1.92	**21**	12.6	17.7	16.8	**17**	0.214 J	0.379 J	0.234 J	**33**
PCB153 & 168	pg/g	31300	8130	8050	**85**	7470	8790	8670	**9**	27800	15800	22000	**27**	1270	2120	1590	**26**
PCB155	pg/g	5.58	2.18	2.3	**58**	1.63	1.76	2.02	**11**	5.65	5.89	6.51	**7**	0.913	1.12	1.05	**10**
PCB156 & 157	pg/g	1690	608	553	**67**	517	749	656	**18**	1030	564	1070	**32**	111	196	147	**28**
PCB158	pg/g	2080	581	562	**81**	517	659	669	**14**	1560	802	1270	**32**	96.1	173	122	**30**
PCB159	pg/g	400	52.8	50.1	**120**	52.6	65.4	67.7	**13**	270	148	177	**32**	8.46	12.9	8.81	**25**
PCB161	pg/g	3.48 U	1.32 U	1.3 U	**NA**	1.14 U	1.73 U	0.967 U	**NA**	1.36 U	2.95 U	3.44 U	**NA**	0.503 U	0.752 U	0.5 U	**NA**
PCB162	pg/g	35.3	21	17.9	**38**	19.8	25.3	20	**14**	38.1	26	40.6	**22**	4.93	7.67	6.05	**22**
PCB164	pg/g	1690	372	356	**95**	349	398	421	**9**	1320	628	897	**37**	60.6	93.1	64.5	**24**
PCB165	pg/g	17.2	4.9	4.92	**79**	5.01	5.23	5.51	**5**	21.3	25.8	27	**12**	0.856	1.35	0.874	**27**
PCB167	pg/g	684	252	232	**66**	224	315	254	**18**	622	314	526	**32**	46.1	77.2	57.9	**26**
PCB169	pg/g	49.2 U	10.1 U	11.5 U	**NA**	7.14 U	9.93 U	8.35 U	**NA**	28.6 U	17.9 U	17.7 U	**NA**	1.49 U	2.33 U	1.79 U	**NA**
PCB170	pg/g	12500	1920	1950	**112**	1940	2200	2020	**6**	9220	4490	5580	**39**	237	399	279	**28**
PCB171 & 173	pg/g	3480	464	467	**118**	451	508	498	**6**	2180	1050	1320	**39**	56.5	101	64.8	**32**

Table B-9a. Field Replicate Results for Chinook Whole-body Tissue Samples.

	Location Name	**T01**				**T02**				**T03**				**T04**			
	Sample ID	LW2-T01-REP1	LW2-T01-REP2	LW2-T01-REP3	**Relative Standard Deviation**	LW2-T02-REP1	LW2-T02-REP2	LW2-T02-REP3	**Relative Standard Deviation**	LW2-T03-REP1	LW2-T03-REP2	LW2-T03-REP3	**Relative Standard Deviation**	LW2-T04-REP1	LW2-T04-REP2	LW2-T04-REP3	**Relative Standard Deviation**
	Sample Type Code	Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate	
	Parent Sample		LW2-T01-REP1	LW2-T01-REP1			LW2-T02-REP1	LW2-T02-REP1			LW2-T03-REP1	LW2-T03-REP1			LW2-T04-REP1	LW2-T04-REP1	
	Sample Date	05/10/2005	05/10/2005	05/10/2005		05/10/2005	05/10/2005	05/10/2005		05/10/2005	05/12/2005	05/12/2005		05/12/2005	05/12/2005	05/12/2005	
Chemical Name	**Unit**																
PCB172	pg/g	2130	386	391	**104**	387	394	390	**1**	1660	888	1060	**34**	50.1	82.5	59	**26**
PCB174	pg/g	10400	1290	1170	**124**	1340	1530	1550	**8**	7100	3580	4180	**38**	170	266	172	**27**
PCB175	pg/g	404	66.1	68.8	**108**	66.7	82.6	76	**11**	314	161	201	**35**	8.98	16.2	10.9	**31**
PCB176	pg/g	1070	108	99.5	**131**	106	110	133	**13**	564	272	356	**38**	14.1	28	16	**39**
PCB177	pg/g	7280	1080	961	**116**	1200	1120	1090	**5**	6150	3120	3430	**39**	148	249	160	**30**
PCB178	pg/g	2090	432	433	**97**	407	430	463	**6**	1940	1190	1290	**28**	65.3	100	73.6	**23**
PCB179	pg/g	3030	367	334	**124**	337	358	435	**14**	2100	1090	1300	**36**	51.8	84	53.5	**29**
PCB180 & 193	pg/g	31300	5410	5610	**106**	5530	7140	5600	**15**	23900	12700	15600	**33**	673	1120	825	**26**
PCB181	pg/g	37.3	11	10.7	**78**	47.4	35.5	34.1	**19**	28.5	17.6	25.4	**24**	2.12 U	3.47	2.57	**NA**
PCB182	pg/g	25.1	9.41	8.78	**64**	12.2	14.8	13.3	**10**	48.5	45.4	43.8	**5**	2.43	3.2	2.33	**18**
PCB183 & 185	pg/g	8900	1390	1440	**111**	1440	1780	1560	**11**	6590	3350	4050	**37**	180	305	205	**29**
PCB184	pg/g	2.53	1.59	1.59	**29**	2.14	2.36	2.38	**6**	3.61	3.19	3.47	**6**	0.926	1.35	1.22	**19**
PCB186	pg/g	0.27 J	0.068 U	0.093 U	**NA**	0.79	0.603	0.563	**19**	0.356 J	0.182 J	0.423 U	**NA**	0.0647 U	0.061 J	0.0537 U	**NA**
PCB187	pg/g	14000	2900	2770	**98**	3510	3790	3900	**5**	15400	7840	9700	**36**	538	724	527	**19**
PCB188	pg/g	8.9	3.14	3.16	**66**	2.95	3.71	3.48	**12**	19.6	23.1	22.7	**9**	0.687	1.09	0.763	**25**
PCB189	pg/g	360	68.9	71.1	**100**	66.2	72.6	67.1	**5**	269	147	181	**32**	8.98	15.2	11.2	**27**
PCB190	pg/g	2490	393	395	**111**	412	501	443	**10**	1970	991	1180	**38**	55.6	90.2	63.4	**26**
