River Corridor Closure Contract

Columbia River Component Data Evaluation Summary Report

July 2006

Washington Closure Hanford

Prepared for the U.S. Department of Energy, Richland Operations Office
Office of Assistant Manager for River Corridor

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ACRONYMS

BHC	hexachlorocyclohexane
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
CRC	Columbia River Component
CRCIA	Columbia River Comprehensive Impact Assessment
DOE	U.S. Department of Energy
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
Ecology	Washington State Department of Ecology
EIM	Environmental Information Management
EPA	U.S. Environmental Protection Agency
ERAMS	Environmental Radiation Ambient Monitoring System
ESRI	Environmental Systems Research Institute
FS	feasibility study
GIS	Geographic Information System
HEIS	Hanford Environmental Information System
MCL	maximum contaminant level
Nadcon	North American Datum Conversion
NGS	National Geodetic Survey
NPDES	National Pollutant Discharge Elimination System
OU	Operable Unit
PAH	polyaromatic hydrocarbons
PCB	polychlorinated biphenyl
PRG	Preliminary Remediation Goal
QA	quality assurance
QC	quality control
RESRAD	RESidual RADioactivity
RI	remedial investigation
RL	DOE Richland Operations Office
RM	river mile
SEDQUAL	Sediment Quality Information System
SVOC	semivolatile organic compound
USGS	U.S. Geological Survey
VOC	volatile organic compound

1.0 INTRODUCTION

1.1 PURPOSE

The purpose of the Columbia River Component (CRC) Data Compilation and Evaluation task was to compile, review, and evaluate existing information for constituents that may have been released to the Columbia River due to Hanford Site operations (i.e., radionuclides and hazardous constituents). Through this effort an extensive compilation of information pertaining to Hanford Site-related contaminants released to the Columbia River has been completed for almost 965 km (600 miles) of the river. A summary of the process used to compile, classify relevant source documents, and manage the data is provided in the *Existing Source Information Summary Report Compilation/Evaluation Effort: December 2004 to September 2005* (WCH 2006). The data compilation and evaluation task was initiated on behalf of the U.S. Department of Energy (DOE), Richland Operations Office (RL) under the Environmental Restoration Contract managed by Bechtel Hanford, Inc. in December 2004. However, this task was concluded under the River Corridor Closure Contract managed by Washington Closure Hanford following a contract transition from the Environmental Restoration Contract to the River Corridor Closure Contract on August 29, 2005.

The CRC data evaluation summary report is the second of several inter-related tasks that will culminate in assessing potential threats to human health and the environment in the Columbia River from Hanford Site releases. The purpose of the CRC data evaluation summary report is to describe the activities that were undertaken to evaluate the data collected in the compilation effort and to assist in defining the extent of Hanford Site-related contamination within the defined boundaries of the CRC (below Grand Coulee Dam to Astoria, Oregon) (Figure 1-1). This information will also be used to develop an initial understanding of river conditions and contaminant distribution within the river and several of the major tributaries.

A primary objective of this data evaluation was to determine if sufficient data was available to adequately characterize the downriver extent of Hanford Site-related contaminants. This information can also be used to identify data gaps and information that are needed to gain a better understanding of existing levels of contaminants in river sediments; assist in the development of a preliminary conceptual site model; and identify information to better understand the location, character, and long-term fate of contaminants in sediment and surface water, as well as the current threat to people, plants, and animals that may contact these media.

1.2 BACKGROUND

The *Columbia River Component of the River Corridor Baseline Risk Assessment: Basis and Assumptions on Project Scope* (DOE-RL 2004) broadly defined what constitutes the CRC in terms of its length and width, and specified that the results of the data evaluation would assist in defining where the study boundaries of the CRC should be drawn. For the purposes of helping to define the final boundary, information on contaminant releases was gathered from below Grand Coulee Dam to the upriver boundary of the Hanford Site to evaluate “upgradient” conditions, as well as information on releases from the Hanford Site that may have migrated as

far downriver as Astoria, Oregon, to identify where contaminants may have come to reside within or adjacent to the Columbia River.¹ The data evaluation report provides the following:

- Characterizes the lower boundary of the study area
- Describes the quality of the existing data used in the evaluation
- Describes the geographic and temporal extent of available data
- Compares abiotic media concentrations to available state and federal benchmarks for protecting human health and the environment
- Provides a preliminary assessment of data gaps that should be addressed prior to conducting a risk assessment.

The scope of this report is constrained to characterizing available information and data relative to the broad definition of the CRC (upstream jurisdictional boundary of the Hanford Site downstream to Astoria, Oregon). Data and information from Grand Coulee Dam to the upriver boundary of the Hanford Site were also collected to support background conditions as well as contributions from upstream sources. Investigation areas along the shoreline of the Columbia River being evaluated as part of the 100 Area and 300 Area Component of the River Corridor Baseline Risk Assessment were excluded from this evaluation. The following subsections provide the general scope of the CRC data compilation and evaluation effort.

1.2.1 Lateral Shoreline Boundaries

The lateral shoreline boundaries of the CRC were bounded by the upper elevation of the third Holocene-age river terrace (H-3). Terrace H-3 coincides with the terrace system situated immediately above the greatest lateral extent of flood waters outside the current river channel since the Hanford Site began operations in 1944. The largest flood on the Columbia River during Hanford Site operations occurred in 1948. In general, shoreline areas are primarily limited to the Hanford Reach of the Columbia River, as it is the last free-flowing stretch of the Columbia River. The Hanford Reach begins at the foot of the Priest Rapids Dam and extends 82 km (51 miles) to the slack waters of McNary Dam, just north of the City of Richland, Washington. The lateral boundaries of remaining downstream areas are limited to the “in water” portion of the Columbia River.

To the extent that information was available, data from major tributaries feeding into the Columbia River were also collected and evaluated. Boundaries for tributaries were loosely defined as the confluence of the tributary with the Columbia River, or the first upriver sampling location that would provide information on the contribution of contaminants made to the Columbia River by the respective tributary. However, in some instances data were collected further upstream within the tributaries when data were readily available.

¹ In this report, the term “Columbia River Component” is approximately defined as below Grand Coulee Dam at river mile 596.6 to Astoria, Oregon at river mile 12.

1.2.2 Focus on Hanford Site-Related Contaminants

The goal of the data compilation effort was to primarily focus on collecting current and historical data for those contaminants released from Hanford Site activities. Although Hanford Site-related contaminants were the focus, all data from each source of information were obtained regardless of the source of contamination or analyses performed. The data evaluation effort attempts to identify current and historic sources of radiological and hazardous constituents within the boundaries of the CRC evaluation. This information potentially can be used to develop an approach for distinguishing the contribution of hazardous substances from the Hanford Site versus non-Hanford Site sources.

1.2.3 Environmental Media of Interest

The primary environmental media of interest during data collection included sediment, surface water (including river seeps), and aquatic biota.

1.3 DESCRIPTION OF STUDY AREA

The CRC study area was divided into five segments during the data compilation phase based on considerations of geologic and hydrologic information, as well as on the potential to obtain relevant information (Figure 1-2). Segments are described in terms of river miles (RMs), which are a statute mile measured along the center line of a river. The RM measurements start at the stream mouth (RM 0). Descriptions of each of the five segments are provided below.

Segment 1 (below Grand Coulee Dam to Vernita Bridge) – Segment 1 represents a 336-km (209-mile)-long stretch of the Columbia River ranging from RM 597 to RM 388. This segment includes the Upper Columbia River drainage above the Hanford Site. The Rock Island Dam, Wanapum Dam, and Priest Rapids Dam are located downstream from Grand Coulee Dam at RM 453.4, RM 415.8, and RM 397.1, respectively. Water quality in this portion of the Columbia River and associated tributaries (Wenatchee River and Lower Crab Creek) is influenced by the plutonic terrain of the Canadian Rocky Mountains, as well as mining waste in British Columbia, northeastern Washington, and northern Idaho. Information from this segment will assist in determining “upgradient” river conditions entering the Hanford Site. As discussed previously, the Upper Columbia River above Grand Coulee Dam was excluded from the CRC study area because it is currently under investigation by the U.S. Environmental Protection Agency (EPA).

Segment 2 (Vernita Bridge to the confluence of the Yakima River) – Segment 2 represents a 76-km (47-mile)-long stretch of the Columbia River ranging from RM 388 to RM 333. This segment includes the portion of the Columbia River primarily within the Hanford Site boundaries, referred to as the Hanford Reach. Information from this segment of the river will provide an indication of the condition of the river adjacent to or immediately downstream from the Hanford Site.

Segment 3 (Yakima River to McNary Dam) – Segment 3 represents a 66-km (41-mile)-long stretch of the Columbia River ranging from RM 333 to RM 292. This segment includes two major tributaries (Yakima River and Snake River) and one minor tributary (Walla Walla River) to the Columbia River and includes the drainage above McNary Dam. Ice Harbor Dam is located

on the Snake River near the confluence of the Columbia River at Snake RM 9.7. Lake Wallula lies directly behind McNary Dam and extends 103 km (64 miles) upstream to the DOE's Hanford Site on the Columbia River to Ice Harbor Dam on the Snake River. This segment of the Columbia River is characterized by high turbidity (i.e., silt, clay) associated with extensive erosion in the eastern and western portions of the Columbia Plateau. In addition to the high turbidity, water quality in this section is impacted by agricultural practices in the Yakima and Kittitas Valleys and in the Palouse region.

Segment 4 (McNary Dam to Bonneville Dam) – Segment 4 represents a 235-km (146-mile)-long stretch of the Columbia River ranging from RM 292 to RM 146. This section includes the restricted flow of the Columbia River through the Columbia Gorge and represents the main stream that transports water from McNary Dam down to Bonneville Dam. The Umatilla, John Day, Deschutes, and Klickitat Rivers enter the Columbia River within this section. The John Day Dam, The Dalles Dam, and the Bonneville Dam are located downstream of the McNary Dam at RMs 215.6, 191.5, and 146.1, respectively. Behind each of the three dams are associated reservoirs: the John Day reservoir, Lake Celilo,; and Lake Bonneville. Each reservoir extends to the base of the respective upstream dams. A variety of minor industrial, agriculture, and forestry activities are conducted along this stretch of the Columbia River.

Segment 5 (Bonneville Dam to Astoria, Oregon) – Segment 5 represents a 216-km (134-mile)-long stretch of the Columbia River ranging from RM 146 to RM 12. This section does not contain any dams and includes the freshwater/saltwater interface of the Columbia River with the Pacific Ocean. The White Salmon, Willamette, Lewis, and Cowlitz Rivers enter the Columbia River within this section. This section is heavily influenced by the Cowlitz River because of extremely high turbidity from sediments being eroded out of the Mount St. Helens region. Sixty percent of the bedload and suspended load in the Columbia River is associated with the Cowlitz discharge (Meade and Parker 1984). This section has extensive floodplain areas due to the very low gradient that occurs immediately above the Columbia River estuary. This segment of the river contains some heavily industrialized areas between Vancouver, Washington and Portland, Oregon. However, this segment is also used for commercial, recreational, and agricultural purposes.

1.4 SIMILAR DATA COMPILATION AND EVALUATION EFFORTS

A number of similar data compilation and evaluation efforts have been conducted along the Columbia River for the purpose of evaluating the impact to the river from various contaminant sources. These studies were used as models for conducting the CRC data evaluation. The data compilation and evaluation approach used for the CRC was designed to maintain consistency between river segments along the entire stretch of the Columbia River. The following studies were used as models for the CRC:

- *Screening Assessment and Requirements for a Comprehensive Assessment: Columbia River Comprehensive Impact Assessment* (DOE-RL 1998b)
- *Portland Harbor Remedial Investigation/Feasibility Study Programmatic Work Plan* (Lower Willamette Group 2004)

- *Sediment Sampling Approach and Rationale, Upper Columbia River*, Technical Briefing Sheet (EPA 2004a).

1.4.1 Columbia River Comprehensive Impact Assessment

The EPA, DOE, and Washington State Department of Ecology (Ecology) (otherwise known as the Tri-Parties) initiated the Columbia River Comprehensive Impact Assessment (CRCIA) to evaluate the impact to the Columbia River from Hanford Site-derived contaminants. The scope of the CRCIA screening assessment was to evaluate the potential impact to the river, resulting from current levels of Hanford Site-derived contaminants to support decisions on remedial actions under interim records of decisions. The study area for the screening assessment extended from the upstream boundary of the Hanford Site down to McNary Dam. An extensive compilation effort obtained sample data from Columbia River water, river seep, pore water, sediment, riparian soils, and riparian and aquatic biota representing “current conditions” from January 1990 to June 1996. Contaminants of interest included 12 radionuclides, 2 carcinogenic chemicals, and 13 toxic chemicals. Approximately 60 key documents contained data or described analyses important to evaluating the health of the Columbia River. Section 3.0 of the CRCIA report describes the approach used to gather data for the screening assessment.

1.4.2 Upper Columbia River

The EPA is studying hazardous waste contamination in the Columbia River from the United States/Canadian border to the Grand Coulee Dam (RM 744 to RM 597). Several investigations and studies over the past 20 years have identified the presence of heavy metals (arsenic, cadmium, copper, lead, mercury, and zinc) and organic contaminants in the sediments of the Upper Columbia River. The data and findings from these past studies and investigations have been used to develop a preliminary understanding of site conditions and contaminant distribution within the lake, river, and local tributaries.

1.4.3 Portland Harbor Superfund Site

The Lower Willamette Group, comprised of 10 parties that potentially share some of the responsibility for contamination at the site, developed and is currently implementing a remedial investigation and feasibility study (RI/FS) for the Portland Harbor Superfund Site in Portland, Oregon. The purpose of the RI/FS is to “investigate the nature and extent of contamination for the in-water portion of the site, to assess the potential risk to human health and the environment, to develop and evaluate potential remedial alternatives, and to recommend a preferred alternative” (EPA 1998). The RI/FS was initiated with an extensive compilation of existing information, where approximately 700 documents and data sets were obtained that address conditions in the lower Willamette River and its confluences with the Columbia River.

Figure 1-1. Columbia River Location Map.

Figure 1-2. Columbia River Component Segments.

2.0 COLUMBIA RIVER CONTAMINANT SOURCES

2.1 NON-HANFORD SITE CONTAMINANT SOURCES

Contaminant sources are defined as existing or potential sources of hazardous or radiological substances released to the environment that may pose a threat of adverse effects to human health or the environment. The purpose of this section is to identify the most important current and historic sources of contamination (both Hanford Site and non-Hanford Site) that have been released within the boundaries of the CRC. This is a summary of potential contaminant sources based on information obtained during the data compilation effort; it does not attempt to identify all possible sources of contaminants.

Six primary contaminant source types have been identified:

- Industrial
- Mining
- Municipal
- Agricultural
- Nuclear weapons production and testing
- Commercial/recreational vessels.

2.1.1 Industrial

Current and historical industrial activities and processes that may lead or may have led to point source releases to the Columbia River include aluminum production, pulp and paper mills, chemical production, and electrical power generation. Types of contaminants that may have been (or are being) released from facilities within the CRC include fluoride, aluminum, ammonia, nitrate, organic halides, dioxin, volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs). These facilities include National Pollutant Discharge Elimination System (NPDES) permitted, nonpermitted, and *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) facilities.

There were over 200 NPDES permitted discharges to the Columbia River identified in 2005 from Grand Coulee Dam to the mouth of the river (<http://www.ecy.wa.gov/programs/wq/permits/wpcls/index.html>). Of these, 14 permits are classified as major industrial discharges of which only one of these point sources are located upstream of the Hanford Site (<http://apps.ecy.wa.gov/industrial/final.asp>; <http://www.deq.state.or.us/wq/sisdata/basinsearchnew.asp>). The majority of these major industrial discharge permits are associated with either pulp and paper, or aluminum facilities.

Additionally, eight CERCLA sites were identified that are located downstream from the Hanford Site along the CRC. These sites may have released, or may continue to release, wastes from aluminum, wood treatment, plating, and land disposal facilities. The types of contamination associated with these sites include ammonia, aluminum, arsenic, chromium, cadmium, copper, nickel, lead, cyanide, fluorides, fuel oil, polychlorinated biphenyls (PCBs), creosote components, pentachlorophenol, polyaromatic hydrocarbons (PAHs), VOCs, and SVOCs.

2.1.2 Mining

Runoff from mining and milling operations along the tributaries feeding the Columbia River upstream of the Hanford Site is a potential source of metals contaminants. Large amounts of ore process wastes containing arsenic, cadmium, copper, lead, mercury, and zinc were produced in Washington, Idaho, and Canada from these operations. Previous investigations have detected elevated levels of these contaminants in the Upper Columbia River. The potential for particle transport and deposition of these contaminants into portions of the middle and lower Columbia River from these sources is likely.

2.1.3 Municipal/Urban

Municipal and urban activities contribute as point and nonpoint sources of contamination to the river. Other NPDES permitted discharges to the Columbia River include storm water, minor industrial process wastewater, contact and noncontact cooling waters, treated waters, construction sites, and domestic facilities. Effluents from municipal sewage treatment plants also contribute to waste loading within the Columbia River system. A total of 41 municipal sewage treatment plants were identified in 2005 that discharge effluent to the Columbia River within the study area.

Urban contributions including nonpermitted residential and commercial storm water runoff, residential use of fertilizers and pesticides, and septic sewage systems are some of the potential sources of contamination from communities along the banks of the Columbia River. Storm water runoff can contain a number of contaminants such as pesticide and weed control products, contamination from leaking transformers, hydraulic and lubricating fluids, petroleum products, metals, PAHs, and deicing salts. Runoff containing naturally occurring contaminants such as uranium also contributes to surface water contamination.

2.1.4 Agricultural

Agricultural activities are a potential source of contamination to the Columbia River via transport mechanisms such as runoff or wasteways that discharge irrigation returns to the Columbia River. An example is the Columbia Basin Irrigation Project, which began transporting water by canal in 1948 to more than 234,000 hectares (600,000 acres) of land in central Washington. It is estimated that the wasteway discharges account for approximately 0.4% of average river flows (Schneider 2002). Water from the wasteways in the Hanford Reach has been sampled to evaluate nutrient contributions from agriculture affects to surface waters. Nutrient contributions from these agriculture activities primarily consist of nitrogen, phosphate, and suspended solids. Sampling conducted in 1980 indicated that nitrate (as nitrogen) is the primary nutrient affecting the wasteways with loading, taken collectively from wasteways located in the South Columbia Irrigation District, near 50% during the irrigation season (Ecology 1981). A larger study of water quality of the Columbia Basin Project irrigation return flows was initiated in 2002. This 5-year study will identify potential biological affects to the *Endangered Species Act of 1973* listed species.

Sampling of irrigation return water from Franklin County and associated seeps resulting from irrigation practices entering the Columbia River, opposite the Hanford Site, have measured total uranium values of 8.6 pCi/L (PNL 1990). Uranium is commonly present in phosphate-based fertilizers and is a natural constituent that weathers from some types of rocks in the region.

In recent years, total uranium concentrations in the Hanford Reach have been elevated along the Franklin County shoreline. Previous studies have indicated these elevated concentrations are likely the result of groundwater seepage and water from irrigation returns that contain natural occurring uranium.

The U.S. Geological Survey (USGS) has also documented nitrate groundwater contamination in Franklin County, which also seeps into the river along the Hanford Reach (USGS 1995). However, the USGS concluded that because of dilution in the river, river water sampling downstream from these sources show negligible differences in nutrient concentrations. The affects of nutrients to surface waters from agriculture activities are likely more substantial from downriver tributaries such as the Yakima, Snake, and Walla Walla Rivers.

Chloride, nitrate, and sulfate concentrations were also elevated along the Franklin County shoreline during annual monitoring in 2003 and also likely resulted from groundwater seepage associated with extensive irrigation (Poston et al. 2004).

2.1.5 Nuclear Weapons Production and Testing

Worldwide atmospheric nuclear testing contributed to radionuclide contaminants in surface waters and ultimately to sediments throughout the Pacific Northwest. Fallout from atmospheric testing by the United States, Russia, and China contributed significantly to radionuclide levels in the environment until 1963 (OHD 1994). The Nuclear Test Ban Treaty ended aboveground testing by the United States and Russia in 1964, and China continued limited aboveground testing until 1977. The fallout materials consisted primarily of long-lived radionuclides such as cesium-137 and strontium-90, along with shorter-lived radionuclides such as cerium-141, zirconium-95/niobium-95, and ruthenium-103/106 (OHD 1994). Strontium and cesium are also associated with Hanford Site operations. The Soviet nuclear reactor accident at Chernobyl in 1986 also produced detectable levels of iodine-131 and cesium-137 in precipitation in Oregon (OHD 1994).

Past Hanford Site facility exhaust stack air emissions included both radiological and nonradionuclide emissions. It has been shown that residual levels along the Hanford Reach of radiologic, hazardous, or toxic materials from Hanford Site stack air emissions are negligible (DOE-RL 2005a).

2.1.6 Commercial/Recreational Vessels

Recreation and commercial activities on the Columbia River also contribute to some contamination to surface water and sediments via marinas, boats, or other recreational watercraft. Discharge of bilge and ballast water, spills, and materials associated with boat and shipyard maintenance are potential sources of contamination. These sources may contain old paint scrapings, anti-foulants, solvents, oil and grease, fuels, and cleaning agents. Vessel traffic and dredging activities within the marinas or shallow navigation channels can also resuspend sediments that may contain metals, nutrients, organic matter, and toxins into the water. Pilings, docks, and bulkheads associated with marine structures treated with creosote, chromated copper arsenate, or copper zinc arsenate are other sources of contamination.

2.2 UPSTREAM SOURCES

The upstream segment of the CRC spans from below Grand Coulee Dam to the Vernita Bridge. Major tributaries along this stretch include the Okanogan and Wenatchee Rivers.

A major point source of metals contamination to the Columbia River is the Teck Cominco industrial/metallurgical complex in Trail, British Columbia. The primary source of historical loading of dioxins and furans to the Upper Columbia River was the Celgar pulp mill in Castlegar, British Columbia. Specific PCB point sources have not yet been identified (EPA 2004a).

As mentioned previously, only 1 of the 14 major industrial NPDES permitted facilities is located upstream of the Hanford Site, an aluminum smelter located near Wenatchee, Washington. Contaminants of interest associated with aluminum facilities include: fluoride, aluminum, benzo(a)pyrene, cyanide, and oil and grease. Nine of the 41 municipal treatment plants that discharge effluent to the CRC are located upstream of the Hanford Site. No CERCLA sites are located in the upstream segment of the CRC.

2.3 HANFORD SITE SOURCES

This segment of the Columbia River spans from the Vernita Bridge to the confluence of the Yakima River; and does not include any major tributaries. The purpose of this section is to discuss the historical releases to the Columbia River and summarize the current releases from groundwater contamination through seeps.

2.3.1 Historic Hanford Reactor Releases to the Columbia River

Eight nuclear reactors (105-B, 105-C, 105-KE, 105-KW, 105-D, 105-DR, 105-H, and 105-F) released contaminants to the Columbia River between 1944 and 1971. These reactors are commonly referred to as single-pass reactors. The cooling water from these eight reactors was discharged through large pipes into retention basins and held for short periods of time to allow for decay of short-lived radionuclides and thermal cooling. After a period of decay, the water was then discharged directly into the Columbia River via outfall structures. The discharged cooling water contained radionuclides from the activation of impurities in the river and treated water. Cooling water also contained radioactive materials (fission products) that escaped from the fuel elements during the irradiation process (DOE-RL 1997). Although a variety of radionuclides were discharged, most of them had very small inventories or very short half-lives.

Nonradioactive contaminants in the cooling water discharges included lead and chromium. Lead entered the discharged water from process tubes, which were capped with lead-shield plugs that corroded over time. Chromium, in the form of sodium dichromate, was added to the reactor coolant to inhibit corrosion in the aluminum process tubes (DOE-RL 2005b).

The Hanford Site's ninth reactor, 105-N, used a closed-loop cooling system that did not discharge cooling water directly to the Columbia River. As cooling water became contaminated, it was bled off and routed to a covered trench for disposal to the soil. This provided opportunities for ion exchange with the soil and additional decay before the effluents eventually reached the Columbia River through the soil (DOE-RL 2002).

The Hanford Site has one NPDES permit (WA-002591-7) that covers the DOE's nonradioactive discharges to the Columbia River from the 300 Area Treated Effluent Disposal Facility, 100-K Area discharges from secondary cooling water, and shoreline seepage of groundwater in the 100-N Area. Energy Northwest also discharges cooling tower blowdown water and treated effluents to the Columbia River within the Hanford Site boundary.

2.3.2 Current Hanford Site Groundwater Sources

Groundwater plumes serve as the current and future sources of contamination to the Columbia River. The following subsections summarize the current groundwater contaminants that are present in the 100 Areas and 300 Area and identify those that exceed drinking water standards as identified in *Hanford Site Groundwater Monitoring for Fiscal Year 2005* (Hartman et al. 2006). In addition, seep information affecting the Columbia River and sediment monitoring are also presented. The 2005 groundwater plume contamination maps for both radionuclides and chemicals on the Hanford Site are shown in Figures 2-1 and 2-2, respectively.

2.3.3 Summary of 100 Area Groundwater Contaminant Sources

2.3.3.1 100-B/C Area. Groundwater flows primarily to the north toward the Columbia River beneath the 100-B/C Area. Groundwater contaminants in this area, commonly referred to as the 100-BC-5 Operable Unit (OU), include strontium-90, tritium, nitrate, and chromium. Of the four contaminants identified in the 100-B/C Area, only strontium-90 and tritium have been detected above the drinking water standards.

2.3.3.2 100-K Area. Groundwater beneath the 100-K Area generally flows to the northwest, with discharge to the Columbia River occurring through the riverbed sediments and, to a limited degree, as riverbank seeps during periods of low river stage (Hartman et al. 2006). Groundwater contaminants in this area, commonly referred to as the 100-KR-4 OU, include carbon-14, strontium-90, technetium 99, tritium, chromium, nitrate, and trichloroethene.

Of the seven groundwater contaminants identified in the 100-K Area, all but one (technetium-99) has been observed at levels above drinking water standards. A groundwater pump and treat system is currently operating in the 100-K Area to reduce the chromium plume. The system began operation in 1997.

2.3.3.3 100-N Area. Groundwater flows primarily to the north and northwest, towards the Columbia River. Groundwater carrying mobile radioactive contaminants enters the Columbia River via a series of riverbank seeps, referred to as the N Springs. Groundwater contaminants in this area, commonly referred to as the 100-NR-2 OU, include strontium-90, tritium, nitrate, sulfate, petroleum hydrocarbons, manganese, and chromium.

Strontium-90 is the contaminant of greatest concern in this area. Aquifer tubes set in the gravel at the rivershore to monitor contamination have shown strontium-90 concentrations in excess of the drinking water standard. In addition to strontium-90, nitrate, chromium, and tritium have been identified at levels that exceed the drinking water standards in the 100-N Area. Tritium was not detected in the 100-N shoreline spring water during 2005.

A groundwater pump and treat system is currently operating in the 100-N Area to treat strontium-90. The system began operation in 1995.

2.3.3.4 100-D Area. Groundwater flows primarily to the north and northwest toward the Columbia River. Groundwater contaminants in this area, commonly referred to as the 100-HR-3-D OU, include chromium, strontium-90, tritium, nitrate, and sulfate.

Of the five groundwater contaminants identified in the 100-D Area, only chromium, nitrate, and tritium have been identified at levels above their respective drinking water standards. Hexavalent chromium is the contaminant of greatest concern in the groundwater. Aquifer tube sampling provides monitoring along the shoreline of the 100-D Area.

Groundwater remedial actions in the 100-D Area include two pump and treat systems and an in-situ redox manipulation system both operating to reduce chromium plumes. The first system began operation in 1997.

2.3.3.5 100-H Area. Groundwater flows from the southwest to northeast towards the Columbia River. Groundwater contaminants in this area, commonly referred to as the 100-HR-3-H OU, include chromium, nitrate, strontium-90, technetium-99, tritium, and uranium. Of the six contaminants identified in this area, all except tritium have been detected at concentrations above drinking water standards.

Chromium is the contaminant of greatest concern in the groundwater. A portion of the plume is thought to be migrating along the river based on aquifer tube results (PNNL 2003). A groundwater pump and treat system is currently operating in the 100-H Area to reduce the chromium plume. The system began operation in 1997.

2.3.3.6 100-F Area. Groundwater flows primarily to the east and southeast beneath the 100-F Area. Groundwater contaminants in this area, also known as the 100-FR-3 OU, include chromium, nitrate, strontium-90, tritium, trichloroethene, and uranium. Only nitrate and trichloroethene have been detected in concentrations above the drinking water standards. Nitrate is the most widely distributed groundwater contaminant in the 100-F Area.

2.3.4 Summary of 300 Area Groundwater Contaminant Sources

The groundwater in this area, also known as the 300-FF-5 OU, is divided into two areas: the 300 Area and the north region. Groundwater flow in the 300-FF-5 OU is generally to the east and southeast. However, in the 300 Area, flow is to the southeast and combines with flow from regions to the northwest, west, and southwest before discharging to the Columbia River. Groundwater flow in this area is strongly affected by changes in river elevation. Groundwater contaminants in this area include uranium, VOCs (cis-1,2-dichloroethene, trichloroethene, tetrachloroethene), and strontium-90.

Tritium, nitrate, trichloroethene, cis-1,2-dichloroethene, and uranium are the contaminants that exceed their respective drinking water standards. However, several constituents migrate from sources outside of the 300 Area and include tritium and nitrate migrating from the 200 East Area. Nitrate and trichloroethene are also migrating into the 300 Area from offsite sources. The uranium plume in the 300 Area exceeds the drinking water standard in an area adjacent to the Columbia River. Uranium is monitored along the shoreline and in river water for this area.

2.3.5 Summary of 200 Areas Groundwater Contaminant Sources

There are no groundwater contaminants from the 200 West Area that reach the Columbia River. Groundwater from the 200 East Area flows to the Columbia River along two separate paths. One path in the eastern portion of the site flows to the southeast, with a more eastern flow as it approaches the Columbia River. The other path is through the Gable Gap flowing to the northwest towards the Columbia River in an area between the 100-K and 100-B/C Areas. The primary contaminants include technetium-99, tritium, uranium, iodine-129, cobalt-60, cyanide, strontium-90, cesium-137, plutonium-239/240, and nitrate. Tritium and nitrate are the only two groundwater contaminants that currently reach the Columbia River from the 200 East Area. Of these two contaminants, only tritium is detected at concentrations above drinking water standards discharging to the Columbia River south of the Hanford Townsite.

2.3.6 Columbia River Shoreline Springs

Several contaminants entering the Columbia River from the Hanford Site continue to be detected in shoreline springs (seep) water. Radionuclides detected in spring water include tritium, strontium-90, technetium-99, iodine-129, uranium-234, uranium-235, and uranium-238. However, all radiological contaminant concentrations measured in the shoreline springs in 2004 were less than DOE-derived concentration guidelines (DOE Order 5400.5, Appendix D, Table D-5). Tritium in shoreline springs at the Hanford Townsite was the only radionuclide that was above the Washington State ambient surface-water quality criterion. Gross alpha ambient surface water quality criterion was also exceeded in the 300 Area. Nonradiological contaminants detected in spring water include metals and anions (chloride, fluoride, nitrate, and sulfate). However, the concentrations measured were below ambient surface water chronic toxicity levels with the exception of dissolved chromium.

Sediment samples are collected at shoreline springs in the 100-B, 100-F, 100-K, 300 Areas and the Hanford Townsite. During 2004, radionuclide concentrations in shoreline spring sediment were similar to those observed in the Columbia River sediment, with the exception of the 300 Area. In the 300 Area, uranium concentrations were two to four times the background concentrations measured from the Priest Rapids Dam. Concentrations of metals were similar to those from the Hanford Reach samples.

2.4 DOWNSTREAM SOURCES

This portion of the CRC spans from the confluence of the Yakima River to Astoria, Oregon. Major tributaries along this section of the Columbia River include the Yakima, Snake, John Day, Deschutes, Willamette, Lewis, and Cowlitz Rivers.

The downstream portion of the CRC consists of segments III, IV, and V. The Umatilla Army Depot (Lagoons) is the only CERCLA site located in Segment III. Contaminants of interest that might be released from this facility are heavy metals, trinitrotoluene, and cyclonite. Three of the 14 NPDES major industrial discharge permits are for facilities located in Segment III. The three facilities are AGRIMUM, Boise Paper Solutions, and Goldendale Aluminum. AGRIMUM is a fertilizer facility located in Kennewick, Washington, and might release ammonia and nitrate (Permit No.: WA-000367-1). Boise Paper Solutions is a pulp and paper mill located in Wallula, Washington, and does not operate with contaminants of interest (Permit No. WA-000369-7).

Goldendale Aluminum is an aluminum smelter located in Goldendale, Washington. Contaminants of interest that might be released include fluoride, oil and grease, benzopyrene, nickel, and arsenic (Permit No. WA-000054-0).

Union Pacific Railroad Tie Treatment and Martin Marietta Aluminum Company are the two CERCLA sites both located in The Dalles, Oregon, which falls within Segment IV of the CRC. Contaminants of interest that might be released from these facilities are pentachlorophenol, fuel oil, ammonia, arsenic, cyanide, fluoride, asbestos, and PAHs. Northwest Aluminum is the only NPDES major industrial discharge permit in Segment IV, also located in The Dalles, Oregon. Contaminants of interest that might be released from this facility include fluoride, oil and grease, benzopyrene, nickel, and arsenic.

The five remaining CERCLA sites are located in Segment V. They include Reynolds Metals in Troutdale, Oregon; Allied Plating, Inc. in Portland, Oregon; Alcoa, an aluminum smelter, in Vancouver, Washington; Frontier Hard Chrome, Inc. in Vancouver, Washington; and Hamilton Island Landfill in North Bonneville, Washington. The combined contaminants of interest for these facilities include PAHs, aluminum, cyanide, fluoride, PCBs, arsenic, heavy metals including chromium, nickel, lead, and VOC and SVOCs.

The majority of agricultural land along the Columbia River is located in the downstream region. Agricultural activities historically contribute runoff containing fertilizers, sediments, pesticides, and herbicides to the surface waters.

The higher populated downstream region of the Columbia River contains more commercial and recreational vessel use than the upstream region. The majority of possible contaminants, mentioned in the above section, are introduced to the Columbia River in this region.

Figure 2-1. Hanford Site 2005 Groundwater Plume Contamination Maps for Radionuclides (Hartman et al. 2006).

Figure 2-2. Hanford Site 2005 Groundwater Plume Contamination Maps for Chemicals (Hartman et al. 2006).

3.0 HISTORICAL DATA QUALITY REVIEW PROCEDURES

The primary purpose of the CRC data compilation and evaluation task was to conduct a thorough and comprehensive review of all appropriate and available information, past and present, to characterize the extent of Hanford Site-related contamination within the defined boundaries of the CRC defined in DOE-RL (2004). This section focuses on the procedures used to perform data quality reviews of all environmental media of interest entered into the CRC database. A data quality review was conducted for compiled historical chemistry and radiological data for sediment, water, and biota samples. The purpose of this review was to determine the relative quality of chemical and radiological data associated with each bibliographical source.

The steps for the review of all documents and their associated data include an initial evaluation to confirm the source of the information prior to database entry, confirmation of the quality assurance (QA) category assigned to the data in each document, review of the associated QA/quality control (QC) information associated with the analytical data provided in the source prior to data entry, and assignment of the initial analytical data by sample media to each CRC segment. If, during the course of the review, additional QA/QC data were obtained, the data were then reevaluated and the data category was reassigned as appropriate.

3.1 REVIEW OF BIBLIOGRAPHICAL SOURCE INFORMATION

The types of bibliographical resources that were identified and reviewed include databases, government publications, technical reports, newspapers, professional journals, books, and Internet web sites of local, state, and federal agencies.

A preliminary bibliographical source information analysis, providing a summary description of the source documents submitted for the CRC Bibliographic Database, is provided in WCH-64 (WCH 2006). The document states there were 1,540 source documents gathered for the database. The first step of the data evaluation was to confirm these sources and ensure that the bibliographic information for each source was complete and could be verified prior to finalizing the entries into the database.

The minimum information required for bibliographic source entry included the document title, publication date, author, organization responsible for sampling, document revision (if applicable), document type, program type, document repository, geographic region(s) covered by the source, description of the document contents, abstract or main points and finding of the document, data category, and website if the document was available online at the time of initial entry. Each input was confirmed for each bibliographic source, either with the hardcopy data package provided by the subcontractor or by reviewing the online document when it was available through a website.

As a result of reviewing the bibliographical database, some sources of information were eliminated. The number of sources was reduced from 1,540 sources to 1,448 sources. Instances where sources were eliminated included the following:

- Bibliographic source entries that were entered more than once

- Bibliographical sources that had no relevance to the Columbia River or tributaries associated with the Columbia River
- Bibliographical sources listed as photographs of the study site taken during various times in history because the photographs were not included in the release of hardcopy reports to the CRC staff and the entry was deemed incomplete
- Bibliographical sources where hardcopy reports or online sources could not be confirmed by accessing the source repository listed in the bibliography or through an independent search by the CRC staff.

Databases maintained by government entities were among the sources of bibliographic entries in the CRC database, though they did not meet the minimum requirements for information entry as stated above. These sources typically have no document number, author, program type, or abstract information for the database. However, each database source maintains its own QA/QC program, and the data obtained from these databases were directly uploaded into the CRC database because this information is of value to the data evaluation effort. These databases were included as bibliographic sources and include the following examples:

- Ecology's Environmental Information Management (EIM) System database
- Washington Department of Health Environmental Radiation Oversight Program database
- EPA's Environmental Radiation Ambient Monitoring System (ERAMS) database
- Sediment Quality Information System (SEDQUAL).

Often a database is cited as the source of analytical data associated within a listed document. In these instances, the database that "houses" the analytical data is noted within each individual bibliographic entry. Data downloaded from the Hanford Environmental Information System (HEIS) database was placed in the individual bibliographic entry associated with the data.

Each bibliographic source can be classified as either primary or secondary, depending on whether the data contained within are original. Primary sources were defined as original sources of information or data, whereas secondary sources included information or data that was interpreted, analyzed, or summarized from the original source. Both primary and secondary sources were included in the database; however, secondary sources include a reference to the primary source within the database. When data were provided with a primary and secondary source, only analytical data from the primary source was entered.

3.2 QUALITY ASSURANCE/QUALITY CONTROL REQUIREMENTS

For each bibliographical source of information containing analytical data, a hardcopy of the report (i.e., data package) was reviewed to either confirm or update the QA category that was assigned to the source document (QA categories are described below). Categories indicate the extent and pedigree of the numerical information for the CRC data evaluation/scoping report and future efforts. The following descriptions indicate the differences between each of the data quality categories.

Category 1 (QA1) – Data are of known quality and are considered to be acceptable for decision making in the data evaluation/scoping report. These data contained evidence of or documented the QA/QC criteria listed below. Data are not rejected as Category 1 based solely on the absence of a chain of custody (i.e., traceability). If a data set satisfies all other criteria except chain-of-custody documentation, there may be other documentation that demonstrates compliance with industry standard field collection and data documentation requirements. This other documentation will be assessed on a case-by-case basis with project personnel to make a final determination on the data category.

Category 2 (QA2) – Data are of partially known or suspect quality because QA/QC criteria are either incomplete or were not discussed or found. These data are considered suitable for qualitative use and may be considered suitable for further evaluation based on project-specific data quality objectives and intended end uses.

Category 3 (QA3) – Data that are of unknown quality and may have sample concentrations, but lack an adequate level of supporting QA/QC information, or are summarized and only provide ranges of concentrations. These data can be used on a limited or provisional basis for qualitative comparisons with other Category 1 or 2 data.

Category 4 (QA4) – No analytical data were reported.

The quality of the analytical data determines how the information was used within this CRC data evaluation summary report and future efforts. Category 1 data are of known quality and can be used to confidently characterize the extent of contamination within the Columbia River (where contaminants have come to reside). Category 1 data may also be used for potential future risk assessment purposes. Category 2 data are of partially known or suspect quality and can be used to identify constituents of interest, data gaps, and general trends in contaminant concentrations and can help define future sampling needs. As previously indicated, Category 3 data can be used on a limited or provisional basis for qualitative comparisons with other Category 1 or 2 data.

The data quality categories are based on the QA/QC criteria described below. The quality of the data was determined using EPA's QA/QC criteria (EPA 2001). Performance criteria for establishing acceptable data quality included evidence of each of the following factors:

1. **Traceability:** The chain-of-custody is documented and complete, and attached to the report of supporting documentation package. However, the data is not rejected as Category 1 based entirely on the absence of chain-of-custody documentation. If a high-quality data set satisfies all criteria except chain-of-custody documentation, there may be references to chain-of-custody forms in the text of a report or the appendix. There may be other documentation that demonstrates compliance with the industry standard field collection and data documentation requirements, and implies chain-of-custody forms were used.
2. **Comparability:** Analytical procedures or methods are identified and are accepted as "standard" or "universal." These acceptable methods are identified in WCH-64 (WCH 2006).
3. **Sample Integrity:** Sample holding times, preservation, and conditions between collection and analysis meet established criteria, which are generally identified by the EPA.

4. **Potential Measurement Bias:** The potential for introduction of positive biases in the reported results exists due to the presence of background or laboratory contamination. The evaluation of precision and accuracy is used to determine the extent of measurement bias caused by laboratory or background contamination. Generally, a goal of $\pm 30\%$ is specified for both accuracy and precision.

Laboratory Contamination – Each analytical batch contains a laboratory (method) blank (material of similar composition as the samples with known/minimal contamination of the analytes of interest) carried through the complete analytical process. The method blank is used to evaluate false-positive results in samples due to contamination during handling at the laboratory.

Accuracy - Matrix spikes, laboratory control samples, and surrogate recoveries are performance measurements for evaluating accuracy. For most analytes, a known quantity of representative analytes of interest and matrix spike is added to a separate aliquot of a sample from an analytical batch. The known amount added is compared to the actual measured amount to calculate the percent recovery. The recovery percentage of the added matrix spike is used to evaluate analytical accuracy. For analyses not amenable to matrix spike techniques (e.g., gamma energy analysis or where analytical recovery is corrected via internal standards (e.g., alpha energy analyses), accuracy is evaluated from recovery of tracers or carriers.

In addition to the matrix spike recovery, surrogate compounds are used to evaluate accuracy in the VOC, SVOC, and PCB compound analyses. Surrogates are compounds with instrumental responses that are typical of the other analytes. The surrogates are added to the blanks, samples, and matrix spikes, and the recovery is evaluated.

The accuracy of the laboratory preparation and analysis is evaluated via QC reference samples (e.g., laboratory control spike). A laboratory control spike is prepared from an independent standard at a concentration other than that used for calibration, but within the calibration range. The laboratory control spike or QC reference sample measures the accuracy of the analytical process.

Precision – Separate aliquots removed from the same sample container (duplicate samples) are analyzed for each analytical batch for radionuclides and metals. The duplicate sample results are compared to the original sample results, are evaluated as relative percent differences, and are used to assess analytical precision. Alternately, a matrix spike duplicate may be used for assessing precision of metals and PCB. For a matrix spike duplicate, a separate aliquot is removed from the same sample container, and spiked in the same manner as the matrix spike. The recoveries from the matrix spike and matrix spike duplicate are used to calculate a relative percent difference and thus to assess precision.

5. **Sample Bias:** Evidence of field duplicates, field splits, or standards, or evidence of data qualifiers based on review of the above-mentioned criteria.

All of these factors require supporting information for placement into the Category 1 designation type. If supporting documentation for each of these factors were not available or were not reinforced by the availability of other high-quality QA/QC information, data were assigned to Category 2 designation type. If the acceptance criteria for any of the above factors were not

satisfied for either the entire data set or a specific analyte group, data for that data set of group are qualified and determined to have limited usefulness.

3.3 ANALYTICAL DATA ENTRY INTO THE CRC DATABASE

The quality of the contents of the database is maintained by several means. A primary key is a type of table constraint that prevents duplicate entries in a table. The relationship between the bibliographic information and the sample information and between the sample information and the analytical results is maintained through the use of foreign keys and triggers. Foreign keys are table constraints that require that entries to a table be related to another table. For example, the following rules are enforced through the use of foreign keys in the database:

- All results have sample numbers
- All sample numbers have results
- All sample numbers have bibliographic sources
- A significant number of bibliographic sources will not have sample numbers and results.

When analytical results for a sample were entered manually or uploaded from an electronic source, the primary fields for each result were the document title and publication date; ensuring the sample result was unique to each source. For manual data entry, the constituent identification number (usually the CAS Registry number assigned to the chemical) selected from the pick list within the database was linked to the constituent name as reported in the source. The laboratory that performed the analyses, analytical method, analysis date, analytical value, analytical units, and lab qualifier(s) (if applicable) were entered exactly as reported. All reports entered manually were independently reviewed for accuracy.

For electronic sources of analytical data, data were uploaded exactly as reported. When a hardcopy was available, electronic results were reviewed against the hardcopy report.

For both manual and electronic sources, all results reported as nondetect concentrations were assigned with a "U" qualifier. In all cases, only one value was reported for nondetects and no distinction was made to determine the type (method detection limit, reporting limit, or quantitation limit).

It should be noted that the analytical data used in this evaluation were not independently validated. The qualifiers included in the database were carried forward from their source. A list of all data qualifiers included in the database and their definitions are found in Table 3-1.

3.3.1 Standardization of Regional Datum

Many different types of sample coordinates and descriptive information were obtained during the data compilation effort, resulting in considerable variability in the quality and type of this information provided in each bibliographic source. Regional datum (i.e., northings and eastings) were standardized for the purpose of obtaining an understanding of the spatial coverage of sample locations sampled and analyzed within the boundaries of the CRC. Each unique sample location was assigned two regional datum coordinate pairs to ensure that each location could be mapped using the Environmental Systems Research Institute (ESRI) ArcInfo Geographic Information System (GIS). The two regional datum coordinate pairs include

(1) longitude/latitude and (2) State Plane Washington South (4602). When sample locations were not reported in the two selected regional datum formats, then they were converted into that format. Sample coordinate pairs were also reported in the following regional datum formats including: Decimal degrees, North American Datum of 1983/World Geodetic System of 1984 (NAD83/WGS84) easting and northing and Oregon State Plane.

In many cases no sample coordinates (in any format) were provided, but descriptive information about its information was provided. Descriptive information could include RMs, text descriptions, or a map or figure. It should be noted that when no coordinates and no descriptive information could be obtained, then these sample locations could not be mapped or included in the data evaluation.

3.3.2 Methodology of Converting Descriptive Information into Sample Coordinates

The following subsections provide a description of how descriptive information (RM, text, or maps) was converted to the selected regional datum formats.

3.3.2.1 River Miles. Transforming RM descriptions into sample coordinates (Cartesian x-coordinate, y-coordinate) required an electronic copy of National Geographic's Seamless USGS Topographic Maps for the States of Washington and Oregon. These USGS topographic maps were used to set waypoints where the USGS Topographic Maps identified RM locations. When the RM location was missing from the topographic maps (above Priest Rapids Dam), the RM was estimated. Setting waypoints allowed a set of points in latitude-longitude to be developed for the length of the Columbia River. This set of points was subsequently converted to Washington State Plane (South Zone) using version 6 of Corpscon, the U.S. Army Corps of Engineers Topographic Center software program for conversion of various coordinate systems. Corpscon uses the National Geodetic Survey (NGS) North American Datum Conversion (Nadcon) algorithms to convert between data.

River miles were shown on the electronic USGS Topographic Maps when the RM descriptions were from the tributaries feeding into the Columbia River (Snake River, the Yakima River, or the Willamette River). The same process was used to set waypoints and acquire the latitude-longitude values for the point when the RM was from a tributary.

3.3.2.2 Definitive Text Descriptions. When a text description was available for a sample location, then the location was estimated using the electronic USGS Topographic Maps. It was possible to locate the item (e.g., Cummins Road Bridge) by searching the internal gazetteer. When the item was found, a waypoint was established, the latitude-longitude coordinates preserved, and added to the database.

3.3.2.3 Hardcopy Maps. When only a map was provided with the bibliographic source a location was estimated using the GIS coverage developed for the CRC. A sample location could be estimated because the ESRI ArcInfo GIS coverage included tributaries, and named points, such as cities, allowing a location to be estimated.

3.3.2.4 Miscellaneous. In some cases, similar sample locations were common between more than one bibliographical source. When sample coordinates for similar locations were not reported in each bibliographic source, then the coordinates were applied to the common location. When sample coordinates were applied to similar locations, the location from which

the coordinate was obtained was signified as “actual” in the accuracy field of the database. This process was also followed for several biota, surface water, and springs samples located on the Hanford Site.

3.3.3 Verification of Sample Coordinates

Sample coordinates were verified by visually inspecting each GIS map to ensure sample locations were in the proper location (or general area) based on the descriptions in the attribute information. Coordinates that were in error were re-assigned (moved) to their new location based on the location descriptions (signified as “moved on map” in the database). In instances where both a latitude-longitude and State Plane coordinate were provided, the conversion verified that both coordinates referenced the same location.

3.3.4 Standardization of Concentration Units and Activity Levels

All concentrations were standardized to mg/kg for solid samples and to mg/L for all liquid samples. Similarly, all activities were standardized to pCi/g for solid samples and to pCi/L for liquid samples. Units also reflect when a sample was reported on an “as received” or on a “dry weight”. As received sample units represents measurements that were reported in the standard wet-weight reporting criteria. Dry-weight samples represent measurements reported in dry-weight criteria that were converted to the standard wet-weight unit. The dry-weight conversions were done using the following formulas:

Percent solids = 100 – percent moisture

Wet-weight = dry-weight x (percent solids/100)

3.3.5 Decay of Radiological Results

Sediment sample results included in this evaluation were analyzed between 1976 and 2004. Radionuclides with short half-lives have decayed to insignificant levels during this 28-year time frame. All radionuclide results for sediment samples were decayed through 2005 to reflect current activity levels. The fraction of activity remaining after 29 years of decay was calculated using the following equation:

$$A_r = A_0 e^{-\lambda t}$$

where:

A_0 = activity at year of sample collection

A_r = remaining activity (fraction of original amount)

λ = radioactive decay constant, defined as: $\text{LN}(2)/T_{1/2}$

$T_{1/2}$ = radioactive half-life (radionuclide-specific)

t = elapsed time (29 years)

3.3.6 Uncertainties

Numerous uncertainties exist as a result of evaluating analytical data that were collected for purposes other than that intended for this report. As described earlier, analytical data were obtained from many different sources and information was reported in a variety of different methods and formats. Most sources of information reported data concentration differently (e.g., electronic, tabular, or appendices), provided different levels of supporting QA/QC

information, and most reports were written to address the needs of a specific audience. The following paragraphs identify some of the uncertainties that were identified during the evaluation process and how the uncertainties were minimized where appropriate.

Based on the requirements set by the procedures for manual and electronic data entry, all database fields required population regardless of whether the information was provided in the report or electronic deliverable. However, in some instances this information was not provided. For example, the name and the location of the laboratory conducting the analysis and the analytical method were not reported on a consistent basis. When the name and location of the laboratory was not provided, it was entered as unknown in the database. If the name of the laboratory was not provided but supporting QA/QC information was provided, it did not affect the categorization of the associated data. Another example is when the analytical method numbers were not documented in the data source. A method number was assigned based on the description provided in the report or it was documented as an unknown method. Efforts were taken to obtain sampling and analysis plans and QA plans to provide complete information in the bibliographic source. For sources that could be verified, the analytical methods employed were appropriately assigned to the analytical result(s) in the source.

For a limited number of samples, the same sample number was assigned to more than one sample. For evaluation purposes, each individual sample was reassigned a unique sample number.

A number of samples were reported without coordinates documenting their location along the Columbia River. This practice was primarily observed for water and biota samples collected because they are mobile and were generally evaluated based on the general segment the sample was collected in. For sediment samples, sample coordinates were required because the results are used to determine where contaminants have come to reside. For those samples without reported coordinates, a map or other descriptor was used to estimate the approximate location. A comment was added in the database to indicate when a sample coordinate was estimated. When inadequate sample location information was available, the associated analytical data were retained in the CRC database, but was not included in the data evaluation and scoping effort.

Surface sediment data were reported using two different conventions, the first reporting the concentration on the basis of the actual weight of the sample ("as received") and the second reporting the concentration on a "dry-weight" basis. Surface sediment results reported on an "as received" basis represent the concentration of contaminant that the receptor comes in contact with or what is environmentally available. Surface sediment results reported on a "dry-weight" basis are considered biased high because the concentration reported represents only the contamination present in the dried sample.

3.4 DESCRIPTION OF HISTORICAL DATA USED IN THE EVALUATION

A substantial amount of historical data has been compiled using the quality review procedures discussed above. The extent to which these data can be used to characterize the extent of contamination within the Columbia River is determined by its QA category.

For purposes of this evaluation, all Category 1 and Category 2 sediment data were used to characterize the extent of contamination within the Columbia River. To a limited extent, Category 3 sediment data were entered into the database when analytical data of higher quality were not available from a similar location. The majority of sediment core samples collected and analyzed were reported without supporting QA/QC documentation. Because a limited number of core samples were collected and analyzed, this information was entered into the database and used in the evaluation.

All Category 1 and 2 water sample data collected and analyzed since January 1, 1999, were considered representative of current contaminant concentrations potentially being transported to adjacent and downstream locations. Similarly, all Category 1 and 2 biota sample data collected and analyzed since 1995 were selected to represent current concentrations. Substantial amounts of analytical data were available for water and biota samples collected prior to these dates, but were not uploaded into the CRC database for this evaluation. However, the reports that contain these data are included as bibliographical sources of information.

3.4.1 Summary of Samples Used in Evaluation

As discussed earlier, a total of 1,448 source documents were entered into the CRC database that contained information pertinent to the CRC. Many of the sources entered into the bibliographical database did not contain analytical data representing contaminant concentrations measured in the sediment surface water or biota. Consequently, significantly fewer documents reported analytical data that could be used for the purpose of evaluating where contaminants have come to reside in the Columbia River. Sediment analytical data were acquired from a total of 72 sources meeting Category 1 QA requirements and 16 meeting Category 2 QA requirements. Surface water analytical data were acquired from a total of 49 sources meeting Category 1 QA requirements and five meeting Category 2 QA requirements. From these 142 sources, a total of 1,578 sediment samples and 4,779 surface water samples were included in the data evaluation. A breakout of the sediment and surface water samples by segment is shown in Figures 3-1 and 3-2, respectively. Contaminant concentrations measured in biota were not reviewed against the QA categories. However, available biota data from 125 bibliographical sources that resulted in 8,606 samples were uploaded into the database and may require additional review to evaluate their quality and relevance to the health of the Columbia River.

The spatial distribution of all samples (including biota) included in the data evaluation for each of the respective segments is shown in Figures 3-3 through 3-7. Note that numerous surface water samples are collected at the same locations over the 5-year evaluation period. When numerous samples were collected from one location, the sample location is only represented by a single location on the figures.

3.4.2 Sample Summary - Segment 1

A total of 26 sources reported sediment analytical data associated with Segment 1 of the Columbia River. These sources include 136 Category 1 surface sediment samples collected between October 1992 and September 2004; 33 Category 2 surface sediment samples collected between September 1984 and October 1999, and four Category 3 sediment core samples. The majority of the surface sediment samples were collected behind the Priest Rapids Dam (121 samples); eight surface sediments collected near Vernita Bridge, four near

Wanapum Dam, and the remaining eight samples were collected from other locations within Segment 1. One core was collected from the Okanogan River and the remaining three cores were collected behind the Priest Rapids Dam. A summary of the sources reporting sediment data within Segment 1 is provided in Table 3-2. Additionally, the data usability category, sample collection dates, number of samples, sample area, and contaminant classes that were analyzed are also included in Table 3-2.

A total of 19 sources reported surface water analytical data associated with Segment 1 of the Columbia River. These sources include 754 Category 1 surface water samples and 142 Category 2 surface water samples. The majority of the surface water samples were collected near the Priest Rapids Dam (300 samples) and near Vernita Bridge (451 samples), two samples were collected from the Methow River, and the remaining samples were collected from other locations along Segment 1 of the Columbia River. A summary of the sources reporting sediment data within Segment 1 is provided in Table 3-3. Additionally, the data usability category, sample collection dates, number of samples, sample area, and contaminant classes that were analyzed are also included in Table 3-3.

3.4.3 Sample Summary - Segment 2

A total of 55 sources reported sediment analytical data associated with Segment 2 of the Columbia River. These sources include 439 Category 1 surface sediment samples collected between October 1984 and March 2005; 36 Category 2 surface sediment samples collected between May 1978 and October 1991; 4 Category 3 samples collected in August 1986; and one Category 3 core sample collected from the Hanford Ferry area. Four Category 3 composite core samples were also collected in the Hanford Reach at RMs 393, 378.5, 373, and 365. A summary of the sources reporting sediment data within Segment 2 is provided in Table 3-4. Additionally, the data usability category, sample collection dates, number of samples, sample area, and contaminant classes that were analyzed are also included in Table 3-4. Surface sediment sample locations were primarily collected from the areas identified in Table 3-5.

A total of 24 sources reported surface water analytical data associated with Segment 2 of the Columbia River. These sources include 3,203 Category 1 surface water samples collected between January 1999 and February 2005 and 14 Category 2 surface water samples collected between May 2002 and January 2004. A summary of the sources reporting sediment data within Segment 2 is provided in Table 3-6. Additionally, the data usability category, sample collection dates, number of samples, sample area, and contaminant classes that were analyzed are also included in Table 3-6. Surface water samples were primarily collected from the areas identified in Table 3-7.

3.4.4 Sample Summary - Segment 3

A total of 42 sources reported sediment analytical data associated with Segment 3 of the Columbia River. These sources include 269 Category 1 surface sediment samples collected between September 1988 and September 2004; 14 Category 2 surface sediment samples collected between June 1987 and October 1991; 32 Category 3 samples collected between December 1976 and May 1993; and 18 Category 3 core samples collected and, one from Wallula, two from Port Kelly, two from Refuge Island, one behind the Ice Harbor Dam, and 12 from behind McNary Dam. Four Category 3 composite core samples were also collected above McNary Dam.

A total of 227 surface sediment samples were collected from the Columbia River, 16 from Wallula Lake, 170 from McNary Dam, and the remainder between RM 274 and RM 340. In addition, sediment samples were collected from the tributaries including 43 samples from the Snake River (32 behind Ice Harbor Dam); 13 samples from Walla Walla River, and 20 samples from the Yakima River. A summary of the sources reporting sediment data within Segment 3 is provided in Table 3-8. Additionally, the data usability category, sample collection dates, number of samples, sample area, and contaminant classes that were analyzed are also included in Table 3-8.

A total of 14 sources reported surface water analytical data associated with Segment 3 of the Columbia River. These sources include 178 Category 1 surface water samples and 220 Category 2 surface water samples. A total of 18 samples were collected near McNary Dam, 308 samples were collected from Yakima River primarily near Kiona, 20 samples were collected from Snake River near Hook Park, and 35 samples were collected from the confluence of the Walla Walla River. A summary of the sources reporting surface water data within Segment 3 is provided in Table 3-9. Additionally, the data usability category, sample collection dates, number of samples, sample area, and contaminant classes that were analyzed are also included in Table 3-9.

3.4.5 Sample Summary - Segment 4

A total of 10 sources reported sediment analytical data associated with Segment 4 of the Columbia River. These sources include 56 Category 1 surface sediment samples collected between March 1992 and September 2004; 91 Category 3 samples collected between February 1965 and August 1993; and six Category 3 core samples were collected, one from Irrigon, Oregon, one from behind John Day Dam, and three behind The Dalles Dam. Surface sediment samples were primarily collected from The Dalles Dam (101 samples), John Day Dam (23 samples), Bonneville Dam (17 samples), and the remainder were collected from RM 145. A summary of the sources reporting sediment data within Segment 4 is provided in Table 3-10. Additionally, the data usability category, sample collection dates, number of samples, sample area, and contaminant classes that were analyzed are also included in Table 3-10.

A total of five sources reported surface water analytical data associated with Segment 4 of the Columbia River. These sources include 112 Category 1 surface water samples collected between February 1999 and June 2005. A total of 11 samples were collected near Umatilla, Oregon; 71 samples were collected near The Dalles, Oregon; and 30 samples were collected near Bonneville Dam. A summary of the sources reporting surface water data within Segment 4 is provided in Table 3-11. Additionally, the data usability category, sample collection dates, number of samples, sample area, and contaminant classes that were analyzed are also included in Table 3-11.

3.4.6 Sample Summary - Segment 5

A total of 23 sources reported sediment analytical data associated with Segment 5 of the Columbia River. These sources include 210 Category 1 surface sediment samples collected between February 1990 and February 2005; 54 Category 2 samples collected between July 1987 and November 1997; 204 Category 3 samples collected between January 1963 and November 1993; and eight Category 3 core samples were collected, two from RM 21, three

from the Skipanon Entrance Channel, one from Clatskanie Flats, one from Young's Bay, and one from Gray's Bay. Surface sediment samples were collected in focused areas but represent the Columbia River from RM 9 through RM 128. Additionally, sediment samples were collected from several tributaries including four samples from the mouth of the Cowlitz River, four samples from the mouth of the Willamette River, and 11 samples from the Skipanon Federal Channel. A summary of the sources reporting sediment data within Segment 5 is provided in Table 3-12. Additionally, the data usability category, sample collection dates, number of samples, sample area, and contaminant classes that were analyzed are also included in Table 3-12.

A total of 15 sources reported surface water analytical data associated with Segment 5 of the Columbia River. These sources include 234 Category 1 surface water samples collected between January 1999 and June 2004. A total of 133 samples were collected from Beaver Army Terminal, 12 samples near Longview, Washington, 14 samples from Columbia Slough, 16 samples collected near Kalama, Washington, three samples from the Cowlitz River, three samples from the Lewis River, 18 samples from the Willamette River, and 24 samples from near Vancouver, Washington. A summary of the sources reporting surface water data within Segment 5 is provided in Table 3-13. Additionally, the data usability category, sample collection dates, number of samples, sample area, and contaminant classes that were analyzed are also included in Table 3-13.

Figure 3-1. Distribution of Sediment Samples by Segment.

Figure 3-2. Distribution of Surface Water Samples by Segment.

Figure 3-3. Grand Coulee Dam to Vernita Bridge – Segment 1 (All Samples).

ERC:rkz:04/17/06:/home/ekzufelt/gis/am/cr_segs_final/cr_seg1_all.aml:Rev. 1 Database: 04/17/06 10:28 AM

Figure 3-4. Vernita Bridge to Yakima River Confluence – Segment 2 (All Samples).

Figure 3-5. Yakima River Confluence to McNary Dam – Segment 3 (All Samples).

Figure 3-6. McNary Dam to Bonneville Dam – Segment 4 (All Samples).

Figure 3-7. Bonneville Dam to Astoria, Oregon – Segment 2 (All Samples).

Table 3-1. Summary of Laboratory Qualifiers and Definitions.

Qualifier	Definition
*	Inorganics: Duplicate analysis not within control limits.
+	Inorganics: Correlation coefficient for method of standard additions is < 0.995.
>	Wet chemistry: Result greater than quantifiable range or greater than upper limit of the analysis range.
A	Organics: Valid for TICs only; the TIC is suspected aldol-condensation product.
B	Inorganics and wet chemistry: The analyte was detected at a value less than the contract RDL, but greater than or equal to the IDL or MDL (as appropriate).
C	Inorganics and wet chemistry: The analyte was detected in the associated quality control blank above the IDL/MDL.
D	Organics and wet chemistry: Analyte was identified in an analysis at a secondary dilution factor (i.e., dilution factor different than 1.0).
E	Inorganics: Reported value is estimated because of interference. See comment on cover page, hardcopy case narrative on specific Form I.
J	All: The reported value is an estimate. Analyte was analyzed for and detected but has potentially larger associated error factors in the result. If this qualifier is applied for any reason other than results reported close to the analytical detection limit, an explanation must be provided in the associated hardcopy sample data summary package and/or case narrative.
M	Duplicate injection precision not met.
N	All: Spike sample recovery is outside control limits.
P	Organics (polychlorinated biphenyl only): Aroclor target analyte with greater than 25% difference between column analyses.
Q	Organics (dioxins only): Estimated maximum concentration. Used if one of the qualitative identification criteria is not met (e.g., C1 isotopic ratios outside theoretical range.).
S	Inorganics: Reported value determined by the method of standard additions.
U	All: Analyzed for but not detected above limiting criteria. NOTE: Limiting criteria may be any of the following: value reported < 0; value reported < counting error; value reported < total analytical error; value reported < MDL/IDL/MDA/PQL.
W	Inorganics: Post-digestion spike recovery for GFAA out-of-control limit. Sample absorbency < 50% of spike absorbency.
X	All: Other specific flags and notes required to properly qualify the result are described in the hardcopy sample data summary package and/or case narrative.
Y	Same as X, if more than one flag is required.
Z	Same as X and Y if more than two flags are required.

GFAA = graphite furnace atomic absorption
 IDL = instrument detection limit
 MDA = method detection analysis
 MDL = method detection limit
 PQL = practical quantitation limit
 RDL = reliable detection limit
 TIC = tentatively identified compounds

Table 3-2. Summary of Documents with Segment 1 Sediment Data. (2 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
1999 Hanford Environmental Oversight Program Data Summary Report	1	8/3/1999	8/3/1999	1	Columbia River RM 397.1 – Priest Rapids Dam	X					
Citizens Monitoring and Technical Assessment - Analysis of Chemical Contaminants in Hanford Reach Biota and Environmental Materials at the Perimeter of the Hanford Nuclear Reservation and on the Columbia River	1	10/7/2003	10/7/2003	1	Columbia River - Vantage, Washington	X	X				
Environmental Monitoring of Columbia River Sediments: Grain-Size Distribution and Contaminant Association	1	4/14/1994	4/14/1994	4	Columbia River RM 397.1 – Priest Rapids Dam	X					
Environmental Radiation Oversight Program - Database	1	7/24/1995	8/10/1998	15	Columbia River RM 397.1 – Priest Rapids Dam	X					X
Environmental Radiation Program 1992-1994 Annual Report	1	10/1/1992	9/22/1994	8	Columbia River RM 397.1 – Priest Rapids Dam	X					X
Hanford Environmental Oversight Program 2000 Data Summary Report	1	8/7/2000	8/7/2000	2	Columbia River RM 397.1 – Priest Rapids Dam	X					X
Hanford Environmental Oversight Program 2001 Data Summary Report	1	7/19/2001	8/28/2001	2 1	Columbia River RM 397.1 – Priest Rapids Dam Columbia River RM 388 - Vernita Bridge	X					X
Hanford Environmental Oversight Program 2002 Data Summary Report	1	7/23/2002	7/23/2002	2	Columbia River RM 397.1 – Priest Rapids Dam	X	X				
Hanford Environmental Oversight Program 2003 Data Summary Report	1	7/14/2003	7/14/2003	2	Columbia River RM 397.1 – Priest Rapids Dam						
Hanford Site Environmental Report for Calendar Year 1994	1	9/22/1994	9/24/1994	3	Columbia River RM 397.1 – Priest Rapids Dam						
Hanford Site Environmental Report for Calendar Year 1995	1	7/24/1995	7/24/1995	4	Columbia River RM 397.1 – Priest Rapids Dam						
Hanford Site Environmental Report for Calendar Year 1996	1	8/10/1996	8/15/1996	5	Columbia River RM 397.1 – Priest Rapids Dam						
Hanford Site Environmental Report for Calendar Year 1999	1	8/3/1999	8/3/1999	6	Columbia River RM 397.1 – Priest Rapids Dam						
Hanford Site Environmental Report for Calendar Year 2000	1	8/7/2000	8/14/2000	2 1	Columbia River RM 397.1 – Priest Rapids Dam Wanapum Dam	X	X				X
Hanford Site Environmental Report for Calendar Year 2001	1	7/19/2001	7/19/2001	2	Columbia River RM 388 - Vernita Bridge	X	X				X
Hanford Site Environmental Report for Calendar Year 2002	1	7/23/2002	7/23/2002	2	Columbia River RM 397.1 – Priest Rapids Dam	X	X				X
Hanford Site Environmental Report for Calendar Year 2003	1	7/14/2003	7/14/2003	3	Columbia River RM 397.1 – Priest Rapids Dam	X	X				X
Mid-Columbia River Basin Sediment Chemical Contaminants Study June 2004 to October 2004 addendum	1	6/1/2004	6/1/2004	1 4 3 1	Columbia River RM 391 – Irrigation Returns Columbia River RM 397.1 – Priest Rapids Dam Columbia River RM 415.8 - Wanapum Dam Lower Crab Creek - RM 5 – Above Delta		X				X
Survey of Potential Hanford Site Contaminants in the Upper Sediment for the Reservoirs at McNary, John Day, The Dalles, and Bonneville Dams, 2003	1	7/14/2003	7/14/2003	6	Columbia River RM 397.1 – Priest Rapids Dam	X	X	X	X	X	X
An Evaluation of Water Quality and Limnology for the Priest Rapids Project Area	2	10/1/1999	10/1/1999	6 1 5 5 13 1	RM 398.5 – Goose Island RM 405.5 – Hansen Creek RM 417.5 – Ginkgo Park RM 428 – Scammon’s Landing RM 440 – Crescent Bar RM 452- Rock Island Tailrace		X	X			X
An Investigation of the Origin of 152 Eu in Columbia River Sediment	2	8/3/1999	8/3/1999	1 Core	Columbia River RM 397.1 – Priest Rapids Dam	X					
Basic Water Monitoring Program Fish Tissue and Sediment Sampling for 1984	2	9/1/1984	9/1/1984	1	Wenatchee, Washington		X		X	X	X

Table 3-2. Summary of Documents with Segment 1 Sediment Data. (2 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Reconnaissance Investigation of Water Quality, Bottom Sediment, and Biota Associated with Irrigation Drainage in the Columbia Basin Project, Washington, 1991-92	2	7/16/1992	7/16/1992	1	Columbia River RM 354.4 – Irrigation Return		X	X		X	
Association of Hanford Origin Radionuclides with Columbia River Sediment	3	8/3/1976	8/3/1976	1 Core	Columbia River RM 397.1 – Priest Rapids Dam	X					
Heavy Metal Transport and Behavior in the Lower Columbia River, USA	3	8/1/1999	8/1/1999	1 Core	Columbia River RM 397.1 – Priest Rapids Dam		X				X
Mercury Levels in the Lower Columbia River Watershed	3	9/1/1971	9/1/1971	1	Columbia River RM 397.1 – Priest Rapids Dam	Results not provided for samples collected at these locations.					
TMDL Technical Assessment of DDT and PCBs in the Okanogan River	3	8/21/2001	8/21/2001	1 Core	Okanogan River RM 2.3 - Mouth				X		X

DDT = dichlorodiphenyltrichloroethane
METs = metals
PCBs = polychlorinated biphenyls
Pest = pesticides
RADs = radionuclides
RM = river mile
SVOCs = semivolatile organic compounds
TMDL = Total Maximum Daily Load

Table 3-3. Summary of Documents with Segment 1 Surface Water Data. (2 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
1999 Hanford Environmental Oversight Program Data Summary Report	1	5/5/1999	11/3/1999	2	Columbia River - RM 397.1 - Priest Rapids Dam	X					
Citizens Monitoring and Technical Assessment - Analysis of Chemical Contaminants in Hanford Reach Biota and Environmental Materials at the Perimeter of the Hanford Nuclear Reservation and on the Columbia River	1	10/7/2003	10/7/2003	1	Columbia River - Vantage, Washington at I90 Bridge	X	X				
Columbia Generating Station 2004 Annual Radiological Environmental Operating Report	1	2/4/2004	7/8/2004	2	Columbia River RM 397.1 - Priest Rapids Dam	X					
EIM Database - Columbia River at Vernita	1	1/13/1999	6/6/2005	75	Columbia River RM 388.1 – Vernita Bridge						X
Hanford Environmental Oversight Program 2000 Data Summary Report	1	2/2/2000	6/29/2000	2	Columbia River RM 397.1 - Priest Rapids Dam	X					
Hanford Environmental Oversight Program 2001 Data Summary Report	1	1/31/2001	8/27/2001	2 4	Columbia River RM 397.1 - Priest Rapids Dam RM 388.1 – Vernita Bridge	X					
Hanford Environmental Oversight Program 2002 Data Summary Report	1	2/6/2002	6/27/2002	2	Columbia River RM 397.1 - Priest Rapids Dam	X					
Hanford Environmental Oversight Program 2003 Data Summary Report	1	2/5/2003	7/10/2003	2	Columbia River RM 397.1 - Priest Rapids Dam	X					
Hanford Site Environmental Report for Calendar Year 1999	1	1/27/1999	12/29/1999	48 46	Columbia River - RM 397.1 - Priest Rapids Dam Vernita	X					X
Hanford Site Environmental Report for Calendar Year 2000	1	1/26/2000	12/28/2000	46 64	Columbia River - RM 397.1 - Priest Rapids Vernita	X	X				
Hanford Site Environmental Report for Calendar Year 2001	1	1/4/2001	12/27/2001	48 73	Columbia River - RM 397.1 - Priest Rapids Dam RM 388.1 – Vernita Bridge	X	X				
Hanford Site Environmental Report for Calendar Year 2002	1	1/3/2002	11/26/2002	46 56	Columbia River - RM 397.1 - Priest Rapids Dam Vernita	X					
Hanford Site Environmental Report for Calendar Year 2003	1	1/8/2003	11/25/2003	56 64	Columbia River - RM 397.1 - Priest Rapids Dam Vernita	X					X
Hanford Site Environmental Report for 2004	1	2/4/2004	1/5/2005	32	Columbia River - RM 397.1 - Priest Rapids	X					

Table 3-3. Summary of Documents with Segment 1 Surface Water Data. (2 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Hydrogeology of the Unconsolidated Sediments, Water Quality, and Ground-Water/Surface-Water Exchanges in the Methow River Basin, Okanogan County, Washington	1	9/21/2001	9/21/2001	2	Columbia River - Methow River - Pateros, Washington		X		X		
Investigation into the Recurring Toxicity of the Chinnet Company Columbia River Intake	1	3/6/2001	6/20/2001	3	Columbia River - Wenatchee, Washington@Chinnet Co. Intake East Bank near Wenatchee		X				
Statewide Arsenic Sampling in Selected Rivers	1	7/9/2001	6/3/2002	12	Columbia River - RM 735.1 - Northport, Washington		X				
Survey of Radiological and Chemical Contaminants in the Near-Shore Environment at the Hanford Site 300 Area	1	8/27/2001	8/27/2001	5	Columbia River - RM 388.1 – Vernita Bridge	X					
An Evaluation of Water Quality and Limnology for the Priest Rapids Project Area	2	3/27/1999	12/5/1999	10 10 11 6 10 10 6 6	Columbia River - RM 397.1 - Priest Rapids Dam RM 415..8 - Below Wanapum Dam RM 440 - Crescent Bar Dry Gulch RM 417.5 - Ginko Park RM 398.5 - Goose Island RM 405.5 - Hanson Creek RM 428 - Scammon's Landing						X

METs = metals
PCBs = polychlorinated biphenyls
Pest = pesticides
RADs = radionuclides
RM = river mile
SVOCs = semivolatile organic compounds

Table 3-4. Summary of Documents with Sediment Data in Segment 2. (6 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
100 Area Columbia River Sediment Sampling	1	11/12/1992	11/24/1992	45	Vernita Area Horn Area 100 B/C Area 100 D Area D Island 100 F Slough 100H Area 100 K Area Hanford Townsite	X	X				
1984 Annual Report Radiological Environmental Monitoring Program Nuclear Plant 2	1	10/26/1984	10/26/1984	2	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
1985 Annual Report Radiological Environmental Monitoring Program Nuclear Plant 2	1	4/16/1985	10/10/1985	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
1986 Radiological Environmental Monitoring Program Annual Report - Plant 2	1	1/21/1986	10/21/1986	8	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
1999 Hanford Environmental Oversight Program Data Summary Report	1	8/2/1999	11/1/1999	9	F Slough CGS (WNP-2) STA 33 CGS (WNP-2) STA 34 100F SPRING 207-1	X					
Citizens Monitoring and Technical Assessment - Analysis of Chemical Contaminants in Hanford Reach Biota and Environmental Materials at the Perimeter of the Hanford Nuclear Reservation and on the Columbia River	1	10/7/2003	8/4/2004	12	100-B/C Reactor Area - 100-D Reactor 100-N Reactor Area 100-H Reactor Area 100-F Reactor Area 300 Area	X	X				
Columbia Generating Station 2000 Annual Radiological Environmental Operating Report	1	3/22/2000	10/25/2000	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	Results not provided for samples collected at these locations.					
Columbia Generating Station 2001 Annual Radiological Environmental Operating Report	1	3/21/2001	10/31/2001	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Columbia Generating Station 2002 Annual Radiological Environmental Operating Report	1	3/20/2002	10/29/2002	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Columbia Generating Station 2003 Annual Radiological Environmental Operating Report	1	3/13/2003	10/30/2003	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Columbia Generating Station 2004 Annual Radiological Environmental Operating Report	1	3/25/2004	3/10/2005	9	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Energy Northwest Nuclear Plant 2 1999 Annual Radiological Environmental Operating Report	1	10/19/1999	10/19/1999	2	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Environmental Monitoring of Columbia River Sediments: Grain-Size Distribution and Contaminant Association	1	4/15/1994	4/15/1994	3	White Bluffs Slough F Slough Hanford Slough	X					

Table 3-4. Summary of Documents with Sediment Data in Segment 2. (6 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Environmental Radiation Oversight Program – Database	1	4/6/1995	10/25/2004	21	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34 100-B Area D Island 100-K Area 100-F Area 100 F 1/10 F Slough Hanford Slough White Bluffs Slough Hanford Spring 28-2 300 Spring Mile 42.2 Richland, Washington	X					
Environmental Radiation Program 1992-1994 Annual Report	1	4/9/1992	9/26/1994	24	Horn Area CGS (WNP-2) STA 33 CGS (WNP-2) STA 34 100-B/C Area 100-F Area 100-N Area 300 FF-5 F Slough H Slough Hanford Slough D Island Shot Rock Spit Tip	X					
Environmental Radiation Program 23rd Annual Report January 1984 - December 1984	1	5/1/1984	6/14/1984	3	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	Results not provided for samples collected at these locations.					
Environmental Radiation Program 28th Annual Report January through December 1989	1	4/11/1989	6/7/1989	6	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Environmental Radiation Program 29th Annual Report January through December 1990	1	4/19/1990	4/19/1990	2	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Hanford Environmental Oversight Program 2000 Data Summary Report	1	3/22/2000	11/7/2000	7	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34 100-N Springs F Slough Hanford Spring 28-2 300 Spring Mile 42.2 100-F Spring 207-1	X					

Table 3-4. Summary of Documents with Sediment Data in Segment 2. (6 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Hanford Environmental Oversight Program 2001 Data Summary Report	1	3/21/2001	10/22/2001	12	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34 100B Spring 38-3 100F Spring 207-1 F Slough 300 Spring Mile 42.2 300 Spring 11 300 Spring 14 Richland, Washington	X					
Hanford Environmental Oversight Program 2002 Data Summary Report	1	3/29/2002	10/29/2002	7	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34 100-N Spring F Slough 100K Spring 63-2 Hanford Spring 28-2 100-F Spring 207-1	X					
Hanford Environmental Oversight Program 2003 Data Summary Report	1	3/13/2003	12/8/2003	9	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34 F Slough 300 Spring Mile 42.2 100-B Spring 37-1 100-K Spring 63-1 100-F Spring 207-1 300 Spring 6	X					
Hanford Site Environmental Report for Calendar Year 1994	1	9/2/1994	9/25/1994	1 1 1 2 2 2 1 1	North 300 Area 300 Spring 42-2 F Slough Hanford Spring 28-2 Hanford Slough White Bluffs Slough Ringold Richland, Washington		X				
Hanford Site Environmental Report for Calendar Year 1995	1	9/2/1994	9/25/1994	1 1 1 1 1 1 1 1 1 1	100-B Spring 100-F Spring 100-K Spring 300 Spring 42-2 F Slough Hanford Spring 28-2 Hanford Slough White Bluffs Slough Richland, Washington		X				

Table 3-4. Summary of Documents with Sediment Data in Segment 2. (6 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Hanford Site Environmental Report for Calendar Year 1996	1	8/20/1996	11/21/1996	1 1 1 1 1 1 1 1	100-B Spring 100-F Spring 300 Spring 42-2 F Slough Hanford Spring 28-2 Hanford Slough White Bluffs Slough Richland, Washington		X				
Hanford Site Environmental Report for Calendar Year 1997	1	8/20/1997	11/3/1997	1 1 1 1 1	North 300 Area 100-B Spring 100-F Spring 300 Spring 42-2 Hanford Spring 28-2		X				
Hanford Site Environmental Report for Calendar Year 1998	1	7/24/1998	10/20/1998	1 1 1 1	North 300 Area 100-B Spring 100-F Spring Ringold		X				
Hanford Site Environmental Report for Calendar Year 1999	1	8/9/1999	11/1/1999	2 1 2 2 2 1 1 1	100-B Spring 100-F Spring 300 Spring 42-2 F Slough Hanford Spring 28-2 Hanford Slough White Bluffs Slough Richland, Washington		X				
Hanford Site Environmental Report for Calendar Year 2000	1	8/8/2000	11/02/2000	1 1 2 3 4 1 2 2	100-B Spring 100-F Spring 300 Spring 42-2 F Slough Hanford Spring 28-2 Hanford Slough White Bluffs Slough Richland, Washington		X				X
Hanford Site Environmental Report for Calendar Year 2001	1	3/5/2001	10/22/2001	2 1 1 1 4 2 1 1 1 1 1 2	Vernita Bridge 100-B Spring 100-F Spring North 300 Area 300 Spring 42-2 F Slough Hanford Slough Hanford Townsite White Bluffs Slough Ringold Richland, Washington		X				

Table 3-4. Summary of Documents with Sediment Data in Segment 2. (6 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Hanford Site Environmental Report for Calendar Year 2002	1	7/19/2002	10/7/2002	1 1 1 2 2 1 1 1 2	100-B Spring 37-1 100-F Spring 207-1 100-K Spring 63-2 300 Spring 42-2 F Slough Hanford Slough Hanford Spring DR 28-2 White Bluffs Slough Richland, Washington		X				X
Hanford Site Environmental Report for Calendar Year 2003	1	7/14/2003	11/13/2003	5 1 1 1 2 1 1 1 1 1	100-B Spring 100-F Spring 100-H Spring 100-K Spring 300 Spring 42-2 F Slough Hanford Slough Hanford Townsite White Bluffs Slough Richland, Washington						
Mid-Columbia River Basin Sediment Chemical Contaminants Study June 2004 to October 2004 addendum	1	6/1/2004	6/1/2004	5 3	Columbia River RM 343.5 to 371 – Irrigation Returns 300 Area Hanford Slough F Slough		X				X
Washington Public Power Supply System Nuclear Plant 2 1993 Annual Report	1	4/15/1993	10/6/1993	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Washington Public Power Supply System Nuclear Plant 2 1994 Annual Radiological Environmental Operating Report	1	4/7/1994	10/5/1994	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Washington Public Power Supply System Nuclear Plant 2 1995 Annual Radiological Environmental Operating Report	1	4/6/1995	10/25/1995	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Washington Public Power Supply System Nuclear Plant 2 1996 Annual Radiological Environmental Operating Report	1	10/9/1996	10/9/1996	2	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Washington Public Power Supply System Nuclear Plant 2 1997 Annual Radiological Environmental Operating Report	1	10/29/1997	10/29/1997	2	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Washington Public Power Supply System Nuclear Plant 2 1998 Annual Radiological Environmental Operating Report	1	4/8/1998	10/21/1998	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Washington Public Power Supply System Nuclear Plant Number 2 Radiological Environmental Monitoring Program 1987 Annual Report	1	4/9/1987	10/14/1987	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Washington Public Power Supply System Nuclear Plant Number 2 Radiological Environmental Monitoring Program 1988 Annual Report	1	4/21/1988	10/26/1988	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					

Table 3-4. Summary of Documents with Sediment Data in Segment 2. (6 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Washington Public Power Supply System Nuclear Plant Number 2 Radiological Environmental Monitoring Program 1989 Annual Report	1	4/11/1989	10/19/1989	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Washington Public Power Supply System Nuclear Plant Number 2 Radiological Environmental Monitoring Program 1990 Annual Report	1	4/19/1990	10/16/1990	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Washington Public Power Supply System Nuclear Plant Number 2 Radiological Environmental Monitoring Program 1991 Annual Report	1	4/10/1991	10/3/1991	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Washington Public Power Supply System Nuclear Plant Number 2 Radiological Environmental Monitoring Program 1992 Annual Report	1	4/9/1992	10/20/1992	4	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Environmental Radiation Program 24th Annual Report January 1985 - December 1985	2	4/16/1985	4/16/1985	2	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Environmental Radiation Program 25th Annual Report January 1986 - December 1986	2	4/16/1986	4/16/1986	2	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Environmental Radiation Program 26th Annual Report January 1987 - December 1987	2	4/9/1987	6/25/1987	7	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34 100-H Area 100-D Area Richland Near Hanford House Locke Island	X					
Environmental Radiation Program 27th Annual Report January through December 1988	2	4/21/1988	9/6/1988	3	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34 100-F Area	X					
Hanford Environmental Oversight Program 1991 Data Summary Report	2	4/10/1991	4/10/1991	2	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Preoperational Environmental Radiological Monitoring Program WNP-2 March 1978 Through January 19, 1984	2	5/17/1978	11/1/1983	21	CGS (WNP-2) STA 33 CGS (WNP-2) STA 34	X					
Association of Hanford Origin Radionuclides with Columbia River Sediment	3	8/4/1976	8/4/1976	1 Core	Hanford Ferry	X					
Mid-Columbia River Feasibility Study: Physical And Chemical Analyses Of Hanford Reach Sediments	3	8/1/1986		4 Cores (Composite)	Hanford Reach RM 393, RM 378.5, RM 373, RM 365		X	X	X		

CGS = Columbia Generating Station
METs = metals
PCBs = polychlorinated biphenyls
Pest = pesticides
RADs = radionuclides
RM = river mile
SVOCs = semivolatile organic compounds
WNP-2 = Washington Public Power Supply System Nuclear Plant Number 2

Table 3-5. Segment 2 Sediment Location Summary.

Sample Area	Sample Collection Dates	No. of Samples
100-B/C Area including 100-B Spring 37-1 and 100-B Spring 38-3	November 1992 – October 2004	23
100-D Area	June 1987 – October 2005	5
D Island	November 1992 – September 1995	11
100-F Area including 100-F Spring 207-1	September 1988 – October 2004	22
100-F Slough	November 1992 – July 2004	47
100-H Area including 100-H Spring 145-1	June 1987 - October 2004	12
100-K Area including 100-K Spring 63-1 and Spring 63-2	November 1992 – October 2003	12
100-N Area including HGP, N-Springs, and 100N-51	June 1992 – October 2003	7
300 Area including 300 Spring 42-2, 300-FF-5, 300 Spring 11, 300 Spring 14, 300 Spring 42-2, and 300 Spring 6	September 1992 – October 2004	7
Hanford Slough	November 1992 – July 2004	32
Hanford Spring 28-2	September 1994 – October 2004	18
Hanford Townsite	November 1992	7
Horn Area	November 1992	6
White Bluffs Slough	April 1994 – July 2004	29
Columbia Generation Station 33	May 1978 – March 2005	70
Columbia Generation Station 34		71
Richland, Washington	June 1987 – July 2004	28
Other locations including Locke Island, Ringold Wasteway, Esquatel Canal	August 1986 – June 2004	25

HGP = Hanford Generating Plant

Table 3-6. Summary of Documents with Segment 2 Surface Water Data. (6 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
1999 Hanford Environmental Oversight Program Data Summary Report	1	1/5/1999	12/16/1999	1 1 5 1 1 1 8 2 1 16 4 1 12 2 5	100 N-1 HRM 9.5 100F SPRING 207-1 100N SPR 1/10 100N SPRING 8-13 100H SPRING 153-1 300 Area 100N SPR STA 3 Benton Pumphouse Butterfield WTP, Pasco, Washington CGS (WNP-2) STA 26, INTAKE CGS (WNP-2) STA 29, WTP Hip Deep Creek, Richland, Washington Richland Water Treatment Plant RL PUMPHOUSE TOWNSITE	X					
Citizens Monitoring and Technical Assessment - Analysis of Chemical Contaminants in Hanford Reach Biota and Environmental Materials at the Perimeter of the Hanford Nuclear Reservation and on the Columbia River	1	10/7/2003	8/4/2004	1 1 1 1 1	K Reactor Area – Water D Reactor Area - Water @ HR023D Richland Water Intake N Reactor Area-seep water H Reactor Area	X	X				
City of Richland Drinking Water data	2	10/7/2003	1/15/2004	2	City of Richland Water Intake		X				X
Columbia Basin Crop and Water Quality Monitoring Study	1	4/17/2000	10/6/2003	8 8	At Road 56 Esquatzel Coulee Wasteway at Road 68	X					
Columbia Generating Station 2000 Annual Radiological Environmental Operating Report	1	1/4/2000	11/1/2000	12 12	CGS (WNP-2) STA 26, INTAKE CGS (WNP-2) STA 27	X					
Columbia Generating Station 2001 Annual Radiological Environmental Operating Report	1	1/3/2001	11/6/2001	15 15	CGS (WNP-2) STA 26, INTAKE CGS (WNP-2) STA 27	X					
Columbia Generating Station 2002 Annual Radiological Environmental Operating Report	1	1/2/2002	11/5/2002	14 13	CGS (WNP-2) STA 26, INTAKE CGS (WNP-2) STA 27	X					
Columbia Generating Station 2003 Annual Radiological Environmental Operating Report	1	1/2/2003	11/4/2003	16 16	CGS (WNP-2) STA 26, INTAKE CGS (WNP-2) STA 27	X					
Columbia Generating Station 2004 Annual Radiological Environmental Operating Report	1	1/6/2004	2/1/2005	35 17	CGS (WNP-2) STA 26, INTAKE CGS (WNP-2) STA 27	X					
Columbia Generating Station, 2000 Annual Environmental Operating Report	2	2/1/2000	2/1/2000	1	CGS (WNP-2) STA 26, INTAKE	X					

Table 3-6. Summary of Documents with Segment 2 Surface Water Data. (6 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Environmental Radiation Oversight Program - Database	1	5/7/2004	10/25/2004	3 3 4 1 1 2 4 1	100 F Shore HRM 18 – 23 100 N Shore HRM 8.4 - 9.8 300 Area Sr HRM 41.5 - 42.9 100 K SPRING 77-2 100N SPRING 8-13 Hanford Townsite HRM 27 – 28 Rich.Pmphs HRM 43.5 - 45.8 RIVERVIEW	X					X
Hanford Environmental Oversight Program 2000 Data Summary Report	1	1/4/2000	12/5/2000	6 1 1 1 1 5 17 4 1 12 1	100N SPR 100H SPRING 153-1 100K SPRINGS 100F SPRING 207-1 SPRING 28.2 300 AREA CGS (WNP-2) STA 26, INTAKE CGS (WNP-2) STA 29, WTP Powerline Richland Water Treatment Plant Wooded Island	X					
Hanford Environmental Oversight Program 2001 Data Summary Report	1	1/3/2001	12/4/2001	1 2 1 10 34 4 16 11 10 1 4	100B SPRING 37-1 100H SPRING 145-1 100N SPRING 8-13 300 AREA 300 SPR CGS (WNP-2) STA 26, INTAKE CGS (WNP-2) STA 29, WTP Richland Water Treatment Plant RL Pumphouse SPRING 28.2 VERNITA	X					
Hanford Environmental Oversight Program 2002 Data Summary Report	1	1/2/2002	12/3/2002	3 5 1 1 1 16 4 3 12 1 6	100 F Shore HRM 18-23 100F 100F SPRING 207-1 100H SPRING 145-1 100K SPRING 63-2 CGS (WNP-2) STA 26, INTAKE CGS (WNP-2) STA 29, WTP Hanfrd Twnsite HRM 26-30 Richland Water Treatment Plant RIVERVIEW TOWNSITE	X					

Table 3-6. Summary of Documents with Segment 2 Surface Water Data. (6 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Hanford Environmental Oversight Program 2003 Data Summary Report	1	1/2/2003	12/8/2003	4 6 6 1 1 1 1 4 1 1 1 16 4 12 1	100 N Shore HRM 8.4 – 9.8 100N SPR 300 AREA 100B SPRING 100F SPRING 100H SPRING 100K SPRING 300 Area Sr HRM 41.5 – 42.9 SPR DR 28.2 300 SPR 14 300 SPRING 6 CGS (WNP-2) STA 26, INTAKE CGS (WNP-2) STA 29, WTP Richland Water Treatment Plant RIVERVIEW	X					
Hanford Site Environmental Report for 1999	1	1/27/1999	12/29/1999	26 12 18 3 2 5 2 2 6 2 12 6 1 18 6 30 160 44 2	HRM 19.0 100 N Shore HRM 8.4 – 9.8 HRM 9.5 100B Area 100BC Area 100D Area 100F Area 100H Area 100K Area 100N Area 300 Area Sr HRM 41.5 – 42.9 300 Area SPRING 42.2 Hanford Reach - 300 Area 300 HRM 43.1 HANFORD SPRING 28-2 Hanfrd Twnsite HRM 26 – 30 Rich.Pmphs HRM 43.5 – 46.4 Vernita WSU-Richland	X					

Table 3-6. Summary of Documents with Segment 2 Surface Water Data. (6 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Hanford Site Environmental Report for Calendar Year 2000	1	1/26/2000	12/28/2000	13	100 F Shore HRM 18 – 23	X					
				24	100 F-10 HRM 19.0						
				20	100 N Shore HRM 8.4 – 9.8						
				27	HRM 9.5						
				4	100B Area						
				4	100D Area						
				4	100K Area						
				7	100B SPRING						
				6	100F SPRING						
				8	100K SPRING						
				12	100D SPRING						
				9	100H SPRING						
				4	100N SPRING						
				46	300 Area-10 HRM 41.5 - 43.1						
				6	HANFORD SPRING 28-2						
				23	Hanford TS-HRM 28.7						
				19	Hanfrd Twnsite HRM 26 – 30						
				213	Rich.Pmphs HRM 43.5 – 46.4						
Hanford Site Environmental Report for Calendar Year 2001	1	1/4/2001	12/27/2001	8	100 F Shore HRM 18 – 23	X					
				24	100 F-10 HRM 19.0						
				12	100 N Shore HRM 8.4 – 9.8						
				24	100 N - HRM 9.5						
				4	100B Area						
				4	100D Area						
				4	100K Area						
				9	100B SPRING						
				3	100D SPRING						
				8	100F SPRING						
				10	100H SPRING						
				3	100N SPRING						
				9	100K SPRING						
				12	300 Area Sr HRM 41.5 - 42.9						
				24	300 Area - HRM 43.1						
				6	300 SPR						
				4	HANFORD SPRING 28-2						
				24	Hanfrd TS - HRM 28.7						
				4	Hanfrd Twnsite HRM 26 – 30						
				213	Rich.Pmphs HRM 43.5 – 46.4						
				1	Richland Spr HRM 44.4						

Table 3-6. Summary of Documents with Segment 2 Surface Water Data. (6 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Hanford Site Environmental Report for Calendar Year 2002	1	1/3/2002	12/12/2002	12 24 16 25 5 5 10 16 6 21 4 11 16 24 7 4 40 186	100 F Shore HRM 18 – 24 100F - HRM 19.0 100 N Shore HRM 8.4 – 9.8 100N - HRM 9.5 100K Area 100N Area 100B SPRING 100D SPRING 100F SPRING 100H SPRING 100N SPRING 100K SPRING 300 Area Sr HRM 41.5 - 42.9 300 Area - HRM 43.1 300 Area SPRING HANFORD SPRING 28-2 Hanfrd Twnsite HRM 26 – 30 Rich.Pmphs HRM 43.5 – 46.4	X					
Hanford Site Environmental Report for Calendar Year 2003	1	1/8/2003	12/9/2003	8 12 21 16 25 9 9 34 16 3 3 11 16 12 10 30 213 12	100 B/C Area 100 F Shore HRM 18 – 23 100f - HRM 19.0 100 N Shore HRM 8.4 – 9.8 100F - HRM 9.5 100K Area 100N Area 100B SPRING 100D SPRING 100F SPRING 100H SPRING 100N SPRING 100K SPRING 300 Area Sr HRM 41.5 - 42.9 300 AREA SPRING Hanfrd Twnsite HRM 26 – 30 Rich.Pmphs HRM 43.5 – 46.4 Ringold Wasteway	X					

Table 3-6. Summary of Documents with Segment 2 Surface Water Data. (6 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Hanford Site Environmental Report for 2004	1	2/4/2004	1/5/2005	40 44 6 8 8 3 6 8 4 8 3 3 61 15 40 134 1	100 F Area 100 N Area 100 B Area 100 D Area 100 H Area 100 K Area 100B SPRING 100D SPRING 100F SPRING 100H SPRING 100N SPRING 100K SPRING 300 AREA HANFORD SPRING Hanfrd Twnsite HRM 26 – 30 Rich Pmphs HRM 43-5 – 46.4 RICHLAND SPR(SRL 437-1)	X					
Survey of Radiological and Chemical Contaminants in the Near-Shore Environment at the Hanford Site 300 Area	1	8/27/2001	8/27/2001	1 42	100 N-1 HRM 9.5 300 SPR	X					
Biogeochemical Processes and Microbial Characteristics across Groundwater-Surface Water Boundaries of the Hanford Reach of the Columbia River	3	3/23/2000	11/2/2000	1 10 1 1	RM 366 RM 372 RM 373 RM 374	Results not available for these samples.					
Water Resource Data Washington Water Year 2003	3	12/12/2002	9/26/2003	3	Richland, Washington	Results not available for these samples.					

- CGS = Columbia Generating Station
- HRM = Hanford River Miles
- METs = metals
- PCBs = polychlorinated biphenyls
- Pest = pesticides
- RADs = radionuclides
- RL = Richland Operations Office
- RM = river mile
- SVOCs = semivolatile organic compounds
- WNP-2 = Washington Public Power Supply System Nuclear Plant Number 2
- WSU = Washington State University
- WTP = Water Treatment Plant

Table 3-7. Segment 2 Surface Water Location Summary.

Sample Area	Sample Collection Dates	No. of Samples
100-B/C Area including 100-B Spring 37-1, 100-B Spring 38-3, 100-B-Spring 39-2	April 1999 – October 2004	156
100-D Area including 100-D Spring 102-1, 110-1, and 98-1	April 1999 – October 2004	85
100-F Area, F Area River Transect locations, and 100-F Spring 207-1, Spring 211-1, and F Spring	June 1999 – October 2004	212
100-H Area including 100-H Spring 144-1, 145-1, 150-1, 152-2, and 153-1	June 1999 – October 2004	80
100-K Area including 100-K Spring 63-1, 63-2, 77-1, 77-2, and 82-2	January 1999 – October 2004	87
100-N Area, N Area River Transect s and Springs	June 1992 – October 2003	332
300 Area and 300 Area River Transects and Springs	July 1992 – December 2004	410
Hanford Spring 28-2	November 1999 – October 2004	79
Hanford Townsite River Transects	September 1999 – September 2004	249
Hanford River Miles (HRM) – 3.6 – 45.6	June 2001	21
Richland, Washington Spring Pumphouse WTNK WTP	January 1999 – February 2005	1 1,131 3 77
Ringold	May 2003	12
Riverview	May 2002 – May 2004	3
Columbia Generation Station 26 Columbia Generation Station 29	January 1999 – February 2005	173 20
Other locations including Road 56, WSU, Benton Co. Pumphouse, Esquatel Canal	July 1999 – October 2003	33

WSU = Washington State University

WTNK =water tank

WTP = Water Treatment Plant

Table 3-8. Summary of Documents with Segment 3 Sediment Data. (3 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
1999 Hanford Environmental Oversight Program Data Summary Report	1	8/2/1999	8/2/1999	4	Columbia River -Above McNary Dam	X					
Class II Inspection of the Boise Cascade Pulp & Paper Mill, Wallula, Washington- April 1992	1	4/13/1992	4/14/1992	4	RM 311 - 1.5 mile below Port Kelly RM 298- 1 mile below Hat Rock State Park RM 318 - Badger Island RM 316 - Old Outfall		X	X	X	X	
Environmental Contaminants in Aquatic Resources from the Columbia River	1	11/1/1991	11/1/1991	1	RM 274-286 – Umatilla, Oregon		X	X		X	
Environmental Monitoring of Columbia River Sediments: Grain-Size Distribution and Contaminant Association	1	4/11/1994	4/11/1994	4	Columbia River -Above McNary Dam	X					
Environmental Radiation Oversight Program – Database	1	7/28/1995	9/21/2004	19	Columbia River -Above McNary Dam	X					
Environmental Radiation Program 1992-1994 Annual Report	1	9/29/1992	9/23/1994	8	Columbia River -Above McNary Dam	X					
Hanford Environmental Oversight Program 2000 Data Summary Report	1	8/8/2000		2	Columbia River -Above McNary Dam	X					
Hanford Environmental Oversight Program 2001 Data Summary Report	1	7/20/2001	7/23/2001	2	Columbia River -Above McNary Dam	X					
Hanford Environmental Oversight Program 2002 Data Summary Report	1	7/19/2002		2	Columbia River -Above McNary Dam	X					
Hanford Environmental Oversight Program 2003 Data Summary Report	1	7/16/2003	8/8/2003	8	Columbia River -Above McNary Dam	X					
Hanford Site Environmental Report for Calendar Year 1994	1	9/23/1994	9/23/1994	7	Columbia River -Above McNary Dam		X				
Hanford Site Environmental Report for Calendar Year 1995	1	7/28/1995	7/28/1995	4	Columbia River -Above McNary Dam						
Hanford Site Environmental Report for Calendar Year 1996	1	8/16/1996	8/16/1996	4	Columbia River -Above McNary Dam						
Hanford Site Environmental Report for Calendar Year 1999	1	8/2/1999	8/16/1999	3 6	Snake River - Above Ice Harbor Dam Columbia River - Above McNary Dam		X				X
Hanford Site Environmental Report for Calendar Year 2000	1	8/8/2000	8/8/2000	2	Columbia River - Above McNary Dam		X				X
Hanford Site Environmental Report for Calendar Year 2001	1	3/26/2001	7/23/2001	3 9	Snake River - Above Ice Harbor Dam- Columbia River - Above McNary Dam		X				X
Hanford Site Environmental Report for Calendar Year 2002	1	7/19/2002	7/19/2002	2	Columbia River - Above McNary Dam		X				X
Hanford Site Environmental Report for Calendar Year 2003	1	7/19/2002	7/19/2002	6 2 2	Columbia River - Above McNary Dam Yakima River Walla Walla River		X				X

Table 3-8. Summary of Documents with Segment 3 Sediment Data. (3 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Mercury in Edible Fish Tissue and Sediments from Selected Lakes and Rivers of Washington State	1	9/27/2002	9/27/2002	2	Walla Walla River - Walla Walla, Washington		X				X
Mid-Columbia River Basin Sediment Chemical Contaminants Study June 2004 to October 2004 addendum	1	6/1/2004	6/1/2004	8 3 4 7 2 4 2 1	Columbia River - Lake Wallula – above/below Snake River Confluence RM 316 - Lake Wallula Above McNary Dam Snake River - RM10 - Above Ice Harbor Dam Lower River Delta Yakima River RM 1 - Lower River Delta RM 2 - Lower River (Below Highway 240 Bridge) Walla Walla River – Lower Delta		X				X
Occurrence and Significance of DDT Compounds and Other Contaminants in Fish, Water, and Sediment from the Yakima River Basin	1	9/24/1985	9/24/1985	1	Yakima River RM 18 - Horn Rapids Dam		X	X	X	X	X
Pesticides Detected in the Walla Walla Drainage, April and June 1996	1	6/18/1996	6/18/1996	1	Walla Walla River -Cummins Road Bridge			X	X		X
Screening Survey of Contaminants in Groundwater and Surface Water Drainage at the Port of Pasco	1	9/10/1985	9/30/1986	11	Port of Pasco		X	X		X	X
Screening Survey of Mercury Levels in Fish Tissue	1	9/27/2002	9/27/2002	1	Walla Walla, Washington		X				X
Snake and Columbia Rivers Sediment Sampling Project	1	8/19/1991	8/19/1991	1 1 2 1	Columbia River – RM 328- Port of Kennewick RM 314-315 RM 315-316 Snake River - RM 2 - Port of Burbank		X	X	X	X	X
Surface Water Quality Assessment of the Yakima River Basin, Washington: Pesticide and Other Trace-Organic-Compound Data for Water, Sediment, Soil, and Aquatic Biota, 1987-91	1	8/31/1988	11/10/1990	3	Yakima River - Kiona, Washington			X		X	
Surface-Water Quality Assessment of the Yakima River Basin in Washington: Major and Minor Element Data for Sediment, Water and Aquatic Biota, 1987-91	1	8/25/1987	8/25/1987	1	Yakima River - Kiona, Washington		X				
Survey of Potential Hanford Site Contaminants in the Upper Sediment for the Reservoirs at McNary, John Day, The Dalles, and Bonneville Dams, 2003	1	7/14/2003	8/8/2003	11	Columbia River - Above McNary Dam	X	X	X	X	X	X
Washington State Pesticide Monitoring Program Reconnaissance Sampling of Fish Tissue and Sediments (1992)	1	9/16/1992	9/16/1992	1 2	Walla Walla River - Near mouth Yakima River - Horn Rapids Dam				X		X

Table 3-8. Summary of Documents with Segment 3 Sediment Data. (3 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
WSPMP 1994 Pesticides in Sediment	1	9/14/1994	9/14/1994	1	Snake River – near Lake Sacajawea				X		X
An Investigation of the Origin of 152 Eu in Columbia River Sediment	2	7/28/1999	8/16/1999	22	Columbia River - Above McNary Dam Snake River - Above Ice Harbor Dam	X					
Basic Water Monitoring Program Fish Tissue and Sediment Sampling for 1984	2	9/12/1984	9/12/1984	1 1	Yakima River - Below Kiona, Washington Walla Walla River - Below Warm Springs		X	X	X	X	
Environmental Radiation Program 26th Annual Report January 1987 - December 1987	2	6/24/1987	6/24/1987	3	Columbia River - Above McNary Dam	X					
Environmental Radiation Program 27th Annual Report January through December 1988	2	9/7/1988	9/7/1988	1	Columbia River -Above McNary Dam	X					
Oregon Department of Environmental Quality *a	2	9/1/1991	10/23/1991	4	Columbia River - Wallula Mill Site - 1 Mi downstream			X	X	X	X
Oregon Department of Environmental Quality *b	2	9/1/1991	10/23/1991	4	Columbia River - Wallula Mill Site			X	X	X	X
Oregon Department of Environmental Quality *c	2	10/23/1991	10/23/1991	1	Columbia River - RM 312			X	X	X	
243,244 Cm in Columbia River Sediments	3	8/1/1977	8/1/1977	1 Core	Columbia River - McNary Dam Reservoir	X					
Association of Hanford Origin Radionuclides with Columbia River Sediment	3	8/5/1976	8/1/1977	1 Core 2 Cores 10 Cores	Columbia River - Wallula Port Kelly Above McNary Dam	X					
Environmental Surveillance Report on Oregon Surface Waters 1961- 1993, Vol. 2	3	12/14/1976	5/26/1993	28	Columbia River - RM 300 - McNary Dam	X					
Heavy Metal Transport and Behavior in the Lower Columbia River, USA	3	8/1/1999	8/1/1999	2 Cores	Columbia River -Above McNary Dam		X				X
Mid-Columbia River Feasibility Study: Physical And Chemical Analyses Of Hanford Reach Sediments	3	10/1/1986	10/1/1986	4 Cores (Composite)	Columbia River - Above McNary Dam		X	X	X		
Nickel-63 in Columbia River Sediments below the Hanford Reservation	3	8/1/1977	8/1/1977	1 Core	Columbia River - McNary Dam Reservoir	X					

DDT = dichlorodiphenyltrichloroethane
METs = metals
PCBs = polychlorinated biphenyls
Pest = pesticides
RADs = radionuclides
RL = Richland Operations Office
RM = river mile
SVOCs = semivolatile organic compounds
WSPNP = Washington State Pesticide Monitoring Program

Table 3-9. Summary of Documents with Segment 3 Surface Water Data. (2 pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
A Total Maximum Daily Load Evaluation for Chlorinated Pesticides and PCBs in the Walla Walla River	1	5/30/2002	6/9/2003	17 4	Touchet River - At Hwy 12 bridge Walla Walla River RM 15.6 Cummins Bridge				X	X	X
Columbia Basin Crop and Water Quality Monitoring Study	1	4/17/2000	10/6/2003	8	Snake River - At Hood Park Boat Launch						X
Hanford Site Environmental Report for Calendar Year 2003	1	5/14/2003	5/15/2003	1 12 15 10	Columbia River - Above McNary Dam mid-river Snake River Yakima River Walla Walla River	X	X				X
Mercury in Edible Fish Tissue and Sediments from Selected Lakes and Rivers of Washington State	1	9/27/2002	9/27/2002	2	Walla Walla River						X
Occurrence and Distribution of Dissolved Trace Elements in the Surface Waters of the Yakima River Basin, Washington, 1999-2000	1	5/19/1999	1/13/2000	16	Yakima River Kiona, Washington	Results not provided for samples from these locations.					
Results of Sampling to Verify 303 (d) Metals Listings for Selected Washington State Rivers and Creeks	1	7/25/2001	5/16/2002	6	Yakima River Kiona, Washington	Results not provided for samples from these locations.					
Statewide Arsenic Sampling in Selected Rivers	1	7/9/2001	6/12/2002	12	Yakima River Kiona, Washington		X				
Statewide Metals in Selected Rivers & Creeks	1	7/25/2001	5/16/2002	14	Yakima River Kiona, Washington		X				
USBR Columbia River Pump Exchange Project, Potential Water Quality Impacts on the Lower Yakima River	1	9/28/1999	7/26/2000	26	Yakima River - Kiona Washington and lower Yakima River areas						X
Walla Walla Bacteria and pH TMDL	1	6/26/2002	6/26/2003	20	Walla Walla River RM 15.6, Cummins Bridge Hwy 12 bridge	Results not provided for samples from these locations.					
Walla Walla River Chlorinated Pesticide and PCB TMDL	1	5/14/2002	6/9/2003	16	Walla Walla River Lower Walla Walla River (32WAL-14.3)				X	X	X
Concentrations and Loads of Suspended Sediment and Nutrients in Surface Water of the Yakima River Basin, Washington, 1999-2000- With an Analysis of Trends of Concentrations	2	1/13/1999	6/7/2005	185	Yakima River - Kiona, Washington				X		X

Table 3-9. Summary of Documents with Segment 3 Surface Water Data. (2 pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Pesticides in Surface Water of the Yakima River Basin, Washington, 1999-2000- Their Occurrence and an Assessment of Factors Affecting Concentrations and Loads	2	5/19/1999	1/13/2000	14	Yakima River Kiona, Washington	Results not provided for samples from these locations.					
Yakima Mainstem Monitoring and BMP Implementation Project	2	6/3/2003	11/3/2004	92	Yakima River - Kiona Washington and lower Yakima River areas						X

BMP = Baseline Monitoring Program
METs = metals
PCBs = polychlorinated biphenyls
Pest = pesticides
RADs = radionuclides
RM = river mile
SVOCs = semivolatile organic compounds
TMDL = Total Maximum Daily Load
USBR =U.S. Bureau of Reclamation

Table 3-10. Summary of Documents with Segment 4 Sediment Data.

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Bonneville Forebay & Upstream Locations Sediment Quality Evaluation September 18, 2002 Sampling Event	1	9/18/2002	9/18/2002	8	Columbia River - Above Bonneville Dam		X	X		X	X
Bonneville Second Powerhouse Forebay Sediment Evaluation	1	7/24/1997	7/28/1997	7	Columbia River - RM 145 - Behind Bonneville Dam		X	X		X	X
Environmental Radiation Oversight Program – Database	1	9/21/2004	9/21/2004	1	Columbia River - Above John Day Dam	X					
Environmental Radiation Program 1992-1994 Annual Report	1	3/11/1992	3/11/1992	1	Columbia River - Bingen, Washington - Marina	X					
Hanford Environmental Oversight Program 2003 Data Summary Report	1	8/7/2003	8/8/2003	3 2 1	Columbia River - Above John Day Dam Above The Dalles Dam Above Bonneville Dam	X					
Port of Morrow Messner Cove Sediment Sampling Evaluation	1	3/17/1999	3/17/1999	11	Columbia River - Messner Cove		X	X	X	X	X
Survey of Potential Hanford Site Contaminants in the Upper Sediment for the Reservoirs at McNary, John Day, The Dalles, and Bonneville Dams, 2003	1	8/1/1967	8/7/2003	8 6 5	Columbia River - Above John Day Dam Above The Dalles Dam Above Bonneville Dam		X				X
Association of Hanford Origin Radionuclides with Columbia River Sediment	3	8/10/1976	8/11/1976	1 Core 3 Cores 1 Core	Columbia River – John Day Dam The Dalles Dam Stevenson, Washington	X					
Environmental Surveillance Report on Oregon Surface Waters 1961- 1993, Vol. 2	3	1/7/1963	8/19/1993	92 32	Columbia River - RM 192.8 - The Dalles Dam Deschutes River - RM 0.3 - Deschutes Park	X					
Irrigon Boat Basin Sediment Evaluation	3	6/4/1993	6/4/1993	1 Core	Columbia River - RM 282 - Irrigon Boat Basin		X	X			X

METs = metals
PCBs = polychlorinated biphenyls
Pest = pesticides
RADs = radionuclides
RM = river mile
SVOCs = semivolatile organic compounds

Table 3-11. Summary of Documents with Segment 4 Surface Water Data.

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Concentrations of 303(d) Listed Pesticides, PCBs, and PAHs Measured With Passive Samplers Deployed in the Lower Columbia River	1	9/1/2003	6/1/2004	3	Columbia River - RM 147, above Bonneville Dam			X	X		
EIM Database - Columbia River above Bonneville Dam	1	8/27/2003	6/22/2004	12	Columbia River - Above Bonneville			X		X	X
Statewide Arsenic Sampling in Selected Rivers	1	7/11/2001	5/15/2002	11	Columbia River - Umatilla, Oregon		X				X
The City of The Dalles Quarterly Testing Data	1	2/8/2000	5/10/2005	22	Columbia River - The Dalles Bridge, 12th pier west of the bridge	X	X				X
Upper Deschutes Basin Spring Water Quality Survey 2002	1	2/22/1999	6/13/2005	49	Columbia River - At footbridge downstream of I-84, Hood River, Oregon						X

EIM = Environmental Information Management
METs = metals
PAH = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
Pest = pesticides
RADs = radionuclides
RM = river mile
SVOCs = semivolatile organic compounds

Table 3-12. Summary of Documents with Segment 5 Sediment Data. (4 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Bachelor Slough Ecosystem Restoration Sediment Quality Evaluation Report	1	6/3/2003	6/3/2003	10	Columbia River - Bachelor Slough		X	X	X		X
Columbia and Willamette River Sediment Quality Evaluation for the Columbia River Channel Deepening Feasibility Report	1	6/3/1997	7/24/1997	2 1 5 2 4 2 3 1 2 2 4 4 1 4 2 4 1 4 2 1 4 1 4 2 7 2 6 7 4 3	Columbia River - RM 6 Desdemona Shoal RM 6 Off Buoy 22 RM 11-12 Flavel Bar RM 15-16 Upper Sands RM 18-22 Tongue Pt X-ing RM 23-24 Miller Sands RM 27-29 Pillar Rock RM 32 Brookfield-Welch RM 33- Skamokawa Bar RM 38-39 Puget Is. Bar RM 40-45- Wanna-Driscoll RM 46-51- West Port Bar RM 54 - Island Bar RM 56-59- Stella-Fisher Bar RM 60-62- Walker Is. RM 63-65 - Slaughters Bar RM 66 R Turning Basin Upper RM 67-73 Dowelbower Bar RM 74 -75 – Kalama RM 76 E8 on BiState RM 79-83 - Martin Is Bar RM 83 - E9D on BiState RM 84-86- St Helens Bar RM 88-89 Warrior Rock Bar RM 90-96 Henrici Bar RM 97-98 Willow Bar RM 99-101 - Morgan Bar RM 102-104 Vancouver, Washington RM 105-106 Willamette River RM 0.1-0.4 mouth		X	X	X	X	X
Columbia River Channel Deepening (CRCD) Station #76 (CR-BC-76) Sediment Quality Evaluation	1	6/1/1997	6/1/1997	3	Columbia River		X	X			X
Columbia River Mile 29-34 Brookfield Mound and Skamakawa Turn Sediment Evaluation	1	8/9/2000	9/7/2000	25	Columbia River - RM 29-34 - Brookfield Mound		X	X		X	X
Crims Island Ecosystem Restoration Sediment Quality Evaluation Report	1	7/15/2003	7/15/2003	5	Columbia River - Crims Island		X	X			X

Table 3-12. Summary of Documents with Segment 5 Sediment Data. (4 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Environmental Contaminants in Aquatic Resources from the Columbia River	1	8/1/1991	11/1/1991	1 1 1 1 1 1 1	Columbia River - RM 2-6 - Baker Bay RM 111-121 - Camas Slough RM 21 - Cathlamet Bay RM 37-47 - Julia Butler Hansen NWR RM 64-72 – Longview, Washington RM 21-37 - Lewis and Clark NWR RM 87-102 - Ridgefield			X		X	
Kalama Turning Basin (Columbia River Mile 73.9-74.8) Sediment Quality Evaluation Report December 2003	1	9/10/2003	9/10/2003	3	Columbia River - RM 73.9 & 74.8		X	X			X
Lower Columbia River Backwater Reconnaissance Survey	1	6/24/1993	7/1/1993	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Columbia River - RM 14 - Young's Bay RM 21 - Cathlamet Bay RM 23 -Svensen Landing RM 26 - Knappa Slough RM 29 - Lewis & Clark NWR (Bug Hole) RM 36 - Elochman Slough RM 59 - Fisher Island Slough RM 68 - Carrolls Channel RM 81 - Burke Slough RM 88- Scappoose Bay RM 90 - Bachelor Island Slough RM 95 - Willow Bar Islands RM 120 - Camas Slough RM 124 - Gary & Flag Islands RM 141 - Skamania Landing		X	X	X	X	X
Old Mouth of the Cowlitz River Federal Project Sediment Quality Evaluation Report	1	9/10/2003	9/10/2003	4	Old Mouth of Cowlitz River		X	X			X
Oregon Slough Entrance Channel Sediment Quality Evaluation	1	6/19/2001	6/19/2001	4	Columbia River - Oregon Slough		X	X			X
Reynolds Metal Company Class II Inspection February 1990	1	2/23/1990	2/23/1990	6	Columbia River - Longview, Washington-		X	X	X	X	X
Sediment Quality Evaluation - 2005 Data from Oregon Slough	1	2/17/2005	2/17/2005	8	Columbia River - Oregon Slough		X	X	X	X	X
Skipanon Channel & Boat Basin Sediment Evaluation Report	1	6/24/2003	6/24/2003	4	Skipanon Federal Channel - Boat Basin		X	X			X

Table 3-12. Summary of Documents with Segment 5 Sediment Data. (4 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Skipanon Entrance Channel and Boat Basin Sediment Quality Evaluation	1	9/12/2001	9/12/2001	7	Skipanon Federal Channel - Boat Basin		X	X			X
VANALCO Aluminum (former ALCOA Aluminum Plant) Sediment Quality Evaluation	1	6/20/2001	6/20/2001	26	Columbia River - RM 103-N. Side Federal Navigation Channel		X	X	X	X	
Investigation of the Distribution of Organochlorine and Polycyclic Aromatic Hydrocarbon Compounds in the Lower Columbia River Using Semipermeable Membrane Devices	2	9/8/1997	11/20/1997	3	Columbia River - RM 54 - Beaver Army Terminal RM 82 - Columbia City RM 141 - Warrendale, Oregon			X	X	X	
Screening Survey for Chemical Contaminants and Toxicity in Sediments at Five Lower Columbia River Ports September 22-24, 1987	2	7/22/1987	7/24/1987	12	Columbia River - Reed Island Camas Slough Vanc. Lower Turning Basin Vancouver below VANALCO Kalama Chemical Pier Below Longview Fibre Longview --below Weyco Longview --below Weyco Longview below Reynolds Coal Creek Slough Ilwaco Boat Basin		X	X			X
Sediment Evaluation of Government Island South Channel	2	--	--	--		Results not provided for samples collected at these locations.					
Sediment Quality Evaluation Lower Columbia and Willamette Rivers May 1990	2	5/3/1990	5/10/1990	39	Columbia River - Willamette River						X
Environmental Surveillance Report on Oregon Surface Waters 1961- 1993, Vol. 2	3	1/19/1963	11/3/1993	109 16 91	Columbia River - RM 13.7 - Astoria, Oregon Portland, Oregon RM 128.4 - Rooster Rock	X					
St. Helens, Oregon Cross Channel, Sediment Quality Evaluation Report	3	4/13/1989	5/4/1989	12	Columbia River - RM 86.5 - St.Helens Cross Channel		X	X			X
The Vertical Distribution of Selected Trace Metals and Organic Compounds in Bottom Materials in the Proposed Lower Columbia River Export Channel, Oregon	3	9/27/1984	9/27/1984	5 Cores	Columbia River - RM 21 - Cathlamet Bay		X		X		X

Table 3-12. Summary of Documents with Segment 5 Sediment Data. (4 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Historical Changes in the Columbia River Estuary Based on Sediment Cores: Feasibility Studies	3	12/1/1997	10/1/2001	3 Cores	Columbia River- RM 49 – Clatskanie Flats RM 12 - Young's Bay RM 24 – Gray's Bay	X	X				X

METs = metals
NWR = National Wildlife Refuge
PCBs = polychlorinated biphenyls
Pest = pesticides
RADs = radionuclides
RM = river mile
SVOCs = semivolatile organic compounds

Table 3-13. Summary of Documents with Segment 5 Surface Water Data. (2 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Concentrations and Annual Fluxes for Selected Water Quality Constituents from the USGS National Stream Quality Accounting Network (NASQAN) 1996-02 (electronic resource)	1	1/5/1999	2/9/2002	40	Columbia River - Beaver Army Terminal, Quincy, Oregon		X		X	X	X
Concentrations of 303(d) Listed Pesticides, PCBs, and PAHs Measured With Passive Samplers Deployed in the Lower Columbia River	1	9/1/2003	6/1/2004	3 6 3 6 2 3 5 3 3 3	Columbia River RM 102 - Columbia Slough RM 102-103 -Near Willamette River RM 121 - Washougal River RM 142 - near Bonneville Dam RM 54 - below Longview RM 68 - at Cowlitz River RM 73-75 - Kalama River RM 86 - Multnomah Channel RM 87 - at Lewis River RM 88 - at Lake River			X	X	X	
EIM Database - Columbia River above Kalama - location #1	1	8/28/2003	1/13/2004	6	Columbia River - Above Kalama, Washington			X	X	X	X
EIM Database - Columbia River above Kalama - location #2	1	5/25/2004	6/23/2004	3	Columbia River - Above Kalama, Washington			X		X	X
EIM Database - Columbia River above Willamette Influent	1	6/25/2003	6/22/2004	9	Columbia River - Above Willamette River			X	X	X	X
EIM Database - Columbia River at Vancouver	1	10/30/2002	9/24/2003	12	Columbia River - At Vancouver (28A100)		X				X
EIM Database - Columbia River below Bonneville Dam - location #2	1	8/27/2003	6/22/2004	9	Columbia River - Below Bonneville Dam			X	X	X	X
EIM Database - Columbia River below Longview	1	5/25/2004	6/23/2004	3	Columbia River Below Longview, Washington			X	X	X	X
EIM Database - Columbia River below Longview (Location 2)	1	8/28/2003	1/13/2004	5	Columbia River Below Longview, Washington			X	X	X	X
EIM Database - Columbia Slough	1	8/27/2003	6/22/2004	8	Columbia River - Columbia Slough			X	X	X	X
Statewide Arsenic Sampling in Selected Rivers	1	9/25/2001	9/25/2001	1 1 2 1	Columbia River - Beacon Rock, Washington Columbia City, Oregon County Line Park, Washington Ryan Pt., Washington		X				
USGS 14128910 – Columbia River at Warrendale	1	1/27/1999	9/15/2004	--	Warrendale, Oregon	Results not available for these samples.					
USGS 14246900 - COLUMBIA RIVER @ BEAVER ARMY TERMINAL NR QUINCY, Oregon	1	1/5/1999	9/13/2004	--	Beaver Army Terminal, Quincy, Oregon	Results not available for these samples.					
Water Resource Data Washington Water Year 2003	3	10/16/2002	9/8/2003	--	Beaver Army Terminal, Quincy, Oregon	Results not available for these samples.					

Table 3-13. Summary of Documents with Segment 5 Surface Water Data. (2 Pages)

Source Title	Data Usability Category	Begin Date	End Date	Number of Samples	Sample Area	RADs	METs	SVOC	Pest	PCBs	GEN CHEM
Results and Recommendations from Monitoring Arsenic Levels in 303 (d) Listed Rivers in Washington	1	7/25/2001	4/25/2002	--	At Kelso, Allen Main Street Bridge At Kelso, boat launch at Gerhart Garden Park	Results not available for these samples.					

EIM = Environmental Information Management
METs = metals
PAH = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
Pest = pesticides
RADs = radionuclides
RM = river mile
SVOCs = semivolatile organic compounds
USGS = U.S. Geological Survey

4.0 EVALUATION OF EXISTING DATA

4.1 METHODOLOGY

As described previously, the purpose of the CRC data evaluation summary report is to evaluate the nature and extent of Hanford Site-related contamination within the defined boundaries of the CRC (below Grand Coulee Dam to Astoria, Oregon). This information will be used to develop an initial understanding of river conditions and contaminant distribution within the river and local tributaries. This was accomplished by comparing measured concentrations of radiological contaminants and hazardous constituents in sediment and surface water to available benchmarks. When more than one benchmark value was available for a medium and receptor, the lowest benchmark value was selected for comparison. A description of the benchmark values included in this evaluation is provided below. Sediment samples were also compared to the 90th percentile of the background concentrations from *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes* (DOE-RL 2001); *Hanford Site Background: Part 2, Soil Background for Radionuclides* (DOE-RL 1996); and *Natural Background Soil Metals Concentrations in Washington State* (Ecology 1994). Although there are no sediment background values available for comparison, it is the general consensus that soil background values would be comparable to those observed in the sediments. A summary of the background values used in this evaluation are provided in Table 4-1.

To simplify the evaluation process, all sample results for a particular environmental medium (e.g., surface water) were grouped by river segment (e.g., Segment 1) regardless of the QA category. Summary statistics were calculated for each sample group that includes the frequency of detection, minimum and maximum nondetected values; and minimum, average, and maximum concentrations. The maximum detected concentration for each contaminant was compared to the lowest benchmark value for each receptor. When the maximum detected concentrations exceeded its respective benchmark value, all individual sample concentrations were compared to the benchmark value to determine where concentrations greater than benchmark values spatially reside within the river segment. If the benchmark value for sediments was lower than the soil background values, the benchmark defaulted to the background value.

It is important to note that when concentrations are below the selected benchmark value, an adverse health effect is not anticipated for the identified receptor. Conversely, when concentrations are above the selected benchmark value, the potential exists for an adverse health effect to occur. Although, the most protective value was selected for comparison purposes it may not be representative of actual river conditions. For example, freshwater sediment benchmark values have not been derived for all detected contaminants; therefore, marine sediment benchmark values were selected as a surrogate. Similarly, total chromium analyses were conducted for the majority of abiotic media. Therefore, measured concentrations of total chromium were compared to the hexavalent chromium benchmark value that assumes that all chromium is present in the hexavalent form.

4.1.1 Sediment Benchmark Values

Sediment benchmark values were selected to evaluate the protection of human and ecological receptors that could potentially come into contact with surface sediment from the Columbia

River. Benchmark values have not been developed for the protection of human health from potential direct contact exposure to surface sediment. Therefore, the WAC 173-340-740 cleanup levels for unrestricted land use and the 2004 EPA Region 9 Preliminary Remediation Goals (PRGs) for residential land use were used to evaluate nonradiological contaminants and the cleanup levels developed in the *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (DOE-RL 1998a) were used to evaluate radiological contaminants. A summary of the surface sediment benchmark values used to evaluate protection of human health are listed in Table 4-2.

Surface sediment benchmark values selected to evaluate protection of ecological receptors include the *Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems* (MacDonald et al. 2000), the *Creation and Analysis of Freshwater Sediment Quality Values in Washington State* (Ecology 1997), and the *Guidance for Ecological Risk Assessment Level II Screening Level Values* (ODEQ 2001) for nonradiological contaminants. Although currently there are no specific statewide standards for freshwater sediment quality as discussed in WAC 173-204-340 (reserved for use by Ecology on a case-by-case-basis), the marine sediment quality standards have been included in this evaluation for completeness. The benchmark values selected for radiological contaminants to evaluate the protection of ecological receptors include the Biota Concentration Guides that were derived using the RESidual RADioactivity (RESRAD) Biota Version 1.0. A summary of the surface sediment benchmark values used to evaluate protection of ecological receptors are listed in Table 4-3.

4.1.2 Surface Water Benchmark Values

Surface water benchmark values were selected to evaluate the protection of human and ecological receptors that could potentially come into contact with surface water from the Columbia River. The surface water benchmark values selected to evaluate protection of human health were the EPA's National Recommended Water Quality Criteria for nonradiological contaminants. State standards for surface water protection are based on this EPA criteria. These water quality criteria include the protection of human health for the consumption of water and organism and for the consumption of the organism only (EPA 2006). The benchmark values selected for radiological contaminants to evaluate the protection of human health include the radiological drinking water maximum contaminant levels (MCLs). The drinking water MCLs derived for radiological contaminants were selected as a surrogate because surface water values have not been developed to evaluate direct exposure. A summary of the surface water benchmark values used to evaluate protection of human health are listed in Table 4-4.

Surface water benchmark values selected to evaluate protection of ecological receptors (including fish and water column organisms) include the Washington Chronic Water Quality standards (WAC 173-201A), the Oregon Aquatic Biota Screening Values (ODEQ 2001), and the National Ambient Water Quality Standards (EPA 2002) for nonradiological contaminants. The benchmark values selected for radiological contaminants to evaluate the protection of ecological receptors were the water concentration guides that were derived using RESRAD Biota Version 1.0. A summary of the surface water benchmark values used to evaluate protection of ecological receptors are listed in Table 4-5.

4.2 CONTAMINANT DISTRIBUTIONS IN SEGMENT 1

A list of the surface sediment and surface water samples used to evaluate Segment 1 of the Columbia River is provided in Appendix A, Tables A-1 and A-2, respectively. All unique surface sediment sampling locations within Segment 1 are provided in Figure A-1. Summary statistics for detected and nondetected surface sediment sample results reported on an “as received” and “dry-weight” basis are presented in Appendix A, Tables A-3 through A-5. A comparison of all detected surface sediment concentrations to available human health and ecological benchmark values is presented in Appendix A, Tables A-6 and A-7. Individual surface sediment samples exceeding respective human health and ecological benchmark values and their sampling location are presented in Appendix A, Table A-8 and shown in Figure A-2.

Summary statistics for detected and nondetected surface water sample results are presented in Appendix A, Tables A-9 and A-10. All unique surface water sampling locations within Segment 1 are provided in Figure A-3. A comparison of all detected surface water concentrations to available human health and ecological benchmark values is presented in Appendix A, Table A-11. Individual surface water samples exceeding respective human health and ecological benchmark values and their sampling location are presented in Appendix A, Table A-12 and shown in Figure A-4.

4.2.1 Sediment

Sediment samples collected within this segment of the river were analyzed for metals, pesticide/PCBs, radionuclides, and SVOCs. Except for 11 metals, dichlorodiphenyldichloroethylene [DDE], and three radiological contaminants, all contaminant concentrations were less than their respective ecological or human health benchmark value. A summary of those contaminants that exceed their respective sediment benchmark values is presented in Table 4-6.

4.2.1.1 Comparison to Ecological Benchmark Values. Maximum concentrations of all 11 metals and DDE were reported above their ecological benchmark value. With the exception of cadmium, the majority of contaminants were only slightly greater than their ecological benchmark value with the factor of exceedance ranging from slightly greater than 1 to 7. Cadmium was measured in 55 of 66 surface sediment samples (90%) at concentrations that are greater than the ecological benchmark value of 0.60 mg/kg with concentrations ranging between 0.3 mg/kg and 16 mg/kg. Cadmium occurs naturally in the environment with a 90th percentile Washington State background value reported as 0.81 mg/kg. All cadmium concentrations measured within this segment are greater than the background value. Results indicate that cadmium is present at levels greater than background and greater than the ecological benchmark value throughout Segment 1 suggesting an upgradient source of cadmium.

4.2.1.2 Comparison to Human Health Benchmark Values. Maximum concentrations of four metals and three radiological contaminants were reported above their human health benchmark value. With the exception of arsenic, the majority of contaminants were only slightly greater than their benchmark value with the factor of exceedance ranging from slightly greater than 1 to slightly greater than 3. All arsenic concentrations measured in sediment are greater than the human health benchmark value of 0.39 mg/kg with concentrations ranging from 0.42 mg/kg to 12 mg/kg. Arsenic occurs naturally in the environment with the 90th percentile Hanford Site background value reported as 6.5 mg/kg. Greater than one-half of all arsenic concentrations

measured (28 of 51, 55%) were also greater than the Hanford Site background value (see Table A-8 for individual locations exceeding benchmark). The majority of sediment samples with arsenic concentrations greater than background were located near Priest Rapids Dam (22 of 28, 79%). The remaining samples were collected near Vernita Bridge, RM 417.5 and RM 428. Results suggest that arsenic is present at naturally occurring levels and concentrations greater than naturally occurring levels may be contributed from an upgradient source.

Chromium was measured in 42 of 67 (63%) at concentrations greater than the human health benchmark value of 30 mg/kg with concentrations ranging from 3.2 mg/kg to 93 mg/kg. Locations where chromium was measured above the benchmark value include the Priest Rapids Dam and Columbia RMs 398.5, 405.5, 417.5, 428, and 440.

Uranium-234 was measured in seven of 38 surface sediment samples (18%) at concentrations greater than the human health benchmark value of 1.1 pCi/g with concentrations ranging from 0.064 pCi/g to 1.6 pCi/g. Uranium-238 was measured in five of 69 surface sediment samples (7%) at concentrations greater than the human health benchmark value of 1.1 pCi/g with concentrations ranging from 0.063 pCi/g to 1.3 pCi/g. Uranium-234 and uranium-238 were measured above the benchmark value at Priest Rapids Dam (see Appendix A, Table A-8 for a list of individual locations).

4.2.2 Surface Water

Surface water samples collected within this segment of the river were analyzed for general chemistry parameters, metals, pesticides, radionuclides, and VOCs. Except for arsenic and barium, all contaminant concentrations were less than their respective ecological or human health benchmark value. The factor of exceedance for arsenic and barium are 94 and 7 fold, respectively. A summary of those contaminants that are greater than their respective sediment benchmark values is presented in Table 4-7.

4.2.2.1 Comparison to Ecological Benchmark Values. Barium was measured in all surface water (five samples) at concentrations that are greater than the ecological benchmark value of 0.004 mg/L with concentrations ranging from 0.028 mg/L to 0.029 mg/L. Barium was measured once at Wenatchee, Washington, and four samples were collected from Vernita Bridge in 2001.

4.2.2.2 Comparison to Human Health Benchmark Values. Arsenic was measured in all surface water (173 samples) at concentrations that are greater than the human health benchmark value of 0.000018 mg/L with concentrations ranging from 0.00026 mg/L to 0.0017 mg/L. Results indicate that arsenic is present at all locations sampled within Segment 1 of the river.

4.3 CONTAMINANT DISTRIBUTIONS IN SEGMENT 2

A list of the surface sediment and surface water samples used to evaluate Segment 2 of the Columbia River is provided in Appendix B, Tables B-1 and B-2, respectively. All unique surface sediment sampling locations within Segment 2 are provided in Figure B-1. Summary statistics for detected and nondetected surface sediment sample results reported on an “as received” and “dry-weight” basis are presented in Appendix B, Tables B-3 and B-4. A comparison of all

detected surface sediment concentrations to available human health and ecological benchmark values is presented in Appendix B, Tables B-5 and B-6. Individual surface sediment samples with concentrations greater than their respective human health and ecological benchmark values and their sampling location are presented in Appendix B, Table B-7 and shown in Figure B-2.

Summary statistics for detected and nondetected surface water sample results are presented in Appendix B, Table B-8. All unique surface water sampling locations within Segment 2 are provided in Figure B-3. A comparison of all detected surface water concentrations to available human health and ecological benchmark values is presented in Appendix B, Table B-9. Individual surface water samples with concentrations greater than their respective human health and ecological benchmark values and their sampling location are presented in Appendix B, Table B-10 and shown in Figure B-4.

4.3.1 Sediment

Sediment samples collected within this segment of the river were analyzed for only metals and radionuclides. Maximum concentrations of 13 metals and five radionuclides were reported above their respective ecological or human health benchmark values. A summary of those contaminants that are greater than their respective sediment benchmark values is presented in Table 4-8.

4.3.1.1 Comparison to Ecological Benchmark Values. Maximum concentrations of 11 metals were reported above their ecological benchmark value. Similar to Segment 1, the majority of contaminants were only slightly greater than their ecological benchmark value with the factor of exceedance ranging from slightly greater than 1 to less than 7, with the exception of cadmium. Cadmium was measured in 49 of 91 surface sediment samples (54%) at concentrations that are greater than the ecological benchmark value of 0.60 mg/kg with concentrations ranging from 0.0004 mg/kg to 5.6 mg/kg. Slightly less than one-half of cadmium concentrations greater than the ecological benchmark value are also greater than the Washington State background value of 0.81 mg/kg (37%). Note that the maximum concentration of cadmium measured within Segment 2 (5.6 mg/kg) is less than the maximum concentration measured in Segment 1 (16 mg/kg). Thus, elevated cadmium concentrations in Segment 2 are likely contributed from a source upgradient from the Hanford Site.

4.3.1.2 Comparison to Human Health Benchmark Values. Maximum concentrations of four metals and four radionuclides were reported above their human health benchmark value. With the exception of arsenic, uranium-234, and uranium-238, the majority of contaminants are only slightly greater than their human health benchmark value with the factor of exceedance ranging from slightly greater than 1 to 6. Measured concentrations of benzo(a)pyrene were greater than both the ecological and human health benchmark values and were discussed in the previous section.

Arsenic was measured in 105 of 118 surface sediment samples (89%) at concentrations that are greater than the human health benchmark value of 0.39 mg/kg with concentrations ranging from 0.002 mg/kg to 20 mg/kg (50 fold factor of exceedance). With the exception of arsenic measured at one location at a concentration of 20 mg/kg, only 23 measurements were greater than the background value of 6.5 mg/kg with concentrations ranging from 6.6 mg/kg to 11 mg/kg. Locations where arsenic was measured above background include the F Slough,

Hanford Slough, White Bluffs Slough, 100-B Spring 38-3, 100-F Spring 207-1, 100-H Spring 145-1, 300 Spring 42-2, Hanford Spring 28-2, and the Richland, Washington, Columbia Generating Station sample station (see Appendix B, Table B-7 for a list of individual locations). Note that arsenic concentrations measured in Segment 2 are similar to those measured in Segment 1.

Cobalt-60 was measured in one of 40 surface sediment samples (3%) at a concentration of 2.4 pCi/g, which is slightly greater than the human health benchmark value of 1.4 pCi/g. Cobalt-60 was measured above the human health benchmark value at Columbia Generating Station 34.

Thorium-232 was measured in 10 of 48 surface sediment samples (21%) at concentrations greater than the human health benchmark value of 1.3 pCi/g with concentrations ranging from 0.5 pCi/g to 3.2 pCi/g. Locations where thorium-232 was measured above the benchmark value include 300 Spring 42-2, F-Slough, 100-H Area, 100-K Area, Horn Area, and the Hanford Townsite (see Appendix B, Table B-7 for a list of individual locations).

Uranium-234 was measured in 28 of 145 surface sediment samples (19%) at concentrations greater than the human health benchmark value of 1.1 pCi/g with concentrations ranging from 0.071 pCi/g to 11 pCi/g. Locations where uranium-234 was measured above the benchmark value include 300 Spring 42-2 and 300 Spring 11 (see Appendix B, Table B-7 for a list of individual locations).

Uranium-238 was measured in 35 of 186 surface sediment samples (19%) at concentrations greater than the human health benchmark value of 1.1 pCi/g with concentrations ranging from 0.051 pCi/g to 10 pCi/g. Locations where uranium-238 was measured above the benchmark value include 300 Spring 42-2, 300 Spring 11, and the F Slough (see Appendix B, Table B-7 for a list of individual locations).

4.3.2 Surface Water

Surface water samples collected within this segment of the river were analyzed for general chemistry parameters, metals, pesticides, radionuclides, and VOCs. Maximum concentrations of 16 metals and five radionuclides were reported above their respective ecological or human health benchmark values. A summary of those contaminants that are greater than their respective surface water benchmark values is presented in Table 4-9.

4.3.2.1 Comparison to Ecological Benchmark Values. Maximum concentrations of 14 metals were reported above their ecological benchmark value. Five metals (copper, mercury, nickel, uranium, and vanadium) only slightly exceeded their ecological benchmark value with the factor of exceedance ranging from slightly greater than 1 to 7. Maximum concentrations of nine metals (aluminum, barium, cadmium, chromium, iron, lead, manganese, silver, and zinc) exceed their ecological benchmark value with the factor of exceedance ranging from 8 to 243 fold.

Aluminum was measured in 18 of 57 surface water samples (32%) at concentrations greater than the ecological benchmark value of 0.087 mg/L with concentrations ranging from 0.0003 mg/L to 21 mg/L. Locations where aluminum was measured above the benchmark

value include 100-D Spring 98-1, 102-1, and 110-1; 100-H Spring 150-1 and 152-2; 100-K Spring 77-1 and 82-2; and 300 Spring 11 and 42-2.

Barium was measured in 121 surface water samples (100%) at concentrations greater than the ecological benchmark value of 0.004 mg/L with concentrations ranging from 0.017 mg/L to 0.29 mg/L. Locations where barium was measured above the benchmark value include 100-B Spring 37-2, 38-3, 39-2; 100-D Spring 98-1, 102-1 and 110-1; 100-F Spring 207-1; 100-H Spring 144-1, 145-1, 150-1, 152-2, and 153-1; 100-K Spring 77-1, and 82-2; and 300 Spring 7, 9, 11, and 42-2.

Cadmium was measured in 15 of 795 surface water samples (2%) at concentrations greater than the ecological benchmark value of 0.00025 mg/L with concentrations ranging from 0.000006 mg/L to 0.0035 mg/L. Locations where cadmium was measured above the benchmark include 100-D Spring 98-1, 102-1, 110-1; 100-F Spring 207-1; 100-H Spring 144-1 and 145-1; 100-K Spring 77-1; 100-N Spring 8-13; 300 Spring 42-2, and Hanford Spring 28-2 (see Appendix B, Table B-10 for a list of individual locations).

Chromium was measured in 116 of 843 chromium surface water samples (14%) at concentrations greater than the ecological benchmark value of 0.01 mg/L with concentrations ranging from 0.00002 mg/L to 0.22 mg/L. Locations where chromium was measured above the benchmark include 100-B Spring 38-3 and 39-2; 100-D Spring 102-1, 110-1, and 98-1; 100-F Spring 207-1; 100-H Spring 145-1 and 152-2; 100-K Spring 63-1 and 82-2; 100-N Spring 8-13; and 300 Spring 42-2 (see Appendix B, Table B-10 for a list of individual locations).

Iron was measured in five of 45 surface water samples (11%) at concentrations greater than the ecological benchmark value of 1.0 mg/L and measured in nine of 45 samples (20%) at concentrations that exceed the human health benchmark value of 0.30 mg/L. Iron concentrations range from 0.016 mg/L to 20 mg/L. Locations where iron was measured above the benchmark include 100-D Spring 98-2, 102-1, 110-1; 100-H Spring 150-1; and 100-K Spring 82-2 (see Appendix B, Table B-10 for a list of individual locations).

Lead was measured in 34 of 900 surface water samples (4%) at concentrations greater than the ecological benchmark value of 0.00087 mg/L with concentrations ranging from 0.000001 mg/L to 0.066 mg/L. Locations where lead was measured above the benchmark include 100-D Spring 102-1, 110-1; 100-F Spring 207-1; 100-K Spring 77-1; 300 Spring 42-2; and Hanford Spring 28-2 (see Appendix B, Table B-10 for a list of individual locations).

Manganese was measured in four of 103 surface water samples (4%) at concentrations greater than the ecological benchmark value of 0.12 mg/L and measured in seven of 103 samples at concentrations that exceed the human health benchmark value of 0.05 mg/L (7%). Manganese concentrations range from 0.00004 mg/L to 0.94 mg/L. Locations where manganese was measured above the benchmarks include 100-D Spring 98-1, 102-1, 110-1; 100-H Spring 150-1; and 100-K Spring 77-1 (see Appendix B, Table B-10 for a list of individual locations).

Silver was measured in seven of 355 surface water samples (2%) at concentrations greater than the ecological benchmark value of 0.00012 mg/L with concentrations ranging from 0.0000009 mg/L to 0.003 mg/L. Locations where silver was measured above the benchmarks include 100-D Spring 98-1; 100-H Spring 144-1 and 145-1; 100-K Spring 77-1; and 300 Spring 42-2 (see Appendix B, Table B-10 for a list of individual locations).

Zinc was measured in 12 of 1,038 surface water samples (1%) at concentrations greater than the ecological benchmark value of 0.055 mg/L with concentrations ranging from 0.0004 mg/L to 0.42 mg/L. Locations where zinc was measured above the benchmark include 100-D Spring 98-1 and 110-1; 100-F Spring 207-1; 100-H Spring 145-1 and 150-1; and 300 Spring 42-2; and Hanford Spring 28-2 (see Appendix B, Table B-10 for a list of individual locations).

4.3.2.2 Comparison to Human Health Benchmark Values. Maximum concentrations of four metals and three radionuclides were reported above their human health benchmark value. Thallium slightly exceeds its human health benchmark value with the factor of exceedance of approximately 2. Maximum concentrations of three metals (arsenic, iron, and manganese) and three radionuclides (strontium-90, tritium, and uranium) exceed their human health benchmark value with a factor of exceedance ranging from 3 to 14 fold. Measured concentrations of iron and manganese were greater than both the ecological and human health benchmark values and were discussed in the previous section.

Arsenic was measured in 978 of 979 surface water samples (>99%) at concentrations greater than the human health benchmark value of 0.000018 mg/L with concentrations ranging from 0.000006 mg/L to 0.0085 mg/L. Arsenic results are similar to Segment 1 indicating that arsenic is present at concentrations greater than the human health benchmark value at all locations sampled.

Strontium-90 was measured in six of 636 surface water samples (1%) at concentrations greater than the human health benchmark value of 8 pCi/L with concentrations ranging from 0.022 pCi/L to 109 pCi/L. Locations where strontium-90 was measured above the benchmark include 100-H Spring 153-1 and 100-N Spring 3.

Tritium was measured in 19 of 970 surface water samples (2%) at concentrations that exceed the human health benchmark value of 20,000 pCi/L with concentrations ranging from 17 pCi/L and 112,000 pCi/L. Hanford Spring 28-2 is the primary location where tritium was measured above the benchmark.

4.4 CONTAMINANT DISTRIBUTIONS IN SEGMENT 3

A list of the surface sediment and surface water samples used to evaluate Segment 3 of the Columbia River is provided in Appendix C, Tables C-1 and C-2, respectively. All unique surface sediment sampling locations within Segment 3 are provided in Figure C-1. Summary statistics for detected and nondetected surface sediment sample results reported on an “as received” and “dry-weight” basis are presented in Appendix C, Tables C-3 through C-8. A comparison of all detected surface sediment concentrations to available human health and ecological benchmark values is presented in Appendix C, Tables C-9 and C-10. Individual surface sediment samples with concentrations greater than their respective human health and ecological benchmark values and their sampling location are presented in Appendix C, Table C-11 and shown in Figure C-2.

Summary statistics for detected and nondetected surface water sample results are presented in Appendix C, Tables C-12 through 16. All unique surface water sampling locations within Segment 3 are provided in Figure C-3. A comparison of all detected surface water

concentrations to available human health and ecological benchmark values is presented in Appendix C, Table C-17. Individual surface water samples with concentrations greater than their respective human health and ecological benchmark values and their sampling location are presented in Appendix C, Table C-18 and shown in Figure C-4.

4.4.1 Sediment

Sediment samples collected within this segment of the river were analyzed for metals, pesticide/PCBs, radionuclides, and SVOCs. Maximum concentrations of 13 metals, five pesticides, two radionuclides, eight PAHs, arochlor-1254, and bis(2-ethylhexyl)phthalate were reported above their respective ecological or human health benchmark values. A summary of those contaminants that are greater than their respective sediment benchmark values is presented in Table 4-10.

4.4.1.1 Comparison to Ecological Benchmark Values. Maximum concentrations of 11 metals, eight PAHs, five pesticides (dichlorodiphenyldichloroethane [DDD], DDE, dichlorodiphenyltrichloroethane [DDT], dieldrin, and gamma-Hexachlorocyclohexane [BHC]), arochlor-1254, and bis(2-ethylhexyl)phthalate were reported above their ecological benchmark value. With the exception of cadmium, DDE, DDT, and gamma-BHC, the majority of contaminants were only slightly greater than their ecological benchmark value with the factor of exceedance ranging from slightly greater than 1 to less than 7. Cadmium was measured in 48 of 64 surface sediment samples (75%) at concentrations that are greater than the ecological benchmark value of 0.60 mg/kg with concentrations ranging from 0.067 mg/kg to 6.0 mg/kg. The majority of cadmium concentrations greater than the ecological benchmark value are also greater than the Washington State background value of 0.81 mg/kg (61%). Note that the maximum concentration of cadmium measured within Segment 3 (6.0 mg/kg) is only slightly greater than that measured in Segment 2 (5.6 mg/kg) and less than the maximum concentration measured in Segment 1 (16 mg/kg). Elevated cadmium concentrations are present in Segment 3 and are likely contributed from a source upgradient from the Hanford Site.

All three surface sediment samples with detected arochlor-1254 results were at concentrations greater than the ecological benchmark value of 0.007 mg/kg, with concentrations ranging from 0.01 mg/kg to 0.013 mg/kg. The location where arochlor-1254 was measured above the benchmark value is at the Port of Pasco (see Appendix C, Table C-11 for a list of individual locations).

Acenaphthene was measured in one surface sediment sample with a concentration of 0.021 mg/kg, which is greater than the ecological benchmark value of 0.0067 mg/kg. The location where acenaphthene was measured above the benchmark value was RM 328 (see Appendix C, Table C-11 for a list of individual locations).

Anthracene was measured in one of three surface sediment samples (33%) at a concentration greater than the ecological benchmark value of 0.057 mg/kg with concentrations ranging from 0.006 mg/kg to 0.088 mg/kg. The location where anthracene was measured above the benchmark value was the Port of Pasco (see Appendix C, Table C-11 for a list of individual locations).

Benzo(a)anthracene was measured in one of two surface sediment samples (50%) at a concentration greater than the ecological benchmark value of 0.032 mg/kg with concentrations

ranging from 0.013 mg/kg to 0.12 mg/kg. The location where benzo(a)anthracene was measured above the benchmark value was the Port of Pasco (see Appendix C, Table C-11 for a list of individual locations).

Benzo(a)pyrene was measured in two of three surface sediment samples (67%) at concentrations greater than the ecological benchmark value of 0.032 mg/kg and greater than the human health benchmark value of 0.062 mg/kg. Benzo(a)pyrene concentrations ranged from 0.013 mg/kg to 0.21 mg/kg. The location where benzo(a)pyrene was measured above the benchmark value was the Port of Pasco (see Appendix C, Table C-11 for a list of individual locations).

Chrysene was measured in one of three surface sediment samples (33%) at concentrations greater than the ecological benchmark value of 0.057 mg/kg with the concentrations ranging from 0.013 mg/kg to 0.13 mg/kg. The location where chrysene was measured above the benchmark value was the Port of Pasco (see Appendix C, Table C-11 for a list of individual locations).

Fluoranthene was measured in three of nine surface sediment samples (33%) at concentrations greater than the ecological benchmark value of 0.11 mg/kg with concentrations ranging from 0.004 mg/kg to 0.2 mg/kg. The location where fluoranthene was measured above the benchmark value was the Port of Pasco (see Appendix C, Table C-11 for a list of individual locations).

Phenanthrene was measured in one surface sediment sample at a concentration of 0.057 mg/kg, which is greater than the ecological benchmark value of 0.042 mg/kg. The location where phenanthrene was measured was at RM 328 (see Appendix C, Table C-11 for a list of individual locations).

Pyrene was measured in three of seven surface sediment samples (43%) at concentrations greater than the ecological benchmark value of 0.053 mg/kg with concentrations ranging from 0.003 mg/kg to 0.22 mg/kg. The location where pyrene was measured above the benchmark value was the Port of Pasco (see Appendix C, Table C-11 for a list of individual locations).

DDE was measured in 21 of 35 surface sediment samples (60%) at concentrations that are greater than the ecological benchmark value of 0.0015 mg/kg with concentrations ranging from 0.00001 mg/kg to 0.058 mg/kg. Locations where DDE was measured above the benchmark include the Yakima River near Kiona and Horn Rapids Dam, the Walla Walla River near Cummins Bridge and at the confluence, the Snake River in Lake Sacajawea, and in the Columbia River near McNary Dam.

DDT was measured in two of six surface sediment samples (33%) at concentrations that are greater than the ecological benchmark value of 0.0042 mg/kg with concentrations ranging from 0.0003 mg/kg to 0.035 mg/kg. The Yakima River near Kiona, Washington, was the primary location where DDT was measured above the ecological benchmark value.

4.4.1.2 Comparison to Human Health Benchmark Values. Maximum concentrations of four metals (arsenic, chromium, iron, and vanadium), two radionuclides (uranium-234 and uranium-238) and benzo(a)pyrene were reported above their human health benchmark value. With the exception of arsenic, the majority of contaminants are only slightly greater than their

human health benchmark value with the factor of exceedance ranging from slightly greater than 1.0 to less than 3.0. Arsenic was measured in 67 of 68 surface sediment samples (>99%) at concentrations that are greater than the human health benchmark value of 0.39 mg/kg with concentrations ranging from 0.37 mg/kg to 12 mg/kg. Arsenic was measured in 33 of 67 surface sediment samples (49%) at concentrations greater than the Hanford Site background value of 6.5 mg/kg. Locations where arsenic was measured above background include the Snake River near the Ice Harbor Dam and at Snake RMs 1 and 10, and in the Columbia River near McNary Dam (see Appendix C, Table C-11 for a list of individual locations). Note that arsenic concentrations measured in Segment 3 are similar to those measured in Segments 1 and 2.

Benzo(a)pyrene was measured in two of three surface sediment samples (67%) at concentrations greater than the human health benchmark value of 0.062 mg/kg with concentrations ranging from 0.013 mg/kg to 0.21 mg/kg. The location where benzo(a)pyrene was measured above the benchmark value was the Port of Pasco (see Appendix C, Table C-11 for a list of individual locations).

Uranium-234 was measured in 38 of 83 surface sediment samples (45%) at concentrations that are greater than the human health benchmark value of 1.1 pCi/g with concentrations ranging from 0.09 pCi/g to 1.9 pCi/g. The primary locations where uranium-234 was measured above the benchmark value include the Snake River near the Ice Harbor Dam and the Columbia River near the McNary Dam.

Uranium-238 was measured in 23 of 86 surface sediment samples (27%) at concentrations that are greater than the human health benchmark value of 1.1 pCi/g with concentrations ranging from 0.21 pCi/g to 1.6 pCi/g. The primary locations where uranium-234 was measured above the benchmark value include the Snake River near the Ice Harbor Dam and the Columbia River near the McNary Dam.

4.4.2 Surface Water

Surface water samples collected within this segment of the river were analyzed for general chemistry parameters, metals, pesticides/PCBs, radionuclides, and VOCs. Maximum concentrations of one metal, and four pesticides (DDD, DDE, dieldrin, and heptachlor epoxide), were reported above their respective human health benchmark values. No contaminants were detected at concentrations exceeding available ecological benchmark values. A summary of those contaminants that are greater than their respective surface water benchmark values is presented in Table 4-11.

4.4.2.1 Comparison to Human Health Benchmark Values. Maximum concentrations of arsenic, DDD, DDT, dieldrin, and heptachlor epoxide were reported above their human health benchmark value. The pesticides slightly exceed their human health benchmark value with the factor of exceedance ranging from 3 to 6 fold and the factor of exceedance for arsenic was 156 fold.

Arsenic was measured in all surface water samples (48 samples) at concentrations greater than the human health benchmark value of 0.000018 mg/L with concentrations ranging from 0.0005 g/L to 0.00028 mg/L. Arsenic results are similar to Segments 1 and 2 indicating that

arsenic is present at concentrations greater than the human health benchmark value at all locations sampled.

DDE was measured in eight of 18 surface water samples (44%) at concentrations greater than the human health benchmark value of 0.00000022 mg/L with concentrations ranging from 0.000000071 mg/L to 0.0000012 mg/L. DDT was measured in one of five surface water samples (20%) at concentrations greater than the human health benchmark value of 0.00000022 mg/L with concentrations ranging from 0.0000001 mg/L to 0.00000065 mg/L. Dieldrin was measured in all four surface water samples (100%) at concentrations greater than the human health benchmark value of 0.000000058 mg/L with concentrations ranging from 0.000000076 mg/L to 0.0000003 mg/L. Heptachlor epoxide was measured in four of six surface water samples (66%) at concentrations greater than the human health benchmark value of 0.000000039 mg/L with concentrations ranging from 0.00000012 mg/L to 0.000000033 mg/L. The Walla Walla River is the only location where DDE, DDT, dieldrin, and heptachlor epoxide were measured above the benchmarks (see Appendix C, Table C-18 for individual locations exceeding benchmark value).

4.5 CONTAMINANT DISTRIBUTIONS IN SEGMENT 4

A list of the surface sediment and surface water samples used to evaluate Segment 4 of the Columbia River is provided in Appendix D, Tables D-1 and D-2, respectively. All unique surface sediment sampling locations within Segment 4 are provided in Figure D-1. Summary statistics for detected and nondetected surface sediment sample results reported on an “as received” and “dry-weight” basis are presented in Appendix D, Tables D-3 and D-4. A comparison of all detected surface sediment concentrations to available human health and ecological benchmark values is presented in Appendix D, Tables D-5 and D-6. Individual surface sediment samples with concentrations greater than their respective human health and ecological benchmark values and their sampling location are presented in Appendix D, Table D-7 and shown in Figure D-2.

Summary statistics for detected and nondetected surface water sample results are presented in Appendix D, Table D-8. All unique surface water sampling locations within Segment 4 are provided in Figure D-3. A comparison of all detected surface water concentrations to available human health and ecological benchmark values is presented in Appendix D, Table D-9. Individual surface water samples with concentrations greater than their respective human health and ecological benchmark values and their sampling location are presented in Appendix D, Table D-10 and shown in Figure D-4.

4.5.1 Sediment

Limited sediment samples collected within this segment of the river were analyzed for metals, pesticide/PCBs, radionuclides, and SVOCs. Maximum concentrations of 12 metals, 2 PAHs, PCB aroclor-1254, di-n-butyl phthalate, and 2 radionuclides were reported above their respective ecological or human health benchmark values. A summary of those contaminants that are greater than their respective sediment benchmark values is presented in Table 4-12.

4.5.1.1 Comparison to Ecological Benchmark Values. Maximum concentrations of nine metals, PCB aroclor-1254, and two PAHs (acenaphthene and acenaphthylene) were reported

above their ecological benchmark value. With the exception of antimony and lead, all contaminants were only slightly greater than their ecological benchmark value with the factor of exceedance ranging from slightly greater than 1 to less than 4.

Cadmium was measured in 17 of 35 surface sediment samples (49%) at concentrations greater than the ecological benchmark value of 0.6 mg/kg with concentrations ranging from 0.003 mg/kg to 2.5 mg/kg. The majority of cadmium concentrations greater than the ecological benchmark value are also greater than the Washington State background value of 0.81 mg/kg (76%).

Antimony was measured in 7 of 15 surface sediment samples (47%) at concentrations greater than the ecological benchmark value of 2.0 mg/kg with concentrations ranging from 0.34 mg/kg to 65 mg/kg. Antimony was measured above the ecological benchmark value of 2.0 mg/kg at Messner Cove and behind John Day and the Bonneville Dams.

Lead was measured in one of 32 surface sediment samples (3%) at a concentration of 250 mg/kg, which is greater than the ecological benchmark value of 35 mg/kg. Lead was measured above the ecological benchmark value of 35 mg/kg at Messner Cove.

4.5.1.2 Comparison to Human Health Benchmark Values. Maximum concentration of six metals (antimony, arsenic, chromium, iron, lead, and vanadium), and two uranium isotopes were reported above their human health benchmark value. With the exception of arsenic, all metals and the uranium isotopes were only slightly greater than their human health benchmark value with the factor of exceedance ranging from slightly greater than 1 to 3.

Arsenic was measured in all surface sediment samples at concentrations greater than the human health benchmark value of 0.39 mg/kg with concentrations ranging from 1.5 mg/kg to 15 g/kg. Arsenic was measured in six of 18 surface sediment samples (33%) at concentrations greater than the Hanford Site background value of 6.5 mg/kg. Arsenic was measured above the background value of 6.5 mg/kg behind the John Day Dam (see Appendix D, Table D-7 for a list of individual locations). Note that arsenic concentrations measured in Segment 4 are similar to those measured in Segments 1 through 3.

Uranium-234 was measured in 8 of 13 surface sediment samples (62%) at concentrations that are greater than the human health benchmark value of 1.1 pCi/g with concentrations ranging from 0.50 pCi/g to 1.7 pCi/g. Uranium-238 was measured in 4 of 12 surface sediment samples (33%) at concentrations that are greater than the human health benchmark value of 1.1 pCi/g with concentrations ranging from 0.38 pCi/g to 1.7 pCi/g. The primary locations where uranium-234 and uranium-238 were measured above the benchmark value include behind the John Day and The Dalles Dams on the Columbia River.

4.5.2 Surface Water

Surface water samples collected within this segment of the river were analyzed for general chemistry parameters, metals, pesticides/PCBs, radionuclides, and VOCs. Maximum concentrations of five metals, total PCBs, four pesticides (DDD, DDE, dieldrin, and heptachlor epoxide), and hexachlorobenzene were reported above their respective ecological or human health benchmark values. A summary of those contaminants that are greater than their respective surface water benchmark values is presented in Table 4-13.

4.5.2.1 Comparison to Ecological Benchmark Values. Maximum concentrations of barium, cadmium, lead, and DDD were reported above their ecological benchmark value. Cadmium, lead, and DDE slightly exceed their ecological benchmark value with the factor of exceedance ranging from slightly greater than 1.2 to 4.0. Maximum concentration of barium was greater than the ecological benchmark value by an exceedance factor of 11 fold.

All barium surface water samples (21 samples) were reported with concentrations greater than the ecological benchmark value of 0.004 mg/L with concentrations ranging from 0.027 mg/L to 0.043 mg/L. Barium was measured above the benchmark value near The Dalles Bridge in Oregon.

Cadmium was measured in 1 of 21 surface water samples (4%) at a concentration of 0.0003 mg/L, which is slightly greater than the ecological benchmark value of 0.00025 mg/L. Cadmium was measured above the benchmark value near The Dalles Bridge in Oregon.

Lead was measured in one sample at a concentration of 0.0036 mg/L, which is greater than the ecological benchmark value of 0.00086 mg/L. Lead was measured near The Dalles Bridge in Oregon.

DDD was measured in two of six surface water samples (33%) at concentrations greater than the ecological benchmark value of 1.0E-06 mg/L and measured in six samples at concentrations greater than the human health benchmark value of 3.1E-07 mg/L. DDD concentrations in surface water ranged from 3.9E-07 mg/L to 2.9E-05 mg/L. DDD was measured above the benchmark value at locations near the Bonneville Dam (see Appendix D, Table D-10 for individual locations exceeding benchmark value).

4.5.2.2 Comparison to Human Health Benchmark Values. Maximum concentrations of arsenic, iron, DDD, DDE, dieldrin, heptachlor epoxide, and hexachlorobenzene were reported above their human health benchmark value. Iron, DDE, heptachlor epoxide, hexachlorobenzene, and total PCBs slightly exceed their human health benchmark value with the factor of exceedance ranging from slightly greater than 1 to 6. Maximum concentrations of DDD and dieldrin were greater than their human health benchmark value by a factor of 9 fold and arsenic was greater than the benchmark by a factor of 117 fold. Measured concentrations of DDD were greater than both the ecological and human health benchmark values and were discussed in the previous section.

Arsenic was measured in 12 surface water samples (100%) at concentrations greater than the human health benchmark value of 0.000018 mg/L with concentrations ranging from 0.00042 mg/L to 0.0021 mg/L. Arsenic results in this segment are similar to Segments 1 through 3 indicating that arsenic is present at concentrations greater than the human health benchmark value at all locations sampled.

Iron was measured in six of 27 surface water samples (22%) at concentrations greater than the human health benchmark value of 0.3 mg/L with concentrations ranging from 0.072 mg/L to 0.89 mg/L. Iron was measured near The Dalles Bridge in Oregon (see Appendix, Table D-10 for individual locations exceeding benchmark value).

Total PCBs were measured in one of three surface water samples (3%) at a concentration 3.7E-7 mg/L, which is greater than the human health benchmark value of 6.4E-08 mg/L.

DDE were measured in all six surface water samples (44%) at concentrations greater than the human health benchmark values of 2.2E-07 mg/L with concentrations ranging from 2.7E-07 mg/L to 1.0E-06 mg/L. Dieldrin was measured in five of six surface water samples (83%) at concentrations greater than the human health benchmark value of 5.2E-08 mg/L with concentrations ranging from 4.6E-08 mg/L to 4.9E-07 mg/L. Heptachlor epoxide was measured in two surface water samples at concentrations greater than the human health benchmark value 3.9E-08 mg/L at a concentration of 6.5E-08 mg/L. Hexachlorobenzene was measured in two of six surface water samples (33%) at concentrations greater than the human health benchmark value 2.8E-07 mg/L at a concentration of 3.5E-07 mg/L. Total PCBs, DDE, dieldrin, heptachlor epoxide, and hexachlorobenzene were all measured in locations near the Bonneville Dam (see Appendix D, Table D-10 for individual locations exceeding benchmark value).

4.6 CONTAMINANT DISTRIBUTIONS IN SEGMENT 5

A list of the surface sediment and surface water samples used to evaluate Segment 5 of the Columbia River is provided in Appendix E, Tables E-1 and E-2, respectively. All unique surface sediment sampling locations within Segment 5 are provided in Figure E-1. Summary statistics for detected and nondetected surface sediment sample results reported on an “as received” and “dry-weight” basis are presented in Appendix E, Tables E-3 through E-7. A comparison of all detected surface sediment concentrations to available human health and ecological benchmark values is presented in Appendix E, Tables E-8 and E-9. Individual surface sediment samples with concentrations greater than their respective human health and ecological benchmark values and their sampling location are presented in Appendix E, Table E-10 and shown in Figure E-2.

Summary statistics for detected and nondetected surface water sample results are presented in Appendix E, Table E-11. All unique surface water sampling locations within Segment 5 are provided in Figure E-3. A comparison of all detected surface water concentrations to available human health and ecological benchmark values is presented in Appendix E, Table E-12. Individual surface water samples with concentrations greater than their respective human health and ecological benchmark values and their sampling location are presented in Appendix E, Table E-13 and shown in Figure E-4.

4.6.1 Sediment

Sediment samples collected within this segment of the river were analyzed for metals, pesticide/PCBs, radionuclides, and SVOCs. Maximum concentrations of 10 metals, three PCB aroclors, two pesticides, 16 PAHs, and two phthalates were reported above their respective ecological or human health benchmark values. A summary of those contaminants that are greater than their respective sediment benchmark values is presented in Table 4-14.

4.6.1.1 Comparison to Ecological Benchmark Values. Maximum concentrations of 10 metals, three PCB aroclors, two pesticides (DDD and DDE), 16 PAHs, and two phthalates were reported above their ecological benchmark value. All metals, two PCB aroclors (aroclor-1254 and aroclor-1260), one pesticide (DDD), three PAHs, and bis(2-ethylhexyl)phthalate were only slightly greater than their ecological benchmark value with the factor of exceedance ranging from slightly greater than 1 to less than 8. PCB aroclor-1248, DDE, and the remaining PAHs were reported with concentrations that result in a factor of

exceedance ranging from 12 to 67 fold. When a contaminant measured in sediment exceeded both the ecological and human health benchmark value, they are discussed together.

Iron was measured in 12 of 27 surface sediment samples (44%) at concentrations that are greater than the ecological benchmark value of 20,000 mg/kg and measured in six of 27 samples (22%) at concentrations greater than the human health benchmark value of 23,500 mg/kg. Surface sediment concentrations range from 12,000 mg/kg to 39,000 mg/kg. Locations where iron was measured above the benchmark value include Camas Slough, Ilwaco Boat Basin, and Columbia RMs 14, 21, 29, 36, 68, 81, 88, 95, and 120.

Aroclor-1248 was measured in six of seven surface sediment samples (85%) at concentrations that are greater than the ecological benchmark value of 0.021 mg/kg and measured in three of seven samples (43%) at concentrations greater than the human health benchmark value of 0.22 g/kg. Surface sediment concentrations ranging from 0.011 mg/kg to 1.4 mg/kg. Aroclor-248 was only measured above the benchmark value at Columbia RM 103.

DDE was measured in nine of 27 surface sediment samples (31%) at concentrations that are greater than the ecological benchmark value of 0.0015 mg/kg with concentrations ranging from 0.0004 mg/kg to 0.03 mg/kg. DDE was measured above the benchmark value at Warrenton, Oregon; and Columbia RMs 37-47, 82, and 100.

2-Methylnaphthalene was measured in three of 72 surface sediment samples (4%) at concentrations that are greater than the ecological benchmark value of 0.020 mg/kg with concentrations ranging from 0.00036 mg/kg to 0.41 mg/kg. The locations where 2-ethylnaphthalene was measured above the benchmark value include the Oregon Slough and Columbia RM 86.5.

Acenaphthene was measured in eight of 59 surface sediment samples (14%) at concentrations that are greater than the ecological benchmark value of 0.0067 mg/kg with concentrations ranging from 0.0005 mg/kg to 0.11 mg/kg. The locations where acenaphthene was measured above the benchmark value include the Oregon Slough; Crims Island; Ilwaco Boat Basin; Longview and Vancouver, Washington; and Columbia RMs 82 and 86.5.

Benzo(a)anthracene was measured in 16 of 74 surface sediment samples (21%) at concentrations that are greater than the ecological benchmark value of 0.032 mg/kg and measured in one of 75 samples (1%) at concentrations greater than the human health benchmark value of 0.62 mg/kg. Surface sediment concentrations range from 0.0007 mg/kg to 2.2 mg/kg. The locations where benzo(a)anthracene was measured above the benchmark value include the Crims Island; Ilwaco Boat Basin; Longview and Vancouver, Washington; and Columbia RMs 21, 81, 82, 83, 86.5, and 88.

Benzo(a)pyrene was measured in 17 of 76 surface sediment samples (22%) at concentrations that are greater than the ecological benchmark value of 0.032 mg/kg and measured in six of 76 surface sediment samples (8%) at concentrations greater than the human health benchmark value of 0.062 mg/kg. Surface sediment concentrations range from 0.0006 mg/kg to 1.5 mg/kg. The locations where benzo(a)pyrene was measured above the benchmark value include the Oregon Slough; Crims Island; Longview and Vancouver, Washington; and Columbia RMs 21, 82, 83, 86.5 88, 100, and 124.

Benzo(b)fluoranthene was measured in one of 36 surface sediment samples (3%) at concentrations that are greater than the ecological benchmark value of 0.24 mg/kg and measured in one of 36 surface sediment samples (3%) at concentrations greater than the human health benchmark value of 0.62 mg/kg. Surface sediment concentrations range from 0.0016 mg/kg to 1.8 mg/kg. The only location where benzo(b)fluoranthene was measured above the benchmark value was Longview, Washington.

Benzo(k)fluoranthene was measured in five of 33 surface sediment samples (15%) at concentrations that are greater than the ecological benchmark value of 0.027 mg/kg with concentrations ranging from 0.00057 mg/kg to 0.91 mg/kg. The locations where benzo(k)fluoranthene was measured above the benchmark value include the Camas Slough; Ilwaco Boat Basin; Longview, Washington; and Columbia RMs 21 and 82.

Chrysene was measured in 12 of 83 surface sediment samples (14%) at concentrations that are greater than the ecological benchmark value of 0.057 mg/kg with concentrations ranging from 0.0006 mg/kg to 4.1 mg/kg. The locations where chrysene was measured above the benchmark value include the Camas Slough; Crims Island; Ilwaco Boat Basin; Longview and Vancouver, Washington; and Columbia RMs 21, 81, 82, and 86.5.

Dibenz(a,h)anthracene was measured in one of 32 surface sediment samples (3%) at concentrations that are greater than the ecological benchmark value of 0.033 mg/kg and measured in one of 32 surface sediment samples (3%) greater than the human health benchmark value of 0.062 mg/kg. Surface sediment concentrations range from 0.0009 mg/kg to 0.4 mg/kg. The only locations where dibenz(a,h)anthracene was measured above the benchmark value is Longview, Washington.

Di-n-butylphthalate was measured in 14 of 47 surface sediment samples (30%) at concentrations that are greater than the ecological benchmark value of 0.043 mg/kg with concentrations ranging from 0.0006 mg/kg to 0.84 mg/kg. Although di-n-butylphthalate was present in sediment samples analyzed from this segment of the river, phthalate compounds are considered common laboratory contaminants and are not likely contributed as a result of a potential release of contaminants to the Columbia River.

Fluoranthene was measured in two of 84 surface sediment samples (2%) at concentrations that are greater than the ecological benchmark value of 0.11 mg/kg with concentrations ranging from 0.0003 mg/kg to 2.1 mg/kg. Locations where fluoranthene was measured above the benchmark value are Longview and Vancouver, Washington.

Indeno(1,2,3-cd)pyrene was measured in 19 of 61 surface sediment samples (31%) at concentrations that are greater than the ecological benchmark value of 0.017 mg/kg and measured in one of 61 samples (2%) greater than the human health benchmark value of 0.62 mg/kg. Surface sediment concentrations range from 0.0007 mg/kg to 0.92 mg/kg. Locations where indeno(1,2,3-cd)pyrene was measured above the benchmark value include Crims Island; Ilwaco Boat Basin; Warrenton, Oregon; Longview and Vancouver, Washington; and Columbia RMs 14, 26, 29, 82, 83, 88, 95, 100, and 124.

Phenanthrene was measured in 11 of 82 surface sediment samples (13%) at concentrations that are greater than the ecological benchmark value of 0.042 mg/kg with concentrations ranging from 0.0004 mg/kg to 0.58 mg/kg. Locations where phenanthrene was measured

above the benchmark value include Camas Slough; Oregon Slough; Ilwaco Boat Basin; Longview and Vancouver, Washington; and Columbia RMs 82, 86.5, and 100.

Pyrene was measured in 18 of 81 surface sediment samples (21%) at concentrations that are greater than the ecological benchmark value of 0.053 mg/kg with concentrations ranging from 0.0004 mg/kg to 2.5 mg/kg. Locations where pyrene was measured above the benchmark value include Camas Slough; Oregon Slough; Ilwaco Boat Basin; Crims Island; Longview and Vancouver, Washington; and Columbia RMs 68, 81, 82, 83, 86.5, 88, and 100.

4.6.1.2 Comparison to Human Health Benchmark Values. Maximum concentrations of three metals, one PCB aroclor, DDD, and five PAHs were reported above their human health benchmark value. Three metals (arsenic, chromium, and iron), aroclor-1248, and five PAHs were only slightly greater than their human health benchmark value with the factor of exceedance ranging from slightly greater than 1 to less than 7. Arsenic, DDE, and benzo(a)pyrene were reported with concentrations that result in a factor of exceedance ranging from 17 to 35 fold. With the exception of arsenic and chromium, measured concentrations of the contaminants listed above were greater than both the ecological and human health benchmark values and were discussed in the previous section.

Arsenic was measured in 116 of 119 surface sediment samples (97%) at concentrations that are greater than the human health benchmark value of 0.39 mg/kg with concentrations ranging from 0.054 mg/kg to 14 mg/kg. Arsenic was measured in 20 of the 116 surface sediment samples (17%) at concentrations greater than the Hanford Site background value of 6.5 mg/kg. Locations where arsenic was measured above background include the Camas Slough; Bachelor Slough; Warrenton, Oregon; Crims Island; Ilwaco Boat Basin; and Columbia RMs 21, 88, and 95 (see Appendix E, Table E-10 for a list of individual locations). Note that arsenic concentrations measured in Segment 5 are similar to those measured in Segments 1 through 4.

Chromium was measured in three of 87 surface sediment samples (3%) at concentrations greater than the human health benchmark value of 30 mg/kg with concentrations ranging from 0.17 mg/kg to 35 mg/kg. Locations where chromium was measured above the benchmark value include Crims Island; Warrenton, Oregon; and Columbia RM 36.

4.6.2 Surface Water

Surface water samples collected within this segment of the river were analyzed for general chemistry parameters, metals, pesticides/PCBs, radionuclides, and VOCs. Maximum concentrations of three metals, total PCBs, five pesticides (DDD, DDE, DDT, dieldrin, and heptachlor epoxide), and hexachlorobenzene were reported above their respective ecological or human health benchmark values. A summary of those contaminants that are greater than their respective surface water benchmark values is presented in Table 4-15.

4.6.2.1 Comparison to Ecological Benchmark Values. Maximum concentrations of barium, boron, total PCBs, DDD, DDT, and dieldrin were reported above their ecological benchmark value. Lead and DDE slightly exceed their ecological benchmark value with the factor of exceedance ranging from slightly greater than 3 to 4. Maximum concentrations of barium and boron were greater than their ecological benchmark value with the factor of exceedance ranging from 5 to 12 fold.

Barium was measured in all surface water samples (100%) at concentrations greater than the ecological benchmark value of 0.004 mg/L with concentrations ranging from 0.011 mg/L to 0.021 mg/L. Boron was measured in 16 of 18 surface water samples (89%) at concentrations greater than the ecological benchmark value of 0.0016 mg/L with concentrations ranging from 0.0081 mg/L to 0.020 mg/L. Barium and boron were only analyzed at locations near the Beaver Army Terminal in Oregon.

Total PCBs were measured in one of eight surface water samples (3%) at a concentration greater than the ecological benchmark value of 0.000014 mg/L and measured in all eight samples greater than the human health benchmark value of 6.4E-08 mg/L. Total PCB concentrations range from 3.3E-07 mg/L to 0.000021 mg/L. Total PCBs were measured at levels above the benchmark value in the Columbia Slough (see Appendix E, Table E-13 for individual locations exceeding benchmark value).

DDD was measured in four of 34 surface water samples (12%) at concentrations greater than the ecological benchmark value of 1E-06 mg/L and measured in 27 of 34 surface water samples (79%) at concentrations greater than the human health benchmark value of 31.E-07 mg/L. DDD concentrations range from 1.9E-07 mg/L to 5.6E-06 mg/L. DDD was measured above the benchmark value at locations below the Bonneville Dam and the Columbia Slough (see Appendix E, Table E-13 for individual locations exceeding benchmark value).

DDT was measured in three of 39 surface water samples (8%) at concentrations greater than the ecological benchmark value of 1E-06 mg/L and measured in eight of 39 samples (21%) at concentrations greater than the human health benchmark value of 2.2E-07 mg/L. DDT concentrations range from 1.3E-08 mg/L to 1.5E-06 mg/L. DDT was measured above the benchmark value at locations near the Columbia Slough and the Willamette River (see Appendix E, Table E-13 for individual locations exceeding benchmark value).

Dieldrin was measured in three of 39 surface water samples (8%) at concentrations greater than the ecological benchmark value of 1E-06 mg/L and measured in 36 of 39 samples (92%) at concentrations greater than the human health benchmark value of 5.2E-08 mg/L. Dieldrin concentrations range from 1.4E-08 mg/L to 5.4E-06 mg/L. DDT was measured above the benchmark value at locations near the Columbia Slough and the Willamette River (see Appendix E, Table E-13 for individual locations exceeding benchmark value).

4.6.2.2 Comparison to Human Health Benchmark Values. Maximum concentrations of arsenic, total PCBs, DDD, DDE, DDT, dieldrin, heptachlor epoxide, and hexachlorobenzene were reported above their human health benchmark value. Heptachlor epoxide and DDT slightly exceed their human health benchmark value with the factor of exceedance ranging from slightly greater than 2 to 7. Maximum concentrations of hexachlorobenzene and the remaining pesticides were greater than their human health benchmark value by a factor of exceedance ranging from 8 to 104 fold. Arsenic was greater than the benchmark by a factor of 328 fold. Measured concentrations of total PCBs, DDD, DDT, and dieldrin were also greater than ecological benchmark value and were discussed in the previous section.

Arsenic was measured in 27 surface water samples at concentrations greater than the human health benchmark value of 0.000018 mg/L with concentrations ranging from 0.0007 mg/L to 0.0015 mg/L. Arsenic results in this segment are similar to Segments 1 through 4 indicating that

arsenic is present at concentrations greater than the human health benchmark value at all locations sampled.

DDE was measured in 29 of 42 surface water samples (69%) at concentrations greater than the human health benchmark value of $2.2\text{E-}07$ mg/L with concentrations ranging from $1.5\text{E-}08$ mg/L to $2.1\text{E-}06$ mg/L. DDE was measured above the benchmark value at locations below the Bonneville Dam; below Longview, Washington; Willamette River; and the Columbia Slough (see Appendix E, Table E-13 for individual locations exceeding benchmark value).

Heptachlor epoxide was measured in three of seven surface water samples (43%) at concentrations greater than the human health benchmark value $3.9\text{E-}08$ mg/L with concentrations ranging from $2.5\text{E-}08$ mg/L to $6.7\text{E-}08$ mg/L. Heptachlor epoxide was measured above the benchmark value in the Willamette River (see Appendix E, Table E-13 for individual locations exceeding benchmark value).

Hexachlorobenzene was measured in 14 of 45 surface water samples (31%) at concentrations greater than the human health benchmark value $2.8\text{E-}07$ mg/L with concentrations ranging from $5.7\text{E-}08$ mg/L to $2.3\text{E-}06$ mg/L. Hexachlorobenzene was measured above the benchmark value at locations below the Bonneville Dam; Kalama, Washington; Kalama River; Willamette River; Cowlitz River; and the Columbia Slough (see Appendix E, Table E-13 for individual locations exceeding benchmark value).

4.7 SEDIMENT CORE ANALYSIS

The purpose of collecting and analyzing core samples is to determine the concentrations of select contaminants deposited at set points in time and to estimate the sediment depositional rate. Core samples are typically collected at a location where sediments are known to be deposited and where sediment deposition is thought to be the deepest. When a core sample is collected, it is divided into predetermined lengths (e.g., 2 cm [0.8 in.]) or depth intervals and each interval is analyzed for the contaminants of interest. The concentration measured at each interval can then be correlated to the date at which it was deposited.

Through the data compilation effort, nine bibliographical sources were obtained that reported the results of core samples collected within the boundaries of the CRC. Four core samples were collected and analyzed from Segment 1, three from behind Priest Rapids Dam, and one from the Okanogan River. One core sample was collected and analyzed from Segment 2, which was located near the Hanford Ferry. Eighteen core samples were collected and analyzed from Segment 3, one from Wallula, two from Port Kelly, two from Refuge Island, one behind Ice Harbor Dam, and 12 from behind McNary Dam. Six core samples were collected from Segment 4, one from Irrigon, Oregon; one from behind John Day Dam; and three behind The Dalles Dam. Eight core samples were collected from Segment 5, two from RM 21, three from the Skipanon Entrance Channel, one from Clatskanie Flats, one from Young's Bay, and one from Gray's Bay. A summary of the radionuclides and other contaminant classes each core sample was analyzed for is presented in Table 4-16. A summary of the core samples collected from each segment and the number of intervals (and their depths) are presented in Tables 4-17 through 4-21 for Segments 1 through 5, respectively.

The purpose of evaluating the core samples is to determine if the levels of radiological contaminants deposited from past Hanford Site operations are at levels above the select ecological and human health benchmark values. As shown in Table 4-16, each of the core samples obtained for evaluation were not analyzed for the same suite of radiological contaminants. As a result of this inconsistency, the following discussion focuses on cesium-137, cobalt-60, and plutonium-239/240 as they were analyzed and reported in most of the core samples. Cesium-137 and cobalt-60 were selected to determine if the levels observed downstream from the Hanford Site can be distinguished from atmospheric fallout levels. Plutonium-239/240 was selected as its presence cannot be attributed to atmospheric deposition and was produced in the past during Hanford Site operations. Europium-152, strontium-90, and uranium isotopes are radiological contaminants that are analyzed for in current monitoring programs as they have been or are currently being released through Hanford Site operations. However, europium-152 was only analyzed in four cores and strontium-90 and uranium isotopes were not analyzed in any core sample.

An additional bibliographical source was obtained that reported results of composite cores samples for Segments 2 and 3. Four composite core samples each were collected and analyzed for nonradionuclides within the Hanford Reach and behind McNary Dam.

4.7.1 Core Samples - Cobalt-60 Analyses

Cobalt-60 was analyzed in 18 of the 36 core samples collected. Concentrations of cobalt-60 measured in sediments deposited during the same year behind the five dams along the Columbia River are shown in Figure 4-1. The core samples shown on this graph were collected during 1976 using the gravity coring method to reflect current concentrations; all results have been decayed to 2005. The half-life of cobalt-60 is 5.26 years.

Priest Rapids Dam is located upstream from the Hanford Site and shows no significant amounts of cobalt-60 (<0.0007 pCi/g) during 1959, suggesting that the cobalt-60 measured at the dams located below the Hanford Site may have been contributed from Hanford Site operations. Concentrations of cobalt-60 measured behind McNary and The Dalles dams both show decreasing concentrations from 1959 to 1975, which coincides with a decrease in production activities at the Hanford Site. Concentrations measured in 1959 and 1964 behind John Day Dam do not correlate with the McNary and The Dalles dams because the John Day Dam was under construction from 1958 to 1972 with the filling of the reservoir occurring in 1968. Concentrations of cobalt-60 behind Bonneville Dam are much lower than the dams above it, but have increased slightly over time, which may indicate contaminated sediments being washed downstream from upstream sources.

Figure 4-2 shows a core collected behind each dam and the concentrations of cobalt-60 corresponding to the year at which it was deposited. Also noted in Figure 4-2 is the year at which the construction was completed for each dam. At McNary Dam, cobalt-60 concentrations correspond to years ranging from 1942 through 1974. Cobalt-60 concentrations peak around 1960 (0.37 pCi/g) and decrease thereafter to a concentration of approximately 0.02 pCi/g in 1974.

4.7.2 Core Samples - Cesium-137 Analysis

Cesium-137 was analyzed in 24 of the 36 core samples collected. Concentrations of cesium-137 measured in sediments deposited during the same year behind five of the dams along the Columbia River are shown in Figure 4-3. The core samples shown on this graph were collected during 1976 using a gravity coring method to reflect current concentrations; all results have been decayed to 2005 to reflect current concentrations. The half-life of cesium-137 is 30.17 years.

The concentrations of cesium-137 measured behind Priest Rapids Dam are relatively low during 1959 (<0.017 pCi/g) and increase substantially (~ 1.8 pCi/g) during 1964, suggesting that cesium-137 may have been contributed from a source other than Hanford Site operations. It is likely that the cesium-137 measured behind the Priest Rapids Dam is from atmospheric fallout from nuclear testing that took place in the early 1960s. Concentrations of cesium-137 measured behind McNary Dam and The Dalles Dam during 1959 are higher than those concentrations observed at Priest Rapids Dam. Cesium-137 concentrations are similar at McNary Dam and The Dalles Dam (~ 1.6 pCi/g), suggesting that cesium-137 may be contributed from Hanford Site operations. However, cesium-137 decreased from 1959 to 1975 to levels less than those observed behind Priest Rapids Dam for the same time period. Concentrations of cesium-137 behind Bonneville Dam are similar to those measured at Priest Rapids Dam during 1959. Concentrations of cesium-137 measured between 1964 and 1975 increase, but are less than those observed at Priest Rapids Dam.

Figure 4-4 shows a core collected behind each dam and the concentrations of cesium-137 corresponding to the year at which it was deposited. Also noted in Figure 4-4 is the year at which the construction was completed for each dam. At McNary Dam, cesium-137 concentrations correspond to years ranging from 1942 through 1974. Cesium-137 concentrations peak around 1948 (2.9 pCi/g) and slowly decrease thereafter to concentrations that are less than the Hanford Site background value of 1.1 pCi/g. Figure 4-5 shows cesium-137 concentrations (same core as that presented in Figure 4-4) at each depth interval and the approximate year at which it was deposited.

Cesium-137 concentrations have been measured infrequently along the Columbia River since the mid-1970s. However, some recent cesium-137 measurements have been taken from behind Priest Rapids Dam, Ice Harbor Dam, McNary Dam, and the John Day Dam. Cesium-137 concentrations measured behind Priest Rapids Dam from 1999 to 2004 range between 0.32 pCi/g and 0.61 pCi/g. Cesium-137 concentrations measured behind Ice Harbor Dam from 1999 to 2004 range between 0.25 pCi/g and 0.32 pCi/g. Cesium-137 concentrations measured behind the McNary Dam from 1999 to 2004 range between 0.04 pCi/g and 1.0 pCi/g. Cesium-137 concentrations measured behind the John Day Dam from 2003 and 2004 range between 0.29 pCi/g and 0.41 pCi/g. Recent cesium-137 concentrations are similar between Priest Rapids, Ice Harbor, and John Day dams suggesting the cesium-137 was not contributed from Hanford Site operations and are only slightly higher at McNary Dam. Cesium-137 concentrations measured behind the McNary Dam between 1942 and 2002 are presented in Figure 4-6. It is important to note that all recent cesium-137 measurements are less than or equal to the Hanford Site background value of 1.1 pCi/g.

4.7.3 Core Samples - Plutonium-239/240 Analysis

Plutonium-239/240 was analyzed in nine of the 36 core samples collected. Individual core samples collected behind each dam and the concentrations of plutonium-239/240 corresponding to the year at which it was deposited is presented in Figure 4-7. Approximately 35 years of time (1942 to 1974) is represented by the core collected behind McNary Dam. The highest plutonium-239/240 concentrations deposited are measured between 1942 and 1947 (0.1 pCi/g to 0.07 pCi/g) and the levels deposited in 1967 and 1974 decrease to less than Hanford Site background of 0.025 pCi/g. Approximately 13 years of time (1962 to 1975) is represented by the core collected behind The Dalles Dam. The highest plutonium-239/240 concentrations deposited are measured between 1962 and 1964 (0.04 pCi/g to 0.05 pCi/g) and decrease to levels less than Hanford Site Background in 1975. Approximately 15 years of time (1959 to 1975) is represented by the core collected behind Bonneville Dam. The highest plutonium-239/240 concentrations deposited are measured in 1969 (0.1 pCi/g) and decrease to below background levels in 1975. Approximately 14 years are represented by the core collected behind Priest Rapids Dam. The highest plutonium-239/240 concentrations deposited are measured between 1962 and 1964 (0.04 pCi/g to 0.05 pCi/g) and decrease to levels below background from 1967 to 1972.

Based on the core data available, plutonium-239/240 is present at the highest levels behind McNary Dam. The levels of plutonium deposited to the dams located downstream of the Hanford Site between 1962 and 1967 ranged between 0.04 pCi/g and 0.05 pCi/g. However, 0.1 pCi/g plutonium-239/240 was deposited behind Bonneville Dam in 1969, which may be a result of contaminated sediments being washed downstream from upstream sources. Plutonium-239/240 was deposited at levels above Hanford Site background between 1962 and 1967. Plutonium-239/240 is not naturally occurring; therefore, its presence could be contributed from an upstream source or as a result of atmospheric deposition.

4.8 BIOTA SUMMARY

As stated in previous sections, all Category 1 and 2 biota sample data collected and summarized since 1995 were selected to represent current concentrations. A total of 1,355 biota samples were identified that met this criterion. Summary statistic tables of these biota samples based on type and analysis are provided in Appendix F. The summary tables includes the frequency of detection, maximum and minimum concentrations (both detected and nondetected values), and average concentrations for approximately 20 different species.

It is important to note that contaminant concentrations measured in biota were not reviewed against the QA categories and may require additional review to evaluate their quality and relevance to the health of the Columbia River.

Figure 4-1. Cobalt-60 Concentrations Behind Columbia River Dams from 1959 to 1975.

Figure 4-2. Cobalt-60 Concentrations Behind Columbia River Dams
from the 1940s to the 1970s.

Figure 4-3. Cesium-137 Concentrations Behind Columbia River Dams from 1959 to 1975.

Figure 4-4. Cesium-137 Concentrations Behind Columbia River Dams from 1940's to 1970's.

**Figure 4-5. Cesium-137 Concentrations at Depth Intervals Behind
Columbia River Dams.**

Figure 4-6. Cobalt-60 and Cesium-137 Measurements Behind McNary Dam from 1942 to Present.

Figure 4-7. Plutonium-239/240 Concentrations Behind Columbia River Dams from the 1940s to the 1970s.

Table 4-1. Summary of Hanford Site Soil Background Concentrations. (2 Pages)

Constituent Name	90th Percentile Values of Background Concentration	Source
<i>Metals (mg/kg)</i>		
Antimony	5.0	c
Aluminum	12,000	b
Arsenic	6.5	b
Barium	130	b
Beryllium	1.5	b
Cadmium	0.81	c
Calcium	17,000	b
Chromium	19	b
Cobalt	16	b
Copper	22	b
Iron	33,000	b
Lead	10	b
Lithium	34	b
Manganese	510	b
Magnesium	7100	b
Mercury	0.33	b
Nickel	19	b
Potassium	2,200	b
Selenium	0.78	b
Silver	0.73	c
Sodium	690	b
Thallium	NA	d
Uranium	3.2	a
Vanadium	85	b
Zinc	68	b
Zirconium	40	b
<i>Radionuclides (pCi/g)</i>		
Americium-241	NA	d
Carbon-14	NA	d
Cesium-137	1.1	b

Table 4-1. Summary of Hanford Site Soil Background Concentrations. (2 Pages)

Constituent Name	90th Percentile Values of Background Concentration	Source
Cobalt-60	0.0084	a
Europium-152	NA	d
Europium-154	0.033	a
Europium-155	0.054	a
Nickel-63	NA	d
Plutonium-238	0.0038	a
Plutonium-239/240	0.025	a
Potassium-40	17	a
Radium-226	0.82	a
Strontium-90	0.18	a
Technetium-99	NA	d
Thorium-232	1.3	a
Tritium (H-3)	NA	d
Uranium-233/234	1.1	a
Uranium-235	0.11	a
Uranium-238	1.1	a

^a Hanford Site Background: Part 2, Soil Background for Radionuclides, (DOE-RL 1996).

^b Hanford Site Background: Part 1 Soil Background for Nonradioactive Analytes, DOE/RL-92-94, Rev. 4, U.S. Department of Energy, Richland Operations Office, Richland, Washington (DOE-RL 2001).

^c Hanford Site-specific background not available; not evaluated during background study. Value is from Ecology (1994), *Natural Background Soil Metals Concentrations in Washington State*, Publication 94-115, Washington State Department of Ecology, Olympia, Washington

^d Contaminant not evaluated during Hanford Site background study.

NA = not applicable

**Table 4-2. Summary of Sediment Benchmark Values for the Protection of Human Health.
(7 Pages)**

Analyte	Units	EPA Region 9 Residential Soil Preliminary Remediation Goals ^a	Soil Method B Unrestricted Land Use ^b	Protection from Direct Exposure Remedial Action Goal for Radionuclides ^c
General Chemistry				
Cyanide	mg/kg	1,200	1,600	--
Soluble Fluoride	mg/kg	3,700	4,800	--
Herbicide				
2-(2,4,5-Trichlorophenoxy)propionic acid	mg/kg	490	640	--
2-(2-methyl-4-chlorophenoxy)propionic acid	mg/kg	61	80	--
2,4,5-Trichlorophenoxyacetic acid	mg/kg	610	800	--
2,4-Dichlorophenoxyacetic acid	mg/kg	690	800	--
2-Methyl-4 chlorophenoxyacetic acid	mg/kg	31	40	--
3,5-dibromo-4-hydroxybenzonitrile	mg/kg	1,200	1,600	--
4-(2,4-Dichlorophenoxy)butanoic acid	mg/kg	490	640	--
Dacthal	mg/kg	610	800	--
Dicamba	mg/kg	1,800	2,400	--
Dichloroprop	mg/kg	--	800	--
Metals				
Aluminum	mg/kg	76,000	--	--
Antimony	mg/kg	31	32	--
Arsenic	mg/kg	0.39	0.67	--
Barium	mg/kg	5,400	16,000	--
Beryllium	mg/kg	150	160	--
Boron	mg/kg	16,000	16,000	--
Cadmium	mg/kg	37	40	--
Hexavalent chromium ^d	mg/kg	30	240	--
Cobalt	mg/kg	900	1,600	--
Copper	mg/kg	3,100	3,000	--
Iron	mg/kg	23,000	--	--
Lead	mg/kg	400	250 ^e	--
Lithium	mg/kg	1,600	1,600	--
Manganese	mg/kg	1,800	11,000	--
Mercury	mg/kg	23	24	--
Molybdenum	mg/kg	390	400	--
Nickel	mg/kg	1,600	1,600	--

**Table 4-2. Summary of Sediment Benchmark Values for the Protection of Human Health.
(7 Pages)**

Analyte	Units	EPA Region 9 Residential Soil Preliminary Remediation Goals ^a	Soil Method B Unrestricted Land Use ^b	Protection from Direct Exposure Remedial Action Goal for Radionuclides ^c
Phosphorus	mg/kg	1.6	1.6	--
Selenium	mg/kg	390	400	--
Silver	mg/kg	390	400	--
Strontium	mg/kg	47,000	48,000	--
Thallium	mg/kg	5.2	5.6	--
Tin	mg/kg	47,000	48,000	--
Titanium	mg/kg	100,000	320,000	--
Uranium	mg/kg	16	240	--
Vanadium	mg/kg	78	560	--
Zinc	mg/kg	23,000	24,000	--
Polychlorinated Biphenyls				
Aroclor-1016	mg/kg	3.9	5.6	--
Aroclor-1221	mg/kg	--	0.50	--
Aroclor-1232	mg/kg	--	0.50	--
Aroclor-1242	mg/kg	--	0.50	--
Aroclor-1248	mg/kg	--	0.50	--
Aroclor-1254	mg/kg	0.22	0.50	--
Aroclor-1260	mg/kg	--	0.50	--
Total polychlorinated biphenyl	mg/kg	--	0.50	--
Pesticides				
2,4'-DDD	mg/kg	2.4	4.2	--
2,4'-DDE	mg/kg	1.7	2.9	--
2,4'-DDT	mg/kg	1.7	2.9	--
Alachlor	mg/kg	6.0	12	--
Aldrin	mg/kg	0.03	0.06	--
Alpha-BHC	mg/kg	0.09	0.16	--
alpha-Chlordane	mg/kg	1.6	2.9	--
Ametryn	mg/kg	550	720	--
Atrazine	mg/kg	2.2	4.6	--
Benefin (Benfluralin)	mg/kg	18,000	24,000	--
beta-1,2,3,4,5,6-Hexachlorocyclohexane	mg/kg	0.32	0.56	--
Butylate	mg/kg	3,000	4,000	--
Captan	mg/kg	140	290	--
Carbethoxy malathion	mg/kg	1,200	1,600	--
Carbophenothion	mg/kg	--	10	--

**Table 4-2. Summary of Sediment Benchmark Values for the Protection of Human Health.
(7 Pages)**

Analyte	Units	EPA Region 9 Residential Soil Preliminary Remediation Goals ^a	Soil Method B Unrestricted Land Use ^b	Protection from Direct Exposure Remedial Action Goal for Radionuclides ^c
Carboxin	mg/kg	6,100	8,000	--
Chlordane	mg/kg	1.6	2.9	--
Chlorine	mg/kg	--	8,000	--
Chlorothalonil	mg/kg	44	91	--
Chlorpropham	mg/kg	12,000	16,000	--
Chlorpyrifos	mg/kg	180	240	--
Cyanazine	mg/kg	0.58	1.2	--
Diallate	mg/kg	8.0	16	--
Diazinon	mg/kg	55	72	--
Dichlorodiphenyldichloroethane	mg/kg	2.4	4.2	--
Dichlorodiphenyldichloroethylene	mg/kg	1.7	2.9	--
Dichlorodiphenyltrichloroethane	mg/kg	1.7	2.9	--
Dichlorvos	mg/kg	1.7	3.4	--
Dicofol	mg/kg	1.1	--	--
Dieldrin	mg/kg	0.03	0.06	--
Dimethoate	mg/kg	12	16	--
Diphenamid	mg/kg	1,800	2,400	--
Disulfoton	mg/kg	2.0	3.2	--
Diuron	mg/kg	120	160	--
Endosulfan I	mg/kg	370	480	--
Endrin	mg/kg	18	24	--
Eptam	mg/kg	1,500	2,000	--
Ethyl methylene phosphorodithioate	mg/kg	31	40	--
Ethyl O-(p-nitrophenyl) phenylphosphonothionate	mg/kg	0.61	0.80	--
Fensulfthion	mg/kg	--	20	--
Fluridone	mg/kg	4,900	6,400	--
Fonofos	mg/kg	120	160	--
Gamma-BHC (Lindane)	mg/kg	0.44	0.77	--
Heptachlor	mg/kg	0.11	0.22	--
Heptachlor epoxide	mg/kg	0.05	0.11	--
Hexazinone	mg/kg	2,000	2,600	--
Metalaxyl	mg/kg	3,700	4,800	--
Methoxychlor	mg/kg	310	400	--
Methyl Chlorpyrifos	mg/kg	610	800	--

**Table 4-2. Summary of Sediment Benchmark Values for the Protection of Human Health.
(7 Pages)**

Analyte	Units	EPA Region 9 Residential Soil Preliminary Remediation Goals ^a	Soil Method B Unrestricted Land Use ^b	Protection from Direct Exposure Remedial Action Goal for Radionuclides ^c
Methyl parathion	mg/kg	15	20	--
Metolachlor	mg/kg	9,200	12,000	--
Metribuzin	mg/kg	1,500	2,000	--
Mevinphos	mg/kg	--	20	--
Mirex	mg/kg	0.27	0.56	--
Molinate	mg/kg	120	160	--
Napropamide	mg/kg	6,100	8,000	--
Norflurazon	mg/kg	2,400	3,200	--
Oxyfluorfen	mg/kg	180	240	--
Parathion	mg/kg	370	480	--
Pebulate	mg/kg	3,100	4,000	--
Pendimethalin	mg/kg	2,400	3,200	--
Perthane	mg/kg	--	240	--
Phorate	mg/kg	12	16	--
Phosmet	mg/kg	1,200	1,600	--
Pramitol (Prometon)	mg/kg	920	1,200	--
Profluralin	mg/kg	370	480	--
Prometryn	mg/kg	240	320	--
Pronamide	mg/kg	4,600	6,000	--
Propachlor (Ramrod)	mg/kg	790	1,000	--
Propazine	mg/kg	1,200	1,600	--
Ronnel	mg/kg	3,100	4,000	--
Simazine	mg/kg	4.0	8.0	--
Terbacil	mg/kg	790	1,000	--
Terbutryn	mg/kg	61	80	--
Tetraethyl dithiopyrophosphate	mg/kg	31	40	--
Toxaphene	mg/kg	0.44	0.91	--
Triadimefon	mg/kg	1,800	2,400	--
Triallate	mg/kg	790	1,000	--
Tributylphosphorotrithioate	mg/kg	1.8	2.4	--
Trifluralin (Treflan)	mg/kg	63	130	--
Vernolate	mg/kg	61	80	--
Radionuclides				
Americium-241	pCi/g	--	--	31
Cesium-137	pCi/g	--	--	6.2

**Table 4-2. Summary of Sediment Benchmark Values for the Protection of Human Health.
(7 Pages)**

Analyte	Units	EPA Region 9 Residential Soil Preliminary Remediation Goals ^a	Soil Method B Unrestricted Land Use ^b	Protection from Direct Exposure Remedial Action Goal for Radionuclides ^c
Cobalt-60	pCi/g	--	--	1.4
Europium-152	pCi/g	--	--	3.3
Europium-154	pCi/g	--	--	3.0
Europium-155	pCi/g	--	--	130
Plutonium-238	pCi/g	--	--	37
Plutonium-239/240	pCi/g	--	--	34
Strontium-90	pCi/g	--	--	4.5
Technetium-99	pCi/g	--	--	15
Thorium-232	pCi/g	--	--	1.3
Tritium	pCi/g	--	--	510
Uranium-234	pCi/g	--	--	1.1
Uranium-235	pCi/g	--	--	0.84
Uranium-238	pCi/g	--	--	1.1
Semivolatile Organic Compounds				
1,2,4-Trichlorobenzene	mg/kg	62	800	--
1,2-Dichlorobenzene	mg/kg	600	7,200	--
1,2-Diphenylhydrazine	mg/kg	0.61	1.3	--
1,3-Dichlorobenzene	mg/kg	530	2,400	--
1,4-Dichlorobenzene	mg/kg	3.5	42	--
2,4,5-Trichlorophenol	mg/kg	6,100	8,000	--
2,4,6-Trichlorophenol	mg/kg	6.0	91	--
2,4-Dichlorophenol	mg/kg	180	240	--
2,4-Dimethylphenol	mg/kg	1,200	1,600	--
2,4-Dinitrophenol	mg/kg	120	160	--
2,4-Dinitrotoluene	mg/kg	120	160	--
2,6-Dinitrotoluene	mg/kg	61	80	--
2-Chloronaphthalene	mg/kg	4,900	6,400	--
2-Chlorophenol	mg/kg	63	400	--
2-Methylphenol (cresol, o-)	mg/kg	3,100	4,000	--
2-Nitroaniline	mg/kg	180	240	--
2-secButyl-4,6-dinitrophenol (DNBP)	mg/kg	61	80	--
3,3'-Dichlorobenzidine	mg/kg	1.0	2.0	--
3-Nitroaniline	mg/kg	18	24	--
4,6-Dinitro-2-methylphenol	mg/kg	6.0	8.0	--
4-Chloro-3-methylphenol	mg/kg	--	4,000	--

**Table 4-2. Summary of Sediment Benchmark Values for the Protection of Human Health.
(7 Pages)**

Analyte	Units	EPA Region 9 Residential Soil Preliminary Remediation Goals ^a	Soil Method B Unrestricted Land Use ^b	Protection from Direct Exposure Remedial Action Goal for Radionuclides ^c
4-Chloroaniline	mg/kg	240	320	--
4-Methylphenol (cresol, p-)	mg/kg	310	400	--
4-Nitroaniline	mg/kg	23	48	--
4-Nitrophenol	mg/kg	--	640	--
Acenaphthene	mg/kg	3,700	4,800	--
Acenaphthylene	mg/kg	--	4,800	--
Aniline	mg/kg	85	180	--
Anthracene	mg/kg	22,000	24,000	--
Azobenzene	mg/kg	4.0	9.0	--
Benzidine	mg/kg	0.00	0.00	--
Benzo(a)anthracene	mg/kg	0.62	1.37	--
Benzo(a)pyrene	mg/kg	0.06	0.14	--
Benzo(b)fluoranthene	mg/kg	0.62	1.0	--
Benzo(ghi)perylene	mg/kg	--	2,400	--
Benzo(k)fluoranthene	mg/kg	6.0	13	--
Benzoic acid	mg/kg	100,000	320,000	--
Benzyl alcohol	mg/kg	18,000	24,000	--
Biphenyl	mg/kg	3,000	4,000	--
Bis(2-chloro-1-methylethyl)ether	mg/kg	3.0	14	--
Bis(2-Chloroethoxy)methane	mg/kg	--	0.91	--
Bis(2-chloroethyl) ether	mg/kg	0.22	0.91	--
Bis(2-chloroisopropyl)	mg/kg	--	3,200	--
Bis(2-ethylhexyl) phthalate	mg/kg	35	71	--
Butylbenzylphthalate	mg/kg	12,000	16,000	--
Carbazole	mg/kg	24	50	--
Chrysene	mg/kg	62	137	--
Dibenz[a,h]anthracene	mg/kg	0.06	0.14	--
Dibenzofuran	mg/kg	150	160	--
Diethylphthalate	mg/kg	49,000	64,000	--
Dimethyl phthalate	mg/kg	100,000	80,000	--
Di-n-butylphthalate	mg/kg	6,100	8,000	--
Di-n-octylphthalate	mg/kg	2,400	1,600	--
Diphenylamine	mg/kg	1,500	2,000	--
Fluoranthene	mg/kg	2,300	3,200	--
Fluorene	mg/kg	2,700	3,200	--

**Table 4-2. Summary of Sediment Benchmark Values for the Protection of Human Health.
(7 Pages)**

Analyte	Units	EPA Region 9 Residential Soil Preliminary Remediation Goals ^a	Soil Method B Unrestricted Land Use ^b	Protection from Direct Exposure Remedial Action Goal for Radionuclides ^c
Hexachlorobenzene	mg/kg	0.30	0.63	--
Hexachlorobutadiene	mg/kg	6.2	13	--
Hexachlorocyclopentadiene	mg/kg	370	480	--
Hexachloroethane	mg/kg	35	71	--
Indeno(1,2,3-cd)pyrene	mg/kg	0.62	1.4	--
Isophorone	mg/kg	510	1,100	--
Naphthalene	mg/kg	56	320	--
Nitrobenzene	mg/kg	20	40	--
N-Nitrosodimethylamine	mg/kg	0.01	0.02	--
N-Nitrosodi-n-dipropylamine	mg/kg	0.07	0.14	--
N-Nitrosodiphenylamine	mg/kg	99	200	--
Pentachlorophenol	mg/kg	3.0	8.0	--
Phenol	mg/kg	18,000	24,000	--
Pyrene	mg/kg	2,300	2,400	--
Pyridine	mg/kg	61	80	--

^a EPA Region 9 Soil Preliminary Remediation Goals for Residential Land use October 2004.

^b Cleanup Levels And Risk Calculations (CLARC) database Soil Method B Unrestricted Land Use Table January 2006 (<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>)

^c Remedial Design Report/Remedial Action Work Plan for the 100 Area, (DOE-RL 1998a).

^d Hexavalent chromium was not analyzed in sediment samples collected, therefore all total chromium was assumed to be in the hexavalent form.

^e CLARC database Soil Method A Limit Table January 2006 (<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>)

BHC = Hexachlorocyclohexane

DDD = dichlorodiphenyldichloroethane

DDE = dichlorodiphenyldichloroethylene

DDT = dichlorodiphenyltrichloroethane

EPA = U.S. Environmental Protection Agency

Table 4-3. Summary of Sediment Benchmark Values for the Protection of Ecological Receptors. (5 Pages)

Analyte	Units	Consensus-based TEC ^a	Source of Consensus-based TEC	Washington Sediment Values ^b	Source of Washington Sediment Values	Oregon Sediment Biota Screening Value ^c	Sediment Biota Concentration Guides (BCG) from RESRAD Biota Version 1.0 ^d
Metals							
Antimony	mg/kg	2.0	NOAA	3.0	LAET	3.0	--
Arsenic	mg/kg	9.8	CBSQG	57	SMS	6.0	--
Cadmium	mg/kg	0.99	CBSQG	5.1	SMS	0.6	--
Chromium	mg/kg	43	CBSQG	260	SMS	37	--
Copper	mg/kg	32	CBSQG	390	SMS	36	--
Iron	mg/kg	20,000	Ontario	--	--	--	--
Lead	mg/kg	36	CBSQG	450	SMS	35	--
Manganese	mg/kg	460	Ontario	1,800	LAET	1,100	--
Mercury	mg/kg	0.18	CBSQG	0.41	SMS	0.2	--
Nickel	mg/kg	23	CBSQG	46	LAET	18	--
Silver	mg/kg	--	--	6.1	LAET	4.5	--
Zinc	mg/kg	120	CBSQG	410	SMS	120	--
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	0.060	--	0.021	FSQV	--	--
Aroclor-1221	mg/kg	0.060	--	0.021	FSQV	--	--
Aroclor-1232	mg/kg	0.060	--	0.021	FSQV	--	--
Aroclor-1242	mg/kg	0.060	--	0.021	FSQV	--	--
Aroclor-1248	mg/kg	0.060	--	0.021	FSQV	0.021	--
Aroclor-1254	mg/kg	0.060	--	0.0073	FSQV	0.0070	--
Aroclor-1260	mg/kg	0.060	--	0.021	FSQV	--	--

Table 4-3. Summary of Sediment Benchmark Values for the Protection of Ecological Receptors. (5 Pages)

Analyte	Units	Consensus-based TEC ^a	Source of Consensus-based TEC	Washington Sediment Values ^b	Source of Washington Sediment Values	Oregon Sediment Biota Screening Value ^c	Sediment Biota Concentration Guides (BCG) from RESRAD Biota Version 1.0 ^d
Total PCBs	mg/kg	0.060	CBSQG	0.021	--	0.034	--
Pesticides							
Aldrin	mg/kg	0.0020	Ontario	--	--	0.040	--
alpha-BHC	mg/kg	0.0060	Ontario	--	--	--	--
BHC (technical)	mg/kg	0.0030	Ontario	--	--	0.10	--
BHC[beta-]	mg/kg	0.0050	Ontario	--	--	--	--
Chlordane	mg/kg	0.0032	CBSQG	--	--	0.0045	--
DDD	mg/kg	0.0049	CBSQG	--	--	0.0040	--
DDE	mg/kg	0.0032	CBSQG	--	--	0.0015	--
DDT, o,p' + p,p'	mg/kg	0.0042	CBSQG	--	--	--	--
Total DDT+DDD+DDE	mg/kg	0.0053	CBSQG	--	--	0.0070	--
Dieldrin	mg/kg	0.0019	CBSQG	--	--	0.0030	--
Endrin	mg/kg	0.0022	CBSQG	--	--	0.0030	--
gamma-BHC (Lindane)	mg/kg	0.0030	CBSQG	--	--	0.00090	--
Heptachlor	mg/kg	--	--	--	--	0.010	--
Heptachlor epoxide	mg/kg	0.0025	CBSQG	0.26	LAET	0.00060	--
Mirex	mg/kg	0.007	Ontario			0.80	--
Toxaphene (Technical Grade)	mg/kg	--	--	--	--	--	--
Semivolatile Organic Compounds							
Acenaphthene	mg/kg	0.0067	CCME	3.5	FSQV	0.29	--

Table 4-3. Summary of Sediment Benchmark Values for the Protection of Ecological Receptors. (5 Pages)

Analyte	Units	Consensus-based TEC ^a	Source of Consensus-based TEC	Washington Sediment Values ^b	Source of Washington Sediment Values	Oregon Sediment Biota Screening Value ^c	Sediment Biota Concentration Guides (BCG) from RESRAD Biota Version 1.0 ^d
Acenaphthylene	mg/kg	0.0059	CCME	1.9	FSQV	0.16	--
Anthracene	mg/kg	0.057	CBSQG	2.1	FSQV	0.057	--
Benzo(a)anthracene	mg/kg	0.11	CBSQG	5.0	FSQV	0.032	--
Benzo(a)pyrene	mg/kg	0.15	CBSQG	7.0	FSQV	0.032	--
Benzo(b)fluoranthene	mg/kg	0.24	Ontario	--	--	--	--
Benzo(e)pyrene	mg/kg	0.15	CBSQG	--	--	--	--
Benzo(g,h,i)perylene	mg/kg	0.17	Ontario	1.2	FSQV	0.3	--
Benzo(k)fluoranthene	mg/kg	0.24	Ontario	--	--	0.027	--
Bis(2-ethylhexyl)phthalate (DEHP)	mg/kg	--	--	0.64	FSQV	0.75	--
Carbazole	mg/kg	--	--	0.14	FSQV	0.14	--
Chrysene	mg/kg	0.17	CBSQG	7.4	FSQV	0.057	--
Dibenz(a,h)anthracene	mg/kg	0.033	CBSQG	0.23	FSQV	0.033	--
Dibenzofuran	mg/kg	--	--	32	LAET	5.1	--
Di-n-Butyl Phthalate	mg/kg	--	--	0.043	LAET	0.11	--
Fluoranthene	mg/kg	0.42	CBSQG	11	FSQV	0.11	--
Fluorene	mg/kg	0.077	CBSQG	3.6	FSQV	0.077	--
Hexachlorobenzene	mg/kg	--	--	--	--	0.1	--
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	CBSQG	0.73	FSQV	0.017	--
Methylnaphthalene[2-]	mg/kg	0.02	CCME	--	--	--	--
Naphthalene	mg/kg	0.18	CBSQG	37	FSQV	0.18	--

Table 4-3. Summary of Sediment Benchmark Values for the Protection of Ecological Receptors. (5 Pages)

Analyte	Units	Consensus-based TEC ^a	Source of Consensus-based TEC	Washington Sediment Values ^b	Source of Washington Sediment Values	Oregon Sediment Biota Screening Value ^c	Sediment Biota Concentration Guides (BCG) from RESRAD Biota Version 1.0 ^d
Phenanthrene	mg/kg	0.20	CBSQG	5.7	FSQV	0.042	--
Pyrene	mg/kg	0.20	CBSQG	9.6	FSQV	0.053	--
PAH, Total LMW	mg/kg	--	--	27	FSQV	0.076	--
PAH, Total HMW	mg/kg	--	--	36	FSQV	0.19	--
Total PAHs	mg/kg	1.6	CBSQG	60	--	1.6	--
Radionuclides							
Americium-241	pCi/g	--	--	--	--	--	5,200
Cesium-137	pCi/g	--	--	--	--	--	3,100
Cobalt-60	pCi/g	--	--	--	--	--	1,500
Europium-154	pCi/g	--	--	--	--	--	2,600
Europium-155	pCi/g	--	--	--	--	--	32,000
Nickel-63	pCi/g	--	--	--	--	--	Na
Plutonium-239	pCi/g	--	--	--	--	--	5,900
Radium-226	pCi/g	--	--	--	--	--	100
Radium-228	pCi/g	--	--	--	--	--	88
Strontium-90	pCi/g	--	--	--	--	--	5.8
Technicium-99	pCi/g	--	--	--	--	--	42,000
Thorium-232	pCi/g	--	--	--	--	--	1,300
Tritium	pCi/g	--	--	--	--	--	370,000
Uranium-234	pCi/g	--	--	--	--	--	5,300
Uranium-235	pCi/g	--	--	--	--	--	3,700

Table 4-3. Summary of Sediment Benchmark Values for the Protection of Ecological Receptors. (5 Pages)

Analyte	Units	Consensus-based TEC ^a	Source of Consensus-based TEC	Washington Sediment Values ^b	Source of Washington Sediment Values	Oregon Sediment Biota Screening Value ^c	Sediment Biota Concentration Guides (BCG) from RESRAD Biota Version 1.0 ^d
Uranium-238	pCi/g	--	--	--	--	--	2,500

CBSQG - Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems, MacDonald, D.D., et al, 2000. Arch. Environ. Contam. Toxicol. 39:20-31.

CCME - Canadian sediment quality guidelines for the protection of aquatic life: summary tables, Canadian Council of Ministers of the Environment, Winnipeg. 1999.

FSQV - Freshwater Sediment Quality Values derived from Probable Apparent Effects Threshold (PAET) Microtox.

LAET - Lowest Apparent Effects Threshold (AET) between Microtox and Hyalella AET.

NOAA - The potential for biological effects of sediment-sorbed contaminants tested in the National Status and Trends Program, Long, E.R., et al, 1991, NOAA tech memo NOS OMA 52.

Ontario - Guidelines for the protection and management of aquatic sediments in Ontario, Persaud, D.R., et al, 1993.

SMS - Sediment Management Standards (MARINE) from Washington Dept of Ecology (WAC 173-204 1991)

^a MacDonald, D.D. and M. MacFarlane, 1999, Criteria for Managing Contaminated Sediment in British Columbia, Ontario Ministry of Environment and Energy, Toronto, Canada.

^b Cubagge, J., Batts, D., Breidenbach, S., 1997, Creation and Analysis of Freshwater Sediment Quality Values in Washington State, Publication No. 97-323a, Washington State Department of Ecology, Washington.

^c ODEQ Guidance for Ecological Risk Assessment Level II Screening Level Values December 2001

^d RESRAD Biota Computer Software Version 1.0 Sediment BCG Report for Level 1 September 2003

For Washington Sediment Values, the FSQV values for organics and the SMS values for Metals were selected over the LAET values - LAET values were only used if the others were not available, as selected for the B/C Pilot study.

BCG = biota concentration guides

BHC = Hexachlorocyclohexane

HMW = high molecular weight

LMW = low molecular weight

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyl

RESRAD = RESidual RADioactivity

TEC = threshold effect concentrations

Table 4-4. Summary of Surface Water Benchmark Values for the Protection of Human Health. (4 Pages)

Analyte	Units	National Recommended Water Quality Criteria - Water + Organism ^a	National Recommended Water Quality Criteria - Organism Only ^a	Radionuclide Drinking Water MCLs ^b
General Chemistry				
Cyanide	mg/L	0.14	0.14	--
Nitrate	mg/L	10	--	--
Metals				
Antimony	mg/L	0.0056	0.64	--
Arsenic	mg/L	0.000018	0.00014 ^c	--
Barium	mg/L	1.0	--	--
Iron	mg/L	0.3	--	--
Manganese	mg/L	0.050	0.1	--
Nickel	mg/L	0.61	4.6	--
Selenium	mg/L	0.17	4.2	--
Thallium	mg/L	0.00024	0.00047	--
Uranium	mg/L	--		
Zinc	mg/L	7.4	26	--
Pesticides				
Aldrin	mg/L	0.000000049	0.00000005	--
Alpha-BHC	mg/L	0.0000026	0.0000049	--
Beta-BHC	mg/L	0.0000091	0.000017	--
Gamma-BHC	mg/L	0.00098	.0018	--
Chlordane	mg/L	0.0000008	0.00000081	--
DDT	mg/L	0.00000022	0.00000022	--
DDE	mg/L	0.00000022	0.00000022	--
DDD	mg/L	0.00000031	0.00000031	--
Dieldrin	mg/L	0.000000052	0.000000054	--
Endosulfan	mg/L	0.062	0.089	--
Endosulfan Sulfate	mg/L	0.062	0.089	--
Endrin	mg/L	0.000059	0.00006	--
Endrin Aldehyde	mg/L	0.00029	0.0003	--
Heptachlor	mg/L	0.000000079	0.000000079	--

Table 4-4. Summary of Surface Water Benchmark Values for the Protection of Human Health. (4 Pages)

Analyte	Units	National Recommended Water Quality Criteria - Water + Organism ^a	National Recommended Water Quality Criteria - Organism Only ^a	Radionuclide Drinking Water MCLs ^b
Heptachlor Epoxide	mg/L	0.000000039	0.000000039	--
Hexachlorocyclohexane (Lindane)	mg/L	0.000012	0.000041	--
Toxaphene	mg/L	0.00000028	0.00000028	--
Polychlorinated Biphenyls				
Polychlorinated biphenyls (*PCBs)	mg/L	0.000000064	0.000000064	--
Semivolatile Organic Compounds				
1,2-dichlorobenzene	mg/L	0.42	1.3	--
1,2-diphenylhydrazine	mg/L	0.000036	0.0002	--
1,2,4-trichlorobenzene	mg/L	0.035	0.070	--
1,2,4,5-tetrachlorobenzene	mg/L	0.00097	.0011	--
1,3-dichlorobenzene	mg/L	0.32	0.96	--
1,4-Dichlorobenzene	mg/L	0.063	0.19	--
2-chloronaphthalene	mg/L	1.0	1.6	--
2-chlorophenol	mg/L	0.081	0.15	--
2-methyl-4,6-dinitrophenol	mg/L	0.013	0.28	--
2,4-dichlorophenol	mg/L	0.077	0.29	--
2,4-dimethylphenol	mg/L	0.38	0.85	--
2,4-dinitrophenol	mg/L	0.069	5.3	--
2,4-dinitrotoluene	mg/L	0.00011	0.0034	--
2,4,5-trichlorophenol	mg/L	1.8	3.6	--
2,4,6-trichlorophenol	mg/L	0.014	0.024	--
3,3-dichlorobenzidine	mg/L	0.000021	0.000028	--
Acenaphthene	mg/L	0.67	0.99	--
Anthracene	mg/L	8.3	40	--
Benidine	mg/L	0.000000086	0.0000002	--
Benzo(a)anthracene	mg/L	0.0000038	0.000018	--
Benzo(a)pyrene	mg/L	0.0000038	0.000018	--
Benzo(b)fluoranthene	mg/L	0.0000038	0.0000018	--

Table 4-4. Summary of Surface Water Benchmark Values for the Protection of Human Health. (4 Pages)

Analyte	Units	National Recommended Water Quality Criteria - Water + Organism ^a	National Recommended Water Quality Criteria - Organism Only ^a	Radionuclide Drinking Water MCLs ^b
Benzo(k)fluoranthene	mg/L	0.0000038	0.0000018	--
Bis(2-chloroethyl) ether	mg/L	0.00003	0.00053	--
Bis(2-chloroisopropyl) ether	mg/L	1.4	65	--
Bis(2-ethylhexyl) phthalate	mg/L	0.0012	0.0022	--
Butyl Benzyl Phthalate	mg/L	1.5	1.9	--
Chrysene	mg/L	0.0000038	0.000018	--
Dibenzo(a,h)anthracene	mg/L	0.0000038	0.000018	--
Diethyl Phthalate	mg/L	17	44	--
Dimethyl Phthalate	mg/L	270	1,100	--
Di-n-butyl Phthalate	mg/L	2	4.5	--
Fluoranthene	mg/L	0.13	0.14	--
Fluorene	mg/L	1.1	5.3	--
Hexachlorobenzene	mg/L	0.00000028	0.00000029	--
Hexachlorobutadiene	mg/L	0.00044	0.018	--
Hexachlorocyclopentadiene	mg/L	0.04	1.1	--
Hexachloroethane	mg/L	0.0014	0.0033	--
Indeno-(1,2,3-cd)pyrene	mg/L	0.0000038	0.000018	--
Isophorone	mg/L	0.035	0.96	--
Nitrobenzene	mg/L	0.017	0.69	--
N-nitrosodiethylamine	mg/L	0.00000069	0.003	--
N-nitrosodimethylamine	mg/L	0.0000008	0.00124	--
N-nitrosodi-n-propylamine	mg/L	0.000005	0.00051	--
N-nitrosodiphenylamine	mg/L	0.0033	0.006	--
Pentachlorobenzene	mg/L	0.0014	0.0015	--
Pentachlorophenol	mg/L	0.00027	0.003	--
Phenol	mg/L	21	1,700	--
Pyrene	mg/L	0.83	4	--
Radionuclides				
Americium-241	pCi/L	--	--	15

Table 4-4. Summary of Surface Water Benchmark Values for the Protection of Human Health. (4 Pages)

Analyte	Units	National Recommended Water Quality Criteria - Water + Organism ^a	National Recommended Water Quality Criteria - Organism Only ^a	Radionuclide Drinking Water MCLs ^b
Carbon-14	pCi/L	--	--	2,000
Cesium-137	pCi/L	--	--	200
Cobalt-60	pCi/L	--	--	100
Europium-152	pCi/L	--	--	200
Europium-154	pCi/L	--	--	60
Europium-155	pCi/L	--	--	600
Nickel-63	pCi/L	--	--	50
Plutonium-238	pCi/L	--	--	15
Plutonium-239/240	pCi/L	--	--	15
Strontium-90	pCi/L	--	--	8
Technicium-99	pCi/L	--	--	900
Thorium-232	pCi/L	--	--	15
Tritium	pCi/L	--	--	20,000
Uranium-234	pCi/L	--	--	30
Uranium-235	pCi/L	--	--	30
Uranium-238	pCi/L	--	--	30

^a EPA National Recommended Water Quality Criteria Table Brochure, EPA/822-F-04-101, 2004.

^b EPA Soil Screening Guidance for Radionuclides: Users Guide, Attachment D, Regulatory and Human Health Benchmarks Used for Radionuclides SSL Development, EPA/540-R-00-007, October 2000.

^c Refers to the inorganic form only.

BHC = hexachlorocyclohexane

DDD = dichlorodiphenyldichloroethane

DDE = dichlorodiphenyldichloroethylene

DDT = dichlorodiphenyltrichloroethane

EPA = U.S. Environmental Protection Agency

MCL = maximum contaminant level

Table 4-5. Summary of Surface Water Benchmark Values for the Protection of Ecological Receptors. (7 Pages)

Analyte	Units	Washington Chronic Water Quality Standards ^a	Washington Chronic Water Quality Standards Notes	Oregon Aquatic Biota Screening Value ^b	National Ambient Water Quality Standards - CCC ^c	National Ambient Water Quality Standards - Notes	Water Biota Concentration Guides (BCG) from RESRAD Biota Version 1.0 ^d
General Chemistry							
Ammonia	mg/L	--	--	0.017	--	--	--
Chloride	mg/L	230	--	--	230	--	--
Cyanide	mg/L	0.0052	--	0.0052	0.022	--	--
Metals							
Aluminum	mg/L	--	--	0.087	0.087	--	--
Antimony	mg/L	--	--	1.6	--	--	--
Arsenic	mg/L	0.19	--	0.15	0.15	--	--
Barium	mg/L	--	--	0.004	--	--	--
Beryllium	mg/L	--	--	0.0053	--	--	--
Boron	mg/L	--	--	0.0016	--	--	--
Cadmium	mg/L	0.00054	g	0.0022	0.00025	g	--
Calcium	mg/L	--	--	120	--	--	--
Hexavalent chromium	mg/L	0.001	e	0.011	0.011	--	--
Chromium	mg/L	0.01	--	0.074	0.074	--	--
Cobalt	mg/L	--	--	0.023	--	--	--
Copper	mg/L	0.0060	g	0.009	0.009	g	--
Iron	mg/L	--	--	1	1	--	--
Lead	mg/L	0.00087	g	0.0025	0.0025	g	--
Lithium	mg/L	--	--	0.014	--	--	--
Magnesium	mg/L	--	--	82	--	--	--

Table 4-5. Summary of Surface Water Benchmark Values for the Protection of Ecological Receptors. (7 Pages)

Analyte	Units	Washington Chronic Water Quality Standards ^a	Washington Chronic Water Quality Standards Notes	Oregon Aquatic Biota Screening Value ^b	National Ambient Water Quality Standards - CCC ^c	National Ambient Water Quality Standards - Notes	Water Biota Concentration Guides (BCG) from RESRAD Biota Version 1.0 ^d
Manganese	mg/L	--	--	0.12	--	--	--
Mercury	mg/L	0.000012	h	0.00077	0.00077	--	--
Molybdenum	mg/L	--	--	0.37	--	--	--
Nickel	mg/L	0.083	g	0.052	0.028	g	--
Potassium	mg/L	--	--	53	--	--	--
Selenium	mg/L	0.005	h	0.005	0.005	--	--
Silver	mg/L	--	f	0.00012	--	--	--
Sodium	mg/L	--	--	680	--	--	--
Strontium	mg/L	--	--	1.5	--	--	--
Thallium	mg/L	--	--	0.04	--	--	--
Tin	mg/L	--	--	0.073	--	--	--
Uranium	mg/L	--	--	0.0026	--	--	--
Vanadium	mg/L	--	--	0.02	--	--	--
Zinc	mg/L	0.055	g	0.12	0.062	g	--
Zirconium	mg/L	--	--	0.017	0.017	--	--
Pesticides							
Methoxychlor	mg/L	--	--	0.00003	0.00003	--	--
Aldrin	mg/L	0.0000019	--	0.00006	--	--	--
Alpha-BHC	mg/L	--	--	0.0022	--	--	--
Beta-BHC	mg/L	--	--	0.0022	--	--	--
Gamma-BHC	mg/L	0.00008	--	0.00008	--	--	--

Table 4-5. Summary of Surface Water Benchmark Values for the Protection of Ecological Receptors. (7 Pages)

Analyte	Units	Washington Chronic Water Quality Standards ^a	Washington Chronic Water Quality Standards Notes	Oregon Aquatic Biota Screening Value ^b	National Ambient Water Quality Standards - CCC ^c	National Ambient Water Quality Standards - Notes	Water Biota Concentration Guides (BCG) from RESRAD Biota Version 1.0 ^d
Chlordane	mg/L	0.0000043	--	0.0000043	0.0000043	--	--
Chlorpyrifos	mg/L	0.000041	--	0.000041	0.000041	--	--
DDD	mg/L	--	--	0.000001	--	--	--
DDT (and metabolites)	mg/L	0.000001	--	0.000001	0.000001	--	--
Dieldrin	mg/L	0.0000019	--	0.000056	0.000056	--	--
Endosulfan	mg/L	0.000056	--	0.000056	0.00022	--	--
Endrin	mg/L	0.0000023	--	0.000036	0.000036	--	--
Heptachlor	mg/L	0.0000038	--	0.0000038	--	--	--
Heptachlor epoxide	mg/L	--	--	0.0000038	0.0000038	--	--
Mirex	mg/L	--	--	0.000001	0.000001	--	--
Parathion	mg/L	0.000013	--	0.000013	0.000013	--	--
Toxaphene	mg/L	0.0000002	--	0.0000002	0.0000002	--	--
<i>Semivolatile Organic Compounds</i>							
Pentachlorophenol	mg/L	--	--	0.015	--	--	--
1,2-dichlorobenzene	mg/L	--	--	0.014	--	--	--
1,2-diphenylhydrazine	mg/L	--	--	0.0054	--	--	--
1,2,3-trichlorobenzene	mg/L	--	--	0.0080	--	--	--
1,2,4-trichlorobenzene	mg/L	--	--	0.11	--	--	--
1,2,4,5-tetrachlorobenzene	mg/L	--	--	0.0030	--	--	--
1,3-dichlorobenzene	mg/L	--	--	0.071	--	--	--
1,4-Dichlorobenzene	mg/L	--	--	0.015	--	--	--

Table 4-5. Summary of Surface Water Benchmark Values for the Protection of Ecological Receptors. (7 Pages)

Analyte	Units	Washington Chronic Water Quality Standards ^a	Washington Chronic Water Quality Standards Notes	Oregon Aquatic Biota Screening Value ^b	National Ambient Water Quality Standards - CCC ^c	National Ambient Water Quality Standards - Notes	Water Biota Concentration Guides (BCG) from RESRAD Biota Version 1.0 ^d
2-chloronaphthalene	mg/L	--	--	0.032	--	--	--
2-chlorophenol	mg/L	--	--	2.0	--	--	--
1-methylnaphthalene	mg/L	--	--	0.0021	--	--	--
2,3,4,6-tetrachlorophenol	mg/L	--	--	0.0012	--	--	--
2,4-dichlorophenol	mg/L	--	--	3.7	--	--	--
2,4-dimethylphenol	mg/L	--	--	0.042	--	--	--
2,4-dinitrotoluene	mg/L	--	--	0.23	--	--	--
2,4,6-trichlorophenol	mg/L	--	--	0.97	--	--	--
2,6-dinitrotoluene	mg/L	--	--	0.23	--	--	--
4-nitrophenol	mg/L	--	--	0.15	--	--	--
Acenaphthene	mg/L	--	--	0.52	--	--	--
Anthracene	mg/L	--	--	0.013	--	--	--
Benzidine	mg/L	--	--	0.0039	--	--	--
Benzoic Acid	mg/L	--	--	0.042	--	--	--
Benzo(a)anthracene	mg/L	--	--	0.000027	--	--	--
Benzo(a)pyrene	mg/L	--	--	0.000014	--	--	--
Benzyl Alcohol	mg/L	--	--	0.0086	--	--	--
Biphenyl	mg/L	--	--	0.014	--	--	--
Bis(2-ethylhexyl) phthalate	mg/L	--	--	0.0030	--	--	--
Butyl Benzyl Phthalate	mg/L	--	--	0.019	--	--	--
Dibenzofuran	mg/L	--	--	0.0037	--	--	--

Table 4-5. Summary of Surface Water Benchmark Values for the Protection of Ecological Receptors. (7 Pages)

Analyte	Units	Washington Chronic Water Quality Standards ^a	Washington Chronic Water Quality Standards Notes	Oregon Aquatic Biota Screening Value ^b	National Ambient Water Quality Standards - CCC ^c	National Ambient Water Quality Standards - Notes	Water Biota Concentration Guides (BCG) from RESRAD Biota Version 1.0 ^d
Diethyl Phthalate	mg/L	--	--	0.21	--	--	--
Dimethyl Phthalate	mg/L	--	--	0.0030	--	--	--
Di-n-butyl Phthalate	mg/L	--	--	0.035	--	--	--
Di-n-octyl Phthalate	mg/L	--	--	0.71	--	--	--
Fluoranthene	mg/L	--	--	0.0062	--	--	--
Fluorene	mg/L	--	--	0.0039	--	--	--
Hexachlorobutadiene	mg/L	--	--	0.0093	--	--	--
Hexachlorocyclopentadiene	mg/L	--	--	0.0052	--	--	--
Hexachloroethane	mg/L	--	--	0.54	--	--	--
Isophorone	mg/L	--	--	2.3	--	--	--
Naphthalene	mg/L	--	--	0.62	--	--	--
Nitrobenzene	mg/L	--	--	0.54	--	--	--
N-nitrosodiethylamine	mg/L	--	--	0.12	--	--	--
N-nitrosodimethylamine	mg/L	--	--	0.12	--	--	--
N-nitrosodi-n-butylamine	mg/L	--	--	0.12	--	--	--
N-nitrosodi-n-propylamine	mg/L	--	--	0.12	--	--	--
N-nitrosodiphenylamine	mg/L	--	--	0.21	--	--	--
N-nitrosomethyl-ethylamine	mg/L	--	--	0.12	--	--	--
O-cresol	mg/L	--	--	0.013	--	--	--
Pentachlorobenzene	mg/L	--	--	0.00047	--	--	--
Pentachlorophenol	mg/L	--	--	0.015	0.015	--	--

Table 4-5. Summary of Surface Water Benchmark Values for the Protection of Ecological Receptors. (7 Pages)

Analyte	Units	Washington Chronic Water Quality Standards ^a	Washington Chronic Water Quality Standards Notes	Oregon Aquatic Biota Screening Value ^b	National Ambient Water Quality Standards - CCC ^c	National Ambient Water Quality Standards - Notes	Water Biota Concentration Guides (BCG) from RESRAD Biota Version 1.0 ^d
Phenanthrene	mg/L	--	--	0.0063	--	--	--
Phenol	mg/L	--	--	0.11	--	--	--
<i>Polychlorinated Biphenyls</i>							
Polychlorinated biphenyls *	mg/L	0.000014	--	0.000014	0.000014	--	--
Aroclor-1221	mg/L	--	--	0.00028	--	--	--
Aroclor-1232	mg/L	--	--	0.00058	--	--	--
Aroclor-1242	mg/L	--	--	0.000053	--	--	--
Aroclor-1248	mg/L	--	--	0.000081	--	--	--
Aroclor-1254	mg/L	--	--	0.000033	--	--	--
Aroclor-1260	mg/L	--	--	0.094	--	--	--
<i>Radionuclides</i>							
Americium-241	pCi/L	--	--	--	--	--	440
Cesium-137	pCi/L	--	--	--	--	--	43
Cobalt-60	pCi/L	--	--	--	--	--	3800
Europium-154	pCi/L	--	--	--	--	--	22,000
Europium-155	pCi/L	--	--	--	--	--	260,000
Nickel-63	pCi/L	--	--	--	--	--	--
Plutonium-239	pCi/L	--	--	--	--	--	190
Radium-226	pCi/L	--	--	--	--	--	4.0
Radium-228	pCi/L	--	--	--	--	--	3.4
Strontium-90	pCi/L	--	--	--	--	--	280

Table 4-5. Summary of Surface Water Benchmark Values for the Protection of Ecological Receptors. (7 Pages)

Analyte	Units	Washington Chronic Water Quality Standards ^a	Washington Chronic Water Quality Standards Notes	Oregon Aquatic Biota Screening Value ^b	National Ambient Water Quality Standards - CCC ^c	National Ambient Water Quality Standards - Notes	Water Biota Concentration Guides (BCG) from RESRAD Biota Version 1.0 ^d
Technicium-99	pCi/L	--	--	--	--	--	670,000
Thorium-232	pCi/L	--	--	--	--	--	300
Tritium	pCi/L	--	--	--	--	--	270,000,000
Uranium-234	pCi/L	--	--	--	--	--	200
Uranium-235	pCi/L	--	--	--	--	--	220
Uranium-238	pCi/L	--	--	--	--	--	220

^a USDOE "Water Quality Standards for Surface Waters" of the State of Washington Table 240(3) Chapter 173-201A WAC July 2003.

^b ODEQ *Guidance for Ecological Risk Assessment Level II Screening Level Values* December 2001.

^c EPA *National Recommended Water Quality Criteria* Table Brochure EPA/822-F-04-010 (EPA 2004b).

^d RESRAD Biota Computer Software Version 1.0 Aquatic BCG Report for Level 1, September 2003.

^e Based on dissolved fraction.

^f Based on dissolved fraction / no chronic value.

^g Based on dissolved fraction and lowest site-specific hardness of 47 mg/L.

^h Based on total-recoverable fraction of the metal.

BHC = hexachlorocyclohexane

CCC = criterion continuous concentration

EPA = U.S. Environmental Protection Agency

RESRAD = RESidual RADioactivity

WAC = *Washington Administrative Code*

Table 4-6. Summary of Segment 1 Sediment Benchmark Exceedances for All Categories of Data.

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Metals													
Arsenic	mg/kg	47	44	94%	12	6.5	Yes	6.0	2.0	27	0.39	31	44
Arsenic	mg/kg dry-wt	4	4	100%	9.6	6.5	Yes	6.0	1.6	3	0.39	25	4
Cadmium	mg/kg	62	57	92%	16	0.81	Yes	0.60	27	53	37	--	--
Cadmium	mg/kg dry-wt	4	4	100%	8.0	0.81	Yes	0.60	13	2	37	0.22	--
Chromium	mg/kg	63	63	100%	92	19	Yes	37	2.5	39	30	3.1	41
Chromium	mg/kg dry-wt	4	4	100%	93	19	Yes	37	2.5	3	30	3.1	3
Copper	mg/kg	63	63	100%	70	22	Yes	32	2.2	23	2,960	--	--
Copper	mg/kg dry-wt	4	4	100%	59	22	Yes	32	1.9	2	2,960	0.020	--
Iron	mg/kg	9	9	100%	40,000	32,600	Yes	20,000	2.0	1	23,463	1.7	1
Lead	mg/kg	59	59	100%	140	10	Yes	35	4.0	37	250	--	--
Lead	mg/kg dry-wt	4	3	75%	56	10	Yes	35	1.6	2	250	0.23	--
Manganese	mg/kg	9	9	100%	660	512	Yes	460	1.4	1	1,762	--	--
Mercury	mg/kg	47	37	71%	0.31	0.33	No	0.18	1.7	12	23	--	--
Nickel	mg/kg	33	33	100%	53	19	Yes	18	2.9	14	1,564	--	--
Nickel	mg/kg dry-wt	3	3	100%	46	19	Yes	18	2.6	3	1,564	0.030	--
Vanadium	mg/kg	9	9	100%	130	85	Yes	--	--	--	78	1.7	1
Zinc	mg/kg	63	63	100%	850	68	Yes	120	7.1	49	23,463	--	--
Zinc	mg/kg dry-wt	4	4	100%	616	68	Yes	120	5.1	3	23,463	0.026	--
Pesticides													
Dichlorodiphenyldichloroethylene	mg/kg dry-wt	1	1	100%	0.0070	--	--	0.0015	4.7	1	1.7	0.0041	--
Radionuclides													
Thorium-232	pCi/g	3	3	100%	2.5	1.3	Yes	--	--	--	1.3	1.9	1
Thorium-232	pCi/g dry-wt	1	1	100%	1.5	1.3	Yes	1,300	0.0012	--	1.3	1.2	1
Uranium-234	pCi/g dry-wt	38	38	100%	1.6	1.1	Yes	5,270	3.05E-04	--	1.1	1.5	7
Uranium-238	pCi/g	31	31	100%	1.4	1.1	Yes	--	--	--	1.1	1.2	1
Uranium-238	pCi/g dry-wt	38	38	100%	1.3	3.2	No	2,490	5.26E-04	--	1.1	1.2	4

Table 4-7. Summary of Segment 1 Surface Water Benchmark Exceedances for All Categories of Data.

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Barium	mg/L	5	5	100%	0.029	0.0040	7.4	5	1.0	--	--
Arsenic	mg/L	173	173	100%	0.0017	0.15	--	--	1.80E-05	96	173

Table 4-8. Summary of Segment 2 Sediment Benchmark Exceedances for All Categories of Data. (2 Pages)

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Metals													
Antimony	mg/kg	99	61	62%	6.8	5.0	Yes	2.0	3.4	3	31	0.22	--
Arsenic	mg/kg	108	104	96%	20	6.5	Yes	6.0	3.3	25	0.39	51	96
Arsenic	mg/kg dry-wt	14	14	100%	7.8	6.5	Yes	6.0	1.3	3	0.39	20	9
Cadmium	mg/kg	112	73	65%	5.6	0.81	Yes	0.60	9.3	42	37	0.15	--
Cadmium	mg/kg dry-wt	18	18	100%	1.6	0.81	Yes	0.60	2.7	7	37	0.043	--
Chromium	mg/kg	120	119	99%	112	19	Yes	37	3.0	48	30	3.7	50
Chromium	mg/kg dry-wt	17	13	76%	88	19	Yes	37	2.4	9	30	2.9	12
Copper	mg/kg	119	119	100%	70	22	Yes	32	2.2	10	2,960	0.024	--
Iron	mg/kg	45	45	100%	31,100	32,600	No	20,000	1.6	2	23,463	1.3	1
Lead	mg/kg	108	108	100%	76	10	Yes	35	2.2	24	250	0.30	--
Lead	mg/kg dry-wt	18	18	100%	57	10	Yes	35	1.7	1	250	0.23	--
Manganese	mg/kg	48	48	100%	603	512	Yes	460	1.3	3	1,762	0.34	--
Mercury	mg/kg	108	67	62%	0.68	0.33	Yes	0.18	3.8	1	23	0.029	--
Nickel	mg/kg	112	112	100%	30	19	Yes	18	1.7	33	1,564	0.019	--
Nickel	mg/kg dry-wt	9	9	100%	21	19	Yes	18	1.2	5	1,564	0.014	--
Silver	mg/kg	99	58	59%	5.3	0.73	Yes	4.5	1.2	1	391	0.014	--
Vanadium	mg/kg	45	45	100%	86	85	Yes	--	--	--	78	1.1	1
Zinc	mg/kg	112	112	100%	477	68	Yes	120	4.0	74	23,463	0.020	--
Zinc	mg/kg dry-wt	13	13	100%	366	68	Yes	120	3.1	8	23,463	0.016	--
Radionuclides													
Cobalt-60	pCi/g	40	40	100%	2.4	0.0084	Yes	1,460	0.0017	--	1.4	1.7	1
Thorium-232	pCi/g	40	40	100%	3.2	1.3	Yes	1,300	0.0025	--	1.3	2.5	9
Thorium-232	pCi/g dry-wt	8	8	100%	1.5	1.3	Yes	1,300	0.0012	--	1.3	1.2	1
Uranium-234	pCi/g	90	90	100%	11	1.1	Yes	5,270	0.0021	--	1.1	10	16

Table 4-8. Summary of Segment 2 Sediment Benchmark Exceedances for All Categories of Data. (2 Pages)

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Uranium-234	pCi/g dry-wt	55	55	100%	4.5	1.1	Yes	5,270	8.50E-04	--	1.1	4.1	12
Uranium-238	pCi/g	129	129	100%	10.0	1.1	Yes	2,490	0.0040	--	1.1	9.1	22
Uranium-238	pCi/g dry-wt	57	57	100%	4.3	1.1	Yes	2,490	0.0017	--	1.1	3.9	13

Table 4-9. Summary of Segment 2 Surface Water Benchmark Exceedances for All Categories of Data.

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Metals											
Aluminum	mg/L	109	57	52%	21	0.087	243	18	--	--	--
Arsenic	mg/L	980	979	100%	0.0085	0.15	0.057	--	1.80E-05	473	978
Barium	mg/L	122	121	99%	0.29	0.0040	73	121	1.0	--	--
Cadmium	mg/L	1057	795	75%	0.0035	2.50E-04	14	15	--	--	--
Chromium	mg/L	1065	843	79%	0.22	0.010	22	116	--	--	--
Copper	mg/L	1060	1001	94%	0.037	0.0060	6.3	17	--	--	--
Iron	mg/L	82	45	55%	20	1.0	20	5	0.30	68	9
Lead	mg/L	980	900	92%	0.066	8.67E-04	76	34	--	--	--
Manganese	mg/L	134	103	77%	0.94	0.12	7.8	4	0.050	19	7
Mercury	mg/L	398	397	100%	4.07E-05	1.20E-05	3.4	5	--	--	--
Nickel	mg/L	1061	988	93%	0.032	0.028	1.2	2	0.61	--	--
Silver	mg/L	1060	355	33%	0.0030	1.20E-04	25	7	--	--	--
Thallium	mg/L	899	802	89%	4.07E-04	0.040	0.010	--	2.40E-04	1.7	2
Uranium	mg/L	54	54	100%	0.0087	0.0026	3.3	12	--	--	--
Vanadium	mg/L	81	38	47%	0.049	0.020	2.4	4	--	--	--
Zinc	mg/L	1061	1038	98%	0.42	0.055	7.5	12	7.4	--	--
Radionuclides											
Strontium-90	pCi/L	784	636	81%	109	278	0.39	--	8.0	14	6
Tritium	pCi/L	1136	970	85%	112,000	2.65E+08	0.00042	--	20000	6	19

Table 4-10. Summary of Segment 3 Sediment Benchmark Exceedances for All Categories of Data. (2 Pages)

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Metals													
Antimony	mg/kg dry-wt	17	13	76%	5.1	5.0	Yes	2.0	2.6	4	31	0.16	--
Arsenic	mg/kg	55	45	82%	10	6.5	Yes	6.0	1.7	25	0.39	26	44
Arsenic	mg/kg dry-wt	23	23	100%	12	6.5	Yes	6.0	2.0	9	0.39	31	24
Cadmium	mg/kg	58	43	74%	6.0	0.81	Yes	0.60	9.9	31	37	0.16	--
Cadmium	mg/kg dry-wt	23	21	91%	4.3	0.81	Yes	0.60	7.2	17	37	0.12	--
Chromium	mg/kg	59	59	100%	74	19	Yes	37	2.0	20	30	2.5	21
Chromium	mg/kg dry-wt	23	21	91%	73	19	Yes	37	2.0	9	30	2.4	9
Copper	mg/kg	59	59	100%	37	22	Yes	32	1.2	10	2,960	0.013	--
Copper	mg/kg dry-wt	23	23	100%	39	22	Yes	32	1.2	7	2,960	0.013	--
Iron	mg/kg	5	5	100%	51,000	32,600	Yes	20,000	2.6	2	23,463	2.2	1
Iron	mg/kg dry-wt	4	4	100%	34,000	32,600	Yes	20,000	1.7	4	23,463	1.4	--
Lead	mg/kg dry-wt	23	22	96%	58	10	Yes	35	1.7	4	250	0.23	--
Manganese	mg/kg	5	5	100%	1,500	512	Yes	460	3.3	1	1,762	0.85	--
Manganese	mg/kg dry-wt	4	4	100%	640	512	Yes	460	1.4	2	1,762	0.36	--
Mercury	mg/kg dry-wt	26	20	77%	0.31	0.33	No	0.18	1.7	3	23	0.013	--
Nickel	mg/kg	59	59	100%	32	19	Yes	18	1.8	30	1,564	0.020	--
Nickel	mg/kg dry-wt	17	17	100%	32	19	Yes	18	1.8	12	1,564	0.020	--
Vanadium	mg/kg	5	5	100%	140	85	Yes	--	--	--	78	1.8	1
Zinc	mg/kg	59	59	100%	558	68	Yes	120	4.7	24	23,463	0.024	--
Zinc	mg/kg dry-wt	23	22	96%	375	68	Yes	120	3.1	12	23,463	0.016	--
Polychlorinated Biphenyls													
Aroclor-1254	mg/kg dry-wt	6	3	50%	0.013	--	--	0.0070	1.9	3	0.22	0.059	--
Semivolatile Organic Compounds													
Acenaphthene	mg/kg dry-wt	6	1	17%	0.021	--	--	0.0067	3.1	1	3,682	5.70E-06	--

Table 4-10. Summary of Segment 3 Sediment Benchmark Exceedances for All Categories of Data. (2 Pages)

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Anthracene	mg/kg dry-wt	20	3	15%	0.088	--	--	0.057	1.5	1	21,896	4.02E-06	--
Benzo(a)anthracene	mg/kg dry-wt	9	2	22%	0.12	--	--	0.032	3.8	1	0.62	0.19	--
Benzo(a)pyrene	mg/kg dry-wt	9	3	33%	0.21	--	--	0.032	6.6	2	0.062	3.4	2
Bis(2-ethylhexyl) phthalate	mg/kg dry-wt	9	5	56%	0.78	--	--	0.64	1.2	1	35	0.022	--
Chrysene	mg/kg dry-wt	22	3	14%	0.13	--	--	0.057	2.3	1	62	0.0021	--
Fluoranthene	mg/kg dry-wt	22	9	41%	0.20	--	--	0.11	1.8	3	2,294	8.72E-05	--
Phenanthrene	mg/kg dry-wt	19	4	21%	0.057	--	--	0.042	1.4	1	--	--	--
Pyrene	mg/kg dry-wt	22	7	32%	0.22	--	--	0.053	4.2	3	2,316	9.50E-05	--
Pesticides													
Dichlorodiphenyldichloroethane	mg/kg dry-wt	26	15	58%	0.023	--	--	0.0040	5.8	6	2.4	0.0094	--
Dichlorodiphenyldichloroethylene	mg/kg	6	3	50%	0.016	--	--	0.0015	11	3	1.7	0.0093	--
Dichlorodiphenyldichloroethylene	mg/kg dry-wt	28	15	54%	0.051	--	--	0.0015	34	12	1.7	0.030	--
Dichlorodiphenyltrichloroethane	mg/kg dry-wt	26	6	23%	0.035	--	--	0.0042	8.4	2	1.7	0.020	--
Dieldrin	mg/kg dry-wt	23	3	13%	0.0050	--	--	0.0019	2.6	1	0.030	0.16	--
Gamma-BHC (Lindane)	mg/kg	6	1	17%	0.0080	--	--	9.00E-04	8.9	1	0.44	0.018	--
Radionuclides													
Uranium-234	pCi/g	38	38	100%	1.9	1.1	Yes	5,270	3.62E-04	--	1.1	1.7	1
Uranium-234	pCi/g dry-wt	45	45	100%	1.8	1.1	Yes	5,270	3.43E-04	--	1.1	1.6	30
Uranium-238	pCi/g	41	41	100%	1.6	1.1	No	2,490	6.47E-04	--	1.1	1.5	4
Uranium-238	pCi/g dry-wt	45	45	100%	1.6	1.1	Yes	2,490	6.43E-04	--	1.1	1.5	19

Table 4-11. Summary of Segment 3 Surface Water Benchmark Exceedances for All Categories of Data.

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
<i>Metals</i>											
Arsenic	mg/L	48	48	100%	0.0028	0.15	--	--	1.80E-05	156	48
<i>Pesticides</i>											
Dichlorodiphenyldichloroethylene	mg/L	21	18	86%	1.20E-06	--	--	--	2.20E-07	5	8
Dichlorodiphenyltrichloroethane	mg/L	21	5	24%	6.50E-07	1.00E-06	--	--	2.20E-07	3	1
Dieldrin	mg/L	21	4	19%	3.00E-07	1.90E-06	--	--	5.20E-08	6	4
Heptachlor epoxide	mg/L	21	6	29%	1.20E-07	3.80E-06	--	--	3.90E-08	3	4

Table 4-12. Summary of Segment 4 Sediment Benchmark Exceedances for All Categories of Data. (2 Pages)

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
<i>Metals</i>													
Antimony	mg/kg	19	10	53%	65	5.0	Yes	2.0	33	2	31	2.1	2
Antimony	mg/kg dry-wt	5	5	100%	6.1	5.0	Yes	2.0	3.1	5	31	0.19	--
Arsenic	mg/kg	24	13	54%	15	6.5	Yes	6.0	2.5	2	0.39	38	12
Arsenic	mg/kg dry-wt	5	5	100%	9.5	6.5	Yes	6.0	1.6	3	0.39	24	5
Cadmium	mg/kg	24	18	75%	2.2	0.81	Yes	0.60	3.7	8	37	0.059	--
Cadmium	mg/kg dry-wt	5	5	100%	2.5	0.81	Yes	0.60	4.2	5	37	0.068	--
Chromium	mg/kg	13	13	100%	69	19	Yes	37	1.9	3	30	2.1	3
Copper	mg/kg	24	24	100%	46	22	Yes	32	1.4	4	2,960	0.015	0
Copper	mg/kg dry-wt	5	5	100%	46	22	Yes	32	1.5	3	2,960	0.016	0
Iron	mg/kg	4	4	100%	26,100	32,600	No	20,000	1.3	4	23,463	1.1	3
Iron	mg/kg dry-wt	5	5	100%	44,000	32,600	Yes	20,000	2.2	5	23,463	1.9	4
Lead	mg/kg	27	20	74%	250	10	Yes	35	7.1	1	250	1.0	1
Lead	mg/kg dry-wt	5	5	100%	27	10	Yes	35	0.77	0	250	0.14	0
Manganese	mg/kg	4	4	100%	716	512	Yes	460	1.6	3	1,762	0.41	0
Manganese	mg/kg dry-wt	5	5	100%	840	512	Yes	460	1.8	3	1,762	0.48	0
Mercury	mg/kg	28	13	46%	0.51	0.33	Yes	0.18	2.8	3	23	0.022	0

Table 4-12. Summary of Segment 4 Sediment Benchmark Exceedances for All Categories of Data. (2 Pages)

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Mercury	mg/kg dry-wt	5	5	100%	0.30	0.33	No	0.18	1.7	3	23	0.013	0
Nickel	mg/kg	24	23	96%	33	19	Yes	18	1.8	6	1,564	0.021	0
Nickel	mg/kg dry-wt	5	5	100%	30	19	Yes	18	1.7	4	1,564	0.019	0
Vanadium	mg/kg dry-wt	5	5	100%	120	85	Yes	--	--	--	78	1.5	2
Zinc	mg/kg	24	24	100%	293	68	Yes	120	2.4	4	23,463	0.012	0
Zinc	mg/kg dry-wt	5	5	100%	270	68	Yes	120	2.3	3	23,463	0.012	0
Polychlorinated Biphenyls													
Aroclor-1254	mg/kg	19	1	5%	0.019	--	--	0.0070	2.7	1	0.22	0.087	0
Radionuclides													
Uranium-234	pCi/g dry-wt	9	9	100%	1.7	1.1	Yes	5,270	3.30E-04	--	1.1	1.6	8
Uranium-238	pCi/g dry-wt	8	8	100%	1.7	1.1	Yes	2,490	6.95E-04	--	1.1	1.6	4
Polyaromatic Hydrocarbons													
Acenaphthene	mg/kg	20	7	35%	0.018	--	--	0.0067	2.7	1	3,682	4.89E-06	0
Acenaphthylene	mg/kg	20	5	25%	0.0060	--	--	0.0059	1.0	1	4,800	1.25E-06	0
Semivolatile Organic Compounds													
Di-n-butylphthalate	mg/kg	11	10	91%	0.065	--	--	0.043	1.5	1	6,110	1.06E-05	0

Table 4-13. Summary of Segment 4 Surface Water Benchmark Exceedances for All Categories of Data. (2 Pages)

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Metals											
Arsenic	mg/L	32	12	38%	0.0021	0.15	--	--	1.80E-05	117	12
Barium	mg/L	21	21	100%	0.043	0.0040	11	21	1.0	--	--
Cadmium	mg/L	27	1	3.7%	0.0003	2.50E-04	1.2	1	--	--	--
Lead	mg/L	27	1	4%	0.0036	8.67E-04	4.2	1	--	--	--
Iron	mg/L	27	27	100%	0.89	1.0	--	--	0.30	3.0	6
Polychlorinated Biphenyls											
Total polychlorinated biphenyl	mg/L	3	1	33%	3.70E-07	1.40E-05	--	--	6.40E-08	5.8	1
Pesticides											

Table 4-13. Summary of Segment 4 Surface Water Benchmark Exceedances for All Categories of Data. (2 Pages)

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Dichlorodiphenyldichloroethane	mg/L	6	6	100%	2.90E-06	1.00E-06	2.9	2	3.10E-07	9.4	6
Dichlorodiphenyldichloroethylene	mg/L	6	6	100%	1.00E-06	--	--	--	2.20E-07	4.5	6
Dieldrin	mg/L	6	6	100%	4.90E-07	1.90E-06	--	--	5.20E-08	9.4	5
Heptachlor epoxide	mg/L	6	2	33%	6.50E-08	3.80E-06	--	--	3.90E-08	1.7	2
Semivolatile Organic Compounds											
Hexachlorobenzene	mg/L	6	6	100%	3.50E-07	--	--	--	2.80E-07	1.3	2

Table 4-14. Summary of Segment 5 Sediment Benchmark Exceedances for All Categories of Data. (3 Pages)

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Metals													
Antimony	mg/kg	36	25	69%	3.6	5.0	Yes	2.0	1.8	3	31	0.12	0
Antimony	mg/kg dry-wt	45	12	27%	3.9	5.0	No	2.0	2.0	1	31	0.12	0
Arsenic	mg/kg	72	72	100%	11	6.5	Yes	6.0	1.8	12	0.39	28	69
Arsenic	mg/kg dry-wt	48	47	98%	14	6.5	Yes	6.0	2.3	6	0.39	35	47
Cadmium	mg/kg	71	31	44%	3.3	0.81	Yes	0.60	5.5	33	37	0.089	0
Cadmium	mg/kg dry-wt	48	37	77%	1.9	0.81	Yes	0.60	3.2	16	37	0.051	0
Chromium	mg/kg	49	49	100%	35	19	Yes	37	0.93	0	30	1.1	1
Chromium	mg/kg dry-wt	38	38	100%	31	19	Yes	37	0.84	0	30	1.0	1
Copper	mg/kg	71	71	100%	76	22	Yes	32	2.4	16	2,960	0.026	0
Copper	mg/kg dry-wt	48	47	98%	75	22	Yes	32	2.4	6	2,960	0.025	0
Iron	mg/kg dry-wt	27	27	100%	39,000	32,600	Yes	20,000	2.0	12	23,463	1.7	6
Lead	mg/kg	73	73	100%	140	10	Yes	35	4.0	2	250	1.0	0
Lead	mg/kg dry-wt	46	34	74%	38	10	Yes	35	1.1	1	250	0.15	0
Mercury	mg/kg	72	38	53%	0.56	0.33	Yes	0.18	3.1	3	23	0.024	0
Mercury	mg/kg dry-wt	48	34	71%	0.51	0.33	Yes	0.18	2.9	1	23	0.022	0
Nickel	mg/kg	71	71	100%	27	19	Yes	18	1.5	15	1,564	0.017	0
Nickel	mg/kg dry-wt	48	47	98%	25	19	Yes	18	1.4	4	1,564	0.016	0
Zinc	mg/kg	72	71	99%	200	68	Yes	120	1.7	13	23,463	0.0085	0
Zinc	mg/kg dry-wt	48	47	98%	155	68	Yes	120	1.3	8	23,463	0.0066	0

Table 4-14. Summary of Segment 5 Sediment Benchmark Exceedances for All Categories of Data. (3 Pages)

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Polychlorinated Biphenyls													
Aroclor-1248	mg/kg	37	6	16%	1.4	--	--	0.021	67	6	0.22	6.3	2
Aroclor-1248	mg/kg dry-wt	25	1	4%	0.011	--	--	0.021	0.46	0	0.22	0.05	0
Aroclor-1254	mg/kg	38	1	3%	0.024	--	--	0.0070	3.4	1	0.22	0.11	--
Aroclor-1260	mg/kg	38	2	5%	0.037	--	--	0.021	1.8	1	0.22	0.17	--
Pesticides													
Dichlorodiphenyldichloroethane	mg/kg	97	13	13%	0.0048	--	--	0.0040	1.2	2	2.4	0.0020	--
Dichlorodiphenyldichloroethylene	mg/kg	97	20	21%	0.0039	--	--	0.0015	2.6	7	1.7	0.0023	--
Dichlorodiphenyldichloroethylene	mg/kg dry-wt	33	7	21%	0.30	--	--	0.0015	20	2	1.7	0.017	--
Semivolatile Organic Compounds													
2-Methylnaphthalene	mg/kg	80	33	41%	0.41	--	--	0.020	20	3	--	--	--
Acenaphthene	mg/kg	80	28	35%	0.11	--	--	0.0067	16	4	3,682	2.99E-05	--
Acenaphthene	mg/kg dry-wt	40	23	58%	0.094	--	--	0.0067	14	5	3,682	2.55E-05	--
Acenaphthylene	mg/kg	80	30	38%	0.021	--	--	0.0059	3.6	3	4,800	4.38E-06	--
Acenaphthylene	mg/kg dry-wt	38	13	34%	0.012	--	--	0.0059	2.0	1	4,800	2.50E-06	--
Anthracene	mg/kg	80	34	43%	0.41	--	--	0.057	7.2	1	21,896	1.88E-05	--
Anthracene	mg/kg dry-wt	40	23	58%	0.46	--	--	0.057	8.1	1	21,896	2.10E-05	--
Benzo(a)anthracene	mg/kg	76	47	62%	0.096	--	--	0.032	3.0	7	0.62	0.15	--
Benzo(a)anthracene	mg/kg dry-wt	40	27	68%	2.2	--	--	0.032	69	9	0.62	3.5	1
Benzo(a)pyrene	mg/kg	79	52	66%	0.10	--	--	0.032	3.2	10	0.062	1.7	2
Benzo(a)pyrene	mg/kg dry-wt	40	24	60%	1.5	--	--	0.032	47	7	0.062	24	4
Benzo(b)fluoranthene	mg/kg dry-wt	25	15	60%	1.8	--	--	0.24	7.5	1	0.62	2.9	1
Benzo(ghi)perylene	mg/kg dry-wt	40	18	45%	1.1	--	--	0.17	6.5	1	2,400	4.58E-04	--
Benzo(k)fluoranthene	mg/kg	30	17	57%	0.027	--	--	0.027	1.0	0	6.2	0.004	0
Benzo(k)fluoranthene	mg/kg dry-wt	25	16	64%	0.91	--	--	0.027	34	5	6.2	0.15	0
Bis(2-ethylhexyl) phthalate	mg/kg dry-wt	38	33	87%	1.9	--	--	0.64	3.0	1	35	0.055	0
Chrysene	mg/kg	80	54	68%	0.13	--	--	0.057	2.3	4	62	0.0021	0
Chrysene	mg/kg dry-wt	40	29	73%	4.1	--	--	0.057	72	8	62	0.066	--
Dibenz[a,h]anthracene	mg/kg dry-wt	39	14	36%	0.40	--	--	0.033	12	1	0.062	6.4	1

Table 4-14. Summary of Segment 5 Sediment Benchmark Exceedances for All Categories of Data. (3 Pages)

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Di-n-butylphthalate	mg/kg	51	23	45%	0.32	--	--	0.043	7.4	10	6,110	5.20E-05	--
Di-n-butylphthalate	mg/kg dry-wt	74	24	32%	0.84	--	--	0.043	20	1	6,110	1.37E-04	--
Fluoranthene	mg/kg dry-wt	40	29	73%	2.1	--	--	0.11	19	2	2,294	9.16E-04	--
Fluoranthene	mg/kg	75	55	73%	0.087	--	--	0.11	.013	0	2,294	3.17E-05	--
Fluorene	mg/kg	80	31	39%	0.10	--	--	0.077	1.3	2	2,747	3.71E-05	--
Indeno(1,2,3-cd)pyrene	mg/kg	79	39	49%	0.076	--	--	0.017	4.5	8	0.62	0.12	--
Indeno(1,2,3-cd)pyrene	mg/kg dry-wt	40	22	55%	0.92	--	--	0.017	54	11	0.62	1.5	1
Phenanthrene	mg/kg	79	52	66%	0.33	--	--	0.042	7.9	5	--	--	--
Phenanthrene	mg/kg dry-wt	40	30	75%	0.58	--	--	0.042	14	6	--	--	--
Pyrene	mg/kg	80	52	65%	0.17	--	--	0.053	3.1	8	2,316	7.12E-05	--
Pyrene	mg/kg dry-wt	40	29	73%	2.5	--	--	0.053	47	10	2,316	0.0011	--

Table 4-15. Summary of Segment 5 Surface Water Benchmark Exceedances for All Categories of Data.

Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Ecological Benchmark Value	Factor of Exceedance	# of Exceedances	Human Health Benchmark Value	Factor of Exceedance	# of Exceedances
Metals											
Arsenic	mg/L	35	27	77%	0.0015	0.15	--	--	1.80E-05	83	27
Barium	mg/L	18	18	100%	0.021	0.0040	5.2	18	1.0	--	--
Boron	mg/L	18	16	89%	0.020	0.0016	12	16	--	--	--
Polychlorinated biphenyls											
Total polychlorinated biphenyl	mg/L	13	8	62%	2.10E-05	1.40E-05	1.5	1	6.40E-08	328	8
Pesticides											
Dichlorodiphenyldichloroethane	mg/L	45	34	76%	5.60E-06	1.00E-06	5.6	4	3.10E-07	18	27
Dichlorodiphenyldichloroethylene	mg/L	93	42	45%	2.10E-06	--	--	--	2.20E-07	9.5	29
Dichlorodiphenyltrichloroethane	mg/L	45	39	87%	1.50E-06	1.00E-06	1.5	3	2.20E-07	6.8	8
Dieldrin	mg/L	88	39	44%	5.40E-06	1.90E-06	2.8	3	5.20E-08	104	37
Heptachlor epoxide	mg/L	45	7	16%	6.70E-08	3.80E-06	--	--	3.90E-08	1.7	3
Semivolatile Organic Compounds											
Hexachlorobenzene	mg/L	45	45	100%	2.30E-06	--	--	--	2.80E-07	8.2	14

Table 4-16. Summary of Contaminant Classes Reported with Sediment Core Samples. (3 Pages)

Source Title	Core ID	River Segment/Core Location/Collection Date	Radionuclides											Metals	Pesticides	PCBs	SVOC
			Am-241	Cs-137	Co-60	Eu-152	Mn-54	Pu-238	Pu-239/240	K-40	Ra-226	Th-228	Zn-65				
TMDL Technical Assessment of DDT and PCBs in the Okanogan River	Seg1_Core1	Segment 1 Core 1 from Okanogan River (RM 2.3)													X	X	
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg1_Core2	Segment 1 Core 1 from Priest Rapids Dam (8-3-76)	X	X	X			X	X	X	X	X	X				
An Investigation of the Origin of 152 Eu in Columbia River Sediment	Seg1_Core3	Segment 1 Core 2 from Priest Rapids Dam (8-3-99)		X		X											
Heavy Metal Transport and Behavior in the Lower Columbia River, USA	Seg1_Core4	Segment 1 Core 3 from Priest Rapids Dam (8-1-99)												X			
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg2_Core1	Segment 2 Core from Hanford Ferry (8-4-76)	X	X	X		X	X	X	X	X	X					
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core1	Segment 3 Core 1 from Wallula (8-5-76)		X	X					X	X	X					
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core2	Segment 3 Core 1 from Port Kelly (8-5-76)		X	X		X			X	X	X	X				
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core3	Segment 3 Core 2 from Port Kelly (9-9-76)	X	X	X		X	X	X	X	X	X	X				
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core4	Segment 3 Core 1 from Refuge Island (8-5-76)		X	X		X			X	X	X					
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core5	Segment 3 Core 2 from Refuge Island (8-5-76)		X	X		X			X	X	X	X				
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core6	Segment 3 Core 1 from McNary Dam (8-18-76)		X	X		X			X	X	X					
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core7	Segment 3 Core 2 from McNary Dam (8-5-76)	X	X	X		X	X	X	X	X	X	X				
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core8	Segment 3 Core 3 from McNary Dam (9-9-76)	X	X	X		X	X	X	X	X	X					
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core9	Segment 3 Core 4 from McNary Dam (9-9-76)		X	X		X			X	X	X	X				
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core16	Segment 3 Core 5 from McNary Dam (9-9-76)	X	X	X		X	X	X	X	X	X					
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core17	Segment 3 Core 6 from McNary Dam (8-18-76)		X	X		X			X	X	X					
243,244Cm in Columbia River Sediments	Seg3_Core10	Segment 3 Core 7 from McNary Dam (8-1-77) ^a	X					X	X								
An Investigation of the Origin of 152 Eu in Columbia River Sediment	Seg3_Core11	Segment 3 Core 8 from McNary Dam (7-28-99)				X											
An Investigation of the Origin of 152 Eu in Columbia River Sediment	Seg3_Core12	Segment 3 Core 9 from McNary Dam (7-28-99)				X											

Table 4-16. Summary of Contaminant Classes Reported with Sediment Core Samples. (3 Pages)

Source Title	Core ID	River Segment/Core Location/Collection Date	Radionuclides											Metals	Pesticides	PCBs	SVOC
			Am-241	Cs-137	Co-60	Eu-152	Mn-54	Pu-238	Pu-239/240	K-40	Ra-226	Th-228	Zn-65				
Heavy Metal Transport and Behavior in the Lower Columbia River, USA	Seg3_Core13	Segment 3 Core 10 from McNary Dam (8-1-99)												X			
Nickel-63 in Columbia River Sediments below the Hanford Reservation	Seg3_Core14	Segment 3 Core 11 from McNary Dam (8-1-77) ^b															
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core15	Segment 3 Core 12 from McNary Dam (8-18-76)		X	X		X			X	X	X					
Hanford-derived Plutonium in Columbia River Sediments	SR_Core1	Snake River Core from Ice Harbor Dam (8-16-99)		X		X											
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg4_Core1	Segment 4 Core 1 from Stevenson WA (8-11-76)	X	X	X		X	X	X	X	X	X	X				
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg4_Core2	Segment 4 Core 1 from The Dalles Dam (8-10-76)		X	X		X			X	X	X					
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg4_Core3	Segment 4 Core 2 from The Dalles Dam (8-10-76)		X	X		X			X	X	X					
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg4_Core4	Segment 4 Core 3 from The Dalles Dam (8-11-76)	X	X	X		X	X	X	X	X	X					
Irrigon Boat Basin Sediment Evaluation	Seg4_Core5	Segment 4 Core 1 from Irrigon Oregon (6-4-93)												X	X	X	X
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg4_Core6	Segment 4 Core from John Day Dam (8-10-76)		X	X		X			X	X	X					
The vertical distribution of selected trace metals and organic compounds in bottom materials in the proposed lower Columbia River export channel, Oregon.	Seg5_Core1	Segment 5 Core 1 from RM 21 (9-27-84)												X	X		
The vertical distribution of selected trace metals and organic compounds in bottom materials in the proposed lower Columbia River export channel, Oregon.	Seg5_Core2	Segment 5 Core 2 from RM 21 (9-27-84)													X		X
Historical Changes in the Columbia River Estuary based on Sediment Cores: Feasibility Studies	Seg5_Core3	Segment 5 Core from Clatskanie Flats (2000) ^c		X							X			X			
Historical Changes in the Columbia River Estuary based on Sediment Cores: Feasibility Studies	Seg5_Core4	Segment 5 Core from Gray's Bay (2000) ^c		X							X			X			
Historical Changes in the Columbia River Estuary based on Sediment Cores: Feasibility Studies	Seg5_Core5	Segment 5 Core from Young's Bay (2000) ^c		X							X			X			
The vertical distribution of selected trace metals and organic compounds in bottom materials in the proposed lower Columbia River export channel, Oregon.	Seg5_Core6	Segment 5 Core 1 from Skipanon River (9-25-1984)												X	X		X
The vertical distribution of selected trace metals and organic compounds in bottom materials in the proposed lower Columbia River export channel, Oregon.	Seg5_Core7	Segment 5 Core 2 from Skipanon River (9-26-1984)												X	X		X

Table 4-16. Summary of Contaminant Classes Reported with Sediment Core Samples. (3 Pages)

Source Title	Core ID	River Segment/Core Location/Collection Date	Radionuclides											Metals	Pesticides	PCBs	SVOC
			Am-241	Cs-137	Co-60	Eu-152	Mn-54	Pu-238	Pu-239/240	K-40	Ra-226	Th-228	Zn-65				
The vertical distribution of selected trace metals and organic compounds in bottom materials in the proposed lower Columbia River export channel, Oregon.	Seg5_Core8	Segment 5 Core 3 from Skipanon River (10-1-1984)												X			

^a Radiological analysis also includes Cm-243/244.
^b Radiological analysis included only Ni-63.
^cRadiological analysis also includes Bi-214, Pb-210, and Pb-214.
DDT = dichlorodiphenyltrichloroethane
PCB = polychlorinated biphenyl
RM = river mile
SVOC = semivolatile organic compound
TMDL = Total Maximum Daily Load

Table 4-17. Summary of Sediment Core Samples Collected in Segment 1 of the Columbia River Component. (3 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
TMDL Technical Assessment of DDT and PCBs in the Okanogan River	Seg1_Core1	1378105	Okanogan River	RM 2.3	cm	0	2	August 21, 2001	January 1, 2001
	Seg1_Core1	1378106	Okanogan River	RM 2.3	cm	6	8	August 21, 2001	January 1, 1998
	Seg1_Core1	1378107	Okanogan River	RM 2.3	cm	12	14	August 21, 2001	January 1, 1995
	Seg1_Core1	1378108	Okanogan River	RM 2.3	cm	18	20	August 21, 2001	January 1, 1992
	Seg1_Core1	1378109	Okanogan River	RM 2.3	cm	24	26	August 21, 2001	January 1, 1988
	Seg1_Core1	1378110	Okanogan River	RM 2.3	cm	28	30	August 21, 2001	January 1, 1984
	Seg1_Core1	1378111	Okanogan River	RM 2.3	cm	30	32	August 21, 2001	January 1, 1981
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg1_Core2	PR-A-0-2.5	Columbia River	Priest Rapids Dam	cm	0	2.5	August 3, 1976	January 1, 1975
	Seg1_Core2	PR-A-2.5-5.1	Columbia River	Priest Rapids Dam	cm	2.5	5.1	August 3, 1976	August 1, 1973
	Seg1_Core2	PR-A-5.1-7.6	Columbia River	Priest Rapids Dam	cm	5.1	7.6	August 3, 1976	June 1, 1972
	Seg1_Core2	PR-A-7.6-10.2	Columbia River	Priest Rapids Dam	cm	7.6	10.2	August 3, 1976	February 1, 1971
	Seg1_Core2	PR-A-10.2-12.7	Columbia River	Priest Rapids Dam	cm	10.2	12.7	August 3, 1976	November 1, 1969

Table 4-17. Summary of Sediment Core Samples Collected in Segment 1 of the Columbia River Component. (3 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
	Seg1_Core2	PR-A-12.7-15.2	Columbia River	Priest Rapids Dam	cm	12.7	15.2	August 3, 1976	September 1, 1968
	Seg1_Core2	PR-A-15.2-17.8	Columbia River	Priest Rapids Dam	cm	15.2	17.8	August 3, 1976	May 1, 1967
	Seg1_Core2	PR-A-17.8-20.3	Columbia River	Priest Rapids Dam	cm	17.8	20.3	August 3, 1976	February 1, 1966
	Seg1_Core2	PR-A-20.3-22.9	Columbia River	Priest Rapids Dam	cm	20.3	22.9	August 3, 1976	November 1, 1964
	Seg1_Core2	PR-A-22.9-25.4	Columbia River	Priest Rapids Dam	cm	22.9	25.4	August 3, 1976	August 1, 1963
	Seg1_Core2	PR-A-25.4-27.9	Columbia River	Priest Rapids Dam	cm	25.4	27.9	August 3, 1976	April 1, 1962
	Seg1_Core2	PR-A-27.9-30.5	Columbia River	Priest Rapids Dam	cm	27.9	30.5	August 3, 1976	January 1, 1961
	Seg1_Core2	PR-A-30.5-33.0	Columbia River	Priest Rapids Dam	cm	30.5	33	August 3, 1976	October 1, 1959
	Seg1_Core2	PR-A-33.0-38.1	Columbia River	Priest Rapids Dam	cm	33	38.1	August 3, 1976	November 1, 1958
An Investigation of the Origin of 152-Eu in Columbia River Sediment Heavy Metal Transport and Behavior in the Lower Columbia River, USA	Seg1_Core3	Priest Rapids-1-11	Columbia River	Priest Rapids Dam	in	0	1	August 3, 1999	October 31, 1997
	Seg1_Core3	Priest Rapids-1-10	Columbia River	Priest Rapids Dam	in	1	2	August 3, 1999	April 29, 1994
	Seg1_Core3	Priest Rapids-1-9	Columbia River	Priest Rapids Dam	in	2	3	August 3, 1999	October 26, 1990
	Seg1_Core3	Priest Rapids-1-8	Columbia River	Priest Rapids Dam	in	3	4	August 3, 1999	April 23, 1987
	Seg1_Core3	Priest Rapids-1-7	Columbia River	Priest Rapids Dam	in	4	5	August 3, 1999	October 20, 1983
	Seg1_Core3	Priest Rapids-1-6	Columbia River	Priest Rapids Dam	in	5	6	August 3, 1999	April 17, 1980
	Seg1_Core3	Priest Rapids-1-5	Columbia River	Priest Rapids Dam	in	6	7	August 3, 1999	October 13, 1976
	Seg1_Core3	Priest Rapids-1-4	Columbia River	Priest Rapids Dam	in	7	8	August 3, 1999	April 11, 1973
	Seg1_Core3	Priest Rapids-1-3	Columbia River	Priest Rapids Dam	in	8	9	August 3, 1999	October 8, 1969
	Seg1_Core3	Priest Rapids-1-2	Columbia River	Priest Rapids Dam	in	9	10	August 3, 1999	July 5, 1964
	Seg1_Core4	PRC_1.2	Columbia River	Priest Rapids Dam	cm	1.2	3.8	August 1, 1999	January 1, 1997
	Seg1_Core4	PRC_3.8	Columbia River	Priest Rapids Dam	cm	3.8	6.4	August 1, 1999	January 1, 1994

Table 4-17. Summary of Sediment Core Samples Collected in Segment 1 of the Columbia River Component. (3 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
	Seg1_Core4	PRC_6.4	Columbia River	Priest Rapids Dam	cm	6.4	9	August 1, 1999	January 1, 1990
	Seg1_Core4	PRC_9.0	Columbia River	Priest Rapids Dam	cm	9	11.4	August 1, 1999	January 1, 1986
	Seg1_Core4	PRC_11.4	Columbia River	Priest Rapids Dam	cm	11.4	14	August 1, 1999	January 1, 1983
	Seg1_Core4	PRC_14.0	Columbia River	Priest Rapids Dam	cm	14	16.6	August 1, 1999	January 1, 1980
	Seg1_Core4	PRC_16.6	Columbia River	Priest Rapids Dam	cm	16.6	19.1	August 1, 1999	January 1, 1976
	Seg1_Core4	PRC_19.1	Columbia River	Priest Rapids Dam	cm	19.1	21.7	August 1, 1999	January 1, 1972
	Seg1_Core4	PRC_21.7	Columbia River	Priest Rapids Dam	cm	21.7	25.7	August 1, 1999	January 1, 1969
	Seg1_Core4	PRC_25.4	Columbia River	Priest Rapids Dam	cm	25.4	27.4	August 1, 1999	January 1, 1966

DDT = dichlorodiphenyltrichloroethane
PCB = polychlorinated biphenyl
RM = river mile
TMDL = Total Maximum Daily Load

Table 4-18. Summary of Sediment Core Samples Collected in Segment 2 of the Columbia River Component.

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg2_Core1	H-4-0-5.1	Columbia River	Hanford Ferry	cm	0	5.1	August 4, 1976	May 1, 1974
	Seg2_Core1	H-4-5.1-10.2	Columbia River	Hanford Ferry	cm	5.1	10.2	August 4, 1976	November 1, 1971
	Seg2_Core1	H-4-10.2-12.7	Columbia River	Hanford Ferry	cm	10.2	12.7	August 4, 1976	November 1, 1969
	Seg2_Core1	H-4-12.7-17.8	Columbia River	Hanford Ferry	cm	12.7	17.8	August 4, 1976	December 1, 1967
	Seg2_Core1	H-4-17.8-22.9	Columbia River	Hanford Ferry	cm	17.8	22.9	August 4, 1976	June 1, 1965

Table 4-19. Summary of Sediment Core Samples Collected in Segment 3 of the Columbia River Component. (10 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core1	M-A-0-2.5	Columbia River	Wallula	cm	0	2.5	August 5, 1976	January 1, 1975
	Seg3_Core1	M-A-2.5-5.1	Columbia River	Wallula	cm	2.5	5.1	August 5, 1976	August 1, 1973
	Seg3_Core1	M-A-5.1-7.6	Columbia River	Wallula	cm	5.1	7.6	August 5, 1976	June 1, 1972
	Seg3_Core1	M-A-7.6-10.2	Columbia River	Wallula	cm	7.6	10.2	August 5, 1976	February 1, 1971
	Seg3_Core1	M-A-10.2-12.7	Columbia River	Wallula	cm	10.2	12.7	August 5, 1976	November 1, 1969
	Seg3_Core1	M-A-12.7-15.2	Columbia River	Wallula	cm	12.7	15.2	August 5, 1976	September 1, 1968
	Seg3_Core1	M-A-15.2-17.8	Columbia River	Wallula	cm	15.2	17.8	August 5, 1976	May 1, 1967
	Seg3_Core1	M-A-17.8-20.3	Columbia River	Wallula	cm	17.8	20.3	August 5, 1976	February 1, 1966
	Seg3_Core1	M-A-20.3-22.9	Columbia River	Wallula	cm	20.3	22.9	August 5, 1976	November 1, 1964
	Seg3_Core1	M-A-22.9-25.4	Columbia River	Wallula	cm	22.9	25.4	August 5, 1976	August 1, 1963
	Seg3_Core1	M-A-25.4-27.9	Columbia River	Wallula	cm	25.4	27.9	August 5, 1976	April 1, 1962
	Seg3_Core1	M-A-27.9-30.5	Columbia River	Wallula	cm	27.9	30.5	August 5, 1976	January 1, 1961
	Seg3_Core1	M-A-30.5-33.0	Columbia River	Wallula	cm	30.5	33	August 5, 1976	June 1, 1959
	Seg3_Core1	M-A-33.0-35.6	Columbia River	Wallula	cm	33	35.6	August 5, 1976	June 1, 1958
	Seg3_Core1	M-A-35.6-40.6	Columbia River	Wallula	cm	35.6	40.6	August 5, 1976	August 1, 1956
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core2	M-B-1-0-2.5	Columbia River	Port Kelly	cm	0	2.5	August 5, 1976	January 1, 1975
	Seg3_Core2	M-B-1-2.5-5.1	Columbia River	Port Kelly	cm	2.5	5.1	August 5, 1976	August 1, 1973
	Seg3_Core2	M-B-1-5.1-7.6	Columbia River	Port Kelly	cm	5.1	7.6	August 5, 1976	June 1, 1972
	Seg3_Core2	M-B-1-7.6-10.2	Columbia River	Port Kelly	cm	7.6	10.2	August 5, 1976	February 1, 1971
	Seg3_Core2	M-B-1-10.2-12.7	Columbia River	Port Kelly	cm	10.2	12.7	August 5, 1976	November 1, 1969
	Seg3_Core2	M-B-1-12.7-15.2	Columbia River	Port Kelly	cm	12.7	15.2	August 5, 1976	September 1, 1968
	Seg3_Core2	M-B-1-15.2-17.8	Columbia River	Port Kelly	cm	15.2	17.8	August 5, 1976	May 1, 1967
	Seg3_Core2	M-B-1-17.8-20.3	Columbia River	Port Kelly	cm	17.8	20.3	August 5, 1976	February 1, 1966
	Seg3_Core2	M-B-1-20.3-22.9	Columbia River	Port Kelly	cm	20.3	22.9	August 5, 1976	November 1, 1964
	Seg3_Core2	M-B-1-22.9-25.4	Columbia River	Port Kelly	cm	22.9	25.4	August 5, 1976	August 1, 1963
	Seg3_Core2	M-B-1-25.4-27.6	Columbia River	Port Kelly	cm	25.4	27.6	August 5, 1976	April 1, 1962
	Seg3_Core2	M-B-1-27.6-30.5	Columbia River	Port Kelly	cm	27.6	30.5	August 5, 1976	January 1, 1961
	Seg3_Core2	M-B-1-30.5-33.0	Columbia River	Port Kelly	cm	30.5	33	August 5, 1976	June 1, 1959
	Seg3_Core2	M-B-1-33.0-35.6	Columbia River	Port Kelly	cm	33	35.6	August 5, 1976	June 1, 1958
	Seg3_Core2	M-B-1-35.6-38.1	Columbia River	Port Kelly	cm	35.6	38.1	August 5, 1976	January 1, 1957
	Seg3_Core2	M-B-1-38.1-40.6	Columbia River	Port Kelly	cm	38.1	40.6	August 5, 1976	December 1, 1955
	Seg3_Core2	M-B-1-40.6-43.2	Columbia River	Port Kelly	cm	40.6	43.2	August 5, 1976	August 1, 1954
	Seg3_Core2	M-B-1-43.2-47.0	Columbia River	Port Kelly	cm	43.2	47	August 5, 1976	February 1, 1953

Table 4-19. Summary of Sediment Core Samples Collected in Segment 3 of the Columbia River Component. (10 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
	Seg3_Core2	M-B-1-47.0-52.1	Columbia River	Port Kelly	cm	47	52.1	August 5, 1976	November 1, 1950
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core3	M-B-2-0-10.2	Columbia River	Port Kelly	cm	0	10.2	September 9, 1976	February 1, 1973
	Seg3_Core3	M-B-2-10.2-20.3	Columbia River	Port Kelly	cm	10.2	20.3	September 9, 1976	January 1, 1968
	Seg3_Core3	M-B-2-20.3-30.5	Columbia River	Port Kelly	cm	20.3	30.5	September 9, 1976	November 1, 1962
	Seg3_Core3	M-B-2-30.5-40.6	Columbia River	Port Kelly	cm	30.5	40.6	September 9, 1976	November 1, 1957
	Seg3_Core3	M-B-2-40.6-50.8	Columbia River	Port Kelly	cm	40.6	50.8	September 9, 1976	October 1, 1952
	Seg3_Core3	M-B-2-50.8-61.0	Columbia River	Port Kelly	cm	50.8	61	September 9, 1976	August 1, 1947
	Seg3_Core3	M-B-2-61.0-71.1	Columbia River	Port Kelly	cm	61	71.1	September 9, 1976	August 1, 1942
	Seg3_Core3	M-B-2-71.1-81.3	Columbia River	Port Kelly	cm	71.1	81.3	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-81.3-91.4	Columbia River	Port Kelly	cm	81.3	91.4	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-91.4-101.6	Columbia River	Port Kelly	cm	91.4	101.6	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-101.6-111.8	Columbia River	Port Kelly	cm	101.6	111.8	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-111.8-121.9	Columbia River	Port Kelly	cm	111.8	121.9	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-121.9-132.1	Columbia River	Port Kelly	cm	121.9	132.1	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-132.1-142.2	Columbia River	Port Kelly	cm	132.1	142.2	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-142.2-152.4	Columbia River	Port Kelly	cm	142.2	152.4	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-152.4-162.6	Columbia River	Port Kelly	cm	152.4	162.6	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-162.6-172.7	Columbia River	Port Kelly	cm	162.6	172.7	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-172.7-182.9	Columbia River	Port Kelly	cm	172.7	182.9	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-182.9-193.0	Columbia River	Port Kelly	cm	182.9	193	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-193.0-203.2	Columbia River	Port Kelly	cm	193	203.2	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-203.2-213.4	Columbia River	Port Kelly	cm	203.2	213.4	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-213.4-223.5	Columbia River	Port Kelly	cm	213.4	223.5	September 9, 1976	pre-1942
	Seg3_Core3	M-B-2-223.5-233.7	Columbia River	Port Kelly	cm	223.5	233.7	September 9, 1976	pre-1942
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core4	M-C-5.1-7.6	Columbia River	Refuge Island	cm	5.1	7.6	August 5, 1976	June 1, 1972
	Seg3_Core4	M-C-7.6-10.2	Columbia River	Refuge Island	cm	7.6	10.2	August 5, 1976	February 1, 1971
	Seg3_Core4	M-C-10.2-12.7	Columbia River	Refuge Island	cm	10.2	12.7	August 5, 1976	November 1, 1965
	Seg3_Core4	M-C-12.7-15.2	Columbia River	Refuge Island	cm	12.7	15.2	August 5, 1976	August 1, 1968
	Seg3_Core4	M-C-15.2-17.8	Columbia River	Refuge Island	cm	15.2	17.8	August 5, 1976	May 1, 1967
	Seg3_Core4	M-C-17.8-20.3	Columbia River	Refuge Island	cm	17.8	20.3	August 5, 1976	February 1, 1966
	Seg3_Core4	M-C-20.3-22.9	Columbia River	Refuge Island	cm	20.3	22.9	August 5, 1976	November 1, 1964
	Seg3_Core4	M-C-22.9-25.4	Columbia River	Refuge Island	cm	22.9	25.4	August 5, 1976	August 1, 1963
	Seg3_Core4	M-C-25.4-27.9	Columbia River	Refuge Island	cm	25.4	27.9	August 5, 1976	May 1, 1962
	Seg3_Core4	M-C-27.9-30.5	Columbia River	Refuge Island	cm	27.9	30.5	August 5, 1976	January 1, 1961

Table 4-19. Summary of Sediment Core Samples Collected in Segment 3 of the Columbia River Component. (10 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
	Seg3_Core4	M-C-30.5-33.0	Columbia River	Refuge Island	cm	30.5	33	August 5, 1976	October 1, 1959
	Seg3_Core4	M-C-33.0-35.6	Columbia River	Refuge Island	cm	33	35.6	August 5, 1976	June 1, 1958
	Seg3_Core4	M-C-35.6-38.1	Columbia River	Refuge Island	cm	35.6	38.1	August 5, 1976	January 1, 1957
	Seg3_Core4	M-C-38.1-40.6	Columbia River	Refuge Island	cm	38.1	40.6	August 5, 1976	December 1, 1955
	Seg3_Core4	M-C-40.6-43.2	Columbia River	Refuge Island	cm	40.6	43.2	August 5, 1976	August 1, 1954
	Seg3_Core4	M-C-43.2-45.7	Columbia River	Refuge Island	cm	43.2	45.7	August 5, 1976	May 1, 1953
	Seg3_Core4	M-C-45.7-48.3	Columbia River	Refuge Island	cm	45.7	48.3	August 5, 1976	February 1, 1952
	Seg3_Core4	M-C-48.3-50.8	Columbia River	Refuge Island	cm	48.3	50.8	August 5, 1976	November 1, 1951
	Seg3_Core4	M-C-50.8-53.5	Columbia River	Refuge Island	cm	50.8	53.5	August 5, 1976	August 1, 1949
	Seg3_Core4	M-C-53.5-55.9	Columbia River	Refuge Island	cm	53.5	55.9	August 5, 1976	April 1, 1948
	Seg3_Core4	M-C-55.9-58.4	Columbia River	Refuge Island	cm	55.9	58.4	August 5, 1976	January 1, 1947
	Seg3_Core4	M-C-58.4-63.5	Columbia River	Refuge Island	cm	58.4	63.5	August 5, 1976	February 1, 1945
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core5	M-D-0-2.5	Columbia River	Refuge Island	cm	0	2.5	August 5, 1976	January 1, 1975
	Seg3_Core5	M-D-2.5-5.1	Columbia River	Refuge Island	cm	2.5	5.1	August 5, 1976	September 1, 1974
	Seg3_Core5	M-D-5.1-7.6	Columbia River	Refuge Island	cm	5.1	7.6	August 5, 1976	June 1, 1972
	Seg3_Core5	M-D-7.6-10.2	Columbia River	Refuge Island	cm	7.6	10.2	August 5, 1976	February 1, 1971
	Seg3_Core5	M-D-10.2-12.7	Columbia River	Refuge Island	cm	10.2	12.7	August 5, 1976	November 1, 1969
	Seg3_Core5	M-D-12.7	Columbia River	Refuge Island	cm	12.7	15.2	August 5, 1976	April 1, 1969
	Seg3_Core5	M-D-15.2	Columbia River	Refuge Island	cm	15.2	17.8	August 5, 1976	January 1, 1968
	Seg3_Core5	M-D-17.8	Columbia River	Refuge Island	cm	17.8	20.3	August 5, 1976	July 1, 1966
	Seg3_Core5	M-D-20.3	Columbia River	Refuge Island	cm	20.3	22.9	August 5, 1976	August 1, 1970
	Seg3_Core5	M-D-22.9	Columbia River	Refuge Island	cm	22.9	25.4	August 5, 1976	November 1, 1969
	Seg3_Core5	M-D-25.4	Columbia River	Refuge Island	cm	25.4	27.9	August 5, 1976	November 1, 1962
	Seg3_Core5	M-D-27.9	Columbia River	Refuge Island	cm	27.9	30.5	August 5, 1976	August 1, 1961
	Seg3_Core5	M-D-30.5-34.3	Columbia River	Refuge Island	cm	30.5	34.3	August 5, 1976	May 1, 1959
	Seg3_Core5	M-D-34.3-39.4	Columbia River	Refuge Island	cm	34.3	39.4	August 5, 1976	February 1, 1957
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core6	M-F-5.1-7.6	Columbia River	McNary Dam	cm	5.1	7.6	August 18, 1976	June 1, 1972
	Seg3_Core6	M-F-7.6-10.2	Columbia River	McNary Dam	cm	7.6	10.2	August 18, 1976	February 1, 1971
	Seg3_Core6	M-F-40.6-43.2	Columbia River	McNary Dam	cm	40.6	43.2	August 18, 1976	August 1, 1954
	Seg3_Core6	M-F-43.2-45.7	Columbia River	McNary Dam	cm	43.2	45.7	August 18, 1976	November 1, 1952
	Seg3_Core6	M-F-45.7-48.3	Columbia River	McNary Dam	cm	45.7	48.3	August 18, 1976	February 1, 1952
	Seg3_Core6	M-F-48.3-50.8	Columbia River	McNary Dam	cm	48.3	50.8	August 18, 1976	November 1, 1950
	Seg3_Core6	M-F-50.8-53.5	Columbia River	McNary Dam	cm	50.8	53.5	August 18, 1976	August 1, 1949

Table 4-19. Summary of Sediment Core Samples Collected in Segment 3 of the Columbia River Component. (10 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
	Seg3_Core6	M-F-53.5-55.9	Columbia River	McNary Dam	cm	53.5	55.9	August 18, 1976	April 1, 1948
	Seg3_Core6	M-F-55.9-58.4	Columbia River	McNary Dam	cm	55.9	58.4	August 18, 1976	February 1, 1947
	Seg3_Core6	M-F-58.4-60.0	Columbia River	McNary Dam	cm	58.4	60	August 18, 1976	January 1, 1946
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core7	M-G-1-0-5.1	Columbia River	McNary Dam	cm	0	5.1	August 5, 1976	May 1, 1974
	Seg3_Core7	M-G-1-5.1-10.2	Columbia River	McNary Dam	cm	5.1	10.2	August 5, 1976	October 1, 1971
	Seg3_Core7	M-G-1-10.2-12.7	Columbia River	McNary Dam	cm	10.2	12.7	August 5, 1976	November 1, 1969
	Seg3_Core7	M-G-1-12.7-15.2	Columbia River	McNary Dam	cm	12.7	15.2	August 5, 1976	August 1, 1968
	Seg3_Core7	M-G-1-15.2-17.8	Columbia River	McNary Dam	cm	15.2	17.8	August 5, 1976	May 1, 1967
	Seg3_Core7	M-G-1-17.8-20.3	Columbia River	McNary Dam	cm	17.8	20.3	August 5, 1976	February 1, 1966
	Seg3_Core7	M-G-1-20.3-22.9	Columbia River	McNary Dam	cm	20.3	22.9	August 5, 1976	November 1, 1964
	Seg3_Core7	M-G-1-22.9-25.4	Columbia River	McNary Dam	cm	22.9	25.4	August 5, 1976	August 1, 1963
	Seg3_Core7	M-G-1-25.4-27.9	Columbia River	McNary Dam	cm	25.4	27.9	August 5, 1976	May 1, 1962
	Seg3_Core7	M-G-1-27.9-30.5	Columbia River	McNary Dam	cm	27.9	30.5	August 5, 1976	January 1, 1961
	Seg3_Core7	M-G-1-30.5-33.0	Columbia River	McNary Dam	cm	30.5	33	August 5, 1976	October 1, 1959
	Seg3_Core7	M-G-1-33.0-35.6	Columbia River	McNary Dam	cm	33	35.6	August 5, 1976	June 1, 1958
	Seg3_Core7	M-G-1-35.6-38.1	Columbia River	McNary Dam	cm	35.6	38.1	August 5, 1976	January 1, 1957
	Seg3_Core7	M-G-1-38.1-40.6	Columbia River	McNary Dam	cm	38.1	40.6	August 5, 1976	December 1, 1955
	Seg3_Core7	M-G-1-40.6-43.2	Columbia River	McNary Dam	cm	40.6	43.2	August 5, 1976	August 1, 1958
	Seg3_Core7	M-G-1-43.2-45.7	Columbia River	McNary Dam	cm	43.2	45.7	August 5, 1976	May 1, 1953
	Seg3_Core7	M-G-1-45.7-48.3	Columbia River	McNary Dam	cm	45.7	48.3	August 5, 1976	February 1, 1952
	Seg3_Core7	M-G-1-48.3-50.8	Columbia River	McNary Dam	cm	48.3	50.8	August 5, 1976	November 1, 1950
	Seg3_Core7	M-G-1-50.8-53.5	Columbia River	McNary Dam	cm	50.8	53.5	August 5, 1976	August 1, 1949
	Seg3_Core7	M-G-1-53.5-55.9	Columbia River	McNary Dam	cm	53.5	55.9	August 5, 1976	April 1, 1948
	Seg3_Core7	M-G-1-55.9-58.4	Columbia River	McNary Dam	cm	55.9	58.4	August 5, 1976	February 1, 1947
	Seg3_Core7	M-G-1-58.4-61.0	Columbia River	McNary Dam	cm	58.4	61	August 5, 1976	October 1, 1945
	Seg3_Core7	M-G-1-61.0-63.5	Columbia River	McNary Dam	cm	61	63.5	August 5, 1976	June 1, 1944
	Seg3_Core7	M-G-1-63.5-68.6	Columbia River	McNary Dam	cm	63.5	68.6	August 5, 1976	August 1, 1942
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core8	M-G-2-0-10.2	Columbia River	McNary Dam	cm	0	10.2	September 9, 1976	February 1, 1973
	Seg3_Core8	M-G-2-10.2-20.3	Columbia River	McNary Dam	cm	10.2	20.3	September 9, 1976	January 1, 1968
	Seg3_Core8	M-G-2-20.3-30.5	Columbia River	McNary Dam	cm	20.3	30.5	September 9, 1976	November 1, 1962
	Seg3_Core8	M-G-2-30.5-40.6	Columbia River	McNary Dam	cm	30.5	40.6	September 9, 1976	November 1, 1957
	Seg3_Core8	M-G-2-40.6-50.8	Columbia River	McNary Dam	cm	40.6	50.8	September 9, 1976	October 1, 1952
	Seg3_Core8	M-G-2-50.8-61.0	Columbia River	McNary Dam	cm	50.8	61	September 9, 1976	August 1, 1947
	Seg3_Core8	M-G-2-61.0-71.1	Columbia River	McNary Dam	cm	61	71.7	September 9, 1976	June 1, 1942

Table 4-19. Summary of Sediment Core Samples Collected in Segment 3 of the Columbia River Component. (10 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
	Seg3_Core8	M-G-2-71.1-81.3	Columbia River	McNary Dam	cm	71.1	81.3	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-81.3-91.4	Columbia River	McNary Dam	cm	81.3	91.4	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-91.4-101.6	Columbia River	McNary Dam	cm	91.4	101.6	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-101.6-111.8	Columbia River	McNary Dam	cm	101.6	111.8	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-111.8-121.9	Columbia River	McNary Dam	cm	111.8	121.9	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-121.9-132.1	Columbia River	McNary Dam	cm	121.9	132.1	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-132.1-142.2	Columbia River	McNary Dam	cm	132.1	142.2	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-142.2-152.4	Columbia River	McNary Dam	cm	142.2	152.4	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-152.4-162.6	Columbia River	McNary Dam	cm	152.4	162.6	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-162.6-172.7	Columbia River	McNary Dam	cm	162.6	172.7	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-172.7-182.9	Columbia River	McNary Dam	cm	172.7	182.9	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-182.9-193.0	Columbia River	McNary Dam	cm	182.9	193	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-193.0-203.2	Columbia River	McNary Dam	cm	193	203.2	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-203.2-213.4	Columbia River	McNary Dam	cm	203.2	213.4	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-213.4-223.5	Columbia River	McNary Dam	cm	213.4	223.5	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-223.5-233.7	Columbia River	McNary Dam	cm	223.5	233.7	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-233.7-243.8	Columbia River	McNary Dam	cm	233.7	243.8	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-243.8-254.0	Columbia River	McNary Dam	cm	243.8	254	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-254.0-264.2	Columbia River	McNary Dam	cm	254	264.2	September 9, 1976	pre-1942
	Seg3_Core8	M-G-2-264.2-274.3	Columbia River	McNary Dam	cm	264.2	274.3	September 9, 1976	pre-1942
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core9	M-G-3-0-15.2	Columbia River	McNary Dam	cm	0	15.2	September 9, 1976	October 1, 1971
	Seg3_Core9	M-G-3-25.4-35.6	Columbia River	McNary Dam	cm	25.4	35.6	September 9, 1976	May 1, 1960
	Seg3_Core9	M-G-3-35.6-45.7	Columbia River	McNary Dam	cm	35.6	45.7	September 9, 1976	April 1, 1955
	Seg3_Core9	M-G-3-45.7-55.9	Columbia River	McNary Dam	cm	45.7	55.9	September 9, 1976	March 1, 1950
	Seg3_Core9	M-G-3-55.9-66.0	Columbia River	McNary Dam	cm	55.9	66	September 9, 1976	February 1, 1945
	Seg3_Core9	M-G-3-66.0-76.2	Columbia River	McNary Dam	cm	66	76.2	September 9, 1976	pre-1942
	Seg3_Core9	M-G-3-76.2-86.4	Columbia River	McNary Dam	cm	76.2	86.4	September 9, 1976	pre-1942
	Seg3_Core9	M-G-3-86.4-96.5	Columbia River	McNary Dam	cm	86.4	96.5	September 9, 1976	pre-1942
	Seg3_Core9	M-G-3-96.5-106.7	Columbia River	McNary Dam	cm	96.5	106.7	September 9, 1976	pre-1942
	Seg3_Core9	M-G-3-106.7-116.8	Columbia River	McNary Dam	cm	106.7	116.8	September 9, 1976	pre-1942
	Seg3_Core9	M-G-3-116.8-127.0	Columbia River	McNary Dam	cm	116.8	127	September 9, 1976	pre-1942
	Seg3_Core9	M-G-3-127.0-137.2	Columbia River	McNary Dam	cm	127	137.2	September 9, 1976	pre-1942
	Seg3_Core9	M-G-3-137.2-147.3	Columbia River	McNary Dam	cm	137.2	147.3	September 9, 1976	pre-1942
	Seg3_Core9	M-G-3-147.3-157.4	Columbia River	McNary Dam	cm	147.3	157.4	September 9, 1976	pre-1942

Table 4-19. Summary of Sediment Core Samples Collected in Segment 3 of the Columbia River Component. (10 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
	Seg3_Core9	M-G-3-15.2-25.4	Columbia River	McNary Dam	cm	15.2	25.4	September 9, 1976	June 1, 1965
	Seg3_Core9	M-G-3-157.4-167.6	Columbia River	McNary Dam	cm	157.4	167.6	September 9, 1976	pre-1942
	Seg3_Core9	M-G-3-167.6-177.8	Columbia River	McNary Dam	cm	167.6	177.8	September 9, 1976	pre-1942
	Seg3_Core9	M-G-3-177.8-188.0	Columbia River	McNary Dam	cm	177.8	188	September 9, 1976	pre-1942
	Seg3_Core9	M-G-3-188.0-198.1	Columbia River	McNary Dam	cm	188	198.1	September 9, 1976	pre-1942
	Seg3_Core9	M-G-3-198.1-208.3	Columbia River	McNary Dam	cm	198.1	208.3	September 9, 1976	pre-1942
	Seg3_Core9	M-G-3-208.3-218.4	Columbia River	McNary Dam	cm	208.3	218.4	September 9, 1976	pre-1942
243,244Cm in Columbia River Sediments	Seg3_Core10	MC-77 0-2cm	Columbia River	McNary Dam	cm	0	2	August 1, 1977	not reported
	Seg3_Core10	MC-77 2-4cm	Columbia River	McNary Dam	cm	2	4	August 1, 1977	not reported
	Seg3_Core10	MC-77 4-6cm	Columbia River	McNary Dam	cm	4	6	August 1, 1977	not reported
	Seg3_Core10	MC-77 8-9cm	Columbia River	McNary Dam	cm	8	9	August 1, 1977	not reported
	Seg3_Core10	MC-77 9-10cm	Columbia River	McNary Dam	cm	9	10	August 1, 1977	not reported
	Seg3_Core10	MC-77 10-11cm	Columbia River	McNary Dam	cm	10	11	August 1, 1977	not reported
	Seg3_Core10	MC-77 13-14cm	Columbia River	McNary Dam	cm	13	14	August 1, 1977	January 1, 1970
	Seg3_Core10	MC-77 14-15cm	Columbia River	McNary Dam	cm	14	15	August 1, 1977	January 1, 1970
	Seg3_Core10	MC-77 15-16cm	Columbia River	McNary Dam	cm	15	16	August 1, 1977	January 1, 1969
	Seg3_Core10	MC-77 16-17cm	Columbia River	McNary Dam	cm	16	17	August 1, 1977	January 1, 1969
	Seg3_Core10	MC-77 19-20cm	Columbia River	McNary Dam	cm	19	20	August 1, 1977	January 1, 1967
	Seg3_Core10	MC-77 22-23cm	Columbia River	McNary Dam	cm	22	23	August 1, 1977	January 1, 1967
	Seg3_Core10	MC-77 23-24cm	Columbia River	McNary Dam	cm	23	24	August 1, 1977	June 1, 1964
	Seg3_Core10	MC-77 24-25cm	Columbia River	McNary Dam	cm	24	25	August 1, 1977	June 1, 1964
	Seg3_Core10	MC-77 25-26cm	Columbia River	McNary Dam	cm	25	26	August 1, 1977	June 1, 1963
	Seg3_Core10	MC-77 26-27cm	Columbia River	McNary Dam	cm	26	27	August 1, 1977	June 1, 1963
	Seg3_Core10	MC-77 34-35cm	Columbia River	McNary Dam	cm	34	35	August 1, 1977	June 1, 1958
	Seg3_Core10	MC-77 39-40cm	Columbia River	McNary Dam	cm	39	40	August 1, 1977	January 1, 1956
	Seg3_Core10	MC-77 53-54cm	Columbia River	McNary Dam	cm	53	54	August 1, 1977	January 1, 1956
	Seg3_Core10	MC-77 56-57cm	Columbia River	McNary Dam	cm	56	57	August 1, 1977	January 1, 1956
An Investigation of the Origin of 152 Eu in Columbia River Sediment	Seg3_Core11	McNary-1-6	Columbia River	McNary Dam	in	24	25	July 28, 1999	March 12, 1971
	Seg3_Core11	McNary-1-5	Columbia River	McNary Dam	in	25	26	July 28, 1999	January 25, 1970
	Seg3_Core11	McNary-1-4	Columbia River	McNary Dam	in	26	27	July 28, 1999	December 10, 1968
	Seg3_Core11	McNary-1-3	Columbia River	McNary Dam	in	27	28	July 28, 1999	October 25, 1967
	Seg3_Core11	McNary-1-2	Columbia River	McNary Dam	in	28	29	July 28, 1999	September 9, 1966
	Seg3_Core11	McNary-1-1	Columbia River	McNary Dam	in	29	30	July 29, 1999	July 24, 1965

Table 4-19. Summary of Sediment Core Samples Collected in Segment 3 of the Columbia River Component. (10 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
An Investigation of the Origin of 152 Eu in Columbia River Sediment	Seg3_Core12	McNary-2-27.5	Columbia River	McNary Dam	in	0	1	July 28, 1999	"post Hanford"
	Seg3_Core12	McNary-2-26.5	Columbia River	McNary Dam	in	1	2.5	July 28, 1999	"post Hanford"
	Seg3_Core12	McNary-2-25	Columbia River	McNary Dam	in	2.5	3.5	July 28, 1999	"post Hanford"
	Seg3_Core12	McNary-2-16	Columbia River	McNary Dam	in	11.5	12.5	July 28, 1999	"post Hanford"
	Seg3_Core12	McNary-2-15	Columbia River	McNary Dam	in	12.5	13.5	July 28, 1999	"post Hanford"
	Seg3_Core12	McNary-2-14	Columbia River	McNary Dam	in	13.5	14.5	July 28, 1999	"post Hanford"
	Seg3_Core12	McNary-2-4	Columbia River	McNary Dam	in	23.5	24.5	July 28, 1999	"post Hanford"
	Seg3_Core12	McNary-2-3	Columbia River	McNary Dam	in	24.5	25.5	July 28, 1999	"post Hanford"
	Seg3_Core12	McNary-2-2	Columbia River	McNary Dam	in	25.5	26.5	July 28, 1999	"post Hanford"
	Seg3_Core12	McNary-2-1	Columbia River	McNary Dam	in	26.5	27.5	July 28, 1999	"post Hanford"
Heavy Metal Transport and Behavior in the Lower Columbia River, USA	Seg3_Core13	MDC_1.2	Columbia River	McNary Dam	cm	1.2	3.8	August 1, 1999	January 1, 1999
	Seg3_Core13	MDC_3.8	Columbia River	McNary Dam	cm	3.8	6.4	August 1, 1999	January 1, 1998
	Seg3_Core13	MDC_6.4	Columbia River	McNary Dam	cm	6.4	8.9	August 1, 1999	January 1, 1997
	Seg3_Core13	MDC_8.9	Columbia River	McNary Dam	cm	8.9	11.4	August 1, 1999	January 1, 1996
	Seg3_Core13	MDC_11.4	Columbia River	McNary Dam	cm	11.4	14	August 1, 1999	January 1, 1995
	Seg3_Core13	MDC_14.0	Columbia River	McNary Dam	cm	14	16.5	August 1, 1999	January 1, 1994
	Seg3_Core13	MDC_16.5	Columbia River	McNary Dam	cm	16.5	19.1	August 1, 1999	January 1, 1992
	Seg3_Core13	MDC_19.1	Columbia River	McNary Dam	cm	19.1	21.6	August 1, 1999	January 1, 1991
	Seg3_Core13	MDC_21.6	Columbia River	McNary Dam	cm	21.6	24.2	August 1, 1999	January 1, 1990
	Seg3_Core13	MDC_24.2	Columbia River	McNary Dam	cm	24.2	26.2	August 1, 1999	January 1, 1989
	Seg3_Core13	MDC_26.2	Columbia River	McNary Dam	cm	26.2	29.2	August 1, 1999	January 1, 1987
	Seg3_Core13	MDC_29.2	Columbia River	McNary Dam	cm	29.2	31.8	August 1, 1999	January 1, 1986
	Seg3_Core13	MDC_31.8	Columbia River	McNary Dam	cm	31.8	34.3	August 1, 1999	January 1, 1985
	Seg3_Core13	MDC_34.3	Columbia River	McNary Dam	cm	34.3	36.8	August 1, 1999	January 1, 1984
	Seg3_Core13	MDC_36.8	Columbia River	McNary Dam	cm	36.8	39.4	August 1, 1999	January 1, 1982
	Seg3_Core13	MDC_39.4	Columbia River	McNary Dam	cm	39.4	41.9	August 1, 1999	January 1, 1981
	Seg3_Core13	MDC_41.9	Columbia River	McNary Dam	cm	41.9	44.5	August 1, 1999	January 1, 1980
	Seg3_Core13	MDC_44.5	Columbia River	McNary Dam	cm	44.5	47	August 1, 1999	January 1, 1979
	Seg3_Core13	MDC_47.0	Columbia River	McNary Dam	cm	47	49.6	August 1, 1999	January 1, 1978
	Seg3_Core13	MDC_49.6	Columbia River	McNary Dam	cm	49.6	52.1	August 1, 1999	January 1, 1977
	Seg3_Core13	MDC_52.1	Columbia River	McNary Dam	cm	52.1	54.6	August 1, 1999	January 1, 1976
	Seg3_Core13	MDC_54.6	Columbia River	McNary Dam	cm	54.6	57.2	August 1, 1999	January 1, 1975
	Seg3_Core13	MDC_57.2	Columbia River	McNary Dam	cm	57.2	59.7	August 1, 1999	January 1, 1974
	Seg3_Core13	MDC_59.7	Columbia River	McNary Dam	cm	59.7	66.1	August 1, 1999	January 1, 1973

Table 4-19. Summary of Sediment Core Samples Collected in Segment 3 of the Columbia River Component. (10 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
	Seg3_Core13	MDC_62.2	Columbia River	McNary Dam	cm	62.2	66.1	August 1, 1999	January 1, 1970
	Seg3_Core13	MDC_66.1	Columbia River	McNary Dam	cm	66.1	68.6	August 1, 1999	January 1, 1969
	Seg3_Core13	MDC_68.6	Columbia River	McNary Dam	cm	68.6	70.6	August 1, 1999	January 1, 1968
Nickel-63 in Columbia River Sediments below the Hanford Reservation	Seg3_Core14	MR-86 2-4cm	Columbia River	McNary Dam	cm	2	4	August 1, 1977	June 1, 1975
	Seg3_Core14	MR-86 4-6cm	Columbia River	McNary Dam	cm	4	6	August 1, 1977	February 1, 1974
	Seg3_Core14	MR-86 7-8cm	Columbia River	McNary Dam	cm	7	8	August 1, 1977	February 1, 1972
	Seg3_Core14	MR-86 10-11cm	Columbia River	McNary Dam	cm	10	11	August 1, 1977	February 1, 1970
	Seg3_Core14	MR-86 13-14cm	Columbia River	McNary Dam	cm	13	14	August 1, 1977	February 1, 1968
	Seg3_Core14	MR-86 16-17cm	Columbia River	McNary Dam	cm	16	17	August 1, 1977	November 1, 1965
	Seg3_Core14	MR-86 19-20cm	Columbia River	McNary Dam	cm	19	20	August 1, 1977	June 1, 1965
	Seg3_Core14	MR-86 22-23cm	Columbia River	McNary Dam	cm	22	23	August 1, 1977	June 1, 1961
	Seg3_Core14	MR-86 25-26cm	Columbia River	McNary Dam	cm	25	26	August 1, 1977	June 1, 1959
	Seg3_Core14	MR-86 28-29cm	Columbia River	McNary Dam	cm	28	29	August 1, 1977	February 1, 1957
	Seg3_Core14	MR-86 31-32cm	Columbia River	McNary Dam	cm	31	32	August 1, 1977	February 1, 1955
	Seg3_Core14	MR-86 34-35cm	Columbia River	McNary Dam	cm	34	35	August 1, 1977	February 1, 1953
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core15	M-F-0-5.1	Columbia River	McNary Dam	cm	0	5.1	August 18, 1976	May 1, 1974
	Seg3_Core15	M-F-10.2-12.7	Columbia River	McNary Dam	cm	10.2	12.7	August 18, 1976	January 1, 1975
	Seg3_Core15	M-F-12.7-15.2	Columbia River	McNary Dam	cm	12.7	15.2	August 18, 1976	November 1, 1969
	Seg3_Core15	M-F-15.2-17.9	Columbia River	McNary Dam	cm	15.2	17.9	August 18, 1976	September 1, 1968
	Seg3_Core15	M-F-17.9-20.3	Columbia River	McNary Dam	cm	17.9	20.3	August 18, 1976	May 1, 1967
	Seg3_Core15	M-F-20.3-22.9	Columbia River	McNary Dam	cm	20.3	22.9	August 18, 1976	February 1, 1966
	Seg3_Core15	M-F-22.9-25.4	Columbia River	McNary Dam	cm	22.9	25.4	August 18, 1976	August 1, 1963
	Seg3_Core15	M-F-25.4-27.9	Columbia River	McNary Dam	cm	25.4	27.9	August 18, 1976	April 1, 1962
	Seg3_Core15	M-F-27.9-30.5	Columbia River	McNary Dam	cm	27.9	30.5	August 18, 1976	January 1, 1961
	Seg3_Core15	M-F-30.5-33.0	Columbia River	McNary Dam	cm	30.5	33	August 18, 1976	October 1, 1959
	Seg3_Core15	M-F-33.0-35.6	Columbia River	McNary Dam	cm	33	35.6	August 18, 1976	June 1, 1958
	Seg3_Core15	M-F-35.6-38.1	Columbia River	McNary Dam	cm	35.6	38.1	August 18, 1976	January 1, 1957
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core16	M-E-2-0-10.2	Columbia River	McNary Dam	cm	0	10.2	September 9, 1976	February 1, 1973
	Seg3_Core16	M-E-2-10.2-20.3	Columbia River	McNary Dam	cm	10.2	20.3	September 9, 1976	January 1, 1968
	Seg3_Core16	M-E-2-20.3-30.5	Columbia River	McNary Dam	cm	20.3	30.5	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-30.5-40.6	Columbia River	McNary Dam	cm	30.5	40.6	September 9, 1976	November 1, 1957
	Seg3_Core16	M-E-2-40.6-50.8	Columbia River	McNary Dam	cm	40.6	50.8	September 9, 1976	October 1, 1952
	Seg3_Core16	M-E-2-50.8-61.0	Columbia River	McNary Dam	cm	50.8	61	September 9, 1976	August 1, 1947

Table 4-19. Summary of Sediment Core Samples Collected in Segment 3 of the Columbia River Component. (10 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
	Seg3_Core16	M-E-2-61.0-71.1	Columbia River	McNary Dam	cm	61	71.1	September 9, 1976	August 1, 1942
	Seg3_Core16	M-E-2-71.1-81.3	Columbia River	McNary Dam	cm	71.1	81.3	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-81.3-91.4	Columbia River	McNary Dam	cm	81.3	91.4	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-91.4-101.6	Columbia River	McNary Dam	cm	91.4	101.6	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-101.6-111.8	Columbia River	McNary Dam	cm	101.6	111.8	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-111.8-121.9	Columbia River	McNary Dam	cm	111.8	121.9	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-121.9-132.1	Columbia River	McNary Dam	cm	121.9	132.1	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-132.1-142.2	Columbia River	McNary Dam	cm	132.1	142.2	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-142.2-152.4	Columbia River	McNary Dam	cm	142.2	152.4	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-152.4-162.6	Columbia River	McNary Dam	cm	152.4	162.6	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-162.6-172.7	Columbia River	McNary Dam	cm	162.6	172.7	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-172.7-182.9	Columbia River	McNary Dam	cm	172.7	182.9	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-182.9-193.0	Columbia River	McNary Dam	cm	182.9	193	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-193.0-203.2	Columbia River	McNary Dam	cm	193	203.2	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-203.2-213.4	Columbia River	McNary Dam	cm	203.2	213.4	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-213.4-223.5	Columbia River	McNary Dam	cm	213.4	223.5	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-223.5-233.7	Columbia River	McNary Dam	cm	223.5	233.7	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-233.7-243.8	Columbia River	McNary Dam	cm	233.7	243.8	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-243.8-254.0	Columbia River	McNary Dam	cm	243.8	254	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-254.0-264.2	Columbia River	McNary Dam	cm	254	264.2	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-264.2-274.3	Columbia River	McNary Dam	cm	264.2	274.3	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-274.0-284.5	Columbia River	McNary Dam	cm	274	284.5	September 9, 1976	pre-1942
	Seg3_Core16	M-E-2-284.5-294.6	Columbia River	McNary Dam	cm	284.5	294.6	September 9, 1976	pre-1942
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg3_Core17	M-E-1-0-5.1	Columbia River	McNary Dam	cm	0	5.1	August 18, 1976	May 1, 1974
	Seg3_Core17	M-E-1-5.1-12.7	Columbia River	McNary Dam	cm	5.1	12.7	August 18, 1976	February 1, 1971
	Seg3_Core17	M-E-1-12.7-15.2	Columbia River	McNary Dam	cm	12.7	15.2	August 18, 1976	August 1, 1968
	Seg3_Core17	M-E-1-15.2-17.8	Columbia River	McNary Dam	cm	15.2	17.8	August 18, 1976	May 1, 1967
	Seg3_Core17	M-E-1-17.8-20.0	Columbia River	McNary Dam	cm	17.8	20	August 18, 1976	February 1, 1966
	Seg3_Core17	M-E-1-20.0-22.9	Columbia River	McNary Dam	cm	20	22.9	August 18, 1976	December 1, 1964
	Seg3_Core17	M-E-1-22.9-25.4	Columbia River	McNary Dam	cm	22.9	25.4	August 18, 1976	July 1, 1963
	Seg3_Core17	M-E-1-25.4-27.9	Columbia River	McNary Dam	cm	25.4	27.9	August 18, 1976	May 1, 1962
	Seg3_Core17	M-E-1-27.9-30.5	Columbia River	McNary Dam	cm	27.9	30.5	August 18, 1976	January 1, 1961
	Seg3_Core17	M-E-1-30.5-33.0	Columbia River	McNary Dam	cm	30.5	33	August 18, 1976	November 1, 1959
	Seg3_Core17	M-E-1-33.0-35.6	Columbia River	McNary Dam	cm	33	35.6	August 18, 1976	June 1, 1958

Table 4-19. Summary of Sediment Core Samples Collected in Segment 3 of the Columbia River Component. (10 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
	Seg3_Core17	M-E-1-35.6-38.1	Columbia River	McNary Dam	cm	35.6	38.1	August 18, 1976	March 1, 1957
	Seg3_Core17	M-E-1-38.1-40.6	Columbia River	McNary Dam	cm	38.1	40.6	August 18, 1976	December 1, 1955
	Seg3_Core17	M-E-1-40.6-43.2	Columbia River	McNary Dam	cm	40.6	43.2	August 18, 1976	August 1, 1954
	Seg3_Core17	M-E-1-43.2-45.7	Columbia River	McNary Dam	cm	43.2	45.7	August 18, 1976	May 1, 1953
	Seg3_Core17	M-E-1-45.7-48.3	Columbia River	McNary Dam	cm	45.7	48.3	August 18, 1976	February 1, 1952
	Seg3_Core17	M-E-1-48.3-50.8	Columbia River	McNary Dam	cm	48.3	50.8	August 18, 1976	November 1, 1951
	Seg3_Core17	M-E-1-50.8-53.5	Columbia River	McNary Dam	cm	50.8	53.5	August 18, 1976	July 1, 1949
	Seg3_Core17	M-E-1-53.5-55.9	Columbia River	McNary Dam	cm	53.5	55.9	August 18, 1976	March 1, 1948
	Seg3_Core17	M-E-1-55.9-58.4	Columbia River	McNary Dam	cm	55.9	58.4	August 18, 1976	January 1, 1947
	Seg3_Core17	M-E-1-58.4-60.0	Columbia River	McNary Dam	cm	58.4	60	August 18, 1976	January 1, 1946
	Seg3_Core17	M-E-1-60.0-63.5	Columbia River	McNary Dam	cm	60	63.5	August 18, 1976	October 1, 1945
	Seg3_Core17	M-E-1-63.5-66.0	Columbia River	McNary Dam	cm	63.5	66	August 18, 1976	April 1, 1943
	Seg3_Core17	M-E-1-66.0-71.1	Columbia River	McNary Dam	cm	66	71.1	August 18, 1976	May 1, 1941
Hanford-derived Plutonium in Columbia River Sediments	SR_Core1	Ice Harbor 1-1	Columbia River	Ice Harbor Dam	cm	0	2	August 16, 1977	February 1, 1977
	SR_Core1	Ice Harbor 1-5	Columbia River	Ice Harbor Dam	cm	6	7	August 16, 1977	June 1, 1974
	SR_Core1	Ice Harbor 1-11	Columbia River	Ice Harbor Dam	cm	14	15	August 16, 1977	June 1, 1970
	SR_Core1	Ice Harbor 1-13	Columbia River	Ice Harbor Dam	cm	16	17	August 16, 1977	June 1, 1969
	SR_Core1	Ice Harbor 1-17	Columbia River	Ice Harbor Dam	cm	26.5	27.5	August 16, 1977	February 1, 1964
	SR_Core1	Ice Harbor 1-20	Columbia River	Ice Harbor Dam	cm	27.5	28.5	August 16, 1977	June 1, 1963

Table 4-20. Summary of Sediment Core Samples Collected in Segment 4 of the Columbia River Component. (3 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg4_Core1	B-A-0-2.5	Columbia River	Stevenson, WA	cm	0	2.5	August 11, 1976	January 1, 1975
	Seg4_Core1	B-A-2.5-5.1	Columbia River	Stevenson, WA	cm	2.5	5.1	August 11, 1976	August 1, 1973
	Seg4_Core1	B-A-5.1-7.6	Columbia River	Stevenson, WA	cm	5.1	7.6	August 11, 1976	July 1, 1972
	Seg4_Core1	B-A-7.6-10.2	Columbia River	Stevenson, WA	cm	7.6	10.2	August 11, 1976	February 1, 1971
	Seg4_Core1	B-A-10.2-12.7	Columbia River	Stevenson, WA	cm	10.2	12.7	August 11, 1976	November 1, 1969
	Seg4_Core1	B-A-12.7-15.2	Columbia River	Stevenson, WA	cm	12.7	15.2	August 11, 1976	September 1, 1968
	Seg4_Core1	B-A-15.2-17.8	Columbia River	Stevenson, WA	cm	15.2	17.8	August 11, 1976	May 1, 1967
	Seg4_Core1	B-A-17.8-20.3	Columbia River	Stevenson, WA	cm	17.8	20.3	August 11, 1976	February 1, 1966
	Seg4_Core1	B-A-20.3-22.9	Columbia River	Stevenson, WA	cm	20.3	22.9	August 11, 1976	November 1, 1964
	Seg4_Core1	B-A-22.9-25.4	Columbia River	Stevenson, WA	cm	22.9	25.4	August 11, 1976	August 1, 1963
	Seg4_Core1	B-A-25.4-27.9	Columbia River	Stevenson, WA	cm	25.4	27.9	August 11, 1976	April 1, 1962

Table 4-20. Summary of Sediment Core Samples Collected in Segment 4 of the Columbia River Component. (3 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
	Seg4_Core1	B-A-27.9-30.5	Columbia River	Stevenson, WA	cm	27.9	30.5	August 11, 1976	January 1, 1961
	Seg4_Core1	B-A-30.5-34.3	Columbia River	Stevenson, WA	cm	30.5	34.3	August 11, 1976	June 1, 1959
	Seg4_Core1	B-A-34.3-39.4	Columbia River	Stevenson, WA	cm	34.3	39.4	August 11, 1976	February 1, 1957
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg4_Core2	D-A-0-2.5	Columbia River	The Dalles Dam	cm	0	2.5	August 10, 1976	January 1, 1975
	Seg4_Core2	D-A-2.5-5.1	Columbia River	The Dalles Dam	cm	2.5	5.1	August 10, 1976	August 1, 1973
	Seg4_Core2	D-A-5.1-7.6	Columbia River	The Dalles Dam	cm	5.1	7.6	August 10, 1976	July 1, 1972
	Seg4_Core2	D-A-7.6-10.2	Columbia River	The Dalles Dam	cm	7.6	10.2	August 10, 1976	February 1, 1971
	Seg4_Core2	D-A-10.2-12.7	Columbia River	The Dalles Dam	cm	10.2	12.7	August 10, 1976	November 1, 1970
	Seg4_Core2	D-A-12.7-15.2	Columbia River	The Dalles Dam	cm	12.7	15.2	August 10, 1976	August 1, 1968
	Seg4_Core2	D-A-15.2-17.8	Columbia River	The Dalles Dam	cm	15.2	20.3	August 10, 1976	May 1, 1963
	Seg4_Core2	D-A-17.8-20.3	Columbia River	The Dalles Dam	cm	17.8	20.3	August 10, 1976	December 1, 1961
	Seg4_Core2	D-A-20.3-22.9	Columbia River	The Dalles Dam	cm	20.3	22.9	August 10, 1976	November 1, 1964
	Seg4_Core2	D-A-22.7-25.4	Columbia River	The Dalles Dam	cm	22.7	25.4	August 10, 1976	August 1, 1963
	Seg4_Core2	D-A-25.4-30.5	Columbia River	The Dalles Dam	cm	25.4	30.5	August 10, 1976	August 1, 1961
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg4_Core3	D-B-0-2.5	Columbia River	The Dalles Dam	cm	0	2.5	August 10, 1976	January 1, 1975
	Seg4_Core3	D-B-2.5-5.1	Columbia River	The Dalles Dam	cm	2.5	5.1	August 10, 1976	August 1, 1973
	Seg4_Core3	D-B-5.1-7.6	Columbia River	The Dalles Dam	cm	5.1	7.6	August 10, 1976	June 1, 1972
	Seg4_Core3	D-B-7.6-10.2	Columbia River	The Dalles Dam	cm	7.6	10.2	August 10, 1976	February 1, 1971
	Seg4_Core3	D-B-10.2-12.7	Columbia River	The Dalles Dam	cm	10.2	12.7	August 10, 1976	November 1, 1970
	Seg4_Core3	D-B-12.7-15.2	Columbia River	The Dalles Dam	cm	12.7	15.2	August 10, 1976	August 1, 1968
	Seg4_Core3	D-B-15.2-17.8	Columbia River	The Dalles Dam	cm	15.2	17.8	August 10, 1976	May 1, 1967
	Seg4_Core3	D-B-17.8-20.3	Columbia River	The Dalles Dam	cm	17.8	20.3	August 10, 1976	February 1, 1966
	Seg4_Core3	D-B-20.3-22.9	Columbia River	The Dalles Dam	cm	20.3	22.9	August 10, 1976	November 1, 1964
	Seg4_Core3	D-B-22.9-25.4	Columbia River	The Dalles Dam	cm	22.9	25.4	August 10, 1976	July 1, 1963
	Seg4_Core3	D-B-25.4-27.9	Columbia River	The Dalles Dam	cm	25.4	27.9	August 10, 1976	April 1, 1962
	Seg4_Core3	D-B-27.9-30.5	Columbia River	The Dalles Dam	cm	27.9	30.5	August 10, 1976	January 1, 1961
	Seg4_Core3	D-B-30.5-33.0	Columbia River	The Dalles Dam	cm	30.5	33	August 10, 1976	October 1, 1959
	Seg4_Core3	D-B-33.0-35.6	Columbia River	The Dalles Dam	cm	33	35.6	August 10, 1976	June 1, 1958
	Seg4_Core3	D-B-35.6-38.1	Columbia River	The Dalles Dam	cm	35.6	38.1	August 10, 1976	February 1, 1957
	Seg4_Core3	D-B-38.1-43.2	Columbia River	The Dalles Dam	cm	38.1	43.2	August 10, 1976	April 1, 1955
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg4_Core4	D-C-0-2.5	Columbia River	The Dalles Dam	cm	0	2.5	August 11, 1976	January 1, 1975
	Seg4_Core4	D-C-2.5-5.1	Columbia River	The Dalles Dam	cm	2.5	5.1	August 11, 1976	August 1, 1973
	Seg4_Core4	D-C-5.1-7.6	Columbia River	The Dalles Dam	cm	5.1	7.6	August 11, 1976	June 1, 1972
	Seg4_Core4	D-C-7.6-10.2	Columbia River	The Dalles Dam	cm	7.6	10.2	August 11, 1976	February 1, 1971

Table 4-20. Summary of Sediment Core Samples Collected in Segment 4 of the Columbia River Component. (3 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
	Seg4_Core4	D-C-10.2-12.7	Columbia River	The Dalles Dam	cm	10.2	12.7	August 11, 1976	November 1, 1970
	Seg4_Core4	D-C-12.7-15.2	Columbia River	The Dalles Dam	cm	12.7	15.2	August 11, 1976	August 1, 1968
	Seg4_Core4	D-C-15.2-17.8	Columbia River	The Dalles Dam	cm	15.2	17.8	August 11, 1976	May 1, 1967
	Seg4_Core4	D-C-17.8-20.3	Columbia River	The Dalles Dam	cm	17.8	20.3	August 11, 1976	February 1, 1966
	Seg4_Core4	D-C-20.3-22.9	Columbia River	The Dalles Dam	cm	20.3	22.9	August 11, 1976	November 1, 1964
	Seg4_Core4	D-C-22.9-27.9	Columbia River	The Dalles Dam	cm	22.9	27.9	August 11, 1976	November 1, 1962
Irrigon Boat Basin Sediment Evaluation	Seg4_Core5	IR-GC-1	Columbia River	RM 282	--	a	--	June 4, 1993	--
	Seg4_Core5	IR-GC-2	Columbia River	RM 282	--	a	--	June 4, 1993	--
	Seg4_Core5	IR-GC-3	Columbia River	RM 282	--	a	--	June 4, 1993	--
Association of Hanford Origin Radionuclides with Columbia River Sediment	Seg4_Core6	JD-A-0-2.5	Columbia River	John Day Dam	cm	0	2.5	August 10, 1976	January 1, 1975
	Seg4_Core6	JD-A-2.5-5.1	Columbia River	John Day Dam	cm	2.5	5.1	August 10, 1976	August 1, 1973
	Seg4_Core6	JD-A-5.1-7.6	Columbia River	John Day Dam	cm	5.1	7.6	August 10, 1976	June 1, 1972
	Seg4_Core6	JD-A-7.6-10.2	Columbia River	John Day Dam	cm	7.6	10.2	August 10, 1976	February 1, 1971
	Seg4_Core6	JD-A-10.2-12.7	Columbia River	John Day Dam	cm	10.2	12.7	August 10, 1976	November 1, 1969
	Seg4_Core6	JD-A-12.7-15.2	Columbia River	John Day Dam	cm	12.7	15.2	August 10, 1976	September 1, 1968
	Seg4_Core6	JD-A-15.2-17.8	Columbia River	John Day Dam	cm	15.2	17.8	August 10, 1976	May 1, 1967
	Seg4_Core6	JD-A-17.8-20.3	Columbia River	John Day Dam	cm	17.8	20.3	August 10, 1976	February 1, 1966
	Seg4_Core6	JD-A-20.3-22.9	Columbia River	John Day Dam	cm	20.3	22.9	August 10, 1976	November 1, 1964
	Seg4_Core6	JD-A-22.9-25.4	Columbia River	John Day Dam	cm	22.9	25.4	August 10, 1976	August 1, 1963
	Seg4_Core6	JD-A-25.4-27.9	Columbia River	John Day Dam	cm	25.4	27.9	August 10, 1976	April 1, 1962
	Seg4_Core6	JD-A-27.9-30.5	Columbia River	John Day Dam	cm	27.9	30.5	August 10, 1976	January 1, 1961
	Seg4_Core6	JD-A-30.5-33.0	Columbia River	John Day Dam	cm	30.5	33	August 10, 1976	June 1, 1959
	Seg4_Core6	JD-A-33.0-35.6	Columbia River	John Day Dam	cm	33	35.6	August 10, 1976	June 1, 1958
	Seg4_Core6	JD-A-35.6-38.1	Columbia River	John Day Dam	cm	35.6	38.1	August 10, 1976	March 1, 1957
	Seg4_Core6	JD-A-38.1-40.6	Columbia River	John Day Dam	cm	38.1	40.6	August 10, 1976	December 1, 1956
	Seg4_Core6	JD-A-40.6-43.2	Columbia River	John Day Dam	cm	40.6	43.2	August 10, 1976	August 1, 1954
	Seg4_Core6	JD-A-43.2-45.7	Columbia River	John Day Dam	cm	43.2	45.7	August 10, 1976	May 1, 1953
	Seg4_Core6	JD-A-45.7-48.3	Columbia River	John Day Dam	cm	45.7	48.3	August 10, 1976	February 1, 1952
	Seg4_Core6	JD-A-48.3-53.5	Columbia River	John Day Dam	cm	48.3	53.5	August 10, 1976	February 1, 1950

^a Entire core length was composited; no depth was given.

Table 4-21. Summary of Sediment Core Samples Collected in Segment 5 of the Columbia River Component. (3 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
The vertical distribution of selected trace metals and organic compounds in bottom materials in the proposed lower Columbia River export channel, Oregon.	CB-S6a 0-0.9m	Seg5_Core1	Columbia River	RM 21	cm	0	90	September 27, 1984	January 1, 1953
	CB-S6a 2.1-2-2	Seg5_Core1	Columbia River	RM 21	cm	210	220	September 27, 1984	August 1, 1958
	CB-S6a 0.9-3.7m	Seg5_Core1	Columbia River	RM 21	cm	90	370	September 27, 1984	October 1, 1956
The vertical distribution of selected trace metals and organic compounds in bottom materials in the proposed lower Columbia River export channel, Oregon.	CB-S6b .56-.76m	Seg5_Core2	Columbia River	RM 21	cm	56	76	September 27, 1984	October 1, 1976
	CB-S6b 1.17-1.40m	Seg5_Core2	Columbia River	RM 21	cm	117	140	September 27, 1984	March 1, 1969
	CB-S6b 1.78-1.98m	Seg5_Core2	Columbia River	RM 21	cm	178	198	September 27, 1984	September 1, 1961
	CB-S6b 2.58-2.76m	Seg5_Core2	Columbia River	RM 21	cm	258	276	September 27, 1984	March 1, 1952
	CB-S6b 2.64-3.82m	Seg5_Core2	Columbia River	RM 21	cm	264	382	September 27, 1984	April 1, 1947
	CB-S6b 3.10-3.20m	Seg5_Core2	Columbia River	RM 21	cm	310	320	September 27, 1984	March 1, 1946
	CB-S6b 3.23-3.44m	Seg5_Core2	Columbia River	RM 21	cm	323	344	September 27, 1984	January 1, 1944
	CB-S6b 4.22-4.42m	Seg5_Core2	Columbia River	RM 21	cm	422	442	September 27, 1984	February 1, 1932
Historical Changes in the Columbia River Estuary based on Sediment Cores: Feasibility Studies.	CRCF-04_02	Seg5_Core3	Columbia River	Clatskanie Flt	cm	2	4	January 1, 2000	December 1, 1997
	CRCF-04_06	Seg5_Core3	Columbia River	Clatskanie Flt	cm	6	8	January 1, 1997	January 1, 1997
	CRCF-04_10	Seg5_Core3	Columbia River	Clatskanie Flt	cm	10	12	January 1, 2000	December 1, 1995
	CRCF-04_15	Seg5_Core3	Columbia River	Clatskanie Flt	cm	15	17	January 1, 2000	March 1, 1994
	CRCF-04_20	Seg5_Core3	Columbia River	Clatskanie Flt	cm	20	22	January 1, 2000	March 1, 1992
	CRCF-04_25	Seg5_Core3	Columbia River	Clatskanie Flt	cm	25	27	January 1, 2000	January 1, 1990
	CRCF-04_30	Seg5_Core3	Columbia River	Clatskanie Flt	cm	30	32	January 1, 2000	June 1, 1987
	CRCF-04_40	Seg5_Core3	Columbia River	Clatskanie Flt	cm	40	42	January 1, 2000	June 1, 1981
	CRCF-04_50	Seg5_Core3	Columbia River	Clatskanie Flt	cm	50	52	January 1, 2000	March 1, 1974
	CRCF-04_60	Seg5_Core3	Columbia River	Clatskanie Flt	cm	60	62	January 1, 2000	October 1, 1965
	CRCF-04_70	Seg5_Core3	Columbia River	Clatskanie Flt	cm	70	72	January 1, 2000	March 1, 1956
	CRCF-04_80	Seg5_Core3	Columbia River	Clatskanie Flt	cm	80	82	January 1, 2000	May 1, 1945
	CRCF-04_90	Seg5_Core3	Columbia River	Clatskanie Flt	cm	90	92	January 1, 2000	May 1, 1933
	CRCF-04_100	Seg5_Core3	Columbia River	Clatskanie Flt	cm	100	102	January 1, 2000	February 1, 1920
	CRCF-04_110	Seg5_Core3	Columbia River	Clatskanie Flt	cm	110	112	January 1, 2000	October 1, 1905
	CRCF-04_120	Seg5_Core3	Columbia River	Clatskanie Flt	cm	120	122	January 1, 2000	February 1, 1890
	CRCF-04_130	Seg5_Core3	Columbia River	Clatskanie Flt	cm	130	132	January 1, 2000	May 1, 1873
	CRCF-04_140	Seg5_Core3	Columbia River	Clatskanie Flt	cm	140	142	January 1, 2000	May 1, 1855

Table 4-21. Summary of Sediment Core Samples Collected in Segment 5 of the Columbia River Component. (3 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
Historical Changes in the Columbia River Estuary based on Sediment Cores: Feasibility Studies.	CRGB-06_02	Seg5_Core4	Columbia River	Gray's Bay	cm	2	4	January 1, 2000	October 1, 2001
	CRGB-06_06	Seg5_Core4	Columbia River	Gray's Bay	cm	6	8	January 1, 2000	January 1, 1998
	CRGB-06_10	Seg5_Core4	Columbia River	Gray's Bay	cm	10	12	January 1, 2000	February 1, 1994
	CRGB-06_15	Seg5_Core4	Columbia River	Gray's Bay	cm	15	17	January 1, 2000	April 1, 1989
	CRGB-06_150	Seg5_Core4	Columbia River	Gray's Bay	cm	150	152	January 1, 2000	10/1/1852
	CRGB-06_20	Seg5_Core4	Columbia River	Gray's Bay	cm	20	22	January 1, 2000	May 1, 1984
	CRGB-06_25	Seg5_Core4	Columbia River	Gray's Bay	cm	25	27	January 1, 2000	July 1, 1979
	CRGB-06_30	Seg5_Core4	Columbia River	Gray's Bay	cm	30	32	January 1, 2000	September 1, 1974
	CRGB-06_40	Seg5_Core4	Columbia River	Gray's Bay	cm	40	42	January 1, 2000	November 1, 1964
	CRGB-06_50	Seg5_Core4	Columbia River	Gray's Bay	cm	50	52	January 1, 2000	January 1, 1955
	CRGB-06_60	Seg5_Core4	Columbia River	Gray's Bay	cm	60	62	January 1, 2000	February 1, 1945
	CRGB-06_70	Seg5_Core4	Columbia River	Gray's Bay	cm	70	72	January 1, 2000	February 1, 1935
	CRGB-06_80	Seg5_Core4	Columbia River	Gray's Bay	cm	80	82	January 1, 2000	January 1, 1925
	CRGB-06_90	Seg5_Core4	Columbia River	Gray's Bay	cm	90	92	January 1, 2000	November 1, 1914
	CRGB-06_100	Seg5_Core4	Columbia River	Gray's Bay	cm	100	102	January 1, 2000	September 1, 1904
	CRGB-06_110	Seg5_Core4	Columbia River	Gray's Bay	cm	110	112	January 1, 2000	6/1/1894
	CRGB-06_120	Seg5_Core4	Columbia River	Gray's Bay	cm	120	122	January 1, 2000	2/1/1884
	CRGB-06_130	Seg5_Core4	Columbia River	Gray's Bay	cm	130	132	January 1, 2000	9/1/1873
	CRGB-06_140	Seg5_Core4	Columbia River	Gray's Bay	cm	140	142	January 1, 2000	4/1/1863
Historical Changes in the Columbia River Estuary based on Sediment Cores: Feasibility Studies.	CRYB-02_02	Seg5_Core5	Columbia River	Young's Bay	cm	2	4	January 1, 2000	September 1, 1999
	CRYB-02_06	Seg5_Core5	Columbia River	Young's Bay	cm	6	8	January 1, 2000	January 1, 1991
	CRYB-02_10	Seg5_Core5	Columbia River	Young's Bay	cm	10	12	January 1, 2000	January 1, 1983
	CRYB-02_15	Seg5_Core5	Columbia River	Young's Bay	cm	15	17	January 1, 2000	June 1, 1973
	CRYB-02_17	Seg5_Core5	Columbia River	Young's Bay	cm	17	19	January 1, 2000	October 1, 1969
	CRYB-02_20	Seg5_Core5	Columbia River	Young's Bay	cm	20	22	January 1, 2000	July 1, 1964
	CRYB-02_25	Seg5_Core5	Columbia River	Young's Bay	cm	25	27	January 1, 2000	April 1, 1956
	CRYB-02_30	Seg5_Core5	Columbia River	Young's Bay	cm	30	32	January 1, 2000	September 1, 1948
	CRYB-02_40	Seg5_Core5	Columbia River	Young's Bay	cm	40	42	January 1, 2000	July 1, 1935
	CRYB-02_50	Seg5_Core5	Columbia River	Young's Bay	cm	50	52	January 1, 2000	January 1, 1925
	CRYB-02_60	Seg5_Core5	Columbia River	Young's Bay	cm	60	62	January 1, 2000	April 1, 1917
	CRYB-02_70	Seg5_Core5	Columbia River	Young's Bay	cm	70	72	January 1, 2000	February 1, 1912
	CRYB-02_80	Seg5_Core5	Columbia River	Young's Bay	cm	80	82	January 1, 2000	August 1, 1909

Table 4-21. Summary of Sediment Core Samples Collected in Segment 5 of the Columbia River Component. (3 Pages)

Source Title	Core ID	Sample ID	Sample Area	Sample Site	Interval Depth Units	Upper Depth	Lower Depth	Collection Date	Estimated Sediment Deposition Date
The vertical distribution of selected trace metals and organic compounds in bottom materials in the proposed lower Columbia River export channel, Oregon.	SR-S2 0-0.9m	Seg5_Core6	Skipanon River	SR-S2	cm	0	90	September 25, 1984	January 1, 1953
	SR-S2 .9-4.1m	Seg5_Core6	Skipanon River	SR-S2	cm	90	410	September 25, 1984	March 1, 1954
	SR-S2 1.1-1.15	Seg5_Core6	Skipanon River	SR-S2	cm	110	115	September 25, 1984	February 1, 1971
	SR-S2 2.7-2.78	Seg5_Core6	Skipanon River	SR-S2	cm	270	278	September 25, 1984	April 1, 1951
	SR-S2 4.1-5.7m	Seg5_Core6	Skipanon River	SR-S2	cm	410	570	September 25, 1984	January 1, 1925
The vertical distribution of selected trace metals and organic compounds in bottom materials in the proposed lower Columbia River export channel, Oregon.	CR-S1 0-1.9m	Seg5_Core7	Columbia River	CR-S1	cm	0	190	September 26, 1984	February 1, 1973
	CR-S1 0.5-0.6	Seg5_Core7	Columbia River	CR-S1	cm	50	60	September 26, 1984	March 1, 1978
	CR-S1 1.9-6.1m	Seg5_Core7	Columbia River	CR-S1	cm	190	610	September 26, 1984	January 1, 1936
	CR-S1 4.7	Seg5_Core7	Columbia River	CR-S1	cm	470	472	September 26, 1984	June 1, 1927
The vertical distribution of selected trace metals and organic compounds in bottom materials in the proposed lower Columbia River export channel, Oregon.	CR-S5 .08-1.0m	Seg5_Core8	Columbia River	CR-S5	cm	8	100	October 1, 1984	October 1, 1984
	CR-S5 1.8-3.8m	Seg5_Core8	Columbia River	CR-S5	cm	180	380	October 1, 1984	October 1, 1984

5.0 SUMMARY AND CONCLUSIONS

The following subsections present a summary of the results for the data evaluated within this report and provides some preliminary observations. Tables 5-1 and 5-2 provide a summary of constituents that exceed either a human health or ecological benchmark by segment for sediment and surface water samples, respectively. The discussion that follows focuses on the primary contaminants with concentrations that are above a human health or ecological benchmark value.

It is important to note that when concentrations are below the selected benchmark value, an adverse health effect is not anticipated for the identified receptor. Conversely, when concentrations are above the selected benchmark value, the potential exists for an adverse health effect to occur. All benchmark values selected for comparison are the most protective values available for the identified receptor.

5.1 SUMMARY OF SURFACE SEDIMENT RESULTS

5.1.1 Metals

The primary metals that greater than available background soil concentrations (background sediment values are not available) and exceed either a human health or ecological benchmark were arsenic, cadmium, and chromium. A summary of the results for each of these three constituents is provided in the following subsections.

5.1.1.1 Arsenic. Arsenic was measured in surface sediment from all segments of the Columbia River at concentrations above the human health benchmark value of 0.39 mg/kg and the Hanford Site background value of 6.5 mg/kg. Detected concentrations of arsenic in all samples analyzed ranged from 0.002 mg/kg to 12 mg/kg; however, there were three measurements greater than 15 mg/kg. Because arsenic was measured in all segments at similar concentration ranges, these results suggest that arsenic is present at naturally occurring levels and concentrations greater than naturally occurring levels may be contributed from sources located upgradient from the boundaries considered in this evaluation. Also note that arsenic is present at higher naturally occurring levels with a background value of 16 mg/kg for Oregon.

5.1.1.2 Cadmium. Cadmium was measured in surface sediment from all segments of the Columbia River at concentrations above the ecological benchmark value of 0.6 mg/kg and the Hanford Site background value of 0.81 mg/kg. Detected concentrations of cadmium in all samples analyzed ranged from 0.0004 mg/kg to 16 mg/kg. Cadmium was measured in all segments at concentrations above the Hanford Site background value of 0.81 mg/kg; however, the highest cadmium concentrations were observed in Segment 1. Similar to arsenic, these results suggest that cadmium is present at naturally occurring levels and concentrations greater than naturally occurring levels may be contributed from sources located upgradient from the boundaries considered in this evaluation.

5.1.1.3 Total Chromium. As discussed previously, all sediment samples that were analyzed for total chromium were compared to the hexavalent chromium benchmark value. Chromium

was measured in surface sediment from all segments of the Columbia River at concentrations ranging from 0.056 mg/kg to 112 mg/kg. Chromium was measured above the human health benchmark value of 30 mg/kg and the ecological benchmark value of 37 mg/kg. It should be noted that all sediment concentrations were below the WAC-173-340-740 benchmark value of 240 mg/kg for unrestricted land use. Chromium was measured at Priest Rapids Dam and other locations along Segment 1 with concentrations above these benchmarks ranging from 32 mg/kg to 93 mg/kg; various locations along Segment 2 with concentrations ranging from 32 mg/kg to 112 mg/kg; at locations near McNary Dam and Yakima River in Segment 3 with concentrations ranging from 35 mg/kg to 73 mg/kg; locations behind John Day and The Dalles dams in Segment 4 with concentrations ranging from 57 mg/kg to 69 mg/kg; and at three locations along Segment 5 with concentrations ranging from 32 mg/kg to 35 mg/kg. Chromium has been measured at elevated in all segments of the Columbia River; however, noticeably higher concentrations are measured in Segments 1 and 2. These results indicate sources of chromium located upgradient from the boundaries considered in this evaluation and potential Hanford Site contribution within Segment 2.

5.1.2 Radionuclides

The three primary radionuclides that were greater than available background soil concentrations (background sediment values are not available) and exceeded either a human health or ecological benchmark were thorium-232, uranium-234, and uranium-238. A summary of the results for each of these three constituents is provided in the following subsections.

5.1.2.1 Thorium-232. Thorium-232 was measured in surface sediment from all segments of the Columbia River with concentrations ranging from 0.24 pCi/g to 3.1 pCi/g. Thorium-232 was only reported above the human health benchmark value of 1.3 pCi/g along several areas of the river adjacent from the Hanford Site.

5.1.2.2 Uranium-234 and Uranium-238. Uranium-234 and uranium-238 was measured in surface sediment from Segments 1 through 4 of the Columbia River at concentrations above the human health benchmark value of 1.1 pCi/g. Uranium-234 and uranium-238 were not analyzed in any of the samples collected from Segment 5.

Detected concentrations of uranium-234 in all samples analyzed ranged from 0.064 pCi/g to 11 pCi/g. The highest uranium-234 concentrations were measured in Segment 2 near the 300 Area where concentrations above the benchmark ranged from 1.3 pCi/g to 11 pCi/g. Uranium-234 was measured in Segment 1 near Priest Rapids at concentrations between 1.1 pCi/g and 1.6 pCi/g; in Segment 3 primarily near McNary Dam at concentrations ranging from 1.1 pCi/g to 1.9 pCi/g; and in Segment 4 primarily near the John Day Dam and The Dalles Dam at concentrations ranging from 1.1 pCi/g to 1.7 pCi/g.

Detected concentrations of uranium-238 in all samples analyzed ranged from 0.05 pCi/g to 9.9 pCi/g. The highest uranium-238 concentrations were measured in Segment 2 near the 300 Area where concentrations above the benchmark ranged from 1.2 pCi/g to 9.9 pCi/g. Uranium-238 was measured in Segment 1 near Priest Rapids at concentrations between 1.2 pCi/g and 1.4 pCi/g; in Segment 3 primarily near McNary Dam at concentrations ranging from 1.1 pCi/g to 1.6 pCi/g; and in Segment 4 primarily near the John Day Dam and The Dalles Dam at concentrations ranging from 1.1 pCi/g to 1.7 pCi/g.

Concentration of both uranium-234 and uranium-238 are generally near or slightly above background levels in all segments of the river, except for portions of Segment 2 near the 300 Area discussed above. Similar concentrations to those observed in the vicinity of McNary Dam and downstream locations were also observed at Ice Harbor Dam in the Snake River. This suggests some natural occurring levels of these constituents may be depositing behind the downstream dams.

5.1.3 PCB Aroclors

PCB aroclors were primarily analyzed in Segments 1, 3, and 5 of the Columbia River. No PCB aroclors were analyzed within the Hanford Site portion of Segment 2 and only at few locations within Segment 4. Because PCB aroclors were not analyzed in surface sediment within the Hanford Site portion of Segment 2, it is difficult to determine if there may be a contribution of this contaminant from Hanford Site operations.

5.1.3.1 Aroclor-1254. Aroclor-1254 was reported above the ecological benchmark value of 0.007 mg/kg at locations within Segments 2, 4, and 5 with concentrations ranging from 0.01 mg/kg to 0.024 mg/kg. Aroclor-1254 was measured above the benchmark value at the Port of Pasco, behind Bonneville Dam, and at Columbia RM 100.

5.1.3.2 Aroclor-1248 and -1260. Aroclor-1248 and -1260 were reported above the ecological benchmark value of 0.021 mg/kg with concentrations ranging from 0.024 mg/kg to 1.4 mg/kg. These aroclors were only detected above the benchmark value in Segment 5 of the Columbia River.

5.1.4 Pesticides

Pesticides were primarily analyzed in Segments 1, 3, and 5 of the Columbia River. No pesticides were analyzed within the Hanford Site portion of Segment 2 and only at few locations within Segment 4. Because pesticides were not analyzed in surface sediments within the Hanford Site portion of Segment 2, it is difficult to determine if there may be a contribution of these contaminants from Hanford Site operations. However, it is apparent that the majority of the samples that exceeded the benchmark values were associated with tributaries that flow into the Columbia River downstream of the Hanford Site.

5.1.4.1 DDD. DDD was reported above the ecological benchmark value of 0.004 mg/kg primarily within the Yakima River and Segment 5 of the Columbia River. DDD concentrations above the benchmark ranged from 0.0043 mg/kg to 0.023 mg/kg.

5.1.4.2 DDE. DDE was reported above the ecological benchmark value of 0.0015 mg/kg primarily within the Yakima River and Segment 5 of the Columbia River. DDE concentrations above the benchmark ranged from 0.0015 mg/kg to 0.05 mg/kg.

5.1.4.3 DDT. DDT was reported above the ecological benchmark value of 0.0042 mg/kg within the Yakima River with concentrations ranging from 0.01 mg/kg to 0.035 mg/kg.

5.1.4.4 Dieldrin. Dieldrin was reported once in the Yakima River (0.005 mg/kg) above the ecological benchmark value of 0.0019 mg/kg.

5.1.4.5 Gamma-BHC. Gamma-BHC was reported once in the Walla Walla River (0.008 mg/kg) above the ecological benchmark value of 0.0009 mg/kg.

5.1.5 Polynuclear Aromatic Hydrocarbons

PAHs were primarily analyzed in Segments 1, 3, 4, and 5 of the Columbia River. No PAHs were analyzed within the Hanford Site portion of Segment 2 and only at few locations within Segment 4. Because PAHs were not analyzed in surface sediments within the Hanford Site portion of Segment 2, it is difficult to determine if there may be a contribution of these contaminants from Hanford Site operations.

Acenaphthene, acenaphthylene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, and phenanthrene were reported above their respective ecological benchmark values in Segment 5 of the Columbia River. Anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, fluoranthene, fluorene, and pyrene were reported above their ecological benchmark values at the Port of Pasco and Segment 5 of the Columbia River. However, it is apparent that the majority of the sediment samples that exceeded the benchmark values were located in the vicinity or downstream of the Portland/Vancouver metropolitan area.

5.2 SUMMARY OF SURFACE WATER RESULTS

5.2.1 Metals

A total of 15 metals exceeded either a human health or ecological benchmark. A summary of the results for each of the primary constituents is provided in the following subsections.

5.2.1.1 Aluminum. Aluminum was only analyzed in surface water from Segments 1 and 2 of the Columbia River with concentrations ranging from 0.0004 mg/L to 21.2 mg/L. Aluminum was reported above the ecological benchmark value of 0.087 mg/L along several areas of the river adjacent from the Hanford Site. The ecological benchmark value of 0.087 mg/L is the freshwater chronic national recommended water quality criteria for protection of aquatic life.

5.2.1.2 Arsenic. Arsenic was measured in surface water from all segments of the Columbia River at concentrations above the human health benchmark value of 0.000018 mg/L. Detected concentrations of arsenic in all samples analyzed ranged from 0.000006 mg/L to 0.0085 mg/L. The highest arsenic concentrations were observed in Segment 1 (maximum value 0.0017 mg/L) and Segment 2 (maximum value of 0.0085 mg/L). It is important to note that the benchmark value of 0.000018 mg/L is the national recommended water quality criteria to protect human health assuming the consumption of surface water as a drinking water source and the consumption of fish. Columbia River surface water is used as a public and domestic water supply, but undergoes treatment prior to consumption. Therefore, the national recommended water quality criteria of 0.00014 mg/L based on fish consumption only may be more appropriate. Additionally, no arsenic concentrations were greater than the federal drinking water MCL of 0.010 mg/L.

5.2.1.3 Barium. Barium was measured in all surface water from all segments (except Segment 3) of the Columbia River at concentrations above the ecological benchmark value of

0.004 mg/L. Detected concentrations of barium in all samples analyzed ranged from 0.017 mg/L to 0.29 mg/L. Barium was not analyzed in any surface water samples in Segment 3 of the river. The only benchmark value available for barium was from the Oregon Department of Environmental Quality Level II Screening Level Values. This screening value is considered a Tier II secondary chronic value and was developed by the Oak Ridge National Laboratory.

5.2.1.4 Cadmium. Cadmium was analyzed in surface water samples from all segments of the Columbia River with concentrations ranging from 5.6E-06 mg/L to 0.0048 mg/L. Cadmium was reported above the ecological benchmark value of 0.00025 mg/L in samples collected from along areas of the river adjacent from the Hanford Site of Segment 2 and near The Dalles, Oregon, in Segment 4. The ecological benchmark value of 0.00025 mg/L is the freshwater chronic national recommended water quality criteria for protection of aquatic life.

5.2.1.5 Chromium. Chromium was primarily analyzed in surface water samples from Segments 1 and 2 of the Columbia River with concentrations ranging from 0.000019 mg/L to 0.22 mg/L. Chromium was analyzed in surface water from Segments 3 through 5, but at very few locations and on an infrequent basis. Chromium was only reported above the ecological benchmark value of 0.01 mg/L in several areas along the river adjacent from the Hanford Site of Segment 2. The ecological benchmark value of 0.01 mg/L is the Washington chronic water quality standards for protection of aquatic life.

5.2.1.6 Iron. Iron was measured in surface water from Segments 1, 2, and 4 of the Columbia River with concentrations ranging from 0.015 mg/L to 20.4 mg/L. Iron was not analyzed in any surface water samples collected with Segments 3 and 5 of the Columbia River. Iron was reported above the ecological benchmark value of 1.0 mg/L near the 100-D Area of Segment 2. The ecological benchmark value of 1.0 mg/L is the freshwater chronic national recommended water quality criteria for protection of aquatic life.

5.2.1.7 Lead. Lead was primarily analyzed in surface water samples from Segments 1 and 2 of the Columbia River with concentrations ranging from 1.1E-06 mg/L to 0.066 mg/L. Lead was analyzed surface water from Segments 3 through 5 but at very few locations and on an infrequent basis. Lead was only reported above the ecological benchmark value of 0.00087 mg/L in several areas along the river adjacent from the Hanford Site of Segment 2. The ecological benchmark value of 0.00087 mg/L is the Washington chronic water quality standards for protection of aquatic life.

5.2.1.8 Manganese. Manganese was measured in surface water from Segments 1, 2, and 4 of the Columbia River with concentrations ranging from 0.000037 mg/L to 0.94 mg/L. Manganese was not analyzed in any surface water samples collected with Segments 3 and 5 of the Columbia River. Manganese was reported above the ecological benchmark value of 0.12 mg/L and the human health benchmark value of 0.05 mg/L near the 100-D Area of Segment 2. The only benchmark value available for manganese was from the Oregon Department of Environmental Quality Level II Screening Level Values. This screening value is considered a Tier II secondary chronic value and was developed by the Oak Ridge National Laboratory.

5.2.1.9 Silver. Silver was primarily analyzed in surface water samples from Segments 1 and 2 of the Columbia River with concentrations ranging from 8.3E-07 mg/L to 0.003 mg/L. Silver was analyzed in surface water from Segments 3 through 5, but at very few locations and on an infrequent basis. Silver was only reported above the ecological benchmark value of

0.00012 mg/L in several areas along the river adjacent from the Hanford Site of Segment 2. The only benchmark value available for silver was from the Oregon Department of Environmental Quality Level II Screening Level Values. This screening value is a freshwater chronic value from the Oregon Water Quality Criteria (Oregon Administrative Record [OAR] 340-41).

5.2.1.10 Zinc. Zinc was primarily analyzed in surface water samples from Segments 1 and 2 of the Columbia River with concentrations ranging from 0.00035 mg/L to 0.42 mg/L. Zinc was analyzed surface water from Segments 3 through 5 but at very few locations and on an infrequent basis. Zinc was only reported above the ecological benchmark value of 0.055 mg/L in several areas along the river adjacent from the Hanford Site of Segment 2. The ecological benchmark value of 0.055 mg/L is the Washington chronic water quality standards for protection of aquatic life.

5.2.2 Radionuclides

The two primary radionuclides that exceeded either a human health or ecological benchmark were strontium-90 and tritium. A summary of the results for each of these constituents is provided in the following subsections.

5.2.2.1 Strontium-90. Strontium-90 was only analyzed in surface water samples from Segments 1, 2, and 3 of the Columbia River. However, strontium-90 was only reported above the human health benchmark value of 8 pCi/L in several samples collected near the 100-H Area and 100-N Area in Segment 2. It should be noted that surface water screening values for radionuclides have not been developed for the protection of human health; therefore, the derived MCL concentration was used for comparison purposes.

5.2.2.2 Tritium. Tritium was only analyzed in surface water samples from Segments 1, 2, and 3 of the Columbia River. However, tritium was only reported above the human health benchmark value of 20,000 pCi/L in samples collected near the Hanford Spring 28-2 in Segment 2. It should be noted that surface water screening values for radionuclides have not been developed for the protection of human health; therefore, the derived MCL concentration was used for comparison purposes.

5.2.3 Pesticides

Pesticides were primarily analyzed in Segments 3, and 5 of the Columbia River. No pesticides were analyzed within the Hanford Site portion of Segment 2 and only a few samples analyzed from Segments 1 and 4 of the Columbia River. Because pesticides were infrequently analyzed in surface water for most segments, it is difficult to determine if there is a contribution of these contaminants from Hanford Site operations. However, similar to the sediment exceedences, it is apparent that the majority of the surface water samples that exceeded the benchmark values were associated with tributaries that flow into the Columbia River downstream of the Hanford Site.

5.2.3.1 DDE. DDE was reported above the human health benchmark value of 2.2E-07 mg/L in the Walla Walla River and various locations within Segment 5 of the Columbia River. DDE concentrations above the benchmark value ranged from 2.4E-06 mg/L to 2.1E-05 mg/L.

5.2.3.2 DDT. DDT was reported above the human health benchmark value of $2.2\text{E-}07$ mg/L in the Walla Walla River and various locations within Segment 5 of the Columbia River. DDT concentrations above the benchmark value ranged from $2.7\text{E-}06$ mg/L to $1.5\text{E-}05$ mg/L.

5.2.3.3 Dieldrin. Dieldrin was reported above the human health benchmark value of $5.2\text{E-}08$ mg/L in the Walla Walla River, above the Bonneville Dam, and various locations within Segment 5 of the Columbia River. Dieldrin concentrations above the benchmark value ranged from $3.0\text{E-}06$ mg/L to $3.6\text{E-}06$ mg/L.

5.2.3.4 Heptachlor Epoxide. Heptachlor epoxide was reported above the human health benchmark value of $3.9\text{E-}08$ mg/L in the Walla Walla River, above the Bonneville Dam, and various locations within Segment 5 of the Columbia River. Heptachlor epoxide concentrations above the benchmark value ranged from $6.7\text{E-}08$ mg/L to $4.1\text{E-}08$ mg/L.

5.2.3.5 Hexachlorobenzene. Hexachlorobenzene was reported above the human health benchmark value of $2.8\text{E-}07$ mg/L above the Bonneville Dam and various locations within Segment 5 of the Columbia River. Hexachlorobenzene concentrations above the benchmark value ranged from $3.4\text{E-}07$ mg/L to $2.3\text{E-}06$ mg/L.

5.3 CONCLUSION

In general, contaminants of Hanford Site origin would be indicated by a particular trend in concentrations in river sediments or surface water. An increase in concentrations downstream of the Hanford Site above the concentrations observed at upstream locations (i.e., Segment 1) could indicate contamination of Hanford Site origin. The trend in concentrations would likely show peaks at the McNary Dam pool (closest downstream sediment reservoir to the Hanford Site), and gradually decline in the lower reservoirs due to dilution from other sediment sources. Based on findings of this evaluation mentioned above, very few of the contaminants that exceed a benchmark value match this trending.

It is also important to note that analysis for some constituents that may be indicators of Hanford Site origin contaminants had limited constituent analyses, especially for radionuclides in downstream segments. In addition, for some segments (i.e., sediment in Segment 4) there was limited sampling over a 245-km (146-mile) stretch of river, thus a potential data gap in addition to the limited constituent analyses.

The results from this evaluation are consistent with the most recent study of Hanford Site-related contaminants in the Columbia River sediments, river water, and sediment porewater that was conducted in 2003. This multi-agency effort (Oregon Department of Energy, Washington Department of Health, Ecology, DOE, and Pacific Northwest National Laboratory) was conducted in the Priest Rapid, McNary, John Day, The Dalles, and Bonneville Dam Reservoirs. In this study they concluded that radionuclides detected in low concentrations in the upper layer of sediment were similar to background concentrations in the Priest Rapids Reservoir for most radionuclides. Only cesium-137 and europium-152 values were slightly elevated at McNary Dam, which may indicate some Hanford Site contribution (Priddy et al. 2005).

Radionuclides with long half-lives deposited during the operational period of the single-pass reactors may be present in deeper sediments of the lower reservoirs that are now covered with layers of more recently deposited sediment. Although data collected and analyzed from core investigations and decayed to 2005 did not indicate any significant problems, the data set contained a limited number of radionuclides.

Hanford Site contribution for metals in the Columbia River does not appear to be significant. This is consistent with the 2003 study where there was no indication of a unique Hanford Site contribution for metals in Columbia River sediments (Priddy et al. 2005). The source of some metals may be associated with upstream contributions (i.e., mining) where previous and ongoing investigations have indicated the presence of contaminated sediments with arsenic, cadmium, copper, lead, mercury, and zinc.

Evaluation for sediment sample analyzed for PAH, PCBs, pesticides, and SVOCs were inconclusive. However, sampling conducted in 2003 resulted in concentrations that were all below analytical detection limits.

Surface water exceedences identified during this evaluation were primarily associated with ecological benchmark values. These values are considered conservative as the majority of these exceedences are tied to seeps located along Columbia River within the Hanford Site. In addition, the water concentrations observed for non-seep areas are consistent with the 2003 data where concentrations at McNary Dam were similar to levels reported by the Hanford Site Surface Environmental Surveillance Project for the Richland Pumpouse and Priest Rapids Dam.

Table 5-1. Summary of Sediment Exceedences.

Constituent Name	Columbia River Component Segment				
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5
Antimony	^a	X	X	X	X
Arsenic	X	X	X	X	X
Cadmium	X	X	X	X	X
Total Chromium	X	X	X	X	X
Copper	X	X	X	X	X
Iron	X	X	X	X	X
Lead	X	X	X	X	X
Manganese	X	X	X	X	^a
Mercury	X	X	X	X	X
Nickel	X	X	X	X	X
Silver	^a	X	^a	^a	^a
Vanadium	X	X	X	X	NA
Zinc	X	X	X	X	X
Thorium-232	X	X	^a	^a	^a
Cobalt-60	^a	X	^a	^a	^a
Uranium-234	X	X	X	X	NA
Uranium-238	X	X	X	X	NA
Aroclor-1248	^a	NA	^a	NA	X
Aroclor-1254	^a	NA	X	X	X
Aroclor-1260	^a	NA	^a	NA	X
DDE	^a	NA	X	NA	X
DDT	^a	NA	X	^a	X
Dieldrin	^a	NA	X	NA	^a
Gamma-BHC	^a	NA	X	^a	^a
PAHs/SVOCs	^a	NA	X	X	X

^a Not detected above human health or ecological benchmarks.

BHC = Hexachlorocyclohexane

DDE = dichlorodiphenyldichloroethylene

DDT = dichlorodiphenyltrichloroethane

NA = Constituent not analyzed

PAH = polyaromatic hydrocarbon

SVOC = semivolatile organic compound

Table 5-2. Summary of Surface Water Exceedences.

Constituent Name	Columbia River Component Segment				
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5
Aluminum	^a	X	NA	NA	NA
Arsenic	X	X	X	X	X
Barium	X	X	NA	X	X
Boron	NA	NA	NA	NA	X
Cadmium	^a	X	^a	X	^a
Chromium	^a	X	^a	^a	^a
Copper	^a	X	^a	^a	^a
Iron	^a	X	NA	X	NA
Lead	^a	X	^a	X	^a
Manganese	^a	X	NA	^a	NA
Silver	^a	X	^a	^a	^a
Thallium	^a	X	^a	^a	NA
Uranium	^a	X	^a	NA	^a
Vanadium	^a	X	NA	NA	NA
Zinc	^a	X	^a	^a	^a
Strontium-90	^a	X	^a	NA	NA
Tritium	^a	X	^a	NA	NA
Total PCBs	NA	NA	^a	X	X
DDE	NA	NA	X	X	X
DDT	NA	NA	X	X	X
Dieldrin	NA	NA	X	X	^a
Heptachlor Epoxide	NA	NA	X	X	^a
PAHs/SVOCs	NA	NA		X	X

^a Not detected above human health or ecological benchmarks.

DDE = dichlorodipenyldichloroethylene

DDT = dichlorodiphenyltrichloroethane

NA = Constituent not analyzed

PAH = polyaromatic hydrocarbon

PCB = polychlorinated biphenyl.

SVOC = semivolatile organic compound

6.0 REFERENCES

- Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 U.S.C. 9601, et seq.
- DOE Order 5400.5, *Radiation Protection of the Public and the Environment*, U.S. Department of Energy, Office of Environment, Safety, and Health, Washington, D.C.
- DOE-RL, 1995, *Hanford Site Background: Part 1 Soil Background for Nonradioactive Analytes*, DOE/RL-92-94, Rev. 4, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 1996, *Hanford Site Background: Part 2, Soil Background for Radionuclides*, DOE/RL-96-12, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 1997, *National Register of Historic Places Multiple Property Documentation Form – Historic, Archeological and Traditional Cultural Properties of the Hanford Site, Washington*, DOE/RL-97-02, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 1998a, *Remedial Design Report/Remedial Action Work Plan for the 100 Area*, DOE/RL-96-17, Rev. 5, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 1998b, *Screening Assessment and Requirements for a Comprehensive Assessment: Columbia River Comprehensive Impact Assessment*, DOE/RL-96-16, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 2001, *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes*, DOE/RL-92-24, Rev. 4, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 2002, *History of the Plutonium Production Facilities at the Hanford Site Historic District, 1943-1990*, DOE/RL-97-1047, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 2004, *Columbia River Component of the River Corridor Baseline Risk Assessment: Basis and Assumptions on Project Scope*, DOE/RL-2004-49, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 2005a, *RCBRA Stack Air Emissions Deposition Scoping Document*, DOE/RL-2005-49, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 2005b, *100 Area Remedial Action Sampling and Analysis Plan*, DOE/RL-96-22, Rev. 4, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

- Ecology, 1981, *Irrigation Return Flow Quality-South Columbia Basin Irrigation District*, Publication No. 81-E16 (WA-36-1010), Washington State Department of Ecology, Olympia, Washington.
- Ecology, 1994, *Natural Background Soil Metals Concentrations in Washington State*, Publication No. 94-115, Washington State Department of Ecology, Toxics Cleanup Program, Olympia, Washington.
- Ecology, 1997, *Creation and Analysis of Freshwater Sediment Quality Values in Washington State*, Publication No. 97-323a, Washington State Department of Ecology, Environmental Investigations and Laboratory Services Program, Olympia, Washington.
- Endangered Species Act of 1973*, 16 U.S.C 1531-1544.
- EPA, 1998, *Portland Harbor Sediment Investigation Report*, EPA910/R-98-006, U.S. Environmental Protection Agency, Office of Environmental Cleanup, Seattle, Washington.
- EPA, 2001, *EPA Requirements for Quality Assurance Project Plans*, EPA QA/R-5, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 2002, *National Recommended Water Quality Criteria: 2002*, EPA 822-R-02-047, Office of Water and Office of Science and Technology, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 2004a, *Sediment Sampling Approach and Rationale, Upper Columbia River*, Technical Briefing Sheet, U.S. Environmental Protection Agency, Region 10, Olympia, Washington.
- EPA, 2004b, *National Recommended Water Quality Criteria Table: Brochure*, EPA-822-F-04-010, Office of Water and Office of Science and Technology, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 2006, *Current National Recommended Water Quality Criteria*, U.S. EPA, Washington, D.C. <http://www.epa.gov/waterscience/criteria/wqcriteria.html>
- Hartman, M. J., L. F. Morasch, and W. D. Webber (eds.), 2006, *Hanford Site Groundwater Monitoring for Fiscal Year 2005*, PNNL-15670, Pacific Northwest National Laboratory, Richland, Washington.
- Lower Willamette Group, 2004, *Portland Harbor Remedial Investigation/Feasibility Study Programmatic Work Plan*, Lower Willamette Group, Portland, Oregon.
- MacDonald, D. D., C. G. Ingersoll, and T. A. Berger, 2000, *Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems*, Arch. Environ. Contam. Toxicol. 39: 20-31.
- Meade, R. H. and R. S. Parker, 1985, *Sediments in Rivers of the United States*, USGS Water-Supply Paper 2275, National Water Summary 1984, U.S. Geological Survey, Washington, D.C.

NAD83, *North American Datum of 1983*.

OAR 340-41, "Oregon Water Quality Criteria," *Oregon Administrative Record*, as amended

ODEQ, 2001, *Guidance for Ecological Risk Assessment Level II Screening Level Values*, Oregon Department of Environmental Quality, Portland, Oregon.

OHD, 1994, *Environmental Radiological Surveillance Report on Oregon Surface Waters 1961-1993, Volume I*, Oregon Health Division Radiation Protection Services, Portland, Oregon.

PNL, 1990, *1988 Hanford Riverbank Springs Characterization Report*, PNL-7500, Pacific Northwest Laboratory, Richland, Washington.

PNNL, 2003, *Aquifer Sampling Tube Results for Fiscal Year 2003*, PNNL-14444, Pacific Northwest National Laboratory, Richland, Washington.

Poston, T. M., R. W. Hanf, R. L. Dirkes, and L. F. Morasch, 2004, *Hanford Site Environmental Report for Calendar Year 2003*, PNNL-14687, Pacific Northwest National Laboratory, Richland, Washington.

Priddy, M., G. Patton, J. Yokel, D. Delistraty, and T. Stoops, 2005, *Survey of Potential Hanford Site Contaminants in the Upper Sediment for the Reservoirs at McNary, John Day, The Dalles and Bonneville Dams*, 2003, PNNL-14878, Pacific Northwest National Laboratory, Richland, Washington.

Schneider, M., 2002, *Mainstem/Systemwide Water Quality Program Summary— Draft*, Northwest Power Planning Council, Portland, Oregon.

USGS, 1995, *Nitrate Concentrations in Groundwater of the Central Columbia Plateau*, Open-File Report 95-445, U.S. Geological Survey, Tacoma, Washington.

WAC 173-201A, "Water Quality Standards for Surface Waters of the State of Washington," *Washington Administrative Code*, as amended.

WAC 173-204-340, "Freshwater Sediment Quality Standards," *Washington Administrative Code*, as amended

WAC 173-340-740, "Model Toxics Control Act – Cleanup, Unrestricted Land Use Soil Cleanup Standards," *Washington Administrative Code*, as amended.

WCH, 2006, *Existing Source Information Summary Report Compilation/Evaluation Effort: December 2004 to September 2005, Columbia River Component of the River Corridor Baseline Risk Assessment*, WCH-64, Rev. 0, Washington Closure Hanford, Richland, Washington.

WGS84, *World Geodetic System of 1984*.