PCB191	pg/g	478	78.1	83.3	**108**	79	91.6	85	**7**	337	180	221	**33**	9.9	17.5	11.6	**31**
PCB192	pg/g	1.23 U	1.23 U	1.1 U	**NA**	1.14 U	0.105 U	1.23 U	**NA**	1.17 U	1.14 U	1.19 U	**NA**	0.0807 U	1.16 U	0.0537 U	**NA**
PCB194	pg/g	4700	725	792	**110**	802	942	828	**9**	3410	1950	2360	**29**	100	166	123	**26**
PCB195	pg/g	1980	254	269	**119**	292	339	308	**8**	1440	768	916	**34**	36.4	61.7	43.2	**28**
PCB196	pg/g	2520	359	380	**114**	382	479	450	**11**	1730	967	1190	**30**	47.1	87.9	59.4	**32**
PCB197 & 200	pg/g	578	66.8	62.2	**126**	77.2	83.2	90.5	**8**	355	205	251	**28**	11	19.4	12	**32**
PCB198 & 199	pg/g	4590	849	845	**103**	933	995	1010	**4**	3780	2150	2600	**30**	139	219	165	**23**
PCB201	pg/g	458	73.1	72	**111**	73.4	87.9	88.4	**10**	326	198	249	**25**	11.6	21.7	14.6	**32**
PCB202	pg/g	569	149	150	**84**	150	145	175	**10**	555	355	428	**23**	32.1	45	34.4	**19**
PCB203	pg/g	2930	528	518	**105**	572	742	691	**13**	2440	1360	1760	**29**	92.3	149	116	**24**
PCB204	pg/g	0.839	0.381 U	0.294 J	**NA**	1.32	1.01	1.08	**14**	0.855	0.471	0.777	**29**	0.133 J	0.223 U	0.165 U	**NA**
PCB205	pg/g	246	37.9	38.2	**112**	45.2	50.8	43	**9**	178	110	120	**27**	5.91	9.24	6.87	**23**
PCB206	pg/g	704	208	194	**79**	318	277	279	**8**	535	374	476	**18**	43.2	62.6	51.6	**19**
PCB207	pg/g	91.5	22.8	23	**87**	32.3	31.2	30.9	**2**	70.8	45.9	66.8	**22**	5.03	8.15	6.19	**24**
PCB208	pg/g	156	66.8	64.4	**55**	85.6	72.5	80.1	**8**	120	87.8	124	**18**	16.2	21.4	17.6	**15**
PCB209	pg/g	45.7	39.3	39.4	**9**	92.8	73.7	76.5	**13**	40.6	31.9	65.8	**38**	21.5	22	19.6	**6**
Polychlorinated biphenyls	pg/g	277000	88200	72300	**78**	97100	100000	111000	**7**	246000	136000	198000	**29**	12800	21600	15800	**27**
PCB Homologs																	
Monochlorobiphenyl	pg/g	6.16	7.37	8.25	**14**	9.15	10.4	8.99	**8**	26.9	32.7	30	**10**	9.72	10.4	10.1	**3**
Dichlorobiphenyl	pg/g	195	193	213	**5**	281	296	313	**5**	771	589	728	**14**	126	111	110	**8**
Trichlorobiphenyl	pg/g	2330	2840	2410	**11**	5100	4370	6320	**19**	3880	3180	4750	**20**	280	404	332	**18**
Tetrachlorobiphenyl	pg/g	9810	15300	7970	**35**	20900	17700	24700	**17**	11600	10700	17200	**27**	1340	2520	1860	**31**
Pentachlorobiphenyl	pg/g	30100	21900	15400	**33**	22700	22200	25500	**8**	33800	18800	38600	**34**	3700	6480	4770	**28**
Hexachlorobiphenyl	pg/g	115000	28100	26500	**90**	27000	31100	32100	**9**	101000	53100	76700	**31**	4500	7560	5460	**27**
Heptachlorobiphenyl	pg/g	100000	16400	16300	**109**	17300	20200	18400	**8**	79800	41100	49700	**36**	2270	3610	2540	**25**
Octachlorobiphenyl	pg/g	18600	3040	3130	**108**	3330	3860	3680	**7**	14200	8050	9880	**29**	476	779	574	**25**
Nonachlorobiphenyl	pg/g	952	298	282	**75**	435	381	390	**7**	725	507	667	**18**	64.5	92.2	75.4	**18**
Pesticides																	
2,4'-DDD	ug/kg	4.2	1.1 U	1.1 U	**NA**	9.7	12	13	**15**	3.6 J	2.6 NJ	5.1 NJ	**33**	0.34 U	0.34 U	0.34 U	**NA**
2,4'-DDE	ug/kg	0.16 U	0.16 U	0.16 U	**NA**	1.4 U	1.6 U	2.1 U	**NA**	1.5 U	1.2 U	6.2 U	**NA**	0.16 U	0.84 U	0.93 U	**NA**
2,4'-DDT	ug/kg	4.4 U	2.9 NJ	2.5 NJ	**NA**	8.6	10	10	**8**	3 U	2.7 U	5.3 U	**NA**	0.81 NJ	1.2 NJ	1 NJ	**19**
4,4'-DDD	ug/kg	1 J	1.9	1.6	**31**	110	120	130	**8**	1.2 J	1.5 J	1.4 J	**11**	0.69 U	1 J	0.88 U	**NA**
4,4'-DDE	ug/kg	8.7	9.1	8.6	**3**	87	92	93	**4**	7	8.1	13	**34**	6.3	7.9	6.6	**12**
4,4'-DDT	ug/kg	18	5.4	4.2	**83**	34	38	38	**6**	12	10	15	**20**	1.5	2.1	1.6	**19**
Total of 4,4'-DDD, -DDE, -DDT	ug/kg	27.7 JT	16.4 T	14.4 T	**37**	231 T	250 T	261 T	**6**	20.2 JT	19.6 JT	29.4 JT	**24**	7.8 T	11 JT	8.2 T	**19**
Aldrin	ug/kg	0.45 U	0.16 U	0.16 U	**NA**	1.2 U	0.16 U	0.16 U	**NA**	0.16 U	0.55 U	0.16 U	**NA**	0.16 U	0.16 U	0.17 U	**NA**
alpha-Hexachlorocyclohexane	ug/kg	0.34 U	0.34 U	0.33 U	**NA**	0.34 U	0.35 U	0.34 U	**NA**	0.34 U	0.35 U	0.34 U	**NA**	0.34 U	0.34 U	0.34 U	**NA**
beta-Hexachlorocyclohexane	ug/kg	1.1 U	1.1 U	0.33 U	**NA**	0.33 U	0.33 U	1.1 U	**NA**	0.33 U	0.34 U	0.37 U	**NA**	0.33 U	0.36 U	0.33 U	**NA**
delta-Hexachlorocyclohexane	ug/kg	0.23 U	0.23 U	0.22 U	**NA**	0.22 U	0.26 U	1.1 U	**NA**	0.38 J	0.44 J	0.51 U	**NA**	0.23 U	0.22 U	0.23 U	**NA**
gamma-Hexachlorocyclohexane	ug/kg	0.18 U	0.18 U	1.1 U	**NA**	0.18 U	1.1 U	0.18 U	**NA**	1.1 U	0.19 U	0.18 U	**NA**	0.18 U	0.18 U	0.49 U	**NA**
cis-Chlordane	ug/kg	0.12 U	0.12 U	0.29 U	**NA**	0.85 NJ	0.59 NJ	0.73 U	**NA**	0.24 J	0.23 J	0.26 J	**6**	0.56 J	0.34 J	0.37 J	**28**
trans-Chlordane	ug/kg	2.1 U	1.8 U	1.4 U	**NA**	3.1 U	2.8 U	2.7 U	**NA**	2.9	2.4	4	**26**	0.56 NJ	0.73 NJ	0.51 NJ	**19**
Oxychlordane	ug/kg	0.42 U	0.41 U	0.4 U	**NA**	0.41 U	0.42 U	0.41 U	**NA**	0.42 U	0.42 U	0.41 U	**NA**	0.45 U	0.41 U	0.42 U	**NA**
cis-Nonachlor	ug/kg	17 U	0.27 U	1.1 U	**NA**	2.5 U	3.1 U	8.8 U	**NA**	1.1 U	1.1 U	1.1 U	**NA**	1.1 U	0.26 U	0.27 U	**NA**
trans-Nonachlor	ug/kg	0.7 J	1.2	1.1 J	**26**	1.2 U	1.3 U	1.8 U	**NA**	0.78 J	0.84 J	0.76 J	**5**	1.9	1 J	1.3	**33**
Dieldrin	ug/kg	1.1 U	0.23 J	0.22 U	**NA**	2.1	1.2	1.1 J	**38**	0.32 U	0.55 U	1.1 U	**NA**	0.65 J	0.84 J	0.72 J	**13**
alpha-Endosulfan	ug/kg	0.22 NJ	0.18 U	0.18 U	**NA**	0.88 J	0.6 NJ	1.1 U	**NA**	0.18 U	0.19 U	0.18 U	**NA**	1.1 U	0.3 U	0.18 U	**NA**
beta-Endosulfan	ug/kg	1 U	1.1 U	0.82 U	**NA**	0.43 U	1.2 U	1.6	**NA**	0.26 U	0.26 U	1.1 U	**NA**	0.26 U	1.1 U	1.1 U	**NA**
Endosulfan sulfate	ug/kg	0.21 UJ	0.2 UJ	0.2 UJ	**NA**	0.99 J	0.96 J	1 J	**2**	0.21 UJ	0.21 UJ	0.2 UJ	**NA**	0.34 J	0.24 UJ	0.32 UJ	**NA**
Endrin	ug/kg	1.1 U	0.084 U	0.076 U	**NA**	0.078 U	0.14 U	0.14 U	**NA**	1.1 U	1.1 U	1.1 U	**NA**	0.14 J	0.24 J	0.4 U	**NA**
Endrin aldehyde	ug/kg	3.5 U	1.1 U	1.1 U	**NA**	1.1 U	1.1 U	1.1 U	**NA**	1.8 U	0.19 U	1.1 U	**NA**	0.61 NJ	0.19 U	0.25 NJ	**NA**
Endrin ketone	ug/kg	3 U	0.43 U	0.41 U	**NA**	0.42 U	0.43 U	0.42 U	**NA**	1.4 U	1.1 U	1.5 U	**NA**	1.1 U	1.3 U	1.1 U	**NA**

Table B-9a. Field Replicate Results for Chinook Whole-body Tissue Samples.

	Location Name	**T01**				**T02**				**T03**				**T04**			
	Sample ID	LW2-T01-REP1	LW2-T01-REP2	LW2-T01-REP3	**Relative Standard Deviation**	LW2-T02-REP1	LW2-T02-REP2	LW2-T02-REP3	**Relative Standard Deviation**	LW2-T03-REP1	LW2-T03-REP2	LW2-T03-REP3	**Relative Standard Deviation**	LW2-T04-REP1	LW2-T04-REP2	LW2-T04-REP3	**Relative Standard Deviation**
	Sample Type Code	Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate		Normal	Field Replicate	Field Replicate	
	Parent Sample		LW2-T01-REP1	LW2-T01-REP1			LW2-T02-REP1	LW2-T02-REP1			LW2-T03-REP1	LW2-T03-REP1			LW2-T04-REP1	LW2-T04-REP1	
	Sample Date	05/10/2005	05/10/2005	05/10/2005		05/10/2005	05/10/2005	05/10/2005		05/10/2005	05/12/2005	05/12/2005		05/12/2005	05/12/2005	05/12/2005	
Chemical Name	**Unit**																
Heptachlor	ug/kg	0.33 U	0.43 U	0.39 J	**NA**	0.57 U	1.1 U	1.1 U	**NA**	1.1 U	1.2	0.76 J	**NA**	0.33 U	0.33 U	0.33 U	**NA**
Heptachlor epoxide	ug/kg	2.1 NJ	1.3	1.4 J	**27**	1.6	1.4	0.93 U	**NA**	1.9 J	1.5	2	**15**	0.36 U	1.2 NJ	0.73 J	**NA**
Methoxychlor	ug/kg	1.7 U	0.34 U	1.1 U	**NA**	1.4 U	1.4 U	1.3 U	**NA**	1.1 U	1.1 U	1.2 U	**NA**	0.34 U	0.34 U	0.34 U	**NA**
Toxaphene	ug/kg	310 U	82 U	86 U	**NA**	80 U	110 U	110 U	**NA**	220 U	180 U	230 U	**NA**	24 U	38 U	36 U	**NA**
SVOCs																	
2,4-Dimethylphenol	ug/kg	26 U	25 U	27 U	**NA**				**NA**	140 U		180 U	**NA**	28 U	27 U	30 U	**NA**
2-Methylphenol	ug/kg	110 U	110 U	110 U	**NA**				**NA**	570 U		720 U	**NA**	120 U	110 U	120 U	**NA**
4-Methylphenol	ug/kg	29 U	29 U	31 U	**NA**				**NA**	160 U		210 U	**NA**	32 U	31 U	34 U	**NA**
Pentachlorophenol	ug/kg	400 J	60 U	64 U	**NA**				**NA**	330 U		420 U	**NA**	65 U	64 U	70 U	**NA**
Phenol	ug/kg	38 J	33 U	35 U	**NA**				**NA**	190 U		230 U	**NA**	40 J	35 U	38 U	**NA**
Dimethyl phthalate	ug/kg	9.9 U	9.8 U	11 U	**NA**				**NA**	55 U		69 U	**NA**	11 U	11 U	12 U	**NA**
Diethyl phthalate	ug/kg	19 U	18 U	20 U	**NA**				**NA**	100 U		130 U	**NA**	20 U	20 U	21 U	**NA**