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APPENDIX A

SEGMENT 1

**SUMMARY STATISTICS, BENCHMARK COMPARISON, AND
INDIVIDUAL SAMPLE EXCEEDENCES**

ERC:rkz:04/17/06:/home/rkzufelt/gis/aml/cr_segs_final/columbia_r_seg1.aml:Rev. 1 Database: 04/17/06 10:32 AM

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Table A-1
Summary Table of Segment 1 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
12989	Columbia River	Pr Rapids Dam	01-Oct-92	1
12990	Columbia River	Pr Rapids Dam	01-Oct-92	1
12991	Columbia River	Pr Rapids Dam	01-Oct-92	1
12992	Columbia River	Pr Rapids Dam	01-Oct-92	1
15824	Columbia River	Pr Rapids Dam	22-Sep-94	1
15825	Columbia River	Pr Rapids Dam	22-Sep-94	1
15826	Columbia River	Pr Rapids Dam	22-Sep-94	1
15827	Columbia River	Pr Rapids Dam	22-Sep-94	1
16956	Columbia River	Pr Rapids Dam	24-Jul-95	1
16957	Columbia River	Pr Rapids Dam	24-Jul-95	1
16958	Columbia River	Pr Rapids Dam	24-Jul-95	1
16959	Columbia River	Pr Rapids Dam	24-Jul-95	1
18293	Columbia River	Pr Rapids Dam	15-Aug-96	1
18294	Columbia River	Pr Rapids Dam	15-Aug-96	1
18295	Columbia River	Pr Rapids Dam	15-Aug-96	1
18296	Columbia River	Pr Rapids Dam	15-Aug-96	1
19683	Columbia River	Pr Rapids Dam	18-Aug-97	1
19684	Columbia River	Pr Rapids Dam	18-Aug-97	1
19685	Columbia River	Pr Rapids Dam	18-Aug-97	1
20753	Columbia River	Pr Rapids Dam	10-Aug-98	1
20754	Columbia River	Pr Rapids Dam	10-Aug-98	1
20755	Columbia River	Pr Rapids Dam	10-Aug-98	1
20756	Columbia River	Pr Rapids Dam	10-Aug-98	1
23519	Columbia River	Pr Rapids Dam	03-Aug-99	1
23520	Columbia River	Pr Rapids Dam	03-Aug-99	1
23521	Columbia River	Pr Rapids Dam	03-Aug-99	1
23522	Columbia River	Pr Rapids Dam	03-Aug-99	1
24748	Columbia River	Pr Rapids Dam	07-Aug-00	1
24749	Columbia River	Pr Rapids Dam	07-Aug-00	1
26250	Columbia River	Pr Rapids Dam	19-Jul-01	1
26251	Columbia River	Pr Rapids Dam	19-Jul-01	1
27652	Columbia River	Vernita Bridge	28-Aug-01	1
29045	Columbia River	Pr Rapids Dam	23-Jul-02	1
29046	Columbia River	Pr Rapids Dam	23-Jul-02	1
30872	Columbia River	Pr Rapids Dam	14-Jul-03	1
30873	Columbia River	Pr Rapids Dam	14-Jul-03	1
4434247	Columbia River	RM 391	01-Jun-04	1
4444203	Columbia River	Pr Rapids Dam	01-Jun-04	1
4444204	Columbia River	Pr Rapids Dam	01-Jun-04	1
4444205	Columbia River	Pr Rapids Dam	01-Jun-04	1
4444206	Columbia River	Pr Rapids Dam	01-Jun-04	1
4444208	Columbia River	Wanapum Dam	01-Jun-04	1
4444209	Columbia River	Wanapum Dam	01-Jun-04	1
4444210	Columbia River	Wanapum Dam	01-Jun-04	1
B07NF5	Columbia River	Vernita Area	20-Nov-92	1
B07NF6	Columbia River	Vernita Area	20-Nov-92	1
B07NF7	Columbia River	Vernita Area	20-Nov-92	1
B07NF8	Columbia River	Vernita Area	20-Nov-92	1

Table A-1**Summary Table of Segment 1 Sediment Samples By Area, Site, Date, and Category**

Sample ID	Sample Area	Sample Site	Sample Date	Category
B0BRT6	Columbia River	Pr Rapids Dam	14-Apr-94	1
B0BRT8	Columbia River	Pr Rapids Dam	14-Apr-94	1
B0BRV0	Columbia River	Pr Rapids Dam	14-Apr-94	1
B0BRV2	Columbia River	Pr Rapids Dam	14-Apr-94	1
B0CSG9	Columbia River	Pr Rapids Dam	22-Sep-94	1
B0CSH0	Columbia River	Pr Rapids Dam	22-Sep-94	1
B0CSH1	Columbia River	Pr Rapids Dam	22-Sep-94	1
B0CSH2	Columbia River	Pr Rapids Dam	22-Sep-94	1
B0W3D5	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3D6	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3D7	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3D8	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3D9	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3F0	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3F1	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3F2	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3L1	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3L3	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3L5	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3L7	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3N2	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3N3	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3N4	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3N5	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3N6	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3N7	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3W2	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3W3	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3W4	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3W5	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3W6	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0W3W7	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0WFK9	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0WFL0	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0WFL1	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0WFL2	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0WFL3	Columbia River	Pr Rapids Dam	03-Aug-99	1
B0YWC1	Columbia River	Pr Rapids Dam	07-Aug-00	1
B0YWC2	Columbia River	Pr Rapids Dam	07-Aug-00	1
B0YWC3	Columbia River	Pr Rapids Dam	07-Aug-00	1
B0YWC4	Columbia River	Pr Rapids Dam	07-Aug-00	1
B0YWC5	Columbia river	Pr Rapids Dam	07-Aug-00	1
B0YWC7	Columbia river	Pr Rapids Dam	07-Aug-00	1
B0YXP6	Columbia river	Pr Rapids Dam	07-Aug-00	1
B0YXP7	Columbia river	Pr Rapids Dam	07-Aug-00	1
B12CL9	Columbia River	Pr Rapids Dam	19-Jul-01	1
B12CM1	Columbia River	Pr Rapids Dam	19-Jul-01	1
B12CM2	Columbia River	Pr Rapids Dam	19-Jul-01	1

Table A-1
Summary Table of Segment 1 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
B12CM4	Columbia River	Pr Rapids Dam	19-Jul-01	1
B12CV1	Columbia River	Pr Rapids Dam	19-Jul-01	1
B12CV2	Columbia River	Pr Rapids Dam	19-Jul-01	1
B12RY5	Columbia River	Vernita BRG	28-Aug-01	1
B12RY7	Columbia River	Vernita BRG	28-Aug-01	1
B12T03	Columbia River	Vernita BRG	28-Aug-01	1
B14WF8	Columbia River	Pr Rapids Dam	23-Jul-02	1
B14WF9	Columbia River	Pr Rapids Dam	23-Jul-02	1
B14YM9	Columbia River	Pr Rapids Dam	23-Jul-02	1
B14YN0	Columbia River	Pr Rapids Dam	23-Jul-02	1
B14YN1	Columbia River	Pr Rapids Dam	23-Jul-02	1
B14YN2	Columbia River	Pr Rapids Dam	23-Jul-02	1
B14YN3	Columbia River	Pr Rapids Dam	23-Jul-02	1
B14YN5	Columbia River	Pr Rapids Dam	23-Jul-02	1
B176V1	Columbia River	Pr Rapids Dam	14-Jul-03	1
B176V2	Columbia River	Pr Rapids Dam	14-Jul-03	1
B17701	Columbia River	Pr Rapids Dam	14-Jul-03	1
B17702	Columbia River	Pr Rapids Dam	14-Jul-03	1
B17703	Columbia River	Pr Rapids Dam	14-Jul-03	1
B17704	Columbia River	Pr Rapids Dam	14-Jul-03	1
B17705	Columbia River	Pr Rapids Dam	14-Jul-03	1
B17707	Columbia River	Pr Rapids Dam	14-Jul-03	1
B199N9	Columbia River	Wanapum Dam	04-Jun-04	1
B19PK8	Columbia River	Pr Rapids Dam	12-Jul-04	1
B19PK9	Columbia River	Pr Rapids Dam	12-Jul-04	1
B19PL0	Columbia River	Pr Rapids Dam	12-Jul-04	1
B19PL1	Columbia River	Pr Rapids Dam	12-Jul-04	1
B19PL2	Columbia River	Pr Rapids Dam	12-Jul-04	1
B19PL4	Columbia River	Pr Rapids Dam	12-Jul-04	1
B19TF7	Columbia River	Pr Rapids Dam	12-Jul-04	1
B19TF8	Columbia River	Pr Rapids Dam	12-Jul-04	1
B1B7R2	Columbia River	Pr Rapids Dam	20-Sep-04	1
B1B7R3	Columbia River	Pr Rapids Dam	20-Sep-04	1
B1B7R4	Columbia River	Pr Rapids Dam	20-Sep-04	1
B1B7W2	Columbia River	Pr Rapids Dam	20-Sep-04	1
B1B7W3	Columbia River	Pr Rapids Dam	20-Sep-04	1
B1B7W4	Columbia River	Pr Rapids Dam	20-Sep-04	1
B1B7W5	Columbia River	Pr Rapids Dam	20-Sep-04	1
CRE-3	Columbia River	RM 440	01-Oct-99	2
GHI-1	Columbia River	RM 417.5	01-Oct-99	2
GHI-2	Columbia River	RM 417.5	01-Oct-99	2
GHI-3	Columbia River	RM 417.5	01-Oct-99	2
GHI-4	Columbia River	RM 417.5	01-Oct-99	2
GHI-5	Columbia River	RM 417.5	01-Oct-99	2
GOO-1	Columbia River	RM 398.5	01-Oct-99	2
GOO-2	Columbia River	RM 398.5	01-Oct-99	2
GOO-3A	Columbia River	RM 398.5	01-Oct-99	2
GOO-3B	Columbia River	RM 398.5	01-Oct-99	2

Table A-1
Summary Table of Segment 1 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
GOO-3C	Columbia River	RM 398.5	01-Oct-99	2
GOO-4	Columbia River	RM 398.5	01-Oct-99	2
HAN-5	Columbia River	RM 405.5	01-Oct-99	2
HR002V	Columbia River	Vantage WA	07-Oct-03	1
PEW-1sed	Columbia River	RM 354.4	16-Jul-92	2
RIT dep-1	Columbia River	RM 452	01-Oct-99	2
SCA-3A	Columbia River	RM 428	01-Oct-99	2
SCA-3B	Columbia River	RM 428	01-Oct-99	2
SCA-3C	Columbia River	RM 428	01-Oct-99	2
SCA-4	Columbia River	RM 428	01-Oct-99	2
SCA-5	Columbia River	RM 428	01-Oct-99	2
SS-1-1	Columbia River	RM 440	01-Oct-99	2
SS-1-2	Columbia River	RM 440	01-Oct-99	2
SS-1-3	Columbia River	RM 440	01-Oct-99	2
SS-2-1	Columbia River	RM 440	01-Oct-99	2
SS-2-2	Columbia River	RM 440	01-Oct-99	2
SS-2-3	Columbia River	RM 440	01-Oct-99	2
SS-3-1	Columbia River	RM 440	01-Oct-99	2
SS-3-2	Columbia River	RM 440	01-Oct-99	2
SS-3-3	Columbia River	RM 440	01-Oct-99	2
SS-4-1	Columbia River	RM 440	01-Oct-99	2
SS-4-2	Columbia River	RM 440	01-Oct-99	2
SS-4-3	Columbia River	RM 440	01-Oct-99	2
4444202	Lower Crab Creek	RM 5	01-Jun-04	1
45A070-7	Wenatchee River	Wenatchee	01-Sep-84	2

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	EB NR Wenatchee	01258001	June 20, 2001	1
Columbia River	Near Vernita	133303	May 5, 2004	1
Columbia River	Near Vernita	41949	May 10, 2000	1
Columbia River	Near Vernita	41908	July 12, 2000	1
Columbia River	Near Vernita	41886	April 12, 2000	1
Columbia River	Near Vernita	41840	June 14, 2000	1
Columbia River	Near Vernita	41555	October 3, 2000	1
Columbia River	Near Vernita	41466	August 9, 2000	1
Columbia River	Near Vernita	41313	September 13, 2000	1
Columbia River	Near Vernita	406008	October 3, 2000	1
Columbia River	Near Vernita	376169	September 13, 2000	1
Columbia River	Near Vernita	132999	February 11, 2004	1
Columbia River	Near Vernita	286169	July 12, 2000	1
Columbia River	Near Vernita	66169	February 9, 2000	1
Columbia River	Near Vernita	26169	January 12, 2000	1
Columbia River	Near Vernita	246169	June 14, 2000	1
Columbia River	Near Vernita	196169	May 10, 2000	1
Columbia River	Near Vernita	156169	April 12, 2000	1
Columbia River	Near Vernita	1366008	September 4, 2001	1
Columbia River	Near Vernita	134536	June 6, 2005	1
Columbia River	Near Vernita	134458	May 2, 2005	1
Columbia River	Near Vernita	133238	April 14, 2004	1
Columbia River	Near Vernita	133090	March 10, 2004	1
Columbia River	Near Vernita	326169	August 9, 2000	1
Columbia River	Near Vernita	99026169	January 13, 1999	1
Columbia River	Near Vernita	99506169	December 15, 1999	1
Columbia River	Near Vernita	99466169	November 17, 1999	1
Columbia River	Near Vernita	99416169	October 13, 1999	1
Columbia River	Near Vernita	99376169	September 15, 1999	1
Columbia River	Near Vernita	99326169	August 11, 1999	1
Columbia River	Near Vernita	99286169	July 14, 1999	1
Columbia River	Near Vernita	99236169	June 9, 1999	1
Columbia River	Near Vernita	99186169	May 5, 1999	1
Columbia River	Near Vernita	99146169	April 7, 1999	1
Columbia River	Near Vernita	456008	November 7, 2000	1
Columbia River	Near Vernita	99066169	February 10, 1999	1
Columbia River	Near Vernita	496008	December 5, 2000	1
Columbia River	Near Vernita	87081	August 14, 2001	1
Columbia River	Near Vernita	86895	June 5, 2001	1
Columbia River	Near Vernita	86779	May 8, 2001	1
Columbia River	Near Vernita	86688	April 3, 2001	1
Columbia River	Near Vernita	86594	March 6, 2001	1
Columbia River	Near Vernita	86500	February 6, 2001	1
Columbia River	Near Vernita	86430	January 16, 2001	1
Columbia River	Near Vernita	86341	December 5, 2000	1
Columbia River	Near Vernita	85847	November 7, 2000	1
Columbia River	Near Vernita	86994	July 10, 2001	1
Columbia River	Near Vernita	99106169	March 10, 1999	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Near Vernita	131036	May 8, 2002	1
Columbia River	Near Vernita	130522	October 10, 2001	1
Columbia River	Near Vernita	130655	November 14, 2001	1
Columbia River	Near Vernita	130674	December 5, 2001	1
Columbia River	Near Vernita	130696	January 9, 2002	1
Columbia River	Near Vernita	130766	February 6, 2002	1
Columbia River	Near Vernita	131675	December 4, 2002	1
Columbia River	Near Vernita	130967	April 3, 2002	1
Columbia River	Near Vernita	1196008	May 8, 2001	1
Columbia River	Near Vernita	131197	June 12, 2002	1
Columbia River	Near Vernita	131218	July 10, 2002	1
Columbia River	Near Vernita	131381	August 7, 2002	1
Columbia River	Near Vernita	131401	September 11, 2002	1
Columbia River	Near Vernita	131493	October 9, 2002	1
Columbia River	Near Vernita	131586	November 6, 2002	1
Columbia River	Near Vernita	130878	March 6, 2002	1
Columbia River	Near Vernita	133824	November 3, 2004	1
Columbia River	Near Vernita	87126	September 4, 2001	1
Columbia River	Near Vernita	132910	January 14, 2004	1
Columbia River	Near Vernita	133373	June 9, 2004	1
Columbia River	Near Vernita	133483	July 14, 2004	1
Columbia River	Near Vernita	133571	August 4, 2004	1
Columbia River	Near Vernita	1336008	August 14, 2001	1
Columbia River	Near Vernita	1286008	July 10, 2001	1
Columbia River	Near Vernita	133716	October 4, 2004	1
Columbia River	Near Vernita	1236008	June 5, 2001	1
Columbia River	Near Vernita	133923	December 6, 2004	1
Columbia River	Near Vernita	134126	February 7, 2005	1
Columbia River	Near Vernita	1066008	February 6, 2001	1
Columbia River	Near Vernita	1146008	April 3, 2001	1
Columbia River	Near Vernita	116169	March 15, 2000	1
Columbia River	Near Vernita	1106008	March 6, 2001	1
Columbia River	Near Vernita	133663	September 15, 2004	1
Columbia River	Near Vernita	131879	February 5, 2003	1
Columbia River	Near Vernita	132260	June 4, 2003	1
Columbia River	Near Vernita	132111	April 9, 2003	1
Columbia River	Near Vernita	131946	March 5, 2003	1
Columbia River	Near Vernita	132170	May 7, 2003	1
Columbia River	Near Vernita	132818	December 9, 2003	1
Columbia River	Near Vernita	132372	July 9, 2003	1
Columbia River	Near Vernita	132439	August 6, 2003	1
Columbia River	Near Vernita	132528	September 10, 2003	1
Columbia River	Near Vernita	131788	January 8, 2003	1
Columbia River	Near Vernita	132641	October 8, 2003	1
Columbia River	Near Vernita	132728	November 5, 2003	1
Columbia River	Near Vernita	1036008	January 16, 2001	1
Columbia River	NORTHPORT WA	1408080	September 10, 2001	1
Columbia River	NORTHPORT WA	2118105	February 11, 2002	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	NORTHPORT WA	2068080	January 14, 2002	1
Columbia River	NORTHPORT WA	2158155	March 11, 2002	1
Columbia River	NORTHPORT WA	2018080	December 3, 2001	1
Columbia River	NORTHPORT WA	1468155	October 15, 2001	1
Columbia River	NORTHPORT WA	2178180	April 8, 2002	1
Columbia River	NORTHPORT WA	1368080	August 6, 2001	1
Columbia River	NORTHPORT WA	1498100	November 5, 2001	1
Columbia River	NORTHPORT WA	2228080	May 12, 2002	1
Columbia River	NORTHPORT WA	2268155	June 3, 2002	1
Columbia River	NORTHPORT WA	1286057	July 9, 2001	1
Columbia River	Pr Rapids Dam	24568	February 2, 2000	1
Columbia River	Pr Rapids Dam	29027	February 6, 2002	1
Columbia River	Pr Rapids Dam	30845	July 10, 2003	1
Columbia River	Pr Rapids Dam	30855	February 5, 2003	1
Columbia River	Pr Rapids Dam	33136	July 8, 2004	1
Columbia River	Pr Rapids Dam	33142	February 4, 2004	1
Columbia River	Pr Rapids Dam	26202	June 23, 2001	1
Columbia River	Pr Rapids Dam	24557	June 29, 2000	1
Columbia River	Pr Rapids Dam	23425	November 3, 1999	1
Columbia River	Pr Rapids Dam	23423	May 5, 1999	1
Columbia River	Pr Rapids Dam	29017	June 27, 2002	1
Columbia River	Pr Rapids Dam	26213	January 31, 2001	1
Columbia River	Pr Rapids River	B18VH5	July 8, 2004	1
Columbia River	Pr Rapids River	B1BCT8	January 5, 2005	1
Columbia River	Pr Rapids River	B1BD44	October 28, 2004	1
Columbia River	Pr Rapids River	B1BD45	November 23, 2004	1
Columbia River	Pr Rapids River	B1BD46	January 5, 2005	1
Columbia River	Pr Rapids River	B1BMR0	December 1, 2004	1
Columbia River	Pr Rapids River	B1BD31	October 28, 2004	1
Columbia River	Pr Rapids River	B1BD43	January 5, 2005	1
Columbia River	Pr Rapids River	B18VT0	May 6, 2004	1
Columbia River	Pr Rapids River	B18VV2	July 8, 2004	1
Columbia River	Pr Rapids River	B18VV3	April 28, 2004	1
Columbia River	Pr Rapids River	B18VV4	June 8, 2004	1
Columbia River	Pr Rapids River	B18VV5	July 8, 2004	1
Columbia River	Pr Rapids River	B19223	June 8, 2004	1
Columbia River	Pr Rapids River	B19B08	July 8, 2004	1
Columbia River	Pr Rapids River	B1BW13	January 5, 2005	1
Columbia River	Pr Rapids River	B1B604	October 1, 2004	1
Columbia River	Pr Rapids River	B18761	April 1, 2004	1
Columbia River	Pr Rapids River	B19XX9	August 31, 2004	1
Columbia River	Pr Rapids River	B19M38	October 1, 2004	1
Columbia River	Pr Rapids River	B19M37	August 31, 2004	1
Columbia River	Pr Rapids River	B19M36	August 4, 2004	1
Columbia River	Pr Rapids River	B19M35	October 1, 2004	1
Columbia River	Pr Rapids River	B19M25	August 4, 2004	1
Columbia River	Pr Rapids River	B161R0	January 8, 2003	1
Columbia River	Pr Rapids River	B18D84	March 2, 2004	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Pr Rapids River	B19LT2	October 6, 2004	1
Columbia River	Pr Rapids River	B18763	March 2, 2004	1
Columbia River	Pr Rapids River	B183H6	January 8, 2004	1
Columbia River	Pr Rapids River	B186W3	April 1, 2004	1
Columbia River	Pr Rapids River	B18746	February 4, 2004	1
Columbia River	Pr Rapids River	B18764	April 1, 2004	1
Columbia River	Pr Rapids River	B15JY4	January 8, 2003	1
Columbia River	Pr Rapids River	B18K74	April 1, 2004	1
Columbia River	Pr Rapids River	B17P39	January 8, 2004	1
Columbia River	Pr Rapids River	B17NT2	January 8, 2004	1
Columbia River	Pr Rapids River	B17P42	January 8, 2004	1
Columbia River	Pr Rapids River	B18762	February 4, 2004	1
Columbia River	Priest Rapids	B114V6	April 4, 2001	1
Columbia River	Priest Rapids	B11C04	March 1, 2001	1
Columbia River	Priest Rapids	B11LH3	June 28, 2001	1
Columbia River	Priest Rapids	B114V4	February 7, 2001	1
Columbia River	Priest Rapids	B11J40	April 4, 2001	1
Columbia River	Priest Rapids	B114T8	March 7, 2001	1
Columbia River	Priest Rapids	B114T9	April 4, 2001	1
Columbia River	Priest Rapids	B114V3	April 4, 2001	1
Columbia River	Priest Rapids	B15948	October 2, 2002	1
Columbia River	Priest Rapids	B103W8	October 5, 2000	1
Columbia River	Priest Rapids	B114V5	March 7, 2001	1
Columbia River	Priest Rapids	B15VN2	November 26, 2002	1
Columbia River	Priest Rapids	B15K74	October 30, 2002	1
Columbia River	Priest Rapids	B15K91	October 30, 2002	1
Columbia River	Priest Rapids	B15K84	January 8, 2003	1
Columbia River	Priest Rapids	B15K85	October 30, 2002	1
Columbia River	Priest Rapids	B15K86	November 26, 2002	1
Columbia River	Priest Rapids	B15K87	January 8, 2003	1
Columbia River	Priest Rapids	B15K90	January 8, 2003	1
Columbia River	Priest Rapids	B15K92	November 26, 2002	1
Columbia River	Priest Rapids	B15K93	January 8, 2003	1
Columbia River	Priest Rapids	B16PK6	May 28, 2003	1
Columbia River	Priest Rapids	B10C13	November 2, 2000	1
Columbia River	Priest Rapids	B10C26	November 2, 2000	1
Columbia River	Priest Rapids	B10C25	December 28, 2000	1
Columbia River	Priest Rapids	B10BR0	January 4, 2001	1
Columbia River	Priest Rapids	B0YW65	September 7, 2000	1
Columbia River	Priest Rapids	B0YKX8	October 5, 2000	1
Columbia River	Priest Rapids	B16P81	July 10, 2003	1
Columbia River	Priest Rapids	B16PJ4	April 30, 2003	1
Columbia River	Priest Rapids	B10C28	December 28, 2000	1
Columbia River	Priest Rapids	B16PK5	April 30, 2003	1
Columbia River	Priest Rapids	B10C31	December 28, 2000	1
Columbia River	Priest Rapids	B16PK7	July 10, 2003	1
Columbia River	Priest Rapids	B16PL0	July 10, 2003	1
Columbia River	Priest Rapids	B11LR6	May 2, 2001	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Priest Rapids	B14408	April 3, 2002	1
Columbia River	Priest Rapids	B16WD8	May 28, 2003	1
Columbia River	Priest Rapids	B16PL1	April 30, 2003	1
Columbia River	Priest Rapids	B16PL2	May 28, 2003	1
Columbia River	Priest Rapids	B16PL3	July 10, 2003	1
Columbia River	Priest Rapids	B16PK4	July 10, 2003	1
Columbia River	Priest Rapids	B16876	April 2, 2003	1
Columbia River	Priest Rapids	B114T6	April 4, 2001	1
Columbia River	Priest Rapids	B114P8	January 31, 2001	1
Columbia River	Priest Rapids	B114F5	April 4, 2001	1
Columbia River	Priest Rapids	B110Y4	January 4, 2001	1
Columbia River	Priest Rapids	B10MP5	November 29, 2000	1
Columbia River	Priest Rapids	B10C34	December 28, 2000	1
Columbia River	Priest Rapids	B167W7	April 9, 2003	1
Columbia River	Priest Rapids	B16858	February 5, 2003	1
Columbia River	Priest Rapids	B10C27	November 29, 2000	1
Columbia River	Priest Rapids	B16875	March 5, 2003	1
Columbia River	Priest Rapids	B114T7	February 7, 2001	1
Columbia River	Priest Rapids	B16879	April 2, 2003	1
Columbia River	Priest Rapids	B16880	February 5, 2003	1
Columbia River	Priest Rapids	B16881	March 5, 2003	1
Columbia River	Priest Rapids	B16882	April 2, 2003	1
Columbia River	Priest Rapids	B16BY2	March 5, 2003	1
Columbia River	Priest Rapids	B16JL8	April 2, 2003	1
Columbia River	Priest Rapids	B10C33	November 29, 2000	1
Columbia River	Priest Rapids	B10C32	November 2, 2000	1
Columbia River	Priest Rapids	B16874	February 5, 2003	1
Columbia River	Priest Rapids	B14B49	June 27, 2002	1
Columbia River	Priest Rapids	B14B58	June 27, 2002	1
Columbia River	Priest Rapids	B13VK3	April 3, 2002	1
Columbia River	Priest Rapids	B13VK4	February 6, 2002	1
Columbia River	Priest Rapids	B13VK5	March 7, 2002	1
Columbia River	Priest Rapids	B13VK6	April 3, 2002	1
Columbia River	Priest Rapids	B140P7	March 7, 2002	1
Columbia River	Priest Rapids	B13VJ8	March 7, 2002	1
Columbia River	Priest Rapids	B16WL1	April 30, 2003	1
Columbia River	Priest Rapids	B13VJ7	February 6, 2002	1
Columbia River	Priest Rapids	B14B50	May 1, 2002	1
Columbia River	Priest Rapids	B14B51	May 29, 2002	1
Columbia River	Priest Rapids	B14B52	June 27, 2002	1
Columbia River	Priest Rapids	B14B55	June 27, 2002	1
Columbia River	Priest Rapids	B14B56	May 1, 2002	1
Columbia River	Priest Rapids	B14B37	May 1, 2002	1
Columbia River	Priest Rapids	B149T6	July 2, 2002	1
Columbia River	Priest Rapids	B13109	December 27, 2001	1
Columbia River	Priest Rapids	B13CC6	November 27, 2001	1
Columbia River	Priest Rapids	B13L96	January 3, 2002	1
Columbia River	Priest Rapids	B13117	November 27, 2001	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Priest Rapids	B13116	November 1, 2001	1
Columbia River	Priest Rapids	B13115	December 27, 2001	1
Columbia River	Priest Rapids	B13112	December 27, 2001	1
Columbia River	Priest Rapids	B13VJ9	April 3, 2002	1
Columbia River	Priest Rapids	B13110	November 1, 2001	1
Columbia River	Priest Rapids	B14JF2	May 29, 2002	1
Columbia River	Priest Rapids	B130Y7	November 1, 2001	1
Columbia River	Priest Rapids	B130M9	January 3, 2002	1
Columbia River	Priest Rapids	B12T28	October 2, 2001	1
Columbia River	Priest Rapids	B13V74	April 3, 2002	1
Columbia River	Priest Rapids	B13VF8	February 6, 2002	1
Columbia River	Priest Rapids	B13VJ6	April 3, 2002	1
Columbia River	Priest Rapids	B13111	November 27, 2001	1
Columbia River	Priest Rapids	B153T9	September 4, 2002	1
Columbia River	Priest Rapids	B14B57	May 29, 2002	1
Columbia River	Priest Rapids	B14WY0	August 7, 2002	1
Columbia River	Priest Rapids	B14WY1	September 4, 2002	1
Columbia River	Priest Rapids	B14WY2	October 2, 2002	1
Columbia River	Priest Rapids	B14WY6	October 2, 2002	1
Columbia River	Priest Rapids	B14WY7	August 7, 2002	1
Columbia River	Priest Rapids	B14WW5	August 7, 2002	1
Columbia River	Priest Rapids	B14WY9	October 2, 2002	1
Columbia River	Priest Rapids	B14WJ9	October 2, 2002	1
Columbia River	Priest Rapids	B11LV6	May 30, 2001	1
Columbia River	Priest Rapids	B11LV5	May 2, 2001	1
Columbia River	Priest Rapids	B11LV4	June 28, 2001	1
Columbia River	Priest Rapids	B11LV1	June 28, 2001	1
Columbia River	Priest Rapids	B11LV0	May 30, 2001	1
Columbia River	Priest Rapids	B11LT9	May 2, 2001	1
Columbia River	Priest Rapids	B14WY8	September 4, 2002	1
Columbia River	Priest Rapids	B12849	August 9, 2001	1
Columbia River	Priest Rapids	B12JR7	September 5, 2001	1
Columbia River	Priest Rapids	B12858	October 2, 2001	1
Columbia River	Priest Rapids	B12857	September 5, 2001	1
Columbia River	Priest Rapids	B14RL3	June 27, 2002	1
Columbia River	Priest Rapids	B12856	August 9, 2001	1
Columbia River	Priest Rapids	B12855	October 2, 2001	1
Columbia River	Priest Rapids	B14WX9	October 2, 2002	1
Columbia River	Priest Rapids	B12850	September 5, 2001	1
Columbia River	Priest Rapids	B11LT8	June 28, 2001	1
Columbia River	Priest Rapids	B12848	October 2, 2001	1
Columbia River	Priest Rapids	B12834	August 9, 2001	1
Columbia River	Priest Rapids	B127T9	October 2, 2001	1
Columbia River	Priest Rapids	B124L7	June 28, 2001	1
Columbia River	Priest Rapids	B11WR8	May 30, 2001	1
Columbia River	Priest Rapids	B11LV7	June 28, 2001	1
Columbia River	Priest Rapids	B12851	October 2, 2001	1
Columbia River	Priest Rapids	B0X7L3	March 8, 2000	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Priest Rapids	B0WJB2	December 29, 1999	1
Columbia River	Priest Rapids	B0WJB3	November 3, 1999	1
Columbia River	Priest Rapids	B0WJB4	December 1, 1999	1
Columbia River	Priest Rapids	B0WJB5	December 29, 1999	1
Columbia River	Priest Rapids	B17P41	November 25, 2003	1
Columbia River	Priest Rapids	B0TM54	March 3, 1999	1
Columbia River	Priest Rapids	B16WL3	May 7, 2003	1
Columbia River	Priest Rapids	B0THJ8	April 7, 1999	1
Columbia River	Priest Rapids	B0THJ7	February 24, 1999	1
Columbia River	Priest Rapids	B0X469	December 29, 1999	1
Columbia River	Priest Rapids	B0X775	April 5, 2000	1
Columbia River	Priest Rapids	B0X7J0	February 2, 2000	1
Columbia River	Priest Rapids	B0X7M1	April 5, 2000	1
Columbia River	Priest Rapids	B0X7L2	January 26, 2000	1
Columbia River	Priest Rapids	B0WJ97	November 3, 1999	1
Columbia River	Priest Rapids	B0X7L4	April 5, 2000	1
Columbia River	Priest Rapids	B0THJ6	January 27, 1999	1
Columbia River	Priest Rapids	B0X7L8	April 5, 2000	1
Columbia River	Priest Rapids	B0V535	June 30, 1999	1
Columbia River	Priest Rapids	B0X7L9	January 26, 2000	1
Columbia River	Priest Rapids	B0WPR4	December 1, 1999	1
Columbia River	Priest Rapids	B17VB4	November 25, 2003	1
Columbia River	Priest Rapids	B17P47	November 25, 2003	1
Columbia River	Priest Rapids	B17P46	October 29, 2003	1
Columbia River	Priest Rapids	B13118	December 27, 2001	1
Columbia River	Priest Rapids	B17P40	October 29, 2003	1
Columbia River	Priest Rapids	B17P27	October 29, 2003	1
Columbia River	Priest Rapids	B0X7L1	April 5, 2000	1
Columbia River	Priest Rapids	B0VTY8	October 6, 1999	1
Columbia River	Priest Rapids	B0V536	May 5, 1999	1
Columbia River	Priest Rapids	B0V537	June 2, 1999	1
Columbia River	Priest Rapids	B0V538	June 30, 1999	1
Columbia River	Priest Rapids	B0V541	June 30, 1999	1
Columbia River	Priest Rapids	B0V542	May 5, 1999	1
Columbia River	Priest Rapids	B0V543	June 2, 1999	1
Columbia River	Priest Rapids	B0V544	June 30, 1999	1
Columbia River	Priest Rapids	B0VCX9	June 2, 1999	1
Columbia River	Priest Rapids	B0VL42	June 30, 1999	1
Columbia River	Priest Rapids	B0VTL8	October 6, 1999	1
Columbia River	Priest Rapids	B0VTX3	July 28, 1999	1
Columbia River	Priest Rapids	B0VTY5	October 6, 1999	1
Columbia River	Priest Rapids	B0WJ99	December 29, 1999	1
Columbia River	Priest Rapids	B0VTY7	September 8, 1999	1
Columbia River	Priest Rapids	B0WJ98	December 1, 1999	1
Columbia River	Priest Rapids	B0VV01	October 6, 1999	1
Columbia River	Priest Rapids	B0VV02	July 28, 1999	1
Columbia River	Priest Rapids	B0VV03	September 8, 1999	1
Columbia River	Priest Rapids	B0VV04	October 6, 1999	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Priest Rapids	B0W388	September 1, 1999	1
Columbia River	Priest Rapids	B0W8Y9	October 6, 1999	1
Columbia River	Priest Rapids	B0V520	May 5, 1999	1
Columbia River	Priest Rapids	B0V4R7	June 30, 1999	1
Columbia River	Priest Rapids	B0TW33	April 7, 1999	1
Columbia River	Priest Rapids	B0WJ08	December 29, 1999	1
Columbia River	Priest Rapids	B0WJ81	November 3, 1999	1
Columbia River	Priest Rapids	B0WJ96	December 29, 1999	1
Columbia River	Priest Rapids	B0X7M0	March 8, 2000	1
Columbia River	Priest Rapids	B0VTY6	July 28, 1999	1
Columbia River	Priest Rapids	B0YKV4	August 10, 2000	1
Columbia River	Priest Rapids	B175H7	September 30, 2003	1
Columbia River	Priest Rapids	B175H6	September 3, 2003	1
Columbia River	Priest Rapids	B175H5	August 8, 2003	1
Columbia River	Priest Rapids	B175H4	September 30, 2003	1
Columbia River	Priest Rapids	B175F4	August 8, 2003	1
Columbia River	Priest Rapids	B17561	September 30, 2003	1
Columbia River	Priest Rapids	B172K0	June 25, 2003	1
Columbia River	Priest Rapids	B0XVR5	June 29, 2000	1
Columbia River	Priest Rapids	B0YB64	June 29, 2000	1
Columbia River	Priest Rapids	B0XH22	March 8, 2000	1
Columbia River	Priest Rapids	B175J0	September 30, 2003	1
Columbia River	Priest Rapids	B0YKJ9	October 5, 2000	1
Columbia River	Priest Rapids	B172F1	June 18, 2003	1
Columbia River	Priest Rapids	B0YKW8	October 5, 2000	1
Columbia River	Priest Rapids	B0YKW9	August 10, 2000	1
Columbia River	Priest Rapids	B0YKX0	September 7, 2000	1
Columbia River	Priest Rapids	B0YKX1	October 5, 2000	1
Columbia River	Priest Rapids	B0YKX5	October 5, 2000	1
Columbia River	Priest Rapids	B0YKX6	August 10, 2000	1
Columbia River	Priest Rapids	B0YKX7	September 7, 2000	1
Columbia River	Priest Rapids	B171K6	June 5, 2003	1
Columbia River	Priest Rapids	B171D2	July 10, 2003	1
Columbia River	Priest Rapids	B17140	May 28, 2003	1
Columbia River	Priest Rapids	B170X7	May 21, 2003	1
Columbia River	Priest Rapids	B17214	June 12, 2003	1
Columbia River	Priest Rapids	B0THJ0	January 27, 1999	1
Columbia River	Priest Rapids	B0XVP8	May 31, 2000	1
Columbia River	Priest Rapids	B0Y231	May 31, 2000	1
Columbia River	Priest Rapids	B0XVP7	May 3, 2000	1
Columbia River	Priest Rapids	B175J1	August 8, 2003	1
Columbia River	Priest Rapids	B0XVP6	June 29, 2000	1
Columbia River	Priest Rapids	B0XVN6	May 3, 2000	1
Columbia River	Priest Rapids	B0XVP9	June 29, 2000	1
Columbia River	Priest Rapids	B0XVD3	June 29, 2000	1
Columbia River	Priest Rapids	B0THJ1	February 24, 1999	1
Columbia River	Priest Rapids	B0THJ2	April 7, 1999	1
Columbia River	Priest Rapids	B17DJ7	September 30, 2003	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Priest Rapids	B170P7	May 13, 2003	1
Columbia River	Priest Rapids	B0THH9	April 7, 1999	1
Columbia River	Priest Rapids	B0XP16	April 5, 2000	1
Columbia River	Priest Rapids	B0THF7	February 3, 1999	1
Columbia River	Priest Rapids	B0TH62	April 7, 1999	1
Columbia River	Priest Rapids	B0XVR2	June 29, 2000	1
Columbia River	Priest Rapids	B0XVR3	May 3, 2000	1
Columbia River	Priest Rapids	B0XVR4	May 31, 2000	1
Columbia River	Priest Rapids	B179R2	September 3, 2003	1
Columbia River	Priest Rapids	B175J3	September 30, 2003	1
Columbia River	Priest Rapids	B175J2	September 3, 2003	1
Columbia River	Priest Rapids	B0THJ5	April 7, 1999	1
Columbia River	Vantage WA I90B	HR001V	October 7, 2003	1
Columbia River	Vernita	B0VWV8	July 1, 1999	1
Columbia River	Vernita	B0VWW4	July 1, 1999	1
Columbia River	VERNITA 1	27645	August 27, 2001	1
Columbia River	VERNITA 2	27646	August 27, 2001	1
Columbia River	VERNITA 3	27647	August 27, 2001	1
Columbia River	VERNITA 4	27648	August 27, 2001	1
Columbia River	Vernita BRG1	B13J18	November 14, 2001	1
Columbia River	Vernita BRG1	B12RN9	August 27, 2001	1
Columbia River	Vernita BRG1	B12RL5	August 27, 2001	1
Columbia River	Vernita BRG1	B12RN4	August 27, 2001	1
Columbia River	Vernita BRG1	B13J17	November 14, 2001	1
Columbia River	Vernita BRG1	B12RP0	August 27, 2001	1
Columbia River	Vernita BRG1	B13J19	November 14, 2001	1
Columbia River	Vernita BRG1	B12RP9	August 27, 2001	1
Columbia River	Vernita BRG2	B12RN7	August 27, 2001	1
Columbia River	Vernita BRG2	B12RP4	August 27, 2001	1
Columbia River	Vernita BRG2	B12RP3	August 27, 2001	1
Columbia River	Vernita BRG2	B12RL3	August 27, 2001	1
Columbia River	Vernita BRG2	B12RR1	August 27, 2001	1
Columbia River	Vernita BRG3	B12RR3	August 27, 2001	1
Columbia River	Vernita BRG4	B12T11	August 27, 2001	1
Columbia River	Vernita1 HRM0.3	B0V228	June 11, 1999	1
Columbia River	Vernita1 HRM0.3	B0V256	June 11, 1999	1
Columbia River	Vernita1 HRM0.3	B12T87	September 7, 2001	1
Columbia River	Vernita1 HRM0.3	B0V229	June 11, 1999	1
Columbia River	Vernita1 HRM0.3	B12T84	September 7, 2001	1
Columbia River	Vernita1 HRM0.3	B12TH6	September 7, 2001	1
Columbia River	Vernita1 HRM0.3	B12VM3	September 7, 2001	1
Columbia River	Vernita1 HRM0.3	B0V231	June 11, 1999	1
Columbia River	Vernita1 HRM0.3	B0YCD5	June 19, 2000	1
Columbia River	Vernita1 HRM0.3	B0X3X0	December 7, 1999	1
Columbia River	Vernita1 HRM0.3	B0XRW6	March 27, 2000	1
Columbia River	Vernita1 HRM0.3	B11241	December 4, 2000	1
Columbia River	Vernita1 HRM0.3	B11135	December 4, 2000	1
Columbia River	Vernita1 HRM0.3	B11125	December 4, 2000	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Vernita1 HRM0.3	B0XRK2	March 27, 2000	1
Columbia River	Vernita1 HRM0.3	B0YC92	June 19, 2000	1
Columbia River	Vernita1 HRM0.3	B0XRJ9	March 27, 2000	1
Columbia River	Vernita1 HRM0.3	B0YCD7	June 19, 2000	1
Columbia River	Vernita1 HRM0.3	B106N8	September 14, 2000	1
Columbia River	Vernita1 HRM0.3	B10688	September 14, 2000	1
Columbia River	Vernita1 HRM0.3	B10673	September 14, 2000	1
Columbia River	Vernita1 HRM0.3	B10671	September 14, 2000	1
Columbia River	Vernita1 HRM0.3	B0YCJ3	June 19, 2000	1
Columbia River	Vernita1 HRM0.3	B11123	December 4, 2000	1
Columbia River	Vernita1 HRM0.3	B0X3Y2	December 7, 1999	1
Columbia River	Vernita1 HRM0.3	B12521	June 14, 2001	1
Columbia River	Vernita1 HRM0.3	B12501	June 14, 2001	1
Columbia River	Vernita1 HRM0.3	B124Y9	June 14, 2001	1
Columbia River	Vernita1 HRM0.3	B124W1	June 14, 2001	1
Columbia River	Vernita1 HRM0.3	B0W969	September 10, 1999	1
Columbia River	Vernita1 HRM0.3	B0XRM8	March 27, 2000	1
Columbia River	Vernita1 HRM0.3	B0X3X2	December 7, 1999	1
Columbia River	Vernita1 HRM0.3	B0W932	September 10, 1999	1
Columbia River	Vernita1 HRM0.3	B0X455	December 7, 1999	1
Columbia River	Vernita1 HRM0.3	B11J26	February 27, 2001	1
Columbia River	Vernita1 HRM0.3	B11H49	February 27, 2001	1
Columbia River	Vernita1 HRM0.3	B11H39	February 27, 2001	1
Columbia River	Vernita1 HRM0.3	B11H37	February 27, 2001	1
Columbia River	Vernita1 HRM0.3	B13LF3	December 3, 2001	1
Columbia River	Vernita1 HRM0.3	B0WBH8	September 10, 1999	1
Columbia River	Vernita1 HRM0.3	B16352	December 9, 2002	1
Columbia River	Vernita1 HRM0.3	B147T3	March 25, 2002	1
Columbia River	Vernita1 HRM0.3	B16L97	March 24, 2003	1
Columbia River	Vernita1 HRM0.3	B16L95	March 24, 2003	1
Columbia River	Vernita1 HRM0.3	B1B701	September 13, 2004	1
Columbia River	Vernita1 HRM0.3	B1B6Y9	September 13, 2004	1
Columbia River	Vernita1 HRM0.3	B184P5	December 9, 2003	1
Columbia River	Vernita1 HRM0.3	B16KD6	March 24, 2003	1
Columbia River	Vernita1 HRM0.3	B14RV3	June 10, 2002	1
Columbia River	Vernita1 HRM0.3	B14RV4	June 10, 2002	1
Columbia River	Vernita1 HRM0.3	B19J66	June 25, 2004	1
Columbia River	Vernita1 HRM0.3	B14RW4	June 10, 2002	1
Columbia River	Vernita1 HRM0.3	B164J6	December 9, 2002	1
Columbia River	Vernita1 HRM0.3	B17CM3	September 4, 2003	1
Columbia River	Vernita1 HRM0.3	B183R5	December 9, 2003	1
Columbia River	Vernita1 HRM0.3	B1B460	September 13, 2004	1
Columbia River	Vernita1 HRM0.3	B19HN4	June 25, 2004	1
Columbia River	Vernita1 HRM0.3	B183R7	December 9, 2003	1
Columbia River	Vernita1 HRM0.3	B14RY6	June 10, 2002	1
Columbia River	Vernita1 HRM0.3	B16342	December 9, 2002	1
Columbia River	Vernita1 HRM0.3	B18V15	March 29, 2004	1
Columbia River	Vernita1 HRM0.3	B16340	December 9, 2002	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Vernita1 HRM0.3	B183T7	December 9, 2003	1
Columbia River	Vernita1 HRM0.3	B158H2	September 5, 2002	1
Columbia River	Vernita1 HRM0.3	B18TH5	March 29, 2004	1
Columbia River	Vernita1 HRM0.3	B158H7	September 5, 2002	1
Columbia River	Vernita1 HRM0.3	B158P2	September 5, 2002	1
Columbia River	Vernita1 HRM0.3	B15991	September 5, 2002	1
Columbia River	Vernita1 HRM0.3	B17HL9	September 4, 2003	1
Columbia River	Vernita1 HRM0.3	B13LF1	December 3, 2001	1
Columbia River	Vernita1 HRM0.3	B171W1	June 9, 2003	1
Columbia River	Vernita1 HRM0.3	B13LH3	December 3, 2001	1
Columbia River	Vernita1 HRM0.3	B17286	June 9, 2003	1
Columbia River	Vernita1 HRM0.3	B16LB7	March 24, 2003	1
Columbia River	Vernita1 HRM0.3	B171V9	June 9, 2003	1
Columbia River	Vernita1 HRM0.3	B17CD6	September 4, 2003	1
Columbia River	Vernita1 HRM0.3	B1BX61	December 6, 2004	1
Columbia River	Vernita1 HRM0.3	B171Y1	June 9, 2003	1
Columbia River	Vernita1 HRM0.3	B13LV4	December 3, 2001	1
Columbia River	Vernita1 HRM0.3	B1B747	September 13, 2004	1
Columbia River	Vernita1 HRM0.3	B1BW38	December 6, 2004	1
Columbia River	Vernita1 HRM0.3	B17CD8	September 4, 2003	1
Columbia River	Vernita1 HRM0.3	B146Y3	March 25, 2002	1
Columbia River	Vernita2 HRM0.3	B171V0	June 9, 2003	1
Columbia River	Vernita2 HRM0.3	B0YCC6	June 19, 2000	1
Columbia River	Vernita2 HRM0.3	B183R8	December 9, 2003	1
Columbia River	Vernita2 HRM0.3	B0YC93	June 19, 2000	1
Columbia River	Vernita2 HRM0.3	B16LB8	March 24, 2003	1
Columbia River	Vernita2 HRM0.3	B16343	December 9, 2002	1
Columbia River	Vernita2 HRM0.3	B16331	December 9, 2002	1
Columbia River	Vernita2 HRM0.3	B0YCD8	June 19, 2000	1
Columbia River	Vernita2 HRM0.3	B11136	December 4, 2000	1
Columbia River	Vernita2 HRM0.3	B183T8	December 9, 2003	1
Columbia River	Vernita2 HRM0.3	B13LD2	December 3, 2001	1
Columbia River	Vernita2 HRM0.3	B11H28	February 27, 2001	1
Columbia River	Vernita2 HRM0.3	B15992	September 5, 2002	1
Columbia River	Vernita2 HRM0.3	B171Y2	June 9, 2003	1
Columbia River	Vernita2 HRM0.3	B11H40	February 27, 2001	1
Columbia River	Vernita2 HRM0.3	B0X3Y3	December 7, 1999	1
Columbia River	Vernita2 HRM0.3	B171W2	June 9, 2003	1
Columbia River	Vernita2 HRM0.3	B11114	December 4, 2000	1
Columbia River	Vernita2 HRM0.3	B106N9	September 14, 2000	1
Columbia River	Vernita2 HRM0.3	B16L98	March 24, 2003	1
Columbia River	Vernita2 HRM0.3	B17CD9	September 4, 2003	1
Columbia River	Vernita2 HRM0.3	B0XRW7	March 27, 2000	1
Columbia River	Vernita2 HRM0.3	B16L86	March 24, 2003	1
Columbia River	Vernita2 HRM0.3	B17CM4	September 4, 2003	1
Columbia River	Vernita2 HRM0.3	B16KD7	March 24, 2003	1
Columbia River	Vernita2 HRM0.3	B10689	September 14, 2000	1
Columbia River	Vernita2 HRM0.3	B11H50	February 27, 2001	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Vernita2 HRM0.3	B16353	December 9, 2002	1
Columbia River	Vernita2 HRM0.3	B164J7	December 9, 2002	1
Columbia River	Vernita2 HRM0.3	B10668	September 14, 2000	1
Columbia River	Vernita2 HRM0.3	B10674	September 14, 2000	1
Columbia River	Vernita2 HRM0.3	B0XRK3	March 27, 2000	1
Columbia River	Vernita2 HRM0.3	B17287	June 9, 2003	1
Columbia River	Vernita2 HRM0.3	B11126	December 4, 2000	1
Columbia River	Vernita2 HRM0.3	B0XRJ0	March 27, 2000	1
Columbia River	Vernita2 HRM0.3	B17HM0	September 4, 2003	1
Columbia River	Vernita2 HRM0.3	B183P6	December 9, 2003	1
Columbia River	Vernita2 HRM0.3	B0XRM9	March 27, 2000	1
Columbia River	Vernita2 HRM0.3	B11242	December 4, 2000	1
Columbia River	Vernita2 HRM0.3	B17CC7	September 4, 2003	1
Columbia River	Vernita2 HRM0.3	B1BX62	December 6, 2004	1
Columbia River	Vernita2 HRM0.3	B14RT4	June 10, 2002	1
Columbia River	Vernita2 HRM0.3	B12502	June 14, 2001	1
Columbia River	Vernita2 HRM0.3	B12T75	September 7, 2001	1
Columbia River	Vernita2 HRM0.3	B0W970	September 10, 1999	1
Columbia River	Vernita2 HRM0.3	B0V257	June 11, 1999	1
Columbia River	Vernita2 HRM0.3	B14RW5	June 10, 2002	1
Columbia River	Vernita2 HRM0.3	B12522	June 14, 2001	1
Columbia River	Vernita2 HRM0.3	B0W933	September 10, 1999	1
Columbia River	Vernita2 HRM0.3	B12TH7	September 7, 2001	1
Columbia River	Vernita2 HRM0.3	B19J67	June 25, 2004	1
Columbia River	Vernita2 HRM0.3	B19HN5	June 25, 2004	1
Columbia River	Vernita2 HRM0.3	B0YCJ4	June 19, 2000	1
Columbia River	Vernita2 HRM0.3	B12VM4	September 7, 2001	1
Columbia River	Vernita2 HRM0.3	B0X3X3	December 7, 1999	1
Columbia River	Vernita2 HRM0.3	B1B461	September 13, 2004	1
Columbia River	Vernita2 HRM0.3	B1B6Y0	September 13, 2004	1
Columbia River	Vernita2 HRM0.3	B12T88	September 7, 2001	1
Columbia River	Vernita2 HRM0.3	B1B702	September 13, 2004	1
Columbia River	Vernita2 HRM0.3	B147T4	March 25, 2002	1
Columbia River	Vernita2 HRM0.3	B13LV5	December 3, 2001	1
Columbia River	Vernita2 HRM0.3	B1BW39	December 6, 2004	1
Columbia River	Vernita2 HRM0.3	B146Y4	March 25, 2002	1
Columbia River	Vernita2 HRM0.3	B1B748	September 13, 2004	1
Columbia River	Vernita2 HRM0.3	B14RV5	June 10, 2002	1
Columbia River	Vernita2 HRM0.3	B158H5	September 5, 2002	1
Columbia River	Vernita2 HRM0.3	B184P6	December 9, 2003	1
Columbia River	Vernita2 HRM0.3	B0V202	June 11, 1999	1
Columbia River	Vernita2 HRM0.3	B0X456	December 7, 1999	1
Columbia River	Vernita2 HRM0.3	B11J27	February 27, 2001	1
Columbia River	Vernita2 HRM0.3	B0V203	June 11, 1999	1
Columbia River	Vernita2 HRM0.3	B0X3W1	December 7, 1999	1
Columbia River	Vernita2 HRM0.3	B13LF4	December 3, 2001	1
Columbia River	Vernita2 HRM0.3	B158P3	September 5, 2002	1
Columbia River	Vernita2 HRM0.3	B0WBH9	September 10, 1999	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Vernita2 HRM0.3	B18TH6	March 29, 2004	1
Columbia River	Vernita2 HRM0.3	B14RY7	June 10, 2002	1
Columbia River	Vernita2 HRM0.3	B0V232	June 11, 1999	1
Columbia River	Vernita2 HRM0.3	B124Y0	June 14, 2001	1
Columbia River	Vernita2 HRM0.3	B124W2	June 14, 2001	1
Columbia River	Vernita2 HRM0.3	B13LH4	December 3, 2001	1
Columbia River	Vernita2 HRM0.3	B18V16	March 29, 2004	1
Columbia River	Vernita2 HRM0.3	B158F3	September 5, 2002	1
Columbia River	Vernita3 HRM0.3	B0YC94	June 19, 2000	1
Columbia River	Vernita3 HRM0.3	B171Y3	June 9, 2003	1
Columbia River	Vernita3 HRM0.3	B17288	June 9, 2003	1
Columbia River	Vernita3 HRM0.3	B0V258	June 11, 1999	1
Columbia River	Vernita3 HRM0.3	B0V204	June 11, 1999	1
Columbia River	Vernita3 HRM0.3	B17CC8	September 4, 2003	1
Columbia River	Vernita3 HRM0.3	B1BX63	December 6, 2004	1
Columbia River	Vernita3 HRM0.3	B0YCC7	June 19, 2000	1
Columbia River	Vernita3 HRM0.3	B0YCD9	June 19, 2000	1
Columbia River	Vernita3 HRM0.3	B0V205	June 11, 1999	1
Columbia River	Vernita3 HRM0.3	B0V233	June 11, 1999	1
Columbia River	Vernita3 HRM0.3	B1BW40	December 6, 2004	1
Columbia River	Vernita3 HRM0.3	B17HM1	September 4, 2003	1
Columbia River	Vernita3 HRM0.3	B0X3X4	December 7, 1999	1
Columbia River	Vernita3 HRM0.3	B0X3Y4	December 7, 1999	1
Columbia River	Vernita3 HRM0.3	B0X3W2	December 7, 1999	1
Columbia River	Vernita3 HRM0.3	B183T9	December 9, 2003	1
Columbia River	Vernita3 HRM0.3	B0X457	December 7, 1999	1
Columbia River	Vernita3 HRM0.3	B184P7	December 9, 2003	1
Columbia River	Vernita3 HRM0.3	B18TH7	March 29, 2004	1
Columbia River	Vernita3 HRM0.3	B183R9	December 9, 2003	1
Columbia River	Vernita3 HRM0.3	B18V17	March 29, 2004	1
Columbia River	Vernita3 HRM0.3	B0WBJ0	September 10, 1999	1
Columbia River	Vernita3 HRM0.3	B19J68	June 25, 2004	1
Columbia River	Vernita3 HRM0.3	B0W971	September 10, 1999	1
Columbia River	Vernita3 HRM0.3	B1B749	September 13, 2004	1
Columbia River	Vernita3 HRM0.3	B19HN6	June 25, 2004	1
Columbia River	Vernita3 HRM0.3	B0XRJ1	March 27, 2000	1
Columbia River	Vernita3 HRM0.3	B0W934	September 10, 1999	1
Columbia River	Vernita3 HRM0.3	B0XRK4	March 27, 2000	1
Columbia River	Vernita3 HRM0.3	B17CM5	September 4, 2003	1
Columbia River	Vernita3 HRM0.3	B0XRN0	March 27, 2000	1
Columbia River	Vernita3 HRM0.3	B1B462	September 13, 2004	1
Columbia River	Vernita3 HRM0.3	B1B6Y1	September 13, 2004	1
Columbia River	Vernita3 HRM0.3	B0XRW8	March 27, 2000	1
Columbia River	Vernita3 HRM0.3	B1B703	September 13, 2004	1
Columbia River	Vernita3 HRM0.3	B17CF0	September 4, 2003	1
Columbia River	Vernita3 HRM0.3	B183P7	December 9, 2003	1
Columbia River	Vernita3 HRM0.3	B15993	September 5, 2002	1
Columbia River	Vernita3 HRM0.3	B158F4	September 5, 2002	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Vernita3 HRM0.3	B158H6	September 5, 2002	1
Columbia River	Vernita3 HRM0.3	B11J28	February 27, 2001	1
Columbia River	Vernita3 HRM0.3	B158P4	September 5, 2002	1
Columbia River	Vernita3 HRM0.3	B11H51	February 27, 2001	1
Columbia River	Vernita3 HRM0.3	B11115	December 4, 2000	1
Columbia River	Vernita3 HRM0.3	B11H29	February 27, 2001	1
Columbia River	Vernita3 HRM0.3	B124Y1	June 14, 2001	1
Columbia River	Vernita3 HRM0.3	B16332	December 9, 2002	1
Columbia River	Vernita3 HRM0.3	B16344	December 9, 2002	1
Columbia River	Vernita3 HRM0.3	B11243	December 4, 2000	1
Columbia River	Vernita3 HRM0.3	B11137	December 4, 2000	1
Columbia River	Vernita3 HRM0.3	B16354	December 9, 2002	1
Columbia River	Vernita3 HRM0.3	B11127	December 4, 2000	1
Columbia River	Vernita3 HRM0.3	B11H41	February 27, 2001	1
Columbia River	Vernita3 HRM0.3	B146Y5	March 25, 2002	1
Columbia River	Vernita3 HRM0.3	B0YCJ5	June 19, 2000	1
Columbia River	Vernita3 HRM0.3	B13LD3	December 3, 2001	1
Columbia River	Vernita3 HRM0.3	B13LF5	December 3, 2001	1
Columbia River	Vernita3 HRM0.3	B12VM5	September 7, 2001	1
Columbia River	Vernita3 HRM0.3	B13LH5	December 3, 2001	1
Columbia River	Vernita3 HRM0.3	B12TH8	September 7, 2001	1
Columbia River	Vernita3 HRM0.3	B14RY8	June 10, 2002	1
Columbia River	Vernita3 HRM0.3	B13LV6	December 3, 2001	1
Columbia River	Vernita3 HRM0.3	B124W3	June 14, 2001	1
Columbia River	Vernita3 HRM0.3	B147T5	March 25, 2002	1
Columbia River	Vernita3 HRM0.3	B14RV6	June 10, 2002	1
Columbia River	Vernita3 HRM0.3	B12523	June 14, 2001	1
Columbia River	Vernita3 HRM0.3	B12503	June 14, 2001	1
Columbia River	Vernita3 HRM0.3	B14RW6	June 10, 2002	1
Columbia River	Vernita3 HRM0.3	B12T76	September 7, 2001	1
Columbia River	Vernita3 HRM0.3	B12T89	September 7, 2001	1
Columbia River	Vernita3 HRM0.3	B171W3	June 9, 2003	1
Columbia River	Vernita3 HRM0.3	B106P0	September 14, 2000	1
Columbia River	Vernita3 HRM0.3	B10690	September 14, 2000	1
Columbia River	Vernita3 HRM0.3	B16L87	March 24, 2003	1
Columbia River	Vernita3 HRM0.3	B16L99	March 24, 2003	1
Columbia River	Vernita3 HRM0.3	B16LB9	March 24, 2003	1
Columbia River	Vernita3 HRM0.3	B171V1	June 9, 2003	1
Columbia River	Vernita3 HRM0.3	B10669	September 14, 2000	1
Columbia River	Vernita3 HRM0.3	B164J8	December 9, 2002	1
Columbia River	Vernita3 HRM0.3	B10675	September 14, 2000	1
Columbia River	Vernita3 HRM0.3	B16KD8	March 24, 2003	1
Columbia River	Vernita4 HRM0.3	B16LB0	March 24, 2003	1
Columbia River	Vernita4 HRM0.3	B146Y6	March 25, 2002	1
Columbia River	Vernita4 HRM0.3	B16LC0	March 24, 2003	1
Columbia River	Vernita4 HRM0.3	B147T6	March 25, 2002	1
Columbia River	Vernita4 HRM0.3	B1B6Y2	September 13, 2004	1
Columbia River	Vernita4 HRM0.3	B1B463	September 13, 2004	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Vernita4 HRM0.3	B19J69	June 25, 2004	1
Columbia River	Vernita4 HRM0.3	B14RV7	June 10, 2002	1
Columbia River	Vernita4 HRM0.3	B14RT6	June 10, 2002	1
Columbia River	Vernita4 HRM0.3	B10670	September 14, 2000	1
Columbia River	Vernita4 HRM0.3	B1B704	September 13, 2004	1
Columbia River	Vernita4 HRM0.3	B12504	June 14, 2001	1
Columbia River	Vernita4 HRM0.3	B19HN7	June 25, 2004	1
Columbia River	Vernita4 HRM0.3	B12524	June 14, 2001	1
Columbia River	Vernita4 HRM0.3	B0W935	September 10, 1999	1
Columbia River	Vernita4 HRM0.3	B0W972	September 10, 1999	1
Columbia River	Vernita4 HRM0.3	B12TH9	September 7, 2001	1
Columbia River	Vernita4 HRM0.3	B0X458	December 7, 1999	1
Columbia River	Vernita4 HRM0.3	B0YCF0	June 19, 2000	1
Columbia River	Vernita4 HRM0.3	B0YJC6	June 19, 2000	1
Columbia River	Vernita4 HRM0.3	B12T77	September 7, 2001	1
Columbia River	Vernita4 HRM0.3	B13LF6	December 3, 2001	1
Columbia River	Vernita4 HRM0.3	B0XRK5	March 27, 2000	1
Columbia River	Vernita4 HRM0.3	B0V207	June 11, 1999	1
Columbia River	Vernita4 HRM0.3	B1BX64	December 6, 2004	1
Columbia River	Vernita4 HRM0.3	B12VM6	September 7, 2001	1
Columbia River	Vernita4 HRM0.3	B0YC95	June 19, 2000	1
Columbia River	Vernita4 HRM0.3	B171Y4	June 9, 2003	1
Columbia River	Vernita4 HRM0.3	B14RW7	June 10, 2002	1
Columbia River	Vernita4 HRM0.3	B0YCC8	June 19, 2000	1
Columbia River	Vernita4 HRM0.3	B0V259	June 11, 1999	1
Columbia River	Vernita4 HRM0.3	B13LH6	December 3, 2001	1
Columbia River	Vernita4 HRM0.3	B12T90	September 7, 2001	1
Columbia River	Vernita4 HRM0.3	B1BW41	December 6, 2004	1
Columbia River	Vernita4 HRM0.3	B171V2	June 9, 2003	1
Columbia River	Vernita4 HRM0.3	B1B750	September 13, 2004	1
Columbia River	Vernita4 HRM0.3	B0V206	June 11, 1999	1
Columbia River	Vernita4 HRM0.3	B13LV7	December 3, 2001	1
Columbia River	Vernita4 HRM0.3	B0V234	June 11, 1999	1
Columbia River	Vernita4 HRM0.3	B11138	December 4, 2000	1
Columbia River	Vernita4 HRM0.3	B0X3Y5	December 7, 1999	1
Columbia River	Vernita4 HRM0.3	B11H30	February 27, 2001	1
Columbia River	Vernita4 HRM0.3	B13LD4	December 3, 2001	1
Columbia River	Vernita4 HRM0.3	B106P1	September 14, 2000	1
Columbia River	Vernita4 HRM0.3	B15994	September 5, 2002	1
Columbia River	Vernita4 HRM0.3	B16L88	March 24, 2003	1
Columbia River	Vernita4 HRM0.3	B183T0	December 9, 2003	1
Columbia River	Vernita4 HRM0.3	B16333	December 9, 2002	1
Columbia River	Vernita4 HRM0.3	B16345	December 9, 2002	1
Columbia River	Vernita4 HRM0.3	B11244	December 4, 2000	1
Columbia River	Vernita4 HRM0.3	B17CF1	September 4, 2003	1
Columbia River	Vernita4 HRM0.3	B16KD9	March 24, 2003	1
Columbia River	Vernita4 HRM0.3	B0XRW9	March 27, 2000	1
Columbia River	Vernita4 HRM0.3	B17HM2	September 4, 2003	1

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Vernita4 HRM0.3	B0XRN1	March 27, 2000	1
Columbia River	Vernita4 HRM0.3	B11128	December 4, 2000	1
Columbia River	Vernita4 HRM0.3	B164J9	December 9, 2002	1
Columbia River	Vernita4 HRM0.3	B0XRJ2	March 27, 2000	1
Columbia River	Vernita4 HRM0.3	B16355	December 9, 2002	1
Columbia River	Vernita4 HRM0.3	B17CM6	September 4, 2003	1
Columbia River	Vernita4 HRM0.3	B11116	December 4, 2000	1
Columbia River	Vernita4 HRM0.3	B171W4	June 9, 2003	1
Columbia River	Vernita4 HRM0.3	B124Y2	June 14, 2001	1
Columbia River	Vernita4 HRM0.3	B183P8	December 9, 2003	1
Columbia River	Vernita4 HRM0.3	B0WBJ1	September 10, 1999	1
Columbia River	Vernita4 HRM0.3	B184P8	December 9, 2003	1
Columbia River	Vernita4 HRM0.3	B11J29	February 27, 2001	1
Columbia River	Vernita4 HRM0.3	B18V18	March 29, 2004	1
Columbia River	Vernita4 HRM0.3	B11H42	February 27, 2001	1
Columbia River	Vernita4 HRM0.3	B158F5	September 5, 2002	1
Columbia River	Vernita4 HRM0.3	B17CC9	September 4, 2003	1
Columbia River	Vernita4 HRM0.3	B10691	September 14, 2000	1
Columbia River	Vernita4 HRM0.3	B158H4	September 5, 2002	1
Columbia River	Vernita4 HRM0.3	B14RY9	June 10, 2002	1
Columbia River	Vernita4 HRM0.3	B0X3W3	December 7, 1999	1
Columbia River	Vernita4 HRM0.3	B10676	September 14, 2000	1
Columbia River	Vernita4 HRM0.3	B11H52	February 27, 2001	1
Columbia River	Vernita4 HRM0.3	B17289	June 9, 2003	1
Columbia River	Vernita4 HRM0.3	B124W4	June 14, 2001	1
Columbia River	Vernita4 HRM0.3	B158P5	September 5, 2002	1
Columbia River	Vernita4 HRM0.3	B0X3X5	December 7, 1999	1
Columbia River	Vernita4 HRM0.3	B183V0	December 9, 2003	1
Columbia River	Vernita4 HRM0.3	B18TH8	March 29, 2004	1
Columbia River	Wenatchee @ CHN	01148005	April 3, 2001	1
Columbia River	Wenatchee @ CHN	01258000	June 20, 2001	1
Columbia River	Wenatchee @ CHN	01108030	March 6, 2001	1
Columbia River	Crescent Bar	CRE-3.99-20	October 1, 1999	2
Columbia River	Crescent Bar	CRE-4.99-1	April 19, 1999	2
Columbia River	Crescent Bar	CRE-3.99-1	March 28, 1999	2
Columbia River	Crescent Bar	CRE-12.99-20	December 4, 1999	2
Columbia River	Crescent Bar	CRE-4.99-20	April 19, 1999	2
Columbia River	Crescent Bar	CRE-11.99-20	November 13, 1999	2
Columbia River	Crescent Bar	CRE-10.99-20	October 10, 1999	2
Columbia River	Crescent Bar	CRE-5.99-1	May 13, 1999	2
Columbia River	Crescent Bar	CRE-5.99-20	May 13, 1999	2
Columbia River	Crescent Bar	CRE-6.99-1	June 23, 1999	2
Columbia River	Crescent Bar	CRE-7.99-20	July 13, 1999	2
Columbia River	Crescent Bar	CRE-7.99-1	July 13, 1999	2
Columbia River	Crescent Bar	CRE-9.99-20	September 11, 1999	2
Columbia River	Crescent Bar	CRE-10.99-1	October 10, 1999	2
Columbia River	Crescent Bar	CRE-9.99-1	September 11, 1999	2
Columbia River	Crescent Bar	CRE-11.99-1	November 13, 1999	2

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Crescent Bar	CRE-8.99-1	August 18, 1999	2
Columbia River	Crescent Bar	CRE-8.99-20	August 18, 1999	2
Columbia River	Crescent Bar	CRE-6.99-20	June 23, 1999	2
Columbia River	Crescent Bar	CRE-12.99-1	December 4, 1999	2
Columbia River	Dry Gulch	DG-4.99	April 19, 1999	2
Columbia River	Dry Gulch	DG-11.99	November 13, 1999	2
Columbia River	Dry Gulch	DG-6.99	June 23, 1999	2
Columbia River	Dry Gulch	DG-7.99	July 13, 1999	2
Columbia River	Dry Gulch	DG-8.99	August 18, 1999	2
Columbia River	Dry Gulch	DG-9.99	September 11, 1999	2
Columbia River	Ginkgo Park	GHI-5.99-1	May 14, 1999	2
Columbia River	Ginkgo Park	GHI-11.99-40	November 14, 1999	2
Columbia River	Ginkgo Park	GHI-11.99	November 14, 1999	2
Columbia River	Ginkgo Park	GHI-12.99-20	December 3, 1999	2
Columbia River	Ginkgo Park	GHI-12.99-40	December 3, 1999	2
Columbia River	Ginkgo Park	GHI-3.99-15	March 29, 1999	2
Columbia River	Ginkgo Park	GHI-11.99-20	November 14, 1999	2
Columbia River	Ginkgo Park	GHI-4.99-1	April 18, 1999	2
Columbia River	Ginkgo Park	GHI-12.99	December 3, 1999	2
Columbia River	Ginkgo Park	GHI-7.99-1	July 15, 1999	2
Columbia River	Ginkgo Park	GHI-9.99-40	September 11, 1999	2
Columbia River	Ginkgo Park	GHI-9.99-20	September 11, 1999	2
Columbia River	Ginkgo Park	GHI-9.99-1	September 11, 1999	2
Columbia River	Ginkgo Park	GHI-8.99-40	August 18, 1999	2
Columbia River	Ginkgo Park	GHI-8.99-20	August 18, 1999	2
Columbia River	Ginkgo Park	GHI-8.99-1	August 18, 1999	2
Columbia River	Ginkgo Park	GHI-4.99-20	April 18, 1999	2
Columbia River	Ginkgo Park	GHI-7.99-20	July 15, 1999	2
Columbia River	Ginkgo Park	GHI-4.99-40	April 18, 1999	2
Columbia River	Ginkgo Park	GHI-6.99-40	June 23, 1999	2
Columbia River	Ginkgo Park	GHI-6.99-20	June 23, 1999	2
Columbia River	Ginkgo Park	GHI-6.99-1	June 23, 1999	2
Columbia River	Ginkgo Park	GHI-5.99-40	May 14, 1999	2
Columbia River	Ginkgo Park	GHI-5.99-20	May 14, 1999	2
Columbia River	Ginkgo Park	GHI-3.99-1	March 29, 1999	2
Columbia River	Ginkgo Park	GHI-7.99-40	July 15, 1999	2
Columbia River	Ginkgo Park	GHI-10.99-20	October 10, 1999	2
Columbia River	Ginkgo Park	GHI-10.99	October 10, 1999	2
Columbia River	Ginkgo Park	GHI-10.99-40	October 10, 1999	2
Columbia River	Ginkgo Park	GHI-3.99-30	March 29, 1999	2
Columbia River	Goose Island	GOO-3.99-12	March 27, 1999	2
Columbia River	Goose Island	GOO-7.99-11	July 15, 1999	2
Columbia River	Goose Island	GOO-10.99-1	October 8, 1999	2
Columbia River	Goose Island	GOO-10.99-10	October 8, 1999	2
Columbia River	Goose Island	GOO-10.99-20	October 8, 1999	2
Columbia River	Goose Island	GOO-11.99-1	November 11, 1999	2
Columbia River	Goose Island	GOO-11.99-12.5	November 11, 1999	2
Columbia River	Goose Island	GOO-11.99-25	November 11, 1999	2

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Goose Island	GOO-12.99-1	December 3, 1999	2
Columbia River	Goose Island	GOO-12.99-12.5	December 3, 1999	2
Columbia River	Goose Island	GOO-3.99-1	March 27, 1999	2
Columbia River	Goose Island	GOO-8.99-12.5	August 17, 1999	2
Columbia River	Goose Island	GOO-3.99-25	March 27, 1999	2
Columbia River	Goose Island	GOO-4.99-1	April 17, 1999	2
Columbia River	Goose Island	GOO-4.99-12	April 17, 1999	2
Columbia River	Goose Island	GOO-4.99-25	April 17, 1999	2
Columbia River	Goose Island	GOO-5.99-1	May 14, 1999	2
Columbia River	Goose Island	GOO-5.99-12.5	May 14, 1999	2
Columbia River	Goose Island	GOO-5.99-25	May 14, 1999	2
Columbia River	Goose Island	GOO-6.99-1	June 24, 1999	2
Columbia River	Goose Island	GOO-12.99-25	December 3, 1999	2
Columbia River	Goose Island	GOO-8.99-1	August 17, 1999	2
Columbia River	Goose Island	GOO-8.99-25	August 17, 1999	2
Columbia River	Goose Island	GOO-9.99-1	September 10, 1999	2
Columbia River	Goose Island	GOO-9.99-12	September 10, 1999	2
Columbia River	Goose Island	GOO-9.99-25	September 10, 1999	2
Columbia River	Goose Island	GOO-7.99-22	July 15, 1999	2
Columbia River	Goose Island	GOO-7.99-1	July 15, 1999	2
Columbia River	Goose Island	GOO-6.99-12	June 24, 1999	2
Columbia River	Goose Island	GOO-6.99-25	June 24, 1999	2
Columbia River	Hanson Creek	HAN-6.99-1	June 24, 1999	2
Columbia River	Hanson Creek	HAN-9.99-10	September 10, 1999	2
Columbia River	Hanson Creek	HAN-9.99-1	September 10, 1999	2
Columbia River	Hanson Creek	HAN-8.99-10	August 16, 1999	2
Columbia River	Hanson Creek	HAN-8.99-1	August 16, 1999	2
Columbia River	Hanson Creek	HAN-7.99-10	July 15, 1999	2
Columbia River	Hanson Creek	HAN-6.99-10	June 24, 1999	2
Columbia River	Hanson Creek	HAN-4.99-10	April 17, 1999	2
Columbia River	Hanson Creek	HAN-4.99-1	April 17, 1999	2
Columbia River	Hanson Creek	HAN-11.99-10	November 11, 1999	2
Columbia River	Hanson Creek	HAN-11.99-1	November 11, 1999	2
Columbia River	Hanson Creek	HAN-7.99-1	July 15, 1999	2
Columbia River	Pr Rapids Dam-B	BPRD-3.99	March 28, 1999	2
Columbia River	Pr Rapids Dam-B	BPRD-4.99	April 18, 1999	2
Columbia River	Pr Rapids Dam-B	BPRD-5.99	May 15, 1999	2
Columbia River	Pr Rapids Dam-B	BPRD-10.99-1	October 9, 1999	2
Columbia River	Pr Rapids Dam-B	BPRD-11.99	November 12, 1999	2
Columbia River	Pr Rapids Dam-B	BPRD-12.99	December 5, 1999	2
Columbia River	Pr Rapids Dam-B	BPRD-6.99	June 22, 1999	2
Columbia River	Pr Rapids Dam-B	BPRD-7.99	July 16, 1999	2
Columbia River	Pr Rapids Dam-B	BPRD-8.99	August 19, 1999	2
Columbia River	Pr Rapids Dam-B	BPRD-9.99	September 12, 1999	2
Columbia River	SCAMMON LDG	SCA-8.99-12.5	August 18, 1999	2
Columbia River	SCAMMON LDG	SCA-4.99-12	April 19, 1999	2
Columbia River	SCAMMON LDG	SCA-4.99-1	April 19, 1999	2
Columbia River	SCAMMON LDG	SCA-11.99-25	November 13, 1999	2

Table A-2**Summary Table of Segment 1 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	SCAMMON LDG	SCA-11.99-12.5	November 13, 1999	2
Columbia River	SCAMMON LDG	SCA-11.99-1	November 13, 1999	2
Columbia River	SCAMMON LDG	SCA-8.99-25	August 18, 1999	2
Columbia River	SCAMMON LDG	SCA-9.99-1	September 11, 1999	2
Columbia River	SCAMMON LDG	SCA-6.99-1	June 23, 1999	2
Columbia River	SCAMMON LDG	SCA-9.99-25	September 11, 1999	2
Columbia River	SCAMMON LDG	SCA-6.99-13	June 23, 1999	2
Columbia River	SCAMMON LDG	SCA-8.99-1	August 18, 1999	2
Columbia River	SCAMMON LDG	SCA-4.99-25	April 19, 1999	2
Columbia River	SCAMMON LDG	SCA-7.99-28	July 16, 1999	2
Columbia River	SCAMMON LDG	SCA-9.99-12.5	September 11, 1999	2
Columbia River	SCAMMON LDG	SCA-7.99-14	July 16, 1999	2
Columbia River	SCAMMON LDG	SCA-7.99-1	July 16, 1999	2
Columbia River	SCAMMON LDG	SCA-6.99-26	June 23, 1999	2
Columbia River	Vernita BRG	B14PX1	June 10, 2002	2
Columbia River	Vernita BRG	B14PX2	June 10, 2002	2
Columbia River	Vernita BRG	B14L11	May 17, 2002	2
Columbia River	Vernita BRG	B14K65	May 3, 2002	2
Columbia River	Vernita BRG	B14L10	May 17, 2002	2
Columbia River	Vernita BRG	B14K64	May 3, 2002	2
Columbia River	Wanapum Dam	BWD-10.99	October 9, 1999	2
Columbia River	Wanapum Dam	BWD-11.99	November 12, 1999	2
Columbia River	Wanapum Dam	BWD-12.99	December 3, 1999	2
Columbia River	Wanapum Dam	BWD-3.99	March 27, 1999	2
Columbia River	Wanapum Dam	BWD-4.99	April 17, 1999	2
Columbia River	Wanapum Dam	BWD-5.99	May 14, 1999	2
Columbia River	Wanapum Dam	BWD-6.99	June 24, 1999	2
Columbia River	Wanapum Dam	BWD-7.99	July 15, 1999	2
Columbia River	Wanapum Dam	BWD-8.99	August 17, 1999	2
Columbia River	Wanapum Dam	BWD-9.99	September 10, 1999	2
Methow River	PATEROS WA	12449950-F	September 21, 2001	1
Methow River	PATEROS WA	12449950	September 21, 2001	1

Table A-3
Summary Statistics for Sediment Collected from Segment 1 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Solids	%	23	23	100%	--	--	35	70	50
CONV	Total Organic Carbon	%	9	9	100%	--	--	0.27	4.0	1.7
CONV	Total Organic Carbon	mg/kg	16	16	100%	--	--	2,069	32,710	13,363
METAL	Aluminum	mg/kg	9	9	100%	--	--	4,790	69,000	13,443
METAL	Antimony	mg/kg	19	15	79%	4.0	4.2	0.031	1.1	1.0
METAL	Arsenic	mg/kg	47	44	94%	4.4	4.5	0.42	12	6.9
METAL	Barium	mg/kg	9	9	100%	--	--	33	710	125
METAL	Beryllium	mg/kg	24	20	83%	0.10	0.10	0.062	2.0	0.99
METAL	Bismuth	mg/kg	1	0	0%	10	10	--	--	5.0
METAL	Boron	mg/kg	1	1	100%	--	--	0.20	0.20	0.20
METAL	Cadmium	mg/kg	62	57	92%	0.25	2.0	0.30	16	5.5
METAL	Calcium	mg/kg	9	9	100%	--	--	2,760	31,000	6,442
METAL	Cerium	mg/kg	1	1	100%	--	--	58	58	58
METAL	Chromium	mg/kg	63	63	100%	--	--	3.3	92	48
METAL	Cobalt	mg/kg	9	9	100%	--	--	4.0	15	7.0
METAL	Copper	mg/kg	63	63	100%	--	--	0.034	70	31
METAL	Europium	mg/kg	1	0	0%	2.0	2.0	--	--	1.0
METAL	Gallium	mg/kg	1	1	100%	--	--	16	16	16
METAL	Gold	mg/kg	1	0	0%	8.0	8.0	--	--	4.0
METAL	Iron	mg/kg	9	9	100%	--	--	9,100	40,000	16,578
METAL	Lanthanum	mg/kg	1	1	100%	--	--	31	31	31
METAL	Lead	mg/kg	59	59	100%	--	--	1.9	140	48
METAL	Lithium	mg/kg	1	1	100%	--	--	22	22	22
METAL	Magnesium	mg/kg	9	9	100%	--	--	2,700	13,000	4,581
METAL	Manganese	mg/kg	9	9	100%	--	--	110	660	238
METAL	Mercury	mg/kg	47	37	79%	0.020	0.060	0.0062	0.31	0.12
METAL	Molybdenum	mg/kg	10	0	0%	0.59	2.0	--	--	0.37
METAL	Neodymium	mg/kg	1	1	100%	--	--	28	28	28
METAL	Nickel	mg/kg	33	33	100%	--	--	1.7	53	23
METAL	Niobium	mg/kg	1	1	100%	--	--	4.0	4.0	4.0
METAL	Phosphorus	mg/Kg	1	1	100%	--	--	800	800	800
METAL	Potassium	mg/kg	9	9	100%	--	--	565	19,000	2,868
METAL	Scandium	mg/kg	1	1	100%	--	--	14	14	14
METAL	Selenium	mg/kg	29	8	28%	0.47	5.0	0.016	1.9	1.1
METAL	Silver	mg/kg	50	14	28%	0.013	75	0.0062	0.57	23
METAL	Sodium	mg/kg	9	9	100%	--	--	102	20,000	2,440
METAL	Strontium	mg/kg	1	1	100%	--	--	410	410	410
METAL	Tantalum	mg/kg	1	0	0%	40	40	--	--	20
METAL	Thallium	mg/kg	19	17	89%	0.31	0.32	0.049	1.9	0.95
METAL	Thorium	mg/kg	1	1	100%	--	--	9.4	9.4	9.4
METAL	Tin	mg/kg	1	0	0%	5.0	5.0	--	--	2.5
METAL	Titanium	mg/Kg	1	1	100%	--	--	5,100	5,100	5,100
METAL	Uranium	mg/kg	1	1	100%	--	--	2.5	2.5	2.5
METAL	Vanadium	mg/kg	9	9	100%	--	--	23	130	44
METAL	Ytterbium	mg/kg	1	1	100%	--	--	2.0	2.0	2.0
METAL	Yttrium	mg/kg	1	1	100%	--	--	18	18	18

Table A-3

Summary Statistics for Sediment Collected from Segment 1 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Zinc	mg/kg	63	63	100%	--	--	24	850	344
PCB	Aroclor-1016	mg/kg	31	0	0%	5.0	5.0	--	--	2.5
PCB	Aroclor-1221	mg/kg	31	0	0%	5.0	5.0	--	--	2.5
PCB	Aroclor-1232	mg/kg	31	0	0%	5.0	5.0	--	--	2.5
PCB	Aroclor-1242	mg/kg	31	0	0%	5.0	5.0	--	--	2.5
PCB	Aroclor-1248	mg/kg	31	0	0%	5.0	5.0	--	--	2.5
PCB	Aroclor-1254	mg/kg	31	0	0%	5.0	5.0	--	--	2.5
PCB	Aroclor-1260	mg/kg	31	0	0%	5.0	5.0	--	--	2.5
PCB	Total polychlorinated biphenyl	mg/kg	1	0	0%	0.0010	0.0010	--	--	5.00E-04
PEST	Aldrin	mg/Kg	21	0	0%	1.00E-04	0.66	--	--	0.30
PEST	Alpha-BHC	mg/kg	19	0	0%	0.66	0.66	--	--	0.33
PEST	beta-1,2,3,4,5,6-Hexachlorocyclohexane	mg/kg	19	0	0%	0.66	0.66	--	--	0.33
PEST	Chlordane	mg/kg	1	0	0%	0.0010	0.0010	--	--	5.00E-04
PEST	Delta-BHC	mg/kg	19	0	0%	0.66	0.66	--	--	0.33
PEST	Dichlorodiphenyldichloroethane	mg/kg	20	0	0%	1.00E-04	0.66	--	--	0.31
PEST	Dichlorodiphenyldichloroethylene	mg/kg	20	1	5%	0.66	0.66	1.00E-04	1.00E-04	0.31
PEST	Dichlorodiphenyltrichloroethane	mg/kg	20	0	0%	1.00E-04	0.66	--	--	0.31
PEST	Dieldrin	mg/Kg	21	1	5%	0.0010	0.66	1.00E-04	1.00E-04	0.30
PEST	Endosulfan I	mg/kg	20	0	0%	1.00E-04	0.66	--	--	0.31
PEST	Endosulfan II	mg/kg	19	0	0%	0.66	0.66	--	--	0.33
PEST	Endosulfan sulfate	mg/kg	19	0	0%	0.66	0.66	--	--	0.33
PEST	Endrin	mg/kg	20	0	0%	1.00E-04	0.66	--	--	0.31
PEST	Endrin aldehyde	mg/kg	19	0	0%	0.66	0.66	--	--	0.33
PEST	Gamma-BHC (Lindane)	mg/kg	20	0	0%	1.00E-04	0.66	--	--	0.31
PEST	Heptachlor	mg/kg	20	0	0%	1.00E-04	0.66	--	--	0.31
PEST	Heptachlor epoxide	mg/kg	20	0	0%	1.00E-04	0.66	--	--	0.31
PEST	Methoxychlor	mg/Kg	2	0	0%	1.00E-04	0.0010	--	--	2.75E-04
PEST	Mirex	mg/kg	1	0	0%	1.00E-04	1.00E-04	--	--	5.00E-05
PEST	Perthane	mg/kg	1	0	0%	0.0010	0.0010	--	--	5.00E-04
PEST	Toxaphene	mg/kg	1	0	0%	0.010	0.010	--	--	0.0050
RAD_D	Cesium-134, Decayed	pCi/g	1	1	100%	--	--	1.13E-04	1.13E-04	1.13E-04
RAD_D	Cesium-137, Decayed	pCi/g	49	49	100%	--	--	0.023	0.78	0.32
RAD_D	Cobalt-60, Decayed	pCi/g	2	2	100%	--	--	0.0047	0.0070	0.0059
RAD_D	Europium-155, Decayed	pCi/g	3	3	100%	--	--	0.0096	0.018	0.013
RAD_D	Plutonium-238, Decayed	pCi/g	15	15	100%	--	--	1.54E-04	6.27E-04	3.56E-04
RAD_D	Plutonium-239/240, Decayed	pCi/g	23	23	100%	--	--	0.0045	0.015	0.0092
RAD_D	Potassium-40, Decayed	pCi/g	30	30	100%	--	--	11	17	14
RAD_D	Radium-226, Decayed	pCi/g	3	3	100%	--	--	0.60	1.2	0.81
RAD_D	Strontium-90, Decayed	pCi/g	10	10	100%	--	--	0.0041	0.019	0.012
RAD_D	Thorium-228, Decayed	pCi/g	3	3	100%	--	--	0.0098	0.022	0.015
RAD_D	Thorium-232, Decayed	pCi/g	3	3	100%	--	--	0.99	2.5	1.5
RAD_D	Uranium-233/234, Decayed	pCi/g	3	3	100%	--	--	0.53	1.00	0.84
RAD_D	Uranium-234, Decayed	pCi/g	25	25	100%	--	--	0.064	0.87	0.50
RAD_D	Uranium-235, Decayed	pCi/g	24	24	100%	--	--	0.0027	0.16	0.030
RAD_D	Uranium-238, Decayed	pCi/g	31	31	100%	--	--	0.063	1.4	0.54
RAD_D	Zirconium/Niobium-95, Decayed	pCi/g	1	1	100%	--	--	2.15E-36	2.15E-36	2.15E-36

Table A-3

Summary Statistics for Sediment Collected from Segment 1 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	1,2,4-Trichlorobenzene	mg/Kg	32	0	0%	0.010	0.66	--	--	0.32
SVOC	1,2-Dichlorobenzene	mg/Kg	32	0	0%	0.010	0.66	--	--	0.32
SVOC	1,2-Diphenylhydrazine	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	1,3-Dichlorobenzene	mg/Kg	32	0	0%	0.010	0.66	--	--	0.32
SVOC	1,4-Dichlorobenzene	mg/Kg	32	0	0%	0.010	0.66	--	--	0.32
SVOC	1-Chloronaphthalene	mg/kg	19	0	0%	0.66	0.66	--	--	0.33
SVOC	2,4,5-Trichlorophenol	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	2,4,6-Trichlorophenol	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	2,4-Dichlorophenol	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	2,4-Dimethylphenol	mg/Kg	32	0	0%	0.010	0.66	--	--	0.32
SVOC	2,4-Dinitrophenol	mg/Kg	20	0	0%	0.025	3.3	--	--	1.6
SVOC	2,4-Dinitrotoluene	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	2,6-Dinitrotoluene	mg/Kg	19	0	0%	0.010	0.66	--	--	0.31
SVOC	2-Chloronaphthalene	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	2-Chlorophenol	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	2-Methylnaphthalene	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	2-Nitroaniline	mg/Kg	20	0	0%	0.010	3.3	--	--	1.6
SVOC	2-Nitrophenol	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	3,3'-Dichlorobenzidine	mg/Kg	20	0	0%	0.020	1.3	--	--	0.62
SVOC	3-Nitroaniline	mg/Kg	20	0	0%	0.010	3.3	--	--	1.6
SVOC	4,6-Dinitro-2-methylphenol	mg/Kg	20	0	0%	0.025	3.3	--	--	1.6
SVOC	4-Bromophenylphenyl ether	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	4-Chloro-3-methylphenol	mg/kg	19	0	0%	1.3	1.3	--	--	0.65
SVOC	4-Chloroaniline	mg/Kg	1	0	0%	0.020	0.020	--	--	0.010
SVOC	4-Chlorophenylphenyl ether	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	4-Methylphenol (cresol, p-)	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	4-Nitroaniline	mg/Kg	20	0	0%	0.010	3.3	--	--	1.6
SVOC	4-Nitrophenol	mg/Kg	20	0	0%	0.020	3.3	--	--	1.6
SVOC	Acenaphthene	mg/Kg	32	0	0%	0.0050	0.66	--	--	0.32
SVOC	Acenaphthylene	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Aniline	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	Anthracene	mg/Kg	32	0	0%	0.0050	0.66	--	--	0.32
SVOC	Benzidine	mg/Kg	1	0	0%	0.050	0.050	--	--	0.025
SVOC	Benzo(a)anthracene	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Benzo(a)pyrene	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Benzo(b)fluoranthene	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Benzo(ghi)perylene	mg/Kg	32	0	0%	0.010	0.66	--	--	0.32
SVOC	Benzo(k)fluoranthene	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Benzoic acid	mg/Kg	32	0	0%	0.010	3.3	--	--	1.6
SVOC	Benzyl alcohol	mg/Kg	32	0	0%	0.010	3.3	--	--	1.6
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Bis(2-Chloroethoxy)methane	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	Bis(2-chloroethyl) ether	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	Bis(2-chloroisopropyl)	mg/kg	19	0	0%	0.66	0.66	--	--	0.33
SVOC	Bis(2-ethylhexyl) phthalate	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Butylbenzylphthalate	mg/kg	31	0	0%	0.66	0.66	--	--	0.33

Table A-3**Summary Statistics for Sediment Collected from Segment 1 of the Columbia River Including All Categories of Data (units reported "as received")**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Dibenz[a,h]anthracene	mg/Kg	32	0	0%	0.010	0.66	--	--	0.32
SVOC	Dibenzofuran	mg/Kg	32	0	0%	0.025	0.66	--	--	0.32
SVOC	Diethylphthalate	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Dimethyl phthalate	mg/Kg	31	0	0%	0.010	0.66	--	--	0.32
SVOC	Di-n-butylphthalate	mg/Kg	32	0	0%	0.0050	0.66	--	--	0.32
SVOC	Di-n-octylphthalate	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Diphenylamine	mg/kg	19	0	0%	1.3	1.3	--	--	0.65
SVOC	Fluoranthene	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Fluorene	mg/Kg	32	0	0%	0.010	0.66	--	--	0.32
SVOC	Hexachlorobenzene	mg/Kg	32	0	0%	0.010	0.66	--	--	0.32
SVOC	Hexachlorobutadiene	mg/Kg	32	0	0%	0.010	0.66	--	--	0.32
SVOC	Hexachlorocyclopentadiene	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	Hexachloroethane	mg/Kg	20	0	0%	0.010	0.66	--	--	0.31
SVOC	Indeno(1,2,3-cd)pyrene	mg/Kg	32	0	0%	0.010	0.66	--	--	0.32
SVOC	Isophorone	mg/kg	19	0	0%	0.66	0.66	--	--	0.33
SVOC	Naphthalene	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Nitrobenzene	mg/Kg	19	0	0%	0.010	0.66	--	--	0.31
SVOC	N-Nitrosodimethylamine	mg/kg	19	0	0%	0.66	0.66	--	--	0.33
SVOC	N-Nitrosodi-n-dipropylamine	mg/Kg	20	0	0%	0.020	0.66	--	--	0.31
SVOC	N-Nitrosodiphenylamine	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Pentachlorophenol	mg/Kg	32	0	0%	0.020	3.3	--	--	1.6
SVOC	Phenanthrene	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Phenol	mg/kg	31	0	0%	0.66	0.66	--	--	0.33
SVOC	Pyrene	mg/kg	30	0	0%	0.66	0.66	--	--	0.33

CONV - Conventional parameter

PEST - Pesticide

PCB - Polychlorinated biphenyl

RAD_D - Decayed radionuclide

SVOC - Semivolatile Organic Compound

Table A-4**Summary Statistics for Category 1 Sediment Samples Collected From the Lower Crab Creek Tributary to the Columbia River (units reported "as received")**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Arsenic	mg/kg	1	1	100%	--	--	5.9	5.9	5.9
METAL	Cadmium	mg/kg	1	0	0%	0.49	0.49	--	--	0.25
METAL	Chromium	mg/kg	1	1	100%	--	--	10	10	10
METAL	Copper	mg/kg	1	1	100%	--	--	13	13	13
METAL	Lead	mg/kg	1	1	100%	--	--	3.4	3.4	3.4
METAL	Mercury	mg/kg	1	1	100%	--	--	0.044	0.044	0.044
METAL	Molybdenum	mg/kg	1	0	0%	0.59	0.59	--	--	0.30
METAL	Nickel	mg/kg	1	1	100%	--	--	11	11	11
METAL	Selenium	mg/kg	1	0	0%	4.9	4.9	--	--	2.5
METAL	Zinc	mg/kg	1	1	100%	--	--	38	38	38

Table A-5

Summary Statistics for Sediment Collected from Segment 1 of the Columbia River Including All Categories of Data (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Antimony	mg/kg dry-wt	3	3	100%	--	--	0.73	1.1	0.87
METAL	Arsenic	mg/kg dry-wt	4	4	100%	--	--	0.80	9.6	6.3
METAL	Beryllium	mg/kg dry-wt	3	3	100%	--	--	1.5	1.7	1.6
METAL	Cadmium	mg/kg dry-wt	4	4	100%	--	--	0.40	8.0	3.5
METAL	Chromium	mg/kg dry-wt	4	4	100%	--	--	21	93	65
METAL	Copper	mg/kg dry-wt	4	4	100%	--	--	20	59	36
METAL	Lead	mg/kg dry-wt	4	3	75%	0.10	0.10	33	56	36
METAL	Mercury	mg/kg dry-wt	4	3	75%	0.0080	0.0080	0.014	0.17	0.081
METAL	Nickel	mg/kg dry-wt	3	3	100%	--	--	22	46	35
METAL	Selenium	mg/kg dry-wt	3	1	33%	0.35	0.35	1.7	1.7	0.68
METAL	Silver	mg/kg dry-wt	3	3	100%	--	--	0.33	0.50	0.41
METAL	Thallium	mg/kg dry-wt	3	3	100%	--	--	0.49	1.9	1.1
METAL	Zinc	mg/kg dry-wt	4	4	100%	--	--	42	616	329
PCB	Aroclor-1260	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Alpha-BHC	mg/kg dry-wt	1	0	0%	0.0010	0.0010	--	--	5.00E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg dry-wt	1	0	0%	0.0010	0.0010	--	--	5.00E-04
PEST	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	1	1	100%	--	--	0.0070	0.0070	0.0070
PEST	Dichlorodiphenyltrichloroethane	mg/kg dry-wt	1	0	0%	0.0010	0.0010	--	--	5.00E-04
RAD_D	Americium-241	pCi/g dry-wt	1	1	100%	--	--	0.0030	0.0030	0.0030
RAD_D	Beryllium-7	pCi/g dry-wt	3	3	100%	--	--	8.39E-20	8.54E-16	2.89E-16
RAD_D	Cesium-134	pCi/g dry-wt	2	2	100%	--	--	0.018	0.023	0.020
RAD_D	Cesium-137	pCi/g dry-wt	16	16	100%	--	--	0.0055	0.59	0.31
RAD_D	Cobalt-60	pCi/g dry-wt	1	1	100%	--	--	0.0053	0.0053	0.0053
RAD_D	Plutonium-238	pCi/g dry-wt	10	10	100%	--	--	2.17E-04	0.0076	0.0039
RAD_D	Plutonium-239/240	pCi/g dry-wt	32	32	100%	--	--	0.0020	0.029	0.0097
RAD_D	Potassium-40	pCi/g dry-wt	38	38	100%	--	--	11	21	14
RAD_D	Strontium-90	pCi/g dry-wt	35	35	100%	--	--	0.0035	0.19	0.015
RAD_D	Thorium-228	pCi/g dry-wt	1	1	100%	--	--	0.33	0.33	0.33
RAD_D	Thorium-230	pCi/g dry-wt	1	1	100%	--	--	1.1	1.1	1.1
RAD_D	Thorium-232	pCi/g dry-wt	1	1	100%	--	--	1.5	1.5	1.5
RAD_D	Uranium-234	pCi/g dry-wt	38	38	100%	--	--	0.51	1.6	0.95
RAD_D	Uranium-235	pCi/g dry-wt	12	12	100%	--	--	0.015	0.050	0.036
RAD_D	Uranium-238	pCi/g dry-wt	38	38	100%	--	--	0.49	1.3	0.89
SVOC	2-Methylnaphthalene	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Methylphenol (cresol, o-)	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Acenaphthylene	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Benzo(a)anthracene	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Benzo(a)pyrene	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Benzo(k)fluoranthene	mg/kg dry-wt	1	0	0%	0.050	0.050	--	--	0.025
SVOC	Bis(2-ethylhexyl) phthalate	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Butylbenzylphthalate	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Chrysene	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Diethylphthalate	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050

Table A-5**Summary Statistics for Sediment Collected from Segment 1 of the Columbia River Including All Categories of Data (units reported "dry-weight")**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Di-n-octylphthalate	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Fluoranthene	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Isophorone	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Naphthalene	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Phenanthrene	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Phenol	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Pyrene	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025

PEST - Pesticide

PCB - Polychlorinated biphenyl

RAD_D - Decayed radionuclide

SVOC - Semivolatile Organic Compound

Table A-6
Comparison of Segment 1 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Background Value	Is Max > Background?	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
CONV	Percent Solids	%	23	23	100%	35	70	50	--	--	--	--	--	--	--	--	--	--
CONV	Total Organic Carbon	%	9	9	100%	0.27	4.0	1.7	--	--	--	--	--	--	--	--	--	--
CONV	Total Organic Carbon	mg/kg	16	16	100%	2,069	32,710	13,363	--	--	--	--	--	--	--	--	--	--
METAL	Aluminum	mg/kg	9	9	100%	4,790	69,000	13,443	11,800	Yes	--	--	--	--	76,142	No	0.91	0
METAL	Antimony	mg/kg	19	15	79%	0.031	1.1	1.0	5.0	No	2.0	No	0.53	0	31	No	0.034	0
METAL	Arsenic	mg/kg	47	44	94%	0.42	12	6.9	6.5	Yes	6.0	Yes	2.0	27	0.39	Yes	31	45
METAL	Barium	mg/kg	9	9	100%	33	710	125	132	Yes	--	--	--	--	5,375	No	0.13	0
METAL	Beryllium	mg/kg	24	20	83%	0.062	2.0	0.99	1.5	Yes	--	--	--	--	154	No	0.013	0
METAL	Boron	mg/kg	1	1	100%	0.20	0.20	0.20	--	--	--	--	--	--	16,000	No	1.25E-05	0
METAL	Cadmium	mg/kg	62	57	92%	0.30	16	5.5	0.81	Yes	0.60	Yes	27	53	37	No	0.43	0
METAL	Calcium	mg/kg	9	9	100%	2,760	31,000	6,442	17,200	Yes	--	--	--	--	--	--	--	--
METAL	Cerium	mg/kg	1	1	100%	58	58	58	--	--	--	--	--	--	--	--	--	--
METAL	Chromium	mg/kg	63	63	100%	3.3	92	48	19	Yes	37	Yes	2.5	39	30	Yes	3.1	41
METAL	Cobalt	mg/kg	9	9	100%	4.0	15	7.0	16	No	--	--	--	--	903	No	0.017	0
METAL	Copper	mg/kg	63	63	100%	0.034	70	31	22	Yes	32	Yes	2.2	23	2,960	No	0.024	0
METAL	Gallium	mg/kg	1	1	100%	16	16	16	--	--	--	--	--	--	--	--	--	--
METAL	Iron	mg/kg	9	9	100%	9,100	40,000	16,578	32,600	Yes	20,000	Yes	2.0	1	23,463	Yes	1.7	1
METAL	Lanthanum	mg/kg	1	1	100%	31	31	31	--	--	--	--	--	--	--	--	--	--
METAL	Lead	mg/kg	59	59	100%	1.9	140	48	10	Yes	35	Yes	4.0	37	250	No	0.56	0
METAL	Lithium	mg/kg	1	1	100%	22	22	22	34	No	--	--	--	--	1,564	No	0.014	0
METAL	Magnesium	mg/kg	9	9	100%	2,700	13,000	4,581	7,060	Yes	--	--	--	--	--	--	--	--
METAL	Manganese	mg/kg	9	9	100%	110	660	238	512	Yes	460	Yes	1.4	1	1,762	No	0.37	0
METAL	Mercury	mg/kg	47	37	79%	0.0062	0.31	0.12	0.33	No	0.18	Yes	1.7	12	23	No	0.013	0
METAL	Neodymium	mg/kg	1	1	100%	28	28	28	--	--	--	--	--	--	--	--	--	--
METAL	Nickel	mg/kg	33	33	100%	1.7	53	23	19	Yes	18	Yes	2.9	14	1,564	No	0.034	0
METAL	Niobium	mg/kg	1	1	100%	4.0	4.0	4.0	--	--	--	--	--	--	--	--	--	--
METAL	Potassium	mg/kg	9	9	100%	565	19,000	2,868	2,150	Yes	--	--	--	--	--	--	--	--
METAL	Scandium	mg/kg	1	1	100%	14	14	14	--	--	--	--	--	--	--	--	--	--
METAL	Selenium	mg/kg	29	8	28%	0.016	1.9	1.1	0.78	Yes	--	--	--	--	391	No	0.0049	0
METAL	Silver	mg/kg	50	14	28%	0.0062	0.57	23	0.73	No	4.5	No	0.13	0	391	No	0.0014	0
METAL	Sodium	mg/kg	9	9	100%	102	20,000	2,440	690	Yes	--	--	--	--	--	--	--	--
METAL	Strontium	mg/kg	1	1	100%	410	410	410	--	--	--	--	--	--	46,924	No	0.0087	0
METAL	Thallium	mg/kg	19	17	89%	0.049	1.9	0.95	--	--	--	--	--	--	5.2	No	0.37	0
METAL	Thorium	mg/kg	1	1	100%	9.4	9.4	9.4	1.3	Yes	1,300	No	0.0072	0	1.3	Yes	7.2	1
METAL	Titanium	mg/kg	1	1	100%	5,100	5,100	5,100	--	--	--	--	--	--	100,000	No	0.051	0
METAL	Uranium	mg/kg	1	1	100%	2.5	2.5	2.5	3.2	No	2,490	No	0.0010	0	240.0	No	0.010	0
METAL	Vanadium	mg/kg	9	9	100%	23	130	44	85	Yes	--	--	--	--	78	Yes	1.7	1
METAL	Ytterbium	mg/kg	1	1	100%	2.0	2.0	2.0	--	--	--	--	--	--	--	--	--	--
METAL	Yttrium	mg/kg	1	1	100%	18	18	18	--	--	--	--	--	--	--	--	--	--
METAL	Zinc	mg/kg	63	63	100%	24	850	344	68	Yes	120	Yes	7.1	49	23,463	No	0.036	0
PEST	Dichlorodiphenyldichloroethylene	mg/kg	20	1	5%	1.00E-04	1.00E-04	0.31	--	--	0.0015	No	0.067	0	1.7	No	5.81E-05	0
PEST	Dieldrin	mg/kg	21	1	5%	1.00E-04	1.00E-04	0.30	--	--	0.0019	No	0.053	0	0.030	No	0.0033	0
RAD_D	Cesium-134	pCi/g	1	1	100%	1.13E-04	1.13E-04	1.13E-04	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-137	pCi/g	49	49	100%	0.023	0.78	0.32	1.1	No	3,120	No	2.49E-04	0	6.2	No	0.13	0
RAD_D	Cobalt-60	pCi/g	2	2	100%	0.0047	0.0070	0.0059	0.0084	No	1,460	No	4.80E-06	0	1.4	No	0.0050	0
RAD_D	Europium-155	pCi/g	3	3	100%	0.0096	0.018	0.013	0.054	No	31,600	No	5.80E-07	0	125	No	1.47E-04	0
RAD_D	Plutonium-238	pCi/g	15	15	100%	1.54E-04	6.27E-04	3.56E-04	0.0038	No	--	--	--	--	37	No	1.68E-05	0
RAD_D	Plutonium-239/240	pCi/g	23	23	100%	0.0045	0.015	0.0092	0.025	No	5,860	No	2.56E-06	0	34	No	4.42E-04	0
RAD_D	Potassium-40	pCi/g	30	30	100%	11	17	14	17	Yes	--	--	--	--	--	--	--	--
RAD_D	Radium-226	pCi/g	3	3	100%	0.60	1.2	0.81	0.82	Yes	101	No	0.012	0	--	--	--	--
RAD_D	Strontium-90	pCi/g	10	10	100%	0.0041	0.019	0.012	0.18	No	582	No	3.25E-05	0	4.5	No	0.0042	0
RAD_D	Thorium-228	pCi/g	3	3	100%	0.0098	0.022	0.015	--	No	--	--	--	--	--	--	--	--
RAD_D	Thorium-232	pCi/g	3	3	100%	0.99	2.5	1.5	1.3	Yes	1,300	No	0.0019	0	1.3	Yes	1.9	1
RAD_D	Uranium-233/234	pCi/g	3	3	100%	0.53	1.00	0.84	--	--	--	--	--	--	--	--	--	--
RAD_D	Uranium-234	pCi/g	25	25	100%	0.064	0.87	0.50	1.1	No	5,270	No	1.66E-04	0	1.1	No	0.79	0
RAD_D	Uranium-235	pCi/g	24	24	100%	0.0027	0.16	0.030	0.11	Yes	3,730	No	4.40E-05	0	0.84	No	0.20	0
RAD_D	Uranium-238	pCi/g	31	31	100%	0.063	1.4	0.54	3.2	No	2,490	No	5.46E-04	0	1.1	Yes	1.2	1
RAD_D	Zirconium/Niobium-95	pCi/g	1	1	100%	2.15E-36	2.15E-36	2.15E-36	--	--	--	--	--	--	--	--	--	--

CONV - Conventional parameter
PEST - Pesticide
RAD_D - Decayed radionuclide

Table A-7
Comparison of Segment 1 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "dry weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Background Value	Is Max > Background?	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health			
															Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
METAL	Antimony	mg/kg dry-wt	3	3	100%	0.73	1.1	0.87	5.0	No	2.0	No	0.54	0	31	No	0.035	0
METAL	Arsenic	mg/kg dry-wt	4	4	100%	0.80	9.6	6.3	6.5	Yes	6.0	Yes	1.6	3	0.39	Yes	24.562	4
METAL	Beryllium	mg/kg dry-wt	3	3	100%	1.5	1.7	1.6	1.5	Yes	--	--	--	--	154	No	0.011	0
METAL	Cadmium	mg/kg dry-wt	4	4	100%	0.40	8.0	3.5	0.81	Yes	0.60	Yes	13	2	37	No	0.215	0
METAL	Chromium	mg/kg dry-wt	4	4	100%	21	93	65	19	Yes	37	Yes	2.5	3	30	Yes	3.090	3
METAL	Copper	mg/kg dry-wt	4	4	100%	20	59	36	22	Yes	32	Yes	1.9	2	2,960	No	0.020	0
METAL	Lead	mg/kg dry-wt	4	3	75%	33	56	36	10	Yes	35	Yes	1.6	2	250	No	0.225	0
METAL	Mercury	mg/kg dry-wt	4	3	75%	0.014	0.17	0.081	0.33	No	0.18	No	0.94	0	23	No	0.007	0
METAL	Nickel	mg/kg dry-wt	3	3	100%	22	46	35	19	Yes	18	Yes	2.6	3	1,564	No	0.030	0
METAL	Selenium	mg/kg dry-wt	3	1	33%	1.7	1.7	0.68	0.78	Yes	--	--	--	--	391	No	0.004	0
METAL	Silver	mg/kg dry-wt	3	3	100%	0.33	0.50	0.41	0.73	No	4.5	No	0.11	0	391	No	0.001	0
METAL	Thallium	mg/kg dry-wt	3	3	100%	0.49	1.9	1.1	--	--	--	--	--	--	5.2	No	0.364	0
METAL	Zinc	mg/kg dry-wt	4	4	100%	42	616	329	68	Yes	120	Yes	5.1	3	23,463	No	0.026	0
PEST	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	1	1	100%	0.0070	0.0070	0.0070	--	--	0.0015	Yes	4.7	1	1.7	No	0.004	0
RAD_D	Americium-241	pCi/g dry-wt	1	1	100%	0.0030	0.0030	0.0030	--	--	5,150	No	5.81E-07	0	31	No	0.000	0
RAD_D	Beryllium-7	pCi/g dry-wt	3	3	100%	8.39E-20	8.54E-16	2.89E-16	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-134	pCi/g dry-wt	2	2	100%	0.018	0.023	0.020	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-137	pCi/g dry-wt	16	16	100%	0.0055	0.59	0.31	1.1	No	3,120	No	1.88E-04	0	6.2	No	0.095	0
RAD_D	Cobalt-60	pCi/g dry-wt	1	1	100%	0.0053	0.0053	0.0053	0.0084	No	1,460	No	3.64E-06	0	1.4	No	0.004	0
RAD_D	Plutonium-238	pCi/g dry-wt	10	10	100%	2.17E-04	0.0076	0.0039	0.0038	Yes	--	--	--	--	37	No	0.000	0
RAD_D	Plutonium-239/240	pCi/g dry-wt	32	32	100%	0.0020	0.029	0.0097	0.025	Yes	5,860	No	4.95E-06	0	34	No	0.001	0
RAD_D	Potassium-40	pCi/g dry-wt	38	38	100%	11	21	14	17	Yes	--	--	--	--	--	--	--	--
RAD_D	Strontium-90	pCi/g dry-wt	35	35	100%	0.0035	0.19	0.015	0.18	Yes	582	No	3.27E-04	0	4.5	No	0.042	0
RAD_D	Thorium-228	pCi/g dry-wt	1	1	100%	0.33	0.33	0.33	--	--	--	--	--	--	--	--	--	--
RAD_D	Thorium-230	pCi/g dry-wt	1	1	100%	1.1	1.1	1.1	--	--	--	--	--	--	--	--	--	--
RAD_D	Thorium-232	pCi/g dry-wt	1	1	100%	1.5	1.5	1.5	1.3	Yes	1,300	No	0.0012	0	1.3	Yes	1.154	1
RAD_D	Uranium-234	pCi/g dry-wt	38	38	100%	0.51	1.6	0.95	1.1	Yes	5,270	No	3.05E-04	0	1.1	Yes	1.464	7
RAD_D	Uranium-235	pCi/g dry-wt	12	12	100%	0.015	0.050	0.036	0.11	No	3,730	No	1.34E-05	0	0.84	No	0.060	0
RAD_D	Uranium-238	pCi/g dry-wt	38	38	100%	0.49	1.3	0.89	3.2	No	2,490	No	5.26E-04	0	1.1	Yes	1.191	4

PEST - Pesticide
RAD_D - Decayed radionuclide

Table A-8**Summary of Surface Sediment Results From Segment 1 Exceeding Select Ecological or Human Health Benchmark Values**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA	Analytical	Qualifier	Ecological	Human Health
						Category	Value		Benchmark Value	Benchmark Value
Columbia River	Pr Rapids Dam	B14YN2	July 23, 2002	Arsenic	mg/kg	1	0.42	=	6.0	0.39
Columbia River	Pr Rapids Dam	B14YN0	July 23, 2002	Arsenic	mg/kg	1	0.53	=	6.0	0.39
Wenatchee River	Wenatchee	45A070-7	September 1, 1984	Arsenic	mg/kg dry-wt	2	0.80	=	6.0	0.39
Columbia River	Vernita Area	B07NF6	November 20, 1992	Arsenic	mg/kg	1	1.9	BJN	6.0	0.39
Columbia River	RM 417.5	GHI-1	October 1, 1999	Arsenic	mg/kg	2	2.3	=	6.0	0.39
Columbia River	Vernita Area	B07NF7	November 20, 1992	Arsenic	mg/kg	1	2.4	JN	6.0	0.39
Columbia River	RM 440	CRE-3	October 1, 1999	Arsenic	mg/kg	2	3.5	=	6.0	0.39
Columbia River	RM 405.5	HAN-5	October 1, 1999	Arsenic	mg/kg	2	3.5	=	6.0	0.39
Columbia River	RM 428	SCA-3B	October 1, 1999	Arsenic	mg/kg	2	3.6	=	6.0	0.39
Columbia River	RM 417.5	GHI-5	October 1, 1999	Arsenic	mg/kg	2	3.8	=	6.0	0.39
Columbia River	Pr Rapids Dam	B0W3D8	August 3, 1999	Arsenic	mg/kg	1	4.1	=	6.0	0.39
Columbia River	RM 428	SCA-3C	October 1, 1999	Arsenic	mg/kg	2	4.3	=	6.0	0.39
Columbia River	RM 354.4	PEW-1sed	July 16, 1992	Arsenic	mg/kg	2	4.6	=	6.0	0.39
Columbia River	Pr Rapids Dam	4444204	June 1, 2004	Arsenic	mg/kg	1	4.8	=	6.0	0.39
Columbia River	Pr Rapids Dam	4444203	June 1, 2004	Arsenic	mg/kg	1	4.9	=	6.0	0.39
Columbia River	Wanapum Dam	4444210	June 1, 2004	Arsenic	mg/kg	1	5.1	=	6.0	0.39
Columbia River	Vernita Area	B07NF8	November 20, 1992	Arsenic	mg/kg	1	5.8	JN+	6.0	0.39
Lower Crab Creek	RM 5	4444202	June 1, 2004	Arsenic	mg/kg	1	5.9	=	6.0	0.39
Columbia River	Vernita BRG	B12RY7	August 28, 2001	Arsenic	mg/kg dry-wt	1	6.5	=	6.0	0.39
Columbia River	RM 428	SCA-3A	October 1, 1999	Arsenic	mg/kg	2	6.5	=	6.0	0.39
Columbia River	Pr Rapids Dam	B0W3F0	August 3, 1999	Arsenic	mg/kg	1	6.7	=	6.0	0.39
Columbia River	Pr Rapids Dam	B0YWC2	August 7, 2000	Arsenic	mg/kg	1	7.3	=	6.0	0.39
Columbia River	Pr Rapids Dam	4444205	June 1, 2004	Arsenic	mg/kg	1	7.6	=	6.0	0.39
Columbia River	Pr Rapids Dam	4444206	June 1, 2004	Arsenic	mg/kg	1	7.6	=	6.0	0.39
Columbia River	Pr Rapids Dam	B0YWC4	August 7, 2000	Arsenic	mg/kg	1	8.2	=	6.0	0.39
Columbia River	Pr Rapids Dam	B12CL9	July 19, 2001	Arsenic	mg/kg dry-wt	1	8.2	=	6.0	0.39
Columbia River	Pr Rapids Dam	B0W3D6	August 3, 1999	Arsenic	mg/kg	1	8.6	=	6.0	0.39
Columbia River	RM 398.5	GOO-3C	October 1, 1999	Arsenic	mg/kg	2	9.0	=	6.0	0.39
Columbia River	Pr Rapids Dam	B19PK9	July 12, 2004	Arsenic	mg/kg	1	9.1	X	6.0	0.39
Columbia River	Pr Rapids Dam	B1B7W4	September 20, 2004	Arsenic	mg/kg	1	9.1	X	6.0	0.39
Columbia River	Pr Rapids Dam	B17702	July 14, 2003	Arsenic	mg/kg	1	9.2	=	6.0	0.39
Columbia River	RM 417.5	GHI-3	October 1, 1999	Arsenic	mg/kg	2	9.3	=	6.0	0.39
Columbia River	Pr Rapids Dam	B0W3N5	August 3, 1999	Arsenic	mg/kg	2	9.4	=	6.0	0.39
Columbia River	Vernita Area	B07NF5	November 20, 1992	Arsenic	mg/kg	1	9.4	JN	6.0	0.39
Columbia River	RM 428	SCA-5	October 1, 1999	Arsenic	mg/kg	1	9.4	=	6.0	0.39
Columbia River	Pr Rapids Dam	B12CM1	July 19, 2001	Arsenic	mg/kg dry-wt	1	9.6	=	6.0	0.39
Columbia River	Pr Rapids Dam	B17704	July 14, 2003	Arsenic	mg/kg	1	9.7	=	6.0	0.39
Columbia River	Pr Rapids Dam	B0W3F2	August 3, 1999	Arsenic	mg/kg	1	9.9	=	6.0	0.39
Columbia River	Pr Rapids Dam	B0W3N3	August 3, 1999	Arsenic	mg/kg	1	10	=	6.0	0.39
Columbia River	RM 417.5	GHI-4	October 1, 1999	Arsenic	mg/kg	2	10	=	6.0	0.39
Columbia River	RM 428	SCA-4	October 1, 1999	Arsenic	mg/kg	2	10	=	6.0	0.39

Table A-8

Summary of Surface Sediment Results From Segment 1 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	RM 398.5	GOO-1	October 1, 1999	Arsenic	mg/kg	2	11	=	6.0	0.39
Columbia River	RM 398.5	GOO-3B	October 1, 1999	Arsenic	mg/kg	2	11	=	6.0	0.39
Columbia River	RM 398.5	GOO-4	October 1, 1999	Arsenic	mg/kg	2	11	=	6.0	0.39
Columbia River	Pr Rapids Dam	B19PL1	July 12, 2004	Arsenic	mg/kg	1	11	X	6.0	0.39
Columbia River	RM 417.5	GHI-2	October 1, 1999	Arsenic	mg/kg	2	12	=	6.0	0.39
Columbia River	RM 398.5	GOO-2	October 1, 1999	Arsenic	mg/kg	2	12	=	6.0	0.39
Columbia River	RM 398.5	GOO-3A	October 1, 1999	Arsenic	mg/kg	2	12	=	6.0	0.39
Columbia River	Vernita Area	B07NF8	November 20, 1992	Cadmium	mg/kg	1	0.62	B	0.60	37
Columbia River	Wanapum Dam	4444210	June 1, 2004	Cadmium	mg/kg	1	0.64	=	0.60	37
Columbia River	Vernita Area	B07NF7	November 20, 1992	Cadmium	mg/kg	1	0.65	B	0.60	37
Columbia River	Pr Rapids Dam	B0CSH1	September 22, 1994	Cadmium	mg/kg	1	0.80	L	0.60	37
Columbia River	Wanapum Dam	4444208	June 1, 2004	Cadmium	mg/kg	1	1.2	=	0.60	37
Columbia River	Pr Rapids Dam	4444203	June 1, 2004	Cadmium	mg/kg	1	1.6	=	0.60	37
Columbia River	RM 440	SS-3-3	October 1, 1999	Cadmium	mg/kg	2	2.1	=	0.60	37
Columbia River	Pr Rapids Dam	B0W3D8	August 3, 1999	Cadmium	mg/kg	1	2.1	=	0.60	37
Columbia River	RM 440	SS-4-3	October 1, 1999	Cadmium	mg/kg	2	2.3	=	0.60	37
Columbia River	Pr Rapids Dam	B0CSH0	September 22, 1994	Cadmium	mg/kg	1	2.4	=	0.60	37
Columbia River	RM 440	SS-1-3	October 1, 1999	Cadmium	mg/kg	2	2.4	=	0.60	37
Columbia River	RM 440	SS-2-3	October 1, 1999	Cadmium	mg/kg	2	2.4	=	0.60	37
Columbia River	Pr Rapids Dam	4444205	June 1, 2004	Cadmium	mg/kg	1	2.9	=	0.60	37
Columbia River	Pr Rapids Dam	B0CSG9	September 22, 1994	Cadmium	mg/kg	1	3.3	=	0.60	37
Columbia River	Pr Rapids Dam	B0CSH2	September 22, 1994	Cadmium	mg/kg	1	3.4	=	0.60	37
Columbia River	RM 417.5	GHI-1	October 1, 1999	Cadmium	mg/kg	2	3.5	=	0.60	37
Columbia River	Pr Rapids Dam	B0W3F0	August 3, 1999	Cadmium	mg/kg	1	4.0	=	0.60	37
Columbia River	RM 440	SS-4-1	October 1, 1999	Cadmium	mg/kg	2	4.2	=	0.60	37
Columbia River	Pr Rapids Dam	4444206	June 1, 2004	Cadmium	mg/kg	1	4.2	=	0.60	37
Columbia River	Pr Rapids Dam	B0YWC2	August 7, 2000	Cadmium	mg/kg	1	4.3	=	0.60	37
Columbia River	RM 440	SS-1-1	October 1, 1999	Cadmium	mg/kg	2	4.6	=	0.60	37
Columbia River	Pr Rapids Dam	B12CL9	7/19/2001	Cadmium	mg/kg dry-wt	1	5.0	=	0.60	37
Columbia River	RM 405.5	HAN-5	October 1, 1999	Cadmium	mg/kg	2	5.1	=	0.60	37
Columbia River	RM 440	SS-2-2	October 1, 1999	Cadmium	mg/kg	2	5.1	=	0.60	37
Columbia River	Pr Rapids Dam	B1B7W4	September 20, 2004	Cadmium	mg/kg	1	5.4	X	0.60	37
Columbia River	RM 440	SS-2-1	October 1, 1999	Cadmium	mg/kg	2	5.6	=	0.60	37
Columbia River	RM 440	SS-4-2	October 1, 1999	Cadmium	mg/kg	2	5.6	=	0.60	37
Columbia River	RM 428	SCA-3B	October 1, 1999	Cadmium	mg/kg	2	5.7	=	0.60	37
Columbia River	RM 440	SS-1-2	October 1, 1999	Cadmium	mg/kg	2	5.7	=	0.60	37
Columbia River	RM 440	SS-3-2	October 1, 1999	Cadmium	mg/kg	2	5.7	=	0.60	37
Columbia River	RM 440	SS-3-1	October 1, 1999	Cadmium	mg/kg	2	5.9	=	0.60	37
Columbia River	Pr Rapids Dam	B17702	July 14, 2003	Cadmium	mg/kg	1	6.0	=	0.60	37
Columbia River	RM 417.5	GHI-5	October 1, 1999	Cadmium	mg/kg	2	6.0	=	0.60	37
Columbia River	RM 428	SCA-3C	October 1, 1999	Cadmium	mg/kg	2	6.1	=	0.60	37

Table A-8**Summary of Surface Sediment Results From Segment 1 Exceeding Select Ecological or Human Health Benchmark Values**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	RM 428	SCA-3A	October 1, 1999	Cadmium	mg/kg	2	6.5	=	0.60	37
Columbia River	Pr Rapids Dam	B0W3F2	August 3, 1999	Cadmium	mg/kg	1	6.7	=	0.60	37
Columbia River	Pr Rapids Dam	B0W3D6	August 3, 1999	Cadmium	mg/kg	1	6.9	=	0.60	37
Columbia River	Pr Rapids Dam	B19PK9	July 12, 2004	Cadmium	mg/kg	1	7.3	X	0.60	37
Columbia River	Pr Rapids Dam	B0W3N3	August 3, 1999	Cadmium	mg/kg	1	7.5	=	0.60	37
Columbia River	Pr Rapids Dam	B19PL1	July 12, 2004	Cadmium	mg/kg	1	7.8	X	0.60	37
Columbia River	Pr Rapids Dam	B12CM1	July 19, 2001	Cadmium	mg/kg dry-wt	1	8.0	=	0.60	37
Columbia River	Pr Rapids Dam	B0YWC4	August 7, 2000	Cadmium	mg/kg	1	8.3	=	0.60	37
Columbia River	Pr Rapids Dam	B0W3N5	August 3, 1999	Cadmium	mg/kg	1	8.7	=	0.60	37
Columbia River	Pr Rapids Dam	B17704	July 14, 2003	Cadmium	mg/kg	1	8.9	=	0.60	37
Columbia River	RM 398.5	GOO-3C	October 1, 1999	Cadmium	mg/kg	2	9.7	=	0.60	37
Columbia River	RM 417.5	GHI-2	October 1, 1999	Cadmium	mg/kg	2	12	=	0.60	37
Columbia River	RM 398.5	GOO-2	October 1, 1999	Cadmium	mg/kg	2	12	=	0.60	37
Columbia River	RM 398.5	GOO-1	October 1, 1999	Cadmium	mg/kg	2	13	=	0.60	37
Columbia River	RM 398.5	GOO-4	October 1, 1999	Cadmium	mg/kg	2	13	=	0.60	37
Columbia River	RM 428	SCA-4	October 1, 1999	Cadmium	mg/kg	2	13	=	0.60	37
Columbia River	RM 417.5	GHI-4	October 1, 1999	Cadmium	mg/kg	2	14	=	0.60	37
Columbia River	RM 398.5	GOO-3A	October 1, 1999	Cadmium	mg/kg	2	14	=	0.60	37
Columbia River	RM 398.5	GOO-3B	October 1, 1999	Cadmium	mg/kg	2	15	=	0.60	37
Columbia River	RM 428	SCA-5	October 1, 1999	Cadmium	mg/kg	2	15	=	0.60	37
Columbia River	RM 417.5	GHI-3	October 1, 1999	Cadmium	mg/kg	2	16	=	0.60	37
Columbia River	RM 405.5	HAN-5	October 1, 1999	Chromium	mg/kg	2	32	=	37	30
Columbia River	RM 440	CRE-3	October 1, 1999	Chromium	mg/kg	2	33	=	37	30
Columbia River	RM 417.5	GHI-5	October 1, 1999	Chromium	mg/kg	2	33	=	37	30
Columbia River	RM 440	SS-1-3	October 1, 1999	Chromium	mg/kg	2	34	=	37	30
Columbia River	RM 440	SS-4-3	October 1, 1999	Chromium	mg/kg	2	34	=	37	30
Columbia River	RM 440	SS-3-3	October 1, 1999	Chromium	mg/kg	2	40	=	37	30
Columbia River	Pr Rapids Dam	B0W3D8	August 3, 1999	Chromium	mg/kg	1	42	=	37	30
Columbia River	RM 354.4	PEW-1sed	July 16, 1992	Chromium	mg/kg	2	46	=	37	30
Columbia River	Pr Rapids Dam	B0W3D6	August 3, 1999	Chromium	mg/kg	1	52	=	37	30
Columbia River	RM 398.5	GOO-2	October 1, 1999	Chromium	mg/kg	2	53	=	37	30
Columbia River	RM 398.5	GOO-3B	October 1, 1999	Chromium	mg/kg	2	55	=	37	30
Columbia River	RM 398.5	GOO-4	October 1, 1999	Chromium	mg/kg	2	56	=	37	30
Columbia River	RM 398.5	GOO-1	October 1, 1999	Chromium	mg/kg	2	57	=	37	30
Columbia River	RM 398.5	GOO-3A	October 1, 1999	Chromium	mg/kg	2	57	=	37	30
Columbia River	RM 417.5	GHI-2	October 1, 1999	Chromium	mg/kg	2	58	=	37	30
Columbia River	RM 440	SS-2-2	October 1, 1999	Chromium	mg/kg	2	60	=	37	30
Columbia River	RM 398.5	GOO-3C	October 1, 1999	Chromium	mg/kg	2	61	=	37	30
Columbia River	RM 440	SS-1-2	October 1, 1999	Chromium	mg/kg	2	63	=	37	30
Columbia River	RM 440	SS-2-1	October 1, 1999	Chromium	mg/kg	2	66	=	37	30
Columbia River	RM 440	SS-4-2	October 1, 1999	Chromium	mg/kg	2	66	=	37	30
Columbia River	RM 440	SS-3-2	October 1, 1999	Chromium	mg/kg	2	67	=	37	30

Table A-8
Summary of Surface Sediment Results From Segment 1 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	Vernita BRG	B12RY7	August 28, 2001	Chromium	mg/kg dry-wt	1	66	=	37	30
Columbia River	RM 440	SS-1-1	October 1, 1999	Chromium	mg/kg	2	70	=	37	30
Columbia River	RM 440	SS-3-1	October 1, 1999	Chromium	mg/kg	2	71	=	37	30
Columbia River	RM 440	SS-4-1	October 1, 1999	Chromium	mg/kg	2	71	=	37	30
Columbia River	RM 428	SCA-5	October 1, 1999	Chromium	mg/kg	2	72	=	37	30
Columbia River	Pr Rapids Dam	B0W3F2	August 3, 1999	Chromium	mg/kg	1	72	=	37	30
Columbia River	RM 417.5	GHI-3	October 1, 1999	Chromium	mg/kg	2	74	=	37	30
Columbia River	RM 417.5	GHI-4	October 1, 1999	Chromium	mg/kg	2	75	=	37	30
Columbia River	RM 428	SCA-4	October 1, 1999	Chromium	mg/kg	2	77	=	37	30
Columbia River	Pr Rapids Dam	B0YWC4	August 7, 2000	Chromium	mg/kg	1	79	=	37	30
Columbia River	Pr Rapids Dam	B0W3F0	August 3, 1999	Chromium	mg/kg	1	80	=	37	30
Columbia River	Pr Rapids Dam	B0W3N5	August 3, 1999	Chromium	mg/kg	1	80	=	37	30
Columbia River	Pr Rapids Dam	B12CL9	July 19, 2001	Chromium	mg/kg dry-wt	1	80	=	37	30
Columbia River	Pr Rapids Dam	B19PK9	July 12, 2004	Chromium	mg/kg	1	83	CX	37	30
Columbia River	Pr Rapids Dam	B0W3N3	August 3, 1999	Chromium	mg/kg	1	84	=	37	30
Columbia River	Pr Rapids Dam	B0YWC2	August 7, 2000	Chromium	mg/kg	1	84	=	37	30
Columbia River	Pr Rapids Dam	B17704	July 14, 2003	Chromium	mg/kg	1	87	C	37	30
Columbia River	RM 428	SCA-3B	October 1, 1999	Chromium	mg/kg	2	89	=	37	30
Columbia River	RM 428	SCA-3C	October 1, 1999	Chromium	mg/kg	2	89	=	37	30
Columbia River	Pr Rapids Dam	B1B7W4	September 20, 2004	Chromium	mg/kg	1	89	X	37	30
Columbia River	Pr Rapids Dam	B19PL1	July 12, 2004	Chromium	mg/kg	1	90	CX	37	30
Columbia River	RM 428	SCA-3A	October 1, 1999	Chromium	mg/kg	2	92	=	37	30
Columbia River	Pr Rapids Dam	B17702	July 14, 2003	Chromium	mg/kg	1	92	C	37	30
Columbia River	Pr Rapids Dam	B12CM1	July 19, 2001	Chromium	mg/kg dry-wt	1	93	=	37	30
Columbia River	Pr Rapids Dam	B0W3F2	August 3, 1999	Copper	mg/kg	1	34	=	32	2,960
Columbia River	Pr Rapids Dam	4444206	June 1, 2004	Copper	mg/kg	1	37	=	32	2,960
Columbia River	Pr Rapids Dam	B12CL9	July 19, 2001	Copper	mg/kg dry-wt	1	39	=	32	2,960
Columbia River	RM 428	SCA-3A	October 1, 1999	Copper	mg/kg	2	39	=	32	2,960
Columbia River	RM 398.5	GOO-2	October 1, 1999	Copper	mg/kg	2	40	=	32	2,960
Columbia River	Pr Rapids Dam	B19PK9	July 12, 2004	Copper	mg/kg	1	44	X	32	2,960
Columbia River	Pr Rapids Dam	B0W3N3	August 3, 1999	Copper	mg/kg	1	46	=	32	2,960
Columbia River	Pr Rapids Dam	B17702	July 14, 2003	Copper	mg/kg	1	46	=	32	2,960
Columbia River	RM 398.5	GOO-3B	October 1, 1999	Copper	mg/kg	2	48	=	32	2,960
Columbia River	Pr Rapids Dam	B0W3N5	August 3, 1999	Copper	mg/kg	1	49	=	32	2,960
Columbia River	Pr Rapids Dam	B17704	July 14, 2003	Copper	mg/kg	1	50	=	32	2,960
Columbia River	RM 398.5	GOO-4	October 1, 1999	Copper	mg/kg	2	51	=	32	2,960
Columbia River	Pr Rapids Dam	B1B7W4	September 20, 2004	Copper	mg/kg	1	52	X	32	2,960
Columbia River	RM 417.5	GHI-2	October 1, 1999	Copper	mg/kg	2	52	=	32	2,960
Columbia River	RM 398.5	GOO-3A	October 1, 1999	Copper	mg/kg	2	53	=	32	2,960
Columbia River	RM 398.5	GOO-3C	October 1, 1999	Copper	mg/kg	2	53	=	32	2,960
Columbia River	Pr Rapids Dam	B0YWC2	August 7, 2000	Copper	mg/kg	1	55	=	32	2,960
Columbia River	RM 398.5	GOO-1	October 1, 1999	Copper	mg/kg	2	56	=	32	2,960

Table A-8

Summary of Surface Sediment Results From Segment 1 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	Pr Rapids Dam	B19PL1	July 12, 2004	Copper	mg/kg	1	58	X	32	2,960
Columbia River	Pr Rapids Dam	B12CM1	July 19, 2001	Copper	mg/kg dry-wt	1	59	=	32	2,960
Columbia River	Pr Rapids Dam	B0YWC4	August 7, 2000	Copper	mg/kg	1	60	=	32	2,960
Columbia River	RM 428	SCA-4	October 1, 1999	Copper	mg/kg	2	62	=	32	2,960
Columbia River	RM 417.5	GHI-4	October 1, 1999	Copper	mg/kg	2	63	=	32	2,960
Columbia River	RM 417.5	GHI-3	October 1, 1999	Copper	mg/kg	2	70	=	32	2,960
Columbia River	RM 428	SCA-5	October 1, 1999	Copper	mg/kg	2	70	=	32	2,960
Wenatchee River	Wenatchee	45A070-7	September 1, 1984	Dichlorodiphenyldichloroethylene	mg/kg dry		0.007	=	0.0015	1.7
Columbia River	RM 354.4	PEW-1sed	July 16, 1992	Iron	mg/kg	2	40,000	=	20,000	23,463
Columbia River	RM 440	CRE-3	October 1, 1999	Lead	mg/kg	2	37	=	35	250
Columbia River	RM 440	SS-4-1	October 1, 1999	Lead	mg/kg	2	40	=	35	250
Columbia River	Pr Rapids Dam	B0YWC2	August 7, 2000	Lead	mg/kg	1	42	=	35	250
Columbia River	Pr Rapids Dam	B1B7W4	September 20, 2004	Lead	mg/kg	1	44	X	35	250
Columbia River	RM 417.5	GHI-5	October 1, 1999	Lead	mg/kg	2	44	=	35	250
Columbia River	RM 405.5	HAN-5	October 1, 1999	Lead	mg/kg	2	44	=	35	250
Columbia River	RM 440	SS-1-1	October 1, 1999	Lead	mg/kg	2	44	=	35	250
Columbia River	RM 440	SS-2-2	October 1, 1999	Lead	mg/kg	2	44	=	35	250
Columbia River	Pr Rapids Dam	B19PL1	July 12, 2004	Lead	mg/kg	1	44	X	35	250
Columbia River	RM 440	SS-1-2	October 1, 1999	Lead	mg/kg	2	45	=	35	250
Columbia River	Pr Rapids Dam	B0YWC4	August 7, 2000	Lead	mg/kg	1	46	=	35	250
Columbia River	Pr Rapids Dam	B0W3N5	August 3, 1999	Lead	mg/kg	1	48	=	35	250
Columbia River	Pr Rapids Dam	B19PK9	July 12, 2004	Lead	mg/kg	1	49	X	35	250
Columbia River	RM 440	SS-2-1	October 1, 1999	Lead	mg/kg	2	49	=	35	250
Columbia River	RM 440	SS-3-1	October 1, 1999	Lead	mg/kg	2	49	=	35	250
Columbia River	RM 440	SS-3-2	October 1, 1999	Lead	mg/kg	2	49	=	35	250
Columbia River	RM 440	SS-4-2	October 1, 1999	Lead	mg/kg	2	49	=	35	250
Columbia River	Pr Rapids Dam	B17704	July 14, 2003	Lead	mg/kg	1	50	=	35	250
Columbia River	Pr Rapids Dam	B0W3N3	August 3, 1999	Lead	mg/kg	1	53	=	35	250
Columbia River	Pr Rapids Dam	B17702	July 14, 2003	Lead	mg/kg	1	54	=	35	250
Columbia River	Pr Rapids Dam	B12CM1	July 19, 2001	Lead	mg/kg dry-wt	1	56	=	35	250
Columbia River	Pr Rapids Dam	B12CL9	July 19, 2001	Lead	mg/kg dry-wt	1	56	=	35	250
Columbia River	RM 428	SCA-3B	October 1, 1999	Lead	mg/kg	2	57	=	35	250
Columbia River	Vernita Area	B07NF5	November 20, 1992	Lead	mg/kg	1	58	JS	35	250
Columbia River	Pr Rapids Dam	B0W3F0	August 3, 1999	Lead	mg/kg	1	59	=	35	250
Columbia River	RM 428	SCA-3C	October 1, 1999	Lead	mg/kg	2	60	=	35	250
Columbia River	Pr Rapids Dam	B0W3F2	August 3, 1999	Lead	mg/kg	1	63	=	35	250
Columbia River	RM 428	SCA-3A	October 1, 1999	Lead	mg/kg	2	73	=	35	250
Columbia River	RM 398.5	GOO-3C	October 1, 1999	Lead	mg/kg	2	89	=	35	250
Columbia River	RM 398.5	GOO-4	October 1, 1999	Lead	mg/kg	2	89	=	35	250
Columbia River	RM 398.5	GOO-1	October 1, 1999	Lead	mg/kg	2	91	=	35	250
Columbia River	RM 428	SCA-4	October 1, 1999	Lead	mg/kg	2	97	=	35	250
Columbia River	RM 417.5	GHI-4	October 1, 1999	Lead	mg/kg	2	110	=	35	250

Table A-8
Summary of Surface Sediment Results From Segment 1 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	RM 398.5	GOO-3A	October 1, 1999	Lead	mg/kg	2	110	=	35	250
Columbia River	RM 428	SCA-5	October 1, 1999	Lead	mg/kg	2	110	=	35	250
Columbia River	RM 417.5	GHI-2	October 1, 1999	Lead	mg/kg	2	120	=	35	250
Columbia River	RM 417.5	GHI-3	October 1, 1999	Lead	mg/kg	2	120	=	35	250
Columbia River	RM 398.5	GOO-3B	October 1, 1999	Lead	mg/kg	2	120	=	35	250
Columbia River	RM 398.5	GOO-2	October 1, 1999	Lead	mg/kg	2	140	=	35	250
Columbia River	RM 354.4	PEW-1sed	July 16, 1992	Manganese	mg/kg	2	660	=	460	1,762
Columbia River	Pr Rapids Dam	B0W3F2	August 3, 1999	Mercury	mg/kg	1	0.19	=	0.18	23
Columbia River	Pr Rapids Dam	B17702	July 14, 2003	Mercury	mg/kg	1	0.19	=	0.18	23
Columbia River	Pr Rapids Dam	B0YWC4	August 7, 2000	Mercury	mg/kg	1	0.19	=	0.18	23
Columbia River	Pr Rapids Dam	B19PK9	July 12, 2004	Mercury	mg/kg	1	0.20	CX	0.18	23
Columbia River	RM 398.5	GOO-2	October 1, 1999	Mercury	mg/kg	2	0.20	=	0.18	23
Columbia River	Pr Rapids Dam	B0W3N5	August 3, 1999	Mercury	mg/kg	1	0.21	=	0.18	23
Columbia River	RM 398.5	GOO-3A	October 1, 1999	Mercury	mg/kg	2	0.23	=	0.18	23
Columbia River	Pr Rapids Dam	B0W3N3	August 3, 1999	Mercury	mg/kg	1	0.24	=	0.18	23
Columbia River	RM 398.5	GOO-3B	October 1, 1999	Mercury	mg/kg	2	0.25	=	0.18	23
Columbia River	RM 417.5	GHI-2	October 1, 1999	Mercury	mg/kg	2	0.26	=	0.18	23
Columbia River	RM 428	SCA-5	October 1, 1999	Mercury	mg/kg	2	0.30	=	0.18	23
Columbia River	RM 417.5	GHI-4	October 1, 1999	Mercury	mg/kg	2	0.31	=	0.18	23
Columbia River	Pr Rapids Dam	B0W3D8	August 3, 1999	Nickel	mg/kg	1	18	=	18	1,564
Columbia River	Vernita BRG	B12RY7	August 28, 2001	Nickel	mg/kg dry-wt	1	22	=	18	1,564
Columbia River	Pr Rapids Dam	B0W3D6	August 3, 1999	Nickel	mg/kg	1	25	=	18	1,564
Columbia River	Pr Rapids Dam	4444206	June 1, 2004	Nickel	mg/kg	1	27	=	18	1,564
Columbia River	Pr Rapids Dam	B0W3F0	August 3, 1999	Nickel	mg/kg	1	35	=	18	1,564
Columbia River	Pr Rapids Dam	B0W3F2	August 3, 1999	Nickel	mg/kg	1	35	=	18	1,564
Columbia River	Pr Rapids Dam	B12CL9	July 19, 2001	Nickel	mg/kg dry-wt	1	38	=	18	1,564
Columbia River	Pr Rapids Dam	B19PK9	July 12, 2004	Nickel	mg/kg	1	41	X	18	1,564
Columbia River	Pr Rapids Dam	B17704	July 14, 2003	Nickel	mg/kg	1	42	=	18	1,564
Columbia River	Pr Rapids Dam	B0W3N5	August 3, 1999	Nickel	mg/kg	1	42	=	18	1,564
Columbia River	Pr Rapids Dam	B0YWC4	August 7, 2000	Nickel	mg/kg	1	44	=	18	1,564
Columbia River	Pr Rapids Dam	B0W3N3	August 3, 1999	Nickel	mg/kg	1	46	=	18	1,564
Columbia River	Pr Rapids Dam	B12CM1	July 19, 2001	Nickel	mg/kg dry-wt	1	46	=	18	1,564
Columbia River	Pr Rapids Dam	B17702	July 14, 2003	Nickel	mg/kg	1	47	=	18	1,564
Columbia River	Pr Rapids Dam	B19PL1	July 12, 2004	Nickel	mg/kg	1	47	X	18	1,564
Columbia River	Pr Rapids Dam	B1B7W4	September 20, 2004	Nickel	mg/kg	1	49	X	18	1,564
Columbia River	Pr Rapids Dam	B0YWC2	August 7, 2000	Nickel	mg/kg	1	53	=	18	1,564
Columbia River	RM 354.4	PEW-1sed	July 16, 1992	Thorium	mg/kg	2	9.4	=	1,300	1.3
Columbia River	Vernita Bridge	27652	August 28, 2001	Thorium-232	pCi/g dry-wt	1	1.5	=	1,300	1.3
Columbia River	Vernita Area	B07NF6	November 20, 1992	Thorium-232	pCi/g	1	2.5	=	1,300	1.3
12989	Columbia River	Pr Rapids	October 1, 1992	Uranium-234	pCi/g dry	1.61	=	--	0,001	
12992	Columbia River	Pr Rapids	October 1, 1992	Uranium-234	pCi/g dry	1.22	=	--	0,001	
15827	Columbia River	Pr Rapids	September 22, 1994	Uranium-234	pCi/g dry	1.14	=	--	0,001	

Table A-8

Summary of Surface Sediment Results From Segment 1 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
18296	Columbia River	Pr Rapids	August 15, 1996	Uranium-234	pCi/g dry	1.29	=	--	0,001	
23522	Columbia River	Pr Rapids	August 3, 1999	Uranium-234	pCi/g dry	1.21	=	--	0,001	
26251	Columbia River	Pr Rapids	July 19, 2001	Uranium-234	pCi/g dry	1.3	=	--	0,001	
30872	Columbia River	Pr Rapids	July 14, 2003	Uranium-234	pCi/g dry	1.32	=	--	0,001	
Columbia River	Pr Rapids Dam	26251	July 19, 2001	Uranium-238	pCi/g dry-wt	1	1.2	=	2,490	1.1
Columbia River	Pr Rapids Dam	30872	July 14, 2003	Uranium-238	pCi/g dry-wt	1	1.3	=	2,490	1.1
Columbia River	Pr Rapids Dam	18296	August 15, 1996	Uranium-238	pCi/g dry-wt	1	1.3	=	2,490	1.1
Columbia River	Pr Rapids Dam	12989	October 1, 1992	Uranium-238	pCi/g dry-wt	1	1.3	=	2,490	1.1
Columbia River	Pr Rapids Dam	B0BRT8	April 14, 1994	Uranium-238	pCi/g	1	1.4	=	2,490	1.1
Columbia River	RM 354.4	PEW-1sed	July 16, 1992	Vanadium	mg/kg	2	130	=	--	78
Columbia River	Pr Rapids Dam	B0CSH1	September 22, 1994	Zinc	mg/kg	1	130	=	120	23,463
Columbia River	Vernita BRG	B12RY7	August 28, 2001	Zinc	mg/kg dry-wt	1	148	=	120	23,463
Columbia River	Wanapum Dam	4444208	June 1, 2004	Zinc	mg/kg	1	149	=	120	23,463
Columbia River	Vernita Area	B07NF7	November 20, 1992	Zinc	mg/kg	1	151	JE	120	23,463
Columbia River	Pr Rapids Dam	4444203	June 1, 2004	Zinc	mg/kg	1	178	=	120	23,463
Columbia River	RM 440	SS-4-1	October 1, 1999	Zinc	mg/kg	2	180	=	120	23,463
Columbia River	Pr Rapids Dam	B0CSH0	September 22, 1994	Zinc	mg/kg	1	190	=	120	23,463
Columbia River	RM 440	CRE-3	October 1, 1999	Zinc	mg/kg	2	200	=	120	23,463
Columbia River	Vernita Area	B07NF8	November 20, 1992	Zinc	mg/kg	1	205	JE	120	23,463
Columbia River	RM 440	SS-1-1	October 1, 1999	Zinc	mg/kg	2	220	=	120	23,463
Columbia River	Vernita Area	B07NF5	November 20, 1992	Zinc	mg/kg	1	226	JE	120	23,463
Columbia River	RM 440	SS-2-2	October 1, 1999	Zinc	mg/kg	2	230	=	120	23,463
Columbia River	RM 417.5	GHI-5	October 1, 1999	Zinc	mg/kg	2	240	=	120	23,463
Columbia River	Pr Rapids Dam	B0W3D8	August 3, 1999	Zinc	mg/kg	1	242	=	120	23,463
Columbia River	Pr Rapids Dam	B0CSG9	September 22, 1994	Zinc	mg/kg	1	250	=	120	23,463
Columbia River	RM 440	SS-2-1	October 1, 1999	Zinc	mg/kg	2	250	=	120	23,463
Columbia River	RM 440	SS-3-1	October 1, 1999	Zinc	mg/kg	2	250	=	120	23,463
Columbia River	RM 440	SS-1-2	October 1, 1999	Zinc	mg/kg	2	260	=	120	23,463
Columbia River	RM 440	SS-4-2	October 1, 1999	Zinc	mg/kg	2	260	=	120	23,463
Columbia River	RM 405.5	HAN-5	October 1, 1999	Zinc	mg/kg	2	290	=	120	23,463
Columbia River	RM 440	SS-3-2	October 1, 1999	Zinc	mg/kg	2	290	=	120	23,463
Columbia River	Pr Rapids Dam	B0CSH2	September 22, 1994	Zinc	mg/kg	1	300	=	120	23,463
Columbia River	Pr Rapids Dam	4444205	June 1, 2004	Zinc	mg/kg	1	346	=	120	23,463
Columbia River	RM 428	SCA-3B	October 1, 1999	Zinc	mg/kg	2	350	=	120	23,463
Columbia River	RM 428	SCA-3C	October 1, 1999	Zinc	mg/kg	2	350	=	120	23,463
Columbia River	RM 428	SCA-3A	October 1, 1999	Zinc	mg/kg	2	380	=	120	23,463
Columbia River	Pr Rapids Dam	4444206	June 1, 2004	Zinc	mg/kg	1	428	=	120	23,463
Columbia River	Pr Rapids Dam	B0W3D6	August 3, 1999	Zinc	mg/kg	1	439	=	120	23,463
Columbia River	Pr Rapids Dam	B0YWC2	August 7, 2000	Zinc	mg/kg	1	443	=	120	23,463
Columbia River	Pr Rapids Dam	B1B7W4	September 20, 2004	Zinc	mg/kg	1	487	X	120	23,463
Columbia River	Pr Rapids Dam	B17702	July 14, 2003	Zinc	mg/kg	1	495	=	120	23,463
Columbia River	Pr Rapids Dam	B0W3F0	August 3, 1999	Zinc	mg/kg	1	503	=	120	23,463

Table A-8**Summary of Surface Sediment Results From Segment 1 Exceeding Select Ecological or Human Health Benchmark Values**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	Pr Rapids Dam	B12CL9	July 19, 2001	Zinc	mg/kg dry-wt	1	510	J	120	23,463
Columbia River	Pr Rapids Dam	B0W3N3	August 3, 1999	Zinc	mg/kg	1	556	=	120	23,463
Columbia River	RM 398.5	GOO-3C	October 1, 1999	Zinc	mg/kg	2	560	=	120	23,463
Columbia River	Pr Rapids Dam	B0W3F2	August 3, 1999	Zinc	mg/kg	1	578	=	120	23,463
Columbia River	Pr Rapids Dam	B19PL1	July 12, 2004	Zinc	mg/kg	1	582	X	120	23,463
Columbia River	Pr Rapids Dam	B19PK9	July 12, 2004	Zinc	mg/kg	1	588	X	120	23,463
Columbia River	Pr Rapids Dam	B17704	July 14, 2003	Zinc	mg/kg	1	591	=	120	23,463
Columbia River	RM 398.5	GOO-4	October 1, 1999	Zinc	mg/kg	2	600	=	120	23,463
Columbia River	RM 428	SCA-4	October 1, 1999	Zinc	mg/kg	2	610	=	120	23,463
Columbia River	Pr Rapids Dam	B12CM1	July 19, 2001	Zinc	mg/kg dry-wt	1	616	J	120	23,463
Columbia River	Pr Rapids Dam	B0W3N5	August 3, 1999	Zinc	mg/kg	1	622	=	120	23,463
Columbia River	RM 417.5	GHI-4	October 1, 1999	Zinc	mg/kg	2	670	=	120	23,463
Columbia River	RM 398.5	GOO-1	October 1, 1999	Zinc	mg/kg	2	680	=	120	23,463
Columbia River	RM 428	SCA-5	October 1, 1999	Zinc	mg/kg	2	700	=	120	23,463
Columbia River	Pr Rapids Dam	B0YWC4	August 7, 2000	Zinc	mg/kg	1	703	=	120	23,463
Columbia River	RM 417.5	GHI-2	October 1, 1999	Zinc	mg/kg	2	710	=	120	23,463
Columbia River	RM 417.5	GHI-3	October 1, 1999	Zinc	mg/kg	2	720	=	120	23,463
Columbia River	RM 398.5	GOO-2	October 1, 1999	Zinc	mg/kg	2	800	=	120	23,463
Columbia River	RM 398.5	GOO-3A	October 1, 1999	Zinc	mg/kg	2	800	=	120	23,463
Columbia River	RM 398.5	GOO-3B	October 1, 1999	Zinc	mg/kg	2	850	=	120	23,463

Table A-9
Summary Statistics for All Categories of Surface Water Samples Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Alkalinity	mg/L	135	135	100%	--	--	41	77	54
CONV	Ammonia	mg/L	76	10	13%	0.010	0.040	0.010	0.034	0.0074
CONV	Chloride	mg/L	83	83	100%	--	--	0.72	3.3	1.0
CONV	Cyanide	mg/L	8	0	0%	0.0016	0.0016	--	--	8.00E-04
CONV	Fluoride	mg/L	83	78	94%	0.0060	0.040	0.020	0.20	0.093
CONV	Nitrogen in ammonia	mg/L	2	2	100%	--	--	0.080	0.11	0.095
CONV	Nitrogen, Nitrate (as N)	mg/L	94	94	100%	--	--	0.050	0.22	0.11
CONV	Nitrogen, Nitrate-Nitrite	mg/L	224	157	70%	0.010	0.10	0.037	0.30	0.10
CONV	Nitrogen, Nitrite	mg/L	83	0	0%	0.0020	0.011	--	--	0.0034
CONV	Orthophosphate	mg/L	76	29	38%	0.0030	0.020	0.0031	0.013	0.0034
CONV	pH	pH Units	65	65	100%	--	--	6.9	8.5	8.1
CONV	Specific Conductance	umhos/cm	67	67	100%	--	--	107	205	134
CONV	Sulfate	mg/L	83	83	100%	--	--	6.8	25	9.1
CONV	Temperature	Deg C	4	4	100%	--	--	7.2	7.3	7.3
CONV	Total Persulfate Nitrogen	mg/L	75	75	100%	--	--	0.083	0.38	0.17
CONV	Total suspended solids	mg/L	75	68	91%	1.0	1.0	1.0	11	2.2
METAL	Aluminum	mg/L	11	11	100%	--	--	4.65E-04	0.033	0.010
METAL	Antimony	mg/L	160	159	99%	0.020	0.020	1.24E-04	2.73E-04	2.55E-04
METAL	Arsenic	mg/L	173	173	100%	--	--	2.60E-04	0.0017	5.97E-04
METAL	Barium	mg/L	5	5	100%	--	--	0.028	0.029	0.029
METAL	Beryllium	mg/L	141	13	9%	8.00E-06	0.0050	1.05E-05	7.20E-05	3.27E-05
METAL	Cadmium	mg/L	159	131	82%	1.00E-05	4.00E-05	8.82E-06	7.84E-05	2.14E-05
METAL	Calcium	mg/L	2	2	100%	--	--	21	29	25
METAL	Chromium	mg/L	162	115	71%	1.65E-05	0.10	1.94E-05	0.0022	4.85E-04
METAL	Cobalt	mg/L	1	0	0%	0.0030	0.0030	--	--	0.0015
METAL	Copper	mg/L	162	161	99%	10	10	3.38E-04	0.0042	0.032
METAL	Iodine	mg/L	19	19	100%	--	--	4.31E-04	9.62E-04	6.15E-04
METAL	Iron	mg/L	2	1	50%	0.010	0.010	0.015	0.015	0.010
METAL	Lead	mg/L	161	153	95%	1.10E-05	1.10E-05	3.47E-06	3.42E-04	6.02E-05
METAL	Magnesium	mg/L	2	2	100%	--	--	5.2	5.2	5.2
METAL	Manganese	mg/L	12	11	92%	0.0030	0.0030	8.52E-04	0.0051	0.0020
METAL	Mercury	mg/L	70	67	96%	2.00E-06	2.00E-06	2.89E-07	3.32E-06	6.74E-07
METAL	Nickel	mg/L	161	161	100%	--	--	3.92E-05	0.0020	4.93E-04
METAL	Phosphorus	mg/L	213	132	62%	0.0040	0.010	0.0025	0.030	0.012
METAL	Potassium	mg/L	2	2	100%	--	--	0.90	1.3	1.1
METAL	Selenium	mg/L	160	68	43%	8.00E-05	5.50E-04	7.52E-05	5.65E-04	1.93E-04
METAL	Silica	mg/L	1	1	100%	--	--	9.9	9.9	9.9
METAL	Silver	mg/L	162	84	52%	1.20E-06	5.00E-05	8.33E-07	1.73E-05	5.79E-06
METAL	Sodium	mg/L	2	2	100%	--	--	2.5	4.4	3.5
METAL	Thallium	mg/L	152	139	91%	3.00E-06	5.00E-04	8.55E-06	3.90E-05	2.27E-05
METAL	Thorium	mg/L	6	1	17%	4.23E-05	4.23E-05	7.30E-05	7.30E-05	2.98E-05
METAL	Uranium	mg/L	6	6	100%	--	--	4.75E-04	6.01E-04	5.42E-04

Table A-9
Summary Statistics for All Categories of Surface Water Samples Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Vanadium	mg/L	1	0	0%	0.0030	0.0030	--	--	0.0015
METAL	Zinc	mg/L	161	161	100%	--	--	5.36E-04	0.0051	0.0019
PEST	Alachlor	mg/L	1	0	0%	7.30E-05	7.30E-05	--	--	3.65E-05
PEST	Ametryn	mg/L	1	0	0%	2.00E-05	2.00E-05	--	--	1.00E-05
PEST	Atraton	mg/L	1	0	0%	3.00E-05	3.00E-05	--	--	1.50E-05
PEST	Atrazine	mg/L	1	0	0%	2.00E-05	2.00E-05	--	--	1.00E-05
PEST	Benefin (Benfluralin)	mg/L	1	0	0%	3.00E-05	3.00E-05	--	--	1.50E-05
PEST	Bromacil (ACN)	mg/L	1	0	0%	8.10E-05	8.10E-05	--	--	4.05E-05
PEST	Butachlor	mg/L	1	0	0%	1.20E-04	1.20E-04	--	--	6.00E-05
PEST	Butylate	mg/L	1	0	0%	4.10E-05	4.10E-05	--	--	2.05E-05
PEST	Carboxin	mg/L	1	0	0%	1.20E-04	1.20E-04	--	--	6.00E-05
PEST	Chlorothalonil	mg/L	1	0	0%	4.90E-05	4.90E-05	--	--	2.45E-05
PEST	Chlorpropham	mg/L	1	0	0%	8.10E-05	8.10E-05	--	--	4.05E-05
PEST	Cyanazine	mg/L	1	0	0%	3.00E-05	3.00E-05	--	--	1.50E-05
PEST	Cycloate	mg/L	1	0	0%	4.10E-05	4.10E-05	--	--	2.05E-05
PEST	Diallate	mg/L	1	0	0%	1.40E-04	1.40E-04	--	--	7.00E-05
PEST	Dichlobenil	mg/L	1	0	0%	4.10E-05	4.10E-05	--	--	2.05E-05
PEST	Diphenamid	mg/L	1	0	0%	6.10E-05	6.10E-05	--	--	3.05E-05
PEST	Diuron	mg/L	1	0	0%	1.20E-04	1.20E-04	--	--	6.00E-05
PEST	Eptam	mg/L	1	0	0%	4.10E-05	4.10E-05	--	--	2.05E-05
PEST	Ethalfuralin (Sonalan)	mg/L	1	0	0%	3.00E-05	3.00E-05	--	--	1.50E-05
PEST	Fenarimol	mg/L	1	0	0%	6.10E-05	6.10E-05	--	--	3.05E-05
PEST	Fluridone	mg/L	1	0	0%	1.20E-04	1.20E-04	--	--	6.00E-05
PEST	Hexazinone	mg/L	1	0	0%	3.00E-05	3.00E-05	--	--	1.50E-05
PEST	Metaxyl	mg/L	1	0	0%	1.20E-04	1.20E-04	--	--	6.00E-05
PEST	Metolachlor	mg/L	1	0	0%	8.10E-05	8.10E-05	--	--	4.05E-05
PEST	Metribuzin	mg/L	1	0	0%	2.00E-05	2.00E-05	--	--	1.00E-05
PEST	MGK264	mg/L	1	0	0%	1.60E-04	1.60E-04	--	--	8.00E-05
PEST	Molinate	mg/L	1	0	0%	4.10E-05	4.10E-05	--	--	2.05E-05
PEST	Napropamide	mg/L	1	0	0%	6.10E-05	6.10E-05	--	--	3.05E-05
PEST	Norflurazon	mg/L	1	0	0%	4.10E-05	4.10E-05	--	--	2.05E-05
PEST	Oxyfluorfen	mg/L	1	0	0%	8.10E-05	8.10E-05	--	--	4.05E-05
PEST	Pebulate	mg/L	1	0	0%	4.10E-05	4.10E-05	--	--	2.05E-05
PEST	Pendimethalin	mg/L	1	0	0%	3.00E-05	3.00E-05	--	--	1.50E-05
PEST	Pramitol (Prometon)	mg/L	1	0	0%	2.00E-05	2.00E-05	--	--	1.00E-05
PEST	Profluralin	mg/L	1	0	0%	4.90E-05	4.90E-05	--	--	2.45E-05
PEST	Prometryn	mg/L	1	0	0%	2.00E-05	2.00E-05	--	--	1.00E-05
PEST	Pronamide	mg/L	1	0	0%	8.10E-05	8.10E-05	--	--	4.05E-05
PEST	Propachlor (Ramrod)	mg/L	1	0	0%	4.90E-05	4.90E-05	--	--	2.45E-05
PEST	Propazine	mg/L	1	0	0%	2.00E-05	2.00E-05	--	--	1.00E-05
PEST	Simazine	mg/L	1	0	0%	2.00E-05	2.00E-05	--	--	1.00E-05
PEST	Tebuthiuron	mg/L	1	0	0%	3.00E-05	3.00E-05	--	--	1.50E-05

Table A-9
Summary Statistics for All Categories of Surface Water Samples Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Terbacil	mg/L	1	0	0%	6.10E-05	6.10E-05	--	--	3.05E-05
PEST	Terbutryn	mg/L	1	0	0%	2.00E-05	2.00E-05	--	--	1.00E-05
PEST	Triadimefon	mg/L	1	0	0%	5.30E-05	5.30E-05	--	--	2.65E-05
PEST	Triallate	mg/L	1	0	0%	6.10E-05	6.10E-05	--	--	3.05E-05
PEST	Trifluralin (Treflan)	mg/L	1	0	0%	3.00E-05	3.00E-05	--	--	1.50E-05
PEST	Vernolate	mg/L	1	0	0%	4.10E-05	4.10E-05	--	--	2.05E-05
RAD	Antimony-125	pCi/L	63	0	0%	9.78E-06	2.0	--	--	0.032
RAD	Beryllium-7	pCi/L	134	42	31%	8.15E-05	12	0.013	0.096	0.13
RAD	Carbon-14	pCi/L	6	1	17%	1.5	8.0	8.8	8.8	3.0
RAD	Cesium-134	pCi/L	75	0	0%	3.30E-05	1.8	--	--	0.028
RAD	Cesium-137	pCi/L	115	4	3%	2.26E-05	2.7	8.97E-04	1.0	0.048
RAD	Cobalt-60	pCi/L	110	2	2%	9.77E-06	1.3	0.40	1.0	0.030
RAD	Europium-152	pCi/L	18	0	0%	2.83E-05	0.0027	--	--	4.09E-04
RAD	Europium-154	pCi/L	68	0	0%	1.47E-04	0.0091	--	--	0.0012
RAD	Europium-155	pCi/L	87	0	0%	4.33E-05	3.5	--	--	0.033
RAD	Gross alpha	pCi/L	80	11	14%	0.025	1.2	0.48	5.6	0.46
RAD	Gross beta	pCi/L	69	11	16%	0.0033	3.6	1.2	8.4	0.91
RAD	Iodine-129	pCi/L	23	23	100%	--	--	6.00E-07	2.12E-05	7.00E-06
RAD	Lead-212	pCi/L	1	1	100%	--	--	0.011	0.011	0.011
RAD	Plutonium-238	pCi/L	24	3	13%	4.63E-07	9.05E-05	9.36E-06	1.54E-04	1.49E-05
RAD	Plutonium-239/240	pCi/L	39	19	49%	1.66E-06	5.48E-05	1.31E-05	1.79E-04	2.25E-05
RAD	Potassium-40	pCi/L	137	122	89%	0.0023	29	0.030	60	2.5
RAD	Ruthenium-106	pCi/L	63	0	0%	5.58E-05	11	--	--	0.17
RAD	Strontium-90	pCi/L	174	157	90%	0.025	0.70	0.042	2.0	0.085
RAD	Technetium-99	pCi/L	41	0	0%	0.0015	0.80	--	--	0.11
RAD	Thorium-228	pCi/L	1	1	100%	--	--	0.023	0.023	0.023
RAD	Thorium-230	pCi/L	2	0	0%	0.0059	0.012	--	--	0.0044
RAD	Thorium-232	pCi/L	2	0	0%	0.0039	0.010	--	--	0.0036
RAD	Tritium	pCi/L	173	169	98%	1.0	34	14	130	35
RAD	Uranium	pCi/L	12	11	92%	0.040	0.040	0.37	0.67	0.43
RAD	Uranium-234	pCi/L	185	184	99%	0.040	0.040	0.11	0.42	0.23
RAD	Uranium-235	pCi/L	154	28	18%	9.14E-05	0.020	0.0049	0.030	0.0048
RAD	Uranium-236	pCi/L	1	1	100%	--	--	0.0025	0.0025	0.0025
RAD	Uranium-238	pCi/L	185	184	99%	0.010	0.010	0.065	0.38	0.18
SVOC	1,4-Dichlorobenzene	mg/L	26	3	12%	1.10E-04	2.50E-04	1.20E-04	4.40E-04	1.11E-04
VOC	1,1,1-Trichloroethane	mg/L	26	0	0%	7.00E-05	3.10E-04	--	--	1.13E-04
VOC	1,1,2-Trichloroethane	mg/L	26	0	0%	5.00E-05	3.10E-04	--	--	1.20E-04
VOC	1,1-Dichloroethane	mg/L	26	0	0%	1.20E-04	2.50E-04	--	--	1.02E-04
VOC	1,1-Dichloroethene	mg/L	6	0	0%	2.30E-04	2.30E-04	--	--	1.15E-04
VOC	1,2-Dichloroethane	mg/L	26	0	0%	8.00E-05	2.70E-04	--	--	1.00E-04
VOC	2-Butanone	mg/L	26	0	0%	1.00E-04	7.00E-04	--	--	2.13E-04
VOC	4-Methyl-2-Pentanone	mg/L	26	0	0%	1.90E-04	0.0013	--	--	3.22E-04

Table A-9
Summary Statistics for All Categories of Surface Water Samples Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
VOC	Acetone	mg/L	26	11	42%	3.00E-04	0.0040	6.20E-04	0.0038	0.0014
VOC	Benzene	mg/L	26	0	0%	7.00E-05	2.30E-04	--	--	9.35E-05
VOC	Carbon disulfide	mg/L	26	2	8%	6.00E-05	4.30E-04	3.30E-04	6.10E-04	1.64E-04
VOC	Carbon tetrachloride	mg/L	26	0	0%	1.00E-04	3.30E-04	--	--	1.18E-04
VOC	Chlorobenzene	mg/L	2	0	0%	2.80E-04	2.80E-04	--	--	1.40E-04
VOC	Chloroform	mg/L	26	0	0%	7.00E-05	2.30E-04	--	--	8.96E-05
VOC	cis-1,2-dichloroethene	mg/L	26	0	0%	6.00E-05	2.40E-04	--	--	8.62E-05
VOC	Ethylbenzene	mg/L	8	0	0%	1.40E-04	2.40E-04	--	--	9.50E-05
VOC	Ethylcyanide	mg/L	26	0	0%	0.0013	0.0026	--	--	9.85E-04
VOC	Methylene chloride	mg/L	26	6	23%	1.70E-04	3.70E-04	3.60E-04	5.80E-04	2.02E-04
VOC	n-Butanol	mg/L	22	0	0%	0.0046	0.0066	--	--	0.0026
VOC	Tetrachloroethene	mg/L	26	0	0%	8.00E-05	5.70E-04	--	--	1.76E-04
VOC	Tetrahydrofuran	mg/L	26	0	0%	0.0015	0.0023	--	--	9.35E-04
VOC	Toluene	mg/L	26	8	31%	1.20E-04	3.30E-04	2.50E-04	5.50E-04	2.03E-04
VOC	trans-1,2-Dichloroethene	mg/L	26	0	0%	9.00E-05	2.60E-04	--	--	1.04E-04
VOC	Trichloroethene	mg/L	26	0	0%	9.00E-05	2.90E-04	--	--	9.96E-05
VOC	Vinyl chloride	mg/L	26	0	0%	8.00E-05	3.20E-04	--	--	1.13E-04
VOC	Xylenes (total)	mg/L	26	3	12%	2.80E-04	6.60E-04	3.20E-04	5.20E-04	2.93E-04

CONV - Conventional parameter

PEST - Pesticide

RAD - Radionuclide

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table A-10
Summary Statistics for Category 1 Surface Water Samples Collected from the Methow River (Segment 1)

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Ammonia	mg/L	1	0	0%	0.040	0.040	--	--	0.020
CONV	Chloride	mg/L	1	1	100%	--	--	3.3	3.3	3.3
CONV	Fluoride	mg/L	1	1	100%	--	--	0.20	0.20	0.20
CONV	Nitrogen in ammonia	mg/L	2	2	100%	--	--	0.080	0.11	0.095
CONV	Nitrogen, Nitrate-Nitrite	mg/L	1	1	100%	--	--	0.22	0.22	0.22
CONV	Nitrogen, Nitrite	mg/L	1	0	0%	0.0060	0.0060	--	--	0.0030
CONV	Orthophosphate	mg/L	1	0	0%	0.020	0.020	--	--	0.010
CONV	pH	pH Units	1	1	100%	--	--	8.1	8.1	8.1
CONV	Specific Conductance	umhos/cm	1	1	100%	--	--	205	205	205
CONV	Sulfate	mg/L	1	1	100%	--	--	9.7	9.7	9.7
METAL	Calcium	mg/L	1	1	100%	--	--	29	29	29
METAL	Iron	mg/L	1	0	0%	0.010	0.010	--	--	0.0050
METAL	Magnesium	mg/L	1	1	100%	--	--	5.2	5.2	5.2
METAL	Manganese	mg/L	1	0	0%	0.0030	0.0030	--	--	0.0015
METAL	Phosphorus	mg/L	2	0	0%	0.0040	0.0060	--	--	0.0025
METAL	Potassium	mg/L	1	1	100%	--	--	0.90	0.90	0.90
METAL	Silica	mg/L	1	1	100%	--	--	9.9	9.9	9.9
METAL	Sodium	mg/L	1	1	100%	--	--	4.4	4.4	4.4

CONV - Conventional parameter

Table A-11
Comparison of All Categories of Surface Water Concentrations Collected from Segment 1 of the Columbia River to Ecological and Human Health Benchmark Values

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
CONV	Alkalinity	mg/L	135	135	100%	41	77	54	--	--	--	--	--	--	--	--
CONV	Ammonia	mg/L	76	10	13%	0.010	0.034	0.0074	--	--	--	--	--	--	--	--
CONV	Chloride	mg/L	83	83	100%	0.72	3.3	1.0	230	No	0.014	0	--	--	--	--
CONV	Fluoride	mg/L	83	78	94%	0.020	0.20	0.093	--	--	--	--	--	--	--	--
CONV	Nitrogen in ammonia	mg/L	2	2	100%	0.080	0.11	0.095	--	--	--	--	--	--	--	--
CONV	Nitrogen, Nitrate (as N)	mg/L	94	94	100%	0.050	0.22	0.11	--	--	--	--	--	--	--	--
CONV	Nitrogen, Nitrate-Nitrite	mg/L	224	157	70%	0.037	0.30	0.10	--	--	--	--	--	--	--	--
CONV	Orthophosphate	mg/L	76	29	38%	0.0031	0.013	0.0034	--	--	--	--	--	--	--	--
CONV	pH	pH Units	65	65	100%	6.9	8.5		--	--	--	--	--	--	--	--
CONV	Specific Conductance	umhos/cm	67	67	100%	107	205	134	--	--	--	--	--	--	--	--
CONV	Sulfate	mg/L	83	83	100%	6.8	25	9.1	--	--	--	--	--	--	--	--
CONV	Temperature	Deg C	4	4	100%	7.2	7.3	7.3	--	--	--	--	--	--	--	--
CONV	Total Persulfate Nitrogen	mg/L	75	75	100%	0.083	0.38	0.17	--	--	--	--	--	--	--	--
CONV	Total suspended solids	mg/L	75	68	91%	1.0	11	2.2	--	--	--	--	--	--	--	--
METAL	Aluminum	mg/L	11	11	100%	4.65E-04	0.033	0.010	0.087	No	0.38	0	--	--	--	--
METAL	Antimony	mg/L	160	159	99%	1.24E-04	2.73E-04	2.55E-04	1.6	No	1.71E-04	0	0.0056	No	0.049	0
METAL	Arsenic	mg/L	173	173	100%	2.60E-04	0.0017	5.97E-04	0.15	No	0.012	0	1.80E-05	Yes	96	173
METAL	Barium	mg/L	5	5	100%	0.028	0.029	0.029	0.0040	Yes	7.4	5	1.0	No	0.029	
METAL	Beryllium	mg/L	141	13	9%	1.05E-05	7.20E-05	3.27E-05	0.0053	No	0.014	0	--	--	--	--
METAL	Cadmium	mg/L	159	131	82%	8.82E-06	7.84E-05	2.14E-05	2.50E-04	No	0.31	0	--	--	--	--
METAL	Calcium	mg/L	2	2	100%	21	29	25	116	No	0.25	0	--	--	--	--
METAL	Chromium	mg/L	162	115	71%	1.94E-05	0.0022	4.85E-04	0.010	No	0.22	0	--	--	--	--
METAL	Copper	mg/L	162	161	99%	3.38E-04	0.0042	0.032	0.0060	No	0.71	0	--	--	--	--
METAL	Iodine	mg/L	19	19	100%	4.31E-04	9.62E-04	6.15E-04	--	--	--	--	--	--	--	--
METAL	Iron	mg/L	2	1	50%	0.015	0.015	0.010	1.0	No	0.015	0	0.30	No	0.050	
METAL	Lead	mg/L	161	153	95%	3.47E-06	3.42E-04	6.02E-05	8.67E-04	No	0.39	0	--	--	--	--
METAL	Magnesium	mg/L	2	2	100%	5.2	5.2	5.2	82	No	0.064	0	--	--	--	--
METAL	Manganese	mg/L	12	11	92%	8.52E-04	0.0051	0.0020	0.12	No	0.042	0	0.050	No	0.10	
METAL	Mercury	mg/L	70	67	96%	2.89E-07	3.32E-06	6.74E-07	1.20E-05	No	0.28	0	--	--	--	--
METAL	Nickel	mg/L	161	161	100%	3.92E-05	0.0020	4.93E-04	0.028	No	0.074	0	0.61	No	0.0033	
METAL	Phosphorus	mg/L	213	132	62%	0.0025	0.030	0.012	--	--	--	--	--	--	--	--
METAL	Potassium	mg/L	2	2	100%	0.90	1.3	1.1	53	No	0.025	0	--	--	--	--
METAL	Selenium	mg/L	160	68	43%	7.52E-05	5.65E-04	1.93E-04	0.0050	No	0.11	0	0.17	No	0.0033	
METAL	Silica	mg/L	1	1	100%	9.9	9.9	9.9	--	--	--	--	--	--	--	--
METAL	Silver	mg/L	162	84	52%	8.33E-07	1.73E-05	5.79E-06	1.20E-04	No	0.14	0	--	--	--	--
METAL	Sodium	mg/L	2	2	100%	2.5	4.4	3.5	680	No	0.0065	0	--	--	--	--
METAL	Thallium	mg/L	152	139	91%	8.55E-06	3.90E-05	2.27E-05	0.040	No	9.74E-04	0	2.40E-04	No	0.16	
METAL	Thorium	mg/L	6	1	17%	7.30E-05	7.30E-05	2.98E-05	--	--	--	--	--	--	--	--
METAL	Uranium	mg/L	6	6	100%	4.75E-04	6.01E-04	5.42E-04	0.0026	No	0.23	0	0.03	No	0.020	--
METAL	Zinc	mg/L	161	161	100%	5.36E-04	0.0051	0.0019	0.055	No	0.092	0	7.4	No	6.84E-04	
RAD	Beryllium-7	pCi/L	134	42	31%	0.013	0.096	0.13	--	--	--	--	--	--	--	--
RAD	Carbon-14	pCi/L	6	1	17%	8.8	8.8	3.0	--	--	--	--	2,000	No	0.0044	
RAD	Cesium-137	pCi/L	115	4	3%	8.97E-04	1.0	0.048	43	No	0.023	0	200	No	0.0050	
RAD	Cobalt-60	pCi/L	110	2	2%	0.40	1.0	0.030	3,760	No	2.66E-04	0	100	No	0.010	
RAD	Gross alpha	pCi/L	80	11	14%	0.48	5.6	0.46	--	--	--	--	--	--	--	--
RAD	Gross beta	pCi/L	69	11	16%	1.2	8.4	0.91	--	--	--	--	--	--	--	--
RAD	Iodine-129	pCi/L	23	23	100%	6.00E-07	2.12E-05	7.00E-06	--	--	--	--	--	--	--	--
RAD	Lead-212	pCi/L	1	1	100%	0.011	0.011	0.011	--	--	--	--	--	--	--	--
RAD	Plutonium-238	pCi/L	24	3	13%	9.36E-06	1.54E-04	1.49E-05	--	--	--	--	15	No	1.03E-05	0
RAD	Plutonium-239/240	pCi/L	39	19	49%	1.31E-05	1.79E-04	2.25E-05	--	--	--	--	15	No	1.19E-05	0
RAD	Potassium-40	pCi/L	137	122	89%	0.030	60	2.5	--	--	--	--	--	--	--	--
RAD	Strontium-90	pCi/L	174	157	90%	0.042	2.0	0.085	278	No	0.0072	0	8.0	No	0.25	0
RAD	Thorium-228	pCi/L	1	1	100%	0.023	0.023	0.023	--	--	--	--	--	--	--	--
RAD	Tritium	pCi/L	173	169	98%	14	130	35	2.65E+08	No	4.91E-07	0	20,000	No	0.0065	0
RAD	Uranium	pCi/L	12	11	92%	0.37	0.67	0.43	223	No	0.0030	0	--	--	--	--
RAD	Uranium-234	pCi/L	185	184	99%	0.11	0.42	0.23	202	No	0.0021	0	--	--	--	--

Table A-11
Comparison of All Categories of Surface Water Concentrations Collected from Segment 1 of the Columbia River to Ecological and Human Health Benchmark Values

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
RAD	Uranium-235	pCi/L	154	28	18%	0.0049	0.030	0.0048	217	No	1.38E-04	0	--	--	--	--
RAD	Uranium-236	pCi/L	1	1	100%	0.0025	0.0025	0.0025	--	--	--	--	--	--	--	--
RAD	Uranium-238	pCi/L	185	184	99%	0.065	0.38	0.18	223	No	0.0017	0	30	No	0.013	0
SVOC	1,4-Dichlorobenzene	mg/L	26	3	12%	1.20E-04	4.40E-04	1.11E-04	0.015	No	0.029	0	0.063	No	0.0070	0
VOC	Acetone	mg/L	26	11	42%	6.20E-04	0.0038	0.0014	--	--	--	--	--	--	--	--
VOC	Carbon disulfide	mg/L	26	2	8%	3.30E-04	6.10E-04	1.64E-04	--	--	--	--	--	--	--	--
VOC	Methylene chloride	mg/L	26	6	23%	3.60E-04	5.80E-04	2.02E-04	--	--	--	--	--	--	--	--
VOC	Toluene	mg/L	26	8	31%	2.50E-04	5.50E-04	2.03E-04	--	--	--	--	--	--	--	--
VOC	Xylenes (total)	mg/L	26	3	12%	3.20E-04	5.20E-04	2.93E-04	--	--	--	--	--	--	--	--

CONV - Conventional parameter
RAD - Radionuclide
SVOC - Semivolatile Organic Compound
VOC - Volatile Organic Compound

Table A-12

Summary of Surface Water Results From Segment 1 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	NORTHPORT WA	2018080	December 3, 2001	Arsenic	mg/L	1	2.60E-04	=	--	1.80E-05
Columbia River	NORTHPORT WA	1408080	September 10, 2001	Arsenic	mg/L	1	3.20E-04	=	--	1.80E-05
Columbia River	NORTHPORT WA	1368080	August 6, 2001	Arsenic	mg/L	1	3.50E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B183P7	December 9, 2003	Arsenic	mg/L	1	3.62E-04	=	--	1.80E-05
Columbia River	NORTHPORT WA	2268155	June 3, 2002	Arsenic	mg/L	1	3.80E-04	=	--	1.80E-05
Columbia River	NORTHPORT WA	2068080	January 14, 2002	Arsenic	mg/L	1	3.90E-04	=	--	1.80E-05
Columbia River	NORTHPORT WA	1498100	November 5, 2001	Arsenic	mg/L	1	4.00E-04	=	--	1.80E-05
Columbia River	NORTHPORT WA	2158155	March 11, 2002	Arsenic	mg/L	1	4.20E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B0XRM9	March 27, 2000	Arsenic	mg/L	1	4.27E-04	=	--	1.80E-05
Columbia River	NORTHPORT WA	1286057	July 9, 2001	Arsenic	mg/L	1	4.40E-04	=	--	1.80E-05
Columbia River	NORTHPORT WA	2228080	May 12, 2002	Arsenic	mg/L	1	4.40E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B0XRM8	March 27, 2000	Arsenic	mg/L	1	4.44E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B10669	September 14, 2000	Arsenic	mg/L	1	4.48E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B10671	September 14, 2000	Arsenic	mg/L	1	4.53E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B0X3Y5	December 7, 1999	Arsenic	mg/L	1	4.57E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B0XRN0	March 27, 2000	Arsenic	mg/L	1	4.64E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B0X3W2	December 7, 1999	Arsenic	mg/L	1	4.66E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B0X3Y2	December 7, 1999	Arsenic	mg/L	1	4.66E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B158P2	September 5, 2002	Arsenic	mg/L	1	4.77E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B158P5	September 5, 2002	Arsenic	mg/L	1	4.81E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B183P8	December 9, 2003	Arsenic	mg/L	1	4.82E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B0XRN1	March 27, 2000	Arsenic	mg/L	1	4.84E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B158P4	September 5, 2002	Arsenic	mg/L	1	4.87E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B16340	December 9, 2002	Arsenic	mg/L	1	4.96E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B10691	September 14, 2000	Arsenic	mg/L	1	4.98E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B183P6	December 9, 2003	Arsenic	mg/L	1	5.01E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B0X3W1	December 7, 1999	Arsenic	mg/L	1	5.02E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B11137	December 4, 2000	Arsenic	mg/L	1	5.05E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B0X3Y3	December 7, 1999	Arsenic	mg/L	1	5.05E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B0X3W3	December 7, 1999	Arsenic	mg/L	1	5.06E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B11H49	February 27, 2001	Arsenic	mg/L	1	5.10E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B16355	December 9, 2002	Arsenic	mg/L	1	5.11E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B158P3	September 5, 2002	Arsenic	mg/L	1	5.12E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B183T9	December 9, 2003	Arsenic	mg/L	1	5.12E-04	C	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B16354	December 9, 2002	Arsenic	mg/L	1	5.17E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B10668	September 14, 2000	Arsenic	mg/L	1	5.19E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B13LH5	December 3, 2001	Arsenic	mg/L	1	5.19E-04	=	--	1.80E-05
Columbia River	NORTHPORT WA	2178180	April 8, 2002	Arsenic	mg/L	1	5.20E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B0X3Y4	December 7, 1999	Arsenic	mg/L	1	5.23E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B16331	December 9, 2002	Arsenic	mg/L	1	5.24E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B16353	December 9, 2002	Arsenic	mg/L	1	5.24E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B11123	December 4, 2000	Arsenic	mg/L	1	5.25E-04	=	--	1.80E-05

Table A-12

Summary of Surface Water Results From Segment 1 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	Vernita4 HRM0.3	B11138	December 4, 2000	Arsenic	mg/L	1	5.25E-04	=	--	1.80E-05
Columbia River	Vernita BRG	B14K64	May 3, 2002	Arsenic	mg/L	2	5.28E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B11114	December 4, 2000	Arsenic	mg/L	1	5.28E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B10688	September 14, 2000	Arsenic	mg/L	1	5.29E-04	=	--	1.80E-05
Columbia River	NORTHPORT WA	1468155	October 15, 2001	Arsenic	mg/L	1	5.30E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B11H50	February 27, 2001	Arsenic	mg/L	1	5.32E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B17CM5	September 4, 2003	Arsenic	mg/L	1	5.32E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B11H52	February 27, 2001	Arsenic	mg/L	1	5.36E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B158H2	September 5, 2002	Arsenic	mg/L	1	5.38E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B17CM6	September 4, 2003	Arsenic	mg/L	1	5.43E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B11136	December 4, 2000	Arsenic	mg/L	1	5.45E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B11135	December 4, 2000	Arsenic	mg/L	1	5.46E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B10689	September 14, 2000	Arsenic	mg/L	1	5.46E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B183T8	December 9, 2003	Arsenic	mg/L	1	5.47E-04	C	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B0X3X0	December 7, 1999	Arsenic	mg/L	1	5.47E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B0W970	September 10, 1999	Arsenic	mg/L	1	5.47E-04	=	--	1.80E-05
Columbia River	Vernita BRG	B14K65	May 3, 2002	Arsenic	mg/L	2	5.48E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B11115	December 4, 2000	Arsenic	mg/L	1	5.48E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B11H30	February 27, 2001	Arsenic	mg/L	1	5.49E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B0XRJ1	March 27, 2000	Arsenic	mg/L	1	5.50E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B0V228	June 11, 1999	Arsenic	mg/L	1	5.51E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B16L95	March 24, 2003	Arsenic	mg/L	1	5.51E-04	C	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B0XRJ9	March 27, 2000	Arsenic	mg/L	1	5.52E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B11116	December 4, 2000	Arsenic	mg/L	1	5.52E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B0XRJ0	March 27, 2000	Arsenic	mg/L	1	5.53E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B13LD3	December 3, 2001	Arsenic	mg/L	1	5.57E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B16332	December 9, 2002	Arsenic	mg/L	1	5.60E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B0XRJ2	March 27, 2000	Arsenic	mg/L	1	5.61E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B17CD6	September 4, 2003	Arsenic	mg/L	1	5.64E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B11H51	February 27, 2001	Arsenic	mg/L	1	5.64E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B11H29	February 27, 2001	Arsenic	mg/L	1	5.69E-04	=	--	1.80E-05
Columbia River	EB NR Wenatchee	01258001	June 20, 2001	Arsenic	mg/L	1	5.70E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B12521	June 14, 2001	Arsenic	mg/L	1	5.70E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B17CC7	September 4, 2003	Arsenic	mg/L	1	5.71E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B17CM3	September 4, 2003	Arsenic	mg/L	1	5.72E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B17CM4	September 4, 2003	Arsenic	mg/L	1	5.72E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B0YCJ3	June 19, 2000	Arsenic	mg/L	1	5.73E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B12524	June 14, 2001	Arsenic	mg/L	1	5.73E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B16352	December 9, 2002	Arsenic	mg/L	1	5.74E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B11H28	February 27, 2001	Arsenic	mg/L	1	5.74E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B10690	September 14, 2000	Arsenic	mg/L	1	5.74E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B183R5	December 9, 2003	Arsenic	mg/L	1	5.76E-04	=	--	1.80E-05

Table A-12

Summary of Surface Water Results From Segment 1 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	Vernita3 HRM0.3	B158F4	September 5, 2002	Arsenic	mg/L	1	5.77E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B13LD2	December 3, 2001	Arsenic	mg/L	1	5.79E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B13LH4	December 3, 2001	Arsenic	mg/L	1	5.83E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B0YCJ4	June 19, 2000	Arsenic	mg/L	1	5.84E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B16L86	March 24, 2003	Arsenic	mg/L	1	5.84E-04	C	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B10670	September 14, 2000	Arsenic	mg/L	1	5.85E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B17CC9	September 4, 2003	Arsenic	mg/L	1	5.87E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B16LB8	March 24, 2003	Arsenic	mg/L	1	5.89E-04	C	--	1.80E-05
Columbia River	Wenatchee @ CHN	01258000	June 20, 2001	Arsenic	mg/L	1	5.90E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B17CC8	September 4, 2003	Arsenic	mg/L	1	5.92E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B171Y2	June 9, 2003	Arsenic	mg/L	1	5.98E-04	C	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B16L87	March 24, 2003	Arsenic	mg/L	1	5.98E-04	C	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B13LF1	December 3, 2001	Arsenic	mg/L	1	5.99E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B16L88	March 24, 2003	Arsenic	mg/L	1	6.00E-04	C	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B158F3	September 5, 2002	Arsenic	mg/L	1	6.02E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B0YCJ5	June 19, 2000	Arsenic	mg/L	1	6.02E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B11H37	February 27, 2001	Arsenic	mg/L	1	6.04E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B16333	December 9, 2002	Arsenic	mg/L	1	6.04E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B16LB9	March 24, 2003	Arsenic	mg/L	1	6.06E-04	C	--	1.80E-05
Columbia River	Vernita BRG	B14L10	May 17, 2002	Arsenic	mg/L	2	6.07E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B16LB7	March 24, 2003	Arsenic	mg/L	1	6.08E-04	C	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B1B749	September 13, 2004	Arsenic	mg/L	1	6.09E-04	X	--	1.80E-05
Columbia River	Vernita BRG	B14L11	May 17, 2002	Arsenic	mg/L	2	6.10E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B16LC0	March 24, 2003	Arsenic	mg/L	1	6.10E-04	C	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B13LH6	December 3, 2001	Arsenic	mg/L	1	6.11E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B158F5	September 5, 2002	Arsenic	mg/L	1	6.12E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B1B747	September 13, 2004	Arsenic	mg/L	1	6.14E-04	X	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B13LH3	December 3, 2001	Arsenic	mg/L	1	6.18E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B1B748	September 13, 2004	Arsenic	mg/L	1	6.19E-04	X	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B0W971	September 10, 1999	Arsenic	mg/L	1	6.22E-04	=	--	1.80E-05
Columbia River	Vernita BRG	B14PX2	June 10, 2002	Arsenic	mg/L	2	6.23E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B0V202	June 11, 1999	Arsenic	mg/L	1	6.28E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B0W969	September 10, 1999	Arsenic	mg/L	1	6.28E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B13LD4	December 3, 2001	Arsenic	mg/L	1	6.30E-04	=	--	1.80E-05
Columbia River	Vernita BRG	B14PX1	June 10, 2002	Arsenic	mg/L	2	6.32E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B0YCC6	June 19, 2000	Arsenic	mg/L	1	6.32E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B0YCJ6	June 19, 2000	Arsenic	mg/L	1	6.32E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B12522	June 14, 2001	Arsenic	mg/L	1	6.34E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B0YCD5	June 19, 2000	Arsenic	mg/L	1	6.36E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B124Y0	June 14, 2001	Arsenic	mg/L	1	6.36E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B14RW4	June 10, 2002	Arsenic	mg/L	1	6.37E-04	X	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B0V204	June 11, 1999	Arsenic	mg/L	1	6.44E-04	=	--	1.80E-05

Table A-12

Summary of Surface Water Results From Segment 1 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	Vernita1 HRM0.3	B171Y1	June 9, 2003	Arsenic	mg/L	1	6.44E-04	C	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B12TH8	September 7, 2001	Arsenic	mg/L	1	6.44E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B171Y4	June 9, 2003	Arsenic	mg/L	1	6.46E-04	C	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B0W972	September 10, 1999	Arsenic	mg/L	1	6.48E-04	=	--	1.80E-05
Columbia River	Vernita BRG2	B12RP4	August 27, 2001	Arsenic	mg/L	1	6.50E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B0YCC8	June 19, 2000	Arsenic	mg/L	1	6.52E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B1B750	September 13, 2004	Arsenic	mg/L	1	6.53E-04	X	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B183T7	December 9, 2003	Arsenic	mg/L	1	6.54E-04	C	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B124Y2	June 14, 2001	Arsenic	mg/L	1	6.56E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B12523	June 14, 2001	Arsenic	mg/L	1	6.60E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B0YCC7	June 19, 2000	Arsenic	mg/L	1	6.61E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B1B6Y0	September 13, 2004	Arsenic	mg/L	1	6.62E-04	X	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B171Y3	June 9, 2003	Arsenic	mg/L	1	6.64E-04	C	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B1B6Y9	September 13, 2004	Arsenic	mg/L	1	6.65E-04	X	--	1.80E-05
Columbia River	Vernita BRG1	B12RP0	August 27, 2001	Arsenic	mg/L	1	6.68E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B124Y1	June 14, 2001	Arsenic	mg/L	1	6.70E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B183V0	December 9, 2003	Arsenic	mg/L	1	6.71E-04	C	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B0V206	June 11, 1999	Arsenic	mg/L	1	6.79E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B124Y9	June 14, 2001	Arsenic	mg/L	1	6.79E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B1B6Y1	September 13, 2004	Arsenic	mg/L	1	6.94E-04	X	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B14RW5	June 10, 2002	Arsenic	mg/L	1	6.95E-04	X	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B1B6Y2	September 13, 2004	Arsenic	mg/L	1	7.05E-04	X	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B12TH7	September 7, 2001	Arsenic	mg/L	1	7.07E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B12TH6	September 7, 2001	Arsenic	mg/L	1	7.11E-04	=	--	1.80E-05
Columbia River	Vernita BRG2	B12RP3	August 27, 2001	Arsenic	mg/L	1	7.12E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B14RW6	June 10, 2002	Arsenic	mg/L	1	7.15E-04	X	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B12T84	September 7, 2001	Arsenic	mg/L	1	7.23E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B12T76	September 7, 2001	Arsenic	mg/L	1	7.24E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B12T75	September 7, 2001	Arsenic	mg/L	1	7.28E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B14RT6	June 10, 2002	Arsenic	mg/L	1	7.30E-04	X	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B0V203	June 11, 1999	Arsenic	mg/L	1	7.32E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B12T77	September 7, 2001	Arsenic	mg/L	1	7.38E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B0V207	June 11, 1999	Arsenic	mg/L	1	7.38E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B0V229	June 11, 1999	Arsenic	mg/L	1	7.42E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B12TH9	September 7, 2001	Arsenic	mg/L	1	7.52E-04	=	--	1.80E-05
Columbia River	Vernita2 HRM0.3	B171V0	June 9, 2003	Arsenic	mg/L	1	7.55E-04	C	--	1.80E-05
Columbia River	Vernita BRG1	B12RN9	August 27, 2001	Arsenic	mg/L	1	7.58E-04	=	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B14RV3	June 10, 2002	Arsenic	mg/L	1	7.68E-04	X	--	1.80E-05
Columbia River	Vernita1 HRM0.3	B171V9	June 9, 2003	Arsenic	mg/L	1	7.69E-04	C	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B14RW7	June 10, 2002	Arsenic	mg/L	1	7.76E-04	X	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B0V205	June 11, 1999	Arsenic	mg/L	1	8.19E-04	=	--	1.80E-05
Columbia River	Vernita3 HRM0.3	B171V1	June 9, 2003	Arsenic	mg/L	1	8.20E-04	C	--	1.80E-05

Table A-12**Summary of Surface Water Results From Segment 1 Exceeding Select Ecological or Human Health Benchmark Values**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	Vernita2 HRM0.3	B14RT4	June 10, 2002	Arsenic	mg/L	1	8.22E-04	X	--	1.80E-05
Columbia River	NORTHPORT WA	2118105	February 11, 2002	Arsenic	mg/L	1	8.60E-04	=	--	1.80E-05
Columbia River	Vernita4 HRM0.3	B171V2	June 9, 2003	Arsenic	mg/L	1	8.66E-04	C	--	1.80E-05
Columbia River	Vernita BRG1	B13J18	November 14, 2001	Arsenic	mg/L	1	0.0011	=	--	1.80E-05
Columbia River	Vernita BRG1	B13J19	November 14, 2001	Arsenic	mg/L	1	0.0017	=	--	1.80E-05
Columbia River	Vernita BRG1	B12RP0	August 27, 2001	Barium	mg/L	1	0.028	=	0.0040	--
Columbia River	Vernita BRG2	B12RP4	August 27, 2001	Barium	mg/L	1	0.028	=	0.0040	--
Columbia River	Vernita BRG1	B12RN9	August 27, 2001	Barium	mg/L	1	0.028	=	0.0040	--
Columbia River	Wenatchee @ CHN	01108030	March 6, 2001	Barium	mg/L	1	0.029	=	0.0040	--
Columbia River	Vernita BRG2	B12RP3	August 27, 2001	Barium	mg/L	1	0.029	=	0.0040	--

APPENDIX B

SEGMENT 2

**SUMMARY STATISTICS, BENCHMARK COMPARISON, AND
INDIVIDUAL SAMPLE EXCEEDENCES**

Table B-1**Summary Table of Segment 2 Sediment Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample ID	Sample Area	Sample Site	Sample Date	Category
10942	Columbia River	CGS STA 33	10-Apr-91	1
10943	Columbia River	CGS STA 34	10-Apr-91	1
12337	Columbia River	CGS STA 33	09-Apr-92	1
12338	Columbia River	CGS STA 34	09-Apr-92	1
12645	Columbia River	100N SHORE HGP	30-Jun-92	1
12646	Columbia River	100N-51 SHORE	30-Jun-92	1
12913	Columbia River	300 FF-5	14-Sep-92	1
12914	Columbia River	300 FF-5	14-Sep-92	1
13163	Columbia River	F Slough	12-Nov-92	1
13164	Columbia River	F Slough	12-Nov-92	1
13165	Columbia River	H Slough	13-Nov-92	1
13166	Columbia River	F Slough	16-Nov-92	1
13167	Columbia River	Spit Tip	16-Nov-92	1
13168	Columbia River	Hanford Slough	17-Nov-92	1
13169	Columbia River	Horn Area	17-Nov-92	1
13170	Columbia River	D Island	19-Nov-92	1
13171	Columbia River	D Island	19-Nov-92	1
13172	Columbia River	100-B/C INTAKE	20-Nov-92	1
13747	Columbia River	Shot Rock	02-Apr-93	1
13748	Columbia River	Shot Rock	02-Apr-93	1
13749	Columbia River	Shot Rock	02-Apr-93	1
13768	Columbia River	CGS STA 33	15-Apr-93	1
13769	Columbia River	CGS STA 34	15-Apr-93	1
15114	Columbia River	CGS STA 33	07-Apr-94	1
15115	Columbia River	CGS STA 34	07-Apr-94	1
15846	Columbia River	100-F Area	26-Sep-94	1
16496	Columbia River	CGS STA 33	06-Apr-95	1
16497	Columbia River	CGS STA 34	06-Apr-95	1
17208	Columbia River	100-B Area	28-Aug-95	1
17209	Columbia River	100-K Area	05-Sep-95	1
17210	Columbia River	HFD SPR 28-2	05-Sep-95	1
17211	Columbia River	300 SPR 42-2	05-Sep-95	1
17212	Columbia River	100-F Area	12-Sep-95	1
17312	Columbia River	D Island	18-Sep-95	1
18445	Columbia River	CGS STA 33	09-Oct-96	1
18446	Columbia River	CGS STA 34	09-Oct-96	1
18470	Columbia River	F Slough	20-Aug-96	1
18471	Columbia River	Wht Bluffs Slg	20-Aug-96	1
18472	Columbia River	Richland, WA	20-Aug-96	1
18473	Columbia River	Hanford Slough	20-Aug-96	1
20043	Columbia River	CGS STA 33	29-Oct-97	1
20044	Columbia River	CGS STA 34	29-Oct-97	1
20496	Columbia River	100-K Area	03-Nov-97	1
20757	Columbia River	100F 1/10	17-Aug-98	1
21207	Columbia River	CGS STA 33	08-Apr-98	1
21208	Columbia River	CGS STA 34	08-Apr-98	1

Table B-1**Summary Table of Segment 2 Sediment Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample ID	Sample Area	Sample Site	Sample Date	Category
23445	Columbia River	CGS STA 34	19-Oct-99	1
23523	Columbia River	F Slough	09-Aug-99	1
23525	Columbia River	100F SPR 207-1	01-Nov-99	1
23737	Columbia River	CGS STA 33	19-Oct-99	1
24625	Columbia River	CGS STA 33	22-Mar-00	1
24626	Columbia River	CGS STA 34	22-Mar-00	1
24750	Columbia River	F Slough	15-Aug-00	1
24751	Columbia River	HFD SPR 28-2	27-Sep-00	1
24752	Columbia River	300 SPR 42-2	27-Sep-00	1
24753	Columbia River	100F SPR 207-1	07-Nov-00	1
25010	Columbia River	100N SPRINGS	01-May-00	1
26112	Columbia River	CGS STA 33	21-Mar-01	1
26113	Columbia River	CGS STA 34	21-Mar-01	1
26252	Columbia River	F Slough	19-Jul-01	1
26255	Columbia River	100F SPR 207-1	22-Oct-01	1
26256	Columbia River	Richland, WA	23-Jul-01	1
26953	Columbia River	100B SPR 38-3	22-Oct-01	1
27573	Columbia River	F Slough	16-Jul-01	1
27574	Columbia River	F Slough	16-Jul-01	1
27651	Columbia River	300 SPR 42-2	27-Aug-01	1
27687	Columbia River	300 SPR 42-2	27-Aug-01	1
27701	Columbia River	300 SPR 11	27-Aug-01	1
27711	Columbia River	300 SPR 14	27-Aug-01	1
28074	Columbia River	CGS STA 33	29-Mar-02	1
28075	Columbia River	CGS STA 34	29-Mar-02	1
29028	Columbia River	HFD SPR 28-2	07-Oct-02	1
29047	Columbia River	F Slough	23-Jul-02	1
29417	Columbia River	100N SPRINGS	24-Jun-02	1
29551	Columbia River	100K SPR 63-2	16-Sep-02	1
29695	Columbia River	100F SPR 207-1	29-Oct-02	1
30584	Columbia River	CGS STA 33	13-Mar-03	1
30585	Columbia River	CGS STA 34	13-Mar-03	1
30874	Columbia River	F Slough	14-Jul-03	1
30926	Columbia River	100K SPR 63-1	20-Oct-03	1
30930	Columbia River	100F SPR 207-1	03-Nov-03	1
30932	Columbia River	300 SPR 42-2	13-Oct-03	1
30934	Columbia River	100B SPR 37-1	20-Oct-03	1
30939	Columbia River	300 SPR 42-2	13-Oct-03	1
32830	Columbia River	CGS STA 33	25-Mar-04	1
32831	Columbia River	CGS STA 34	25-Mar-04	1
33073	Columbia River	300 SPRING 6	08-Dec-03	1
33224	Columbia River	300 SPR 42-2	25-Oct-04	1
34493	Columbia River	CGS STA 33	10-Mar-05	1
34494	Columbia River	CGS STA 34	10-Mar-05	1
4434235	Columbia River	300 Area	01-Jun-04	1
4434236	Columbia River	RM 343.5	01-Jun-04	1

Table B-1**Summary Table of Segment 2 Sediment Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample ID	Sample Area	Sample Site	Sample Date	Category
4434237	Columbia River	RM 345	01-Jun-04	1
4434238	Columbia River	RM 356.5	01-Jun-04	1
4434239	Columbia River	RM 362	01-Jun-04	1
4444201	Columbia River	RM 354.4	01-Jun-04	1
4434245	Columbia River	RM 366	01-Jun-04	1
4434246	Columbia River	RM 370	01-Jun-04	1
4465	Columbia River	CGS STA 33	16-Apr-85	2
4466	Columbia River	CGS STA 34	16-Apr-85	2
4976	Columbia River	CGS STA 33	16-Apr-86	2
4977	Columbia River	CGS STA 34	16-Apr-86	2
6135	Columbia River	CGS STA 33	09-Apr-87	2
6136	Columbia River	CGS STA 34	09-Apr-87	2
6431	Columbia River	100-H Area	25-Jun-87	2
6432	Columbia River	100-D Area	25-Jun-87	2
6433	Columbia River	100-D Area	25-Jun-87	2
6434	Columbia River	Richland WA	25-Jun-87	2
6435	Columbia River	Locke Island	25-Jun-87	2
7073	Columbia River	CGS STA 33	21-Apr-88	2
7074	Columbia River	CGS STA 34	21-Apr-88	2
72970	Columbia River	CGS STA 33	09-Apr-92	1
72971	Columbia River	CGS STA 34	09-Apr-92	1
7383	Columbia River	100-F Area	06-Sep-88	2
84-33-1	Columbia River	CGS STA 33	26-Oct-84	1
84-34-1	Columbia River	CGS STA 34	26-Oct-84	1
85-33-1	Columbia River	CGS STA 33	16-Apr-85	1
85-33-2	Columbia River	CGS STA 33	10-Oct-85	1
85-34-1	Columbia River	CGS STA 34	16-Apr-85	1
85-34-2	Columbia River	CGS STA 34	10-Oct-85	1
86-33-1	Columbia River	CGS STA 33	16-Apr-86	1
86-33-2	Columbia River	CGS STA 33	25-Jun-86	1
86-33-3	Columbia River	CGS STA 33	25-Jun-86	1
86-33-4	Columbia River	CGS STA 33	21-Oct-86	1
86-34-1	Columbia River	CGS STA 34	16-Apr-86	1
86-34-2	Columbia River	CGS STA 34	25-Jun-86	1
86-34-3	Columbia River	CGS STA 34	25-Jun-86	1
86-34-4	Columbia River	CGS STA 34	21-Jan-86	1
87-33-1	Columbia River	CGS STA 33	09-Apr-87	1
87-33-2	Columbia River	CGS STA 33	14-Oct-87	1
87-34-1	Columbia River	CGS STA 34	09-Apr-87	1
87-34-2	Columbia River	CGS STA 34	14-Oct-87	1
88-33-1	Columbia River	CGS STA 33	21-Apr-88	1
88-33-2	Columbia River	CGS STA 33	26-Oct-88	1
88-34-1	Columbia River	CGS STA 34	21-Apr-88	1
88-34-2	Columbia River	CGS STA 34	26-Oct-88	1
89-33-1	Columbia River	CGS STA 33	11-Apr-89	1
89-33-2	Columbia River	CGS STA 33	19-Oct-89	1

Table B-1**Summary Table of Segment 2 Sediment Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample ID	Sample Area	Sample Site	Sample Date	Category
89-34-1	Columbia River	CGS STA 34	11-Apr-89	1
89-34-2	Columbia River	CGS STA 34	19-Oct-89	1
90-33-1	Columbia River	CGS STA 33	19-Apr-90	1
90-33-2	Columbia River	CGS STA 33	16-Oct-90	1
90-34-1	Columbia River	CGS STA 34	19-Apr-90	1
90-34-2	Columbia River	CGS STA 34	16-Oct-90	1
91-33-1	Columbia River	CGS STA 33	10-Apr-91	1
91-33-2	Columbia River	CGS STA 33	03-Oct-91	1
91-34-1	Columbia River	CGS STA 34	10-Apr-91	1
91-34-2	Columbia River	CGS STA 34	03-Oct-91	1
93-33-1	Columbia River	CGS STA 33	15-Apr-93	1
93-33-2	Columbia River	CGS STA 33	06-Oct-93	1
93-34-1	Columbia River	CGS STA 34	15-Apr-93	1
93-34-2	Columbia River	CGS STA 34	06-Oct-93	1
93607	Columbia River	CGS STA 33	20-Oct-92	1
93608	Columbia River	CGS STA 34	20-Oct-92	1
94-33-1	Columbia River	CGS STA 33	07-Apr-94	1
94-33-2	Columbia River	CGS STA 34	05-Oct-94	1
94-34-1	Columbia River	CGS STA 34	07-Apr-94	1
94-34-2	Columbia River	CGS STA 33	05-Oct-94	1
95-33-1	Columbia River	CGS STA 33	06-Apr-95	1
95-33-2	Columbia River	CGS STA 34	25-Oct-95	1
95-34-1	Columbia River	CGS STA 34	06-Apr-95	1
95-34-2	Columbia River	CGS STA 34	25-Oct-95	1
96-33-1	Columbia River	CGS STA 33	09-Oct-96	1
96-34-1	Columbia River	CGS STA 34	09-Oct-96	1
97-33-1	Columbia River	CGS STA 33	29-Oct-97	1
97-34-1	Columbia River	CGS STA 34	29-Oct-97	1
9731	Columbia River	CGS STA 33	19-Apr-90	1
9732	Columbia River	CGS STA 34	19-Apr-90	1
98-33-1	Columbia River	CGS STA 33	08-Apr-98	1
98-33-2	Columbia River	CGS STA 33	21-Oct-98	1
98-34-1	Columbia River	CGS STA 34	08-Apr-98	1
98-34-2	Columbia River	CGS STA 34	21-Oct-98	1
99-33-1	Columbia River	CGS STA 33	19-Oct-99	1
99-34-1	Columbia River	CGS STA 34	19-Oct-99	1
B07NB6	Columbia River	F Slough	12-Nov-92	1
B07NB7	Columbia River	F Slough	12-Nov-92	1
B07NB8	Columbia River	F Slough	12-Nov-92	1
B07NB9	Columbia River	F Slough	12-Nov-92	1
B07NC2	Columbia River	100-H Area	13-Nov-92	1
B07NC3	Columbia River	100-H Area	13-Nov-92	1
B07NC4	Columbia River	F Slough	16-Nov-92	1
B07NC5	Columbia River	F Slough	16-Nov-92	1
B07NC6	Columbia River	Hanford Tnsite	16-Nov-92	1
B07NC7	Columbia River	Hanford Tnsite	16-Nov-92	1

Table B-1**Summary Table of Segment 2 Sediment Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample ID	Sample Area	Sample Site	Sample Date	Category
B07NC9	Columbia River	Horn Area	17-Nov-92	1
B07ND0	Columbia River	Horn Area	17-Nov-92	1
B07ND1	Columbia River	100-B/C Area	20-Nov-92	1
B07ND2	Columbia River	Hanford Tnsite	17-Nov-92	1
B07ND3	Columbia River	Hanford Tnsite	17-Nov-92	1
B07ND4	Columbia River	D Island	19-Nov-92	1
B07ND5	Columbia River	D Island	19-Nov-92	1
B07ND6	Columbia River	D Island	19-Nov-92	1
B07ND7	Columbia River	D Island	19-Nov-92	1
B07ND8	Columbia River	D Island	19-Nov-92	1
B07ND9	Columbia River	100-B/C Area	20-Nov-92	1
B07NF0	Columbia River	Horn Area	19-Nov-92	1
B07NF1	Columbia River	100-D Area	19-Nov-92	1
B07NF2	Columbia River	100-D Area	19-Nov-92	1
B07NF9	Columbia River	100-K Area	21-Nov-92	1
B07NG0	Columbia River	100-K Area	21-Nov-92	1
B07NG1	Columbia River	100-K Area	21-Nov-92	1
B07NG2	Columbia River	100-K Area	21-Nov-92	1
B07NG3	Columbia River	100-H Area	22-Nov-92	1
B07NG5	Columbia River	100-H Area	22-Nov-92	1
B07NG6	Columbia River	100-H Area	22-Nov-92	1
B07NG7	Columbia River	100-H Area	22-Nov-92	1
B07NG9	Columbia River	F Slough	23-Nov-92	1
B07NH0	Columbia River	F Slough	23-Nov-92	1
B07NH1	Columbia River	Horn Area	23-Nov-92	1
B07NH2	Columbia River	Horn Area	23-Nov-92	1
B07NH3	Columbia River	Hanford Tnsite	23-Nov-92	1
B07NH4	Columbia River	Hanford Tnsite	23-Nov-92	1
B07NH5	Columbia River	D Island	24-Nov-92	1
B07NH6	Columbia River	D Island	24-Nov-92	1
B07NH7	Columbia River	D Island	24-Nov-92	1
B0BRV4	Columbia River	Wht Bluffs Slg	15-Apr-94	1
B0BRV6	Columbia River	F Slough	15-Apr-94	1
B0BRV8	Columbia River	Hanford Slough	15-Apr-94	1
B0CSH3	Columbia River	Wht Bluffs Slg	24-Sep-94	1
B0CSH5	Columbia River	Hanford Slough	25-Sep-94	1
B0CSH6	Columbia River	Richland, WA	25-Sep-94	1
B0CSH8	Columbia River	HFD SPR 28-2	02-Sep-94	1
B0W3F3	Columbia River	Wht Bluffs Slg	09-Aug-99	1
B0W3F4	Columbia River	Wht Bluffs Slg	09-Aug-99	1
B0W3F5	Columbia River	100 F SLOUGH	09-Aug-99	1
B0W3F6	Columbia River	100 F SLOUGH	09-Aug-99	1
B0W3F7	Columbia River	Hanford Slough	09-Aug-99	1
B0W3F8	Columbia River	Hanford Slough	09-Aug-99	1
B0W3H7	Columbia River	Hanford Slough	09-Aug-99	1
B0W3H8	Columbia River	RICHLAND-RIVER	03-Sep-99	1

Table B-1**Summary Table of Segment 2 Sediment Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample ID	Sample Area	Sample Site	Sample Date	Category
B0W3L9	Columbia River	Wht Bluffs Slg	09-Aug-99	1
B0W3M0	Columbia River	100 F SLOUGH	09-Aug-99	1
B0W3V1	Columbia River	100 F SLOUGH	09-Aug-99	1
B0W3V2	Columbia River	Hanford Slough	09-Aug-99	1
B0W3W9	Columbia River	Wht Bluffs Slg	09-Aug-99	1
B0WDL4	Columbia River	300 SPR 42-2	01-Nov-99	1
B0WDL8	Columbia River	300 SPR 42-2	01-Nov-99	1
B0WDP4	Columbia River	100-B SPR 38-3	25-Oct-99	1
B0WDP5	Columbia River	100-B SPR 38-3	25-Oct-99	1
B0WDP8	Columbia River	HFD SPR UR 28-2	01-Nov-99	1
B0WDP9	Columbia River	HFD SPR UR 28-2	01-Nov-99	1
B0WDR0	Columbia River	HFD SPR DR 28-2	01-Nov-99	1
B0WDR1	Columbia River	HFD SPR DR 28-2	01-Nov-99	1
B0WDR2	Columbia River	300 SPR DR 42-2	01-Nov-99	1
B0WDR3	Columbia River	300 SPR DR 42-2	01-Nov-99	1
B0WDR8	Columbia River	100-F SPR 207-1	01-Nov-99	1
B0WDT0	Columbia River	100-F SPR 207-1	01-Nov-99	1
B0WFM0	Columbia River	Wht Bluffs Slg	09-Aug-99	1
B0WFM1	Columbia River	Wht Bluffs Slg	09-Aug-99	1
B0WFM2	Columbia River	Wht Bluffs Slg	09-Aug-99	1
B0WFM3	Columbia River	Wht Bluffs Slg	09-Aug-99	1
B0WFM5	Columbia River	100 F SLOUGH	09-Aug-99	1
B0WFM6	Columbia River	100 F SLOUGH	09-Aug-99	1
B0WFM7	Columbia River	100 F SLOUGH	09-Aug-99	1
B0WFM8	Columbia River	100 F SLOUGH	09-Aug-99	1
B0WFN0	Columbia River	Hanford Slough	09-Aug-99	1
B0WFN1	Columbia River	Hanford Slough	09-Aug-99	1
B0WFN2	Columbia River	Hanford Slough	09-Aug-99	1
B0WFN3	Columbia River	Hanford Slough	09-Aug-99	1
B0WFN5	Columbia River	RICHLAND-RIVER	03-Sep-99	1
B0WFN6	Columbia River	RICHLAND-RIVER	03-Sep-99	1
B0WFN7	Columbia River	RICHLAND-RIVER	03-Sep-99	1
B0WFN8	Columbia River	RICHLAND-RIVER	03-Sep-99	1
B0YW84	Columbia River	RICHLAND-RIVER	08-Aug-00	1
B0YW85	Columbia River	RICHLAND-RIVER	08-Aug-00	1
B0YW87	Columbia river	RICHLAND-RIVER	08-Aug-00	1
B0YY64	Columbia River	Wht Bluffs Slg	15-Aug-00	1
B0YY65	Columbia River	Wht Bluffs Slg	15-Aug-00	1
B0YY66	Columbia River	100 F SLOUGH	15-Aug-00	1
B0YY67	Columbia River	100 F SLOUGH	15-Aug-00	1
B0YY68	Columbia River	Hanford Slough	15-Aug-00	1
B0YY69	Columbia River	Hanford Slough	15-Aug-00	1
B0YY70	Columbia river	Hanford Slough	15-Aug-00	1
B0YY71	Columbia river	Wht Bluffs Slg	15-Aug-00	1
B0YY72	Columbia river	100 F SLOUGH	15-Aug-00	1
B10167	Columbia river	Hanford Slough	15-Aug-00	1

Table B-1**Summary Table of Segment 2 Sediment Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample ID	Sample Area	Sample Site	Sample Date	Category
B10168	Columbia river	Wht Bluffs Slg	15-Aug-00	1
B10169	Columbia river	100 F SLOUGH	15-Aug-00	1
B10905	Columbia River	300 SPR 42-2	02-Nov-00	1
B10908	Columbia river	300 SPR 42-2	27-Sep-00	1
B10915	Columbia river	100-B SPR 38-3	25-Oct-00	1
B10916	Columbia River	100-B SPR 38-3	20-Nov-00	1
B10917	Columbia river	HFD SPR UR 28-2	27-Sep-00	1
B10918	Columbia River	HFD SPR UR 28-2	02-Nov-00	1
B10919	Columbia river	HFD SPR DR 28-2	27-Sep-00	1
B10921	Columbia River	HFD SPR DR 28-2	02-Nov-00	1
B10922	Columbia river	300 SPR DR 42-2	27-Sep-00	1
B10923	Columbia River	300 SPR DR 42-2	02-Nov-00	1
B10929	Columbia river	100-F SPR 207-1	07-Nov-00	1
B10931	Columbia River	100-F SPR 207-1	20-Nov-00	1
B12CJ7	Columbia River	100 F SLOUGH	19-Jul-01	1
B12CJ9	Columbia River	Hanford Slough	19-Jul-01	1
B12CK1	Columbia River	RICHLAND-RIVER	23-Jul-01	1
B12CK8	Columbia River	Hanford Slough	19-Jul-01	1
B12CK9	Columbia River	RICHLAND-RIVER	23-Jul-01	1
B12CL5	Columbia River	Wht Bluffs Slg	19-Jul-01	1
B12CL6	Columbia River	100 F SLOUGH	19-Jul-01	1
B12CT0	Columbia River	100 F SLOUGH	19-Jul-01	1
B12CT1	Columbia River	Hanford Slough	19-Jul-01	1
B12CV3	Columbia River	RICHLAND-RIVER	23-Jul-01	1
B12CV4	Columbia River	Wht Bluffs Slg	19-Jul-01	1
B12RL7	Columbia River	300 SPR 42-2	27-Aug-01	1
B12RL9	Columbia River	300 SPR 42-2	27-Aug-01	1
B12RM5	Columbia River	300 SPR DR 42-2	27-Aug-01	1
B12RY8	Columbia River	300 SPR 11	27-Aug-01	1
B12RY9	Columbia River	300 SPR 11	27-Aug-01	1
B12T01	Columbia River	300 SPR 14	27-Aug-01	1
B12T04	Columbia River	300 SPR 42-2	27-Aug-01	1
B12T05	Columbia River	300 SPR DR 42-2	27-Aug-01	1
B12T06	Columbia River	300 SPR 11	27-Aug-01	1
B12T07	Columbia River	300 SPR 14	27-Aug-01	1
B12T08	Columbia River	300 SPR 14	27-Aug-01	1
B12X20	Columbia River	100-B SPR 38-3	22-Oct-01	1
B12X22	Columbia River	100-B SPR 38-3	22-Oct-01	1
B12X35	Columbia River	100-F SPR 207-1	22-Oct-01	1
B12X37	Columbia River	100-F SPR 207-1	22-Oct-01	1
B14WF4	Columbia River	100 F SLOUGH	23-Jul-02	1
B14WF5	Columbia River	Hanford Slough	23-Jul-02	1
B14WH0	Columbia River	RICHLAND-RIVER	19-Jul-02	1
B14WH1	Columbia River	Wht Bluffs Slg	23-Jul-02	1
B14YL6	Columbia River	Wht Bluffs Slg	23-Jul-02	1
B14YL7	Columbia River	Wht Bluffs Slg	23-Jul-02	1

Table B-1**Summary Table of Segment 2 Sediment Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample ID	Sample Area	Sample Site	Sample Date	Category
B14YL8	Columbia River	100 F SLOUGH	23-Jul-02	1
B14YL9	Columbia River	100 F SLOUGH	23-Jul-02	1
B14YM0	Columbia River	Hanford Slough	23-Jul-02	1
B14YM1	Columbia River	Hanford Slough	23-Jul-02	1
B14YM2	Columbia River	RICHLAND-RIVER	19-Jul-02	1
B14YM3	Columbia River	RICHLAND-RIVER	19-Jul-02	1
B14YM4	Columbia River	Hanford Slough	23-Jul-02	1
B14YM5	Columbia River	RICHLAND-RIVER	19-Jul-02	1
B14YM6	Columbia River	Wht Bluffs Slg	23-Jul-02	1
B14YM7	Columbia River	100 F SLOUGH	23-Jul-02	1
B15C03	Columbia River	300 SPR 42-2	07-Oct-02	1
B15C07	Columbia River	300 SPR 42-2	07-Oct-02	1
B15C40	Columbia River	100-B SPR 37-1	16-Sep-02	1
B15C41	Columbia River	100-B SPR 37-1	16-Sep-02	1
B15C44	Columbia River	HFD SPR DR 28-2	07-Oct-02	1
B15C46	Columbia River	HFD SPR DR 28-2	07-Oct-02	1
B15C47	Columbia River	300 SPR DR 42-2	07-Oct-02	1
B15C48	Columbia River	300 SPR DR 42-2	07-Oct-02	1
B15C49	Columbia River	100-K SPR 63-2	16-Sep-02	1
B15C51	Columbia River	100-K SPR 63-2	16-Sep-02	1
B15C52	Columbia River	100-F SPR 207-1	29-Oct-02	1
B15C54	Columbia River	100-F SPR 207-1	29-Oct-02	1
B16WW4	Columbia River	Ringold WW	14-May-03	1
B16WW5	Columbia River	Ringold WW	14-May-03	1
B16WW6	Columbia River	ESQUATZEL CANAL	14-May-03	1
B16WW7	Columbia River	ESQUATZEL CANAL	14-May-03	1
B16WX6	Columbia River	Ringold WW	14-May-03	1
B16WX7	Columbia River	Ringold WW	14-May-03	1
B16WX8	Columbia River	ESQUATZEL CANAL	14-May-03	1
B16WX9	Columbia River	ESQUATZEL CANAL	14-May-03	1
B170V0	Columbia River	ESQUATZEL CANAL	14-May-03	1
B170V1	Columbia River	ESQUATZEL CANAL	14-May-03	1
B170V4	Columbia River	Ringold WW	14-May-03	1
B170V5	Columbia River	Ringold WW	14-May-03	1
B176T7	Columbia River	100 F SLOUGH	14-Jul-03	1
B176T8	Columbia River	RICHLAND-RIVER	16-Jul-03	1
B176T9	Columbia River	Wht Bluffs Slg	14-Jul-03	1
B176V0	Columbia River	Hanford Slough	14-Jul-03	1
B176X8	Columbia River	Wht Bluffs Slg	14-Jul-03	1
B176X9	Columbia River	Wht Bluffs Slg	14-Jul-03	1
B176Y0	Columbia River	100 F SLOUGH	14-Jul-03	1
B176Y1	Columbia River	100 F SLOUGH	14-Jul-03	1
B176Y2	Columbia River	Hanford Slough	14-Jul-03	1
B176Y3	Columbia River	Hanford Slough	14-Jul-03	1
B176Y4	Columbia River	RICHLAND-RIVER	16-Jul-03	1
B176Y5	Columbia River	RICHLAND-RIVER	16-Jul-03	1

Table B-1**Summary Table of Segment 2 Sediment Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample ID	Sample Area	Sample Site	Sample Date	Category
B176Y6	Columbia River	Hanford Slough	14-Jul-03	1
B176Y7	Columbia River	RICHLAND-RIVER	16-Jul-03	1
B176Y8	Columbia River	Wht Bluffs Slg	14-Jul-03	1
B176Y9	Columbia River	100 F SLOUGH	14-Jul-03	1
B17J18	Columbia River	300 SPR 42-2	13-Oct-03	1
B17J20	Columbia River	300 SPR 42-2	13-Oct-03	1
B17J51	Columbia River	100-B SPR 37-1	20-Oct-03	1
B17J53	Columbia River	100-B SPR 37-1	20-Oct-03	1
B17J58	Columbia River	HFD SPR DR 28-2	03-Nov-03	1
B17J59	Columbia River	300 SPR DR 42-2	13-Oct-03	1
B17J61	Columbia River	300 SPR DR 42-2	13-Oct-03	1
B17J62	Columbia River	100-K SPR 63-1	20-Oct-03	1
B17J64	Columbia River	100-K SPR 63-1	20-Oct-03	1
B17J65	Columbia River	100-F SPR 207-1	03-Nov-03	1
B17J67	Columbia River	100-F SPR 207-1	03-Nov-03	1
B17J99	Columbia River	100-H SPR 145-1	27-Oct-03	1
B17JB1	Columbia River	100-H SPR 145-1	27-Oct-03	1
B17XN6	Columbia River	100 B/C AREA UR	17-Nov-03	1
B17XN8	Columbia River	100-B SPR 37-1	13-Nov-03	1
B17XN9	Columbia River	100-B SPR 38-3	13-Nov-03	1
B199H6	Columbia River	North 300 Area	02-Aug-04	1
B199J0	Columbia River	Hanford Tnsite	07-Jun-04	1
B199J7	Columbia River	Ringold	03-Jun-04	1
B19PJ5	Columbia River	Wht Bluffs Slg	12-Jul-04	1
B19PJ6	Columbia River	Wht Bluffs Slg	12-Jul-04	1
B19PJ7	Columbia River	100 F SLOUGH	12-Jul-04	1
B19PJ8	Columbia River	100 F SLOUGH	12-Jul-04	1
B19PJ9	Columbia River	Hanford Slough	12-Jul-04	1
B19PK0	Columbia River	Hanford Slough	12-Jul-04	1
B19PK1	Columbia River	RICHLAND-RIVER	13-Jul-04	1
B19PK2	Columbia River	RICHLAND-RIVER	13-Jul-04	1
B19PK3	Columbia River	Hanford Slough	12-Jul-04	1
B19PK4	Columbia River	RICHLAND-RIVER	13-Jul-04	1
B19PK5	Columbia River	Wht Bluffs Slg	12-Jul-04	1
B19PK6	Columbia River	100 F SLOUGH	12-Jul-04	1
B19TF9	Columbia River	Wht Bluffs Slg	12-Jul-04	1
B19TH0	Columbia River	Hanford Slough	12-Jul-04	1
B19TH1	Columbia River	RICHLAND-RIVER	13-Jul-04	1
B19TH2	Columbia River	100 F SLOUGH	12-Jul-04	1
B1BFM1	Columbia River	300 SPR 42-2	25-Oct-04	1
B1BFN9	Columbia River	300 SPR 42-2	25-Oct-04	1
B1BFP6	Columbia River	100-B SPR 37-1	11-Oct-04	1
B1BFP7	Columbia River	100-B SPR 37-1	11-Oct-04	1
B1BFP8	Columbia River	HFD SPR UR 28-2	25-Oct-04	1
B1BFP9	Columbia River	HFD SPR UR 28-2	25-Oct-04	1
B1BFR2	Columbia River	HFD SPR DR 28-2	25-Oct-04	1

Table B-1**Summary Table of Segment 2 Sediment Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample ID	Sample Area	Sample Site	Sample Date	Category
B1BFR3	Columbia River	300 SPR DR 42-2	25-Oct-04	1
B1BFR5	Columbia River	300 SPR DR 42-2	25-Oct-04	1
B1BFR9	Columbia River	100-F SPR 207-1	26-Oct-04	1
B1BFT0	Columbia River	100-F SPR 207-1	26-Oct-04	1
B1BH02	Columbia River	100-H SPR 145-1	26-Oct-04	1
B1BH03	Columbia River	100-H SPR 145-1	26-Oct-04	1
B1BH12	Columbia River	300 SPR 41-9	25-Oct-04	1
B1BH14	Columbia River	RICHLAND SPR	25-Oct-04	1
CGS-89-8081	Columbia River	CGS STA 33	11-Apr-89	1
CGS-89-8082	Columbia River	CGS STA 34	11-Apr-89	1
CGS-89-8407	Columbia River	CGS STA 34	07-Jun-89	1
HR-location 1	Columbia River	RM 393	01-Aug-86	3
HR-location 2	Columbia River	RM 378.5	01-Aug-86	3
HR-location 3	Columbia River	RM 373	01-Aug-86	3
HR-location 4	Columbia River	RM 365	01-Aug-86	3
HR004W	Columbia River	100-B/C Area	07-Oct-03	1
HR006B/C	Columbia River	100-B/C Area	07-Oct-03	1
HR016N	Columbia River	100-N Area	09-Oct-03	1
HR019N	Columbia River	100-N Area	09-Oct-03	1
HR020N	Columbia River	100-N Area	09-Oct-03	1
HR023D	Columbia River	100-D Area	08-Oct-03	1
HR027H	Columbia River	H Reactor Area	09-Oct-03	1
HR032F	Columbia River	F Reactor Area	09-Oct-03	1
HR037-300	Columbia River	300 Upstream	04-Aug-04	1
HR046-300	Columbia River	300 Area	04-Aug-04	1
HR048-300	Columbia River	300 Area	04-Aug-04	1
HR063S	Columbia River	300 Outfall	04-Aug-04	1
L15057-1	Columbia River	CGS STA 33	21-Mar-01	1
L15057-2	Columbia River	CGS STA 34	21-Mar-01	1
L16927-1	Columbia River	CGS STA 33	31-Oct-01	1
L16927-2	Columbia River	CGS STA 34	31-Oct-01	1
L17850-1	Columbia River	CGS STA 33	20-Mar-02	1
L17850-2	Columbia River	CGS STA 34	20-Mar-02	1
L19569-2	Columbia River	CGS STA 33	29-Oct-02	1
L19569-3	Columbia River	CGS STA 34	29-Oct-02	1
L20678-1	Columbia River	CGS STA 33	13-Mar-03	1
L20678-2	Columbia River	CGS STA 34	13-Mar-03	1
L22408-1	Columbia River	CGS STA 33	30-Oct-03	1
L22408-2	Columbia River	CGS STA 34	30-Oct-03	1
L23195-1	Columbia River	CGS STA 33	25-Mar-04	1
L23195-2	Columbia River	CGS STA 34	25-Mar-04	1
L23195-3	Columbia River	CGS STA 33	25-Mar-04	1
L24794-1	Columbia River	CGS STA 33	07-Dec-04	1
L24794-2	Columbia River	CGS STA 34	07-Dec-04	1
SD_78-33-1	Columbia River	CGS STA 33	17-May-78	2
SD_78-33-2	Columbia River	CGS STA 33	21-Dec-78	2

Table B-1**Summary Table of Segment 2 Sediment Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample ID	Sample Area	Sample Site	Sample Date	Category
SD_78-34-1	Columbia River	CGS STA 34	17-May-78	2
SD_78-34-2	Columbia River	CGS STA 34	27-Nov-78	2
SD_79-33-1	Columbia River	CGS STA 33	10-Jul-79	2
SD_79-33-2	Columbia River	CGS STA 33	19-Nov-79	2
SD_79-34-1	Columbia River	CGS STA 34	10-Jul-79	2
SD_79-34-2	Columbia River	CGS STA 34	19-Nov-79	2
SD_80-33-1	Columbia River	CGS STA 33	08-May-80	2
SD_80-33-2	Columbia River	CGS STA 33	18-Nov-80	2
SD_80-34-1	Columbia River	CGS STA 34	18-Nov-80	2
SD_81-33-1	Columbia River	CGS STA 33	08-May-81	2
SD_81-33-2	Columbia River	CGS STA 33	19-Nov-81	2
SD_81-34-1	Columbia River	CGS STA 34	08-May-81	2
SD_81-34-2	Columbia River	CGS STA 34	19-Nov-81	2
SD_82-33-1	Columbia River	CGS STA 33	05-Nov-82	2
SD_82-34-1	Columbia River	CGS STA 34	05-Nov-82	2
SD_83-33-1	Columbia River	CGS STA 33	03-May-83	2
SD_83-33-2	Columbia River	CGS STA 33	01-Nov-83	2
SD_83-34-1	Columbia River	CGS STA 34	03-May-83	2
SD_83-34-2	Columbia River	CGS STA 34	01-Nov-83	2

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100 B/C AREA DR	B180F3	37942	1
Columbia River	100 B/C AREA DR	B18148	37942	1
Columbia River	100 B/C AREA DR	B18147	37942	1
Columbia River	100 B/C AREA DR	B18146	37942	1
Columbia River	100 B/C AREA DR	B18145	37942	1
Columbia River	100 B/C AREA DR	J00X57	37858	1
Columbia River	100 B/C AREA DR	B180F4	37942	1
Columbia River	100 B/C AREA DR	B180F2	37942	1
Columbia River	100 B/C AREA DR	B180F1	37942	1
Columbia River	100 B/C AREA DR	J01450	37942	1
Columbia River	100 B/C AREA DR	J014J4	37942	1
Columbia River	100 B/C AREA DR	J014J5	37942	1
Columbia River	100 B/C AREA DR	J014J6	37942	1
Columbia River	100 B/C AREA DR	J00X50	37858	1
Columbia River	100 B/C AREA UR	J013J1	37938	1
Columbia River	100 B/C AREA UR	B18154	37938	1
Columbia River	100 B/C AREA UR	J013J3	37938	1
Columbia River	100 B/C AREA UR	J00X44	37858	1
Columbia River	100 B/C AREA UR	J013J0	37938	1
Columbia River	100 B/C AREA UR	J013J2	37938	1
Columbia River	100 B/C AREA UR	B18155	37938	1
Columbia River	100 B/C AREA UR	J00X51	37858	1
Columbia River	100 B/C AREA UR	B180C8	37938	1
Columbia River	100 B/C AREA UR	B18152	37938	1
Columbia River	100 B/C AREA UR	B180C6	37938	1
Columbia River	100 B/C AREA UR	B18153	37938	1
Columbia River	100 B/C AREA UR	B180C7	37938	1
Columbia River	100 B/C AREA UR	B180C9	37938	1
Columbia River	100 B/C OUTFLL1	J00X47	37858	1
Columbia River	100 B/C OUTFLL1	B180D8	37942	1
Columbia River	100 B/C OUTFLL1	B18149	37942	1
Columbia River	100 B/C OUTFLL1	J013X6	37942	1
Columbia River	100 B/C OUTFLL1	J00X54	37858	1
Columbia River	100 B/C OUTFLL2	J013X9	37942	1
Columbia River	100 B/C OUTFLL2	B180J0	37942	1
Columbia River	100 B/C OUTFLL2	B180D9	37942	1
Columbia River	100 B/C OUTFLL2	B18134	37942	1
Columbia River	100 B/C OUTFLL2	J013Y0	37942	1
Columbia River	100 B/C OUTFLL2	B18150	37942	1
Columbia River	100 B/C OUTFLL2	J00X48	37858	1
Columbia River	100 B/C OUTFLL2	J00X55	37858	1
Columbia River	100 B/C OUTFLL3	J00X49	37858	1
Columbia River	100 B/C OUTFLL3	B18151	37942	1
Columbia River	100 B/C OUTFLL3	J013Y1	37942	1
Columbia River	100 B/C OUTFLL3	J00X56	37858	1
Columbia River	100 B/C OUTFLL3	B180F0	37942	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100 F-1 HRM19.0	B0WBN1	36424	1
Columbia River	100 F-1 HRM19.0	B158J1	37508	1
Columbia River	100 F-1 HRM19.0	B12T70	37144	1
Columbia River	100 F-1 HRM19.0	B109C0	36787	1
Columbia River	100 F-1 HRM19.0	B106J0	36787	1
Columbia River	100 F-1 HRM19.0	B158V0	37508	1
Columbia River	100 F-1 HRM19.0	B17CR1	37872	1
Columbia River	100 F-1 HRM19.0	B17HF1	37872	1
Columbia River	100 F-1 HRM19.0	B0WBB95	36424	1
Columbia River	100 F-1 HRM19.0	B10755	36787	1
Columbia River	100 F-1 HRM19.0	B12VM7	37144	1
Columbia River	100 F-1 HRM19.0	B0WBB02	36424	1
Columbia River	100 F-1 HRM19.0	B17CF8	37872	1
Columbia River	100 F-1 HRM19.0	B12TL4	37144	1
Columbia River	100 F-1 HRM19.0	B106W1	36787	1
Columbia River	100 F-1 HRM19.0	B17CC2	37872	1
Columbia River	100 F-1 HRM19.0	B158D8	37508	1
Columbia River	100 F-1 HRM19.0	B15995	37508	1
Columbia River	100 F-1 HRM19.0	B106T9	36787	1
Columbia River	100 F-1 HRM19.0	B1B708	38244	1
Columbia River	100 F-1 HRM19.0	B1B6X5	38244	1
Columbia River	100 F-1 HRM19.0	B1B775	38244	1
Columbia River	100 F-1 HRM19.0	B1B464	38244	1
Columbia River	100 F-10HRM19.0	B159B0	37508	1
Columbia River	100 F-10HRM19.0	B158K3	37508	1
Columbia River	100 F-10HRM19.0	B106H9	36787	1
Columbia River	100 F-10HRM19.0	B17CR6	37872	1
Columbia River	100 F-10HRM19.0	B106W7	36787	1
Columbia River	100 F-10HRM19.0	B10760	36787	1
Columbia River	100 F-10HRM19.0	B12TL9	37144	1
Columbia River	100 F-10HRM19.0	B17C96	37872	1
Columbia River	100 F-10HRM19.0	B0WBB12	36424	1
Columbia River	100 F-10HRM19.0	B12T54	37144	1
Columbia River	100 F-10HRM19.0	B12VN2	37144	1
Columbia River	100 F-10HRM19.0	B17CH4	37872	1
Columbia River	100 F-10HRM19.0	B158C2	37508	1
Columbia River	100 F-10HRM19.0	B12TB0	37144	1
Columbia River	100 F-10HRM19.0	B106R9	36787	1
Columbia River	100 F-10HRM19.0	B158V5	37508	1
Columbia River	100 F-10HRM19.0	B17HF0	37872	1
Columbia River	100 F-10HRM19.0	B0WBN2	36424	1
Columbia River	100 F-10HRM19.0	B0WBB4	36424	1
Columbia River	100 F-10HRM19.0	B1B780	38244	1
Columbia River	100 F-10HRM19.0	B1B6V9	38244	1
Columbia River	100 F-10HRM19.0	B1B469	38244	1
Columbia River	100 F-10HRM19.0	B1B714	38244	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100 F-2 HRM19.0	B17HF2	37872	1
Columbia River	100 F-2 HRM19.0	B106W4	36787	1
Columbia River	100 F-2 HRM19.0	B158D9	37508	1
Columbia River	100 F-2 HRM19.0	B0WB96	36424	1
Columbia River	100 F-2 HRM19.0	B15996	37508	1
Columbia River	100 F-2 HRM19.0	B17CH1	37872	1
Columbia River	100 F-2 HRM19.0	B158V1	37508	1
Columbia River	100 F-2 HRM19.0	B12T97	37144	1
Columbia River	100 F-2 HRM19.0	B12TL5	37144	1
Columbia River	100 F-2 HRM19.0	B0WB06	36424	1
Columbia River	100 F-2 HRM19.0	B12T71	37144	1
Columbia River	100 F-2 HRM19.0	B158J7	37508	1
Columbia River	100 F-2 HRM19.0	B0WBN3	36424	1
Columbia River	100 F-2 HRM19.0	B12VM8	37144	1
Columbia River	100 F-2 HRM19.0	B106V0	36787	1
Columbia River	100 F-2 HRM19.0	B17CR2	37872	1
Columbia River	100 F-2 HRM19.0	B10756	36787	1
Columbia River	100 F-2 HRM19.0	B1B6X6	38244	1
Columbia River	100 F-2 HRM19.0	B1B465	38244	1
Columbia River	100 F-2 HRM19.0	B1B711	38244	1
Columbia River	100 F-2 HRM19.0	B1B776	38244	1
Columbia River	100 F-3 HRM19.0	B12VM9	37144	1
Columbia River	100 F-3 HRM19.0	B17HF3	37872	1
Columbia River	100 F-3 HRM19.0	B12T95	37144	1
Columbia River	100 F-3 HRM19.0	B15997	37508	1
Columbia River	100 F-3 HRM19.0	B106W2	36787	1
Columbia River	100 F-3 HRM19.0	B17CR3	37872	1
Columbia River	100 F-3 HRM19.0	B158F0	37508	1
Columbia River	100 F-3 HRM19.0	B10757	36787	1
Columbia River	100 F-3 HRM19.0	B0WB03	36424	1
Columbia River	100 F-3 HRM19.0	B0WBN4	36424	1
Columbia River	100 F-3 HRM19.0	B106V1	36787	1
Columbia River	100 F-3 HRM19.0	B17CF9	37872	1
Columbia River	100 F-3 HRM19.0	B12TL6	37144	1
Columbia River	100 F-3 HRM19.0	B12T72	37144	1
Columbia River	100 F-3 HRM19.0	B158J3	37508	1
Columbia River	100 F-3 HRM19.0	B17CC4	37872	1
Columbia River	100 F-3 HRM19.0	B0WB97	36424	1
Columbia River	100 F-3 HRM19.0	B106J2	36787	1
Columbia River	100 F-3 HRM19.0	B158V2	37508	1
Columbia River	100 F-3 HRM19.0	B1B709	38244	1
Columbia River	100 F-3 HRM19.0	B1B466	38244	1
Columbia River	100 F-3 HRM19.0	B1B6X7	38244	1
Columbia River	100 F-3 HRM19.0	B1B777	38244	1
Columbia River	100 F-4 HRM19.0	B0WB07	36424	1
Columbia River	100 F-4 HRM19.0	B0WBN5	36424	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100 F-5 HRM19.0	B12VN0	37144	1
Columbia River	100 F-5 HRM19.0	B10758	36787	1
Columbia River	100 F-5 HRM19.0	B12TL7	37144	1
Columbia River	100 F-5 HRM19.0	B158F1	37508	1
Columbia River	100 F-5 HRM19.0	B0WB99	36424	1
Columbia River	100 F-5 HRM19.0	B15998	37508	1
Columbia River	100 F-5 HRM19.0	B158V3	37508	1
Columbia River	100 F-5 HRM19.0	B17CR4	37872	1
Columbia River	100 F-5 HRM19.0	B0WB08	36424	1
Columbia River	100 F-5 HRM19.0	B158J9	37508	1
Columbia River	100 F-5 HRM19.0	B106W5	36787	1
Columbia River	100 F-5 HRM19.0	B17CH2	37872	1
Columbia River	100 F-5 HRM19.0	B12T98	37144	1
Columbia River	100 F-5 HRM19.0	B12T73	37144	1
Columbia River	100 F-5 HRM19.0	B0WBN6	36424	1
Columbia River	100 F-5 HRM19.0	B17HF4	37872	1
Columbia River	100 F-5 HRM19.0	B106V2	36787	1
Columbia River	100 F-5 HRM19.0	B106J3	36787	1
Columbia River	100 F-5 HRM19.0	B1B467	38244	1
Columbia River	100 F-5 HRM19.0	B1B6X8	38244	1
Columbia River	100 F-5 HRM19.0	B1B712	38244	1
Columbia River	100 F-5 HRM19.0	B1B778	38244	1
Columbia River	100 F-6 HRM19.0	B0WB09	36424	1
Columbia River	100 F-6 HRM19.0	B0WBN7	36424	1
Columbia River	100 F-7 HRM19.0	B158F2	37508	1
Columbia River	100 F-7 HRM19.0	B17CR5	37872	1
Columbia River	100 F-7 HRM19.0	B12VN1	37144	1
Columbia River	100 F-7 HRM19.0	B12T74	37144	1
Columbia River	100 F-7 HRM19.0	B12T99	37144	1
Columbia River	100 F-7 HRM19.0	B0WBB1	36424	1
Columbia River	100 F-7 HRM19.0	B0WBN8	36424	1
Columbia River	100 F-7 HRM19.0	B15999	37508	1
Columbia River	100 F-7 HRM19.0	B12TL8	37144	1
Columbia River	100 F-7 HRM19.0	B106V3	36787	1
Columbia River	100 F-7 HRM19.0	B17HF5	37872	1
Columbia River	100 F-7 HRM19.0	B106J4	36787	1
Columbia River	100 F-7 HRM19.0	B0WB10	36424	1
Columbia River	100 F-7 HRM19.0	B158K1	37508	1
Columbia River	100 F-7 HRM19.0	B158V4	37508	1
Columbia River	100 F-7 HRM19.0	B17CH3	37872	1
Columbia River	100 F-7 HRM19.0	B10759	36787	1
Columbia River	100 F-7 HRM19.0	B106W6	36787	1
Columbia River	100 F-7 HRM19.0	B1B468	38244	1
Columbia River	100 F-7 HRM19.0	B1B713	38244	1
Columbia River	100 F-7 HRM19.0	B1B779	38244	1
Columbia River	100 F-8 HRM19.0	B0WBN9	36424	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100 F-8 HRM19.0	B0WB11	36424	1
Columbia River	100 F-9 HRM19.0	B0WB13	36424	1
Columbia River	100 F-9 HRM19.0	B0WB0P0	36424	1
Columbia River	100 FSHR HRM18	B12VN3	37144	1
Columbia River	100 FSHR HRM18	B159B1	37508	1
Columbia River	100 FSHR HRM18	29024	37508	1
Columbia River	100 FSHR HRM18	B12TT5	37144	1
Columbia River	100 FSHR HRM18	B106J5	36787	1
Columbia River	100 FSHR HRM18	B12TT3	37144	1
Columbia River	100 FSHR HRM18	B109C1	36787	1
Columbia River	100 FSHR HRM18	B15909	37508	1
Columbia River	100 FSHR HRM18	B12TT4	37144	1
Columbia River	100 FSHR HRM18	B10790	36787	1
Columbia River	100 FSHR HRM18	B17HF6	37872	1
Columbia River	100 FSHR HRM18	B10789	36787	1
Columbia River	100 FSHR HRM18	B10788	36787	1
Columbia River	100 FSHR HRM18	B17CY6	37872	1
Columbia River	100 FSHR HRM18	33281	38244	1
Columbia River	100 FSHR HRM18	B17CY5	37872	1
Columbia River	100 FSHR HRM18	B15906	37508	1
Columbia River	100 FSHR HRM18	B15908	37508	1
Columbia River	100 FSHR HRM18	B17CY4	37872	1
Columbia River	100 FSHR HRM18	B1B6X9	38244	1
Columbia River	100 FSHR HRM18	B1B7D5	38244	1
Columbia River	100 FSHR HRM18	B1B470	38244	1
Columbia River	100 FSHR HRM18	B1B7D8	38244	1
Columbia River	100 FSHR HRM18	B1B7D7	38244	1
Columbia River	100 FSHR HRM22	B17CY7	37872	1
Columbia River	100 FSHR HRM22	B17CY8	37872	1
Columbia River	100 FSHR HRM22	B17CY9	37872	1
Columbia River	100 FSHR HRM22	B106J6	36787	1
Columbia River	100 FSHR HRM22	B10791	36787	1
Columbia River	100 FSHR HRM22	B10793	36787	1
Columbia River	100 FSHR HRM22	33228	38244	1
Columbia River	100 FSHR HRM22	B10792	36787	1
Columbia River	100 FSHR HRM22	B17HF7	37872	1
Columbia River	100 FSHR HRM22	29025	37508	1
Columbia River	100 FSHR HRM22	B1B7D9	38244	1
Columbia River	100 FSHR HRM22	B1B7F2	38244	1
Columbia River	100 FSHR HRM22	B1B7F1	38244	1
Columbia River	100 FSHR HRM22	B1B471	38244	1
Columbia River	100 FSHR HRM23	B12VN5	37144	1
Columbia River	100 FSHR HRM23	B106J7	36787	1
Columbia River	100 FSHR HRM23	B159B3	37508	1
Columbia River	100 FSHR HRM23	B15914	37508	1
Columbia River	100 FSHR HRM23	29026	37508	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100 FSHR HRM23	33196	38244	1
Columbia River	100 FSHR HRM23	B10794	36787	1
Columbia River	100 FSHR HRM23	B10795	36787	1
Columbia River	100 FSHR HRM23	B15916	37508	1
Columbia River	100 FSHR HRM23	B12TV1	37144	1
Columbia River	100 FSHR HRM23	B12TV0	37144	1
Columbia River	100 FSHR HRM23	B12TT9	37144	1
Columbia River	100 FSHR HRM23	B15917	37508	1
Columbia River	100 FSHR HRM23	B17D00	37872	1
Columbia River	100 FSHR HRM23	B17D01	37872	1
Columbia River	100 FSHR HRM23	B17D02	37872	1
Columbia River	100 FSHR HRM23	B17HF8	37872	1
Columbia River	100 FSHR HRM23	B10796	36787	1
Columbia River	100 FSHR HRM23	B1B7F3	38244	1
Columbia River	100 FSHR HRM23	B1B7F5	38244	1
Columbia River	100 FSHR HRM23	B1B7F6	38244	1
Columbia River	100 FSHR HRM23	B1B472	38244	1
Columbia River	100 FSHR HRM24	B15912	37508	1
Columbia River	100 FSHR HRM24	B159B2	37508	1
Columbia River	100 FSHR HRM24	B15910	37508	1
Columbia River	100 FSHR HRM24	B12T94	37144	1
Columbia River	100 FSHR HRM24	B15913	37508	1
Columbia River	100 N-1 HRM 9.5	B159B4	37504	1
Columbia River	100 N-1 HRM 9.5	B0W936	36413	1
Columbia River	100 N-1 HRM 9.5	B12T85	37141	1
Columbia River	100 N-1 HRM 9.5	B158H8	37504	1
Columbia River	100 N-1 HRM 9.5	B158P6	37504	1
Columbia River	100 N-1 HRM 9.5	B12T64	37141	1
Columbia River	100 N-1 HRM 9.5	B0WBF8	36413	1
Columbia River	100 N-1 HRM 9.5	B0W930	36413	1
Columbia River	100 N-1 HRM 9.5	B10692	36783	1
Columbia River	100 N-1 HRM 9.5	B106J9	36783	1
Columbia River	100 N-1 HRM 9.5	B17HF9	37868	1
Columbia River	100 N-1 HRM 9.5	B12VN6	37141	1
Columbia River	100 N-1 HRM 9.5	B17CB6	37868	1
Columbia River	100 N-1 HRM 9.5	B12TJ0	37141	1
Columbia River	100 N-1 HRM 9.5	B158H3	37504	1
Columbia River	100 N-1 HRM 9.5	B10662	36783	1
Columbia River	100 N-1 HRM 9.5	B158D2	37504	1
Columbia River	100 N-1 HRM 9.5	B12T91	37141	1
Columbia River	100 N-1 HRM 9.5	B17CM7	37868	1
Columbia River	100 N-1 HRM 9.5	B17CD7	37868	1
Columbia River	100 N-1 HRM 9.5	B109B4	36783	1
Columbia River	100 N-1 HRM 9.5	B10672	36783	1
Columbia River	100 N-1 HRM 9.5	B17CF2	37868	1
Columbia River	100 N-1 HRM 9.5	B10677	36783	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100 N-1 HRM 9.5	B0W973	36413	1
Columbia River	100 N-1 HRM 9.5	B1B6W9	38243	1
Columbia River	100 N-1 HRM 9.5	B1B473	38243	1
Columbia River	100 N-1 HRM 9.5	B1B751	38243	1
Columbia River	100 N-1 HRM 9.5	B1B700	38243	1
Columbia River	100 N-1 HRM 9.5	B1B705	38243	1
Columbia River	100 N-10HRM 9.5	B159B9	37504	1
Columbia River	100 N-10HRM 9.5	B10667	36783	1
Columbia River	100 N-10HRM 9.5	B17HH0	37868	1
Columbia River	100 N-10HRM 9.5	B0WBH3	36413	1
Columbia River	100 N-10HRM 9.5	B158D7	37504	1
Columbia River	100 N-10HRM 9.5	B10683	36783	1
Columbia River	100 N-10HRM 9.5	B158R1	37504	1
Columbia River	100 N-10HRM 9.5	B10697	36783	1
Columbia River	100 N-10HRM 9.5	B0W978	36413	1
Columbia River	100 N-10HRM 9.5	B12T69	37141	1
Columbia River	100 N-10HRM 9.5	B12VP1	37141	1
Columbia River	100 N-10HRM 9.5	B12TD4	37141	1
Columbia River	100 N-10HRM 9.5	B17CC1	37868	1
Columbia River	100 N-10HRM 9.5	B106J8	36783	1
Columbia River	100 N-10HRM 9.5	B17CN2	37868	1
Columbia River	100 N-10HRM 9.5	B17CK8	37868	1
Columbia River	100 N-10HRM 9.5	B0W942	36413	1
Columbia River	100 N-10HRM 9.5	B158M7	37504	1
Columbia River	100 N-10HRM 9.5	B12TJ5	37141	1
Columbia River	100 N-10HRM 9.5	B1B732	38243	1
Columbia River	100 N-10HRM 9.5	B1B6X4	38243	1
Columbia River	100 N-10HRM 9.5	B1B756	38243	1
Columbia River	100 N-10HRM 9.5	B1B478	38243	1
Columbia River	100 N-2 HRM 9.5	B12TJ1	37141	1
Columbia River	100 N-2 HRM 9.5	B0W974	36413	1
Columbia River	100 N-2 HRM 9.5	B109B5	36783	1
Columbia River	100 N-2 HRM 9.5	B17CM8	37868	1
Columbia River	100 N-2 HRM 9.5	B10693	36783	1
Columbia River	100 N-2 HRM 9.5	B17CF4	37868	1
Columbia River	100 N-2 HRM 9.5	B10663	36783	1
Columbia River	100 N-2 HRM 9.5	B12VN7	37141	1
Columbia River	100 N-2 HRM 9.5	B12T92	37141	1
Columbia River	100 N-2 HRM 9.5	B0WBF9	36413	1
Columbia River	100 N-2 HRM 9.5	B158H9	37504	1
Columbia River	100 N-2 HRM 9.5	B159B5	37504	1
Columbia River	100 N-2 HRM 9.5	B158P7	37504	1
Columbia River	100 N-2 HRM 9.5	B17HH1	37868	1
Columbia River	100 N-2 HRM 9.5	B0W938	36413	1
Columbia River	100 N-2 HRM 9.5	B106K0	36783	1
Columbia River	100 N-2 HRM 9.5	B12T65	37141	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100 N-2 HRM 9.5	B158D3	37504	1
Columbia River	100 N-2 HRM 9.5	B17CB7	37868	1
Columbia River	100 N-2 HRM 9.5	B10679	36783	1
Columbia River	100 N-2 HRM 9.5	B1B474	38243	1
Columbia River	100 N-2 HRM 9.5	B1B706	38243	1
Columbia River	100 N-2 HRM 9.5	B1B752	38243	1
Columbia River	100 N-2 HRM 9.5	B1B6X0	38243	1
Columbia River	100 N-3 HRM 9.5	B158D4	37504	1
Columbia River	100 N-3 HRM 9.5	B10694	36783	1
Columbia River	100 N-3 HRM 9.5	B158P8	37504	1
Columbia River	100 N-3 HRM 9.5	B10684	36783	1
Columbia River	100 N-3 HRM 9.5	B10664	36783	1
Columbia River	100 N-3 HRM 9.5	B158M8	37504	1
Columbia River	100 N-3 HRM 9.5	B106K1	36783	1
Columbia River	100 N-3 HRM 9.5	B17CM9	37868	1
Columbia River	100 N-3 HRM 9.5	B0W975	36413	1
Columbia River	100 N-3 HRM 9.5	B17CL0	37868	1
Columbia River	100 N-3 HRM 9.5	B0W943	36413	1
Columbia River	100 N-3 HRM 9.5	B17HH2	37868	1
Columbia River	100 N-3 HRM 9.5	B12TJ2	37141	1
Columbia River	100 N-3 HRM 9.5	B12VN8	37141	1
Columbia River	100 N-3 HRM 9.5	B0WBH0	36413	1
Columbia River	100 N-3 HRM 9.5	B12TD5	37141	1
Columbia River	100 N-3 HRM 9.5	B12T66	37141	1
Columbia River	100 N-3 HRM 9.5	B17CB8	37868	1
Columbia River	100 N-3 HRM 9.5	B1B733	38243	1
Columbia River	100 N-3 HRM 9.5	B1B475	38243	1
Columbia River	100 N-3 HRM 9.5	B1B753	38243	1
Columbia River	100 N-3 HRM 9.5	B1B6X1	38243	1
Columbia River	100 N-5 HRM 9.5	B10665	36783	1
Columbia River	100 N-5 HRM 9.5	B106K2	36783	1
Columbia River	100 N-5 HRM 9.5	B158P9	37504	1
Columbia River	100 N-5 HRM 9.5	B12TJ3	37141	1
Columbia River	100 N-5 HRM 9.5	B10695	36783	1
Columbia River	100 N-5 HRM 9.5	B12T67	37141	1
Columbia River	100 N-5 HRM 9.5	B10681	36783	1
Columbia River	100 N-5 HRM 9.5	B12VN9	37141	1
Columbia River	100 N-5 HRM 9.5	B0W976	36413	1
Columbia River	100 N-5 HRM 9.5	B17CN0	37868	1
Columbia River	100 N-5 HRM 9.5	B159B7	37504	1
Columbia River	100 N-5 HRM 9.5	B158D5	37504	1
Columbia River	100 N-5 HRM 9.5	B158J0	37504	1
Columbia River	100 N-5 HRM 9.5	B17HH3	37868	1
Columbia River	100 N-5 HRM 9.5	B12T93	37141	1
Columbia River	100 N-5 HRM 9.5	B17CB9	37868	1
Columbia River	100 N-5 HRM 9.5	B0WBH1	36413	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100 N-5 HRM 9.5	B17CF6	37868	1
Columbia River	100 N-5 HRM 9.5	B0W940	36413	1
Columbia River	100 N-5 HRM 9.5	B1B754	38243	1
Columbia River	100 N-5 HRM 9.5	B1B6X2	38243	1
Columbia River	100 N-5 HRM 9.5	B1B476	38243	1
Columbia River	100 N-5 HRM 9.5	B1B707	38243	1
Columbia River	100 N-7 HRM 9.5	B17CN1	37868	1
Columbia River	100 N-7 HRM 9.5	B10696	36783	1
Columbia River	100 N-7 HRM 9.5	B106K3	36783	1
Columbia River	100 N-7 HRM 9.5	B12VP0	37141	1
Columbia River	100 N-7 HRM 9.5	B0W977	36413	1
Columbia River	100 N-7 HRM 9.5	B12TJ4	37141	1
Columbia River	100 N-7 HRM 9.5	B158R0	37504	1
Columbia River	100 N-7 HRM 9.5	B12T68	37141	1
Columbia River	100 N-7 HRM 9.5	B158D6	37504	1
Columbia River	100 N-7 HRM 9.5	B159B8	37504	1
Columbia River	100 N-7 HRM 9.5	B158M9	37504	1
Columbia River	100 N-7 HRM 9.5	B10686	36783	1
Columbia River	100 N-7 HRM 9.5	B12TD6	37141	1
Columbia River	100 N-7 HRM 9.5	B17CC0	37868	1
Columbia River	100 N-7 HRM 9.5	B17CL2	37868	1
Columbia River	100 N-7 HRM 9.5	B0W945	36413	1
Columbia River	100 N-7 HRM 9.5	B10666	36783	1
Columbia River	100 N-7 HRM 9.5	B0WBH2	36413	1
Columbia River	100 N-7 HRM 9.5	B17HH4	37868	1
Columbia River	100 N-7 HRM 9.5	B1B477	38243	1
Columbia River	100 N-7 HRM 9.5	B1B6X3	38243	1
Columbia River	100 N-7 HRM 9.5	B1B734	38243	1
Columbia River	100 N-7 HRM 9.5	B1B755	38243	1
Columbia River	100 NSHR HRM8.4	B10699	36783	1
Columbia River	100 NSHR HRM8.4	B106B0	36783	1
Columbia River	100 NSHR HRM8.4	B17CT9	37868	1
Columbia River	100 NSHR HRM8.4	B106K4	36783	1
Columbia River	100 NSHR HRM8.4	B10698	36783	1
Columbia River	100 NSHR HRM8.4	B17CV1	37868	1
Columbia River	100 NSHR HRM8.4	B17CV2	37868	1
Columbia River	100 NSHR HRM8.4	B0WBH4	36413	1
Columbia River	100 NSHR HRM8.4	33229	38243	1
Columbia River	100 NSHR HRM8.4	B159C0	37504	1
Columbia River	100 NSHR HRM8.4	B17HH5	37868	1
Columbia River	100 NSHR HRM8.4	B0W957	36413	1
Columbia River	100 NSHR HRM8.4	B0W965	36413	1
Columbia River	100 NSHR HRM8.4	B12TN4	37141	1
Columbia River	100 NSHR HRM8.4	B12TN3	37141	1
Columbia River	100 NSHR HRM8.4	B12VP2	37141	1
Columbia River	100 NSHR HRM8.4	31857	37868	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100 NSHR HRM8.4	B109B7	36783	1
Columbia River	100 NSHR HRM8.4	B12TN2	37141	1
Columbia River	100 NSHR HRM8.4	B158X0	37504	1
Columbia River	100 NSHR HRM8.4	B158W8	37504	1
Columbia River	100 NSHR HRM8.4	B158W9	37504	1
Columbia River	100 NSHR HRM8.4	B1B796	38243	1
Columbia River	100 NSHR HRM8.4	B1B479	38243	1
Columbia River	100 NSHR HRM8.4	B1B793	38243	1
Columbia River	100 NSHR HRM8.4	B1B795	38243	1
Columbia River	100 NSHR HRM8.9	B106B1	36783	1
Columbia River	100 NSHR HRM8.9	B12VP3	37141	1
Columbia River	100 NSHR HRM8.9	B12TN7	37141	1
Columbia River	100 NSHR HRM8.9	B159C1	37504	1
Columbia River	100 NSHR HRM8.9	B0W958	36413	1
Columbia River	100 NSHR HRM8.9	31858	37868	1
Columbia River	100 NSHR HRM8.9	B0W966	36413	1
Columbia River	100 NSHR HRM8.9	33230	38243	1
Columbia River	100 NSHR HRM8.9	B12TN6	37141	1
Columbia River	100 NSHR HRM8.9	B158X3	37504	1
Columbia River	100 NSHR HRM8.9	B106B2	36783	1
Columbia River	100 NSHR HRM8.9	B106K5	36783	1
Columbia River	100 NSHR HRM8.9	B158X1	37504	1
Columbia River	100 NSHR HRM8.9	B158X2	37504	1
Columbia River	100 NSHR HRM8.9	B106B3	36783	1
Columbia River	100 NSHR HRM8.9	B12TN5	37141	1
Columbia River	100 NSHR HRM8.9	B109B6	36783	1
Columbia River	100 NSHR HRM8.9	B0WBH5	36413	1
Columbia River	100 NSHR HRM8.9	B17CV3	37868	1
Columbia River	100 NSHR HRM8.9	B17CV5	37868	1
Columbia River	100 NSHR HRM8.9	B17HH6	37868	1
Columbia River	100 NSHR HRM8.9	B17CV6	37868	1
Columbia River	100 NSHR HRM8.9	B1B480	38243	1
Columbia River	100 NSHR HRM8.9	B1B797	38243	1
Columbia River	100 NSHR HRM8.9	B1B799	38243	1
Columbia River	100 NSHR HRM8.9	B1B7B0	38243	1
Columbia River	100 NSHR HRM9.2	B12TN9	37141	1
Columbia River	100 NSHR HRM9.2	B12TN8	37141	1
Columbia River	100 NSHR HRM9.2	B12TP0	37141	1
Columbia River	100 NSHR HRM9.2	B158X6	37504	1
Columbia River	100 NSHR HRM9.2	B158X5	37504	1
Columbia River	100 NSHR HRM9.2	B158X4	37504	1
Columbia River	100 NSHR HRM9.2	B17CV7	37868	1
Columbia River	100 NSHR HRM9.2	B109B8	36783	1
Columbia River	100 NSHR HRM9.2	B17CW0	37868	1
Columbia River	100 NSHR HRM9.2	B0W967	36413	1
Columbia River	100 NSHR HRM9.2	B12VP4	37141	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100 NSHR HRM9.2	B0W959	36413	1
Columbia River	100 NSHR HRM9.2	B17CV9	37868	1
Columbia River	100 NSHR HRM9.2	B106B4	36783	1
Columbia River	100 NSHR HRM9.2	B0WBH6	36413	1
Columbia River	100 NSHR HRM9.2	B17HH7	37868	1
Columbia River	100 NSHR HRM9.2	B159C2	37504	1
Columbia River	100 NSHR HRM9.2	B106B5	36783	1
Columbia River	100 NSHR HRM9.2	B106K6	36783	1
Columbia River	100 NSHR HRM9.2	31859	37868	1
Columbia River	100 NSHR HRM9.2	B106B6	36783	1
Columbia River	100 NSHR HRM9.2	B1B481	38243	1
Columbia River	100 NSHR HRM9.2	B1B7B1	38243	1
Columbia River	100 NSHR HRM9.2	B1B7B4	38243	1
Columbia River	100 NSHR HRM9.2	B1B7B3	38243	1
Columbia River	100 NSHR HRM9.8	31860	37868	1
Columbia River	100 NSHR HRM9.8	B17CW3	37868	1
Columbia River	100 NSHR HRM9.8	B12VP5	37141	1
Columbia River	100 NSHR HRM9.8	B158X9	37504	1
Columbia River	100 NSHR HRM9.8	B12TP2	37141	1
Columbia River	100 NSHR HRM9.8	B106K7	36783	1
Columbia River	100 NSHR HRM9.8	B0W968	36413	1
Columbia River	100 NSHR HRM9.8	B109B9	36783	1
Columbia River	100 NSHR HRM9.8	B17CW4	37868	1
Columbia River	100 NSHR HRM9.8	33232	38243	1
Columbia River	100 NSHR HRM9.8	B158X7	37504	1
Columbia River	100 NSHR HRM9.8	B12TP1	37141	1
Columbia River	100 NSHR HRM9.8	B17CW1	37868	1
Columbia River	100 NSHR HRM9.8	B158X8	37504	1
Columbia River	100 NSHR HRM9.8	B106B9	36783	1
Columbia River	100 NSHR HRM9.8	B0WBH7	36413	1
Columbia River	100 NSHR HRM9.8	B0W960	36413	1
Columbia River	100 NSHR HRM9.8	B17HH8	37868	1
Columbia River	100 NSHR HRM9.8	B106B7	36783	1
Columbia River	100 NSHR HRM9.8	B159C3	37504	1
Columbia River	100 NSHR HRM9.8	B106B8	36783	1
Columbia River	100 NSHR HRM9.8	B12TP3	37141	1
Columbia River	100 NSHR HRM9.8	B1B7B5	38243	1
Columbia River	100 NSHR HRM9.8	B1B482	38243	1
Columbia River	100 NSHR HRM9.8	B1B7B8	38243	1
Columbia River	100 NSHR HRM9.8	B1B7B7	38243	1
Columbia River	100-B SPR 37-1	B15C62	37515	1
Columbia River	100-B SPR 37-1	B13608	37186	1
Columbia River	100-B SPR 37-1	B15MM0	37550	1
Columbia River	100-B SPR 37-1	B15C71	37515	1
Columbia River	100-B SPR 37-1	B15ML9	37550	1
Columbia River	100-B SPR 37-1	B13607	37186	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100-B SPR 37-1	B13606	37186	1
Columbia River	100-B SPR 37-1	B15MM1	37550	1
Columbia River	100-B SPR 37-1	B180H6	37938	1
Columbia River	100-B SPR 37-1	B1BFT1	38271	1
Columbia River	100-B SPR 37-1	J013J4	37938	1
Columbia River	100-B SPR 37-1	B1BFT7	38271	1
Columbia River	100-B SPR 37-1	B1BFV3	38271	1
Columbia River	100-B SPR 37-1	B18136	37938	1
Columbia River	100-B SPR 38-3	B13609	37186	1
Columbia River	100-B SPR 38-3	B13610	37186	1
Columbia River	100-B SPR 38-3	B13611	37186	1
Columbia River	100-B SPR 38-3	B15MM3	37550	1
Columbia River	100-B SPR 38-3	B0WP24	36458	1
Columbia River	100-B SPR 38-3	B10937	36816	1
Columbia River	100-B SPR 38-3	B15MM2	37550	1
Columbia River	100-B SPR 38-3	B10944	36816	1
Columbia River	100-B SPR 38-3	B15MM4	37550	1
Columbia River	100-B SPR 38-3	B0WP15	36458	1
Columbia River	100-B SPR 38-3	B10FB0	36824	1
Columbia River	100-B SPR 38-3	B10FB1	36824	1
Columbia River	100-B SPR 38-3	B10FB2	36824	1
Columbia River	100-B SPR 38-3	B18137	37938	1
Columbia River	100-B SPR 38-3	J013K3	37938	1
Columbia River	100-B SPR 38-3	J013K9	37938	1
Columbia River	100-B SPR 38-3	B180F9	37938	1
Columbia River	100-B SPR 38-3	B180H7	37938	1
Columbia River	100-B SPR 38-3	J013P4	37938	1
Columbia River	100-B SPR 38-3	J013K6	37938	1
Columbia River	100-B SPR 38-3	J013P5	37938	1
Columbia River	100-B SPR 38-3	J00X52	37858	1
Columbia River	100-B SPR 38-3	B18158	37938	1
Columbia River	100-B SPR 38-3	B180D3	37938	1
Columbia River	100-B SPR 38-3	J013P3	37938	1
Columbia River	100-B SPR 38-3	B18160	37938	1
Columbia River	100-B SPR 38-3	B18156	37938	1
Columbia River	100-B SPR 38-3	B18157	37938	1
Columbia River	100-B SPR 38-3	B18166	37938	1
Columbia River	100-B SPR 38-3	J013K8	37938	1
Columbia River	100-B SPR 38-3	J013K7	37938	1
Columbia River	100-B SPR 38-3	J00X45	37858	1
Columbia River	100-B SPR 38-3	B180D0	37938	1
Columbia River	100-B SPR 38-3	J013P6	37938	1
Columbia River	100-B SPR 38-3	J013K4	37938	1
Columbia River	100-B SPR 38-3	B18159	37938	1
Columbia River	100-B SPR 38-3	B180D2	37938	1
Columbia River	100-B SPR 38-3	B180D1	37938	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100-B SPR 38-3	B180J4	37938	1
Columbia River	100-B SPR 39-2	B0WP27	36458	1
Columbia River	100-B SPR 39-2	B0WP29	36458	1
Columbia River	100-B SPR 39-2	B180D5	37938	1
Columbia River	100-B SPR 39-2	B180D4	37938	1
Columbia River	100-B SPR 39-2	B1BFW0	38271	1
Columbia River	100-B SPR 39-2	B180H8	37942	1
Columbia River	100-B SPR 39-2	J00X53	37858	1
Columbia River	100-B SPR 39-2	B180D7	37938	1
Columbia River	100-B SPR 39-2	J013W4	37942	1
Columbia River	100-B SPR 39-2	B18162	37938	1
Columbia River	100-B SPR 39-2	J00X46	37858	1
Columbia River	100-B SPR 39-2	B18164	37938	1
Columbia River	100-B SPR 39-2	B18165	37938	1
Columbia River	100-B SPR 39-2	J013V7	37938	1
Columbia River	100-B SPR 39-2	J013W1	37938	1
Columbia River	100-B SPR 39-2	B18163	37938	1
Columbia River	100-B SPR 39-2	J013W2	37938	1
Columbia River	100-B SPR 39-2	B1BFT2	38271	1
Columbia River	100-B SPR 39-2	B180D6	37938	1
Columbia River	100-B SPR 39-2	B18138	37942	1
Columbia River	100-B SPR 39-2	B1BFV7	38271	1
Columbia River	100-B SPR 39-2	J013W0	37938	1
Columbia River	100-D SPR 102-1	B10JP7	36816	1
Columbia River	100-D SPR 102-1	B10962	36816	1
Columbia River	100-D SPR 102-1	B15HV8	37550	1
Columbia River	100-D SPR 102-1	B15HV9	37550	1
Columbia River	100-D SPR 102-1	B15HW0	37550	1
Columbia River	100-D SPR 102-1	B15C89	37550	1
Columbia River	100-D SPR 102-1	B10963	36816	1
Columbia River	100-D SPR 102-1	B0WP42	36460	1
Columbia River	100-D SPR 102-1	B15C88	37550	1
Columbia River	100-D SPR 102-1	B0WP43	36460	1
Columbia River	100-D SPR 102-1	B10JR8	36816	1
Columbia River	100-D SPR 102-1	B1BFV0	38286	1
Columbia River	100-D SPR 102-1	B17JP1	37921	1
Columbia River	100-D SPR 102-1	B1BJ55	38286	1
Columbia River	100-D SPR 102-1	B17JP2	37921	1
Columbia River	100-D SPR 102-1	B17JP3	37921	1
Columbia River	100-D SPR 102-1	B17JP4	37921	1
Columbia River	100-D SPR 102-1	B17JP0	37921	1
Columbia River	100-D SPR 102-1	B17JN9	37921	1
Columbia River	100-D SPR 102-1	B17JN8	37921	1
Columbia River	100-D SPR 102-1	B1BFX3	38286	1
Columbia River	100-D SPR 102-1	B1BFX2	38286	1
Columbia River	100-D SPR 110-1	B15HW2	37550	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100-D SPR 110-1	B10JT0	36816	1
Columbia River	100-D SPR 110-1	B10JP9	36816	1
Columbia River	100-D SPR 110-1	B10960	36816	1
Columbia River	100-D SPR 110-1	B10961	36816	1
Columbia River	100-D SPR 110-1	B0WP40	36460	1
Columbia River	100-D SPR 110-1	B15HW5	37550	1
Columbia River	100-D SPR 110-1	B15HW1	37550	1
Columbia River	100-D SPR 110-1	B10JR9	36816	1
Columbia River	100-D SPR 110-1	B15HW3	37550	1
Columbia River	100-D SPR 110-1	B15HW4	37550	1
Columbia River	100-D SPR 110-1	B15C87	37550	1
Columbia River	100-D SPR 110-1	B0WP41	36460	1
Columbia River	100-D SPR 110-1	B10JP8	36816	1
Columbia River	100-D SPR 110-1	B15C86	37550	1
Columbia River	100-D SPR 110-1	B1BJ56	38286	1
Columbia River	100-D SPR 110-1	B17JN7	37921	1
Columbia River	100-D SPR 110-1	B1BFX1	38286	1
Columbia River	100-D SPR 110-1	B1BFT9	38286	1
Columbia River	100-D SPR 110-1	B1BFX0	38286	1
Columbia River	100-D SPR 98-1	B15HX1	37550	1
Columbia River	100-D SPR 98-1	B135X2	37189	1
Columbia River	100-D SPR 98-1	B135X3	37189	1
Columbia River	100-D SPR 98-1	B15HX0	37550	1
Columbia River	100-D SPR 98-1	B15HW9	37550	1
Columbia River	100-F SPR 207-1	B15C92	37558	1
Columbia River	100-F SPR 207-1	B13619	37186	1
Columbia River	100-F SPR 207-1	B13620	37186	1
Columbia River	100-F SPR 207-1	B15C93	37558	1
Columbia River	100-F SPR 207-1	B10967	36837	1
Columbia River	100-F SPR 207-1	B10966	36837	1
Columbia River	100-F SPR 207-1	B13618	37186	1
Columbia River	100-F SPR 207-1	B15MN1	37556	1
Columbia River	100-F SPR 207-1	B10FC4	36837	1
Columbia River	100-F SPR 207-1	B15MN2	37556	1
Columbia River	100-F SPR 207-1	B15MN3	37558	1
Columbia River	100-F SPR 207-1	B10FC2	36837	1
Columbia River	100-F SPR 207-1	B10FC3	36837	1
Columbia River	100-F SPR 207-1	B0WP48	36465	1
Columbia River	100-F SPR 207-1	B0WP49	36465	1
Columbia River	100-F SPR 207-1	B1BJ59	38286	1
Columbia River	100-F SPR 207-1	B1BFV2	38286	1
Columbia River	100-F SPR 207-1	B1BFX7	38286	1
Columbia River	100-F SPR 207-1	B1BFX6	38286	1
Columbia River	100-F SPR 211-1	B13622	37186	1
Columbia River	100-F SPR 211-1	B13621	37186	1
Columbia River	100-F SPR 211-1	B13623	37186	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100-F SPRING	B17LB4	37945	1
Columbia River	100-F SPRING	B17LB2	37945	1
Columbia River	100-F SPRING	B17LB1	37945	1
Columbia River	100-H SPR 144-1	B15HX3	37556	1
Columbia River	100-H SPR 144-1	B15HX4	37556	1
Columbia River	100-H SPR 144-1	B15HX2	37556	1
Columbia River	100-H SPR 145-1	B15HX8	37556	1
Columbia River	100-H SPR 145-1	B135X8	37196	1
Columbia River	100-H SPR 145-1	B0WP47	36460	1
Columbia River	100-H SPR 145-1	B135X9	37196	1
Columbia River	100-H SPR 145-1	B10964	36831	1
Columbia River	100-H SPR 145-1	B0WP46	36460	1
Columbia River	100-H SPR 145-1	B15HX5	37556	1
Columbia River	100-H SPR 145-1	B10965	36831	1
Columbia River	100-H SPR 145-1	B15HX7	37556	1
Columbia River	100-H SPR 145-1	B15HX9	37556	1
Columbia River	100-H SPR 145-1	B10JT4	36831	1
Columbia River	100-H SPR 145-1	B10JR3	36831	1
Columbia River	100-H SPR 145-1	B15HY0	37556	1
Columbia River	100-H SPR 145-1	B15HX6	37556	1
Columbia River	100-H SPR 145-1	B1BJ57	38286	1
Columbia River	100-H SPR 145-1	B1BFX5	38286	1
Columbia River	100-H SPR 145-1	B1BFX4	38286	1
Columbia River	100-H SPR 145-1	B1BFV1	38286	1
Columbia River	100-H SPR 150-1	B15HY3	37556	1
Columbia River	100-H SPR 150-1	B15HY2	37556	1
Columbia River	100-H SPR 150-1	B15HY1	37556	1
Columbia River	100-H SPR 150-1	B17VK7	37945	1
Columbia River	100-H SPR 150-1	B17VK6	37945	1
Columbia River	100-H SPR 150-1	B17VK5	37945	1
Columbia River	100-H SPR 152-2	B15CB5	37556	1
Columbia River	100-H SPR 152-2	B15CB4	37556	1
Columbia River	100-H SPR 152-2	B135Y4	37196	1
Columbia River	100-H SPR 152-2	B15HY4	37556	1
Columbia River	100-H SPR 152-2	B15HY5	37556	1
Columbia River	100-H SPR 152-2	B135Y5	37196	1
Columbia River	100-H SPR 152-2	B15HY6	37556	1
Columbia River	100-H SPR 153-1	B15HY8	37556	1
Columbia River	100-H SPR 153-1	B135Y6	37196	1
Columbia River	100-H SPR 153-1	B15HY7	37556	1
Columbia River	100-H SPR 153-1	B15HY9	37556	1
Columbia River	100-H SPR 153-1	B135Y7	37196	1
Columbia River	100-H SPR 153-1	B10979	36831	1
Columbia River	100-H SPR 153-1	B0WP44	36460	1
Columbia River	100-H SPR 153-1	B0WP45	36460	1
Columbia River	100-H SPR 153-1	B10980	36831	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100-H SPR 153-1	B1BH00	38286	1
Columbia River	100-H SPR 153-1	B1BH01	38286	1
Columbia River	100-H SPR 153-1	B1BJ58	38286	1
Columbia River	100-H SPR 153-1	B1BFY7	38286	1
Columbia River	100-K SPR 63-1	B0WP32	36458	1
Columbia River	100-K SPR 63-1	B0WP34	36458	1
Columbia River	100-K SPR 63-1	B10954	36816	1
Columbia River	100-K SPR 63-1	B10953	36816	1
Columbia River	100-K SPR 63-1	B17JR2	37914	1
Columbia River	100-K SPR 63-1	B17JR1	37914	1
Columbia River	100-K SPR 63-2	B15C80	37515	1
Columbia River	100-K SPR 63-2	B15C79	37515	1
Columbia River	100-K SPR 68-1	B17LF3	37935	1
Columbia River	100-K SPR 68-1	B17LC4	37935	1
Columbia River	100-K SPR 68-1	B17LB5	37935	1
Columbia River	100-K SPR 77-1	B10955	36824	1
Columbia River	100-K SPR 77-1	B10956	36824	1
Columbia River	100-K SPR 77-1	B15LM4	37550	1
Columbia River	100-K SPR 77-1	B15LM5	37550	1
Columbia River	100-K SPR 77-1	B15LM6	37550	1
Columbia River	100-K SPR 77-1	B13600	37189	1
Columbia River	100-K SPR 77-1	B15C81	37550	1
Columbia River	100-K SPR 77-1	B15C82	37550	1
Columbia River	100-K SPR 77-1	B13601	37189	1
Columbia River	100-K SPR 77-1	B17JR0	37935	1
Columbia River	100-K SPR 77-1	B17JP9	37935	1
Columbia River	100-K SPR 77-1	B1BFW6	38271	1
Columbia River	100-K SPR 77-1	B1BFW5	38271	1
Columbia River	100-K SPR 77-1	B1BFT5	38271	1
Columbia River	100-K SPR 77-1	B17JP8	37935	1
Columbia River	100-K SPR 82-2	B15LM7	37550	1
Columbia River	100-K SPR 82-2	B15LM8	37550	1
Columbia River	100-K SPR 82-2	B15LM9	37550	1
Columbia River	100-K SPR 82-2	B13604	37189	1
Columbia River	100-K SPR 82-2	B13605	37189	1
Columbia River	100-N SPR 8-13	B15C02	37515	1
Columbia River	100-N SPR 8-13	B10904	36816	1
Columbia River	100-N SPR 8-13	B0WP37	36458	1
Columbia River	100-N SPR 8-13	B15C83	37515	1
Columbia River	100-N SPR 8-13	B10957	36816	1
Columbia River	100-N SPR 8-13	B0WNX6	36458	1
Columbia River	100-N SPR 8-13	B1BFP1	38271	1
Columbia River	100-N SPR 8-13	B18XL7	38075	1
Columbia River	100-N SPR 8-13	B1BFM0	38271	1
Columbia River	100-N SPR 8-13	B18XM0	38075	1
Columbia River	100-N SPR 8-13	B18XL5	38075	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100-N SPR 8-13	B18XL6	38075	1
Columbia River	100-N SPR 8-13	B1BFW7	38271	1
Columbia River	100-N SPR 8-13	B18XL9	38075	1
Columbia River	100-N SPR 8-13	B18XL8	38075	1
Columbia River	100B Area	B0YP01	36732	1
Columbia River	100B Area	B0Y265	36648	1
Columbia River	100B Area	B11RY4	36998	1
Columbia River	100B Area	B0V8F9	36269	1
Columbia River	100B Area	B0W108	36368	1
Columbia River	100B Area	B11CX6	36937	1
Columbia River	100B Area	B134L1	37172	1
Columbia River	100B Area	B129N8	37081	1
Columbia River	100B Area	B0WVP6	36466	1
Columbia River	100B Area	B0XKV5	36578	1
Columbia River	100B Area	B10KN4	36817	1
Columbia River	100B SPR 37-1	B15CC3	37515	1
Columbia River	100B SPR 37-1	B15C55	37515	1
Columbia River	100B SPR 37-1	26215	37015	1
Columbia River	100B SPR 37-1	B11W40	37015	1
Columbia River	100B SPR 37-1	30858	37914	1
Columbia River	100B SPR 37-1	B17J76	37914	1
Columbia River	100B SPR 37-1	B17J81	37914	1
Columbia River	100B SPR 37-1	B17J68	37914	1
Columbia River	100B SPR 37-1	B17JM8	37914	1
Columbia River	100B SPR 38-3	B12X38	37186	1
Columbia River	100B SPR 38-3	B10932	36824	1
Columbia River	100B SPR 38-3	B0WP11	36458	1
Columbia River	100B SPR 38-3	B135P3	37186	1
Columbia River	100B SPR 38-3	B0WMR9	36458	1
Columbia River	100B SPR 38-3	B10JP0	36824	1
Columbia River	100B SPR 39-2	B0WP12	36458	1
Columbia River	100B SPR 39-2	30935	37914	1
Columbia River	100B SPR 39-2	B0WMT0	36458	1
Columbia River	100B SPR 39-2	B17J83	37914	1
Columbia River	100B SPR 39-2	B17J70	37914	1
Columbia River	100B SPR 39-2	B17JM9	37914	1
Columbia River	100B SPR 39-2	B17J82	37914	1
Columbia River	100BC Area	B0VW80	36333	1
Columbia River	100BC Area	B0VWR0	36339	1
Columbia River	100D Area	B0XKV6	36578	1
Columbia River	100D Area	B0Y266	36648	1
Columbia River	100D Area	B0W109	36368	1
Columbia River	100D Area	B0VW79	36332	1
Columbia River	100D Area	B0WVP7	36466	1
Columbia River	100D Area	B0YP02	36732	1
Columbia River	100D Area	B134L2	37172	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100D Area	B0VWP8	36339	1
Columbia River	100D Area	B11RY5	36998	1
Columbia River	100D Area	B0V8H0	36269	1
Columbia River	100D Area	B10KN5	36817	1
Columbia River	100D Area	B129N9	37081	1
Columbia River	100D Area	B11CX7	36937	1
Columbia River	100D SPR 102-1	B0WVP18	36460	1
Columbia River	100D SPR 102-1	B0WMT6	36460	1
Columbia River	100D SPR 102-1	B10940	36816	1
Columbia River	100D SPR 102-1	B17J93	37921	1
Columbia River	100D SPR 102-1	B17J94	37921	1
Columbia River	100D SPR 102-1	B17J80	37921	1
Columbia River	100D SPR 102-1	B17JN4	37921	1
Columbia River	100D SPR 110-1	B0WMT5	36460	1
Columbia River	100D SPR 110-1	B10939	36816	1
Columbia River	100D SPR 110-1	B15C65	37550	1
Columbia River	100D SPR 110-1	B11W48	37015	1
Columbia River	100D SPR 110-1	B0WVP17	36460	1
Columbia River	100D SPR 110-1	B17J92	37921	1
Columbia River	100D SPR 110-1	B17JN5	37921	1
Columbia River	100D SPR 110-1	B17J91	37921	1
Columbia River	100D SPR 110-1	B17J79	37921	1
Columbia River	100F 1/10	29018	37508	1
Columbia River	100F 10/10	29023	37508	1
Columbia River	100F 2/10	29019	37508	1
Columbia River	100F 3/10	29020	37508	1
Columbia River	100F 5/10	29021	37508	1
Columbia River	100F 7/10	29022	37508	1
Columbia River	100F Area	B0VWP2	36367	1
Columbia River	100F Area	B0VW76	36332	1
Columbia River	100F SPR 207-1	24572	36837	1
Columbia River	100F SPR 207-1	B11W52	37011	1
Columbia River	100F SPR 207-1	B0WVP22	36465	1
Columbia River	100F SPR 207-1	29692	37558	1
Columbia River	100F SPR 207-1	23441	36465	1
Columbia River	100F SPR 207-1	B15C69	37558	1
Columbia River	100F SPR 207-1	B12X50	37186	1
Columbia River	100F SPR 207-1	B0WMT9	36465	1
Columbia River	100F SPR 207-1	B10942	36837	1
Columbia River	100F SPR 207-1	33078	37928	1
Columbia River	100F SPR 207-1	B17RR2	37928	1
Columbia River	100F SPR 207-1	B17RK7	37928	1
Columbia River	100F SPR 207-1	B17RJ6	37928	1
Columbia River	100F SPR 207-1	B17RK8	37928	1
Columbia River	100H Area	B0VWP6	36367	1
Columbia River	100H Area	B0VW78	36332	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100H SPR 145-1	B10941	36831	1
Columbia River	100H SPR 145-1	B11W50	37011	1
Columbia River	100H SPR 145-1	B0WMT8	36460	1
Columbia River	100H SPR 145-1	26216	37011	1
Columbia River	100H SPR 145-1	29696	37556	1
Columbia River	100H SPR 145-1	B0WP21	36460	1
Columbia River	100H SPR 145-1	B12X48	37196	1
Columbia River	100H SPR 145-1	28287	37196	1
Columbia River	100H SPR 145-1	30931	37921	1
Columbia River	100H SPR 145-1	B17RK5	37904	1
Columbia River	100H SPR 145-1	B17RK6	37921	1
Columbia River	100H SPR 145-1	B17RJ4	37921	1
Columbia River	100H SPR 145-1	B17RR3	37921	1
Columbia River	100H SPR 150-1	B10JP6	36831	1
Columbia River	100H SPR 152-2	B15CB3	37556	1
Columbia River	100H SPR 152-2	B12X85	37196	1
Columbia River	100H SPR 153-1	B10977	36831	1
Columbia River	100H SPR 153-1	24571	36837	1
Columbia River	100H SPR 153-1	B11W86	37011	1
Columbia River	100H SPR 153-1	B0WP19	36460	1
Columbia River	100H SPR 153-1	23440	36460	1
Columbia River	100H SPR 153-1	B0WMT7	36460	1
Columbia River	100H SPR 153-1	B17RL8	37921	1
Columbia River	100H SPR 153-1	B17RR4	37921	1
Columbia River	100H SPR 153-1	B17RM0	37921	1
Columbia River	100H SPR 153-1	B17RL9	37921	1
Columbia River	100K Area	B16RN5	37775	1
Columbia River	100K Area	B0W112	36368	1
Columbia River	100K Area	B0XKW7	36578	1
Columbia River	100K Area	B0WPW7	36466	1
Columbia River	100K Area	B10KN8	36817	1
Columbia River	100K Area	B0VW82	36333	1
Columbia River	100K Area	B176L4	37866	1
Columbia River	100K Area	B129P9	37081	1
Columbia River	100K Area	B0VWR4	36339	1
Columbia River	100K Area	B14CV2	37355	1
Columbia River	100K Area	B14YJ2	37445	1
Columbia River	100K Area	B0TLJ2	36187	1
Columbia River	100K Area	B14266	37301	1
Columbia River	100K Area	B134L4	37172	1
Columbia River	100K Area	B11T05	36998	1
Columbia River	100K Area	B15LF6	37602	1
Columbia River	100K Area	B0V8J0	36269	1
Columbia River	100K Area	B0YP05	36732	1
Columbia River	100K Area	B11CY8	36937	1
Columbia River	100K Area	B15LH6	37901	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100K Area	B15LH3	37670	1
Columbia River	100K Area	B15LH5	37810	1
Columbia River	100K Area	B15LH2	37538	1
Columbia River	100K Area	B169B4	37683	1
Columbia River	100K Area	B15LH4	37718	1
Columbia River	100K Area	B0Y269	36648	1
Columbia River	100K Area	B15LH1	37901	1
Columbia River	100K Area	B17R72	37956	1
Columbia River	100K SPR 63-1	B12X41	37189	1
Columbia River	100K SPR 63-1	B10934	36816	1
Columbia River	100K SPR 63-1	B0WMT1	36458	1
Columbia River	100K SPR 63-1	B0WVP13	36458	1
Columbia River	100K SPR 63-1	B10JP2	36816	1
Columbia River	100K SPR 63-1	B135P5	37189	1
Columbia River	100K SPR 63-2	B15C58	37515	1
Columbia River	100K SPR 63-2	30936	37914	1
Columbia River	100K SPR 63-2	29030	37515	1
Columbia River	100K SPR 63-2	B15CD0	37515	1
Columbia River	100K SPR 63-2	B17J72	37914	1
Columbia River	100K SPR 63-2	B17J84	37914	1
Columbia River	100K SPR 63-2	B17J85	37914	1
Columbia River	100K SPR 63-2	B17JN0	37914	1
Columbia River	100K SPR 77-1	B10JP3	36824	1
Columbia River	100K SPR 77-1	B15C60	37550	1
Columbia River	100K SPR 77-1	B135P6	37189	1
Columbia River	100K SPR 77-1	B15CD1	37550	1
Columbia River	100K SPR 77-1	B10936	36824	1
Columbia River	100K SPR 77-1	B12X42	37189	1
Columbia River	100K SPR 77-1	B17JN1	37935	1
Columbia River	100K SPR 77-1	B17J87	37935	1
Columbia River	100K SPR 77-1	B17J86	37935	1
Columbia River	100K SPR 77-1	B17J74	37935	1
Columbia River	100K SPR 77-2	30937	37935	1
Columbia River	100K SPR 77-2	33222	38271	1
Columbia River	100K SPR 77-2	B11W43	37015	1
Columbia River	100K SPRINGS	24569	36816	1
Columbia River	100N Area	B14YJ8	37445	1
Columbia River	100N Area	B14271	37301	1
Columbia River	100N Area	B14CV5	37354	1
Columbia River	100N Area	B15LF2	37670	1
Columbia River	100N Area	B0VW81	36333	1
Columbia River	100N Area	B15LF0	37901	1
Columbia River	100N Area	B15LF4	37810	1
Columbia River	100N Area	B16999	37683	1
Columbia River	100N Area	B16RN0	37775	1
Columbia River	100N Area	B0VWR2	36339	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100N Area	B15LF5	37901	1
Columbia River	100N Area	B15LD5	37602	1
Columbia River	100N Area	B15LF1	37538	1
Columbia River	100N Area	B15LF3	37718	1
Columbia River	100N Area	B176K9	37866	1
Columbia River	100N Area	B1BC58	38255	1
Columbia River	100N Area	B19H75	38147	1
Columbia River	100N Area	B19113	38086	1
Columbia River	100N Area	B19114	38086	1
Columbia River	100N Area	B1BC59	38255	1
Columbia River	100N Area	B1BC57	38255	1
Columbia River	100N Area	B19H72	38147	1
Columbia River	100N Area	B19H73	38147	1
Columbia River	100N Area	B19H74	38147	1
Columbia River	100N Area	B17R67	37956	1
Columbia River	100N Area	B1BC56	38255	1
Columbia River	100N SPR 1/10	31856	37868	1
Columbia River	100N SPR 1/10	24558	36783	1
Columbia River	100N SPR 1/10	23428	36413	1
Columbia River	100N SPR 10/10	30909	37868	1
Columbia River	100N SPR 2/10	23429	36413	1
Columbia River	100N SPR 2/10	24559	36783	1
Columbia River	100N SPR 2/10	30847	37868	1
Columbia River	100N SPR 3/10	24560	36783	1
Columbia River	100N SPR 3/10	23430	36413	1
Columbia River	100N SPR 3/10	30848	37868	1
Columbia River	100N SPR 5/10	23431	36413	1
Columbia River	100N SPR 5/10	24562	36783	1
Columbia River	100N SPR 5/10	30849	37868	1
Columbia River	100N SPR 7/10	23427	36413	1
Columbia River	100N SPR 7/10	30850	37868	1
Columbia River	100N SPR 7/10	24561	36783	1
Columbia River	100N SPR 8-13	B0W NX9	36458	1
Columbia River	100N SPR 8-13	B11W35	37015	1
Columbia River	100N SPR 8-13	B0W MT3	36458	1
Columbia River	100N SPR 8-13	B135P7	37189	1
Columbia River	100N SPR 8-13	24570	36816	1
Columbia River	100N SPR 8-13	33223	38271	1
Columbia River	100N SPR 8-13	23438	36458	1
Columbia River	100N SPR 8-13	30938	37919	1
Columbia River	100N SPR 8-13	B12WY1	37189	1
Columbia River	100N SPR 8-13	B15CD3	37515	1
Columbia River	100N SPR 8-13	B10900	36816	1
Columbia River	100N SPR 8-13	26214	37015	1
Columbia River	100N SPR 8-13	B10910	36816	1
Columbia River	100N SPR 8-13	B15C08	37515	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	100N SPR 8-13	B17J17	37914	1
Columbia River	100N SPR 8-13	B17JN3	37914	1
Columbia River	100N SPR 8-13	B17J88	37914	1
Columbia River	100N SPR 8-13	B17J22	37914	1
Columbia River	100N SPR STA 3	23128	36334	1
Columbia River	100N SPR STA 3	23736	36458	1
Columbia River	100N SPR STA 3	23123	36181	1
Columbia River	100N SPR STA 3	23124	36213	1
Columbia River	100N SPR STA 3	23125	36244	1
Columbia River	100N SPR STA 3	23126	36276	1
Columbia River	100N SPR STA 3	23127	36304	1
Columbia River	100N SPR STA 3	23129	36363	1
Columbia River	300 SPR 42-2	B0WP55	36465	1
Columbia River	300 SPR 42-2	B0WNX5	36465	1
Columbia River	300 A1 HRM 43.1	B17CN9	37873	1
Columbia River	300 A1 HRM 43.1	B158R8	37509	1
Columbia River	300 A1 HRM 43.1	B0WBP1	36419	1
Columbia River	300 A1 HRM 43.1	B10743	36788	1
Columbia River	300 A1 HRM 43.1	B12TB6	37147	1
Columbia River	300 A1 HRM 43.1	B12TK2	37147	1
Columbia River	300 A1 HRM 43.1	B12T61	37147	1
Columbia River	300 A1 HRM 43.1	B17CJ0	37873	1
Columbia River	300 A1 HRM 43.1	B158L5	37509	1
Columbia River	300 A1 HRM 43.1	B109C7	36788	1
Columbia River	300 A1 HRM 43.1	B106K9	36788	1
Columbia River	300 A1 HRM 43.1	B17HH9	37873	1
Columbia River	300 A1 HRM 43.1	B158C9	37509	1
Columbia River	300 A1 HRM 43.1	B106X3	36788	1
Columbia River	300 A1 HRM 43.1	B106T6	36788	1
Columbia River	300 A1 HRM 43.1	B12VP6	37147	1
Columbia River	300 A1 HRM 43.1	B0WB83	36419	1
Columbia River	300 A1 HRM 43.1	B159C4	37509	1
Columbia River	300 A1 HRM 43.1	B0WB23	36419	1
Columbia River	300 A1 HRM 43.1	B1B483	38245	1
Columbia River	300 A1 HRM 43.1	B1B763	38245	1
Columbia River	300 A1 HRM 43.1	B1B720	38245	1
Columbia River	300 A1 HRM 43.1	B1B767	38245	1
Columbia River	300 A1 HRM 43.1	B1B6W6	38245	1
Columbia River	300 A10 HRM43.1	B17CP4	37873	1
Columbia River	300 A10 HRM43.1	B158M0	37509	1
Columbia River	300 A10 HRM43.1	B12T53	37147	1
Columbia River	300 A10 HRM43.1	B17HJ0	37873	1
Columbia River	300 A10 HRM43.1	B158C1	37509	1
Columbia River	300 A10 HRM43.1	B158T3	37509	1
Columbia River	300 A10 HRM43.1	B17CK0	37873	1
Columbia River	300 A10 HRM43.1	B0WBP2	36419	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	300 A10 HRM43.1	B159C9	37509	1
Columbia River	300 A10 HRM43.1	B12TC6	37147	1
Columbia River	300 A10 HRM43.1	B106Y3	36788	1
Columbia River	300 A10 HRM43.1	B106R8	36788	1
Columbia River	300 A10 HRM43.1	B12TK7	37147	1
Columbia River	300 A10 HRM43.1	B0WB88	36419	1
Columbia River	300 A10 HRM43.1	B12VR1	37147	1
Columbia River	300 A10 HRM43.1	B10748	36788	1
Columbia River	300 A10 HRM43.1	B0WB28	36419	1
Columbia River	300 A10 HRM43.1	B106K8	36788	1
Columbia River	300 A10 HRM43.1	B1B6V8	38245	1
Columbia River	300 A10 HRM43.1	B1B725	38245	1
Columbia River	300 A10 HRM43.1	B1B488	38245	1
Columbia River	300 A10 HRM43.1	B1B768	38245	1
Columbia River	300 A2 HRM 43.1	B159C5	37509	1
Columbia River	300 A2 HRM 43.1	B106L0	36788	1
Columbia River	300 A2 HRM 43.1	B106T7	36788	1
Columbia River	300 A2 HRM 43.1	B158L6	37509	1
Columbia River	300 A2 HRM 43.1	B12VP7	37147	1
Columbia River	300 A2 HRM 43.1	B17HJ1	37873	1
Columbia River	300 A2 HRM 43.1	B109C8	36788	1
Columbia River	300 A2 HRM 43.1	B158D0	37509	1
Columbia River	300 A2 HRM 43.1	B158R9	37509	1
Columbia River	300 A2 HRM 43.1	B0WB84	36419	1
Columbia River	300 A2 HRM 43.1	B17CP0	37873	1
Columbia River	300 A2 HRM 43.1	B12T62	37147	1
Columbia River	300 A2 HRM 43.1	B12TK3	37147	1
Columbia River	300 A2 HRM 43.1	B0WBP3	36419	1
Columbia River	300 A2 HRM 43.1	B17CJ2	37873	1
Columbia River	300 A2 HRM 43.1	B10744	36788	1
Columbia River	300 A2 HRM 43.1	B0WB24	36419	1
Columbia River	300 A2 HRM 43.1	B12TB8	37147	1
Columbia River	300 A2 HRM 43.1	B106X5	36788	1
Columbia River	300 A2 HRM 43.1	B1B6W7	38245	1
Columbia River	300 A2 HRM 43.1	B1B721	38245	1
Columbia River	300 A2 HRM 43.1	B1B484	38245	1
Columbia River	300 A2 HRM 43.1	B1B764	38245	1
Columbia River	300 A3 HRM 43.1	B12VP8	37147	1
Columbia River	300 A3 HRM 43.1	B12TK4	37147	1
Columbia River	300 A3 HRM 43.1	B12TC0	37147	1
Columbia River	300 A3 HRM 43.1	B106X7	36788	1
Columbia River	300 A3 HRM 43.1	B17HJ2	37873	1
Columbia River	300 A3 HRM 43.1	B17CP1	37873	1
Columbia River	300 A3 HRM 43.1	B17CJ4	37873	1
Columbia River	300 A3 HRM 43.1	B0WB25	36419	1
Columbia River	300 A3 HRM 43.1	B0WB85	36419	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	300 A3 HRM 43.1	B0WBP4	36419	1
Columbia River	300 A3 HRM 43.1	B106L1	36788	1
Columbia River	300 A3 HRM 43.1	B106T8	36788	1
Columbia River	300 A3 HRM 43.1	B159C6	37509	1
Columbia River	300 A3 HRM 43.1	B12T63	37147	1
Columbia River	300 A3 HRM 43.1	B10745	36788	1
Columbia River	300 A3 HRM 43.1	B158T0	37509	1
Columbia River	300 A3 HRM 43.1	B158L7	37509	1
Columbia River	300 A3 HRM 43.1	B158D1	37509	1
Columbia River	300 A3 HRM 43.1	B1B765	38245	1
Columbia River	300 A3 HRM 43.1	B1B6W8	38245	1
Columbia River	300 A3 HRM 43.1	B1B722	38245	1
Columbia River	300 A3 HRM 43.1	B1B485	38245	1
Columbia River	300 A5 HRM 43.1	B12TK5	37147	1
Columbia River	300 A5 HRM 43.1	B106X9	36788	1
Columbia River	300 A5 HRM 43.1	B158B9	37509	1
Columbia River	300 A5 HRM 43.1	B159C7	37509	1
Columbia River	300 A5 HRM 43.1	B106L2	36788	1
Columbia River	300 A5 HRM 43.1	B106R6	36788	1
Columbia River	300 A5 HRM 43.1	B0WB86	36419	1
Columbia River	300 A5 HRM 43.1	B12TC2	37147	1
Columbia River	300 A5 HRM 43.1	B0WB26	36419	1
Columbia River	300 A5 HRM 43.1	B158L8	37509	1
Columbia River	300 A5 HRM 43.1	B0WC84	36419	1
Columbia River	300 A5 HRM 43.1	B12T51	37147	1
Columbia River	300 A5 HRM 43.1	B17CP2	37873	1
Columbia River	300 A5 HRM 43.1	B12VP9	37147	1
Columbia River	300 A5 HRM 43.1	B17HJ3	37873	1
Columbia River	300 A5 HRM 43.1	B10746	36788	1
Columbia River	300 A5 HRM 43.1	B158T1	37509	1
Columbia River	300 A5 HRM 43.1	B17CJ6	37873	1
Columbia River	300 A5 HRM 43.1	B1B486	38245	1
Columbia River	300 A5 HRM 43.1	B1B723	38245	1
Columbia River	300 A5 HRM 43.1	B1B6V6	38245	1
Columbia River	300 A5 HRM 43.1	B1B766	38245	1
Columbia River	300 A7 HRM 43.1	B159C8	37509	1
Columbia River	300 A7 HRM 43.1	B12TC4	37147	1
Columbia River	300 A7 HRM 43.1	B106Y1	36788	1
Columbia River	300 A7 HRM 43.1	B106R7	36788	1
Columbia River	300 A7 HRM 43.1	B106L3	36788	1
Columbia River	300 A7 HRM 43.1	B10747	36788	1
Columbia River	300 A7 HRM 43.1	B0WB87	36419	1
Columbia River	300 A7 HRM 43.1	B0WB27	36419	1
Columbia River	300 A7 HRM 43.1	B17CJ8	37873	1
Columbia River	300 A7 HRM 43.1	B17CP3	37873	1
Columbia River	300 A7 HRM 43.1	B12T52	37147	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	300 A7 HRM 43.1	B17HJ4	37873	1
Columbia River	300 A7 HRM 43.1	B12VR0	37147	1
Columbia River	300 A7 HRM 43.1	B0WC85	36419	1
Columbia River	300 A7 HRM 43.1	B12TK6	37147	1
Columbia River	300 A7 HRM 43.1	B158L9	37509	1
Columbia River	300 A7 HRM 43.1	B158C0	37509	1
Columbia River	300 A7 HRM 43.1	B158T2	37509	1
Columbia River	300 A7 HRM 43.1	B1B724	38245	1
Columbia River	300 A7 HRM 43.1	B1B487	38245	1
Columbia River	300 A7 HRM 43.1	B1B6V7	38245	1
Columbia River	300 AREA	B0WKP1	36433	1
Columbia River	300 AREA	B0VWV9	36342	1
Columbia River	300 AREA 1/10	24563	36788	1
Columbia River	300 AREA 1/10	30899	37873	1
Columbia River	300 AREA 1/10	26208	37147	1
Columbia River	300 AREA 10/10	30851	37873	1
Columbia River	300 AREA 10/10	26992	37147	1
Columbia River	300 AREA 2/10	24564	36788	1
Columbia River	300 AREA 2/10	30900	37873	1
Columbia River	300 AREA 2/10	26209	37147	1
Columbia River	300 AREA 3/10	30901	37873	1
Columbia River	300 AREA 3/10	24565	36788	1
Columbia River	300 AREA 3/10	26210	37147	1
Columbia River	300 AREA 5/10	30907	37873	1
Columbia River	300 AREA 5/10	26212	37147	1
Columbia River	300 AREA 5/10	24567	36788	1
Columbia River	300 AREA 7/10	30908	37873	1
Columbia River	300 AREA 7/10	24566	36788	1
Columbia River	300 AREA 7/10	26991	37147	1
Columbia River	300 AREA OUT13	B1B7H8	38245	1
Columbia River	300 AREA OUT13	B1B7H7	38245	1
Columbia River	300 AREA OUT13	B1BW54	38340	1
Columbia River	300 AREA OUT13	B1BX60	38340	1
Columbia River	300 AREA OUT13	B1B493	38245	1
Columbia River	300 AREA OUT13	B1B7H9	38245	1
Columbia River	300 AREA OUT13	B19JC5	38162	1
Columbia River	300 AREA OUT13	B19HP8	38162	1
Columbia River	300 AREA OUT13	B19JC4	38162	1
Columbia River	300 AREA OUT13	B19JC6	38162	1
Columbia River	300 SHR HRM41.5	B1B7B9	38245	1
Columbia River	300 SHR HRM41.5	B1B7C1	38245	1
Columbia River	300 SHR HRM41.5	B1B7C2	38245	1
Columbia River	300 SHR HRM41.5	B1B489	38245	1
Columbia River	300 SHR HRM42.1	B1B7C5	38245	1
Columbia River	300 SHR HRM42.1	B1B7C6	38245	1
Columbia River	300 SHR HRM42.1	B1B490	38245	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	300 SHR HRM42.1	B1B7C3	38245	1
Columbia River	300 SHR HRM42.4	B1B7H6	38245	1
Columbia River	300 SHR HRM42.4	B1B7H5	38245	1
Columbia River	300 SHR HRM42.4	B1B7H3	38245	1
Columbia River	300 SHR HRM42.4	B1B491	38245	1
Columbia River	300 SHR HRM42.9	B1B492	38245	1
Columbia River	300 SHR HRM42.9	B1B7C9	38245	1
Columbia River	300 SHR HRM42.9	B1B7D0	38245	1
Columbia River	300 SHR HRM42.9	B1B7C7	38245	1
Columbia River	300 SPR 11 -1	B12RP6	37130	1
Columbia River	300 SPR 11 -1	B12RW5	37130	1
Columbia River	300 SPR 11 -1	B12RP5	37130	1
Columbia River	300 SPR 11-1	27693	37130	1
Columbia River	300 SPR 11-2	27694	37130	1
Columbia River	300 SPR 11-2	B12RW7	37130	1
Columbia River	300 SPR 11-3	27695	37130	1
Columbia River	300 SPR 11-3	B12RW9	37130	1
Columbia River	300 SPR 11-4	B12T21	37130	1
Columbia River	300 SPR 11-4	27696	37130	1
Columbia River	300 SPR 11-DR-1	27697	37130	1
Columbia River	300 SPR 11-DR-2	27698	37130	1
Columbia River	300 SPR 11-DR-3	27699	37130	1
Columbia River	300 SPR 11-DR-4	27700	37130	1
Columbia River	300 SPR 14	33072	37963	1
Columbia River	300 SPR 14-1	27707	37130	1
Columbia River	300 SPR 14-1	B12RX9	37130	1
Columbia River	300 SPR 14-2	B12RY1	37130	1
Columbia River	300 SPR 14-2	27708	37130	1
Columbia River	300 SPR 14-3	27709	37130	1
Columbia River	300 SPR 14-3	B12RY3	37130	1
Columbia River	300 SPR 14-4	27710	37130	1
Columbia River	300 SPR 14-4	B12T25	37130	1
Columbia River	300 SPR 41-9	B1BH15	38285	1
Columbia River	300 SPR 42-2	B12RM1	37130	1
Columbia River	300 SPR 42-2	30857	37907	1
Columbia River	300 SPR 42-2	B12RM8	37130	1
Columbia River	300 SPR 42-2	B12RN5	37130	1
Columbia River	300 SPR 42-2	B0WNY3	36465	1
Columbia River	300 SPR 42-2	B10907	36796	1
Columbia River	300 SPR 42-2	B10903	36796	1
Columbia River	300 SPR 42-2	B108Y4	36796	1
Columbia River	300 SPR 42-2	B10973	36796	1
Columbia River	300 SPR 42-2	27650	37130	1
Columbia River	300 SPR 42-2	B0WMV3	36465	1
Columbia River	300 SPR 42-2	B12RL6	37130	1
Columbia River	300 SPR 42-2	B12RL8	37130	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	300 SPR 42-2	B10913	36796	1
Columbia River	300 SPR 42-2	B0W NX8	36465	1
Columbia River	300 SPR 42-2	B11W34	37021	1
Columbia River	300 SPR 42-2	B11W38	37021	1
Columbia River	300 SPR 42-2	B12RL2	37130	1
Columbia River	300 SPR 42-2	33144	38285	1
Columbia River	300 SPR 42-2	26956	37021	1
Columbia River	300 SPR 42-2	B15C01	37536	1
Columbia River	300 SPR 42-2	B15C06	37536	1
Columbia River	300 SPR 42-2	B15C11	37536	1
Columbia River	300 SPR 42-2	24574	36796	1
Columbia River	300 SPR 42-2	B15CD5	37536	1
Columbia River	300 SPR 42-2	B15C99	37536	1
Columbia River	300 SPR 42-2	B12XK1	37152	1
Columbia River	300 SPR 42-2	B1BJ63	38285	1
Columbia River	300 SPR 42-2	B1BFY3	38285	1
Columbia River	300 SPR 42-2	B1BFP4	38285	1
Columbia River	300 SPR 42-2	B1BFN1	38285	1
Columbia River	300 SPR 42-2	B1BFL9	38285	1
Columbia River	300 SPR 42-2	B17RH8	37907	1
Columbia River	300 SPR 42-2	B17RJ0	37907	1
Columbia River	300 SPR 42-2	B17RJ2	37907	1
Columbia River	300 SPR 42-2	B17RL4	37907	1
Columbia River	300 SPR 42-2	B17RR6	37907	1
Columbia River	300 SPR 6	33071	37963	1
Columbia River	300 SPR 7-1	B12RR5	37130	1
Columbia River	300 SPR 7-1	B12T09	37130	1
Columbia River	300 SPR 7-1	B12T10	37130	1
Columbia River	300 SPR 7-1	27662	37130	1
Columbia River	300 SPR 7-2	27663	37130	1
Columbia River	300 SPR 7-2	B12RR7	37130	1
Columbia River	300 SPR 7-3	27664	37130	1
Columbia River	300 SPR 7-3	B12RR9	37130	1
Columbia River	300 SPR 7-4	B12T13	37130	1
Columbia River	300 SPR 7-4	27665	37130	1
Columbia River	300 SPR 7-DR-1	27666	37130	1
Columbia River	300 SPR 7-DR-2	27667	37130	1
Columbia River	300 SPR 7-DR-3	27668	37130	1
Columbia River	300 SPR 7-DR-4	27669	37130	1
Columbia River	300 SPR 7-SPR 9	27670	37130	1
Columbia River	300 SPR 7/9	B12RT7	37130	1
Columbia River	300 SPR 9-1	27672	37130	1
Columbia River	300 SPR 9-1	B12RP1	37130	1
Columbia River	300 SPR 9-1	B12RP2	37130	1
Columbia River	300 SPR 9-1	B12RT9	37130	1
Columbia River	300 SPR 9-2	B12RV1	37130	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	300 SPR 9-2	27673	37130	1
Columbia River	300 SPR 9-3	B12RV3	37130	1
Columbia River	300 SPR 9-3	27674	37130	1
Columbia River	300 SPR 9-4	B12T17	37130	1
Columbia River	300 SPR 9-4	27675	37130	1
Columbia River	300 SPR 9-DR-1	27676	37130	1
Columbia River	300 SPR 9-DR-2	27677	37130	1
Columbia River	300 SPR 9-DR-3	27678	37130	1
Columbia River	300 SPR 9-DR-4	27679	37130	1
Columbia River	300 SPR 9-SPR11	27680	37130	1
Columbia River	300 SPR 9/11	B12RW1	37130	1
Columbia River	300 SPR DR 11-1	B12RX1	37130	1
Columbia River	300 SPR DR 11-2	B12RX3	37130	1
Columbia River	300 SPR DR 11-3	B12RX5	37130	1
Columbia River	300 SPR DR 11-4	B12T23	37130	1
Columbia River	300 SPR DR 42-2	B108Y5	36796	1
Columbia River	300 SPR DR 42-2	B10949	36796	1
Columbia River	300 SPR DR 42-2	B10975	36796	1
Columbia River	300 SPR DR 42-2	B10976	36796	1
Columbia River	300 SPR DR 42-2	33225	38285	1
Columbia River	300 SPR DR 42-2	B15C75	37616	1
Columbia River	300 SPR DR 42-2	B10974	36796	1
Columbia River	300 SPR DR 42-2	B0WP28	36465	1
Columbia River	300 SPR DR 42-2	B12RN6	37130	1
Columbia River	300 SPR DR 42-2	B0WP57	36465	1
Columbia River	300 SPR DR 42-2	B0WMV4	36465	1
Columbia River	300 SPR DR 42-2	B12RN1	37130	1
Columbia River	300 SPR DR 42-2	B12RN0	37130	1
Columbia River	300 SPR DR 42-2	B12RM9	37130	1
Columbia River	300 SPR DR 42-2	B12RM6	37130	1
Columbia River	300 SPR DR 42-2	B0WP33	36465	1
Columbia River	300 SPR DR 42-2	B0WP56	36465	1
Columbia River	300 SPR DR 42-2	B12RL1	37130	1
Columbia River	300 SPR DR 42-2	26957	37014	1
Columbia River	300 SPR DR 42-2	B11W57	37014	1
Columbia River	300 SPR DR 42-2	B15CB2	37616	1
Columbia River	300 SPR DR 42-2	B11W85	37014	1
Columbia River	300 SPR DR 42-2	B12XK2	37151	1
Columbia River	300 SPR DR 42-2	27671	37130	1
Columbia River	300 SPR DR 42-2	30940	37907	1
Columbia River	300 SPR DR 42-2	B17RR5	37907	1
Columbia River	300 SPR DR 42-2	B1BJ64	38285	1
Columbia River	300 SPR DR 42-2	B1BFY6	38285	1
Columbia River	300 SPR DR 42-2	B1BFY5	38285	1
Columbia River	300 SPR DR 42-2	B1BFY4	38285	1
Columbia River	300 SPR DR 42-2	B1BFV8	38285	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	300 SPR DR 42-2	B17RK1	37907	1
Columbia River	300 SPR DR 42-2	B17RL5	37907	1
Columbia River	300 SPR DR 42-2	B17RL6	37907	1
Columbia River	300 SPR DR 42-2	B17RL7	37907	1
Columbia River	300 SPR DR 7-1	B12RT1	37130	1
Columbia River	300 SPR DR 7-2	B12RT3	37130	1
Columbia River	300 SPR DR 7-3	B12RT5	37130	1
Columbia River	300 SPR DR 7-4	B12T15	37130	1
Columbia River	300 SPR DR 9-1	B12RV5	37130	1
Columbia River	300 SPR DR 9-2	B12RV7	37130	1
Columbia River	300 SPR DR 9-3	B12RV9	37130	1
Columbia River	300 SPR DR 9-4	B12T19	37130	1
Columbia River	300 SR HRM 41.5	B0WB61	36419	1
Columbia River	300 SR HRM 41.5	27407	37147	1
Columbia River	300 SR HRM 41.5	B0WC86	36419	1
Columbia River	300 SR HRM 41.5	B158Y1	37509	1
Columbia River	300 SR HRM 41.5	B10775	36788	1
Columbia River	300 SR HRM 41.5	B10774	36788	1
Columbia River	300 SR HRM 41.5	B159D0	37509	1
Columbia River	300 SR HRM 41.5	B10773	36788	1
Columbia River	300 SR HRM 41.5	30910	37873	1
Columbia River	300 SR HRM 41.5	B106L4	36788	1
Columbia River	300 SR HRM 41.5	B158Y2	37509	1
Columbia River	300 SR HRM 41.5	B0WB53	36419	1
Columbia River	300 SR HRM 41.5	B17HJ5	37873	1
Columbia River	300 SR HRM 41.5	B17CW5	37873	1
Columbia River	300 SR HRM 41.5	B17CW8	37873	1
Columbia River	300 SR HRM 41.5	B158Y0	37509	1
Columbia River	300 SR HRM 41.5	B12TP7	37147	1
Columbia River	300 SR HRM 41.5	B12TP6	37147	1
Columbia River	300 SR HRM 41.5	B12TP4	37147	1
Columbia River	300 SR HRM 41.5	B109C9	36788	1
Columbia River	300 SR HRM 41.5	33197	38245	1
Columbia River	300 SR HRM 41.5	B12VR2	37147	1
Columbia River	300 SR HRM 42.1	B12TP8	37147	1
Columbia River	300 SR HRM 42.1	B0WC87	36419	1
Columbia River	300 SR HRM 42.1	27408	37147	1
Columbia River	300 SR HRM 42.1	B12TR0	37147	1
Columbia River	300 SR HRM 42.1	B10778	36788	1
Columbia River	300 SR HRM 42.1	B10776	36788	1
Columbia River	300 SR HRM 42.1	B0WB62	36419	1
Columbia River	300 SR HRM 42.1	B109D0	36788	1
Columbia River	300 SR HRM 42.1	B12VR3	37147	1
Columbia River	300 SR HRM 42.1	B10777	36788	1
Columbia River	300 SR HRM 42.1	B12TR1	37147	1
Columbia River	300 SR HRM 42.1	33198	38245	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	300 SR HRM 42.1	B158Y3	37509	1
Columbia River	300 SR HRM 42.1	30911	37873	1
Columbia River	300 SR HRM 42.1	B0WB54	36419	1
Columbia River	300 SR HRM 42.1	B158Y5	37509	1
Columbia River	300 SR HRM 42.1	B158Y4	37509	1
Columbia River	300 SR HRM 42.1	B106L5	36788	1
Columbia River	300 SR HRM 42.1	B159D1	37509	1
Columbia River	300 SR HRM 42.1	B17CW9	37873	1
Columbia River	300 SR HRM 42.1	B17CX2	37873	1
Columbia River	300 SR HRM 42.1	B17HJ6	37873	1
Columbia River	300 SR HRM 42.4	33199	38245	1
Columbia River	300 SR HRM 42.4	30912	37873	1
Columbia River	300 SR HRM 42.4	27409	37147	1
Columbia River	300 SR HRM 42.5	B17CX3	37873	1
Columbia River	300 SR HRM 42.5	B17CX6	37873	1
Columbia River	300 SR HRM 42.5	B0WC88	36419	1
Columbia River	300 SR HRM 42.5	B159D2	37509	1
Columbia River	300 SR HRM 42.5	B12TR4	37147	1
Columbia River	300 SR HRM 42.5	B10781	36788	1
Columbia River	300 SR HRM 42.5	B106L6	36788	1
Columbia River	300 SR HRM 42.5	B109D1	36788	1
Columbia River	300 SR HRM 42.5	B0WB63	36419	1
Columbia River	300 SR HRM 42.5	B12VR4	37147	1
Columbia River	300 SR HRM 42.5	B0WB55	36419	1
Columbia River	300 SR HRM 42.5	B10780	36788	1
Columbia River	300 SR HRM 42.5	B10779	36788	1
Columbia River	300 SR HRM 42.5	B158Y6	37509	1
Columbia River	300 SR HRM 42.5	B158Y7	37509	1
Columbia River	300 SR HRM 42.5	B158Y8	37509	1
Columbia River	300 SR HRM 42.5	B12TR2	37147	1
Columbia River	300 SR HRM 42.5	B12TR5	37147	1
Columbia River	300 SR HRM 42.5	B17HJ7	37873	1
Columbia River	300 SR HRM 42.9	B17CY0	37873	1
Columbia River	300 SR HRM 42.9	B106L7	36788	1
Columbia River	300 SR HRM 42.9	B17CX7	37873	1
Columbia River	300 SR HRM 42.9	B12TR6	37147	1
Columbia River	300 SR HRM 42.9	B12TR8	37147	1
Columbia River	300 SR HRM 42.9	B12TR9	37147	1
Columbia River	300 SR HRM 42.9	33200	38245	1
Columbia River	300 SR HRM 42.9	B109D2	36788	1
Columbia River	300 SR HRM 42.9	B10784	36788	1
Columbia River	300 SR HRM 42.9	B0WB56	36419	1
Columbia River	300 SR HRM 42.9	B15900	37509	1
Columbia River	300 SR HRM 42.9	30913	37873	1
Columbia River	300 SR HRM 42.9	B0WB64	36419	1
Columbia River	300 SR HRM 42.9	B10783	36788	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	300 SR HRM 42.9	B0WC89	36419	1
Columbia River	300 SR HRM 42.9	B10782	36788	1
Columbia River	300 SR HRM 42.9	B159D3	37509	1
Columbia River	300 SR HRM 42.9	27410	37147	1
Columbia River	300 SR HRM 42.9	B158Y9	37509	1
Columbia River	300 SR HRM 42.9	B15901	37509	1
Columbia River	300 SR HRM 42.9	B12VR5	37147	1
Columbia River	300 SR HRM 42.9	B17HJ8	37873	1
Columbia River	At Road 56	0000099	36804	1
Columbia River	At Road 56	0000098	36633	1
Columbia River	At Road 56	0000105	37900	1
Columbia River	At Road 56	0000104	37720	1
Columbia River	At Road 56	0000103	37531	1
Columbia River	At Road 56	0000102	37369	1
Columbia River	At Road 56	0000100	37018	1
Columbia River	At Road 56	0000101	37165	1
Columbia River	BENTON PMPHSE	23694	36433	1
Columbia River	BENTON PMPHSE	B0WD65	36433	1
Columbia River	Butterfield WTP	23693	36426	1
Columbia River	CGS (WNP-2)S26I	27565	36845	1
Columbia River	CGS (WNP-2)S26I	24060	36865	1
Columbia River	CGS (WNP-2)S26I	27399	37210	1
Columbia River	CGS (WNP-2)S26I	27398	37118	1
Columbia River	CGS (WNP-2)S26I	27397	37026	1
Columbia River	CGS (WNP-2)S26I	27396	36937	1
Columbia River	CGS (WNP-2)S26I	24036	36739	1
Columbia River	CGS (WNP-2)S26I	24048	36802	1
Columbia River	CGS (WNP-2)S26I	23994	36529	1
Columbia River	CGS (WNP-2)S26I	24054	36831	1
Columbia River	CGS (WNP-2)S26I	24042	36775	1
Columbia River	CGS (WNP-2)S26I	24030	36712	1
Columbia River	CGS (WNP-2)S26I	24024	36684	1
Columbia River	CGS (WNP-2)S26I	24018	36648	1
Columbia River	CGS (WNP-2)S26I	24012	36621	1
Columbia River	CGS (WNP-2)S26I	24000	36557	1
Columbia River	CGS (WNP-2)S26I	25916	37229	1
Columbia River	CGS (WNP-2)S26I	25910	37201	1
Columbia River	CGS (WNP-2)S26I	25904	37166	1
Columbia River	CGS (WNP-2)S26I	25898	37139	1
Columbia River	CGS (WNP-2)S26I	25892	37104	1
Columbia River	CGS (WNP-2)S26I	25880	37047	1
Columbia River	CGS (WNP-2)S26I	24006	36586	1
Columbia River	CGS (WNP-2)S26I	32600	38140	1
Columbia River	CGS (WNP-2)S26I	22914	36348	1
Columbia River	CGS (WNP-2)S26I	32572	37992	1
Columbia River	CGS (WNP-2)S26I	30667	37940	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	CGS (WNP-2)S26I	30666	37848	1
Columbia River	CGS (WNP-2)S26I	30665	37756	1
Columbia River	CGS (WNP-2)S26I	25519	36894	1
Columbia River	CGS (WNP-2)S26I	22206	36165	1
Columbia River	CGS (WNP-2)S26I	22894	36194	1
Columbia River	CGS (WNP-2)S26I	30338	37656	1
Columbia River	CGS (WNP-2)S26I	22902	36256	1
Columbia River	CGS (WNP-2)S26I	30340	37684	1
Columbia River	CGS (WNP-2)S26I	24824	36387	1
Columbia River	CGS (WNP-2)S26I	24827	36479	1
Columbia River	CGS (WNP-2)S26I	32907	38032	1
Columbia River	CGS (WNP-2)S26I	32636	38322	1
Columbia River	CGS (WNP-2)S26I	32630	38293	1
Columbia River	CGS (WNP-2)S26I	32908	38122	1
Columbia River	CGS (WNP-2)S26I	25492	36753	1
Columbia River	CGS (WNP-2)S26I	22906	36284	1
Columbia River	CGS (WNP-2)S26I	22910	36313	1
Columbia River	CGS (WNP-2)S26I	22898	36221	1
Columbia River	CGS (WNP-2)S26I	30384	37929	1
Columbia River	CGS (WNP-2)S26I	32909	38214	1
Columbia River	CGS (WNP-2)S26I	32910	38306	1
Columbia River	CGS (WNP-2)S26I	32594	38107	1
Columbia River	CGS (WNP-2)S26I	24820	36295	1
Columbia River	CGS (WNP-2)S26I	24691	36560	1
Columbia River	CGS (WNP-2)S26I	32588	38083	1
Columbia River	CGS (WNP-2)S26I	34236	38356	1
Columbia River	CGS (WNP-2)S26I	34248	38384	1
Columbia River	CGS (WNP-2)S26I	30326	37623	1
Columbia River	CGS (WNP-2)S26I	32586	38048	1
Columbia River	CGS (WNP-2)S26I	25488	36661	1
Columbia River	CGS (WNP-2)S26I	30378	37895	1
Columbia River	CGS (WNP-2)S26I	30372	37867	1
Columbia River	CGS (WNP-2)S26I	30366	37838	1
Columbia River	CGS (WNP-2)S26I	30360	37802	1
Columbia River	CGS (WNP-2)S26I	25027	36571	1
Columbia River	CGS (WNP-2)S26I	32584	38020	1
Columbia River	CGS (WNP-2)S26I	30354	37775	1
Columbia River	CGS (WNP-2)S26I	30348	37746	1
Columbia River	CGS (WNP-2)S26I	30342	37712	1
Columbia River	CGS (WNP-2)S26I	30390	37957	1
Columbia River	CGS (WNP-2)S26I	27850	37439	1
Columbia River	CGS (WNP-2)S26I	30664	37667	1
Columbia River	CGS (WNP-2)S26I	28159	37302	1
Columbia River	CGS (WNP-2)S26I	22918	36375	1
Columbia River	CGS (WNP-2)S26I	25886	37075	1
Columbia River	CGS (WNP-2)S26I	27880	37593	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	CGS (WNP-2)S26I	27874	37565	1
Columbia River	CGS (WNP-2)S26I	27868	37530	1
Columbia River	CGS (WNP-2)S26I	22934	36495	1
Columbia River	CGS (WNP-2)S26I	27856	37474	1
Columbia River	CGS (WNP-2)S26I	25874	37012	1
Columbia River	CGS (WNP-2)S26I	27844	37411	1
Columbia River	CGS (WNP-2)S26I	27838	37383	1
Columbia River	CGS (WNP-2)S26I	27832	37348	1
Columbia River	CGS (WNP-2)S26I	27830	37320	1
Columbia River	CGS (WNP-2)S26I	27828	37292	1
Columbia River	CGS (WNP-2)S26I	27816	37258	1
Columbia River	CGS (WNP-2)S26I	23335	36206	1
Columbia River	CGS (WNP-2)S26I	27862	37503	1
Columbia River	CGS (WNP-2)S26I	32612	38202	1
Columbia River	CGS (WNP-2)S26I	32624	38265	1
Columbia River	CGS (WNP-2)S26I	32618	38231	1
Columbia River	CGS (WNP-2)S26I	25856	36928	1
Columbia River	CGS (WNP-2)S26I	25862	36956	1
Columbia River	CGS (WNP-2)S26I	25868	36984	1
Columbia River	CGS (WNP-2)S26I	28162	37575	1
Columbia River	CGS (WNP-2)S26I	28161	37483	1
Columbia River	CGS (WNP-2)S26I	28160	37391	1
Columbia River	CGS (WNP-2)S26I	22922	36404	1
Columbia River	CGS (WNP-2)S26I	22930	36466	1
Columbia River	CGS (WNP-2)S26I	22926	36438	1
Columbia River	CGS (WNP-2)S26I	32606	38175	1
Columbia River	CGS (WNP-2)S26I	L24019-4	38175	1
Columbia River	CGS (WNP-2)S26I	L22909-4	37992	1
Columbia River	CGS (WNP-2)S26I	L19364-1	37439	1
Columbia River	CGS (WNP-2)S26I	L22549-4	37929	1
Columbia River	CGS (WNP-2)S26I	L22394-4	37895	1
Columbia River	CGS (WNP-2)S26I	L22152-1	37802	1
Columbia River	CGS (WNP-2)S26I	L22128-4	37867	1
Columbia River	CGS (WNP-2)S26I	L24404-4	38231	1
Columbia River	CGS (WNP-2)S26I	L19598-4	37530	1
Columbia River	CGS (WNP-2)S26I	L24216-4	38202	1
Columbia River	CGS (WNP-2)S26I	L23259-4	38048	1
Columbia River	CGS (WNP-2)S26I	L23933-1	38083	1
Columbia River	CGS (WNP-2)S26I	L21908-4	37838	1
Columbia River	CGS (WNP-2)S26I	L21725-4	37802	1
Columbia River	CGS (WNP-2)S26I	L23867-4	38140	1
Columbia River	CGS (WNP-2)S26I	L22128-11	37867	1
Columbia River	CGS (WNP-2)S26I	L20567-4	37656	1
Columbia River	CGS (WNP-2)S26I	L24571-4	38265	1
Columbia River	CGS (WNP-2)S26I	L24718-4	38293	1
Columbia River	CGS (WNP-2)S26I	L24912-4	38322	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	CGS (WNP-2)S26I	L21455-1	37712	1
Columbia River	CGS (WNP-2)S26I	L23447-4	38083	1
Columbia River	CGS (WNP-2)S26I	L23447-11	38083	1
Columbia River	CGS (WNP-2)S26I	L23066-4	38020	1
Columbia River	CGS (WNP-2)S26I	L20742-4	37684	1
Columbia River	CGS (WNP-2)S26I	L24466-1	38175	1
Columbia River	CGS (WNP-2)S26I	L20357-4	37623	1
Columbia River	CGS (WNP-2)S26I	L23644-4	38107	1
Columbia River	CGS (WNP-2)S26I	L20975-4	37712	1
Columbia River	CGS (WNP-2)S26I	L20817-1	37623	1
Columbia River	CGS (WNP-2)S26I	L21183-4	37747	1
Columbia River	CGS (WNP-2)S26I	L21399-4	37775	1
Columbia River	CGS (WNP-2)S26I	L20975-11	37712	1
Columbia River	CGS (WNP-2)S26I	L23346-1	37992	1
Columbia River	CGS (WNP-2)S26I	L17150-4	37201	1
Columbia River	CGS (WNP-2)S26I	L18452-1	37383	1
Columbia River	CGS (WNP-2)S26I	L13375-4	36775	1
Columbia River	CGS (WNP-2)S26I	L12689-4	36712	1
Columbia River	CGS (WNP-2)S26I	L12542-1	36621	1
Columbia River	CGS (WNP-2)S26I	L12370-4	36684	1
Columbia River	CGS (WNP-2)S26I	L13876-1	36831	1
Columbia River	CGS (WNP-2)S26I	L16959-4	37166	1
Columbia River	CGS (WNP-2)S26I	L14841-4	36928	1
Columbia River	CGS (WNP-2)S26I	L17585-4	37258	1
Columbia River	CGS (WNP-2)S26I	L17761-5	37292	1
Columbia River	CGS (WNP-2)S26I	L17906-4	37320	1
Columbia River	CGS (WNP-2)S26I	L18011-1	37258	1
Columbia River	CGS (WNP-2)S26I	L12074-4	36648	1
Columbia River	CGS (WNP-2)S26I	L18161-4	37348	1
Columbia River	CGS (WNP-2)S26I	L16959-1	37166	1
Columbia River	CGS (WNP-2)S26I	L15619-4	37012	1
Columbia River	CGS (WNP-2)S26I	L16658-4	37139	1
Columbia River	CGS (WNP-2)S26I	L19879-4	37565	1
Columbia River	CGS (WNP-2)S26I	L16688-1	37075	1
Columbia River	CGS (WNP-2)S26I	L16425-4	37104	1
Columbia River	CGS (WNP-2)S26I	L16110-4	37075	1
Columbia River	CGS (WNP-2)S26I	L13520-4	36802	1
Columbia River	CGS (WNP-2)S26I	L15843-4	37047	1
Columbia River	CGS (WNP-2)S26I	L14628-4	36894	1
Columbia River	CGS (WNP-2)S26I	L15575-1	36894	1
Columbia River	CGS (WNP-2)S26I	L15329-4	36984	1
Columbia River	CGS (WNP-2)S26I	L15070-4	36956	1
Columbia River	CGS (WNP-2)S26I	L11471-4	36621	1
Columbia River	CGS (WNP-2)S26I	L11430-1	36529	1
Columbia River	CGS (WNP-2)S26I	L11058-4	36586	1
Columbia River	CGS (WNP-2)S26I	L15893-1	36984	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	CGS (WNP-2)S26I	L19103-4	37474	1
Columbia River	CGS (WNP-2)S26I	L10458-4	36557	1
Columbia River	CGS (WNP-2)S26I	L10018-4	36529	1
Columbia River	CGS (WNP-2)S26I	L18679-4	37411	1
Columbia River	CGS (WNP-2)S26I	L18860-1	37348	1
Columbia River	CGS (WNP-2)S26I	L18886-4	37439	1
Columbia River	CGS (WNP-2)S26I	L19282-4	37502	1
Columbia River	CGS (WNP-2)S26I	L24982-1	38265	1
Columbia River	CGS (WNP-2)S29W	28154	37302	1
Columbia River	CGS (WNP-2)S29W	30644	37756	1
Columbia River	CGS (WNP-2)S29W	30658	37848	1
Columbia River	CGS (WNP-2)S29W	27567	36845	1
Columbia River	CGS (WNP-2)S29W	23337	36206	1
Columbia River	CGS (WNP-2)S29W	24822	36295	1
Columbia River	CGS (WNP-2)S29W	30659	37667	1
Columbia River	CGS (WNP-2)S29W	30660	37940	1
Columbia River	CGS (WNP-2)S29W	24828	36479	1
Columbia River	CGS (WNP-2)S29W	28153	37483	1
Columbia River	CGS (WNP-2)S29W	27391	36937	1
Columbia River	CGS (WNP-2)S29W	27039	37118	1
Columbia River	CGS (WNP-2)S29W	26186	37026	1
Columbia River	CGS (WNP-2)S29W	25491	36661	1
Columbia River	CGS (WNP-2)S29W	25494	36753	1
Columbia River	CGS (WNP-2)S29W	24825	36387	1
Columbia River	CGS (WNP-2)S29W	28139	37391	1
Columbia River	CGS (WNP-2)S29W	25030	36571	1
Columbia River	CGS (WNP-2)S29W	27392	37210	1
Columbia River	CGS (WNP-2)S29W	28155	37575	1
Columbia River	ESQUATZEL CANAL	B170R3	37755	1
Columbia River	ESQUATZEL CANAL	B170R2	37755	1
Columbia River	ESQUATZEL CANAL	B16WV1	37755	1
Columbia River	ESQUATZEL CANAL	B16WV0	37755	1
Columbia River	ESQUATZEL CANAL	B16WT9	37755	1
Columbia River	ESQUATZEL CANAL	B16WT8	37755	1
Columbia River	ESQUATZEL CANAL	B16WT7	37755	1
Columbia River	ESQUATZEL CANAL	B16WT6	37755	1
Columbia River	ESQUATZEL CANAL	B16WN2	37755	1
Columbia River	ESQUATZEL CANAL	B16WN1	37755	1
Columbia River	ESQUATZEL CANAL	B16WN0	37755	1
Columbia River	ESQUATZEL CANAL	B170R4	37755	1
Columbia River	ESQUATZEL CWR68	0000031	37531	1
Columbia River	ESQUATZEL CWR68	0000026	36633	1
Columbia River	ESQUATZEL CWR68	0000032	37720	1
Columbia River	ESQUATZEL CWR68	0000033	37900	1
Columbia River	ESQUATZEL CWR68	0000027	36804	1
Columbia River	ESQUATZEL CWR68	0000030	37369	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	ESQUATZEL CWR68	0000029	37165	1
Columbia River	ESQUATZEL CWR68	0000028	37018	1
Columbia River	HFD SPR 28-2	29079	37536	1
Columbia River	HFD SPR 28-2	B15CD8	37536	1
Columbia River	HFD SPR 28-2	23439	36465	1
Columbia River	HFD SPR 28-2	26955	37015	1
Columbia River	HFD SPR 28-2	B15C05	37536	1
Columbia River	HFD SPR 28-2	B15C00	37536	1
Columbia River	HFD SPR 28-2	B0WP50	36465	1
Columbia River	HFD SPR 28-2	B0WNY1	36465	1
Columbia River	HFD SPR 28-2	B0WMV0	36465	1
Columbia River	HFD SPR 28-2	B0WNX4	36465	1
Columbia River	HFD SPR 28-2	B10912	36796	1
Columbia River	HFD SPR 28-2	B15C94	37536	1
Columbia River	HFD SPR 28-2	B10968	36796	1
Columbia River	HFD SPR 28-2	B108Y6	36796	1
Columbia River	HFD SPR 28-2	B10902	36796	1
Columbia River	HFD SPR 28-2	B10906	36796	1
Columbia River	HFD SPR 28-2	B0WNX7	36465	1
Columbia River	HFD SPR 28-2	B11W36	37011	1
Columbia River	HFD SPR 28-2	B15C09	37536	1
Columbia River	HFD SPR 28-2	24573	36796	1
Columbia River	HFD SPR 28-2	B11W77	37011	1
Columbia River	HFD SPR 28-2	B11W30	37011	1
Columbia River	HFD SPR 28-2	B11W33	37011	1
Columbia River	HFD SPR 28-2	B1BJ61	38285	1
Columbia River	HFD SPR 28-2	B1BFX8	38285	1
Columbia River	HFD SPR 28-2	B1BFP3	38285	1
Columbia River	HFD SPR 28-2	B1BFN0	38285	1
Columbia River	HFD SPR 28-2	B1BFL8	38285	1
Columbia River	HFD SPR DR 28-2	B10972	36796	1
Columbia River	HFD SPR DR 28-2	B11W81	37011	1
Columbia River	HFD SPR DR 28-2	B11W80	37011	1
Columbia River	HFD SPR DR 28-2	B10946	36796	1
Columbia River	HFD SPR DR 28-2	30898	37928	1
Columbia River	HFD SPR DR 28-2	33185	38285	1
Columbia River	HFD SPR DR 28-2	B11W61	37011	1
Columbia River	HFD SPR DR 28-2	B10952	36796	1
Columbia River	HFD SPR DR 28-2	B0WMV2	36465	1
Columbia River	HFD SPR DR 28-2	B11W55	37011	1
Columbia River	HFD SPR DR 28-2	B10971	36796	1
Columbia River	HFD SPR DR 28-2	B0WP31	36465	1
Columbia River	HFD SPR DR 28-2	B108Y7	36796	1
Columbia River	HFD SPR DR 28-2	B0WP53	36465	1
Columbia River	HFD SPR DR 28-2	B0WP54	36465	1
Columbia River	HFD SPR DR 28-2	B15C73	37536	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	HFD SPR DR 28-2	B15C78	37536	1
Columbia River	HFD SPR DR 28-2	B15C97	37536	1
Columbia River	HFD SPR DR 28-2	B15C98	37536	1
Columbia River	HFD SPR DR 28-2	B15CD6	37536	1
Columbia River	HFD SPR DR 28-2	B0WP26	36465	1
Columbia River	HFD SPR DR 28-2	B1BFY1	38285	1
Columbia River	HFD SPR DR 28-2	B17RL2	37928	1
Columbia River	HFD SPR DR 28-2	B1BFW2	38285	1
Columbia River	HFD SPR DR 28-2	B17RK4	37928	1
Columbia River	HFD SPR DR 28-2	B17RL3	37928	1
Columbia River	HFD SPR DR 28-2	B1BFV5	38285	1
Columbia River	HFD SPR DR 28-2	B1BJ62	38285	1
Columbia River	HFD SPR DR 28-2	B17RR7	37928	1
Columbia River	HFD SPR DR 28-2	B17RJ9	37928	1
Columbia River	HFD SPR DR 28-2	B1BFY2	38285	1
Columbia River	HFD SPR UR 28-2	B10970	36796	1
Columbia River	HFD SPR UR 28-2	B10969	36796	1
Columbia River	HFD SPR UR 28-2	B10951	36796	1
Columbia River	HFD SPR UR 28-2	B10945	36796	1
Columbia River	HFD SPR UR 28-2	B0WMV1	36465	1
Columbia River	HFD SPR UR 28-2	B0WP25	36465	1
Columbia River	HFD SPR UR 28-2	B0WP30	36465	1
Columbia River	HFD SPR UR 28-2	B0WP51	36465	1
Columbia River	HFD SPR UR 28-2	B0WP52	36465	1
Columbia River	HFD SPR UR 28-2	B108Y8	36796	1
Columbia River	HFD SPR UR 28-2	B1BJ60	38285	1
Columbia River	HFD SPR UR 28-2	B1BFX9	38285	1
Columbia River	HFD SPR UR 28-2	B17RL0	37928	1
Columbia River	HFD SPR UR 28-2	B17RR8	37928	1
Columbia River	HFD SPR UR 28-2	B17RL1	37928	1
Columbia River	HFD SPR UR 28-2	B1BFY0	38285	1
Columbia River	HFD SPR UR 28-2	B1BFW1	38285	1
Columbia River	HFD SPR UR 28-2	B17RJ8	37928	1
Columbia River	HFD SPR UR 28-2	B1BFV4	38285	1
Columbia River	HFD SPR UR 28-2	B17RK3	37928	1
Columbia River	HFD TS HRM 26	B159F0	37508	1
Columbia River	HFD TS HRM 26	B12TF7	37144	1
Columbia River	HFD TS HRM 26	B10731	36787	1
Columbia River	HFD TS HRM 26	B17CM0	37872	1
Columbia River	HFD TS HRM 26	B12TH0	37144	1
Columbia River	HFD TS HRM 26	B0WB73	36424	1
Columbia River	HFD TS HRM 26	B158N0	37508	1
Columbia River	HFD TS HRM 26	B17CL7	37872	1
Columbia River	HFD TS HRM 26	B106M4	36787	1
Columbia River	HFD TS HRM 26	29092	37508	1
Columbia River	HFD TS HRM 26	B0WB65	36424	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	HFD TS HRM 26	B17CL4	37872	1
Columbia River	HFD TS HRM 26	B158N9	37508	1
Columbia River	HFD TS HRM 26	B12VT2	37144	1
Columbia River	HFD TS HRM 26	B10734	36787	1
Columbia River	HFD TS HRM 26	B158N6	37508	1
Columbia River	HFD TS HRM 26	B0WC96	36424	1
Columbia River	HFD TS HRM 26	B12TH3	37144	1
Columbia River	HFD TS HRM 26	B10728	36787	1
Columbia River	HFD TS HRM 26	B1B735	38244	1
Columbia River	HFD TS HRM 26	B1B744	38244	1
Columbia River	HFD TS HRM 26	B17HK5	37872	1
Columbia River	HFD TS HRM 26	B1B495	38244	1
Columbia River	HFD TS HRM 26	B1B741	38244	1
Columbia River	HFD TS HRM 27	B106M5	36787	1
Columbia River	HFD TS HRM 27	B17CL8	37872	1
Columbia River	HFD TS HRM 27	B10735	36787	1
Columbia River	HFD TS HRM 27	B0WB66	36424	1
Columbia River	HFD TS HRM 27	B12TF8	37144	1
Columbia River	HFD TS HRM 27	B158P0	37508	1
Columbia River	HFD TS HRM 27	B12VT3	37144	1
Columbia River	HFD TS HRM 27	B159F1	37508	1
Columbia River	HFD TS HRM 27	B12TH1	37144	1
Columbia River	HFD TS HRM 27	29093	37508	1
Columbia River	HFD TS HRM 27	B158N2	37508	1
Columbia River	HFD TS HRM 27	B12TH4	37144	1
Columbia River	HFD TS HRM 27	B17CL5	37872	1
Columbia River	HFD TS HRM 27	B158N7	37508	1
Columbia River	HFD TS HRM 27	33277	38244	1
Columbia River	HFD TS HRM 27	B109C4	36787	1
Columbia River	HFD TS HRM 27	B0WC97	36424	1
Columbia River	HFD TS HRM 27	B10732	36787	1
Columbia River	HFD TS HRM 27	B10729	36787	1
Columbia River	HFD TS HRM 27	B0WB74	36424	1
Columbia River	HFD TS HRM 27	B17CM1	37872	1
Columbia River	HFD TS HRM 27	B1B742	38244	1
Columbia River	HFD TS HRM 27	B1B496	38244	1
Columbia River	HFD TS HRM 27	B1B745	38244	1
Columbia River	HFD TS HRM 27	B1B737	38244	1
Columbia River	HFD TS HRM 27	B17HK6	37872	1
Columbia River	HFD TS HRM 28	B15904	37508	1
Columbia River	HFD TS HRM 28	B159F2	37508	1
Columbia River	HFD TS HRM 28	B17CY3	37872	1
Columbia River	HFD TS HRM 28	29094	37508	1
Columbia River	HFD TS HRM 28	B10785	36787	1
Columbia River	HFD TS HRM 28	B12TT0	37144	1
Columbia River	HFD TS HRM 28	B17CY1	37872	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	HFD TS HRM 28	B12TT2	37144	1
Columbia River	HFD TS HRM 28	B109C5	36787	1
Columbia River	HFD TS HRM 28	B15902	37508	1
Columbia River	HFD TS HRM 28	B17CY2	37872	1
Columbia River	HFD TS HRM 28	B10786	36787	1
Columbia River	HFD TS HRM 28	B12VT4	37144	1
Columbia River	HFD TS HRM 28	B10787	36787	1
Columbia River	HFD TS HRM 28	B106M6	36787	1
Columbia River	HFD TS HRM 28	B15905	37508	1
Columbia River	HFD TS HRM 28	33278	38244	1
Columbia River	HFD TS HRM 28	B12TT1	37144	1
Columbia River	HFD TS HRM 28	B1B7D4	38244	1
Columbia River	HFD TS HRM 28	B17HK7	37872	1
Columbia River	HFD TS HRM 28	B1B497	38244	1
Columbia River	HFD TS HRM 28	B1B7D1	38244	1
Columbia River	HFD TS HRM 28	B1B7D3	38244	1
Columbia River	HFD TS HRM 29	B0WB75	36424	1
Columbia River	HFD TS HRM 29	B0WC98	36424	1
Columbia River	HFD TS HRM 29	B0WB67	36424	1
Columbia River	HFD TS HRM 30	B158P1	37508	1
Columbia River	HFD TS HRM 30	B0WC99	36424	1
Columbia River	HFD TS HRM 30	B158N4	37508	1
Columbia River	HFD TS HRM 30	B10736	36787	1
Columbia River	HFD TS HRM 30	B0WB76	36424	1
Columbia River	HFD TS HRM 30	B158N8	37508	1
Columbia River	HFD TS HRM 30	B12TH5	37144	1
Columbia River	HFD TS HRM 30	B12TH2	37144	1
Columbia River	HFD TS HRM 30	B10733	36787	1
Columbia River	HFD TS HRM 30	B12VT5	37144	1
Columbia River	HFD TS HRM 30	B109C6	36787	1
Columbia River	HFD TS HRM 30	B10730	36787	1
Columbia River	HFD TS HRM 30	29095	37508	1
Columbia River	HFD TS HRM 30	B17CL6	37872	1
Columbia River	HFD TS HRM 30	B159F3	37508	1
Columbia River	HFD TS HRM 30	B106M7	36787	1
Columbia River	HFD TS HRM 30	B17CL9	37872	1
Columbia River	HFD TS HRM 30	B0WB68	36424	1
Columbia River	HFD TS HRM 30	B17CM2	37872	1
Columbia River	HFD TS HRM 30	B12TF9	37144	1
Columbia River	HFD TS HRM 30	B1B743	38244	1
Columbia River	HFD TS HRM 30	B1B498	38244	1
Columbia River	HFD TS HRM 30	B17HK8	37872	1
Columbia River	HFD TS HRM 30	B1B746	38244	1
Columbia River	HFD TS HRM 30	B1B739	38244	1
Columbia River	HFD TS1 HRM28.7	B0WB90	36424	1
Columbia River	HFD TS1 HRM28.7	B17CH5	37872	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	HFD TS1 HRM28.7	B12VR6	37144	1
Columbia River	HFD TS1 HRM28.7	B12TK8	37144	1
Columbia River	HFD TS1 HRM28.7	B0WB16	36424	1
Columbia River	HFD TS1 HRM28.7	B109C2	36787	1
Columbia River	HFD TS1 HRM28.7	B158K5	37508	1
Columbia River	HFD TS1 HRM28.7	B106W8	36787	1
Columbia River	HFD TS1 HRM28.7	B159D4	37508	1
Columbia River	HFD TS1 HRM28.7	B158C3	37508	1
Columbia River	HFD TS1 HRM28.7	B158T4	37508	1
Columbia River	HFD TS1 HRM28.7	B106T0	36787	1
Columbia River	HFD TS1 HRM28.7	B12T55	37144	1
Columbia River	HFD TS1 HRM28.7	B17CP5	37872	1
Columbia River	HFD TS1 HRM28.7	B12TB1	37144	1
Columbia River	HFD TS1 HRM28.7	B0WC90	36424	1
Columbia River	HFD TS1 HRM28.7	B10749	36787	1
Columbia River	HFD TS1 HRM28.7	B17C97	37872	1
Columbia River	HFD TS1 HRM28.7	B106L9	36787	1
Columbia River	HFD TS1 HRM28.7	B1B494	38244	1
Columbia River	HFD TS1 HRM28.7	B1B769	38244	1
Columbia River	HFD TS1 HRM28.7	B1B715	38244	1
Columbia River	HFD TS1 HRM28.7	B1B6W0	38244	1
Columbia River	HFD TS1 HRM28.7	B17HJ9	37872	1
Columbia River	HFD TS10HRM28.7	B17CH8	37872	1
Columbia River	HFD TS10HRM28.7	B17CR0	37872	1
Columbia River	HFD TS10HRM28.7	B10754	36787	1
Columbia River	HFD TS10HRM28.7	B0WC91	36424	1
Columbia River	HFD TS10HRM28.7	B159D9	37508	1
Columbia River	HFD TS10HRM28.7	B12VT1	37144	1
Columbia River	HFD TS10HRM28.7	B12TB4	37144	1
Columbia River	HFD TS10HRM28.7	B158L1	37508	1
Columbia River	HFD TS10HRM28.7	B12T60	37144	1
Columbia River	HFD TS10HRM28.7	B106L8	36787	1
Columbia River	HFD TS10HRM28.7	B0WB20	36424	1
Columbia River	HFD TS10HRM28.7	B0WB94	36424	1
Columbia River	HFD TS10HRM28.7	B106X1	36787	1
Columbia River	HFD TS10HRM28.7	B12TL3	37144	1
Columbia River	HFD TS10HRM28.7	B17CB2	37872	1
Columbia River	HFD TS10HRM28.7	B158C8	37508	1
Columbia River	HFD TS10HRM28.7	B158T9	37508	1
Columbia River	HFD TS10HRM28.7	B106T5	36787	1
Columbia River	HFD TS10HRM28.7	B1B718	38244	1
Columbia River	HFD TS10HRM28.7	B17HK4	37872	1
Columbia River	HFD TS10HRM28.7	B1B6W5	38244	1
Columbia River	HFD TS10HRM28.7	B1B774	38244	1
Columbia River	HFD TS10HRM28.7	B1B9N1	38244	1
Columbia River	HFD TS2 HRM28.7	B106W9	36787	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	HFD TS2 HRM28.7	B158T5	37508	1
Columbia River	HFD TS2 HRM28.7	B158K7	37508	1
Columbia River	HFD TS2 HRM28.7	B12T56	37144	1
Columbia River	HFD TS2 HRM28.7	B109C3	36787	1
Columbia River	HFD TS2 HRM28.7	B0WC92	36424	1
Columbia River	HFD TS2 HRM28.7	B17CP6	37872	1
Columbia River	HFD TS2 HRM28.7	B12VR7	37144	1
Columbia River	HFD TS2 HRM28.7	B106M0	36787	1
Columbia River	HFD TS2 HRM28.7	B0WB14	36424	1
Columbia River	HFD TS2 HRM28.7	B12TB2	37144	1
Columbia River	HFD TS2 HRM28.7	B17CH6	37872	1
Columbia River	HFD TS2 HRM28.7	B17C98	37872	1
Columbia River	HFD TS2 HRM28.7	B0WB89	36424	1
Columbia River	HFD TS2 HRM28.7	B12TK9	37144	1
Columbia River	HFD TS2 HRM28.7	B159D5	37508	1
Columbia River	HFD TS2 HRM28.7	B158C4	37508	1
Columbia River	HFD TS2 HRM28.7	B1B6W1	38244	1
Columbia River	HFD TS2 HRM28.7	B1B9M7	38244	1
Columbia River	HFD TS2 HRM28.7	B1B770	38244	1
Columbia River	HFD TS2 HRM28.7	B17HK0	37872	1
Columbia River	HFD TS2 HRM28.7	B1B716	38244	1
Columbia River	HFD TS3 HRM28.7	B12TB5	37144	1
Columbia River	HFD TS3 HRM28.7	B0WB91	36424	1
Columbia River	HFD TS3 HRM28.7	B10751	36787	1
Columbia River	HFD TS3 HRM28.7	B158T6	37508	1
Columbia River	HFD TS3 HRM28.7	B0WB21	36424	1
Columbia River	HFD TS3 HRM28.7	B0WC93	36424	1
Columbia River	HFD TS3 HRM28.7	B17C99	37872	1
Columbia River	HFD TS3 HRM28.7	B12T57	37144	1
Columbia River	HFD TS3 HRM28.7	B106T2	36787	1
Columbia River	HFD TS3 HRM28.7	B17CH9	37872	1
Columbia River	HFD TS3 HRM28.7	B159D6	37508	1
Columbia River	HFD TS3 HRM28.7	B158L3	37508	1
Columbia River	HFD TS3 HRM28.7	B17CP7	37872	1
Columbia River	HFD TS3 HRM28.7	B158C5	37508	1
Columbia River	HFD TS3 HRM28.7	B12TL0	37144	1
Columbia River	HFD TS3 HRM28.7	B106X2	36787	1
Columbia River	HFD TS3 HRM28.7	B12VR8	37144	1
Columbia River	HFD TS3 HRM28.7	B1B771	38244	1
Columbia River	HFD TS3 HRM28.7	B17HK1	37872	1
Columbia River	HFD TS3 HRM28.7	B1B6W2	38244	1
Columbia River	HFD TS3 HRM28.7	B1B719	38244	1
Columbia River	HFD TS3 HRM28.7	B1B9M8	38244	1
Columbia River	HFD TS5 HRM28.7	B106W3	36787	1
Columbia River	HFD TS5 HRM28.7	B159D7	37508	1
Columbia River	HFD TS5 HRM28.7	B17CB0	37872	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	HFD TS5 HRM28.7	B158T7	37508	1
Columbia River	HFD TS5 HRM28.7	B10752	36787	1
Columbia River	HFD TS5 HRM28.7	B12TL1	37144	1
Columbia River	HFD TS5 HRM28.7	B106T3	36787	1
Columbia River	HFD TS5 HRM28.7	B158J5	37508	1
Columbia River	HFD TS5 HRM28.7	B12T96	37144	1
Columbia River	HFD TS5 HRM28.7	B158C6	37508	1
Columbia River	HFD TS5 HRM28.7	B17CH0	37872	1
Columbia River	HFD TS5 HRM28.7	B17CP8	37872	1
Columbia River	HFD TS5 HRM28.7	B0WB04	36424	1
Columbia River	HFD TS5 HRM28.7	B12VR9	37144	1
Columbia River	HFD TS5 HRM28.7	B106M2	36787	1
Columbia River	HFD TS5 HRM28.7	B0WB92	36424	1
Columbia River	HFD TS5 HRM28.7	B12T58	37144	1
Columbia River	HFD TS5 HRM28.7	B0WC94	36424	1
Columbia River	HFD TS5 HRM28.7	B1B6W3	38244	1
Columbia River	HFD TS5 HRM28.7	B1B710	38244	1
Columbia River	HFD TS5 HRM28.7	B1B772	38244	1
Columbia River	HFD TS5 HRM28.7	B17HK2	37872	1
Columbia River	HFD TS5 HRM28.7	B1B9M9	38244	1
Columbia River	HFD TS7 HRM28.7	B106T4	36787	1
Columbia River	HFD TS7 HRM28.7	B12T59	37144	1
Columbia River	HFD TS7 HRM28.7	B17CH7	37872	1
Columbia River	HFD TS7 HRM28.7	B0WC95	36424	1
Columbia River	HFD TS7 HRM28.7	B10753	36787	1
Columbia River	HFD TS7 HRM28.7	B12VT0	37144	1
Columbia River	HFD TS7 HRM28.7	B159D8	37508	1
Columbia River	HFD TS7 HRM28.7	B106M3	36787	1
Columbia River	HFD TS7 HRM28.7	B17CB1	37872	1
Columbia River	HFD TS7 HRM28.7	B12TB3	37144	1
Columbia River	HFD TS7 HRM28.7	B158K9	37508	1
Columbia River	HFD TS7 HRM28.7	B17CP9	37872	1
Columbia River	HFD TS7 HRM28.7	B158C7	37508	1
Columbia River	HFD TS7 HRM28.7	B106X0	36787	1
Columbia River	HFD TS7 HRM28.7	B0WB93	36424	1
Columbia River	HFD TS7 HRM28.7	B12TL2	37144	1
Columbia River	HFD TS7 HRM28.7	B158T8	37508	1
Columbia River	HFD TS7 HRM28.7	B0WB18	36424	1
Columbia River	HFD TS7 HRM28.7	B1B773	38244	1
Columbia River	HFD TS7 HRM28.7	B1B717	38244	1
Columbia River	HFD TS7 HRM28.7	B17HK3	37872	1
Columbia River	HFD TS7 HRM28.7	B1B6W4	38244	1
Columbia River	HFD TS7 HRM28.7	B1B9N0	38244	1
Columbia River	HIP DEEP CRK	23832	36510	1
Columbia River	Powerline	24690	36560	1
Columbia River	REACTOR D AREA	HR024D	37902	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	REACTOR H AREA	HR028H	37903	1
Columbia River	REACTOR K AREA	HR021K	37902	1
Columbia River	REACTOR N AREA	HR015N	37903	1
Columbia River	RICHLAND SPR	B1BH17	38285	1
Columbia River	Richland WNTK	HR047R	38203	1
Columbia River	Richland WTP	28062	37474	1
Columbia River	Richland WTP	28061	37503	1
Columbia River	Richland WTP	28054	37320	1
Columbia River	Richland WTP	27818	37258	1
Columbia River	Richland WTP	28053	37292	1
Columbia River	Richland WTP	24609	36831	1
Columbia River	Richland WTP	30573	37775	1
Columbia River	Richland WTP	30571	37867	1
Columbia River	Richland WTP	22923	36404	1
Columbia River	Richland WTP	24607	36712	1
Columbia River	Richland WTP	30572	37838	1
Columbia River	Richland WTP	22919	36375	1
Columbia River	Richland WTP	24608	36802	1
Columbia River	Richland WTP	24612	36775	1
Columbia River	Richland WTP	28063	37411	1
Columbia River	Richland WTP	22935	36495	1
Columbia River	Richland WTP	24605	36586	1
Columbia River	Richland WTP	24592	36557	1
Columbia River	Richland WTP	22931	36466	1
Columbia River	Richland WTP	24610	36865	1
Columbia River	Richland WTP	28055	37593	1
Columbia River	Richland WTP	24606	36621	1
Columbia River	Richland WTP	28060	37383	1
Columbia River	Richland WTP	30570	37746	1
Columbia River	Richland WTP	22927	36438	1
Columbia River	Richland WTP	28059	37348	1
Columbia River	Richland WTP	28058	37530	1
Columbia River	Richland WTP	28057	37439	1
Columbia River	Richland WTP	24611	36648	1
Columbia River	Richland WTP	28056	37565	1
Columbia River	Richland WTP	26101	37047	1
Columbia River	Richland WTP	30566	37929	1
Columbia River	Richland WTP	22895	36194	1
Columbia River	Richland WTP	32902	38032	1
Columbia River	Richland WTP	32903	38306	1
Columbia River	Richland WTP	26093	37229	1
Columbia River	Richland WTP	26095	37075	1
Columbia River	Richland WTP	22208	36165	1
Columbia River	Richland WTP	25521	36894	1
Columbia River	Richland WTP	32811	38322	1
Columbia River	Richland WTP	26096	37166	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Richland WTP	24613	36739	1
Columbia River	Richland WTP	24614	36684	1
Columbia River	Richland WTP	34238	38356	1
Columbia River	Richland WTP	32901	38214	1
Columbia River	Richland WTP	30567	37802	1
Columbia River	Richland WTP	26094	37201	1
Columbia River	Richland WTP	26097	36984	1
Columbia River	Richland WTP	26098	37012	1
Columbia River	Richland WTP	26099	37139	1
Columbia River	Richland WTP	26100	37104	1
Columbia River	Richland WTP	30565	37957	1
Columbia River	Richland WTP	30564	37684	1
Columbia River	Richland WTP	24101	36529	1
Columbia River	Richland WTP	30563	37656	1
Columbia River	Richland WTP	32574	37992	1
Columbia River	Richland WTP	32810	38048	1
Columbia River	Richland WTP	32809	38020	1
Columbia River	Richland WTP	30328	37623	1
Columbia River	Richland WTP	34473	38384	1
Columbia River	Richland WTP	26092	36956	1
Columbia River	Richland WTP	30569	37712	1
Columbia River	Richland WTP	22907	36284	1
Columbia River	Richland WTP	32815	38083	1
Columbia River	Richland WTP	22915	36348	1
Columbia River	Richland WTP	30568	37895	1
Columbia River	Richland WTP	22903	36256	1
Columbia River	Richland WTP	32812	38293	1
Columbia River	Richland WTP	32816	38107	1
Columbia River	Richland WTP	32814	38265	1
Columbia River	Richland WTP	32813	38175	1
Columbia River	Richland WTP	32817	38231	1
Columbia River	Richland WTP	32818	38202	1
Columbia River	Richland WTP	32819	38140	1
Columbia River	Richland WTP	22911	36313	1
Columbia River	Richland WTP	32887	38122	1
Columbia River	Richland WTP	22899	36221	1
Columbia River	RICHLANDHRM44.4	B121V4	37028	1
Columbia River	RICHPS HRM 43.5	B0X409	36500	1
Columbia River	RICHPS HRM 43.5	B11148	36865	1
Columbia River	RICHPS HRM 43.5	B106N4	36788	1
Columbia River	RICHPS HRM 43.5	B0YCL0	36697	1
Columbia River	RICHPS HRM 43.5	B0YCL4	36697	1
Columbia River	RICHPS HRM 43.5	B12TN1	37147	1
Columbia River	RICHPS HRM 43.5	B0X413	36500	1
Columbia River	RICHPS HRM 43.5	B16KD2	37705	1
Columbia River	RICHPS HRM 43.5	B12TM7	37147	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS HRM 43.5	B16373	37600	1
Columbia River	RICHPS HRM 43.5	B16365	37600	1
Columbia River	RICHPS HRM 43.5	B12TM3	37147	1
Columbia River	RICHPS HRM 43.5	B16369	37600	1
Columbia River	RICHPS HRM 43.5	B164K6	37600	1
Columbia River	RICHPS HRM 43.5	B0XRP9	36613	1
Columbia River	RICHPS HRM 43.5	B14T06	37418	1
Columbia River	RICHPS HRM 43.5	33140	38245	1
Columbia River	RICHPS HRM 43.5	B13LK0	37229	1
Columbia River	RICHPS HRM 43.5	B0XRP1	36613	1
Columbia River	RICHPS HRM 43.5	B12VL9	37147	1
Columbia River	RICHPS HRM 43.5	B0YC96	36697	1
Columbia River	RICHPS HRM 43.5	B11237	36865	1
Columbia River	RICHPS HRM 43.5	B0X454	36500	1
Columbia River	RICHPS HRM 43.5	B14RY1	37418	1
Columbia River	RICHPS HRM 43.5	B11156	36865	1
Columbia River	RICHPS HRM 43.5	B0XRW2	36613	1
Columbia River	RICHPS HRM 43.5	B11152	36865	1
Columbia River	RICHPS HRM 43.5	B147W6	37341	1
Columbia River	RICHPS HRM 43.5	B0YCK6	36697	1
Columbia River	RICHPS HRM 43.5	B13LJ6	37229	1
Columbia River	RICHPS HRM 43.5	B11H66	36948	1
Columbia River	RICHPS HRM 43.5	B13LV0	37229	1
Columbia River	RICHPS HRM 43.5	B109D5	36788	1
Columbia River	RICHPS HRM 43.5	B124X1	37054	1
Columbia River	RICHPS HRM 43.5	B17CT0	37873	1
Columbia River	RICHPS HRM 43.5	B0WBC6	36419	1
Columbia River	RICHPS HRM 43.5	B11H62	36948	1
Columbia River	RICHPS HRM 43.5	B14RX7	37418	1
Columbia River	RICHPS HRM 43.5	B17CT4	37873	1
Columbia River	RICHPS HRM 43.5	B0WBB8	36419	1
Columbia River	RICHPS HRM 43.5	B11H70	36948	1
Columbia River	RICHPS HRM 43.5	B11J36	36948	1
Columbia River	RICHPS HRM 43.5	B158W3	37509	1
Columbia River	RICHPS HRM 43.5	B0XRP5	36613	1
Columbia River	RICHPS HRM 43.5	B16LD0	37705	1
Columbia River	RICHPS HRM 43.5	B16LD4	37705	1
Columbia River	RICHPS HRM 43.5	B16LD8	37705	1
Columbia River	RICHPS HRM 43.5	B158W7	37509	1
Columbia River	RICHPS HRM 43.5	B12534	37054	1
Columbia River	RICHPS HRM 43.5	B10764	36788	1
Columbia River	RICHPS HRM 43.5	B12538	37054	1
Columbia River	RICHPS HRM 43.5	B12542	37054	1
Columbia River	RICHPS HRM 43.5	B10768	36788	1
Columbia River	RICHPS HRM 43.5	B10772	36788	1
Columbia River	RICHPS HRM 43.5	B158V9	37509	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS HRM 43.5	B17212	37782	1
Columbia River	RICHPS HRM 43.5	B146X9	37341	1
Columbia River	RICHPS HRM 43.5	B0X405	36500	1
Columbia River	RICHPS HRM 43.5	B17282	37782	1
Columbia River	RICHPS HRM 43.5	B14RY5	37418	1
Columbia River	RICHPS HRM 43.5	B13LK4	37229	1
Columbia River	RICHPS HRM 43.5	B17208	37782	1
Columbia River	RICHPS HRM 43.5	27403	37147	1
Columbia River	RICHPS HRM 43.5	B17204	37782	1
Columbia River	RICHPS HRM 43.5	B15987	37509	1
Columbia River	RICHPS HRM 43.5	B0WCB3	36419	1
Columbia River	RICHPS HRM 43.5	B1BW51	38340	1
Columbia River	RICHPS HRM 43.5	B183W8	37963	1
Columbia River	RICHPS HRM 43.5	B19HP6	38162	1
Columbia River	RICHPS HRM 43.5	B1BX56	38340	1
Columbia River	RICHPS HRM 43.5	B18V25	38076	1
Columbia River	RICHPS HRM 43.5	B1B784	38245	1
Columbia River	RICHPS HRM 43.5	B17HL5	37873	1
Columbia River	RICHPS HRM 43.5	B184R5	37963	1
Columbia River	RICHPS HRM 43.5	B19JB7	38162	1
Columbia River	RICHPS HRM 43.5	B183W0	37963	1
Columbia River	RICHPS HRM 43.5	B1B788	38245	1
Columbia River	RICHPS HRM 43.5	B18TJ8	38076	1
Columbia River	RICHPS HRM 43.5	B183W4	37963	1
Columbia River	RICHPS HRM 43.5	B1B456	38245	1
Columbia River	RICHPS HRM 43.5	B1B792	38245	1
Columbia River	RICHPS HRM 43.9	B0YCK5	36697	1
Columbia River	RICHPS HRM 43.9	B12TN0	37147	1
Columbia River	RICHPS HRM 43.9	B0YC97	36697	1
Columbia River	RICHPS HRM 43.9	B147W5	37341	1
Columbia River	RICHPS HRM 43.9	B16LD7	37705	1
Columbia River	RICHPS HRM 43.9	B0X408	36500	1
Columbia River	RICHPS HRM 43.9	B0YCK9	36697	1
Columbia River	RICHPS HRM 43.9	B16372	37600	1
Columbia River	RICHPS HRM 43.9	B12TM6	37147	1
Columbia River	RICHPS HRM 43.9	B16LD3	37705	1
Columbia River	RICHPS HRM 43.9	B0XRP8	36613	1
Columbia River	RICHPS HRM 43.9	B0YCL3	36697	1
Columbia River	RICHPS HRM 43.9	B13LK3	37229	1
Columbia River	RICHPS HRM 43.9	B0WCB2	36419	1
Columbia River	RICHPS HRM 43.9	B164K7	37600	1
Columbia River	RICHPS HRM 43.9	B12TM2	37147	1
Columbia River	RICHPS HRM 43.9	B0WBB7	36419	1
Columbia River	RICHPS HRM 43.9	B13LJ9	37229	1
Columbia River	RICHPS HRM 43.9	B17203	37782	1
Columbia River	RICHPS HRM 43.9	B146Y0	37341	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS HRM 43.9	B13LJ5	37229	1
Columbia River	RICHPS HRM 43.9	B17207	37782	1
Columbia River	RICHPS HRM 43.9	B13LV1	37229	1
Columbia River	RICHPS HRM 43.9	B16KD3	37705	1
Columbia River	RICHPS HRM 43.9	B17211	37782	1
Columbia River	RICHPS HRM 43.9	B12VM0	37147	1
Columbia River	RICHPS HRM 43.9	B0X453	36500	1
Columbia River	RICHPS HRM 43.9	B0XRW3	36613	1
Columbia River	RICHPS HRM 43.9	B16LC9	37705	1
Columbia River	RICHPS HRM 43.9	B0XRP0	36613	1
Columbia River	RICHPS HRM 43.9	B0WBC5	36419	1
Columbia River	RICHPS HRM 43.9	B0X404	36500	1
Columbia River	RICHPS HRM 43.9	B0XRP4	36613	1
Columbia River	RICHPS HRM 43.9	B17283	37782	1
Columbia River	RICHPS HRM 43.9	33139	38245	1
Columbia River	RICHPS HRM 43.9	B0X412	36500	1
Columbia River	RICHPS HRM 43.9	B16368	37600	1
Columbia River	RICHPS HRM 43.9	B10767	36788	1
Columbia River	RICHPS HRM 43.9	B12541	37054	1
Columbia River	RICHPS HRM 43.9	B11H65	36948	1
Columbia River	RICHPS HRM 43.9	B12533	37054	1
Columbia River	RICHPS HRM 43.9	27404	37147	1
Columbia River	RICHPS HRM 43.9	B158W6	37509	1
Columbia River	RICHPS HRM 43.9	B124X2	37054	1
Columbia River	RICHPS HRM 43.9	B11H69	36948	1
Columbia River	RICHPS HRM 43.9	B11238	36865	1
Columbia River	RICHPS HRM 43.9	B11155	36865	1
Columbia River	RICHPS HRM 43.9	B11H61	36948	1
Columbia River	RICHPS HRM 43.9	B158V8	37509	1
Columbia River	RICHPS HRM 43.9	B14RY4	37418	1
Columbia River	RICHPS HRM 43.9	B158W2	37509	1
Columbia River	RICHPS HRM 43.9	B14T07	37418	1
Columbia River	RICHPS HRM 43.9	B106N5	36788	1
Columbia River	RICHPS HRM 43.9	B10771	36788	1
Columbia River	RICHPS HRM 43.9	B16364	37600	1
Columbia River	RICHPS HRM 43.9	B15988	37509	1
Columbia River	RICHPS HRM 43.9	B14RX6	37418	1
Columbia River	RICHPS HRM 43.9	B11147	36865	1
Columbia River	RICHPS HRM 43.9	B14RY0	37418	1
Columbia River	RICHPS HRM 43.9	B11J37	36948	1
Columbia River	RICHPS HRM 43.9	B10763	36788	1
Columbia River	RICHPS HRM 43.9	B12537	37054	1
Columbia River	RICHPS HRM 43.9	B11151	36865	1
Columbia River	RICHPS HRM 43.9	B1B787	38245	1
Columbia River	RICHPS HRM 43.9	B18V26	38076	1
Columbia River	RICHPS HRM 43.9	B18TJ7	38076	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS HRM 43.9	B19JB6	38162	1
Columbia River	RICHPS HRM 43.9	B1BW50	38340	1
Columbia River	RICHPS HRM 43.9	B184R6	37963	1
Columbia River	RICHPS HRM 43.9	B1B783	38245	1
Columbia River	RICHPS HRM 43.9	B1BX57	38340	1
Columbia River	RICHPS HRM 43.9	B1B791	38245	1
Columbia River	RICHPS HRM 43.9	B183V9	37963	1
Columbia River	RICHPS HRM 43.9	B1B457	38245	1
Columbia River	RICHPS HRM 43.9	B183W3	37963	1
Columbia River	RICHPS HRM 43.9	B19HP5	38162	1
Columbia River	RICHPS HRM 43.9	B183W7	37963	1
Columbia River	RICHPS HRM 45.0	B13LJ4	37229	1
Columbia River	RICHPS HRM 45.0	B16LD6	37705	1
Columbia River	RICHPS HRM 45.0	B12TM9	37147	1
Columbia River	RICHPS HRM 45.0	B10770	36788	1
Columbia River	RICHPS HRM 45.0	B0WBC4	36419	1
Columbia River	RICHPS HRM 45.0	B158V7	37509	1
Columbia River	RICHPS HRM 45.0	B0YC98	36697	1
Columbia River	RICHPS HRM 45.0	B12TM5	37147	1
Columbia River	RICHPS HRM 45.0	B11150	36865	1
Columbia River	RICHPS HRM 45.0	B17202	37782	1
Columbia River	RICHPS HRM 45.0	B16LD2	37705	1
Columbia River	RICHPS HRM 45.0	B147W4	37341	1
Columbia River	RICHPS HRM 45.0	B0X452	36500	1
Columbia River	RICHPS HRM 45.0	33138	38245	1
Columbia River	RICHPS HRM 45.0	B11154	36865	1
Columbia River	RICHPS HRM 45.0	B0XRP7	36613	1
Columbia River	RICHPS HRM 45.0	B10766	36788	1
Columbia River	RICHPS HRM 45.0	B14RX9	37418	1
Columbia River	RICHPS HRM 45.0	B13LK2	37229	1
Columbia River	RICHPS HRM 45.0	B12TM1	37147	1
Columbia River	RICHPS HRM 45.0	B0WBB6	36419	1
Columbia River	RICHPS HRM 45.0	B0XRP3	36613	1
Columbia River	RICHPS HRM 45.0	B109D6	36788	1
Columbia River	RICHPS HRM 45.0	B16367	37600	1
Columbia River	RICHPS HRM 45.0	B124X3	37054	1
Columbia River	RICHPS HRM 45.0	B11146	36865	1
Columbia River	RICHPS HRM 45.0	B0XRN9	36613	1
Columbia River	RICHPS HRM 45.0	B13LJ8	37229	1
Columbia River	RICHPS HRM 45.0	B0XRW4	36613	1
Columbia River	RICHPS HRM 45.0	B16KD4	37705	1
Columbia River	RICHPS HRM 45.0	B14T08	37418	1
Columbia River	RICHPS HRM 45.0	B11239	36865	1
Columbia River	RICHPS HRM 45.0	B10762	36788	1
Columbia River	RICHPS HRM 45.0	B14RY3	37418	1
Columbia River	RICHPS HRM 45.0	B0YCK8	36697	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS HRM 45.0	B106N6	36788	1
Columbia River	RICHPS HRM 45.0	B158W5	37509	1
Columbia River	RICHPS HRM 45.0	B17210	37782	1
Columbia River	RICHPS HRM 45.0	27405	37147	1
Columbia River	RICHPS HRM 45.0	B12532	37054	1
Columbia River	RICHPS HRM 45.0	B11H64	36948	1
Columbia River	RICHPS HRM 45.0	B15989	37509	1
Columbia River	RICHPS HRM 45.0	B17CT2	37873	1
Columbia River	RICHPS HRM 45.0	B12540	37054	1
Columbia River	RICHPS HRM 45.0	B0YCL2	36697	1
Columbia River	RICHPS HRM 45.0	B14RX5	37418	1
Columbia River	RICHPS HRM 45.0	B164K8	37600	1
Columbia River	RICHPS HRM 45.0	B11J38	36948	1
Columbia River	RICHPS HRM 45.0	B12536	37054	1
Columbia River	RICHPS HRM 45.0	B146Y1	37341	1
Columbia River	RICHPS HRM 45.0	B17284	37782	1
Columbia River	RICHPS HRM 45.0	B16363	37600	1
Columbia River	RICHPS HRM 45.0	B16371	37600	1
Columbia River	RICHPS HRM 45.0	B11H68	36948	1
Columbia River	RICHPS HRM 45.0	B158W1	37509	1
Columbia River	RICHPS HRM 45.0	B0WCB1	36419	1
Columbia River	RICHPS HRM 45.0	B12VM1	37147	1
Columbia River	RICHPS HRM 45.0	B0X403	36500	1
Columbia River	RICHPS HRM 45.0	B17206	37782	1
Columbia River	RICHPS HRM 45.0	B16LC8	37705	1
Columbia River	RICHPS HRM 45.0	B0X407	36500	1
Columbia River	RICHPS HRM 45.0	B0X411	36500	1
Columbia River	RICHPS HRM 45.0	B17CR8	37873	1
Columbia River	RICHPS HRM 45.0	B11H60	36948	1
Columbia River	RICHPS HRM 45.0	B13LV2	37229	1
Columbia River	RICHPS HRM 45.0	B0YCK4	36697	1
Columbia River	RICHPS HRM 45.0	B18V27	38076	1
Columbia River	RICHPS HRM 45.0	B1B458	38245	1
Columbia River	RICHPS HRM 45.0	B183V8	37963	1
Columbia River	RICHPS HRM 45.0	B19HP7	38162	1
Columbia River	RICHPS HRM 45.0	B18TJ6	38076	1
Columbia River	RICHPS HRM 45.0	B17HL7	37873	1
Columbia River	RICHPS HRM 45.0	B1B790	38245	1
Columbia River	RICHPS HRM 45.0	B1B782	38245	1
Columbia River	RICHPS HRM 45.0	B1B786	38245	1
Columbia River	RICHPS HRM 45.0	B1BW49	38340	1
Columbia River	RICHPS HRM 45.0	B184R7	37963	1
Columbia River	RICHPS HRM 45.0	B19JB5	38162	1
Columbia River	RICHPS HRM 45.0	B1BX58	38340	1
Columbia River	RICHPS HRM 45.0	B183W2	37963	1
Columbia River	RICHPS HRM 45.0	B183W6	37963	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS HRM 45.8	B0X451	36500	1
Columbia River	RICHPS HRM 45.8	B12TM8	37147	1
Columbia River	RICHPS HRM 45.8	B14RX4	37418	1
Columbia River	RICHPS HRM 45.8	B16LD1	37705	1
Columbia River	RICHPS HRM 45.8	B17205	37782	1
Columbia River	RICHPS HRM 45.8	B12TM4	37147	1
Columbia River	RICHPS HRM 45.8	B11145	36865	1
Columbia River	RICHPS HRM 45.8	B17285	37782	1
Columbia River	RICHPS HRM 45.8	B146Y2	37341	1
Columbia River	RICHPS HRM 45.8	B106N7	36788	1
Columbia River	RICHPS HRM 45.8	B109D7	36788	1
Columbia River	RICHPS HRM 45.8	B0X402	36500	1
Columbia River	RICHPS HRM 45.8	B16LC7	37705	1
Columbia River	RICHPS HRM 45.8	B17209	37782	1
Columbia River	RICHPS HRM 45.8	B16KD5	37705	1
Columbia River	RICHPS HRM 45.8	B0X410	36500	1
Columbia River	RICHPS HRM 45.8	B13LK1	37229	1
Columbia River	RICHPS HRM 45.8	B17201	37782	1
Columbia River	RICHPS HRM 45.8	B15990	37509	1
Columbia River	RICHPS HRM 45.8	B13LV3	37229	1
Columbia River	RICHPS HRM 45.8	27406	37147	1
Columbia River	RICHPS HRM 45.8	B14RX8	37418	1
Columbia River	RICHPS HRM 45.8	B16LD5	37705	1
Columbia River	RICHPS HRM 45.8	B12TM0	37147	1
Columbia River	RICHPS HRM 45.8	B0X406	36500	1
Columbia River	RICHPS HRM 45.8	B11H67	36948	1
Columbia River	RICHPS HRM 45.8	B0WBC3	36419	1
Columbia River	RICHPS HRM 45.8	B12VM2	37147	1
Columbia River	RICHPS HRM 45.8	B0YC99	36697	1
Columbia River	RICHPS HRM 45.8	B11H63	36948	1
Columbia River	RICHPS HRM 45.8	B11J39	36948	1
Columbia River	RICHPS HRM 45.8	B0XRP6	36613	1
Columbia River	RICHPS HRM 45.8	B16362	37600	1
Columbia River	RICHPS HRM 45.8	B11149	36865	1
Columbia River	RICHPS HRM 45.8	B164K9	37600	1
Columbia River	RICHPS HRM 45.8	B10769	36788	1
Columbia River	RICHPS HRM 45.8	B12539	37054	1
Columbia River	RICHPS HRM 45.8	33137	38245	1
Columbia River	RICHPS HRM 45.8	B17CR7	37873	1
Columbia River	RICHPS HRM 45.8	B0YCK3	36697	1
Columbia River	RICHPS HRM 45.8	B12535	37054	1
Columbia River	RICHPS HRM 45.8	B12531	37054	1
Columbia River	RICHPS HRM 45.8	B17CT1	37873	1
Columbia River	RICHPS HRM 45.8	B0YCK7	36697	1
Columbia River	RICHPS HRM 45.8	B158W4	37509	1
Columbia River	RICHPS HRM 45.8	B0WCB0	36419	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS HRM 45.8	B0YCL1	36697	1
Columbia River	RICHPS HRM 45.8	B11H59	36948	1
Columbia River	RICHPS HRM 45.8	B14RY2	37418	1
Columbia River	RICHPS HRM 45.8	B11153	36865	1
Columbia River	RICHPS HRM 45.8	B10761	36788	1
Columbia River	RICHPS HRM 45.8	B0XRN8	36613	1
Columbia River	RICHPS HRM 45.8	B0XRP2	36613	1
Columbia River	RICHPS HRM 45.8	B124X4	37054	1
Columbia River	RICHPS HRM 45.8	B10765	36788	1
Columbia River	RICHPS HRM 45.8	B0WBB5	36419	1
Columbia River	RICHPS HRM 45.8	B158V6	37509	1
Columbia River	RICHPS HRM 45.8	B147W3	37341	1
Columbia River	RICHPS HRM 45.8	B14T09	37418	1
Columbia River	RICHPS HRM 45.8	B158W0	37509	1
Columbia River	RICHPS HRM 45.8	B0XRW5	36613	1
Columbia River	RICHPS HRM 45.8	B13LJ3	37229	1
Columbia River	RICHPS HRM 45.8	B16370	37600	1
Columbia River	RICHPS HRM 45.8	B13LJ7	37229	1
Columbia River	RICHPS HRM 45.8	B16366	37600	1
Columbia River	RICHPS HRM 45.8	B11240	36865	1
Columbia River	RICHPS HRM 45.8	B1B789	38245	1
Columbia River	RICHPS HRM 45.8	B1B781	38245	1
Columbia River	RICHPS HRM 45.8	B1B785	38245	1
Columbia River	RICHPS HRM 45.8	B1BW48	38340	1
Columbia River	RICHPS HRM 45.8	B18TJ5	38076	1
Columbia River	RICHPS HRM 45.8	B183W5	37963	1
Columbia River	RICHPS HRM 45.8	B18V28	38076	1
Columbia River	RICHPS HRM 45.8	B1BX59	38340	1
Columbia River	RICHPS HRM 45.8	B184R8	37963	1
Columbia River	RICHPS HRM 45.8	B183W1	37963	1
Columbia River	RICHPS HRM 45.8	B19HP3	38162	1
Columbia River	RICHPS HRM 45.8	B183V7	37963	1
Columbia River	RICHPS HRM 45.8	B1B459	38245	1
Columbia River	RICHPS HRM 45.8	B17HL8	37873	1
Columbia River	RICHPS HRM 45.8	B19JB4	38162	1
Columbia River	RICHPS HRM 46.4	B17575	37894	1
Columbia River	RICHPS HRM 46.4	B13VL2	37322	1
Columbia River	RICHPS HRM 46.4	B175F9	37841	1
Columbia River	RICHPS HRM 46.4	B172F2	37790	1
Columbia River	RICHPS HRM 46.4	B172K1	37797	1
Columbia River	RICHPS HRM 46.4	B17215	37784	1
Columbia River	RICHPS HRM 46.4	B14X12	37503	1
Columbia River	RICHPS HRM 46.4	B13VL1	37293	1
Columbia River	RICHPS HRM 46.4	B14X13	37531	1
Columbia River	RICHPS HRM 46.4	B153V4	37503	1
Columbia River	RICHPS HRM 46.4	B11WT4	37041	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS HRM 46.4	B14X11	37475	1
Columbia River	RICHPS HRM 46.4	B13V88	37349	1
Columbia River	RICHPS HRM 46.4	B12TJ6	37147	1
Columbia River	RICHPS HRM 46.4	B175J6	37894	1
Columbia River	RICHPS HRM 46.4	B10BT4	36895	1
Columbia River	RICHPS HRM 46.4	B10C19	36832	1
Columbia River	RICHPS HRM 46.4	B10C37	36888	1
Columbia River	RICHPS HRM 46.4	B10C38	36832	1
Columbia River	RICHPS HRM 46.4	B10C39	36859	1
Columbia River	RICHPS HRM 46.4	B171K7	37777	1
Columbia River	RICHPS HRM 46.4	B171F6	37812	1
Columbia River	RICHPS HRM 46.4	B170P8	37754	1
Columbia River	RICHPS HRM 46.4	B170X8	37762	1
Columbia River	RICHPS HRM 46.4	B124M3	37070	1
Columbia River	RICHPS HRM 46.4	B13VJ0	37293	1
Columbia River	RICHPS HRM 46.4	B10C40	36888	1
Columbia River	RICHPS HRM 46.4	B10C43	36888	1
Columbia River	RICHPS HRM 46.4	B13VL0	37349	1
Columbia River	RICHPS HRM 46.4	B124Y3	37054	1
Columbia River	RICHPS HRM 46.4	B10C44	36832	1
Columbia River	RICHPS HRM 46.4	B12525	37054	1
Columbia River	RICHPS HRM 46.4	B10C45	36859	1
Columbia River	RICHPS HRM 46.4	B10C46	36888	1
Columbia River	RICHPS HRM 46.4	B17141	37769	1
Columbia River	RICHPS HRM 46.4	B114W1	36929	1
Columbia River	RICHPS HRM 46.4	B0THK7	36257	1
Columbia River	RICHPS HRM 46.4	B11LW9	37070	1
Columbia River	RICHPS HRM 46.4	B11H31	36948	1
Columbia River	RICHPS HRM 46.4	B11C10	36951	1
Columbia River	RICHPS HRM 46.4	B13LH7	37229	1
Columbia River	RICHPS HRM 46.4	B114X0	36985	1
Columbia River	RICHPS HRM 46.4	B114W9	36957	1
Columbia River	RICHPS HRM 46.4	B114W8	36929	1
Columbia River	RICHPS HRM 46.4	B114W7	36985	1
Columbia River	RICHPS HRM 46.4	B11LW7	37013	1
Columbia River	RICHPS HRM 46.4	B114W2	36957	1
Columbia River	RICHPS HRM 46.4	B11LW6	37070	1
Columbia River	RICHPS HRM 46.4	B114W0	36985	1
Columbia River	RICHPS HRM 46.4	B114T0	36922	1
Columbia River	RICHPS HRM 46.4	B114H9	36985	1
Columbia River	RICHPS HRM 46.4	B0TH77	36257	1
Columbia River	RICHPS HRM 46.4	B0THH3	36194	1
Columbia River	RICHPS HRM 46.4	B0THK1	36257	1
Columbia River	RICHPS HRM 46.4	B0THK2	36187	1
Columbia River	RICHPS HRM 46.4	B0THK3	36215	1
Columbia River	RICHPS HRM 46.4	B0VCY5	36313	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS HRM 46.4	B114W3	36985	1
Columbia River	RICHPS HRM 46.4	B13124	37252	1
Columbia River	RICHPS HRM 46.4	B11LW0	37070	1
Columbia River	RICHPS HRM 46.4	B11LT2	37013	1
Columbia River	RICHPS HRM 46.4	B11LJ7	37070	1
Columbia River	RICHPS HRM 46.4	B11J46	36985	1
Columbia River	RICHPS HRM 46.4	B11LW2	37041	1
Columbia River	RICHPS HRM 46.4	B17DK3	37894	1
Columbia River	RICHPS HRM 46.4	B130P4	37259	1
Columbia River	RICHPS HRM 46.4	B13103	37196	1
Columbia River	RICHPS HRM 46.4	B13121	37252	1
Columbia River	RICHPS HRM 46.4	B11LW8	37041	1
Columbia River	RICHPS HRM 46.4	B13123	37222	1
Columbia River	RICHPS HRM 46.4	B0THK8	36187	1
Columbia River	RICHPS HRM 46.4	B13127	37252	1
Columbia River	RICHPS HRM 46.4	B13128	37196	1
Columbia River	RICHPS HRM 46.4	B13129	37222	1
Columbia River	RICHPS HRM 46.4	B13130	37252	1
Columbia River	RICHPS HRM 46.4	B13CD2	37222	1
Columbia River	RICHPS HRM 46.4	B13LB3	37259	1
Columbia River	RICHPS HRM 46.4	B13LD5	37229	1
Columbia River	RICHPS HRM 46.4	B11H53	36948	1
Columbia River	RICHPS HRM 46.4	B11LW3	37070	1
Columbia River	RICHPS HRM 46.4	B13122	37196	1
Columbia River	RICHPS HRM 46.4	B0W905	36439	1
Columbia River	RICHPS HRM 46.4	B0THK4	36257	1
Columbia River	RICHPS HRM 46.4	B0VV14	36369	1
Columbia River	RICHPS HRM 46.4	B0VV15	36411	1
Columbia River	RICHPS HRM 46.4	B0VV16	36439	1
Columbia River	RICHPS HRM 46.4	B10MR1	36859	1
Columbia River	RICHPS HRM 46.4	B14WL4	37531	1
Columbia River	RICHPS HRM 46.4	B14WX2	37475	1
Columbia River	RICHPS HRM 46.4	B14X03	37531	1
Columbia River	RICHPS HRM 46.4	B14X04	37475	1
Columbia River	RICHPS HRM 46.4	B0VV10	36439	1
Columbia River	RICHPS HRM 46.4	B0W395	36404	1
Columbia River	RICHPS HRM 46.4	B0VV09	36411	1
Columbia River	RICHPS HRM 46.4	B14X06	37531	1
Columbia River	RICHPS HRM 46.4	B14X10	37531	1
Columbia River	RICHPS HRM 46.4	B179R7	37867	1
Columbia River	RICHPS HRM 46.4	B175K5	37894	1
Columbia River	RICHPS HRM 46.4	B175K4	37867	1
Columbia River	RICHPS HRM 46.4	B175K3	37841	1
Columbia River	RICHPS HRM 46.4	B175K2	37894	1
Columbia River	RICHPS HRM 46.4	B175J9	37894	1
Columbia River	RICHPS HRM 46.4	B175J8	37867	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS HRM 46.4	B14X05	37503	1
Columbia River	RICHPS HRM 46.4	B0V554	36285	1
Columbia River	RICHPS HRM 46.4	B0THK9	36215	1
Columbia River	RICHPS HRM 46.4	B0THL0	36257	1
Columbia River	RICHPS HRM 46.4	B0TM59	36222	1
Columbia River	RICHPS HRM 46.4	B0TW39	36257	1
Columbia River	RICHPS HRM 46.4	B0V4V1	36341	1
Columbia River	RICHPS HRM 46.4	B0V530	36285	1
Columbia River	RICHPS HRM 46.4	B0V547	36341	1
Columbia River	RICHPS HRM 46.4	B0V548	36285	1
Columbia River	RICHPS HRM 46.4	B0V549	36313	1
Columbia River	RICHPS HRM 46.4	B0VV13	36439	1
Columbia River	RICHPS HRM 46.4	B0V553	36341	1
Columbia River	RICHPS HRM 46.4	B175J7	37841	1
Columbia River	RICHPS HRM 46.4	B0V555	36313	1
Columbia River	RICHPS HRM 46.4	B0V556	36341	1
Columbia River	RICHPS HRM 46.4	B11100	36895	1
Columbia River	RICHPS HRM 46.4	B13VL3	37349	1
Columbia River	RICHPS HRM 46.4	B0VL48	36341	1
Columbia River	RICHPS HRM 46.4	B0VTN3	36439	1
Columbia River	RICHPS HRM 46.4	B0VTX9	36369	1
Columbia River	RICHPS HRM 46.4	B0VV07	36439	1
Columbia River	RICHPS HRM 46.4	B0VV08	36369	1
Columbia River	RICHPS HRM 46.4	B0V550	36341	1
Columbia River	RICHPS HRM 46.4	B11LW1	37013	1
Columbia River	RICHPS HRM 46.4	B0XP21	36621	1
Columbia River	RICHPS HRM 46.4	B14B67	37434	1
Columbia River	RICHPS HRM 46.4	B14B64	37434	1
Columbia River	RICHPS HRM 46.4	B14B63	37405	1
Columbia River	RICHPS HRM 46.4	B14B62	37377	1
Columbia River	RICHPS HRM 46.4	B15K08	37629	1
Columbia River	RICHPS HRM 46.4	B15K79	37559	1
Columbia River	RICHPS HRM 46.4	B0XVR8	36706	1
Columbia River	RICHPS HRM 46.4	B15K97	37559	1
Columbia River	RICHPS HRM 46.4	B0X7N3	36551	1
Columbia River	RICHPS HRM 46.4	B15K98	37586	1
Columbia River	RICHPS HRM 46.4	B15K99	37629	1
Columbia River	RICHPS HRM 46.4	B15KB2	37629	1
Columbia River	RICHPS HRM 46.4	B15KB3	37559	1
Columbia River	RICHPS HRM 46.4	B15KB4	37586	1
Columbia River	RICHPS HRM 46.4	B0XVF7	36706	1
Columbia River	RICHPS HRM 46.4	B12872	37166	1
Columbia River	RICHPS HRM 46.4	B15K96	37629	1
Columbia River	RICHPS HRM 46.4	B12T33	37166	1
Columbia River	RICHPS HRM 46.4	B15954	37531	1
Columbia River	RICHPS HRM 46.4	B12JT2	37139	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS HRM 46.4	B0WPT0	36495	1
Columbia River	RICHPS HRM 46.4	B12T78	37147	1
Columbia River	RICHPS HRM 46.4	B14RM5	37434	1
Columbia River	RICHPS HRM 46.4	B14JF8	37405	1
Columbia River	RICHPS HRM 46.4	B14B70	37434	1
Columbia River	RICHPS HRM 46.4	B0XH28	36593	1
Columbia River	RICHPS HRM 46.4	B14B68	37377	1
Columbia River	RICHPS HRM 46.4	B0X7N5	36621	1
Columbia River	RICHPS HRM 46.4	B0X474	36523	1
Columbia River	RICHPS HRM 46.4	B0X790	36621	1
Columbia River	RICHPS HRM 46.4	B0X7K4	36558	1
Columbia River	RICHPS HRM 46.4	B0X7M5	36621	1
Columbia River	RICHPS HRM 46.4	B0X7M6	36551	1
Columbia River	RICHPS HRM 46.4	B0X7M7	36593	1
Columbia River	RICHPS HRM 46.4	B0X7M8	36621	1
Columbia River	RICHPS HRM 46.4	B0XVR9	36649	1
Columbia River	RICHPS HRM 46.4	B14B69	37405	1
Columbia River	RICHPS HRM 46.4	B16886	37657	1
Columbia River	RICHPS HRM 46.4	B0YKY2	36804	1
Columbia River	RICHPS HRM 46.4	B0YKY3	36748	1
Columbia River	RICHPS HRM 46.4	B0YKY4	36776	1
Columbia River	RICHPS HRM 46.4	B0YKY5	36804	1
Columbia River	RICHPS HRM 46.4	B0YKY9	36804	1
Columbia River	RICHPS HRM 46.4	B0YL00	36748	1
Columbia River	RICHPS HRM 46.4	B0YL01	36776	1
Columbia River	RICHPS HRM 46.4	B0XVP1	36649	1
Columbia River	RICHPS HRM 46.4	B16887	37685	1
Columbia River	RICHPS HRM 46.4	B16888	37713	1
Columbia River	RICHPS HRM 46.4	B16885	37713	1
Columbia River	RICHPS HRM 46.4	B0YW70	36776	1
Columbia River	RICHPS HRM 46.4	B103X3	36804	1
Columbia River	RICHPS HRM 46.4	B16868	37657	1
Columbia River	RICHPS HRM 46.4	B167Y1	37720	1
Columbia River	RICHPS HRM 46.4	B14B43	37377	1
Columbia River	RICHPS HRM 46.4	B14B61	37434	1
Columbia River	RICHPS HRM 46.4	B0YL02	36804	1
Columbia River	RICHPS HRM 46.4	B15VN8	37586	1
Columbia River	RICHPS HRM 46.4	B0XVT0	36677	1
Columbia River	RICHPS HRM 46.4	B0XVT1	36706	1
Columbia River	RICHPS HRM 46.4	B0XVT4	36706	1
Columbia River	RICHPS HRM 46.4	B0XVT5	36649	1
Columbia River	RICHPS HRM 46.4	B0XVT6	36677	1
Columbia River	RICHPS HRM 46.4	B0XVT7	36706	1
Columbia River	RICHPS HRM 46.4	B0Y237	36677	1
Columbia River	RICHPS HRM 46.4	B0YKW1	36748	1
Columbia River	RICHPS HRM 46.4	B0YB76	36706	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS HRM 46.4	B0YKL4	36804	1
Columbia River	RICHPS HRM 46.4	B161R7	37629	1
Columbia River	RICHPS HRM 46.4	B149W0	37439	1
Columbia River	RICHPS HRM 46.4	B16JM4	37713	1
Columbia River	RICHPS HRM 46.4	B16BY7	37685	1
Columbia River	RICHPS HRM 46.4	B16894	37713	1
Columbia River	RICHPS HRM 46.4	B16893	37685	1
Columbia River	RICHPS HRM 46.4	B16892	37657	1
Columbia River	RICHPS HRM 46.4	B0X7N2	36621	1
Columbia River	RICHPS HRM 46.4	B15KB5	37629	1
Columbia River	RICHPS HRM 46.4	B16PL8	37769	1
Columbia River	RICHPS HRM 46.4	B140R2	37322	1
Columbia River	RICHPS HRM 46.4	B0WJ22	36523	1
Columbia River	RICHPS HRM 46.4	B12870	37112	1
Columbia River	RICHPS HRM 46.4	B0WJ91	36467	1
Columbia River	RICHPS HRM 46.4	B0WJB8	36523	1
Columbia River	RICHPS HRM 46.4	B0WJB9	36467	1
Columbia River	RICHPS HRM 46.4	B0WJC0	36495	1
Columbia River	RICHPS HRM 46.4	B0WJC1	36523	1
Columbia River	RICHPS HRM 46.4	B0WJC4	36523	1
Columbia River	RICHPS HRM 46.4	B16PJ9	37741	1
Columbia River	RICHPS HRM 46.4	B16PM3	37741	1
Columbia River	RICHPS HRM 46.4	B16PL6	37812	1
Columbia River	RICHPS HRM 46.4	B13VM0	37349	1
Columbia River	RICHPS HRM 46.4	B12869	37166	1
Columbia River	RICHPS HRM 46.4	B16P95	37812	1
Columbia River	RICHPS HRM 46.4	B0WJC5	36467	1
Columbia River	RICHPS HRM 46.4	B0WJC6	36495	1
Columbia River	RICHPS HRM 46.4	B0WJC7	36523	1
Columbia River	RICHPS HRM 46.4	B14413	37349	1
Columbia River	RICHPS HRM 46.4	B16WL4	37748	1
Columbia River	RICHPS HRM 46.4	B16WL2	37741	1
Columbia River	RICHPS HRM 46.4	B16WF4	37769	1
Columbia River	RICHPS HRM 46.4	B16PM5	37812	1
Columbia River	RICHPS HRM 46.4	B16PM4	37769	1
Columbia River	RICHPS HRM 46.4	B0X7N4	36593	1
Columbia River	RICHPS HRM 46.4	B16PL9	37812	1
Columbia River	RICHPS HRM 46.4	B16PM2	37812	1
Columbia River	RICHPS HRM 46.4	B16PL7	37741	1
Columbia River	RICHPS HRM 46.4	B12863	37112	1
Columbia River	RICHPS HRM 46.4	B12864	37139	1
Columbia River	RICHPS HRM 46.4	B12862	37166	1
Columbia River	RICHPS HRM 46.4	B127W4	37166	1
Columbia River	RICHPS HRM 46.4	B12865	37166	1
Columbia River	RICHPS HRM 46.4	B12871	37139	1
Columbia River	RICHPS HRM 46.4	B13VL7	37349	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS HRM 46.4	B13VL9	37322	1
Columbia River	RICHPS HRM 46.4	B12841	37112	1
Columbia River	RICHPS HRM 46.4	B13VL8	37293	1
Columbia River	RICHPS HRM 46.4	B19B18	38176	1
Columbia River	RICHPS HRM 46.4	B19229	38146	1
Columbia River	RICHPS HRM 46.4	B18VX3	38176	1
Columbia River	RICHPS HRM 46.4	B18VX2	38146	1
Columbia River	RICHPS HRM 46.4	B1BCW2	38357	1
Columbia River	RICHPS HRM 46.4	B1BD37	38288	1
Columbia River	RICHPS HRM 46.4	B18VX1	38105	1
Columbia River	RICHPS HRM 46.4	B1BD61	38357	1
Columbia River	RICHPS HRM 46.4	B18VX0	38176	1
Columbia River	RICHPS HRM 46.4	B1BD62	38288	1
Columbia River	RICHPS HRM 46.4	B18VK0	38176	1
Columbia River	RICHPS HRM 46.4	B17NV7	37994	1
Columbia River	RICHPS HRM 46.4	B1B610	38261	1
Columbia River	RICHPS HRM 46.4	B19XY5	38230	1
Columbia River	RICHPS HRM 46.4	B19M56	38261	1
Columbia River	RICHPS HRM 46.4	B19M55	38230	1
Columbia River	RICHPS HRM 46.4	B19M54	38203	1
Columbia River	RICHPS HRM 46.4	B19M53	38261	1
Columbia River	RICHPS HRM 46.4	B1BD63	38314	1
Columbia River	RICHPS HRM 46.4	B19LV6	38266	1
Columbia River	RICHPS HRM 46.4	B1BD64	38357	1
Columbia River	RICHPS HRM 46.4	B17P33	37923	1
Columbia River	RICHPS HRM 46.4	B17P52	37923	1
Columbia River	RICHPS HRM 46.4	B17P53	37950	1
Columbia River	RICHPS HRM 46.4	B17P57	37994	1
Columbia River	RICHPS HRM 46.4	B17P58	37923	1
Columbia River	RICHPS HRM 46.4	B17P59	37950	1
Columbia River	RICHPS HRM 46.4	B17P60	37994	1
Columbia River	RICHPS HRM 46.4	B19M30	38203	1
Columbia River	RICHPS HRM 46.4	B18756	38021	1
Columbia River	RICHPS HRM 46.4	B1BMR7	38322	1
Columbia River	RICHPS HRM 46.4	B1BW19	38357	1
Columbia River	RICHPS HRM 46.4	B183J3	37994	1
Columbia River	RICHPS HRM 46.4	B18VT6	38113	1
Columbia River	RICHPS HRM 46.4	B186X7	38078	1
Columbia River	RICHPS HRM 46.4	B18779	38078	1
Columbia River	RICHPS HRM 46.4	B18780	38021	1
Columbia River	RICHPS HRM 46.4	B18781	38048	1
Columbia River	RICHPS HRM 46.4	B18782	38078	1
Columbia River	RICHPS HRM 46.4	B17VC0	37950	1
Columbia River	RICHPS HRM 46.4	B18K80	38078	1
Columbia River	RICHPS HRM 46.4	B18D89	38048	1
Columbia River	RICHPS1 HRM46.4	B0V246	36325	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS1 HRM46.4	B16334	37600	1
Columbia River	RICHPS1 HRM46.4	B11124	36865	1
Columbia River	RICHPS1 HRM46.4	B124W5	37054	1
Columbia River	RICHPS1 HRM46.4	B16KC7	37705	1
Columbia River	RICHPS1 HRM46.4	B11129	36865	1
Columbia River	RICHPS1 HRM46.4	B0XRJ3	36613	1
Columbia River	RICHPS1 HRM46.4	B0YCB0	36697	1
Columbia River	RICHPS1 HRM46.4	B11139	36865	1
Columbia River	RICHPS1 HRM46.4	B0WB77	36419	1
Columbia River	RICHPS1 HRM46.4	B0YCC9	36697	1
Columbia River	RICHPS1 HRM46.4	B106V4	36788	1
Columbia River	RICHPS1 HRM46.4	B158M1	37509	1
Columbia River	RICHPS1 HRM46.4	B109D3	36788	1
Columbia River	RICHPS1 HRM46.4	B11117	36865	1
Columbia River	RICHPS1 HRM46.4	B147T2	37341	1
Columbia River	RICHPS1 HRM46.4	B164K0	37600	1
Columbia River	RICHPS1 HRM46.4	B0WB29	36419	1
Columbia River	RICHPS1 HRM46.4	B171Y5	37782	1
Columbia River	RICHPS1 HRM46.4	B0V208	36325	1
Columbia River	RICHPS1 HRM46.4	B0V209	36325	1
Columbia River	RICHPS1 HRM46.4	B0XRV7	36613	1
Columbia River	RICHPS1 HRM46.4	B158R2	37509	1
Columbia River	RICHPS1 HRM46.4	B11231	36865	1
Columbia River	RICHPS1 HRM46.4	B12TC8	37147	1
Columbia River	RICHPS1 HRM46.4	B106M9	36788	1
Columbia River	RICHPS1 HRM46.4	B147T7	37341	1
Columbia River	RICHPS1 HRM46.4	B146X4	37341	1
Columbia River	RICHPS1 HRM46.4	B171W5	37782	1
Columbia River	RICHPS1 HRM46.4	B0XRK6	36613	1
Columbia River	RICHPS1 HRM46.4	B0XRK0	36613	1
Columbia River	RICHPS1 HRM46.4	B14RW8	37418	1
Columbia River	RICHPS1 HRM46.4	B17CN3	37873	1
Columbia River	RICHPS1 HRM46.4	B0V230	36325	1
Columbia River	RICHPS1 HRM46.4	B0V235	36325	1
Columbia River	RICHPS1 HRM46.4	B15981	37509	1
Columbia River	RICHPS1 HRM46.4	B171V3	37782	1
Columbia River	RICHPS1 HRM46.4	B12505	37054	1
Columbia River	RICHPS1 HRM46.4	B0X3X6	36500	1
Columbia River	RICHPS1 HRM46.4	B17CD0	37873	1
Columbia River	RICHPS1 HRM46.4	B13LF2	37229	1
Columbia River	RICHPS1 HRM46.4	B16L96	37705	1
Columbia River	RICHPS1 HRM46.4	B13LT5	37229	1
Columbia River	RICHPS1 HRM46.4	B17277	37782	1
Columbia River	RICHPS1 HRM46.4	B16346	37600	1
Columbia River	RICHPS1 HRM46.4	B14T00	37418	1
Columbia River	RICHPS1 HRM46.4	B13LF7	37229	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS1 HRM46.4	B16341	37600	1
Columbia River	RICHPS1 HRM46.4	B0X3Y6	36500	1
Columbia River	RICHPS1 HRM46.4	B0YJCJ7	36697	1
Columbia River	RICHPS1 HRM46.4	B0X3X1	36500	1
Columbia River	RICHPS1 HRM46.4	B16L89	37705	1
Columbia River	RICHPS1 HRM46.4	B121R8	37028	1
Columbia River	RICHPS1 HRM46.4	B0WCB4	36419	1
Columbia River	RICHPS1 HRM46.4	B10737	36788	1
Columbia River	RICHPS1 HRM46.4	B0X3W4	36500	1
Columbia River	RICHPS1 HRM46.4	B11H38	36948	1
Columbia River	RICHPS1 HRM46.4	B0XRN2	36613	1
Columbia River	RICHPS1 HRM46.4	B11J30	36948	1
Columbia River	RICHPS1 HRM46.4	B16LB1	37705	1
Columbia River	RICHPS1 HRM46.4	B11H43	36948	1
Columbia River	RICHPS1 HRM46.4	B0X445	36500	1
Columbia River	RICHPS1 HRM46.4	B0YCF1	36697	1
Columbia River	RICHPS1 HRM46.4	B158F6	37509	1
Columbia River	RICHPS1 HRM46.4	B14RT7	37418	1
Columbia River	RICHPS1 HRM46.4	B14RV8	37418	1
Columbia River	RICHPS1 HRM46.4	B16LC1	37705	1
Columbia River	RICHPS1 HRM46.4	B12VL3	37147	1
Columbia River	RICHPS1 HRM46.4	B106Y4	36788	1
Columbia River	RICHPS1 HRM46.4	B16356	37600	1
Columbia River	RICHPS1 HRM46.4	B17CK2	37873	1
Columbia River	RICHPS1 HRM46.4	B1B6Y3	38245	1
Columbia River	RICHPS1 HRM46.4	B183R6	37963	1
Columbia River	RICHPS1 HRM46.4	B183T1	37963	1
Columbia River	RICHPS1 HRM46.4	B1BX50	38340	1
Columbia River	RICHPS1 HRM46.4	B1BW42	38340	1
Columbia River	RICHPS1 HRM46.4	B1B757	38245	1
Columbia River	RICHPS1 HRM46.4	B183P9	37963	1
Columbia River	RICHPS1 HRM46.4	B1B726	38245	1
Columbia River	RICHPS1 HRM46.4	B184P9	37963	1
Columbia River	RICHPS1 HRM46.4	B18TH9	38076	1
Columbia River	RICHPS1 HRM46.4	B18V19	38076	1
Columbia River	RICHPS1 HRM46.4	B183V1	37963	1
Columbia River	RICHPS1 HRM46.4	B18TF5	38076	1
Columbia River	RICHPS1 HRM46.4	B1BW37	38340	1
Columbia River	RICHPS1 HRM46.4	B19J70	38162	1
Columbia River	RICHPS1 HRM46.4	B1B450	38245	1
Columbia River	RICHPS1 HRM46.4	B17HK9	37873	1
Columbia River	RICHPS1 HRM46.4	B19HN8	38162	1
Columbia River	RICHPS10HRM46.4	B124Y8	37054	1
Columbia River	RICHPS10HRM46.4	B147V2	37341	1
Columbia River	RICHPS10HRM46.4	B0YCK2	36697	1
Columbia River	RICHPS10HRM46.4	B0XRV6	36613	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS10HRM46.4	B158M6	37509	1
Columbia River	RICHPS10HRM46.4	B11236	36865	1
Columbia River	RICHPS10HRM46.4	B16351	37600	1
Columbia River	RICHPS10HRM46.4	B0WCB5	36419	1
Columbia River	RICHPS10HRM46.4	B12530	37054	1
Columbia River	RICHPS10HRM46.4	B11J35	36948	1
Columbia River	RICHPS10HRM46.4	B11H36	36948	1
Columbia River	RICHPS10HRM46.4	B16KC6	37705	1
Columbia River	RICHPS10HRM46.4	B0YCD4	36697	1
Columbia River	RICHPS10HRM46.4	B14T05	37418	1
Columbia River	RICHPS10HRM46.4	B0YCB5	36697	1
Columbia River	RICHPS10HRM46.4	B13LH2	37229	1
Columbia River	RICHPS10HRM46.4	B12VL8	37149	1
Columbia River	RICHPS10HRM46.4	B164K5	37600	1
Columbia River	RICHPS10HRM46.4	B17CN8	37873	1
Columbia River	RICHPS10HRM46.4	B171V8	37782	1
Columbia River	RICHPS10HRM46.4	B13LF0	37229	1
Columbia River	RICHPS10HRM46.4	B16361	37600	1
Columbia River	RICHPS10HRM46.4	B0YCF6	36697	1
Columbia River	RICHPS10HRM46.4	B13LJ2	37229	1
Columbia River	RICHPS10HRM46.4	B16339	37600	1
Columbia River	RICHPS10HRM46.4	B11H58	36948	1
Columbia River	RICHPS10HRM46.4	B158R7	37509	1
Columbia River	RICHPS10HRM46.4	B11H48	36948	1
Columbia River	RICHPS10HRM46.4	B12TK1	37147	1
Columbia River	RICHPS10HRM46.4	B17276	37782	1
Columbia River	RICHPS10HRM46.4	B0V244	36325	1
Columbia River	RICHPS10HRM46.4	B11122	36865	1
Columbia River	RICHPS10HRM46.4	B17CK7	37873	1
Columbia River	RICHPS10HRM46.4	B13LT4	37229	1
Columbia River	RICHPS10HRM46.4	B0V255	36325	1
Columbia River	RICHPS10HRM46.4	B106Y9	36788	1
Columbia River	RICHPS10HRM46.4	B12510	37054	1
Columbia River	RICHPS10HRM46.4	B14RV2	37418	1
Columbia River	RICHPS10HRM46.4	B12TD3	37147	1
Columbia River	RICHPS10HRM46.4	B106M8	36788	1
Columbia River	RICHPS10HRM46.4	B124X0	37054	1
Columbia River	RICHPS10HRM46.4	B16LB6	37705	1
Columbia River	RICHPS10HRM46.4	B0X450	36500	1
Columbia River	RICHPS10HRM46.4	B15986	37509	1
Columbia River	RICHPS10HRM46.4	B146X3	37341	1
Columbia River	RICHPS10HRM46.4	B16L94	37705	1
Columbia River	RICHPS10HRM46.4	B106V9	36788	1
Columbia River	RICHPS10HRM46.4	B12T83	37147	1
Columbia River	RICHPS10HRM46.4	B0X3W9	36500	1
Columbia River	RICHPS10HRM46.4	B0X401	36500	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS10HRM46.4	B14RX3	37418	1
Columbia River	RICHPS10HRM46.4	B0X3Y1	36500	1
Columbia River	RICHPS10HRM46.4	B17CD5	37873	1
Columbia River	RICHPS10HRM46.4	B158H1	37509	1
Columbia River	RICHPS10HRM46.4	B0XRN7	36613	1
Columbia River	RICHPS10HRM46.4	B0WB82	36419	1
Columbia River	RICHPS10HRM46.4	B0XRJ8	36613	1
Columbia River	RICHPS10HRM46.4	B17200	37782	1
Columbia River	RICHPS10HRM46.4	B11144	36865	1
Columbia River	RICHPS10HRM46.4	B10742	36788	1
Columbia River	RICHPS10HRM46.4	B0V227	36325	1
Columbia River	RICHPS10HRM46.4	B0V226	36325	1
Columbia River	RICHPS10HRM46.4	B0WB34	36419	1
Columbia River	RICHPS10HRM46.4	B0XRL1	36613	1
Columbia River	RICHPS10HRM46.4	B171X0	37782	1
Columbia River	RICHPS10HRM46.4	B14RW3	37418	1
Columbia River	RICHPS10HRM46.4	B11134	36865	1
Columbia River	RICHPS10HRM46.4	B16LC6	37705	1
Columbia River	RICHPS10HRM46.4	B1BW47	38340	1
Columbia River	RICHPS10HRM46.4	B1B455	38245	1
Columbia River	RICHPS10HRM46.4	B18V24	38076	1
Columbia River	RICHPS10HRM46.4	B18TJ4	38076	1
Columbia River	RICHPS10HRM46.4	B1B731	38245	1
Columbia River	RICHPS10HRM46.4	B1B762	38245	1
Columbia River	RICHPS10HRM46.4	B183R4	37963	1
Columbia River	RICHPS10HRM46.4	B183T6	37963	1
Columbia River	RICHPS10HRM46.4	B184R4	37963	1
Columbia River	RICHPS10HRM46.4	B1BX55	38340	1
Columbia River	RICHPS10HRM46.4	B183V6	37963	1
Columbia River	RICHPS10HRM46.4	B19J75	38162	1
Columbia River	RICHPS10HRM46.4	B19HP4	38162	1
Columbia River	RICHPS10HRM46.4	B17HL4	37873	1
Columbia River	RICHPS10HRM46.4	B1B6Y8	38245	1
Columbia River	RICHPS2 HRM46.4	B16L90	37705	1
Columbia River	RICHPS2 HRM46.4	B15982	37509	1
Columbia River	RICHPS2 HRM46.4	B16347	37600	1
Columbia River	RICHPS2 HRM46.4	B0X3W5	36500	1
Columbia River	RICHPS2 HRM46.4	B14RW9	37418	1
Columbia River	RICHPS2 HRM46.4	B164K1	37600	1
Columbia River	RICHPS2 HRM46.4	B0Y CJ8	36697	1
Columbia River	RICHPS2 HRM46.4	B0WB30	36419	1
Columbia River	RICHPS2 HRM46.4	B0X3X7	36500	1
Columbia River	RICHPS2 HRM46.4	B17CD1	37873	1
Columbia River	RICHPS2 HRM46.4	B12TC9	37147	1
Columbia River	RICHPS2 HRM46.4	B16LB2	37705	1
Columbia River	RICHPS2 HRM46.4	B17278	37782	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS2 HRM46.4	B16LC2	37705	1
Columbia River	RICHPS2 HRM46.4	B158F7	37509	1
Columbia River	RICHPS2 HRM46.4	B12526	37054	1
Columbia River	RICHPS2 HRM46.4	B14T01	37418	1
Columbia River	RICHPS2 HRM46.4	B11J31	36948	1
Columbia River	RICHPS2 HRM46.4	B14RT8	37418	1
Columbia River	RICHPS2 HRM46.4	B11232	36865	1
Columbia River	RICHPS2 HRM46.4	B0WCB6	36419	1
Columbia River	RICHPS2 HRM46.4	B121R9	37028	1
Columbia River	RICHPS2 HRM46.4	B106Y5	36788	1
Columbia River	RICHPS2 HRM46.4	B16357	37600	1
Columbia River	RICHPS2 HRM46.4	B146X5	37341	1
Columbia River	RICHPS2 HRM46.4	B10738	36788	1
Columbia River	RICHPS2 HRM46.4	B124W6	37054	1
Columbia River	RICHPS2 HRM46.4	B14RV9	37418	1
Columbia River	RICHPS2 HRM46.4	B12506	37054	1
Columbia River	RICHPS2 HRM46.4	B12VL4	37147	1
Columbia River	RICHPS2 HRM46.4	B11130	36865	1
Columbia River	RICHPS2 HRM46.4	B16KC8	37705	1
Columbia River	RICHPS2 HRM46.4	B0XRJ4	36613	1
Columbia River	RICHPS2 HRM46.4	B13LH8	37229	1
Columbia River	RICHPS2 HRM46.4	B12TJ7	37147	1
Columbia River	RICHPS2 HRM46.4	B0V236	36325	1
Columbia River	RICHPS2 HRM46.4	B171V4	37782	1
Columbia River	RICHPS2 HRM46.4	B11118	36865	1
Columbia River	RICHPS2 HRM46.4	B11140	36865	1
Columbia River	RICHPS2 HRM46.4	B0YCB1	36697	1
Columbia River	RICHPS2 HRM46.4	B0XRK7	36613	1
Columbia River	RICHPS2 HRM46.4	B171Y6	37782	1
Columbia River	RICHPS2 HRM46.4	B158R3	37509	1
Columbia River	RICHPS2 HRM46.4	B147T8	37341	1
Columbia River	RICHPS2 HRM46.4	B0V211	36325	1
Columbia River	RICHPS2 HRM46.4	B0XRV8	36613	1
Columbia River	RICHPS2 HRM46.4	B0V210	36325	1
Columbia River	RICHPS2 HRM46.4	B124Y4	37054	1
Columbia River	RICHPS2 HRM46.4	B17CN4	37873	1
Columbia River	RICHPS2 HRM46.4	B11H44	36948	1
Columbia River	RICHPS2 HRM46.4	B11H54	36948	1
Columbia River	RICHPS2 HRM46.4	B13LD6	37229	1
Columbia River	RICHPS2 HRM46.4	B0X3Y7	36500	1
Columbia River	RICHPS2 HRM46.4	B13LT6	37229	1
Columbia River	RICHPS2 HRM46.4	B0YCF2	36697	1
Columbia River	RICHPS2 HRM46.4	B17CK3	37873	1
Columbia River	RICHPS2 HRM46.4	B0XRN3	36613	1
Columbia River	RICHPS2 HRM46.4	B106V5	36788	1
Columbia River	RICHPS2 HRM46.4	B0V247	36325	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS2 HRM46.4	B0X446	36500	1
Columbia River	RICHPS2 HRM46.4	B12T79	37147	1
Columbia River	RICHPS2 HRM46.4	B109D4	36788	1
Columbia River	RICHPS2 HRM46.4	B11H32	36948	1
Columbia River	RICHPS2 HRM46.4	B0YCD0	36697	1
Columbia River	RICHPS2 HRM46.4	B158M2	37509	1
Columbia River	RICHPS2 HRM46.4	B0WB78	36419	1
Columbia River	RICHPS2 HRM46.4	B13LF8	37229	1
Columbia River	RICHPS2 HRM46.4	B106N0	36788	1
Columbia River	RICHPS2 HRM46.4	B16335	37600	1
Columbia River	RICHPS2 HRM46.4	B171W6	37782	1
Columbia River	RICHPS2 HRM46.4	B1BW43	38340	1
Columbia River	RICHPS2 HRM46.4	B17HL0	37873	1
Columbia River	RICHPS2 HRM46.4	B1BX51	38340	1
Columbia River	RICHPS2 HRM46.4	B184R0	37963	1
Columbia River	RICHPS2 HRM46.4	B183V2	37963	1
Columbia River	RICHPS2 HRM46.4	B18V20	38076	1
Columbia River	RICHPS2 HRM46.4	B1B758	38245	1
Columbia River	RICHPS2 HRM46.4	B1B451	38245	1
Columbia River	RICHPS2 HRM46.4	B1B727	38245	1
Columbia River	RICHPS2 HRM46.4	B183R0	37963	1
Columbia River	RICHPS2 HRM46.4	B18TJ0	38076	1
Columbia River	RICHPS2 HRM46.4	B183T2	37963	1
Columbia River	RICHPS2 HRM46.4	B1B6Y4	38245	1
Columbia River	RICHPS2 HRM46.4	B19HN9	38162	1
Columbia River	RICHPS2 HRM46.4	B19J71	38162	1
Columbia River	RICHPS3 HRM46.4	B11119	36865	1
Columbia River	RICHPS3 HRM46.4	B0WB79	36419	1
Columbia River	RICHPS3 HRM46.4	B13LF9	37229	1
Columbia River	RICHPS3 HRM46.4	B0XRv9	36613	1
Columbia River	RICHPS3 HRM46.4	B13LH9	37229	1
Columbia River	RICHPS3 HRM46.4	B0XRn4	36613	1
Columbia River	RICHPS3 HRM46.4	B13LT7	37229	1
Columbia River	RICHPS3 HRM46.4	B0XRk8	36613	1
Columbia River	RICHPS3 HRM46.4	B146X6	37341	1
Columbia River	RICHPS3 HRM46.4	B0XRJ5	36613	1
Columbia River	RICHPS3 HRM46.4	B13LD7	37229	1
Columbia River	RICHPS3 HRM46.4	B0X447	36500	1
Columbia River	RICHPS3 HRM46.4	B0YCD1	36697	1
Columbia River	RICHPS3 HRM46.4	B14RT9	37418	1
Columbia River	RICHPS3 HRM46.4	B124Y5	37054	1
Columbia River	RICHPS3 HRM46.4	B14RW0	37418	1
Columbia River	RICHPS3 HRM46.4	B0X3X8	36500	1
Columbia River	RICHPS3 HRM46.4	B14RX0	37418	1
Columbia River	RICHPS3 HRM46.4	B0X3W6	36500	1
Columbia River	RICHPS3 HRM46.4	B14T02	37418	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS3 HRM46.4	B0WCB7	36419	1
Columbia River	RICHPS3 HRM46.4	B158F8	37509	1
Columbia River	RICHPS3 HRM46.4	B147T9	37341	1
Columbia River	RICHPS3 HRM46.4	B106Y6	36788	1
Columbia River	RICHPS3 HRM46.4	B11131	36865	1
Columbia River	RICHPS3 HRM46.4	B11141	36865	1
Columbia River	RICHPS3 HRM46.4	B11233	36865	1
Columbia River	RICHPS3 HRM46.4	B11H33	36948	1
Columbia River	RICHPS3 HRM46.4	B11H45	36948	1
Columbia River	RICHPS3 HRM46.4	B11H55	36948	1
Columbia River	RICHPS3 HRM46.4	B11J32	36948	1
Columbia River	RICHPS3 HRM46.4	B121T0	37028	1
Columbia River	RICHPS3 HRM46.4	B124W7	37054	1
Columbia River	RICHPS3 HRM46.4	B0YCB2	36697	1
Columbia River	RICHPS3 HRM46.4	B12507	37054	1
Columbia River	RICHPS3 HRM46.4	B0X3Y8	36500	1
Columbia River	RICHPS3 HRM46.4	B12527	37054	1
Columbia River	RICHPS3 HRM46.4	B106V6	36788	1
Columbia River	RICHPS3 HRM46.4	B12T80	37147	1
Columbia River	RICHPS3 HRM46.4	B106N1	36788	1
Columbia River	RICHPS3 HRM46.4	B12TD0	37147	1
Columbia River	RICHPS3 HRM46.4	B0YCY9	36697	1
Columbia River	RICHPS3 HRM46.4	B12TJ8	37147	1
Columbia River	RICHPS3 HRM46.4	B0YCF3	36697	1
Columbia River	RICHPS3 HRM46.4	B12VL5	37147	1
Columbia River	RICHPS3 HRM46.4	B10739	36788	1
Columbia River	RICHPS3 HRM46.4	B16KC9	37705	1
Columbia River	RICHPS3 HRM46.4	B0V237	36325	1
Columbia River	RICHPS3 HRM46.4	B171W7	37782	1
Columbia River	RICHPS3 HRM46.4	B17279	37782	1
Columbia River	RICHPS3 HRM46.4	B158M3	37509	1
Columbia River	RICHPS3 HRM46.4	B17CD2	37873	1
Columbia River	RICHPS3 HRM46.4	B16LC3	37705	1
Columbia River	RICHPS3 HRM46.4	B16LB3	37705	1
Columbia River	RICHPS3 HRM46.4	B0V248	36325	1
Columbia River	RICHPS3 HRM46.4	B16L91	37705	1
Columbia River	RICHPS3 HRM46.4	B171Y7	37782	1
Columbia River	RICHPS3 HRM46.4	B17CK4	37873	1
Columbia River	RICHPS3 HRM46.4	B171V5	37782	1
Columbia River	RICHPS3 HRM46.4	B164K2	37600	1
Columbia River	RICHPS3 HRM46.4	B17CN5	37873	1
Columbia River	RICHPS3 HRM46.4	B0V213	36325	1
Columbia River	RICHPS3 HRM46.4	B0V212	36325	1
Columbia River	RICHPS3 HRM46.4	B16358	37600	1
Columbia River	RICHPS3 HRM46.4	B16348	37600	1
Columbia River	RICHPS3 HRM46.4	B0WB31	36419	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS3 HRM46.4	B15983	37509	1
Columbia River	RICHPS3 HRM46.4	B158R4	37509	1
Columbia River	RICHPS3 HRM46.4	B16336	37600	1
Columbia River	RICHPS3 HRM46.4	B1B6Y5	38245	1
Columbia River	RICHPS3 HRM46.4	B17HL1	37873	1
Columbia River	RICHPS3 HRM46.4	B183T3	37963	1
Columbia River	RICHPS3 HRM46.4	B184R1	37963	1
Columbia River	RICHPS3 HRM46.4	B1B728	38245	1
Columbia River	RICHPS3 HRM46.4	B18TJ1	38076	1
Columbia River	RICHPS3 HRM46.4	B18V21	38076	1
Columbia River	RICHPS3 HRM46.4	B183V3	37963	1
Columbia River	RICHPS3 HRM46.4	B1BX52	38340	1
Columbia River	RICHPS3 HRM46.4	B19HP0	38162	1
Columbia River	RICHPS3 HRM46.4	B19J72	38162	1
Columbia River	RICHPS3 HRM46.4	B1BW44	38340	1
Columbia River	RICHPS3 HRM46.4	B183R1	37963	1
Columbia River	RICHPS3 HRM46.4	B1B452	38245	1
Columbia River	RICHPS3 HRM46.4	B1B759	38245	1
Columbia River	RICHPS4 HRM46.4	B0V249	36325	1
Columbia River	RICHPS4 HRM46.4	B0V214	36325	1
Columbia River	RICHPS4 HRM46.4	B0V238	36325	1
Columbia River	RICHPS4 HRM46.4	B0V215	36325	1
Columbia River	RICHPS5 HRM46.4	B124W8	37054	1
Columbia River	RICHPS5 HRM46.4	B171Y8	37782	1
Columbia River	RICHPS5 HRM46.4	B11120	36865	1
Columbia River	RICHPS5 HRM46.4	B12508	37054	1
Columbia River	RICHPS5 HRM46.4	B17280	37782	1
Columbia River	RICHPS5 HRM46.4	B11132	36865	1
Columbia River	RICHPS5 HRM46.4	B12528	37054	1
Columbia River	RICHPS5 HRM46.4	B17CN6	37873	1
Columbia River	RICHPS5 HRM46.4	B11234	36865	1
Columbia River	RICHPS5 HRM46.4	B11J33	36948	1
Columbia River	RICHPS5 HRM46.4	B11142	36865	1
Columbia River	RICHPS5 HRM46.4	B17CD3	37873	1
Columbia River	RICHPS5 HRM46.4	B121T1	37028	1
Columbia River	RICHPS5 HRM46.4	B11H34	36948	1
Columbia River	RICHPS5 HRM46.4	B17CK5	37873	1
Columbia River	RICHPS5 HRM46.4	B11H56	36948	1
Columbia River	RICHPS5 HRM46.4	B11H46	36948	1
Columbia River	RICHPS5 HRM46.4	B124Y6	37054	1
Columbia River	RICHPS5 HRM46.4	B13LT8	37229	1
Columbia River	RICHPS5 HRM46.4	B158F9	37509	1
Columbia River	RICHPS5 HRM46.4	B158M4	37509	1
Columbia River	RICHPS5 HRM46.4	B14T03	37418	1
Columbia River	RICHPS5 HRM46.4	B158R5	37509	1
Columbia River	RICHPS5 HRM46.4	B14RX1	37418	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS5 HRM46.4	B15984	37509	1
Columbia River	RICHPS5 HRM46.4	B14RW1	37418	1
Columbia River	RICHPS5 HRM46.4	B16337	37600	1
Columbia River	RICHPS5 HRM46.4	B16349	37600	1
Columbia River	RICHPS5 HRM46.4	B147V0	37341	1
Columbia River	RICHPS5 HRM46.4	B16359	37600	1
Columbia River	RICHPS5 HRM46.4	B12TJ9	37147	1
Columbia River	RICHPS5 HRM46.4	B164K3	37600	1
Columbia River	RICHPS5 HRM46.4	B171W8	37782	1
Columbia River	RICHPS5 HRM46.4	B16KD0	37705	1
Columbia River	RICHPS5 HRM46.4	B13LJ0	37229	1
Columbia River	RICHPS5 HRM46.4	B13LH0	37229	1
Columbia River	RICHPS5 HRM46.4	B16L92	37705	1
Columbia River	RICHPS5 HRM46.4	B13LD8	37229	1
Columbia River	RICHPS5 HRM46.4	B16LB4	37705	1
Columbia River	RICHPS5 HRM46.4	B12VL6	37147	1
Columbia River	RICHPS5 HRM46.4	B16LC4	37705	1
Columbia River	RICHPS5 HRM46.4	B14RV0	37418	1
Columbia River	RICHPS5 HRM46.4	B171V6	37782	1
Columbia River	RICHPS5 HRM46.4	B12TD1	37147	1
Columbia River	RICHPS5 HRM46.4	B12T81	37147	1
Columbia River	RICHPS5 HRM46.4	B146X7	37341	1
Columbia River	RICHPS5 HRM46.4	B0YCF4	36697	1
Columbia River	RICHPS5 HRM46.4	B0X3W7	36500	1
Columbia River	RICHPS5 HRM46.4	B106Y7	36788	1
Columbia River	RICHPS5 HRM46.4	B0XRN5	36613	1
Columbia River	RICHPS5 HRM46.4	B0WCB8	36419	1
Columbia River	RICHPS5 HRM46.4	B0WB32	36419	1
Columbia River	RICHPS5 HRM46.4	B106V7	36788	1
Columbia River	RICHPS5 HRM46.4	B0X3X9	36500	1
Columbia River	RICHPS5 HRM46.4	B106N2	36788	1
Columbia River	RICHPS5 HRM46.4	B0X3Y9	36500	1
Columbia River	RICHPS5 HRM46.4	B0YCK0	36697	1
Columbia River	RICHPS5 HRM46.4	B10740	36788	1
Columbia River	RICHPS5 HRM46.4	B0V250	36325	1
Columbia River	RICHPS5 HRM46.4	B0WB80	36419	1
Columbia River	RICHPS5 HRM46.4	B0X448	36500	1
Columbia River	RICHPS5 HRM46.4	B0YCD2	36697	1
Columbia River	RICHPS5 HRM46.4	B0V239	36325	1
Columbia River	RICHPS5 HRM46.4	B0V216	36325	1
Columbia River	RICHPS5 HRM46.4	B0XRJ6	36613	1
Columbia River	RICHPS5 HRM46.4	B0XRK9	36613	1
Columbia River	RICHPS5 HRM46.4	B0YCB3	36697	1
Columbia River	RICHPS5 HRM46.4	B0V217	36325	1
Columbia River	RICHPS5 HRM46.4	B0XRW0	36613	1
Columbia River	RICHPS5 HRM46.4	B19J73	38162	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS5 HRM46.4	B17HL2	37873	1
Columbia River	RICHPS5 HRM46.4	B1B6Y6	38245	1
Columbia River	RICHPS5 HRM46.4	B18V22	38076	1
Columbia River	RICHPS5 HRM46.4	B1B453	38245	1
Columbia River	RICHPS5 HRM46.4	B19HP1	38162	1
Columbia River	RICHPS5 HRM46.4	B183T4	37963	1
Columbia River	RICHPS5 HRM46.4	B18TJ2	38076	1
Columbia River	RICHPS5 HRM46.4	B184R2	37963	1
Columbia River	RICHPS5 HRM46.4	B1B760	38245	1
Columbia River	RICHPS5 HRM46.4	B1B729	38245	1
Columbia River	RICHPS5 HRM46.4	B183V4	37963	1
Columbia River	RICHPS5 HRM46.4	B1BW45	38340	1
Columbia River	RICHPS5 HRM46.4	B1BX53	38340	1
Columbia River	RICHPS5 HRM46.4	B183R2	37963	1
Columbia River	RICHPS6 HRM46.4	B0V251	36325	1
Columbia River	RICHPS6 HRM46.4	B0V240	36325	1
Columbia River	RICHPS6 HRM46.4	B0V218	36325	1
Columbia River	RICHPS6 HRM46.4	B0V219	36325	1
Columbia River	RICHPS7 HRM46.4	B14RV1	37418	1
Columbia River	RICHPS7 HRM46.4	B0XRL0	36613	1
Columbia River	RICHPS7 HRM46.4	B0X3W8	36500	1
Columbia River	RICHPS7 HRM46.4	B14RW2	37418	1
Columbia River	RICHPS7 HRM46.4	B147V1	37341	1
Columbia River	RICHPS7 HRM46.4	B13LT9	37229	1
Columbia River	RICHPS7 HRM46.4	B0XRJ7	36613	1
Columbia River	RICHPS7 HRM46.4	B0X400	36500	1
Columbia River	RICHPS7 HRM46.4	B146X8	37341	1
Columbia River	RICHPS7 HRM46.4	B0X449	36500	1
Columbia River	RICHPS7 HRM46.4	B0X3Y0	36500	1
Columbia River	RICHPS7 HRM46.4	B16KD1	37705	1
Columbia River	RICHPS7 HRM46.4	B17CN7	37873	1
Columbia River	RICHPS7 HRM46.4	B17CK6	37873	1
Columbia River	RICHPS7 HRM46.4	B17CD4	37873	1
Columbia River	RICHPS7 HRM46.4	B0V220	36325	1
Columbia River	RICHPS7 HRM46.4	B17281	37782	1
Columbia River	RICHPS7 HRM46.4	B0V221	36325	1
Columbia River	RICHPS7 HRM46.4	B171Y9	37782	1
Columbia River	RICHPS7 HRM46.4	B171W9	37782	1
Columbia River	RICHPS7 HRM46.4	B171V7	37782	1
Columbia River	RICHPS7 HRM46.4	B16LC5	37705	1
Columbia River	RICHPS7 HRM46.4	B0V241	36325	1
Columbia River	RICHPS7 HRM46.4	B158H0	37509	1
Columbia River	RICHPS7 HRM46.4	B16L93	37705	1
Columbia River	RICHPS7 HRM46.4	B14RX2	37418	1
Columbia River	RICHPS7 HRM46.4	B164K4	37600	1
Columbia River	RICHPS7 HRM46.4	B16360	37600	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS7 HRM46.4	B16350	37600	1
Columbia River	RICHPS7 HRM46.4	B16338	37600	1
Columbia River	RICHPS7 HRM46.4	B0V252	36325	1
Columbia River	RICHPS7 HRM46.4	B15985	37509	1
Columbia River	RICHPS7 HRM46.4	B158R6	37509	1
Columbia River	RICHPS7 HRM46.4	B158M5	37509	1
Columbia River	RICHPS7 HRM46.4	B0WB33	36419	1
Columbia River	RICHPS7 HRM46.4	B0WB81	36419	1
Columbia River	RICHPS7 HRM46.4	B14T04	37418	1
Columbia River	RICHPS7 HRM46.4	B124Y7	37054	1
Columbia River	RICHPS7 HRM46.4	B16LB5	37705	1
Columbia River	RICHPS7 HRM46.4	B11133	36865	1
Columbia River	RICHPS7 HRM46.4	B124W9	37054	1
Columbia River	RICHPS7 HRM46.4	B10741	36788	1
Columbia River	RICHPS7 HRM46.4	B106Y8	36788	1
Columbia River	RICHPS7 HRM46.4	B12509	37054	1
Columbia River	RICHPS7 HRM46.4	B106V8	36788	1
Columbia River	RICHPS7 HRM46.4	B12529	37054	1
Columbia River	RICHPS7 HRM46.4	B106N3	36788	1
Columbia River	RICHPS7 HRM46.4	B12T82	37147	1
Columbia River	RICHPS7 HRM46.4	B0YCK1	36697	1
Columbia River	RICHPS7 HRM46.4	B12TD2	37147	1
Columbia River	RICHPS7 HRM46.4	B11143	36865	1
Columbia River	RICHPS7 HRM46.4	B11J34	36948	1
Columbia River	RICHPS7 HRM46.4	B11H57	36948	1
Columbia River	RICHPS7 HRM46.4	B13LJ1	37229	1
Columbia River	RICHPS7 HRM46.4	B0YCD3	36697	1
Columbia River	RICHPS7 HRM46.4	B0XRN6	36613	1
Columbia River	RICHPS7 HRM46.4	B11H35	36948	1
Columbia River	RICHPS7 HRM46.4	B13LH1	37229	1
Columbia River	RICHPS7 HRM46.4	B0XRW1	36613	1
Columbia River	RICHPS7 HRM46.4	B13LD9	37229	1
Columbia River	RICHPS7 HRM46.4	B11235	36865	1
Columbia River	RICHPS7 HRM46.4	B12VL7	37147	1
Columbia River	RICHPS7 HRM46.4	B0WCB9	36419	1
Columbia River	RICHPS7 HRM46.4	B12TK0	37147	1
Columbia River	RICHPS7 HRM46.4	B0YCF5	36697	1
Columbia River	RICHPS7 HRM46.4	B11H47	36948	1
Columbia River	RICHPS7 HRM46.4	B11121	36865	1
Columbia River	RICHPS7 HRM46.4	B0YCB4	36697	1
Columbia River	RICHPS7 HRM46.4	B1B454	38245	1
Columbia River	RICHPS7 HRM46.4	B1B730	38245	1
Columbia River	RICHPS7 HRM46.4	B19J74	38162	1
Columbia River	RICHPS7 HRM46.4	B1BW46	38340	1
Columbia River	RICHPS7 HRM46.4	B183R3	37963	1
Columbia River	RICHPS7 HRM46.4	B184R3	37963	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RICHPS7 HRM46.4	B183T5	37963	1
Columbia River	RICHPS7 HRM46.4	B18TJ3	38076	1
Columbia River	RICHPS7 HRM46.4	B1BX54	38340	1
Columbia River	RICHPS7 HRM46.4	B183V5	37963	1
Columbia River	RICHPS7 HRM46.4	B17HL3	37873	1
Columbia River	RICHPS7 HRM46.4	B1B761	38245	1
Columbia River	RICHPS7 HRM46.4	B1B6Y7	38245	1
Columbia River	RICHPS7 HRM46.4	B18V23	38076	1
Columbia River	RICHPS7 HRM46.4	B19HP2	38162	1
Columbia River	RICHPS8 HRM46.4	B0V223	36325	1
Columbia River	RICHPS8 HRM46.4	B0V242	36325	1
Columbia River	RICHPS8 HRM46.4	B0V222	36325	1
Columbia River	RICHPS8 HRM46.4	B0V253	36325	1
Columbia River	RICHPS9 HRM46.4	B0V243	36325	1
Columbia River	RICHPS9 HRM46.4	B0V225	36325	1
Columbia River	RICHPS9 HRM46.4	B0V254	36325	1
Columbia River	RICHPS9 HRM46.4	B0V224	36325	1
Columbia River	Ringold WW	B170R8	37755	1
Columbia River	Ringold WW	B170T0	37755	1
Columbia River	Ringold WW	B170R9	37755	1
Columbia River	Ringold WW	B16WM7	37755	1
Columbia River	Ringold WW	B16WM8	37755	1
Columbia River	Ringold WW	B16WM9	37755	1
Columbia River	Ringold WW	B16WT0	37755	1
Columbia River	Ringold WW	B16WT1	37755	1
Columbia River	Ringold WW	B16WT2	37755	1
Columbia River	Ringold WW	B16WT3	37755	1
Columbia River	Ringold WW	B16WT4	37755	1
Columbia River	Ringold WW	B16WT5	37755	1
Columbia River	RIVERVIEW	29056	37399	1
Columbia River	RIVERVIEW	33166	38114	1
Columbia River	RIVERVIEW	30879	37750	1
Columbia River	RL PUMPHSE	23426	36467	1
Columbia River	RL PUMPHSE	23424	36285	1
Columbia River	RL PUMPHSE 1/10	26203	37147	1
Columbia River	RL PUMPHSE 2/10	26204	37147	1
Columbia River	RL PUMPHSE 3/10	26205	37147	1
Columbia River	RL PUMPHSE 5/10	26206	37147	1
Columbia River	RL PUMPHSE 7/10	26207	37147	1
Columbia River	RL PUMPHSE 10/10	26990	37147	1
Columbia River	SB-037-1	B10F97	36824	1
Columbia River	SB-037-1	B10F99	36824	1
Columbia River	SB-037-1	B10F98	36824	1
Columbia River	SD-110-2	B10JT1	36816	1
Columbia River	SD-110-2	B10JR0	36816	1
Columbia River	SD-98-1	B10JV0	36811	1