Dibutyl phthalate	ug/kg	31 U	33 J	48 J	**NA**				**NA**	180 U		220 U	**NA**	34 U	52 J	50 J	**NA**
Butylbenzyl phthalate	ug/kg	220	190	190	**9**				**NA**	160 J		190 U	**NA**	200	240	210	**10**
Di-n-octyl phthalate	ug/kg	26 U	25 U	27 U	**NA**				**NA**	140 U		180 U	**NA**	28 U	27 U	30 U	**NA**
Bis(2-ethylhexyl) phthalate	ug/kg	110 U	110 U	110 U	**NA**				**NA**	570 U		720 U	**NA**	120 U	140 J	140 J	**NA**
1,2,4-Trichlorobenzene	ug/kg	20 U	19 U	21 U	**NA**				**NA**	110 U		140 U	**NA**	21 U	21 U	23 U	**NA**
1,2-Dichlorobenzene	ug/kg	24 U	23 U	25 U	**NA**				**NA**	130 U		170 U	**NA**	25 U	25 U	27 U	**NA**
1,3-Dichlorobenzene	ug/kg	22 UJ	21 UJ	23 UJ	**NA**				**NA**	120 UJ		150 UJ	**NA**	23 UJ	23 UJ	25 UJ	**NA**
1,4-Dichlorobenzene	ug/kg	22 UJ	21 UJ	23 UJ	**NA**				**NA**	120 UJ		150 UJ	**NA**	23 UJ	23 UJ	25 UJ	**NA**
Benzyl alcohol	ug/kg	56 J	55 J	77 J	**20**				**NA**	72 UJ		200 J	**NA**	57 J	31 J	39 J	**31**
Dibenzofuran	ug/kg	0.85	0.88	0.9	**3**	0.55	0.64	0.58	**8**	0.61	0.68	0.75	**10**	0.37 J	0.4 J	0.48 J	**14**
Hexachlorobenzene	ug/kg	0.62 J	0.81 J	0.7 J	**13**	0.88 J	1.2	1 J	**16**	0.83 J	0.74 J	0.88 J	**9**	0.57 J	1.1 J	1.2 J	**35**
Hexachlorobutadiene	ug/kg	1.1 U	1.1 U	1.1 U	**NA**	1.1 U	1.1 U	1.1 U	**NA**	1.1 U	1.1 U	1.1 U	**NA**	1.1 U	1.8 U	1.1 U	**NA**
Hexachloroethane	ug/kg	17 U	17 U	18 U	**NA**				**NA**	91 U		120 U	**NA**	18 U	18 U	19 U	**NA**
N-Nitrosodiphenylamine	ug/kg	19 U	19 U	20 U	**NA**				**NA**	110 U		130 U	**NA**	20 U	20 U	22 U	**NA**

Table B-9b. Field Replicate Results for Chinook Stomach Content Samples.

	Location ID	**T01**			**T02**			**T03**	**T04**
	Sample ID	LW2-T01 SC	LW2-T01-NOAA SC		LW2-T02 SC	LW2-T02-NOAA SC		LW2-T03 SC	LW2-T04 SC
	Sample Date	05/10/2005	05/14/2005	**Relative Percent**	05/10/2005	05/14/2005	**Relative Percent**	05/10/2005	05/12/2005
Analyte	**Units**			**Difference**			**Difference**		
PCB Aroclors									
Aroclor 1016	ug/kg	0.00171 U	0.00377 U	**NA**	0.00299 U	0.00365 U	**NA**	0.00246 U	0.00112 U
Aroclor 1221	ug/kg	0.000597 U	0.00135 U	**NA**	0.00155 U	0.00176 U	**NA**	0.000891 U	0.000581 U
Aroclor 1232	ug/kg	0.00151 U	0.00327 U	**NA**	0.00217 U	0.00276 U	**NA**	0.00154 U	0.000761 U
Aroclor 1242	ug/kg	8.16 NJ	4.04 NJ	**68**	10.7 NJ	0.00406 U	**NA**	11.4 NJ	0.87 NJ
Aroclor 1248	ug/kg	0.00502 U	0.00511 U	**NA**	0.00804 U	42.2 NJ	**NA**	0.00577 U	0.00111 U
Aroclor 1254	ug/kg	24.9 NJ	15.7 NJ	**45**	22.5 NJ	0.0199 U	**NA**	27.6 NJ	4.87 NJ
Aroclor 1260	ug/kg	55.1 NJ	23.3 NJ	**81**	18.9 NJ	12.9 NJ	**38**	124 NJ	3.43 NJ
Total Aroclors	ug/kg	88.2 JT	43 JT	**69**	52.1 JT	55.1 JT	**-6**	163 JT	9.17 JT
PAHs									
2-Methylnaphthalene	ug/kg	14.2 U	15.6 U	**NA**	14.5 U	41.5	**NA**	12 U	6.15 U
Acenaphthene	ug/kg	12.3	7.35 J	**50**	6.65 J	131	**-181**	4.44 J	1.96 J
Acenaphthylene	ug/kg	2 J	1.24 U	**NA**	2.04 U	6.99 J	**NA**	0.738 J	0.764 J
Anthracene	ug/kg	7.52	6.32 J	**17**	6.47 J	225	**-189**	1.3 J	1.78 J
Fluorene	ug/kg	16.1	8.15 J	**66**	5.34 J	143	**-186**	5.31 J	2.07 U
Naphthalene	ug/kg	29.3 U	38 U	**NA**	38.8 UJ	37.6 U	**NA**	27.3 U	11 U
Phenanthrene	ug/kg	103	46.6	**75**	53.8	862	**-177**	33.9	23.5
Low Molecular Weight PAH	ug/kg	141 JT	68.4 JT	**69**	72.3 JT	1410 JT	**-180**	45.7 JT	28 JT
Dibenz(a,h)anthracene	ug/kg	0.93 U	0.57 U	**NA**	0.905 J	2.68 J	**-99**	0.486 U	0.207 U
Benz(a)anthracene	ug/kg	6.6	7.67 J	**-15**	11.8	77.8	**-147**	1.89 J	2.66
Benzo(a)pyrene	ug/kg	2.26 J	3.31 U	**NA**	5.82 U	20.7	**NA**	1.63 U	1.07 J
Benzo(g,h,i)perylene	ug/kg	6.04 J	4.01 U	**NA**	5.65 U	7.3 J	**NA**	2.44 U	2.3 U
Benzo(k)fluoranthene	ug/kg	7.12	5.2 J	**31**	7.04 J	23.8	**-109**	1.95 J	1.86 J
Chrysene	ug/kg	42.4	22.2	**63**	29.4	97.7	**-107**	6.97 J	8.01
Fluoranthene	ug/kg	109 J	49.4 J	**75**	75.1 J	475 J	**-145**	20.5 J	24.3 J
Indeno(1,2,3-cd)pyrene	ug/kg	5 J	3.91 U	**NA**	4.64 J	8.51 J	**-59**	1.86 U	1.27 U
Pyrene	ug/kg	64.3 J	33.7 J	**62**	60.1 J	301 J	**-133**	15.7 J	19.1 J
High Molecular Weight PAH	ug/kg	261 JT	128 JT	**68**	200 JT	1050 JT	**-136**	49.9 JT	59.4 JT
Polycyclic Aromatic Hydrocarbons	ug/kg	402 JT	196 JT	**69**	272 JT	2460 JT	**-160**	95.5 JT	87.4 JT
Benzo(b+j)fluoranthene	ug/kg	18	9.35 J	**63**	11.2	35.3	**-104**	2.85 J	2.43
PCB Congeners									
PCB001	pg/g	19.2	4.38 J	**126**	27.9	5.17	**137**	48.7	8.67
PCB002	pg/g	3.35	3.6 U	**NA**	4.69	3.57 U	**NA**	4.04 U	1.47 U
PCB003	pg/g	7.93 U	5.21 U	**NA**	15.6 U	5.4	**NA**	24.8	3.65
PCB004	pg/g	84.6	23.7	**112**	124	74.8	**49**	371	30.6
PCB005	pg/g	3.02	3.49 U	**NA**	4.99 U	2.76 U	**NA**	5.83 U	1.2 U
PCB006	pg/g	29.2	11.9	**84**	59.3	9.54	**145**	146	9.13
PCB007	pg/g	7.93	4.12 J	**63**	16.7	4.14 U	**NA**	17.6	2.57
PCB008	pg/g	162	53.3	**101**	277	42.2	**147**	491	40.4
PCB009	pg/g	10.4	3.3 U	**NA**	20.5	2.77 U	**NA**	29.5	3.54
PCB010	pg/g	3.57	2.02 U	**NA**	6.77	3.97	**52**	10.4	1.25
PCB011	pg/g	729	455	**46**	179	332	**-60**	109	334
PCB012 & 013	pg/g	13.9	9.2 U	**NA**	24.1	5.78 J	**123**	31.5	2.6
PCB014	pg/g	3.11 U	6.02 U	**NA**	4.93 U	4.76 U	**NA**	3.42 U	1.15 U
PCB015	pg/g	203	100	**68**	278	67.2	**122**	395	17.3
PCB016	pg/g	75.1	56.4	**28**	192	356	**-60**	226	14.6
PCB017	pg/g	152	89	**52**	280	534	**-62**	453	24.6
PCB018 & 030	pg/g	216	155	**33**	452	789	**-54**	647	39.5
PCB019	pg/g	37.3	36.7	**2**	62.8	67.3	**-7**	136	5.23

Table B-9b. Field Replicate Results for Chinook Stomach Content Samples.

	Location ID	**T01**			**T02**			**T03**	**T04**
	Sample ID	LW2-T01 SC	LW2-T01-NOAA SC		LW2-T02 SC	LW2-T02-NOAA SC		LW2-T03 SC	LW2-T04 SC
	Sample Date	05/10/2005	05/14/2005	**Relative Percent**	05/10/2005	05/14/2005	**Relative Percent**	05/10/2005	05/12/2005
Analyte	**Units**			**Difference**			**Difference**		
PCB020 & 028	pg/g	1400	675	**70**	1800	1170	**42**	1590	129
PCB021 & 033	pg/g	285	172	**49**	453	113	**120**	353	21.8
PCB022	pg/g	225	155	**37**	413	280	**38**	322	20.6
PCB023	pg/g	0.67 U	6.32 U	**NA**	1.71 U	5 U	**NA**	0.966 U	1.21 U
PCB024	pg/g	3.6	1.83 J	**65**	8.37	6.02	**33**	8.37	0.462 U
PCB025	pg/g	51.9	35.3	**38**	86.6	59.7	**37**	114	6.95
PCB026 & 029	pg/g	106	86.8	**20**	200	91.9	**74**	231	15.5
PCB027	pg/g	18.3	21.7	**-17**	46.7	50.5	**-8**	63.8	2.93
PCB031	pg/g	941	461	**68**	1040	576	**57**	1070	81
PCB032	pg/g	256	94.9	**92**	238	289	**-19**	294	14.9
PCB034	pg/g	3.17	1.45 U	**NA**	3.73 U	1.81 U	**NA**	2.98	0.421 J
PCB035	pg/g	14.5	6.8 U	**NA**	13.2	4.76	**94**	9.36	2.51
PCB036	pg/g	5.3	1.73 U	**NA**	1.01 U	1.37 U	**NA**	3.22 U	1.63
PCB037	pg/g	377	226	**50**	370	121	**101**	336	26.1
PCB038	pg/g	2.42 U	1.47 U	**NA**	1.05 U	3.71 U	**NA**	0.96 U	0.223 U
PCB039	pg/g	4.35 U	3.53 J	**NA**	7.58	14.1 U	**NA**	5.16	0.796 J
PCB040 & 041 & 071	pg/g	480	550	**-14**	823	1150	**-33**	531	44.4
PCB042	pg/g	229	196	**16**	424	783	**-59**	269	36.2
PCB043	pg/g	24.3	22.1	**9**	45.9	63.9	**-33**	19.7	2.52
PCB044 & 047 & 065	pg/g	1370	1090	**23**	1730	3100	**-57**	2810	166
PCB045 & 051	pg/g	97.5	106	**-8**	221	422	**-63**	479	12.6
PCB046	pg/g	17.5	29.3 U	**NA**	58.5	70.7	**-19**	46.5	3.01
PCB048	pg/g	147	129	**13**	266	536	**-67**	154	19.6
PCB049 & 069	pg/g	884	1030	**-15**	1050	1940	**-60**	1770	126
PCB050 & 053	pg/g	68.1	100	**-38**	180	273	**-41**	338	12.2
PCB052	pg/g	1190	1260	**-6**	2000	3010	**-40**	1580	241
PCB054	pg/g	5.01	8.59	**-53**	4.56	5.32	**-15**	38.9	0.54 U
PCB055	pg/g	18.7	15.5 U	**NA**	30.6	24.2	**23**	13.4	2.77
PCB056	pg/g	358	237	**41**	608	623	**-2**	335	46.7
PCB057	pg/g	6.35	4.07 J	**44**	7.46	3.78	**65**	4.45	0.587 J
PCB058	pg/g	2.17 J	2.8 J	**-25**	3.21 U	2.72 J	**NA**	4.2	0.514 J
PCB059 & 062 & 075	pg/g	93.6	130	**-33**	168	223	**-28**	105	11.6
PCB060	pg/g	338	191	**56**	568	455	**22**	258	45
PCB061 & 070 & 074 & 076	pg/g	2400	1540	**44**	2800	2350	**17**	1710	370
PCB063	pg/g	79.4	41.7	**62**	92.3	72.9	**23**	46.2	11.2