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	SD-98-1	B10JT9	36811	1
Columbia River	SD-98-1	B10JR1	36811	1
Columbia River	SD-98-1	B10JT2	36811	1
Columbia River	SF-190-4	B10FC1	36837	1
Columbia River	SF-190-4	B10FB9	36837	1
Columbia River	SF-190-4	B10FC0	36837	1
Columbia River	SF-211-1	B10FC5	36837	1
Columbia River	SF-211-1	B10FC7	36837	1
Columbia River	SF-211-1	B10FC6	36837	1
Columbia River	SH-144-1	B10JT3	36812	1
Columbia River	SH-144-1	B10JR2	36812	1
Columbia River	SH-150-1	B10JT6	36831	1
Columbia River	SH-150-1	B10JR5	36831	1
Columbia River	SH-153-1	B10JR7	36831	1
Columbia River	SH-153-1	B10JT8	36831	1
Columbia River	TOWNSITE 1/10	23432	36424	1
Columbia River	TOWNSITE 1/10	29097	37508	1
Columbia River	TOWNSITE 10/10	29091	37508	1
Columbia River	TOWNSITE 2/10	23433	36424	1
Columbia River	TOWNSITE 2/10	29082	37508	1
Columbia River	TOWNSITE 3/10	29083	37508	1
Columbia River	TOWNSITE 3/10	23434	36424	1
Columbia River	TOWNSITE 5/10	29084	37508	1
Columbia River	TOWNSITE 5/10	23436	36424	1
Columbia River	TOWNSITE 7/10	23435	36424	1
Columbia River	TOWNSITE 7/10	29090	37508	1
Columbia River	Wooded Island	24689	36560	1
Columbia River	WSU-Richland	B0VWW8	36342	1
Columbia River	WSU-Richland	B0VWW0	36342	1
Columbia River	100D Area	B14L06	37393	2
Columbia River	100D Area	B14PW8	37417	2
Columbia River	100D Area	B14PW7	37417	2
Columbia River	100D Area	B14L07	37393	2
Columbia River	100D Area	B14K63	37379	2
Columbia River	100D Area	B14K61	37379	2
Columbia River	100D Area	B14K60	37379	2
Columbia River	100D Area	B14K62	37379	2
Columbia River	100H Area	B14PX0	37417	2
Columbia River	100H Area	B14L08	37393	2
Columbia River	100H Area	B14L09	37393	2
Columbia River	100H Area	B14PW9	37417	2
Columbia River	Richland WNTK	112 00288	38001	2
Columbia River	Richland WNTK	125 00287	38001	2
Columbia River	HRM 10.5	290615a	37043	3
Columbia River	HRM 10.9	271813a	37043	3
Columbia River	HRM 11.1	182414a	37043	3

Table B-2**Summary Table of Segment 2 Surface Water Samples By Area, Site, Date, and Category
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	HRM 11.1	181215a	37043	3
Columbia River	HRM 12.5	172915a	37043	3
Columbia River	HRM 15	190616b	37043	3
Columbia River	HRM 15	190616a	37043	3
Columbia River	HRM 15.4	172916b	37043	3
Columbia River	HRM 16.3	170214a	37043	3
Columbia River	HRM 18	182310b	37043	3
Columbia River	HRM 19.3	190607a	37043	3
Columbia River	HRM 20.6	182311a	37043	3
Columbia River	HRM 20.6	1906x_a	37043	3
Columbia River	HRM 21	172114a	37043	3
Columbia River	HRM 22.5	2y0915a	37043	3
Columbia River	HRM 22.5	190613a	37043	3
Columbia River	HRM 22.5	2y0915b	37043	3
Columbia River	HRM 26	182312a	37043	3
Columbia River	HRM 27	190516a	37043	3
Columbia River	HRM 3.6	290711a	37043	3
Columbia River	HRM 45.6	181316a	37043	3

Table B-3

Summary Statistics for Sediment Collected from Segment 2 of the Columbia River Including All Categories of Data (units reported "as received")
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Ash Content	%	2	2	100%	--	--	91	93	92
CONV	Nitrogen in ammonia	mg/kg	1	1	100%	--	--	15	15	15
CONV	Percent Solids	%	35	35	100%	--	--	2.0	81	62
CONV	Phosphorous in phosphate	mg/kg	1	1	100%	--	--	0.060	0.060	0.060
CONV	Sulfide	mg/kg	1	1	100%	--	--	2.4	2.4	2.4
CONV	Total Organic Carbon	%	9	9	100%	--	--	0.15	1.9	0.87
CONV	Total Organic Carbon	% dry-wt	4	4	100%	--	--	3.1	3.4	3.2
CONV	Total Organic Carbon	mg/kg	26	26	100%	--	--	175	16,500	4,850
METAL	Aluminum	mg/kg	45	45	100%	--	--	2,460	11,100	6,349
METAL	Antimony	mg/kg	99	61	62%	3.3	18	0.019	6.8	1.4
METAL	Arsenic	mg/kg	108	104	96%	4.5	4.5	0.0082	20	4.6
METAL	Barium	mg/kg	48	47	98%	49	49	35	869	104
METAL	Beryllium	mg/kg	110	85	77%	0.0050	0.25	0.032	2.4	0.74
METAL	Cadmium	mg/kg	112	73	65%	0.20	3.4	3.80E-04	5.6	0.72
METAL	Calcium	mg/kg	45	45	100%	--	--	1,760	9,120	3,720
METAL	Chromium	mg/kg	120	119	99%	0.10	0.10	0.056	112	35
METAL	Cobalt	mg/kg	45	44	98%	6.4	6.4	2.8	10	6.5
METAL	Copper	mg/kg	119	119	100%	--	--	0.18	70	19
METAL	Iron	mg/kg	45	45	100%	--	--	6,480	31,100	14,519
METAL	Lead	mg/kg	108	108	100%	--	--	0.10	76	24
METAL	Magnesium	mg/kg	45	45	100%	--	--	1,480	5,520	3,777
METAL	Manganese	mg/kg	48	48	100%	--	--	94	603	215
METAL	Mercury	mg/kg	108	67	62%	0.0015	0.080	1.60E-05	0.68	0.034
METAL	Molybdenum	mg/kg	8	0	0%	0.59	0.60	--	--	0.30
METAL	Nickel	mg/kg	112	112	100%	--	--	0.64	30	14
METAL	Potassium	mg/kg	45	45	100%	--	--	424	1,650	845
METAL	Selenium	mg/kg	107	29	27%	0.0027	5.0	0.0084	1.6	0.53
METAL	Silver	mg/kg	99	58	59%	0.0012	3.0	0.0020	5.3	0.39
METAL	Sodium	mg/kg	45	45	100%	--	--	97	364	207
METAL	Thallium	mg/kg	99	63	64%	0.26	1.1	0.027	2.4	0.48
METAL	Thorium	mg/Kg	3	3	100%	--	--	7.0	7.9	7.4
METAL	Uranium	mg/Kg	7	7	100%	--	--	1.1	2.6	1.6
METAL	Vanadium	mg/kg	45	45	100%	--	--	6.5	86	31
METAL	Zinc	mg/kg	112	112	100%	--	--	0.18	477	179
RAD_D	Americium-241, Decayed	pCi/g	2	2	100%	--	--	0.0030	0.24	0.12
RAD_D	Antimony-125, Decayed	pCi/g	1	1	100%	--	--	0.0018	0.0018	0.0018
RAD_D	Beryllium-7, Decayed	pCi/g	1	1	100%	--	--	0.30	0.30	0.30
RAD_D	Cesium-134, Decayed	pCi/g	4	4	100%	--	--	2.86E-04	0.0011	6.44E-04
RAD_D	Cesium-137, Decayed	pCi/g	122	122	100%	--	--	0.023	1.5	0.28
RAD_D	Cobalt-57, Decayed	pCi/g	1	1	100%	--	--	3.07E-09	3.07E-09	3.07E-09
RAD_D	Cobalt-60, Decayed	pCi/g	40	40	100%	--	--	0.0033	2.4	0.091
RAD_D	Europium-152, Decayed	pCi/g	37	37	100%	--	--	0.024	0.76	0.24
RAD_D	Europium-154, Decayed	pCi/g	6	6	100%	--	--	0.015	0.075	0.047
RAD_D	Europium-155, Decayed	pCi/g	3	3	100%	--	--	0.0071	0.034	0.024
RAD_D	Manganese-54, Decayed	pCi/g	2	2	100%	--	--	1.15E-08	1.51E-06	7.59E-07

Table B-3

Summary Statistics for Sediment Collected from Segment 2 of the Columbia River Including All Categories of Data (units reported "as received")
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD_D	Neptunium-237, Decayed	pCi/g	2	2	100%	--	--	0.48	0.61	0.54
RAD_D	Plutonium-238, Decayed	pCi/g	15	15	100%	--	--	1.26E-04	0.13	0.016
RAD_D	Plutonium-239/240, Decayed	pCi/g	34	34	100%	--	--	3.98E-04	0.071	0.0064
RAD_D	Potassium-40, Decayed	pCi/g	132	132	100%	--	--	8.4	21	16
RAD_D	Radium-226, Decayed	pCi/g	37	37	100%	--	--	0.42	1.7	0.77
RAD_D	Radium-228, Decayed	pCi/g	1	1	100%	--	--	0.12	0.12	0.12
RAD_D	Strontium-89, Decayed	pCi/g	3	3	100%	--	--	3.43E-42	4.80E-42	3.89E-42
RAD_D	Strontium-90, Decayed	pCi/g	18	18	100%	--	--	0.0020	1.0	0.090
RAD_D	Thorium-228, Decayed	pCi/g	41	41	100%	--	--	0.0041	2.1	0.13
RAD_D	Thorium-230, Decayed	pCi/g	4	4	100%	--	--	0.16	5.6	2.1
RAD_D	Thorium-232, Decayed	pCi/g	40	40	100%	--	--	0.24	3.2	1.1
RAD_D	Thorium-234, Decayed	pCi/g	2	2	100%	--	--	3.70E-60	4.37E-60	4.03E-60
RAD_D	Tritium, Decayed	pCi/g	1	1	100%	--	--	0.038	0.038	0.038
RAD_D	Uranium-233/234, Decayed	pCi/g	36	36	100%	--	--	0.29	2.6	0.82
RAD_D	Uranium-234, Decayed	pCi/g	90	90	100%	--	--	0.071	11	0.82
RAD_D	Uranium-235, Decayed	pCi/g	79	79	100%	--	--	0.0029	0.38	0.039
RAD_D	Uranium-236, Decayed	pCi/g	4	4	100%	--	--	3.11E-05	0.039	0.026
RAD_D	Uranium-238, Decayed	pCi/g	129	129	100%	--	--	0.051	10.0	0.76
RAD_D	Zirconium/Niobium-95, Decayed	pCi/g	2	2	100%	--	--	2.60E-36	3.08E-36	2.84E-36

CONV - Conventional parameter

RAD_D - Decayed radionuclide

Table B-4

Summary Statistics for Sediment Collected from Segment 2 of the Columbia River Including All Categories of Data (units reported "dry-weight")
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Total Organic Carbon	% dry-wt	4	4	100%	--	--	3.1	3.4	3.2
METAL	Aluminum	mg/kg dry-wt	4	4	100%	--	--	0.40	1.2	0.65
METAL	Antimony	mg/kg dry-wt	9	9	100%	--	--	0.39	0.81	0.57
METAL	Arsenic	mg/kg dry-wt	14	14	100%	--	--	0.0020	7.8	3.5
METAL	Barium	mg/kg dry-wt	4	4	100%	--	--	0.40	1.0	0.60
METAL	Beryllium	mg/kg dry-wt	12	12	100%	--	--	0.10	1.6	1.1
METAL	Cadmium	mg/kg dry-wt	18	18	100%	--	--	0.20	1.6	0.61
METAL	Chromium	mg/kg dry-wt	17	13	76%	0.10	0.10	20	88	44
METAL	Copper	mg/kg dry-wt	17	17	100%	--	--	1.2	26	14
METAL	Iron	mg/kg dry-wt	4	4	100%	--	--	2.2	7.6	5.8
METAL	Lead	mg/kg dry-wt	18	18	100%	--	--	1.4	57	19
METAL	Manganese	mg/kg dry-wt	4	4	100%	--	--	4.0	20	12
METAL	Mercury	mg/kg dry-wt	16	8	50%	8.96E-04	0.060	0.0018	0.033	0.0094
METAL	Nickel	mg/kg dry-wt	9	9	100%	--	--	12	21	18
METAL	Selenium	mg/kg dry-wt	13	7	54%	0.35	0.35	0.0010	1.5	0.27
METAL	Silver	mg/kg dry-wt	9	8	89%	0.033	0.033	0.048	0.33	0.21
METAL	Thallium	mg/kg dry-wt	9	9	100%	--	--	0.42	0.77	0.58
METAL	Zinc	mg/kg dry-wt	13	13	100%	--	--	4.0	366	132
RAD_D	Americium-241	pCi/g dry-wt	4	4	100%	--	--	0.0020	0.0049	0.0032
RAD_D	Barium-140	pCi/g dry-wt	1	1	100%	--	--	7.09E-116	7.09E-116	7.09E-116
RAD_D	Beryllium-7	pCi/g dry-wt	11	11	100%	--	--	6.83E-30	0.0031	2.84E-04
RAD_D	Bismuth-214	pCi/g dry-wt	4	4	100%	--	--	3.55E-05	8.93E-05	5.79E-05
RAD_D	Cerium-141	pCi/g dry-wt	2	2	100%	--	--	1.23E-46	1.46E-46	1.35E-46
RAD_D	Cerium-144	pCi/g dry-wt	1	1	100%	--	--	1.68E-06	1.68E-06	1.68E-06
RAD_D	Cesium-134	pCi/g dry-wt	12	12	100%	--	--	2.68E-05	0.0015	3.20E-04
RAD_D	Cesium-137	pCi/g dry-wt	129	129	100%	--	--	0.021	1.2	0.15
RAD_D	Cobalt-57	pCi/g dry-wt	4	4	100%	--	--	4.88E-12	3.58E-04	8.96E-05
RAD_D	Cobalt-58	pCi/g dry-wt	1	1	100%	--	--	2.21E-23	2.21E-23	2.21E-23
RAD_D	Cobalt-60	pCi/g dry-wt	60	60	100%	--	--	0.0014	0.020	0.0059
RAD_D	Europium-152	pCi/g dry-wt	26	26	100%	--	--	0.012	0.11	0.051
RAD_D	Europium-154	pCi/g dry-wt	6	6	100%	--	--	0.015	0.090	0.045
RAD_D	Europium-155	pCi/g dry-wt	1	1	100%	--	--	0.065	0.065	0.065
RAD_D	Iodine-131	pCi/g dry-wt	2	2	100%	--	--	1.07E-180	7.44E-180	4.25E-180
RAD_D	Iron-59	pCi/g dry-wt	2	2	100%	--	--	2.23E-35	4.70E-35	3.47E-35
RAD_D	Lead-214	pCi/g dry-wt	6	6	100%	--	--	5.09E-04	9.87E-04	7.28E-04
RAD_D	Manganese-54	pCi/g dry-wt	6	6	100%	--	--	1.81E-09	4.75E-07	1.19E-07
RAD_D	Niobium-95	pCi/g dry-wt	4	4	100%	--	--	1.40E-43	7.12E-43	4.63E-43
RAD_D	Plutonium-238	pCi/g dry-wt	9	9	100%	--	--	9.10E-04	0.050	0.0084
RAD_D	Plutonium-239/240	pCi/g dry-wt	26	26	100%	--	--	0.0016	0.036	0.0082
RAD_D	Potassium-40	pCi/g dry-wt	170	170	100%	--	--	1.46E-07	24	16
RAD_D	Radium-226	pCi/g dry-wt	81	81	100%	--	--	0.42	3.3	1.2
RAD_D	Ruthenium-103	pCi/g dry-wt	2	2	100%	--	--	9.47E-40	5.41E-39	3.18E-39
RAD_D	Ruthenium-106	pCi/g dry-wt	3	3	100%	--	--	1.28E-07	7.88E-06	2.71E-06
RAD_D	Strontium-89	pCi/g dry-wt	4	4	100%	--	--	3.05E-45	4.77E-42	2.07E-42
RAD_D	Strontium-90	pCi/g dry-wt	43	43	100%	--	--	9.38E-04	0.16	0.019
RAD_D	Technetium-99	pCi/g dry-wt	2	2	100%	--	--	0.30	0.38	0.34

Table B-4

Summary Statistics for Sediment Collected from Segment 2 of the Columbia River Including All Categories of Data (units reported "dry-weight")
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD_D	Thallium-208	pCi/g dry-wt	6	6	100%	--	--	8.18E-27	5.01E-26	2.26E-26
RAD_D	Thorium-228	pCi/g dry-wt	67	67	100%	--	--	5.75E-05	4.3	0.30
RAD_D	Thorium-230	pCi/g dry-wt	8	8	100%	--	--	0.50	1.2	0.69
RAD_D	Thorium-232	pCi/g dry-wt	8	8	100%	--	--	0.60	1.5	0.98
RAD_D	Tritium	pCi/g dry-wt	1	1	100%	--	--	0.0098	0.0098	0.0098
RAD_D	Uranium-234	pCi/g dry-wt	55	55	100%	--	--	0.38	4.5	1.1
RAD_D	Uranium-235	pCi/g dry-wt	31	31	100%	--	--	0.017	0.64	0.076
RAD_D	Uranium-236	pCi/g dry-wt	2	2	100%	--	--	0.040	0.050	0.045
RAD_D	Uranium-238	pCi/g dry-wt	57	57	100%	--	--	0.41	4.3	1.1
RAD_D	Zinc-65	pCi/g dry-wt	7	7	100%	--	--	2.57E-13	6.86E-08	2.25E-08
RAD_D	Zirconium-95	pCi/g dry-wt	5	5	100%	--	--	1.84E-36	8.64E-24	3.16E-24

CONV - Conventional parameter

RAD_D - Decayed radionuclide

Table B-5
Comparison of Segment 2 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "as received")
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Background Value	Is Max > Background?	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
CONV	Ash Content	%	2.0	2.0	100%	91	93	92	--	--	--	--	--	--	--	--	--	--
CONV	Nitrogen in ammonia	mg/kg	1.0	1.0	100%	15	15	15	--	--	--	--	--	--	--	--	--	--
CONV	Percent Solids	%	35	35	100%	2.0	81	62	--	--	--	--	--	--	--	--	--	--
CONV	Phosphorous in phosphate	mg/kg	1.0	1.0	100%	0.060	0.060	0.060	--	--	--	--	--	--	--	--	--	--
CONV	Sulfide	mg/kg	1.0	1.0	100%	2.4	2.4	2.4	--	--	--	--	--	--	--	--	--	--
CONV	Total Organic Carbon	%	9.0	9.0	100%	0.15	1.9	0.87	--	--	--	--	--	--	--	--	--	--
CONV	Total Organic Carbon	mg/kg	4.0	4.0	100%	3.1	3.4	3.2	--	--	--	--	--	--	--	--	--	--
METAL	Acid Volatile Sulfate	umole/g	26	26	100%	175	16,500	4,850	--	--	--	--	--	--	--	--	--	--
METAL	Aluminum	mg/kg	45	45	100%	2,460	11,100	6,349	11,800	No	--	--	--	--	76,142	No	0.15	0
METAL	Antimony	mg/kg	99	61	62%	0.019	6.8	1.4	5.0	Yes	2.0	Yes	3.4	3	31	No	0.22	0
METAL	Arsenic	mg/kg	108	104	96%	0.0082	20	4.6	6.5	Yes	6.0	Yes	3.3	25	0.39	Yes	51	96
METAL	Barium	mg/kg	48	47	98%	35	869	104	132	Yes	--	--	--	--	5,375	No	0.16	0
METAL	Beryllium	mg/kg	110	85	77%	0.032	2.4	0.74	1.5	Yes	--	--	--	--	154	No	0.015	0
METAL	Cadmium	mg/kg	112	73	65%	3.80E-04	5.6	0.72	0.81	Yes	0.60	Yes	9.3	42	37	No	0.15	0
METAL	Calcium	mg/kg	45	45	100%	1,760	9,120	3,720	17,200	No	--	--	--	--	--	--	--	--
METAL	Chromium	mg/kg	120	119	99%	0.056	112	35	19	Yes	37	Yes	3.0	48	30	Yes	3.7	50
METAL	Cobalt	mg/kg	45	44	98%	2.8	10	6.5	16	No	--	--	--	--	903	No	0.011	0
METAL	Copper	mg/kg	119	119	100%	0.18	70	19	22	Yes	32	Yes	2.2	10	2,960	No	0.024	0
METAL	Iron	mg/kg	45	45	100%	6,480	31,100	14,519	32,600	No	20,000	Yes	1.6	2	23,463	Yes	1.3	1
METAL	Lead	mg/kg	108	108	100%	0.10	76	24	10	Yes	35	Yes	2.2	24	250	No	0.30	0
METAL	Magnesium	mg/kg	45	45	100%	1,480	5,520	3,777	7,060	No	--	--	--	--	--	--	--	--
METAL	Manganese	mg/kg	48	48	100%	94	603	215	512	Yes	460	Yes	1.3	3	1,762	No	0.34	0
METAL	Mercury	mg/kg	108	67	62%	1.60E-05	0.68	0.034	0.33	Yes	0.18	Yes	3.8	1	23	No	0.029	0
METAL	Nickel	mg/kg	112	112	100%	0.64	30	14	19	Yes	18	Yes	1.7	33	1,564	No	0.019	0
METAL	Potassium	mg/kg	45	45	100%	424	1,650	845	2,150	No	--	--	--	--	--	--	--	--
METAL	Selenium	mg/kg	107	29	27%	0.0084	1.6	0.53	0.78	Yes	--	--	--	--	391	No	0.0042	0
METAL	Silver	mg/kg	99	58	59%	0.0020	5.3	0.39	0.73	Yes	4.5	Yes	1.2	1	391	No	0.014	0
METAL	Sodium	mg/kg	45	45	100%	97	364	207	690	No	--	--	--	--	--	--	--	--
METAL	Thallium	mg/kg	99	63	64%	0.027	2.4	0.48	--	--	--	--	--	--	5.2	No	0.47	0
METAL	Thorium	mg/kg	3.0	3.0	100%	7.0	7.9	7.4	1.3	Yes	1,300	No	0.0061	0	1.3	Yes	6.1	3
METAL	Uranium	mg/kg	7.0	7.0	100%	1.1	2.6	1.6	3.2	No	2,490	No	0.0010	0	16	No	0.16	0
METAL	Vanadium	mg/kg	45	45	100%	6.5	86	31	85	Yes	--	--	--	--	78	Yes	1.1	1
METAL	Zinc	mg/kg	112	112	100%	0.18	477	179	68	Yes	120	Yes	4.0	74	23,463	No	0.020	0
RAD_D	Americium-241	pCi/g	2.0	2.0	100%	0.0030	0.24	0.12	--	--	5,150	No	4.60E-05	0	31	No	0.0076	0
RAD_D	Antimony-125	pCi/g	1.0	1.0	100%	0.0018	0.0018	0.0018	--	--	--	--	--	--	--	--	--	--
RAD_D	Beryllium-7	pCi/g	1.0	1.0	100%	0.30	0.30	0.30	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-134	pCi/g	4.0	4.0	100%	2.86E-04	0.0011	6.44E-04	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-137	pCi/g	122	122	100%	0.023	1.5	0.28	1.1	Yes	3,120	No	4.73E-04	0	6.2	No	0.24	0
RAD_D	Cobalt-57	pCi/g	1.0	1.0	100%	3.07E-09	3.07E-09	3.07E-09	--	--	--	--	--	--	--	--	--	--
RAD_D	Cobalt-60	pCi/g	40	40	100%	0.0033	2.4	0.091	0.0084	Yes	1,460	No	0.0017	0	1.4	Yes	1.7	1
RAD_D	Europium-152	pCi/g	37	37	100%	0.024	0.76	0.24	--	--	--	--	--	--	3.3	No	0.23	0
RAD_D	Europium-154	pCi/g	6.0	6.0	100%	0.015	0.075	0.047	0.033	Yes	2,570	No	2.93E-05	0	3.0	No	0.025	0
RAD_D	Europium-155	pCi/g	3.0	3.0	100%	0.0071	0.034	0.024	0.054	No	31,600	No	1.09E-06	0	125	No	2.75E-04	0
RAD_D	Manganese-54	pCi/g	2.0	2.0	100%	1.15E-08	1.51E-06	7.59E-07	--	--	--	--	--	--	--	--	--	--
RAD_D	Neptunium-237	pCi/g	2.0	2.0	100%	0.48	0.61	0.54	--	--	--	--	--	--	--	--	--	--
RAD_D	Plutonium-238	pCi/g	15	15	100%	1.26E-04	0.13	0.016	0.0038	Yes	--	--	--	--	37	No	0.0035	0
RAD_D	Plutonium-239/240	pCi/g	34	34	100%	3.98E-04	0.071	0.0064	0.025	Yes	5,860	No	1.21E-05	0	34	No	0.0021	0
RAD_D	Potassium-40	pCi/g	132	132	100%	8.4	21	16	17	Yes	--	--	--	--	--	--	--	--
RAD_D	Radium-226	pCi/g	37	37	100%	0.42	1.7	0.77	0.82	Yes	101	No	0.017	2	--	--	--	--
RAD_D	Radium-228	pCi/g	1.0	1.0	100%	0.12	0.12	0.12	--	--	88	No	0.0014	0	--	--	--	--
RAD_D	Strontium-89	pCi/g	3.0	3.0	100%	3.43E-42	4.80E-42	3.89E-42	--	--	--	--	--	--	--	--	--	--
RAD_D	Strontium-90	pCi/g	18	18	100%	0.0020	1.0	0.090	0.18	Yes	582	No	0.0018	0	4.5	No	0.23	0
RAD_D	Thorium-228	pCi/g	41	41	100%	0.0041	2.1	0.13	--	--	--	--	--	--	--	--	--	--
RAD_D	Thorium-230	pCi/g	4.0	4.0	100%	0.16	5.6	2.1	--	--	--	--	--	--	--	--	--	--
RAD_D	Thorium-232	pCi/g	40	40	100%	0.24	3.2	1.1	1.3	Yes	1,300	No	0.0025	0	1.3	Yes	2.5	9
RAD_D	Thorium-234	pCi/g	2.0	2.0	100%	3.70E-60	4.37E-60	4.03E-60	--	--	--	--	--	--	--	--	--	--
RAD_D	Tritium	pCi/g	1.0	1.0	100%	0.038	0.038	0.038	--	--	374,000	No	1.03E-07	0	510	No	7.54E-05	0
RAD_D	Uranium-233/234	pCi/g	36	36	100%	0.29	2.6	0.82	--	--	--	--	--	--	--	--	--	--
RAD_D	Uranium-234	pCi/g	90	90	100%	0.071	11	0.82	1.1	Yes	5,270	No	0.0021	0	1.1	Yes	10	16
RAD_D	Uranium-235	pCi/g	79	79	100%	0.0029	0.38	0.039	0.11	Yes	3,730	No	1.02E-04	0	0.84	No	0.45	0
RAD_D	Uranium-236	pCi/g	4.0	4.0	100%	3.11E-05	0.039	0.026	--	--	--	--	--	--	--	--	--	--
RAD_D	Uranium-238	pCi/g	129	129	100%	0.051	10.0	0.76	3.2	Yes	2,490	No	0.0040	0	1.1	Yes	9.1	22
RAD_D	Zirconium/Niobium-95	pCi/g	2.0	2.0	100%	2.60E-36	3.08E-36	2.84E-36	--	--	--	--	--	--	--	--	--	--

CONV - Conventional parameter
RAD_D - Decayed radionuclide

Table B-6
Comparison of Segment 2 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "dry weight")
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Background Value	Is Max > Background?	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Samples that Exceeded	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Samples that Exceeded
CONV	Total Organic Carbon	% dry-wt	4	4	100%	3.1	3.4	3.2	--	--	--	--	--	--	--	--	--	--
METAL	Aluminum	mg/kg dry-wt	4	4	100%	0.40	1.2	0.65	11,800	No	--	--	--	--	76,142	No	1.58E-05	0
METAL	Antimony	mg/kg dry-wt	9	9	100%	0.39	0.81	0.57	5.0	No	2.0	No	0.40	0	31	No	0.026	0
METAL	Arsenic	mg/kg dry-wt	14	14	100%	0.0020	7.8	3.5	6.5	Yes	6.0	Yes	1.3	3	0.39	Yes	20	9
METAL	Barium	mg/kg dry-wt	4	4	100%	0.40	1.0	0.60	132	No	--	--	--	--	5,375	No	1.86E-04	0
METAL	Beryllium	mg/kg dry-wt	12	12	100%	0.10	1.6	1.1	1.5	Yes	--	--	--	--	154	No	0.010	0
METAL	Cadmium	mg/kg dry-wt	18	18	100%	0.20	1.6	0.61	0.81	Yes	0.60	Yes	2.7	7	37	No	0.043	0
METAL	Chromium	mg/kg dry-wt	17	13	76%	20	88	44	19	Yes	37	Yes	2.4	9	30	Yes	2.9	12
METAL	Copper	mg/kg dry-wt	17	17	100%	1.2	26	14	22	Yes	32	No	0.83	0	2,960	No	0.0088	0
METAL	Iron	mg/kg dry-wt	4	4	100%	2.2	7.6	5.8	32,600	No	20,000	No	3.80E-04	0	23,463	No	3.24E-04	0
METAL	Lead	mg/kg dry-wt	18	18	100%	1.4	57	19	10	Yes	35	Yes	1.7	1	250	No	0.23	0
METAL	Manganese	mg/kg dry-wt	4	4	100%	4.0	20	12	512	No	460	No	0.043	0	1,762	No	0.011	0
METAL	Mercury	mg/kg dry-wt	16	8	50%	0.0018	0.033	0.0094	0.33	No	0.18	No	0.18	0	23	No	0.0014	0
METAL	Nickel	mg/kg dry-wt	9	9	100%	12	21	18	19	Yes	18	Yes	1.2	5	1,564	No	0.014	0
METAL	Selenium	mg/kg dry-wt	13	7	54%	0.0010	1.5	0.27	0.78	Yes	--	--	--	--	391	No	0.0039	0
METAL	Silver	mg/kg dry-wt	9	8	89%	0.048	0.33	0.21	0.73	No	4.5	No	0.072	0	391	No	8.31E-04	0
METAL	Thallium	mg/kg dry-wt	9	9	100%	0.42	0.77	0.58	--	--	--	--	--	--	5.2	No	0.15	0
METAL	Zinc	mg/kg dry-wt	13	13	100%	4.0	366	132	68	Yes	120	Yes	3.1	8	23,463	No	0.016	0
RAD_D	Americium-241	pCi/g dry-wt	4	4	100%	0.0020	0.0049	0.0032	--	--	5,150	No	9.52E-07	0	31	No	1.58E-04	0
RAD_D	Barium-140	pCi/g dry-wt	1	1	100%	7.09E-116	7.09E-116	7.09E-116	--	--	--	--	--	--	--	--	--	--
RAD_D	Beryllium-7	pCi/g dry-wt	11	11	100%	6.83E-30	0.0031	2.84E-04	--	--	--	--	--	--	--	--	--	--
RAD_D	Bismuth-214	pCi/g dry-wt	4	4	100%	3.55E-05	8.93E-05	5.79E-05	--	--	--	--	--	--	--	--	--	--
RAD_D	Cerium-141	pCi/g dry-wt	2	2	100%	1.23E-46	1.46E-46	1.35E-46	--	--	--	--	--	--	--	--	--	--
RAD_D	Cerium-144	pCi/g dry-wt	1	1	100%	1.68E-06	1.68E-06	1.68E-06	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-134	pCi/g dry-wt	12	12	100%	2.68E-05	0.0015	3.20E-04	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-137	pCi/g dry-wt	129	129	100%	0.021	1.2	0.15	1.1	Yes	3,120	No	3.82E-04	0	6.2	No	0.19	0
RAD_D	Cobalt-57	pCi/g dry-wt	4	4	100%	4.88E-12	3.58E-04	8.96E-05	--	--	--	--	--	--	--	--	--	--
RAD_D	Cobalt-58	pCi/g dry-wt	1	1	100%	2.21E-23	2.21E-23	2.21E-23	--	--	--	--	--	--	--	--	--	--
RAD_D	Cobalt-60	pCi/g dry-wt	60	60	100%	0.0014	0.020	0.0059	0.0084	Yes	1,460	No	1.37E-05	0	1.4	No	0.014	0
RAD_D	Europium-152	pCi/g dry-wt	26	26	100%	0.012	0.11	0.051	--	--	--	--	--	--	3.3	No	0.034	0
RAD_D	Europium-154	pCi/g dry-wt	6	6	100%	0.015	0.090	0.045	0.033	Yes	2,570	No	3.49E-05	0	3.0	No	0.030	0
RAD_D	Europium-155	pCi/g dry-wt	1	1	100%	0.065	0.065	0.065	0.054	Yes	31,600	No	2.05E-06	0	125	No	5.17E-04	0
RAD_D	Iodine-131	pCi/g dry-wt	2	2	100%	1.07E-180	7.44E-180	4.25E-180	--	--	--	--	--	--	--	--	--	--
RAD_D	Iron-59	pCi/g dry-wt	2	2	100%	2.23E-35	4.70E-35	3.47E-35	--	--	--	--	--	--	--	--	--	--
RAD_D	Lead-214	pCi/g dry-wt	6	6	100%	5.09E-04	9.87E-04	7.28E-04	--	--	--	--	--	--	--	--	--	--
RAD_D	Manganese-54	pCi/g dry-wt	6	6	100%	1.81E-09	4.75E-07	1.19E-07	--	--	--	--	--	--	--	--	--	--
RAD_D	Niobium-95	pCi/g dry-wt	4	4	100%	1.40E-43	7.12E-43	4.63E-43	--	--	--	--	--	--	--	--	--	--
RAD_D	Plutonium-238	pCi/g dry-wt	9	9	100%	9.10E-04	0.050	0.0084	0.0038	Yes	--	--	--	--	37	No	0.0013	0
RAD_D	Plutonium-239/240	pCi/g dry-wt	26	26	100%	0.0016	0.036	0.0082	0.025	Yes	5,860	No	6.14E-06	0	34	No	0.0011	0
RAD_D	Potassium-40	pCi/g dry-wt	170	170	100%	1.46E-07	24	16	17	Yes	--	--	--	--	--	--	--	--
RAD_D	Radium-226	pCi/g dry-wt	81	81	100%	0.42	3.3	1.2	0.82	Yes	101	No	0.033	0	--	--	--	--
RAD_D	Ruthenium-103	pCi/g dry-wt	2	2	100%	9.47E-40	5.41E-39	3.18E-39	--	--	--	--	--	--	--	--	--	--
RAD_D	Ruthenium-106	pCi/g dry-wt	3	3	100%	1.28E-07	7.88E-06	2.71E-06	--	--	--	--	--	--	--	--	--	--
RAD_D	Strontium-89	pCi/g dry-wt	4	4	100%	3.05E-45	4.77E-42	2.07E-42	--	--	--	--	--	--	--	--	--	--
RAD_D	Strontium-90	pCi/g dry-wt	43	43	100%	9.38E-04	0.16	0.019	0.18	No	582	No	2.77E-04	0	4.5	No	0.036	0
RAD_D	Technetium-99	pCi/g dry-wt	2	2	100%	0.30	0.38	0.34	--	--	42,200	No	9.00E-06	0	15	No	0.025	0
RAD_D	Thallium-208	pCi/g dry-wt	6	6	100%	8.18E-27	5.01E-26	2.26E-26	--	--	--	--	--	--	--	--	--	--
RAD_D	Thorium-228	pCi/g dry-wt	67	67	100%	5.75E-05	4.3	0.30	--	--	--	--	--	--	--	--	--	--
RAD_D	Thorium-230	pCi/g dry-wt	8	8	100%	0.50	1.2	0.69	--	--	--	--	--	--	--	--	--	--
RAD_D	Thorium-232	pCi/g dry-wt	8	8	100%	0.60	1.5	0.98	1.3	Yes	1,300	No	0.0012	0	1.3	Yes	1.2	1
RAD_D	Tritium	pCi/g dry-wt	1	1	100%	0.0098	0.0098	0.0098	--	--	374,000	No	2.63E-08	0	510	No	1.93E-05	0
RAD_D	Uranium-234	pCi/g dry-wt	55	55	100%	0.38	4.5	1.1	1.1	Yes	5,270	No	8.50E-04	0	1.1	Yes	4.1	12
RAD_D	Uranium-235	pCi/g dry-wt	31	31	100%	0.017	0.64	0.076	0.11	Yes	3,730	No	1.72E-04	0	0.84	No	0.76	0
RAD_D	Uranium-236	pCi/g dry-wt	2	2	100%	0.040	0.050	0.045	--	--	--	--	--	--	--	--	--	--
RAD_D	Uranium-238	pCi/g dry-wt	57	57	100%	0.41	4.3	1.1	3.2	Yes	2,490	No	0.0017	0	1.1	Yes	3.9	13
RAD_D	Zinc-65	pCi/g dry-wt	7	7	100%	2.57E-13	6.86E-08	2.25E-08	--	--	--	--	--	--	--	--	--	--
RAD_D	Zirconium-95	pCi/g dry-wt	5	5	100%	1.84E-36	8.64E-24	3.16E-24	--	--	--	--	--	--	--	--	--	--

CONV - Conventional parameter
RAD_D - Decayed radionuclide

Table B-7

Summary of Surface Sediment Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	Hanford Tnsite	B07NC6	November 16, 1992	Antimony	mg/kg	1	3.7	BJN	2.0	31
Columbia River	Horn Area	B07ND0	November 17, 1992	Antimony	mg/kg	1	6.8	BJN	2.0	31
Columbia River	Horn Area	B07NH2	November 23, 1992	Antimony	mg/kg	1	4.7	JN	2.0	31
Columbia River	300 Area	4434235	June 1, 2004	Arsenic	mg/kg	1	5.5	=	6.0	0.39
Columbia River	RM 370	4434246	June 1, 2004	Arsenic	mg/kg	1	4.6	=	6.0	0.39
Columbia River	RM 362	4434239	June 1, 2004	Arsenic	mg/kg	1	6.8	=	6.0	0.39
Columbia River	RM 366	4434245	June 1, 2004	Arsenic	mg/kg	1	20	=	6.0	0.39
Columbia River	F Slough	B07NB6	November 12, 1992	Arsenic	mg/kg	1	7.4	=	6.0	0.39
Columbia River	F Slough	B07NB7	November 12, 1992	Arsenic	mg/kg	1	6.0	=	6.0	0.39
Columbia River	F Slough	B07NB8	November 12, 1992	Arsenic	mg/kg	1	5.4	=	6.0	0.39
Columbia River	F Slough	B07NB9	November 12, 1992	Arsenic	mg/kg	1	6.2	=	6.0	0.39
Columbia River	100-H Area	B07NC2	November 13, 1992	Arsenic	mg/kg	1	2.4	B	6.0	0.39
Columbia River	100-H Area	B07NC3	November 13, 1992	Arsenic	mg/kg	1	4.5	=	6.0	0.39
Columbia River	F Slough	B07NC4	November 16, 1992	Arsenic	mg/kg	1	5.7	=	6.0	0.39
Columbia River	F Slough	B07NC5	November 16, 1992	Arsenic	mg/kg	1	3.0	=	6.0	0.39
Columbia River	Hanford Tnsite	B07NC6	November 16, 1992	Arsenic	mg/kg	1	2.5	=	6.0	0.39
Columbia River	Hanford Tnsite	B07NC7	November 16, 1992	Arsenic	mg/kg	1	5.6	=	6.0	0.39
Columbia River	Horn Area	B07NC9	November 17, 1992	Arsenic	mg/kg	1	6.3	=	6.0	0.39
Columbia River	Horn Area	B07ND0	November 17, 1992	Arsenic	mg/kg	1	2.3	B	6.0	0.39
Columbia River	100-B/C Area	B07ND1	November 20, 1992	Arsenic	mg/kg	1	1.9	JN+	6.0	0.39
Columbia River	Hanford Tnsite	B07ND2	November 17, 1992	Arsenic	mg/kg	1	3.4	=	6.0	0.39
Columbia River	Hanford Tnsite	B07ND3	November 17, 1992	Arsenic	mg/kg	1	3.2	=	6.0	0.39
Columbia River	D Island	B07ND4	November 19, 1992	Arsenic	mg/kg	1	2.9	B	6.0	0.39
Columbia River	D Island	B07ND5	November 19, 1992	Arsenic	mg/kg	1	3.5	=	6.0	0.39
Columbia River	D Island	B07ND6	November 19, 1992	Arsenic	mg/kg	1	2.7	=	6.0	0.39
Columbia River	D Island	B07ND7	November 19, 1992	Arsenic	mg/kg	1	3.1	=	6.0	0.39
Columbia River	D Island	B07ND8	November 19, 1992	Arsenic	mg/kg	1	2.2	=	6.0	0.39
Columbia River	100-B/C Area	B07ND9	November 20, 1992	Arsenic	mg/kg	1	1.6	BJN	6.0	0.39
Columbia River	Horn Area	B07NF0	November 19, 1992	Arsenic	mg/kg	1	1.9	B	6.0	0.39
Columbia River	100-D Area	B07NF1	November 19, 1992	Arsenic	mg/kg	1	2.0	B	6.0	0.39
Columbia River	100-D Area	B07NF2	November 19, 1992	Arsenic	mg/kg	1	4.4	=	6.0	0.39
Columbia River	100-K Area	B07NF9	November 21, 1992	Arsenic	mg/kg	1	6.2	=	6.0	0.39
Columbia River	100-K Area	B07NG0	November 21, 1992	Arsenic	mg/kg	1	5.1	S	6.0	0.39
Columbia River	100-K Area	B07NG1	November 21, 1992	Arsenic	mg/kg	1	6.0	=	6.0	0.39
Columbia River	100-K Area	B07NG2	November 21, 1992	Arsenic	mg/kg	1	2.9	=	6.0	0.39
Columbia River	100-H Area	B07NG3	November 22, 1992	Arsenic	mg/kg	1	4.5	S	6.0	0.39
Columbia River	100-H Area	B07NG5	November 22, 1992	Arsenic	mg/kg	1	4.8	S	6.0	0.39
Columbia River	100-H Area	B07NG6	November 22, 1992	Arsenic	mg/kg	1	3.9	S	6.0	0.39
Columbia River	100-H Area	B07NG7	November 22, 1992	Arsenic	mg/kg	1	4.3	JNS	6.0	0.39
Columbia River	F Slough	B07NG9	November 23, 1992	Arsenic	mg/kg	1	4.9	S	6.0	0.39
Columbia River	F Slough	B07NH0	November 23, 1992	Arsenic	mg/kg	1	4.9	JS	6.0	0.39
Columbia River	Horn Area	B07NH1	November 23, 1992	Arsenic	mg/kg	1	6.1	=	6.0	0.39

Table B-7

Summary of Surface Sediment Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	Horn Area	B07NH2	November 23, 1992	Arsenic	mg/kg	1	6.0	S	6.0	0.39
Columbia River	Hanford Tnsite	B07NH3	November 23, 1992	Arsenic	mg/kg	1	4.5	S	6.0	0.39
Columbia River	Hanford Tnsite	B07NH4	November 23, 1992	Arsenic	mg/kg	1	3.5	=	6.0	0.39
Columbia River	D Island	B07NH5	November 24, 1992	Arsenic	mg/kg	1	3.0	=	6.0	0.39
Columbia River	D Island	B07NH6	November 24, 1992	Arsenic	mg/kg	1	2.8	=	6.0	0.39
Columbia River	D Island	B07NH7	November 24, 1992	Arsenic	mg/kg	1	2.2	BJN	6.0	0.39
Columbia River	Wht Bluffs Slg	B0W3F4	August 9, 1999	Arsenic	mg/Kg	1	7.1	=	6.0	0.39
Columbia River	100 F SLOUGH	B0W3F6	August 9, 1999	Arsenic	mg/Kg	1	6.6	=	6.0	0.39
Columbia River	Hanford Slough	B0W3F8	August 9, 1999	Arsenic	mg/Kg	1	5.8	=	6.0	0.39
Columbia River	300 SPR 42-2	B0WDL4	November 1, 1999	Arsenic	mg/Kg	1	5.1	=	6.0	0.39
Columbia River	100-B SPR 38-3	B0WDP5	October 25, 1999	Arsenic	mg/Kg	1	3.4	=	6.0	0.39
Columbia River	HFD SPR UR 28-2	B0WDP9	November 1, 1999	Arsenic	mg/Kg	1	6.6	=	6.0	0.39
Columbia River	HFD SPR DR 28-2	B0WDR1	November 1, 1999	Arsenic	mg/Kg	1	9.6	=	6.0	0.39
Columbia River	300 SPR DR 42-2	B0WDR3	November 1, 1999	Arsenic	mg/Kg	1	6.0	=	6.0	0.39
Columbia River	100-F SPR 207-1	B0WDT0	November 1, 1999	Arsenic	mg/Kg	1	5.8	=	6.0	0.39
Columbia River	RICHLAND-RIVER	B0YW85	August 8, 2000	Arsenic	mg/Kg	1	5.1	=	6.0	0.39
Columbia River	Wht Bluffs Slg	B0YY65	August 15, 2000	Arsenic	mg/Kg	1	7.0	=	6.0	0.39
Columbia River	100 F SLOUGH	B0YY67	August 15, 2000	Arsenic	mg/Kg	1	3.3	=	6.0	0.39
Columbia River	Hanford Slough	B0YY69	August 15, 2000	Arsenic	mg/Kg	1	4.0	=	6.0	0.39
Columbia River	300 SPR 42-2	B10905	November 2, 2000	Arsenic	mg/Kg	1	5.9	=	6.0	0.39
Columbia River	100-B SPR 38-3	B10916	November 20, 2000	Arsenic	mg/Kg	1	2.4	=	6.0	0.39
Columbia River	HFD SPR UR 28-2	B10918	November 2, 2000	Arsenic	mg/Kg	1	5.0	=	6.0	0.39
Columbia River	HFD SPR DR 28-2	B10921	November 2, 2000	Arsenic	mg/Kg	1	7.7	=	6.0	0.39
Columbia River	300 SPR DR 42-2	B10923	November 2, 2000	Arsenic	mg/Kg	1	5.4	=	6.0	0.39
Columbia River	100-F SPR 207-1	B10931	November 20, 2000	Arsenic	mg/Kg	1	5.8	=	6.0	0.39
Columbia River	100 F SLOUGH	B12CJ7	July 19, 2001	Arsenic	mg/kg dry-wt	1	4.3	=	6.0	0.39
Columbia River	Hanford Slough	B12CJ9	July 19, 2001	Arsenic	mg/kg dry-wt	1	3.5	=	6.0	0.39
Columbia River	RICHLAND-RIVER	B12CK1	July 23, 2001	Arsenic	mg/kg dry-wt	1	7.4	=	6.0	0.39
Columbia River	300 SPR 42-2	B12RL7	August 27, 2001	Arsenic	mg/kg dry-wt	1	6.6	=	6.0	0.39
Columbia River	300 SPR DR 42-2	B12RM5	August 27, 2001	Arsenic	mg/kg dry-wt	1	7.8	=	6.0	0.39
Columbia River	300 SPR 11	B12RY8	August 27, 2001	Arsenic	mg/kg dry-wt	1	3.4	=	6.0	0.39
Columbia River	300 SPR 14	B12T08	August 27, 2001	Arsenic	mg/kg dry-wt	1	5.9	=	6.0	0.39
Columbia River	100-B SPR 38-3	B12X22	October 22, 2001	Arsenic	mg/kg dry-wt	1	2.3	=	6.0	0.39
Columbia River	100-F SPR 207-1	B12X37	October 22, 2001	Arsenic	mg/kg dry-wt	1	3.9	=	6.0	0.39
Columbia River	Hanford Slough	B14YM1	July 23, 2002	Arsenic	mg/kg	1	0.44	=	6.0	0.39
Columbia River	RICHLAND-RIVER	B14YM3	July 19, 2002	Arsenic	mg/kg	1	0.45	=	6.0	0.39
Columbia River	HFD SPR DR 28-2	B15C46	October 7, 2002	Arsenic	mg/kg	1	0.65	=	6.0	0.39
Columbia River	Ringold WW	B16WX6	May 14, 2003	Arsenic	mg/Kg	1	3.3	=	6.0	0.39
Columbia River	Ringold WW	B16WX7	May 14, 2003	Arsenic	mg/Kg	1	3.7	=	6.0	0.39
Columbia River	ESQUATZEL CANAL	B16WX8	May 14, 2003	Arsenic	mg/Kg	1	2.7	=	6.0	0.39
Columbia River	ESQUATZEL CANAL	B16WX9	May 14, 2003	Arsenic	mg/Kg	1	2.7	=	6.0	0.39
Columbia River	Wht Bluffs Slg	B176X9	July 14, 2003	Arsenic	mg/Kg	1	8.3	=	6.0	0.39

Table B-7

Summary of Surface Sediment Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	100 F SLOUGH	B176Y1	July 14, 2003	Arsenic	mg/Kg	1	4.4	=	6.0	0.39
Columbia River	Hanford Slough	B176Y3	July 14, 2003	Arsenic	mg/Kg	1	8.7	=	6.0	0.39
Columbia River	RICHLAND-RIVER	B176Y5	July 16, 2003	Arsenic	mg/Kg	1	8.6	=	6.0	0.39
Columbia River	300 SPR 42-2	B17J18	October 13, 2003	Arsenic	mg/Kg	1	6.2	=	6.0	0.39
Columbia River	100-B SPR 37-1	B17J53	October 20, 2003	Arsenic	mg/Kg	1	4.8	C	6.0	0.39
Columbia River	HFD SPR DR 28-2	B17J58	November 3, 2003	Arsenic	mg/Kg	1	9.2	C	6.0	0.39
Columbia River	300 SPR DR 42-2	B17J61	October 13, 2003	Arsenic	mg/Kg	1	5.9	=	6.0	0.39
Columbia River	100-K SPR 63-1	B17J64	October 20, 2003	Arsenic	mg/Kg	1	5.0	C	6.0	0.39
Columbia River	100-F SPR 207-1	B17J67	November 3, 2003	Arsenic	mg/Kg	1	7.8	C	6.0	0.39
Columbia River	100-H SPR 145-1	B17JB1	October 27, 2003	Arsenic	mg/Kg	1	9.6	C	6.0	0.39
Columbia River	100 B/C AREA UR	B17XN6	November 17, 2003	Arsenic	mg/Kg	1	2.7	C	6.0	0.39
Columbia River	100-B SPR 37-1	B17XN8	November 13, 2003	Arsenic	mg/Kg	1	3.2	C	6.0	0.39
Columbia River	100-B SPR 38-3	B17XN9	November 13, 2003	Arsenic	mg/Kg	1	6.9	C	6.0	0.39
Columbia River	Wht Bluffs Slg	B19PJ6	July 12, 2004	Arsenic	mg/Kg	1	8.1	X	6.0	0.39
Columbia River	100 F SLOUGH	B19PJ8	July 12, 2004	Arsenic	mg/Kg	1	4.8	X	6.0	0.39
Columbia River	Hanford Slough	B19PK0	July 12, 2004	Arsenic	mg/Kg	1	4.5	X	6.0	0.39
Columbia River	RICHLAND-RIVER	B19PK2	July 13, 2004	Arsenic	mg/Kg	1	6.7	X	6.0	0.39
Columbia River	300 SPR 42-2	B1BFM1	October 25, 2004	Arsenic	mg/Kg	1	4.9	X	6.0	0.39
Columbia River	100-B SPR 37-1	B1BFP7	October 11, 2004	Arsenic	mg/Kg	1	3.0	X	6.0	0.39
Columbia River	HFD SPR UR 28-2	B1BFP9	October 25, 2004	Arsenic	mg/Kg	1	11	X	6.0	0.39
Columbia River	HFD SPR DR 28-2	B1BFR2	October 25, 2004	Arsenic	mg/Kg	1	7.3	X	6.0	0.39
Columbia River	300 SPR DR 42-2	B1BFR5	October 25, 2004	Arsenic	mg/Kg	1	4.9	X	6.0	0.39
Columbia River	100-F SPR 207-1	B1BFT0	October 26, 2004	Arsenic	mg/Kg	1	5.2	X	6.0	0.39
Columbia River	100-H SPR 145-1	B1BH03	October 26, 2004	Arsenic	mg/Kg	1	7.4	X	6.0	0.39
Columbia River	300 Area	4434235	June 1, 2004	Cadmium	mg/kg	1	2.5	=	0.60	37
Columbia River	RM 345	4434237	June 1, 2004	Cadmium	mg/kg	1	0.98	=	0.60	37
Columbia River	RM 362	4434239	June 1, 2004	Cadmium	mg/kg	1	3.8	=	0.60	37
Columbia River	RM 366	4434245	June 1, 2004	Cadmium	mg/kg	1	1.2	=	0.60	37
Columbia River	100-K Area	B07NF9	November 21, 1992	Cadmium	mg/kg	1	5.6	=	0.60	37
Columbia River	100-H Area	B07NG3	November 22, 1992	Cadmium	mg/kg	1	2.0	=	0.60	37
Columbia River	100-H Area	B07NG6	November 22, 1992	Cadmium	mg/kg	1	1.7	=	0.60	37
Columbia River	Horn Area	B07NH1	November 23, 1992	Cadmium	mg/kg	1	1.6	=	0.60	37
Columbia River	Wht Bluffs Slg	B0CSH3	September 24, 1994	Cadmium	mg/kg	1	1.2	=	0.60	37
Columbia River	Richland, WA	B0CSH6	September 25, 1994	Cadmium	mg/kg	1	1.2	=	0.60	37
Columbia River	HFD SPR 28-2	B0CSH8	September 2, 1994	Cadmium	mg/kg	1	0.80	L	0.60	37
Columbia River	Wht Bluffs Slg	B0W3F4	August 9, 1999	Cadmium	mg/Kg	1	1.3	=	0.60	37
Columbia River	100 F SLOUGH	B0W3F6	August 9, 1999	Cadmium	mg/Kg	1	1.5	=	0.60	37
Columbia River	Hanford Slough	B0W3F8	August 9, 1999	Cadmium	mg/Kg	1	1.1	=	0.60	37
Columbia River	100-B SPR 38-3	B0WDP5	October 25, 1999	Cadmium	mg/Kg	1	0.92	=	0.60	37
Columbia River	HFD SPR UR 28-2	B0WDP9	November 1, 1999	Cadmium	mg/Kg	1	0.95	=	0.60	37
Columbia River	HFD SPR DR 28-2	B0WDR1	November 1, 1999	Cadmium	mg/Kg	1	0.83	=	0.60	37
Columbia River	300 SPR DR 42-2	B0WDR3	November 1, 1999	Cadmium	mg/Kg	1	0.77	=	0.60	37

Table B-7

Summary of Surface Sediment Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	100-F SPR 207-1	B0WDT0	November 1, 1999	Cadmium	mg/Kg	1	1.1	=	0.60	37
Columbia River	RICHLAND-RIVER	B0YW85	August 8, 2000	Cadmium	mg/Kg	1	1.0	=	0.60	37
Columbia River	Wht Bluffs Slg	B0YY65	August 15, 2000	Cadmium	mg/Kg	1	1.8	=	0.60	37
Columbia River	100-B SPR 38-3	B10916	November 20, 2000	Cadmium	mg/Kg	1	0.64	=	0.60	37
Columbia River	HFD SPR UR 28-2	B10918	November 2, 2000	Cadmium	mg/Kg	1	0.95	=	0.60	37
Columbia River	300 SPR DR 42-2	B10923	November 2, 2000	Cadmium	mg/Kg	1	0.65	=	0.60	37
Columbia River	100-F SPR 207-1	B10931	November 20, 2000	Cadmium	mg/Kg	1	0.75	=	0.60	37
Columbia River	100 F SLOUGH	B12CJ7	July 19, 2001	Cadmium	mg/kg dry-wt	1	0.61	=	0.60	37
Columbia River	RICHLAND-RIVER	B12CK1	July 23, 2001	Cadmium	mg/kg dry-wt	1	1.5	=	0.60	37
Columbia River	300 SPR DR 42-2	B12RM5	August 27, 2001	Cadmium	mg/kg dry-wt	1	0.87	=	0.60	37
Columbia River	100-B SPR 38-3	B12X22	October 22, 2001	Cadmium	mg/kg dry-wt	1	0.77	=	0.60	37
Columbia River	100-F SPR 207-1	B12X37	October 22, 2001	Cadmium	mg/kg dry-wt	1	0.87	=	0.60	37
Columbia River	Wht Bluffs Slg	B176X9	July 14, 2003	Cadmium	mg/Kg	1	2.6	=	0.60	37
Columbia River	100 F SLOUGH	B176Y1	July 14, 2003	Cadmium	mg/Kg	1	0.67	=	0.60	37
Columbia River	Hanford Slough	B176Y3	July 14, 2003	Cadmium	mg/Kg	1	3.5	=	0.60	37
Columbia River	RICHLAND-RIVER	B176Y5	July 16, 2003	Cadmium	mg/Kg	1	1.00	=	0.60	37
Columbia River	100-B SPR 37-1	B17J53	October 20, 2003	Cadmium	mg/Kg	1	2.5	=	0.60	37
Columbia River	HFD SPR DR 28-2	B17J58	November 3, 2003	Cadmium	mg/Kg	1	1.1	=	0.60	37
Columbia River	100-K SPR 63-1	B17J64	October 20, 2003	Cadmium	mg/Kg	1	0.72	=	0.60	37
Columbia River	100-F SPR 207-1	B17J67	November 3, 2003	Cadmium	mg/Kg	1	1.5	=	0.60	37
Columbia River	100-H SPR 145-1	B17JB1	October 27, 2003	Cadmium	mg/Kg	1	1.1	=	0.60	37
Columbia River	100-B SPR 37-1	B17XN8	November 13, 2003	Cadmium	mg/Kg	1	0.74	=	0.60	37
Columbia River	100-B SPR 38-3	B17XN9	November 13, 2003	Cadmium	mg/Kg	1	0.64	=	0.60	37
Columbia River	Wht Bluffs Slg	B19PJ6	July 12, 2004	Cadmium	mg/Kg	1	1.9	X	0.60	37
Columbia River	100 F SLOUGH	B19PJ8	July 12, 2004	Cadmium	mg/Kg	1	0.70	X	0.60	37
Columbia River	RICHLAND-RIVER	B19PK2	July 13, 2004	Cadmium	mg/Kg	1	0.83	X	0.60	37
Columbia River	HFD SPR UR 28-2	B1BFP9	October 25, 2004	Cadmium	mg/Kg	1	1.3	X	0.60	37
Columbia River	HFD SPR DR 28-2	B1BFR2	October 25, 2004	Cadmium	mg/Kg	1	0.70	X	0.60	37
Columbia River	100-H SPR 145-1	B1BH03	October 26, 2004	Cadmium	mg/Kg	1	0.68	X	0.60	37
Columbia River	RM 328	SRP 3.4	August 20, 1991	Cadmium	mg/kg dry-wt	1	1.6	=	0.60	37
Columbia River	CGS STA 33	6135	April 9, 1987	Cobalt-60	pCi/g	2	2.4	=	1,460	1.4
Columbia River	F Slough	B07NB9	November 12, 1992	Chromium	mg/kg	1	46	=	37	30
Columbia River	100-B/C Area	B07ND1	November 20, 1992	Chromium	mg/kg	1	48	=	37	30
Columbia River	100-B/C Area	B07ND9	November 20, 1992	Chromium	mg/kg	1	51	=	37	30
Columbia River	100-D Area	B07NF1	November 19, 1992	Chromium	mg/kg	1	47	=	37	30
Columbia River	100-K Area	B07NF9	November 21, 1992	Chromium	mg/kg	1	64	=	37	30
Columbia River	Horn Area	B07NH2	November 23, 1992	Chromium	mg/kg	1	32	=	37	30
Columbia River	Wht Bluffs Slg	B0W3F4	August 9, 1999	Chromium	mg/Kg	1	52	=	37	30
Columbia River	100 F SLOUGH	B0W3F6	August 9, 1999	Chromium	mg/Kg	1	75	=	37	30
Columbia River	Hanford Slough	B0W3F8	August 9, 1999	Chromium	mg/Kg	1	59	=	37	30
Columbia River	300 SPR 42-2	B0WDL4	November 1, 1999	Chromium	mg/Kg	1	47	=	37	30
Columbia River	100-B SPR 38-3	B0WDP5	October 25, 1999	Chromium	mg/Kg	1	62	=	37	30

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Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	HFD SPR UR 28-2	B0WDP9	November 1, 1999	Chromium	mg/Kg	1	61	=	37	30
Columbia River	HFD SPR DR 28-2	B0WDR1	November 1, 1999	Chromium	mg/Kg	1	84	=	37	30
Columbia River	300 SPR DR 42-2	B0WDR3	November 1, 1999	Chromium	mg/Kg	1	44	=	37	30
Columbia River	100-F SPR 207-1	B0WDT0	November 1, 1999	Chromium	mg/Kg	1	54	=	37	30
Columbia River	RICHLAND-RIVER	B0YW85	August 8, 2000	Chromium	mg/Kg	1	49	=	37	30
Columbia River	Wht Bluffs Slg	B0YY65	August 15, 2000	Chromium	mg/Kg	1	59	=	37	30
Columbia River	Hanford Slough	B0YY69	August 15, 2000	Chromium	mg/Kg	1	60	=	37	30
Columbia River	300 SPR 42-2	B10905	November 2, 2000	Chromium	mg/Kg	1	54	=	37	30
Columbia River	100-B SPR 38-3	B10916	November 20, 2000	Chromium	mg/Kg	1	83	=	37	30
Columbia River	HFD SPR UR 28-2	B10918	November 2, 2000	Chromium	mg/Kg	1	76	=	37	30
Columbia River	HFD SPR DR 28-2	B10921	November 2, 2000	Chromium	mg/Kg	1	77	=	37	30
Columbia River	300 SPR DR 42-2	B10923	November 2, 2000	Chromium	mg/Kg	1	59	=	37	30
Columbia River	100-F SPR 207-1	B10931	November 20, 2000	Chromium	mg/Kg	1	72	=	37	30
Columbia River	100 F SLOUGH	B12CJ7	July 19, 2001	Chromium	mg/kg dry-wt	1	76	=	37	30
Columbia River	Hanford Slough	B12CJ9	July 19, 2001	Chromium	mg/kg dry-wt	1	65	=	37	30
Columbia River	RICHLAND-RIVER	B12CK1	July 23, 2001	Chromium	mg/kg dry-wt	1	53	=	37	30
Columbia River	300 SPR 42-2	B12RL7	August 27, 2001	Chromium	mg/kg dry-wt	1	78	=	37	30
Columbia River	300 SPR DR 42-2	B12RM5	August 27, 2001	Chromium	mg/kg dry-wt	1	55	=	37	30
Columbia River	300 SPR 11	B12RY8	August 27, 2001	Chromium	mg/kg dry-wt	1	34	=	37	30
Columbia River	300 SPR 14	B12T08	August 27, 2001	Chromium	mg/kg dry-wt	1	43	=	37	30
Columbia River	100-B SPR 38-3	B12X22	October 22, 2001	Chromium	mg/kg dry-wt	1	86	=	37	30
Columbia River	100-F SPR 207-1	B12X37	October 22, 2001	Chromium	mg/kg dry-wt	1	88	=	37	30
Columbia River	Wht Bluffs Slg	B176X9	July 14, 2003	Chromium	mg/Kg	1	79	C	37	30
Columbia River	100 F SLOUGH	B176Y1	July 14, 2003	Chromium	mg/Kg	1	55	C	37	30
Columbia River	Hanford Slough	B176Y3	July 14, 2003	Chromium	mg/Kg	1	83	C	37	30
Columbia River	RICHLAND-RIVER	B176Y5	July 16, 2003	Chromium	mg/Kg	1	65	C	37	30
Columbia River	300 SPR 42-2	B17J18	October 13, 2003	Chromium	mg/Kg	1	46	=	37	30
Columbia River	100-B SPR 37-1	B17J53	October 20, 2003	Chromium	mg/Kg	1	112	C	37	30
Columbia River	HFD SPR DR 28-2	B17J58	November 3, 2003	Chromium	mg/Kg	1	81	C	37	30
Columbia River	300 SPR DR 42-2	B17J61	October 13, 2003	Chromium	mg/Kg	1	51	=	37	30
Columbia River	100-K SPR 63-1	B17J64	October 20, 2003	Chromium	mg/Kg	1	110	C	37	30
Columbia River	100-F SPR 207-1	B17J67	November 3, 2003	Chromium	mg/Kg	1	74	C	37	30
Columbia River	100-H SPR 145-1	B17JB1	October 27, 2003	Chromium	mg/Kg	1	53	C	37	30
Columbia River	100 B/C AREA UR	B17XN6	November 17, 2003	Chromium	mg/Kg	1	103	C	37	30
Columbia River	100-B SPR 37-1	B17XN8	November 13, 2003	Chromium	mg/Kg	1	96	C	37	30
Columbia River	100-B SPR 38-3	B17XN9	November 13, 2003	Chromium	mg/Kg	1	68	C	37	30
Columbia River	Wht Bluffs Slg	B19PJ6	July 12, 2004	Chromium	mg/Kg	1	63	CX	37	30
Columbia River	100 F SLOUGH	B19PJ8	July 12, 2004	Chromium	mg/Kg	1	41	CX	37	30
Columbia River	Hanford Slough	B19PK0	July 12, 2004	Chromium	mg/Kg	1	59	CX	37	30
Columbia River	RICHLAND-RIVER	B19PK2	July 13, 2004	Chromium	mg/Kg	1	78	CX	37	30
Columbia River	300 SPR 42-2	B1BFM1	October 25, 2004	Chromium	mg/Kg	1	50	X	37	30
Columbia River	100-B SPR 37-1	B1BFP7	October 11, 2004	Chromium	mg/Kg	1	82	X	37	30

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Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	HFD SPR UR 28-2	B1BFP9	October 25, 2004	Chromium	mg/Kg	1	45	X	37	30
Columbia River	HFD SPR DR 28-2	B1BFR2	October 25, 2004	Chromium	mg/Kg	1	81	X	37	30
Columbia River	300 SPR DR 42-2	B1BFR5	October 25, 2004	Chromium	mg/Kg	1	56	X	37	30
Columbia River	100-F SPR 207-1	B1BFT0	October 26, 2004	Chromium	mg/Kg	1	62	X	37	30
Columbia River	100-H SPR 145-1	B1BH03	October 26, 2004	Chromium	mg/Kg	1	63	X	37	30
Columbia River	100-B/C Area	HR004W	October 7, 2003	Chromium	mg/kg dry-wt	1	86	=	37	30
Columbia River	100-B/C Area	HR006B/C	October 7, 2003	Chromium	mg/kg dry-wt	1	36	=	37	30
Columbia River	100-N Area	HR016N	October 9, 2003	Chromium	mg/kg dry-wt	1	34	=	37	30
Columbia River	300 Area	HR048-300	August 4, 2004	Chromium	mg/kg	1	36	=	37	30
Columbia River	F Slough	B07NB6	November 12, 1992	Copper	mg/kg	1	63	=	32	2,960
Columbia River	F Slough	B07NB7	November 12, 1992	Copper	mg/kg	1	51	=	32	2,960
Columbia River	F Slough	B07NB8	November 12, 1992	Copper	mg/kg	1	37	=	32	2,960
Columbia River	F Slough	B07NB9	November 12, 1992	Copper	mg/kg	1	42	=	32	2,960
Columbia River	100-H Area	B07NC2	November 13, 1992	Copper	mg/kg	1	33	=	32	2,960
Columbia River	F Slough	B07NC4	November 16, 1992	Copper	mg/kg	1	70	JE	32	2,960
Columbia River	D Island	B07ND5	November 19, 1992	Copper	mg/kg	1	34	=	32	2,960
Columbia River	100-K Area	B07NF9	November 21, 1992	Copper	mg/kg	1	43	=	32	2,960
Columbia River	Wht Bluffs Slg	B176X9	July 14, 2003	Copper	mg/Kg	1	35	=	32	2,960
Columbia River	Wht Bluffs Slg	B19PJ6	July 12, 2004	Copper	mg/Kg	1	33	X	32	2,960
Columbia River	F Slough	B07NC5	November 16, 1992	Iron	mg/kg	1	22,000	*	20,000	23,463
Columbia River	Horn Area	B07NH2	November 23, 1992	Iron	mg/kg	1	31,100	=	20,000	23,463
Columbia River	RM 366	4434245	June 1, 2004	Lead	mg/kg	1	76	=	35	250
Columbia River	F Slough	B07NB6	November 12, 1992	Lead	mg/kg	1	56	=	35	250
Columbia River	F Slough	B07NB7	November 12, 1992	Lead	mg/kg	1	50	=	35	250
Columbia River	F Slough	B07NB9	November 12, 1992	Lead	mg/kg	1	44	=	35	250
Columbia River	100-H Area	B07NC2	November 13, 1992	Lead	mg/kg	1	36	=	35	250
Columbia River	F Slough	B07NC4	November 16, 1992	Lead	mg/kg	1	50	JN	35	250
Columbia River	Hanford Tnsite	B07NC7	November 16, 1992	Lead	mg/kg	1	39	JNS	35	250
Columbia River	Hanford Tnsite	B07ND2	November 17, 1992	Lead	mg/kg	1	43	JN	35	250
Columbia River	100-K Area	B07NF9	November 21, 1992	Lead	mg/kg	1	59	=	35	250
Columbia River	100-K Area	B07NG0	November 21, 1992	Lead	mg/kg	1	40	=	35	250
Columbia River	F Slough	B07NG9	November 23, 1992	Lead	mg/kg	1	50	S	35	250
Columbia River	Horn Area	B07NH1	November 23, 1992	Lead	mg/kg	1	60	=	35	250
Columbia River	Wht Bluffs Slg	B0W3F4	August 9, 1999	Lead	mg/Kg	1	39	=	35	250
Columbia River	HFD SPR UR 28-2	B0WDP9	November 1, 1999	Lead	mg/Kg	1	39	=	35	250
Columbia River	RICHLAND-RIVER	B0YW85	August 8, 2000	Lead	mg/Kg	1	42	=	35	250
Columbia River	Wht Bluffs Slg	B0YY65	August 15, 2000	Lead	mg/Kg	1	43	=	35	250
Columbia River	RICHLAND-RIVER	B12CK1	July 23, 2001	Lead	mg/kg dry-wt	1	57	=	35	250
Columbia River	Wht Bluffs Slg	B176X9	July 14, 2003	Lead	mg/Kg	1	42	=	35	250
Columbia River	Hanford Slough	B176Y3	July 14, 2003	Lead	mg/Kg	1	36	=	35	250
Columbia River	RICHLAND-RIVER	B176Y5	July 16, 2003	Lead	mg/Kg	1	58	=	35	250
Columbia River	100-H SPR 145-1	B17JB1	October 27, 2003	Lead	mg/Kg	1	62	=	35	250

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Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	Wht Bluffs Slg	B19PJ6	July 12, 2004	Lead	mg/Kg	1	58	X	35	250
Columbia River	RICHLAND-RIVER	B19PK2	July 13, 2004	Lead	mg/Kg	1	38	X	35	250
Columbia River	HFD SPR UR 28-2	B1BFP9	October 25, 2004	Lead	mg/Kg	1	50	X	35	250
Columbia River	100-H SPR 145-1	B1BH03	October 26, 2004	Lead	mg/Kg	1	48	X	35	250
Columbia River	100 B/C AREA UR	B17XN6	November 17, 2003	Manganese	mg/Kg	1	511	C	460	1,762
Columbia River	100-B SPR 37-1	B17XN8	November 13, 2003	Manganese	mg/Kg	1	603	C	460	1,762
Columbia River	100-B SPR 38-3	B17XN9	November 13, 2003	Manganese	mg/Kg	1	561	C	460	1,762
Columbia River	Hanford Tnsite	B07NC7	November 16, 1992	Mercury	mg/kg	1	0.68	=	0.18	23
Columbia River	RM 362	4434239	June 1, 2004	Nickel	mg/kg	1	18	=	18	1,564
Columbia River	100-K Area	B07NF9	November 21, 1992	Nickel	mg/kg	1	19	=	18	1,564
Columbia River	Horn Area	B07NH2	November 23, 1992	Nickel	mg/kg	1	22	=	18	1,564
Columbia River	100 F SLOUGH	B0W3F6	August 9, 1999	Nickel	mg/Kg	1	23	=	18	1,564
Columbia River	Hanford Slough	B0W3F8	August 9, 1999	Nickel	mg/Kg	1	23	=	18	1,564
Columbia River	HFD SPR DR 28-2	B0WDR1	November 1, 1999	Nickel	mg/Kg	1	20	=	18	1,564
Columbia River	100-F SPR 207-1	B0WDT0	November 1, 1999	Nickel	mg/Kg	1	19	=	18	1,564
Columbia River	Wht Bluffs Slg	B0YY65	August 15, 2000	Nickel	mg/Kg	1	24	=	18	1,564
Columbia River	Hanford Slough	B0YY69	August 15, 2000	Nickel	mg/Kg	1	24	=	18	1,564
Columbia River	300 SPR 42-2	B10905	November 2, 2000	Nickel	mg/Kg	1	21	=	18	1,564
Columbia River	HFD SPR UR 28-2	B10918	November 2, 2000	Nickel	mg/Kg	1	20	=	18	1,564
Columbia River	HFD SPR DR 28-2	B10921	November 2, 2000	Nickel	mg/Kg	1	22	=	18	1,564
Columbia River	300 SPR DR 42-2	B10923	November 2, 2000	Nickel	mg/Kg	1	20	=	18	1,564
Columbia River	100-F SPR 207-1	B10931	November 20, 2000	Nickel	mg/Kg	1	26	=	18	1,564
Columbia River	Hanford Slough	B12CJ9	July 19, 2001	Nickel	mg/kg dry-wt	1	21	=	18	1,564
Columbia River	RICHLAND-RIVER	B12CK1	July 23, 2001	Nickel	mg/kg dry-wt	1	18	=	18	1,564
Columbia River	300 SPR 42-2	B12RL7	August 27, 2001	Nickel	mg/kg dry-wt	1	20	=	18	1,564
Columbia River	300 SPR DR 42-2	B12RM5	August 27, 2001	Nickel	mg/kg dry-wt	1	18	=	18	1,564
Columbia River	100-F SPR 207-1	B12X37	October 22, 2001	Nickel	mg/kg dry-wt	1	20	=	18	1,564
Columbia River	Wht Bluffs Slg	B176X9	July 14, 2003	Nickel	mg/Kg	1	24	=	18	1,564
Columbia River	Hanford Slough	B176Y3	July 14, 2003	Nickel	mg/Kg	1	30	=	18	1,564
Columbia River	RICHLAND-RIVER	B176Y5	July 16, 2003	Nickel	mg/Kg	1	19	=	18	1,564
Columbia River	300 SPR 42-2	B17J18	October 13, 2003	Nickel	mg/Kg	1	19	=	18	1,564
Columbia River	HFD SPR DR 28-2	B17J58	November 3, 2003	Nickel	mg/Kg	1	26	=	18	1,564
Columbia River	100-K SPR 63-1	B17J64	October 20, 2003	Nickel	mg/Kg	1	19	=	18	1,564
Columbia River	100-F SPR 207-1	B17J67	November 3, 2003	Nickel	mg/Kg	1	26	=	18	1,564
Columbia River	100-H SPR 145-1	B17JB1	October 27, 2003	Nickel	mg/Kg	1	20	=	18	1,564
Columbia River	100 B/C AREA UR	B17XN6	November 17, 2003	Nickel	mg/Kg	1	19	=	18	1,564
Columbia River	100-B SPR 38-3	B17XN9	November 13, 2003	Nickel	mg/Kg	1	21	=	18	1,564
Columbia River	Wht Bluffs Slg	B19PJ6	July 12, 2004	Nickel	mg/Kg	1	22	X	18	1,564
Columbia River	Hanford Slough	B19PK0	July 12, 2004	Nickel	mg/Kg	1	22	X	18	1,564
Columbia River	RICHLAND-RIVER	B19PK2	July 13, 2004	Nickel	mg/Kg	1	18	X	18	1,564
Columbia River	100-B SPR 37-1	B1BFP7	October 11, 2004	Nickel	mg/Kg	1	20	X	18	1,564
Columbia River	HFD SPR UR 28-2	B1BFP9	October 25, 2004	Nickel	mg/Kg	1	21	X	18	1,564

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Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	HFD SPR DR 28-2	B1BFR2	October 25, 2004	Nickel	mg/Kg	1	24	X	18	1,564
Columbia River	100-F SPR 207-1	B1BFT0	October 26, 2004	Nickel	mg/Kg	1	21	X	18	1,564
Columbia River	100-H SPR 145-1	B1BH03	October 26, 2004	Nickel	mg/Kg	1	19	X	18	1,564
Columbia River	300 Outfall	HR063S	August 4, 2004	Nickel	mg/kg	1	19	=	18	1,564
Columbia River	D Island	B07NH7	November 24, 1992	Silver	mg/kg	1	5.3	JN*	4.5	391
Columbia River	100 B/C AREA UR	B17XN6	November 17, 2003	Thorium	mg/Kg	1	7.0	C	1,300	1.3
Columbia River	100-B SPR 37-1	B17XN8	November 13, 2003	Thorium	mg/Kg	1	7.9	C	1,300	1.3
Columbia River	100-B SPR 38-3	B17XN9	November 13, 2003	Thorium	mg/Kg	1	7.4	C	1,300	1.3
Columbia River	300 SPR 42-2	27651	August 27, 2001	Thorium-232	pCi/g dry-wt	1	1.5	=	1,300	1.3
Columbia River	F Slough	B07NB7	November 12, 1992	Thorium-232	pCi/g	1	1.8	=	1,300	1.3
Columbia River	F Slough	B07NB9	November 12, 1992	Thorium-232	pCi/g	1	1.9	=	1,300	1.3
Columbia River	100-H Area	B07NC2	November 13, 1992	Thorium-232	pCi/g	1	1.8	=	1,300	1.3
Columbia River	F Slough	B07NC4	November 16, 1992	Thorium-232	pCi/g	1	3.2	=	1,300	1.3
Columbia River	F Slough	B07NC5	November 16, 1992	Thorium-232	pCi/g	1	1.5	=	1,300	1.3
Columbia River	Horn Area	B07NC9	November 17, 1992	Thorium-232	pCi/g	1	1.6	=	1,300	1.3
Columbia River	Hanford Tnsite	B07ND3	November 17, 1992	Thorium-232	pCi/g	1	2.1	=	1,300	1.3
Columbia River	100-K Area	B07NG2	November 21, 1992	Thorium-232	pCi/g	1	1.5	=	1,300	1.3
Columbia River	Horn Area	B07NH2	November 23, 1992	Thorium-232	pCi/g	1	2.3	=	1,300	1.3
Columbia River	300 FF-5	12913	September 14, 1992	Uranium-234	pCi/g dry-wt	1	1.3	=	5,270	1.1
Columbia River	300 FF-5	12914	September 14, 1992	Uranium-234	pCi/g dry-wt	1	3.5	=	5,270	1.1
Columbia River	F Slough	13166	November 16, 1992	Uranium-234	pCi/g dry-wt	1	1.5	=	5,270	1.1
Columbia River	100-K Area	17209	September 5, 1995	Uranium-234	pCi/g dry-wt	1	2.0	=	5,270	1.1
Columbia River	300 SPR 42-2	17211	September 5, 1995	Uranium-234	pCi/g dry-wt	1	4.5	=	5,270	1.1
Columbia River	HFD SPR 28-2	24751	September 27, 2000	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1
Columbia River	300 SPR 42-2	24752	September 27, 2000	Uranium-234	pCi/g dry-wt	1	2.3	=	5,270	1.1
Columbia River	300 SPR 42-2	27651	August 27, 2001	Uranium-234	pCi/g dry-wt	1	2.7	=	5,270	1.1
Columbia River	100F SPR 207-1	29695	October 29, 2002	Uranium-234	pCi/g dry-wt	1	1.3	=	5,270	1.1
Columbia River	300 SPR 42-2	30932	October 13, 2003	Uranium-234	pCi/g dry-wt	1	2.4	=	5,270	1.1
Columbia River	300 SPR 42-2	30939	October 13, 2003	Uranium-234	pCi/g dry-wt	1	2.2	=	5,270	1.1
Columbia River	300 SPR 42-2	33224	October 25, 2004	Uranium-234	pCi/g dry-wt	1	3.6	=	5,270	1.1
Columbia River	300 SPR 42-2	B0WDL8	November 1, 1999	Uranium-234	pCi/g	1	2.6	=	5,270	1.1
Columbia River	300 SPR DR 42-2	B0WDR2	November 1, 1999	Uranium-234	pCi/g	1	3.9	=	5,270	1.1
Columbia river	300 SPR 42-2	B10908	September 27, 2000	Uranium-234	pCi/g	1	2.0	=	5,270	1.1
Columbia river	300 SPR DR 42-2	B10922	September 27, 2000	Uranium-234	pCi/g	1	3.0	=	5,270	1.1
Columbia River	300 SPR 42-2	B12RL9	August 27, 2001	Uranium-234	pCi/g	1	2.7	=	5,270	1.1
Columbia River	300 SPR 11	B12RY9	August 27, 2001	Uranium-234	pCi/g	1	1.9	=	5,270	1.1
Columbia River	300 SPR DR 42-2	B12T05	August 27, 2001	Uranium-234	pCi/g	1	1.5	=	5,270	1.1
Columbia River	300 SPR 11	B12T06	August 27, 2001	Uranium-234	pCi/g	1	1.5	=	5,270	1.1
Columbia River	Wht Bluffs Slg	B14YM6	July 23, 2002	Uranium-234	pCi/g	1	1.6	=	5,270	1.1
Columbia River	300 SPR DR 42-2	B15C47	October 7, 2002	Uranium-234	pCi/g	1	11	=	5,270	1.1
Columbia River	300 SPR 42-2	B17J20	October 13, 2003	Uranium-234	pCi/g	1	1.4	=	5,270	1.1
Columbia River	300 SPR DR 42-2	B17J59	October 13, 2003	Uranium-234	pCi/g	1	1.5	=	5,270	1.1

Table B-7

Summary of Surface Sediment Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	300 SPR 42-2	B1BFN9	October 25, 2004	Uranium-234	pCi/g	1	2.4	=	5,270	1.1
Columbia River	300 SPR DR 42-2	B1BFR3	October 25, 2004	Uranium-234	pCi/g	1	4.1	=	5,270	1.1
Columbia River	300 Upstream	HR037-300	August 4, 2004	Uranium-234	pCi/g	1	2.0	=	5,270	1.1
Columbia River	300 Area	HR046-300	August 4, 2004	Uranium-234	pCi/g	1	3.0	=	5,270	1.1
Columbia River	100N SHORE HGP	12645	June 30, 1992	Uranium-238	pCi/g dry-wt	1	1.6	=	2,490	1.1
Columbia River	300 FF-5	12913	September 14, 1992	Uranium-238	pCi/g dry-wt	1	1.2	=	2,490	1.1
Columbia River	300 FF-5	12914	September 14, 1992	Uranium-238	pCi/g dry-wt	1	3.1	=	2,490	1.1
Columbia River	F Slough	13166	November 16, 1992	Uranium-238	pCi/g dry-wt	1	1.4	=	2,490	1.1
Columbia River	100-K Area	17209	September 5, 1995	Uranium-238	pCi/g dry-wt	1	2.0	=	2,490	1.1
Columbia River	300 SPR 42-2	17211	September 5, 1995	Uranium-238	pCi/g dry-wt	1	4.3	=	2,490	1.1
Columbia River	HFD SPR 28-2	24751	September 27, 2000	Uranium-238	pCi/g dry-wt	1	1.2	=	2,490	1.1
Columbia River	300 SPR 42-2	24752	September 27, 2000	Uranium-238	pCi/g dry-wt	1	2.2	=	2,490	1.1
Columbia River	300 SPR 42-2	27651	August 27, 2001	Uranium-238	pCi/g dry-wt	1	2.5	=	2,490	1.1
Columbia River	100F SPR 207-1	29695	October 29, 2002	Uranium-238	pCi/g dry-wt	1	1.2	=	2,490	1.1
Columbia River	300 SPR 42-2	30932	October 13, 2003	Uranium-238	pCi/g dry-wt	1	2.3	=	2,490	1.1
Columbia River	300 SPR 42-2	30939	October 13, 2003	Uranium-238	pCi/g dry-wt	1	2.1	=	2,490	1.1
Columbia River	300 SPR 42-2	33224	October 25, 2004	Uranium-238	pCi/g dry-wt	1	3.3	=	2,490	1.1
Columbia River	F Slough	B07NB9	November 12, 1992	Uranium-238	pCi/g	1	1.3	=	2,490	1.1
Columbia River	100-H Area	B07NC2	November 13, 1992	Uranium-238	pCi/g	1	1.2	=	2,490	1.1
Columbia River	100-H Area	B07NC3	November 13, 1992	Uranium-238	pCi/g	1	1.2	=	2,490	1.1
Columbia River	F Slough	B07NC4	November 16, 1992	Uranium-238	pCi/g	1	2.0	=	2,490	1.1
Columbia River	Horn Area	B07NH2	November 23, 1992	Uranium-238	pCi/g	1	2.0	=	2,490	1.1
Columbia River	F Slough	B0BRV6	April 15, 1994	Uranium-238	pCi/g	1	1.4	=	2,490	1.1
Columbia River	300 SPR 42-2	B0WDL8	November 1, 1999	Uranium-238	pCi/g	1	2.2	=	2,490	1.1
Columbia River	300 SPR DR 42-2	B0WDR2	November 1, 1999	Uranium-238	pCi/g	1	3.7	=	2,490	1.1
Columbia river	300 SPR 42-2	B10908	September 27, 2000	Uranium-238	pCi/g	1	1.9	=	2,490	1.1
Columbia river	300 SPR DR 42-2	B10922	September 27, 2000	Uranium-238	pCi/g	1	2.6	=	2,490	1.1
Columbia River	300 SPR 42-2	B12RL9	August 27, 2001	Uranium-238	pCi/g	1	2.5	=	2,490	1.1
Columbia River	300 SPR 11	B12RY9	August 27, 2001	Uranium-238	pCi/g	1	1.8	=	2,490	1.1
Columbia River	300 SPR DR 42-2	B12T05	August 27, 2001	Uranium-238	pCi/g	1	1.3	=	2,490	1.1
Columbia River	300 SPR 11	B12T06	August 27, 2001	Uranium-238	pCi/g	1	1.3	=	2,490	1.1
Columbia River	Wht Bluffs Slg	B14YM6	July 23, 2002	Uranium-238	pCi/g	1	1.3	=	2,490	1.1
Columbia River	300 SPR DR 42-2	B15C47	October 7, 2002	Uranium-238	pCi/g	1	10.0	=	2,490	1.1
Columbia River	300 SPR 42-2	B17J20	October 13, 2003	Uranium-238	pCi/g	1	1.3	=	2,490	1.1
Columbia River	300 SPR DR 42-2	B17J59	October 13, 2003	Uranium-238	pCi/g	1	1.5	=	2,490	1.1
Columbia River	300 SPR 42-2	B1BFN9	October 25, 2004	Uranium-238	pCi/g	1	2.4	=	2,490	1.1
Columbia River	300 SPR DR 42-2	B1BFR3	October 25, 2004	Uranium-238	pCi/g	1	3.8	=	2,490	1.1
Columbia River	300 Upstream	HR037-300	August 4, 2004	Uranium-238	pCi/g	1	1.4	=	2,490	1.1
Columbia River	300 Area	HR046-300	August 4, 2004	Uranium-238	pCi/g	1	3.7	=	2,490	1.1
Columbia River	Horn Area	B07NH2	November 23, 1992	Vanadium	mg/kg	1	86	=	--	78
Columbia River	300 Area	4434235	June 1, 2004	Zinc	mg/kg	1	305	=	120	23,463
Columbia River	RM 362	4434239	June 1, 2004	Zinc	mg/kg	1	444	=	120	23,463

Table B-7**Summary of Surface Sediment Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	RM 366	4434245	June 1, 2004	Zinc	mg/kg	1	402	=	120	23,463
Columbia River	F Slough	B07NB6	November 12, 1992	Zinc	mg/kg	1	335	=	120	23,463
Columbia River	F Slough	B07NB7	November 12, 1992	Zinc	mg/kg	1	309	=	120	23,463
Columbia River	F Slough	B07NB8	November 12, 1992	Zinc	mg/kg	1	246	=	120	23,463
Columbia River	F Slough	B07NB9	November 12, 1992	Zinc	mg/kg	1	195	=	120	23,463
Columbia River	100-H Area	B07NC2	November 13, 1992	Zinc	mg/kg	1	168	=	120	23,463
Columbia River	100-H Area	B07NC3	November 13, 1992	Zinc	mg/kg	1	141	=	120	23,463
Columbia River	F Slough	B07NC4	November 16, 1992	Zinc	mg/kg	1	315	=	120	23,463
Columbia River	Hanford Tnsite	B07NC6	November 16, 1992	Zinc	mg/kg	1	123	=	120	23,463
Columbia River	Hanford Tnsite	B07NC7	November 16, 1992	Zinc	mg/kg	1	219	=	120	23,463
Columbia River	Horn Area	B07NC9	November 17, 1992	Zinc	mg/kg	1	279	=	120	23,463
Columbia River	Horn Area	B07ND0	November 17, 1992	Zinc	mg/kg	1	221	=	120	23,463
Columbia River	Hanford Tnsite	B07ND2	November 17, 1992	Zinc	mg/kg	1	293	=	120	23,463
Columbia River	Hanford Tnsite	B07ND3	November 17, 1992	Zinc	mg/kg	1	155	=	120	23,463
Columbia River	D Island	B07ND4	November 19, 1992	Zinc	mg/kg	1	192	=	120	23,463
Columbia River	D Island	B07ND5	November 19, 1992	Zinc	mg/kg	1	216	=	120	23,463
Columbia River	D Island	B07ND6	November 19, 1992	Zinc	mg/kg	1	144	=	120	23,463
Columbia River	D Island	B07ND7	November 19, 1992	Zinc	mg/kg	1	203	=	120	23,463
Columbia River	Horn Area	B07NF0	November 19, 1992	Zinc	mg/kg	1	377	=	120	23,463
Columbia River	100-D Area	B07NF1	November 19, 1992	Zinc	mg/kg	1	221	=	120	23,463
Columbia River	100-D Area	B07NF2	November 19, 1992	Zinc	mg/kg	1	257	=	120	23,463
Columbia River	100-K Area	B07NF9	November 21, 1992	Zinc	mg/kg	1	454	=	120	23,463
Columbia River	100-K Area	B07NG0	November 21, 1992	Zinc	mg/kg	1	378	=	120	23,463
Columbia River	100-K Area	B07NG1	November 21, 1992	Zinc	mg/kg	1	209	=	120	23,463
Columbia River	100-H Area	B07NG3	November 22, 1992	Zinc	mg/kg	1	397	=	120	23,463
Columbia River	100-H Area	B07NG5	November 22, 1992	Zinc	mg/kg	1	253	=	120	23,463
Columbia River	100-H Area	B07NG6	November 22, 1992	Zinc	mg/kg	1	369	=	120	23,463
Columbia River	100-H Area	B07NG7	November 22, 1992	Zinc	mg/kg	1	230	=	120	23,463
Columbia River	F Slough	B07NG9	November 23, 1992	Zinc	mg/kg	1	296	=	120	23,463
Columbia River	Horn Area	B07NH1	November 23, 1992	Zinc	mg/kg	1	294	=	120	23,463
Columbia River	D Island	B07NH5	November 24, 1992	Zinc	mg/kg	1	185	=	120	23,463
Columbia River	D Island	B07NH6	November 24, 1992	Zinc	mg/kg	1	209	=	120	23,463
Columbia River	D Island	B07NH7	November 24, 1992	Zinc	mg/kg	1	167	=	120	23,463
Columbia River	Wht Bluffs Slg	B0CSH3	September 24, 1994	Zinc	mg/kg	1	200	=	120	23,463
Columbia River	Richland, WA	B0CSH6	September 25, 1994	Zinc	mg/kg	1	190	=	120	23,463
Columbia River	HFD SPR 28-2	B0CSH8	September 2, 1994	Zinc	mg/kg	1	140	=	120	23,463
Columbia River	Wht Bluffs Slg	B0W3F4	August 9, 1999	Zinc	mg/Kg	1	334	=	120	23,463
Columbia River	100 F SLOUGH	B0W3F6	August 9, 1999	Zinc	mg/Kg	1	275	=	120	23,463
Columbia River	Hanford Slough	B0W3F8	August 9, 1999	Zinc	mg/Kg	1	187	=	120	23,463
Columbia River	100-B SPR 38-3	B0WDP5	October 25, 1999	Zinc	mg/Kg	1	149	=	120	23,463
Columbia River	HFD SPR UR 28-2	B0WDP9	November 1, 1999	Zinc	mg/Kg	1	164	=	120	23,463
Columbia River	HFD SPR DR 28-2	B0WDR1	November 1, 1999	Zinc	mg/Kg	1	154	=	120	23,463

Table B-7**Summary of Surface Sediment Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	300 SPR DR 42-2	B0WDR3	November 1, 1999	Zinc	mg/Kg	1	146	=	120	23,463
Columbia River	100-F SPR 207-1	B0WDT0	November 1, 1999	Zinc	mg/Kg	1	205	=	120	23,463
Columbia River	RICHLAND-RIVER	B0YW85	August 8, 2000	Zinc	mg/Kg	1	292	=	120	23,463
Columbia River	Wht Bluffs Slg	B0YY65	August 15, 2000	Zinc	mg/Kg	1	360	=	120	23,463
Columbia River	100 F SLOUGH	B0YY67	August 15, 2000	Zinc	mg/Kg	1	219	=	120	23,463
Columbia River	100-B SPR 38-3	B10916	November 20, 2000	Zinc	mg/Kg	1	137	=	120	23,463
Columbia River	HFD SPR UR 28-2	B10918	November 2, 2000	Zinc	mg/Kg	1	200	=	120	23,463
Columbia River	HFD SPR DR 28-2	B10921	November 2, 2000	Zinc	mg/Kg	1	149	=	120	23,463
Columbia River	300 SPR DR 42-2	B10923	November 2, 2000	Zinc	mg/Kg	1	161	=	120	23,463
Columbia River	100-F SPR 207-1	B10931	November 20, 2000	Zinc	mg/Kg	1	155	=	120	23,463
Columbia River	100 F SLOUGH	B12CJ7	July 19, 2001	Zinc	mg/kg dry-wt	1	212	=	120	23,463
Columbia River	RICHLAND-RIVER	B12CK1	July 23, 2001	Zinc	mg/kg dry-wt	1	366	=	120	23,463
Columbia River	300 SPR 42-2	B12RL7	August 27, 2001	Zinc	mg/kg dry-wt	1	144	=	120	23,463
Columbia River	300 SPR DR 42-2	B12RM5	August 27, 2001	Zinc	mg/kg dry-wt	1	215	=	120	23,463
Columbia River	300 SPR 11	B12RY8	August 27, 2001	Zinc	mg/kg dry-wt	1	128	=	120	23,463
Columbia River	300 SPR 14	B12T08	August 27, 2001	Zinc	mg/kg dry-wt	1	154	=	120	23,463
Columbia River	100-B SPR 38-3	B12X22	October 22, 2001	Zinc	mg/kg dry-wt	1	141	=	120	23,463
Columbia River	100-F SPR 207-1	B12X37	October 22, 2001	Zinc	mg/kg dry-wt	1	199	=	120	23,463
Columbia River	Wht Bluffs Slg	B176X9	July 14, 2003	Zinc	mg/Kg	1	394	=	120	23,463
Columbia River	100 F SLOUGH	B176Y1	July 14, 2003	Zinc	mg/Kg	1	222	=	120	23,463
Columbia River	Hanford Slough	B176Y3	July 14, 2003	Zinc	mg/Kg	1	477	=	120	23,463
Columbia River	RICHLAND-RIVER	B176Y5	July 16, 2003	Zinc	mg/Kg	1	332	=	120	23,463
Columbia River	100-B SPR 37-1	B17J53	October 20, 2003	Zinc	mg/Kg	1	175	=	120	23,463
Columbia River	HFD SPR DR 28-2	B17J58	November 3, 2003	Zinc	mg/Kg	1	188	=	120	23,463
Columbia River	300 SPR DR 42-2	B17J61	October 13, 2003	Zinc	mg/Kg	1	128	=	120	23,463
Columbia River	100-K SPR 63-1	B17J64	October 20, 2003	Zinc	mg/Kg	1	196	=	120	23,463
Columbia River	100-F SPR 207-1	B17J67	November 3, 2003	Zinc	mg/Kg	1	256	=	120	23,463
Columbia River	100-H SPR 145-1	B17JB1	October 27, 2003	Zinc	mg/Kg	1	306	=	120	23,463
Columbia River	100-B SPR 37-1	B17XN8	November 13, 2003	Zinc	mg/Kg	1	151	=	120	23,463
Columbia River	100-B SPR 38-3	B17XN9	November 13, 2003	Zinc	mg/Kg	1	184	=	120	23,463
Columbia River	Wht Bluffs Slg	B19PJ6	July 12, 2004	Zinc	mg/Kg	1	380	X	120	23,463
Columbia River	100 F SLOUGH	B19PJ8	July 12, 2004	Zinc	mg/Kg	1	216	X	120	23,463
Columbia River	RICHLAND-RIVER	B19PK2	July 13, 2004	Zinc	mg/Kg	1	242	X	120	23,463
Columbia River	HFD SPR UR 28-2	B1BFP9	October 25, 2004	Zinc	mg/Kg	1	255	X	120	23,463
Columbia River	HFD SPR DR 28-2	B1BFR2	October 25, 2004	Zinc	mg/Kg	1	162	X	120	23,463
Columbia River	300 SPR DR 42-2	B1BFR5	October 25, 2004	Zinc	mg/Kg	1	144	X	120	23,463
Columbia River	100-F SPR 207-1	B1BFT0	October 26, 2004	Zinc	mg/Kg	1	148	X	120	23,463
Columbia River	100-H SPR 145-1	B1BH03	October 26, 2004	Zinc	mg/Kg	1	268	X	120	23,463

Table B-8

Summary Statistics for All Categories of Surface Water Samples Collected from Segment 2 of the Columbia River
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Alkalinity	mg/L	3	3	100%	--	--	56	60	58
CONV	Ammonia	mg/L	1	0	0%	1.0	1.0	--	--	0.50
CONV	Bicarbonate	mg/L	1	1	100%	--	--	57	57	57
CONV	Bromide	mg/L	8	0	0%	0.25	0.25	--	--	0.13
CONV	Carbonate	mg/L	2	2	100%	--	--	39	45	42
CONV	Chloride	mg/L	515	513	100%	0.035	20	0.65	48	2.4
CONV	Cyanide	mg/L	21	0	0%	0.0016	0.050	--	--	0.0020
CONV	Dissolved oxygen	mg/L	5	5	100%	--	--	9.3	9.8	9.7
CONV	Fluoride	mg/L	515	488	95%	0.010	0.50	0.013	2.4	0.12
CONV	Hardness	mg/L	1	1	100%	--	--	69	69	69
CONV	Nitrate	mg/L	27	26	96%	0.50	0.50	0.34	7.5	2.5
CONV	Nitrite	mg/L	8	0	0%	0.10	0.25	--	--	0.12
CONV	Nitrogen, Nitrate (as N)	mg/L	604	603	100%	0.011	0.011	0.028	295	1.6
CONV	Nitrogen, Nitrate-Nitrite	mg/L	91	91	100%	--	--	0.067	22,000	432
CONV	Nitrogen, Nitrite	mg/L	503	7	1%	0.0020	0.15	0.0081	0.023	0.0038
CONV	Orthophosphate	mg/L	1	0	0%	0.10	0.10	--	--	0.050
Oxidation Reduction										
CONV	Potential	mV	13	13	100%	--	--	132	343	231
CONV	pH	pH Units	31	31	100%	--	--	6.7	8.0	7.6
CONV	Phosphate	mg/L	9	1	11%	0.25	0.25	0.010	0.010	0.11
CONV	Specific Conductance	umhos/cm	32	32	100%	--	--	120	426	209
CONV	Sulfate	mg/L	515	514	100%	0.11	0.11	1.1	290	14
CONV	Temperature	Deg C	21	21	100%	--	--	7.1	18	13
CONV	Total dissolved solids	mg/L	1	0	0%	150	150	--	--	75
CONV	Total suspended solids	mg/L	6	6	100%	--	--	7.0	14	10
METAL	Aluminum	mg/L	109	57	52%	0.012	0.096	3.39E-04	21	0.39
METAL	Antimony	mg/L	1058	978	92%	0.0017	0.039	9.10E-05	0.0043	0.0010
METAL	Arsenic	mg/L	980	979	100%	0.0020	0.0020	6.00E-06	0.0085	8.95E-04
METAL	Barium	mg/L	122	121	99%	0.10	0.10	0.017	0.29	0.040
METAL	Beryllium	mg/L	975	76	8%	8.00E-06	0.0050	9.95E-07	0.0018	4.55E-05
METAL	Cadmium	mg/L	1057	795	75%	4.44E-06	0.0043	5.58E-06	0.0035	1.21E-04
METAL	Calcium	mg/L	84	84	100%	--	--	17	65	31
METAL	Chromium	mg/L	1065	843	79%	1.65E-05	0.10	2.09E-05	0.22	0.0053
METAL	Cobalt	mg/L	81	3	4%	8.00E-04	0.0050	0.0017	0.0096	0.0020
METAL	Copper	mg/L	1060	1001	94%	8.60E-04	10	2.02E-04	0.037	0.0058
METAL	Iodine	mg/L	37	37	100%	--	--	4.28E-04	51	1.4
METAL	Iron	mg/L	82	45	55%	0.016	0.10	0.016	20	0.54
METAL	Lead	mg/L	980	900	92%	4.00E-06	0.0020	1.11E-06	0.066	3.14E-04
METAL	Magnesium	mg/L	84	84	100%	--	--	4.0	18	7.0
METAL	Manganese	mg/L	134	103	77%	3.00E-04	0.010	3.70E-05	0.94	0.017
METAL	Mercury	mg/L	398	397	100%	5.00E-04	5.00E-04	2.25E-07	4.07E-05	1.77E-06
METAL	Molybdenum	mg/L	1	1	100%	--	--	6.14E-04	6.14E-04	6.14E-04

Table B-8

Summary Statistics for All Categories of Surface Water Samples Collected from Segment 2 of the Columbia River
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Nickel	mg/L	1061	988	93%	2.83E-05	0.040	4.10E-05	0.032	0.0012
METAL	Potassium	mg/L	67	33	49%	1.3	3.0	0.52	12	1.9
METAL	Selenium	mg/L	982	457	47%	6.42E-05	0.0050	6.73E-05	0.0039	3.78E-04
METAL	Silica	mg/L	1	1	100%	--	--	2.0	2.0	2.0
METAL	Silicon	mg/L	2	2	100%	--	--	0.095	0.21	0.15
METAL	Silver	mg/L	1060	355	33%	1.20E-06	0.010	9.48E-07	0.0030	1.34E-04
METAL	Sodium	mg/L	84	83	99%	5.0	5.0	2.0	19	6.2
METAL	Strontium	mg/L	81	81	100%	--	--	0.081	0.38	0.16
METAL	Thallium	mg/L	899	802	89%	3.00E-06	0.0020	5.18E-06	4.07E-04	2.21E-05
METAL	Thorium	mg/L	42	2	5%	3.10E-06	1.11E-04	5.65E-06	1.19E-05	4.08E-05
METAL	Uranium	mg/L	54	54	100%	--	--	1.21E-04	0.0087	0.0021
METAL	Vanadium	mg/L	81	38	47%	9.00E-04	0.0097	6.50E-04	0.049	0.0066
METAL	Zinc	mg/L	1061	1038	98%	1.40E-04	0.020	3.51E-04	0.42	0.0045
RAD	Actinium-228	pCi/L	27	0	0%	5.0	26	--	--	6.2
RAD	Americium-241	pCi/L	3	0	0%	0.0018	0.0052	--	--	0.0018
RAD	Antimony-124	pCi/L	1	0	0%	6.1	6.1	--	--	3.0
RAD	Antimony-125	pCi/L	138	0	0%	4.97E-06	15	--	--	0.60
RAD	Barium-133	pCi/L	1	0	0%	7.0	7.0	--	--	3.5
RAD	Barium-140	pCi/L	83	2	2%	0.10	506	4.0	4.5	10
RAD	Beryllium-7	pCi/L	263	67	25%	6.40E-07	93	0.016	41	5.1
RAD	Carbon-14	pCi/L	10	4	40%	1.2	7.3	9.2	608	74
RAD	Cerium-139	pCi/L	1	0	0%	4.6	4.6	--	--	2.3
RAD	Cerium-141	pCi/L	50	0	0%	2.5	25	--	--	3.1
RAD	Cerium-144	pCi/L	50	0	0%	8.9	39	--	--	10
RAD	Cesium-134	pCi/L	218	1	0%	2.46E-07	6.6	1.0	1.0	0.55
RAD	Cesium-136	pCi/L	1	0	0%	8.4	8.4	--	--	4.2
RAD	Cesium-137	pCi/L	352	16	5%	2.08E-05	17	0.0020	8.5	0.49
RAD	Chromium-51	pCi/L	1	0	0%	52	52	--	--	26
RAD	Cobalt-57	pCi/L	38	0	0%	1.2	4.5	--	--	1.2
RAD	Cobalt-58	pCi/L	80	0	0%	0.020	9.5	--	--	1.1
RAD	Cobalt-60	pCi/L	344	2	1%	1.47E-05	22	1.0	1.2	0.50
RAD	Europium-152	pCi/L	98	0	0%	1.53E-04	39	--	--	2.8
RAD	Europium-154	pCi/L	156	0	0%	2.63E-05	49	--	--	0.88
RAD	Europium-155	pCi/L	152	0	0%	1.46E-04	41	--	--	0.61
RAD	Gross alpha	pCi/L	375	150	40%	0.0065	4.0	0.20	228	6.5
RAD	Gross beta	pCi/L	487	269	55%	0.028	4.0	0.40	84	5.5
RAD	Iodine-129	pCi/L	53	53	100%	--	--	2.55E-05	0.41	0.054
RAD	Iodine-131	pCi/L	84	3	4%	0.019	1,100	1.0	1.2	10
RAD	Iron-59	pCi/L	98	8	8%	0.10	52	1.8	3.0	2.7
RAD	Lanthanum-140	pCi/L	51	0	0%	2.0	172	--	--	5.4
RAD	Manganese-54	pCi/L	82	0	0%	0.010	6.1	--	--	1.1
RAD	Molybdenum-99	pCi/L	1	0	0%	300	300	--	--	150

Table B-8

Summary Statistics for All Categories of Surface Water Samples Collected from Segment 2 of the Columbia River
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Nickel-63	pCi/L	2	0	0%	2.0	3.4	--	--	1.4
RAD	Niobium-94	pCi/L	1	0	0%	5.9	5.9	--	--	3.0
RAD	Niobium-95	pCi/L	50	0	0%	1.3	10	--	--	1.7
RAD	Plutonium-238	pCi/L	29	6	21%	7.06E-07	9.26E-04	6.35E-06	0.0052	3.96E-04
RAD	Plutonium-239/240	pCi/L	41	15	37%	1.04E-07	0.0025	6.89E-06	1.63E-04	7.45E-05
RAD	Potassium-40	pCi/L	308	184	60%	2.72E-04	220	0.027	126	15
RAD	Radium-226	pCi/L	63	10	16%	9.9	192	0.022	0.058	30
RAD	Radium-228	pCi/L	12	4	33%	0.0059	78	0.36	1.0	5.8
RAD	Ruthenium-103	pCi/L	50	0	0%	1.5	14	--	--	1.9
RAD	Ruthenium-106	pCi/L	191	0	0%	1.36E-04	54	--	--	5.1
RAD	Selenium-75	pCi/L	1	0	0%	6.5	6.5	--	--	3.2
RAD	Silver-110 metastable	pCi/L	1	0	0%	5.7	5.7	--	--	2.9
RAD	Sodium-24	pCi/L	1	0	0%	26,600	26,600	--	--	13,300
RAD	Strontium-85	pCi/L	1	0	0%	7.8	7.8	--	--	3.9
RAD	Strontium-90	pCi/L	784	636	81%	2.67E-05	1.3	0.022	109	0.44
RAD	Technetium-99	pCi/L	144	64	44%	0.0041	0.70	0.27	144	12
RAD	Tellurium-129M	pCi/L	1	0	0%	68	68	--	--	34
RAD	Thorium-228	pCi/L	60	2	3%	0.0018	500	0.080	0.084	18
RAD	Thorium-230	pCi/L	6	3	50%	0.0030	0.0097	0.054	2.6	0.46
RAD	Thorium-232	pCi/L	9	2	22%	3.78E-04	78	0.060	0.087	8.8
RAD	Tin-113	pCi/L	1	0	0%	7.1	7.1	--	--	3.5
RAD	Tritium	pCi/L	1136	970	85%	0.060	284	17	112,000	1,939
RAD	Uranium	pCi/L	118	118	100%	--	--	0.14	100	5.5
RAD	Uranium-234	pCi/L	778	776	100%	0.010	0.12	0.078	111	1.8
RAD	Uranium-235	pCi/L	715	200	28%	2.59E-04	56	0.0065	2.9	0.48
RAD	Uranium-236	pCi/L	8	8	100%	--	--	0.29	1.0	0.68
RAD	Uranium-238	pCi/L	782	776	99%	0.010	1,900	0.070	99	3.9
RAD	Yttrium	pCi/L	1	0	0%	6.7	6.7	--	--	3.4
RAD	Zinc-65	pCi/L	66	0	0%	0.20	15	--	--	2.7
RAD	Zirconium-95	pCi/L	84	5	6%	0.040	16	0.90	1.5	1.9
SVOC	1,4-Dichlorobenzene	mg/L	120	3	3%	1.10E-04	2.50E-04	1.90E-04	2.50E-04	8.16E-05
VOC	1,1,1-Trichloroethane	mg/L	119	0	0%	7.00E-05	3.10E-04	--	--	1.05E-04
VOC	1,1,2-Trichloroethane	mg/L	120	11	9%	5.00E-05	3.10E-04	1.30E-04	8.80E-04	1.43E-04
VOC	1,1-Dichloroethane	mg/L	120	0	0%	1.20E-04	2.50E-04	--	--	9.97E-05
VOC	1,1-Dichloroethene	mg/L	15	0	0%	2.30E-04	2.30E-04	--	--	1.15E-04
VOC	1,2-Dichloroethane	mg/L	120	13	11%	8.00E-05	2.70E-04	1.30E-04	0.0011	1.55E-04
VOC	2-Butanone	mg/L	120	0	0%	1.00E-04	8.90E-04	--	--	2.07E-04
VOC	4-Methyl-2-Pentanone	mg/L	120	0	0%	1.50E-04	0.0013	--	--	2.87E-04
VOC	Acetone	mg/L	120	46	38%	2.10E-04	0.0040	6.00E-04	0.0062	0.0011
VOC	Benzene	mg/L	120	1	1%	7.00E-05	2.30E-04	1.40E-04	1.40E-04	7.90E-05
VOC	Carbon disulfide	mg/L	120	4	3%	6.00E-05	4.30E-04	4.60E-04	0.0024	1.83E-04
VOC	Carbon tetrachloride	mg/L	119	1	1%	1.00E-04	3.30E-04	0.0041	0.0041	1.39E-04

Table B-8**Summary Statistics for All Categories of Surface Water Samples Collected from Segment 2 of the Columbia River
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
VOC	Chlorobenzene	mg/L	6	0	0%	2.80E-04	2.80E-04	--	--	1.40E-04
VOC	Chloroform	mg/L	120	19	16%	7.00E-05	2.30E-04	1.90E-04	0.0055	3.89E-04
VOC	cis-1,2-dichloroethene	mg/L	117	4	3%	6.00E-05	2.40E-04	3.00E-04	4.00E-04	8.12E-05
VOC	Ethylbenzene	mg/L	33	0	0%	1.40E-04	2.40E-04	--	--	9.42E-05
VOC	Ethylcyanide	mg/L	120	0	0%	6.80E-04	0.0026	--	--	8.93E-04
VOC	Methylene chloride	mg/L	120	13	11%	1.70E-04	4.10E-04	2.60E-04	0.0010	1.87E-04
VOC	n-Butanol	mg/L	108	0	0%	0.0038	0.0070	--	--	0.0025
VOC	Tetrachloroethene	mg/L	120	1	1%	8.00E-05	5.70E-04	7.00E-04	7.00E-04	1.60E-04
VOC	Tetrahydrofuran	mg/L	120	0	0%	0.0012	0.0023	--	--	8.95E-04
VOC	Toluene	mg/L	120	41	34%	7.00E-05	3.30E-04	1.30E-04	9.80E-04	2.25E-04
VOC	trans-1,2-Dichloroethene	mg/L	120	0	0%	9.00E-05	2.60E-04	--	--	9.83E-05
VOC	Trichloroethene	mg/L	120	15	13%	9.00E-05	2.90E-04	3.10E-04	0.0033	2.78E-04
VOC	Vinyl chloride	mg/L	120	0	0%	8.00E-05	3.20E-04	--	--	1.13E-04
VOC	Xylenes (total)	mg/L	120	15	13%	2.80E-04	7.90E-04	3.40E-04	0.0012	3.14E-04

CONV - Conventional parameter

RAD - Radionuclide

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table B-9
Comparison of All Categories of Surface Water Concentrations from Segment 2 of the Columbia River to Ecological and Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Ecological	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
									Benchmark Value							
CONV	Alkalinity	mg/L	3	3	100%	56	60	58	--	--	--	--	--	--	--	--
CONV	Bicarbonate	mg/L	1	1	100%	57	57	57	--	--	--	--	--	--	--	--
CONV	Carbonate	mg/L	2	2	100%	39	45	42	--	--	--	--	--	--	--	--
CONV	Chloride	mg/L	515	513	100%	0.65	48	2.4	230	No	0.21	0	--	--	--	--
CONV	Dissolved oxygen	mg/L	5	5	100%	9.3	9.8	9.7	--	--	--	--	--	--	--	--
CONV	Fluoride	mg/L	515	488	95%	0.013	2.4	0.12	--	--	--	--	--	--	--	--
CONV	Hardness	mg/L	1	1	100%	69	69	69	--	--	--	--	--	--	--	--
CONV	Nitrate	mg/L	27	26	96%	0.34	7.5	2.5	--	--	--	--	10	No	0.75	0
CONV	Nitrogen, Nitrate (as N)	mg/L	604	603	100%	0.028	295	1.6	--	--	--	--	--	--	--	--
CONV	Nitrogen, Nitrate-Nitrite	mg/L	91	91	100%	0.067	22,000	432	--	--	--	--	--	--	--	--
CONV	Nitrogen, Nitrite	mg/L	503	7	1%	0.0081	0.023	0.0038	--	--	--	--	--	--	--	--
	Oxidation Reduction Potential	mV	13	13	100%	132	343	231	--	--	--	--	--	--	--	--
CONV	pH	pH Units	31	31	100%	6.7	8.0	7.6	--	--	--	--	--	--	--	--
CONV	Phosphate	mg/L	9	1	11%	0.010	0.010	0.11	--	--	--	--	--	--	--	--
CONV	Specific Conductance	umhos/cm	32	32	100%	120	426	209	--	--	--	--	--	--	--	--
CONV	Sulfate	mg/L	515	514	100%	1.1	290	14	--	--	--	--	--	--	--	--
CONV	Temperature	Deg C	21	21	100%	7.1	18	13	--	--	--	--	--	--	--	--
CONV	Total suspended solids	mg/L	6	6	100%	7.0	14	10	--	--	--	--	--	--	--	--
METAL	Aluminum	mg/L	109	57	52%	3.39E-04	21	0.39	0.087	Yes	243	18	--	--	--	--
METAL	Antimony	mg/L	1058	978	92%	9.10E-05	0.0043	0.0010	1.6	No	0.0027	0	0.0056	No	0.77	0
METAL	Arsenic	mg/L	980	979	100%	6.00E-06	0.0085	8.95E-04	0.15	No	0.057	0	1.80E-05	Yes	473	978
METAL	Barium	mg/L	122	121	99%	0.017	0.29	0.040	0.0040	Yes	73	121	1.0	No	0.29	0
METAL	Beryllium	mg/L	975	76	8%	9.95E-07	0.0018	4.55E-05	0.0053	No	0.34	0	--	--	--	--
METAL	Cadmium	mg/L	1057	795	75%	5.58E-06	0.0035	1.21E-04	2.50E-04	Yes	14	15	--	--	--	--
METAL	Calcium	mg/L	84	84	100%	17	65	31	116	No	0.56	0	--	--	--	--
METAL	Chromium	mg/L	1065	843	79%	2.09E-05	0.22	0.0053	0.010	Yes	22	118	--	--	--	--
METAL	Cobalt	mg/L	81	3	4%	0.0017	0.0096	0.0020	0.023	No	0.42	0	--	--	--	--
METAL	Copper	mg/L	1060	1001	94%	2.02E-04	0.037	0.0058	0.0060	Yes	6.3	17	--	--	--	--
METAL	Iodine	mg/L	37	37	100%	4.28E-04	51	1.4	--	--	--	--	--	--	--	--
METAL	Iron	mg/L	82	45	55%	0.016	20	0.54	1.0	Yes	20	5	0.30	Yes	68	10
METAL	Lead	mg/L	980	900	92%	1.11E-06	0.066	3.14E-04	8.67E-04	Yes	76	34	--	--	--	--
METAL	Magnesium	mg/L	84	84	100%	4.0	18	7.0	82	No	0.22	0	--	--	--	--
METAL	Manganese	mg/L	134	103	77%	3.70E-05	0.94	0.017	0.12	Yes	7.8	4	0.050	Yes	19	7
METAL	Mercury	mg/L	398	397	100%	2.25E-07	4.07E-05	1.77E-06	1.20E-05	Yes	3.4	5	--	--	--	--
METAL	Molybdenum	mg/L	1	1	100%	6.14E-04	6.14E-04	6.14E-04	0.37	No	0.0017	0	--	--	--	--
METAL	Nickel	mg/L	1061	988	93%	4.10E-05	0.032	0.0012	0.028	Yes	1.2	2	0.61	No	0.053	0
METAL	Potassium	mg/L	67	33	49%	0.52	12	1.9	53	No	0.22	0	--	--	--	--
METAL	Selenium	mg/L	982	457	47%	6.73E-05	0.0039	3.78E-04	0.0050	No	0.79	0	0.17	No	0.023	0
METAL	Silica	mg/L	1	1	100%	2.0	2.0	2.0	--	--	--	--	--	--	--	--
METAL	Silicon	mg/L	2	2	100%	0.095	0.21	0.15	--	--	--	--	--	--	--	--
METAL	Silver	mg/L	1060	355	33%	9.48E-07	0.0030	1.34E-04	1.20E-04	Yes	25	7	--	--	--	--
METAL	Sodium	mg/L	84	83	99%	2.0	19	6.2	680	No	0.028	0	--	--	--	--
METAL	Strontium	mg/L	81	81	100%	0.081	0.38	0.16	1.5	No	0.25	0	--	--	--	--
METAL	Thallium	mg/L	899	802	89%	5.18E-06	4.07E-04	2.21E-05	0.040	No	0.010	0	2.40E-04	Yes	1.7	2
METAL	Thorium	mg/L	42	2	5%	5.65E-06	1.19E-05	4.08E-05	--	--	--	--	--	--	--	--
METAL	Uranium	mg/L	54	54	100%	1.21E-04	0.0087	0.0021	0.0026	Yes	3.3	12	0.030	No	0.29	0
METAL	Vanadium	mg/L	81	38	47%	6.50E-04	0.049	0.0066	0.020	Yes	2.4	4	--	--	--	--
METAL	Zinc	mg/L	1061	1038	98%	3.51E-04	0.42	0.0045	0.055	Yes	7.5	12	7.4	No	0.056	0
RAD	Barium-140	pCi/L	83	2	2%	4.0	4.5	10	--	--	--	--	--	--	--	--
RAD	Beryllium-7	pCi/L	263	67	25%	0.016	41	5.1	--	--	--	--	--	--	--	--
RAD	Carbon-14	pCi/L	10	4	40%	9.2	608	74	--	--	--	--	2,000	No	0.30	0
RAD	Cesium-134	pCi/L	218	1	0%	1.0	1.0	0.55	--	--	--	--	--	--	--	--
RAD	Cesium-137	pCi/L	352	16	5%	0.0020	8.5	0.49	43	No	0.20	0	200	No	0.043	0
RAD	Cobalt-60	pCi/L	344	2	1%	1.0	1.2	0.50	3,760	No	3.19E-04	0	100	No	0.012	0
RAD	Gross alpha	pCi/L	375	150	40%	0.20	228	6.5	--	--	--	--	--	--	--	--

Table B-9
Comparison of All Categories of Surface Water Concentrations from Segment 2 of the Columbia River to Ecological and Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
RAD	Gross beta	pCi/L	487	269	55%	0.40	84	5.5	--	--	--	--	--	--	--	--
RAD	Iodine-129	pCi/L	53	53	100%	2.55E-05	0.41	0.054	--	--	--	--	--	--	--	--
RAD	Iodine-131	pCi/L	84	3	4%	1.0	1.2	10	--	--	--	--	--	--	--	--
RAD	Iron-59	pCi/L	98	8	8%	1.8	3.0	2.7	--	--	--	--	--	--	--	--
RAD	Plutonium-238	pCi/L	29	6	21%	6.35E-06	0.0052	3.96E-04	--	--	--	--	15	No	3.47E-04	0
RAD	Plutonium-239/240	pCi/L	41	15	37%	6.89E-06	1.63E-04	7.45E-05	--	--	--	--	15	No	1.09E-05	0
RAD	Potassium-40	pCi/L	308	184	60%	0.027	126	15	--	--	--	--	--	--	--	--
RAD	Radium-226	pCi/L	63	10	16%	0.022	0.058	30	4.1	No	0.014	0	--	--	--	--
RAD	Radium-228	pCi/L	12	4	33%	0.36	1.0	5.8	3.4	No	0.31	0	--	--	--	--
RAD	Strontium-90	pCi/L	784	636	81%	0.022	109	0.44	278	No	0.39	0	8.0	Yes	14	7
RAD	Technetium-99	pCi/L	144	64	44%	0.27	144	12	667,000	No	2.16E-04	0	900	No	0.16	0
RAD	Thorium-228	pCi/L	60	2	3%	0.080	0.084	18	--	--	--	--	--	--	--	--
RAD	Thorium-230	pCi/L	6	3	50%	0.054	2.6	0.46	--	--	--	--	--	--	--	--
RAD	Thorium-232	pCi/L	9	2	22%	0.060	0.087	8.8	--	--	--	--	--	--	--	--
RAD	Tritium	pCi/L	1136	970	85%	17	112,000	1,939	2.65E+08	No	4.23E-04	0	20,000	Yes	5.6	19
RAD	Uranium	pCi/L	118	118	100%	0.14	100	5.5	223	No	0.45	0	--	--	--	--
RAD	Uranium-234	pCi/L	778	776	100%	0.078	111	1.8	202	No	0.55	0	--	--	--	--
RAD	Uranium-235	pCi/L	715	200	28%	0.0065	2.9	0.48	217	No	0.014	0	--	--	--	--
RAD	Uranium-236	pCi/L	8	8	100%	0.29	1.0	0.68	--	--	--	--	--	--	--	--
RAD	Uranium-238	pCi/L	782	776	99%	0.070	99	3.9	223	No	0.45	0	--	--	--	--
RAD	Zirconium-95	pCi/L	84	5	6%	0.90	1.5	1.9	--	--	--	--	--	--	--	--
SVOC	1,4-Dichlorobenzene	mg/L	120	3	3%	1.90E-04	2.50E-04	8.16E-05	0.015	No	0.017	0	0.063	No	0.0040	0
VOC	1,1,2-Trichloroethane	mg/L	120	11	9%	1.30E-04	8.80E-04	1.43E-04	--	--	--	--	--	--	--	--
VOC	1,2-Dichloroethane	mg/L	120	13	11%	1.30E-04	0.0011	1.55E-04	--	--	--	--	--	--	--	--
VOC	Acetone	mg/L	120	46	38%	6.00E-04	0.0062	0.0011	--	--	--	--	--	--	--	--
VOC	Benzene	mg/L	120	1	1%	1.40E-04	1.40E-04	7.90E-05	--	--	--	--	--	--	--	--
VOC	Carbon disulfide	mg/L	120	4	3%	4.60E-04	0.0024	1.83E-04	--	--	--	--	--	--	--	--
VOC	Carbon tetrachloride	mg/L	119	1	1%	0.0041	0.0041	1.39E-04	--	--	--	--	--	--	--	--
VOC	Chloroform	mg/L	120	19	16%	1.90E-04	0.0055	3.89E-04	--	--	--	--	--	--	--	--
VOC	cis-1,2-dichloroethene	mg/L	117	4	3%	3.00E-04	4.00E-04	8.12E-05	--	--	--	--	--	--	--	--
VOC	Methylene chloride	mg/L	120	13	11%	2.60E-04	0.0010	1.87E-04	--	--	--	--	--	--	--	--
VOC	Tetrachloroethene	mg/L	120	1	1%	7.00E-04	7.00E-04	1.60E-04	--	--	--	--	--	--	--	--
VOC	Toluene	mg/L	120	41	34%	1.30E-04	9.80E-04	2.25E-04	--	--	--	--	--	--	--	--
VOC	Trichloroethene	mg/L	120	15	13%	3.10E-04	0.0033	2.78E-04	--	--	--	--	--	--	--	--
VOC	Xylenes (total)	mg/L	120	15	13%	3.40E-04	0.0012	3.14E-04	--	--	--	--	--	--	--	--

CONV - Conventional parameter
RAD - Radionuclide
SVOC - Semivolatile Organic Compound
VOC - Volatile Organic Compound

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	300 SPR 42-2	August 27, 2001	B12RL6	Aluminum	mg/L	1	0.088	=		0.087	--
Columbia River	300 SPR 11 -1	August 27, 2001	B12RP5	Aluminum	mg/L	1	0.12	=		0.087	--
Columbia River	SD-110-2	October 17, 2000	B10JR0	Aluminum	mg/L	1	0.13	B		0.087	--
Columbia River	100-B SPR 38-3	October 22, 2001	B13609	Aluminum	mg/L	1	0.14	B		0.087	--
Columbia River	100-D SPR 102-1	October 17, 2000	B10JP7	Aluminum	mg/L	1	0.15	B		0.087	--
Columbia River	SD-110-2	October 17, 2000	B10JT1	Aluminum	mg/L	1	0.18	B		0.087	--
Columbia River	SD-98-1	October 12, 2000	B10JR1	Aluminum	mg/L	1	0.27	=		0.087	--
Columbia River	100-H SPR 150-1	October 27, 2002	B15HY1	Aluminum	mg/L	1	0.28	=		0.087	--
Columbia River	100-H SPR 152-2	October 27, 2002	B15HY4	Aluminum	mg/L	1	0.28	=		0.087	--
Columbia River	100-K SPR 82-2	October 25, 2001	B13605	Aluminum	mg/L	1	0.31	=		0.087	--
Columbia River	100-D SPR 102-1	October 27, 2003	B17JP2	Aluminum	mg/L	1	0.32	=		0.087	--
Columbia River	100-K SPR 77-1	October 21, 2002	B15LM4	Aluminum	mg/L	1	0.34	=		0.087	--
Columbia River	100-D SPR 102-1	October 21, 2002	B15HV8	Aluminum	mg/L	1	0.59	=		0.087	--
Columbia River	100-H SPR 150-1	November 20, 2003	B17VK5	Aluminum	mg/L	1	2.1	=		0.087	--
Columbia River	SD-98-1	October 12, 2000	B10JT9	Aluminum	mg/L	1	2.3	=		0.087	--
Columbia River	100-D SPR 98-1	October 25, 2001	B135X3	Aluminum	mg/L	1	3.5	=		0.087	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW4	Aluminum	mg/L	1	7.9	=		0.087	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW1	Aluminum	mg/L	1	21	=		0.087	--
Columbia River	RICHPS1 HRM46.4	June 14, 1999	B0V209	Arsenic	mg/L	1	2.72E-04	=		0.15	1.80E-05
Columbia River	100-K SPR 77-1	October 25, 2000	B10955	Arsenic	mg/L	1	3.07E-04	=		0.15	1.80E-05
Columbia River	100-K SPR 77-1	October 25, 2000	B10956	Arsenic	mg/L	1	3.15E-04	=		0.15	1.80E-05
Columbia River	100 B/C OUTFL2	November 17, 2003	B180J0	Arsenic	mg/L	1	3.19E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	December 8, 2003	B183P9	Arsenic	mg/L	1	3.23E-04	=		0.15	1.80E-05
Columbia River	100K SPR 77-1	November 10, 2003	B17J87	Arsenic	mg/L	1	3.48E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	December 8, 2003	B183V3	Arsenic	mg/L	1	3.67E-04	C		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	December 8, 2003	B183W2	Arsenic	mg/L	1	3.72E-04	C		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	December 8, 2003	B183V2	Arsenic	mg/L	1	3.95E-04	C		0.15	1.80E-05
Columbia River	100K SPR 77-1	November 10, 2003	B17J86	Arsenic	mg/L	1	3.97E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	December 10, 2002	B16360	Arsenic	mg/L	1	4.05E-04	=		0.15	1.80E-05
Columbia River	100-K SPR 77-1	October 11, 2004	B1BFW6	Arsenic	mg/L	1	4.06E-04	X		0.15	1.80E-05
Columbia River	100 B/C AREA UR	November 13, 2003	B180C6	Arsenic	mg/L	1	4.23E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.8	September 14, 2000	B106B9	Arsenic	mg/L	1	4.43E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	March 28, 2000	B0XRN5	Arsenic	mg/L	1	4.47E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	March 28, 2000	B0XRP4	Arsenic	mg/L	1	4.50E-04	=		0.15	1.80E-05
Columbia River	100 F-2 HRM19.0	September 18, 2000	B10756	Arsenic	mg/L	1	4.52E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	March 28, 2000	B0XRN6	Arsenic	mg/L	1	4.52E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	March 28, 2000	B0XRP2	Arsenic	mg/L	1	4.56E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.8	September 14, 2000	B106B8	Arsenic	mg/L	1	4.58E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	March 28, 2000	B0XRP3	Arsenic	mg/L	1	4.58E-04	=		0.15	1.80E-05
Columbia River	300 A2 HRM 43.1	September 10, 2002	B158R9	Arsenic	mg/L	1	4.61E-04	=		0.15	1.80E-05
Columbia River	HFD TS10HRM28.7	September 18, 2000	B10754	Arsenic	mg/L	1	4.61E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	September 19, 2000	B10741	Arsenic	mg/L	1	4.64E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	December 6, 1999	B0X407	Arsenic	mg/L	1	4.66E-04	=		0.15	1.80E-05
Columbia River	100 B/C AREA UR	November 13, 2003	B180C8	Arsenic	mg/L	1	4.69E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	March 28, 2000	B0XRN3	Arsenic	mg/L	1	4.69E-04	=		0.15	1.80E-05

Table B-10**Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological	Human Health
							Value			Benchmark Value	Benchmark Value
Columbia River	RICHPS HRM 43.9	December 6, 1999	BOX408	Arsenic	mg/L	1	4.73E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	December 6, 1999	BOX3Y9	Arsenic	mg/L	1	4.73E-04	=		0.15	1.80E-05
Columbia River	100 N-2 HRM 9.5	September 14, 2000	B10693	Arsenic	mg/L	1	4.74E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	December 8, 2003	B183W8	Arsenic	mg/L	1	4.74E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	March 28, 2000	BOXRN4	Arsenic	mg/L	1	4.74E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	September 19, 2000	B106V6	Arsenic	mg/L	1	4.76E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	September 19, 2000	B106V7	Arsenic	mg/L	1	4.76E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	December 10, 2002	B16357	Arsenic	mg/L	1	4.80E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	September 19, 2000	B10766	Arsenic	mg/L	1	4.83E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	December 8, 2003	B183R0	Arsenic	mg/L	1	4.85E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	December 6, 1999	BOX413	Arsenic	mg/L	1	4.85E-04	=		0.15	1.80E-05
Columbia River	100 B/C AREA UR	November 13, 2003	B180C7	Arsenic	mg/L	1	4.86E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM8.9	September 14, 2000	B106B3	Arsenic	mg/L	1	4.86E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	September 19, 2000	B10740	Arsenic	mg/L	1	4.89E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	March 28, 2000	BOXRP5	Arsenic	mg/L	1	4.90E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	March 28, 2000	BOXRN2	Arsenic	mg/L	1	4.90E-04	=		0.15	1.80E-05
Columbia River	300 A3 HRM 43.1	September 19, 2000	B10745	Arsenic	mg/L	1	4.91E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	September 19, 2000	B10738	Arsenic	mg/L	1	4.92E-04	=		0.15	1.80E-05
Columbia River	300 A3 HRM 43.1	September 19, 2000	B106T8	Arsenic	mg/L	1	4.93E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	September 19, 2000	B10739	Arsenic	mg/L	1	4.93E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	December 6, 1999	BOX400	Arsenic	mg/L	1	4.93E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	February 26, 2001	B11H57	Arsenic	mg/L	1	4.93E-04	=		0.15	1.80E-05
Columbia River	HFD TS7 HRM28.7	September 18, 2000	B10753	Arsenic	mg/L	1	4.94E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	December 5, 2000	B11143	Arsenic	mg/L	1	4.94E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.2	September 14, 2000	B106B5	Arsenic	mg/L	1	4.95E-04	=		0.15	1.80E-05
Columbia River	100 F-2 HRM19.0	September 8, 2003	B17CR2	Arsenic	mg/L	1	4.96E-04	=		0.15	1.80E-05
Columbia River	100 F-7 HRM19.0	September 9, 2002	B158V4	Arsenic	mg/L	1	4.96E-04	=		0.15	1.80E-05
Columbia River	100 B/C AREA DR	November 17, 2003	B180F4	Arsenic	mg/L	1	4.97E-04	=		0.15	1.80E-05
Columbia River	100 F-2 HRM19.0	September 9, 2002	B158V1	Arsenic	mg/L	1	4.97E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.2	September 14, 2000	B106B6	Arsenic	mg/L	1	4.97E-04	=		0.15	1.80E-05
Columbia River	100 N-5 HRM 9.5	September 4, 2003	B17CN0	Arsenic	mg/L	1	4.98E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	December 6, 1999	BOX3Y7	Arsenic	mg/L	1	4.99E-04	=		0.15	1.80E-05
Columbia River	300 A2 HRM 43.1	September 19, 2000	B10744	Arsenic	mg/L	1	4.99E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	December 5, 2000	B11141	Arsenic	mg/L	1	4.99E-04	=		0.15	1.80E-05
Columbia River	100 F-5 HRM19.0	September 9, 2002	B158V3	Arsenic	mg/L	1	5.00E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	September 19, 2000	B10767	Arsenic	mg/L	1	5.00E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	September 19, 2000	B10770	Arsenic	mg/L	1	5.00E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 41.5	September 10, 2002	B158Y2	Arsenic	mg/L	1	5.01E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 42.9	September 19, 2000	B10784	Arsenic	mg/L	1	5.01E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	December 6, 1999	BOX3Y6	Arsenic	mg/L	1	5.01E-04	=		0.15	1.80E-05
Columbia River	100 F-2 HRM19.0	September 18, 2000	B106V0	Arsenic	mg/L	1	5.02E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	December 5, 2000	B11150	Arsenic	mg/L	1	5.02E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM8.4	September 14, 2000	B106B0	Arsenic	mg/L	1	5.03E-04	=		0.15	1.80E-05
Columbia River	100 N-3 HRM 9.5	September 14, 2000	B10694	Arsenic	mg/L	1	5.04E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	December 5, 2000	B11119	Arsenic	mg/L	1	5.04E-04	=		0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological	Human Health
							Value			Benchmark Value	Benchmark Value
Columbia River	HFD TS HRM 26	September 8, 2003	B17CM0	Arsenic	mg/L	1	5.05E-04	=		0.15	1.80E-05
Columbia River	HFD TS5 HRM28.7	September 18, 2000	B10752	Arsenic	mg/L	1	5.05E-04	=		0.15	1.80E-05
Columbia River	100 N-3 HRM 9.5	September 14, 2000	B10664	Arsenic	mg/L	1	5.06E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	December 5, 2000	B11149	Arsenic	mg/L	1	5.07E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM8.4	September 14, 2000	B10699	Arsenic	mg/L	1	5.08E-04	=		0.15	1.80E-05
Columbia River	100N Area	April 9, 2004	B19114	Arsenic	mg/L	1	5.08E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	February 26, 2001	B11H66	Arsenic	mg/L	1	5.08E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM18	September 18, 2000	B10790	Arsenic	mg/L	1	5.09E-04	=		0.15	1.80E-05
Columbia River	100 N-10HRM 9.5	September 14, 2000	B10667	Arsenic	mg/L	1	5.09E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	September 19, 2000	B10765	Arsenic	mg/L	1	5.10E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	December 6, 1999	B0X3W6	Arsenic	mg/L	1	5.10E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM18	September 9, 2002	B15909	Arsenic	mg/L	1	5.11E-04	=		0.15	1.80E-05
Columbia River	100 N-2 HRM 9.5	September 14, 2000	B10663	Arsenic	mg/L	1	5.11E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 27	September 8, 2003	B17CM1	Arsenic	mg/L	1	5.14E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	December 5, 2000	B11152	Arsenic	mg/L	1	5.14E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	September 10, 2002	B158R6	Arsenic	mg/L	1	5.14E-04	=		0.15	1.80E-05
Columbia River	100 B/C AREA DR	November 17, 2003	B180F1	Arsenic	mg/L	1	5.15E-04	=		0.15	1.80E-05
Columbia River	100 B/C AREA UR	November 13, 2003	B180C9	Arsenic	mg/L	1	5.15E-04	=		0.15	1.80E-05
Columbia River	100 B/C OUTFL1	November 17, 2003	B180D8	Arsenic	mg/L	1	5.15E-04	=		0.15	1.80E-05
Columbia River	100 B/C OUTFL2	November 17, 2003	B180D9	Arsenic	mg/L	1	5.15E-04	=		0.15	1.80E-05
Columbia River	100-B SPR 38-3	November 13, 2003	B180D3	Arsenic	mg/L	1	5.15E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	September 10, 2002	B158W2	Arsenic	mg/L	1	5.15E-04	=		0.15	1.80E-05
Columbia River	300 A1 HRM 43.1	September 10, 2002	B158R8	Arsenic	mg/L	1	5.16E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	December 5, 2000	B11140	Arsenic	mg/L	1	5.16E-04	=		0.15	1.80E-05
Columbia River	100D Area	May 3, 2002	B14K61	Arsenic	mg/L	2	5.17E-04	=		0.15	1.80E-05
Columbia River	HFD TS5 HRM28.7	September 18, 2000	B106T3	Arsenic	mg/L	1	5.17E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	December 10, 2002	B16373	Arsenic	mg/L	1	5.17E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	December 5, 2000	B11154	Arsenic	mg/L	1	5.17E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	September 19, 2000	B106V5	Arsenic	mg/L	1	5.18E-04	=		0.15	1.80E-05
Columbia River	100 B/C AREA DR	November 17, 2003	B180F2	Arsenic	mg/L	1	5.19E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	September 10, 2002	B158W1	Arsenic	mg/L	1	5.19E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	December 5, 2000	B11142	Arsenic	mg/L	1	5.19E-04	=		0.15	1.80E-05
Columbia River	100 B/C AREA DR	November 17, 2003	B180F3	Arsenic	mg/L	1	5.20E-04	=		0.15	1.80E-05
Columbia River	100 N-7 HRM 9.5	September 14, 2000	B10696	Arsenic	mg/L	1	5.20E-04	=		0.15	1.80E-05
Columbia River	100-B SPR 38-3	November 13, 2003	B180J4	Arsenic	mg/L	1	5.20E-04	=		0.15	1.80E-05
Columbia River	300 A3 HRM 43.1	September 10, 2002	B158T0	Arsenic	mg/L	1	5.20E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	December 5, 2000	B11151	Arsenic	mg/L	1	5.20E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	February 26, 2001	B11H54	Arsenic	mg/L	1	5.20E-04	=		0.15	1.80E-05
Columbia River	100-B SPR 39-2	November 13, 2003	B180D5	Arsenic	mg/L	1	5.21E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	December 10, 2002	B16369	Arsenic	mg/L	1	5.21E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	December 5, 2000	B11121	Arsenic	mg/L	1	5.21E-04	=		0.15	1.80E-05
Columbia River	100-B SPR 39-2	November 13, 2003	B180D7	Arsenic	mg/L	1	5.22E-04	=		0.15	1.80E-05
Columbia River	HFD TS7 HRM28.7	September 8, 2003	B17CP9	Arsenic	mg/L	1	5.22E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	December 10, 2002	B16366	Arsenic	mg/L	1	5.22E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM23	September 9, 2002	B15917	Arsenic	mg/L	1	5.24E-04	=		0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values

Columbia River Component - Existing Sample Data Evaluation and Scoping Report

									Ecological	
Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical	Qualifier	Benchmark	Human Health
							Value		Value	Benchmark Value
Columbia River	RICHPS HRM 43.5	September 19, 2000	B10772	Arsenic	mg/L	1	5.24E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	December 5, 2000	B11156	Arsenic	mg/L	1	5.24E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	June 12, 2001	B12537	Arsenic	mg/L	1	5.24E-04	=	0.15	1.80E-05
Columbia River	100 F-1 HRM19.0	September 8, 2003	B17CR1	Arsenic	mg/L	1	5.25E-04	=	0.15	1.80E-05
Columbia River	100-B SPR 39-2	November 13, 2003	B180D6	Arsenic	mg/L	1	5.26E-04	=	0.15	1.80E-05
Columbia River	HFD TS HRM 26	September 18, 2000	B10734	Arsenic	mg/L	1	5.26E-04	=	0.15	1.80E-05
Columbia River	HFD TS3 HRM28.7	September 18, 2000	B10751	Arsenic	mg/L	1	5.26E-04	=	0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	September 10, 2002	B158R3	Arsenic	mg/L	1	5.27E-04	=	0.15	1.80E-05
Columbia River	100 N-10HRM 9.5	September 14, 2000	B10697	Arsenic	mg/L	1	5.28E-04	=	0.15	1.80E-05
Columbia River	100 N-2 HRM 9.5	September 4, 2003	B17CB7	Arsenic	mg/L	1	5.28E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	December 5, 2000	B11153	Arsenic	mg/L	1	5.28E-04	=	0.15	1.80E-05
Columbia River	100 F-7 HRM19.0	September 18, 2000	B10759	Arsenic	mg/L	1	5.29E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	February 26, 2001	B11H65	Arsenic	mg/L	1	5.29E-04	=	0.15	1.80E-05
Columbia River	100 F-3 HRM19.0	September 9, 2002	B158F0	Arsenic	mg/L	1	5.30E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	September 10, 2002	B158W3	Arsenic	mg/L	1	5.30E-04	=	0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	December 5, 2000	B11139	Arsenic	mg/L	1	5.30E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	December 5, 2000	B11155	Arsenic	mg/L	1	5.31E-04	=	0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	December 10, 2002	B16359	Arsenic	mg/L	1	5.31E-04	=	0.15	1.80E-05
Columbia River	100 F-10HRM19.0	September 18, 2000	B106R9	Arsenic	mg/L	1	5.32E-04	=	0.15	1.80E-05
Columbia River	100 F-2 HRM19.0	September 9, 2002	B158D9	Arsenic	mg/L	1	5.32E-04	=	0.15	1.80E-05
Columbia River	HFD TS HRM 26	September 18, 2000	B10731	Arsenic	mg/L	1	5.32E-04	=	0.15	1.80E-05
Columbia River	100N Area	June 9, 2004	B19H73	Arsenic	mg/L	1	5.33E-04	X	0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	December 10, 2002	B16368	Arsenic	mg/L	1	5.33E-04	=	0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	February 26, 2001	B11H55	Arsenic	mg/L	1	5.33E-04	=	0.15	1.80E-05
Columbia River	100 N-5 HRM 9.5	September 14, 2000	B10665	Arsenic	mg/L	1	5.34E-04	=	0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	December 5, 2000	B11118	Arsenic	mg/L	1	5.34E-04	=	0.15	1.80E-05
Columbia River	HFD TS HRM 27	September 21, 1999	B0WB74	Arsenic	mg/L	1	5.35E-04	=	0.15	1.80E-05
Columbia River	100 F-1 HRM19.0	September 9, 2002	B158V0	Arsenic	mg/L	1	5.35E-04	=	0.15	1.80E-05
Columbia River	300 SR HRM 41.5	September 19, 2000	B10775	Arsenic	mg/L	1	5.35E-04	=	0.15	1.80E-05
Columbia River	100 N-7 HRM 9.5	September 4, 2003	B17CN1	Arsenic	mg/L	1	5.36E-04	=	0.15	1.80E-05
Columbia River	100-H SPR 153-1	October 26, 2004	B1BH01	Arsenic	mg/L	1	5.36E-04	X	0.15	1.80E-05
Columbia River	300 A1 HRM 43.1	September 19, 2000	B10743	Arsenic	mg/L	1	5.36E-04	=	0.15	1.80E-05
Columbia River	300 SR HRM 42.5	September 10, 2002	B158Y8	Arsenic	mg/L	1	5.36E-04	=	0.15	1.80E-05
Columbia River	300 A2 HRM 43.1	September 16, 1999	B0WB84	Arsenic	mg/L	1	5.37E-04	=	0.15	1.80E-05
Columbia River	100 N-1 HRM 9.5	September 14, 2000	B10692	Arsenic	mg/L	1	5.37E-04	=	0.15	1.80E-05
Columbia River	100-B SPR 38-3	November 13, 2003	B180D2	Arsenic	mg/L	1	5.37E-04	=	0.15	1.80E-05
Columbia River	100D Area	May 3, 2002	B14K63	Arsenic	mg/L	2	5.37E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	September 19, 2000	B10771	Arsenic	mg/L	1	5.37E-04	=	0.15	1.80E-05
Columbia River	100 N-5 HRM 9.5	September 4, 2003	B17CB9	Arsenic	mg/L	1	5.38E-04	=	0.15	1.80E-05
Columbia River	100-D SPR 110-1	October 26, 2004	B1BFX0	Arsenic	mg/L	1	5.38E-04	X	0.15	1.80E-05
Columbia River	100H Area	May 17, 2002	B14L08	Arsenic	mg/L	2	5.38E-04	=	0.15	1.80E-05
Columbia River	300 A5 HRM 43.1	September 19, 2000	B106R6	Arsenic	mg/L	1	5.38E-04	=	0.15	1.80E-05
Columbia River	300 SR HRM 42.9	September 10, 2002	B15901	Arsenic	mg/L	1	5.38E-04	=	0.15	1.80E-05
Columbia River	HFD TS2 HRM28.7	September 8, 2003	B17C98	Arsenic	mg/L	1	5.38E-04	=	0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	December 5, 2000	B11120	Arsenic	mg/L	1	5.38E-04	=	0.15	1.80E-05

Table B-10**Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values****Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	RICHPS7 HRM46.4	September 9, 2003	B17CN7	Arsenic	mg/L	1	5.38E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM24	September 9, 2002	B15913	Arsenic	mg/L	1	5.39E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	December 8, 2003	B183V5	Arsenic	mg/L	1	5.39E-04	C		0.15	1.80E-05
Columbia River	100 F-3 HRM19.0	September 18, 2000	B10757	Arsenic	mg/L	1	5.40E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	February 26, 2001	B11H64	Arsenic	mg/L	1	5.40E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	September 10, 2002	B158R4	Arsenic	mg/L	1	5.40E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	December 10, 2002	B16358	Arsenic	mg/L	1	5.40E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	September 19, 2000	B106V8	Arsenic	mg/L	1	5.40E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	December 6, 1999	B0X3W4	Arsenic	mg/L	1	5.40E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	December 10, 2002	B16367	Arsenic	mg/L	1	5.41E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	December 8, 2003	B183V1	Arsenic	mg/L	1	5.41E-04	C		0.15	1.80E-05
Columbia River	100 F-1 HRM19.0	September 8, 2003	B17CC2	Arsenic	mg/L	1	5.42E-04	=		0.15	1.80E-05
Columbia River	100 F-10HRM19.0	September 8, 2003	B17CR6	Arsenic	mg/L	1	5.42E-04	=		0.15	1.80E-05
Columbia River	100 F-5 HRM19.0	September 18, 2000	B10758	Arsenic	mg/L	1	5.42E-04	=		0.15	1.80E-05
Columbia River	100D Area	May 3, 2002	B14K60	Arsenic	mg/L	2	5.42E-04	=		0.15	1.80E-05
Columbia River	HFD TS3 HRM28.7	September 18, 2000	B106T2	Arsenic	mg/L	1	5.42E-04	=		0.15	1.80E-05
Columbia River	100 B/C OUTFLL3	November 17, 2003	B180F0	Arsenic	mg/L	1	5.43E-04	=		0.15	1.80E-05
Columbia River	100-D SPR 110-1	October 26, 2004	B1BFX1	Arsenic	mg/L	1	5.43E-04	X		0.15	1.80E-05
Columbia River	300 SR HRM 42.5	September 19, 2000	B10781	Arsenic	mg/L	1	5.43E-04	=		0.15	1.80E-05
Columbia River	100 F-7 HRM19.0	September 21, 1999	B0WBB1	Arsenic	mg/L	1	5.43E-04	=		0.15	1.80E-05
Columbia River	100 N-7 HRM 9.5	September 14, 2000	B10666	Arsenic	mg/L	1	5.44E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM8.9	September 14, 2000	B106B2	Arsenic	mg/L	1	5.44E-04	=		0.15	1.80E-05
Columbia River	300 A3 HRM 43.1	September 16, 1999	B0WB85	Arsenic	mg/L	1	5.45E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM18	September 9, 2002	B15908	Arsenic	mg/L	1	5.45E-04	=		0.15	1.80E-05
Columbia River	100-K SPR 77-1	October 21, 2002	B15C82	Arsenic	mg/L	1	5.45E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	September 10, 2002	B158R5	Arsenic	mg/L	1	5.45E-04	=		0.15	1.80E-05
Columbia River	100 F-10HRM19.0	September 21, 1999	B0WBB4	Arsenic	mg/L	1	5.46E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.2	September 4, 2003	B17CW0	Arsenic	mg/L	1	5.46E-04	=		0.15	1.80E-05
Columbia River	300 A5 HRM 43.1	September 10, 2002	B158T1	Arsenic	mg/L	1	5.46E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	December 6, 1999	B0X3W8	Arsenic	mg/L	1	5.46E-04	=		0.15	1.80E-05
Columbia River	100-B SPR 38-3	November 13, 2003	B180D1	Arsenic	mg/L	1	5.47E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	December 5, 2000	B11117	Arsenic	mg/L	1	5.47E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	September 9, 2003	B17CN5	Arsenic	mg/L	1	5.47E-04	=		0.15	1.80E-05
Columbia River	HFD TS1 HRM28.7	September 21, 1999	B0WB90	Arsenic	mg/L	1	5.48E-04	=		0.15	1.80E-05
Columbia River	100D Area	May 17, 2002	B14L07	Arsenic	mg/L	2	5.48E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	December 4, 2001	B13LJ1	Arsenic	mg/L	1	5.48E-04	=		0.15	1.80E-05
Columbia River	100 F-3 HRM19.0	September 18, 2000	B106V1	Arsenic	mg/L	1	5.49E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 41.5	September 19, 2000	B10774	Arsenic	mg/L	1	5.49E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	June 12, 2001	B12527	Arsenic	mg/L	1	5.49E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM23	September 8, 2003	B17D02	Arsenic	mg/L	1	5.50E-04	=		0.15	1.80E-05
Columbia River	300 A2 HRM 43.1	September 9, 2003	B17CP0	Arsenic	mg/L	1	5.50E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	February 26, 2001	B11H32	Arsenic	mg/L	1	5.50E-04	=		0.15	1.80E-05
Columbia River	100 N-2 HRM 9.5	September 10, 1999	B0W974	Arsenic	mg/L	1	5.51E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	February 26, 2001	B11H56	Arsenic	mg/L	1	5.51E-04	=		0.15	1.80E-05
Columbia River	100 F-3 HRM19.0	September 9, 2002	B158V2	Arsenic	mg/L	1	5.52E-04	=		0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	100 NSHR HRM9.8	September 4, 2003	B17CW4	Arsenic	mg/L	1	5.52E-04	=		0.15	1.80E-05
Columbia River	300 A5 HRM 43.1	September 9, 2003	B17CP2	Arsenic	mg/L	1	5.52E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	September 16, 1999	B0WB81	Arsenic	mg/L	1	5.52E-04	=		0.15	1.80E-05
Columbia River	300 A7 HRM 43.1	September 10, 2002	B158T2	Arsenic	mg/L	1	5.53E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 42.1	September 10, 2002	B158Y5	Arsenic	mg/L	1	5.53E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	June 12, 2001	B12535	Arsenic	mg/L	1	5.53E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 46.4	February 26, 2001	B11H53	Arsenic	mg/L	1	5.53E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM22	September 18, 2000	B10792	Arsenic	mg/L	1	5.54E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.2	September 4, 2003	B17CV9	Arsenic	mg/L	1	5.54E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	September 16, 1999	B0WBC3	Arsenic	mg/L	1	5.54E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 26	September 21, 1999	B0WB73	Arsenic	mg/L	1	5.56E-04	=		0.15	1.80E-05
Columbia River	HFD TS10HRM28.7	September 21, 1999	B0WB94	Arsenic	mg/L	1	5.56E-04	=		0.15	1.80E-05
Columbia River	100D Area	May 17, 2002	B14L06	Arsenic	mg/L	2	5.56E-04	=		0.15	1.80E-05
Columbia River	100N Area	September 25, 2004	B1BC57	Arsenic	mg/L	1	5.56E-04	X		0.15	1.80E-05
Columbia River	300 A5 HRM 43.1	September 19, 2000	B10746	Arsenic	mg/L	1	5.56E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 42.9	September 19, 2000	B10783	Arsenic	mg/L	1	5.56E-04	=		0.15	1.80E-05
Columbia River	HFD TS3 HRM28.7	September 8, 2003	B17C99	Arsenic	mg/L	1	5.56E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	September 19, 2000	B10737	Arsenic	mg/L	1	5.56E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	December 10, 2002	B16335	Arsenic	mg/L	1	5.56E-04	=		0.15	1.80E-05
Columbia River	300 A5 HRM 43.1	September 10, 2002	B158B9	Arsenic	mg/L	1	5.57E-04	=		0.15	1.80E-05
Columbia River	RICHPS6 HRM46.4	June 14, 1999	B0V218	Arsenic	mg/L	1	5.58E-04	=		0.15	1.80E-05
Columbia River	100-B SPR 39-2	November 13, 2003	B180D4	Arsenic	mg/L	1	5.58E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 30	September 18, 2000	B10736	Arsenic	mg/L	1	5.58E-04	=		0.15	1.80E-05
Columbia River	100 N-2 HRM 9.5	September 4, 2003	B17CM8	Arsenic	mg/L	1	5.59E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 26	September 8, 2003	B17CL7	Arsenic	mg/L	1	5.59E-04	=		0.15	1.80E-05
Columbia River	HFD TS5 HRM28.7	September 8, 2003	B17CB0	Arsenic	mg/L	1	5.59E-04	=		0.15	1.80E-05
Columbia River	100 F-3 HRM19.0	September 21, 1999	B0WB97	Arsenic	mg/L	1	5.60E-04	=		0.15	1.80E-05
Columbia River	100 F-1 HRM19.0	September 18, 2000	B106T9	Arsenic	mg/L	1	5.60E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM8.9	September 4, 2003	B17CV6	Arsenic	mg/L	1	5.60E-04	=		0.15	1.80E-05
Columbia River	100H Area	May 17, 2002	B14L09	Arsenic	mg/L	2	5.60E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	February 26, 2001	B11H63	Arsenic	mg/L	1	5.60E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	March 28, 2000	B0XRJ4	Arsenic	mg/L	1	5.60E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	December 6, 1999	B0X3Y8	Arsenic	mg/L	1	5.61E-04	=		0.15	1.80E-05
Columbia River	100 F-1 HRM19.0	September 18, 2000	B10755	Arsenic	mg/L	1	5.61E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 27	September 18, 2000	B10735	Arsenic	mg/L	1	5.61E-04	=		0.15	1.80E-05
Columbia River	HFD TS1 HRM28.7	September 18, 2000	B10749	Arsenic	mg/L	1	5.61E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	September 10, 2002	B158W0	Arsenic	mg/L	1	5.61E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	December 10, 2002	B16334	Arsenic	mg/L	1	5.61E-04	=		0.15	1.80E-05
Columbia River	100 N-3 HRM 9.5	September 4, 2003	B17CB8	Arsenic	mg/L	1	5.62E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	March 25, 2003	B16LD2	Arsenic	mg/L	1	5.63E-04	C		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	June 12, 2001	B12526	Arsenic	mg/L	1	5.63E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	March 25, 2003	B16L92	Arsenic	mg/L	1	5.63E-04	C		0.15	1.80E-05
Columbia River	100 N-3 HRM 9.5	September 4, 2003	B17CM9	Arsenic	mg/L	1	5.64E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 41.5	September 9, 2003	B17CW8	Arsenic	mg/L	1	5.64E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	February 26, 2001	B11H68	Arsenic	mg/L	1	5.64E-04	=		0.15	1.80E-05

Table B-10**Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values****Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

									Ecological	
Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical	Qualifier	Benchmark	Human Health
							Value		Value	Benchmark Value
Columbia River	100 FSHR HRM18	September 8, 2003	B17CY6	Arsenic	mg/L	1	5.65E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	September 19, 2000	B10768	Arsenic	mg/L	1	5.65E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	December 6, 1999	B0X412	Arsenic	mg/L	1	5.65E-04	=	0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	December 6, 1999	B0X3W7	Arsenic	mg/L	1	5.66E-04	=	0.15	1.80E-05
Columbia River	100 NSHR HRM9.8	September 4, 2003	B17CW3	Arsenic	mg/L	1	5.66E-04	=	0.15	1.80E-05
Columbia River	100 F-7 HRM19.0	September 8, 2003	B17CR5	Arsenic	mg/L	1	5.67E-04	=	0.15	1.80E-05
Columbia River	100 FSHR HRM24	September 9, 2002	B15912	Arsenic	mg/L	1	5.67E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	February 26, 2001	B11H67	Arsenic	mg/L	1	5.67E-04	=	0.15	1.80E-05
Columbia River	100 F-10HRM19.0	September 9, 2002	B158C2	Arsenic	mg/L	1	5.68E-04	=	0.15	1.80E-05
Columbia River	100-H SPR 153-1	November 1, 2000	B10979	Arsenic	mg/L	1	5.68E-04	=	0.15	1.80E-05
Columbia River	100 N-7 HRM 9.5	September 10, 1999	B0W977	Arsenic	mg/L	1	5.68E-04	=	0.15	1.80E-05
Columbia River	100 NSHR HRM8.4	September 4, 2003	B17CV2	Arsenic	mg/L	1	5.69E-04	=	0.15	1.80E-05
Columbia River	HFD TS5 HRM28.7	September 8, 2003	B17CP8	Arsenic	mg/L	1	5.69E-04	=	0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	February 26, 2001	B11H34	Arsenic	mg/L	1	5.69E-04	=	0.15	1.80E-05
Columbia River	100D Area	May 3, 2002	B14K62	Arsenic	mg/L	2	5.70E-04	=	0.15	1.80E-05
Columbia River	300 A3 HRM 43.1	September 9, 2003	B17CP1	Arsenic	mg/L	1	5.70E-04	=	0.15	1.80E-05
Columbia River	300 SR HRM 41.5	September 10, 2002	B158Y1	Arsenic	mg/L	1	5.70E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	February 26, 2001	B11H70	Arsenic	mg/L	1	5.70E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	September 10, 2002	B158W7	Arsenic	mg/L	1	5.70E-04	=	0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	December 10, 2002	B16356	Arsenic	mg/L	1	5.70E-04	=	0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	September 9, 2003	B17CD4	Arsenic	mg/L	1	5.70E-04	=	0.15	1.80E-05
Columbia River	100 F-7 HRM19.0	September 9, 2002	B158F2	Arsenic	mg/L	1	5.71E-04	=	0.15	1.80E-05
Columbia River	100 FSHR HRM23	September 18, 2000	B10796	Arsenic	mg/L	1	5.71E-04	=	0.15	1.80E-05
Columbia River	100 N-10HRM 9.5	September 4, 2003	B17CN2	Arsenic	mg/L	1	5.71E-04	=	0.15	1.80E-05
Columbia River	HFD TS1 HRM28.7	September 18, 2000	B106T0	Arsenic	mg/L	1	5.71E-04	=	0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	February 26, 2001	B11H33	Arsenic	mg/L	1	5.71E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	December 6, 1999	B0X410	Arsenic	mg/L	1	5.71E-04	=	0.15	1.80E-05
Columbia River	100 F-3 HRM19.0	September 8, 2003	B17CC4	Arsenic	mg/L	1	5.72E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	December 4, 2001	B13LK0	Arsenic	mg/L	1	5.72E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	December 8, 2003	B183W6	Arsenic	mg/L	1	5.72E-04	=	0.15	1.80E-05
Columbia River	100 FSHR HRM22	September 8, 2003	B17CY8	Arsenic	mg/L	1	5.73E-04	=	0.15	1.80E-05
Columbia River	100 NSHR HRM9.2	September 10, 1999	B0W967	Arsenic	mg/L	1	5.73E-04	=	0.15	1.80E-05
Columbia River	100-B SPR 38-3	November 13, 2003	B180D0	Arsenic	mg/L	1	5.73E-04	=	0.15	1.80E-05
Columbia River	300 SR HRM 42.5	September 19, 2000	B10780	Arsenic	mg/L	1	5.73E-04	=	0.15	1.80E-05
Columbia River	300 SR HRM 42.5	September 10, 2002	B158Y7	Arsenic	mg/L	1	5.73E-04	=	0.15	1.80E-05
Columbia River	HFD TS5 HRM28.7	September 21, 1999	B0WB92	Arsenic	mg/L	1	5.73E-04	=	0.15	1.80E-05
Columbia River	100 N-7 HRM 9.5	September 4, 2003	B17CC0	Arsenic	mg/L	1	5.74E-04	=	0.15	1.80E-05
Columbia River	100 NSHR HRM8.9	September 5, 2002	B158X2	Arsenic	mg/L	1	5.74E-04	=	0.15	1.80E-05
Columbia River	300 A1 HRM 43.1	September 19, 2000	B106T6	Arsenic	mg/L	1	5.74E-04	=	0.15	1.80E-05
Columbia River	300 A2 HRM 43.1	September 10, 2002	B158D0	Arsenic	mg/L	1	5.74E-04	=	0.15	1.80E-05
Columbia River	HFD TS5 HRM28.7	September 9, 2002	B158T7	Arsenic	mg/L	1	5.74E-04	=	0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	September 10, 2002	B158H0	Arsenic	mg/L	1	5.74E-04	=	0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	December 6, 1999	B0X411	Arsenic	mg/L	1	5.75E-04	=	0.15	1.80E-05
Columbia River	100 NSHR HRM8.4	September 4, 2003	B17CV1	Arsenic	mg/L	1	5.75E-04	=	0.15	1.80E-05
Columbia River	100-B SPR 38-3	November 13, 2003	B180F9	Arsenic	mg/L	1	5.75E-04	=	0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological	Human Health
							Value			Benchmark Value	Benchmark Value
Columbia River	RICHPS HRM 43.9	December 4, 2001	B13LK3	Arsenic	mg/L	1	5.75E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	December 10, 2002	B16336	Arsenic	mg/L	1	5.75E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	December 10, 2002	B16337	Arsenic	mg/L	1	5.75E-04	=		0.15	1.80E-05
Columbia River	100-K SPR 77-1	October 11, 2004	B1BFW5	Arsenic	mg/L	1	5.76E-04	X		0.15	1.80E-05
Columbia River	100 N-1 HRM 9.5	September 4, 2003	B17CM7	Arsenic	mg/L	1	5.77E-04	=		0.15	1.80E-05
Columbia River	100 N-5 HRM 9.5	September 14, 2000	B10695	Arsenic	mg/L	1	5.77E-04	=		0.15	1.80E-05
Columbia River	HFD TS7 HRM28.7	September 18, 2000	B106T4	Arsenic	mg/L	1	5.77E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	September 19, 2000	B10769	Arsenic	mg/L	1	5.77E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	June 12, 2001	B12536	Arsenic	mg/L	1	5.78E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	March 28, 2000	B0XRJ6	Arsenic	mg/L	1	5.79E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	February 26, 2001	B11H35	Arsenic	mg/L	1	5.79E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.8	September 10, 1999	B0W968	Arsenic	mg/L	1	5.80E-04	=		0.15	1.80E-05
Columbia River	100 F-3 HRM19.0	September 8, 2003	B17CR3	Arsenic	mg/L	1	5.80E-04	=		0.15	1.80E-05
Columbia River	100 N-1 HRM 9.5	September 14, 2000	B10662	Arsenic	mg/L	1	5.80E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	March 25, 2003	B16LD8	Arsenic	mg/L	1	5.80E-04	C		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	December 4, 2001	B13LH8	Arsenic	mg/L	1	5.80E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	December 6, 1999	B0X406	Arsenic	mg/L	1	5.80E-04	=		0.15	1.80E-05
Columbia River	100-H SPR 153-1	November 1, 2000	B10980	Arsenic	mg/L	1	5.81E-04	=		0.15	1.80E-05
Columbia River	300 A2 HRM 43.1	September 19, 2000	B106T7	Arsenic	mg/L	1	5.81E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	December 6, 1999	B0X409	Arsenic	mg/L	1	5.82E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	September 16, 1999	B0WBC5	Arsenic	mg/L	1	5.82E-04	=		0.15	1.80E-05
Columbia River	100 N-10HRM 9.5	September 4, 2003	B17CC1	Arsenic	mg/L	1	5.82E-04	=		0.15	1.80E-05
Columbia River	300 A7 HRM 43.1	September 19, 2000	B106R7	Arsenic	mg/L	1	5.82E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	March 28, 2000	B0XRJ5	Arsenic	mg/L	1	5.82E-04	=		0.15	1.80E-05
Columbia River	100 N-5 HRM 9.5	September 10, 1999	B0W976	Arsenic	mg/L	1	5.82E-04	=		0.15	1.80E-05
Columbia River	100 F-1 HRM19.0	September 21, 1999	B0WB95	Arsenic	mg/L	1	5.83E-04	=		0.15	1.80E-05
Columbia River	100 F-10HRM19.0	September 18, 2000	B10760	Arsenic	mg/L	1	5.83E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM22	September 18, 2000	B10793	Arsenic	mg/L	1	5.83E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM8.9	September 4, 2003	B17CV5	Arsenic	mg/L	1	5.83E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	March 25, 2003	B16LD4	Arsenic	mg/L	1	5.83E-04	C		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	December 4, 2001	B13LK2	Arsenic	mg/L	1	5.83E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	March 28, 2000	B0XRJ3	Arsenic	mg/L	1	5.83E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	March 25, 2003	B16L90	Arsenic	mg/L	1	5.83E-04	C		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	March 25, 2003	B16LC3	Arsenic	mg/L	1	5.83E-04	C		0.15	1.80E-05
Columbia River	100 F-5 HRM19.0	September 18, 2000	B106V2	Arsenic	mg/L	1	5.84E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM18	September 18, 2000	B10789	Arsenic	mg/L	1	5.84E-04	=		0.15	1.80E-05
Columbia River	300 A3 HRM 43.1	September 10, 2002	B158D1	Arsenic	mg/L	1	5.84E-04	=		0.15	1.80E-05
Columbia River	HFD TS10HRM28.7	September 18, 2000	B106T5	Arsenic	mg/L	1	5.84E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	September 10, 2002	B158W5	Arsenic	mg/L	1	5.84E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 46.4	June 12, 2001	B12525	Arsenic	mg/L	1	5.84E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	December 8, 2003	B183V4	Arsenic	mg/L	1	5.84E-04	C		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	September 16, 1999	B0WB79	Arsenic	mg/L	1	5.84E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 42.1	September 16, 1999	B0WB62	Arsenic	mg/L	1	5.85E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 27	September 18, 2000	B10732	Arsenic	mg/L	1	5.85E-04	=		0.15	1.80E-05
Columbia River	HFD TS3 HRM28.7	September 8, 2003	B17CP7	Arsenic	mg/L	1	5.85E-04	=		0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values

Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	RICHPS HRM 43.9	March 25, 2003	B16LD3	Arsenic	mg/L	1	5.85E-04		C	0.15	1.80E-05
Columbia River	100 F-2 HRM19.0	September 21, 1999	B0WB96	Arsenic	mg/L	1	5.85E-04		=	0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	December 6, 1999	B0X3W5	Arsenic	mg/L	1	5.85E-04		=	0.15	1.80E-05
Columbia River	100 F-7 HRM19.0	September 18, 2000	B106V3	Arsenic	mg/L	1	5.86E-04		=	0.15	1.80E-05
Columbia River	100 FSHR HRM23	September 9, 2002	B15916	Arsenic	mg/L	1	5.86E-04		=	0.15	1.80E-05
Columbia River	100 FSHR HRM23	September 8, 2003	B17D01	Arsenic	mg/L	1	5.86E-04		=	0.15	1.80E-05
Columbia River	100D Area	June 10, 2002	B14PW7	Arsenic	mg/L	2	5.86E-04		=	0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	December 10, 2002	B16338	Arsenic	mg/L	1	5.86E-04		=	0.15	1.80E-05
Columbia River	100 FSHR HRM23	September 18, 2000	B10795	Arsenic	mg/L	1	5.87E-04		=	0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	March 28, 2000	B0XRP7	Arsenic	mg/L	1	5.87E-04		=	0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	March 25, 2003	B16LD6	Arsenic	mg/L	1	5.87E-04		C	0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	March 25, 2003	B16LC5	Arsenic	mg/L	1	5.87E-04		C	0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	September 16, 1999	B0WBC4	Arsenic	mg/L	1	5.88E-04		=	0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	September 10, 2002	B158R2	Arsenic	mg/L	1	5.88E-04		=	0.15	1.80E-05
Columbia River	100 F-5 HRM19.0	September 21, 1999	B0WB99	Arsenic	mg/L	1	5.88E-04		=	0.15	1.80E-05
Columbia River	100 FSHR HRM22	September 8, 2003	B17CY9	Arsenic	mg/L	1	5.89E-04		=	0.15	1.80E-05
Columbia River	HFD TS7 HRM28.7	September 9, 2002	B158T8	Arsenic	mg/L	1	5.89E-04		=	0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	September 9, 2003	B17CN6	Arsenic	mg/L	1	5.89E-04		=	0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	June 10, 2003	B17205	Arsenic	mg/L	1	5.90E-04		C	0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	September 9, 2003	B17CD3	Arsenic	mg/L	1	5.90E-04		=	0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	March 28, 2000	B0XRJ7	Arsenic	mg/L	1	5.91E-04		=	0.15	1.80E-05
Columbia River	300 A1 HRM 43.1	September 10, 2002	B158C9	Arsenic	mg/L	1	5.92E-04		=	0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	March 25, 2003	B16LC1	Arsenic	mg/L	1	5.92E-04		C	0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	September 16, 1999	B0WB80	Arsenic	mg/L	1	5.92E-04		=	0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	March 25, 2003	B16LC4	Arsenic	mg/L	1	5.93E-04		C	0.15	1.80E-05
Columbia River	100H SPR 153-1	October 27, 2003	B17RL9	Arsenic	mg/L	1	5.95E-04		=	0.15	1.80E-05
Columbia River	HFD TS7 HRM28.7	September 21, 1999	B0WB93	Arsenic	mg/L	1	5.95E-04		=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	March 28, 2000	B0XRP9	Arsenic	mg/L	1	5.96E-04		=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	December 8, 2003	B183W7	Arsenic	mg/L	1	5.96E-04		=	0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	June 10, 2003	B171Y6	Arsenic	mg/L	1	5.96E-04		C	0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	September 10, 2002	B158F8	Arsenic	mg/L	1	5.96E-04		=	0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	December 4, 2001	B13LJ0	Arsenic	mg/L	1	5.96E-04		=	0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	March 25, 2003	B16LD1	Arsenic	mg/L	1	5.97E-04		C	0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	September 10, 2002	B158F7	Arsenic	mg/L	1	5.97E-04		=	0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	June 20, 2000	B0YCK0	Arsenic	mg/L	1	5.97E-04		=	0.15	1.80E-05
Columbia River	100 NSHR HRM8.4	September 10, 1999	B0W965	Arsenic	mg/L	1	5.98E-04		=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	September 16, 1999	B0WBC6	Arsenic	mg/L	1	5.98E-04		=	0.15	1.80E-05
Columbia River	100 F-10HRM19.0	September 9, 2002	B158V5	Arsenic	mg/L	1	5.98E-04		=	0.15	1.80E-05
Columbia River	100-H SPR 153-1	October 26, 2004	B1BH00	Arsenic	mg/L	1	5.98E-04		X	0.15	1.80E-05
Columbia River	100D SPR 110-1	October 27, 2003	B17J92	Arsenic	mg/L	1	5.98E-04		=	0.15	1.80E-05
Columbia River	HFD TS10HRM28.7	September 8, 2003	B17CR0	Arsenic	mg/L	1	5.98E-04		=	0.15	1.80E-05
Columbia River	HFD TS7 HRM28.7	September 8, 2003	B17CB1	Arsenic	mg/L	1	5.98E-04		=	0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	September 10, 2002	B158W4	Arsenic	mg/L	1	5.98E-04		=	0.15	1.80E-05
Columbia River	100-B SPR 39-2	October 11, 2004	B1BFW0	Arsenic	mg/L	1	5.99E-04		X	0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	March 28, 2000	B0XRP8	Arsenic	mg/L	1	5.99E-04		=	0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	RICHPS HRM 43.9	February 26, 2001	B11H69	Arsenic	mg/L	1	5.99E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	September 10, 2002	B158W6	Arsenic	mg/L	1	5.99E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	March 25, 2003	B16LD7	Arsenic	mg/L	1	5.99E-04	C		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	December 8, 2003	B183W5	Arsenic	mg/L	1	5.99E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 46.4	February 26, 2001	B11H31	Arsenic	mg/L	1	5.99E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	June 20, 2000	B0YCK8	Arsenic	mg/L	1	5.99E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	December 4, 2001	B13LD7	Arsenic	mg/L	1	5.99E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	March 25, 2003	B16L91	Arsenic	mg/L	1	5.99E-04	C		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	September 16, 1999	B0WB77	Arsenic	mg/L	1	6.00E-04	=		0.15	1.80E-05
Columbia River	100 F-5 HRM19.0	September 14, 2004	B1B778	Arsenic	mg/L	1	6.00E-04	X		0.15	1.80E-05
Columbia River	300 A1 HRM 43.1	September 16, 1999	B0WB83	Arsenic	mg/L	1	6.01E-04	=		0.15	1.80E-05
Columbia River	100H Area	June 10, 2002	B14PX0	Arsenic	mg/L	2	6.01E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 42.1	September 10, 2002	B158Y4	Arsenic	mg/L	1	6.01E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	June 20, 2000	B0YCK1	Arsenic	mg/L	1	6.01E-04	=		0.15	1.80E-05
Columbia River	HFD TS2 HRM28.7	September 21, 1999	B0WB89	Arsenic	mg/L	1	6.02E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	June 12, 2001	B12538	Arsenic	mg/L	1	6.02E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	June 20, 2000	B0YCK8	Arsenic	mg/L	1	6.02E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	December 10, 2002	B16371	Arsenic	mg/L	1	6.02E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	December 10, 2002	B16370	Arsenic	mg/L	1	6.02E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	March 25, 2003	B16LC2	Arsenic	mg/L	1	6.02E-04	C		0.15	1.80E-05
Columbia River	RICHPS4 HRM46.4	June 14, 1999	B0V214	Arsenic	mg/L	1	6.03E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	June 14, 1999	B0V216	Arsenic	mg/L	1	6.04E-04	=		0.15	1.80E-05
Columbia River	300 A7 HRM 43.1	September 10, 2002	B158C0	Arsenic	mg/L	1	6.04E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	March 28, 2000	B0XRP6	Arsenic	mg/L	1	6.04E-04	=		0.15	1.80E-05
Columbia River	100 F-1 HRM19.0	September 9, 2002	B158D8	Arsenic	mg/L	1	6.05E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 26	September 14, 2004	B1B744	Arsenic	mg/L	1	6.05E-04	X		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	March 25, 2003	B16L93	Arsenic	mg/L	1	6.05E-04	C		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	September 16, 1999	B0WB78	Arsenic	mg/L	1	6.06E-04	=		0.15	1.80E-05
Columbia River	100 F-5 HRM19.0	September 9, 2002	B158F1	Arsenic	mg/L	1	6.06E-04	=		0.15	1.80E-05
Columbia River	100 N-10HRM 9.5	September 5, 2002	B158R1	Arsenic	mg/L	1	6.06E-04	=		0.15	1.80E-05
Columbia River	HFD TS3 HRM28.7	September 14, 2004	B1B771	Arsenic	mg/L	1	6.07E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	June 20, 2000	B0YCK9	Arsenic	mg/L	1	6.07E-04	=		0.15	1.80E-05
Columbia River	300 A5 HRM 43.1	September 16, 1999	B0WB86	Arsenic	mg/L	1	6.08E-04	=		0.15	1.80E-05
Columbia River	100 N-7 HRM 9.5	September 5, 2002	B158R0	Arsenic	mg/L	1	6.08E-04	=		0.15	1.80E-05
Columbia River	100 N-2 HRM 9.5	September 5, 2002	B158P7	Arsenic	mg/L	1	6.09E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 30	September 18, 2000	B10733	Arsenic	mg/L	1	6.09E-04	=		0.15	1.80E-05
Columbia River	HFD TS2 HRM28.7	September 8, 2003	B17CP6	Arsenic	mg/L	1	6.09E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	June 12, 2001	B12528	Arsenic	mg/L	1	6.09E-04	=		0.15	1.80E-05
Columbia River	HFD TS2 HRM28.7	September 9, 2002	B158C4	Arsenic	mg/L	1	6.10E-04	=		0.15	1.80E-05
Columbia River	HFD TS2 HRM28.7	September 14, 2004	B1B770	Arsenic	mg/L	1	6.11E-04	X		0.15	1.80E-05
Columbia River	HFD TS3 HRM28.7	September 9, 2002	B158T6	Arsenic	mg/L	1	6.11E-04	=		0.15	1.80E-05
Columbia River	100 N-5 HRM 9.5	September 5, 2002	B158P9	Arsenic	mg/L	1	6.12E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	December 8, 2003	B183R2	Arsenic	mg/L	1	6.12E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	June 10, 2003	B171Y7	Arsenic	mg/L	1	6.13E-04	C		0.15	1.80E-05
Columbia River	HFD TS HRM 30	September 21, 1999	B0WB76	Arsenic	mg/L	1	6.14E-04	=		0.15	1.80E-05