PCB064	pg/g	593	636	**-7**	804	1100	**-31**	389	73.9
PCB066	pg/g	1280	825	**43**	2060	1880	**9**	1170	251
PCB067	pg/g	35.8	21	**52**	44.4	41.9	**6**	32.4	4
PCB068	pg/g	18	7.65	**81**	8.39	8.62	**-3**	25.3	3.28
PCB072	pg/g	17.2	28.7	**-50**	12	10.8	**11**	21.5	3.1
PCB073	pg/g	4.79	5.14	**-7**	10.9 U	10.5 U	**NA**	20.1	0.679 U
PCB077	pg/g	143	75.6	**62**	211	83.3	**87**	115	17.4
PCB078	pg/g	5.06 U	9.78 U	**NA**	8.01 U	7.75 U	**NA**	5.55 U	1.87 U
PCB079	pg/g	15.9	13.4	**17**	17.6	20.7	**-16**	20.3	4.32
PCB080	pg/g	8.78 U	17 U	**NA**	13.9 U	13.4 U	**NA**	9.64 U	3.24 U
PCB081	pg/g	6.62 U	5.01 U	**NA**	10.3	3.21 U	**NA**	4.9 U	0.712 U
PCB082	pg/g	215	117	**59**	240	290	**-19**	184	33.5
PCB083 & 099	pg/g	1830	1050	**54**	1460	1770	**-19**	2170	358
PCB084	pg/g	225	218	**3**	319	390	**-20**	342	45.8
PCB085 & 116 & 117	pg/g	514	303	**52**	545	667	**-20**	450	113
PCB086 & 087 & 097 & 108 & 119 & 125	pg/g	1290	917	**34**	1350	1700	**-23**	1280	251

Table B-9b. Field Replicate Results for Chinook Stomach Content Samples.

	Location ID	**T01**			**T02**			**T03**	**T04**
	Sample ID	LW2-T01 SC	LW2-T01-NOAA SC	**Relative Percent**	LW2-T02 SC	LW2-T02-NOAA SC	**Relative Percent**	LW2-T03 SC	LW2-T04 SC
Analyte	**Sample Date** **Units**	05/10/2005	05/14/2005	**Difference**	05/10/2005	05/14/2005	**Difference**	05/10/2005	05/12/2005
PCB088 & 091	pg/g	225	210	**7**	253	435	**-53**	600	46.4
PCB089	pg/g	7.93 U	11.1	**NA**	20.5 U	38.8	**NA**	16.6	1.66
PCB090 & 101 & 113	pg/g	2810	2930	**-4**	2240	2450	**-9**	4410	483
PCB092	pg/g	429	386	**11**	393	393	**0**	752	77.2
PCB093 & 095 & 098 & 100 & 102	pg/g	1160	1120	**4**	1260	1740	**-32**	3010	202
PCB094	pg/g	8.14 U	12.2	**NA**	8.09 U	16.4	**NA**	18.4	0.989
PCB096	pg/g	5.7	8.62	**-41**	9.96	11.1	**-11**	22.2	0.853 J
PCB103	pg/g	22.3	22.9	**-3**	16.5	23.8	**-36**	101	2.72
PCB104	pg/g	1.42 J	1.27 U	**NA**	0.586 U	1.09 J	**NA**	4.97 U	0.119 J
PCB105	pg/g	1230	550	**76**	1160	762	**41**	744	224
PCB106	pg/g	3.03 U	5.84 U	**NA**	4.78 U	4.63 U	**NA**	3.32 U	1.11 U
PCB107 & 124	pg/g	128	109	**16**	102	64.1	**46**	88.5	19.6
PCB109	pg/g	286	113	**87**	172	133	**26**	187	48.9
PCB110 & 115	pg/g	2190	1920	**13**	2090	2140	**-2**	2620	440
PCB111	pg/g	6.78 U	1.54 J	**NA**	1.96 J	1.93 U	**NA**	7.7	0.409 U
PCB112	pg/g	2.65 U	5.12 U	**NA**	4.19 U	4.05 U	**NA**	2.9 U	0.976 U
PCB114	pg/g	80.3	33.3	**83**	76.7	50.6	**41**	43.9	14.7
PCB118	pg/g	3610	1630	**76**	2520	1730	**37**	2220	631
PCB120	pg/g	21.9	10.3	**72**	9.68	7.66	**23**	32.1	2.73
PCB121	pg/g	5.3	2.35 J	**77**	1.74 U	1.82 U	**NA**	7.94	0.414 U
PCB122	pg/g	35.9	13.6	**90**	30.5	23.1	**28**	25.9	5.2
PCB123	pg/g	60.4	37.5	**47**	64.7	41.5	**44**	43.9	12.9
PCB126	pg/g	13.8	5.22 U	**NA**	17	5	**109**	11.6	2.84
PCB127	pg/g	5.53	1.66 U	**NA**	3.11 U	3.33 J	**NA**	4.29	1.02 U
PCB128 & 166	pg/g	767	351	**74**	391	337	**15**	1010	105
PCB129 & 138 & 160 & 163	pg/g	7860	4010	**65**	3450	2890	**18**	14600	856
PCB130	pg/g	411	165	**85**	163	143	**13**	514	49.3
PCB131	pg/g	24.9	21.2	**16**	20.7	15.7	**27**	61.5	4.14
PCB132	pg/g	811	726	**11**	594	540	**10**	2710	110
PCB133	pg/g	193	74	**89**	73.8	49.6	**39**	262	15.8
PCB134 & 143	pg/g	129	117	**10**	103	88.6	**15**	381	16.3
PCB135 & 151 & 154	pg/g	1190	1290	**-8**	940	850	**10**	5000	151
PCB136	pg/g	224	278	**-22**	184	141	**26**	960	33.3
PCB137	pg/g	186	90.4	**69**	108	107	**1**	171	35.3
PCB139 & 140	pg/g	51.8	37.4	**32**	41.1 U	43.1	**NA**	80.7	10.6
PCB141	pg/g	1230	781	**45**	598	466	**25**	3700	99.8
PCB142	pg/g	2.48 U	4.79 U	**NA**	3.93 U	2.19 U	**NA**	2.72 U	0.915 U
PCB144	pg/g	159	149	**6**	107	90.8	**16**	702	17.4
PCB145	pg/g	0.28 J	0.985 J	**-111**	0.616 J	0.581 U	**NA**	5 U	0.122 U
PCB146	pg/g	1680	736	**78**	669	563	**17**	2970	171
PCB147 & 149	pg/g	3200	3120	**3**	2220	1930	**14**	12400	466
PCB148	pg/g	13.4	7.43	**57**	6.65 U	6.93	**NA**	29.7	1.14 U
PCB150	pg/g	3.29 U	3.99 J	**NA**	3.1 J	3.19 J	**-3**	21.6	0.497 U