Table B-10**Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values****Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological	Human Health
							Value			Benchmark Value	Benchmark Value
Columbia River	RICHPS HRM 45.8	March 25, 2003	B16LD5	Arsenic	mg/L	1	6.14E-04	C		0.15	1.80E-05
Columbia River	100H Area	June 10, 2002	B14PW9	Arsenic	mg/L	2	6.15E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	March 25, 2003	B16L89	Arsenic	mg/L	1	6.15E-04	C		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	June 11, 2002	B14RX2	Arsenic	mg/L	1	6.15E-04	X		0.15	1.80E-05
Columbia River	100 NSHR HRM8.4	September 5, 2002	B158X0	Arsenic	mg/L	1	6.16E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	December 4, 2001	B13LJ7	Arsenic	mg/L	1	6.16E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	December 4, 2001	B13LJ9	Arsenic	mg/L	1	6.17E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	December 8, 2003	B183W1	Arsenic	mg/L	1	6.17E-04	C		0.15	1.80E-05
Columbia River	100 NSHR HRM8.9	September 10, 1999	B0W966	Arsenic	mg/L	1	6.18E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 42.9	September 9, 2003	B17CY0	Arsenic	mg/L	1	6.19E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	September 15, 2004	B1B758	Arsenic	mg/L	1	6.19E-04	X		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	June 20, 2000	B0YCJ9	Arsenic	mg/L	1	6.19E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 27	September 14, 2004	B1B745	Arsenic	mg/L	1	6.20E-04	X		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	June 20, 2000	B0YCJ7	Arsenic	mg/L	1	6.20E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	December 8, 2003	B183V6	Arsenic	mg/L	1	6.20E-04	C		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	December 4, 2001	B13LH9	Arsenic	mg/L	1	6.20E-04	=		0.15	1.80E-05
Columbia River	HFD TS7 HRM28.7	September 14, 2004	B1B773	Arsenic	mg/L	1	6.21E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	June 20, 2000	B0YCL0	Arsenic	mg/L	1	6.21E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	June 20, 2000	B0YCK7	Arsenic	mg/L	1	6.21E-04	=		0.15	1.80E-05
Columbia River	100D SPR 110-1	October 27, 2003	B17J91	Arsenic	mg/L	1	6.22E-04	=		0.15	1.80E-05
Columbia River	100 N-1 HRM 9.5	September 5, 2002	B158P6	Arsenic	mg/L	1	6.23E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	June 10, 2003	B17208	Arsenic	mg/L	1	6.23E-04	C		0.15	1.80E-05
Columbia River	100 N-2 HRM 9.5	September 13, 2004	B1B752	Arsenic	mg/L	1	6.24E-04	X		0.15	1.80E-05
Columbia River	HFD TS HRM 27	September 14, 2004	B1B742	Arsenic	mg/L	1	6.24E-04	X		0.15	1.80E-05
Columbia River	HFD TS3 HRM28.7	September 14, 2004	B1B6W2	Arsenic	mg/L	1	6.24E-04	X		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	September 9, 2003	B17CD1	Arsenic	mg/L	1	6.24E-04	=		0.15	1.80E-05
Columbia River	100 N-3 HRM 9.5	September 10, 1999	B0W975	Arsenic	mg/L	1	6.24E-04	=		0.15	1.80E-05
Columbia River	100 F-5 HRM19.0	September 8, 2003	B17CR4	Arsenic	mg/L	1	6.25E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM18	September 8, 2003	B17CY5	Arsenic	mg/L	1	6.25E-04	=		0.15	1.80E-05
Columbia River	100 N-3 HRM 9.5	September 5, 2002	B158D4	Arsenic	mg/L	1	6.25E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 30	September 8, 2003	B17CM2	Arsenic	mg/L	1	6.25E-04	=		0.15	1.80E-05
Columbia River	HFD TS10HRM28.7	September 8, 2003	B17CB2	Arsenic	mg/L	1	6.25E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	December 4, 2001	B13LD6	Arsenic	mg/L	1	6.25E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.2	September 5, 2002	B158X6	Arsenic	mg/L	1	6.26E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	June 11, 2002	B14RY0	Arsenic	mg/L	1	6.26E-04	X		0.15	1.80E-05
Columbia River	100 NSHR HRM9.8	September 5, 2002	B158X8	Arsenic	mg/L	1	6.27E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 30	September 14, 2004	B1B746	Arsenic	mg/L	1	6.27E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	December 4, 2001	B13LJ8	Arsenic	mg/L	1	6.27E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 29	September 21, 1999	B0WB75	Arsenic	mg/L	1	6.27E-04	=		0.15	1.80E-05
Columbia River	100 N-7 HRM 9.5	September 5, 2002	B158D6	Arsenic	mg/L	1	6.28E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	December 10, 2002	B16372	Arsenic	mg/L	1	6.28E-04	=		0.15	1.80E-05
Columbia River	100 F-10HRM19.0	September 8, 2003	B17C96	Arsenic	mg/L	1	6.29E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM8.9	September 13, 2004	B1B7B0	Arsenic	mg/L	1	6.29E-04	X		0.15	1.80E-05
Columbia River	100-B SPR 39-2	October 11, 2004	B1BFV7	Arsenic	mg/L	1	6.29E-04	X		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	December 4, 2001	B13LD9	Arsenic	mg/L	1	6.29E-04	=		0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	100 FSHR HRM23	September 14, 2004	B1B7F6	Arsenic	mg/L	1	6.30E-04	X		0.15	1.80E-05
Columbia River	100 N-1 HRM 9.5	September 4, 2003	B17CB6	Arsenic	mg/L	1	6.30E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 27	September 8, 2003	B17CL8	Arsenic	mg/L	1	6.30E-04	=		0.15	1.80E-05
Columbia River	HFD TS3 HRM28.7	September 9, 2002	B158C5	Arsenic	mg/L	1	6.30E-04	=		0.15	1.80E-05
Columbia River	100 F-2 HRM19.0	September 14, 2004	B1B776	Arsenic	mg/L	1	6.31E-04	X		0.15	1.80E-05
Columbia River	100 N-3 HRM 9.5	September 5, 2002	B158P8	Arsenic	mg/L	1	6.31E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.2	September 5, 2002	B158X5	Arsenic	mg/L	1	6.31E-04	=		0.15	1.80E-05
Columbia River	100D Area	June 10, 2002	B14PW8	Arsenic	mg/L	2	6.32E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	September 9, 2003	B17CD2	Arsenic	mg/L	1	6.32E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	June 12, 2001	B12529	Arsenic	mg/L	1	6.32E-04	=		0.15	1.80E-05
Columbia River	100-H SPR 153-1	October 27, 1999	B0WP45	Arsenic	mg/L	1	6.32E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 26	September 14, 2004	B1B741	Arsenic	mg/L	1	6.33E-04	X		0.15	1.80E-05
Columbia River	HFD TS5 HRM28.7	September 14, 2004	B1B6W3	Arsenic	mg/L	1	6.33E-04	X		0.15	1.80E-05
Columbia River	100 N-5 HRM 9.5	September 7, 2001	B12TJ3	Arsenic	mg/L	1	6.34E-04	=		0.15	1.80E-05
Columbia River	HFD TS3 HRM28.7	September 21, 1999	B0WB91	Arsenic	mg/L	1	6.35E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 41.5	September 16, 1999	B0WB61	Arsenic	mg/L	1	6.35E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM18	September 14, 2004	B1B7D7	Arsenic	mg/L	1	6.35E-04	X		0.15	1.80E-05
Columbia River	100 NSHR HRM8.9	September 5, 2002	B158X3	Arsenic	mg/L	1	6.35E-04	=		0.15	1.80E-05
Columbia River	HFD TS10HRM28.7	September 14, 2004	B1B774	Arsenic	mg/L	1	6.35E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	December 4, 2001	B13LK4	Arsenic	mg/L	1	6.35E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	September 15, 2004	B1B760	Arsenic	mg/L	1	6.35E-04	X		0.15	1.80E-05
Columbia River	100 N-2 HRM 9.5	September 5, 2002	B158D3	Arsenic	mg/L	1	6.36E-04	=		0.15	1.80E-05
Columbia River	100 N-5 HRM 9.5	September 5, 2002	B158D5	Arsenic	mg/L	1	6.36E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.8	September 5, 2002	B158X9	Arsenic	mg/L	1	6.36E-04	=		0.15	1.80E-05
Columbia River	HFD TS5 HRM28.7	September 14, 2004	B1B772	Arsenic	mg/L	1	6.36E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	June 10, 2003	B17207	Arsenic	mg/L	1	6.36E-04	C		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	June 12, 2001	B12539	Arsenic	mg/L	1	6.36E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM8.4	September 13, 2004	B1B796	Arsenic	mg/L	1	6.37E-04	X		0.15	1.80E-05
Columbia River	HFD TS HRM 30	September 8, 2003	B17CL9	Arsenic	mg/L	1	6.37E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.2	September 13, 2004	B1B7B4	Arsenic	mg/L	1	6.38E-04	X		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	December 4, 2001	B13LD8	Arsenic	mg/L	1	6.38E-04	=		0.15	1.80E-05
Columbia River	100 N-3 HRM 9.5	September 13, 2004	B1B753	Arsenic	mg/L	1	6.39E-04	X		0.15	1.80E-05
Columbia River	100 N-7 HRM 9.5	September 13, 2004	B1B755	Arsenic	mg/L	1	6.39E-04	X		0.15	1.80E-05
Columbia River	HFD TS HRM 30	September 14, 2004	B1B743	Arsenic	mg/L	1	6.39E-04	X		0.15	1.80E-05
Columbia River	100-B SPR 39-2	November 17, 2003	B180H8	Arsenic	mg/L	1	6.40E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	June 20, 2000	B0YCD2	Arsenic	mg/L	1	6.40E-04	=		0.15	1.80E-05
Columbia River	300 A7 HRM 43.1	September 16, 1999	B0WB87	Arsenic	mg/L	1	6.40E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM8.9	September 13, 2004	B1B799	Arsenic	mg/L	1	6.41E-04	X		0.15	1.80E-05
Columbia River	HFD TS2 HRM28.7	September 14, 2004	B1B6W1	Arsenic	mg/L	1	6.41E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	September 13, 2001	B12TN0	Arsenic	mg/L	1	6.41E-04	=		0.15	1.80E-05
Columbia River	100 N-10HRM 9.5	September 5, 2002	B158D7	Arsenic	mg/L	1	6.42E-04	=		0.15	1.80E-05
Columbia River	HFD TS10HRM28.7	September 9, 2002	B158C8	Arsenic	mg/L	1	6.42E-04	=		0.15	1.80E-05
Columbia River	HFD TS7 HRM28.7	September 9, 2002	B158C7	Arsenic	mg/L	1	6.42E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	June 20, 2000	B0YCD1	Arsenic	mg/L	1	6.43E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	September 15, 2004	B1B759	Arsenic	mg/L	1	6.43E-04	X		0.15	1.80E-05

Table B-10**Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values****Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	HFD TS HRM 27	September 10, 2001	B12TH1	Arsenic	mg/L	1	6.44E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM8.4	September 5, 2002	B158W9	Arsenic	mg/L	1	6.45E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	December 8, 2003	B183R1	Arsenic	mg/L	1	6.45E-04	=		0.15	1.80E-05
Columbia River	HFD TS1 HRM28.7	September 8, 2003	B17CP5	Arsenic	mg/L	1	6.46E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 28	September 14, 2004	B1B7D3	Arsenic	mg/L	1	6.47E-04	X		0.15	1.80E-05
Columbia River	100 F-1 HRM19.0	September 14, 2004	B1B775	Arsenic	mg/L	1	6.48E-04	X		0.15	1.80E-05
Columbia River	HFD TS1 HRM28.7	September 14, 2004	B1B6W0	Arsenic	mg/L	1	6.49E-04	X		0.15	1.80E-05
Columbia River	HFD TS1 HRM28.7	September 14, 2004	B1B769	Arsenic	mg/L	1	6.49E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	September 9, 2003	B17CT4	Arsenic	mg/L	1	6.49E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	September 9, 2003	B17CN4	Arsenic	mg/L	1	6.49E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	June 10, 2003	B171Y9	Arsenic	mg/L	1	6.49E-04	C		0.15	1.80E-05
Columbia River	100 F-3 HRM19.0	September 14, 2004	B1B777	Arsenic	mg/L	1	6.50E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	June 12, 2001	B12542	Arsenic	mg/L	1	6.50E-04	=		0.15	1.80E-05
Columbia River	100 N-5 HRM 9.5	September 13, 2004	B1B754	Arsenic	mg/L	1	6.51E-04	X		0.15	1.80E-05
Columbia River	HFD TS7 HRM28.7	September 14, 2004	B1B6W4	Arsenic	mg/L	1	6.51E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	June 20, 2000	B0YCL4	Arsenic	mg/L	1	6.52E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	June 10, 2003	B171Y8	Arsenic	mg/L	1	6.52E-04	C		0.15	1.80E-05
Columbia River	100 N-1 HRM 9.5	September 13, 2004	B1B751	Arsenic	mg/L	1	6.53E-04	X		0.15	1.80E-05
Columbia River	300 A2 HRM 43.1	September 13, 2001	B12TK3	Arsenic	mg/L	1	6.53E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 26	September 9, 2002	B158N9	Arsenic	mg/L	1	6.53E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	June 11, 2002	B14RX1	Arsenic	mg/L	1	6.54E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	September 13, 2001	B12TM9	Arsenic	mg/L	1	6.55E-04	=		0.15	1.80E-05
Columbia River	100-D SPR 110-1	October 27, 1999	B0WP41	Arsenic	mg/L	1	6.55E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	June 20, 2000	B0YCL1	Arsenic	mg/L	1	6.56E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	June 20, 2000	B0YCD0	Arsenic	mg/L	1	6.56E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM23	September 14, 2004	B1B7F5	Arsenic	mg/L	1	6.57E-04	X		0.15	1.80E-05
Columbia River	300 A7 HRM 43.1	September 9, 2003	B17CP3	Arsenic	mg/L	1	6.57E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	June 20, 2000	B0YCL3	Arsenic	mg/L	1	6.57E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	June 20, 2000	B0YCL2	Arsenic	mg/L	1	6.57E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	June 11, 2002	B14RX8	Arsenic	mg/L	1	6.57E-04	X		0.15	1.80E-05
Columbia River	HFD TS2 HRM28.7	September 9, 2002	B158T5	Arsenic	mg/L	1	6.58E-04	=		0.15	1.80E-05
Columbia River	HFD TS5 HRM28.7	September 9, 2002	B158C6	Arsenic	mg/L	1	6.58E-04	=		0.15	1.80E-05
Columbia River	RICHPS8 HRM46.4	June 14, 1999	B0V222	Arsenic	mg/L	1	6.59E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 26	September 10, 2001	B12TH0	Arsenic	mg/L	1	6.60E-04	=		0.15	1.80E-05
Columbia River	100 F-7 HRM19.0	September 10, 2001	B12T74	Arsenic	mg/L	1	6.61E-04	=		0.15	1.80E-05
Columbia River	100 N-7 HRM 9.5	September 7, 2001	B12TJ4	Arsenic	mg/L	1	6.61E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 27	September 9, 2002	B158P0	Arsenic	mg/L	1	6.61E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	December 8, 2003	B183R3	Arsenic	mg/L	1	6.61E-04	=		0.15	1.80E-05
Columbia River	100 N-1 HRM 9.5	September 10, 1999	B0W973	Arsenic	mg/L	1	6.62E-04	=		0.15	1.80E-05
Columbia River	100 N-7 HRM 9.5	September 13, 2004	B1B6X3	Arsenic	mg/L	1	6.62E-04	X		0.15	1.80E-05
Columbia River	300 A1 HRM 43.1	September 13, 2001	B12T61	Arsenic	mg/L	1	6.62E-04	=		0.15	1.80E-05
Columbia River	HFD TS10HRM28.7	September 10, 2001	B12T60	Arsenic	mg/L	1	6.62E-04	=		0.15	1.80E-05
Columbia River	HFD TS10HRM28.7	September 9, 2002	B158T9	Arsenic	mg/L	1	6.62E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	June 10, 2003	B17206	Arsenic	mg/L	1	6.62E-04	C		0.15	1.80E-05
Columbia River	100 F-7 HRM19.0	September 14, 2004	B1B779	Arsenic	mg/L	1	6.63E-04	X		0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	RICHPS7 HRM46.4	September 15, 2004	B1B6Y7	Arsenic	mg/L	1	6.63E-04	X		0.15	1.80E-05
Columbia River	100 FSHR HRM18	September 14, 2004	B1B7D8	Arsenic	mg/L	1	6.64E-04	X		0.15	1.80E-05
Columbia River	100 NSHR HRM9.8	September 13, 2004	B1B7B8	Arsenic	mg/L	1	6.64E-04	X		0.15	1.80E-05
Columbia River	300 A3 HRM 43.1	September 13, 2001	B12T63	Arsenic	mg/L	1	6.64E-04	=		0.15	1.80E-05
Columbia River	100 N-2 HRM 9.5	September 13, 2004	B1B6X0	Arsenic	mg/L	1	6.65E-04	X		0.15	1.80E-05
Columbia River	HFD TS HRM 27	September 9, 2002	B158N7	Arsenic	mg/L	1	6.66E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	June 10, 2003	B171Y5	Arsenic	mg/L	1	6.66E-04	C		0.15	1.80E-05
Columbia River	100 F-5 HRM19.0	September 14, 2004	B1B6X8	Arsenic	mg/L	1	6.67E-04	X		0.15	1.80E-05
Columbia River	100 N-1 HRM 9.5	September 5, 2002	B158D2	Arsenic	mg/L	1	6.68E-04	=		0.15	1.80E-05
Columbia River	100-D SPR 110-1	October 27, 1999	B0WP40	Arsenic	mg/L	1	6.68E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	September 19, 2000	B10742	Arsenic	mg/L	1	6.68E-04	=		0.15	1.80E-05
Columbia River	100 N-10HRM 9.5	September 10, 1999	B0W978	Arsenic	mg/L	1	6.68E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 26	September 9, 2002	B158N6	Arsenic	mg/L	1	6.69E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 27	September 10, 2001	B12TH4	Arsenic	mg/L	1	6.69E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	June 20, 2000	B0YCC9	Arsenic	mg/L	1	6.70E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	September 19, 2000	B106V4	Arsenic	mg/L	1	6.70E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	December 6, 1999	B0X401	Arsenic	mg/L	1	6.70E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	June 14, 1999	B0V208	Arsenic	mg/L	1	6.72E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	September 15, 2004	B1B6Y4	Arsenic	mg/L	1	6.72E-04	X		0.15	1.80E-05
Columbia River	300 SR HRM 42.9	September 16, 1999	B0WB64	Arsenic	mg/L	1	6.73E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	September 9, 2003	B17CT2	Arsenic	mg/L	1	6.73E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.2	September 13, 2004	B1B7B3	Arsenic	mg/L	1	6.74E-04	X		0.15	1.80E-05
Columbia River	300 A2 HRM 43.1	September 13, 2001	B12T62	Arsenic	mg/L	1	6.74E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 42.9	September 13, 2001	B12TR9	Arsenic	mg/L	1	6.74E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 42.9	September 10, 2002	B15900	Arsenic	mg/L	1	6.74E-04	=		0.15	1.80E-05
Columbia River	HFD TS7 HRM28.7	September 10, 2001	B12TL2	Arsenic	mg/L	1	6.74E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	September 13, 2001	B12TM6	Arsenic	mg/L	1	6.74E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	June 12, 2001	B124Y4	Arsenic	mg/L	1	6.74E-04	=		0.15	1.80E-05
Columbia River	300 A3 HRM 43.1	September 15, 2004	B1B765	Arsenic	mg/L	1	6.75E-04	X		0.15	1.80E-05
Columbia River	100 N-1 HRM 9.5	September 13, 2004	B1B6W9	Arsenic	mg/L	1	6.76E-04	X		0.15	1.80E-05
Columbia River	100 N-3 HRM 9.5	September 13, 2004	B1B6X1	Arsenic	mg/L	1	6.76E-04	X		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	September 15, 2004	B1B6Y5	Arsenic	mg/L	1	6.76E-04	X		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	June 20, 2000	B0YCD3	Arsenic	mg/L	1	6.76E-04	=		0.15	1.80E-05
Columbia River	HFD TS10HRM28.7	September 14, 2004	B1B6W5	Arsenic	mg/L	1	6.77E-04	X		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	September 10, 2002	B158F6	Arsenic	mg/L	1	6.77E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	September 9, 2003	B17CN3	Arsenic	mg/L	1	6.78E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	June 14, 1999	B0V212	Arsenic	mg/L	1	6.79E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	June 12, 2001	B12541	Arsenic	mg/L	1	6.79E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	June 12, 2001	B124Y6	Arsenic	mg/L	1	6.79E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	September 15, 2004	B1B761	Arsenic	mg/L	1	6.79E-04	X		0.15	1.80E-05
Columbia River	300 A5 HRM 43.1	September 13, 2001	B12T51	Arsenic	mg/L	1	6.80E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	February 26, 2001	B11H58	Arsenic	mg/L	1	6.80E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	June 11, 2002	B14RX0	Arsenic	mg/L	1	6.80E-04	X		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	September 13, 2001	B12TK0	Arsenic	mg/L	1	6.80E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 42.5	September 13, 2001	B12TR4	Arsenic	mg/L	1	6.81E-04	=		0.15	1.80E-05

Table B-10**Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values****Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	RICHPS HRM 43.5	September 13, 2001	B12TN1	Arsenic	mg/L	1	6.81E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	September 13, 2001	B12TJ9	Arsenic	mg/L	1	6.81E-04	=		0.15	1.80E-05
Columbia River	100 F-1 HRM19.0	September 10, 2001	B12TL4	Arsenic	mg/L	1	6.82E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	December 4, 2001	B13LK1	Arsenic	mg/L	1	6.82E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	September 15, 2004	B1B6Y6	Arsenic	mg/L	1	6.82E-04	X		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	September 13, 2001	B12TJ8	Arsenic	mg/L	1	6.83E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	June 14, 1999	B0V226	Arsenic	mg/L	1	6.83E-04	=		0.15	1.80E-05
Columbia River	100 N-10HRM 9.5	September 13, 2004	B1B756	Arsenic	mg/L	1	6.84E-04	X		0.15	1.80E-05
Columbia River	100 F-2 HRM19.0	September 10, 2001	B12T71	Arsenic	mg/L	1	6.85E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	June 11, 2002	B14RY1	Arsenic	mg/L	1	6.85E-04	X		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	June 14, 1999	B0V210	Arsenic	mg/L	1	6.85E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 41.5	September 13, 2001	B12TP6	Arsenic	mg/L	1	6.87E-04	=		0.15	1.80E-05
Columbia River	300 A5 HRM 43.1	September 15, 2004	B1B6V6	Arsenic	mg/L	1	6.88E-04	X		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	December 5, 2000	B11144	Arsenic	mg/L	1	6.88E-04	=		0.15	1.80E-05
Columbia River	100 F-2 HRM19.0	September 14, 2004	B1B6X6	Arsenic	mg/L	1	6.90E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	September 13, 2001	B12TM7	Arsenic	mg/L	1	6.91E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	June 11, 2002	B14RW9	Arsenic	mg/L	1	6.91E-04	X		0.15	1.80E-05
Columbia River	100 F-1 HRM19.0	September 14, 2004	B1B6X5	Arsenic	mg/L	1	6.92E-04	X		0.15	1.80E-05
Columbia River	100 NSHR HRM9.8	September 13, 2004	B1B7B7	Arsenic	mg/L	1	6.92E-04	X		0.15	1.80E-05
Columbia River	100-D SPR 102-1	October 26, 2004	B1BFX3	Arsenic	mg/L	1	6.93E-04	X		0.15	1.80E-05
Columbia River	300 A5 HRM 43.1	September 15, 2004	B1B766	Arsenic	mg/L	1	6.93E-04	X		0.15	1.80E-05
Columbia River	HFD TS HRM 30	September 10, 2001	B12TH2	Arsenic	mg/L	1	6.93E-04	=		0.15	1.80E-05
Columbia River	HFD TS2 HRM28.7	September 10, 2001	B12TK9	Arsenic	mg/L	1	6.93E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	June 14, 1999	B0V211	Arsenic	mg/L	1	6.93E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM8.4	September 13, 2004	B1B795	Arsenic	mg/L	1	6.94E-04	X		0.15	1.80E-05
Columbia River	300 A5 HRM 43.1	September 13, 2001	B12TK5	Arsenic	mg/L	1	6.94E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 28	September 14, 2004	B1B7D4	Arsenic	mg/L	1	6.94E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	September 13, 2001	B12TM5	Arsenic	mg/L	1	6.94E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	December 10, 2002	B16361	Arsenic	mg/L	1	6.94E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM18	September 14, 2004	B1B6X9	Arsenic	mg/L	1	6.95E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	September 13, 2001	B12TM8	Arsenic	mg/L	1	6.96E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 46.4	June 12, 2001	B124Y3	Arsenic	mg/L	1	6.96E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 26	September 10, 2001	B12TH3	Arsenic	mg/L	1	6.97E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	December 6, 1999	B0X3W9	Arsenic	mg/L	1	6.97E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	June 10, 2003	B17200	Arsenic	mg/L	1	6.97E-04	C		0.15	1.80E-05
Columbia River	100 FSHR HRM22	September 14, 2004	B1B7F2	Arsenic	mg/L	1	6.98E-04	X		0.15	1.80E-05
Columbia River	100H SPR 153-1	October 27, 2003	B17RM0	Arsenic	mg/L	1	6.98E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	June 11, 2002	B14RW8	Arsenic	mg/L	1	7.00E-04	X		0.15	1.80E-05
Columbia River	HFD TS5 HRM28.7	September 10, 2001	B12TL1	Arsenic	mg/L	1	7.01E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	June 12, 2001	B12540	Arsenic	mg/L	1	7.01E-04	=		0.15	1.80E-05
Columbia River	100 N-3 HRM 9.5	September 7, 2001	B12TJ2	Arsenic	mg/L	1	7.04E-04	=		0.15	1.80E-05
Columbia River	300 A1 HRM 43.1	September 9, 2003	B17CN9	Arsenic	mg/L	1	7.04E-04	=		0.15	1.80E-05
Columbia River	300 A3 HRM 43.1	September 15, 2004	B1B6W8	Arsenic	mg/L	1	7.04E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	June 11, 2002	B14RX9	Arsenic	mg/L	1	7.04E-04	X		0.15	1.80E-05
Columbia River	300 SR HRM 41.5	September 13, 2001	B12TP7	Arsenic	mg/L	1	7.05E-04	=		0.15	1.80E-05

Table B-10**Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values****Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	100 N-5 HRM 9.5	September 13, 2004	B1B6X2	Arsenic	mg/L	1	7.06E-04		X	0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	December 10, 2002	B16339	Arsenic	mg/L	1	7.06E-04		=	0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	September 13, 2001	B12T80	Arsenic	mg/L	1	7.06E-04		=	0.15	1.80E-05
Columbia River	300 A1 HRM 43.1	September 13, 2001	B12TK2	Arsenic	mg/L	1	7.07E-04		=	0.15	1.80E-05
Columbia River	300 A2 HRM 43.1	September 15, 2004	B1B6W7	Arsenic	mg/L	1	7.07E-04		X	0.15	1.80E-05
Columbia River	300 SR HRM 42.5	September 13, 2001	B12TR5	Arsenic	mg/L	1	7.07E-04		=	0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	September 15, 2004	B1B786	Arsenic	mg/L	1	7.07E-04		X	0.15	1.80E-05
Columbia River	100 F-3 HRM19.0	September 14, 2004	B1B6X7	Arsenic	mg/L	1	7.09E-04		X	0.15	1.80E-05
Columbia River	100 N-10HRM 9.5	September 7, 2001	B12TJ5	Arsenic	mg/L	1	7.09E-04		=	0.15	1.80E-05
Columbia River	100 NSHR HRM9.8	September 7, 2001	B12TP3	Arsenic	mg/L	1	7.09E-04		=	0.15	1.80E-05
Columbia River	300 A2 HRM 43.1	September 15, 2004	B1B764	Arsenic	mg/L	1	7.09E-04		X	0.15	1.80E-05
Columbia River	100-D SPR 110-1	October 17, 2000	B10961	Arsenic	mg/L	1	7.10E-04		=	0.15	1.80E-05
Columbia River	300 A3 HRM 43.1	September 13, 2001	B12TK4	Arsenic	mg/L	1	7.11E-04		=	0.15	1.80E-05
Columbia River	100-D SPR 102-1	October 26, 2004	B1BFX2	Arsenic	mg/L	1	7.12E-04		X	0.15	1.80E-05
Columbia River	300 A7 HRM 43.1	September 13, 2001	B12TK6	Arsenic	mg/L	1	7.12E-04		=	0.15	1.80E-05
Columbia River	300 SR HRM 42.9	September 13, 2001	B12TR8	Arsenic	mg/L	1	7.12E-04		=	0.15	1.80E-05
Columbia River	100 N-1 HRM 9.5	September 7, 2001	B12TJ0	Arsenic	mg/L	1	7.13E-04		=	0.15	1.80E-05
Columbia River	100B SPR 39-2	October 20, 2003	B17J83	Arsenic	mg/L	1	7.13E-04		=	0.15	1.80E-05
Columbia River	300 A7 HRM 43.1	September 13, 2001	B12T52	Arsenic	mg/L	1	7.13E-04		=	0.15	1.80E-05
Columbia River	HFD TS3 HRM28.7	September 10, 2001	B12TL0	Arsenic	mg/L	1	7.13E-04		=	0.15	1.80E-05
Columbia River	300 A1 HRM 43.1	September 15, 2004	B1B6W6	Arsenic	mg/L	1	7.14E-04		X	0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	September 15, 2004	B1B787	Arsenic	mg/L	1	7.15E-04		X	0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	September 9, 2003	B17CD0	Arsenic	mg/L	1	7.15E-04		=	0.15	1.80E-05
Columbia River	HFD TS10HRM28.7	September 10, 2001	B12TL3	Arsenic	mg/L	1	7.16E-04		=	0.15	1.80E-05
Columbia River	100B SPR 39-2	October 20, 2003	B17J82	Arsenic	mg/L	1	7.17E-04		=	0.15	1.80E-05
Columbia River	100 FSHR HRM22	September 14, 2004	B1B7F1	Arsenic	mg/L	1	7.18E-04		X	0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	September 13, 2001	B12T82	Arsenic	mg/L	1	7.18E-04		=	0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	June 14, 1999	B0V220	Arsenic	mg/L	1	7.19E-04		=	0.15	1.80E-05
Columbia River	HFD TS5 HRM28.7	September 10, 2001	B12T58	Arsenic	mg/L	1	7.19E-04		=	0.15	1.80E-05
Columbia River	100 F-5 HRM19.0	September 10, 2001	B12TL7	Arsenic	mg/L	1	7.20E-04		=	0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	September 15, 2004	B1B791	Arsenic	mg/L	1	7.20E-04		X	0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	September 10, 2002	B158R7	Arsenic	mg/L	1	7.20E-04		=	0.15	1.80E-05
Columbia River	100 NSHR HRM8.4	September 7, 2001	B12TN4	Arsenic	mg/L	1	7.22E-04		=	0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	September 15, 2004	B1B790	Arsenic	mg/L	1	7.22E-04		X	0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	September 15, 2004	B1B757	Arsenic	mg/L	1	7.23E-04		X	0.15	1.80E-05
Columbia River	RICHPS9 HRM46.4	June 14, 1999	B0V224	Arsenic	mg/L	1	7.25E-04		=	0.15	1.80E-05
Columbia River	HFD TS HRM 30	September 10, 2001	B12TH5	Arsenic	mg/L	1	7.26E-04		=	0.15	1.80E-05
Columbia River	100 FSHR HRM18	September 10, 2001	B12TT5	Arsenic	mg/L	1	7.27E-04		=	0.15	1.80E-05
Columbia River	300 A10 HRM43.1	September 13, 2001	B12T53	Arsenic	mg/L	1	7.27E-04		=	0.15	1.80E-05
Columbia River	100 F-7 HRM19.0	September 10, 2001	B12TL8	Arsenic	mg/L	1	7.28E-04		=	0.15	1.80E-05
Columbia River	100 N-2 HRM 9.5	September 7, 2001	B12TJ1	Arsenic	mg/L	1	7.28E-04		=	0.15	1.80E-05
Columbia River	300 SHR HRM42.9	September 15, 2004	B1B7D0	Arsenic	mg/L	1	7.28E-04		X	0.15	1.80E-05
Columbia River	HFD TS HRM 28	September 18, 2000	B10786	Arsenic	mg/L	1	7.28E-04		=	0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	February 26, 2001	B11H36	Arsenic	mg/L	1	7.28E-04		=	0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	June 20, 2000	B0YCK2	Arsenic	mg/L	1	7.29E-04		=	0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	RICHPS10HRM46.4	December 5, 2000	B11122	Arsenic	mg/L	1	7.30E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	September 15, 2004	B1B788	Arsenic	mg/L	1	7.31E-04	X		0.15	1.80E-05
Columbia River	300 SHR HRM41.5	September 15, 2004	B1B7C1	Arsenic	mg/L	1	7.32E-04	X		0.15	1.80E-05
Columbia River	300 SPR 11 -1	August 27, 2001	B12RP6	Arsenic	mg/L	1	7.32E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	September 9, 2003	B17CT1	Arsenic	mg/L	1	7.32E-04	=		0.15	1.80E-05
Columbia River	100 F-2 HRM19.0	September 10, 2001	B12TL5	Arsenic	mg/L	1	7.33E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 42.5	September 9, 2003	B17CX6	Arsenic	mg/L	1	7.34E-04	=		0.15	1.80E-05
Columbia River	100 N-10HRM 9.5	September 13, 2004	B1B6X4	Arsenic	mg/L	1	7.35E-04	X		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	June 12, 2001	B124Y5	Arsenic	mg/L	1	7.35E-04	=		0.15	1.80E-05
Columbia River	HFD TS3 HRM28.7	September 10, 2001	B12T57	Arsenic	mg/L	1	7.36E-04	=		0.15	1.80E-05
Columbia River	100-D SPR 110-1	October 17, 2000	B10960	Arsenic	mg/L	1	7.37E-04	=		0.15	1.80E-05
Columbia River	300 SHR HRM41.5	September 15, 2004	B1B7C2	Arsenic	mg/L	1	7.37E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	December 8, 2003	B183W3	Arsenic	mg/L	1	7.37E-04	C		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	September 10, 2002	B158F9	Arsenic	mg/L	1	7.37E-04	=		0.15	1.80E-05
Columbia River	100 F-3 HRM19.0	September 10, 2001	B12TL6	Arsenic	mg/L	1	7.39E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM8.9	September 7, 2001	B12TN7	Arsenic	mg/L	1	7.39E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 28	September 18, 2000	B10787	Arsenic	mg/L	1	7.39E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	June 12, 2001	B124Y7	Arsenic	mg/L	1	7.39E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM18	September 10, 2001	B12TT4	Arsenic	mg/L	1	7.42E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	September 13, 2001	B12T81	Arsenic	mg/L	1	7.42E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.2	September 7, 2001	B12TP0	Arsenic	mg/L	1	7.43E-04	=		0.15	1.80E-05
Columbia River	300 A10 HRM43.1	September 19, 2000	B10748	Arsenic	mg/L	1	7.44E-04	=		0.15	1.80E-05
Columbia River	300 A1 HRM 43.1	September 15, 2004	B1B763	Arsenic	mg/L	1	7.45E-04	X		0.15	1.80E-05
Columbia River	RICHPS8 HRM46.4	June 14, 1999	B0V223	Arsenic	mg/L	1	7.45E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 30	September 9, 2002	B158P1	Arsenic	mg/L	1	7.46E-04	=		0.15	1.80E-05
Columbia River	300 A10 HRM43.1	September 10, 2002	B158T3	Arsenic	mg/L	1	7.47E-04	=		0.15	1.80E-05
Columbia River	100 N-7 HRM 9.5	September 7, 2001	B12T68	Arsenic	mg/L	1	7.48E-04	=		0.15	1.80E-05
Columbia River	300 A7 HRM 43.1	September 19, 2000	B10747	Arsenic	mg/L	1	7.49E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM23	September 10, 2001	B12TV0	Arsenic	mg/L	1	7.50E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	June 14, 1999	B0V213	Arsenic	mg/L	1	7.51E-04	=		0.15	1.80E-05
Columbia River	HFD TS7 HRM28.7	September 10, 2001	B12T59	Arsenic	mg/L	1	7.52E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	June 11, 2002	B14RX3	Arsenic	mg/L	1	7.52E-04	X		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	September 13, 2001	B12T79	Arsenic	mg/L	1	7.52E-04	=		0.15	1.80E-05
Columbia River	100 F-1 HRM19.0	September 10, 2001	B12T70	Arsenic	mg/L	1	7.56E-04	=		0.15	1.80E-05
Columbia River	100 FSHR HRM23	September 10, 2001	B12TV1	Arsenic	mg/L	1	7.56E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.2	September 7, 2001	B12TN9	Arsenic	mg/L	1	7.56E-04	=		0.15	1.80E-05
Columbia River	HFD TS1 HRM28.7	September 10, 2001	B12TK8	Arsenic	mg/L	1	7.56E-04	=		0.15	1.80E-05
Columbia River	RICHPS4 HRM46.4	June 14, 1999	B0V215	Arsenic	mg/L	1	7.60E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	June 11, 2002	B14RY5	Arsenic	mg/L	1	7.63E-04	X		0.15	1.80E-05
Columbia River	300 SR HRM 42.1	September 19, 2000	B10778	Arsenic	mg/L	1	7.66E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	June 14, 1999	B0V221	Arsenic	mg/L	1	7.66E-04	=		0.15	1.80E-05
Columbia River	100 F-10HRM19.0	September 10, 2001	B12TL9	Arsenic	mg/L	1	7.67E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	June 11, 2002	B14RT7	Arsenic	mg/L	1	7.67E-04	X		0.15	1.80E-05
Columbia River	RICHPS9 HRM46.4	June 14, 1999	B0V225	Arsenic	mg/L	1	7.68E-04	=		0.15	1.80E-05
Columbia River	100 F-3 HRM19.0	September 10, 2001	B12T72	Arsenic	mg/L	1	7.68E-04	=		0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	100 F-5 HRM19.0	September 10, 2001	B12T73	Arsenic	mg/L	1	7.68E-04	=		0.15	1.80E-05
Columbia River	HFD TS1 HRM28.7	September 9, 2002	B158T4	Arsenic	mg/L	1	7.71E-04	=		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	September 15, 2004	B1B6Y3	Arsenic	mg/L	1	7.71E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	September 13, 2001	B12TM4	Arsenic	mg/L	1	7.72E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	June 20, 2000	B0YCD4	Arsenic	mg/L	1	7.72E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 46.4	December 4, 2001	B13LH7	Arsenic	mg/L	1	7.75E-04	=		0.15	1.80E-05
Columbia River	300 A1 HRM 43.1	September 15, 2004	B1B767	Arsenic	mg/L	1	7.76E-04	X		0.15	1.80E-05
Columbia River	300 A7 HRM 43.1	September 15, 2004	B1B6V7	Arsenic	mg/L	1	7.76E-04	X		0.15	1.80E-05
Columbia River	HFD TS2 HRM28.7	September 10, 2001	B12T56	Arsenic	mg/L	1	7.79E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	June 11, 2002	B14RV1	Arsenic	mg/L	1	7.79E-04	X		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	June 12, 2001	B12530	Arsenic	mg/L	1	7.82E-04	=		0.15	1.80E-05
Columbia River	100-D SPR 102-1	October 21, 2002	B15C89	Arsenic	mg/L	1	7.84E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 30	September 9, 2002	B158N8	Arsenic	mg/L	1	7.85E-04	=		0.15	1.80E-05
Columbia River	300 A10 HRM43.1	September 13, 2001	B12TK7	Arsenic	mg/L	1	7.88E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	June 11, 2002	B14RY2	Arsenic	mg/L	1	7.88E-04	X		0.15	1.80E-05
Columbia River	300 SPR 11 -1	August 27, 2001	B12RP5	Arsenic	mg/L	1	7.93E-04	=		0.15	1.80E-05
Columbia River	300 A10 HRM43.1	September 19, 2000	B106R8	Arsenic	mg/L	1	7.94E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	September 15, 2004	B1B785	Arsenic	mg/L	1	7.96E-04	X		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	June 11, 2002	B14RT9	Arsenic	mg/L	1	7.96E-04	X		0.15	1.80E-05
Columbia River	HFD TS1 HRM28.7	September 8, 2003	B17C97	Arsenic	mg/L	1	7.97E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	June 10, 2003	B171V6	Arsenic	mg/L	1	7.97E-04	C		0.15	1.80E-05
Columbia River	300 SR HRM 42.1	September 19, 2000	B10777	Arsenic	mg/L	1	7.98E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	June 14, 1999	B0V217	Arsenic	mg/L	1	7.98E-04	=		0.15	1.80E-05
Columbia River	100 N-2 HRM 9.5	September 7, 2001	B12T65	Arsenic	mg/L	1	8.03E-04	=		0.15	1.80E-05
Columbia River	HFD TS1 HRM28.7	September 9, 2002	B158C3	Arsenic	mg/L	1	8.03E-04	=		0.15	1.80E-05
Columbia River	300 A10 HRM43.1	September 16, 1999	B0WB88	Arsenic	mg/L	1	8.03E-04	=		0.15	1.80E-05
Columbia River	300 SHR HRM42.4	September 15, 2004	B1B7H6	Arsenic	mg/L	1	8.04E-04	X		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	September 10, 2002	B158H1	Arsenic	mg/L	1	8.05E-04	=		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	June 11, 2002	B14RT8	Arsenic	mg/L	1	8.06E-04	X		0.15	1.80E-05
Columbia River	100 F-10HRM19.0	September 14, 2004	B1B6V9	Arsenic	mg/L	1	8.08E-04	X		0.15	1.80E-05
Columbia River	100 F-10HRM19.0	September 14, 2004	B1B780	Arsenic	mg/L	1	8.08E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 46.4	September 13, 2001	B12TJ6	Arsenic	mg/L	1	8.08E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	June 10, 2003	B17210	Arsenic	mg/L	1	8.12E-04	C		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	March 28, 2000	B0XRN7	Arsenic	mg/L	1	8.14E-04	=		0.15	1.80E-05
Columbia River	RICHPS5 HRM46.4	June 11, 2002	B14RV0	Arsenic	mg/L	1	8.17E-04	X		0.15	1.80E-05
Columbia River	100 N-5 HRM 9.5	September 7, 2001	B12T67	Arsenic	mg/L	1	8.20E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	September 19, 2000	B106V9	Arsenic	mg/L	1	8.21E-04	=		0.15	1.80E-05
Columbia River	HFD TS1 HRM28.7	September 10, 2001	B12T55	Arsenic	mg/L	1	8.22E-04	=		0.15	1.80E-05
Columbia River	300 SHR HRM42.1	September 15, 2004	B1B7C6	Arsenic	mg/L	1	8.23E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	September 15, 2004	B1B789	Arsenic	mg/L	1	8.23E-04	X		0.15	1.80E-05
Columbia River	100-D SPR 102-1	October 27, 1999	B0WP42	Arsenic	mg/L	1	8.24E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM8.9	September 7, 2001	B12TN6	Arsenic	mg/L	1	8.25E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	December 8, 2003	B183W4	Arsenic	mg/L	1	8.30E-04	C		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	September 13, 2001	B12TJ7	Arsenic	mg/L	1	8.34E-04	=		0.15	1.80E-05
Columbia River	RICHPS7 HRM46.4	June 10, 2003	B171V7	Arsenic	mg/L	1	8.35E-04	C		0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological	Human Health
							Value			Benchmark Value	Benchmark Value
Columbia River	100 N-3 HRM 9.5	September 7, 2001	B12T66	Arsenic	mg/L	1	8.36E-04	=		0.15	1.80E-05
Columbia River	100 F-10HRM19.0	September 10, 2001	B12T54	Arsenic	mg/L	1	8.39E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 45.0	June 11, 2002	B14RY3	Arsenic	mg/L	1	8.40E-04	X		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	December 4, 2001	B13LF0	Arsenic	mg/L	1	8.41E-04	=		0.15	1.80E-05
Columbia River	100-D SPR 110-1	October 21, 2002	B15C87	Arsenic	mg/L	1	8.42E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	June 10, 2003	B17212	Arsenic	mg/L	1	8.42E-04	C		0.15	1.80E-05
Columbia River	RICHPS HRM 43.5	September 15, 2004	B1B792	Arsenic	mg/L	1	8.42E-04	X		0.15	1.80E-05
Columbia River	300 A10 HRM43.1	September 10, 2002	B158C1	Arsenic	mg/L	1	8.43E-04	=		0.15	1.80E-05
Columbia River	300 SHR HRM42.4	September 15, 2004	B1B7H5	Arsenic	mg/L	1	8.43E-04	X		0.15	1.80E-05
Columbia River	RICHPS HRM 45.8	June 10, 2003	B17209	Arsenic	mg/L	1	8.45E-04	C		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	June 10, 2003	B17211	Arsenic	mg/L	1	8.46E-04	C		0.15	1.80E-05
Columbia River	RICHPS1 HRM46.4	June 10, 2003	B171V3	Arsenic	mg/L	1	8.47E-04	C		0.15	1.80E-05
Columbia River	300 SR HRM 42.1	September 9, 2003	B17CX2	Arsenic	mg/L	1	8.52E-04	=		0.15	1.80E-05
Columbia River	100 NSHR HRM9.8	September 7, 2001	B12TP2	Arsenic	mg/L	1	8.60E-04	=		0.15	1.80E-05
Columbia River	RICHPS3 HRM46.4	June 10, 2003	B171V5	Arsenic	mg/L	1	8.63E-04	C		0.15	1.80E-05
Columbia River	RICHPS2 HRM46.4	June 10, 2003	B171V4	Arsenic	mg/L	1	8.70E-04	C		0.15	1.80E-05
Columbia River	100 NSHR HRM8.4	September 7, 2001	B12TN3	Arsenic	mg/L	1	8.73E-04	=		0.15	1.80E-05
Columbia River	RICHPS HRM 43.9	June 11, 2002	B14RY4	Arsenic	mg/L	1	8.73E-04	X		0.15	1.80E-05
Columbia River	100 N-1 HRM 9.5	September 7, 2001	B12T64	Arsenic	mg/L	1	8.74E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	September 16, 1999	B0WB82	Arsenic	mg/L	1	8.78E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 42.1	September 13, 2001	B12TR1	Arsenic	mg/L	1	8.78E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	December 4, 2001	B13LJ2	Arsenic	mg/L	1	8.81E-04	=		0.15	1.80E-05
Columbia River	100D SPR 102-1	October 27, 2003	B17J94	Arsenic	mg/L	1	8.92E-04	=		0.15	1.80E-05
Columbia River	100-D SPR 102-1	October 17, 2000	B10963	Arsenic	mg/L	1	8.94E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	December 8, 2003	B183R4	Arsenic	mg/L	1	8.94E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 28	September 10, 2001	B12TT1	Arsenic	mg/L	1	9.01E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 42.5	September 16, 1999	B0WB63	Arsenic	mg/L	1	9.02E-04	=		0.15	1.80E-05
Columbia River	300 SHR HRM42.1	September 15, 2004	B1B7C5	Arsenic	mg/L	1	9.06E-04	X		0.15	1.80E-05
Columbia River	100-B SPR 39-2	October 25, 1999	B0WP27	Arsenic	mg/L	1	9.07E-04	=		0.15	1.80E-05
Columbia River	HFD TS HRM 28	September 10, 2001	B12TT2	Arsenic	mg/L	1	9.07E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	June 10, 2003	B171V8	Arsenic	mg/L	1	9.10E-04	C		0.15	1.80E-05
Columbia River	100 N-10HRM 9.5	September 7, 2001	B12T69	Arsenic	mg/L	1	9.15E-04	=		0.15	1.80E-05
Columbia River	300 SR HRM 42.1	September 13, 2001	B12TR0	Arsenic	mg/L	1	9.26E-04	=		0.15	1.80E-05
Columbia River	100-B SPR 39-2	October 25, 1999	B0WP29	Arsenic	mg/L	1	9.28E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	June 12, 2001	B124Y8	Arsenic	mg/L	1	9.28E-04	=		0.15	1.80E-05
Columbia River	300 SPR 42-2	October 7, 2002	B15C01	Arsenic	mg/L	1	9.34E-04	C		0.15	1.80E-05
Columbia River	300 A10 HRM43.1	September 9, 2003	B17CP4	Arsenic	mg/L	1	9.36E-04	=		0.15	1.80E-05
Columbia River	100-D SPR 102-1	October 27, 1999	B0WP43	Arsenic	mg/L	1	9.38E-04	=		0.15	1.80E-05
Columbia River	100-B SPR 37-1	September 16, 2002	B15C62	Arsenic	mg/L	1	9.47E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	June 14, 1999	B0V227	Arsenic	mg/L	1	9.48E-04	=		0.15	1.80E-05
Columbia River	300 SPR DR 42-2	September 27, 2000	B10975	Arsenic	mg/L	1	9.52E-04	=		0.15	1.80E-05
Columbia River	100-B SPR 37-1	September 16, 2002	B15C71	Arsenic	mg/L	1	9.53E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	June 11, 2002	B14RV2	Arsenic	mg/L	1	9.61E-04	X		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	September 9, 2003	B17CN8	Arsenic	mg/L	1	9.62E-04	=		0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	March 28, 2000	B0XRJ8	Arsenic	mg/L	1	9.75E-04	=		0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

									Ecological	
Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical	Qualifier	Benchmark	Human Health
							Value		Value	Benchmark Value
Columbia River	300 SPR DR 42-2	September 27, 2000	B10974	Arsenic	mg/L	1	9.87E-04	=	0.15	1.80E-05
Columbia River	HFD SPR UR 28-2	October 25, 2004	B1BFY0	Arsenic	mg/L	1	9.87E-04	X	0.15	1.80E-05
Columbia River	100B SPR 37-1	October 20, 2003	B17J76	Arsenic	mg/L	1	9.94E-04	=	0.15	1.80E-05
Columbia River	300 SPR DR 42-2	November 1, 1999	B0WP57	Arsenic	mg/L	1	0.0010	=	0.15	1.80E-05
Columbia River	100D SPR 102-1	October 27, 2003	B17J93	Arsenic	mg/L	1	0.0010	=	0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	September 13, 2001	B12T83	Arsenic	mg/L	1	0.0010	=	0.15	1.80E-05
Columbia River	300 SHR HRM42.9	September 15, 2004	B1B7C9	Arsenic	mg/L	1	0.0010	X	0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	March 25, 2003	B16L94	Arsenic	mg/L	1	0.0010	C	0.15	1.80E-05
Columbia River	100-B SPR 37-1	November 13, 2003	B180H6	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Columbia River	100B SPR 37-1	October 20, 2003	B17J81	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Columbia River	100-H SPR 153-1	October 27, 1999	B0WP44	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	March 25, 2003	B16LC6	Arsenic	mg/L	1	0.0011	C	0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	September 13, 2001	B12TK1	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	September 9, 2003	B17CD5	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Columbia River	300 SPR 9-1	August 27, 2001	B12RP2	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Columbia River	300 SPR 42-2	October 7, 2002	B15C99	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Columbia River	100-B SPR 38-3	October 25, 1999	B0WP15	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Columbia River	300 SPR DR 42-2	August 27, 2001	B12RN0	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	September 15, 2004	B1B762	Arsenic	mg/L	1	0.0011	X	0.15	1.80E-05
Columbia River	RICHPS10HRM46.4	September 15, 2004	B1B6Y8	Arsenic	mg/L	1	0.0012	X	0.15	1.80E-05
Columbia River	100-D SPR 102-1	October 17, 2000	B10962	Arsenic	mg/L	1	0.0012	=	0.15	1.80E-05
Columbia River	300 SPR 42-2	August 27, 2001	B12RM8	Arsenic	mg/L	1	0.0012	=	0.15	1.80E-05
Columbia River	300 SPR 42-2	October 25, 2004	B1BFY3	Arsenic	mg/L	1	0.0012	X	0.15	1.80E-05
Columbia River	300 SPR 9-1	August 27, 2001	B12RP1	Arsenic	mg/L	1	0.0012	=	0.15	1.80E-05
Columbia River	100-B SPR 38-3	October 25, 1999	B0WP24	Arsenic	mg/L	1	0.0012	=	0.15	1.80E-05
Columbia River	300 SPR DR 42-2	August 27, 2001	B12RM9	Arsenic	mg/L	1	0.0012	=	0.15	1.80E-05
Columbia River	300 SPR DR 42-2	October 25, 2004	B1BFY4	Arsenic	mg/L	1	0.0012	X	0.15	1.80E-05
Columbia River	300 SPR DR 42-2	October 25, 2004	B1BFY5	Arsenic	mg/L	1	0.0012	X	0.15	1.80E-05
Columbia River	100-B SPR 37-1	October 11, 2004	B1BFV3	Arsenic	mg/L	1	0.0012	X	0.15	1.80E-05
Columbia River	300 A10 HRM43.1	September 15, 2004	B1B768	Arsenic	mg/L	1	0.0013	X	0.15	1.80E-05
Columbia River	100-B SPR 37-1	October 11, 2004	B1BFT7	Arsenic	mg/L	1	0.0013	X	0.15	1.80E-05
Columbia River	300 SPR 42-2	November 1, 1999	B0WP55	Arsenic	mg/L	1	0.0013	=	0.15	1.80E-05
Columbia River	100-H SPR 152-2	October 27, 2002	B15CB4	Arsenic	mg/L	1	0.0013	=	0.15	1.80E-05
Columbia River	300 A10 HRM43.1	September 15, 2004	B1B6V8	Arsenic	mg/L	1	0.0013	X	0.15	1.80E-05
Columbia River	300 SPR 42-2	August 27, 2001	B12RL6	Arsenic	mg/L	1	0.0013	=	0.15	1.80E-05
Columbia River	300 SPR DR 42-2	October 13, 2003	B17RL6	Arsenic	mg/L	1	0.0013	=	0.15	1.80E-05
Columbia River	100-K SPR 63-1	October 17, 2000	B10954	Arsenic	mg/L	1	0.0013	=	0.15	1.80E-05
Columbia River	100-K SPR 77-1	October 21, 2002	B15C81	Arsenic	mg/L	1	0.0013	=	0.15	1.80E-05
Columbia River	100-F SPR 207-1	October 26, 2004	B1BFX7	Arsenic	mg/L	1	0.0014	X	0.15	1.80E-05
Columbia River	100-K SPR 63-1	October 17, 2000	B10953	Arsenic	mg/L	1	0.0014	=	0.15	1.80E-05
Columbia River	HFD TS HRM 28	September 8, 2003	B17CY3	Arsenic	mg/L	1	0.0014	=	0.15	1.80E-05
Columbia River	100K SPR 63-2	October 20, 2003	B17J84	Arsenic	mg/L	1	0.0014	=	0.15	1.80E-05
Columbia River	300 SPR DR 42-2	November 1, 1999	B0WP56	Arsenic	mg/L	1	0.0014	=	0.15	1.80E-05
Columbia River	100-D SPR 102-1	October 21, 2002	B15C88	Arsenic	mg/L	1	0.0014	=	0.15	1.80E-05
Columbia River	300 SPR DR 42-2	October 13, 2003	B17RL5	Arsenic	mg/L	1	0.0014	=	0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	HFD TS HRM 28	September 8, 2003	B17CY2	Arsenic	mg/L	1	0.0014	=		0.15	1.80E-05
Columbia River	100-H SPR 152-2	October 27, 2002	B15CB5	Arsenic	mg/L	1	0.0015	=		0.15	1.80E-05
Columbia River	100K SPR 63-2	October 20, 2003	B17J85	Arsenic	mg/L	1	0.0015	=		0.15	1.80E-05
Columbia River	RICHPS HRM 46.4	December 4, 2001	B13LD5	Arsenic	mg/L	1	0.0015	=		0.15	1.80E-05
Columbia River	100F SPR 207-1	November 3, 2003	B17RK8	Arsenic	mg/L	1	0.0015	=		0.15	1.80E-05
Columbia River	HFD TS HRM 28	September 9, 2002	B15904	Arsenic	mg/L	1	0.0015	=		0.15	1.80E-05
Columbia River	100-K SPR 63-1	October 25, 1999	B0WP32	Arsenic	mg/L	1	0.0015	=		0.15	1.80E-05
Columbia River	100-F SPR 207-1	November 7, 2000	B10967	Arsenic	mg/L	1	0.0015	=		0.15	1.80E-05
Columbia River	100-K SPR 63-1	October 25, 1999	B0WP34	Arsenic	mg/L	1	0.0016	=		0.15	1.80E-05
Columbia River	100-B SPR 38-3	November 13, 2003	B180H7	Arsenic	mg/L	1	0.0016	=		0.15	1.80E-05
Columbia River	300 SPR 42-2	September 27, 2000	B10973	Arsenic	mg/L	1	0.0016	=		0.15	1.80E-05
Columbia River	300 SPR 42-2	October 13, 2003	B17RL4	Arsenic	mg/L	1	0.0016	=		0.15	1.80E-05
Columbia River	100-B SPR 38-3	October 17, 2000	B10944	Arsenic	mg/L	1	0.0016	=		0.15	1.80E-05
Columbia River	HFD TS HRM 28	September 9, 2002	B15905	Arsenic	mg/L	1	0.0016	=		0.15	1.80E-05
Columbia River	300 SPR 42-2	October 25, 2004	B1BFL9	Arsenic	mg/L	1	0.0017	X		0.15	1.80E-05
Columbia River	300 SPR 7-1	August 27, 2001	B12T10	Arsenic	mg/L	1	0.0017	=		0.15	1.80E-05
Columbia River	300 SPR 7-1	August 27, 2001	B12T09	Arsenic	mg/L	1	0.0018	=		0.15	1.80E-05
Columbia River	100-B SPR 38-3	October 17, 2000	B10937	Arsenic	mg/L	1	0.0018	=		0.15	1.80E-05
Columbia River	100-H SPR 145-1	November 1, 2000	B10965	Arsenic	mg/L	1	0.0018	=		0.15	1.80E-05
Columbia River	300 SPR 42-2	October 13, 2003	B17RH8	Arsenic	mg/L	1	0.0019	=		0.15	1.80E-05
Columbia River	100-H SPR 145-1	October 27, 1999	B0WP47	Arsenic	mg/L	1	0.0020	=		0.15	1.80E-05
Columbia River	100-H SPR 145-1	October 27, 1999	B0WP46	Arsenic	mg/L	1	0.0021	=		0.15	1.80E-05
Columbia River	100-H SPR 145-1	October 26, 2004	B1BFX4	Arsenic	mg/L	1	0.0021	X		0.15	1.80E-05
Columbia River	100-K SPR 63-2	September 16, 2002	B15C80	Arsenic	mg/L	1	0.0021	=		0.15	1.80E-05
Columbia River	100-N SPR 8-13	October 25, 1999	B0WVX6	Arsenic	mg/L	1	0.0022	=		0.15	1.80E-05
Columbia River	100-H SPR 145-1	October 26, 2004	B1BFX5	Arsenic	mg/L	1	0.0022	X		0.15	1.80E-05
Columbia River	100-K SPR 63-2	September 16, 2002	B15C79	Arsenic	mg/L	1	0.0022	=		0.15	1.80E-05
Columbia River	100-N SPR 8-13	October 11, 2004	B1BFW7	Arsenic	mg/L	1	0.0022	X		0.15	1.80E-05
Columbia River	100-N SPR 8-13	October 25, 1999	B0WP37	Arsenic	mg/L	1	0.0022	=		0.15	1.80E-05
Columbia River	100-F SPR 207-1	October 29, 2002	B15C93	Arsenic	mg/L	1	0.0023	=		0.15	1.80E-05
Columbia River	100-D SPR 110-1	October 21, 2002	B15C86	Arsenic	mg/L	1	0.0023	=		0.15	1.80E-05
Columbia River	100N SPR 8-13	October 20, 2003	B17J88	Arsenic	mg/L	1	0.0023	=		0.15	1.80E-05
Columbia River	100-F SPR 207-1	November 7, 2000	B10966	Arsenic	mg/L	1	0.0024	=		0.15	1.80E-05
Columbia River	100-N SPR 8-13	October 11, 2004	B1BFM0	Arsenic	mg/L	1	0.0024	X		0.15	1.80E-05
Columbia River	100N SPR 8-13	October 20, 2003	B17J17	Arsenic	mg/L	1	0.0024	=		0.15	1.80E-05
Columbia River	100-F SPR 207-1	November 1, 1999	B0WP49	Arsenic	mg/L	1	0.0024	=		0.15	1.80E-05
Columbia River	HFD SPR UR 28-2	November 3, 2003	B17RL1	Arsenic	mg/L	1	0.0025	=		0.15	1.80E-05
Columbia River	100-H SPR 145-1	November 1, 2000	B10964	Arsenic	mg/L	1	0.0025	=		0.15	1.80E-05
Columbia River	HFD SPR UR 28-2	November 3, 2003	B17RL0	Arsenic	mg/L	1	0.0026	=		0.15	1.80E-05
Columbia River	100-N SPR 8-13	September 16, 2002	B15C83	Arsenic	mg/L	1	0.0026	=		0.15	1.80E-05
Columbia River	HFD SPR UR 28-2	September 27, 2000	B10969	Arsenic	mg/L	1	0.0026	=		0.15	1.80E-05
Columbia River	HFD SPR UR 28-2	September 27, 2000	B10970	Arsenic	mg/L	1	0.0026	=		0.15	1.80E-05
Columbia River	100-N SPR 8-13	March 29, 2004	B18XM0	Arsenic	mg/L	1	0.0027	X		0.15	1.80E-05
Columbia River	100-N SPR 8-13	March 29, 2004	B18XL7	Arsenic	mg/L	1	0.0027	X		0.15	1.80E-05
Columbia River	300 AREA OUT13	September 15, 2004	B1B7H8	Arsenic	mg/L	1	0.0027	X		0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological	Human Health
							Value			Benchmark Value	Benchmark Value
Columbia River	300 AREA OUT13	September 15, 2004	B1B7H9	Arsenic	mg/L	1	0.0028	X		0.15	1.80E-05
Columbia River	100-F SPR 207-1	November 1, 1999	B0WP48	Arsenic	mg/L	1	0.0028	=		0.15	1.80E-05
Columbia River	HFD SPR UR 28-2	October 25, 2004	B1BFX9	Arsenic	mg/L	1	0.0028	X		0.15	1.80E-05
Columbia River	100H SPR 145-1	October 27, 2003	B17RK6	Arsenic	mg/L	1	0.0029	=		0.15	1.80E-05
Columbia River	100-F SPR 207-1	October 29, 2002	B15C92	Arsenic	mg/L	1	0.0029	=		0.15	1.80E-05
Columbia River	100-N SPR 8-13	October 17, 2000	B10904	Arsenic	mg/L	1	0.0029	=		0.15	1.80E-05
Columbia River	100-N SPR 8-13	October 17, 2000	B10957	Arsenic	mg/L	1	0.0029	=		0.15	1.80E-05
Columbia River	300 AREA OUT13	June 24, 2004	B19JC6	Arsenic	mg/L	1	0.0030	X		0.15	1.80E-05
Columbia River	HFD SPR 28-2	October 7, 2002	B15C94	Arsenic	mg/L	1	0.0030	=		0.15	1.80E-05
Columbia River	100F SPR 207-1	November 3, 2003	B17RK7	Arsenic	mg/L	1	0.0031	=		0.15	1.80E-05
Columbia River	HFD SPR 28-2	October 25, 2004	B1BFX8	Arsenic	mg/L	1	0.0031	X		0.15	1.80E-05
Columbia River	300 AREA OUT13	June 24, 2004	B19JC5	Arsenic	mg/L	1	0.0031	X		0.15	1.80E-05
Columbia River	HFD SPR DR 28-2	October 7, 2002	B15C98	Arsenic	mg/L	1	0.0032	=		0.15	1.80E-05
Columbia River	HFD SPR 28-2	October 7, 2002	B15C00	Arsenic	mg/L	1	0.0032	C		0.15	1.80E-05
Columbia River	HFD SPR DR 28-2	October 7, 2002	B15C97	Arsenic	mg/L	1	0.0032	C		0.15	1.80E-05
Columbia River	HFD SPR 28-2	September 27, 2000	B10902	Arsenic	mg/L	1	0.0034	=		0.15	1.80E-05
Columbia River	100-N SPR 8-13	September 16, 2002	B15C02	Arsenic	mg/L	1	0.0034	=		0.15	1.80E-05
Columbia River	HFD SPR 28-2	September 27, 2000	B10968	Arsenic	mg/L	1	0.0034	=		0.15	1.80E-05
Columbia River	HFD SPR DR 28-2	October 25, 2004	B1BFY2	Arsenic	mg/L	1	0.0035	X		0.15	1.80E-05
Columbia River	HFD SPR DR 28-2	September 27, 2000	B10972	Arsenic	mg/L	1	0.0035	=		0.15	1.80E-05
Columbia River	HFD SPR 28-2	October 25, 2004	B1BFL8	Arsenic	mg/L	1	0.0036	X		0.15	1.80E-05
Columbia River	HFD SPR DR 28-2	September 27, 2000	B10971	Arsenic	mg/L	1	0.0036	=		0.15	1.80E-05
Columbia River	HFD SPR DR 28-2	October 25, 2004	B1BFY1	Arsenic	mg/L	1	0.0037	X		0.15	1.80E-05
Columbia River	HFD SPR DR 28-2	November 3, 2003	B17RL3	Arsenic	mg/L	1	0.0037	=		0.15	1.80E-05
Columbia River	HFD SPR DR 28-2	April 30, 2001	B11W81	Arsenic	mg/L	1	0.0039	=		0.15	1.80E-05
Columbia River	HFD SPR UR 28-2	November 1, 1999	B0WP52	Arsenic	mg/L	1	0.0039	=		0.15	1.80E-05
Columbia River	HFD SPR DR 28-2	November 3, 2003	B17RL2	Arsenic	mg/L	1	0.0039	=		0.15	1.80E-05
Columbia River	HFD SPR 28-2	April 30, 2001	B11W77	Arsenic	mg/L	1	0.0040	=		0.15	1.80E-05
Columbia River	HFD SPR UR 28-2	November 1, 1999	B0WP51	Arsenic	mg/L	1	0.0040	=		0.15	1.80E-05
Columbia River	300 SPR 42-2	September 27, 2000	B10903	Arsenic	mg/L	1	0.0040	=		0.15	1.80E-05
Columbia River	HFD SPR DR 28-2	November 1, 1999	B0WP54	Arsenic	mg/L	1	0.0043	=		0.15	1.80E-05
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WT7	Arsenic	mg/L	1	0.0044	X		0.15	1.80E-05
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WT9	Arsenic	mg/L	1	0.0044	X		0.15	1.80E-05
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WV0	Arsenic	mg/L	1	0.0044	X		0.15	1.80E-05
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WV1	Arsenic	mg/L	1	0.0045	X		0.15	1.80E-05
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WT6	Arsenic	mg/L	1	0.0045	X		0.15	1.80E-05
Columbia River	HFD SPR DR 28-2	November 1, 1999	B0WP53	Arsenic	mg/L	1	0.0046	=		0.15	1.80E-05
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WT8	Arsenic	mg/L	1	0.0047	X		0.15	1.80E-05
Columbia River	Ringold WW	May 14, 2003	B16WT0	Arsenic	mg/L	1	0.0047	X		0.15	1.80E-05
Columbia River	Ringold WW	May 14, 2003	B16WT5	Arsenic	mg/L	1	0.0047	X		0.15	1.80E-05
Columbia River	100-F SPR 207-1	October 26, 2004	B1BFX6	Arsenic	mg/L	1	0.0047	X		0.15	1.80E-05
Columbia River	HFD SPR 28-2	November 1, 1999	B0WP50	Arsenic	mg/L	1	0.0048	=		0.15	1.80E-05
Columbia River	HFD SPR 28-2	April 30, 2001	B11W30	Arsenic	mg/L	1	0.0048	=		0.15	1.80E-05
Columbia River	Ringold WW	May 14, 2003	B16WT4	Arsenic	mg/L	1	0.0048	X		0.15	1.80E-05
Columbia River	Ringold WW	May 14, 2003	B16WT3	Arsenic	mg/L	1	0.0048	X		0.15	1.80E-05

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	HFD SPR DR 28-2	April 30, 2001	B11W80	Arsenic	mg/L	1	0.0049	=		0.15	1.80E-05
Columbia River	Ringold WW	May 14, 2003	B16WT2	Arsenic	mg/L	1	0.0049	X		0.15	1.80E-05
Columbia River	HFD SPR 28-2	November 1, 1999	B0W NX4	Arsenic	mg/L	1	0.0049	=		0.15	1.80E-05
Columbia River	Ringold WW	May 14, 2003	B16WT1	Arsenic	mg/L	1	0.0050	X		0.15	1.80E-05
Columbia River	300 SPR 42-2	November 1, 1999	B0W NX5	Arsenic	mg/L	1	0.0082	=		0.15	1.80E-05
Columbia River	100H SPR 145-1	October 10, 2003	B17RK5	Arsenic	mg/L	1	0.0085	=		0.15	1.80E-05
Columbia River	100 B/C AREA UR	November 13, 2003	B180C6	Barium	mg/L	1	0.017	C		0.0040	1.0
Columbia River	SF-190-4	November 7, 2000	B10FC0	Barium	mg/L	1	0.018	B		0.0040	1.0
Columbia River	100-K SPR 77-1	November 10, 2003	B17JP9	Barium	mg/L	1	0.019	B		0.0040	1.0
Columbia River	100-K SPR 77-1	November 10, 2003	B17JP8	Barium	mg/L	1	0.020	B		0.0040	1.0
Columbia River	100-H SPR 145-1	November 1, 2000	B10JT4	Barium	mg/L	1	0.021	B		0.0040	1.0
Columbia River	100 B/C AREA UR	November 13, 2003	B180C7	Barium	mg/L	1	0.021	C		0.0040	1.0
Columbia River	100-H SPR 145-1	November 1, 2000	B10JR3	Barium	mg/L	1	0.021	B		0.0040	1.0
Columbia River	100 B/C AREA UR	November 13, 2003	B180C8	Barium	mg/L	1	0.021	C		0.0040	1.0
Columbia River	100-H SPR 153-1	October 27, 2002	B15HY8	Barium	mg/L	1	0.021	B		0.0040	1.0
Columbia River	100 B/C OUTFL2	November 17, 2003	B180J0	Barium	mg/L	1	0.021	C		0.0040	1.0
Columbia River	100-H SPR 153-1	October 27, 2002	B15HY7	Barium	mg/L	1	0.022	B		0.0040	1.0
Columbia River	SH-153-1	November 1, 2000	B10JT8	Barium	mg/L	1	0.022	B		0.0040	1.0
Columbia River	SH-153-1	November 1, 2000	B10JR7	Barium	mg/L	1	0.023	B		0.0040	1.0
Columbia River	100-H SPR 144-1	October 27, 2002	B15HX3	Barium	mg/L	1	0.023	B		0.0040	1.0
Columbia River	100-B SPR 39-2	November 13, 2003	B180D7	Barium	mg/L	1	0.023	C		0.0040	1.0
Columbia River	100-B SPR 38-3	November 13, 2003	B180D3	Barium	mg/L	1	0.023	C		0.0040	1.0
Columbia River	100-B SPR 39-2	November 13, 2003	B180D6	Barium	mg/L	1	0.023	C		0.0040	1.0
Columbia River	100 B/C OUTFL1	November 17, 2003	B180D8	Barium	mg/L	1	0.023	C		0.0040	1.0
Columbia River	100-B SPR 39-2	November 13, 2003	B180D5	Barium	mg/L	1	0.023	C		0.0040	1.0
Columbia River	100-H SPR 152-2	November 1, 2001	B135Y4	Barium	mg/L	1	0.023	=		0.0040	1.0
Columbia River	100 B/C AREA UR	November 13, 2003	B180C9	Barium	mg/L	1	0.024	C		0.0040	1.0
Columbia River	100 B/C AREA DR	November 17, 2003	B180F3	Barium	mg/L	1	0.024	C		0.0040	1.0
Columbia River	100 B/C AREA DR	November 17, 2003	B180F1	Barium	mg/L	1	0.024	C		0.0040	1.0
Columbia River	100 B/C AREA DR	November 17, 2003	B180F2	Barium	mg/L	1	0.024	C		0.0040	1.0
Columbia River	100 B/C AREA DR	November 17, 2003	B180F4	Barium	mg/L	1	0.024	C		0.0040	1.0
Columbia River	100 B/C OUTFL2	November 17, 2003	B180D9	Barium	mg/L	1	0.024	C		0.0040	1.0
Columbia River	100-B SPR 39-2	November 13, 2003	B180D4	Barium	mg/L	1	0.024	C		0.0040	1.0
Columbia River	100-H SPR 144-1	October 27, 2002	B15HX2	Barium	mg/L	1	0.024	B		0.0040	1.0
Columbia River	100 B/C OUTFL3	November 17, 2003	B180F0	Barium	mg/L	1	0.024	C		0.0040	1.0
Columbia River	100-B SPR 38-3	November 13, 2003	B180F9	Barium	mg/L	1	0.024	C		0.0040	1.0
Columbia River	100-B SPR 38-3	November 13, 2003	B180D2	Barium	mg/L	1	0.024	C		0.0040	1.0
Columbia River	100-B SPR 38-3	November 13, 2003	B180D1	Barium	mg/L	1	0.024	C		0.0040	1.0
Columbia River	100-H SPR 153-1	November 1, 2001	B135Y7	Barium	mg/L	1	0.024	=		0.0040	1.0
Columbia River	100-B SPR 38-3	November 13, 2003	B180J4	Barium	mg/L	1	0.024	C		0.0040	1.0
Columbia River	100-H SPR 152-2	November 1, 2001	B135Y5	Barium	mg/L	1	0.024	=		0.0040	1.0
Columbia River	100N Area	June 9, 2004	B19H73	Barium	mg/L	1	0.025	X		0.0040	1.0
Columbia River	100-B SPR 38-3	November 13, 2003	B180D0	Barium	mg/L	1	0.025	C		0.0040	1.0
Columbia River	100-H SPR 153-1	November 1, 2001	B135Y6	Barium	mg/L	1	0.025	=		0.0040	1.0
Columbia River	100-H SPR 145-1	October 27, 2002	B15HX6	Barium	mg/L	1	0.026	B		0.0040	1.0

Table B-10**Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Ecological Benchmark Value	Human Health Benchmark Value
							Value	Qualifier		
Columbia River	100-H SPR 145-1	October 27, 2002	B15HX9	Barium	mg/L	1	0.026	B	0.0040	1.0
Columbia River	100-K SPR 77-1	October 25, 2001	B13601	Barium	mg/L	1	0.026	=	0.0040	1.0
Columbia River	100-H SPR 152-2	October 27, 2002	B15HY5	Barium	mg/L	1	0.026	B	0.0040	1.0
Columbia River	100-K SPR 77-1	October 21, 2002	B15LM5	Barium	mg/L	1	0.026	B	0.0040	1.0
Columbia River	100N Area	April 9, 2004	B19114	Barium	mg/L	1	0.026	X	0.0040	1.0
Columbia River	100-D SPR 110-1	October 27, 2003	B17JN7	Barium	mg/L	1	0.027	=	0.0040	1.0
Columbia River	100-H SPR 145-1	October 27, 2002	B15HX8	Barium	mg/L	1	0.027	B	0.0040	1.0
Columbia River	100-H SPR 145-1	October 27, 2002	B15HX5	Barium	mg/L	1	0.028	B	0.0040	1.0
Columbia River	100-H SPR 150-1	November 20, 2003	B17VK6	Barium	mg/L	1	0.028	B	0.0040	1.0
Columbia River	100-K SPR 77-1	October 25, 2001	B13600	Barium	mg/L	1	0.028	=	0.0040	1.0
Columbia River	100N Area	September 25, 2004	B1BC57	Barium	mg/L	1	0.028	X	0.0040	1.0
Columbia River	100-H SPR 150-1	October 27, 2002	B15HY2	Barium	mg/L	1	0.028	B	0.0040	1.0
Columbia River	100-D SPR 102-1	October 27, 2003	B17JN9	Barium	mg/L	1	0.028	B	0.0040	1.0
Columbia River	100-H SPR 152-2	October 27, 2002	B15HY4	Barium	mg/L	1	0.028	B	0.0040	1.0
Columbia River	100-D SPR 102-1	October 27, 2003	B17JP0	Barium	mg/L	1	0.029	B	0.0040	1.0
Columbia River	100-D SPR 98-1	October 21, 2002	B15HX0	Barium	mg/L	1	0.029	B	0.0040	1.0
Columbia River	100-D SPR 102-1	October 27, 2003	B17JN8	Barium	mg/L	1	0.030	=	0.0040	1.0
Columbia River	100-B SPR 39-2	November 17, 2003	B180H8	Barium	mg/L	1	0.030	C	0.0040	1.0
Columbia River	100-H SPR 145-1	November 1, 2001	B135X8	Barium	mg/L	1	0.030	=	0.0040	1.0
Columbia River	100-H SPR 145-1	November 1, 2001	B135X9	Barium	mg/L	1	0.030	=	0.0040	1.0
Columbia River	300 SPR 11 -1	August 27, 2001	B12RP6	Barium	mg/L	1	0.031	=	0.0040	1.0
Columbia River	SD-98-1	October 12, 2000	B10JV0	Barium	mg/L	1	0.031	B	0.0040	1.0
Columbia River	SD-98-1	October 12, 2000	B10JT2	Barium	mg/L	1	0.032	B	0.0040	1.0
Columbia River	100-D SPR 98-1	October 21, 2002	B15HW9	Barium	mg/L	1	0.032	B	0.0040	1.0
Columbia River	100-D SPR 98-1	October 25, 2001	B135X2	Barium	mg/L	1	0.032	=	0.0040	1.0
Columbia River	100-H SPR 150-1	October 27, 2002	B15HY1	Barium	mg/L	1	0.032	B	0.0040	1.0
Columbia River	100-K SPR 63-1	October 20, 2003	B17JR1	Barium	mg/L	1	0.032	B	0.0040	1.0
Columbia River	300 SPR 11 -1	August 27, 2001	B12RP5	Barium	mg/L	1	0.033	=	0.0040	1.0
Columbia River	SH-144-1	October 13, 2000	B10JR2	Barium	mg/L	1	0.033	B	0.0040	1.0
Columbia River	SH-144-1	October 13, 2000	B10JT3	Barium	mg/L	1	0.033	B	0.0040	1.0
Columbia River	SH-150-1	November 1, 2000	B10JT6	Barium	mg/L	1	0.034	B	0.0040	1.0
Columbia River	SH-150-1	November 1, 2000	B10JR5	Barium	mg/L	1	0.034	B	0.0040	1.0
Columbia River	SD-110-2	October 17, 2000	B10JR0	Barium	mg/L	1	0.034	B	0.0040	1.0
Columbia River	100-K SPR 68-1	November 10, 2003	B17LC4	Barium	mg/L	1	0.035	B	0.0040	1.0
Columbia River	100-K SPR 77-1	October 21, 2002	B15LM4	Barium	mg/L	1	0.036	B	0.0040	1.0
Columbia River	SD-110-2	October 17, 2000	B10JT1	Barium	mg/L	1	0.036	B	0.0040	1.0
Columbia River	100-D SPR 102-1	October 21, 2002	B15HV9	Barium	mg/L	1	0.036	B	0.0040	1.0
Columbia River	SD-98-1	October 12, 2000	B10JR1	Barium	mg/L	1	0.036	B	0.0040	1.0
Columbia River	100-F SPR 207-1	November 7, 2000	B10FC3	Barium	mg/L	1	0.039	B	0.0040	1.0
Columbia River	100-D SPR 110-1	October 17, 2000	B10JR9	Barium	mg/L	1	0.040	B	0.0040	1.0
Columbia River	100-D SPR 110-1	October 17, 2000	B10JP9	Barium	mg/L	1	0.040	B	0.0040	1.0
Columbia River	100-D SPR 110-1	October 17, 2000	B10JT0	Barium	mg/L	1	0.040	B	0.0040	1.0
Columbia River	100-D SPR 110-1	October 17, 2000	B10JP8	Barium	mg/L	1	0.041	B	0.0040	1.0
Columbia River	100-K SPR 82-2	October 21, 2002	B15LM7	Barium	mg/L	1	0.044	B	0.0040	1.0
Columbia River	100-N SPR 8-13	March 29, 2004	B18XL7	Barium	mg/L	1	0.044	X	0.0040	1.0

Table B-10**Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Qualifier	Ecological Benchmark	Human Health
							Value			Value	Benchmark Value
Columbia River	100-B SPR 38-3	November 13, 2003	B180H7	Barium	mg/L	1	0.044		C	0.0040	1.0
Columbia River	100-K SPR 82-2	October 21, 2002	B15LM8	Barium	mg/L	1	0.044		B	0.0040	1.0
Columbia River	100-K SPR 82-2	October 25, 2001	B13604	Barium	mg/L	1	0.045		=	0.0040	1.0
Columbia River	100-N SPR 8-13	March 29, 2004	B18XM0	Barium	mg/L	1	0.045		X	0.0040	1.0
Columbia River	100-D SPR 102-1	October 21, 2002	B15HV8	Barium	mg/L	1	0.046		B	0.0040	1.0
Columbia River	100-B SPR 37-1	November 13, 2003	B180H6	Barium	mg/L	1	0.047		C	0.0040	1.0
Columbia River	100-K SPR 82-2	October 25, 2001	B13605	Barium	mg/L	1	0.048		=	0.0040	1.0
Columbia River	100-F SPR 207-1	October 27, 2002	B15MN2	Barium	mg/L	1	0.049		B	0.0040	1.0
Columbia River	100-F SPRING	November 20, 2003	B17LB2	Barium	mg/L	1	0.049		B	0.0040	1.0
Columbia River	100-D SPR 102-1	October 27, 2003	B17JP3	Barium	mg/L	1	0.050		B	0.0040	1.0
Columbia River	300 SPR 7-1	August 27, 2001	B12T10	Barium	mg/L	1	0.050		=	0.0040	1.0
Columbia River	300 SPR 7-1	August 27, 2001	B12T09	Barium	mg/L	1	0.051		=	0.0040	1.0
Columbia River	SF-211-1	November 7, 2000	B10FC6	Barium	mg/L	1	0.052		B	0.0040	1.0
Columbia River	100-D SPR 102-1	October 17, 2000	B10JR8	Barium	mg/L	1	0.052		B	0.0040	1.0
Columbia River	100-F SPR 211-1	October 22, 2001	B13621	Barium	mg/L	1	0.052		B	0.0040	1.0
Columbia River	100-H SPR 150-1	November 20, 2003	B17VK5	Barium	mg/L	1	0.053		B	0.0040	1.0
Columbia River	100-D SPR 102-1	October 17, 2000	B10JP7	Barium	mg/L	1	0.054		B	0.0040	1.0
Columbia River	100-D SPR 102-1	October 27, 2003	B17JP2	Barium	mg/L	1	0.054		B	0.0040	1.0
Columbia River	100-F SPR 207-1	October 22, 2001	B13618	Barium	mg/L	1	0.057		B	0.0040	1.0
Columbia River	100-B SPR 37-1	October 21, 2002	B15MM0	Barium	mg/L	1	0.058		B	0.0040	1.0
Columbia River	300 SPR 9-1	August 27, 2001	B12RP1	Barium	mg/L	1	0.059		=	0.0040	1.0
Columbia River	300 SPR 9-1	August 27, 2001	B12RP2	Barium	mg/L	1	0.059		=	0.0040	1.0
Columbia River	SB-037-1	October 25, 2000	B10F98	Barium	mg/L	1	0.062		B	0.0040	1.0
Columbia River	100-D SPR 98-1	October 25, 2001	B135X3	Barium	mg/L	1	0.066		=	0.0040	1.0
Columbia River	SD-98-1	October 12, 2000	B10JT9	Barium	mg/L	1	0.067		B	0.0040	1.0
Columbia River	100-B SPR 38-3	October 25, 2000	B10FB1	Barium	mg/L	1	0.070		B	0.0040	1.0
Columbia River	100-B SPR 38-3	October 21, 2002	B15MM3	Barium	mg/L	1	0.072		B	0.0040	1.0
Columbia River	300 SPR 42-2	August 27, 2001	B12RM8	Barium	mg/L	1	0.072		=	0.0040	1.0
Columbia River	100-B SPR 37-1	October 22, 2001	B13606	Barium	mg/L	1	0.074		B	0.0040	1.0
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW2	Barium	mg/L	1	0.075		B	0.0040	1.0
Columbia River	300 SPR DR 42-2	August 27, 2001	B12RN0	Barium	mg/L	1	0.078		=	0.0040	1.0
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW5	Barium	mg/L	1	0.079		=	0.0040	1.0
Columbia River	300 SPR 42-2	August 27, 2001	B12RL6	Barium	mg/L	1	0.079		=	0.0040	1.0
Columbia River	300 SPR DR 42-2	August 27, 2001	B12RM9	Barium	mg/L	1	0.081		=	0.0040	1.0
Columbia River	100-B SPR 38-3	October 22, 2001	B13609	Barium	mg/L	1	0.094		B	0.0040	1.0
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW4	Barium	mg/L	1	0.15		=	0.0040	1.0
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW1	Barium	mg/L	1	0.29		=	0.0040	1.0
Columbia River	100-N SPR 8-13	September 16, 2002	B15C02	Cadmium	mg/L	1	2.64E-04		=	2.50E-04	--
Columbia River	300 SPR 42-2	August 27, 2001	B12RL6	Cadmium	mg/L	1	3.02E-04		=	2.50E-04	--
Columbia River	100F SPR 207-1	November 3, 2003	B17RK7	Cadmium	mg/L	1	3.48E-04		=	2.50E-04	--
Columbia River	100-K SPR 77-1	October 21, 2002	B15C81	Cadmium	mg/L	1	3.57E-04		=	2.50E-04	--
Columbia River	100-D SPR 98-1	October 25, 2001	B135X3	Cadmium	mg/L	1	4.20E-04		=	2.50E-04	--
Columbia River	100-D SPR 102-1	October 21, 2002	B15C88	Cadmium	mg/L	1	4.52E-04		=	2.50E-04	--
Columbia River	100-F SPR 207-1	October 26, 2004	B1BFX6	Cadmium	mg/L	1	5.59E-04		X	2.50E-04	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15C86	Cadmium	mg/L	1	5.69E-04		=	2.50E-04	--

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	300 SPR 42-2	September 27, 2000	B10903	Cadmium	mg/L	1	5.71E-04	=	2.50E-04	--
Columbia River	HFD SPR UR 28-2	October 25, 2004	B1BFX9	Cadmium	mg/L	1	6.31E-04	X	2.50E-04	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW4	Cadmium	mg/L	1	6.80E-04	=	2.50E-04	--
Columbia River	100H SPR 145-1	October 10, 2003	B17RK5	Cadmium	mg/L	1	6.89E-04	=	2.50E-04	--
Columbia River	300 SPR 42-2	November 1, 1999	B0WNVX5	Cadmium	mg/L	1	0.0016	=	2.50E-04	--
Columbia River	100-H SPR 144-1	October 27, 2002	B15HX2	Cadmium	mg/L	1	0.0033	B	2.50E-04	--
Columbia River	100-H SPR 145-1	October 27, 2002	B15HX5	Cadmium	mg/L	1	0.0035	B	2.50E-04	--
Columbia River	100-D SPR 110-1	October 27, 2003	B17JN7	Chromium	mg/L	1	0.010	=	0.010	--
Columbia River	100H SPR 153-1	October 27, 2003	B17RL9	Chromium	mg/L	1	0.010	=	0.010	--
Columbia River	100-D SPR 110-1	October 26, 2004	B1BFX1	Chromium	mg/L	1	0.011	X	0.010	--
Columbia River	100-N SPR 8-13	September 16, 2002	B15C02	Chromium	mg/L	1	0.011	=	0.010	--
Columbia River	100F SPR 207-1	November 3, 2003	B17RK7	Chromium	mg/L	1	0.011	C	0.010	--
Columbia River	100-D SPR 110-1	October 26, 2004	B1BFX0	Chromium	mg/L	1	0.011	X	0.010	--
Columbia River	100-H SPR 152-2	November 1, 2001	B135Y5	Chromium	mg/L	1	0.011	=	0.010	--
Columbia River	100-N SPR 8-13	October 11, 2004	B1BFW7	Chromium	mg/L	1	0.011	X	0.010	--
Columbia River	100D SPR 110-1	October 27, 2003	B17J91	Chromium	mg/L	1	0.011	=	0.010	--
Columbia River	100-N SPR 8-13	October 11, 2004	B1BFM0	Chromium	mg/L	1	0.011	X	0.010	--
Columbia River	100-N SPR 8-13	October 17, 2000	B10957	Chromium	mg/L	1	0.011	=	0.010	--
Columbia River	100-B SPR 38-3	October 17, 2000	B10937	Chromium	mg/L	1	0.011	=	0.010	--
Columbia River	100-H SPR 152-2	October 27, 2002	B15HY4	Chromium	mg/L	1	0.011	=	0.010	--
Columbia River	100-D SPR 102-1	October 27, 2003	B17JN8	Chromium	mg/L	1	0.011	=	0.010	--
Columbia River	100-N SPR 8-13	October 17, 2000	B10904	Chromium	mg/L	1	0.011	=	0.010	--
Columbia River	100D SPR 110-1	October 27, 2003	B17J92	Chromium	mg/L	1	0.012	=	0.010	--
Columbia River	SF-211-1	November 7, 2000	B10FC6	Chromium	mg/L	1	0.012	=	0.010	--
Columbia River	100-B SPR 39-2	November 17, 2003	B180H8	Chromium	mg/L	1	0.012	C	0.010	--
Columbia River	SB-037-1	October 25, 2000	B10F98	Chromium	mg/L	1	0.013	=	0.010	--
Columbia River	100-H SPR 145-1	November 1, 2000	B10965	Chromium	mg/L	1	0.013	=	0.010	--
Columbia River	100-B SPR 38-3	October 25, 2000	B10FB1	Chromium	mg/L	1	0.013	=	0.010	--
Columbia River	100-H SPR 145-1	November 1, 2000	B10JT4	Chromium	mg/L	1	0.013	=	0.010	--
Columbia River	100-D SPR 102-1	October 27, 2003	B17JP0	Chromium	mg/L	1	0.013	=	0.010	--
Columbia River	100-D SPR 102-1	October 27, 2003	B17JN9	Chromium	mg/L	100%	0.014	=	0.010	--
Columbia River	100-H SPR 145-1	October 27, 2002	B15HX9	Chromium	mg/L	1	0.014	=	0.010	--
Columbia River	100-H SPR 145-1	November 1, 2000	B10JR3	Chromium	mg/L	1	0.014	=	0.010	--
Columbia River	100-N SPR 8-13	March 29, 2004	B18XL9	Chromium	mg/L	1	0.014	X	0.010	--
Columbia River	100-F SPR 207-1	November 7, 2000	B10FC3	Chromium	mg/L	1	0.014	=	0.010	--
Columbia River	100-F SPR 207-1	November 7, 2000	B10967	Chromium	mg/L	1	0.014	=	0.010	--
Columbia River	100-N SPR 8-13	March 29, 2004	B18XL7	Chromium	mg/L	1	0.014	X	0.010	--
Columbia River	100-N SPR 8-13	March 29, 2004	B18XM0	Chromium	mg/L	1	0.014	X	0.010	--
Columbia River	100-H SPR 145-1	October 27, 2002	B15HX6	Chromium	mg/L	1	0.014	=	0.010	--
Columbia River	100-N SPR 8-13	March 29, 2004	B18XL6	Chromium	mg/L	1	0.015	X	0.010	--
Columbia River	100-H SPR 153-1	October 27, 1999	B0WP45	Chromium	mg/L	1	0.015	=	0.010	--
Columbia River	100-H SPR 145-1	October 27, 2002	B15HX8	Chromium	mg/L	1	0.015	=	0.010	--
Columbia River	100-F SPR 211-1	October 22, 2001	B13621	Chromium	mg/L	1	0.015	=	0.010	--
Columbia River	100-B SPR 38-3	October 25, 1999	B0WP15	Chromium	mg/L	1	0.016	=	0.010	--
Columbia River	100-H SPR 145-1	October 27, 2002	B15HX5	Chromium	mg/L	1	0.016	=	0.010	--

Table B-10**Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Ecological Benchmark Value	Human Health Benchmark Value
							Value	Qualifier		
Columbia River	100-B SPR 38-3	October 25, 1999	B0WP24	Chromium	mg/L	1	0.016	=	0.010	--
Columbia River	100-D SPR 98-1	October 21, 2002	B15HX0	Chromium	mg/L	1	0.016	=	0.010	--
Columbia River	100-H SPR 145-1	November 1, 2000	B10964	Chromium	mg/L	1	0.016	=	0.010	--
Columbia River	100-H SPR 145-1	October 27, 1999	B0WP46	Chromium	mg/L	1	0.017	=	0.010	--
Columbia River	100-H SPR 145-1	October 27, 1999	B0WP47	Chromium	mg/L	1	0.017	=	0.010	--
Columbia River	100B SPR 39-2	October 20, 2003	B17J83	Chromium	mg/L	1	0.017	=	0.010	--
Columbia River	100-D SPR 98-1	October 21, 2002	B15HW9	Chromium	mg/L	1	0.017	=	0.010	--
Columbia River	100-F SPR 207-1	October 22, 2001	B13618	Chromium	mg/L	1	0.017	=	0.010	--
Columbia River	100B SPR 39-2	October 20, 2003	B17J82	Chromium	mg/L	1	0.017	=	0.010	--
Columbia River	100-F SPR 207-1	November 7, 2000	B10966	Chromium	mg/L	1	0.017	=	0.010	--
Columbia River	100-H SPR 153-1	October 27, 1999	B0WP44	Chromium	mg/L	1	0.018	=	0.010	--
Columbia River	100-H SPR 145-1	October 26, 2004	B1BFX5	Chromium	mg/L	1	0.018	X	0.010	--
Columbia River	300 SPR 42-2	September 27, 2000	B10903	Chromium	mg/L	1	0.018	=	0.010	--
Columbia River	100-H SPR 145-1	October 26, 2004	B1BFX4	Chromium	mg/L	1	0.018	X	0.010	--
Columbia River	100-B SPR 39-2	October 11, 2004	B1BFW0	Chromium	mg/L	1	0.019	X	0.010	--
Columbia River	100-F SPR 207-1	October 29, 2002	B15C93	Chromium	mg/L	1	0.019	=	0.010	--
Columbia River	100-B SPR 39-2	October 11, 2004	B1BFV7	Chromium	mg/L	1	0.020	X	0.010	--
Columbia River	100-H SPR 145-1	November 1, 2001	B135X9	Chromium	mg/L	1	0.020	=	0.010	--
Columbia River	100-B SPR 39-2	October 25, 1999	B0WP29	Chromium	mg/L	1	0.020	=	0.010	--
Columbia River	100-H SPR 145-1	November 1, 2001	B135X8	Chromium	mg/L	1	0.020	=	0.010	--
Columbia River	100-B SPR 39-2	October 25, 1999	B0WP27	Chromium	mg/L	1	0.020	=	0.010	--
Columbia River	100-F SPR 207-1	October 26, 2004	B1BFX6	Chromium	mg/L	1	0.021	X	0.010	--
Columbia River	100-D SPR 98-1	October 25, 2001	B135X2	Chromium	mg/L	1	0.022	=	0.010	--
Columbia River	100-F SPR 207-1	October 29, 2002	B15C92	Chromium	mg/L	1	0.022	=	0.010	--
Columbia River	SD-98-1	October 12, 2000	B10JT2	Chromium	mg/L	1	0.022	=	0.010	--
Columbia River	100-F SPR 207-1	November 1, 1999	B0WP49	Chromium	mg/L	1	0.022	=	0.010	--
Columbia River	SD-98-1	October 12, 2000	B10JV0	Chromium	mg/L	1	0.022	=	0.010	--
Columbia River	100-F SPR 207-1	November 1, 1999	B0WP48	Chromium	mg/L	1	0.022	=	0.010	--
Columbia River	SD-98-1	October 12, 2000	B10JR1	Chromium	mg/L	1	0.023	=	0.010	--
Columbia River	SD-98-1	October 12, 2000	B10JT9	Chromium	mg/L	1	0.024	=	0.010	--
Columbia River	300 SPR 42-2	November 1, 1999	B0WNV5	Chromium	mg/L	1	0.024	=	0.010	--
Columbia River	100-D SPR 110-1	October 27, 1999	B0WP40	Chromium	mg/L	1	0.024	=	0.010	--
Columbia River	100-D SPR 110-1	October 27, 1999	B0WP41	Chromium	mg/L	1	0.024	=	0.010	--
Columbia River	100-F SPR 207-1	October 27, 2002	B15MN2	Chromium	mg/L	1	0.024	=	0.010	--
Columbia River	100-D SPR 98-1	October 25, 2001	B135X3	Chromium	mg/L	1	0.027	=	0.010	--
Columbia River	SH-144-1	October 13, 2000	B10JR2	Chromium	mg/L	1	0.030	=	0.010	--
Columbia River	SH-144-1	October 13, 2000	B10JT3	Chromium	mg/L	1	0.030	=	0.010	--
Columbia River	100-D SPR 102-1	October 21, 2002	B15C89	Chromium	mg/L	1	0.032	=	0.010	--
Columbia River	100H SPR 145-1	October 27, 2003	B17RK6	Chromium	mg/L	1	0.033	=	0.010	--
Columbia River	100-D SPR 102-1	October 21, 2002	B15HV9	Chromium	mg/L	1	0.034	=	0.010	--
Columbia River	SD-110-2	October 17, 2000	B10JR0	Chromium	mg/L	1	0.034	=	0.010	--
Columbia River	SD-110-2	October 17, 2000	B10JT1	Chromium	mg/L	1	0.035	=	0.010	--
Columbia River	100-D SPR 102-1	October 21, 2002	B15HV8	Chromium	mg/L	1	0.035	=	0.010	--
Columbia River	100-D SPR 102-1	October 21, 2002	B15C88	Chromium	mg/L	1	0.039	=	0.010	--
Columbia River	100-K SPR 63-1	October 20, 2003	B17JR1	Chromium	mg/L	1	0.041	=	0.010	--

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Ecological Benchmark Value	Human Health Benchmark Value
							Value	Qualifier		
Columbia River	100K SPR 63-2	October 20, 2003	B17J84	Chromium	mg/L	1	0.041	=	0.010	--
Columbia River	100K SPR 63-2	October 20, 2003	B17J85	Chromium	mg/L	1	0.042	=	0.010	--
Columbia River	100-K SPR 63-1	October 25, 1999	B0WP34	Chromium	mg/L	1	0.042	=	0.010	--
Columbia River	100-K SPR 63-1	October 25, 1999	B0WP32	Chromium	mg/L	1	0.042	=	0.010	--
Columbia River	100-D SPR 102-1	October 26, 2004	B1BFX3	Chromium	mg/L	1	0.045	X	0.010	--
Columbia River	100-K SPR 82-2	October 25, 2001	B13604	Chromium	mg/L	1	0.046	=	0.010	--
Columbia River	100-K SPR 82-2	October 25, 2001	B13605	Chromium	mg/L	1	0.046	=	0.010	--
Columbia River	100-D SPR 102-1	October 26, 2004	B1BFX2	Chromium	mg/L	1	0.047	X	0.010	--
Columbia River	100-K SPR 63-1	October 17, 2000	B10953	Chromium	mg/L	1	0.048	=	0.010	--
Columbia River	100-K SPR 63-1	October 17, 2000	B10954	Chromium	mg/L	1	0.049	=	0.010	--
Columbia River	100-K SPR 82-2	October 21, 2002	B15LM8	Chromium	mg/L	1	0.050	=	0.010	--
Columbia River	100-K SPR 82-2	October 21, 2002	B15LM7	Chromium	mg/L	1	0.052	=	0.010	--
Columbia River	100D SPR 102-1	October 27, 2003	B17J93	Chromium	mg/L	1	0.052	=	0.010	--
Columbia River	100D SPR 102-1	October 27, 2003	B17J94	Chromium	mg/L	1	0.057	=	0.010	--
Columbia River	100-D SPR 102-1	October 27, 2003	B17JP2	Chromium	mg/L	1	0.059	=	0.010	--
Columbia River	100-D SPR 102-1	October 27, 2003	B17JP3	Chromium	mg/L	1	0.061	=	0.010	--
Columbia River	100H SPR 145-1	October 10, 2003	B17RK5	Chromium	mg/L	1	0.063	=	0.010	--
Columbia River	100-D SPR 110-1	October 17, 2000	B10961	Chromium	mg/L	1	0.083	=	0.010	--
Columbia River	100-D SPR 110-1	October 17, 2000	B10960	Chromium	mg/L	1	0.085	=	0.010	--
Columbia River	100-D SPR 110-1	October 17, 2000	B10JP9	Chromium	mg/L	1	0.087	=	0.010	--
Columbia River	100-D SPR 110-1	October 17, 2000	B10JP8	Chromium	mg/L	1	0.088	=	0.010	--
Columbia River	100-D SPR 110-1	October 17, 2000	B10JR9	Chromium	mg/L	1	0.089	=	0.010	--
Columbia River	100-D SPR 110-1	October 17, 2000	B10JT0	Chromium	mg/L	1	0.089	=	0.010	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15C87	Chromium	mg/L	1	0.15	=	0.010	--
Columbia River	100-D SPR 102-1	October 17, 2000	B10963	Chromium	mg/L	1	0.15	=	0.010	--
Columbia River	100-D SPR 102-1	October 17, 2000	B10962	Chromium	mg/L	1	0.15	=	0.010	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW2	Chromium	mg/L	1	0.15	=	0.010	--
Columbia River	100-D SPR 102-1	October 27, 1999	B0WP43	Chromium	mg/L	1	0.15	=	0.010	--
Columbia River	100-D SPR 102-1	October 27, 1999	B0WP42	Chromium	mg/L	1	0.15	=	0.010	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW5	Chromium	mg/L	1	0.16	=	0.010	--
Columbia River	100-D SPR 102-1	October 17, 2000	B10JR8	Chromium	mg/L	1	0.16	=	0.010	--
Columbia River	100-D SPR 102-1	October 17, 2000	B10JP7	Chromium	mg/L	1	0.16	=	0.010	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW4	Chromium	mg/L	1	0.18	=	0.010	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15C86	Chromium	mg/L	1	0.19	=	0.010	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW1	Chromium	mg/L	1	0.22	=	0.010	--
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WV0	Copper	mg/L	1	0.0066	X	0.0060	--
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WV1	Copper	mg/L	1	0.0070	X	0.0060	--
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WT9	Copper	mg/L	1	0.0070	X	0.0060	--
Columbia River	SH-153-1	November 1, 2000	B10JT8	Copper	mg/L	1	0.0076	B	0.0060	--
Columbia River	HFD SPR UR 28-2	October 25, 2004	B1BFX9	Copper	mg/L	1	0.0076	X	0.0060	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15C86	Copper	mg/L	1	0.0080	=	0.0060	--
Columbia River	100-K SPR 77-1	October 25, 2001	B13601	Copper	mg/L	1	0.0081	=	0.0060	--
Columbia River	SD-98-1	October 12, 2000	B10JT9	Copper	mg/L	1	0.010	B	0.0060	--
Columbia River	100-D SPR 98-1	October 25, 2001	B135X3	Copper	mg/L	1	0.014	=	0.0060	--
Columbia River	100-B SPR 38-3	October 22, 2001	B13609	Copper	mg/L	1	0.014	B	0.0060	--

Table B-10**Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Ecological Benchmark Value	Human Health Benchmark Value
							Value	Qualifier		
Columbia River	100-F SPR 207-1	October 26, 2004	B1BFX6	Copper	mg/L	1	0.015	X	0.0060	--
Columbia River	300 SPR 42-2	September 27, 2000	B10903	Copper	mg/L	1	0.015	=	0.0060	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW4	Copper	mg/L	1	0.016	=	0.0060	--
Columbia River	SH-150-1	November 1, 2000	B10JT6	Copper	mg/L	1	0.018	B	0.0060	--
Columbia River	100H SPR 145-1	October 10, 2003	B17RK5	Copper	mg/L	1	0.027	=	0.0060	--
Columbia River	300 SPR 42-2	November 1, 1999	B0WNVX5	Copper	mg/L	1	0.032	=	0.0060	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW1	Copper	mg/L	1	0.037	=	0.0060	--
Columbia River	100-H SPR 150-1	October 27, 2002	B15HY1	Iron	mg/L	1	0.30	=	1.0	0.30
Columbia River	100-K SPR 82-2	October 25, 2001	B13605	Iron	mg/L	1	0.38	=	1.0	0.30
Columbia River	SD-98-1	October 12, 2000	B10JR1	Iron	mg/L	1	0.42	=	1.0	0.30
Columbia River	100-K SPR 77-1	October 21, 2002	B15LM4	Iron	mg/L	1	0.47	=	1.0	0.30
Columbia River	100-D SPR 102-1	October 21, 2002	B15HV8	Iron	mg/L	1	0.64	=	1.0	0.30
Columbia River	100-H SPR 150-1	November 20, 2003	B17VK5	Iron	mg/L	1	2.2	=	1.0	0.30
Columbia River	SD-98-1	October 12, 2000	B10JT9	Iron	mg/L	1	2.7	=	1.0	0.30
Columbia River	100-D SPR 98-1	October 25, 2001	B135X3	Iron	mg/L	1	4.4	=	1.0	0.30
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW4	Iron	mg/L	1	8.3	=	1.0	0.30
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW1	Iron	mg/L	1	20	=	1.0	0.30
Columbia River	100B SPR 37-1	October 20, 2003	B17J76	Lead	mg/L	1	8.87E-04	=	8.67E-04	--
Columbia River	100-B SPR 37-1	October 11, 2004	B1BFT7	Lead	mg/L	1	9.60E-04	X	8.67E-04	--
Columbia River	100-K SPR 77-1	October 11, 2004	B1BFW5	Lead	mg/L	1	9.99E-04	X	8.67E-04	--
Columbia River	HFD SPR 28-2	April 30, 2001	B11W30	Lead	mg/L	1	0.0011	=	8.67E-04	--
Columbia River	HFD SPR 28-2	October 25, 2004	B1BFL8	Lead	mg/L	1	0.0011	X	8.67E-04	--
Columbia River	100D SPR 102-1	October 27, 2003	B17J93	Lead	mg/L	1	0.0012	=	8.67E-04	--
Columbia River	HFD SPR 28-2	October 7, 2002	B15C00	Lead	mg/L	1	0.0012	C	8.67E-04	--
Columbia River	100-D SPR 110-1	October 17, 2000	B10960	Lead	mg/L	1	0.0012	=	8.67E-04	--
Columbia River	HFD SPR 28-2	November 1, 1999	B0WNVX4	Lead	mg/L	1	0.0012	=	8.67E-04	--
Columbia River	HFD SPR DR 28-2	October 25, 2004	B1BFY1	Lead	mg/L	1	0.0013	X	8.67E-04	--
Columbia River	100-K SPR 77-1	October 25, 2000	B10955	Lead	mg/L	1	0.0013	=	8.67E-04	--
Columbia River	100-D SPR 102-1	October 17, 2000	B10962	Lead	mg/L	1	0.0014	=	8.67E-04	--
Columbia River	HFD SPR UR 28-2	November 1, 1999	B0WP51	Lead	mg/L	1	0.0015	=	8.67E-04	--
Columbia River	300 SPR DR 42-2	November 1, 1999	B0WP56	Lead	mg/L	1	0.0015	=	8.67E-04	--
Columbia River	HFD SPR DR 28-2	November 1, 1999	B0WP53	Lead	mg/L	1	0.0016	=	8.67E-04	--
Columbia River	300 SPR 42-2	October 25, 2004	B1BFL9	Lead	mg/L	1	0.0017	X	8.67E-04	--
Columbia River	100-F SPR 207-1	November 1, 1999	B0WP48	Lead	mg/L	1	0.0018	=	8.67E-04	--
Columbia River	300 SHR HRM42.9	September 15, 2004	B1B7C9	Lead	mg/L	1	0.0019	X	8.67E-04	--
Columbia River	300 SPR 42-2	October 13, 2003	B17RH8	Lead	mg/L	1	0.0024	C	8.67E-04	--
Columbia River	100-F SPR 207-1	October 29, 2002	B15C92	Lead	mg/L	1	0.0030	=	8.67E-04	--
Columbia River	RICHPH HRM 46.4	December 4, 2001	B13LD5	Lead	mg/L	1	0.0035	=	8.67E-04	--
Columbia River	100-N SPR 8-13	September 16, 2002	B15C02	Lead	mg/L	1	0.0044	=	8.67E-04	--
Columbia River	100-D SPR 102-1	October 21, 2002	B15C88	Lead	mg/L	1	0.0047	=	8.67E-04	--
Columbia River	100-F SPR 207-1	November 7, 2000	B10966	Lead	mg/L	1	0.0052	=	8.67E-04	--
Columbia River	100-H SPR 145-1	November 1, 2000	B10964	Lead	mg/L	1	0.0054	=	8.67E-04	--
Columbia River	100-K SPR 77-1	October 21, 2002	B15C81	Lead	mg/L	1	0.0057	=	8.67E-04	--
Columbia River	100-H SPR 153-1	October 27, 1999	B0WP44	Lead	mg/L	1	0.0058	=	8.67E-04	--
Columbia River	100F SPR 207-1	November 3, 2003	B17RK7	Lead	mg/L	1	0.0080	=	8.67E-04	--

Table B-10**Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Ecological Benchmark Value	Human Health Benchmark Value
							Value	Qualifier		
Columbia River	100-D SPR 110-1	October 21, 2002	B15C86	Lead	mg/L	1	0.0080	=	8.67E-04	--
Columbia River	100-F SPR 207-1	October 26, 2004	B1BFX6	Lead	mg/L	1	0.015	X	8.67E-04	--
Columbia River	300 SPR 42-2	September 27, 2000	B10903	Lead	mg/L	1	0.016	=	8.67E-04	--
Columbia River	HFD SPR UR 28-2	October 25, 2004	B1BFX9	Lead	mg/L	1	0.019	X	8.67E-04	--
Columbia River	300 SPR 42-2	November 1, 1999	B0WNVX5	Lead	mg/L	1	0.037	=	8.67E-04	--
Columbia River	100H SPR 145-1	October 10, 2003	B17RK5	Lead	mg/L	1	0.066	=	8.67E-04	--
Columbia River	100-D SPR 102-1	October 21, 2002	B15HV8	Manganese	mg/L	1	0.056	=	0.12	0.050
Columbia River	100-K SPR 77-1	October 21, 2002	B15LM4	Manganese	mg/L	1	0.066	=	0.12	0.050
Columbia River	100-H SPR 150-1	November 20, 2003	B17VK5	Manganese	mg/L	1	0.075	=	0.12	0.050
Columbia River	SD-98-1	October 12, 2000	B10JT9	Manganese	mg/L	1	0.18	=	0.12	0.050
Columbia River	100-D SPR 98-1	October 25, 2001	B135X3	Manganese	mg/L	1	0.26	=	0.12	0.050
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW4	Manganese	mg/L	1	0.34	=	0.12	0.050
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW1	Manganese	mg/L	1	0.94	=	0.12	0.050
Columbia River	100-K SPR 77-1	October 21, 2002	B15C81	Mercury	mg/L	1	1.38E-05	=	1.20E-05	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15C86	Mercury	mg/L	1	2.04E-05	=	1.20E-05	--
Columbia River	100-D SPR 102-1	October 21, 2002	B15C88	Mercury	mg/L	1	2.05E-05	=	1.20E-05	--
Columbia River	300 SPR 42-2	November 1, 1999	B0WNVX5	Mercury	mg/L	1	3.46E-05	=	1.20E-05	--
Columbia River	100H SPR 145-1	October 10, 2003	B17RK5	Mercury	mg/L	1	4.07E-05	X	1.20E-05	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW1	Nickel	mg/L	1	0.029	B	0.028	610
Columbia River	300 SPR 42-2	November 1, 1999	B0WNVX5	Nickel	mg/L	1	0.032	=	0.028	610
Columbia River	300 SPR 42-2	November 1, 1999	B0WNVX5	Silver	mg/L	1	1.45E-04	=	1.20E-04	--
Columbia River	300 AREA OUT13	September 15, 2004	B1B7H8	Silver	mg/L	1	1.62E-04	X	1.20E-04	--
Columbia River	RICHPS5 HRM46.4	December 6, 1999	B0X3W7	Silver	mg/L	1	2.51E-04	=	1.20E-04	--
Columbia River	100-K SPR 77-1	October 25, 2001	B13601	Silver	mg/L	1	6.50E-04	=	1.20E-04	--
Columbia River	100-D SPR 98-1	October 25, 2001	B135X2	Silver	mg/L	1	7.50E-04	=	1.20E-04	--
Columbia River	100-H SPR 144-1	October 27, 2002	B15HX3	Silver	mg/L	1	0.0018	B	1.20E-04	--
Columbia River	100-H SPR 145-1	October 27, 2002	B15HX8	Silver	mg/L	1	0.0030	B	1.20E-04	--
Columbia River	100H SPR 153-1	November 7, 2000	24571	Strontium-90	pCi/L	1	8.0	=	278	8.0
Columbia River	100H SPR 153-1	October 27, 1999	23440	Strontium-90	pCi/L	1	11	=	278	8.0
Columbia River	100H SPR 153-1	October 27, 2003	B17RL8	Strontium-90	pCi/L	1	14	=	278	8.0
Columbia River	100H SPR 153-1	October 27, 1999	B0WP19	Strontium-90	pCi/L	1	14	=	278	8.0
Columbia River	100H SPR 153-1	April 30, 2001	B11W86	Strontium-90	pCi/L	1	14	=	278	8.0
Columbia River	100N SPR STA 3	October 25, 1999	23736	Strontium-90	pCi/L	1	33	=	278	8.0
Columbia River	100N Area	June 28, 1999	B0VVR2	Strontium-90	pCi/L	1	109	=	278	8.0
Columbia River	300 SPR 42-2	September 27, 2000	B10903	Thallium	mg/L	1	2.59E-04	=	0.040	2.40E-04
Columbia River	300 SPR 42-2	November 1, 1999	B0WNVX5	Thallium	mg/L	1	4.07E-04	=	0.040	2.40E-04
Columbia River	100BC Area	June 22, 1999	B0VW80	Tritium	pCi/L	1	20,200	=	2.65E+08	20000
Columbia River	HFD TS HRM 28	September 9, 2002	29094	Tritium	pCi/L	1	21,000	=	2.65E+08	20000
Columbia River	HFD SPR DR 28-2	October 25, 2004	B1BFV5	Tritium	pCi/L	1	45,800	=	2.65E+08	20000
Columbia River	HFD SPR DR 28-2	October 25, 2004	33185	Tritium	pCi/L	1	50,600	=	2.65E+08	20000
Columbia River	HFD SPR DR 28-2	October 7, 2002	B15C73	Tritium	pCi/L	1	53,900	=	2.65E+08	20000
Columbia River	HFD SPR UR 28-2	September 27, 2000	B10945	Tritium	pCi/L	1	53,900	=	2.65E+08	20000
Columbia River	HFD SPR 28-2	October 7, 2002	B15C09	Tritium	pCi/L	1	58,400	=	2.65E+08	20000
Columbia River	HFD SPR 28-2	September 27, 2000	B10912	Tritium	pCi/L	1	61,100	=	2.65E+08	20000
Columbia River	HFD SPR 28-2	November 1, 1999	23439	Tritium	pCi/L	1	63,600	=	2.65E+08	20000

Table B-10

Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical	Qualifier	Ecological	Human Health
							Value		Benchmark Value	Benchmark Value
Columbia River	HFD SPR 28-2	October 25, 2004	B1BFP3	Tritium	pCi/L	1	66,700	=	2.65E+08	20000
Columbia River	HFD SPR 28-2	September 27, 2000	24573	Tritium	pCi/L	1	70,700	=	2.65E+08	20000
Columbia River	HFD SPR 28-2	October 7, 2002	29079	Tritium	pCi/L	1	71,600	=	2.65E+08	20000
Columbia River	HFD SPR UR 28-2	November 1, 1999	B0WP25	Tritium	pCi/L	1	75,000	=	2.65E+08	20000
Columbia River	HFD SPR DR 28-2	September 27, 2000	B10946	Tritium	pCi/L	1	79,100	=	2.65E+08	20000
Columbia River	HFD SPR DR 28-2	November 1, 1999	B0WP26	Tritium	pCi/L	1	86,100	=	2.65E+08	20000
Columbia River	HFD SPR 28-2	April 30, 2001	B11W36	Tritium	pCi/L	1	102,000	=	2.65E+08	20000
Columbia River	HFD SPR 28-2	November 1, 1999	B0WNY1	Tritium	pCi/L	1	106,000	=	2.65E+08	20000
Columbia River	HFD SPR DR 28-2	April 30, 2001	B11W55	Tritium	pCi/L	1	107,000	=	2.65E+08	20000
Columbia River	HFD SPR 28-2	May 4, 2001	26955	Tritium	pCi/L	1	112,000	=	2.65E+08	20000
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WT8	Uranium	mg/L	1	0.0058	X	0.0026	--
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WT6	Uranium	mg/L	1	0.0058	X	0.0026	--
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WV0	Uranium	mg/L	1	0.0058	X	0.0026	--
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WT9	Uranium	mg/L	1	0.0059	X	0.0026	--
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WT7	Uranium	mg/L	1	0.0059	X	0.0026	--
Columbia River	ESQUATZEL CANAL	May 14, 2003	B16WV1	Uranium	mg/L	1	0.0061	X	0.0026	--
Columbia River	Ringold WW	May 14, 2003	B16WT0	Uranium	mg/L	1	0.0083	X	0.0026	--
Columbia River	Ringold WW	May 14, 2003	B16WT5	Uranium	mg/L	1	0.0085	X	0.0026	--
Columbia River	Ringold WW	May 14, 2003	B16WT2	Uranium	mg/L	1	0.0086	X	0.0026	--
Columbia River	Ringold WW	May 14, 2003	B16WT4	Uranium	mg/L	1	0.0086	X	0.0026	--
Columbia River	Ringold WW	May 14, 2003	B16WT1	Uranium	mg/L	1	0.0086	X	0.0026	--
Columbia River	Ringold WW	May 14, 2003	B16WT3	Uranium	mg/L	1	0.0087	X	0.0026	--
Columbia River	300 SPR 9-1	August 27, 2001	B12RT9	Uranium-234	pCi/L	1	31	=	202	30.0
Columbia River	300 SPR DR 42-2	September 17, 2001	B12XK2	Uranium-234	pCi/L	1	36	=	202	30.0
Columbia River	300 SPR DR 42-2	May 3, 2001	B11W57	Uranium-234	pCi/L	1	38	=	202	30.0
Columbia River	300 SPR DR 42-2	August 27, 2001	B12RN6	Uranium-234	pCi/L	1	39	=	202	30.0
Columbia River	300 SPR DR 42-2	May 3, 2001	26957	Uranium-234	pCi/L	1	41	=	202	30.0
Columbia River	300 SPR 42-2	October 13, 2003	30857	Uranium-234	pCi/L	1	41	=	202	30.0
Columbia River	300 SPR 42-2	November 1, 1999	B0WNY3	Uranium-234	pCi/L	1	42	=	202	30.0
Columbia River	300 SPR DR 42-2	August 27, 2001	27671	Uranium-234	pCi/L	1	44	=	202	30.0
Columbia River	300 SPR DR 42-2	October 13, 2003	30940	Uranium-234	pCi/L	1	51	=	202	30.0
Columbia River	300 SPR DR 42-2	December 26, 2002	B15C75	Uranium-234	pCi/L	1	51	=	202	30.0
Columbia River	300 SPR DR 42-2	August 27, 2001	B12RM6	Uranium-234	pCi/L	1	53	=	202	30.0
Columbia River	300 SPR DR 42-2	October 13, 2003	B17RK1	Uranium-234	pCi/L	1	57	=	202	30.0
Columbia River	300 SPR DR 42-2	September 27, 2000	B10949	Uranium-234	pCi/L	1	69	=	202	30.0
Columbia River	300 SPR 42-2	October 13, 2003	B17RJ2	Uranium-234	pCi/L	1	70	=	202	30.0
Columbia River	300 SPR DR 42-2	November 1, 1999	B0WP28	Uranium-234	pCi/L	1	111	=	202	30
Columbia River	300 SPR DR 42-2	September 17, 2001	B12XK2	Uranium-238	pCi/L	1	34	=	223	30.0
Columbia River	300 SPR DR 42-2	August 27, 2001	B12RN6	Uranium-238	pCi/L	1	34	=	223	30.0
Columbia River	300 SPR DR 42-2	May 3, 2001	B11W57	Uranium-238	pCi/L	1	34	=	223	30.0
Columbia River	300 SPR DR 42-2	October 25, 2004	33225	Uranium	pCi/L	1	34	=	223	30.0
Columbia River	300 SPR DR 42-2	May 3, 2001	26957	Uranium-238	pCi/L	1	37	=	223	30.0
Columbia River	300 SPR 42-2	November 1, 1999	B0WNY3	Uranium-238	pCi/L	1	38	=	223	30.0
Columbia River	300 SPR 42-2	October 13, 2003	30857	Uranium-238	pCi/L	1	40	=	223	30.0
Columbia River	300 SPR DR 42-2	August 27, 2001	27671	Uranium-238	pCi/L	1	44	=	223	30.0

Table B-10**Summary of Surface Water Results From Segment 2 Exceeding Select Ecological or Human Health Benchmark Values
Columbia River Component - Existing Sample Data Evaluation and Scoping Report**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical		Ecological Benchmark Value	Human Health Benchmark Value
							Value	Qualifier		
Columbia River	300 SPR 42-2	September 27, 2000	24574	Uranium	pCi/L	1	44	=	223	30.0
Columbia River	300 SPR DR 42-2	October 13, 2003	30940	Uranium-238	pCi/L	1	46	=	223	30.0
Columbia River	300 SPR DR 42-2	December 26, 2002	B15C75	Uranium-238	pCi/L	1	47	=	223	30.0
Columbia River	300 SPR DR 42-2	August 27, 2001	B12RM6	Uranium-238	pCi/L	1	48	=	223	30.0
Columbia River	300 SPR 42-2	October 25, 2004	33144	Uranium	pCi/L	1	48	=	223	30.0
Columbia River	300 SPR DR 42-2	October 13, 2003	B17RK1	Uranium-238	pCi/L	1	52	=	223	30.0
Columbia River	300 SPR 42-2	May 10, 2001	26956	Uranium	pCi/L	1	54	=	223	30.0
Columbia River	300 SPR DR 42-2	September 27, 2000	B10949	Uranium-238	pCi/L	1	61	=	223	30.0
Columbia River	300 SPR 42-2	October 13, 2003	B17RJ2	Uranium-238	pCi/L	1	66	=	223	30.0
Columbia River	300 SPR DR 42-2	May 3, 2001	26957	Uranium	pCi/L	1	82	=	223	30.0
Columbia River	300 SPR 42-2	October 13, 2003	30857	Uranium	pCi/L	1	84	=	223	30.0
Columbia River	300 SPR DR 42-2	August 27, 2001	27671	Uranium	pCi/L	1	91	=	223	30.0
Columbia River	300 SPR DR 42-2	November 1, 1999	B0WP28	Uranium-238	pCi/L	1	99	=	223	30.0
Columbia River	300 SPR DR 42-2	October 13, 2003	30940	Uranium	pCi/L	1	100	=	223	30.0
Columbia River	100-D SPR 98-1	October 25, 2001	B135X3	Vanadium	mg/L	1	0.020	=	0.020	--
Columbia River	100-D SPR 98-1	October 21, 2002	B15HW9	Vanadium	mg/L	1	0.021	=	0.020	--
Columbia River	100-F SPR 207-1	October 27, 2002	B15MN2	Vanadium	mg/L	1	0.047	=	0.020	--
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW1	Vanadium	mg/L	1	0.049	=	0.020	--
Columbia River	SD-98-1	October 12, 2000	B10JT9	Zinc	mg/L	1	0.057	=	0.055	7.4
Columbia River	300 A10 HRM43.1	September 13, 2001	B12T53	Zinc	mg/L	1	0.057	=	0.055	7.4
Columbia River	100-H SPR 150-1	November 20, 2003	B17VK5	Zinc	mg/L	1	0.058	=	0.055	7.4
Columbia River	100-D SPR 110-1	October 21, 2002	B15C86	Zinc	mg/L	1	0.077	C	0.055	7.4
Columbia River	100-D SPR 98-1	October 25, 2001	B135X3	Zinc	mg/L	1	0.080	=	0.055	7.4
Columbia River	100-F SPR 207-1	October 26, 2004	B1BFX6	Zinc	mg/L	1	0.11	X	0.055	7.4
Columbia River	300 SPR 42-2	September 27, 2000	B10903	Zinc	mg/L	1	0.11	=	0.055	7.4
Columbia River	HFD SPR UR 28-2	October 25, 2004	B1BFX9	Zinc	mg/L	1	0.11	X	0.055	7.4
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW4	Zinc	mg/L	1	0.13	=	0.055	7.4
Columbia River	300 SPR 42-2	November 1, 1999	B0WVN5	Zinc	mg/L	1	0.23	=	0.055	7.4
Columbia River	100H SPR 145-1	October 10, 2003	B17RK5	Zinc	mg/L	1	0.28	=	0.055	7.4
Columbia River	100-D SPR 110-1	October 21, 2002	B15HW1	Zinc	mg/L	1	0.42	=	0.055	7.4

APPENDIX C

SEGMENT 3

**SUMMARY STATISTICS, BENCHMARK COMPARISON, AND
INDIVIDUAL SAMPLE EXCEEDENCES**

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Table C-1
Summary Table of Segment 3 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
05-8000	Columbia River	Pt of Pasco	30-Sep-86	1
05-8001	Columbia River	Pt of Pasco	30-Sep-86	1
05-8002	Columbia River	Pt of Pasco	30-Sep-86	1
05-8003	Columbia River	Pt of Pasco	30-Sep-86	1
12985	Columbia River	McNary Dam	29-Sep-92	1
12986	Columbia River	McNary Dam	29-Sep-92	1
12987	Columbia River	McNary Dam	29-Sep-92	1
12988	Columbia River	McNary Dam	29-Sep-92	1
15828	Columbia River	McNary Dam	23-Sep-94	1
15829	Columbia River	McNary Dam	23-Sep-94	1
15830	Columbia River	McNary Dam	23-Sep-94	1
15831	Columbia River	McNary Dam	23-Sep-94	1
168272	Columbia River	RM 318	14-Apr-92	1
168273	Columbia River	RM 316	14-Apr-92	1
168274	Columbia River	RM 311	13-Apr-92	1
168275	Columbia River	RM 298	13-Apr-92	1
16952	Columbia River	McNary Dam	28-Jul-95	1
16953	Columbia River	McNary Dam	28-Jul-95	1
16954	Columbia River	McNary Dam	28-Jul-95	1
16955	Columbia River	McNary Dam	28-Jul-95	1
18466	Columbia River	McNary Dam	16-Aug-96	1
18467	Columbia River	McNary Dam	16-Aug-96	1
18468	Columbia River	McNary Dam	16-Aug-96	1
18469	Columbia River	McNary Dam	16-Aug-96	1
194274	Columbia River	Wallula Mill	10-Sep-91	2
194275	Columbia River	Wallula Mill	10-Sep-91	2
194276	Columbia River	Wallula Mill	10-Sep-91	2
194277	Columbia River	Wallula Mill	10-Sep-91	2
195563	Columbia River	Wallula Mill	01-Sep-91	2
195564	Columbia River	Wallula Mill	01-Sep-91	2
19679	Columbia River	McNary Dam	15-Aug-97	1
19680	Columbia River	McNary Dam	15-Aug-97	1
19681	Columbia River	McNary Dam	15-Aug-97	1
19682	Columbia River	McNary Dam	15-Aug-97	1
20749	Columbia River	McNary Dam	11-Aug-98	1
20750	Columbia River	McNary Dam	11-Aug-98	1
20751	Columbia River	McNary Dam	11-Aug-98	1
20752	Columbia River	McNary Dam	11-Aug-98	1
23515	Columbia River	McNary Dam	02-Aug-99	1
23516	Columbia River	McNary Dam	02-Aug-99	1
23517	Columbia River	McNary Dam	02-Aug-99	1
23518	Columbia River	McNary Dam	02-Aug-99	1
24743	Columbia River	McNary Dam	08-Aug-00	1
24746	Columbia River	McNary Dam	08-Aug-00	1
26245	Columbia River	McNary Dam	20-Jul-01	1
26248	Columbia River	McNary Dam	23-Jul-01	1
29043	Columbia River	McNary Dam	19-Jul-02	1

Table C-1
Summary Table of Segment 3 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
29044	Columbia River	McNary Dam	19-Jul-02	1
30870	Columbia River	McNary Dam	16-Jul-03	1
30871	Columbia River	McNary Dam	16-Jul-03	1
31809	Columbia River	McNary Dam	08-Aug-03	1
31810	Columbia River	McNary Dam	08-Aug-03	1
31811	Columbia River	McNary Dam	08-Aug-03	1
31812	Columbia River	McNary Dam	08-Aug-03	1
31813	Columbia River	McNary Dam	08-Aug-03	1
31814	Columbia River	McNary Dam	08-Aug-03	1
33603	Columbia River	McNary Dam	21-Sep-04	1
33604	Columbia River	McNary Dam	21-Sep-04	1
33605	Columbia River	McNary Dam	21-Sep-04	1
3504038	Columbia River	McNary Dam	01-Jun-04	1
40-8324	Columbia River	Pt of Pasco	30-Sep-86	1
40-8325	Columbia River	Pt of Pasco	30-Sep-86	1
40-8326	Columbia River	Pt of Pasco	30-Sep-86	1
40-8327	Columbia River	Pt of Pasco	30-Sep-86	1
4414200	Columbia River	McNary Dam	01-Jun-04	1
4414202	Columbia River	McNary Dam	01-Jun-04	1
4414203	Columbia River	McNary Dam	01-Jun-04	1
4414210	Columbia River	RM 316	01-Jun-04	1
4414211	Columbia River	RM 316	01-Jun-04	1
4414212	Columbia River	RM 316	01-Jun-04	1
4414213	Columbia River	Lake Wallula	01-Jun-04	1
4424215	Columbia River	Lake Wallula	01-Jun-04	1
4424216	Columbia River	Lake Wallula	01-Jun-04	1
4424220	Columbia River	Lake Wallula	01-Jun-04	1
4424224	Columbia River	Lake Wallula	01-Jun-04	1
4424225	Columbia River	Lake Wallula	01-Jun-04	1
4424226	Columbia River	Lake Wallula	01-Jun-04	1
4424227	Columbia River	Lake Wallula	01-Jun-04	1
4434234	Columbia River	RM 339.5	01-Jun-04	1
59550	Columbia River	RM 312	23-Oct-91	2
59551	Columbia River	Wallula Mill	23-Oct-91	2
59552	Columbia River	Wallula Mill	23-Oct-91	2
6428	Columbia River	McNary Dam	24-Jun-87	2
6429	Columbia River	McNary Dam	24-Jun-87	2
6430	Columbia River	McNary Dam	24-Jun-87	2
7401	Columbia River	McNary Dam	07-Sep-88	2
8094	Columbia River	Pt of Pasco	10-Sep-85	2
8095	Columbia River	Pt of Pasco	10-Sep-85	2
8096	Columbia River	Pt of Pasco	10-Sep-85	2
B0BRS3	Columbia River	McNary Dam	11-Apr-94	1
B0BRS5	Columbia River	McNary Dam	11-Apr-94	1
B0BRS7	Columbia River	McNary Dam	11-Apr-94	1
B0BRS9	Columbia River	McNary Dam	11-Apr-94	1
B0CSG5	Columbia River	McNary Dam 1	23-Sep-94	1

Table C-1
Summary Table of Segment 3 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
B0CSG6	Columbia River	McNary Dam 2	23-Sep-94	1
B0CSG7	Columbia River	McNary Dam	23-Sep-94	1
B0CSG8	Columbia River	McNary Dam	23-Sep-94	1
B0W3D3	Columbia River	McNary Dam	02-Aug-99	1
B0W3D4	Columbia River	McNary Dam	02-Aug-99	1
B0W3H1	Columbia River	McNary Dam	02-Aug-99	1
B0W3H2	Columbia River	McNary Dam	02-Aug-99	1
B0W3H3	Columbia River	McNary Dam	02-Aug-99	1
B0W3H4	Columbia River	McNary Dam	02-Aug-99	1
B0W3H5	Columbia River	McNary Dam	02-Aug-99	1
B0W3H6	Columbia River	McNary Dam	02-Aug-99	1
B0W3K3	Columbia River	McNary Dam	02-Aug-99	1
B0W3K5	Columbia River	McNary Dam	02-Aug-99	1
B0W3K7	Columbia River	McNary Dam	02-Aug-99	1
B0W3K9	Columbia River	McNary Dam	02-Aug-99	1
B0W3N8	Columbia River	McNary Dam	02-Aug-99	1
B0W3N9	Columbia River	McNary Dam	02-Aug-99	1
B0W3P0	Columbia River	McNary Dam	02-Aug-99	1
B0W3P1	Columbia River	McNary Dam	02-Aug-99	1
B0W3P2	Columbia River	McNary Dam	02-Aug-99	1
B0W3P3	Columbia River	McNary Dam	02-Aug-99	1
B0W3V6	Columbia River	McNary Dam	02-Aug-99	1
B0W3V7	Columbia River	McNary Dam	02-Aug-99	1
B0W3V8	Columbia River	McNary Dam	02-Aug-99	1
B0W3V9	Columbia River	McNary Dam	02-Aug-99	1
B0W3W0	Columbia River	McNary Dam	02-Aug-99	1
B0W3W1	Columbia River	McNary Dam	02-Aug-99	1
B0WFL6	Columbia River	MC NARY DAM	02-Aug-99	1
B0WFL7	Columbia River	MC NARY DAM	02-Aug-99	1
B0WFL8	Columbia River	MC NARY DAM	02-Aug-99	1
B0YWC9	Columbia River	McNary Dam	08-Aug-00	1
B0YWD0	Columbia River	McNary Dam	08-Aug-00	1
B0YWD1	Columbia River	McNary Dam	08-Aug-00	1
B0YWD2	Columbia River	McNary Dam	08-Aug-00	1
B0YWD3	Columbia river	McNary Dam	08-Aug-00	1
B0YWD5	Columbia river	McNary Dam	08-Aug-00	1
B0YXP4	Columbia river	McNary Dam	08-Aug-00	1
B0YXP5	Columbia river	McNary Dam	08-Aug-00	1
B12CJ3	Columbia River	McNary Dam	20-Jul-01	1
B12CK3	Columbia River	McNary Dam	20-Jul-01	1
B12CK5	Columbia River	McNary Dam	20-Jul-01	1
B12CK7	Columbia River	McNary Dam	20-Jul-01	1
B12CL1	Columbia River	McNary Dam	20-Jul-01	1
B12CL2	Columbia River	McNary Dam	20-Jul-01	1
B12CL3	Columbia River	McNary Dam	20-Jul-01	1
B12CL4	Columbia River	McNary Dam	20-Jul-01	1
B12CM7	Columbia River	McNary Dam	23-Jul-01	1

Table C-1
Summary Table of Segment 3 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
B12CM9	Columbia River	McNary Dam	23-Jul-01	1
B12CN0	Columbia River	McNary Dam	23-Jul-01	1
B12CN2	Columbia River	McNary Dam	23-Jul-01	1
B12CT5	Columbia River	McNary Dam	20-Jul-01	1
B12CT6	Columbia River	McNary Dam	20-Jul-01	1
B12CT7	Columbia River	McNary Dam	20-Jul-01	1
B12CT8	Columbia River	McNary Dam	23-Jul-01	1
B12CT9	Columbia River	McNary Dam	23-Jul-01	1
B12CV0	Columbia River	McNary Dam	23-Jul-01	1
B14WF6	Columbia River	McNary Dam	19-Jul-02	1
B14WF7	Columbia River	McNary Dam	19-Jul-02	1
B14YN7	Columbia River	McNary Dam	19-Jul-02	1
B14YN8	Columbia River	McNary Dam	19-Jul-02	1
B14YN9	Columbia River	McNary Dam	19-Jul-02	1
B14YP0	Columbia River	McNary Dam	19-Jul-02	1
B14YP1	Columbia River	McNary Dam	19-Jul-02	1
B14YP3	Columbia River	McNary Dam	19-Jul-02	1
B176V3	Columbia River	McNary Dam	16-Jul-03	1
B176V4	Columbia River	McNary Dam	16-Jul-03	1
B17709	Columbia River	McNary Dam	16-Jul-03	1
B17710	Columbia River	McNary Dam	16-Jul-03	1
B17711	Columbia River	McNary Dam	16-Jul-03	1
B17712	Columbia River	McNary Dam	16-Jul-03	1
B17713	Columbia River	McNary Dam	16-Jul-03	1
B17715	Columbia River	McNary Dam	16-Jul-03	1
B17B57	Columbia River	McNary Dam	08-Aug-03	1
B17B60	Columbia River	McNary Dam	08-Aug-03	1
B17B65	Columbia River	McNary Dam	08-Aug-03	1
B17B67	Columbia River	McNary Dam	08-Aug-03	1
B17BD7	Columbia River	McNary Dam	08-Aug-03	1
B17BD8	Columbia River	McNary Dam	08-Aug-03	1
B17BD9	Columbia River	McNary Dam	08-Aug-03	1
B17BF1	Columbia River	McNary Dam	08-Aug-03	1
B17BH7	Columbia River	McNary Dam	08-Aug-03	1
B17BJ1	Columbia River	McNary Dam	08-Aug-03	1
B17BJ2	Columbia River	McNary Dam	08-Aug-03	1
B17BJ3	Columbia River	McNary Dam	08-Aug-03	1
B17BJ4	Columbia River	McNary Dam	08-Aug-03	1
B17BP1	Columbia River	McNary Dam	08-Aug-03	1
B17BP2	Columbia River	McNary Dam	08-Aug-03	1
B17BP3	Columbia River	McNary Dam	08-Aug-03	1
B17BP4	Columbia River	McNary Dam	08-Aug-03	1
B17BP5	Columbia River	McNary Dam	08-Aug-03	1
B17BP6	Columbia River	McNary Dam	08-Aug-03	1
B199D2	Columbia River	McNary Dam	11-Jun-04	1
B19PL6	Columbia River	McNary Dam	13-Jul-04	1
B19PL7	Columbia River	McNary Dam	13-Jul-04	1

Table C-1
Summary Table of Segment 3 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
B19PL8	Columbia River	McNary Dam	13-Jul-04	1
B19PL9	Columbia River	McNary Dam	13-Jul-04	1
B19PM0	Columbia River	McNary Dam	13-Jul-04	1
B19PM2	Columbia River	McNary Dam	13-Jul-04	1
B19TF5	Columbia River	McNary Dam	13-Jul-04	1
B19TF6	Columbia River	McNary Dam	13-Jul-04	1
B1B7N0	Columbia River	McNary Dam	21-Sep-04	1
B1B7N1	Columbia River	McNary Dam	21-Sep-04	1
B1B7N2	Columbia River	McNary Dam	21-Sep-04	1
B1B7N3	Columbia River	McNary Dam	21-Sep-04	1
B1B7N7	Columbia River	McNary Dam	21-Sep-04	1
B1B7N8	Columbia River	McNary Dam	21-Sep-04	1
B1B7N9	Columbia River	McNary Dam	21-Sep-04	1
B1B7P0	Columbia River	McNary Dam	21-Sep-04	1
CRUSD128	Columbia River	RM 274-286	01-Nov-91	1
MD-04/12/83	Columbia River	RM 300	12-Apr-83	3
MD-05/19/77	Columbia River	RM 300	19-May-77	3
MD-07/10/78	Columbia River	RM 300	10-Jul-78	3
MD-08/29/79	Columbia River	RM 300	29-Aug-79	3
MD-09/03/80	Columbia River	RM 300	03-Sep-80	3
MD-09/12/83	Columbia River	RM 300	12-Sep-83	3
MD-09/20/82	Columbia River	RM 300	20-Sep-82	3
MD-09/28/81	Columbia River	RM 300	28-Sep-81	3
MD-1/28/1993	Columbia River	RM 300	28-Jan-93	3
MD-10/22/1992	Columbia River	RM 300	22-Oct-92	3
MD-11/20/1986	Columbia River	RM 300	20-Nov-86	3
MD-11/9/1984	Columbia River	RM 300	09-Nov-84	3
MD-12/14/76	Columbia River	RM 300	14-Dec-76	3
MD-2/25/1992	Columbia River	RM 300	25-Feb-92	3
MD-2/6/1991	Columbia River	RM 300	06-Feb-91	3
MD-3/18/1987	Columbia River	RM 300	18-Mar-87	3
MD-3/28/1990	Columbia River	RM 300	28-Mar-90	3
MD-4/24/1985	Columbia River	RM 300	24-Apr-85	3
MD-4/7/1988	Columbia River	RM 300	07-Apr-88	3
MD-5/26/1993	Columbia River	RM 300	26-May-93	3
MD-5/3/1984	Columbia River	RM 300	03-May-84	3
MD-7/21/1989	Columbia River	RM 300	21-Jul-89	3
MD-7/29/1985	Columbia River	RM 300	29-Jul-85	3
MD-7/3/1991	Columbia River	RM 300	03-Jul-91	3
MD-8/27/1986	Columbia River	RM 300	27-Aug-86	3
MD-8/5/1987	Columbia River	RM 300	05-Aug-87	3
MD-9/5/1990	Columbia River	RM 300	05-Sep-90	3
MD-9/8/1988	Columbia River	RM 300	08-Sep-88	3
MD-mid river-1	Columbia River	McNary Dam	01-Oct-86	3
MD-mid river-2	Columbia River	McNary Dam	01-Oct-86	3
MD-north shore	Columbia River	McNary Dam	01-Oct-86	3
MD-south shore	Columbia River	McNary Dam	01-Oct-86	3

Table C-1
Summary Table of Segment 3 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
SRP 1,2	Columbia River	RM 314-315	19-Aug-91	1
SRP 3,4	Columbia River	RM 328	20-Aug-91	1
SRP 50	Columbia River	RM 315-316	19-Aug-91	1
SRP 51	Columbia River	RM 315-316	19-Aug-91	1
B12CH3	Snake Harbor	ICE HARBOR DAM	23-Jul-01	1
B12CJ0	Snake Harbor	ICE HARBOR DAM	23-Jul-01	1
B12CJ1	Snake Harbor	ICE HARBOR DAM	23-Jul-01	1
B12CT2	Snake Harbor	ICE HARBOR DAM	23-Jul-01	1
B12CT3	Snake Harbor	ICE HARBOR DAM	23-Jul-01	1
B12CT4	Snake Harbor	ICE HARBOR DAM	23-Jul-01	1
3504002	Snake River	RM 10	01-Jun-04	1
3504003	Snake River	RM 10	01-Jun-04	1
3504026	Snake River	RM 10	01-Jun-04	1
3504027	Snake River	RM 10	01-Jun-04	1
4414205	Snake River	RM 10	01-Jun-04	1
4414206	Snake River	RM 10	01-Jun-04	1
4414207	Snake River	RM 10	01-Jun-04	1
4424217	Snake River	RM 1	01-Jun-04	1
4424218	Snake River	RM 1	01-Jun-04	1
94378145	Snake River	Lake Sacajawea	14-Sep-94	1
B0W3C4	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0W3C5	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0W3C6	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0W3C7	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0W3C8	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0W3C9	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0W3D0	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0W3D1	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0W3D2	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0W3V3	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0W3V4	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0W3V5	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0WFK5	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0WFK6	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0WFK7	Snake River	ICE HARBOR DAM	16-Aug-99	1
B0WFK8	Snake River	ICE HARBOR DAM	16-Aug-99	1
B12CH5	Snake River	ICE HARBOR DAM	23-Jul-01	1
B12CH7	Snake River	ICE HARBOR DAM	23-Jul-01	1
B12CH9	Snake River	ICE HARBOR DAM	23-Jul-01	1
B1B7T7	Snake River	ICE HARBOR DAM	20-Sep-04	1
B1B7T8	Snake River	ICE HARBOR DAM	20-Sep-04	1
B1B7T9	Snake River	ICE HARBOR DAM	20-Sep-04	1
B1B7W6	Snake River	ICE HARBOR DAM	20-Sep-04	1
B1B7W7	Snake River	ICE HARBOR DAM	20-Sep-04	1
B1B7W8	Snake River	ICE HARBOR DAM	20-Sep-04	1
B1B7W9	Snake River	ICE HARBOR DAM	20-Sep-04	1
SRP 7A	Snake River	RM 2	19-Aug-91	1

Table C-1**Summary Table of Segment 3 Sediment Samples By Area, Site, Date, and Category**

Sample ID	Sample Area	Sample Site	Sample Date	Category
2398242-SD	Walla Walla River	Walla Walla, WA	27-Sep-02	1
2398243	Walla Walla River	Walla Walla, WA	27-Sep-02	1
2398244	Walla Walla River	Walla Walla, WA	27-Sep-02	1
32A070-4	Walla Walla River	Blw Warm Sprgs	12-Sep-84	2
4414209	Walla Walla River	RM 1	01-Jun-04	1
92388089	Walla Walla River	Near mouth	16-Sep-92	1
B16WW0	Walla Walla River	Walla Walla Riv	15-May-03	1
B16WW1	Walla Walla River	Walla Walla Riv	15-May-03	1
B16WX2	Walla Walla River	Walla Walla Riv	15-May-03	1
B16WX3	Walla Walla River	Walla Walla Riv	15-May-03	1
B170V8	Walla Walla River	Walla Walla Riv	15-May-03	1
B170V9	Walla Walla River	Walla Walla Riv	15-May-03	1
Walla 003	Walla Walla River	Cummins Rd Bdg	18-Jun-96	1
37A070-7	Yakima River	Below Kiona	12-Sep-84	2
4434230	Yakima River	RM 1	01-Jun-04	1
4434231	Yakima River	RM 1	01-Jun-04	1
4434233	Yakima River	RM 1	01-Jun-04	1
4434242	Yakima River	RM 2	01-Jun-04	1
4434243	Yakima River	RM 2	01-Jun-04	1
4434244	Yakima River	RM 1	01-Jun-04	1
8140	Yakima River	RM 18	24-Sep-85	1
92388096	Yakima River	Horn Rapids Dam	16-Sep-92	1
92388097	Yakima River	Horn Rapids Dam	16-Sep-92	1
B16WV8	Yakima River	YAKIMA RIVER	14-May-03	1
B16WV9	Yakima River	YAKIMA RIVER	14-May-03	1
B16WX0	Yakima River	YAKIMA RIVER	14-May-03	1
B16WX1	Yakima River	YAKIMA RIVER	14-May-03	1
B170W0	Yakima River	YAKIMA RIVER	14-May-03	1
B170W1	Yakima River	YAKIMA RIVER	14-May-03	1
Bed sediment #1	Yakima River	Kiona WA	31-Aug-88	1
Bed sediment #2	Yakima River	Kiona WA	31-Aug-88	1
Bed sediment #3	Yakima River	Kiona WA	10-Nov-90	1
Yakima sed	Yakima River	Kiona WA	25-Aug-87	1

Table C-2**Summary Table of Segment 3 Surface Water Samples By Category, Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	MCNARY DAM	B16WN7	May 15, 2003	1
Columbia River	MCNARY DAM	B16WL5	May 15, 2003	1
Columbia River	MCNARY DAM	B16WP0	May 15, 2003	1
Columbia River	MCNARY DAM	B16WL6	May 15, 2003	1
Columbia River	MCNARY DAM	B16WL7	May 15, 2003	1
Columbia River	MCNARY DAM	B170P9	May 15, 2003	1
Columbia River	MCNARY DAM	B170R1	May 15, 2003	1
Columbia River	MCNARY DAM	B16WN6	May 15, 2003	1
Columbia River	MCNARY DAM	B16WN8	May 15, 2003	1
Columbia River	MCNARY DAM	B16WN9	May 15, 2003	1
Columbia River	MCNARY DAM	B16WP1	May 15, 2003	1
Columbia River	McNary Dam	McNary-WA Shore	August 8, 2003	1
Columbia River	McNary Dam	B17BH8	August 8, 2003	1
Columbia River	McNary Dam	B17BH9	August 8, 2003	1
Columbia River	MCNARY DAM	B17BJ0	August 8, 2003	1
Columbia River	McNary Dam	McNary OR Shore	August 8, 2003	1
Columbia River	McNary Dam	McNary-2/3 OR Shore	August 8, 2003	1
Columbia River	McNary MID-RVR	B170R0	May 15, 2003	1
Snake River	HOOD PK-FRKN CS	B16WR8	May 15, 2003	1
Snake River	HOOD PK-FRKN CS	B16WR5	May 15, 2003	1
Snake River	HOOD PK-FRKN CS	B170T1	May 15, 2003	1
Snake River	HOOD PK-FRKN CS	B16WM6	May 15, 2003	1
Snake River	HOOD PK-MID-RVR	B16WM5	May 15, 2003	1
Snake River	HOOD PK-MID-RVR	B16WR4	May 15, 2003	1
Snake River	HOOD PK-MID-RVR	B16WR9	May 15, 2003	1
Snake River	HOOD PK-MID-RVR	B170T2	May 15, 2003	1
Snake River	HOOD PK-WALLA S	B16WR6	May 15, 2003	1
Snake River	HOOD PK-WALLA S	B16WM4	May 15, 2003	1
Snake River	HOOD PK-WALLA S	B170T3	May 15, 2003	1
Snake River	HOOD PK-WALLA S	B16WR7	May 15, 2003	1
Snake River	Hood Prk BTLNCH	0000202	April 9, 2003	1
Snake River	Hood Prk BTLNCH	0000203	October 6, 2003	1
Snake River	Hood Prk BTLNCH	0000201	October 2, 2002	1
Snake River	Hood Prk BTLNCH	0000200	April 23, 2002	1
Snake River	Hood Prk BTLNCH	0000199	October 1, 2001	1
Snake River	Hood Prk BTLNCH	0000198	May 7, 2001	1
Snake River	Hood Prk BTLNCH	0000197	October 5, 2000	1
Snake River	Hood Prk BTLNCH	0000196	April 17, 2000	1
Touchet River	HWY12 Bridge	3228272	May 30, 2002	1
Touchet River	HWY12 Bridge	2368894	September 3, 2002	1
Touchet River	HWY12 Bridge	3078993	February 11, 2003	1
Touchet River	HWY12 Bridge	3248272	June 9, 2003	1
Touchet River	HWY12 Bridge	3058983	January 30, 2003	1
Touchet River	HWY12 Bridge	2518973	December 16, 2002	1
Touchet River	HWY12 Bridge	2498956	December 2, 2002	1
Touchet River	HWY12 Bridge	2478956	November 19, 2002	1
Touchet River	HWY12 Bridge	2388911	September 16, 2002	1
Touchet River	HWY12 Bridge	2378911	September 16, 2002	1
Touchet River	HWY12 Bridge	2248088	June 12, 2002	1
Touchet River	HWY12 Bridge	3138162	March 24, 2003	1
Touchet River	HWY12 Bridge	2348863	August 21, 2002	1
Touchet River	HWY12 Bridge	3108993	March 6, 2003	1
Touchet River	HWY12 Bridge	3098995	February 24, 2003	1
Touchet River	HWY12 Bridge	3208163	May 14, 2003	1
Touchet River	HWY12 Bridge	2228163	May 30, 2002	1
Walla Walla River	RM15.6 CMNS BRG	3058984	January 30, 2003	1
Walla Walla River	RM15.6 CMNS BRG	2248090	June 12, 2002	1

Table C-2**Summary Table of Segment 3 Surface Water Samples By Category, Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Walla Walla River	RM15.6 CMNS BRG	2228167	May 30, 2002	1
Walla Walla River	RM15.6 CMNS BRG	2228168	May 30, 2002	1
Walla Walla River	WALLA 1	2398242	September 27, 2002	1
Walla Walla River	WALLA 2	2398245	September 27, 2002	1
Walla Walla River	WALLA 2	2398243-SW	September 27, 2002	1
Walla Walla River	Walla Walla Riv	B170T5	May 15, 2003	1
Walla Walla River	Walla Walla Riv	B170T6	May 15, 2003	1
Walla Walla River	Walla Walla Riv	B16WR1	May 15, 2003	1
Walla Walla River	Walla Walla Riv	B16WP8	May 15, 2003	1
Walla Walla River	Walla Walla Riv	B16WM3	May 15, 2003	1
Walla Walla River	Walla Walla Riv	B16WM2	May 15, 2003	1
Walla Walla River	Walla Walla Riv	B16WM1	May 15, 2003	1
Walla Walla River	Walla Walla Riv	B16WP9	May 15, 2003	1
Walla Walla River	Walla Walla Riv	B16WR0	May 15, 2003	1
Walla Walla River	Walla Walla Riv	B16WR2	May 15, 2003	1
Walla Walla River	Walla Walla Riv	B170T4	May 15, 2003	1
Walla Walla River	Walla Walla Riv	B16WR3	May 15, 2003	1
Walla Walla River	WWR (32WAL14.3)	3208164	May 14, 2003	1
Walla Walla River	WWR (32WAL14.3)	2348864	August 21, 2002	1
Walla Walla River	WWR (32WAL14.3)	3108994	March 6, 2003	1
Walla Walla River	WWR (32WAL14.3)	2368895	September 3, 2002	1
Walla Walla River	WWR (32WAL14.3)	3098996	February 24, 2003	1
Walla Walla River	WWR (32WAL14.3)	2248089	June 11, 2002	1
Walla Walla River	WWR (32WAL14.3)	2208114	May 14, 2002	1
Walla Walla River	WWR (32WAL14.3)	3138163	March 24, 2003	1
Walla Walla River	WWR (32WAL14.3)	2388912	September 16, 2002	1
Walla Walla River	WWR (32WAL14.3)	3078994	February 10, 2003	1
Walla Walla River	WWR (32WAL14.3)	3248273	June 9, 2003	1
Walla Walla River	WWR (32WAL14.3)	3228273	May 30, 2003	1
Walla Walla River	WWR (32WAL14.3)	2478957	November 19, 2002	1
Walla Walla River	WWR (32WAL14.3)	2518974	December 16, 2002	1
Walla Walla River	WWR (32WAL14.3)	2498957	December 3, 2002	1
Walla Walla River	WWR (32WAL14.3)	2228166	May 30, 2002	1
Yakima River	BENTON CITY BRG	B16KJ0	March 7, 2003	1
Yakima River	KIONA WA	1296007	July 9, 2001	1
Yakima River	KIONA WA	1308113	July 25, 2001	1
Yakima River	KIONA WA	308194	July 25, 2000	1
Yakima River	KIONA WA	2058088	January 29, 2002	1
Yakima River	KIONA WA	1378090-F	September 12, 2001	1
Yakima River	KIONA WA	1378090	September 12, 2001	1
Yakima River	KIONA WA	1378089-F	September 12, 2001	1
Yakima River	KIONA WA	1378089	September 12, 2001	1
Yakima River	KIONA WA	1368084	August 14, 2001	1
Yakima River	KIONA WA	1468091	November 14, 2001	1
Yakima River	KIONA WA	1468091-F	November 14, 2001	1
Yakima River	KIONA WA	1468165	October 10, 2001	1
Yakima River	KIONA WA	1498111	November 13, 2001	1
Yakima River	KIONA WA	308197	July 25, 2000	1
Yakima River	KIONA WA	2208164-F	May 16, 2002	1
Yakima River	KIONA WA	2018090	December 5, 2001	1
Yakima River	KIONA WA	2138003	March 25, 2002	1
Yakima River	KIONA WA	2228090	May 10, 2002	1
Yakima River	KIONA WA	2208164	May 16, 2002	1
Yakima River	KIONA WA	1408090	September 4, 2001	1
Yakima River	KIONA WA	2178190	April 3, 2002	1
Yakima River	KIONA WA	1308113-F	July 25, 2001	1
Yakima River	KIONA WA	2138003-F	March 25, 2002	1

Table C-2**Summary Table of Segment 3 Surface Water Samples By Category, Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Yakima River	KIONA WA	2268165	June 12, 2002	1
Yakima River	KIONA WA	2118115	February 6, 2002	1
Yakima River	KIONA WA	2068090	January 9, 2002	1
Yakima River	KIONA WA	2058088-F	January 29, 2002	1
Yakima River	KIONA WA	99398291	September 28, 1999	1
Yakima River	KIONA WA	2158165	March 6, 2002	1
Yakima River	Richland WTP-W	99398311	September 29, 1999	1
Yakima River	Richland WTP-W	99398306	September 29, 1999	1
Yakima River	Richland WTP-W	99398307	September 29, 1999	1
Yakima River	RM12.8, TWIN BR	308206	July 26, 2000	1
Yakima River	RM12.8, TWIN BR	99398304	September 29, 1999	1
Yakima River	RM16.2, WANA DM	308205	July 26, 2000	1
Yakima River	RM16.2, WANA DM	99398310	September 29, 1999	1
Yakima River	RM16.2, WANA DM	99398303	September 29, 1999	1
Yakima River	RM27.0 KIONA	308195	July 25, 2000	1
Yakima River	RM27.0 KIONA	99398292	September 28, 1999	1
Yakima River	RM27.0 KIONA	99398295	September 28, 1999	1
Yakima River	RM5.5 I182	308208	July 26, 2000	1
Yakima River	RM5.5 I182	99398309	September 29, 1999	1
Yakima River	RM5.5 I182	308209	July 26, 2000	1
Yakima River	VAN GIESEN	99398308	September 29, 1999	1
Yakima River	VAN GIESEN	99398294	September 28, 1999	1
Yakima River	VAN GIESEN	308199	July 26, 2000	1
Yakima River	VAN GIESEN	308207	July 26, 2000	1
Yakima River	WANAWISH DAM	308196	July 25, 2000	1
Yakima River	WANAWISH DAM	99398293	September 28, 1999	1
Yakima River	WANAWISH DAM	99398298	September 29, 1999	1
Yakima River	WANAWISH DAM	308198	July 26, 2000	1
Yakima River	WANAWISH DAM	308204	July 26, 2000	1
Yakima River	YAK-6	95338432	August 15, 1995	1
Yakima River	YAK-6	95178425	April 26, 1995	1
Yakima River	YAK-6	95398438	September 27, 1995	1
Yakima River	YAK-6	95158431	April 11, 1995	1
Yakima River	YAK-6	95128429	March 21, 1995	1
Yakima River	YAK-6	95378424	September 13, 1995	1
Yakima River	YAK-6	95238422	June 6, 1995	1
Yakima River	YAK-6	95358432	August 29, 1995	1
Yakima River	YAK-6	95258430	June 20, 1995	1
Yakima River	YAK-6	95278424	July 6, 1995	1
Yakima River	YAK-6	95318430	August 2, 1995	1
Yakima River	YAK-7	95398439	September 27, 1995	1
Yakima River	YAK-7	95378425	September 13, 1995	1
Yakima River	YAK-7	95358433	August 29, 1995	1
Yakima River	YAK-7	95318431	August 2, 1995	1
Yakima River	YAK-7	95128419	March 21, 1995	1
Yakima River	YAK-7	95158432	April 11, 1995	1
Yakima River	YAK-7	95338433	August 15, 1995	1
Yakima River	YAK-7	95128430	March 21, 1995	1
Yakima River	YAK-7	95278425	July 6, 1995	1
Yakima River	YAK-7	95178426	April 26, 1995	1
Yakima River	YAK-7	95238423	June 6, 1995	1
Yakima River	YAK-7	95258431	June 20, 1995	1
Yakima River	Yakima Rvr	B16WL9	May 14, 2003	1
Yakima River	Yakima Rvr	B16WP5	May 14, 2003	1
Yakima River	Yakima Rvr	B16WP4	May 14, 2003	1
Yakima River	Yakima Rvr	B16WP3	May 14, 2003	1
Yakima River	Yakima Rvr	B16WP2	May 14, 2003	1

Table C-2**Summary Table of Segment 3 Surface Water Samples By Category, Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Yakima River	Yakima Rvr	B170T7	May 14, 2003	1
Yakima River	Yakima Rvr	B170T9	May 14, 2003	1
Yakima River	Yakima Rvr	B16WM0	May 14, 2003	1
Yakima River	Yakima Rvr	B16WL8	May 14, 2003	1
Yakima River	Yakima Rvr	B16WP7	May 14, 2003	1
Yakima River	Yakima Rvr	B170T8	May 14, 2003	1
Yakima River	Yakima Rvr	B16WP6	May 14, 2003	1
Yakima River	KIONA BRG	10000007	May 19, 2004	2
Yakima River	KIONA BRG	10000008	June 2, 2004	2
Yakima River	KIONA BRG	10000018	October 20, 2004	2
Yakima River	KIONA BRG	40000011	August 26, 2003	2
Yakima River	KIONA BRG	10000016	September 22, 2004	2
Yakima River	KIONA BRG	10000004	April 7, 2004	2
Yakima River	KIONA BRG	10000006	May 5, 2004	2
Yakima River	KIONA BRG	40000001	May 20, 2003	2
Yakima River	KIONA BRG	40000002	June 3, 2003	2
Yakima River	KIONA BRG	40000004	July 1, 2003	2
Yakima River	KIONA BRG	10000002	March 18, 2004	2
Yakima River	KIONA BRG	40000009	August 12, 2003	2
Yakima River	KIONA BRG	10000003	March 24, 2004	2
Yakima River	KIONA BRG	40000012	September 23, 2003	2
Yakima River	KIONA BRG	40000014	October 1, 2003	2
Yakima River	KIONA BRG	40000016	October 21, 2003	2
Yakima River	KIONA BRG	40000018	November 12, 2003	2
Yakima River	KIONA BRG	40000019	November 24, 2003	2
Yakima River	KIONA BRG	40000020	December 9, 2003	2
Yakima River	KIONA BRG	40000007	July 29, 2003	2
Yakima River	KIONA BRG	10000009	June 15, 2004	2
Yakima River	KIONA BRG	10000011	July 14, 2004	2
Yakima River	KIONA BRG	10000001	February 25, 2004	2
Yakima River	KIONA BRG	10000005	April 21, 2004	2
Yakima River	KIONA WA	132911	January 14, 2004	2
Yakima River	KIONA WA	134232-F	March 8, 2005	2
Yakima River	KIONA WA	132112	April 9, 2003	2
Yakima River	KIONA WA	134330	April 5, 2005	2
Yakima River	KIONA WA	134330-F	April 5, 2005	2
Yakima River	KIONA WA	133091	March 10, 2004	2
Yakima River	KIONA WA	133000-F	February 11, 2004	2
Yakima River	KIONA WA	133000	February 11, 2004	2
Yakima River	KIONA WA	132642-F	October 8, 2003	2
Yakima River	KIONA WA	132819-F	December 9, 2003	2
Yakima River	KIONA WA	132819	December 9, 2003	2
Yakima River	KIONA WA	134232	March 8, 2005	2
Yakima River	KIONA WA	134132-F	February 8, 2005	2
Yakima River	KIONA WA	133239-F	April 14, 2004	2
Yakima River	KIONA WA	132729-F	November 5, 2003	2
Yakima River	KIONA WA	132729	November 5, 2003	2
Yakima River	KIONA WA	133091-F	March 10, 2004	2
Yakima River	KIONA WA	133239	April 14, 2004	2
Yakima River	KIONA WA	132911-F	January 14, 2004	2
Yakima River	KIONA WA	130678	December 5, 2001	2
Yakima River	KIONA WA	131198-F	June 12, 2002	2
Yakima River	KIONA WA	131198	June 12, 2002	2
Yakima River	KIONA WA	131038-F	May 8, 2002	2
Yakima River	KIONA WA	131038	May 8, 2002	2
Yakima River	KIONA WA	130969-F	April 3, 2002	2
Yakima River	KIONA WA	130969	April 3, 2002	2

Table C-2**Summary Table of Segment 3 Surface Water Samples By Category, Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Yakima River	KIONA WA	130879-F	March 6, 2002	2
Yakima River	KIONA WA	130879	March 6, 2002	2
Yakima River	KIONA WA	130768-F	February 6, 2002	2
Yakima River	KIONA WA	130768	February 6, 2002	2
Yakima River	KIONA WA	130698-F	January 9, 2002	2
Yakima River	KIONA WA	132171	May 7, 2003	2
Yakima River	KIONA WA	130678-F	December 5, 2001	2
Yakima River	KIONA WA	131382	August 7, 2002	2
Yakima River	KIONA WA	130657-F	November 14, 2001	2
Yakima River	KIONA WA	130657	November 14, 2001	2
Yakima River	KIONA WA	130520-F	October 10, 2001	2
Yakima River	KIONA WA	130520	October 10, 2001	2
Yakima River	KIONA WA	1286007	July 10, 2001	2
Yakima River	KIONA WA	1236007	June 5, 2001	2
Yakima River	KIONA WA	1196007	May 8, 2001	2
Yakima River	KIONA WA	1146007	April 3, 2001	2
Yakima River	KIONA WA	1106007	March 6, 2001	2
Yakima River	KIONA WA	1066007	February 6, 2001	2
Yakima River	KIONA WA	106014	March 8, 2000	2
Yakima River	KIONA WA	1036007	January 16, 2001	2
Yakima River	KIONA WA	130698	January 9, 2002	2
Yakima River	KIONA WA	131880	February 5, 2003	2
Yakima River	KIONA WA	132529-F	September 10, 2003	2
Yakima River	KIONA WA	132529	September 10, 2003	2
Yakima River	KIONA WA	132440-F	August 6, 2003	2
Yakima River	KIONA WA	132440	August 6, 2003	2
Yakima River	KIONA WA	132373-F	July 9, 2003	2
Yakima River	KIONA WA	132373	July 9, 2003	2
Yakima River	KIONA WA	132261-F	June 4, 2003	2
Yakima River	KIONA WA	132261	June 4, 2003	2
Yakima River	KIONA WA	132171-F	May 7, 2003	2
Yakima River	KIONA WA	134463	May 3, 2005	2
Yakima River	KIONA WA	132112-F	April 9, 2003	2
Yakima River	KIONA WA	131947-F	March 5, 2003	2
Yakima River	KIONA WA	131219	July 10, 2002	2
Yakima River	KIONA WA	131880-F	February 5, 2003	2
Yakima River	KIONA WA	131219-F	July 10, 2002	2
Yakima River	KIONA WA	131789-F	January 8, 2003	2
Yakima River	KIONA WA	131789	January 8, 2003	2
Yakima River	KIONA WA	131676-F	December 4, 2002	2
Yakima River	KIONA WA	131676	December 4, 2002	2
Yakima River	KIONA WA	131587-F	November 6, 2002	2
Yakima River	KIONA WA	131587	November 6, 2002	2
Yakima River	KIONA WA	131494-F	October 9, 2002	2
Yakima River	KIONA WA	131494	October 9, 2002	2
Yakima River	KIONA WA	131402-F	September 11, 2002	2
Yakima River	KIONA WA	131402	September 11, 2002	2
Yakima River	KIONA WA	131382-F	August 7, 2002	2
Yakima River	KIONA WA	132642	October 8, 2003	2
Yakima River	KIONA WA	131947	March 5, 2003	2
Yakima River	KIONA WA	133484-F	July 14, 2004	2
Yakima River	KIONA WA	86499	February 6, 2001	2
Yakima River	KIONA WA	86593	March 6, 2001	2
Yakima River	KIONA WA	86687	April 3, 2001	2
Yakima River	KIONA WA	133304-F	May 5, 2004	2
Yakima River	KIONA WA	99366015	September 8, 1999	2
Yakima River	KIONA WA	133304	May 5, 2004	2

Table C-2**Summary Table of Segment 3 Surface Water Samples By Category, Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Yakima River	KIONA WA	134463-F	May 3, 2005	2
Yakima River	KIONA WA	85846	November 7, 2000	2
Yakima River	KIONA WA	133572	August 4, 2004	2
Yakima River	KIONA WA	133572-F	August 4, 2004	2
Yakima River	KIONA WA	1336007	August 14, 2001	2
Yakima River	KIONA WA	133664	September 15, 2004	2
Yakima River	KIONA WA	86778	May 8, 2001	2
Yakima River	KIONA WA	133664-F	September 15, 2004	2
Yakima River	KIONA WA	133374-F	June 9, 2004	2
Yakima River	KIONA WA	41393	August 16, 2000	2
Yakima River	KIONA WA	496007	December 5, 2000	2
Yakima River	KIONA WA	456007	November 7, 2000	2
Yakima River	KIONA WA	42116	July 12, 2000	2
Yakima River	KIONA WA	42097	June 7, 2000	2
Yakima River	KIONA WA	42078	May 3, 2000	2
Yakima River	KIONA WA	42041	April 5, 2000	2
Yakima River	KIONA WA	86429	January 16, 2001	2
Yakima River	KIONA WA	41429	September 6, 2000	2
Yakima River	KIONA WA	86340	December 5, 2000	2
Yakima River	KIONA WA	40813	July 7, 1999	2
Yakima River	KIONA WA	406007	October 3, 2000	2
Yakima River	KIONA WA	366014	September 6, 2000	2
Yakima River	KIONA WA	336014	August 16, 2000	2
Yakima River	KIONA WA	66014	February 9, 2000	2
Yakima River	KIONA WA	133484	July 14, 2004	2
Yakima River	KIONA WA	41554	October 3, 2000	2
Yakima River	KIONA WA	16014	January 5, 2000	2
Yakima River	KIONA WA	99156015	April 14, 1999	2
Yakima River	KIONA WA	99406014	October 6, 1999	2
Yakima River	KIONA WA	99316015	August 4, 1999	2
Yakima River	KIONA WA	99446014	November 3, 1999	2
Yakima River	KIONA WA	186014	May 3, 2000	2
Yakima River	KIONA WA	99496014	December 8, 1999	2
Yakima River	KIONA WA	99246015	June 16, 1999	2
Yakima River	KIONA WA	99026015	January 13, 1999	2
Yakima River	KIONA WA	133723	October 5, 2004	2
Yakima River	KIONA WA	134543	June 7, 2005	2
Yakima River	KIONA WA	133374	June 9, 2004	2
Yakima River	KIONA WA	134543-F	June 7, 2005	2
Yakima River	KIONA WA	1366007	September 4, 2001	2
Yakima River	KIONA WA	146014	April 5, 2000	2
Yakima River	KIONA WA	99276015	July 7, 1999	2
Yakima River	KIONA WA	86894	June 5, 2001	2
Yakima River	KIONA WA	133723-F	October 5, 2004	2
Yakima River	KIONA WA	133829	November 2, 2004	2
Yakima River	KIONA WA	133829-F	November 2, 2004	2
Yakima River	KIONA WA	133928	December 7, 2004	2
Yakima River	KIONA WA	133928-F	December 7, 2004	2
Yakima River	KIONA WA	134051	January 4, 2005	2
Yakima River	KIONA WA	99116015	March 17, 1999	2
Yakima River	KIONA WA	134132	February 8, 2005	2
Yakima River	KIONA WA	99056015	February 3, 1999	2
Yakima River	KIONA WA	286014	July 12, 2000	2
Yakima River	KIONA WA	86993	July 10, 2001	2
Yakima River	KIONA WA	87080	August 14, 2001	2
Yakima River	KIONA WA	87125	September 4, 2001	2
Yakima River	KIONA WA	236014	June 7, 2000	2

Table C-2**Summary Table of Segment 3 Surface Water Samples By Category, Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Yakima River	KIONA WA	99196015	May 12, 1999	2
Yakima River	KIONA WA	134051-F	January 4, 2005	2
Yakima River	Terrace HGHTSBR	50000001	February 25, 2004	2
Yakima River	Terrace HGHTSBR	50000002	March 18, 2004	2
Yakima River	Terrace HGHTSBR	50000003	March 24, 2004	2
Yakima River	Terrace HGHTSBR	50000004	April 8, 2004	2
Yakima River	Terrace HGHTSBR	50000006	May 6, 2004	2
Yakima River	Terrace HGHTSBR	50000015	September 7, 2004	2
Yakima River	Terrace HGHTSBR	50000005	April 22, 2004	2
Yakima River	Terrace HGHTSBR	50000007	July 29, 2003	2
Yakima River	Terrace HGHTSBR	50000008	June 3, 2004	2
Yakima River	Terrace HGHTSBR	50000009	June 14, 2004	2
Yakima River	Terrace HGHTSBR	50000010	June 29, 2004	2
Yakima River	Terrace HGHTSBR	50000011	July 13, 2004	2
Yakima River	Terrace HGHTSBR	50000012	July 29, 2004	2
Yakima River	Terrace HGHTSBR	50000014	August 26, 2004	2
Yakima River	Terrace HGHTSBR	50000016	September 22, 2004	2
Yakima River	Terrace HGHTSBR	50000017	October 6, 2004	2
Yakima River	Terrace HGHTSBR	50000018	October 19, 2004	2
Yakima River	Terrace HGHTSBR	50000019	November 2, 2004	2
Yakima River	Terrace HGHTSBR	50000020	December 9, 2003	2
Yakima River	Terrace HGHTSBR	50000013	August 11, 2004	2
Yakima River	VAN GIESEN	300000014	August 26, 2003	2
Yakima River	VAN GIESEN	300000017	October 7, 2003	2
Yakima River	VAN GIESEN	300000008	July 8, 2003	2
Yakima River	VAN GIESEN	300000009	July 22, 2003	2
Yakima River	VAN GIESEN	300000010	July 29, 2003	2
Yakima River	VAN GIESEN	300000011	August 5, 2003	2
Yakima River	VAN GIESEN	300000013	August 19, 2003	2
Yakima River	VAN GIESEN	300000012	August 12, 2003	2
Yakima River	VAN GIESEN	300000016	September 30, 2003	2
Yakima River	VAN GIESEN	300000004	June 3, 2003	2
Yakima River	VAN GIESEN	300000018	October 14, 2003	2
Yakima River	VAN GIESEN	300000019	October 21, 2003	2
Yakima River	VAN GIESEN	300000020	October 28, 2003	2
Yakima River	VAN GIESEN	300000021	November 12, 2003	2
Yakima River	VAN GIESEN	300000022	November 24, 2003	2
Yakima River	VAN GIESEN	300000023	December 9, 2003	2
Yakima River	VAN GIESEN	300000015	September 23, 2003	2
Yakima River	VAN GIESEN	20000017	October 6, 2004	2
Yakima River	VAN GIESEN	20000009	June 15, 2004	2
Yakima River	VAN GIESEN	20000010	June 30, 2004	2
Yakima River	VAN GIESEN	20000011	July 14, 2004	2
Yakima River	VAN GIESEN	20000012	July 29, 2004	2
Yakima River	VAN GIESEN	20000013	August 11, 2004	2
Yakima River	VAN GIESEN	20000014	August 25, 2004	2
Yakima River	VAN GIESEN	300000007	July 1, 2003	2
Yakima River	VAN GIESEN	20000016	September 22, 2004	2
Yakima River	VAN GIESEN	300000006	June 24, 2003	2
Yakima River	VAN GIESEN	20000018	October 20, 2004	2
Yakima River	VAN GIESEN	20000019	November 3, 2004	2
Yakima River	VAN GIESEN	300000001	April 29, 2003	2
Yakima River	VAN GIESEN	300000002	May 20, 2003	2
Yakima River	VAN GIESEN	300000003	May 27, 2003	2
Yakima River	VAN GIESEN	20000001	February 25, 2004	2
Yakima River	VAN GIESEN	20000015	September 7, 2004	2

Table C-3
Summary Statistics for Sediment Collected from Segment 3 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Nitrogen in ammonia	mg/kg	4	4	100%	--	--	6.0	35	17
CONV	Phosphorous in phosphate	mg/kg	4	4	100%	--	--	0.040	0.23	0.11
CONV	Sulfide	mg/kg	4	2	50%	1.2	1.2	1.9	3.6	1.7
CONV	Total Organic Carbon	%	41	41	100%	--	--	0.11	2.1	0.93
CONV	Total Organic Carbon	mg/kg	42	42	100%	--	--	1.0	28,692	9,089
METAL	Acid Volatile Sulfate	umole/g	18	15	83%	0.069	0.12	0.081	4.9	1.1
METAL	Aluminum	mg/kg	5	5	100%	--	--	5,900	68,000	20,380
METAL	Antimony	mg/kg	25	25	100%	--	--	0.035	1.3	0.69
METAL	Arsenic	mg/kg	55	45	82%	4.5	4.5	0.37	10	5.8
METAL	Barium	mg/kg	5	5	100%	--	--	47	530	154
METAL	Beryllium	mg/kg	29	29	100%	--	--	0.085	2.1	1.4
METAL	Bismuth	mg/kg	1	0	0%	10	10	--	--	5.0
METAL	Boron	mg/kg	1	1	100%	--	--	2.3	2.3	2.3
METAL	Cadmium	mg/kg	58	43	74%	0.090	2.0	0.067	6.0	1.1
METAL	Calcium	mg/kg	5	5	100%	--	--	2,800	26,000	8,000
METAL	Cerium	mg/kg	1	1	100%	--	--	53	53	53
METAL	Chromium	mg/kg	59	59	100%	--	--	2.6	74	30
METAL	Cobalt	mg/kg	5	5	100%	--	--	5.2	20	9.0
METAL	Copper	mg/kg	59	59	100%	--	--	1.5	37	20
METAL	Europium	mg/kg	1	0	0%	2.0	2.0	--	--	1.0
METAL	Gallium	mg/kg	1	1	100%	--	--	19	19	19
METAL	Gold	mg/kg	1	0	0%	8.0	8.0	--	--	4.0
METAL	Iron	mg/kg	5	5	100%	--	--	12,000	51,000	23,000
METAL	Lanthanum	mg/kg	1	1	100%	--	--	28	28	28
METAL	Lead	mg/kg	55	54	98%	2.5	2.5	1.1	32	14
METAL	Lithium	mg/kg	1	1	100%	--	--	26	26	26
METAL	Magnesium	mg/kg	5	5	100%	--	--	2,700	14,000	5,400
METAL	Manganese	mg/kg	5	5	100%	--	--	250	1,500	532
METAL	Mercury	mg/kg	54	36	67%	0.040	0.16	0.0032	0.17	0.061
METAL	Molybdenum	mg/kg	31	0	0%	0.59	2.0	--	--	0.32
METAL	Neodymium	mg/kg	1	1	100%	--	--	30	30	30
METAL	Nickel	mg/kg	59	59	100%	--	--	1.3	32	19
METAL	Niobium	mg/kg	1	0	0%	4.0	4.0	--	--	2.0
METAL	Phosphorus	mg/kg	1	1	100%	--	--	1,000	1,000	1,000
METAL	Potassium	mg/kg	4	4	100%	--	--	700	1,400	1,175
METAL	Scandium	mg/kg	1	1	100%	--	--	19	19	19
METAL	Selenium	mg/kg	54	8	15%	0.40	5.0	0.015	1.8	1.6
METAL	Silver	mg/kg	25	24	96%	2.0	2.0	0.0039	0.56	0.28
METAL	Sodium	mg/kg	5	5	100%	--	--	280	16,000	3,478
METAL	Strontium	mg/kg	1	1	100%	--	--	260	260	260
METAL	Thallium	mg/kg	24	24	100%	--	--	0.035	1.1	0.57
METAL	Thorium	mg/kg	1	1	100%	--	--	8.0	8.0	8.0
METAL	Tin	mg/kg	1	0	0%	10	10	--	--	5.0
METAL	Titanium	mg/kg	1	1	100%	--	--	6,200	6,200	6,200
METAL	Uranium	mg/kg	5	5	100%	--	--	1.1	1.5	1.3
METAL	Vanadium	mg/kg	5	5	100%	--	--	26	140	61
METAL	Ytterbium	mg/kg	1	1	100%	--	--	3.0	3.0	3.0

Table C-3
Summary Statistics for Sediment Collected from Segment 3 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Yttrium	mg/kg	1	1	100%	--	--	23	23	23
METAL	Zinc	mg/kg	59	59	100%	--	--	11	558	142
PCB	Aroclor-1221	mg/kg	3	0	0%	0.31	0.33	--	--	0.16
PCB	Aroclor-1232	mg/kg	3	0	0%	0.12	0.13	--	--	0.062
PCB	Aroclor-1242	mg/kg	3	0	0%	0.12	0.13	--	--	0.063
PCB	Aroclor-1242/1016	mg/kg	3	0	0%	0.060	0.070	--	--	0.032
PCB	Aroclor-1248	mg/kg	3	0	0%	0.12	0.13	--	--	0.063
PCB	Aroclor-1254	mg/kg	8	0	0%	1.20E-04	0.13	--	--	0.048
PCB	Aroclor-1260	mg/kg	6	0	0%	0.060	0.13	--	--	0.048
PEST	2,4'-DDD	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
PEST	2,4'-DDE	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
PEST	2,4'-DDT	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
PEST	Alachlor	mg/kg	3	0	0%	0.14	0.16	--	--	0.075
PEST	Aldrin	mg/kg	8	0	0%	0.0010	0.040	--	--	0.0082
PEST	Alpha-BHC	mg/kg	6	0	0%	0.0050	0.040	--	--	0.011
PEST	alpha-Chlordane	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
PEST	Ametryn	mg/kg	3	0	0%	0.060	0.066	--	--	0.032
PEST	Atraton	mg/kg	3	0	0%	0.18	0.20	--	--	0.095
PEST	Atrazine	mg/kg	3	0	0%	0.060	0.066	--	--	0.032
PEST	Azinphos Ethyl	mg/kg	3	0	0%	0.096	0.11	--	--	0.051
PEST	Azinphos Methyl	mg/kg	3	0	0%	0.11	0.12	--	--	0.057
PEST	Benefin (Benfluralin)	mg/kg	3	0	0%	0.090	0.099	--	--	0.048
PEST	beta-1,2,3,4,5,6-Hexachlorocyclohexane	mg/kg	6	0	0%	0.0050	0.040	--	--	0.011
PEST	Bromacil (ACN)	mg/kg	3	0	0%	0.36	0.40	--	--	0.19
PEST	Butachlor	mg/kg	3	0	0%	0.21	0.23	--	--	0.11
PEST	Butylate	mg/kg	3	0	0%	0.090	0.099	--	--	0.048
PEST	Carbethoxy malathion	mg/kg	3	0	0%	0.048	0.053	--	--	0.025
PEST	Carboxin	mg/kg	3	0	0%	0.66	0.73	--	--	0.35
PEST	Chlordane	mg/kg	3	0	0%	0.060	0.070	--	--	0.032
PEST	Chlorothalonil	mg/kg	3	0	0%	0.14	0.16	--	--	0.075
PEST	Chlorpropham	mg/kg	3	0	0%	0.30	0.33	--	--	0.16
PEST	Chlorpyrifos	mg/kg	3	0	0%	0.042	0.046	--	--	0.022
PEST	Cyanazine	mg/kg	3	0	0%	0.091	0.099	--	--	0.048
PEST	Cycloate	mg/kg	3	0	0%	0.090	0.099	--	--	0.048
PEST	DDMU	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
PEST	Delta-BHC	mg/kg	6	0	0%	0.0050	0.040	--	--	0.011
PEST	Diazinon	mg/kg	3	0	0%	0.048	0.053	--	--	0.025
PEST	Dichlobenil	mg/kg	3	0	0%	0.072	0.079	--	--	0.038
PEST	Dichlorodiphenyldichloroethane	mg/kg	6	2	33%	0.0050	0.038	0.0030	0.0030	0.0054
PEST	Dichlorodiphenyldichloroethylene	mg/kg	8	3	38%	1.00E-05	0.0050	0.0080	0.016	0.0078
PEST	Dichlorodiphenyltrichloroethane	mg/kg	7	0	0%	0.0050	0.040	--	--	0.0096
PEST	Dicofol	mg/kg	3	0	0%	0.14	0.16	--	--	0.075
PEST	Dieldrin	mg/kg	8	0	0%	0.0010	0.040	--	--	0.0082
PEST	Dimethoate	mg/kg	3	0	0%	0.048	0.053	--	--	0.025
PEST	Diphenamid	mg/kg	3	0	0%	0.18	0.20	--	--	0.095
PEST	Disulfoton	mg/kg	3	0	0%	0.036	0.040	--	--	0.019

Table C-3
Summary Statistics for Sediment Collected from Segment 3 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Diuron	mg/kg	3	0	0%	0.48	0.53	--	--	0.25
PEST	Endosulfan I	mg/kg	6	0	0%	0.0050	0.040	--	--	0.011
PEST	Endosulfan II	mg/kg	6	0	0%	0.0050	0.040	--	--	0.011
PEST	Endosulfan sulfate	mg/kg	6	0	0%	0.0050	0.040	--	--	0.011
PEST	Endrin	mg/kg	6	0	0%	0.0050	0.040	--	--	0.011
PEST	Endrin aldehyde	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
PEST	Endrin ketone	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
PEST	Eptam	mg/kg	3	0	0%	0.090	0.099	--	--	0.048
PEST	Ethalfuralin (Sonalan)	mg/kg	3	0	0%	0.090	0.099	--	--	0.048
PEST	Ethyl methylene phosphorodithioate	mg/kg	3	0	0%	0.042	0.046	--	--	0.022
PEST	Fenarimol	mg/kg	3	0	0%	0.18	0.20	--	--	0.095
PEST	Fensulfothion	mg/kg	3	0	0%	0.060	0.066	--	--	0.032
PEST	Fluridone	mg/kg	3	0	0%	0.48	0.53	--	--	0.25
PEST	Fonofos	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
PEST	Gamma-BHC (Lindane)	mg/kg	6	1	17%	0.0050	0.040	0.0080	0.0080	0.0089
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
PEST	Heptachlor	mg/kg	6	0	0%	0.0050	0.040	--	--	0.011
PEST	Heptachlor epoxide	mg/kg	6	0	0%	0.0050	0.040	--	--	0.011
PEST	Hexazinone	mg/kg	3	0	0%	0.090	0.099	--	--	0.048
PEST	Methoxychlor	mg/kg	5	0	0%	0.0010	0.040	--	--	0.012
PEST	Methyl Chlorpyrifos	mg/kg	3	0	0%	0.042	0.046	--	--	0.022
PEST	Methyl parathion	mg/kg	3	0	0%	0.042	0.046	--	--	0.022
PEST	Metolachlor	mg/kg	3	0	0%	0.18	0.20	--	--	0.095
PEST	Metribuzin	mg/kg	3	0	0%	0.060	0.066	--	--	0.032
PEST	MGK264	mg/kg	3	0	0%	0.42	0.46	--	--	0.22
PEST	Mirex	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
PEST	Molinate	mg/kg	3	0	0%	0.16	0.17	--	--	0.083
PEST	Napropamide	mg/kg	3	0	0%	0.18	0.20	--	--	0.095
PEST	Norflurazon	mg/kg	3	0	0%	0.090	0.099	--	--	0.048
PEST	Oxychlordane	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
PEST	Oxyfluorfen	mg/kg	3	0	0%	0.16	0.17	--	--	0.083
PEST	Parathion	mg/kg	3	0	0%	0.048	0.053	--	--	0.025
PEST	Pebulate	mg/kg	3	0	0%	0.14	0.16	--	--	0.075
PEST	Pendimethalin	mg/kg	3	0	0%	0.090	0.099	--	--	0.048
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
PEST	Phorate	mg/kg	3	0	0%	0.042	0.046	--	--	0.022
PEST	Pramitol (Prometon)	mg/kg	3	0	0%	0.060	0.096	--	--	0.037
PEST	Prometryn	mg/kg	3	0	0%	0.060	0.066	--	--	0.032
PEST	Pronamide	mg/kg	3	0	0%	0.18	0.20	--	--	0.095
PEST	Propachlor (Ramrod)	mg/kg	3	0	0%	0.12	0.13	--	--	0.063
PEST	Propazine	mg/kg	3	0	0%	0.060	0.096	--	--	0.037
PEST	Simazine	mg/kg	3	0	0%	0.060	0.066	--	--	0.032
PEST	Terbacil	mg/kg	3	0	0%	0.30	0.33	--	--	0.16
PEST	Terbutryn	mg/kg	3	0	0%	0.060	0.066	--	--	0.032
PEST	Toxaphene	mg/kg	6	0	0%	0.060	0.79	--	--	0.21
PEST	trans-Chlordane	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
PEST	trans-Nonachlor	mg/kg	3	0	0%	0.036	0.040	--	--	0.019

Table C-3
Summary Statistics for Sediment Collected from Segment 3 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Triadimefon	mg/kg	3	0	0%	0.16	0.17	--	--	0.083
PEST	Triallate	mg/kg	3	0	0%	0.16	0.17	--	--	0.083
PEST	Trifluralin (Treflan)	mg/kg	3	0	0%	0.090	0.099	--	--	0.048
PEST	Vernolate	mg/kg	3	0	0%	0.090	0.099	--	--	0.048
RAD_D	Beryllium-7	pCi/g	1	1	100%			1.36E-13	1.36E-13	1.36E-13
RAD_D	Cerium-141	pCi/g	3	3	100%			2.18E-96	1.80E-62	6.01E-63
RAD_D	Cesium-134	pCi/g	5	5	100%			1.08E-04	0.054	0.040
RAD_D	Cesium-137	pCi/g	81	81	100%			0.027	1.0	0.28
RAD_D	Cobalt-60	pCi/g	31	31	100%			0.0024	0.081	0.023
RAD_D	Europium-152	pCi/g	28	28	100%			0.035	0.49	0.18
RAD_D	Europium-154	pCi/g	1	1	100%			0.063	0.063	0.063
RAD_D	Europium-155	pCi/g	3	3	100%			0.018	0.024	0.020
RAD_D	Plutonium-238	pCi/g	25	25	100%			1.53E-04	0.0018	4.79E-04
RAD_D	Plutonium-239/240	pCi/g	38	38	100%			7.66E-04	0.032	0.0087
RAD_D	Potassium-40	pCi/g	74	74	100%			6.7	22	14
RAD_D	Radium-226	pCi/g	14	14	100%			0.40	0.95	0.55
RAD_D	Ruthenium-106	pCi/g	1	1	100%			9.51E-05	9.51E-05	9.51E-05
RAD_D	Strontium-90	pCi/g	14	14	100%			0.0073	0.039	0.022
RAD_D	Thorium-232	pCi/g	9	9	100%			0.40	0.80	0.56
RAD_D	Uranium-234	pCi/g	38	38	100%			0.094	1.9	0.73
RAD_D	Uranium-235	pCi/g	37	37	100%			0.0092	0.12	0.028
RAD_D	Uranium-238	pCi/g	41	41	100%			0.21	1.6	0.65
RAD_D	Zirconium/Niobium-95	pCi/g	1	1	100%			3.51E-36	3.51E-36	3.51E-36
SVOC	1,2,4-Trichlorobenzene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	1,2-Dichlorobenzene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	1,2-Diphenylhydrazine	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	1,3-Dichlorobenzene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	1,4-Dichlorobenzene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4,5-Trichlorophenol	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4,6-Trichlorophenol	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4-Dichlorophenol	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4-Dimethylphenol	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4-Dinitrophenol	mg/kg	2	0	0%	0.025	0.025	--	--	0.013
SVOC	2,4-Dinitrotoluene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,6-Dinitrotoluene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Chloronaphthalene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Chlorophenol	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Methylnaphthalene	mg/kg	2	0	0%	0.0032	0.043	--	--	0.012
SVOC	2-Nitroaniline	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Nitrophenol	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	3,3'-Dichlorobenzidine	mg/kg	2	0	0%	0.020	0.020	--	--	0.010
SVOC	3-Nitroaniline	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	4,6-Dinitro-2-methylphenol	mg/kg	2	0	0%	0.025	0.025	--	--	0.013
SVOC	4-Bromophenylphenyl ether	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	4-Chloroaniline	mg/kg	2	0	0%	0.020	0.020	--	--	0.010
SVOC	4-Chlorophenylphenyl ether	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	4-Methylphenol (cresol, p-)	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050

Table C-3
Summary Statistics for Sediment Collected from Segment 3 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	4-Nitroaniline	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	4-Nitrophenol	mg/kg	2	0	0%	0.020	0.020	--	--	0.010
SVOC	Acenaphthene	mg/kg	4	0	0%	0.0032	0.0430	--	--	0.0080
SVOC	Aniline	mg/kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Anthracene	mg/kg	2	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Benzidine	mg/kg	2	0	0%	0.050	0.050	--	--	0.025
SVOC	Benzo(ghi)perylene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Benzoic acid	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Benzyl alcohol	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Bis(2-Chloroethoxy)methane	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Bis(2-chloroethyl) ether	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Dibenz[a,h]anthracene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Dibenzofuran	mg/kg	2	0	0%	0.025	0.025	--	--	0.013
SVOC	Dimethyl phthalate	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Di-n-butylphthalate	mg/kg	2	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Fluorene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Hexachlorobenzene	mg/kg	5	0	0%	0.010	0.040	--	--	0.013
SVOC	Hexachlorobutadiene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Hexachlorocyclopentadiene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Hexachloroethane	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Naphthalene	mg/kg	2	0	0%	0.0032	0.043	--	--	0.012
SVOC	Nitrobenzene	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	N-Nitrosodi-n-dipropylamine	mg/kg	2	0	0%	0.020	0.020	--	--	0.010
SVOC	Pentachlorophenol	mg/kg	7	4	57%	0.020	0.043	0.014	0.023	0.017
SVOC	Phenanthrene	mg/kg	2	0	0%	0.0032	0.043	--	--	0.012
VOC	1,1,1-Trichloroethane	mg/kg	2	0	0%	8.60E-05	0.0012	--	--	3.16E-04
VOC	1,1-Dichloroethane	mg/kg	2	0	0%	8.20E-05	0.0012	--	--	3.15E-04
VOC	1,2-Dibromo-3-chloropropane	mg/kg	1	0	0%	0.0012	0.0012	--	--	5.89E-04
VOC	1,2-Dichloropropane	mg/kg	1	0	0%	8.60E-05	8.60E-05	--	--	4.30E-05
VOC	2-Hexanone	mg/kg	2	1	50%	1.72E-04	1.72E-04	0.0031	0.0031	0.0016
VOC	4-Methyl-2-Pentanone	mg/kg	2	1	50%	1.72E-04	1.72E-04	0.0018	0.0018	9.58E-04
VOC	Ethylbenzene	mg/kg	2	0	0%	8.60E-05	0.0012	--	--	3.16E-04
VOC	Tetrachloroethene	mg/kg	2	1	50%	0.0012	0.0012	1.14E-05	1.14E-05	3.00E-04
VOC	Toluene	mg/kg	2	0	0%	8.60E-05	0.0012	--	--	3.16E-04
VOC	Trichloroethene	mg/kg	2	0	0%	6.00E-06	0.0014	--	--	3.43E-04
VOC	Xylenes (total)	mg/kg	2	0	0%	8.60E-05	0.0012	--	--	3.16E-04

CONV - Conventional parameter
PEST - Pesticide
PCB - Polychlorinated biphenyl
RAD_D - Decayed radionuclide
SVOC - Semivolatile Organic Compound
VOC - Volatile Organic Compound

Table C-4
Summary Statistics for Sediment Collected from Segment 3 of the Columbia River Including All Categories of Data (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Total Organic Carbon	mg/kg dry-wt	2	2	100%			0.0092	1.0	0.50
CONV	Total solids	mg/kg dry-wt	1	1	100%			50	50	50
METAL	Aluminum	mg/kg dry-wt	4	4	100%			2,900	17,000	10,000
METAL	Antimony	mg/kg dry-wt	17	13	76%	3.0	3.0	0.52	5.1	1.6
METAL	Arsenic	mg/kg dry-wt	23	23	100%			1.7	12	5.5
METAL	Barium	mg/kg dry-wt	4	4	100%			53	150	101
METAL	Beryllium	mg/kg dry-wt	17	17	100%			0.17	1.8	1.2
METAL	Cadmium	mg/kg dry-wt	23	21	91%	0.20	0.20	0.19	4.3	1.2
METAL	Calcium	mg/kg dry-wt	4	4	100%			3,500	5,800	4,500
METAL	Chromium	mg/kg dry-wt	23	21	91%	0.10	0.10	3.7	73	33
METAL	Cobalt	mg/kg dry-wt	4	4	100%			11	17	13
METAL	Copper	mg/kg dry-wt	23	23	100%			7.1	39	23
METAL	Iron	mg/kg dry-wt	4	4	100%			24,000	34,000	27,250
METAL	Lead	mg/kg dry-wt	23	22	96%	0.10	0.10	2.1	58	17
METAL	Magnesium	mg/kg dry-wt	4	4	100%			3,200	6,700	4,825
METAL	Manganese	mg/kg dry-wt	4	4	100%			280	640	490
METAL	Mercury	mg/kg dry-wt	26	20	77%	0.0050	0.060	0.013	0.31	0.069
METAL	Nickel	mg/kg dry-wt	17	17	100%			6.1	32	20
METAL	Potassium	mg/kg dry-wt	4	4	100%			490	2,300	1,288
METAL	Selenium	mg/kg dry-wt	17	12	71%	0.20	0.35	0.32	1.3	0.59
METAL	Silver	mg/kg dry-wt	17	14	82%	0.30	0.30	0.29	2.5	0.65
METAL	Sodium	mg/kg dry-wt	4	4	100%			130	280	193
METAL	Thallium	mg/kg dry-wt	17	14	82%	0.25	0.25	0.27	2.5	0.96
METAL	Vanadium	mg/kg dry-wt	4	4	100%			50	77	66
METAL	Zinc	mg/kg dry-wt	23	22	96%	60	60	45	375	160
PCB	Aroclor-1016	mg/kg dry-wt	4	0	0%	0.090	0.20	--	--	0.061
PCB	Aroclor-1221	mg/kg dry-wt	6	0	0%	0.090	0.33	--	--	0.095
PCB	Aroclor-1232	mg/kg dry-wt	6	0	0%	0.090	0.20	--	--	0.063
PCB	Aroclor-1242	mg/kg dry-wt	5	0	0%	0.040	0.20	--	--	0.053
PCB	Aroclor-1242/1016	mg/kg dry-wt	8	0	0%	0.010	0.070	--	--	0.014
PCB	Aroclor-1248	mg/kg dry-wt	10	0	0%	0.010	0.20	--	--	0.029
PCB	Aroclor-1254	mg/kg dry-wt	17	3	18%	0.010	0.20	0.010	0.013	0.025
PCB	Aroclor-1260	mg/kg dry-wt	15	3	20%	0.0015	0.20	0.0056	0.011	0.025
PCB	Total polychlorinated biphenyl	mg/kg dry-wt	3	0	0%	1.00E-04	0.050	--	--	0.0085
PEST	2,4'-DDD	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	2,4'-DDE	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	2,4'-DDT	mg/kg dry-wt	2	1	50%	0.010	0.010	7.10E-04	7.10E-04	0.0029
PEST	Alachlor	mg/kg dry-wt	1	0	0%	0.024	0.024	--	--	0.012
PEST	Aldrin	mg/kg dry-wt	23	0	0%	1.00E-04	0.020	--	--	0.0019
PEST	Alpha-BHC	mg/kg dry-wt	14	0	0%	0.0010	0.020	--	--	0.0028
PEST	alpha-Chlordane	mg/kg dry-wt	5	0	0%	0.0010	0.010	--	--	0.0011
PEST	alpha-Chlordene	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Azinphos Ethyl	mg/kg dry-wt	1	0	0%	0.016	0.016	--	--	0.0080
PEST	Azinphos Methyl	mg/kg dry-wt	1	0	0%	0.018	0.018	--	--	0.0090
PEST	Benefin (Benfluralin)	mg/kg dry-wt	1	0	0%	0.015	0.015	--	--	0.0075
PEST	beta-1,2,3,4,5,6-Hexachlorocyclohexane	mg/kg dry-wt	12	0	0%	0.0020	0.020	--	--	0.0031
PEST	Bolstar	mg/kg dry-wt	1	0	0%	0.0070	0.0070	--	--	0.0035

Table C-4
Summary Statistics for Sediment Collected from Segment 3 of the Columbia River Including All Categories of Data (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Bromacil (ACN)	mg/kg dry-wt	1	0	0%	0.060	0.060	--	--	0.030
PEST	Butachlor	mg/kg dry-wt	1	0	0%	0.035	0.035	--	--	0.018
PEST	Butylate	mg/kg dry-wt	1	0	0%	0.015	0.015	--	--	0.0075
PEST	Captan	mg/kg dry-wt	1	0	0%	0.030	0.030	--	--	0.015
PEST	Carbethoxy malathion	mg/kg dry-wt	1	0	0%	0.0080	0.0080	--	--	0.0040
PEST	Carbophenothion	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Carboxin	mg/kg dry-wt	1	0	0%	0.11	0.11	--	--	0.055
PEST	Chlordane	mg/kg dry-wt	12	1	8%	0.0020	0.20	0.0030	0.0030	0.027
PEST	Chlorothalonil	mg/kg dry-wt	1	0	0%	0.024	0.024	--	--	0.012
PEST	Chlorpropham	mg/kg dry-wt	1	0	0%	0.050	0.050	--	--	0.025
PEST	Chlorpyrifos	mg/kg dry-wt	1	0	0%	0.0070	0.0070	--	--	0.0035
PEST	cis-Nonachlor	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Coumaphos	mg/kg dry-wt	1	0	0%	0.012	0.012	--	--	0.0060
PEST	Cyanazine	mg/kg dry-wt	1	0	0%	0.015	0.015	--	--	0.0075
PEST	Cycloate	mg/kg dry-wt	1	0	0%	0.015	0.015	--	--	0.0075
PEST	DDMU	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Delta-BHC	mg/kg dry-wt	12	0	0%	0.0020	0.020	--	--	0.0031
PEST	Demeton-O	mg/kg dry-wt	1	0	0%	0.0070	0.0070	--	--	0.0035
PEST	Demeton-S	mg/kg dry-wt	1	0	0%	0.0070	0.0070	--	--	0.0035
PEST	Diallate	mg/kg dry-wt	1	0	0%	0.038	0.038	--	--	0.019
PEST	Diazinon	mg/kg dry-wt	1	0	0%	0.0080	0.0080	--	--	0.0040
PEST	Dichlobenil	mg/kg dry-wt	1	0	0%	0.012	0.012	--	--	0.0060
PEST	Dichlorodiphenyldichloroethane	mg/kg dry-wt	26	15	58%	0.0010	0.020	4.00E-04	0.023	0.0046
PEST	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	28	15	54%	0.0010	0.020	7.00E-04	0.051	0.0058
PEST	Dichlorodiphenyltrichloroethane	mg/kg dry-wt	26	6	23%	0.0010	0.020	3.00E-04	0.035	0.0037
PEST	Dichlorvos	mg/kg dry-wt	1	0	0%	0.0080	0.0080	--	--	0.0040
PEST	Dicofol	mg/kg dry-wt	1	0	0%	0.040	0.040	--	--	0.020
PEST	Dieldrin	mg/kg dry-wt	23	3	13%	0.0010	0.020	2.00E-04	0.0050	0.0022
PEST	Dimethoate	mg/kg dry-wt	1	0	0%	0.0080	0.0080	--	--	0.0040
PEST	Dioxathion	mg/kg dry-wt	1	0	0%	0.017	0.017	--	--	0.0085
PEST	Diphenamid	mg/kg dry-wt	1	0	0%	0.030	0.030	--	--	0.015
PEST	Disulfoton	mg/kg dry-wt	1	0	0%	0.0060	0.0060	--	--	0.0030
PEST	Diuron	mg/kg dry-wt	1	0	0%	0.060	0.060	--	--	0.030
PEST	Endosulfan I	mg/kg dry-wt	14	0	0%	1.00E-04	0.020	--	--	0.0027
PEST	Endosulfan II	mg/kg dry-wt	12	0	0%	0.0020	0.020	--	--	0.0031
PEST	Endosulfan sulfate	mg/kg dry-wt	12	0	0%	0.0020	0.020	--	--	0.0031
PEST	Endrin	mg/kg dry-wt	14	0	0%	1.00E-04	0.020	--	--	0.0027
PEST	Endrin aldehyde	mg/kg dry-wt	7	0	0%	0.0050	0.020	--	--	0.0046
PEST	Endrin ketone	mg/kg dry-wt	15	0	0%	0.0020	0.020	--	--	0.0030
PEST	Eptam	mg/kg dry-wt	1	0	0%	0.015	0.015	--	--	0.0075
PEST	Ethalfuralin (Sonalan)	mg/kg dry-wt	1	0	0%	0.015	0.015	--	--	0.0075
PEST	Ethyl methylene phosphorodithioate	mg/kg dry-wt	1	0	0%	0.0070	0.0070	--	--	0.0035
PEST	Ethyl O-(p-nitrophenyl)	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Fenarimol	mg/kg dry-wt	1	0	0%	0.030	0.030	--	--	0.015
PEST	Fensulfothion	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Fenthion	mg/kg dry-wt	1	0	0%	0.0070	0.0070	--	--	0.0035
PEST	Fluridone	mg/kg dry-wt	1	0	0%	0.080	0.080	--	--	0.040

Table C-4
Summary Statistics for Sediment Collected from Segment 3 of the Columbia River Including All Categories of Data (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Fonofos	mg/kg dry-wt	1	0	0%	0.0060	0.0060	--	--	0.0030
PEST	Gamma-BHC (Lindane)	mg/kg dry-wt	22	1	5%	1.00E-04	0.020	8.00E-04	8.00E-04	0.0019
PEST	gamma-Chlordene	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Heptachlor	mg/kg dry-wt	22	0	0%	1.00E-04	0.020	--	--	0.0020
PEST	Heptachlor epoxide	mg/kg dry-wt	22	0	0%	1.00E-04	0.020	--	--	0.0021
PEST	Hexazinone	mg/kg dry-wt	1	0	0%	0.015	0.015	--	--	0.0075
PEST	Metalaxyl	mg/kg dry-wt	1	0	0%	0.068	0.068	--	--	0.034
PEST	Methoxychlor	mg/kg dry-wt	17	0	0%	1.00E-04	0.021	--	--	0.0049
PEST	Methyl Chlorpyrifos	mg/kg dry-wt	1	0	0%	0.0070	0.0070	--	--	0.0035
PEST	Methyl parathion	mg/kg dry-wt	1	0	0%	0.0070	0.0070	--	--	0.0035
PEST	Metribuzin	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Mevinphos	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Mirex	mg/kg dry-wt	11	0	0%	1.00E-04	0.010	--	--	0.0012
PEST	Molinate	mg/kg dry-wt	1	0	0%	0.026	0.026	--	--	0.013
PEST	Napropamide	mg/kg dry-wt	1	0	0%	0.030	0.030	--	--	0.015
PEST	Norflurazon	mg/kg dry-wt	1	0	0%	0.015	0.015	--	--	0.0075
PEST	Oxychlordane	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Oxyfluorfen	mg/kg dry-wt	1	0	0%	0.026	0.026	--	--	0.013
PEST	Parathion	mg/kg dry-wt	1	0	0%	0.0080	0.0080	--	--	0.0040
PEST	Pebulate	mg/kg dry-wt	1	0	0%	0.024	0.024	--	--	0.012
PEST	Pendimethalin	mg/kg dry-wt	1	0	0%	0.015	0.015	--	--	0.0075
PEST	Pentachloroanisole	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Perthane	mg/kg dry-wt	2	0	0%	0.0010	0.0010	--	--	5.00E-04
PEST	Phorate	mg/kg dry-wt	1	0	0%	0.0070	0.0070	--	--	0.0035
PEST	Phosmet	mg/kg dry-wt	1	0	0%	0.011	0.011	--	--	0.0055
PEST	Profluralin	mg/kg dry-wt	1	0	0%	0.024	0.024	--	--	0.012
PEST	Pronamide	mg/kg dry-wt	1	0	0%	0.030	0.030	--	--	0.015
PEST	Propachlor (Ramrod)	mg/kg dry-wt	1	0	0%	0.020	0.020	--	--	0.010
PEST	Ronnel	mg/kg dry-wt	1	0	0%	0.0070	0.0070	--	--	0.0035
PEST	Terbacil	mg/kg dry-wt	1	0	0%	0.050	0.050	--	--	0.025
PEST	Tetraethyl dithiopyrophosphate	mg/kg dry-wt	1	0	0%	0.0060	0.0060	--	--	0.0030
PEST	Toxaphene	mg/kg dry-wt	14	0	0%	0.0010	0.60	--	--	0.068
PEST	trans-Chlordane	mg/kg dry-wt	1	0	0%	0.0060	0.0060	--	--	0.0030
PEST	trans-Nonachlor	mg/kg dry-wt	9	4	44%	0.010	0.010	0.0020	0.0030	0.0019
PEST	Triadimefon	mg/kg dry-wt	1	0	0%	0.026	0.026	--	--	0.013
PEST	Triallate	mg/kg dry-wt	1	0	0%	0.026	0.026	--	--	0.013
PEST	Tributylphosphorotrithioate	mg/kg dry-wt	1	0	0%	0.014	0.014	--	--	0.0070
PEST	Trifluralin (Treflan)	mg/kg dry-wt	1	0	0%	0.015	0.015	--	--	0.0075
PEST	Vernolate	mg/kg dry-wt	1	0	0%	0.015	0.015	--	--	0.0075
RAD_D	Beryllium-7	pCi/g dry-wt	5	5	100%			1.45E-19	2.26E-05	4.52E-06
RAD_D	Cesium-134	pCi/g dry-wt	3	3	100%			2.11E-04	3.54E-04	2.72E-04
RAD_D	Cesium-137	pCi/g dry-wt	20	20	100%			0.040	0.81	0.33
RAD_D	Cobalt-57	pCi/g dry-wt	2	2	100%			4.42E-09	0.0097	0.0049
RAD_D	Cobalt-60	pCi/g dry-wt	20	20	100%			0.0030	0.047	0.019
RAD_D	Europium-152	pCi/g dry-wt	15	15	100%			0.027	0.97	0.16
RAD_D	Europium-154	pCi/g dry-wt	4	4	100%			0.036	0.088	0.053
RAD_D	Plutonium-238	pCi/g dry-wt	8	8	100%			0.0020	0.012	0.0060

Table C-4
Summary Statistics for Sediment Collected from Segment 3 of the Columbia River Including All Categories of Data (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD_D	Plutonium-239/240	pCi/g dry-wt	46	46	100%			0.0020	0.024	0.0092
RAD_D	Potassium-40	pCi/g dry-wt	48	48	100%			13	19	15
RAD_D	Radium-226	pCi/g dry-wt	1	1	100%			0.99	0.99	0.99
RAD_D	Strontium-90	pCi/g dry-wt	45	45	100%			0.0019	0.037	0.014
RAD_D	Thorium-230	pCi/g dry-wt	4	4	100%			0.63	0.88	0.77
RAD_D	Thorium-232	pCi/g dry-wt	4	4	100%			0.70	0.91	0.82
RAD_D	Uranium-234	pCi/g dry-wt	45	45	100%			0.39	1.8	1.2
RAD_D	Uranium-235	pCi/g dry-wt	24	24	100%			0.020	0.070	0.041
RAD_D	Uranium-238	pCi/g dry-wt	45	45	100%			0.35	1.6	1.1
SVOC	1,2,4-Trichlorobenzene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	1,2-Dichlorobenzene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	1,3-Dichlorobenzene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	1,4-Dichlorobenzene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	1-methylnaphthalene	mg/kg dry-wt	8	0	0%	0.0050	0.026	--	--	0.0067
SVOC	1-Methylphenanthrene	mg/kg dry-wt	8	0	0%	0.0030	0.0070	--	--	0.0024
SVOC	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg dry-wt	2	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	2,3,4-Trichlorophenol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	2,3,6-Trichlorophenol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	2,4,5-Trichlorophenol	mg/kg dry-wt	5	0	0%	0.041	0.21	--	--	0.066
SVOC	2,4,6-Trichlorophenol	mg/kg dry-wt	8	0	0%	0.042	0.60	--	--	0.15
SVOC	2,4-Dichlorophenol	mg/kg dry-wt	7	0	0%	0.13	0.21	--	--	0.087
SVOC	2,4-Dimethylphenol	mg/kg dry-wt	7	0	0%	0.13	0.21	--	--	0.087
SVOC	2,4-Dinitrophenol	mg/kg dry-wt	7	1	14%	0.60	1.20	0.093	0.093	0.38
SVOC	2,4-Dinitrotoluene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	2,6-Dimethylnaphthalene	mg/kg dry-wt	8	0	0%	0.0050	0.013	--	--	0.0034
SVOC	2,6-Dinitrotoluene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	2-Chloronaphthalene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	2-Chlorophenol	mg/kg dry-wt	7	0	0%	0.13	0.21	--	--	0.087
SVOC	2-Methylnaphthalene	mg/kg dry-wt	16	2	13%	0.0040	12	0.010	0.011	0.42
SVOC	2-Methylphenol (cresol, o-)	mg/kg dry-wt	6	1	17%	0.010	0.21	0.81	0.81	0.19
SVOC	2-Nitrophenol	mg/kg dry-wt	7	0	0%	0.13	0.21	--	--	0.087
SVOC	3,4,5-trichlorocatechol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	3,4,5-trichloroguaiacol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	4,5,6-Trichloroguaiacol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	4,5-Dichlorocatechol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	4,5-Dichloroguaiacol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	4,6-Dinitro-2-methylphenol	mg/kg dry-wt	3	0	0%	0.60	0.60	--	--	0.30
SVOC	4-Allylguaiacol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	4-Bromophenylphenyl ether	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	4-Chloro-3-methylphenol	mg/kg dry-wt	7	0	0%	0.13	0.60	--	--	0.17
SVOC	4-Chlorocatechol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	4-Chloroguaiacol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	4-Chlorophenylphenyl ether	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	4-Methylphenol (cresol, p-)	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	4-Nitrophenol	mg/kg dry-wt	7	0	0%	0.13	0.60	--	--	0.17
SVOC	4-Propenylguaiacol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	5,6-Dichlorovanillin	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078

Table C-4
Summary Statistics for Sediment Collected from Segment 3 of the Columbia River Including All Categories of Data (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	6-chlorovanillin	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	Acenaphthene	mg/kg dry-wt	17	1	6%	0.0040	12	0.021	0.021	0.42
SVOC	Acenaphthylene	mg/kg dry-wt	10	0	0%	0.010	12	--	--	0.63
SVOC	Alpha-terpineol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	Anthracene	mg/kg dry-wt	20	3	15%	0.0030	12	0.0060	0.0880	0.34
SVOC	Benzo(a)anthracene	mg/kg dry-wt	22	2	9%	0.0020	12	0.013	0.12	0.32
SVOC	Benzo(a)pyrene	mg/kg dry-wt	22	3	14%	0.0020	1.1	0.013	0.21	0.078
SVOC	Benzo(b)fluoranthene	mg/kg dry-wt	11	4	36%	0.012	12	0.018	0.22	0.66
SVOC	Benzo(e)pyrene	mg/kg dry-wt	8	0	0%	0.0040	0.0150	--	--	0.0042
SVOC	Benzo(ghi)perylene	mg/kg dry-wt	8	2	25%	0.012	12	0.014	0.016	0.83
SVOC	Benzo(k)fluoranthene	mg/kg dry-wt	10	1	10%	0.012	12	0.023	0.023	0.67
SVOC	Benzoic acid	mg/kg dry-wt	4	2	50%	1.1	1.2	0.20	1.1	0.61
SVOC	Biphenyl	mg/kg dry-wt	8	0	0%	0.0050	0.0070	--	--	0.0030
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Bis(2-Chloroethoxy)methane	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Bis(2-chloroethyl) ether	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Bis(2-ethylhexyl) phthalate	mg/kg dry-wt	9	5	56%	0.20	0.23	0.053	0.78	0.27
SVOC	Butylbenzylphthalate	mg/kg dry-wt	5	0	0%	0.0050	0.20	--	--	0.061
SVOC	Chrysene	mg/kg dry-wt	22	3	14%	0.0030	12	0.013	0.130	0.32
SVOC	Dibenz[a,h]anthracene	mg/kg dry-wt	16	4	25%	0.0040	12	0.0080	0.018	0.42
SVOC	Dibenzofuran	mg/kg dry-wt	5	1	20%	0.012	12	0.015	0.015	1.2
SVOC	Diethylphthalate	mg/kg dry-wt	5	1	20%	0.010	0.20	0.010	0.010	0.063
SVOC	Dimethyl phthalate	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Di-n-butylphthalate	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Di-n-octylphthalate	mg/kg dry-wt	5	0	0%	0.0050	0.40	--	--	0.12
SVOC	Fluoranthene	mg/kg dry-wt	22	9	41%	0.0040	12	0.0040	0.200	0.31
SVOC	Fluorene	mg/kg dry-wt	16	3	19%	0.0030	12	0.0070	0.022	0.40
SVOC	Guaiacol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	Hexachlorobenzene	mg/kg dry-wt	13	5	38%	0.001	0.20	0.0010	0.0030	0.024
SVOC	Hexachlorobutadiene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Hexachlorocyclopentadiene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Hexachloroethane	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
	Hexadecanoic acid (9CI)	mg/kg dry-wt	1	1	100%	--	--	130	130	130.00
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg dry-wt	8	1	13%	0.012	12	0.016	0.016	0.83
SVOC	Isophorone	mg/kg dry-wt	9	5	56%	0.010	0.20	0.015	0.091	0.054
SVOC	Naphthalene	mg/kg dry-wt	19	3	16%	0.006	12	0.0020	0.015	0.36
SVOC	Nitrobenzene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	N-Nitrosodimethylamine	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	N-Nitrosodi-n-dipropylamine	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	N-Nitrosodiphenylamine	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Pentachlorophenol	mg/kg dry-wt	13	3	23%	0.13	1.40	0.013	1.200	0.33
SVOC	Perylene	mg/kg dry-wt	8	3	38%	0.0040	0.0170	0.0070	0.011	0.0068
SVOC	Phenanthrene	mg/kg dry-wt	19	4	21%	0.0030	12	0.0040	0.057	0.37
SVOC	Phenol	mg/kg dry-wt	9	3	33%	0.010	0.28	0.035	0.10	0.082
SVOC	Pyrene	mg/kg dry-wt	22	7	32%	0.0030	12	0.0030	0.220	0.32
SVOC	Tetrachloro-1-1'-biphenyl	mg/kg dry-wt	2	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Tetrachlorocatechol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078

Table C-4
Summary Statistics for Sediment Collected from Segment 3 of the Columbia River Including All Categories of Data (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Tetrachloroguaiacol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	Trichlorosyringol	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078
SVOC	Trichlorotrimethoxybenzene	mg/kg dry-wt	4	0	0%	0.13	0.21	--	--	0.078

CONV - Conventional parameter
PEST - Pesticide
PCB - Polychlorinated biphenyl
RAD_D - Decayed radionuclide
SVOC - Semivolatile Organic Compound

Table C-5
Summary Statistics for Sediment Samples Collected From the Yakima River Tributary of Segment 3 of the Columbia River (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Solids	%	6	6	100%	--	--	57	71	65
CONV	Total Organic Carbon	%	7	7	100%	--	--	0.62	2.0	0.97
CONV	Total Organic Carbon	mg/Kg	3	3	100%	--	--	1.0	7,070	4,047
CONV	Total solids	mg/Kg	1	1	100%	--	--	52	52	52
METAL	Aluminum	mg/Kg	1	1	100%	--	--	68,000	68,000	68,000
METAL	Antimony	mg/Kg	3	3	100%	--	--	0.34	0.60	0.43
METAL	Arsenic	mg/kg	9	4	44%	4.5	4.5	2.4	6.7	3.1
METAL	Barium	mg/kg	1	1	100%	--	--	530	530	530
METAL	Beryllium	mg/Kg	3	3	100%	--	--	0.78	2.0	1.2
METAL	Bismuth	mg/kg	1	0	0%	10	10	--	--	5.0
METAL	Boron	mg/kg	1	1	100%	--	--	2.3	2.3	2.3
METAL	Cadmium	mg/kg	9	4	44%	0.50	2.0	0.093	6.0	0.98
METAL	Calcium	mg/Kg	1	1	100%	--	--	26,000	26,000	26,000
METAL	Cerium	mg/kg	1	1	100%	--	--	53	53	53
METAL	Chromium	mg/kg	9	9	100%	--	--	15	61	27
METAL	Cobalt	mg/kg	1	1	100%	--	--	20	20	20
METAL	Copper	mg/kg	9	9	100%	--	--	12	29	17
METAL	Europium	mg/kg	1	0	0%	2.0	2.0	--	--	1.0
METAL	Gallium	mg/kg	1	1	100%	--	--	19	19	19
METAL	Gold	mg/kg	1	0	0%	8.0	8.0	--	--	4.0
METAL	Iron	mg/Kg	1	1	100%	--	--	51,000	51,000	51,000
METAL	Lanthanum	mg/kg	1	1	100%	--	--	28	28	28
METAL	Lead	mg/kg	9	9	100%	--	--	4.9	27	10
METAL	Lithium	mg/kg	1	1	100%	--	--	26	26	26
METAL	Magnesium	mg/Kg	1	1	100%	--	--	14,000	14,000	14,000
METAL	Manganese	mg/kg	1	1	100%	--	--	1,500	1,500	1,500
METAL	Mercury	mg/kg	9	5	56%	0.040	0.040	0.025	0.17	0.049
METAL	Molybdenum	mg/kg	7	0	0%	0.60	2.0	--	--	0.40
METAL	Neodymium	mg/kg	1	1	100%	--	--	30	30	30
METAL	Nickel	mg/kg	9	9	100%	--	--	20	30	24
METAL	Niobium	mg/kg	1	0	0%	4.0	4.0	--	--	2.0
METAL	Phosphorus	mg/Kg	1	1	100%	--	--	1,000	1,000	1,000
METAL	Scandium	mg/kg	1	1	100%	--	--	19	19	19
METAL	Selenium	mg/kg	8	0	0%	0.46	5.0	--	--	1.9
METAL	Silver	mg/Kg	3	2	67%	2.0	2.0	0.31	0.35	0.55
METAL	Sodium	mg/Kg	1	1	100%	--	--	16,000	16,000	16,000
METAL	Strontium	mg/kg	1	1	100%	--	--	260	260	260
METAL	Thallium	mg/Kg	2	2	100%	--	--	0.21	0.22	0.21
METAL	Thorium	mg/kg	1	1	100%	--	--	8.0	8.0	8.0
METAL	Tin	mg/kg	1	0	0%	10	10	--	--	5.0
METAL	Titanium	mg/Kg	1	1	100%	--	--	6,200	6,200	6,200
METAL	Uranium	mg/Kg	3	3	100%	--	--	1.1	1.3	1.2
METAL	Vanadium	mg/kg	1	1	100%	--	--	140	140	140
METAL	Ytterbium	mg/kg	1	1	100%	--	--	3.0	3.0	3.0
METAL	Yttrium	mg/kg	1	1	100%	--	--	23	23	23
METAL	Zinc	mg/kg	9	9	100%	--	--	53	558	127
PCB	Aroclor-1242	mg/Kg	2	0	0%	0.12	0.13	--	--	0.063

Table C-5
Summary Statistics for Sediment Samples Collected From the Yakima River Tributary of Segment 3 of the Columbia River (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1248	mg/Kg	2	0	0%	0.12	0.13	--	--	0.063
PCB	Aroclor-1254	mg/Kg	2	0	0%	0.12	0.13	--	--	0.063
PCB	Aroclor-1260	mg/Kg	2	0	0%	0.12	0.13	--	--	0.063
PEST	2,4'-DDD	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	2,4'-DDE	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	2,4'-DDT	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Alachlor	mg/Kg	2	0	0%	0.14	0.16	--	--	0.075
PEST	Aldrin	mg/Kg	3	0	0%	0.0010	0.040	--	--	0.013
PEST	Alpha-BHC	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	alpha-Chlordane	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	alpha-Chlordene	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Ametryn	mg/Kg	2	0	0%	0.060	0.066	--	--	0.032
PEST	Atraton	mg/Kg	2	0	0%	0.18	0.20	--	--	0.095
PEST	Atrazine	mg/Kg	2	0	0%	0.060	0.066	--	--	0.032
PEST	Azinphos Ethyl	mg/Kg	2	0	0%	0.096	0.11	--	--	0.052
PEST	Azinphos Methyl	mg/Kg	2	0	0%	0.11	0.12	--	--	0.058
PEST	Benefin (Benfluralin)	mg/Kg	2	0	0%	0.090	0.099	--	--	0.047
PEST	beta-1,2,3,4,5,6-Hexachlorocyclohexane	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Bromacil (ACN)	mg/Kg	2	0	0%	0.36	0.40	--	--	0.19
PEST	Butachlor	mg/Kg	2	0	0%	0.21	0.23	--	--	0.11
PEST	Butylate	mg/Kg	2	0	0%	0.090	0.099	--	--	0.047
PEST	Carbethoxy malathion	mg/Kg	2	0	0%	0.048	0.053	--	--	0.025
PEST	Carboxin	mg/Kg	2	0	0%	0.66	0.73	--	--	0.35
PEST	Chlorothalonil	mg/Kg	2	0	0%	0.14	0.16	--	--	0.075
PEST	Chlorpropham	mg/Kg	2	0	0%	0.30	0.33	--	--	0.16
PEST	Chlorpyrifos	mg/Kg	2	0	0%	0.042	0.046	--	--	0.022
PEST	Cyanazine	mg/Kg	2	0	0%	0.091	0.099	--	--	0.048
PEST	Cycloate	mg/Kg	2	0	0%	0.090	0.099	--	--	0.047
PEST	DDMU	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Delta-BHC	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Diazinon	mg/Kg	2	0	0%	0.048	0.053	--	--	0.025
PEST	Dichlobenil	mg/Kg	2	0	0%	0.072	0.079	--	--	0.038
PEST	Dichlorodiphenyldichloroethane	mg/Kg	2	2	100%	--	--	0.0030	0.0030	0.0030
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	2	2	100%	--	--	0.015	0.016	0.016
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Dicofol	mg/Kg	2	0	0%	0.14	0.16	--	--	0.075
PEST	Dieldrin	mg/Kg	3	0	0%	0.0010	0.040	--	--	0.013
PEST	Dimethoate	mg/Kg	2	0	0%	0.048	0.053	--	--	0.025
PEST	Diphenamid	mg/Kg	2	0	0%	0.18	0.20	--	--	0.095
PEST	Disulfoton	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Diuron	mg/Kg	2	0	0%	0.48	0.53	--	--	0.25
PEST	Endosulfan I	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Endosulfan II	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Endosulfan sulfate	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Endrin	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Endrin aldehyde	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Endrin ketone	mg/Kg	2	0	0%	0.018	0.020	--	--	0.0095

Table C-5
Summary Statistics for Sediment Samples Collected From the Yakima River Tributary of Segment 3 of the Columbia River (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Eptam	mg/Kg	2	0	0%	0.090	0.099	--	--	0.047
PEST	Ethalfuralin (Sonalan)	mg/Kg	2	0	0%	0.090	0.099	--	--	0.047
PEST	Ethyl methylene phosphorodithioate	mg/Kg	2	0	0%	0.042	0.046	--	--	0.022
PEST	Fenarimol	mg/Kg	2	0	0%	0.18	0.20	--	--	0.095
PEST	Fensulfothion	mg/Kg	2	0	0%	0.060	0.066	--	--	0.032
PEST	Fluridone	mg/Kg	2	0	0%	0.48	0.53	--	--	0.25
PEST	Fonofos	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Gamma-BHC (Lindane)	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	gamma-Chlordene	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Heptachlor	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Heptachlor epoxide	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Hexazinone	mg/Kg	2	0	0%	0.090	0.099	--	--	0.047
PEST	Methoxychlor	mg/Kg	3	0	0%	0.0010	0.040	--	--	0.013
PEST	Methyl Chlorpyrifos	mg/Kg	2	0	0%	0.042	0.046	--	--	0.022
PEST	Methyl parathion	mg/Kg	2	0	0%	0.042	0.046	--	--	0.022
PEST	Metolachlor	mg/Kg	2	0	0%	0.18	0.20	--	--	0.095
PEST	Metribuzin	mg/Kg	2	0	0%	0.060	0.066	--	--	0.032
PEST	MGK264	mg/Kg	2	0	0%	0.42	0.46	--	--	0.22
PEST	Mirex	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Molinate	mg/Kg	2	0	0%	0.16	0.17	--	--	0.083
PEST	Napropamide	mg/Kg	2	0	0%	0.18	0.20	--	--	0.095
PEST	Norflurazon	mg/Kg	2	0	0%	0.090	0.099	--	--	0.047
PEST	Oxychlordane	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Oxyfluorfen	mg/Kg	2	0	0%	0.16	0.17	--	--	0.083
PEST	Parathion	mg/Kg	2	0	0%	0.048	0.053	--	--	0.025
PEST	Pebulate	mg/Kg	2	0	0%	0.14	0.16	--	--	0.075
PEST	Pendimethalin	mg/Kg	2	0	0%	0.090	0.099	--	--	0.047
PEST	Pentachloroanisole	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Phorate	mg/Kg	2	0	0%	0.042	0.046	--	--	0.022
PEST	Pramitol (Prometon)	mg/Kg	2	0	0%	0.060	0.066	--	--	0.032
PEST	Prometryn	mg/Kg	2	0	0%	0.060	0.066	--	--	0.032
PEST	Pronamide	mg/Kg	2	0	0%	0.18	0.20	--	--	0.095
PEST	Propachlor (Ramrod)	mg/Kg	2	0	0%	0.12	0.13	--	--	0.063
PEST	Propazine	mg/Kg	2	0	0%	0.060	0.066	--	--	0.032
PEST	Simazine	mg/Kg	2	0	0%	0.060	0.066	--	--	0.032
PEST	Terbacil	mg/Kg	2	0	0%	0.30	0.33	--	--	0.16
PEST	Terbutryn	mg/Kg	2	0	0%	0.060	0.066	--	--	0.032
PEST	Toxaphene	mg/Kg	2	0	0%	0.72	0.79	--	--	0.38
PEST	trans-Chlordane	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	trans-Nonachlor	mg/Kg	2	0	0%	0.036	0.040	--	--	0.019
PEST	Triadimefon	mg/Kg	2	0	0%	0.16	0.17	--	--	0.083
PEST	Triallate	mg/Kg	2	0	0%	0.16	0.17	--	--	0.083
PEST	Trifluralin (Treflan)	mg/Kg	2	0	0%	0.090	0.099	--	--	0.047
PEST	Vernolate	mg/Kg	2	0	0%	0.090	0.099	--	--	0.047
SVOC	1,2,4-Trichlorobenzene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	1,2-Dichlorobenzene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	1,2-Diphenylhydrazine	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050

Table C-5
Summary Statistics for Sediment Samples Collected From the Yakima River Tributary of Segment 3 of the Columbia River (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	1,3-Dichlorobenzene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	1,4-Dichlorobenzene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4,5-Trichlorophenol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4,6-Trichlorophenol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4-Dichlorophenol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4-Dimethylphenol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4-Dinitrophenol	mg/Kg	1	0	0%	0.025	0.025	--	--	0.013
SVOC	2,4-Dinitrotoluene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,6-Dinitrotoluene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Chloronaphthalene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Chlorophenol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Nitroaniline	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Nitrophenol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	3,3'-Dichlorobenzidine	mg/Kg	1	0	0%	0.020	0.020	--	--	0.010
SVOC	3-Nitroaniline	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	4,6-Dinitro-2-methylphenol	mg/Kg	1	0	0%	0.025	0.025	--	--	0.013
SVOC	4-Bromophenylphenyl ether	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	4-Chloroaniline	mg/Kg	1	0	0%	0.020	0.020	--	--	0.010
SVOC	4-Chlorophenylphenyl ether	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	4-Methylphenol (cresol, p-)	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	4-Nitroaniline	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	4-Nitrophenol	mg/Kg	1	0	0%	0.020	0.020	--	--	0.010
SVOC	Acenaphthene	mg/Kg	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Anthracene	mg/Kg	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Benzidine	mg/Kg	1	0	0%	0.050	0.050	--	--	0.025
SVOC	Benzo(ghi)perylene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Benzoic acid	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Benzyl alcohol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Bis(2-Chloroethoxy)methane	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Bis(2-chloroethyl) ether	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Dibenz[a,h]anthracene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Dibenzofuran	mg/Kg	1	0	0%	0.025	0.025	--	--	0.013
SVOC	Dimethyl phthalate	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Di-n-butylphthalate	mg/Kg	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Fluorene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Hexachlorobenzene	mg/Kg	3	0	0%	0.010	0.040	--	--	0.014
SVOC	Hexachlorobutadiene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Hexachlorocyclopentadiene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Hexachloroethane	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Indeno(1,2,3-cd)pyrene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Nitrobenzene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	N-Nitrosodi-n-dipropylamine	mg/Kg	1	0	0%	0.020	0.020	--	--	0.010
SVOC	Pentachlorophenol	mg/Kg	3	2	67%	0.020	0.020	0.016	0.023	0.016
RAD	Antimony-125	pCi/g	1	0	0%	0.013	0.013	--	--	0.0067
RAD	Beryllium-7	pCi/g	2	0	0%	0.016	0.23	--	--	0.063
RAD	Cesium-134	pCi/g	2	0	0%	0.037	0.046	--	--	0.021

Table C-5
Summary Statistics for Sediment Samples Collected From the Yakima River Tributary of Segment 3 of the Columbia River (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Cesium-137	pCi/g	2	0	0%	0.0099	0.031	--	--	0.010
RAD	Cobalt-60	pCi/g	2	0	0%	0.0017	0.011	--	--	0.0031
RAD	Europium-152	pCi/g	1	0	0%	0.020	0.020	--	--	0.010
RAD	Europium-154	pCi/g	1	0	0%	0.0071	0.0071	--	--	0.0036
RAD	Europium-155	pCi/g	2	0	0%	0.017	0.044	--	--	0.015
RAD	Potassium-40	pCi/g	2	2	100%	--	--	11	12	11
RAD	Technetium-99	pCi/g	2	0	0%	0.18	0.26	--	--	0.11
RAD_D	Potassium-40, Decayed	pCi/g	2	2	100%	--	--	11	11	11

CONV - Conventional parameter
PEST - Pesticide
PCB - Polychlorinated biphenyl
RAD_D - Decayed radionuclide
SVOC - Semivolatile Organic Compound

Table C-6
Summary Statistics for Sediment Samples Collected From the Yakima River Tributary of Segment 3 of the Columbia River (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Total Organic Carbon	mg/kg dry-wt	1	1	100%	--	--	1.0	1.0	1.0
CONV	Total solids	mg/kg dry-wt	1	1	100%	--	--	50	50	50
METAL	Arsenic	mg/kg dry-wt	1	1	100%	--	--	2.8	2.8	2.8
METAL	Cadmium	mg/kg dry-wt	1	1	100%	--	--	1.4	1.4	1.4
METAL	Chromium	mg/kg dry-wt	1	0	0%	0.10	0.10	--	--	0.050
METAL	Copper	mg/kg dry-wt	1	1	100%	--	--	36	36	36
METAL	Lead	mg/kg dry-wt	1	1	100%	--	--	4.2	4.2	4.2
METAL	Mercury	mg/kg dry-wt	2	2	100%	--	--	0.022	0.038	0.030
METAL	Zinc	mg/kg dry-wt	1	1	100%	--	--	83	83	83
PCB	Aroclor-1260	mg/kg dry-wt	2	0	0%	0.0015	0.010	--	--	0.0029
PCB	Total polychlorinated biphenyl	mg/kg dry-wt	2	0	0%	1.00E-04	0.0010	--	--	2.75E-04
PEST	2,4'-DDT	mg/kg dry-wt	1	1	100%	--	--	7.10E-04	7.10E-04	7.10E-04
PEST	Aldrin	mg/kg dry-wt	3	0	0%	1.00E-04	1.00E-04	--	--	5.00E-05
PEST	Alpha-BHC	mg/kg dry-wt	1	0	0%	0.0010	0.0010	--	--	5.00E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg dry-wt	4	4	100%	--	--	0.0010	0.023	0.0077
PEST	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	4	4	100%	--	--	0.0027	0.051	0.022
PEST	Dichlorodiphenyltrichloroethane	mg/kg dry-wt	4	4	100%	--	--	3.00E-04	0.035	0.012
PEST	Dieldrin	mg/kg dry-wt	3	3	100%	--	--	2.00E-04	0.0050	0.0023
PEST	Endosulfan I	mg/kg dry-wt	2	0	0%	1.00E-04	1.00E-04	--	--	5.00E-05
PEST	Endrin	mg/kg dry-wt	2	0	0%	1.00E-04	1.00E-04	--	--	5.00E-05
PEST	Gamma-BHC (Lindane)	mg/kg dry-wt	1	0	0%	1.00E-04	1.00E-04	--	--	5.00E-05
PEST	Heptachlor	mg/kg dry-wt	2	0	0%	1.00E-04	1.00E-04	--	--	5.00E-05
PEST	Heptachlor epoxide	mg/kg dry-wt	2	0	0%	1.00E-04	1.00E-04	--	--	5.00E-05
PEST	Methoxychlor	mg/kg dry-wt	2	0	0%	1.00E-04	1.00E-04	--	--	5.00E-05
PEST	Mirex	mg/kg dry-wt	2	0	0%	1.00E-04	1.00E-04	--	--	5.00E-05
PEST	Perthane	mg/kg dry-wt	2	0	0%	0.0010	0.0010	--	--	5.00E-04
PEST	Toxaphene	mg/kg dry-wt	2	0	0%	0.0010	0.010	--	--	0.0028
SVOC	1,2,4-Trichlorobenzene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	1,2-Dichlorobenzene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	1,3-Dichlorobenzene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	1,4-Dichlorobenzene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	2,4,6-Trichlorophenol	mg/kg dry-wt	3	0	0%	0.60	0.60	--	--	0.30
SVOC	2,4-Dichlorophenol	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	2,4-Dimethylphenol	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	2,4-Dinitrophenol	mg/kg dry-wt	3	0	0%	0.60	0.60	--	--	0.30
SVOC	2,4-Dinitrotoluene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	2,6-Dinitrotoluene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	2-Chloronaphthalene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	2-Chlorophenol	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	2-Methylnaphthalene	mg/kg dry-wt	1	1	100%	--	--	0.010	0.010	0.010
SVOC	2-Methylphenol (cresol, o-)	mg/kg dry-wt	1	1	100%	--	--	0.81	0.81	0.81
SVOC	2-Nitrophenol	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	4,6-Dinitro-2-methylphenol	mg/kg dry-wt	3	0	0%	0.60	0.60	--	--	0.30
SVOC	4-Bromophenylphenyl ether	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	4-Chloro-3-methylphenol	mg/kg dry-wt	3	0	0%	0.60	0.60	--	--	0.30
SVOC	4-Chlorophenylphenyl ether	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10

Table C-6
Summary Statistics for Sediment Samples Collected From the Yakima River Tributary of Segment 3 of the Columbia River (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	4-Nitrophenol	mg/kg dry-wt	3	0	0%	0.60	0.60	--	--	0.30
SVOC	Acenaphthene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Acenaphthylene	mg/kg dry-wt	4	0	0%	0.010	0.20	--	--	0.076
SVOC	Anthracene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Benzo(a)anthracene	mg/kg dry-wt	4	0	0%	0.0050	0.40	--	--	0.15
SVOC	Benzo(a)pyrene	mg/kg dry-wt	4	0	0%	0.010	0.40	--	--	0.15
SVOC	Benzo(b)fluoranthene	mg/kg dry-wt	3	0	0%	0.40	0.40	--	--	0.20
SVOC	Benzo(ghi)perylene	mg/kg dry-wt	3	0	0%	0.40	0.40	--	--	0.20
SVOC	Benzo(k)fluoranthene	mg/kg dry-wt	4	0	0%	0.050	0.40	--	--	0.16
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Bis(2-Chloroethoxy)methane	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Bis(2-chloroethyl) ether	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Bis(2-ethylhexyl) phthalate	mg/kg dry-wt	4	2	50%	0.20	0.20	0.053	0.61	0.22
SVOC	Butylbenzylphthalate	mg/kg dry-wt	4	0	0%	0.0050	0.20	--	--	0.076
SVOC	Chrysene	mg/kg dry-wt	4	1	25%	0.40	0.40	0.013	0.013	0.15
SVOC	Dibenz[a,h]anthracene	mg/kg dry-wt	3	0	0%	0.40	0.40	--	--	0.20
SVOC	Diethylphthalate	mg/kg dry-wt	4	1	25%	0.20	0.20	0.010	0.010	0.078
SVOC	Dimethyl phthalate	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Di-n-butylphthalate	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Di-n-octylphthalate	mg/kg dry-wt	4	0	0%	0.0050	0.40	--	--	0.15
SVOC	Fluoranthene	mg/kg dry-wt	4	2	50%	0.20	0.20	0.0040	0.015	0.055
SVOC	Fluorene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Hexachlorobenzene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Hexachlorobutadiene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Hexachlorocyclopentadiene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Hexachloroethane	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg dry-wt	3	0	0%	0.40	0.40	--	--	0.20
SVOC	Isophorone	mg/kg dry-wt	4	1	25%	0.010	0.20	0.015	0.015	0.055
SVOC	Naphthalene	mg/kg dry-wt	4	3	75%	0.20	0.20	0.0020	0.015	0.031
SVOC	Nitrobenzene	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	N-Nitrosodimethylamine	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	N-Nitrosodi-n-dipropylamine	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	N-Nitrosodiphenylamine	mg/kg dry-wt	3	0	0%	0.20	0.20	--	--	0.10
SVOC	Pentachlorophenol	mg/kg dry-wt	3	0	0%	0.60	0.60	--	--	0.30
SVOC	Phenanthrene	mg/kg dry-wt	4	2	50%	0.20	0.20	0.0040	0.025	0.057
SVOC	Phenol	mg/kg dry-wt	4	3	75%	0.20	0.20	0.035	0.10	0.075
SVOC	Pyrene	mg/kg dry-wt	4	2	50%	0.20	0.20	0.0030	0.016	0.055

CONV - Conventional parameter
PEST - Pesticide
PCB - Polychlorinated biphenyl
SVOC - Semivolatile Organic Compound

Table C-7
Summary Statistics for Sediment Samples Collected From the Walla Walla River Tributary of Segment 3 of the Columbia River (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Solids	%	1	1	100%	--	--	68	68	68
CONV	Total Organic Carbon	%	4	4	100%	--	--	0.80	1.1	0.92
CONV	Total Organic Carbon	mg/Kg	3	3	100%	--	--	2.0	7,880	3,297
CONV	Total solids	mg/Kg	1	1	100%	--	--	46	46	46
METAL	Antimony	mg/Kg	2	2	100%	--	--	0.31	0.38	0.35
METAL	Arsenic	mg/kg	3	3	100%	--	--	2.4	4.6	3.3
METAL	Beryllium	mg/Kg	2	2	100%	--	--	1.1	1.1	1.1
METAL	Cadmium	mg/kg	3	2	67%	0.50	0.50	0.11	0.12	0.16
METAL	Chromium	mg/kg	3	3	100%	--	--	11	30	23
METAL	Copper	mg/kg	3	3	100%	--	--	11	15	13
METAL	Lead	mg/kg	3	3	100%	--	--	5.8	9.0	7.7
METAL	Mercury	mg/kg	3	2	67%	0.040	0.040	0.0078	0.0099	0.013
METAL	Molybdenum	mg/kg	1	0	0%	0.60	0.60	--	--	0.30
METAL	Nickel	mg/kg	3	3	100%	--	--	8.9	12	11
METAL	Selenium	mg/kg	3	0	0%	0.46	5.0	--	--	0.99
METAL	Silver	mg/Kg	2	2	100%	--	--	0.41	0.46	0.44
METAL	Thallium	mg/Kg	2	2	100%	--	--	0.26	0.27	0.27
METAL	Uranium	mg/Kg	2	2	100%	--	--	1.5	1.5	1.5
METAL	Zinc	mg/kg	3	3	100%	--	--	46	66	59
PCB	Aroclor-1242	mg/Kg	1	0	0%	0.13	0.13	--	--	0.065
PCB	Aroclor-1248	mg/Kg	1	0	0%	0.13	0.13	--	--	0.065
PCB	Aroclor-1254	mg/Kg	1	0	0%	0.13	0.13	--	--	0.065
PCB	Aroclor-1260	mg/Kg	1	0	0%	0.13	0.13	--	--	0.065
PEST	2,4'-DDD	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	2,4'-DDE	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	2,4'-DDT	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Alachlor	mg/Kg	1	0	0%	0.15	0.15	--	--	0.075
PEST	Aldrin	mg/Kg	2	0	0%	0.0010	0.038	--	--	0.0098
PEST	Alpha-BHC	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	alpha-Chlordane	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	alpha-Chlordene	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Ametryn	mg/Kg	1	0	0%	0.064	0.064	--	--	0.032
PEST	Atraton	mg/Kg	1	0	0%	0.19	0.19	--	--	0.095
PEST	Atrazine	mg/Kg	1	0	0%	0.064	0.064	--	--	0.032
PEST	Azinphos Ethyl	mg/Kg	1	0	0%	0.10	0.10	--	--	0.050
PEST	Azinphos Methyl	mg/Kg	1	0	0%	0.11	0.11	--	--	0.055
PEST	Benefin (Benfluralin)	mg/Kg	1	0	0%	0.096	0.096	--	--	0.048
PEST	beta-1,2,3,4,5,6-Hexachlorocyclohexane	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Bromacil (ACN)	mg/Kg	1	0	0%	0.38	0.38	--	--	0.19
PEST	Butachlor	mg/Kg	1	0	0%	0.22	0.22	--	--	0.11
PEST	Butylate	mg/Kg	1	0	0%	0.096	0.096	--	--	0.048
PEST	Carbethoxy malathion	mg/Kg	1	0	0%	0.051	0.051	--	--	0.026
PEST	Carboxin	mg/Kg	1	0	0%	0.70	0.70	--	--	0.35
PEST	Chlorothalonil	mg/Kg	1	0	0%	0.15	0.15	--	--	0.075
PEST	Chlorpropham	mg/Kg	1	0	0%	0.32	0.32	--	--	0.16
PEST	Chlorpyrifos	mg/Kg	1	0	0%	0.045	0.045	--	--	0.023
PEST	Cyanazine	mg/Kg	1	0	0%	0.096	0.096	--	--	0.048

Table C-7
Summary Statistics for Sediment Samples Collected From the Walla Walla River Tributary of Segment 3 of the Columbia River (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Cycloate	mg/Kg	1	0	0%	0.096	0.096	--	--	0.048
PEST	DDMU	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Delta-BHC	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Diazinon	mg/Kg	1	0	0%	0.051	0.051	--	--	0.026
PEST	Dichlobenil	mg/Kg	1	0	0%	0.076	0.076	--	--	0.038
PEST	Dichlorodiphenyldichloroethane	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	1	1	100%	--	--	0.0080	0.0080	0.0080
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Dicofol	mg/Kg	1	0	0%	0.15	0.15	--	--	0.075
PEST	Dieldrin	mg/Kg	2	0	0%	0.0010	0.038	--	--	0.0098
PEST	Dimethoate	mg/Kg	1	0	0%	0.051	0.051	--	--	0.026
PEST	Diphenamid	mg/Kg	1	0	0%	0.19	0.19	--	--	0.095
PEST	Disulfoton	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Diuron	mg/Kg	1	0	0%	0.51	0.51	--	--	0.26
PEST	Endosulfan I	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Endosulfan II	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Endosulfan sulfate	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Endrin	mg/Kg	1	0	0%	0.036	0.036	--	--	0.018
PEST	Endrin aldehyde	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Endrin ketone	mg/Kg	1	0	0%	0.019	0.019	--	--	0.0095
PEST	Eptam	mg/Kg	1	0	0%	0.096	0.096	--	--	0.048
PEST	Ethalfuralin (Sonalan)	mg/Kg	1	0	0%	0.096	0.096	--	--	0.048
PEST	Ethyl methylene phosphorodithioate	mg/Kg	1	0	0%	0.045	0.045	--	--	0.023
PEST	Fenarimol	mg/Kg	1	0	0%	0.19	0.19	--	--	0.095
PEST	Fensulfothion	mg/Kg	1	0	0%	0.064	0.064	--	--	0.032
PEST	Fluridone	mg/Kg	1	0	0%	0.51	0.51	--	--	0.26
PEST	Fonofos	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Gamma-BHC (Lindane)	mg/Kg	1	1	100%	--	--	0.0080	0.0080	0.0080
PEST	gamma-Chlordene	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Heptachlor	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Heptachlor epoxide	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Hexazinone	mg/Kg	1	0	0%	0.096	0.096	--	--	0.048
PEST	Methoxychlor	mg/Kg	2	0	0%	0.0010	0.038	--	--	0.0098
PEST	Methyl Chlorpyrifos	mg/Kg	1	0	0%	0.045	0.045	--	--	0.023
PEST	Methyl parathion	mg/Kg	1	0	0%	0.045	0.045	--	--	0.023
PEST	Metolachlor	mg/Kg	1	0	0%	0.19	0.19	--	--	0.095
PEST	Metribuzin	mg/Kg	1	0	0%	0.064	0.064	--	--	0.032
PEST	MGK264	mg/Kg	1	0	0%	0.45	0.45	--	--	0.23
PEST	Mirex	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Molinate	mg/Kg	1	0	0%	0.17	0.17	--	--	0.085
PEST	Napropamide	mg/Kg	1	0	0%	0.19	0.19	--	--	0.095
PEST	Norflurazon	mg/Kg	1	0	0%	0.096	0.096	--	--	0.048
PEST	Oxychlordane	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Oxyfluorfen	mg/Kg	1	0	0%	0.17	0.17	--	--	0.085
PEST	Parathion	mg/Kg	1	0	0%	0.051	0.051	--	--	0.026
PEST	Pebulate	mg/Kg	1	0	0%	0.15	0.15	--	--	0.075
PEST	Pendimethalin	mg/Kg	1	0	0%	0.096	0.096	--	--	0.048

Table C-7
Summary Statistics for Sediment Samples Collected From the Walla Walla River Tributary of Segment 3 of the Columbia River (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Pentachloroanisole	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Phorate	mg/Kg	1	0	0%	0.045	0.045	--	--	0.023
PEST	Pramitol (Prometon)	mg/Kg	1	0	0%	0.096	0.096	--	--	0.048
PEST	Prometryn	mg/Kg	1	0	0%	0.064	0.064	--	--	0.032
PEST	Pronamide	mg/Kg	1	0	0%	0.19	0.19	--	--	0.095
PEST	Propachlor (Ramrod)	mg/Kg	1	0	0%	0.13	0.13	--	--	0.065
PEST	Propazine	mg/Kg	1	0	0%	0.096	0.096	--	--	0.048
PEST	Simazine	mg/Kg	1	0	0%	0.064	0.064	--	--	0.032
PEST	Terbacil	mg/Kg	1	0	0%	0.32	0.32	--	--	0.16
PEST	Terbutryn	mg/Kg	1	0	0%	0.064	0.064	--	--	0.032
PEST	Toxaphene	mg/Kg	1	0	0%	0.76	0.76	--	--	0.38
PEST	trans-Chlordane	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	trans-Nonachlor	mg/Kg	1	0	0%	0.038	0.038	--	--	0.019
PEST	Triadimefon	mg/Kg	1	0	0%	0.17	0.17	--	--	0.085
PEST	Triallate	mg/Kg	1	0	0%	0.17	0.17	--	--	0.085
PEST	Trifluralin (Treflan)	mg/Kg	1	0	0%	0.096	0.096	--	--	0.048
PEST	Vernolate	mg/Kg	1	0	0%	0.096	0.096	--	--	0.048
SVOC	1,2,4-Trichlorobenzene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	1,2-Dichlorobenzene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	1,2-Diphenylhydrazine	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	1,3-Dichlorobenzene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	1,4-Dichlorobenzene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4,5-Trichlorophenol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4,6-Trichlorophenol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4-Dichlorophenol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4-Dimethylphenol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,4-Dinitrophenol	mg/Kg	1	0	0%	0.025	0.025	--	--	0.013
SVOC	2,4-Dinitrotoluene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2,6-Dinitrotoluene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Chloronaphthalene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Chlorophenol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Nitroaniline	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Nitrophenol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	3,3'-Dichlorobenzidine	mg/Kg	1	0	0%	0.020	0.020	--	--	0.010
SVOC	3-Nitroaniline	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	4,6-Dinitro-2-methylphenol	mg/Kg	1	0	0%	0.025	0.025	--	--	0.013
SVOC	4-Bromophenylphenyl ether	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	4-Chloroaniline	mg/Kg	1	0	0%	0.020	0.020	--	--	0.010
SVOC	4-Chlorophenylphenyl ether	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	4-Methylphenol (cresol, p-)	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	4-Nitroaniline	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	4-Nitrophenol	mg/Kg	1	0	0%	0.020	0.020	--	--	0.010
SVOC	Acenaphthene	mg/Kg	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Aniline	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Anthracene	mg/Kg	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Benzidine	mg/Kg	1	0	0%	0.050	0.050	--	--	0.025
SVOC	Benzo(ghi)perylene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050

Table C-7
Summary Statistics for Sediment Samples Collected From the Walla Walla River Tributary of Segment 3 of the Columbia River (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Benzoic acid	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Benzyl alcohol	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Bis(2-Chloroethoxy)methane	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Bis(2-chloroethyl) ether	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Dibenz[a,h]anthracene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Dibenzofuran	mg/Kg	1	0	0%	0.025	0.025	--	--	0.013
SVOC	Dimethyl phthalate	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Di-n-butylphthalate	mg/Kg	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Fluorene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Hexachlorobenzene	mg/Kg	2	0	0%	0.010	0.038	--	--	0.012
SVOC	Hexachlorobutadiene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Hexachlorocyclopentadiene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Hexachloroethane	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Indeno(1,2,3-cd)pyrene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Nitrobenzene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	N-Nitrosodi-n-dipropylamine	mg/Kg	1	0	0%	0.020	0.020	--	--	0.010
SVOC	Pentachlorophenol	mg/Kg	2	1	50%	0.020	0.020	0.014	0.014	0.012
RAD_D	Cesium-137	pCi/g	2	2	100%	--	--	0.031	0.050	0.041
RAD_D	Potassium-40	pCi/g	2	2	100%	--	--	14	14	14

CONV - Conventional parameter
PEST - Pesticide
PCB - Polychlorinated biphenyl
RAD_D - Decayed radionuclide
SVOC - Semivolatile Organic Compound

Table C-8
Summary Statistics for Sediment Samples Collected From the Walla Walla River Tributary of Segment 3 of the Columbia River (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Total Organic Carbon	mg/kg dry-wt	1	1	100%	--	--	0.0092	0.0092	0.0092
METAL	Arsenic	mg/kg dry-wt	1	1	100%	--	--	1.7	1.7	1.7
METAL	Cadmium	mg/kg dry-wt	1	1	100%	--	--	0.70	0.70	0.70
METAL	Chromium	mg/kg dry-wt	1	0	0%	0.10	0.10	--	--	0.050
METAL	Copper	mg/kg dry-wt	1	1	100%	--	--	12	12	12
METAL	Lead	mg/kg dry-wt	1	0	0%	0.10	0.10	--	--	0.050
METAL	Mercury	mg/kg dry-wt	4	3	75%	0.0070	0.0070	0.013	0.014	0.011
METAL	Zinc	mg/kg dry-wt	1	0	0%	60	60	--	--	30
PCB	Aroclor-1260	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Alpha-BHC	mg/kg dry-wt	1	0	0%	0.0010	0.0010	--	--	5.00E-04
PEST	Chlordane	mg/kg dry-wt	1	1	100%	--	--	0.0030	0.0030	0.0030
PEST	Dichlorodiphenyldichloroethane	mg/kg dry-wt	2	1	50%	0.0010	0.0010	0.0018	0.0018	0.0012
PEST	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	2	1	50%	0.0010	0.0010	0.0076	0.0076	0.0041
PEST	Dichlorodiphenyltrichloroethane	mg/kg dry-wt	2	1	50%	0.0010	0.0010	0.0012	0.0012	8.50E-04
PEST	Gamma-BHC (Lindane)	mg/kg dry-wt	1	1	100%	--	--	8.00E-04	8.00E-04	8.00E-04
SVOC	2-Methylnaphthalene	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	2-Methylphenol (cresol, o-)	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Acenaphthylene	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Benzo(a)anthracene	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Benzo(a)pyrene	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Benzo(k)fluoranthene	mg/kg dry-wt	1	0	0%	0.050	0.050	--	--	0.025
SVOC	Bis(2-ethylhexyl) phthalate	mg/kg dry-wt	1	1	100%	--	--	0.058	0.058	0.058
SVOC	Butylbenzylphthalate	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Chrysene	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Diethylphthalate	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Di-n-octylphthalate	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Fluoranthene	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Hexachlorobenzene	mg/kg dry-wt	1	1	100%	--	--	0.0020	0.0020	0.0020
SVOC	Isophorone	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Naphthalene	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Phenanthrene	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025
SVOC	Phenol	mg/kg dry-wt	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Pyrene	mg/kg dry-wt	1	0	0%	0.0050	0.0050	--	--	0.0025

CONV - Conventional parameter
PEST - Pesticide
PCB - Polychlorinated biphenyl
SVOC - Semivolatile Organic Compound

Table C-9
Comparison of Segment 3 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Background Value	Is Max > Background?	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
CONV	Nitrogen in ammonia	mg/kg	4	4	100%	6.0	35	17	--	--	--	--	--	--	--	--	--	--
CONV	Phosphorous in phosphate	mg/kg	4	4	100%	0.040	0.23	0.11	--	--	--	--	--	--	--	--	--	--
CONV	Sulfide	mg/kg	4	2	50%	1.9	3.6	1.7	--	--	--	--	--	--	--	--	--	--
CONV	Total Organic Carbon	%	41	41	100%	0.11	2.1	0.93	--	--	--	--	--	--	--	--	--	--
CONV	Total Organic Carbon	mg/kg	42	42	100%	1.0	28,692	9,089	--	--	--	--	--	--	--	--	--	--
METAL	Acid Volatile Sulfate	umole/g	18	15	83%	0.081	4.9	1.1	--	--	--	--	--	--	--	--	--	--
METAL	Aluminum	mg/kg	5	5	100%	5,900	68,000	20,380	11,800	Yes	--	--	--	--	76,142	No	0.89	0
METAL	Antimony	mg/kg	25	25	100%	0.035	1.3	0.69	5.0	No	2.0	No	0.67	0	31	No	0.043	0
METAL	Arsenic	mg/kg	55	45	82%	0.37	10	5.8	6.5	Yes	6.0	Yes	1.7	25	0.39	Yes	26	44
METAL	Barium	mg/kg	5	5	100%	47	530	154	132	Yes	--	--	--	--	5,375	No	0.099	0
METAL	Beryllium	mg/kg	29	29	100%	0.085	2.1	1.4	1.5	Yes	--	--	--	--	154	No	0.013	0
METAL	Boron	mg/kg	1	1	100%	2.3	2.3	2.3	--	--	--	--	--	--	16,000	No	1.44E-04	0
METAL	Cadmium	mg/kg	58	43	74%	0.067	6.0	1.1	0.81	Yes	0.60	Yes	9.9	31	37	No	0.16	0
METAL	Calcium	mg/kg	5	5	100%	2,800	26,000	8,000	17,200	Yes	--	--	--	--	--	--	--	--
METAL	Cerium	mg/kg	1	1	100%	53	53	53	--	--	--	--	--	--	--	--	--	--
METAL	Chromium	mg/kg	59	59	100%	2.6	74	30	19	Yes	37	Yes	2.0	20	30	Yes	2.5	21
METAL	Cobalt	mg/kg	5	5	100%	5.2	20	9.0	16	Yes	--	--	--	--	903	No	0.022	0
METAL	Copper	mg/kg	59	59	100%	1.5	37	20	22	Yes	32	Yes	1.2	10	2,960	No	0.013	0
METAL	Gallium	mg/kg	1	1	100%	19	19	19	--	--	--	--	--	--	--	--	--	--
METAL	Iron	mg/kg	5	5	100%	12,000	51,000	23,000	32,600	Yes	20,000	Yes	2.6	2	23,463	Yes	2.2	1
METAL	Lanthanum	mg/kg	1	1	100%	28	28	28	--	--	--	--	--	--	--	--	--	--
METAL	Lead	mg/kg	55	54	98%	1.1	32	14	10	Yes	35	No	0.90	0	250	No	0.13	0
METAL	Lithium	mg/kg	1	1	100%	26	26	26	34	No	--	--	--	--	1,564	No	0.017	0
METAL	Magnesium	mg/kg	5	5	100%	2,700	14,000	5,400	7,060	Yes	--	--	--	--	--	--	--	--
METAL	Manganese	mg/kg	5	5	100%	250	1,500	532	512	Yes	460	Yes	3.3	1	1,762	No	0.85	0
METAL	Mercury	mg/kg	54	36	67%	0.0032	0.17	0.061	0.33	No	0.18	No	0.93	0	23	No	0.0071	0
METAL	Neodymium	mg/kg	1	1	100%	30	30	30	--	--	--	--	--	--	--	--	--	--
METAL	Nickel	mg/kg	59	59	100%	1.3	32	19	19	Yes	18	Yes	1.8	30	1,564	No	0.020	0
METAL	Potassium	mg/kg	4	4	100%	700	1,400	1,175	2,150	No	--	--	--	--	--	--	--	--
METAL	Scandium	mg/kg	1	1	100%	19	19	19	--	--	--	--	--	--	--	--	--	--
METAL	Selenium	mg/kg	54	8	15%	0.015	1.8	1.6	0.78	Yes	--	--	--	--	391	No	0.0046	0
METAL	Silver	mg/kg	25	24	96%	0.0039	0.56	0.28	0.73	No	4.5	No	0.12	0	391	No	0.0014	0
METAL	Sodium	mg/kg	5	5	100%	280	16,000	3,478	690	Yes	--	--	--	--	--	--	--	--
METAL	Strontium	mg/kg	1	1	100%	260	260	260	--	--	--	--	--	--	46,924	No	0.0055	0
METAL	Thallium	mg/kg	24	24	100%	0.035	1.1	0.57	--	--	--	--	--	--	5.2	No	0.21	0
METAL	Thorium	mg/kg	1	1	100%	8.0	8.0	8.0	--	--	--	--	--	--	--	--	--	--
METAL	Titanium	mg/kg	1	1	100%	6,200	6,200	6,200	--	--	--	--	--	--	100,000	No	0.062	0
METAL	Uranium	mg/kg	5	5	100%	1.1	1.5	1.3	3.2	No	2,490	No	5.98E-04	0	16	No	0.096	0
METAL	Vanadium	mg/kg	5	5	100%	26	140	61	85	Yes	--	--	--	--	78	Yes	1.8	1
METAL	Ytterbium	mg/kg	1	1	100%	3.0	3.0	3.0	--	--	--	--	--	--	--	--	--	--
METAL	Yttrium	mg/kg	1	1	100%	23	23	23	--	--	--	--	--	--	--	--	--	--
METAL	Zinc	mg/kg	59	59	100%	11	558	142	68	Yes	120	Yes	4.7	24	23,463	No	0.024	0
PEST	Dichlorodiphenyldichloroethane	mg/kg	6	2	33%	0.0030	0.0030	0.0054	--	--	0.0040	No	0.75	0	2.4	No	0.0012	0
PEST	Dichlorodiphenyldichloroethylene	mg/kg	8	3	38%	1.00E-05	0.0050	0.0078	--	--	0.0015	Yes	11	3	1.7	No	0.0093	0
PEST	Gamma-BHC (Lindane)	mg/kg	6	1	17%	0.0080	0.0080	0.0089	--	--	9.00E-04	Yes	8.9	1	0.44	No	0.018	0
RAD_D	Beryllium-7	pCi/g	1	1	100%	1.36E-13	1.36E-13	1.36E-13	--	--	--	--	--	--	--	--	--	--
RAD_D	Cerium-141	pCi/g	3	3	100%	2.18E-96	1.80E-62	6.01E-63	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-134	pCi/g	5	5	100%	1.08E-04	0.054	0.040	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-137	pCi/g	81	81	100%	0.027	1.0	0.28	1.1	No	3,120	No	3.21E-04	0	6.2	No	0.16	0
RAD_D	Cobalt-60	pCi/g	31	31	100%	0.0024	0.081	0.023	0.0084	Yes	1,460	No	5.52E-05	0	1.4	No	0.058	0
RAD_D	Europium-152	pCi/g	28	28	100%	0.035	0.49	0.18	--	--	--	--	--	--	3.3	No	0.15	0
RAD_D	Europium-154	pCi/g	1	1	100%	0.063	0.063	0.063	0.033	Yes	2,570	No	2.45E-05	0	3.0	No	0.021	0
RAD_D	Europium-155	pCi/g	3	3	100%	0.018	0.024	0.020	0.054	No	31,600	No	7.48E-07	0	125	No	1.89E-04	0
RAD_D	Plutonium-238	pCi/g	25	25	100%	1.53E-04	0.0018	4.79E-04	0.0038	No	--	--	--	--	37	No	4.93E-05	0
RAD_D	Plutonium-239/240	pCi/g	38	38	100%	7.66E-04	0.032	0.0087	0.025	Yes	5,860	No	5.39E-06	0	34	No	9.32E-04	0
RAD_D	Potassium-40	pCi/g	74	74	100%	6.7	22	14	17	Yes	--	--	--	--	--	--	--	--
RAD_D	Radium-226	pCi/g	14	14	100%	0.40	0.95	0.55	0.82	Yes	101	No	0.0094	0	--	--	--	--
RAD_D	Ruthenium-106	pCi/g	1	1	100%	9.51E-05	9.51E-05	9.51E-05	--	--	--	--	--	--	--	--	--	--
RAD_D	Strontium-90	pCi/g	14	14	100%	0.0073	0.039	0.022	0.18	No	582	No	6.78E-05	0	4.5	No	0.0088	0
RAD_D	Thorium-232	pCi/g	9	9	100%	0.40	0.80	0.56	1.3	No	1,300	No	6.15E-04	0	1.3	No	0.62	0
RAD_D	Uranium-234	pCi/g	38	38	100%	0.094	1.9	0.73	1.1	Yes	5,270	No	3.62E-04	0	1.1	Yes	1.7	1
RAD_D	Uranium-235	pCi/g	37	37	100%	0.0092	0.12	0.028	0.11	Yes	3,730	No	3.24E-05	0	0.84	No	0.14	0
RAD_D	Uranium-238	pCi/g	41	41	100%	0.21	1.6	0.65	3.2	No	2,490	No	6.47E-04	0	1.1	Yes	1.5	4
RAD_D	Zirconium/Niobium-95	pCi/g	1	1	100%	3.51E-36	3.51E-36	3.51E-36	--	--	--	--	--	--	--	--	--	--
SVOC	Pentachlorophenol	mg/kg	7	4	57%	0.014	0.023	0.017	--	--	--	--	--	--	3.0	No	0.0077	0
VOC	2-Hexanone	mg/kg	2.0	1.0	0.50	0.0031	0.0031	0.0016	--	--	--	--	--	--	--	--	--	--
VOC	4-Methyl-2-Pentanone	mg/kg	2.0	1.0	0.50	0.0018	0.0018	9.58E-04	--	--	--	--	--	--	--	--	--	--
VOC	Tetrachloroethene	mg/kg	2.0	1.0	0.50	1.14E-05	1.14E-05	3.00E-04	--	--	--	--	--	--	0.48	No	2.38E-05	0

CONV - Conventional parameter
PEST - Pesticide

Table C-9
Comparison of Segment 3 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Background Value	Is Max > Background?	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
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RAD_D - Decayed radionuclide
SVOC - Semivolatile Organic Compound
VOC - Volatile Organic Compound

Table C-10
Comparison of Segment 3 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "dry weight")

															Human Health			
Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Background Value	Is Max > Background?	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
CONV	Total Organic Carbon	mg/kg dry-wt	2	2	100%	0.0092	1.0	0.50	--	--	--	--	--	--	--	--	--	--
CONV	Total solids	mg/kg dry-wt	1	1	100%	50	50	50	--	--	--	--	--	--	--	--	--	--
METAL	Aluminum	mg/kg dry-wt	4	4	100%	2,900	17,000	10,000	11,800	Yes	--	--	--	--	76,142	No	0.22	0
METAL	Antimony	mg/kg dry-wt	17	13	76%	0.52	5.1	1.6	5.0	Yes	2.0	Yes	2.6	4	31	No	0.16	0
METAL	Arsenic	mg/kg dry-wt	23	23	100%	1.7	12	5.5	6.5	Yes	6.0	Yes	2.0	9	0.39	Yes	31	24
METAL	Barium	mg/kg dry-wt	4	4	100%	53	150	101	132	Yes	--	--	--	--	5,375	No	0.028	0
METAL	Beryllium	mg/kg dry-wt	17	17	100%	0.17	1.8	1.2	1.5	Yes	--	--	--	--	154	No	0.012	0
METAL	Cadmium	mg/kg dry-wt	23	21	91%	0.19	4.3	1.2	0.81	Yes	0.60	Yes	7.2	17	37	No	0.12	0
METAL	Calcium	mg/kg dry-wt	4	4	100%	3,500	5,800	4,500	17,200	No	--	--	--	--	--	--	--	--
METAL	Chromium	mg/kg dry-wt	23	21	91%	3.7	73	33	19	Yes	37	Yes	2.0	9	30	Yes	2.4	9
METAL	Cobalt	mg/kg dry-wt	4	4	100%	11	17	13	16	Yes	--	--	--	--	903	No	0.019	0
METAL	Copper	mg/kg dry-wt	23	23	100%	7.1	39	23	22	Yes	32	Yes	1.2	7	2,960	No	0.013	0
METAL	Iron	mg/kg dry-wt	4	4	100%	24,000	34,000	27,250	32,600	Yes	20,000	Yes	1.7	4	23,463	Yes	1.4	4
METAL	Lead	mg/kg dry-wt	23	22	96%	2.1	58	17	10	Yes	35	Yes	1.7	4	250	No	0.23	0
METAL	Magnesium	mg/kg dry-wt	4	4	100%	3,200	6,700	4,825	7,060	No	--	--	--	--	--	--	--	--
METAL	Manganese	mg/kg dry-wt	4	4	100%	280	640	490	512	Yes	460	Yes	1.4	2	1,762	No	0.36	0
METAL	Mercury	mg/kg dry-wt	26	20	77%	0.013	0.31	0.069	0.33	No	0.18	Yes	1.7	3	23	No	0.013	0
METAL	Nickel	mg/kg dry-wt	17	17	100%	6.1	32	20	19	Yes	18	Yes	1.8	12	1,564	No	0.020	0
METAL	Potassium	mg/kg dry-wt	4	4	100%	490	2,300	1,288	2,150	Yes	--	--	--	--	--	--	--	--
METAL	Selenium	mg/kg dry-wt	17	12	71%	0.32	1.3	0.59	0.78	Yes	--	--	--	--	391	No	0.0033	0
METAL	Silver	mg/kg dry-wt	17	14	82%	0.29	2.5	0.65	0.73	Yes	4.5	No	0.56	0	391	No	0.0064	0
METAL	Sodium	mg/kg dry-wt	4	4	100%	130	280	193	690	No	--	--	--	--	--	--	--	--
METAL	Thallium	mg/kg dry-wt	17	14	82%	0.27	2.5	0.96	--	--	--	--	--	--	5.2	No	0.48	0
METAL	Vanadium	mg/kg dry-wt	4	4	100%	50	77	66	85	No	--	--	--	--	78	No	0.98	0
METAL	Zinc	mg/kg dry-wt	23	22	96%	45	375	160	68	Yes	120	Yes	3.1	12	23,463	No	0.016	0
PCB	Aroclor-1254	mg/kg dry-wt	6	3	50%	0.010	0.013	0.012	--	--	0.0070	Yes	1.9	3	0.22	No	0.059	0
PCB	Aroclor-1260	mg/kg dry-wt	15	3	20%	0.0056	0.011	0.025	--	--	0.021	No	0.52	0	0.22	No	0.050	0
PEST	2,4'-DDT	mg/kg dry-wt	2	1	50%	7.10E-04	7.10E-04	0.0029	--	--	--	--	--	--	1.7	No	4.13E-04	0
PEST	Chlordane	mg/kg dry-wt	12	1	8%	0.0030	0.0030	0.027	--	--	0.0032	No	0.93	0	--	--	--	--
PEST	Dichlorodiphenyldichloroethane	mg/kg dry-wt	26	15	58%	4.00E-04	0.023	0.0046	--	--	0.0040	Yes	5.8	6	2.4	No	0.0094	0
PEST	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	28	15	54%	7.00E-04	0.051	0.0058	--	--	0.0015	Yes	34	12	1.7	No	0.030	0
PEST	Dichlorodiphenyltrichloroethane	mg/kg dry-wt	26	6	23%	3.00E-04	0.035	0.0037	--	--	0.0042	Yes	8.4	2	1.7	No	0.020	0
PEST	Dieldrin	mg/kg dry-wt	23	3	13%	2.00E-04	0.0050	0.0022	--	--	0.0019	Yes	2.6	1	0.030	No	0.16	0
PEST	Gamma-BHC (Lindane)	mg/kg dry-wt	22	1	5%	8.00E-04	8.00E-04	0.0019	--	--	9.00E-04	No	0.89	0	0.44	No	0.0018	0
PEST	trans-Nonachlor	mg/kg dry-wt	9	4	44%	0.0020	0.0030	0.0019	--	--	--	--	--	--	--	--	--	--
RAD_D	Beryllium-7	pCi/g dry-wt	5	5	100%	1.45E-19	2.26E-05	4.52E-06	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-134	pCi/g dry-wt	3	3	100%	2.11E-04	3.54E-04	2.72E-04	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-137	pCi/g dry-wt	20	20	100%	0.040	0.81	0.33	1.1	No	3,120	No	2.60E-04	0	6.2	No	0.13	0
RAD_D	Cobalt-57	pCi/g dry-wt	2	2	100%	4.42E-09	0.0097	0.0049	--	--	--	--	--	--	--	--	--	--
RAD_D	Cobalt-60	pCi/g dry-wt	20	20	100%	0.0030	0.047	0.019	0.0084	Yes	1,460	No	3.22E-05	0	1.4	No	0.034	0
RAD_D	Europium-152	pCi/g dry-wt	15	15	100%	0.027	0.97	0.16	--	--	--	--	--	--	3.3	No	0.30	0
RAD_D	Europium-154	pCi/g dry-wt	4	4	100%	0.036	0.088	0.053	0.033	Yes	2,570	No	3.41E-05	0	3.0	No	0.029	0
RAD_D	Plutonium-238	pCi/g dry-wt	8	8	100%	0.0020	0.012	0.0060	0.0038	Yes	--	--	--	--	37	No	3.13E-04	0
RAD_D	Plutonium-239/240	pCi/g dry-wt	46	46	100%	0.0020	0.024	0.0092	0.025	No	5,860	No	4.10E-06	0	34	No	7.08E-04	0
RAD_D	Potassium-40	pCi/g dry-wt	48	48	100%	13	19	15	17	Yes	--	--	--	--	--	--	--	--
RAD_D	Radium-226	pCi/g dry-wt	1	1	100%	0.99	0.99	0.99	0.82	Yes	101	No	0.0098	0	--	--	--	--
RAD_D	Strontium-90	pCi/g dry-wt	45	45	100%	0.0019	0.037	0.014	0.18	No	582	No	6.40E-05	0	4.5	No	0.0083	0
RAD_D	Thorium-230	pCi/g dry-wt	4	4	100%	0.63	0.88	0.77	--	--	--	--	--	--	--	--	--	--
RAD_D	Thorium-232	pCi/g dry-wt	4	4	100%	0.70	0.91	0.82	1.3	No	1,300	No	7.00E-04	0	1.3	No	0.70	0
RAD_D	Uranium-234	pCi/g dry-wt	45	45	100%	0.39	1.8	1.2	1.1	Yes	5,270	No	3.43E-04	0	1.1	Yes	1.6	30
RAD_D	Uranium-235	pCi/g dry-wt	24	24	100%	0.020	0.070	0.041	0.11	No	3,730	No	1.88E-05	0	0.84	No	0.083	0
RAD_D	Uranium-238	pCi/g dry-wt	45	45	100%	0.35	1.6	1.1	3.2	No	2,490	No	6.43E-04	0	1.1	Yes	1.5	19
SVOC	2,4-Dinitrophenol	mg/kg dry-wt	4	1	25%	0.093	0.093	0.44	--	--	--	--	--	--	122	No	7.61E-04	0
SVOC	2-Methylnaphthalene	mg/kg dry-wt	16	2	13%	0.010	0.011	0.42	--	--	0.020	No	0.50	0	--	--	--	--
SVOC	2-Methylphenol (cresol, o-)	mg/kg dry-wt	6	1	17%	0.81	0.81	0.19	--	--	--	--	--	--	3,055	No	2.65E-04	0
SVOC	Acenaphthene	mg/kg dry-wt	6	1	17%	0.021	0.021	0.12	--	--	0.0067	Yes	3.1	1	3,682	No	5.70E-06	0
SVOC	Anthracene	mg/kg dry-wt	20	3	15%	0.0060	0.0880	0.34	--	--	0.057	Yes	1.50	1	21,896	No	4.20E-06	0
SVOC	Benzo(a)anthracene	mg/kg dry-wt	9	2	22%	0.013	0.12	0.049	--	--	0.032	Yes	3.8	1	0.62	No	0.19	0
SVOC	Benzo(a)pyrene	mg/kg dry-wt	9	3	33%	0.013	0.21	0.060	--	--	0.032	Yes	6.6	2	0.062	Yes	3.4	2
SVOC	Benzo(b+k)fluoranthene	mg/kg dry-wt	4	4	100%	0.018	0.22	0.15	--	--	--	--	--	--	--	--	--	--
SVOC	Benzo(ghi)perylene	mg/kg dry-wt	8	2	25%	0.014	0.016	0.83	--	--	0.17	No	0.082	0	2,400	No	5.83E-06	0
SVOC	Benzo(k)fluoranthene	mg/kg dry-wt	1	1	100%	0.023	0.023	0.023	--	--	0.027	No	0.85	0	6.2	No	0.0037	0
SVOC	Benzoic acid	mg/kg dry-wt	4	2	50%	0.20	1.1	0.61	--	--	--	--	--	--	100,000	No	1.10E-05	0
SVOC	Bis(2-ethylhexyl) phthalate	mg/kg dry-wt	9	5	56%	0.053	0.78	0.27	--	--	0.64	Yes	1.20	1	35	No	0.022	0

Table C-10
Comparison of Segment 3 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "dry weight")

															Human Health			
Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Background Value	Is Max > Background?	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
SVOC	Chrysene	mg/kg dry-wt	22	3	14%	0.013	0.130	0.32	--	--	0.057	Yes	2.30	1	62	No	2.10E-03	0
SVOC	Dibenz[a,h]anthracene	mg/kg dry-wt	16	4	25%	0.0080	0.018	0.42	--	--	0.033	No	0.55	0	0.062	No	0.29	0
SVOC	Dibenzofuran	mg/kg dry-wt	1	1	100%	0.015	0.015	0.015	--	--	5.1	No	0.0029	0	145	No	1.03E-04	0
SVOC	Diethylphthalate	mg/kg dry-wt	5	1	20%	0.010	0.010	0.063	--	--	--	--	--	--	48,882	No	2.05E-07	0
SVOC	Fluoranthene	mg/kg dry-wt	22	9	41%	0.0040	0.200	0.31	--	--	0.11	Yes	1.80	3	2,294	No	8.72E-05	0
SVOC	Fluorene	mg/kg dry-wt	16	3	19%	0.0070	0.022	0.40	--	--	0.077	No	0.29	0	2,747	No	8.01E-06	0
SVOC	Hexachlorobenzene	mg/kg dry-wt	13	5	38%	0.0010	0.0030	0.024	--	--	0.10	No	0.030	0	0.30	No	0.0099	0
SVOC	Hexadecanoic acid (9Cl)	mg/kg dry-wt	1	1	100%	130	130	130	--	--	--	--	--	--	--	--	--	--
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg dry-wt	1	1	100%	0.016	0.016	0.016	--	--	0.017	No	0.94	0	0.62	No	0.026	0
SVOC	Isophorone	mg/kg dry-wt	5	1	20%	0.015	0.015	0.045	--	--	--	--	--	--	512	No	2.93E-05	0
SVOC	Naphthalene	mg/kg dry-wt	13	3	23%	0.0020	0.015	0.48	--	--	0.18	No	0.085	0	56	No	2.68E-04	0
SVOC	Pentachlorophenol	mg/kg dry-wt	13	3	23%	0.013	1.200	0.33	--	--	--	--	--	--	3.0	No	0.0044	0
SVOC	Perylene	mg/kg dry-wt	8	3	38%	0.0070	0.011	0.0068	--	--	--	--	--	--	--	--	--	--
SVOC	Phenanthrene	mg/kg dry-wt	19	4	21%	0.0040	0.057	0.37	--	--	0.042	Yes	1.40	1	--	--	--	--
SVOC	Phenol	mg/kg dry-wt	9	3	33%	0.035	0.10	0.082	--	--	--	--	--	--	18,331	No	5.46E-06	0
SVOC	Pyrene	mg/kg dry-wt	22	7	32%	0.0030	0.220	0.32	--	--	0.053	Yes	4.20	3	2,316	No	9.50E-05	0

CONV - Conventional parameter
PEST - Pesticide
PCB - Polychlorinated biphenyl
RAD_D - Decayed radionuclide
SVOC - Semivolatile Organic Compound

Table C-11
Summary of Surface Sediment Results From Segment 3 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical	Qualifier	Ecological	Human
							Value		Benchmark	Health
									Value	Benchmark
Columbia River	RM 328	SRP 3,4	August 20, 1991	Acenaphthene	mg/kg dry-wt	1	0.021	=	0.0067	3,681
Columbia River	Pt of Pasco	05-8002	September 30, 1986	Anthracene	mg/kg dry-wt	1	0.088	J	0.057	21,896
Columbia River	McNary Dam	B17B57	August 8, 2003	Antimony	mg/kg dry-wt	1	2.4	=	2.0	31
Columbia River	McNary Dam	B17B60	August 8, 2003	Antimony	mg/kg dry-wt	1	5.1	=	2.0	31
Columbia River	McNary Dam	B17B65	August 8, 2003	Antimony	mg/kg dry-wt	1	3.7	=	2.0	31
Columbia River	McNary Dam	B17B67	August 8, 2003	Antimony	mg/kg dry-wt	1	3.4	=	2.0	31
Columbia River	Pt of Pasco	05-8000	September 30, 1986	Aroclor-1254	mg/kg dry-wt	1	0.010	J	0.0070	0.22
Columbia River	Pt of Pasco	05-8001	September 30, 1986	Aroclor-1254	mg/kg dry-wt	1	0.010	J	0.0070	0.22
Columbia River	Pt of Pasco	05-8002	September 30, 1986	Aroclor-1254	mg/kg dry-wt	1	0.013	=	0.0070	0.22
Columbia River	RM 318	168272	April 14, 1992	Arsenic	mg/kg dry-wt	1	3.3	=	6.0	0.39
Columbia River	RM 316	168273	April 14, 1992	Arsenic	mg/kg dry-wt	1	2.7	=	6.0	0.39
Columbia River	RM 311	168274	April 13, 1992	Arsenic	mg/kg dry-wt	1	1.7	=	6.0	0.39
Columbia River	RM 298	168275	April 13, 1992	Arsenic	mg/kg dry-wt	1	4.9	=	6.0	0.39
Walla Walla River	Blw Warm Sprgs	32A070-4	September 12, 1984	Arsenic	mg/kg dry-wt	2	1.7	=	6.0	0.39
Snake River	RM 10	3504002	June 1, 2004	Arsenic	mg/kg	1	8.9	=	6.0	0.39
Snake River	RM 10	3504026	June 1, 2004	Arsenic	mg/kg	1	9.2	=	6.0	0.39
Yakima River	Below Kiona	37A070-7	September 12, 1984	Arsenic	mg/kg dry-wt	2	2.8	=	6.0	0.39
Columbia River	McNary Dam	4414200	June 1, 2004	Arsenic	mg/kg	1	5.5	=	6.0	0.39
Columbia River	McNary Dam	4414202	June 1, 2004	Arsenic	mg/kg	1	7.1	=	6.0	0.39
Columbia River	McNary Dam	4414203	June 1, 2004	Arsenic	mg/kg	1	9.6	=	6.0	0.39
Snake River	RM 10	4414205	June 1, 2004	Arsenic	mg/kg	1	5.7	=	6.0	0.39
Snake River	RM 10	4414206	June 1, 2004	Arsenic	mg/kg	1	8.0	=	6.0	0.39
Snake River	RM 10	4414207	June 1, 2004	Arsenic	mg/kg	1	8.9	=	6.0	0.39
Walla Walla River	RM 1	4414209	June 1, 2004	Arsenic	mg/kg	1	4.6	=	6.0	0.39
Columbia River	RM 316	4414210	June 1, 2004	Arsenic	mg/kg	1	6.3	=	6.0	0.39
Columbia River	RM 316	4414211	June 1, 2004	Arsenic	mg/kg	1	5.1	=	6.0	0.39
Columbia River	RM 316	4414212	June 1, 2004	Arsenic	mg/kg	1	5.7	=	6.0	0.39
Columbia River	Lake Wallula	4414213	June 1, 2004	Arsenic	mg/kg	1	7.2	=	6.0	0.39
Columbia River	Lake Wallula	4424215	June 1, 2004	Arsenic	mg/kg	1	7.4	=	6.0	0.39
Columbia River	Lake Wallula	4424220	June 1, 2004	Arsenic	mg/kg	1	4.8	=	6.0	0.39
Columbia River	Lake Wallula	4424224	June 1, 2004	Arsenic	mg/kg	1	4.5	=	6.0	0.39
Columbia River	Lake Wallula	4424225	June 1, 2004	Arsenic	mg/kg	1	5.8	=	6.0	0.39
Columbia River	Lake Wallula	4424226	June 1, 2004	Arsenic	mg/kg	1	5.1	=	6.0	0.39
Yakima River	RM 1	4434230	June 1, 2004	Arsenic	mg/kg	1	6.7	=	6.0	0.39
Columbia River	RM 339.5	4434234	June 1, 2004	Arsenic	mg/kg	1	5.3	=	6.0	0.39
Snake River	ICE HARBOR DAM	B0W3C6	August 16, 1999	Arsenic	mg/Kg	1	6.3	=	6.0	0.39
Snake River	ICE HARBOR DAM	B0W3C8	August 16, 1999	Arsenic	mg/Kg	1	8.6	=	6.0	0.39
Snake River	ICE HARBOR DAM	B0W3D0	August 16, 1999	Arsenic	mg/Kg	1	8.2	=	6.0	0.39
Columbia River	McNary Dam	B0W3D4	August 2, 1999	Arsenic	mg/Kg	1	9.1	=	6.0	0.39
Columbia River	McNary Dam	B0W3H2	August 2, 1999	Arsenic	mg/Kg	1	8.9	=	6.0	0.39
Columbia River	McNary Dam	B0W3H4	August 2, 1999	Arsenic	mg/Kg	1	6.0	=	6.0	0.39
Columbia River	McNary Dam	B0W3H6	August 2, 1999	Arsenic	mg/Kg	1	8.1	=	6.0	0.39
Columbia River	McNary Dam	B0W3N9	August 2, 1999	Arsenic	mg/Kg	1	9.6	=	6.0	0.39
Columbia River	McNary Dam	B0W3P1	August 2, 1999	Arsenic	mg/Kg	1	7.1	=	6.0	0.39
Columbia River	McNary Dam	B0YWD0	August 8, 2000	Arsenic	mg/Kg	1	7.6	=	6.0	0.39
Columbia River	McNary Dam	B0YWD2	August 8, 2000	Arsenic	mg/Kg	1	6.4	=	6.0	0.39
Snake River	ICE HARBOR DAM	B12CH5	July 23, 2001	Arsenic	mg/kg dry-wt	1	7.4	=	6.0	0.39
Snake River	ICE HARBOR DAM	B12CH7	July 23, 2001	Arsenic	mg/kg dry-wt	1	8.2	=	6.0	0.39

Table C-11
Summary of Surface Sediment Results From Segment 3 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical	Qualifier	Ecological	Human
							Value		Benchmark	Health
									Value	Benchmark
Snake River	ICE HARBOR DAM	B12CH9	July 23, 2001	Arsenic	mg/kg dry-wt	1	8.3	=	6.0	0.39
Columbia River	McNary Dam	B12CJ3	July 20, 2001	Arsenic	mg/kg dry-wt	1	9.2	=	6.0	0.39
Columbia River	McNary Dam	B12CK3	July 20, 2001	Arsenic	mg/kg dry-wt	1	6.6	=	6.0	0.39
Columbia River	McNary Dam	B12CK5	July 20, 2001	Arsenic	mg/kg dry-wt	1	4.5	=	6.0	0.39
Columbia River	McNary Dam	B12CK7	July 20, 2001	Arsenic	mg/kg dry-wt	1	12	=	6.0	0.39
Columbia River	McNary Dam	B12CM7	July 23, 2001	Arsenic	mg/kg dry-wt	1	10	=	6.0	0.39
Columbia River	McNary Dam	B12CM9	July 23, 2001	Arsenic	mg/kg dry-wt	1	8.3	=	6.0	0.39
Columbia River	McNary Dam	B14YN8	July 19, 2002	Arsenic	mg/kg	1	0.40	=	6.0	0.39
Yakima River	YAKIMA RIVER	B16WX0	May 14, 2003	Arsenic	mg/Kg	1	2.4	=	6.0	0.39
Yakima River	YAKIMA RIVER	B16WX1	May 14, 2003	Arsenic	mg/Kg	1	2.5	=	6.0	0.39
Walla Walla River	Walla Walla Riv	B16WX2	May 15, 2003	Arsenic	mg/Kg	1	2.4	=	6.0	0.39
Walla Walla River	Walla Walla Riv	B16WX3	May 15, 2003	Arsenic	mg/Kg	1	2.8	=	6.0	0.39
Columbia River	McNary Dam	B17710	July 16, 2003	Arsenic	mg/Kg	1	9.9	=	6.0	0.39
Columbia River	McNary Dam	B17712	July 16, 2003	Arsenic	mg/Kg	1	8.2	=	6.0	0.39
Columbia River	McNary Dam	B17B57	August 8, 2003	Arsenic	mg/kg dry-wt	1	2.1	=	6.0	0.39
Columbia River	McNary Dam	B17B60	August 8, 2003	Arsenic	mg/kg dry-wt	1	7.6	=	6.0	0.39
Columbia River	McNary Dam	B17B65	August 8, 2003	Arsenic	mg/kg dry-wt	1	5.8	=	6.0	0.39
Columbia River	McNary Dam	B17B67	August 8, 2003	Arsenic	mg/kg dry-wt	1	4.3	=	6.0	0.39
Columbia River	McNary Dam	B17BJ3	August 8, 2003	Arsenic	mg/Kg	1	7.6	=	6.0	0.39
Columbia River	McNary Dam	B19PL7	July 13, 2004	Arsenic	mg/Kg	1	10	X	6.0	0.39
Columbia River	McNary Dam	B19PL9	July 13, 2004	Arsenic	mg/Kg	1	9.3	X	6.0	0.39
Columbia River	McNary Dam	B1B7N9	September 21, 2004	Arsenic	mg/Kg	1	9.5	X	6.0	0.39
Snake River	ICE HARBOR DAM	B1B7W8	September 20, 2004	Arsenic	mg/Kg	1	9.2	X	6.0	0.39
Columbia River	RM 314-315	SRP 1,2	August 19, 1991	Arsenic	mg/kg dry-wt	1	3.1	=	6.0	0.39
Columbia River	RM 328	SRP 3,4	August 20, 1991	Arsenic	mg/kg dry-wt	1	4.0	=	6.0	0.39
Columbia River	RM 315-316	SRP 50	August 19, 1991	Arsenic	mg/kg dry-wt	1	3.6	=	6.0	0.39
Columbia River	RM 315-316	SRP 51	August 19, 1991	Arsenic	mg/kg dry-wt	1	2.8	=	6.0	0.39
Snake River	RM 2	SRP 7A	August 19, 1991	Arsenic	mg/kg dry-wt	1	5.7	=	6.0	0.39
Yakima River	Kiona WA	Yakima sed	August 25, 1987	Arsenic	mg/kg	1	5.4	=	6.0	0.39
Columbia River	Pt of Pasco	05-8002	September 30, 1986	Benzo(a)anthracene	mg/kg dry-wt	1	0.12	J	0.032	0.062
Columbia River	Pt of Pasco	05-8000	September 30, 1986	Benzo(a)pyrene	mg/kg dry-wt	1	0.21	=	0.032	0.062
Columbia River	Pt of Pasco	05-8002	September 30, 1986	Benzo(a)pyrene	mg/kg dry-wt	1	0.11	J	0.032	0.062
Columbia River	Pt of Pasco	05-8002	September 30, 1986	Bis(2-ethylhexyl) phthalate	mg/kg dry-wt	1	0.78	B	0.64	35
Columbia River	RM 318	168272	April 14, 1992	Cadmium	mg/kg dry-wt	1	0.79	P	0.60	37
Columbia River	RM 316	168273	April 14, 1992	Cadmium	mg/kg dry-wt	1	0.87	P	0.60	37
Columbia River	RM 298	168275	April 13, 1992	Cadmium	mg/kg dry-wt	1	3.2	=	0.60	37
Walla Walla River	Blw Warm Sprgs	32A070-4	September 12, 1984	Cadmium	mg/kg dry-wt	2	0.70	=	0.60	37
Columbia River	McNary Dam	3504038	June 1, 2004	Cadmium	mg/kg	1	0.68	=	0.60	37
Yakima River	Below Kiona	37A070-7	September 12, 1984	Cadmium	mg/kg dry-wt	2	1.4	=	0.60	37
Columbia River	McNary Dam	4414200	June 1, 2004	Cadmium	mg/kg	1	0.62	=	0.60	37
Columbia River	McNary Dam	4414202	June 1, 2004	Cadmium	mg/kg	1	1.4	=	0.60	37
Columbia River	McNary Dam	4414203	June 1, 2004	Cadmium	mg/kg	1	2.1	=	0.60	37
Snake River	RM 10	4414206	June 1, 2004	Cadmium	mg/kg	1	0.62	=	0.60	37
Columbia River	Lake Wallula	4414213	June 1, 2004	Cadmium	mg/kg	1	2.0	=	0.60	37
Columbia River	Lake Wallula	4424220	June 1, 2004	Cadmium	mg/kg	1	0.64	=	0.60	37
Columbia River	Lake Wallula	4424224	June 1, 2004	Cadmium	mg/kg	1	1.3	=	0.60	37
Columbia River	Lake Wallula	4424225	June 1, 2004	Cadmium	mg/kg	1	1.4	=	0.60	37
Columbia River	Lake Wallula	4424226	June 1, 2004	Cadmium	mg/kg	1	1.2	=	0.60	37

Table C-11
Summary of Surface Sediment Results From Segment 3 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical	Qualifier	Ecological	Human
							Value		Benchmark	Health
									Value	Benchmark
Columbia River	Lake Wallula	4424227	June 1, 2004	Cadmium	mg/kg	1	2.1	=	0.60	37
Yakima River	RM 1	4434230	June 1, 2004	Cadmium	mg/kg	1	6.0	=	0.60	37
Yakima River	RM 1	4434233	June 1, 2004	Cadmium	mg/kg	1	0.63	=	0.60	37
Columbia River	RM 339.5	4434234	June 1, 2004	Cadmium	mg/kg	1	1.4	=	0.60	37
Columbia River	McNary Dam 1	B0CSG5	September 23, 1994	Cadmium	mg/kg	1	0.66	L	0.60	37
Columbia River	McNary Dam 2	B0CSG6	September 23, 1994	Cadmium	mg/kg	1	1.4	=	0.60	37
Columbia River	McNary Dam	B0CSG7	September 23, 1994	Cadmium	mg/kg	1	1.6	=	0.60	37
Columbia River	McNary Dam	B0W3D4	August 2, 1999	Cadmium	mg/Kg	1	3.3	=	0.60	37
Columbia River	McNary Dam	B0W3H2	August 2, 1999	Cadmium	mg/Kg	1	1.4	=	0.60	37
Columbia River	McNary Dam	B0W3H4	August 2, 1999	Cadmium	mg/Kg	1	1.2	=	0.60	37
Columbia River	McNary Dam	B0W3H6	August 2, 1999	Cadmium	mg/Kg	1	1.6	=	0.60	37
Columbia River	McNary Dam	B0W3N9	August 2, 1999	Cadmium	mg/Kg	1	1.5	=	0.60	37
Columbia River	McNary Dam	B0W3P1	August 2, 1999	Cadmium	mg/Kg	1	2.2	=	0.60	37
Columbia River	McNary Dam	B0YWD0	August 8, 2000	Cadmium	mg/Kg	1	1.5	=	0.60	37
Columbia River	McNary Dam	B0YWD2	August 8, 2000	Cadmium	mg/Kg	1	5.4	=	0.60	37
Snake River	ICE HARBOR DAM	B12CH7	July 23, 2001	Cadmium	mg/kg dry-wt	1	1.9	=	0.60	37
Columbia River	McNary Dam	B12CJ3	July 20, 2001	Cadmium	mg/kg dry-wt	1	1.6	=	0.60	37
Columbia River	McNary Dam	B12CK3	July 20, 2001	Cadmium	mg/kg dry-wt	1	0.94	=	0.60	37
Columbia River	McNary Dam	B12CK5	July 20, 2001	Cadmium	mg/kg dry-wt	1	0.82	=	0.60	37
Columbia River	McNary Dam	B12CK7	July 20, 2001	Cadmium	mg/kg dry-wt	1	2.2	=	0.60	37
Columbia River	McNary Dam	B12CM7	July 23, 2001	Cadmium	mg/kg dry-wt	1	4.3	=	0.60	37
Columbia River	McNary Dam	B12CM9	July 23, 2001	Cadmium	mg/kg dry-wt	1	2.5	=	0.60	37
Columbia River	McNary Dam	B17710	July 16, 2003	Cadmium	mg/Kg	1	1.6	=	0.60	37
Columbia River	McNary Dam	B17712	July 16, 2003	Cadmium	mg/Kg	1	1.6	=	0.60	37
Columbia River	McNary Dam	B17B57	August 8, 2003	Cadmium	mg/kg dry-wt	1	1.2	=	0.60	37
Columbia River	McNary Dam	B17B60	August 8, 2003	Cadmium	mg/kg dry-wt	1	1.9	=	0.60	37
Columbia River	McNary Dam	B17B65	August 8, 2003	Cadmium	mg/kg dry-wt	1	1.4	=	0.60	37
Columbia River	McNary Dam	B17B67	August 8, 2003	Cadmium	mg/kg dry-wt	1	1.0	=	0.60	37
Columbia River	McNary Dam	B17BJ3	August 8, 2003	Cadmium	mg/Kg	1	1.5	=	0.60	37
Columbia River	McNary Dam	B19PL7	July 13, 2004	Cadmium	mg/Kg	1	1.7	X	0.60	37
Columbia River	McNary Dam	B19PL9	July 13, 2004	Cadmium	mg/Kg	1	2.2	X	0.60	37
Columbia River	McNary Dam	B1B7N9	September 21, 2004	Cadmium	mg/Kg	1	2.9	X	0.60	37
Columbia River	RM 328	SRP 3,4	August 20, 1991	Cadmium	mg/kg dry-wt	1	1.6	=	0.60	37
Snake River	ICE HARBOR DAM	B0W3C6	August 16, 1999	Chromium	mg/Kg	1	47	=	37	30
Snake River	ICE HARBOR DAM	B0W3C8	August 16, 1999	Chromium	mg/Kg	1	52	=	37	30
Snake River	ICE HARBOR DAM	B0W3D0	August 16, 1999	Chromium	mg/Kg	1	51	=	37	30
Columbia River	McNary Dam	B0W3D4	August 2, 1999	Chromium	mg/Kg	1	63	=	37	30
Columbia River	McNary Dam	B0W3H2	August 2, 1999	Chromium	mg/Kg	1	59	=	37	30
Columbia River	McNary Dam	B0W3H4	August 2, 1999	Chromium	mg/Kg	1	55	=	37	30
Columbia River	McNary Dam	B0W3H6	August 2, 1999	Chromium	mg/Kg	1	61	=	37	30
Columbia River	McNary Dam	B0W3N9	August 2, 1999	Chromium	mg/Kg	1	61	=	37	30
Columbia River	McNary Dam	B0W3P1	August 2, 1999	Chromium	mg/Kg	1	55	=	37	30
Columbia River	McNary Dam	B0YWD0	August 8, 2000	Chromium	mg/Kg	1	56	=	37	30
Columbia River	McNary Dam	B0YWD2	August 8, 2000	Chromium	mg/Kg	1	57	=	37	30
Snake River	ICE HARBOR DAM	B12CH5	July 23, 2001	Chromium	mg/kg dry-wt	1	56	=	37	30
Snake River	ICE HARBOR DAM	B12CH7	July 23, 2001	Chromium	mg/kg dry-wt	1	71	=	37	30
Snake River	ICE HARBOR DAM	B12CH9	July 23, 2001	Chromium	mg/kg dry-wt	1	59	=	37	30
Columbia River	McNary Dam	B12CJ3	July 20, 2001	Chromium	mg/kg dry-wt	1	71	=	37	30

Table C-11
Summary of Surface Sediment Results From Segment 3 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical	Qualifier	Ecological	Human
							Value		Benchmark	Health
									Value	Benchmark
Columbia River	McNary Dam	B12CK3	July 20, 2001	Chromium	mg/kg dry-wt	1	51	=	37	30
Columbia River	McNary Dam	B12CK5	July 20, 2001	Chromium	mg/kg dry-wt	1	60	=	37	30
Columbia River	McNary Dam	B12CK7	July 20, 2001	Chromium	mg/kg dry-wt	1	73	=	37	30
Columbia River	McNary Dam	B12CM7	July 23, 2001	Chromium	mg/kg dry-wt	1	70	=	37	30
Columbia River	McNary Dam	B12CM9	July 23, 2001	Chromium	mg/kg dry-wt	1	70	=	37	30
Yakima River	YAKIMA RIVER	B16WX0	May 14, 2003	Chromium	mg/Kg	1	40	=	37	30
Yakima River	YAKIMA RIVER	B16WX1	May 14, 2003	Chromium	mg/Kg	1	35	=	37	30
Columbia River	McNary Dam	B17710	July 16, 2003	Chromium	mg/Kg	1	71	C	37	30
Columbia River	McNary Dam	B17712	July 16, 2003	Chromium	mg/Kg	1	74	C	37	30
Columbia River	McNary Dam	B17BJ3	August 8, 2003	Chromium	mg/Kg	1	73	=	37	30
Columbia River	McNary Dam	B19PL7	July 13, 2004	Chromium	mg/Kg	1	64	CX	37	30
Columbia River	McNary Dam	B19PL9	July 13, 2004	Chromium	mg/Kg	1	68	CX	37	30
Columbia River	McNary Dam	B1B7N9	September 21, 2004	Chromium	mg/Kg	1	62	X	37	30
Snake River	ICE HARBOR DAM	B1B7W8	September 20, 2004	Chromium	mg/Kg	1	51	X	37	30
Yakima River	Kiona WA	Yakima sed	August 25, 1987	Chromium	mg/kg	1	61	=	37	30
Columbia River	Pt of Pasco	05-8002	September 30, 1986	Chrysene	mg/kg dry-wt	1	0.13	J	0.057	62
Yakima River	Below Kiona	37A070-7	September 12, 1984	Copper	mg/kg dry-wt	2	36	=	32	2,960
Columbia River	McNary Dam	B0W3D4	August 2, 1999	Copper	mg/Kg	1	34	=	32	2,960
Columbia River	McNary Dam	B0W3H2	August 2, 1999	Copper	mg/Kg	1	33	=	32	2,960
Columbia River	McNary Dam	B0W3N9	August 2, 1999	Copper	mg/Kg	1	33	=	32	2,960
Columbia River	McNary Dam	B0YWD0	August 8, 2000	Copper	mg/Kg	1	37	=	32	2,960
Columbia River	McNary Dam	B0YWD2	August 8, 2000	Copper	mg/Kg	1	32	=	32	2,960
Snake River	ICE HARBOR DAM	B12CH7	July 23, 2001	Copper	mg/kg dry-wt	1	33	=	32	2,960
Snake River	ICE HARBOR DAM	B12CH9	July 23, 2001	Copper	mg/kg dry-wt	1	33	=	32	2,960
Columbia River	McNary Dam	B12CJ3	July 20, 2001	Copper	mg/kg dry-wt	1	36	=	32	2,960
Columbia River	McNary Dam	B12CK7	July 20, 2001	Copper	mg/kg dry-wt	1	33	=	32	2,960
Columbia River	McNary Dam	B12CM7	July 23, 2001	Copper	mg/kg dry-wt	1	39	=	32	2,960
Columbia River	McNary Dam	B12CM9	July 23, 2001	Copper	mg/kg dry-wt	1	37	=	32	2,960
Columbia River	McNary Dam	B17710	July 16, 2003	Copper	mg/Kg	1	37	=	32	2,960
Columbia River	McNary Dam	B19PL7	July 13, 2004	Copper	mg/Kg	1	36	X	32	2,960
Columbia River	McNary Dam	B19PL9	July 13, 2004	Copper	mg/Kg	1	34	X	32	2,960
Columbia River	McNary Dam	B1B7N9	September 21, 2004	Copper	mg/Kg	1	37	X	32	2,960
Snake River	ICE HARBOR DAM	B1B7W8	September 20, 2004	Copper	mg/Kg	1	34	X	32	2,960
Yakima River	Below Kiona	37A070-7	September 12, 1984	Dichlorodiphenyldichloroethane	mg/kg dry-wt	2	0.023	=	0.0040	2.4
Yakima River	RM 18	8140	September 24, 1985	Dichlorodiphenyldichloroethane	mg/kg dry-wt	1	0.0053	=	0.0040	2.4
Columbia River	RM 274-286	CRUSD128	November 1, 1991	Dichlorodiphenyldichloroethane	mg/kg dry-wt	1	0.020	J	0.0040	2.4
Columbia River	McNary Dam	MD-mid river-1	October 1, 1986	Dichlorodiphenyldichloroethane	mg/kg dry-wt	3	0.010	=	0.0040	2.4
Columbia River	McNary Dam	MD-mid river-2	October 1, 1986	Dichlorodiphenyldichloroethane	mg/kg dry-wt	3	0.0090	=	0.0040	2.4
Columbia River	McNary Dam	MD-north shore	October 1, 1986	Dichlorodiphenyldichloroethane	mg/kg dry-wt	3	0.0090	D	0.0040	2.4
Yakima River	Below Kiona	37A070-7	September 12, 1984	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	2	0.051	=	0.0015	1.7
Yakima River	RM 18	8140	September 24, 1985	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	1	0.030	=	0.0015	1.7
Walla Walla River	Near mouth	92388089	September 16, 1992	Dichlorodiphenyldichloroethylene	mg/Kg	1	0.0080	J	0.0015	1.7
Yakima River	Horn Rapids Dam	92388096	September 16, 1992	Dichlorodiphenyldichloroethylene	mg/Kg	1	0.015	J	0.0015	1.7
Yakima River	Horn Rapids Dam	92388097	September 16, 1992	Dichlorodiphenyldichloroethylene	mg/Kg	1	0.016	J	0.0015	1.7
Snake River	Lake Sacajawea	94378145	September 14, 1994	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	1	0.0020	J	0.0015	1.7
Yakima River	Kiona WA	Bed sediment #1	August 31, 1988	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	1	0.0030	=	0.0015	1.7
Yakima River	Kiona WA	Bed sediment #2	August 31, 1988	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	1	0.0027	=	0.0015	1.7
Columbia River	McNary Dam	MD-mid river-1	October 1, 1986	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	3	0.0050	=	0.0015	1.7

Table C-11
Summary of Surface Sediment Results From Segment 3 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	McNary Dam	MD-mid river-2	October 1, 1986	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	3	0.0050	=	0.0015	1.7
Columbia River	McNary Dam	MD-north shore	October 1, 1986	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	3	0.0060	D	0.0015	1.7
Columbia River	McNary Dam	MD-south shore	October 1, 1986	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	3	0.0040	=	0.0015	1.7
Columbia River	RM 314-315	SRP 1,2	August 19, 1991	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	1	0.0024	=	0.0015	1.7
Columbia River	RM 315-316	SRP 51	August 19, 1991	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	1	0.0020	=	0.0015	1.7
Walla Walla River	Cummins Rd Bdg	Walla 003	June 18, 1996	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	1	0.0076	=	0.0015	1.7
Yakima River	Below Kiona	37A070-7	September 12, 1984	Dichlorodiphenyltrichloroethane	mg/kg dry-wt	2	0.035	=	0.0042	1.7
Yakima River	Kiona WA	Bed sediment #2	August 31, 1988	Dichlorodiphenyltrichloroethane	mg/kg dry-wt	1	0.010	=	0.0042	1.7
Yakima River	Kiona WA	Bed sediment #2	August 31, 1988	Dieldrin	mg/kg dry-wt	1	0.0050	=	0.0019	0.030
Columbia River	Pt of Pasco	05-8000	September 30, 1986	Fluoranthene	mg/kg dry-wt	1	0.12	J	0.11	2,294
Columbia River	Pt of Pasco	05-8001	September 30, 1986	Fluoranthene	mg/kg dry-wt	1	0.12	J	0.11	2,294
Columbia River	Pt of Pasco	05-8002	September 30, 1986	Fluoranthene	mg/kg dry-wt	1	0.20	J	0.11	2,294
Walla Walla River	Near mouth	92388089	September 16, 1992	Gamma-BHC (Lindane)	mg/Kg	1	0.0080	J	9.00E-04	--
Columbia River	McNary Dam	B0CSG8	September 23, 1994	Iron	mg/kg	1	22,000	=	20,000	23,463
Columbia River	McNary Dam	B17B57	August 8, 2003	Iron	mg/kg dry-wt	1	24,000	=	20,000	23,463
Columbia River	McNary Dam	B17B60	August 8, 2003	Iron	mg/kg dry-wt	1	34,000	=	20,000	23,463
Columbia River	McNary Dam	B17B65	August 8, 2003	Iron	mg/kg dry-wt	1	27,000	=	20,000	23,463
Columbia River	McNary Dam	B17B67	August 8, 2003	Iron	mg/kg dry-wt	1	24,000	=	20,000	23,463
Yakima River	Kiona WA	Yakima sed	August 25, 1987	Iron	mg/Kg	1	51,000	=	20,000	23,463
Columbia River	Pt of Pasco	40-8326	September 30, 1986	Lead	mg/kg dry-wt	1	58	=	35	250
Columbia River	RM 298	168275	April 13, 1992	Lead	mg/kg dry-wt	1	39	=	35	250
Columbia River	McNary Dam	B12CK7	July 20, 2001	Lead	mg/kg dry-wt	1	52	=	35	250
Columbia River	McNary Dam	B12CM7	July 23, 2001	Lead	mg/kg dry-wt	1	37	=	35	250
Columbia River	McNary Dam	B17B60	August 8, 2003	Manganese	mg/kg dry-wt	1	640	=	460	1,762
Columbia River	McNary Dam	B17B65	August 8, 2003	Manganese	mg/kg dry-wt	1	630	=	460	1,762
Yakima River	Kiona WA	Yakima sed	August 25, 1987	Manganese	mg/kg	1	1,500	=	460	1,762
Columbia River	McNary Dam	B12CM7	July 23, 2001	Mercury	mg/kg dry-wt	1	0.31	=	0.18	23
Columbia River	McNary Dam	B17B60	August 8, 2003	Mercury	mg/kg dry-wt	1	0.25	=	0.18	23
Columbia River	McNary Dam	B17B65	August 8, 2003	Mercury	mg/kg dry-wt	1	0.19	=	0.18	23
Columbia River	RM 298	168275	April 13, 1992	Nickel	mg/kg dry-wt	1	21	=	18	1,564
Columbia River	McNary Dam	4414203	June 1, 2004	Nickel	mg/kg	1	21	=	18	1,564
Columbia River	Lake Wallula	4424225	June 1, 2004	Nickel	mg/kg	1	22	=	18	1,564
Columbia River	Lake Wallula	4424226	June 1, 2004	Nickel	mg/kg	1	25	=	18	1,564
Columbia River	Lake Wallula	4424227	June 1, 2004	Nickel	mg/kg	1	20	=	18	1,564
Yakima River	RM 1	4434230	June 1, 2004	Nickel	mg/kg	1	22	=	18	1,564
Yakima River	RM 1	4434231	June 1, 2004	Nickel	mg/kg	1	24	=	18	1,564
Yakima River	RM 1	4434233	June 1, 2004	Nickel	mg/kg	1	20	=	18	1,564
Yakima River	RM 2	4434242	June 1, 2004	Nickel	mg/kg	1	24	=	18	1,564
Yakima River	RM 2	4434243	June 1, 2004	Nickel	mg/kg	1	27	=	18	1,564
Yakima River	RM 1	4434244	June 1, 2004	Nickel	mg/kg	1	27	=	18	1,564
Snake River	ICE HARBOR DAM	B0W3C8	August 16, 1999	Nickel	mg/Kg	1	22	=	18	1,564
Snake River	ICE HARBOR DAM	B0W3D0	August 16, 1999	Nickel	mg/Kg	1	23	=	18	1,564
Columbia River	McNary Dam	B0W3D4	August 2, 1999	Nickel	mg/Kg	1	29	=	18	1,564
Columbia River	McNary Dam	B0W3H2	August 2, 1999	Nickel	mg/Kg	1	29	=	18	1,564
Columbia River	McNary Dam	B0W3H4	August 2, 1999	Nickel	mg/Kg	1	23	=	18	1,564
Columbia River	McNary Dam	B0W3H6	August 2, 1999	Nickel	mg/Kg	1	30	=	18	1,564
Columbia River	McNary Dam	B0W3N9	August 2, 1999	Nickel	mg/Kg	1	29	=	18	1,564
Columbia River	McNary Dam	B0W3P1	August 2, 1999	Nickel	mg/Kg	1	25	=	18	1,564

Table C-11
Summary of Surface Sediment Results From Segment 3 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical	Qualifier	Ecological	Human
							Value		Benchmark	Health
									Value	Benchmark
Columbia River	McNary Dam	B0YWD0	August 8, 2000	Nickel	mg/Kg	1	30	=	18	1,564
Columbia River	McNary Dam	B0YWD2	August 8, 2000	Nickel	mg/Kg	1	27	=	18	1,564
Snake River	ICE HARBOR DAM	B12CH5	July 23, 2001	Nickel	mg/kg dry-wt	1	22	=	18	1,564
Snake River	ICE HARBOR DAM	B12CH7	July 23, 2001	Nickel	mg/kg dry-wt	1	32	=	18	1,564
Snake River	ICE HARBOR DAM	B12CH9	July 23, 2001	Nickel	mg/kg dry-wt	1	23	=	18	1,564
Columbia River	McNary Dam	B12CJ3	July 20, 2001	Nickel	mg/kg dry-wt	1	30	=	18	1,564
Columbia River	McNary Dam	B12CK3	July 20, 2001	Nickel	mg/kg dry-wt	1	22	=	18	1,564
Columbia River	McNary Dam	B12CK5	July 20, 2001	Nickel	mg/kg dry-wt	1	22	=	18	1,564
Columbia River	McNary Dam	B12CK7	July 20, 2001	Nickel	mg/kg dry-wt	1	24	=	18	1,564
Columbia River	McNary Dam	B12CM7	July 23, 2001	Nickel	mg/kg dry-wt	1	28	=	18	1,564
Columbia River	McNary Dam	B12CM9	July 23, 2001	Nickel	mg/kg dry-wt	1	30	=	18	1,564
Yakima River	YAKIMA RIVER	B16WX0	May 14, 2003	Nickel	mg/Kg	1	22	=	18	1,564
Yakima River	YAKIMA RIVER	B16WX1	May 14, 2003	Nickel	mg/Kg	1	21	=	18	1,564
Columbia River	McNary Dam	B17710	July 16, 2003	Nickel	mg/Kg	1	32	=	18	1,564
Columbia River	McNary Dam	B17712	July 16, 2003	Nickel	mg/Kg	1	30	=	18	1,564
Columbia River	McNary Dam	B17B60	August 8, 2003	Nickel	mg/kg dry-wt	1	25	=	18	1,564
Columbia River	McNary Dam	B17B65	August 8, 2003	Nickel	mg/kg dry-wt	1	20	=	18	1,564
Columbia River	McNary Dam	B17BJ3	August 8, 2003	Nickel	mg/Kg	1	30	=	18	1,564
Columbia River	McNary Dam	B19PL7	July 13, 2004	Nickel	mg/Kg	1	31	X	18	1,564
Columbia River	McNary Dam	B19PL9	July 13, 2004	Nickel	mg/Kg	1	32	X	18	1,564
Columbia River	McNary Dam	B1B7N9	September 21, 2004	Nickel	mg/Kg	1	31	X	18	1,564
Snake River	ICE HARBOR DAM	B1B7W8	September 20, 2004	Nickel	mg/Kg	1	24	X	18	1,564
Yakima River	Kiona WA	Yakima sed	August 25, 1987	Nickel	mg/kg	1	30	=	18	1,564
Columbia River	RM 328	SRP 3,4	August 20, 1991	Phenanthrene	mg/kg dry-wt	1	0.057	=	0.042	--
Columbia River	Pt of Pasco	05-8000	September 30, 1986	Pyrene	mg/kg dry-wt	1	0.19	J	0.053	2,316
Columbia River	Pt of Pasco	05-8001	September 30, 1986	Pyrene	mg/kg dry-wt	1	0.15	J	0.053	2,316
Columbia River	Pt of Pasco	05-8002	September 30, 1986	Pyrene	mg/kg dry-wt	1	0.22	J	0.053	2,316
Yakima River	Kiona WA	Yakima sed	August 25, 1987	Thorium	mg/kg	1	8.0	=	--	1.3
Columbia River	McNary Dam	12986	September 29, 1992	Uranium-234	pCi/g dry-wt	1	1.8	=	5,270	1.1
Columbia River	McNary Dam	12987	September 29, 1992	Uranium-234	pCi/g dry-wt	1	1.8	=	5,270	1.1
Columbia River	McNary Dam	12988	September 29, 1992	Uranium-234	pCi/g dry-wt	1	1.4	=	5,270	1.1
Columbia River	McNary Dam	15829	September 23, 1994	Uranium-234	pCi/g dry-wt	1	1.3	=	5,270	1.1
Columbia River	McNary Dam	15830	September 23, 1994	Uranium-234	pCi/g dry-wt	1	1.4	=	5,270	1.1
Columbia River	McNary Dam	16952	July 28, 1995	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1
Columbia River	McNary Dam	16953	July 28, 1995	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1
Columbia River	McNary Dam	16954	July 28, 1995	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1
Columbia River	McNary Dam	18467	August 16, 1996	Uranium-234	pCi/g dry-wt	1	1.4	=	5,270	1.1
Columbia River	McNary Dam	18468	August 16, 1996	Uranium-234	pCi/g dry-wt	1	1.3	=	5,270	1.1
Columbia River	McNary Dam	18469	August 16, 1996	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1
Columbia River	McNary Dam	19680	August 15, 1997	Uranium-234	pCi/g dry-wt	1	1.5	=	5,270	1.1
Columbia River	McNary Dam	19681	August 15, 1997	Uranium-234	pCi/g dry-wt	1	1.3	=	5,270	1.1
Columbia River	McNary Dam	19682	August 15, 1997	Uranium-234	pCi/g dry-wt	1	1.4	=	5,270	1.1
Columbia River	McNary Dam	20750	August 11, 1998	Uranium-234	pCi/g dry-wt	1	1.5	=	5,270	1.1
Columbia River	McNary Dam	20751	August 11, 1998	Uranium-234	pCi/g dry-wt	1	1.3	=	5,270	1.1
Columbia River	McNary Dam	20752	August 11, 1998	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1
Columbia River	McNary Dam	23515	August 2, 1999	Uranium-234	pCi/g dry-wt	1	1.3	=	5,270	1.1
Columbia River	McNary Dam	23516	August 2, 1999	Uranium-234	pCi/g dry-wt	1	1.3	=	5,270	1.1
Columbia River	McNary Dam	24743	August 8, 2000	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1

Table C-11
Summary of Surface Sediment Results From Segment 3 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical	Qualifier	Ecological	Human
							Value		Benchmark	Health
									Value	Benchmark
Columbia River	McNary Dam	24746	August 8, 2000	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1
Columbia River	McNary Dam	26248	July 23, 2001	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1
Columbia River	McNary Dam	29043	July 19, 2002	Uranium-234	pCi/g dry-wt	1	1.3	=	5,270	1.1
Columbia River	McNary Dam	29044	July 19, 2002	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1
Columbia River	McNary Dam	30870	July 16, 2003	Uranium-234	pCi/g dry-wt	1	1.4	=	5,270	1.1
Columbia River	McNary Dam	30871	July 16, 2003	Uranium-234	pCi/g dry-wt	1	1.6	=	5,270	1.1
Columbia River	McNary Dam	31810	August 8, 2003	Uranium-234	pCi/g dry-wt	1	1.6	=	5,270	1.1
Columbia River	McNary Dam	31811	August 8, 2003	Uranium-234	pCi/g dry-wt	1	1.5	=	5,270	1.1
Columbia River	McNary Dam	31812	August 8, 2003	Uranium-234	pCi/g dry-wt	1	1.4	=	5,270	1.1
Columbia River	McNary Dam	33603	September 21, 2004	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1
Snake River	ICE HARBOR DAM	B1B7T8	September 20, 2004	Uranium-234	pCi/g	1	1.9	=	5,270	1.1
Columbia River	McNary Dam	12986	September 29, 1992	Uranium-238	pCi/g dry-wt	1	1.6	=	2,490	1.1
Columbia River	McNary Dam	12987	September 29, 1992	Uranium-238	pCi/g dry-wt	1	1.6	=	2,490	1.1
Columbia River	McNary Dam	12988	September 29, 1992	Uranium-238	pCi/g dry-wt	1	1.2	=	2,490	1.1
Columbia River	McNary Dam	18467	August 16, 1996	Uranium-238	pCi/g dry-wt	1	1.2	=	2,490	1.1
Columbia River	McNary Dam	18468	August 16, 1996	Uranium-238	pCi/g dry-wt	1	1.2	=	2,490	1.1
Columbia River	McNary Dam	19680	August 15, 1997	Uranium-238	pCi/g dry-wt	1	1.3	=	2,490	1.1
Columbia River	McNary Dam	19681	August 15, 1997	Uranium-238	pCi/g dry-wt	1	1.2	=	2,490	1.1
Columbia River	McNary Dam	19682	August 15, 1997	Uranium-238	pCi/g dry-wt	1	1.3	=	2,490	1.1
Columbia River	McNary Dam	20751	August 11, 1998	Uranium-238	pCi/g dry-wt	1	1.2	=	2,490	1.1
Columbia River	McNary Dam	23516	August 2, 1999	Uranium-238	pCi/g dry-wt	1	1.3	=	2,490	1.1
Columbia River	McNary Dam	24743	August 8, 2000	Uranium-238	pCi/g dry-wt	1	1.1	=	2,490	1.1
Columbia River	McNary Dam	29043	July 19, 2002	Uranium-238	pCi/g dry-wt	1	1.1	=	2,490	1.1
Columbia River	McNary Dam	29044	July 19, 2002	Uranium-238	pCi/g dry-wt	1	1.1	=	2,490	1.1
Columbia River	McNary Dam	30870	July 16, 2003	Uranium-238	pCi/g dry-wt	1	1.3	=	2,490	1.1
Columbia River	McNary Dam	30871	July 16, 2003	Uranium-238	pCi/g dry-wt	1	1.2	=	2,490	1.1
Columbia River	McNary Dam	31810	August 8, 2003	Uranium-238	pCi/g dry-wt	1	1.3	=	2,490	1.1
Columbia River	McNary Dam	31811	August 8, 2003	Uranium-238	pCi/g dry-wt	1	1.4	=	2,490	1.1
Columbia River	McNary Dam	31812	August 8, 2003	Uranium-238	pCi/g dry-wt	1	1.4	=	2,490	1.1
Columbia River	McNary Dam	33603	September 21, 2004	Uranium-238	pCi/g dry-wt	1	1.2	=	2,490	1.1
Columbia River	McNary Dam	B0BRS5	April 11, 1994	Uranium-238	pCi/g	1	1.3	=	2,490	1.1
Columbia River	McNary Dam	B0BRS7	April 11, 1994	Uranium-238	pCi/g	1	1.6	=	2,490	1.1
Columbia River	McNary Dam	B0BRS9	April 11, 1994	Uranium-238	pCi/g	1	1.5	=	2,490	1.1
Snake River	ICE HARBOR DAM	B1B7T8	September 20, 2004	Uranium-238	pCi/g	1	1.3	=	2,490	1.1
Yakima River	Kiona WA	Yakima sed	August 25, 1987	Vanadium	mg/kg	1	140	=	--	78
Columbia River	RM 298	168275	April 13, 1992	Zinc	mg/kg dry-wt	1	284	J	120	23,463
Columbia River	McNary Dam	4414200	June 1, 2004	Zinc	mg/kg	1	131	=	120	23,463
Columbia River	McNary Dam	4414203	June 1, 2004	Zinc	mg/kg	1	178	=	120	23,463
Columbia River	Lake Wallula	4414213	June 1, 2004	Zinc	mg/kg	1	247	=	120	23,463
Columbia River	Lake Wallula	4424224	June 1, 2004	Zinc	mg/kg	1	124	=	120	23,463
Columbia River	Lake Wallula	4424225	June 1, 2004	Zinc	mg/kg	1	195	=	120	23,463
Columbia River	Lake Wallula	4424226	June 1, 2004	Zinc	mg/kg	1	163	=	120	23,463
Columbia River	Lake Wallula	4424227	June 1, 2004	Zinc	mg/kg	1	241	=	120	23,463
Yakima River	RM 1	4434230	June 1, 2004	Zinc	mg/kg	1	558	=	120	23,463
Columbia River	RM 339.5	4434234	June 1, 2004	Zinc	mg/kg	1	209	=	120	23,463
Columbia River	McNary Dam	B0CSG7	September 23, 1994	Zinc	mg/kg	1	150	=	120	23,463
Columbia River	McNary Dam	B0W3D4	August 2, 1999	Zinc	mg/Kg	1	312	=	120	23,463
Columbia River	McNary Dam	B0W3H2	August 2, 1999	Zinc	mg/Kg	1	202	=	120	23,463

Table C-11
Summary of Surface Sediment Results From Segment 3 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	McNary Dam	B0W3H4	August 2, 1999	Zinc	mg/Kg	1	208	=	120	23,463
Columbia River	McNary Dam	B0W3H6	August 2, 1999	Zinc	mg/Kg	1	241	=	120	23,463
Columbia River	McNary Dam	B0W3N9	August 2, 1999	Zinc	mg/Kg	1	215	=	120	23,463
Columbia River	McNary Dam	B0W3P1	August 2, 1999	Zinc	mg/Kg	1	282	=	120	23,463
Columbia River	McNary Dam	B0YWD0	August 8, 2000	Zinc	mg/Kg	1	244	=	120	23,463
Columbia River	McNary Dam	B0YWD2	August 8, 2000	Zinc	mg/Kg	1	483	=	120	23,463
Snake River	ICE HARBOR DAM	B12CH5	July 23, 2001	Zinc	mg/kg dry-wt	1	136	=	120	23,463
Snake River	ICE HARBOR DAM	B12CH7	July 23, 2001	Zinc	mg/kg dry-wt	1	316	=	120	23,463
Snake River	ICE HARBOR DAM	B12CH9	July 23, 2001	Zinc	mg/kg dry-wt	1	131	=	120	23,463
Columbia River	McNary Dam	B12CJ3	July 20, 2001	Zinc	mg/kg dry-wt	1	280	=	120	23,463
Columbia River	McNary Dam	B12CK3	July 20, 2001	Zinc	mg/kg dry-wt	1	175	=	120	23,463
Columbia River	McNary Dam	B12CK5	July 20, 2001	Zinc	mg/kg dry-wt	1	223	=	120	23,463
Columbia River	McNary Dam	B12CK7	July 20, 2001	Zinc	mg/kg dry-wt	1	375	=	120	23,463
Columbia River	McNary Dam	B12CM7	July 23, 2001	Zinc	mg/kg dry-wt	1	345	=	120	23,463
Columbia River	McNary Dam	B12CM9	July 23, 2001	Zinc	mg/kg dry-wt	1	322	=	120	23,463
Columbia River	McNary Dam	B17710	July 16, 2003	Zinc	mg/Kg	1	247	=	120	23,463
Columbia River	McNary Dam	B17712	July 16, 2003	Zinc	mg/Kg	1	275	=	120	23,463
Columbia River	McNary Dam	B17B60	August 8, 2003	Zinc	mg/kg dry-wt	1	220	=	120	23,463
Columbia River	McNary Dam	B17B65	August 8, 2003	Zinc	mg/kg dry-wt	1	240	=	120	23,463
Columbia River	McNary Dam	B17BJ3	August 8, 2003	Zinc	mg/Kg	1	276	C	120	23,463
Columbia River	McNary Dam	B19PL7	July 13, 2004	Zinc	mg/Kg	1	244	X	120	23,463
Columbia River	McNary Dam	B19PL9	July 13, 2004	Zinc	mg/Kg	1	296	X	120	23,463
Columbia River	McNary Dam	B1B7N9	September 21, 2004	Zinc	mg/Kg	1	340	X	120	23,463

Table C-12**Summary Statistics for All Categories of Surface Water Samples Collected from Segment 3 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Alkalinity	mg/L	23	23	100%	--	--	99	121	104
CONV	Ammonia	mg/L	103	63	61%	0.010	0.010	0.010	0.090	0.020
	Biochemical Oxygen Demand	mg/L	9	0	0%	2.0	4.0	--	--	1.6
CONV	Chloride	mg/L	37	37	100%	--	--	2.0	150	13
CONV	Dissolved organic carbon	mg/L	46	46	100%	--	--	1.5	4.4	2.3
CONV	Dissolved oxygen	mg/L	1	1	100%	--	--	9.3	9.3	9.3
CONV	Fluoride	mg/L	12	12	100%	--	--	0.11	0.21	0.16
CONV	Hardness	mg/L	32	32	100%	--	--	56	118	95
CONV	Nitrate	mg/L	48	48	100%	--	--	0.20	4.6	1.9
CONV	Nitrogen, Nitrate (as N)	mg/L	12	12	100%	--	--	0.15	0.60	0.29
CONV	Nitrogen, Nitrate-Nitrite	mg/L	3	3	100%	--	--	0.86	1.0	0.92
CONV	Nitrogen, Nitrite	mg/L	12	0	0%	0.011	0.011	--	--	0.0055
CONV	Orthophosphate	mg/L	98	98	100%	--	--	0.032	0.14	0.080
CONV	pH	pH Units	82	82	100%	--	--	7.6	9.5	8.3
CONV	Phosphorous in phosphate	mg/L	36	35	97%	0.010	0.010	0.010	0.12	0.046
CONV	Specific Conductance	umhos/cm	124	124	100%	--	--	70	1,030	219
CONV	Sulfate	mg/L	12	12	100%	--	--	4.6	14	8.8
CONV	Temperature	Deg C	19	19	100%	--	--	3.8	24	14
	Total Non-Volatile Suspended Solids	mg/L	16	16	100%	--	--	15	57	29
CONV	Total Organic Carbon	%	1	1	100%	--	--	0.83	0.83	0.83
CONV	Total Organic Carbon	mg/L	48	48	100%	--	--	1.7	5.0	2.5
CONV	Total Persulfate Nitrogen	mg/L	103	103	100%	--	--	0.43	23	1.5
CONV	Total suspended solids	mg/L	258	258	100%	--	--	1.0	405	24
CONV	Turbidity	NTU	163	163	100%	--	--	1.2	210	12
METAL	Antimony	mg/L	24	24	100%	--	--	2.89E-05	2.13E-04	1.02E-04
METAL	Arsenic	mg/L	48	48	100%	--	--	5.08E-04	0.0028	0.0013
METAL	Beryllium	mg/L	24	0	0%	6.60E-05	6.60E-05	--	--	3.30E-05
METAL	Cadmium	mg/L	36	3	8%	2.00E-05	1.00E-04	2.59E-05	3.32E-05	1.91E-05
METAL	Chromium	mg/L	39	33	85%	4.70E-05	5.00E-04	8.82E-05	0.0017	5.38E-04
METAL	Copper	mg/L	39	39	100%	--	--	4.80E-04	0.0025	9.18E-04
METAL	Lead	mg/L	39	28	72%	1.10E-05	1.00E-04	1.11E-05	6.90E-04	8.91E-05
METAL	Mercury	mg/L	37	28	76%	2.00E-06	2.00E-06	5.83E-07	3.20E-06	1.35E-06
METAL	Nickel	mg/L	36	36	100%	--	--	3.03E-05	0.0023	6.65E-04
METAL	Phosphorus	mg/L	139	139	100%	--	--	0.010	3.9	0.19
METAL	Selenium	mg/L	24	12	50%	8.00E-05	8.00E-05	8.01E-05	4.66E-04	1.37E-04
METAL	Silver	mg/L	43	12	28%	8.50E-06	2.00E-05	2.00E-05	1.00E-04	2.07E-05
METAL	Thallium	mg/L	24	7	29%	9.00E-06	9.00E-06	9.48E-06	1.51E-05	6.81E-06
METAL	Uranium	mg/L	24	24	100%	--	--	3.71E-04	0.0016	8.48E-04
METAL	Zinc	mg/L	39	39	100%	--	--	4.90E-04	0.0064	0.0024
PCB	Aroclor-1016	mg/L	2	0	0%	6.30E-07	6.60E-07	--	--	3.23E-07
PCB	Aroclor-1221	mg/L	2	0	0%	6.30E-07	6.60E-07	--	--	3.23E-07
PCB	Aroclor-1232	mg/L	2	0	0%	6.30E-07	6.60E-07	--	--	3.23E-07
PCB	Aroclor-1242	mg/L	2	0	0%	6.30E-07	6.60E-07	--	--	3.23E-07
PCB	Aroclor-1248	mg/L	2	0	0%	6.30E-07	6.60E-07	--	--	3.23E-07

Table C-12
Summary Statistics for All Categories of Surface Water Samples Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1254	mg/L	2	0	0%	6.30E-07	6.60E-07	--	--	3.23E-07
PCB	Aroclor-1260	mg/L	2	0	0%	6.30E-07	6.60E-07	--	--	3.23E-07
PEST	2,4'-DDD	mg/L	16	0	0%	6.20E-08	6.90E-08	--	--	3.33E-08
PEST	2,4'-DDE	mg/L	16	0	0%	6.20E-08	6.90E-08	--	--	3.33E-08
PEST	2,4'-DDT	mg/L	16	0	0%	6.20E-08	1.10E-07	--	--	3.47E-08
PEST	alpha-Chlordane	mg/L	21	0	0%	6.20E-08	6.90E-08	--	--	3.30E-08
PEST	cis-Nonachlor	mg/L	21	0	0%	6.20E-08	6.90E-08	--	--	3.30E-08
PEST	Dichlorodiphenyldichloroethane	mg/L	21	4	19%	6.20E-08	9.20E-08	6.70E-08	1.30E-07	4.68E-08
PEST	Dichlorodiphenyldichloroethylene	mg/L	21	18	86%	6.60E-08	6.90E-08	7.10E-08	1.20E-06	2.37E-07
PEST	Dichlorodiphenyltrichloroethane	mg/L	21	5	24%	6.40E-08	1.60E-07	1.00E-07	6.50E-07	8.82E-08
PEST	Dieldrin	mg/L	21	4	19%	6.20E-08	1.60E-07	7.60E-08	3.00E-07	6.26E-08
PEST	Heptachlor	mg/L	21	0	0%	6.20E-08	6.90E-08	--	--	3.30E-08
PEST	Heptachlor epoxide	mg/L	21	6	29%	6.20E-08	1.10E-07	3.30E-08	1.20E-07	4.00E-08
PEST	Oxychlordane	mg/L	21	0	0%	6.20E-08	1.70E-07	--	--	4.47E-08
PEST	trans-Chlordane	mg/L	21	0	0%	6.20E-08	1.70E-07	--	--	4.47E-08
PEST	trans-Nonachlor	mg/L	21	0	0%	6.20E-08	6.90E-08	--	--	3.30E-08
RAD	Antimony-125	pCi/L	8	1	13%	0.13	5.0	0.13	0.13	1.2
RAD	Beryllium-7	pCi/L	7	0	0%	0.42	23	--	--	4.5
RAD	Cesium-134	pCi/L	10	1	10%	0.025	2.5	0.70	0.70	0.68
RAD	Cesium-137	pCi/L	8	0	0%	0.16	1.8	--	--	0.40
RAD	Cobalt-60	pCi/L	8	1	13%	0.77	4.4	4.4	4.4	1.3
RAD	Europium-152	pCi/L	8	0	0%	0.079	3.1	--	--	0.60
RAD	Europium-154	pCi/L	5	0	0%	0.52	7.6	--	--	1.5
RAD	Europium-155	pCi/L	8	0	0%	1.2	5.3	--	--	1.5
RAD	Plutonium-239/240	pCi/L	1	0	0%	0.0018	0.0018	--	--	8.85E-04
RAD	Potassium-40	pCi/L	4	0	0%	6.5	23	--	--	7.3
RAD	Ruthenium-106	pCi/L	7	1	14%	0.54	8.8	4.3	4.3	2.5
RAD	Strontium-90	pCi/L	18	17	94%	0.046	0.046	0.055	0.15	0.089
RAD	Technetium-99	pCi/L	11	0	0%	0.0039	0.44	--	--	0.13
RAD	Tritium	pCi/L	12	12	100%	--	--	13	35	25
RAD	Uranium-234	pCi/L	3	3	100%	--	--	0.25	0.54	0.35
RAD	Uranium-235	pCi/L	3	2	67%	0.0035	0.0035	0.0035	0.019	0.0080
RAD	Uranium-238	pCi/L	3	3	100%	--	--	0.19	0.41	0.26
SVOC	Hexachlorobenzene	mg/L	21	3	14%	6.30E-08	1.00E-07	1.10E-07	1.80E-07	5.31E-08

CONV - Conventional parameter

PCB - Polychlorinated Biphenyls

PEST - Pesticide

RAD - Radionuclide

SVOC - Semivolatile Organic Compound

Table C-13

Summary Statistics for All Categories of Surface Water Samples Collected from the Yakima River (Segment 3)

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Alkalinity	mg/L	22	22	100%	--	--	99	107	103
CONV	Ammonia	mg/L	103	63	61%	0.010	0.010	0.010	0.090	0.020
CONV	Biochemical Oxygen Deman	mg/L	9	0	0%	2.0	4.0	--	--	1.6
CONV	Chloride	mg/L	28	28	100%	--	--	5.5	150	16
CONV	Dissolved organic carbon	mg/L	14	14	100%	--	--	1.5	4.4	1.9
CONV	Fluoride	mg/L	3	3	100%	--	--	0.18	0.19	0.18
CONV	Hardness	mg/L	31	31	100%	--	--	56	118	95
CONV	Nitrate	mg/L	40	40	100%	--	--	0.20	4.6	2.2
CONV	Nitrogen, Nitrate (as N)	mg/L	3	3	100%	--	--	0.60	0.60	0.60
CONV	Nitrogen, Nitrate-Nitrite	mg/L	3	3	100%	--	--	0.86	1.0	0.92
CONV	Nitrogen, Nitrite	mg/L	3	0	0%	0.011	0.011	--	--	0.0055
CONV	Orthophosphate	mg/L	98	98	100%	--	--	0.032	0.14	0.080
CONV	pH	pH Units	80	80	100%	--	--	7.6	9.5	8.3
CONV	Phosphorous in phosphate	mg/L	36	35	97%	0.010	0.010	0.010	0.12	0.046
CONV	Specific Conductance	umhos/cm	86	86	100%	--	--	113	1,030	241
CONV	Sulfate	mg/L	3	3	100%	--	--	13	14	14
CONV	Total Non-Volatile Suspended	mg/L	16	16	100%	--	--	15	57	29
CONV	Total Organic Carbon	mg/L	16	16	100%	--	--	1.7	4.9	2.1
CONV	Total Persulfate Nitrogen	mg/L	103	103	100%	--	--	0.43	23	1.5
CONV	Total suspended solids	mg/L	213	213	100%	--	--	1.0	379	20
CONV	Turbidity	NTU	127	127	100%	--	--	1.2	170	10
METAL	Antimony	mg/L	6	6	100%	--	--	5.36E-05	7.58E-05	6.07E-05
METAL	Arsenic	mg/L	30	30	100%	--	--	7.30E-04	0.0028	0.0015
METAL	Beryllium	mg/L	6	0	0%	6.60E-05	6.60E-05	--	--	3.30E-05
METAL	Cadmium	mg/L	18	0	0%	2.00E-05	1.00E-04	--	--	2.38E-05
METAL	Chromium	mg/L	21	16	76%	5.00E-04	5.00E-04	2.50E-04	0.0017	6.52E-04
METAL	Copper	mg/L	21	21	100%	--	--	4.80E-04	0.0025	0.0010
METAL	Lead	mg/L	21	13	62%	2.00E-05	1.00E-04	1.55E-05	6.90E-04	8.12E-05
METAL	Mercury	mg/L	19	10	53%	2.00E-06	2.00E-06	8.08E-07	3.20E-06	1.47E-06
METAL	Nickel	mg/L	18	18	100%	--	--	5.20E-04	0.0023	9.70E-04
METAL	Phosphorus	mg/L	139	139	100%	--	--	0.010	3.9	0.19
METAL	Selenium	mg/L	6	3	50%	8.00E-05	8.00E-05	2.43E-04	2.65E-04	1.45E-04
METAL	Silver	mg/L	25	12	48%	8.50E-06	2.00E-05	2.00E-05	1.00E-04	3.26E-05
METAL	Thallium	mg/L	6	0	0%	9.00E-06	9.00E-06	--	--	4.50E-06
METAL	Uranium	mg/L	6	6	100%	--	--	0.0015	0.0016	0.0015
METAL	Zinc	mg/L	21	21	100%	--	--	4.90E-04	0.0064	0.0026
RAD	Antimony-125	pCi/L	2	0	0%	1.7	5.0	--	--	1.7
RAD	Beryllium-7	pCi/L	1	0	0%	2.4	2.4	--	--	1.2
RAD	Cesium-134	pCi/L	2	0	0%	0.025	0.98	--	--	0.25
RAD	Cesium-137	pCi/L	1	0	0%	0.75	0.75	--	--	0.37
RAD	Cobalt-60	pCi/L	2	0	0%	0.85	0.92	--	--	0.44
RAD	Europium-152	pCi/L	3	0	0%	0.079	3.1	--	--	0.84
RAD	Europium-154	pCi/L	2	0	0%	0.52	0.64	--	--	0.29
RAD	Europium-155	pCi/L	2	0	0%	2.9	3.9	--	--	1.7
RAD	Potassium-40	pCi/L	1	0	0%	6.5	6.5	--	--	3.3
RAD	Ruthenium-106	pCi/L	1	0	0%	4.6	4.6	--	--	2.3
RAD	Strontium-90	pCi/L	3	3	100%	--	--	0.062	0.073	0.067

Table C-13**Summary Statistics for All Categories of Surface Water Samples Collected from the Yakima River (Segment 3)**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Technetium-99	pCi/L	2	0	0%	0.18	0.23	--	--	0.10
RAD	Tritium	pCi/L	3	3	100%	--	--	13	14	14
RAD	Uranium-234	pCi/L	1	1	100%	--	--	0.54	0.54	0.54
RAD	Uranium-235	pCi/L	1	1	100%	--	--	0.019	0.019	0.019
RAD	Uranium-238	pCi/L	1	1	100%	--	--	0.41	0.41	0.41

CONV - Conventional parameter

RAD - Radionuclide

Table C-14

Summary Statistics for Category 1 Surface Water Samples Collected from the Snake River (Segment 3)

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Chloride	mg/L	3	3	100%	--	--	3.3	3.4	3.3
CONV	Fluoride	mg/L	3	3	100%	--	--	0.20	0.21	0.20
CONV	Nitrate	mg/L	8	8	100%	--	--	0.30	1.0	0.71
CONV	Nitrogen, Nitrate (as N)	mg/L	3	3	100%	--	--	0.17	0.18	0.18
CONV	Nitrogen, Nitrite	mg/L	3	0	0%	0.011	0.011	--	--	0.0055
CONV	Sulfate	mg/L	3	3	100%	--	--	7.9	8.0	7.9
CONV	Total suspended solids	mg/L	3	3	100%	--	--	5.0	6.0	5.3
METAL	Antimony	mg/L	6	6	100%	--	--	9.11E-05	1.68E-04	1.28E-04
METAL	Arsenic	mg/L	6	6	100%	--	--	0.0011	0.0012	0.0011
METAL	Beryllium	mg/L	6	0	0%	6.60E-05	6.60E-05	--	--	3.30E-05
METAL	Cadmium	mg/L	6	0	0%	2.30E-05	2.30E-05	--	--	1.15E-05
METAL	Chromium	mg/L	6	6	100%	--	--	1.13E-04	5.72E-04	4.22E-04
METAL	Copper	mg/L	6	6	100%	--	--	5.01E-04	7.84E-04	6.36E-04
METAL	Lead	mg/L	6	6	100%	--	--	1.26E-05	1.26E-04	6.86E-05
METAL	Mercury	mg/L	6	6	100%	--	--	1.01E-06	1.82E-06	1.40E-06
METAL	Nickel	mg/L	6	6	100%	--	--	3.03E-05	8.01E-04	1.87E-04
METAL	Selenium	mg/L	6	2	33%	8.00E-05	8.00E-05	1.52E-04	2.40E-04	9.20E-05
METAL	Silver	mg/L	6	0	0%	8.50E-06	8.50E-06	--	--	4.25E-06
METAL	Thallium	mg/L	6	0	0%	9.00E-06	9.00E-06	--	--	4.50E-06
METAL	Uranium	mg/L	6	6	100%	--	--	7.09E-04	7.72E-04	7.39E-04
METAL	Zinc	mg/L	6	6	100%	--	--	6.11E-04	0.0015	0.0010
RAD	Antimony-125	pCi/L	1	0	0%	1.4	1.4	--	--	0.70
RAD	Beryllium-7	pCi/L	2	0	0%	8.5	23	--	--	8.0
RAD	Cesium-134	pCi/L	1	0	0%	2.5	2.5	--	--	1.3
RAD	Cesium-137	pCi/L	3	0	0%	0.19	1.8	--	--	0.39
RAD	Cobalt-60	pCi/L	2	0	0%	0.77	0.94	--	--	0.43
RAD	Europium-152	pCi/L	1	0	0%	0.28	0.28	--	--	0.14
RAD	Europium-154	pCi/L	1	0	0%	0.65	0.65	--	--	0.32
RAD	Europium-155	pCi/L	2	0	0%	2.3	4.4	--	--	1.7
RAD	Potassium-40	pCi/L	2	0	0%	6.5	22	--	--	7.2
RAD	Ruthenium-106	pCi/L	1	0	0%	8.8	8.8	--	--	4.4
RAD	Strontium-90	pCi/L	3	3	100%	--	--	0.055	0.069	0.061
RAD	Technetium-99	pCi/L	3	0	0%	0.0039	0.43	--	--	0.14
RAD	Tritium	pCi/L	3	3	100%	--	--	28	29	29

CONV - Conventional parameter

RAD - Radionuclide

Table C-15

Summary Statistics for Category 1 Surface Water Samples Collected from the Walla Walla River (Segment 3)

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Alkalinity	mg/L	1	1	100%	--	--	121	121	121
CONV	Chloride	mg/L	3	3	100%	--	--	3.2	3.2	3.2
CONV	Dissolved organic carbon	mg/L	18	18	100%	--	--	1.6	3.8	2.5
CONV	Dissolved oxygen	mg/L	1	1	100%	--	--	9.3	9.3	9.3
CONV	Fluoride	mg/L	3	3	100%	--	--	0.13	0.15	0.14
CONV	Hardness	mg/L	1	1	100%	--	--	109	109	109
CONV	Nitrogen, Nitrate (as N)	mg/L	3	3	100%	--	--	0.23	0.23	0.23
CONV	Nitrogen, Nitrite	mg/L	3	0	0%	0.011	0.011	--	--	0.0055
CONV	pH	pH Units	2	2	100%	--	--	8.1	8.3	8.2
CONV	Specific Conductance	umhos/cm	22	22	100%	--	--	86	608	209
CONV	Sulfate	mg/L	3	3	100%	--	--	4.6	4.6	4.6
CONV	Temperature	Deg C	4	4	100%	--	--	7.5	21	15
CONV	Total Organic Carbon	%	1	1	100%	--	--	0.83	0.83	0.83
CONV	Total Organic Carbon	mg/L	18	18	100%	--	--	1.9	5.0	2.8
CONV	Total suspended solids	mg/L	23	23	100%	--	--	2.0	405	55
CONV	Turbidity	NTU	20	20	100%	--	--	2.0	210	24
METAL	Antimony	mg/L	6	6	100%	--	--	2.89E-05	4.42E-05	3.68E-05
METAL	Arsenic	mg/L	6	6	100%	--	--	5.08E-04	7.05E-04	5.81E-04
METAL	Beryllium	mg/L	6	0	0%	6.60E-05	6.60E-05	--	--	3.30E-05
METAL	Cadmium	mg/L	6	0	0%	2.30E-05	2.30E-05	--	--	1.15E-05
METAL	Chromium	mg/L	6	5	83%	4.70E-05	4.70E-05	8.82E-05	7.50E-04	4.14E-04
METAL	Copper	mg/L	6	6	100%	--	--	7.02E-04	0.0015	0.0011
METAL	Lead	mg/L	6	3	50%	1.10E-05	1.10E-05	2.73E-04	3.27E-04	1.52E-04
METAL	Mercury	mg/L	6	6	100%	--	--	7.59E-07	1.52E-06	1.17E-06
METAL	Nickel	mg/L	6	6	100%	--	--	1.59E-04	0.0018	5.79E-04
METAL	Selenium	mg/L	6	3	50%	8.00E-05	8.00E-05	1.32E-04	3.97E-04	1.48E-04
METAL	Silver	mg/L	6	0	0%	8.50E-06	8.50E-06	--	--	4.25E-06
METAL	Thallium	mg/L	6	1	17%	9.00E-06	9.00E-06	9.48E-06	9.48E-06	5.33E-06
METAL	Uranium	mg/L	6	6	100%	--	--	3.71E-04	4.35E-04	4.05E-04
METAL	Zinc	mg/L	6	6	100%	--	--	0.0015	0.0034	0.0024
PCB	Aroclor-1016	mg/L	1	0	0%	6.30E-07	6.30E-07	--	--	3.15E-07
PCB	Aroclor-1221	mg/L	1	0	0%	6.30E-07	6.30E-07	--	--	3.15E-07
PCB	Aroclor-1232	mg/L	1	0	0%	6.30E-07	6.30E-07	--	--	3.15E-07
PCB	Aroclor-1242	mg/L	1	0	0%	6.30E-07	6.30E-07	--	--	3.15E-07
PCB	Aroclor-1248	mg/L	1	0	0%	6.30E-07	6.30E-07	--	--	3.15E-07
PCB	Aroclor-1254	mg/L	1	0	0%	6.30E-07	6.30E-07	--	--	3.15E-07
PCB	Aroclor-1260	mg/L	1	0	0%	6.30E-07	6.30E-07	--	--	3.15E-07
PEST	2,4'-DDD	mg/L	8	0	0%	6.50E-08	6.90E-08	--	--	3.34E-08
PEST	2,4'-DDE	mg/L	8	0	0%	6.50E-08	6.90E-08	--	--	3.34E-08
PEST	2,4'-DDT	mg/L	8	0	0%	6.50E-08	1.10E-07	--	--	3.61E-08
PEST	alpha-Chlordane	mg/L	11	0	0%	6.30E-08	6.90E-08	--	--	3.29E-08
PEST	cis-Nonachlor	mg/L	11	0	0%	6.30E-08	6.90E-08	--	--	3.29E-08
PEST	Dichlorodiphenyldichloroethane	mg/L	11	4	36%	6.30E-08	7.70E-08	6.70E-08	1.30E-07	5.79E-08
PEST	Dichlorodiphenyldichloroethylene	mg/L	11	11	100%	--	--	1.50E-07	1.20E-06	3.39E-07

Table C-15

Summary Statistics for Category 1 Surface Water Samples Collected from the Walla Walla River (Segment 3)

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Dichlorodiphenyltrichloroethane	mg/L	11	4	36%	6.50E-08	1.60E-07	1.00E-07	6.50E-07	1.27E-07
PEST	Dieldrin	mg/L	11	4	36%	6.30E-08	1.60E-07	7.60E-08	3.00E-07	8.22E-08
PEST	Heptachlor	mg/L	11	0	0%	6.30E-08	6.90E-08	--	--	3.29E-08
PEST	Heptachlor epoxide	mg/L	11	4	36%	6.50E-08	1.10E-07	3.80E-08	1.20E-07	4.55E-08
PEST	Oxychlorane	mg/L	11	0	0%	6.50E-08	1.60E-07	--	--	4.61E-08
PEST	trans-Chlordane	mg/L	11	0	0%	6.50E-08	1.60E-07	--	--	4.61E-08
PEST	trans-Nonachlor	mg/L	11	0	0%	6.30E-08	6.90E-08	--	--	3.29E-08
RAD	Antimony-125	pCi/L	2	0	0%	2.8	3.2	--	--	1.5
RAD	Beryllium-7	pCi/L	2	0	0%	0.42	0.70	--	--	0.28
RAD	Cesium-134	pCi/L	2	0	0%	0.46	1.8	--	--	0.56
RAD	Cesium-137	pCi/L	2	0	0%	0.16	0.95	--	--	0.28
RAD	Cobalt-60	pCi/L	1	0	0%	2.0	2.0	--	--	1.0
RAD	Europium-152	pCi/L	1	0	0%	1.1	1.1	--	--	0.57
RAD	Europium-155	pCi/L	3	0	0%	1.2	2.0	--	--	0.77
RAD	Ruthenium-106	pCi/L	2	0	0%	0.54	6.7	--	--	1.8
RAD	Strontium-90	pCi/L	3	2	67%	0.046	0.046	0.061	0.065	0.050
RAD	Technetium-99	pCi/L	3	0	0%	0.18	0.44	--	--	0.14
RAD	Tritium	pCi/L	3	3	100%	--	--	19	29	23
SVOC	Hexachlorobenzene	mg/L	11	2	18%	6.30E-08	1.00E-07	1.10E-07	1.80E-07	5.58E-08

CONV - Conventional parameter

PCB- Polychlorinated biphenyls

PEST - Pesticide

RAD - Radionuclide

SVOC - Semivolatile Organic Compound

Table C-16

Summary Statistics for Category 1 Surface Water Samples Collected from the Touchet River (Segment 3)

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Dissolved organic carbon	mg/L	14	14	100%	--	--	1.6	3.2	2.3
CONV	Specific Conductance	umhos/cm	16	16	100%	--	--	70	179	113
CONV	Temperature	Deg C	15	15	100%	--	--	3.8	24	14
CONV	Total Organic Carbon	mg/L	14	14	100%	--	--	1.8	3.7	2.6
CONV	Total suspended solids	mg/L	16	16	100%	--	--	1.0	187	40
CONV	Turbidity	NTU	16	16	100%	--	--	1.3	72	14
PCB	Aroclor-1016	mg/L	1	0	0%	6.60E-07	6.60E-07	--	--	3.30E-07
PCB	Aroclor-1221	mg/L	1	0	0%	6.60E-07	6.60E-07	--	--	3.30E-07
PCB	Aroclor-1232	mg/L	1	0	0%	6.60E-07	6.60E-07	--	--	3.30E-07
PCB	Aroclor-1242	mg/L	1	0	0%	6.60E-07	6.60E-07	--	--	3.30E-07
PCB	Aroclor-1248	mg/L	1	0	0%	6.60E-07	6.60E-07	--	--	3.30E-07
PCB	Aroclor-1254	mg/L	1	0	0%	6.60E-07	6.60E-07	--	--	3.30E-07
PCB	Aroclor-1260	mg/L	1	0	0%	6.60E-07	6.60E-07	--	--	3.30E-07
PEST	2,4'-DDD	mg/L	8	0	0%	6.20E-08	6.90E-08	--	--	3.33E-08
PEST	2,4'-DDE	mg/L	8	0	0%	6.20E-08	6.90E-08	--	--	3.33E-08
PEST	2,4'-DDT	mg/L	8	0	0%	6.20E-08	6.90E-08	--	--	3.33E-08
PEST	alpha-Chlordane	mg/L	10	0	0%	6.20E-08	6.90E-08	--	--	3.33E-08
PEST	cis-Nonachlor	mg/L	10	0	0%	6.20E-08	6.90E-08	--	--	3.33E-08
PEST	Dichlorodiphenyldichloroethane	mg/L	10	0	0%	6.20E-08	9.20E-08	--	--	3.46E-08
PEST	Dichlorodiphenyldichloroethylene	mg/L	10	7	70%	6.60E-08	6.90E-08	7.10E-08	4.10E-07	1.24E-07
PEST	Dichlorodiphenyltrichloroethane	mg/L	10	1	10%	6.40E-08	9.30E-08	1.20E-07	1.20E-07	4.60E-08
PEST	Dieldrin	mg/L	10	0	0%	6.20E-08	1.60E-07	--	--	4.10E-08
PEST	Heptachlor	mg/L	10	0	0%	6.20E-08	6.90E-08	--	--	3.33E-08
PEST	Heptachlor epoxide	mg/L	10	2	20%	6.20E-08	7.00E-08	3.30E-08	3.90E-08	3.40E-08
PEST	Oxychlordane	mg/L	10	0	0%	6.20E-08	1.70E-07	--	--	4.31E-08
PEST	trans-Chlordane	mg/L	10	0	0%	6.20E-08	1.70E-07	--	--	4.31E-08
PEST	trans-Nonachlor	mg/L	10	0	0%	6.20E-08	6.90E-08	--	--	3.33E-08
SVOC	Hexachlorobenzene	mg/L	10	1	10%	6.40E-08	9.70E-08	1.60E-07	1.60E-07	5.02E-08

CONV - Conventional parameter

PCB - Polychlorinated Biphenyls

PEST - Pesticide

SVOC - Semivolatile Organic Compound

Table C-17
Comparison of All Categories of Surface Water Concentrations Collected from Segment 3 of the Columbia River to Ecological and Human Health Benchmark Values

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Ecological	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
									Benchmark Value							
CONV	Alkalinity	mg/L	23	23	100%	99	121	104	--	--	--	--	--	--	--	--
CONV	Ammonia	mg/L	103	63	61%	0.010	0.090	0.020	--	--	--	--	--	--	--	--
CONV	Chloride	mg/L	37	37	100%	2.0	150	13	230	No	0.65	0	--	--	--	--
CONV	Dissolved organic carbon	mg/L	46	46	100%	1.5	4.4	2.3	--	--	--	--	--	--	--	--
CONV	Dissolved oxygen	mg/L	1	1	100%	9.3	9.3	9.3	--	--	--	--	--	--	--	--
CONV	Fluoride	mg/L	12	12	100%	0.11	0.21	0.16	--	--	--	--	--	--	--	--
CONV	Hardness	mg/L	32	32	100%	56	118	95	--	--	--	--	--	--	--	--
CONV	Nitrate	mg/L	48	48	100%	0.20	4.6	1.9	--	--	--	--	10	No	0.46	0
CONV	Nitrogen, Nitrate (as N)	mg/L	12	12	100%	0.15	0.60	0.29	--	--	--	--	--	--	--	--
CONV	Nitrogen, Nitrate-Nitrite	mg/L	3	3	100%	0.86	1.0	0.92	--	--	--	--	--	--	--	--
CONV	Orthophosphate	mg/L	98	98	100%	0.032	0.14	0.080	--	--	--	--	--	--	--	--
CONV	pH	pH Units	82	82	100%	7.6	9.5	8.3	--	--	--	--	--	--	--	--
CONV	Phosphorous in phosphate	mg/L	36	35	97%	0.010	0.12	0.046	--	--	--	--	--	--	--	--
CONV	Specific Conductance	umhos/cm	124	124	100%	70	1,030	219	--	--	--	--	--	--	--	--
CONV	Sulfate	mg/L	12	12	100%	4.6	14	8.8	--	--	--	--	--	--	--	--
CONV	Temperature	Deg C	19	19	100%	3.8	24	14	--	--	--	--	--	--	--	--
CONV	Total Non-Volatile Suspended Solic	mg/L	16	16	100%	15	57	29	--	--	--	--	--	--	--	--
CONV	Total Organic Carbon	%	1	1	100%	0.83	0.83	0.83	--	--	--	--	--	--	--	--
CONV	Total Organic Carbon	mg/L	48	48	100%	1.7	5.0	2.5	--	--	--	--	--	--	--	--
CONV	Total Persulfate Nitrogen	mg/L	103	103	100%	0.43	23	1.5	--	--	--	--	--	--	--	--
CONV	Total suspended solids	mg/L	258	258	100%	1.0	405	24	--	--	--	--	--	--	--	--
CONV	Turbidity	NTU	163	163	100%	1.2	210	12	--	--	--	--	--	--	--	--
METAL	Antimony	mg/L	24	24	100%	2.89E-05	2.13E-04	1.02E-04	1.6	No	1.33E-04	0	0.0056	No	0.038	0
METAL	Arsenic	mg/L	48	48	100%	5.08E-04	0.0028	0.0013	0.15	No	0.019	0	1.80E-05	Yes	156	48
METAL	Cadmium	mg/L	36	3	8%	2.59E-05	3.32E-05	1.91E-05	2.50E-04	No	0.13	0	--	--	--	--
METAL	Chromium	mg/L	39	33	85%	8.82E-05	0.0017	5.38E-04	0.010	No	0.17	0	--	--	--	--
METAL	Copper	mg/L	39	39	100%	4.80E-04	0.0025	9.18E-04	0.0060	No	0.42	0	--	--	--	--
METAL	Lead	mg/L	39	28	72%	1.11E-05	6.90E-04	8.91E-05	8.67E-04	No	0.80	0	--	--	--	--
METAL	Mercury	mg/L	37	28	76%	5.83E-07	3.20E-06	1.35E-06	1.20E-05	No	0.27	0	--	--	--	--
METAL	Nickel	mg/L	36	36	100%	3.03E-05	0.0023	6.65E-04	0.028	No	0.085	0	0.61	No	0.0038	0
METAL	Phosphorus	mg/L	139	139	100%	0.010	3.9	0.19	--	--	--	--	--	--	--	--
METAL	Selenium	mg/L	24	12	50%	8.01E-05	4.66E-04	1.37E-04	0.0050	No	0.093	0	0.17	No	0.0027	0
METAL	Silver	mg/L	43	12	28%	2.00E-05	1.00E-04	2.07E-05	1.20E-04	No	0.83	0	--	--	--	--
METAL	Thallium	mg/L	24	7	29%	9.48E-06	1.51E-05	6.81E-06	0.040	No	3.78E-04	0	2.40E-04	No	0.063	0
METAL	Uranium	mg/L	24	24	100%	3.71E-04	0.0016	8.48E-04	0.0026	No	0.61	0	0.030	No	0.053	0
METAL	Zinc	mg/L	39	39	100%	4.90E-04	0.0064	0.0024	0.055	No	0.12	0	7.4	No	8.65E-04	0
PEST	Dichlorodiphenyldichloroethane	mg/L	21	4	19%	6.70E-08	1.30E-07	4.68E-08	1.00E-06	No	0.13	0	3.10E-07	No	0.42	0
PEST	Dichlorodiphenyldichloroethylene	mg/L	21	18	86%	7.10E-08	1.20E-06	2.37E-07	--	--	--	--	2.20E-07	Yes	5.5	8
PEST	Dichlorodiphenyltrichloroethane	mg/L	21	5	24%	1.00E-07	6.50E-07	8.82E-08	1.00E-06	No	0.65	0	2.20E-07	Yes	3.0	1
PEST	Dieldrin	mg/L	21	4	19%	7.60E-08	3.00E-07	6.26E-08	1.90E-06	No	0.16	0	5.20E-08	Yes	5.8	4
PEST	Heptachlor epoxide	mg/L	21	6	29%	3.30E-08	1.20E-07	4.00E-08	3.80E-06	No	0.032	0	3.90E-08	Yes	3.1	4
RAD	Antimony-125	pCi/L	8	1	13%	0.13	0.13	1.2	--	--	--	--	--	--	--	--
RAD	Cesium-134	pCi/L	10	1	10%	0.70	0.70	0.68	--	--	--	--	--	--	--	--
RAD	Cobalt-60	pCi/L	8	1	13%	4.4	4.4	1.3	3,760	No	0.0012	0	100	No	0.044	0
RAD	Ruthenium-106	pCi/L	7	1	14%	4.3	4.3	2.5	--	--	--	--	--	--	--	--
RAD	Strontium-90	pCi/L	18	17	94%	0.055	0.15	0.089	278	No	5.47E-04	0	8.0	No	0.019	0
RAD	Tritium	pCi/L	12	12	100%	13	35	25	2.65E+08	No	1.33E-07	0	20,000	No	0.0018	0
RAD	Uranium-234	pCi/L	3	3	100%	0.25	0.54	0.35	202	No	0.0027	0	--	--	--	--
RAD	Uranium-235	pCi/L	3	2	67%	0.0035	0.019	0.0080	217	No	8.71E-05	0	--	--	--	--
RAD	Uranium-238	pCi/L	3	3	100%	0.19	0.41	0.26	223	No	0.0018	0	--	--	--	--
SVOC	Hexachlorobenzene	mg/L	21	3	14%	1.10E-07	1.80E-07	5.31E-08	--	--	--	--	2.80E-07	No	0.64	0

CONV - Conventional parameter
PEST - Pesticide
RAD - Radionuclide
SVOC - Semivolatile Organic Compound

Table C-18**Summary of Surface Water Results From Segment 3 Exceeding Select Ecological or Human Health Benchmark Values**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Walla Walla River	Walla Walla Riv	B16WP9	May 15, 2003	Arsenic	mg/L	1	5.08E-04	=	0.15	1.80E-05
Walla Walla River	Walla Walla Riv	B16WR0	May 15, 2003	Arsenic	mg/L	1	5.11E-04	=	0.15	1.80E-05
Walla Walla River	Walla Walla Riv	B16WR1	May 15, 2003	Arsenic	mg/L	1	5.67E-04	=	0.15	1.80E-05
Walla Walla River	Walla Walla Riv	B16WP8	May 15, 2003	Arsenic	mg/L	1	5.72E-04	=	0.15	1.80E-05
Walla Walla River	Walla Walla Riv	B16WR2	May 15, 2003	Arsenic	mg/L	1	6.20E-04	=	0.15	1.80E-05
Walla Walla River	Walla Walla Riv	B16WR3	May 15, 2003	Arsenic	mg/L	1	7.05E-04	=	0.15	1.80E-05
Yakima River	KIONA WA	133239-F	April 14, 2004	Arsenic	mg/L	2	7.30E-04	=	0.15	1.80E-05
Columbia River	MCNARY DAM	B16WN7	May 15, 2003	Arsenic	mg/L	1	8.00E-04	=	0.15	1.80E-05
Yakima River	KIONA WA	2158165	March 6, 2002	Arsenic	mg/L	1	8.20E-04	=	0.15	1.80E-05
Yakima River	KIONA WA	2228090	May 10, 2002	Arsenic	mg/L	1	8.20E-04	=	0.15	1.80E-05
Columbia River	MCNARY DAM	B16WN6	May 15, 2003	Arsenic	mg/L	1	8.41E-04	=	0.15	1.80E-05
Columbia River	MCNARY DAM	B16WP0	May 15, 2003	Arsenic	mg/L	1	8.43E-04	=	0.15	1.80E-05
Yakima River	KIONA WA	2268165	June 12, 2002	Arsenic	mg/L	1	8.70E-04	=	0.15	1.80E-05
Columbia River	MCNARY DAM	B16WP1	May 15, 2003	Arsenic	mg/L	1	8.83E-04	=	0.15	1.80E-05
Columbia River	MCNARY DAM	B16WN8	May 15, 2003	Arsenic	mg/L	1	8.88E-04	=	0.15	1.80E-05
Yakima River	KIONA WA	2118115	February 6, 2002	Arsenic	mg/L	1	9.30E-04	=	0.15	1.80E-05
Yakima River	KIONA WA	133239	April 14, 2004	Arsenic	mg/L	2	9.90E-04	=	0.15	1.80E-05
Columbia River	MCNARY DAM	B16WN9	May 15, 2003	Arsenic	mg/L	1	9.95E-04	=	0.15	1.80E-05
Yakima River	KIONA WA	2178190	April 3, 2002	Arsenic	mg/L	1	0.0010	=	0.15	1.80E-05
Snake River	HOOD PK-WALLA S	B16WR6	May 15, 2003	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Snake River	HOOD PK-MID-RVR	B16WR4	May 15, 2003	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Yakima River	KIONA WA	132819	December 9, 2003	Arsenic	mg/L	2	0.0011	=	0.15	1.80E-05
Yakima River	KIONA WA	133000	February 11, 2004	Arsenic	mg/L	2	0.0011	=	0.15	1.80E-05
Snake River	HOOD PK-FRKN CS	B16WR5	May 15, 2003	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Snake River	HOOD PK-FRKN CS	B16WR8	May 15, 2003	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Snake River	HOOD PK-MID-RVR	B16WR9	May 15, 2003	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Yakima River	KIONA WA	132819-F	December 9, 2003	Arsenic	mg/L	2	0.0012	=	0.15	1.80E-05
Yakima River	KIONA WA	133000-F	February 11, 2004	Arsenic	mg/L	2	0.0012	=	0.15	1.80E-05
Snake River	HOOD PK-WALLA S	B16WR7	May 15, 2003	Arsenic	mg/L	1	0.0012	=	0.15	1.80E-05
Yakima River	KIONA WA	2018090	December 5, 2001	Arsenic	mg/L	1	0.0012	=	0.15	1.80E-05
Yakima River	KIONA WA	1498111	November 13, 2001	Arsenic	mg/L	1	0.0013	=	0.15	1.80E-05
Yakima River	Yakima Rvr	B16WP3	May 14, 2003	Arsenic	mg/L	1	0.0014	=	0.15	1.80E-05
Yakima River	KIONA WA	133374	June 9, 2004	Arsenic	mg/L	2	0.0015	=	0.15	1.80E-05
Yakima River	Yakima Rvr	B16WP2	May 14, 2003	Arsenic	mg/L	1	0.0015	=	0.15	1.80E-05
Yakima River	KIONA WA	2068090	January 9, 2002	Arsenic	mg/L	1	0.0015	=	0.15	1.80E-05
Yakima River	Yakima Rvr	B16WP4	May 14, 2003	Arsenic	mg/L	1	0.0015	=	0.15	1.80E-05
Yakima River	Yakima Rvr	B16WP5	May 14, 2003	Arsenic	mg/L	1	0.0015	=	0.15	1.80E-05
Yakima River	KIONA WA	133374-F	June 9, 2004	Arsenic	mg/L	2	0.0015	=	0.15	1.80E-05
Yakima River	Yakima Rvr	B16WP7	May 14, 2003	Arsenic	mg/L	1	0.0016	=	0.15	1.80E-05
Yakima River	Yakima Rvr	B16WP6	May 14, 2003	Arsenic	mg/L	1	0.0017	=	0.15	1.80E-05
Yakima River	KIONA WA	1468165	October 10, 2001	Arsenic	mg/L	1	0.0020	=	0.15	1.80E-05
Yakima River	KIONA WA	132642	October 8, 2003	Arsenic	mg/L	2	0.0020	=	0.15	1.80E-05
Yakima River	KIONA WA	1408090	September 4, 2001	Arsenic	mg/L	1	0.0022	=	0.15	1.80E-05
Yakima River	KIONA WA	132642-F	October 8, 2003	Arsenic	mg/L	2	0.0024	=	0.15	1.80E-05
Yakima River	KIONA WA	1296007	July 9, 2001	Arsenic	mg/L	1	0.0024	=	0.15	1.80E-05

Table C-18**Summary of Surface Water Results From Segment 3 Exceeding Select Ecological or Human Health Benchmark Values**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Yakima River	KIONA WA	133572	August 4, 2004	Arsenic	mg/L	2	0.0026	=	0.15	1.80E-05
Yakima River	KIONA WA	1368084	August 14, 2001	Arsenic	mg/L	1	0.0027	=	0.15	1.80E-05
Yakima River	KIONA WA	133572-F	August 4, 2004	Arsenic	mg/L	2	0.0028	=	0.15	1.80E-05
Walla Walla River	WWR (32WAL14.3)	3208164	May 14, 2003	Dichlorodiphenyldichloroethylene	mg/L	1	2.40E-07	J	--	2.20E-07
Walla Walla River	RM15.6 CMNS BRG	2228168	May 30, 2002	Dichlorodiphenyldichloroethylene	mg/L	1	2.80E-07	J	--	2.20E-07
Walla Walla River	RM15.6 CMNS BRG	2228167	May 30, 2002	Dichlorodiphenyldichloroethylene	mg/L	1	2.80E-07	=	--	2.20E-07
Walla Walla River	WWR (32WAL14.3)	3098996	February 24, 2003	Dichlorodiphenyldichloroethylene	mg/L	1	2.80E-07	J	--	2.20E-07
Walla Walla River	WWR (32WAL14.3)	2368895	September 3, 2002	Dichlorodiphenyldichloroethylene	mg/L	1	3.10E-07	=	--	2.20E-07
Touchet River	HWY12 Bridge	3138162	March 24, 2003	Dichlorodiphenyldichloroethylene	mg/L	1	4.10E-07	=	--	2.20E-07
Walla Walla River	WWR (32WAL14.3)	3138163	March 24, 2003	Dichlorodiphenyldichloroethylene	mg/L	1	4.10E-07	=	--	2.20E-07
Walla Walla River	RM15.6 CMNS BRG	3058984	January 30, 2003	Dichlorodiphenyldichloroethylene	mg/L	1	1.20E-06	=	--	2.20E-07
Walla Walla River	RM15.6 CMNS BRG	3058984	January 30, 2003	Dichlorodiphenyltrichloroethane	mg/L	1	6.50E-07	=	1.00E-06	2.20E-07
Walla Walla River	WWR (32WAL14.3)	3098996	February 24, 2003	Dieldrin	mg/L	1	7.60E-08	J	1.90E-06	5.20E-08
Walla Walla River	WWR (32WAL14.3)	2368895	September 3, 2002	Dieldrin	mg/L	1	8.00E-08	=	1.90E-06	5.20E-08
Walla Walla River	WWR (32WAL14.3)	2518974	December 16, 2002	Dieldrin	mg/L	1	1.10E-07	=	1.90E-06	5.20E-08
Walla Walla River	RM15.6 CMNS BRG	3058984	January 30, 2003	Dieldrin	mg/L	1	3.00E-07	J	1.90E-06	5.20E-08
Touchet River	HWY12 Bridge	2248088	June 12, 2002	Heptachlor epoxide	mg/L	1	3.90E-08	J	3.80E-06	3.90E-08
Walla Walla River	RM15.6 CMNS BRG	2228168	May 30, 2002	Heptachlor epoxide	mg/L	1	4.10E-08	J	3.80E-06	3.90E-08
Walla Walla River	RM15.6 CMNS BRG	2248090	June 12, 2002	Heptachlor epoxide	mg/L	1	4.40E-08	J	3.80E-06	3.90E-08
Walla Walla River	RM15.6 CMNS BRG	3058984	January 30, 2003	Heptachlor epoxide	mg/L	1	1.20E-07	J	3.80E-06	3.90E-08

APPENDIX D

SEGMENT 4

**SUMMARY STATISTICS, BENCHMARK COMPARISON, AND
INDIVIDUAL SAMPLE EXCEEDENCES**

ERC:rkz:04/17/06:/home/rkzufelt/gis/aml/cr_segs_final/columbia_r_seg4.aml:Rev. 1 Database: 04/17/06 10:38 AM

Table D-1
Summary Table of Segment 4 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
12225	Columbia River	Bingen WA	11-Mar-92	1
31802	Columbia River	Bonneville Dam	07-Aug-03	1
31803	Columbia River	Bonneville Dam	07-Aug-03	1
31804	Columbia River	Dalles Dam	07-Aug-03	1
31805	Columbia River	Dalles Dam	07-Aug-03	1
31806	Columbia River	John Day Dam	08-Aug-03	1
31807	Columbia River	John Day Dam	08-Aug-03	1
31808	Columbia River	John Day Dam	08-Aug-03	1
33607	Columbia River	John Day Dam	21-Sep-04	1
B17B78	Columbia River	John Day Dam	08-Aug-03	1
B17B81	Columbia River	John Day Dam	08-Aug-03	1
B17B84	Columbia River	John Day Dam	08-Aug-03	1
B17B99	Columbia River	Dalles Dam	08-Aug-03	1
B17BB5	Columbia River	Bonneville Dam	07-Aug-03	1
B17BF3	Columbia River	John Day Dam	08-Aug-03	1
B17BF4	Columbia River	John Day Dam	08-Aug-03	1
B17BF5	Columbia River	John Day Dam	08-Aug-03	1
B17BF9	Columbia River	Dalles Dam	07-Aug-03	1
B17BH0	Columbia River	Dalles Dam	07-Aug-03	1
B17BH2	Columbia River	Bonneville Dam	07-Aug-03	1
B17BH4	Columbia River	Bonneville Dam	07-Aug-03	1
B17BJ5	Columbia River	John Day Dam	08-Aug-03	1
B17BJ6	Columbia River	John Day Dam	08-Aug-03	1
B17BJ8	Columbia River	John Day Dam	08-Aug-03	1
B17BJ9	Columbia River	Dalles Dam	07-Aug-03	1
B17BK1	Columbia River	Dalles Dam	07-Aug-03	1
B17BK2	Columbia River	Dalles Dam	07-Aug-03	1
B17BK3	Columbia River	Bonneville Dam	07-Aug-03	1
B17BK5	Columbia River	Bonneville Dam	07-Aug-03	1
B17BP8	Columbia River	John Day Dam	08-Aug-03	1
B17BP9	Columbia River	John Day Dam	08-Aug-03	1
B17BR0	Columbia River	John Day Dam	08-Aug-03	1
B17BR3	Columbia River	Dalles Dam	07-Aug-03	1
B17BR5	Columbia River	Dalles Dam	07-Aug-03	1
B17BR7	Columbia River	Bonneville Dam	07-Aug-03	1
B17BR8	Columbia River	Bonneville Dam	07-Aug-03	1
B1B7N4	Columbia River	John Day Dam	21-Sep-04	1
B1B7N5	Columbia River	John Day Dam	21-Sep-04	1
B1B7N6	Columbia River	John Day Dam	21-Sep-04	1
B1B7P1	Columbia River	John Day Dam	21-Sep-04	1
B1B7P2	Columbia River	John Day Dam	21-Sep-04	1
B1B7P3	Columbia River	John Day Dam	21-Sep-04	1
B1B7P4	Columbia River	John Day Dam	21-Sep-04	1
B2GC1	Columbia River	RM 145	28-Jul-97	1
B2GC2	Columbia River	RM 145	28-Jul-97	1
B2GC3	Columbia River	RM 145	28-Jul-97	1
BF-BC-03	Columbia River	Bonneville Dam	18-Sep-02	1

Table D-1
Summary Table of Segment 4 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
BF-BC-04	Columbia River	Bonneville Dam	18-Sep-02	1
BF-BC-07	Columbia River	Bonneville Dam	18-Sep-02	1
BF-BC-14	Columbia River	Bonneville Dam	18-Sep-02	1
BF-BC-15	Columbia River	Bonneville Dam	18-Sep-02	1
BF-BC-16	Columbia River	Bonneville Dam	18-Sep-02	1
BF-BC-17	Columbia River	Bonneville Dam	18-Sep-02	1
BF-BC-26	Columbia River	Bonneville Dam	18-Sep-02	1
DD-02/09/65	Columbia River	RM 192.8	09-Feb-65	3
DD-02/21/67	Columbia River	RM 192.8	21-Feb-67	3
DD-02/24/66	Columbia River	RM 192.8	24-Feb-66	3
DD-05/17/67	Columbia River	RM 192.8	17-May-67	3
DD-05/31/66	Columbia River	RM 192.8	31-May-66	3
DD-07/06/66	Columbia River	RM 192.8	06-Jul-66	3
DD-08/31/66	Columbia River	RM 192.8	13-Aug-66	3
DD-1/28/1993	Columbia River	RM 192.8	28-Jan-93	3
DD-10/13/1977	Columbia River	RM 192.8	13-Oct-77	3
DD-11/13/1991	Columbia River	RM 192.8	13-Nov-91	3
DD-11/17/65	Columbia River	RM 192.8	17-Nov-65	3
DD-11/19/1975	Columbia River	RM 192.8	19-Nov-75	3
DD-11/20/1986	Columbia River	RM 192.8	20-Nov-86	3
DD-11/21/1973	Columbia River	RM 192.8	21-Nov-73	3
DD-11/28/1969	Columbia River	RM 192.8	28-Nov-69	3
DD-11/28/1990	Columbia River	RM 192.8	28-Nov-90	3
DD-11/28/67	Columbia River	RM 192.8	28-Nov-67	3
DD-11/29/1972	Columbia River	RM 192.8	29-Nov-72	3
DD-11/29/66	Columbia River	RM 192.8	29-Nov-66	3
DD-11/4/1987	Columbia River	RM 192.8	04-Nov-87	3
DD-11/9/1984	Columbia River	RM 192.8	09-Nov-84	3
DD-12/10/1981	Columbia River	RM 192.8	10-Dec-81	3
DD-12/14/1976	Columbia River	RM 192.8	14-Dec-76	3
DD-12/19/1974	Columbia River	RM 192.8	19-Dec-74	3
DD-12/19/1989	Columbia River	RM 192.8	19-Dec-89	3
DD-12/22/1971	Columbia River	RM 192.8	22-Dec-71	3
DD-12/23/1982	Columbia River	RM 192.8	23-Dec-82	3
DD-12/30/1970	Columbia River	RM 192.8	30-Dec-70	3
DD-12/4/1980	Columbia River	RM 192.8	04-Dec-80	3
DD-12/5/1979	Columbia River	RM 192.8	05-Dec-79	3
DD-12/6/1988	Columbia River	RM 192.8	06-Dec-88	3
DD-2/15/1989	Columbia River	RM 192.8	15-Feb-89	3
DD-2/17/1971	Columbia River	RM 192.8	17-Feb-71	3
DD-2/20/1969	Columbia River	RM 192.8	20-Feb-69	3
DD-2/25/1975	Columbia River	RM 192.8	25-Feb-75	3
DD-2/25/1988	Columbia River	RM 192.8	25-Feb-88	3
DD-2/25/1992	Columbia River	RM 192.8	25-Feb-92	3
DD-2/6/1991	Columbia River	RM 192.8	06-Feb-91	3
DD-3/14/1980	Columbia River	RM 192.8	14-Mar-80	3
DD-3/17/1987	Columbia River	RM 192.8	17-Mar-87	3

Table D-1
Summary Table of Segment 4 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
DD-3/19/1981	Columbia River	RM 192.8	19-Mar-81	3
DD-3/21/1968	Columbia River	RM 192.8	21-Mar-68	3
DD-3/22/1974	Columbia River	RM 192.8	22-Mar-74	3
DD-3/22/1978	Columbia River	RM 192.8	22-Mar-78	3
DD-3/23/1973	Columbia River	RM 192.8	23-Mar-73	3
DD-3/25/1982	Columbia River	RM 192.8	25-Mar-82	3
DD-3/26/1970	Columbia River	RM 192.8	26-Mar-70	3
DD-3/28/1990	Columbia River	RM 192.8	28-Mar-90	3
DD-3/3/1972	Columbia River	RM 192.8	03-Mar-72	3
DD-3/31/1986	Columbia River	RM 192.8	31-Mar-86	3
DD-4/13/1983	Columbia River	RM 192.8	13-Apr-83	3
DD-4/24/1985	Columbia River	RM 192.8	24-Apr-85	3
DD-5/1/1974	Columbia River	RM 192.8	01-May-74	3
DD-5/19/1977	Columbia River	RM 192.8	19-May-77	3
DD-5/22/1987	Columbia River	RM 192.8	22-May-87	3
DD-5/26/1993	Columbia River	RM 192.8	26-May-93	3
DD-5/28/1992	Columbia River	RM 192.8	28-May-92	3
DD-5/3/1984	Columbia River	RM 192.8	03-May-84	3
DD-5/30/1991	Columbia River	RM 192.8	30-May-91	3
DD-6/10/1976	Columbia River	RM 192.8	10-Jun-76	3
DD-6/15/1973	Columbia River	RM 192.8	15-Jun-73	3
DD-6/19/1979	Columbia River	RM 192.8	19-Jun-79	3
DD-6/2/1990	Columbia River	RM 192.8	02-Jun-90	3
DD-6/28/1988	Columbia River	RM 192.8	28-Jun-88	3
DD-6/30/1971	Columbia River	RM 192.8	30-Jun-71	3
DD-7/1/1975	Columbia River	RM 192.8	01-Jul-75	3
DD-7/10/1978	Columbia River	RM 192.8	10-Jul-78	3
DD-7/13/1970	Columbia River	RM 192.8	13-Jul-70	3
DD-7/21/1989	Columbia River	RM 192.8	21-Jul-89	3
DD-7/29/1985	Columbia River	RM 192.8	29-Jul-85	3
DD-7/8/1980	Columbia River	RM 192.8	08-Jul-80	3
DD-8/13/1981	Columbia River	RM 192.8	13-Aug-81	3
DD-8/19/1993	Columbia River	RM 192.8	19-Aug-93	3
DD-8/23/1974	Columbia River	RM 192.8	23-Aug-74	3
DD-8/24/1979	Columbia River	RM 192.8	24-Aug-79	3
DD-8/24/1988	Columbia River	RM 192.8	24-Aug-88	3
DD-8/28/1986	Columbia River	RM 192.8	28-Aug-86	3
DD-8/29/1975	Columbia River	RM 192.8	29-Aug-75	3
DD-8/30/1973	Columbia River	RM 192.8	30-Aug-73	3
DD-8/30/1978	Columbia River	RM 192.8	30-Aug-78	3
DD-8/5/1987	Columbia River	RM 192.8	05-Aug-87	3
DD-8/7/1991	Columbia River	RM 192.8	07-Aug-91	3
DD-9/12/1983	Columbia River	RM 192.8	12-Sep-83	3
DD-9/16/1976	Columbia River	RM 192.8	16-Sep-76	3
DD-9/2/1980	Columbia River	RM 192.8	02-Sep-80	3
DD-9/20/1982	Columbia River	RM 192.8	20-Sep-82	3
DD-9/23/1992	Columbia River	RM 192.8	23-Sep-92	3

Table D-1
Summary Table of Segment 4 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
DD-9/24/1968	Columbia River	RM 192.8	24-Sep-68	3
DD-9/26/1969	Columbia River	RM 192.8	26-Sep-69	3
DD-9/29/1971	Columbia River	RM 192.8	29-Sep-71	3
DD-9/6/1990	Columbia River	RM 192.8	06-Sep-90	3
PH2#1	Columbia River	RM 145	24-Jul-97	1
PH2#2	Columbia River	RM 145	24-Jul-97	1
PM-BC-02	Columbia River	Messner Cove	17-Mar-99	1
PM-BC-03	Columbia River	Messner Cove	17-Mar-99	1
PM-BC-04	Columbia River	Messner Cove	17-Mar-99	1
PM-BC-05	Columbia River	Messner Cove	17-Mar-99	1
PM-BC-06	Columbia River	Messner Cove	17-Mar-99	1
PM-BC-07	Columbia River	Messner Cove	17-Mar-99	1
PM-BC-08	Columbia River	Messner Cove	17-Mar-99	1
PM-BC-09	Columbia River	Messner Cove	17-Mar-99	1
PM-BC-10	Columbia River	Messner Cove	17-Mar-99	1
PM-BC-11	Columbia River	Messner Cove	17-Mar-99	1
PM-GC-01	Columbia River	Messner Cove	17-Mar-99	1

Table D-2
Summary Table of Segment 4 Surface Water Samples by Area, Site, Date, and Category

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Bonneville Dam	3514105	December 15, 2003	CRC1_Seg4
Columbia River	Bonneville Dam	4154230	January 12, 2004	CRC1_Seg4
Columbia River	Bonneville Dam	3354155	August 27, 2003	CRC1_Seg4
Columbia River	Bonneville Dam	3384080	September 15, 2003	CRC1_Seg4
Columbia River	Bonneville Dam	3454413	September 24, 2003	CRC1_Seg4
Columbia River	Bonneville Dam	4024105	January 5, 2004	CRC1_Seg4
Columbia River	Bonneville Dam	4034250	January 12, 2004	CRC1_Seg4
Columbia River	Bonneville Dam	4314230	June 22, 2004	CRC1_Seg4
Columbia River	Bonneville Dam	4264250	June 22, 2004	CRC1_Seg4
Columbia River	Bonneville Dam	4244130	June 9, 2004	CRC1_Seg4
Columbia River	Bonneville Dam	4224105	May 24, 2004	CRC1_Seg4
Columbia River	Bonneville Dam	3394400	September 24, 2003	CRC1_Seg4
Columbia River	DALLES BRDG	101304	October 13, 2004	CRC1_Seg4
Columbia River	DALLES BRDG	083000	August 30, 2000	CRC1_Seg4
Columbia River	DALLES BRDG	020403	February 4, 2003	CRC1_Seg4
Columbia River	DALLES BRDG	111300	November 13, 2000	CRC1_Seg4
Columbia River	DALLES BRDG	110502	November 5, 2002	CRC1_Seg4
Columbia River	DALLES BRDG	052201	May 22, 2001	CRC1_Seg4
Columbia River	DALLES BRDG	020502	February 5, 2002	CRC1_Seg4
Columbia River	DALLES BRDG	020601	February 6, 2001	CRC1_Seg4
Columbia River	DALLES BRDG	020800	February 8, 2000	CRC1_Seg4
Columbia River	DALLES BRDG	020805	February 8, 2005	CRC1_Seg4
Columbia River	DALLES BRDG	021004	February 10, 2004	CRC1_Seg4
Columbia River	DALLES BRDG	050702	May 7, 2002	CRC1_Seg4
Columbia River	DALLES BRDG	050703	May 7, 2003	CRC1_Seg4
Columbia River	DALLES BRDG	051004	May 10, 2004	CRC1_Seg4
Columbia River	DALLES BRDG	110601	November 6, 2001	CRC1_Seg4
Columbia River	DALLES BRDG	052200	May 22, 2000	CRC1_Seg4
Columbia River	DALLES BRDG	081301	August 13, 2001	CRC1_Seg4
Columbia River	DALLES BRDG	080503	August 5, 2003	CRC1_Seg4
Columbia River	DALLES BRDG	080602	August 6, 2002	CRC1_Seg4
Columbia River	DALLES BRDG	080701	August 7, 2001	CRC1_Seg4
Columbia River	DALLES BRDG	080904	August 9, 2004	CRC1_Seg4
Columbia River	DALLES BRDG	051005	May 10, 2005	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	279257	October 2, 2000	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	283919	December 18, 2000	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	286118	February 5, 2001	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	249958	April 26, 1999	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	275833	August 7, 2000	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	274023	June 19, 2000	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	270829	April 24, 2000	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	265415	February 7, 2000	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	260087	December 13, 1999	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	257175	October 18, 1999	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	257169	October 18, 1999	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	251708	June 14, 1999	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	303688	August 13, 2001	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	247183	February 22, 1999	CRC1_Seg4

Table D-2**Summary Table of Segment 4 Surface Water Samples by Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	FTBRDG DSM I-84	254819	August 23, 1999	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	630522	April 14, 2003	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	706316	August 9, 2004	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	722716	February 14, 2005	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	721191	December 27, 2004	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	296548	June 4, 2001	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	711932	October 25, 2004	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	293695	April 23, 2001	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	611573	October 28, 2002	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	730580	March 23, 2005	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	626385	February 24, 2003	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	737705	April 25, 2005	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	632874	June 9, 2003	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	637606	August 18, 2003	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	640925	October 13, 2003	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	690799	December 8, 2003	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	698009	February 2, 2004	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	701821	April 19, 2004	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	704280	June 14, 2004	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	613379	December 2, 2002	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	605402	April 1, 2002	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	307595	October 15, 2001	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	310795	December 10, 2001	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	603559	March 4, 2002	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	605342	April 8, 2002	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	605360	March 14, 2002	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	605371	March 22, 2002	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	730520	March 21, 2005	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	605398	March 29, 2002	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	605855	April 19, 2002	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	605926	April 22, 2002	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	607432	June 10, 2002	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	608972	August 5, 2002	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	740442	June 13, 2005	CRC1_Seg4
Columbia River	FTBRDG DSM I-84	605388	March 27, 2002	CRC1_Seg4
Columbia River	RM147 BONN DAM	loc 01 5/04-6/04	June 1, 2004	CRC1_Seg4
Columbia River	RM147 BONN DAM	loc 01 12/03-1/04	January 1, 2004	CRC1_Seg4
Columbia River	RM147 BONN DAM	loc 01 8/03-9/03	September 1, 2003	CRC1_Seg4
Columbia River	Umatilla OR	1408081	September 12, 2001	CRC1_Seg4
Columbia River	Umatilla OR	1368082	August 8, 2001	CRC1_Seg4
Columbia River	Umatilla OR	1468156	October 17, 2001	CRC1_Seg4
Columbia River	Umatilla OR	1498101	November 7, 2001	CRC1_Seg4
Columbia River	Umatilla OR	2018081	December 5, 2001	CRC1_Seg4
Columbia River	Umatilla OR	2068081	January 16, 2002	CRC1_Seg4
Columbia River	Umatilla OR	2118106	February 11, 2002	CRC1_Seg4
Columbia River	Umatilla OR	2158156	March 13, 2002	CRC1_Seg4
Columbia River	Umatilla OR	2178181	April 10, 2002	CRC1_Seg4
Columbia River	Umatilla OR	2228081	May 15, 2002	CRC1_Seg4

Table D-2**Summary Table of Segment 4 Surface Water Samples by Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Umatilla OR	1286070	July 11, 2001	CRC1_Seg4

Table D-3

Summary Statistics for Sediment Collected from Segment 4 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Solids	%	6	6	100%	--	--	37	74	50
CONV	Total Organic Carbon	%	5	5	100%	--	--	0.080	0.43	0.29
CONV	Total Organic Carbon	mg/kg	26	26	100%	--	--	480	16,200	7,184
CONV	Total Volatile Solids	%	11	11	100%	--	--	1.0	4.8	2.7
METAL	Acid Volatile Sulfate	mg/kg	5	3	60%	0.30	0.30	2.0	2.3	1.3
METAL	Aluminum	mg/kg	4	4	100%	--	--	9,500	11,900	10,668
METAL	Antimony	mg/Kg	19	10	53%	53	65	0.34	65	21
METAL	Arsenic	mg/Kg	24	13	54%	18	22	2.0	15	8.0
METAL	Barium	mg/kg	4	4	100%	--	--	118	199	156
METAL	Beryllium	mg/Kg	8	8	100%	--	--	0.37	2.0	1.1
METAL	Cadmium	mg/Kg	24	18	75%	0.48	1.1	0.060	2.2	0.64
METAL	Calcium	mg/kg	4	4	100%	--	--	5,510	7,150	6,180
METAL	Chromium	mg/Kg	13	13	100%	--	--	9.2	69	29
METAL	Cobalt	mg/kg	4	4	100%	--	--	9.9	15	12
METAL	Copper	mg/Kg	24	24	100%	--	--	7.7	46	19
METAL	Iron	mg/kg	4	4	100%	--	--	20,700	26,100	23,950
METAL	Lead	mg/Kg	27	20	74%	8.7	11	7.6	250	20
METAL	Magnesium	mg/kg	4	4	100%	--	--	5,100	6,980	5,803
METAL	Manganese	mg/kg	4	4	100%	--	--	399	716	531
METAL	Mercury	mg/Kg	28	13	46%	1.00E-04	0.11	1.17E-04	0.51	0.081
METAL	Nickel	mg/Kg	24	23	96%	3.9	3.9	4.4	33	13
METAL	Potassium	mg/kg	4	4	100%	--	--	845	1,550	1,068
METAL	Selenium	mg/Kg	8	1	13%	0.46	0.73	0.66	0.66	0.31
METAL	Silver	mg/Kg	24	14	58%	1.7	2.1	0.060	2.2	0.59
METAL	Sodium	mg/kg	4	4	100%	--	--	263	366	312
METAL	Thallium	mg/Kg	8	8	100%	--	--	0.19	0.69	0.42
METAL	Tin	mg/kg	4	4	100%	--	--	49	69	57
METAL	Zinc	mg/Kg	24	24	100%	--	--	38	293	112
PCB	Aroclor-1016	mg/kg	19	0	0%	0.0027	0.010	--	--	0.0032
PCB	Aroclor-1221	mg/kg	19	0	0%	0.012	0.019	--	--	0.0077
PCB	Aroclor-1232	mg/kg	19	0	0%	0.0064	0.015	--	--	0.0047
PCB	Aroclor-1242	mg/kg	19	0	0%	0.0040	0.0083	--	--	0.0027
PCB	Aroclor-1248	mg/kg	19	0	0%	0.0022	0.021	--	--	0.0042
PCB	Aroclor-1254	mg/kg	19	1	5%	0.0037	0.0064	0.019	0.019	0.0032
PCB	Aroclor-1260	mg/kg	19	0	0%	0.0032	0.0064	--	--	0.0021
PEST	Aldrin	mg/kg	11	0	0%	8.40E-05	1.10E-04	--	--	4.75E-05
PEST	Alpha-BHC	mg/kg	16	0	0%	8.70E-05	2.00E-04	--	--	6.50E-05
PEST	beta-1,2,3,4,5,6-Hexachlorocyclohexane	mg/kg	11	0	0%	1.60E-04	2.20E-04	--	--	9.14E-05
PEST	Chlordane	mg/kg	11	0	0%	0.0028	0.0038	--	--	0.0016
PEST	Delta-BHC	mg/kg	11	0	0%	8.80E-05	1.20E-04	--	--	5.00E-05
PEST	Dichlorodiphenyldichloroethane	mg/kg	11	0	0%	1.90E-04	2.60E-04	--	--	1.10E-04
PEST	Dichlorodiphenyldichloroethylene	mg/kg	11	0	0%	4.10E-04	5.50E-04	--	--	2.32E-04
PEST	Dichlorodiphenyltrichloroethane	mg/kg	16	1	6%	2.00E-04	0.0019	0.0020	0.0020	7.09E-04
PEST	Dieldrin	mg/kg	11	0	0%	8.00E-05	1.10E-04	--	--	4.59E-05
PEST	Endosulfan I	mg/kg	11	0	0%	3.70E-04	5.00E-04	--	--	2.08E-04
PEST	Endosulfan II	mg/kg	11	0	0%	1.90E-04	2.50E-04	--	--	1.07E-04