PCB152	pg/g	1.73 U	2.58 J	**NA**	1.21 J	1.87 U	**NA**	5.65	0.105 U
PCB153 & 168	pg/g	8470	4470	**62**	3820	2760	**32**	17700	842
PCB155	pg/g	2.66 U	0.936 U	**NA**	0.769 U	1.07 U	**NA**	2.47 J	0.488 J
PCB156 & 157	pg/g	715	279	**88**	306	199	**42**	504	83.8
PCB158	pg/g	661	354	**60**	312	233	**29**	1080	73.4
PCB159	pg/g	47.8	49.4	**-3**	32.2	18.4	**55**	180	4.34 U
PCB161	pg/g	2.8 U	5.42 U	**NA**	4.44 U	4.29 U	**NA**	3.08 U	1.03 U
PCB162	pg/g	25.3	12.3	**69**	12.6	7 U	**NA**	26.3	4.3

Table B-9b. Field Replicate Results for Chinook Stomach Content Samples.

	Location ID	**T01**			**T02**			**T03**	**T04**
	Sample ID	LW2-T01 SC	LW2-T01-NOAA SC	**Relative Percent**	LW2-T02 SC	LW2-T02-NOAA SC	**Relative Percent**	LW2-T03 SC	LW2-T04 SC
Analyte	**Sample Date Units**	05/10/2005	05/14/2005	**Difference**	05/10/2005	05/14/2005	**Difference**	05/10/2005	05/12/2005
PCB164	pg/g	356	257	**32**	216	141	**42**	944	42.1
PCB165	pg/g	11	3.7 J	**99**	2.85 U	2.76 U	**NA**	12	0.36 U
PCB167	pg/g	329	140	**81**	134	76.2	**55**	418	36.2
PCB169	pg/g	5.35 U	1.94 U	**NA**	1.41 U	1.07 U	**NA**	8.85 U	0.316 U
PCB170	pg/g	2610	997	**89**	820	598	**31**	5340	149
PCB171 & 173	pg/g	552	345	**46**	227	159	**35**	1480	37.9
PCB172	pg/g	617	252	**84**	191	125	**42**	1060	35.9
PCB174	pg/g	1180	1180	**0**	703	453	**43**	4600	103
PCB175	pg/g	93.1	40	**80**	35.4	23.4	**41**	204	6.84
PCB176	pg/g	95.3	113	**-17**	64.1	38.5	**50**	429	9.6
PCB177	pg/g	1460	708	**69**	483	364	**28**	3030	85.7
PCB178	pg/g	656	325	**67**	254	160	**45**	1170	44.7
PCB179	pg/g	309	471	**-42**	227	150	**41**	1310	43
PCB180 & 193	pg/g	6820	2720	**86**	2270	1530	**39**	15000	424
PCB181	pg/g	13.4	7.13 U	**NA**	19.4	20.7	**-6**	17.9	1.43 U
PCB182	pg/g	8.36 U	8.18 U	**NA**	6.9	5.18	**28**	26	1.37
PCB183 & 185	pg/g	1580	938	**51**	685	454	**41**	4410	114
PCB184	pg/g	1.28 U	1.22 J	**NA**	1.27 U	1.53 U	**NA**	4.73 U	0.707 J
PCB186	pg/g	2.67 U	5.17 U	**NA**	4.23 U	0.712 U	**NA**	2.93 U	0.986 U
PCB187	pg/g	3520	2460	**35**	1510	1510	**0**	8210	394
PCB188	pg/g	4.61	2.09 U	**NA**	1.96 J	1.35 J	**37**	9.4	0.542 J
PCB189	pg/g	110	41.1	**91**	36.3	21.3	**52**	157	6.74
PCB190	pg/g	569	244	**80**	181	123	**38**	1110	35.4
PCB191	pg/g	108	44.2	**84**	35.7	24.2	**38**	225	6.6
PCB192	pg/g	6.22 U	12 U	**NA**	9.84 U	9.52 U	**NA**	6.82 U	2.29 U
PCB194	pg/g	1370	405	**109**	455	252	**57**	1980	78.4
PCB195	pg/g	487	205	**82**	153	105	**37**	821	25.6
PCB196	pg/g	620	220	**95**	210	130	**47**	1040	37.4
PCB197 & 200	pg/g	91.9	88.6	**4**	57.6	30.7	**61**	243	9.66
PCB198 & 199	pg/g	1560	727	**73**	567	354	**46**	2120	132
PCB201	pg/g	119	50.8	**80**	44.5	29.5	**41**	190	10.4
PCB202	pg/g	262	156	**51**	135	58.3	**79**	333	30.5
PCB203	pg/g	864	395	**75**	307	207	**39**	1460	82
PCB204	pg/g	0.523 U	0.21 U	**NA**	0.739 U	0.654 U	**NA**	0.71 J	0.156 U
PCB205	pg/g	69.5	27.6	**86**	22.7	14.8	**42**	97.1	4.07
PCB206	pg/g	445	156	**96**	203	139	**37**	301	44.8
PCB207	pg/g	49.2	20.2	**84**	21.4	16	**29**	45.8	5.12
PCB208	pg/g	143	52.7	**92**	62.8	38.9	**47**	74.2	15.7
PCB209	pg/g	157	32.8	**131**	106	98	**8**	31.9	22.6
Polychlorinated biphenyls	pg/g	87000	53800	**47**	59800	57100	**5**	162000	10600
PCB Homologs									
Monochlorobiphenyl	pg/g	22.5	4.38	**135**	32.6	14.1	**79**	73.5	13.8
Dichlorobiphenyl	pg/g	1250	648	**63**	985	535	**59**	1600	442
Trichlorobiphenyl	pg/g	4170	2270	**59**	5660	4510	**23**	5860	408
Tetrachlorobiphenyl	pg/g	9910	8250	**18**	14200	18200	**-25**	12300	1510
Pentachlorobiphenyl	pg/g	16400	11700	**33**	14300	14900	**-4**	19400	3020
Hexachlorobiphenyl	pg/g	28700	17500	**48**	14500	11700	**21**	66500	3220
Heptachlorobiphenyl	pg/g	20300	10900	**60**	7750	5770	**29**	47800	1500
Octachlorobiphenyl	pg/g	5440	2280	**82**	1950	1180	**49**	8280	410
Nonachlorobiphenyl	pg/g	637	229	**94**	287	194	**39**	421	65.6

Table B-9b. Field Replicate Results for Chinook Stomach Content Samples.

	Location ID	**T01**			**T02**			**T03**	**T04**
Analyte	**Sample ID** **Sample Date** **Units**	LW2-T01 SC 05/10/2005	LW2-T01-NOAA SC 05/14/2005	**Relative Percent Difference**	LW2-T02 SC 05/10/2005	LW2-T02-NOAA SC 05/14/2005	**Relative Percent Difference**	LW2-T03 SC 05/10/2005	LW2-T04 SC 05/12/2005
Pesticides									
2,4'-DDD	ug/kg	0.228 J	0.419 NJ	**-59**	23.5 NJ	5.02	**130**	0.0924 J	0.0822 J
2,4'-DDE	ug/kg	0.0542 J	0.0713 NJ	**-27**	2.91 NJ	3.78	**-26**	0.0289 J	0.0317 J
2,4'-DDT	ug/kg	0.21 J	0.208 J	**1**	6.42 J	16.3	**-87**	0.149 J	0.108
4,4'-DDD	ug/kg	2.04	2.01 NJ	**1**	113 NJ	22.8	**133**	0.528	0.478
4,4'-DDE	ug/kg	9.16	4.96 NJ	**59**	144 NJ	74	**64**	6.91	5.33
4,4'-DDT	ug/kg	0.969	1.29 J	**-28**	37.5 J	53.1	**-34**	1.17	0.578
Total of 4,4'-DDD, -DDE, -DDT	ug/kg	12.2 T	8.26 JT	**39**	295 JT	150 T	**65**	8.61 T	6.39 T
Aldrin	ug/kg	0.00911 U	0.0355 U	**NA**	0.0426 J	0.0333 U	**NA**	0.00576 J	0.000169 U
alpha-Hexachlorocyclohexane	ug/kg	0.0317 J	0.0322 J	**-2**	0.0748 J	0.0298 U	**NA**	0.0319 U	0.0165 J
beta-Hexachlorocyclohexane	ug/kg	0.029 U	0.0598 U	**NA**	0.215 J	0.0742 U	**NA**	0.0225 U	0.00892 U
delta-Hexachlorocyclohexane	ug/kg	0.0024 U	0.0072 U	**NA**	0.0972 J	0.023 U	**NA**	0.00586 U	0.0014 U
gamma-Hexachlorocyclohexane	ug/kg	0.0252 U	0.0435 U	**NA**	0.128 J	0.0677 U	**NA**	0.0194 U	0.0221 U
cis-Chlordane	ug/kg	0.183 J	0.309 J	**-51**	1.39	0.891	**44**	0.358 J	0.267
trans-Chlordane	ug/kg	0.126 J	0.262 J	**-70**	1.09	0.7 J	**44**	0.13 J	0.151 J
Oxychlordane	ug/kg	0.379 U	0.172 J	**NA**	0.427 J	0.663 U	**NA**	0.868	0.58
cis-Nonachlor	ug/kg	0.124 J	0.137 J	**-10**	0.416 J	0.412 J	**1**	0.301 J	0.244
trans-Nonachlor	ug/kg	0.647	0.452 J	**35**	1.29	1.37	**-6**	1.32	1.02
Dieldrin	ug/kg	0.471 J	0.637 J	**-30**	2.92	1.58	**60**	1.8	0.905
alpha-Endosulfan	ug/kg	0.23 U	0.533 U	**NA**	0.49 U	0.724 J	**NA**	0.141 U	0.449
beta-Endosulfan	ug/kg	0.224 U	0.52 U	**NA**	0.439 U	0.561 U	**NA**	0.198 U	0.25 J
Endosulfan sulfate	ug/kg	0.414 J	0.782 U	**NA**	0.68 J	0.713 J	**-5**	0.232 J	0.891
Endrin	ug/kg	0.0066 U	0.0172 J	**NA**	0.212 J	0.033 J	**146**	0.0172 U	0.00503 J
Endrin aldehyde	ug/kg	0.0405 U	0.0166 U	**NA**	0.0769 U	0.0286 U	**NA**	0.0205 U	0.0224 U
Endrin ketone	ug/kg	0.0043 U	0.0095 U	**NA**	0.0854 J	0.0075 U	**NA**	0.0055 U	0.0015 U
Heptachlor	ug/kg	0.00825 U	0.0128 U	**NA**	0.293 U	0.11 U	**NA**	0.00687 U	0.0025 U
Heptachlor epoxide	ug/kg	0.0666 J	0.071 J	**-6**	0.154 J	0.312 J	**-68**	0.159 J	0.11 J
Methoxychlor	ug/kg	0.0184 U	0.0463 U	**NA**	0.35 U	0.0437 U	**NA**	0.014 U	0.0545 U
SVOCs									
Hexachlorobenzene	ug/kg	1.07	0.613	**54**	0.849	1.66	**-65**	0.469	0.767
Hexachlorobutadiene	ug/kg	0.0302 U	0.0412 J	**NA**	0.16 U	0.179 U	**NA**	0.0308 U	0.00589 U