Table D-3

Summary Statistics for Sediment Collected from Segment 4 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Endosulfan sulfate	mg/kg	11	0	0%	2.70E-04	3.70E-04	--	--	1.55E-04
PEST	Endrin	mg/kg	11	0	0%	1.40E-04	1.90E-04	--	--	7.82E-05
PEST	Endrin aldehyde	mg/kg	11	0	0%	0.0010	0.0014	--	--	5.73E-04
PEST	Endrin ketone	mg/kg	11	0	0%	3.60E-04	4.90E-04	--	--	2.05E-04
PEST	Gamma-BHC (Lindane)	mg/kg	16	1	6%	1.90E-04	2.60E-04	2.00E-04	2.00E-04	1.13E-04
PEST	Heptachlor	mg/kg	11	0	0%	1.10E-04	0.0033	--	--	2.09E-04
PEST	Heptachlor epoxide	mg/kg	11	0	0%	2.60E-05	2.50E-04	--	--	9.75E-05
PEST	Methoxychlor	mg/kg	11	0	0%	3.90E-04	0.0034	--	--	0.0013
PEST	Toxaphene	mg/kg	11	0	0%	0.049	0.067	--	--	0.028
RAD_D	Cerium-141, Decayed	pCi/g	4	4	100%	--	--	3.77E-103	1.26E-89	3.14E-90
RAD_D	Cesium-137, Decayed	pCi/g	36	36	100%	--	--	0.049	0.59	0.10
RAD_D	Cobalt-60, Decayed	pCi/g	23	23	100%	--	--	8.78E-04	0.021	0.0061
RAD_D	Plutonium-238, Decayed	pCi/g	5	5	100%	--	--	1.88E-04	0.0011	4.94E-04
RAD_D	Plutonium-239/240, Decayed	pCi/g	6	6	100%	--	--	0.0045	0.018	0.0089
RAD_D	Potassium-40, Decayed	pCi/g	95	95	100%	--	--	7.2	31	13
RAD_D	Radium-226, Decayed	pCi/g	25	25	100%	--	--	0.50	1.9	0.81
RAD_D	Ruthenium-106, Decayed	pCi/g	23	23	100%	--	--	2.27E-13	1.03E-08	4.59E-10
RAD_D	Strontium-90, Decayed	pCi/g	1	1	100%	--	--	0.028	0.028	0.028
RAD_D	Thorium-232, Decayed	pCi/g	16	16	100%	--	--	0.40	1.00	0.78
RAD_D	Uranium-234, Decayed	pCi/g	4	4	100%	--	--	0.67	0.97	0.82
RAD_D	Uranium-235, Decayed	pCi/g	4	4	100%	--	--	0.010	0.034	0.022
RAD_D	Uranium-238, Decayed	pCi/g	4	4	100%	--	--	0.52	0.79	0.64
RAD_D	Zinc-65, Decayed	pCi/g	37	37	100%	--	--	6.80E-19	1.10E-12	8.25E-14
RAD_D	Zirconium/Niobium-95, Decayed	pCi/g	34	34	100%	--	--	2.77E-126	5.25E-86	1.54E-87
SVOC	1,2,4-Trichlorobenzene	mg/kg	11	0	0%	0.0026	0.0031	--	--	0.0014
SVOC	1,2-Dichlorobenzene	mg/kg	11	0	0%	0.0027	0.0032	--	--	0.0014
SVOC	1,3-Dichlorobenzene	mg/kg	11	0	0%	0.0041	0.0049	--	--	0.0022
SVOC	1,4-Dichlorobenzene	mg/kg	11	0	0%	0.0036	0.0044	--	--	0.0020
SVOC	2,4-Dimethylphenol	mg/kg	16	0	0%	0.0027	0.050	--	--	0.0088
SVOC	2-Methylnaphthalene	mg/kg	20	14	70%	0.0019	0.0030	0.0010	0.014	0.0040
SVOC	2-Methylphenol (cresol, o-)	mg/kg	16	0	0%	0.0029	0.030	--	--	0.0058
SVOC	3&4-Methylphenol (Cresol, m+p)	mg/kg	11	2	18%	0.0016	0.0019	0.0058	0.013	0.0024
SVOC	4-Methylphenol (cresol, p-)	mg/kg	5	1	20%	0.050	0.050	0.10	0.10	0.040
SVOC	Acenaphthene	mg/kg	20	7	35%	5.00E-04	0.0019	9.20E-04	0.018	0.0019
SVOC	Acenaphthylene	mg/kg	20	5	25%	7.50E-04	0.0024	2.00E-04	0.0060	0.0012
SVOC	Anthracene	mg/kg	20	5	25%	6.00E-04	0.0022	9.00E-04	0.013	0.0017
SVOC	Benzo(a)anthracene	mg/kg	20	6	30%	7.00E-04	0.0014	0.0010	0.0068	0.0014
SVOC	Benzo(a)pyrene	mg/kg	20	5	25%	5.00E-04	0.0015	0.0020	0.0073	0.0017
SVOC	Benzo(b)fluoranthene	mg/kg	16	5	31%	8.00E-04	0.0021	0.0010	0.0040	0.0016
SVOC	Benzo(b+k)fluoranthene	mg/kg	4	3	75%	0.0015	0.0015	0.0035	0.014	0.0069
SVOC	Benzo(ghi)perylene	mg/kg	20	6	30%	7.50E-04	0.0015	5.00E-04	0.0070	0.0016
SVOC	Benzo(k)fluoranthene	mg/kg	16	3	19%	6.00E-04	0.0019	0.0010	0.0040	0.0011
SVOC	Benzoic acid	mg/kg	15	3	20%	0.0069	0.061	0.011	0.014	0.011
SVOC	Benzyl alcohol	mg/kg	11	0	0%	0.0046	0.0055	--	--	0.0025
SVOC	Bis(2-ethylhexyl) phthalate	mg/kg	15	15	100%	--	--	0.0087	0.029	0.021
SVOC	Butylbenzylphthalate	mg/kg	15	7	47%	0.0015	0.0098	0.0030	0.037	0.0058

Table D-3**Summary Statistics for Sediment Collected from Segment 4 of the Columbia River Including All Categories of Data (units reported "as received")**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	20	10	50%	7.50E-04	0.0024	6.00E-04	0.0096	0.0026
SVOC	Dibenz[a,h]anthracene	mg/kg	20	3	15%	5.00E-04	0.0014	6.00E-04	0.0030	7.36E-04
SVOC	Dibenzofuran	mg/kg	16	3	19%	5.00E-04	0.0028	0.0010	0.0056	0.0014
SVOC	Diethylphthalate	mg/kg	11	1	9%	0.0045	0.0045	0.064	0.064	0.0079
SVOC	Dimethyl phthalate	mg/kg	11	11	100%	--	--	0.0073	0.12	0.044
SVOC	Di-n-butylphthalate	mg/kg	11	10	91%	0.019	0.019	0.0094	0.065	0.018
SVOC	Di-n-octylphthalate	mg/kg	11	3	27%	0.0017	0.0017	0.0027	0.0071	0.0020
SVOC	Fluoranthene	mg/kg	20	13	65%	0.0022	0.0022	0.0010	0.022	0.0052
SVOC	Fluorene	mg/kg	20	6	30%	5.00E-04	0.0023	7.00E-04	0.010	0.0014
SVOC	Hexachlorobenzene	mg/kg	11	0	0%	0.0013	0.0016	--	--	7.27E-04
SVOC	Hexachlorocyclopentadiene	mg/kg	11	0	0%	0.0032	0.0038	--	--	0.0017
SVOC	Hexachloroethane	mg/kg	11	0	0%	0.0025	0.0039	--	--	0.0014
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	20	6	30%	7.00E-04	0.0018	0.0010	0.0070	0.0015
SVOC	Naphthalene	mg/kg	20	9	45%	0.0019	0.0030	8.00E-04	0.0086	0.0024
SVOC	N-Nitrosodi-n-dipropylamine	mg/kg	11	0	0%	0.0029	0.0034	--	--	0.0016
SVOC	Pentachlorophenol	mg/kg	16	2	13%	0.0018	1.8	0.011	0.029	0.067
SVOC	Phenanthrene	mg/kg	20	13	65%	7.50E-04	0.0018	9.00E-04	0.029	0.0045
SVOC	Phenol	mg/kg	20	4	20%	0.0031	3.1	0.0054	0.020	0.082
SVOC	Pyrene	mg/kg	20	14	70%	0.0022	0.0022	0.0010	0.027	0.0052

CONV - Conventional parameter

PEST - Pesticide

PCB - Polychlorinated biphenyl

RAD_D - Decayed radionuclide

SVOC - Semivolatile Organic Compound

Table D-4
Summary Statistics for Sediment Collected from Segment 4 of the Columbia River Including All Categories of Data (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg dry-wt	5	5	100%	--	--	5,500	22,000	15,100
METAL	Antimony	mg/kg dry-wt	5	5	100%	--	--	2.6	6.1	4.6
METAL	Arsenic	mg/kg dry-wt	5	5	100%	--	--	1.5	9.5	6.1
METAL	Barium	mg/kg dry-wt	5	5	100%	--	--	72	210	140
METAL	Beryllium	mg/kg dry-wt	5	5	100%	--	--	0.65	1.5	1.2
METAL	Cadmium	mg/kg dry-wt	5	5	100%	--	--	0.65	2.5	1.9
METAL	Calcium	mg/kg dry-wt	5	5	100%	--	--	3,100	6,800	5,280
METAL	Chromium	mg/kg dry-wt	5	5	100%	--	--	9.4	30	21
METAL	Cobalt	mg/kg dry-wt	5	5	100%	--	--	10	22	18
METAL	Copper	mg/kg dry-wt	5	5	100%	--	--	7.5	46	28
METAL	Iron	mg/kg dry-wt	5	5	100%	--	--	22,000	44,000	36,400
METAL	Lead	mg/kg dry-wt	5	5	100%	--	--	4.0	27	17
METAL	Magnesium	mg/kg dry-wt	5	5	100%	--	--	3,100	7,500	6,140
METAL	Manganese	mg/kg dry-wt	5	5	100%	--	--	370	840	622
METAL	Mercury	mg/kg dry-wt	5	5	100%	--	--	0.13	0.30	0.23
METAL	Nickel	mg/kg dry-wt	5	5	100%	--	--	9.7	30	24
METAL	Potassium	mg/kg dry-wt	5	5	100%	--	--	450	3,000	1,856
METAL	Selenium	mg/kg dry-wt	5	5	100%	--	--	0.96	1.6	1.4
METAL	Silver	mg/kg dry-wt	5	5	100%	--	--	1.3	3.0	2.3
METAL	Sodium	mg/kg dry-wt	5	5	100%	--	--	170	390	314
METAL	Thallium	mg/kg dry-wt	5	5	100%	--	--	1.3	3.0	2.6
METAL	Uranium	pCi/g dry-wt	1	1	100%	--	--	2.7	2.7	2.7
METAL	Vanadium	mg/kg dry-wt	5	5	100%	--	--	62	120	83
METAL	Zinc	mg/kg dry-wt	5	5	100%	--	--	64	270	182
PCB	Aroclor-1016	mg/kg dry-wt	5	0	0%	0.033	0.033	--	--	0.017
PCB	Aroclor-1221	mg/kg dry-wt	5	0	0%	0.067	0.067	--	--	0.034
PCB	Aroclor-1232	mg/kg dry-wt	5	0	0%	0.033	0.033	--	--	0.017
PCB	Aroclor-1242	mg/kg dry-wt	5	0	0%	0.033	0.033	--	--	0.017
PCB	Aroclor-1248	mg/kg dry-wt	5	0	0%	0.033	0.033	--	--	0.017
PCB	Aroclor-1254	mg/kg dry-wt	5	0	0%	0.033	0.033	--	--	0.017
PCB	Aroclor-1260	mg/kg dry-wt	5	0	0%	0.033	0.033	--	--	0.017
PEST	Aldrin	mg/kg dry-wt	5	0	0%	0.0017	0.0017	--	--	8.50E-04
PEST	Alpha-BHC	mg/kg dry-wt	5	0	0%	0.0017	0.0017	--	--	8.50E-04
PEST	beta-1,2,3,4,5,6-Hexachlorocyclohexane	mg/kg dry-wt	5	0	0%	0.0017	0.0017	--	--	8.50E-04
PEST	Delta-BHC	mg/kg dry-wt	5	0	0%	0.0017	0.0017	--	--	8.50E-04
PEST	Dieldrin	mg/kg dry-wt	5	0	0%	0.0017	0.0017	--	--	8.50E-04
PEST	Endosulfan I	mg/kg dry-wt	5	0	0%	0.0017	0.0017	--	--	8.50E-04
PEST	Endosulfan II	mg/kg dry-wt	5	0	0%	0.0017	0.0017	--	--	8.50E-04
PEST	Endosulfan sulfate	mg/kg dry-wt	5	0	0%	0.0017	0.0017	--	--	8.50E-04
PEST	Endrin	mg/kg dry-wt	5	0	0%	0.0017	0.0017	--	--	8.50E-04
PEST	Endrin aldehyde	mg/kg dry-wt	5	0	0%	0.0017	0.0017	--	--	8.50E-04
PEST	Endrin ketone	mg/kg dry-wt	5	0	0%	0.0017	0.0017	--	--	8.50E-04
PEST	gamma-Chlordane	mg/kg dry-wt	5	0	0%	0.0017	0.0017	--	--	8.50E-04
PEST	Methoxychlor	mg/kg dry-wt	5	0	0%	0.0017	0.0017	--	--	8.50E-04
PEST	Toxaphene	mg/kg dry-wt	5	0	0%	0.083	0.083	--	--	0.042
RAD_D	Beryllium-7	pCi/g dry-wt	1	1	100%	--	--	0.0016	0.0016	0.0016

Table D-4
Summary Statistics for Sediment Collected from Segment 4 of the Columbia River Including All Categories of Data (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD_D	Cesium-134	pCi/g dry-wt	1	1	100%	--	--	0.039	0.039	0.039
RAD_D	Cesium-137	pCi/g dry-wt	8	8	100%	--	--	0.090	0.41	0.20
RAD_D	Cobalt-60	pCi/g dry-wt	5	5	100%	--	--	0.0077	0.038	0.016
RAD_D	Europium-152	pCi/g dry-wt	2	2	100%	--	--	0.064	0.22	0.14
RAD_D	Plutonium-238	pCi/g dry-wt	5	5	100%	--	--	2.66E-04	0.020	0.0054
RAD_D	Plutonium-239/240	pCi/g dry-wt	8	8	100%	--	--	1.00E-03	0.049	0.013
RAD_D	Potassium-40	pCi/g dry-wt	10	10	100%	--	--	8.2	16	13
RAD_D	Strontium-90	pCi/g dry-wt	9	9	100%	--	--	0.0057	0.031	0.016
RAD_D	Uranium-234	pCi/g dry-wt	9	9	100%	--	--	0.50	1.7	1.3
RAD_D	Uranium-235	pCi/g dry-wt	9	9	100%	--	--	0.017	0.062	0.039
RAD_D	Uranium-236	pCi/g dry-wt	1	1	100%	--	--	1.2	1.2	1.2
RAD_D	Uranium-238	pCi/g dry-wt	8	8	100%	--	--	0.38	1.7	1.1
SVOC	1,2-Dichlorobenzene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	1,4-Dichlorobenzene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	2,4-Dichlorophenol	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	2,4-Dimethylphenol	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	2,4-Dinitrophenol	mg/kg dry-wt	5	0	0%	1.7	1.7	--	--	0.85
SVOC	2,4-Dinitrotoluene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	2,6-Dinitrotoluene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	2-Chloronaphthalene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	2-Chlorophenol	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	2-Methylnaphthalene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	2-Nitroaniline	mg/kg dry-wt	5	0	0%	1.7	1.7	--	--	0.85
SVOC	2-Nitrophenol	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	3-Nitroaniline	mg/kg dry-wt	5	0	0%	1.7	1.7	--	--	0.85
SVOC	4,6-Dinitro-2-methylphenol	mg/kg dry-wt	5	0	0%	1.7	1.7	--	--	0.85
SVOC	4-Chloro-3-methylphenol	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	4-Chloroaniline	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	4-Nitrophenol	mg/kg dry-wt	5	0	0%	1.7	1.7	--	--	0.85
SVOC	Acenaphthene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Aniline	mg/kg dry-wt	5	0	0%	0.83	0.83	--	--	0.42
SVOC	Anthracene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Azobenzene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Benzo(a)pyrene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Benzo(b)fluoranthene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Benzoic acid	mg/kg dry-wt	5	0	0%	1.7	1.7	--	--	0.85
SVOC	Benzyl alcohol	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Bis(2-Chloroethoxy)methane	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Butylbenzylphthalate	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Carbazole	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Chrysene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Dibenzofuran	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Diethylphthalate	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Fluoranthene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Fluorene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17

Table D-4
Summary Statistics for Sediment Collected from Segment 4 of the Columbia River Including All Categories of Data (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Hexachlorobenzene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Hexachlorobutadiene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Hexachlorocyclopentadiene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Hexachloroethane	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Isophorone	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Naphthalene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Nitrobenzene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	N-Nitrosodiphenylamine	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Pentachlorophenol	mg/kg dry-wt	5	0	0%	1.7	1.7	--	--	0.85
SVOC	Phenanthrene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Phenol	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Pyrene	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.17
SVOC	Pyridine	mg/kg dry-wt	5	0	0%	0.33	0.33	--	--	0.2

PEST - Pesticide
PCB - Polychlorinated biphenyl
RAD_D - Decayed radionuclide
SVOC - Semivolatile Organic Compound

Table D-5
Comparison of Segment 4 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "as received")

Constituent		Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Background Value	Is Max > Background?	Ecological Benchmark	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
Class	Constituent Name										Value							
METAL	Aluminum	mg/kg	4	4	100%	9,500	11,900	10,668	11,800	Yes	--	--	--	--	76,142	No	0.16	0
METAL	Antimony	mg/Kg	19	10	53%	0.34	65	21	5.0	Yes	2.0	Yes	33	2	31	Yes	2.1	2
METAL	Arsenic	mg/kg	24	13	54%	2.0	15	8.0	6.5	Yes	6.0	Yes	2.5	2	0.39	Yes	38	12
METAL	Barium	mg/kg	4	4	100%	118	199	156	132	Yes	--	--	--	--	5,375	No	0.037	0
METAL	Beryllium	mg/Kg	8	8	100%	0.37	2.0	1.1	1.5	Yes	--	--	--	--	154	No	0.013	0
METAL	Cadmium	mg/kg	24	18	75%	0.060	2.2	0.64	0.81	Yes	0.60	Yes	3.7	8	37	No	0.059	0
METAL	Calcium	mg/kg	4	4	100%	5,510	7,150	6,180	17,200	No	--	--	--	--	--	--	--	--
METAL	Chromium	mg/kg	13	13	100%	9.2	69	29	19	Yes	37	Yes	1.9	3	30	Yes	2.3	3
METAL	Cobalt	mg/kg	4	4	100%	9.9	15	12	16	No	--	--	--	--	903	No	0.016	0
METAL	Copper	mg/kg	24	24	100%	7.7	46	19	22	Yes	32	Yes	1.4	4	2,960	No	0.015	0
METAL	Iron	mg/kg	4	4	100%	20,700	26,100	23,950	32,600	No	20,000	Yes	1.3	4	23,463	Yes	1.1	3
METAL	Lead	mg/Kg	27	20	74%	7.6	250	20	10	Yes	35	Yes	7.1	1	250	No	1.0	1
METAL	Magnesium	mg/kg	4	4	100%	5,100	6,980	5,803	7,060	No	--	--	--	--	--	--	--	--
METAL	Manganese	mg/kg	4	4	100%	399	716	531	512	Yes	460	Yes	1.6	3	1,762	No	0.41	0
METAL	Mercury	mg/kg	28	13	46%	1.17E-04	0.51	0.081	0.33	Yes	0.18	Yes	2.8	3	23	No	0.022	0
METAL	Nickel	mg/kg	24	23	96%	4.4	33	13	19	Yes	18	Yes	1.8	6	1,564	No	0.021	0
METAL	Potassium	mg/kg	4	4	100%	845	1,550	1,068	2,150	No	--	--	--	--	--	--	--	--
METAL	Selenium	mg/Kg	8	1	13%	0.66	0.66	0.31	0.78	No	--	--	--	--	391	No	0.0017	0
METAL	Silver	mg/Kg	24	14	58%	0.060	2.2	0.59	0.73	Yes	4.5	No	0.49	0	391	No	0.0056	0
METAL	Sodium	mg/kg	4	4	100%	263	366	312	690	No	--	--	--	--	--	--	--	--
METAL	Thallium	mg/Kg	8	8	100%	0.19	0.69	0.42	--	--	--	--	--	--	5.2	No	0.13	0
METAL	Tin	mg/kg	4	4	100%	49	69	57	--	--	--	--	--	--	46,924	No	0.0015	0
METAL	Zinc	mg/kg	24	24	100%	38	293	112	68	Yes	120	Yes	2.4	4	23,463	No	0.012	0
PCB	Aroclor-1254	mg/kg	19	1	5%	0.019	0.019	0.0032	--	--	0.0070	Yes	2.7	1	0.22	No	0.087	0
PEST	Dichlorodiphenyltrichloroethane	mg/kg	16	1	6%	0.0020	0.0020	7.09E-04	--	--	0.0042	No	0.48	0	1.7	No	0.0012	0
PEST	Gamma-BHC (Lindane)	mg/kg	16	1	6%	2.00E-04	2.00E-04	1.13E-04	--	--	9.00E-04	No	0.22	0	0.44	No	4.57E-04	0
RAD_D	Cerium-141	pCi/g	4	4	100%	3.77E-103	1.26E-89	3.14E-90	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-137	pCi/g	36	36	100%	0.049	0.049	0.10	1.1	No	3,120	No	1.88E-04	0	6.2	No	0.095	0
RAD_D	Cobalt-60	pCi/g	23	23	100%	8.78E-04	0.021	0.0061	0.0084	Yes	1,460	No	1.42E-05	0	1.4	No	0.015	0
RAD_D	Plutonium-238	pCi/g	5	5	100%	1.88E-04	0.0011	4.94E-04	0.0038	No	--	--	--	--	37	No	2.81E-05	0
RAD_D	Plutonium-239/240	pCi/g	6	6	100%	0.0045	0.018	0.0089	0.025	No	5,860	No	3.07E-06	0	34	No	5.31E-04	0
RAD_D	Potassium-40	pCi/g	95	95	100%	7.2	31	13	17	Yes	--	--	--	--	--	--	--	--
RAD_D	Radium-226	pCi/g	25	25	100%	0.50	1.9	0.81	0.82	Yes	101	No	0.019	0	--	--	--	--
RAD_D	Ruthenium-106	pCi/g	23	23	100%	2.27E-13	1.03E-08	4.59E-10	--	--	--	--	--	--	--	--	--	--
RAD_D	Strontium-90	pCi/g	1	1	100%	0.028	0.028	0.028	0.18	No	582	No	4.88E-05	0	4.5	No	0.0063	0
RAD_D	Thorium-232	pCi/g	16	16	100%	0.40	1.00	0.78	1.3	No	1,300	No	7.69E-04	0	1.3	No	0.77	0
RAD_D	Uranium-234	pCi/g	4	4	100%	0.67	0.97	0.82	1.1	No	5,270	No	1.85E-04	0	1.1	No	0.89	0
RAD_D	Uranium-235	pCi/g	4	4	100%	0.010	0.034	0.022	0.11	No	3,730	No	9.09E-06	0	0.84	No	0.040	0
RAD_D	Uranium-238	pCi/g	4	4	100%	0.52	0.79	0.64	3.2	No	2,490	No	3.16E-04	0	1.1	No	0.71	0
RAD_D	Zinc-65	pCi/g	37	37	100%	6.80E-19	1.10E-12	8.25E-14	--	--	--	--	--	--	--	--	--	--
RAD_D	Zirconium/Niobium-95	pCi/g	34	34	100%	2.77E-126	5.25E-86	1.54E-87	--	--	--	--	--	--	--	--	--	--
SVOC	2-Methylnaphthalene	mg/kg	20	14	70%	0.0010	0.014	0.0040	--	--	0.020	No	0.69	0	--	--	--	--
SVOC	3&4-Methylphenol (Cresol, m+p)	mg/kg	11	2	18%	0.0058	0.013	0.0024	--	--	--	--	--	--	--	--	--	--
SVOC	4-Methylphenol (cresol, p-)	mg/kg	5	1	20%	0.10	0.10	0.040	--	--	--	--	--	--	306	No	3.27E-04	0
SVOC	Acenaphthene	mg/kg	20	7	35%	9.20E-04	0.018	0.0019	--	--	0.0067	Yes	2.7	1	3,682	No	4.89E-06	0
SVOC	Acenaphthylene	mg/kg	20	5	25%	2.00E-04	0.0060	0.0012	--	--	0.0059	Yes	1.0	1	4,800	No	1.25E-06	0
SVOC	Anthracene	mg/kg	20	5	25%	9.00E-04	0.013	0.0017	--	--	0.057	No	0.23	0	21,896	No	5.94E-07	0
SVOC	Benzo(a)anthracene	mg/kg	20	6	30%	0.0010	0.0068	0.0014	--	--	0.032	No	0.21	0	0.62	No	0.011	0
SVOC	Benzo(a)pyrene	mg/kg	20	5	25%	0.0020	0.0073	0.0017	--	--	0.032	No	0.23	0	0.062	No	0.12	0
SVOC	Benzo(b)fluoranthene	mg/kg	16	5	31%	0.0010	0.0040	0.0016	--	--	0.24	No	0.017	0	0.62	No	0.0064	0
SVOC	Benzo(b+k)fluoranthene	mg/kg	4	3	75%	0.0035	0.014	0.0069	--	--	--	--	--	--	--	--	--	--
SVOC	Benzo(ghi)perylene	mg/kg	20	6	30%	5.00E-04	0.0070	0.0016	--	--	0.17	No	0.041	0	2,400	No	2.92E-06	0
SVOC	Benzo(k)fluoranthene	mg/kg	16	3	19%	0.0010	0.0040	0.0011	--	--	0.027	No	0.15	0	6.2	No	6.44E-04	0
SVOC	Benzoic acid	mg/kg	15	3	20%	0.011	0.014	0.011	--	--	--	--	--	--	100,000	No	1.40E-07	0
SVOC	Bis(2-ethylhexyl) phthalate	mg/kg	15	15	100%	0.0087	0.029	0.021	--	--	0.64	No	0.045	0	35	No	8.35E-04	0
SVOC	Butylbenzylphthalate	mg/kg	15	7	47%	0.0030	0.037	0.0058	--	--	--	--	--	--	12,221	No	3.03E-06	0
SVOC	Chrysene	mg/kg	20	10	50%	6.00E-04	0.0096	0.0026	--	--	0.057	No	0.17	0	62	No	1.55E-04	0
SVOC	Dibenz[a,h]anthracene	mg/kg	20	3	15%	6.00E-04	0.0030	7.36E-04	--	--	0.033	No	0.091	0	0.062	No	0.048	0
SVOC	Dibenzofuran	mg/kg	16	3	19%	0.0010	0.0056	0.0014	--	--	5.1	No	0.0011	0	145	No	3.86E-05	0
SVOC	Diethylphthalate	mg/kg	11	1	9%	0.064	0.064	0.0079	--	--	--	--	--	--	48,882	No	1.31E-06	0
SVOC	Dimethyl phthalate	mg/kg	11	11	100%	0.0073	0.12	0.044	--	--	--	--	--	--	80,000	No	1.50E-06	0
SVOC	Di-n-butylphthalate	mg/kg	11	10	91%	0.0094	0.065	0.018	--	--	0.043	Yes	1.5	1	6,110	No	1.06E-05	0
SVOC	Di-n-octylphthalate	mg/kg	11	3	27%	0.0027	0.0071	0.0020	--	--	--	--	--	--	1,600	No	4.44E-06	0
SVOC	Fluoranthene	mg/kg	20	13	65%	0.0010	0.022	0.0052	--	--	0.11	No	0.20	0	2,294	No	9.59E-06	0
SVOC	Fluorene	mg/kg	20	6	30%	7.00E-04	0.010	0.0014	--	--	0.077	No	0.13	0	2,747	No	3.64E-06	0
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	20	6	30%	0.0010	0.0070	0.0015	--	--	0.017	No	0.41	0	0.62	No	0.011	0
SVOC	Naphthalene	mg/kg	20	9	45%	8.00E-04	0.0086	0.0024	--	--	0.18	No	0.049	0	56	No	1.54E-04	0
SVOC	Pentachlorophenol	mg/kg	16	2	13%	0.011	0.029	0.067	--	--	--	--	--	--	3.0	No	9.73E-03	0
SVOC	Phenanthrene	mg/kg	20	13	65%	9.00E-04	0.029	0.0045	--	--	0.042	No	0.69	0	--	--	--	--
SVOC	Phenol	mg/kg	20	4	20%	0.0054	0.020	0.082	--	--	--	--	--	--	18,331	No	1.09E-06	0
SVOC	Pyrene	mg/kg	20	14	70%	0.0010	0.027	0.0052	--	--	0.053	No	0.51	0	2,316	No	1.17E-05	0

CONV - Conventional parameter
PEST - Pesticide
PCB - Polychlorinated biphenyl
RAD_D - Decayed radionuclide
SVOC - Semivolatile Organic Compound

Table D-6
Comparison of Segment 4 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "dry weight")

Constituent		Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Background Value	Is Max > Background?	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health			
Class	Constituent Name														Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
METAL	Aluminum	mg/kg dry-wt	5	5	100%	5,500	22,000	15,100	11,800	Yes	--	--	--	--	76,142	No	0.29	0
METAL	Antimony	mg/kg dry-wt	5	5	100%	2.6	6.1	4.6	5.0	Yes	2.0	Yes	3.1	5	31	No	0.19	0
METAL	Arsenic	mg/kg dry-wt	5	5	100%	1.5	9.5	6.1	6.5	Yes	6.0	Yes	1.6	3	0.39	Yes	24	5
METAL	Barium	mg/kg dry-wt	5	5	100%	72	210	140	132	Yes	--	--	--	--	5,375	No	0.039	0
METAL	Beryllium	mg/kg dry-wt	5	5	100%	0.65	1.5	1.2	1.5	No	--	--	--	--	154	No	0.0097	0
METAL	Cadmium	mg/kg dry-wt	5	5	100%	0.65	2.5	1.9	0.81	Yes	0.60	Yes	4.2	5	37	No	0.068	0
METAL	Calcium	mg/kg dry-wt	5	5	100%	3,100	6,800	5,280	17,200	No	--	--	--	--	--	--	--	--
METAL	Chromium	mg/kg dry-wt	5	5	100%	9.4	30	21	19	Yes	37	No	0.81	0	30	No	1.00	0
METAL	Cobalt	mg/kg dry-wt	5	5	100%	10	22	18	16	Yes	--	--	--	--	903	No	0.024	0
METAL	Copper	mg/kg dry-wt	5	5	100%	7.5	46	28	22	Yes	32	Yes	1.5	3	2,960	No	0.016	0
METAL	Iron	mg/kg dry-wt	5	5	100%	22,000	44,000	36,400	32,600	Yes	20,000	Yes	2.2	5	23,463	Yes	1.9	4
METAL	Lead	mg/kg dry-wt	5	5	100%	4.0	27	17	10	Yes	35	No	0.77	0	250	No	0.11	0
METAL	Magnesium	mg/kg dry-wt	5	5	100%	3,100	7,500	6,140	7,060	Yes	--	--	--	--	--	--	--	--
METAL	Manganese	mg/kg dry-wt	5	5	100%	370	840	622	512	Yes	460	Yes	1.8	3	1,762	No	0.48	0
METAL	Mercury	mg/kg dry-wt	5	5	100%	0.13	0.30	0.23	0.33	No	0.18	Yes	1.7	3	23	No	0.013	0
METAL	Nickel	mg/kg dry-wt	5	5	100%	9.7	30	24	19	Yes	18	Yes	1.7	4	1,564	No	0.019	0
METAL	Potassium	mg/kg dry-wt	5	5	100%	450	3,000	1,856	2,150	Yes	--	--	--	--	--	--	--	--
METAL	Selenium	mg/kg dry-wt	5	5	100%	0.96	1.6	1.4	0.78	Yes	--	--	--	--	391	No	0.0041	0
METAL	Silver	mg/kg dry-wt	5	5	100%	1.3	3.0	2.3	0.73	Yes	4.5	No	0.67	0	391	No	0.0077	0
METAL	Sodium	mg/kg dry-wt	5	5	100%	170	390	314	690	No	--	--	--	--	--	--	--	--
METAL	Thallium	mg/kg dry-wt	5	5	100%	1.3	3.0	2.6	--	--	--	--	--	--	5.2	No	0.58	0
METAL	Uranium	mg/kg dry-wt	1	1	100%	2.7	2.7	2.7	3.2	No	2,490	No	0.0011	0	16	No	0.17	0
METAL	Vanadium	mg/kg dry-wt	5	5	100%	62	120	83	85	Yes	--	--	--	--	78	Yes	1.5	2
METAL	Zinc	mg/kg dry-wt	5	5	100%	64	270	182	68	Yes	120	Yes	2.3	3	23,463	No	0.012	0
RAD_D	Beryllium-7	pCi/g dry-wt	1	1	100%	0.0016	0.0016	0.0016	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-134	pCi/g dry-wt	1	1	100%	0.039	0.039	0.039	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-137	pCi/g dry-wt	8	8	100%	0.090	0.41	0.20	1.1	No	3,120	No	1.32E-04	0	6.2	No	0.066	0
RAD_D	Cobalt-60	pCi/g dry-wt	5	5	100%	0.0077	0.038	0.016	0.0084	Yes	1,460	No	2.58E-05	0	1.4	No	0.027	0
RAD_D	Europium-152	pCi/g dry-wt	2	2	100%	0.064	0.22	0.14	--	--	--	--	--	--	3.3	No	0.066	0
RAD_D	Plutonium-238	pCi/g dry-wt	5	5	100%	2.66E-04	0.020	0.0054	0.0038	Yes	--	--	--	--	37	No	5.26E-04	0
RAD_D	Plutonium-239/240	pCi/g dry-wt	8	8	100%	1.00E-03	0.049	0.013	0.025	Yes	5,860	No	8.36E-06	0	34	No	0.0014	0
RAD_D	Potassium-40	pCi/g dry-wt	10	10	100%	8.2	16	13	17	No	--	--	--	--	--	--	--	--
RAD_D	Strontium-90	pCi/g dry-wt	9	9	100%	0.0057	0.031	0.016	0.18	No	582	No	5.24E-05	0	4.5	No	0.0068	0
RAD_D	Uranium-234	pCi/g dry-wt	9	9	100%	0.50	1.7	1.3	1.1	Yes	5,270	No	3.30E-04	0	1.1	Yes	1.6	8
RAD_D	Uranium-235	pCi/g dry-wt	9	9	100%	0.017	0.062	0.039	0.11	No	3,730	No	1.66E-05	0	0.84	No	0.074	0
RAD_D	Uranium-236	pCi/g dry-wt	1	1	100%	1.2	1.2	1.2	--	--	--	--	--	--	--	--	--	--
RAD_D	Uranium-238	pCi/g dry-wt	8	8	100%	0.38	1.7	1.1	3.2	No	2,490	No	6.95E-04	0	1.1	Yes	1.6	4

RAD_D - Decayed radionuclide

Table D-7
Summary of Surface Sediment Results From Segment 4 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical		Ecological Benchmark	Human Health Benchmark
							Value	Qualifier		
Columbia River	RM 145	B2GC1	July 28, 1997	Acenaphthene	mg/kg	1	0.018	=	0.0067	3,682
Columbia River	RM 145	B2GC3	July 28, 1997	Acenaphthylene	mg/kg	1	0.0060	=	0.0059	4,800
Columbia River	John Day Dam	B17B78	August 8, 2003	Antimony	mg/kg dry-wt	1	5.9	=	2.0	31
Columbia River	John Day Dam	B17B81	August 8, 2003	Antimony	mg/kg dry-wt	1	6.1	=	2.0	31
Columbia River	John Day Dam	B17B84	August 8, 2003	Antimony	mg/kg dry-wt	1	5.5	=	2.0	31
Columbia River	Dalles Dam	B17B99	August 8, 2003	Antimony	mg/kg dry-wt	1	2.6	=	2.0	31
Columbia River	Bonneville Dam	B17BB5	August 7, 2003	Antimony	mg/kg dry-wt	1	3.0	=	2.0	31
Columbia River	Messner Cove	PM-BC-07	March 17, 1999	Antimony	mg/kg	1	62	=	2.0	0
Columbia River	Messner Cove	PM-BC-09	March 17, 1999	Antimony	mg/kg	1	65	=	2.0	0
Columbia River	Bonneville Dam	BF-BC-07	September 18, 2002	Aroclor-1254	mg/kg	1	0.019	=	0.0070	0.22
Columbia River	John Day Dam	B17B78	August 8, 2003	Arsenic	mg/kg dry-wt	1	9.5	=	6.0	0.39
Columbia River	John Day Dam	B17B81	August 8, 2003	Arsenic	mg/kg dry-wt	1	8.6	=	6.0	0.39
Columbia River	John Day Dam	B17B84	August 8, 2003	Arsenic	mg/kg dry-wt	1	7.4	=	6.0	0.39
Columbia River	Dalles Dam	B17B99	August 8, 2003	Arsenic	mg/kg dry-wt	1	3.3	=	6.0	0.39
Columbia River	Bonneville Dam	B17BB5	August 7, 2003	Arsenic	mg/kg dry-wt	1	1.5	=	6.0	0.39
Columbia River	Dalles Dam	B17BK1	August 7, 2003	Arsenic	mg/Kg	1	5.6	=	6.0	0.39
Columbia River	Bonneville Dam	B17BK5	August 7, 2003	Arsenic	mg/Kg	1	6.0	=	6.0	0.39
Columbia River	John Day Dam	B1B7P3	September 21, 2004	Arsenic	mg/Kg	1	10	X	6.0	0.39
Columbia River	RM 145	B2GC1	July 28, 1997	Arsenic	mg/kg	1	4.0	=	6.0	0.39
Columbia River	RM 145	B2GC2	July 28, 1997	Arsenic	mg/kg	1	3.0	=	6.0	0.39
Columbia River	RM 145	B2GC3	July 28, 1997	Arsenic	mg/kg	1	5.0	=	6.0	0.39
Columbia River	Bonneville Dam	BF-BC-03	September 18, 2002	Arsenic	mg/kg	1	4.6	=	6.0	0.39
Columbia River	Bonneville Dam	BF-BC-07	September 18, 2002	Arsenic	mg/kg	1	2.4	=	6.0	0.39
Columbia River	Bonneville Dam	BF-BC-17	September 18, 2002	Arsenic	mg/kg	1	5.5	=	6.0	0.39
Columbia River	Bonneville Dam	BF-BC-26	September 18, 2002	Arsenic	mg/kg	1	5.8	=	6.0	0.39
Columbia River	RM 145	PH2#1	July 24, 1997	Arsenic	mg/kg	1	2.0	=	6.0	0.39
Columbia River	RM 145	PH2#2	July 24, 1997	Arsenic	mg/kg	1	15	=	6.0	0.39
Columbia River	John Day Dam	B17B78	August 8, 2003	Cadmium	mg/kg dry-wt	1	2.5	=	0.60	37
Columbia River	John Day Dam	B17B81	August 8, 2003	Cadmium	mg/kg dry-wt	1	2.3	=	0.60	37
Columbia River	John Day Dam	B17B84	August 8, 2003	Cadmium	mg/kg dry-wt	1	2.4	=	0.60	37
Columbia River	Dalles Dam	B17B99	August 8, 2003	Cadmium	mg/kg dry-wt	1	0.65	=	0.60	37
Columbia River	Bonneville Dam	B17BB5	August 7, 2003	Cadmium	mg/kg dry-wt	1	1.5	=	0.60	37
Columbia River	Dalles Dam	B17BK1	August 7, 2003	Cadmium	mg/Kg	1	1.2	=	0.60	37
Columbia River	Bonneville Dam	B17BK5	August 7, 2003	Cadmium	mg/Kg	1	0.88	=	0.60	37
Columbia River	John Day Dam	B1B7P3	September 21, 2004	Cadmium	mg/Kg	1	2.2	X	0.60	37
Columbia River	Messner Cove	PM-BC-02	March 17, 1999	Cadmium	mg/kg	1	0.61	=	0.60	37
Columbia River	Messner Cove	PM-BC-03	March 17, 1999	Cadmium	mg/kg	1	0.74	=	0.60	37
Columbia River	Messner Cove	PM-BC-04	March 17, 1999	Cadmium	mg/kg	1	0.96	=	0.60	37
Columbia River	Messner Cove	PM-BC-10	March 17, 1999	Cadmium	mg/kg	1	1.0	=	0.60	37
Columbia River	Messner Cove	PM-GC-01	March 17, 1999	Cadmium	mg/kg	1	0.98	=	0.60	37
Columbia River	Dalles Dam	B17BK1	August 7, 2003	Chromium	mg/Kg	1	57	=	37	30
Columbia River	Bonneville Dam	B17BK5	August 7, 2003	Chromium	mg/Kg	1	57	=	37	30
Columbia River	John Day Dam	B1B7P3	September 21, 2004	Chromium	mg/Kg	1	62	X	37	30
Columbia River	John Day Dam	B17B78	August 8, 2003	Copper	mg/kg dry-wt	1	46	=	32	2,960
Columbia River	John Day Dam	B17B81	August 8, 2003	Copper	mg/kg dry-wt	1	35	=	32	2,960
Columbia River	John Day Dam	B17B84	August 8, 2003	Copper	mg/kg dry-wt	1	34	=	32	2,960
Columbia River	Bonneville Dam	B17BK5	August 7, 2003	Copper	mg/Kg	1	32	=	32	2,960
Columbia River	John Day Dam	B1B7P3	September 21, 2004	Copper	mg/Kg	1	46	X	32	2,960
Columbia River	Bonneville Dam	BF-BC-03	September 18, 2002	Copper	mg/kg	1	37	=	32	2,960
Columbia River	Bonneville Dam	BF-BC-26	September 18, 2002	Copper	mg/kg	1	34	=	32	2,960

Table D-7
Summary of Surface Sediment Results From Segment 4 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical		Ecological Benchmark	Human Health Benchmark
							Value	Qualifier		
Columbia River	Messner Cove	PM-GC-01	March 17, 1999	Di-n-butylphthalate	mg/kg	1	0.065	=	0.043	6,110
Columbia River	John Day Dam	B17B78	August 8, 2003	Iron	mg/kg dry-wt	1	44,000	=	20,000	23,463
Columbia River	John Day Dam	B17B81	August 8, 2003	Iron	mg/kg dry-wt	1	37,000	=	20,000	23,463
Columbia River	John Day Dam	B17B84	August 8, 2003	Iron	mg/kg dry-wt	1	37,000	=	20,000	23,463
Columbia River	Dalles Dam	B17B99	August 8, 2003	Iron	mg/kg dry-wt	1	22,000	=	20,000	23,463
Columbia River	Bonneville Dam	B17BB5	August 7, 2003	Iron	mg/kg dry-wt	1	42,000	=	20,000	23,463
Columbia River	Bonneville Dam	BF-BC-03	September 18, 2002	Iron	mg/kg	1	23,800	=	20,000	23,463
Columbia River	Bonneville Dam	BF-BC-07	September 18, 2002	Iron	mg/kg	1	20,700	=	20,000	23,463
Columbia River	Bonneville Dam	BF-BC-17	September 18, 2002	Iron	mg/kg	1	26,100	=	20,000	23,463
Columbia River	Bonneville Dam	BF-BC-26	September 18, 2002	Iron	mg/kg	1	25,200	=	20,000	23,463
Columbia River	Messner Cove	PM-BC-03	March 17, 1999	Lead	mg/kg	1	0,250	=	0,035	0,250
Columbia River	John Day Dam	B17B78	August 8, 2003	Manganese	mg/kg dry-wt	1	840	=	460	1,762
Columbia River	John Day Dam	B17B81	August 8, 2003	Manganese	mg/kg dry-wt	1	770	=	460	1,762
Columbia River	John Day Dam	B17B84	August 8, 2003	Manganese	mg/kg dry-wt	1	680	=	460	1,762
Columbia River	Bonneville Dam	BF-BC-03	September 18, 2002	Manganese	mg/kg	1	510	=	460	1,762
Columbia River	Bonneville Dam	BF-BC-17	September 18, 2002	Manganese	mg/kg	1	716	=	460	1,762
Columbia River	Bonneville Dam	BF-BC-26	September 18, 2002	Manganese	mg/kg	1	499	=	460	1,762
Columbia River	John Day Dam	B17B78	August 8, 2003	Mercury	mg/kg dry-wt	1	0.29	=	0.18	23
Columbia River	John Day Dam	B17B81	August 8, 2003	Mercury	mg/kg dry-wt	1	0.30	=	0.18	23
Columbia River	John Day Dam	B17B84	August 8, 2003	Mercury	mg/kg dry-wt	1	0.28	=	0.18	23
Columbia River	Bonneville Dam	B17BK5	August 7, 2003	Mercury	mg/Kg	1	0.51	C	0.18	23
Columbia River	Bonneville Dam	BF-BC-15	September 18, 2002	Mercury	mg/kg	1	0.20	=	0.18	23
Columbia River	Bonneville Dam	BF-BC-17	September 18, 2002	Mercury	mg/kg	1	0.19	=	0.18	23
Columbia River	John Day Dam	B17B78	August 8, 2003	Nickel	mg/kg dry-wt	1	29	=	18	1,564
Columbia River	John Day Dam	B17B81	August 8, 2003	Nickel	mg/kg dry-wt	1	25	=	18	1,564
Columbia River	John Day Dam	B17B84	August 8, 2003	Nickel	mg/kg dry-wt	1	24	=	18	1,564
Columbia River	Bonneville Dam	B17BB5	August 7, 2003	Nickel	mg/kg dry-wt	1	30	=	18	1,564
Columbia River	Dalles Dam	B17BK1	August 7, 2003	Nickel	mg/Kg	1	24	=	18	1,564
Columbia River	Bonneville Dam	B17BK5	August 7, 2003	Nickel	mg/Kg	1	25	=	18	1,564
Columbia River	John Day Dam	B17BP3	September 21, 2004	Nickel	mg/Kg	1	33	X	18	1,564
Columbia River	Bonneville Dam	BF-BC-03	September 18, 2002	Nickel	mg/kg	1	19	=	18	1,564
Columbia River	Bonneville Dam	BF-BC-17	September 18, 2002	Nickel	mg/kg	1	19	=	18	1,564
Columbia River	Bonneville Dam	BF-BC-26	September 18, 2002	Nickel	mg/kg	1	19	=	18	1,564
Columbia River	Bonneville Dam	31803	August 7, 2003	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1
Columbia River	Dalles Dam	31804	August 7, 2003	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1
Columbia River	Dalles Dam	31805	August 7, 2003	Uranium-234	pCi/g dry-wt	1	1.7	=	5,270	1.1
Columbia River	John Day Dam	31806	August 8, 2003	Uranium-234	pCi/g dry-wt	1	1.2	=	5,270	1.1
Columbia River	John Day Dam	31807	August 8, 2003	Uranium-234	pCi/g dry-wt	1	1.4	=	5,270	1.1
Columbia River	John Day Dam	31808	August 8, 2003	Uranium-234	pCi/g dry-wt	1	1.4	=	5,270	1.1
Columbia River	John Day Dam	33607	September 21, 2004	Uranium-234	pCi/g dry-wt	1	1.4	=	5,270	1.1
Columbia River	John Day Dam	B17BP9	August 8, 2003	Uranium-234	pCi/g dry-wt	1	1.4	=	5,270	1.1
Columbia River	Dalles Dam	31805	August 7, 2003	Uranium-238	pCi/g dry-wt	1	1.7	=	2,490	1.1
Columbia River	John Day Dam	31807	August 8, 2003	Uranium-238	pCi/g dry-wt	1	1.2	=	2,490	1.1
Columbia River	John Day Dam	31808	August 8, 2003	Uranium-238	pCi/g dry-wt	1	1.2	=	2,490	1.1
Columbia River	John Day Dam	33607	September 21, 2004	Uranium-238	pCi/g dry-wt	1	1.3	=	2,490	1.1
Columbia River	John Day Dam	B17B78	August 8, 2003	Vanadium	mg/kg dry-wt	1	87	=	--	78
Columbia River	Bonneville Dam	B17BB5	August 7, 2003	Vanadium	mg/kg dry-wt	1	120	=	--	78
Columbia River	John Day Dam	B17B78	August 8, 2003	Zinc	mg/kg dry-wt	1	270	=	120	23,463
Columbia River	John Day Dam	B17B81	August 8, 2003	Zinc	mg/kg dry-wt	1	250	=	120	23,463
Columbia River	John Day Dam	B17B84	August 8, 2003	Zinc	mg/kg dry-wt	1	240	=	120	23,463

Table D-7
Summary of Surface Sediment Results From Segment 4 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical		Ecological Benchmark	Human Health Benchmark
							Value	Qualifier		
Columbia River	Dalles Dam	B17BK1	August 7, 2003	Zinc	mg/Kg	1	179	C	120	23,463
Columbia River	Bonneville Dam	B17BK5	August 7, 2003	Zinc	mg/Kg	1	175	C	120	23,463
Columbia River	John Day Dam	B1B7P3	September 21, 2004	Zinc	mg/Kg	1	293	X	120	23,463
Columbia River	Bonneville Dam	BF-BC-17	September 18, 2002	Zinc	mg/kg	1	147	=	120	23,463

Table D-8

Summary Statistics for All Categories of Surface Water Samples Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Alkalinity	mg/L	22	22	100%	--	--	29	109	62
CONV	Ammonia	mg/L	40	23	58%	0.020	0.020	0.020	0.050	0.020
CONV	Chloride	mg/L	21	21	100%	--	--	1.0	4.0	3.0
CONV	Dissolved organic carbon	mg/L	9	9	100%	--	--	1.0	2.1	1.4
CONV	Fluoride	mg/L	21	0	0%	0.50	0.50	--	--	0.25
CONV	Hardness	mg/L	27	27	100%	--	--	17	80	55
CONV	Nitrate	mg/L	21	9	43%	0.20	0.20	0.20	0.40	0.18
CONV	Nitrogen, Kjeldahl total	mg/L	39	8	21%	0.20	0.20	0.20	1.4	0.15
CONV	Nitrogen, Nitrate-Nitrite	mg/L	40	40	100%	--	--	0.058	0.53	0.18
CONV	Orthophosphate	mg/L	40	40	100%	--	--	0.0060	0.061	0.019
CONV	pH	pH Units	21	21	100%	--	--	7.0	8.8	8.0
CONV	Phosphorous in phosphate	mg/L	40	40	100%	--	--	0.010	6.4	0.23
CONV	Specific Conductance	umhos/cm	33	33	100%	--	--	44	185	139
CONV	Sulfate	mg/L	21	17	81%	10	20	7.0	15	11
CONV	Total dissolved solids	mg/L	21	21	100%	--	--	76	118	97
CONV	Total Organic Carbon	mg/L	54	36	67%	1.0	1.0	1.0	5.0	1.2
CONV	Total solids	mg/L	42	42	100%	--	--	40	6,300	229
CONV	Total suspended solids	mg/L	58	57	98%	1.0	1.0	1.0	5,900	118
METAL	Antimony	mg/L	21	0	0%	0.0020	0.0030	--	--	0.0011
METAL	Arsenic	mg/L	32	12	38%	0.0020	0.0050	4.20E-04	0.0021	0.0012
METAL	Barium	mg/L	21	21	100%	--	--	0.027	0.043	0.034
METAL	Beryllium	mg/L	21	1	5%	5.00E-05	1.00E-04	1.00E-04	1.00E-04	5.12E-05
METAL	Cadmium	mg/L	27	1.0	0.037	1.00E-04	0.0050	3.00E-04	3.00E-04	6.26E-04
METAL	Chromium	mg/L	27	1	4%	0.0010	0.0020	0.0015	0.0015	6.48E-04
METAL	Copper	mg/L	27	0	0%	0.010	0.050	--	--	0.020
METAL	Iron	mg/L	27	27	100%	--	--	0.072	0.89	0.24
METAL	Lead	mg/L	27	1	4%	0.0020	0.010	0.0036	0.0036	0.0020
METAL	Magnesium	mg/L	6	6	100%	--	--	1.6	2.0	1.8
METAL	Manganese	mg/L	21	1	5%	0.020	0.020	0.022	0.022	0.011
METAL	Mercury	mg/L	21	0	0%	2.00E-04	4.00E-04	--	--	1.95E-04
METAL	Nickel	mg/L	20	2	10%	0.0020	0.0025	0.0034	0.0039	0.0013
METAL	Selenium	mg/L	21	0	0%	0.0020	0.0050	--	--	0.0024
METAL	Silver	mg/L	21	0	0%	5.00E-04	0.0050	--	--	0.0024
METAL	Sodium	mg/L	21	21	100%	--	--	3.5	11	6.7
METAL	Thallium	mg/L	21	0	0%	0.0010	0.0020	--	--	5.24E-04
METAL	Zinc	mg/L	27	0	0%	0.020	0.050	--	--	0.022
PCB	Total polychlorinated biphenyl	mg/L	3	1	33%	5.90E-07	1.70E-06	3.70E-07	3.70E-07	5.05E-07
PEST	Alpha-BHC	mg/L	6	0	0%	4.80E-08	8.80E-07	--	--	2.35E-07
PEST	alpha-Chlordane	mg/L	3	2	67%	2.10E-07	2.10E-07	3.00E-08	1.20E-07	8.50E-08
PEST	Atrazine	mg/L	7	0	0%	2.50E-05	2.60E-05	--	--	1.29E-05
PEST	Azinphos Methyl	mg/L	7	0	0%	2.50E-05	2.60E-05	--	--	1.29E-05
PEST	Carbethoxy malathion	mg/L	7	0	0%	2.50E-05	2.60E-05	--	--	1.29E-05
PEST	Chlorpyrifos	mg/L	7	0	0%	2.50E-05	2.60E-05	--	--	1.29E-05

Table D-8**Summary Statistics for All Categories of Surface Water Samples Collected from Segment 4 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Diazinon	mg/L	7	0	0%	2.50E-05	2.60E-05	--	--	1.29E-05
PEST	Dichlorodiphenyldichloroethane	mg/L	6	6	100%	--	--	3.90E-07	2.90E-06	1.44E-06
PEST	Dichlorodiphenyldichloroethylene	mg/L	6	6	100%	--	--	2.70E-07	1.00E-06	6.33E-07
PEST	Dichlorodiphenyltrichloroethane	mg/L	6	6	100%	--	--	2.40E-08	1.20E-07	7.30E-08
PEST	Dieldrin	mg/L	6	6	100%	--	--	4.60E-08	4.90E-07	2.24E-07
PEST	Dimethoate	mg/L	7	0	0%	5.00E-05	5.20E-05	--	--	2.54E-05
PEST	Endosulfan I	mg/L	2	0	0%	7.20E-07	7.20E-07	--	--	3.60E-07
PEST	Endrin	mg/L	6	0	0%	9.00E-09	2.60E-07	--	--	6.98E-08
PEST	gamma-Chlordane	mg/L	3	2	67%	2.30E-07	2.30E-07	3.20E-08	9.40E-08	8.03E-08
PEST	Heptachlor epoxide	mg/L	6	2	33%	3.20E-08	2.70E-07	6.50E-08	6.50E-08	7.26E-08
PEST	Methoxychlor	mg/L	6	2	33%	9.00E-09	5.30E-07	5.40E-08	5.40E-08	1.08E-07
PEST	Methyl parathion	mg/L	7	0	0%	2.50E-05	2.60E-05	--	--	1.29E-05
PEST	Phosmet	mg/L	7	0	0%	2.50E-05	2.60E-05	--	--	1.29E-05
PEST	Simazine	mg/L	7	0	0%	2.50E-05	2.60E-05	--	--	1.29E-05
RAD	Gross alpha	pCi/L	20	3	15%	0.90	3.0	1.1	2.4	0.98
RAD	Gross beta	pCi/L	20	4	20%	0.90	5.0	1.2	6.5	2.1
SVOC	Benzo(a)anthracene	mg/L	6	4	67%	3.50E-08	3.50E-08	1.30E-08	3.50E-08	2.18E-08
SVOC	Benzo(a)pyrene	mg/L	6	4	67%	2.90E-08	2.90E-08	4.00E-09	1.00E-08	9.50E-09
SVOC	Benzo(b)fluoranthene	mg/L	6	4	67%	3.70E-08	3.70E-08	1.20E-08	3.20E-08	2.08E-08
SVOC	Benzo(ghi)perylene	mg/L	6	4	67%	5.20E-08	5.20E-08	8.00E-09	1.20E-08	1.53E-08
SVOC	Benzo(k)fluoranthene	mg/L	6	4	67%	3.10E-08	3.10E-08	1.40E-08	3.20E-08	2.05E-08
SVOC	Chrysene	mg/L	6	6	100%	--	--	2.30E-08	7.80E-08	4.80E-08
SVOC	Dibenz[a,h]anthracene	mg/L	3	2	67%	3.80E-08	3.80E-08	5.00E-09	7.00E-09	1.03E-08
SVOC	Dibenzo(a,h)pyrene	mg/L	3	2	67%	3.80E-08	3.80E-08	5.00E-09	7.00E-09	1.03E-08
SVOC	Hexachlorobenzene	mg/L	6	6	100%	--	--	8.90E-08	3.50E-07	2.23E-07
SVOC	Indeno(1,2,3-cd)pyrene	mg/L	6	4	67%	3.00E-08	3.00E-08	5.00E-09	1.10E-08	1.03E-08

CONV - Conventional parameter

PCB - Polychlorinated biphenyls

PEST - Pesticide

RAD - Radionuclide

SVOC - Semivolatile Organic Compound

Table D-9
Comparison of All Categories of Surface Water Concentrations from Segment 4 of the Columbia River to Ecological and Human Health Benchmark Values

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
CONV	Alkalinity	mg/L	22	22	100%	29	109	62	--	--	--	--	--	--	--	--
CONV	Ammonia	mg/L	40	23	58%	0.020	0.050	0.020	--	--	--	--	--	--	--	--
CONV	Chloride	mg/L	21	21	100%	1.0	4.0	3.0	230	No	0.017	0	--	--	--	--
CONV	Dissolved organic carbon	mg/L	9	9	100%	1.0	2.1	1.4	--	--	--	--	--	--	--	--
CONV	Hardness	mg/L	27	27	100%	17	80	55	--	--	--	--	--	--	--	--
CONV	Nitrate	mg/L	21	9	43%	0.20	0.40	0.18	--	--	--	--	10	No	0.040	0
CONV	Nitrogen, Kjeldahl total	mg/L	39	8	21%	0.20	1.4	0.15	--	--	--	--	--	--	--	--
CONV	Nitrogen, Nitrate-Nitrite	mg/L	40	40	100%	0.058	0.53	0.18	--	--	--	--	--	--	--	--
CONV	Orthophosphate	mg/L	40	40	100%	0.0060	0.061	0.019	--	--	--	--	--	--	--	--
CONV	pH	pH Units	21	21	100%	7.0	8.8	8.0	--	--	--	--	--	--	--	--
CONV	Phosphorous in phosphate	mg/L	40	40	100%	0.010	6.4	0.23	--	--	--	--	--	--	--	--
CONV	Specific Conductance	umhos/cm	33	33	100%	44	185	139	--	--	--	--	--	--	--	--
CONV	Sulfate	mg/L	21	17	81%	7.0	15	11	--	--	--	--	--	--	--	--
CONV	Total dissolved solids	mg/L	21	21	100%	76	118	97	--	--	--	--	--	--	--	--
CONV	Total Organic Carbon	mg/L	54	36	67%	1.0	5.0	1.2	--	--	--	--	--	--	--	--
CONV	Total solids	mg/L	42	42	100%	40	6,300	229	--	--	--	--	--	--	--	--
CONV	Total suspended solids	mg/L	58	57	98%	1.0	5,900	118	--	--	--	--	--	--	--	--
METAL	Arsenic	mg/L	32	12	38%	4.20E-04	0.0021	0.0012	0.15	No	0.014	0	1.80E-05	Yes	117	12
METAL	Barium	mg/L	21	21	100%	0.027	0.043	0.034	0.0040	Yes	11	21	1.0	No	0.043	0
METAL	Beryllium	mg/L	21	1	5%	1.00E-04	1.00E-04	5.12E-05	0.0053	No	0.019	0	--	--	--	--
METAL	Cadmium	mg/L	27	1	4%	3.00E-04	3.00E-04	6.26E-04	2.50E-04	Yes	1.2	1	--	--	--	--
METAL	Chromium	mg/L	27	1	4%	0.0015	0.0015	6.48E-04	0.010	No	0.15	0	--	--	--	--
METAL	Iron	mg/L	27	27	100%	0.072	0.89	0.24	1.0	No	0.89	0	0.30	Yes	3.0	6
METAL	Lead	mg/L	27	1	4%	0.0036	0.0036	0.0020	8.67E-04	Yes	4.2	1	--	--	--	--
METAL	Magnesium	mg/L	6	6	100%	1.6	2.0	1.8	82	No	0.025	0	--	--	--	--
METAL	Manganese	mg/L	21	1	5%	0.022	0.022	0.011	0.12	No	0.18	0	0.050	No	0.44	0
METAL	Nickel	mg/L	20	2	10%	0.0034	0.0039	0.0013	0.028	No	0.14	0	0.61	No	0.0064	0
METAL	Sodium	mg/L	21	21	100%	3.5	11	6.7	680	No	0.016	0	--	--	--	--
PCB	Total polychlorinated biphenyl	mg/L	3	1	33%	3.70E-07	3.70E-07	5.05E-07	1.40E-05	No	0.026	0	6.40E-08	Yes	5.8	1
PEST	alpha-Chlordane	mg/L	3	2	67%	3.00E-08	1.20E-07	8.50E-08	--	--	--	--	--	--	--	--
PEST	Dichlorodiphenyldichloroethane	mg/L	6	6	100%	3.90E-07	2.90E-06	1.44E-06	1.00E-06	Yes	2.9	1	3.10E-07	Yes	9.4	6
PEST	Dichlorodiphenyldichloroethylene	mg/L	6	6	100%	2.70E-07	1.00E-06	6.33E-07	--	--	--	--	2.20E-07	Yes	4.5	6
PEST	Dichlorodiphenyltrichloroethane	mg/L	6	6	100%	2.40E-08	1.20E-07	7.30E-08	1.00E-06	No	0.12	0	2.20E-07	No	0.55	0
PEST	Dieldrin	mg/L	6	6	100%	4.60E-08	4.90E-07	2.24E-07	1.90E-06	No	0.26	0	5.20E-08	Yes	9.4	5
PEST	gamma-Chlordane	mg/L	3	2	67%	3.20E-08	9.40E-08	8.03E-08	--	--	--	--	--	--	--	--
PEST	Heptachlor epoxide	mg/L	6	2	33%	6.50E-08	6.50E-08	7.26E-08	3.80E-06	No	0.017	0	3.90E-08	Yes	1.7	2
PEST	Methoxychlor	mg/L	6	2	33%	5.40E-08	5.40E-08	1.08E-07	3.00E-05	No	0.0018	0	--	--	--	--
RAD	Gross alpha	pCi/L	20	3	15%	1.1	2.4	0.98	--	--	--	--	--	--	--	--
RAD	Gross beta	pCi/L	20	4	20%	1.2	6.5	2.1	--	--	--	--	--	--	--	--
SVOC	Benzo(a)anthracene	mg/L	6	4	67%	1.30E-08	3.50E-08	2.18E-08	2.70E-05	No	0.0013	0	3.80E-06	No	0.0092	0
SVOC	Benzo(a)pyrene	mg/L	6	4	67%	4.00E-09	1.00E-08	9.50E-09	1.40E-05	No	7.14E-04	0	3.80E-06	No	0.0026	0
SVOC	Benzo(b)fluoranthene	mg/L	6	4	67%	1.20E-08	3.20E-08	2.08E-08	--	--	--	--	3.80E-06	No	0.0084	0
SVOC	Benzo(ghi)perylene	mg/L	6	4	67%	8.00E-09	1.20E-08	1.53E-08	--	--	--	--	--	--	--	--
SVOC	Benzo(k)fluoranthene	mg/L	6	4	67%	1.40E-08	3.20E-08	2.05E-08	--	--	--	--	3.80E-06	No	0.0084	0
SVOC	Chrysene	mg/L	6	6	100%	2.30E-08	7.80E-08	4.80E-08	--	--	--	--	3.80E-06	No	0.021	0
SVOC	Dibenz[a,h]anthracene	mg/L	3	2	67%	5.00E-09	7.00E-09	1.03E-08	--	--	--	--	3.80E-06	No	0.0018	0
SVOC	Dibenzo(a,h)pyrene	mg/L	3	2	67%	5.00E-09	7.00E-09	1.03E-08	--	--	--	--	--	--	--	--
SVOC	Hexachlorobenzene	mg/L	6	6	100%	8.90E-08	3.50E-07	2.23E-07	--	--	--	--	2.80E-07	Yes	1.3	2
SVOC	Indeno(1,2,3-cd)pyrene	mg/L	6	4	67%	5.00E-09	1.10E-08	1.03E-08	--	--	--	--	3.80E-06	No	0.0029	0

CONV - Conventional parameter
PCB - Polychlorinated Biphenyls
PEST - Pesticide
RAD - Radionuclide
SVOC - Semivolatile Organic Compound

Table D-10
Summary of Surface Water Results From Segment 4 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Health Benchmark Value
Columbia River	Umatilla OR	2118106	February 11, 2002	Arsenic	mg/L	1	4.20E-04	=	0.15	1.80E-05
Columbia River	Umatilla OR	2228081	May 15, 2002	Arsenic	mg/L	1	6.90E-04	=	0.15	1.80E-05
Columbia River	Umatilla OR	2158156	March 13, 2002	Arsenic	mg/L	1	8.80E-04	=	0.15	1.80E-05
Columbia River	Umatilla OR	1286070	July 11, 2001	Arsenic	mg/L	1	8.90E-04	=	0.15	1.80E-05
Columbia River	Umatilla OR	2018081	December 5, 2001	Arsenic	mg/L	1	9.90E-04	=	0.15	1.80E-05
Columbia River	Umatilla OR	2068081	January 16, 2002	Arsenic	mg/L	1	0.0010	=	0.15	1.80E-05
Columbia River	Umatilla OR	1468156	October 17, 2001	Arsenic	mg/L	1	0.0011	=	0.15	1.80E-05
Columbia River	Umatilla OR	1408081	September 12, 2001	Arsenic	mg/L	1	0.0012	=	0.15	1.80E-05
Columbia River	Umatilla OR	2178181	April 10, 2002	Arsenic	mg/L	1	0.0014	=	0.15	1.80E-05
Columbia River	Umatilla OR	1368082	August 8, 2001	Arsenic	mg/L	1	0.0014	=	0.15	1.80E-05
Columbia River	Umatilla OR	1498101	November 7, 2001	Arsenic	mg/L	1	0.0014	=	0.15	1.80E-05
Columbia River	DALLES BRDG	080701	August 7, 2001	Arsenic	mg/L	1	0.0021	=	0.15	1.80E-05
Columbia River	DALLES BRDG	083000	August 30, 2000	Barium	mg/L	1	0.027	=	0.0040	1.0
Columbia River	DALLES BRDG	021004	February 10, 2004	Barium	mg/L	1	0.027	=	0.0040	1.0
Columbia River	DALLES BRDG	052200	May 22, 2000	Barium	mg/L	1	0.028	=	0.0040	1.0
Columbia River	DALLES BRDG	020800	February 8, 2000	Barium	mg/L	1	0.029	=	0.0040	1.0
Columbia River	DALLES BRDG	051004	May 10, 2004	Barium	mg/L	1	0.029	=	0.0040	1.0
Columbia River	DALLES BRDG	080904	August 9, 2004	Barium	mg/L	1	0.030	=	0.0040	1.0
Columbia River	DALLES BRDG	111300	November 13, 2000	Barium	mg/L	1	0.030	=	0.0040	1.0
Columbia River	DALLES BRDG	110601	November 6, 2001	Barium	mg/L	1	0.030	=	0.0040	1.0
Columbia River	DALLES BRDG	110502	November 5, 2002	Barium	mg/L	1	0.032	=	0.0040	1.0
Columbia River	DALLES BRDG	101304	October 13, 2004	Barium	mg/L	1	0.032	=	0.0040	1.0
Columbia River	DALLES BRDG	050703	May 7, 2003	Barium	mg/L	1	0.033	=	0.0040	1.0
Columbia River	DALLES BRDG	080503	August 5, 2003	Barium	mg/L	1	0.034	=	0.0040	1.0
Columbia River	DALLES BRDG	052201	May 22, 2001	Barium	mg/L	1	0.034	=	0.0040	1.0
Columbia River	DALLES BRDG	080701	August 7, 2001	Barium	mg/L	1	0.035	=	0.0040	1.0
Columbia River	DALLES BRDG	020403	February 4, 2003	Barium	mg/L	1	0.036	=	0.0040	1.0
Columbia River	DALLES BRDG	020502	February 5, 2002	Barium	mg/L	1	0.036	=	0.0040	1.0
Columbia River	DALLES BRDG	050702	May 7, 2002	Barium	mg/L	1	0.037	=	0.0040	1.0
Columbia River	DALLES BRDG	080602	August 6, 2002	Barium	mg/L	1	0.038	=	0.0040	1.0
Columbia River	DALLES BRDG	020805	February 8, 2005	Barium	mg/L	1	0.039	=	0.0040	1.0
Columbia River	DALLES BRDG	051005	May 10, 2005	Barium	mg/L	1	0.042	=	0.0040	1.0
Columbia River	DALLES BRDG	020601	February 6, 2001	Barium	mg/L	1	0.043	=	0.0040	1.0
Columbia River	DALLES BRDG	020805	February 8, 2005	Cadmium	mg/L	1	3.00E-04	=	2.50E-04	--
Columbia River	RM147 BONN DAM	01 8/03-9/	September 1, 2003	Dichlorodiphenyldichloroethane	mg/L	1	3.90E-07	=	1.00E-06	3.10E-07
Columbia River	Bonneville Dam	3454413	September 24, 2003	Dichlorodiphenyldichloroethane	mg/L	1	4.90E-07	=	1.00E-06	3.10E-07
Columbia River	Bonneville Dam	4314230	June 22, 2004	Dichlorodiphenyldichloroethane	mg/L	1	9.80E-07	=	1.00E-06	3.10E-07
Columbia River	RM147 BONN DAM	01 5/04-6/	June 1, 2004	Dichlorodiphenyldichloroethane	mg/L	1	9.80E-07	=	1.00E-06	3.10E-07
Columbia River	Bonneville Dam	4154230	January 12, 2004	Dichlorodiphenyldichloroethane	mg/L	1	2.90E-06	=	1.00E-06	3.10E-07
Columbia River	RM147 BONN DAM	01 12/03-1	January 1, 2004	Dichlorodiphenyldichloroethane	mg/L	1	2.90E-06	=	1.00E-06	3.10E-07
Columbia River	RM147 BONN DAM	01 8/03-9/	September 1, 2003	Dichlorodiphenyldichloroethylene	mg/L	1	2.70E-07	=	--	2.20E-07
Columbia River	Bonneville Dam	3454413	September 24, 2003	Dichlorodiphenyldichloroethylene	mg/L	1	3.30E-07	=	--	2.20E-07
Columbia River	Bonneville Dam	4314230	June 22, 2004	Dichlorodiphenyldichloroethylene	mg/L	1	6.00E-07	=	--	2.20E-07
Columbia River	RM147 BONN DAM	01 5/04-6/	June 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	1	6.00E-07	=	--	2.20E-07
Columbia River	Bonneville Dam	4154230	January 12, 2004	Dichlorodiphenyldichloroethylene	mg/L	1	1.00E-06	=	--	2.20E-07
Columbia River	RM147 BONN DAM	01 12/03-1	January 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	1	1.00E-06	=	--	2.20E-07
Columbia River	Bonneville Dam	3454413	September 24, 2003	Dieldrin	mg/L	1	5.70E-08	=	1.90E-06	5.20E-08
Columbia River	Bonneville Dam	4314230	June 22, 2004	Dieldrin	mg/L	1	1.30E-07	J	1.90E-06	5.20E-08
Columbia River	RM147 BONN DAM	01 5/04-6/	June 1, 2004	Dieldrin	mg/L	1	1.30E-07	=	1.90E-06	5.20E-08

Table D-10
Summary of Surface Water Results From Segment 4 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Health Benchmark Value
Columbia River	Bonneville Dam	4154230	January 12, 2004	Dieldrin	mg/L	1	4.90E-07	J	1.90E-06	5.20E-08
Columbia River	RM147 BONN DAM	01 12/03-1	January 1, 2004	Dieldrin	mg/L	1	4.90E-07	=	1.90E-06	5.20E-08
Columbia River	Bonneville Dam	4314230	June 22, 2004	Heptachlor epoxide	mg/L	1	6.50E-08	J	3.80E-06	3.90E-08
Columbia River	RM147 BONN DAM	01 5/04-6/	June 1, 2004	Heptachlor epoxide	mg/L	1	6.50E-08	=	3.80E-06	3.90E-08
Columbia River	Bonneville Dam	4154230	January 12, 2004	Hexachlorobenzene	mg/L	1	3.50E-07	J	--	2.80E-07
Columbia River	RM147 BONN DAM	01 12/03-1	January 1, 2004	Hexachlorobenzene	mg/L	1	3.50E-07	=	--	2.80E-07
Columbia River	DALLES BRDG	052200	May 22, 2000	Iron	mg/L	1	0.33	=	1.0	0.30
Columbia River	DALLES BRDG	050703	May 7, 2003	Iron	mg/L	1	0.33	=	1.0	0.30
Columbia River	DALLES BRDG	051005	May 10, 2005	Iron	mg/L	1	0.34	=	1.0	0.30
Columbia River	DALLES BRDG	050702	May 7, 2002	Iron	mg/L	1	0.43	=	1.0	0.30
Columbia River	FTBRDG DSM I-84	605855	April 19, 2002	Iron	mg/L	1	0.55	=	1.0	0.30
Columbia River	DALLES BRDG	080602	August 6, 2002	Iron	mg/L	1	0.89	=	1.0	0.30
Columbia River	DALLES BRDG	101304	October 13, 2004	Lead	mg/L	1	0.0036	=	8.67E-04	--
Columbia River	Bonneville Dam	4314230	June 22, 2004	Total polychlorinated biphenyl	mg/L	1	3.70E-07	=	1.40E-05	6.40E-08

APPENDIX E

SEGMENT 5

**SUMMARY STATISTICS, BENCHMARK COMPARISON, AND
INDIVIDUAL SAMPLE EXCEEDENCES**

Table E-1
Summary Table of Segment 5 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
0205-OS-VC-01	Columbia River	Oregon Slough	17-Feb-05	1
0205-OS-VC-02	Columbia River	Oregon Slough	17-Feb-05	1
0205-OS-VC-03	Columbia River	Oregon Slough	17-Feb-05	1
0205-OS-VC-03A	Columbia River	Oregon Slough	17-Feb-05	1
0205-OS-VC-04	Columbia River	Oregon Slough	17-Feb-05	1
0205-OS-VC-05	Columbia River	Oregon Slough	17-Feb-05	1
0205-OS-VC-06	Columbia River	Oregon Slough	17-Feb-05	1
0205-OS-VC-06Z	Columbia River	Oregon Slough	17-Feb-05	1
088020-Diffuser	Columbia River	Longview WA	23-Feb-90	1
088020-Diffuser-F	Columbia River	Longview WA	23-Feb-90	1
088021-Dwnstrm	Columbia River	Longview WA	23-Feb-90	1
088021-Dwnstrm-F	Columbia River	Longview WA	23-Feb-90	1
088022-Upstrm	Columbia River	Longview WA	23-Feb-90	1
088022-Upstrm-F	Columbia River	Longview WA	23-Feb-90	1
1-S	Columbia River	RM 14	28-Jun-93	1
10-S	Columbia River	RM 88	28-Jun-93	1
11-S	Columbia River	RM 90	29-Jun-93	1
12-S	Columbia River	RM 95	30-Jun-93	1
13-S	Columbia River	RM 120	01-Jul-93	1
14-S	Columbia River	RM 124	01-Jul-93	1
15-S	Columbia River	RM 141	30-Jun-93	1
2-S	Columbia River	RM 21	27-Jun-93	1
3-S	Columbia River	RM 23	27-Jun-93	1
4-S	Columbia River	RM 26	26-Jun-93	1
5-S	Columbia River	RM 29	26-Jun-93	1
6-S	Columbia River	RM 36	25-Jun-93	1
7-S	Columbia River	RM 59	25-Jun-93	1
8-S	Columbia River	RM 68	24-Jun-93	1
88-398-300	Columbia River	Reed Island	22-Jul-87	2
88-398-301	Columbia River	Camas Slough	22-Jul-87	2
88-398-302	Columbia River	Camas Slough	22-Jul-87	2
88-398-303	Columbia River	Vancouver WA	22-Jul-87	2
88-398-304	Columbia River	Vancouver WA	22-Jul-87	2
88-398-305	Columbia River	Kalama ChemPier	22-Jul-87	2
88-398-306	Columbia River	Longview Fibre	23-Jul-87	2
88-398-307	Columbia River	Longview WA	23-Jul-87	2
88-398-308	Columbia River	Longview WA	23-Jul-87	2
88-398-309	Columbia River	Longview WA	23-Jul-87	2
88-398-310	Columbia River	Coal Creek Slg	23-Jul-87	2
88-398-311	Columbia River	Ilwaco Boat Bsn	24-Jul-87	2
9-S	Columbia River	RM 81	29-Jun-93	1
AS-10/20/1988	Columbia River	RM 13.7	20-Oct-88	3
AS-10/7/1992	Columbia River	RM 13.7	07-Oct-92	3
AS-11/11/1969	Columbia River	RM 13.7	11-Nov-69	3
AS-11/11/1981	Columbia River	RM 13.7	11-Nov-81	3
AS-11/14/1972	Columbia River	RM 13.7	14-Nov-72	3
AS-11/17/1977	Columbia River	RM 13.7	17-Nov-77	3

Table E-1
Summary Table of Segment 5 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
AS-11/22/1967	Columbia River	RM 13.7	22-Nov-67	3
AS-11/25/1965	Columbia River	RM 13.7	25-Nov-65	3
AS-11/25/1980	Columbia River	RM 13.7	25-Nov-80	3
AS-11/26/1984	Columbia River	RM 13.7	26-Nov-84	3
AS-11/29/1966	Columbia River	RM 13.7	29-Nov-66	3
AS-11/4/1982	Columbia River	RM 13.7	04-Nov-82	3
AS-11/6/1964	Columbia River	RM 13.7	06-Nov-64	3
AS-12/10/1970	Columbia River	RM 13.7	10-Dec-70	3
AS-12/10/1990	Columbia River	RM 13.7	10-Dec-90	3
AS-12/12/1973	Columbia River	RM 13.7	12-Dec-73	3
AS-12/13/1978	Columbia River	RM 13.7	13-Dec-78	3
AS-12/14/1989	Columbia River	RM 13.7	14-Dec-89	3
AS-12/15/1971	Columbia River	RM 13.7	15-Dec-71	3
AS-12/15/1988	Columbia River	RM 13.7	15-Dec-88	3
AS-12/16/1991	Columbia River	RM 13.7	16-Dec-91	3
AS-12/17/1974	Columbia River	RM 13.7	17-Dec-74	3
AS-12/18/1975	Columbia River	RM 13.7	18-Dec-75	3
AS-12/18/1986	Columbia River	RM 13.7	18-Dec-86	3
AS-12/22/1987	Columbia River	RM 13.7	22-Dec-87	3
AS-12/23/1968	Columbia River	RM 13.7	23-Dec-68	3
AS-12/23/1985	Columbia River	RM 13.7	23-Dec-85	3
AS-12/31/1963	Columbia River	RM 13.7	31-Dec-63	3
AS-12/6/1979	Columbia River	RM 13.7	06-Dec-79	3
AS-12/7/1976	Columbia River	RM 13.7	07-Dec-76	3
AS-12/8/1983	Columbia River	RM 13.7	08-Dec-83	3
AS-2/11/1971	Columbia River	RM 13.7	11-Feb-71	3
AS-2/12/1965	Columbia River	RM 13.7	12-Feb-65	3
AS-2/12/1974	Columbia River	RM 13.7	12-Feb-74	3
AS-2/15/1985	Columbia River	RM 13.7	15-Feb-85	3
AS-2/17/1972	Columbia River	RM 13.7	17-Feb-72	3
AS-2/18/1982	Columbia River	RM 13.7	18-Feb-82	3
AS-2/18/1983	Columbia River	RM 13.7	18-Feb-83	3
AS-2/19/1981	Columbia River	RM 13.7	19-Feb-81	3
AS-2/20/1975	Columbia River	RM 13.7	20-Feb-75	3
AS-2/26/1976	Columbia River	RM 13.7	26-Feb-76	3
AS-2/27/1980	Columbia River	RM 13.7	27-Feb-80	3
AS-2/28/1966	Columbia River	RM 13.7	28-Feb-66	3
AS-2/28/1967	Columbia River	RM 13.7	28-Feb-67	3
AS-2/3/1984	Columbia River	RM 13.7	03-Feb-84	3
AS-2/5/1988	Columbia River	RM 13.7	05-Feb-88	3
AS-2/8/1969	Columbia River	RM 13.7	08-Feb-69	3
AS-3/10/1989	Columbia River	RM 13.7	10-Mar-89	3
AS-3/10/1992	Columbia River	RM 13.7	10-Mar-92	3
AS-3/13/1987	Columbia River	RM 13.7	13-Mar-87	3
AS-3/20/1964	Columbia River	RM 13.7	20-Mar-64	3
AS-3/25/1986	Columbia River	RM 13.7	25-Mar-86	3
AS-3/26/1971	Columbia River	RM 13.7	26-Mar-71	3

Table E-1
Summary Table of Segment 5 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
AS-3/26/1973	Columbia River	RM 13.7	26-Mar-73	3
AS-3/31/1970	Columbia River	RM 13.7	31-Mar-70	3
AS-3/7/1978	Columbia River	RM 13.7	07-Mar-78	3
AS-3/8/1979	Columbia River	RM 13.7	08-Mar-79	3
AS-3/8/1993	Columbia River	RM 13.7	08-Mar-93	3
AS-4/1/1968	Columbia River	RM 13.7	01-Apr-68	3
AS-5/10/1984	Columbia River	RM 13.7	10-May-84	3
AS-5/11/1966	Columbia River	RM 13.7	11-May-66	3
AS-5/12/1988	Columbia River	RM 13.7	12-May-88	3
AS-5/16/1983	Columbia River	RM 13.7	16-May-83	3
AS-5/17/1969	Columbia River	RM 13.7	17-May-69	3
AS-5/19/1987	Columbia River	RM 13.7	19-May-87	3
AS-5/20/1980	Columbia River	RM 13.7	20-May-80	3
AS-5/23/1972	Columbia River	RM 13.7	23-May-72	3
AS-5/24/1967	Columbia River	RM 13.7	24-May-67	3
AS-5/25/1989	Columbia River	RM 13.7	25-May-89	3
AS-5/26/1977	Columbia River	RM 13.7	26-May-77	3
AS-5/26/1982	Columbia River	RM 13.7	26-May-82	3
AS-5/27/1963	Columbia River	RM 13.7	27-May-63	3
AS-5/28/1981	Columbia River	RM 13.7	28-May-81	3
AS-5/7/1985	Columbia River	RM 13.7	07-May-85	3
AS-6/1/1978	Columbia River	RM 13.7	01-Jun-78	3
AS-6/11/1970	Columbia River	RM 13.7	11-Jun-70	3
AS-6/13/1968	Columbia River	RM 13.7	13-Jun-68	3
AS-6/17/1966	Columbia River	RM 13.7	17-Jun-66	3
AS-6/17/1971	Columbia River	RM 13.7	17-Jun-71	3
AS-6/19/1975	Columbia River	RM 13.7	19-Jun-75	3
AS-6/25/1965	Columbia River	RM 13.7	25-Jun-65	3
AS-6/27/1973	Columbia River	RM 13.7	27-Jun-73	3
AS-6/27/1991	Columbia River	RM 13.7	27-Jun-91	3
AS-6/28/1990	Columbia River	RM 13.7	28-Jun-90	3
AS-6/5/1974	Columbia River	RM 13.7	05-Jun-74	3
AS-7/1/1992	Columbia River	RM 13.7	01-Jul-92	3
AS-7/15/1980	Columbia River	RM 13.7	15-Jul-80	3
AS-7/21/1970	Columbia River	RM 13.7	21-Jul-70	3
AS-7/27/1976	Columbia River	RM 13.7	27-Jul-76	3
AS-8/10/1982	Columbia River	RM 13.7	10-Aug-82	3
AS-8/10/1983	Columbia River	RM 13.7	10-Aug-83	3
AS-8/13/1987	Columbia River	RM 13.7	13-Aug-87	3
AS-8/19/1981	Columbia River	RM 13.7	19-Aug-81	3
AS-8/23/1989	Columbia River	RM 13.7	23-Aug-89	3
AS-8/25/1966	Columbia River	RM 13.7	25-Aug-66	3
AS-8/25/1975	Columbia River	RM 13.7	25-Aug-75	3
AS-8/26/1985	Columbia River	RM 13.7	26-Aug-85	3
AS-8/28/1974	Columbia River	RM 13.7	28-Aug-74	3
AS-9/13/1978	Columbia River	RM 13.7	13-Sep-78	3
AS-9/14/1965	Columbia River	RM 13.7	14-Sep-65	3

Table E-1
Summary Table of Segment 5 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
AS-9/17/1973	Columbia River	RM 13.7	17-Sep-73	3
AS-9/18/1979	Columbia River	RM 13.7	18-Sep-79	3
AS-9/19/1968	Columbia River	RM 13.7	19-Sep-68	3
AS-9/2/1986	Columbia River	RM 13.7	02-Sep-86	3
AS-9/25/1969	Columbia River	RM 13.7	25-Sep-69	3
AS-9/26/1963	Columbia River	RM 13.7	26-Sep-63	3
AS-9/27/1967	Columbia River	RM 13.7	27-Sep-67	3
AS-9/8/1971	Columbia River	RM 13.7	08-Sep-71	3
AS-9/9/1964	Columbia River	RM 13.7	09-Sep-64	3
BACH-BC-01	Columbia River	Bachelor Slough	03-Jun-03	1
BACH-BC-02	Columbia River	Bachelor Slough	03-Jun-03	1
BACH-BC-03	Columbia River	Bachelor Slough	03-Jun-03	1
BACH-BC-04	Columbia River	Bachelor Slough	03-Jun-03	1
BACH-BC-05	Columbia River	Bachelor Slough	03-Jun-03	1
BACH-BC-06	Columbia River	Bachelor Slough	03-Jun-03	1
BACH-BC-07	Columbia River	Bachelor Slough	03-Jun-03	1
BACH-BC-08	Columbia River	Bachelor Slough	03-Jun-03	1
BACH-BC-09	Columbia River	Bachelor Slough	03-Jun-03	1
BACH-GC-10	Columbia River	Bachelor Slough	03-Jun-03	1
Beav-1	Columbia River	RM 54	08-Sep-97	2
CR-BC-1	Columbia River	RM 6	03-Jun-97	1
CR-BC-11	Columbia River	RM 18	03-Jun-97	1
CR-BC-12	Columbia River	RM 20	03-Jun-97	1
CR-BC-13	Columbia River	RM 20	03-Jun-97	1
CR-BC-15	Columbia River	RM 23	03-Jun-97	1
CR-BC-16	Columbia River	RM 24	03-Jun-97	1
CR-BC-17	Columbia River	RM 27	03-Jun-97	1
CR-BC-19	Columbia River	RM 29	03-Jun-97	1
CR-BC-2	Columbia River	RM 6	03-Jun-97	1
CR-BC-20	Columbia River	RM 32	03-Jun-97	1
CR-BC-21	Columbia River	RM 33	03-Jun-97	1
CR-BC-22	Columbia River	RM 33	03-Jun-97	1
CR-BC-24	Columbia River	RM 39	03-Jun-97	1
CR-BC-25	Columbia River	RM 40	03-Jun-97	1
CR-BC-26	Columbia River	RM 42	03-Jun-97	1
CR-BC-29	Columbia River	RM 46	03-Jun-97	1
CR-BC-3	Columbia River	RM 6	03-Jun-97	1
CR-BC-31	Columbia River	RM 48	03-Jun-97	1
CR-BC-34	Columbia River	RM 56	03-Jun-97	1
CR-BC-35	Columbia River	RM 57	03-Jun-97	1
CR-BC-38	Columbia River	RM 60	03-Jun-97	1
CR-BC-4	Columbia River	RM 9	03-Jun-97	1
CR-BC-40	Columbia River	RM 63	03-Jun-97	1
CR-BC-41	Columbia River	RM 64	03-Jun-97	1
CR-BC-44	Columbia River	RM 66	03-Jun-97	1
CR-BC-47	Columbia River	RM 70	03-Jun-97	1
CR-BC-48	Columbia River	RM 71	03-Jun-97	1

Table E-1
Summary Table of Segment 5 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
CR-BC-49	Columbia River	RM 73	03-Jun-97	1
CR-BC-5	Columbia River	RM 11	03-Jun-97	1
CR-BC-50	Columbia River	RM 74 - Kalama	03-Jun-97	1
CR-BC-51	Columbia River	RM 75 - Kalama	03-Jun-97	1
CR-BC-52	Columbia River	RM 76	03-Jun-97	1
CR-BC-53	Columbia River	RM 79	03-Jun-97	1
CR-BC-54	Columbia River	RM 80	03-Jun-97	1
CR-BC-55	Columbia River	RM 82	03-Jun-97	1
CR-BC-56	Columbia River	RM 83	03-Jun-97	1
CR-BC-57	Columbia River	RM 83	03-Jun-97	1
CR-BC-59	Columbia River	RM 85	03-Jun-97	1
CR-BC-60	Columbia River	RM 85	03-Jun-97	1
CR-BC-61	Columbia River	RM 86	03-Jun-97	1
CR-BC-62	Columbia River	RM 88	03-Jun-97	1
CR-BC-63	Columbia River	RM 89	03-Jun-97	1
CR-BC-65	Columbia River	RM 91	03-Jun-97	1
CR-BC-66	Columbia River	RM 92	03-Jun-97	1
CR-BC-67	Columbia River	RM 93	03-Jun-97	1
CR-BC-68	Columbia River	RM 93	03-Jun-97	1
CR-BC-7	Columbia River	RM 12	03-Jun-97	1
CR-BC-70	Columbia River	RM 96	03-Jun-97	1
CR-BC-71	Columbia River	RM 97	03-Jun-97	1
CR-BC-72	Columbia River	RM 98	03-Jun-97	1
CR-BC-73	Columbia River	RM 99	03-Jun-97	1
CR-BC-74	Columbia River	RM 99	03-Jun-97	1
CR-BC-75	Columbia River	RM 99	03-Jun-97	1
CR-BC-76	Columbia River	RM 100	03-Jun-97	1
CR-BC-77	Columbia River	RM 100	03-Jun-97	1
CR-BC-78	Columbia River	RM 100	03-Jun-97	1
CR-BC-79	Columbia River	RM 102	03-Jun-97	1
CR-BC-8	Columbia River	RM 12	03-Jun-97	1
CR-BC-80	Columbia River	RM 103	03-Jun-97	1
CR-BC-81	Columbia River	RM 103	03-Jun-97	1
CR-BC-83	Columbia River	RM 103	03-Jun-97	1
CR-BC-84	Columbia River	RM 104	03-Jun-97	1
CR-BC-85	Columbia River	RM 104	03-Jun-97	1
CR-BC-86	Columbia River	RM 105	03-Jun-97	1
CR-BC-87	Columbia River	RM 105	03-Jun-97	1
CR-BC-88	Columbia River	RM 106	03-Jun-97	1
CR-BC-89	Columbia River	RM 106	03-Jun-97	1
CR-BC-9	Columbia River	RM 15	03-Jun-97	1
CR-GC-15	Columbia River	CR-GC-15	10-May-90	2
CR-GC-16	Columbia River	CR-GC-16	10-May-90	2
CR-GC-17	Columbia River	CR-GC-17	10-May-90	2
CR-GC-18	Columbia River	CR-GC-18	10-May-90	2
CR-GC-2	Columbia River	CR-GC-2	09-May-90	2
CR-GC-23	Columbia River	CR-GC-23	10-May-90	2

Table E-1
Summary Table of Segment 5 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
CR-GC-24	Columbia River	CR-GC-24	10-May-90	2
CR-GC-25	Columbia River	CR-GC-25	10-May-90	2
CR-GC-26	Columbia River	CR-GC-26	10-May-90	2
CR-GC-4	Columbia River	CR-GC-4	09-May-90	2
CR-GC-5	Columbia River	CR-GC-5	09-May-90	2
CR-GC-6A	Columbia River	CR-GC-6	09-May-90	2
CR-GC-6B	Columbia River	CR-GC-6	09-May-90	2
CR-GC-7	Columbia River	CR-GC-7	09-May-90	2
CR-GC6AB	Columbia River	CR-GC-6	09-May-90	2
CR-S5 .08-1.0m	Columbia River	CR-S5	01-Oct-84	3
CR-S5 1.8-3.8m	Columbia River	CR-S5	01-Oct-84	3
CR-VC-10	Columbia River	CR-VC-10	10-May-90	2
CR-VC-11	Columbia River	CR-VC-11	10-May-90	2
CR-VC-13	Columbia River	CR-VC-13	10-May-90	2
CR-VC-14	Columbia River	CR-VC-14	10-May-90	2
CR-VC-9	Columbia River	CR-VC-9	10-May-90	2
CR-VC12A	Columbia River	CR-VC-12	10-May-90	2
CR-VC12B	Columbia River	CR-VC-12	10-May-90	2
CR17/18	Columbia River	CR17/18	10-May-90	2
CR23/24	Columbia River	CR23/24	10-May-90	2
CR25/26	Columbia River	CR25/26	10-May-90	2
CR76-PG-01	Columbia River	STA CR-BC-76	01-Jun-97	1
CR76-PG-02	Columbia River	STA CR-BC-76	01-Jun-97	1
CR76-PG-03	Columbia River	STA CR-BC-76	01-Jun-97	1
CRASD200	Columbia River	RM 21	01-Aug-91	1
CRBSD174	Columbia River	RM 2-6	01-Aug-91	1
CRCSD151	Columbia River	RM 111-121	01-Aug-91	1
CRIM-SG-01	Columbia River	Crims Island	15-Jul-03	1
CRIM-SG-02	Columbia River	Crims Island	15-Jul-03	1
CRIM-SG-03	Columbia River	Crims Island	15-Jul-03	1
CRIM-SG-04	Columbia River	Crims Island	15-Jul-03	1
CRIM-SG-05	Columbia River	Crims Island	15-Jul-03	1
CRJSD120	Columbia River	RM 37-47	01-Aug-91	1
CRLSD171	Columbia River	RM 64-72	01-Aug-91	1
CRM-BC1	Columbia River	RM 29	09-Aug-00	1
CRM-BC10	Columbia River	RM 29	09-Aug-00	1
CRM-BC11	Columbia River	RM 29	09-Aug-00	1
CRM-BC12	Columbia River	RM 29	09-Aug-00	1
CRM-BC13	Columbia River	RM 29	09-Aug-00	1
CRM-BC14	Columbia River	RM 29	09-Aug-00	1
CRM-BC15	Columbia River	RM 29	09-Aug-00	1
CRM-BC16	Columbia River	RM 29	09-Aug-00	1
CRM-BC17	Columbia River	RM 31	09-Aug-00	1
CRM-BC18	Columbia River	RM 32	09-Aug-00	1
CRM-BC19	Columbia River	RM 33	09-Aug-00	1
CRM-BC2	Columbia River	RM 29	09-Aug-00	1
CRM-BC20	Columbia River	RM 34	09-Aug-00	1

Table E-1
Summary Table of Segment 5 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
CRM-BC3	Columbia River	RM 29	09-Aug-00	1
CRM-BC4	Columbia River	RM 29	09-Aug-00	1
CRM-BC5	Columbia River	RM 29	09-Aug-00	1
CRM-BC6	Columbia River	RM 29	09-Aug-00	1
CRM-BC7	Columbia River	RM 29	09-Aug-00	1
CRM-BC8	Columbia River	RM 29	09-Aug-00	1
CRM-BC9	Columbia River	RM 29	09-Aug-00	1
CRM-VC-01	Columbia River	RM 29	07-Sep-00	1
CRM-VC-02	Columbia River	RM 29	07-Sep-00	1
CRM-VC-03	Columbia River	RM 29	07-Sep-00	1
CRM-VC-04	Columbia River	RM 29	07-Sep-00	1
CRM-VC-05	Columbia River	RM 29	07-Sep-00	1
CRMSD214	Columbia River	RM 21-37	01-Aug-91	1
CRRSD117	Columbia River	RM 87-102	01-Aug-91	1
CRVC12AB	Columbia River	CR-VC-12	10-May-90	2
KR-BC-01	Columbia River	RM 73.9-74.8	10-Sep-03	1
KR-BC-04	Columbia River	RM 73.9-74.8	10-Sep-03	1
KR-BC-04A	Columbia River	RM 73.9-74.8	10-Sep-03	1
OR-VC-01	Columbia River	Oregon Slough	19-Jun-01	1
OR-VC-02	Columbia River	Oregon Slough	19-Jun-01	1
OR-VC-03	Columbia River	Oregon Slough	19-Jun-01	1
OR-VC-04	Columbia River	Oregon Slough	19-Jun-01	1
RR-1/19/1963	Columbia River	RM 128.4	19-Jan-63	3
RR-10/13/1977	Columbia River	RM 128.4	13-Oct-77	3
RR-11/13/1991	Columbia River	RM 128.4	13-Nov-91	3
RR-11/16/1964	Columbia River	RM 128.4	16-Nov-64	3
RR-11/17/1965	Columbia River	RM 128.4	17-Nov-65	3
RR-11/20/1986	Columbia River	RM 128.4	20-Nov-86	3
RR-11/28/1967	Columbia River	RM 128.4	28-Nov-67	3
RR-11/28/1990	Columbia River	RM 128.4	28-Nov-90	3
RR-11/29/1966	Columbia River	RM 128.4	29-Nov-66	3
RR-11/29/1972	Columbia River	RM 128.4	29-Nov-72	3
RR-11/3/1993	Columbia River	RM 128.4	03-Nov-93	3
RR-11/4/1987	Columbia River	RM 128.4	04-Nov-87	3
RR-11/9/1984	Columbia River	RM 128.4	09-Nov-84	3
RR-12/15/1976	Columbia River	RM 128.4	15-Dec-76	3
RR-12/19/1989	Columbia River	RM 128.4	19-Dec-89	3
RR-12/22/1971	Columbia River	RM 128.4	22-Dec-71	3
RR-12/27/1968	Columbia River	RM 128.4	27-Dec-68	3
RR-12/27/1985	Columbia River	RM 128.4	27-Dec-85	3
RR-12/29/1969	Columbia River	RM 128.4	29-Dec-69	3
RR-12/30/1970	Columbia River	RM 128.4	30-Dec-70	3
RR-12/31/1963	Columbia River	RM 128.4	31-Dec-63	3
RR-12/4/1980	Columbia River	RM 128.4	04-Dec-80	3
RR-12/5/1979	Columbia River	RM 128.4	05-Dec-79	3
RR-12/6/1988	Columbia River	RM 128.4	06-Dec-88	3
RR-2/17/1971	Columbia River	RM 128.4	17-Feb-71	3

Table E-1
Summary Table of Segment 5 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
RR-2/21/1967	Columbia River	RM 128.4	21-Feb-67	3
RR-2/24/1966	Columbia River	RM 128.4	24-Feb-66	3
RR-2/24/1993	Columbia River	RM 128.4	24-Feb-93	3
RR-2/25/1988	Columbia River	RM 128.4	25-Feb-88	3
RR-2/25/1992	Columbia River	RM 128.4	25-Feb-92	3
RR-2/6/1991	Columbia River	RM 128.4	06-Feb-91	3
RR-2/9/1965	Columbia River	RM 128.4	09-Feb-65	3
RR-3/14/1980	Columbia River	RM 128.4	14-Mar-80	3
RR-3/17/1987	Columbia River	RM 128.4	17-Mar-87	3
RR-3/19/1969	Columbia River	RM 128.4	19-Mar-69	3
RR-3/19/1970	Columbia River	RM 128.4	19-Mar-70	3
RR-3/19/1981	Columbia River	RM 128.4	19-Mar-81	3
RR-3/21/1968	Columbia River	RM 128.4	21-Mar-68	3
RR-3/22/1978	Columbia River	RM 128.4	22-Mar-78	3
RR-3/23/1973	Columbia River	RM 128.4	23-Mar-73	3
RR-3/30/1964	Columbia River	RM 128.4	30-Mar-64	3
RR-3/30/1990	Columbia River	RM 128.4	30-Mar-90	3
RR-3/31/1985	Columbia River	RM 128.4	31-Mar-86	3
RR-3/4/1971	Columbia River	RM 128.4	04-Mar-71	3
RR-4/24/1985	Columbia River	RM 128.4	24-Apr-85	3
RR-5/17/1967	Columbia River	RM 128.4	17-May-67	3
RR-5/20/1977	Columbia River	RM 128.4	20-May-77	3
RR-5/22/1969	Columbia River	RM 128.4	22-May-69	3
RR-5/22/1987	Columbia River	RM 128.4	22-May-87	3
RR-5/26/1970	Columbia River	RM 128.4	26-May-70	3
RR-5/27/1993	Columbia River	RM 128.4	27-May-93	3
RR-5/28/1992	Columbia River	RM 128.4	28-May-92	3
RR-5/30/1991	Columbia River	RM 128.4	30-May-91	3
RR-5/31/1966	Columbia River	RM 128.4	31-May-66	3
RR-6/15/1973	Columbia River	RM 128.4	15-Jun-73	3
RR-6/19/1979	Columbia River	RM 128.4	19-Jun-79	3
RR-6/2/1990	Columbia River	RM 128.4	02-Jun-90	3
RR-6/24/1964	Columbia River	RM 128.4	24-Jun-64	3
RR-6/24/1965	Columbia River	RM 128.4	24-Jun-65	3
RR-6/27/1968	Columbia River	RM 128.4	27-Jun-68	3
RR-6/28/1988	Columbia River	RM 128.4	28-Jun-88	3
RR-7/13/1970	Columbia River	RM 128.4	13-Jul-70	3
RR-7/16/1971	Columbia River	RM 128.4	16-Jul-71	3
RR-7/21/1989	Columbia River	RM 128.4	21-Jul-89	3
RR-7/27/1966	Columbia River	RM 128.4	27-Jul-66	3
RR-7/29/1985	Columbia River	RM 128.4	29-Jul-85	3
RR-7/8/1980	Columbia River	RM 128.4	08-Jul-80	3
RR-8/13/1966	Columbia River	RM 128.4	13-Aug-66	3
RR-8/13/1981	Columbia River	RM 128.4	13-Aug-81	3
RR-8/19/1993	Columbia River	RM 128.4	19-Aug-93	3
RR-8/24/1979	Columbia River	RM 128.4	24-Aug-79	3
RR-8/24/1988	Columbia River	RM 128.4	24-Aug-88	3

Table E-1
Summary Table of Segment 5 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
RR-8/30/1973	Columbia River	RM 128.4	30-Aug-73	3
RR-8/30/1978	Columbia River	RM 128.4	30-Aug-78	3
RR-8/5/1987	Columbia River	RM 128.4	05-Aug-87	3
RR-8/7/1991	Columbia River	RM 128.4	07-Aug-91	3
RR-9/10/1976	Columbia River	RM 128.4	10-Sep-76	3
RR-9/12/1983	Columbia River	RM 128.4	12-Sep-83	3
RR-9/16/1964	Columbia River	RM 128.4	16-Sep-64	3
RR-9/16/1965	Columbia River	RM 128.4	16-Sep-65	3
RR-9/20/1982	Columbia River	RM 128.4	20-Sep-82	3
RR-9/23/1992	Columbia River	RM 128.4	23-Sep-92	3
RR-9/24/1968	Columbia River	RM 128.4	24-Sep-68	3
RR-9/26/1967	Columbia River	RM 128.4	26-Sep-67	3
RR-9/29/1970	Columbia River	RM 128.4	29-Sep-70	3
RR-9/30/1963	Columbia River	RM 128.4	30-Sep-63	3
RR-9/30/1971	Columbia River	RM 128.4	30-Sep-71	3
RR-9/5/1980	Columbia River	RM 128.4	05-Sep-80	3
RR-9/6/1990	Columbia River	RM 128.4	06-Sep-90	3
RR-9/9/1969	Columbia River	RM 128.4	09-Sep-69	3
SH-VC-4	Columbia River	RM 86.5	04-May-89	3
SH-VC-5	Columbia River	RM 86.5	04-May-89	3
SH-VC-6	Columbia River	RM 86.5	04-May-89	3
V-PG-02	Columbia River	RM 103	20-Jun-01	1
V-PG-03	Columbia River	RM 103	20-Jun-01	1
V-PG-04	Columbia River	RM 103	20-Jun-01	1
V-PG-05	Columbia River	RM 103	20-Jun-01	1
V-PG-06	Columbia River	RM 103	20-Jun-01	1
V-PG-07	Columbia River	RM 103	20-Jun-01	1
V-PG-08	Columbia River	RM 103	20-Jun-01	1
V-PG-09	Columbia River	RM 103	20-Jun-01	1
V-PG-10	Columbia River	RM 103	20-Jun-01	1
V-PG-11	Columbia River	RM 103	20-Jun-01	1
V-PG-12	Columbia River	RM 103	20-Jun-01	1
V-PG-13	Columbia River	RM 103	20-Jun-01	1
V-PG-14	Columbia River	RM 103	20-Jun-01	1
V-PG-15	Columbia River	RM 103	20-Jun-01	1
V-PG-16	Columbia River	RM 103	20-Jun-01	1
V-PG-17	Columbia River	RM 103	20-Jun-01	1
V-PG-18	Columbia River	RM 103	20-Jun-01	1
V-PG-19	Columbia River	RM 103	20-Jun-01	1
V-PG-20	Columbia River	RM 103	20-Jun-01	1
V-PG-21	Columbia River	RM 103	20-Jun-01	1
V-PG-22	Columbia River	RM 103	20-Jun-01	1
V-PG-23	Columbia River	RM 103	20-Jun-01	1
V-PG-24	Columbia River	RM 103	20-Jun-01	1
V-PG-25	Columbia River	RM 103	20-Jun-01	1
V-VC-01A	Columbia River	RM 103	20-Jun-01	1
V-VC-01B	Columbia River	RM 103	20-Jun-01	1

Table E-1
Summary Table of Segment 5 Sediment Samples By Area, Site, Date, and Category

Sample ID	Sample Area	Sample Site	Sample Date	Category
Warr-1	Columbia River	RM 141	20-Nov-97	2
Will-1	Columbia River	RM 82	10-Sep-97	2
OMCR-BC-04	Cowlitz River	OM Cowlitz Rvr	10-Sep-03	1
OMCR-GC-01	Cowlitz River	OM Cowlitz Rvr	10-Sep-03	1
OMCR-GC-02	Cowlitz River	OM Cowlitz Rvr	10-Sep-03	1
OMCR-GC-03	Cowlitz River	OM Cowlitz Rvr	10-Sep-03	1
SBIO-GC-01	Skipanon Federal Channel	Warrenton OR	24-Jun-03	1
SBIO-GC-02	Skipanon Federal Channel	Warrenton OR	24-Jun-03	1
SBIO-GC-03	Skipanon Federal Channel	Warrenton OR	24-Jun-03	1
SBIO-GC-04	Skipanon Federal Channel	Warrenton OR	24-Jun-03	1
SKIP-GC-01	Skipanon Federal channel	Warrenton OR	12-Sep-01	1
SKIP-GC-02	Skipanon Federal channel	Warrenton OR	12-Sep-01	1
SKIP-GC-03	Skipanon Federal channel	Warrenton OR	12-Sep-01	1
SKIP-GC-04	Skipanon Federal channel	Warrenton OR	12-Sep-01	1
SKIP-GC-05	Skipanon Federal channel	Warrenton OR	12-Sep-01	1
SKIP-GC-06	Skipanon Federal channel	Warrenton OR	12-Sep-01	1
SKIP-GC-07	Skipanon Federal channel	Warrenton OR	12-Sep-01	1
WR-BC-1	Willamette River	RM 0.1 - mouth	24-Jul-97	1
WR-BC-3	Willamette River	RM 0.4 - mouth	24-Jul-97	1
WR-GC-10	Willamette River	WR-GC-10	03-May-90	2
WR-GC-1B	Willamette River	WR-GC-1	03-May-90	2
WR-GC-1T	Willamette River	WR-GC-1	03-May-90	2
WR-GC-2	Willamette River	WR-GC-2	03-May-90	2
WR-GC-2A	Willamette River	RM 0.1 - mouth	24-Jul-97	2
WR-GC-2B	Willamette River	RM 0.1 - mouth	24-Jul-97	2
WR-GC-3A	Willamette River	WR-GC-3	03-May-90	2
WR-GC-3B	Willamette River	WR-GC-3	03-May-90	2
WR-GC-4	Willamette River	WR-GC-4	03-May-90	2
WR-GC-5	Willamette River	WR-GC-5	03-May-90	2
WR-GC-6	Willamette River	WR-GC-6	03-May-90	2
WR-GC-7	Willamette River	WR-GC-7	03-May-90	2
WR-GC-8	Willamette River	WR-GC-8	03-May-90	2
WR-GC-9	Willamette River	WR-GC-9	03-May-90	2
WR-GC3AB	Willamette River	WR-GC-3	03-May-90	2

Table E-2**Summary Table of Segment 5 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Beacon Rock WA	1388040	September 25, 2001	1
Columbia River	Beaver Army TML	14246900-02-01-16	February 1, 2002	1
Columbia River	Beaver Army TML	14246900-02-05-16D	February 5, 2002	1
Columbia River	Beaver Army TML	14246900-02-05-16-FD	February 5, 2002	1
Columbia River	Beaver Army TML	14246900-02-05-16-F	February 5, 2002	1
Columbia River	Beaver Army TML	14246900-02-05-16	February 5, 2002	1
Columbia River	Beaver Army TML	14246900-02-04-09	February 4, 2002	1
Columbia River	Beaver Army TML	14246900-02-03-12-FD	February 3, 2002	1
Columbia River	Beaver Army TML	14246900-02-03-12-F	February 3, 2002	1
Columbia River	Beaver Army TML	14246900-02-03-12	February 3, 2002	1
Columbia River	Beaver Army TML	14246900-02-02-14-FD	February 2, 2002	1
Columbia River	Beaver Army TML	14246900-02-02-14-F	February 2, 2002	1
Columbia River	Beaver Army TML	14246900-02-02-14	February 2, 2002	1
Columbia River	Beaver Army TML	14246900-99-05-25	May 25, 1999	1
Columbia River	Beaver Army TML	14246900-02-01-16-F	February 1, 2002	1
Columbia River	Beaver Army TML	14246900-02-07-16-FD	February 7, 2002	1
Columbia River	Beaver Army TML	14246900-02-01-10	February 1, 2002	1
Columbia River	Beaver Army TML	14246900-01-12-18D	January 12, 2001	1
Columbia River	Beaver Army TML	14246900-01-12-18-FD	January 12, 2001	1
Columbia River	Beaver Army TML	14246900-01-12-18-F	January 12, 2001	1
Columbia River	Beaver Army TML	14246900-01-12-18	January 12, 2001	1
Columbia River	Beaver Army TML	14246900-01-12-04-FD	January 12, 2001	1
Columbia River	Beaver Army TML	14246900-01-12-04-F	January 12, 2001	1
Columbia River	Beaver Army TML	14246900-01-12-04	January 12, 2001	1
Columbia River	Beaver Army TML	14246900-01-11-27-FD	January 11, 2001	1
Columbia River	Beaver Army TML	14246900-01-11-27-F	January 11, 2001	1
Columbia River	Beaver Army TML	14246900-01-11-27	January 11, 2001	1
Columbia River	Beaver Army TML	14246900-02-01-16-FD	February 1, 2002	1
Columbia River	Beaver Army TML	14246900-99-02-23	February 23, 1999	1
Columbia River	Beaver Army TML	14246900-99-05-11-FD	May 11, 1999	1
Columbia River	Beaver Army TML	14246900-99-05-11-F	May 11, 1999	1
Columbia River	Beaver Army TML	14246900-99-05-11	May 11, 1999	1
Columbia River	Beaver Army TML	14246900-99-04-20-FD	April 20, 1999	1
Columbia River	Beaver Army TML	14246900-99-04-20-F	April 20, 1999	1
Columbia River	Beaver Army TML	14246900-99-04-20	April 20, 1999	1
Columbia River	Beaver Army TML	14246900-99-03-29D	March 29, 1999	1
Columbia River	Beaver Army TML	14246900-99-03-29-FD	March 29, 1999	1
Columbia River	Beaver Army TML	14246900-99-03-29-F	March 29, 1999	1
Columbia River	Beaver Army TML	14246900-99-03-29	March 29, 1999	1
Columbia River	Beaver Army TML	14246900-99-03-08-FD	March 8, 1999	1
Columbia River	Beaver Army TML	14246900-02-07-16	February 7, 2002	1
Columbia River	Beaver Army TML	14246900-99-02-23-FD	February 23, 1999	1
Columbia River	Beaver Army TML	14246900-02-07-16-F	February 7, 2002	1
Columbia River	Beaver Army TML	14246900-99-01-25-FD	January 25, 1999	1
Columbia River	Beaver Army TML	14246900-99-01-25-F	January 25, 1999	1
Columbia River	Beaver Army TML	14246900-99-01-25	January 25, 1999	1
Columbia River	Beaver Army TML	14246900-99-01-05D	January 5, 1999	1
Columbia River	Beaver Army TML	14246900-99-01-05-FD	January 5, 1999	1
Columbia River	Beaver Army TML	14246900-99-01-05-F	January 5, 1999	1
Columbia River	Beaver Army TML	14246900-99-01-05	January 5, 1999	1

Table E-2**Summary Table of Segment 5 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Beaver Army TML	14246900-99--08-03-F	August 3, 1999	1
Columbia River	Beaver Army TML	14246900-02-09-10-FD	February 9, 2002	1
Columbia River	Beaver Army TML	14246900-02-09-10-F	February 9, 2002	1
Columbia River	Beaver Army TML	14246900-02-09-10	February 9, 2002	1
Columbia River	Beaver Army TML	14246900-01-09-24-F	January 9, 2001	1
Columbia River	Beaver Army TML	14246900-99-03-08-F	March 8, 1999	1
Columbia River	Beaver Army TML	14246900-00-05-16-F	May 16, 2000	1
Columbia River	Beaver Army TML	14246900-00-07-25-F	July 25, 2000	1
Columbia River	Beaver Army TML	14246900-00-07-25	July 25, 2000	1
Columbia River	Beaver Army TML	14246900-00-06-26-FD	June 26, 2000	1
Columbia River	Beaver Army TML	14246900-00-06-26-F	June 26, 2000	1
Columbia River	Beaver Army TML	14246900-00-06-26	June 26, 2000	1
Columbia River	Beaver Army TML	14246900-00-06-13-FD	June 13, 2000	1
Columbia River	Beaver Army TML	14246900-00-06-13-F	June 13, 2000	1
Columbia River	Beaver Army TML	14246900-00-06-13	June 13, 2000	1
Columbia River	Beaver Army TML	14246900-00-05-30-FD	May 30, 2000	1
Columbia River	Beaver Army TML	14246900-00-05-30-F	May 30, 2000	1
Columbia River	Beaver Army TML	14246900-00-05-30	May 30, 2000	1
Columbia River	Beaver Army TML	14246900-01-09-24D	January 9, 2001	1
Columbia River	Beaver Army TML	14246900-00-05-16-FD	May 16, 2000	1
Columbia River	Beaver Army TML	14246900-00-09-12-F	September 12, 2000	1
Columbia River	Beaver Army TML	14246900-00-05-16	May 16, 2000	1
Columbia River	Beaver Army TML	14246900-00-04-11-FD	April 11, 2000	1
Columbia River	Beaver Army TML	14246900-00-04-11-F	April 11, 2000	1
Columbia River	Beaver Army TML	14246900-00-04-11	April 11, 2000	1
Columbia River	Beaver Army TML	14246900-00-02-28-FD	February 28, 2000	1
Columbia River	Beaver Army TML	14246900-00-02-28-F	February 28, 2000	1
Columbia River	Beaver Army TML	14246900-00-02-28	February 28, 2000	1
Columbia River	Beaver Army TML	14246900-00-01-18D	January 18, 2000	1
Columbia River	Beaver Army TML	14246900-00-01-18-FD	January 18, 2000	1
Columbia River	Beaver Army TML	14246900-00-01-18-F	January 18, 2000	1
Columbia River	Beaver Army TML	14246900-00-01-18	January 18, 2000	1
Columbia River	Beaver Army TML	14246900-00-05-16D	May 16, 2000	1
Columbia River	Beaver Army TML	14246900-01-02-13	January 2, 2001	1
Columbia River	Beaver Army TML	14246900-99-03-08	March 8, 1999	1
Columbia River	Beaver Army TML	14246900-01-09-24	January 9, 2001	1
Columbia River	Beaver Army TML	14246900-01-07-17-F	January 7, 2001	1
Columbia River	Beaver Army TML	14246900-01-07-17	January 7, 2001	1
Columbia River	Beaver Army TML	14246900-01-05-15-FD	January 5, 2001	1
Columbia River	Beaver Army TML	14246900-01-05-15-F	January 5, 2001	1
Columbia River	Beaver Army TML	14246900-01-05-15	January 5, 2001	1
Columbia River	Beaver Army TML	14246900-01-03-13D	January 3, 2001	1
Columbia River	Beaver Army TML	14246900-01-03-13-FD	January 3, 2001	1
Columbia River	Beaver Army TML	14246900-01-03-13-F	January 3, 2001	1
Columbia River	Beaver Army TML	14246900-01-03-13	January 3, 2001	1
Columbia River	Beaver Army TML	14246900-00-07-25-FD	July 25, 2000	1
Columbia River	Beaver Army TML	14246900-01-02-13-F	January 2, 2001	1
Columbia River	Beaver Army TML	14246900-00-09-12	September 12, 2000	1
Columbia River	Beaver Army TML	14246900-01-01-16D	January 1, 2001	1
Columbia River	Beaver Army TML	14246900-01-01-16-FD	January 1, 2001	1

Table E-2
Summary Table of Segment 5 Surface Water Samples By Area, Site, Date, and Category

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Beaver Army TML	14246900-01-01-16-F	January 1, 2001	1
Columbia River	Beaver Army TML	14246900-01-01-16	January 1, 2001	1
Columbia River	Beaver Army TML	14246900-00-12-11-FD	December 11, 2000	1
Columbia River	Beaver Army TML	14246900-00-12-11-F	December 11, 2000	1
Columbia River	Beaver Army TML	14246900-00-12-11	December 11, 2000	1
Columbia River	Beaver Army TML	14246900-00-11-13-FD	November 13, 2000	1
Columbia River	Beaver Army TML	14246900-00-11-13-F	November 13, 2000	1
Columbia River	Beaver Army TML	14246900-00-11-13	November 13, 2000	1
Columbia River	Beaver Army TML	14246900-00-09-12-FD	September 12, 2000	1
Columbia River	Beaver Army TML	14246900-01-09-24-FD	January 9, 2001	1
Columbia River	Beaver Army TML	14246900-01-02-13-FD	January 2, 2001	1
Columbia River	Beaver Army TML	14246900-99-10-19-FD	October 19, 1999	1
Columbia River	Beaver Army TML	14246900-99-05-25-F	May 25, 1999	1
Columbia River	Beaver Army TML	14246900-99-02-23-F	February 23, 1999	1
Columbia River	Beaver Army TML	14246900-99-11-30D	November 30, 1999	1
Columbia River	Beaver Army TML	14246900-99-11-30-FD	November 30, 1999	1
Columbia River	Beaver Army TML	14246900-99-11-30	November 30, 1999	1
Columbia River	Beaver Army TML	14246900-99-10-19-F	October 19, 1999	1
Columbia River	Beaver Army TML	14246900-99-10-19	October 19, 1999	1
Columbia River	Beaver Army TML	14246900-99-09-14-FD	September 14, 1999	1
Columbia River	Beaver Army TML	14246900-99-09-14-F	September 14, 1999	1
Columbia River	Beaver Army TML	14246900-99-09-14	September 14, 1999	1
Columbia River	Beaver Army TML	14246900-99-05-25D	May 25, 1999	1
Columbia River	Beaver Army TML	14246900-99-11-30-F	November 30, 1999	1
Columbia River	Beaver Army TML	14246900-99-05-25-FD	May 25, 1999	1
Columbia River	Beaver Army TML	14246900-99-08-03-FD	August 3, 1999	1
Columbia River	Beaver Army TML	14246900-99-06-08	June 8, 1999	1
Columbia River	Beaver Army TML	14246900-99-06-08-F	June 8, 1999	1
Columbia River	Beaver Army TML	14246900-99-06-08-FD	June 8, 1999	1
Columbia River	Beaver Army TML	14246900-99-06-22-F	June 22, 1999	1
Columbia River	Beaver Army TML	14246900-99-06-22-FD	June 22, 1999	1
Columbia River	Beaver Army TML	14246900-99-08-03	August 3, 1999	1
Columbia River	Beaver Army TML	14246900-99-08-03-F	August 3, 1999	1
Columbia River	Beaver Army TML	14246900-99-06-22	June 22, 1999	1
Columbia River	Below Longview	3354167	August 28, 2003	1
Columbia River	Below Longview	3394412	September 25, 2003	1
Columbia River	Below Longview	3514117	December 17, 2003	1
Columbia River	Below Longview	4034262	January 13, 2004	1
Columbia River	Below Longview	3384092	September 16, 2003	1
Columbia River	Below Longview	4224117	May 25, 2004	1
Columbia River	Below Longview	4314243	June 23, 2004	1
Columbia River	Below Longview	4264262	June 23, 2004	1
Columbia River	Below Longview	3454426	September 25, 2003	1
Columbia River	Below Longview	4244142	June 9, 2004	1
Columbia River	Bonneville Dam	4264251	June 22, 2004	1
Columbia River	Bonneville Dam	4224106	May 24, 2004	1
Columbia River	Bonneville Dam	4154232	January 12, 2004	1
Columbia River	Bonneville Dam	4314231	June 22, 2004	1
Columbia River	Bonneville Dam	4034251	January 12, 2004	1
Columbia River	Bonneville Dam	4024106	January 5, 2004	1

Table E-2**Summary Table of Segment 5 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Bonneville Dam	3514106	December 15, 2003	1
Columbia River	Bonneville Dam	4244131	June 9, 2004	1
Columbia River	Bonneville Dam	3454414	September 24, 2003	1
Columbia River	Bonneville Dam	3384081	September 15, 2003	1
Columbia River	Bonneville Dam	3354156	August 27, 2003	1
Columbia River	Bonneville Dam	3394401	September 24, 2003	1
Columbia River	Columbia CTY OR	1388042	September 25, 2001	1
Columbia River	Columbia Slough	3454417	September 25, 2003	1
Columbia River	Columbia Slough	3384084	September 15, 2003	1
Columbia River	Columbia Slough	4314234	June 22, 2004	1
Columbia River	Columbia Slough	4264254	June 22, 2004	1
Columbia River	Columbia Slough	4244134	June 9, 2004	1
Columbia River	Columbia Slough	4224109	May 24, 2004	1
Columbia River	Columbia Slough	4034254	January 12, 2004	1
Columbia River	Columbia Slough	4154236	January 12, 2004	1
Columbia River	Columbia Slough	3394404	September 25, 2003	1
Columbia River	Columbia Slough	3354159	August 27, 2003	1
Columbia River	Columbia Slough	3514109	December 16, 2003	1
Columbia River	County Line PRK	1388044	September 25, 2001	1
Columbia River	County Line PRK	1388043	September 25, 2001	1
Columbia River	Kalama WA	3354164	August 28, 2003	1
Columbia River	Kalama WA	4264259	June 23, 2004	1
Columbia River	Kalama WA	4224114	May 25, 2004	1
Columbia River	Kalama WA	4244139	June 9, 2004	1
Columbia River	Kalama WA	4314240	June 23, 2004	1
Columbia River	Kalama WA	4154241	January 13, 2004	1
Columbia River	Kalama WA	3384089	September 16, 2003	1
Columbia River	Kalama WA	4034259	January 13, 2004	1
Columbia River	Kalama WA	4024114	January 5, 2004	1
Columbia River	Kalama WA	3394409	September 25, 2003	1
Columbia River	Kalama WA	3514114	December 17, 2003	1
Columbia River	RM102, COL SLGH	loc 05 5/04-6/04	June 1, 2004	1
Columbia River	RM102, COL SLGH	loc 05 8/03-9/03	September 1, 2003	1
Columbia River	RM102, COL SLGH	loc 05 12/03-1/04	January 1, 2004	1
Columbia River	RM102, WRVR	loc 06 8/03-9/03	September 1, 2003	1
Columbia River	RM102, WRVR	loc 06 12/03-1/04	January 1, 2004	1
Columbia River	RM102, WRVR	loc 06 5/04-6/04	June 1, 2004	1
Columbia River	RM103, WRVR	loc 04 8/03-9/03	September 1, 2003	1
Columbia River	RM103, WRVR	loc 04 5/04-6/04	June 1, 2004	1
Columbia River	RM103, WRVR	loc 04 12/03-1/04	January 1, 2004	1
Columbia River	RM121, WASHVR	loc 03 12/03-1/04	January 1, 2004	1
Columbia River	RM121, WASHVR	loc 03 8/03-9/03	September 1, 2003	1
Columbia River	RM121, WASHVR	loc 03 5/04-6/04	June 1, 2004	1
Columbia River	RM142 BONN DAM	loc 02 5/04-6/04	June 1, 2004	1
Columbia River	RM142 BONN DAM	loc 02 12/03-1/04	January 1, 2004	1
Columbia River	RM142 BONN DAM	loc 02 8/03-9/03	September 1, 2003	1
Columbia River	RM54, LONGVIEW	loc 13 8/03-9/03	September 1, 2003	1
Columbia River	RM54, LONGVIEW	loc 13 5/04-6/04	June 1, 2004	1
Columbia River	RM68, COWLITZ R	loc 12 12/03-1/04	January 1, 2004	1
Columbia River	RM68, COWLITZ R	loc 12 5/04-6/04	June 1, 2004	1

Table E-2**Summary Table of Segment 5 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	RM68, COWLITZ R	loc 12 8/03-9/03	September 1, 2003	1
Columbia River	RM73, KALAMA R	loc 11 12/3-1/04	January 1, 2004	1
Columbia River	RM73, KALAMA R	loc 11 5/04-6/04	June 1, 2004	1
Columbia River	RM73, KALAMA R	loc 11 8/03-9/03	September 1, 2003	1
Columbia River	RM75, KALAMA R	loc 10 5/04-6/04	June 1, 2004	1
Columbia River	RM75, KALAMA R	loc 10 12/03-1/04	January 1, 2004	1
Columbia River	RM86, MULT CHNL	loc 09 12/03-1/04	January 1, 2004	1
Columbia River	RM86, MULT CHNL	loc 09 5/04-6/04	June 1, 2004	1
Columbia River	RM86, MULT CHNL	loc 09 8/03-9/03	September 1, 2003	1
Columbia River	RM87, LEWIS R	loc 08 12/03-1/04	January 1, 2004	1
Columbia River	RM87, LEWIS R	loc 08 5/04-6/04	June 1, 2004	1
Columbia River	RM87, LEWIS R	loc 08 8/03-9/03	September 1, 2003	1
Columbia River	RM88, LAKE R	loc 07 12/03-1/04	January 1, 2004	1
Columbia River	RM88, LAKE R	loc 07 5/04-6/04	June 1, 2004	1
Columbia River	RM88, LAKE R	loc 07 8/03-9/03	September 1, 2003	1
Columbia River	RYAN PT WA	1388041	September 25, 2001	1
Columbia River	VANCOUV(28A100)	131985	March 19, 2003	1
Columbia River	VANCOUV(28A100)	131627-F	November 20, 2002	1
Columbia River	VANCOUV(28A100)	132211	May 21, 2003	1
Columbia River	VANCOUV(28A100)	132299	June 18, 2003	1
Columbia River	VANCOUV(28A100)	132084-F	April 23, 2003	1
Columbia River	VANCOUV(28A100)	132084	April 23, 2003	1
Columbia River	VANCOUV(28A100)	131985-F	March 19, 2003	1
Columbia River	VANCOUV(28A100)	132211-F	May 21, 2003	1
Columbia River	VANCOUV(28A100)	131897-F	February 26, 2003	1
Columbia River	VANCOUV(28A100)	131897	February 26, 2003	1
Columbia River	VANCOUV(28A100)	131807-F	January 29, 2003	1
Columbia River	VANCOUV(28A100)	131807	January 29, 2003	1
Columbia River	VANCOUV(28A100)	132299-F	June 18, 2003	1
Columbia River	VANCOUV(28A100)	131716	December 11, 2002	1
Columbia River	VANCOUV(28A100)	131627	November 20, 2002	1
Columbia River	VANCOUV(28A100)	131560-F	October 30, 2002	1
Columbia River	VANCOUV(28A100)	131716-F	December 11, 2002	1
Columbia River	VANCOUV(28A100)	131560	October 30, 2002	1
Columbia River	VANCOUV(28A100)	132390-F	July 23, 2003	1
Columbia River	VANCOUV(28A100)	132503	August 20, 2003	1
Columbia River	VANCOUV(28A100)	132503-F	August 20, 2003	1
Columbia River	VANCOUV(28A100)	132569	September 24, 2003	1
Columbia River	VANCOUV(28A100)	132569-F	September 24, 2003	1
Columbia River	VANCOUV(28A100)	132390	July 23, 2003	1
Columbia River	Willamette RVR	3394403	September 25, 2003	1
Columbia River	Willamette RVR	4034253	January 12, 2004	1
Columbia River	Willamette RVR	3354158	August 27, 2003	1
Columbia River	Willamette RVR	4154235	January 12, 2004	1
Columbia River	Willamette RVR	4224108	May 24, 2004	1
Columbia River	Willamette RVR	3384083	September 15, 2003	1
Columbia River	Willamette RVR	4314233	June 22, 2004	1
Columbia River	Willamette RVR	4244133	June 9, 2004	1
Columbia River	Willamette RVR	3514108	December 16, 2003	1
Columbia River	Willamette RVR	3454416	June 25, 2003	1

Table E-2**Summary Table of Segment 5 Surface Water Samples By Area, Site, Date, and Category**

Sample Area	Sample Site	Sample ID	Sample Date	Category
Columbia River	Willamette RVR	4264253	June 22, 2004	1
Columbia River	Willamette RVR	4024108	January 5, 2004	1

Table E-3
Summary Statistics for Sediment Collected from Segment 5 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Cyanide	mg/kg	3	0	0%	0.0071	0.0076	--	--	0.0037
CONV	Nitrogen in ammonia	mg/kg	8	8	100%	--	--	55	414	246
CONV	Percent Solids	%	3	3	100%	--	--	76	78	77
CONV	Soluble Fluoride	mg/kg	3	3	100%	--	--	1.8	8.9	4.4
CONV	Total Organic Carbon	%	83	68	82%	0.050	0.20	0.037	7.5	1.0
CONV	Total Organic Carbon	mg/kg	42	42	100%	--	--	370	44,300	10,216
CONV	Total solids	%	15	15	100%	--	--	36	58	46
CONV	Total Volatile Solids	%	152	152	100%	--	--	0.20	11	2.0
METAL	Aluminum	mg/kg	3	3	100%	--	--	454	498	483
METAL	Antimony	mg/kg	36	25	69%	0.023	2.4	0.14	3.6	0.88
METAL	Arsenic	mg/kg	72	72	100%	--	--	0.054	11	3.3
METAL	Beryllium	mg/kg	3	2	67%	0.043	0.043	0.054	0.077	0.051
METAL	Cadmium	mg/kg	71	31	44%	0.018	0.80	0.038	3.3	0.52
METAL	Chromium	mg/kg	49	49	100%	--	--	0.99	35	11
METAL	Copper	mg/kg	71	71	100%	--	--	1.1	76	19
METAL	Lead	mg/kg	73	73	100%	--	--	0.084	140	11
METAL	Mercury	mg/kg	72	38	53%	8.40E-04	0.50	0.0024	0.56	0.060
METAL	Nickel	mg/kg	71	71	100%	--	--	0.57	27	11
METAL	Selenium	mg/kg	3	0	0%	0.045	0.048	--	--	0.023
METAL	Silver	mg/kg	72	28	39%	0.052	0.77	0.027	2.3	0.29
METAL	Thallium	mg/kg	3	3	100%	--	--	0.054	0.094	0.077
METAL	Zinc	mg/kg	72	71	99%	34	34	2.1	200	67
PCB	Aroclor-1016	mg/kg	11	0	0%	0.0017	0.0084	--	--	0.0019
PCB	Aroclor-1221	mg/kg	11	0	0%	0.0017	0.0084	--	--	0.0019
PCB	Aroclor-1232	mg/kg	11	0	0%	0.0017	0.0084	--	--	0.0019
PCB	Aroclor-1242	mg/kg	16	1	6%	0.0017	0.010	0.019	0.019	0.0038
PCB	Aroclor-1248	mg/kg	37	6	16%	0.0017	0.0084	0.097	1.4	0.065
PCB	Aroclor-1254	mg/kg	38	1	3%	9.20E-04	0.017	0.024	0.024	0.0048
PCB	Aroclor-1260	mg/kg	38	2	5%	9.20E-04	0.017	0.0050	0.037	0.0052
PEST	Aldrin	mg/kg	34	2	6%	7.54E-05	0.0020	2.00E-04	6.00E-04	6.97E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	7.66E-04	8.40E-04	--	--	3.98E-04
PEST	alpha-Chlordane	mg/kg	11	0	0%	7.91E-05	0.0084	--	--	0.0011
PEST	beta-1,2,3,4,5,6-Hexachlorocyclohexane	mg/kg	3	0	0%	7.66E-04	8.40E-04	--	--	3.98E-04
PEST	Bromine	mg/kg	24	19	79%	0.0030	0.0030	0.0039	0.017	0.0074
PEST	Chlordane	mg/kg	4	0	0%	0.010	0.010	--	--	0.0050
PEST	Chlorine	mg/kg	24	14	58%	0.030	0.030	0.031	2.4	0.34
PEST	Delta-BHC	mg/kg	3	0	0%	7.66E-04	8.40E-04	--	--	3.98E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	97	13	13%	1.49E-04	1.0	5.00E-04	0.0048	0.010
PEST	Dichlorodiphenyldichloroethylene	mg/kg	97	20	21%	1.65E-04	1.0	4.00E-04	0.0039	0.010
PEST	Dichlorodiphenyltrichloroethane	mg/kg	97	3	3%	1.72E-04	1.0	3.00E-04	0.0030	0.010
PEST	Dieldrin	mg/kg	15	0	0%	1.78E-04	0.0050	--	--	5.80E-04
PEST	Endosulfan I	mg/kg	3	0	0%	7.66E-04	8.40E-04	--	--	3.98E-04
PEST	Endosulfan II	mg/kg	3	0	0%	0.0015	0.0017	--	--	8.09E-04
PEST	Endosulfan sulfate	mg/kg	29	2	7%	4.00E-04	0.0017	0.0023	0.0030	4.65E-04
PEST	Endrin	mg/kg	3	0	0%	0.0015	0.0017	--	--	8.09E-04
PEST	Endrin ketone	mg/kg	29	1	3%	3.10E-04	0.0017	0.0047	0.0047	4.06E-04
PEST	Gamma-BHC (Lindane)	mg/kg	11	0	0%	8.78E-05	8.40E-04	--	--	1.43E-04
PEST	gamma-Chlordane	mg/kg	8	0	0%	8.86E-05	1.00E-04	--	--	4.78E-05
PEST	Heptachlor	mg/kg	16	1	6%	7.32E-05	0.0019	0.0074	0.0074	6.99E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	7.66E-04	8.40E-04	--	--	3.98E-04
PEST	Methoxychlor	mg/kg	29	1	3%	0.0015	0.015	0.0055	0.0055	0.0016

Table E-3
Summary Statistics for Sediment Collected from Segment 5 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Toxaphene	mg/kg	3	0	0%	0.015	0.017	--	--	0.0081
PEST	trans-Chlordane	mg/kg	3	0	0%	0.0077	0.0084	--	--	0.0040
RAD_D	Beryllium-7, Decayed	pCi/g	1	1	100%	--	--	1.59E-28	1.59E-28	1.59E-28
RAD_D	Cerium-141, Decayed	pCi/g	9	9	100%	--	--	9.05E-100	3.77E-89	5.59E-90
RAD_D	Cesium-137, Decayed	pCi/g	53	53	100%	--	--	0.048	0.23	0.087
RAD_D	Cobalt-60, Decayed	pCi/g	51	51	100%	--	--	8.78E-04	0.013	0.0056
RAD_D	Potassium-40, Decayed	pCi/g	199	199	100%	--	--	2.7	30	11
RAD_D	Radium-226, Decayed	pCi/g	44	44	100%	--	--	0.099	1.5	0.58
RAD_D	Ruthenium-106, Decayed	pCi/g	70	70	100%	--	--	5.77E-14	6.58E-10	2.01E-11
RAD_D	Thorium-232, Decayed	pCi/g	29	29	100%	--	--	0.30	1.00	0.64
RAD_D	Zinc-65, Decayed	pCi/g	95	95	100%	--	--	7.33E-20	1.56E-12	5.77E-14
RAD_D	Zirconium/Niobium-95, Decayed	pCi/g	67	67	100%	--	--	3.95E-132	2.43E-76	5.44E-78
SVOC	1,2,4-Trichlorobenzene	mg/kg	11	8	73%	0.0033	0.0035	4.11E-04	7.11E-04	8.81E-04
SVOC	1,2-Dichlorobenzene	mg/kg	11	2	18%	1.76E-04	0.0035	3.78E-04	3.82E-04	5.81E-04
SVOC	1,3-Dichlorobenzene	mg/kg	10	0	0%	3.62E-04	0.0035	--	--	6.44E-04
SVOC	1,4-Dichlorobenzene	mg/kg	11	1	9%	3.34E-04	0.0035	4.40E-04	4.40E-04	6.15E-04
SVOC	2,4,5-Trichlorophenol	mg/kg	3	0	0%	0.0065	0.0070	--	--	0.0034
SVOC	2,4,6-Trichlorophenol	mg/kg	3	0	0%	0.0065	0.0070	--	--	0.0034
SVOC	2,4-Dichlorophenol	mg/kg	3	0	0%	0.0065	0.0070	--	--	0.0034
SVOC	2,4-Dimethylphenol	mg/kg	11	2	18%	1.65E-04	0.0035	0.0019	0.0020	8.61E-04
SVOC	2,4-Dinitrophenol	mg/kg	3	0	0%	0.033	0.035	--	--	0.017
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.0065	0.0070	--	--	0.0034
SVOC	2,6-Dinitrotoluene	mg/kg	10	7	70%	0.0065	0.0070	0.012	0.021	0.012
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.0033	0.0035	--	--	0.0017
SVOC	2-Chlorophenol	mg/kg	3	0	0%	0.0033	0.0035	--	--	0.0017
SVOC	2-Methylnaphthalene	mg/kg	80	33	41%	2.10E-04	0.0071	3.60E-04	0.41	0.0084
SVOC	2-Methylphenol (cresol, o-)	mg/kg	21	4	19%	3.60E-04	0.0099	4.59E-04	0.015	0.0030
SVOC	2-Nitroaniline	mg/kg	3	0	0%	0.0065	0.0070	--	--	0.0034
SVOC	2-Nitrophenol	mg/kg	3	0	0%	0.0065	0.0070	--	--	0.0034
SVOC	3&4-Methylphenol (Cresol, m+p)	mg/kg	12	9	75%	0.045	0.057	0.0019	0.057	0.015
SVOC	3,3'-Dichlorobenzidine	mg/kg	3	0	0%	0.033	0.035	--	--	0.017
SVOC	3-Nitroaniline	mg/kg	3	0	0%	0.016	0.018	--	--	0.0083
SVOC	4,6-Dinitro-2-methylphenol	mg/kg	3	0	0%	0.033	0.035	--	--	0.017
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0065	0.0070	--	--	0.0034
SVOC	4-Chloro-3-methylphenol	mg/kg	3	0	0%	0.0065	0.0070	--	--	0.0034
SVOC	4-Chloroaniline	mg/kg	3	0	0%	0.0033	0.0035	--	--	0.0017
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0033	0.0035	--	--	0.0017
SVOC	4-Methylphenol (cresol, p-)	mg/kg	3	0	0%	0.0033	0.0035	--	--	0.0017
SVOC	4-Nitroaniline	mg/kg	3	0	0%	0.0065	0.0070	--	--	0.0034
SVOC	4-Nitrophenol	mg/kg	3	0	0%	0.033	0.035	--	--	0.017
SVOC	Acenaphthene	mg/kg	80	28	35%	8.90E-05	0.011	5.00E-04	0.11	0.0038
SVOC	Acenaphthylene	mg/kg	80	30	38%	1.89E-04	0.011	2.00E-04	0.021	0.0021
SVOC	Anthracene	mg/kg	80	34	43%	1.95E-04	0.010	7.00E-04	0.41	0.0083
SVOC	Benzo(a)anthracene	mg/kg	76	47	62%	1.36E-04	0.0050	7.00E-04	0.096	0.010
SVOC	Benzo(a)pyrene	mg/kg	79	52	66%	6.81E-05	0.0070	6.00E-04	0.10	0.013
SVOC	Benzo(b)fluoranthene	mg/kg	29	21	72%	2.46E-04	0.0070	0.0016	0.044	0.011
SVOC	Benzo(b+k)fluoranthene	mg/kg	28	16	57%	0.0050	0.0050	6.00E-04	0.12	0.013
SVOC	Benzo(ghi)perylene	mg/kg	80	52	65%	1.32E-04	0.0070	5.00E-04	0.077	0.0091
SVOC	Benzo(k)fluoranthene	mg/kg	30	17	57%	3.06E-04	0.0070	5.70E-04	0.027	0.0048
SVOC	Benzofluoranthene	mg/kg	4	3	75%	0.0056	0.0056	0.044	0.066	0.043
SVOC	Benzoic acid	mg/kg	31	19	61%	0.0069	0.092	0.034	0.49	0.055

Table E-3
Summary Statistics for Sediment Collected from Segment 5 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Benzyl alcohol	mg/kg	16	9	56%	0.0033	0.016	0.0045	0.069	0.0099
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.0033	0.0035	--	--	0.0017
SVOC	Bis(2-Chloroethoxy)methane	mg/kg	3	0	0%	0.0033	0.0035	--	--	0.0017
SVOC	Bis(2-chloroethyl) ether	mg/kg	3	0	0%	0.0033	0.0035	--	--	0.0017
SVOC	Bis(2-ethylhexyl) phthalate	mg/kg	45	34	76%	0.0054	0.023	0.0062	0.21	0.030
SVOC	Butylbenzylphthalate	mg/kg	27	22	81%	0.0025	0.0035	0.0032	0.033	0.0090
SVOC	Chrysene	mg/kg	80	54	68%	1.80E-04	0.0050	6.00E-04	0.13	0.016
SVOC	Dibenz[a,h]anthracene	mg/kg	71	18	25%	1.20E-04	0.0070	9.00E-04	0.016	0.0022
SVOC	Dibenzofuran	mg/kg	18	6	33%	1.99E-04	0.0041	0.0010	0.0042	0.0017
SVOC	Diethylphthalate	mg/kg	25	10	40%	0.0033	0.028	0.0023	0.026	0.0062
SVOC	Dimethyl phthalate	mg/kg	11	3	27%	4.44E-04	0.0035	6.87E-04	0.0035	0.0010
SVOC	Di-n-butylphthalate	mg/kg	30	20	67%	0.0033	0.028	0.013	0.32	0.076
SVOC	Di-n-octylphthalate	mg/kg	21	3	14%	2.93E-04	0.0099	5.75E-04	0.023	0.0035
SVOC	Fluoranthene	mg/kg	75	55	73%	6.20E-04	0.0050	3.21E-04	0.087	0.015
SVOC	Fluorene	mg/kg	80	31	39%	2.48E-04	0.0091	6.00E-04	0.10	0.0049
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.0065	0.0070	--	--	0.0034
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0033	0.0035	--	--	0.0017
SVOC	Hexachlorocyclopentadiene	mg/kg	3	0	0%	0.0065	0.0070	--	--	0.0034
SVOC	Hexachloroethane	mg/kg	11	0	0%	3.76E-04	0.0070	--	--	0.0011
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	79	39	49%	8.54E-05	0.0070	7.00E-04	0.076	0.0069
SVOC	Isophorone	mg/kg	3	0	0%	0.0033	0.0035	--	--	0.0017
SVOC	Naphthalene	mg/kg	80	47	59%	6.20E-04	0.0070	4.24E-04	0.066	0.0048
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0033	0.0035	--	--	0.0017
SVOC	N-Nitrosodi-n-dipropylamine	mg/kg	3	0	0%	0.0033	0.0035	--	--	0.0017
SVOC	N-Nitrosodiphenylamine	mg/kg	11	0	0%	1.38E-04	0.0035	--	--	5.16E-04
SVOC	Pentachlorophenol	mg/kg	21	7	33%	9.59E-04	0.035	0.0013	0.039	0.0067
SVOC	Phenanthrene	mg/kg	79	52	66%	2.80E-04	0.0092	3.81E-04	0.33	0.017
SVOC	Phenol	mg/kg	21	9	43%	0.0033	0.0099	0.0033	0.013	0.0045
SVOC	Pyrene	mg/kg	80	52	65%	4.40E-04	0.0050	3.62E-04	0.17	0.019
VOC	1,1,1-Trichloroethane	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	1,1,2,2-Tetrachloroethane	mg/kg	3	0	0%	3.83E-04	4.69E-04	--	--	2.18E-04
VOC	1,1,2-Trichloroethane	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	1,1-Dichloroethane	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	1,1-Dichloroethene	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	1,2-Dichloroethane	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	1,2-Dichloroethene (Total)	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	1,2-Dichloropropane	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	2-Butanone	mg/kg	3	0	0%	3.83E-04	4.69E-04	--	--	2.18E-04
VOC	2-Hexanone	mg/kg	3	0	0%	3.83E-04	4.69E-04	--	--	2.18E-04
VOC	4-Methyl-2-Pentanone	mg/kg	3	0	0%	3.83E-04	4.69E-04	--	--	2.18E-04
VOC	Acetone	mg/kg	3	3	100%	--	--	0.0018	0.0024	0.0021
VOC	Benzene	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	Bromodichloromethane	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	Bromoform	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	Bromomethane	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	Carbon disulfide	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	Carbon tetrachloride	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	Chlorobenzene	mg/kg	3	0	0%	3.83E-04	4.69E-04	--	--	2.18E-04
VOC	Chloroethane	mg/kg	3	0	0%	3.83E-04	4.69E-04	--	--	2.18E-04
VOC	Chloroform	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	Chloromethane	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05

Table E-3
Summary Statistics for Sediment Collected from Segment 5 of the Columbia River Including All Categories of Data (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
VOC	cis-1,3-Dichloropropene	mg/kg	3	0	0%	3.83E-04	4.69E-04	--	--	2.18E-04
VOC	Dibromochloromethane	mg/kg	3	0	0%	3.83E-04	4.69E-04	--	--	2.18E-04
VOC	Ethylbenzene	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	Methylene chloride	mg/kg	3	3	100%	--	--	9.19E-04	0.0011	9.76E-04
VOC	Styrene	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	Tetrachloroethene	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	Toluene	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	trans-1,3-Dichloropropene	mg/kg	3	0	0%	3.83E-04	4.69E-04	--	--	2.18E-04
VOC	Trichloroethene	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	Vinyl acetate	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	Vinyl chloride	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05
VOC	Xylenes (total)	mg/kg	3	0	0%	1.53E-04	1.56E-04	--	--	7.71E-05

CONV - Conventional parameter
PEST - Pesticide
PCB - Polychlorinated biphenyl
RAD_D - Decayed radionuclide
SVOC - Semivolatile Organic Compound

Table E-4
Summary Statistics for Sediment Collected from Segment 5 of the Columbia River Including All Categories of Data (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Ammonia	mg/kg dry-wt	15	15	100%	--	--	4.3	64	28
CONV	Cyanide	mg/kg dry-wt	15	1	7%	0.10	0.10	0.17	0.17	0.058
CONV	Nitrogen, Kjeldahl total	mg/kg dry-wt	15	15	100%	--	--	650	2,000	1,367
CONV	Sulfide	mg/kg dry-wt	15	15	100%	--	--	1.8	134	25
METAL	Aluminum	mg/kg dry-wt	27	27	100%	--	--	5,500	33,300	16,304
METAL	Antimony	mg/kg dry-wt	45	12	27%	0.15	2.5	0.029	3.9	0.62
METAL	Arsenic	mg/kg dry-wt	48	47	98%	0.67	0.67	0.80	14	3.6
METAL	Barium	mg/kg dry-wt	15	15	100%	--	--	60	186	142
METAL	Beryllium	mg/kg dry-wt	27	23	85%	0.10	0.10	0.10	1.2	0.57
METAL	Cadmium	mg/kg dry-wt	48	37	77%	0.016	0.50	0.14	1.9	0.59
METAL	Chromium	mg/kg dry-wt	38	38	100%	--	--	0.17	31	16
METAL	Copper	mg/kg dry-wt	48	47	98%	0.041	0.041	6.0	75	21
METAL	Dibutyltin Dichloride	mg/kg dry-wt	15	4	27%	0.0026	0.0026	0.0046	0.012	0.0030
METAL	Iron	mg/kg dry-wt	27	27	100%	--	--	12,000	39,000	19,978
METAL	Lead	mg/kg dry-wt	46	34	74%	0.016	18	2.5	38	9.5
METAL	Manganese	mg/kg dry-wt	12	12	100%	--	--	110	330	212
METAL	Mercury	mg/kg dry-wt	48	34	71%	0.0045	0.031	0.020	0.51	0.066
METAL	Monobutyltin Trichloride	mg/kg dry-wt	15	6	40%	0.0017	0.0034	0.0051	0.015	0.0040
METAL	Nickel	mg/kg dry-wt	48	47	98%	0.026	0.026	5.0	25	13
METAL	Selenium	mg/kg dry-wt	27	0	0%	0.50	1.6	--	--	0.45
METAL	Silver	mg/kg dry-wt	48	21	44%	0.012	0.60	0.030	3.1	0.20
METAL	Thallium	mg/kg dry-wt	27	0	0%	0.30	0.55	--	--	0.22
METAL	Tin	mg/kg dry-wt	12	12	100%	--	--	6.0	21	11
METAL	Tributyltin Chloride	mg/kg dry-wt	15	11	73%	0.0032	0.0032	0.0024	0.034	0.0071
METAL	Zinc	mg/kg dry-wt	48	47	98%	0.070	0.070	27	155	77
PCB	Aroclor-1016	mg/kg dry-wt	25	0	0%	0.0062	0.010	--	--	0.0045
PCB	Aroclor-1221	mg/kg dry-wt	25	0	0%	0.0091	0.020	--	--	0.0085
PCB	Aroclor-1232	mg/kg dry-wt	25	0	0%	0.0060	0.010	--	--	0.0044
PCB	Aroclor-1242	mg/kg dry-wt	25	0	0%	0.0028	0.010	--	--	0.0037
PCB	Aroclor-1248	mg/kg dry-wt	25	1	4%	0.0022	0.010	0.011	0.011	0.0037
PCB	Aroclor-1254	mg/kg dry-wt	25	0	0%	0.0029	0.010	--	--	0.0037
PCB	Aroclor-1260	mg/kg dry-wt	25	0	0%	0.0030	0.010	--	--	0.0037
PCB	Total polychlorinated biphenyl	mg/kg dry-wt	7	0	0%	5.00E-05	50	--	--	3.6
PEST	2,4'-DDD	mg/kg dry-wt	17	2	12%	1.60E-04	5.00E-04	2.00E-04	0.0015	2.14E-04
PEST	2,4'-DDE	mg/kg dry-wt	16	1	6%	1.60E-04	2.40E-04	4.00E-04	4.00E-04	1.18E-04
PEST	2,4'-DDT	mg/kg dry-wt	15	0	0%	1.60E-04	2.40E-04	--	--	9.87E-05
PEST	Aldrin	mg/kg dry-wt	25	0	0%	8.40E-05	5.00E-04	--	--	1.69E-04
PEST	Alpha-BHC	mg/kg dry-wt	25	0	0%	8.60E-05	5.00E-04	--	--	1.73E-04
PEST	alpha-Chlordane	mg/kg dry-wt	15	0	0%	5.00E-04	5.00E-04	--	--	2.50E-04
PEST	beta-1,2,3,4,5,6-Hexachlorocyclohexane	mg/kg dry-wt	25	0	0%	1.60E-04	5.00E-04	--	--	1.90E-04
PEST	Chlordane	mg/kg dry-wt	25	0	0%	5.00E-04	0.0076	--	--	0.0011
PEST	Delta-BHC	mg/kg dry-wt	25	0	0%	8.80E-05	5.00E-04	--	--	1.73E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg dry-wt	35	11	31%	1.00E-05	10	6.00E-04	0.0039	0.14
PEST	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	33	7	21%	1.00E-05	0.010	5.00E-04	30	0.91
PEST	Dichlorodiphenyltrichloroethane	mg/kg dry-wt	33	1	3%	1.00E-05	10	0.0028	0.0028	0.15
PEST	Dicofol	mg/kg dry-wt	15	0	0%	0.011	0.017	--	--	0.0069
PEST	Dieldrin	mg/kg dry-wt	26	1	4%	8.00E-05	0.0010	5.00E-04	5.00E-04	3.39E-04
PEST	Endosulfan I	mg/kg dry-wt	25	0	0%	1.30E-04	5.00E-04	--	--	2.04E-04
PEST	Endosulfan II	mg/kg dry-wt	25	0	0%	1.90E-04	0.0010	--	--	3.50E-04
PEST	Endosulfan sulfate	mg/kg dry-wt	25	0	0%	2.70E-04	0.0010	--	--	3.59E-04
PEST	Endrin	mg/kg dry-wt	25	0	0%	1.40E-04	0.0010	--	--	3.46E-04

Table E-4
Summary Statistics for Sediment Collected from Segment 5 of the Columbia River Including All Categories of Data (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Endrin aldehyde	mg/kg dry-wt	25	0	0%	3.30E-04	0.0012	--	--	4.45E-04
PEST	Endrin ketone	mg/kg dry-wt	25	0	0%	2.90E-04	0.0010	--	--	3.71E-04
PEST	Gamma-BHC (Lindane)	mg/kg dry-wt	25	0	0%	1.70E-04	5.00E-04	--	--	1.90E-04
PEST	Heptachlor	mg/kg dry-wt	25	0	0%	1.00E-04	5.00E-04	--	--	1.73E-04
PEST	Heptachlor epoxide	mg/kg dry-wt	25	0	0%	1.60E-04	5.00E-04	--	--	1.88E-04
PEST	Methoxychlor	mg/kg dry-wt	25	0	0%	7.50E-04	0.0050	--	--	0.0019
PEST	Methyl parathion	mg/kg dry-wt	15	0	0%	0.011	0.017	--	--	0.0069
PEST	Toxaphene	mg/kg dry-wt	25	0	0%	0.011	0.057	--	--	0.022
PEST	trans-Chlordane	mg/kg dry-wt	1	1	100%	--	--	2.00E-04	2.00E-04	2.00E-04
PEST	trans-Nonachlor	mg/kg dry-wt	1	1	100%	--	--	2.00E-04	2.00E-04	2.00E-04
RAD_D	Americium-241	pCi/g dry-wt	1	1	100%	--	--	0.068	0.068	0.068
RAD_D	Cesium-137	pCi/g dry-wt	15	15	100%	--	--	0.038	0.13	0.078
RAD_D	Cobalt-60	pCi/g dry-wt	3	3	100%	--	--	0.0025	0.0045	0.0036
RAD_D	Plutonium-239/240	pCi/g dry-wt	7	7	100%	--	--	0.0040	0.0100	0.0069
SVOC	1,2,4-Trichlorobenzene	mg/kg dry-wt	25	0	0%	0.0014	0.020	--	--	0.0051
SVOC	1,2-Dichlorobenzene	mg/kg dry-wt	25	0	0%	0.0022	0.020	--	--	0.0053
SVOC	1,3-Dichlorobenzene	mg/kg dry-wt	25	0	0%	0.0031	0.020	--	--	0.0055
SVOC	1,4-Dichlorobenzene	mg/kg dry-wt	25	0	0%	0.0025	0.040	--	--	0.010
SVOC	2,4,5-Trichlorophenol	mg/kg dry-wt	5	0	0%	0.0015	0.0016	--	--	7.80E-04
SVOC	2,4,6-Trichlorophenol	mg/kg dry-wt	20	0	0%	0.0014	0.10	--	--	0.030
SVOC	2,4-Dichlorophenol	mg/kg dry-wt	20	0	0%	7.90E-04	0.040	--	--	0.012
SVOC	2,4-Dimethylphenol	mg/kg dry-wt	25	0	0%	0.0028	0.040	--	--	0.010
SVOC	2,4-Dinitrophenol	mg/kg dry-wt	20	0	0%	0.0026	0.20	--	--	0.060
SVOC	2,4-Dinitrotoluene	mg/kg dry-wt	20	0	0%	4.00E-05	0.10	--	--	0.030
SVOC	2,6-Dinitrotoluene	mg/kg dry-wt	20	0	0%	0.0014	0.10	--	--	0.030
SVOC	2-Chloronaphthalene	mg/kg dry-wt	20	0	0%	9.00E-04	0.020	--	--	0.0061
SVOC	2-Chlorophenol	mg/kg dry-wt	20	0	0%	0.0025	0.020	--	--	0.0063
SVOC	2-Methylnaphthalene	mg/kg dry-wt	37	26	70%	0.0015	0.12	7.00E-04	0.017	0.0045
SVOC	2-Methylphenol (cresol, o-)	mg/kg dry-wt	25	0	0%	0.0016	0.020	--	--	0.0052
SVOC	2-Nitroaniline	mg/kg dry-wt	20	0	0%	0.0035	0.10	--	--	0.030
SVOC	2-Nitrophenol	mg/kg dry-wt	20	0	0%	0.0019	0.10	--	--	0.030
SVOC	2-secButyl-4,6-dinitrophenol (DNBP)	mg/kg dry-wt	5	0	0%	0.0015	0.0016	--	--	7.90E-04
SVOC	3&4-Methylphenol (Cresol, m+p)	mg/kg dry-wt	10	0	0%	0.0028	0.0043	--	--	0.0018
SVOC	3,3'-Dichlorobenzidine	mg/kg dry-wt	20	0	0%	0.0012	0.10	--	--	0.030
SVOC	3-Nitroaniline	mg/kg dry-wt	20	0	0%	0.0012	0.10	--	--	0.030
SVOC	4,6-Dinitro-2-methylphenol	mg/kg dry-wt	15	0	0%	0.12	0.20	--	--	0.079
SVOC	4-Bromophenylphenyl ether	mg/kg dry-wt	20	0	0%	0.0015	0.020	--	--	0.0062
SVOC	4-Chloro-3-methylphenol	mg/kg dry-wt	15	0	0%	0.025	0.040	--	--	0.016
SVOC	4-Chloroaniline	mg/kg dry-wt	5	0	0%	0.0017	0.0018	--	--	8.90E-04
SVOC	4-Chlorophenylphenyl ether	mg/kg dry-wt	20	0	0%	0.0018	0.020	--	--	0.0062
SVOC	4-Methylphenol (cresol, p-)	mg/kg dry-wt	15	1	7%	0.013	0.020	0.15	0.15	0.017
SVOC	4-Nitroaniline	mg/kg dry-wt	20	0	0%	0.0010	0.060	--	--	0.018
SVOC	4-Nitrophenol	mg/kg dry-wt	20	0	0%	5.10E-05	0.10	--	--	0.030
SVOC	Acenaphthene	mg/kg dry-wt	40	23	58%	6.70E-04	0.84	7.20E-04	0.094	0.023
SVOC	Acenaphthylene	mg/kg dry-wt	38	13	34%	2.60E-04	0.84	0.0010	0.012	0.032
SVOC	Anthracene	mg/kg dry-wt	40	23	58%	5.00E-04	1.5	0.0010	0.46	0.051
SVOC	Benzo(a)anthracene	mg/kg dry-wt	40	27	68%	6.90E-04	0.12	0.0050	2.2	0.076
SVOC	Benzo(a)pyrene	mg/kg dry-wt	40	24	60%	9.00E-04	1.5	0.0042	1.5	0.088
SVOC	Benzo(b)fluoranthene	mg/kg dry-wt	25	15	60%	6.20E-04	9.30E-04	0.0020	1.8	0.091
SVOC	Benzo(ghi)perylene	mg/kg dry-wt	40	18	45%	3.30E-04	1.5	0.0060	1.1	0.065
SVOC	Benzo(k)fluoranthene	mg/kg dry-wt	25	16	64%	7.20E-04	0.0011	0.0020	0.91	0.057

Table E-4
Summary Statistics for Sediment Collected from Segment 5 of the Columbia River Including All Categories of Data (units reported "dry-weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Benzoic acid	mg/kg dry-wt	25	0	0%	0.0012	0.16	--	--	0.016
SVOC	Benzyl alcohol	mg/kg dry-wt	25	0	0%	0.0033	0.10	--	--	0.025
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg dry-wt	20	0	0%	0.0030	0.020	--	--	0.0063
SVOC	Bis(2-Chloroethoxy)methane	mg/kg dry-wt	15	0	0%	0.013	0.020	--	--	0.0079
SVOC	Bis(2-chloroethyl) ether	mg/kg dry-wt	20	0	0%	0.0023	0.020	--	--	0.0063
SVOC	Bis(2-ethylhexyl) phthalate	mg/kg dry-wt	38	33	87%	0.011	0.025	0.012	1.9	0.098
SVOC	Butylbenzylphthalate	mg/kg dry-wt	37	5	14%	0.0017	1.5	0.0010	0.0020	0.056
SVOC	Carbazole	mg/kg dry-wt	15	0	0%	0.013	0.020	--	--	0.0079
SVOC	Chrysene	mg/kg dry-wt	40	29	73%	9.00E-04	0.12	0.0050	4.1	0.13
SVOC	Dibenz[a,h]anthracene	mg/kg dry-wt	39	14	36%	5.00E-04	1.5	0.0015	0.40	0.059
SVOC	Dibenzofuran	mg/kg dry-wt	37	19	51%	3.90E-04	0.84	8.10E-04	0.028	0.021
SVOC	Diethylphthalate	mg/kg dry-wt	36	11	31%	0.0030	0.53	0.0020	0.17	0.026
SVOC	Dimethyl phthalate	mg/kg dry-wt	25	0	0%	0.0034	0.020	--	--	0.0056
SVOC	Di-n-butylphthalate	mg/kg dry-wt	37	13	35%	0.013	1.5	0.0090	0.84	0.071
SVOC	Di-n-octylphthalate	mg/kg dry-wt	37	11	30%	0.0026	0.53	0.0040	0.072	0.018
SVOC	Fluoranthene	mg/kg dry-wt	40	29	73%	6.90E-04	1.5	5.00E-04	2.1	0.10
SVOC	Fluorene	mg/kg dry-wt	40	27	68%	7.40E-04	0.12	7.80E-04	0.049	0.0081
SVOC	Hexachlorobenzene	mg/kg dry-wt	33	0	0%	6.52E-04	0.020	--	--	0.0042
SVOC	Hexachlorobutadiene	mg/kg dry-wt	18	0	0%	3.21E-04	0.0035	--	--	8.74E-04
SVOC	Hexachlorocyclopentadiene	mg/kg dry-wt	20	0	0%	0.0017	0.040	--	--	0.012
SVOC	Hexachloroethane	mg/kg dry-wt	25	0	0%	0.0032	0.10	--	--	0.025
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg dry-wt	40	22	55%	8.10E-04	0.84	0.0050	0.92	0.052
SVOC	Isophorone	mg/kg dry-wt	32	1	3%	0.0029	1.5	0.0040	0.0040	0.068
SVOC	Naphthalene	mg/kg dry-wt	37	19	51%	0.0021	0.84	0.0010	0.11	0.037
SVOC	Nitrobenzene	mg/kg dry-wt	20	0	0%	0.0018	0.020	--	--	0.0062
SVOC	N-Nitrosodi-n-dipropylamine	mg/kg dry-wt	5	0	0%	0.0026	0.0028	--	--	0.0014
SVOC	N-Nitrosodiphenylamine	mg/kg dry-wt	10	0	0%	8.00E-04	0.0012	--	--	4.97E-04
SVOC	Pentachlorophenol	mg/kg dry-wt	25	0	0%	0.0015	0.10	--	--	0.024
SVOC	Phenanthrene	mg/kg dry-wt	40	30	75%	7.10E-04	0.0011	0.0010	0.58	0.036
SVOC	Phenol	mg/kg dry-wt	25	0	0%	0.0040	0.040	--	--	0.010
SVOC	Pyrene	mg/kg dry-wt	40	29	73%	6.10E-04	0.12	0.0050	2.5	0.11

CONV - Conventional parameter
PEST - Pesticide
PCB - Polychlorinated biphenyl
RAD_D - Decayed radionuclide
SVOC - Semivolatile Organic Compound

Table E-5
Summary Statistics for Sediment Samples Collected from the Willamette River Tributary to Segment 5 of the Columbia River (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Total Organic Carbon	%	13	13	100%	--	--	0.13	4.0	1.8
CONV	Total Volatile Solids	%	16	16	100%	--	--	0.70	10	5.7
METAL	Arsenic	mg/kg	4	4	100%	--	--	1.0	2.7	1.8
METAL	Cadmium	mg/kg	4	4	100%	--	--	0.10	0.50	0.28
METAL	Chromium	mg/kg	4	4	100%	--	--	11	18	14
METAL	Copper	mg/kg	4	4	100%	--	--	8.0	16	12
METAL	Lead	mg/kg	4	4	100%	--	--	3.4	11	7.3
METAL	Mercury	mg/kg	4	4	100%	--	--	0.030	0.060	0.040
METAL	Nickel	mg/kg	4	4	100%	--	--	9.0	17	12
METAL	Silver	mg/kg	4	4	100%	--	--	0.040	0.11	0.068
METAL	Zinc	mg/kg	4	4	100%	--	--	35	92	67
PCB	Aroclor-1242	mg/kg	4	0	0%	0.010	0.010	--	--	0.0050
PCB	Aroclor-1254	mg/kg	4	0	0%	0.010	0.010	--	--	0.0050
PCB	Aroclor-1260	mg/kg	4	1	25%	0.010	0.010	0.0050	0.0050	0.0050
PEST	Bromine	mg/kg	10	10	100%	--	--	0.0052	0.015	0.0099
PEST	Chlordane	mg/kg	4	0	0%	0.010	0.010	--	--	0.0050
PEST	Chlorine	mg/kg	10	10	100%	--	--	0.12	2.4	0.77
PEST	Dichlorodiphenyldichloroethane	mg/kg	4	2	50%	0.0020	0.0020	7.00E-04	0.0010	9.25E-04
PEST	Dichlorodiphenyldichloroethylene	mg/kg	4	2	50%	0.0020	0.0020	4.00E-04	7.00E-04	7.75E-04
PEST	Dichlorodiphenyltrichloroethane	mg/kg	4	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Dieldrin	mg/kg	4	0	0%	0.0020	0.0050	--	--	0.0014
SVOC	2-Methylnaphthalene	mg/kg	4	4	100%	--	--	0.0010	0.0040	0.0025
SVOC	Acenaphthene	mg/kg	4	3	75%	0.0050	0.0050	9.00E-04	0.0030	0.0019
SVOC	Acenaphthylene	mg/kg	4	4	100%	--	--	5.00E-04	0.0050	0.0021
SVOC	Anthracene	mg/kg	4	4	100%	--	--	0.0010	0.0060	0.0023
SVOC	Benzo(a)anthracene	mg/kg	4	4	100%	--	--	0.0020	0.044	0.014
SVOC	Benzo(a)pyrene	mg/kg	4	4	100%	--	--	0.0050	0.10	0.032
SVOC	Benzo(b+k)fluoranthene	mg/kg	4	4	100%	--	--	0.0060	0.12	0.039
SVOC	Benzo(ghi)perylene	mg/kg	4	4	100%	--	--	0.0060	0.077	0.026
SVOC	Chrysene	mg/kg	4	4	100%	--	--	0.0020	0.052	0.016
SVOC	Dibenz[a,h]anthracene	mg/kg	4	4	100%	--	--	0.0020	0.013	0.0058
SVOC	Fluoranthene	mg/kg	4	4	100%	--	--	0.0040	0.071	0.023
SVOC	Fluorene	mg/kg	4	4	100%	--	--	7.00E-04	0.0030	0.0014
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	4	4	100%	--	--	0.0060	0.076	0.025
SVOC	Naphthalene	mg/kg	4	4	100%	--	--	0.0010	0.0040	0.0020
SVOC	Phenanthrene	mg/kg	4	4	100%	--	--	0.0040	0.020	0.0085
SVOC	Pyrene	mg/kg	4	4	100%	--	--	0.0050	0.096	0.030

CONV - Conventional parameter
PEST - Pesticide
PCB - Polychlorinated biphenyl
SVOC - Semivolatile Organic Compound

Table E-6**Summary Statistics for Category 1 Sediment Samples Collected from the Kalama River Tributary to Segment 5 of the Columbia River (units reported "as received")**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD_D	Cesium-134	pCi/g	2	2	100%	--	--	25	25	25
RAD_D	Iodine-131	pCi/g	2	2	100%	--	--	1.31E-174	1.31E-174	1.31E-174

RAD_D - Decayed radionuclide

Table E-7
Summary Statistics for Category 1 Sediment Samples Collected from the Skipanon Federal Channel Tributary to Segment 5 of the Columbia River (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Antimony	mg/kg	7	7	100%	--	--	0.75	3.6	1.9
METAL	Arsenic	mg/kg	11	11	100%	--	--	6.6	11	9.0
METAL	Cadmium	mg/kg	11	8	73%	0.56	0.71	0.85	3.3	1.7
METAL	Chromium	mg/kg	4	4	100%	--	--	18	32	25
METAL	Copper	mg/kg	11	11	100%	--	--	32	76	52
METAL	Lead	mg/kg	11	11	100%	--	--	13	26	21
METAL	Mercury	mg/kg	11	11	100%	--	--	0.097	0.56	0.16
METAL	Nickel	mg/kg	11	11	100%	--	--	14	25	20
METAL	Silver	mg/kg	11	7	64%	0.43	0.71	0.38	1.6	0.59
METAL	Zinc	mg/kg	11	11	100%	--	--	90	200	150
PEST	Dichlorodiphenyldichloroethane	mg/kg	11	5	45%	3.40E-04	0.0028	8.70E-04	0.0048	0.0018
PEST	Dichlorodiphenyldichloroethylene	mg/kg	11	6	55%	5.30E-04	0.0028	0.0010	0.0039	0.0018
PEST	Dichlorodiphenyltrichloroethane	mg/kg	11	0	0%	4.40E-04	0.0028	--	--	6.12E-04
SVOC	2,6-Dinitrotoluene	mg/kg	7	7	100%	--	--	0.012	0.021	0.016
SVOC	2-Methylnaphthalene	mg/kg	11	0	0%	3.30E-04	0.0071	--	--	0.0012
SVOC	3&4-Methylphenol (Cresol, m+p)	mg/kg	4	1	25%	0.045	0.057	0.057	0.057	0.033
SVOC	Acenaphthene	mg/kg	11	3	27%	0.0011	0.0022	0.0044	0.0058	0.0020
SVOC	Acenaphthylene	mg/kg	11	3	27%	9.30E-04	0.0025	0.0034	0.0099	0.0021
SVOC	Anthracene	mg/kg	11	4	36%	5.40E-04	9.00E-04	0.0044	0.011	0.0034
SVOC	Benzo(a)anthracene	mg/kg	11	11	100%	--	--	0.0032	0.030	0.012
SVOC	Benzo(a)pyrene	mg/kg	11	10	91%	0.0029	0.0029	0.0043	0.043	0.018
SVOC	Benzo(b)fluoranthene	mg/kg	6	6	100%	--	--	0.0048	0.020	0.012
SVOC	Benzo(ghi)perylene	mg/kg	11	8	73%	4.20E-04	0.0022	0.0028	0.032	0.011
SVOC	Benzo(k)fluoranthene	mg/kg	7	5	71%	0.0011	0.0012	0.0026	0.0060	0.0031
SVOC	Benzofluoranthene	mg/kg	4	3	75%	0.0056	0.0056	0.044	0.066	0.043
SVOC	Benzoic acid	mg/kg	6	0	0%	0.0072	0.012	--	--	0.0047
SVOC	Bis(2-ethylhexyl) phthalate	mg/kg	11	11	100%	--	--	0.035	0.11	0.057
SVOC	Butylbenzylphthalate	mg/kg	7	7	100%	--	--	0.0053	0.033	0.016
SVOC	Chrysene	mg/kg	11	11	100%	--	--	0.0058	0.038	0.020
SVOC	Dibenz[a,h]anthracene	mg/kg	11	0	0%	5.00E-04	0.0037	--	--	7.73E-04
SVOC	Dibenzofuran	mg/kg	7	0	0%	0.0025	0.0041	--	--	0.0016
SVOC	Diethylphthalate	mg/kg	4	1	25%	0.019	0.028	0.026	0.026	0.015
SVOC	Di-n-butylphthalate	mg/kg	4	0	0%	0.019	0.028	--	--	0.012
SVOC	Fluoranthene	mg/kg	11	11	100%	--	--	0.0070	0.068	0.028
SVOC	Fluorene	mg/kg	11	2	18%	0.0010	0.0028	0.0075	0.0095	0.0022
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	10	4	40%	5.60E-04	0.0029	0.0051	0.028	0.0070
SVOC	Naphthalene	mg/kg	11	4	36%	0.0010	0.0017	0.0032	0.012	0.0027
SVOC	Phenanthrene	mg/kg	11	11	100%	--	--	0.0035	0.032	0.012
SVOC	Pyrene	mg/kg	11	11	100%	--	--	0.0066	0.056	0.029

PEST - Pesticide
SVOC - Semivolatile Organic Compound

Table E-8
Comparison of Segment 5 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
CONV	Bromine	mg/kg	24	19	79%	0.017	--	--	--	--	--	--	--	--	--	6
CONV	Chlorine	mg/kg	24	14	58%	2.4	--	--	--	--	--	--	8,000	No	2.98E-04	0
CONV	Nitrogen in ammonia	mg/kg	8	8	100%	414	--	--	--	--	--	--	--	--	--	--
METAL	Aluminum	mg/kg	3	3	100%	498	11,800	No	--	--	--	--	76,142	No	0.0065	0
METAL	Antimony	mg/kg	36	25	69%	3.6	5.0	No	2.0	Yes	1.8	3	31	No	0.12	0
METAL	Arsenic	mg/kg	72	72	100%	11	6.5	Yes	6.0	Yes	1.8	12	0.39	Yes	28	69
METAL	Beryllium	mg/kg	3	2	67%	0.077	1.5	No	--	--	--	--	154	No	4.96E-04	2
METAL	Cadmium	mg/kg	71	31	44%	3.3	0.81	Yes	0.60	Yes	5.5	33	37	No	0.089	0
METAL	Chromium	mg/kg	49	49	100%	35	19	Yes	37	No	0.93	0	30	Yes	1.1	1
METAL	Copper	mg/kg	71	71	100%	76	22	Yes	32	Yes	2.4	16	2,960	No	0.026	0
METAL	Lead	mg/kg	73	73	100%	140	10	Yes	35	Yes	4.0	2	250	No	0.56	0
METAL	Mercury	mg/kg	72	38	53%	0.56	0.33	Yes	0.18	Yes	3.1	3	23	No	0.024	0
METAL	Nickel	mg/kg	71	71	100%	27	19	Yes	18	Yes	1.5	15	1,564	No	0.017	0
METAL	Silver	mg/kg	72	28	39%	2.3	0.73	Yes	4.5	No	0.52	0	391	No	0.0060	0
METAL	Thallium	mg/kg	3	3	100%	0.094	--	--	--	--	--	--	5.2	No	0.018	0
METAL	Zinc	mg/kg	72	71	99%	200	68	Yes	120	Yes	1.7	13	23,463	No	0.0085	0
PCB	Aroclor-1242	mg/kg	16	1	6%	0.019	--	--	0.021	No	0.92	0	0.22	No	0.087	0
PCB	Aroclor-1248	mg/kg	37	6	16%	1.4	--	--	0.021	Yes	67	6	0.22	Yes	6.3	1
PCB	Aroclor-1254	mg/kg	38	1	3%	0.024	--	--	0.0070	Yes	3.4	1	0.22	No	0.11	0
PCB	Aroclor-1260	mg/kg	38	2	5%	0.037	--	--	0.021	Yes	1.8	1	0.22	No	0.17	0
PEST	Aldrin	mg/kg	34	2	6%	6.00E-04	--	--	0.0020	No	0.30	0	0.029	No	0.021	0
PEST	Dichlorodiphenyldichloroethane	mg/kg	97	13	13%	0.0048	--	--	0.0040	Yes	1.2	2	2.4	No	0.0020	0
PEST	Dichlorodiphenyldichloroethylene	mg/kg	97	20	21%	0.0039	--	--	0.0015	Yes	2.6	7	1.7	No	0.0023	0
PEST	Dichlorodiphenyltrichloroethane	mg/kg	97	3	3%	0.0030	--	--	0.0042	No	0.72	0	1.7	No	0.0017	--
PEST	Endosulfan sulfate	mg/kg	29	2	7%	0.0030	--	--	--	--	--	--	--	--	--	0
PEST	Endrin ketone	mg/kg	29	1	3%	0.0047	--	--	--	--	--	--	--	--	--	--
PEST	Heptachlor	mg/kg	16	1	6%	0.0074	--	--	0.010	No	0.74	0	0.11	No	0.068	0
PEST	Methoxychlor	mg/kg	29	1	3%	0.0055	--	--	--	--	--	--	306	No	1.80E-05	0
RAD_D	Beryllium-7	pCi/g	1	1	100%	1.59E-28	--	--	--	--	--	--	--	--	--	--
RAD_D	Cerium-141	pCi/g	9	9	100%	3.77E-89	--	--	--	--	--	--	--	--	--	--
RAD_D	Cesium-137	pCi/g	53	53	100%	0.23	1.1	No	3,120	No	7.48E-05	0	6.2	No	0.038	0
RAD_D	Cobalt-60	pCi/g	51	51	100%	0.013	0.0084	Yes	1,460	No	9.02E-06	0	1.4	No	0.0094	0
RAD_D	Potassium-40	pCi/g	199	199	100%	30	17	Yes	--	--	--	--	--	--	--	--
RAD_D	Radium-226	pCi/g	44	44	100%	1.5	0.82	Yes	101	No	0.015	0	--	--	--	--
RAD_D	Ruthenium-106	pCi/g	70	70	100%	6.58E-10	--	--	--	--	--	--	--	--	--	--
RAD_D	Thorium-232	pCi/g	29	29	100%	1.00	1.3	No	1,300	No	7.69E-04	0	1.3	No	0.77	0
RAD_D	Zinc-65	pCi/g	95	95	100%	1.56E-12	--	--	--	--	--	--	--	--	--	--
RAD_D	Zirconium/Niobium-95	pCi/g	67	67	100%	2.43E-76	--	--	--	--	--	--	--	--	--	--
SVOC	1,2,4-Trichlorobenzene	mg/kg	11	8	73%	7.11E-04	--	--	--	--	--	--	62	No	1.14E-05	0
SVOC	1,2-Dichlorobenzene	mg/kg	11	2	18%	3.82E-04	--	--	--	--	--	--	600	No	6.37E-07	0
SVOC	1,4-Dichlorobenzene	mg/kg	11	1	9%	4.40E-04	--	--	--	--	--	--	3.4	No	1.28E-04	0
SVOC	2,4-Dimethylphenol	mg/kg	11	2	18%	0.0020	--	--	--	--	--	--	1,222	No	1.64E-06	0
SVOC	2,6-Dinitrotoluene	mg/kg	10	7	70%	0.021	--	--	--	--	--	--	61	No	3.44E-04	0
SVOC	2-Methylnaphthalene	mg/kg	80	33	41%	0.41	--	--	0.020	Yes	20	3	--	--	--	--
SVOC	2-Methylphenol (cresol, o-)	mg/kg	21	4	19%	0.015	--	--	--	--	--	--	3,055	No	4.75E-06	0
SVOC	3&4-Methylphenol (Cresol, m+p)	mg/kg	12	9	75%	0.057	--	--	--	--	--	--	--	--	--	--
SVOC	Acenaphthene	mg/kg	80	28	35%	0.11	--	--	0.0067	Yes	16	4	3,682	No	2.99E-05	0
SVOC	Acenaphthylene	mg/kg	80	30	38%	0.021	--	--	0.0059	Yes	3.6	3	4,800	No	4.38E-06	0
SVOC	Anthracene	mg/kg	80	34	43%	0.41	--	--	0.057	Yes	7.2	1	21,896	No	1.88E-05	0
SVOC	Benzo(a)anthracene	mg/kg	76	47	62%	0.096	--	--	0.032	Yes	3.0	7	0.62	No	0.15	0
SVOC	Benzo(a)pyrene	mg/kg	79	52	66%	0.10	--	--	0.032	Yes	3.2	10	0.062	Yes	1.7	2
SVOC	Benzo(b)fluoranthene	mg/kg	29	21	72%	0.044	--	--	0.24	No	0.18	0	0.62	No	0.070	0
SVOC	Benzo(b+k)fluoranthene	mg/kg	28	16	57%	0.12	--	--	--	--	--	--	--	--	--	--
SVOC	Benzo(ghi)perylene	mg/kg	80	52	65%	0.077	--	--	0.17	No	0.45	0	2,400	No	3.21E-05	0
SVOC	Benzo(k)fluoranthene	mg/kg	30	17	57%	0.027	--	--	0.027	No	1.0	0	6.2	No	0.0043	0
SVOC	Benzo(a)fluoranthene	mg/kg	4	3	75%	0.066	--	--	--	--	--	--	--	--	--	--
SVOC	Benzoic acid	mg/kg	31	19	61%	0.49	--	--	--	--	--	--	100,000	No	4.85E-06	0
SVOC	Benzyl alcohol	mg/kg	16	9	56%	0.069	--	--	--	--	--	--	18,331	No	3.76E-06	0
SVOC	Bis(2-ethylhexyl) phthalate	mg/kg	45	34	76%	0.21	--	--	0.64	No	0.32	0	35	No	0.0059	0
SVOC	Butylbenzylphthalate	mg/kg	27	22	81%	0.033	--	--	--	--	--	--	12,221	No	2.70E-06	0

Table E-8
Comparison of Segment 5 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "as received")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
SVOC	Chrysene	mg/kg	80	54	68%	0.13	--	--	0.057	Yes	2.3	4	62	No	0.0021	0
SVOC	Dibenz[a,h]anthracene	mg/kg	71	18	25%	0.016	--	--	0.033	No	0.49	0	0.062	No	0.26	0
SVOC	Dibenzofuran	mg/kg	18	6	33%	0.0042	--	--	5.1	No	8.20E-04	0	145	No	2.88E-05	0
SVOC	Diethylphthalate	mg/kg	25	10	40%	0.026	--	--	--	--	--	--	48,882	No	5.26E-07	0
SVOC	Dimethyl phthalate	mg/kg	11	3	27%	0.0035	--	--	--	--	--	--	80,000	No	4.41E-08	0
SVOC	Di-n-butylphthalate	mg/kg	30	20	67%	0.32	--	--	0.043	Yes	7.4	10	6,110	No	5.20E-05	0
SVOC	Di-n-octylphthalate	mg/kg	21	3	14%	0.023	--	--	--	--	--	--	1,600	No	1.44E-05	0
SVOC	Fluoranthene	mg/kg	75	55	73%	0.087	--	--	0.11	No	0.78	0	2,294	No	3.79E-05	0
SVOC	Fluorene	mg/kg	80	31	39%	0.10	--	--	0.077	Yes	1.3	2	2,747	No	3.71E-05	0
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	79	39	49%	0.076	--	--	0.017	Yes	4.5	8	0.62	No	0.12	0
SVOC	Naphthalene	mg/kg	80	47	59%	0.066	--	--	0.18	No	0.38	0	56	No	0.0012	0
SVOC	Pentachlorophenol	mg/kg	21	7	33%	0.039	--	--	--	--	--	--	3.0	No	0.013	0
SVOC	Phenanthrene	mg/kg	79	52	66%	0.33	--	--	0.042	Yes	7.9	5	--	--	--	--
SVOC	Phenol	mg/kg	21	9	43%	0.013	--	--	--	--	--	--	18,331	No	6.98E-07	0
SVOC	Pyrene	mg/kg	80	52	65%	0.17	--	--	0.053	Yes	3.1	8	2,316	No	7.12E-05	0
VOC	Acetone	mg/kg	3	3	100%	0.0024	--	--	--	--	--	--	14,000	No	1.73E-07	0
VOC	Methylene chloride	mg/kg	3	3	100%	0.0011	--	--	--	--	--	--	9.1	No	1.18E-04	0

CONV - Conventional parameter
PEST - Pesticide
PCB - Polychlorinated biphenyl
RAD_D - Decayed radionuclide
SVOC - Semivolatile Organic Compound

Table E-9
Comparison of Segment 5 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "dry weight")

													Human Health			
Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
CONV	Ammonia	mg/kg dry-wt	15	15	100%	64	--	--	--	--	--	--	--	--	--	--
CONV	Cyanide	mg/kg dry-wt	15	1	7%	0.17	--	--	--	--	--	--	1,222	No	1.41E-04	0
CONV	Sulfide	mg/kg dry-wt	15	15	100%	134	--	--	--	--	--	--	--	--	--	--
METAL	Aluminum	mg/kg dry-wt	27	27	100%	33,300	11,800	Yes	--	--	--	--	76,142	No	0.44	0
METAL	Antimony	mg/kg dry-wt	45	12	27%	3.9	5.0	No	2.0	Yes	2.0	1	31	No	0.12	0
METAL	Arsenic	mg/kg dry-wt	48	47	98%	14	6.5	Yes	6.0	Yes	2.3	6	0.39	Yes	35	47
METAL	Barium	mg/kg dry-wt	15	15	100%	186	132	Yes	--	--	--	--	5,375	No	0.035	0
METAL	Beryllium	mg/kg dry-wt	27	23	85%	1.2	1.5	No	--	--	--	--	154	No	0.0078	0
METAL	Cadmium	mg/kg dry-wt	48	37	77%	1.9	0.81	Yes	0.60	Yes	3.2	16	37	No	0.051	0
METAL	Chromium	mg/kg dry-wt	38	38	100%	31	19	Yes	37	No	0.84	0	30	Yes	1.0	1
METAL	Copper	mg/kg dry-wt	48	47	98%	75	22	Yes	32	Yes	2.4	6	2,960	No	0.025	0
METAL	Dibutyltin Dichloride	mg/kg dry-wt	15	4	27%	0.012	--	--	--	--	--	--	--	--	--	--
METAL	Iron	mg/kg dry-wt	27	27	100%	39,000	32,600	Yes	20,000	Yes	2.0	12	23,463	Yes	1.7	6
METAL	Lead	mg/kg dry-wt	46	34	74%	38	10	Yes	35	Yes	1.1	1	250	No	0.15	0
METAL	Manganese	mg/kg dry-wt	12	12	100%	330	512	No	460	No	0.72	0	1,762	No	0.19	0
METAL	Mercury	mg/kg dry-wt	48	34	71%	0.51	0.33	Yes	0.18	Yes	2.9	1	23	No	0.022	0
METAL	Monobutyltin Trichloride	mg/kg dry-wt	15	6	40%	0.015	--	--	--	--	--	--	--	--	--	--
METAL	Nickel	mg/kg dry-wt	48	47	98%	25	19	Yes	18	Yes	1.4	4	1,564	No	0.016	0
METAL	Silver	mg/kg dry-wt	48	21	44%	3.1	0.73	Yes	4.5	No	0.69	0	391	No	0.0079	0
METAL	Tin	mg/kg dry-wt	12	12	100%	21	--	--	--	--	--	--	46,924	No	4.48E-04	0
METAL	Tributyltin Chloride	mg/kg dry-wt	15	11	73%	0.034	--	--	--	--	--	--	--	--	--	--
METAL	Zinc	mg/kg dry-wt	48	47	98%	155	68	Yes	120	Yes	1.3	8	23,463	No	0.0066	0
PCB	Aroclor-1248	mg/kg dry-wt	25	1	4%	0.011	--	--	0.021	No	0.52	0	0.22	No	0.050	0
PEST	2,4'-DDD	mg/kg dry-wt	17	2	12%	0.0015	--	--	--	--	--	--	2.4	No	6.16E-04	0
PEST	2,4'-DDE	mg/kg dry-wt	16	1	6%	4.00E-04	--	--	--	--	--	--	1.7	No	2.33E-04	0
PEST	Dichlorodiphenyldichloroethane	mg/kg dry-wt	35	11	31%	0.0039	--	--	0.0040	No	0.98	0	2.4	No	0.0016	0
PEST	Dichlorodiphenyldichloroethylene	mg/kg dry-wt	33	7	21%	0.030	--	--	0.0015	Yes	20	2	1.7	No	0.017	0
PEST	Dichlorodiphenyltrichloroethane	mg/kg dry-wt	33	1	3%	0.0028	--	--	0.0042	No	0.67	0	1.7	No	0.0016	0
PEST	Dieldrin	mg/kg dry-wt	26	1	4%	5.00E-04	--	--	0.0019	No	0.26	0	0.030	No	0.016	0
PEST	trans-Chlordane	mg/kg dry-wt	1	1	100%	2.00E-04	--	--	--	--	--	--	1.6	No	1.23E-04	0
PEST	trans-Nonachlor	mg/kg dry-wt	1	1	100%	2.00E-04	--	--	--	--	--	--	--	--	--	--
RAD_D	Americium-241	pCi/g dry-wt	1	1	100%	0.068	--	--	5,150	No	1.31E-05	0	31	No	0.0022	0
RAD_D	Cesium-137	pCi/g dry-wt	15	15	100%	0.13	1.1	No	3,120	No	4.28E-05	0	6.2	No	0.022	0
RAD_D	Cobalt-60	pCi/g dry-wt	3	3	100%	0.0045	0.0084	No	1,460	No	3.11E-06	0	1.4	No	0.0032	0
RAD_D	Plutonium-239/240	pCi/g dry-wt	7	7	100%	0.0100	0.025	No	5,860	No	1.71E-06	0	34	No	2.95E-04	0
SVOC	2-Methylnaphthalene	mg/kg dry-wt	37	26	70%	0.017	--	--	0.020	No	0.84	0	--	--	--	--
SVOC	4-Methylphenol (cresol, p-)	mg/kg dry-wt	15	1	7%	0.15	--	--	--	--	--	--	306	No	4.91E-04	0
SVOC	Acenaphthene	mg/kg dry-wt	40	23	58%	0.094	--	--	0.0067	Yes	14	5	3,682	No	2.55E-05	0
SVOC	Acenaphthylene	mg/kg dry-wt	38	13	34%	0.012	--	--	0.0059	Yes	2.0	1	4,800	No	2.50E-06	0
SVOC	Anthracene	mg/kg dry-wt	40	23	58%	0.46	--	--	0.057	Yes	8.1	1	21,896	No	2.10E-05	0
SVOC	Benzo(a)anthracene	mg/kg dry-wt	40	27	68%	2.2	--	--	0.032	Yes	69	9	0.62	Yes	3.5	1
SVOC	Benzo(a)pyrene	mg/kg dry-wt	40	24	60%	1.5	--	--	0.032	Yes	47	7	0.062	Yes	24	1
SVOC	Benzo(b)fluoranthene	mg/kg dry-wt	25	15	60%	1.8	--	--	0.24	Yes	7.5	1	0.62	Yes	2.9	1
SVOC	Benzo(ghi)perylene	mg/kg dry-wt	40	18	45%	1.1	--	--	0.17	Yes	6.5	1	2,400	No	4.58E-04	0
SVOC	Benzo(k)fluoranthene	mg/kg dry-wt	25	16	64%	0.91	--	--	0.027	Yes	34	5	6.2	No	0.15	0
SVOC	Bis(2-ethylhexyl) phthalate	mg/kg dry-wt	38	33	87%	1.9	--	--	0.64	Yes	3.0	1	35	No	0.055	0
SVOC	Butylbenzylphthalate	mg/kg dry-wt	37	5	14%	0.0020	--	--	--	--	--	--	12,221	No	1.64E-07	0
SVOC	Chrysene	mg/kg dry-wt	40	29	73%	4.1	--	--	0.057	Yes	72	8	62	No	0.066	0
SVOC	Dibenz[a,h]anthracene	mg/kg dry-wt	39	14	36%	0.40	--	--	0.033	Yes	12	1	0.062	Yes	6.4	1
SVOC	Dibenzofuran	mg/kg dry-wt	37	19	51%	0.028	--	--	5.1	No	0.0055	0	145	No	1.93E-04	0
SVOC	Diethylphthalate	mg/kg dry-wt	36	11	31%	0.17	--	--	--	--	--	--	48,882	No	3.48E-06	0
SVOC	Di-n-butylphthalate	mg/kg dry-wt	37	13	35%	0.84	--	--	0.043	Yes	20	1	6,110	No	1.37E-04	0
SVOC	Di-n-octylphthalate	mg/kg dry-wt	37	11	30%	0.072	--	--	--	--	--	--	1,600	No	4.50E-05	0
SVOC	Fluoranthene	mg/kg dry-wt	40	29	73%	2.1	--	--	0.11	Yes	19	2	2,294	No	9.16E-04	0
SVOC	Fluorene	mg/kg dry-wt	40	27	68%	0.049	--	--	0.077	No	0.64	0	2,747	No	1.78E-05	0
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg dry-wt	40	22	55%	0.92	--	--	0.017	Yes	54	11	0.62	Yes	1.5	1
SVOC	Isophorone	mg/kg dry-wt	32	1	3%	0.0040	--	--	--	--	--	--	512	No	7.81E-06	0
SVOC	Naphthalene	mg/kg dry-wt	37	19	51%	0.11	--	--	0.18	No	0.63	0	56	No	0.0020	0
SVOC	Phenanthrene	mg/kg dry-wt	40	30	75%	0.58	--	--	0.042	Yes	14	6	--	--	--	--
SVOC	Pyrene	mg/kg dry-wt	40	29	73%	2.5	--	--	0.053	Yes	47	20	2,316	No	0.0011	0

Table E-9
Comparison of Segment 5 Detected Sediment Concentrations to Ecological and Human Health Benchmark Values (units reported "dry weight")

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Maximum Detect	Background Value	Is Max > Background?	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
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CONV - Conventional parameter
PEST - Pesticide
PCB - Polychlorinated biphenyl
RAD_D - Decayed radionuclide
SVOC - Semivolatile Organic Compound

Table E-10
Summary of Surface Sediment Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Eco Benchmark Value	HH Benchmark Value
Columbia River	Oregon Slough	0205-OS-VC-01	February 17, 2005	2-Methylnaphthalene	mg/kg	1	0.405	E	0.02	--
Columbia River	RM 86.5	SH-VC-4	May 4, 1989	2-Methylnaphthalene	mg/kg	3	0.037	=	0.02	--
Columbia River	RM 86.5	SH-VC-5	May 4, 1989	2-Methylnaphthalene	mg/kg	3	0.07	=	0.02	--
Columbia River	Oregon Slough	0205-OS-VC-01	February 17, 2005	Acenaphthene	mg/kg	1	0.0257	=	0.0067	3,682
Columbia River	Oregon Slough	0205-OS-VC-06Z	February 17, 2005	Acenaphthene	mg/kg	1	0.0109	=	0.0067	3,682
Columbia River	Vancouver WA	88-398-304	July 22, 1987	Acenaphthene	mg/kg dry	2	0.009	J	0.0067	3,682
Columbia River	Longview Fibre	88-398-306	July 23, 1987	Acenaphthene	mg/kg dry	2	0.024	J	0.0067	3,682
Columbia River	Longview WA	88-398-309	July 23, 1987	Acenaphthene	mg/kg dry	2	0.094	J	0.0067	3,682
Columbia River	Ilwaco Boat Bsn	88-398-311	July 24, 1987	Acenaphthene	mg/kg dry	2	0.014	J	0.0067	3,682
Columbia River	Crims Island	CRIM-SG-02	July 15, 2003	Acenaphthene	mg/kg	1	0.11	=	0.0067	3,682
Columbia River	RM 86.5	SH-VC-5	May 4, 1989	Acenaphthene	mg/kg	3	0.019	=	0.0067	3,682
Columbia River	RM 82	Will-1	September 10, 1997	Acenaphthene	mg/kg dry	2	0.014	=	0.0067	3,682
Columbia River	Ilwaco Boat Bsn	88-398-311	July 24, 1987	Acenaphthylene	mg/kg dry	2	0.012	J	0.0059	4,800
Columbia River	Crims Island	CRIM-SG-03	July 15, 2003	Acenaphthylene	mg/kg	1	0.00869	=	0.0059	4,800
Skipanon Federal Channel	Warrenton OR	SBIO-GC-04	June 24, 2003	Acenaphthylene	mg/kg	1	0.00987	=	0.0059	4,800
Columbia River	RM 86.5	SH-VC-5	May 4, 1989	Acenaphthylene	mg/kg	3	0.021	=	0.0059	4,800
Columbia River	Longview WA	88-398-309	July 23, 1987	Anthracene	mg/kg dry	2	0.46	J	0.057	21,896
Columbia River	Bachelor Slough	BACH-GC-10	June 3, 2003	Anthracene	mg/kg	1	0.411	=	0.057	21,896
Columbia River	RM 29	CRM-BC2	August 9, 2000	Antimony	mg/kg dry	1	3.9	B	2	0.39
Skipanon Federal channel	Warrenton OR	SKIP-GC-02	September 12, 2001	Antimony	mg/kg	1	3.6	BC	2	0.39
Skipanon Federal channel	Warrenton OR	SKIP-GC-03	September 12, 2001	Antimony	mg/kg	1	2.8	BC	2	0.39
Skipanon Federal channel	Warrenton OR	SKIP-GC-04	September 12, 2001	Antimony	mg/kg	1	2.2	BC	2	0.39
Columbia River	RM 103	V-PG-02	June 20, 2001	Aroclor-1248	mg/kg	1	0.22	=	0.021	0.22
Columbia River	RM 103	V-PG-03	June 20, 2001	Aroclor-1248	mg/kg	1	0.27	=	0.021	0.22
Columbia River	RM 103	V-PG-04	June 20, 2001	Aroclor-1248	mg/kg	1	0.12	=	0.021	0.22
Columbia River	RM 103	V-PG-05	June 20, 2001	Aroclor-1248	mg/kg	1	0.26	=	0.021	0.22
Columbia River	RM 103	V-PG-06	June 20, 2001	Aroclor-1248	mg/kg	1	1.4	=	0.021	0.22
Columbia River	RM 103	V-PG-07	June 20, 2001	Aroclor-1248	mg/kg	1	0.097	D	0.021	0.22
Columbia River	RM 100	CR-BC-76	June 3, 1997	Aroclor-1254	mg/kg	1	0.024	=	0.007	0.22
Columbia River	RM 100	CR-BC-76	June 3, 1997	Aroclor-1260	mg/kg	1	0.037	=	0.021	0.22
Columbia River	Oregon Slough	0205-OS-VC-01	February 17, 2005	Arsenic	mg/kg dry	1	4.45	=	6	0.39
Columbia River	Oregon Slough	0205-OS-VC-03	February 17, 2005	Arsenic	mg/kg dry	1	2.76	=	6	0.39
Columbia River	Oregon Slough	0205-OS-VC-03A	February 17, 2005	Arsenic	mg/kg dry	1	3.07	=	6	0.39
Columbia River	Oregon Slough	0205-OS-VC-04	February 17, 2005	Arsenic	mg/kg dry	1	3.14	=	6	0.39
Columbia River	Oregon Slough	0205-OS-VC-05	February 17, 2005	Arsenic	mg/kg dry	1	2.46	=	6	0.39
Columbia River	Oregon Slough	0205-OS-VC-06	February 17, 2005	Arsenic	mg/kg dry	1	2.53	=	6	0.39
Columbia River	Oregon Slough	0205-OS-VC-06Z	February 17, 2005	Arsenic	mg/kg dry	1	3.85	=	6	0.39
Columbia River	RM 88	10-S	June 28, 1993	Arsenic	mg/kg dry	1	13.6	=	6	0.39
Columbia River	RM 90	11-S	June 29, 1993	Arsenic	mg/kg dry	1	3.6	=	6	0.39
Columbia River	RM 95	12-S	June 30, 1993	Arsenic	mg/kg dry	1	8.6	=	6	0.39
Columbia River	RM 120	13-S	July 1, 1993	Arsenic	mg/kg dry	1	6.2	=	6	0.39
Columbia River	RM 124	14-S	July 1, 1993	Arsenic	mg/kg dry	1	4.4	E	6	0.39
Columbia River	RM 141	15-S	June 30, 1993	Arsenic	mg/kg dry	1	3.7	=	6	0.39
Columbia River	RM 14	1-S	June 28, 1993	Arsenic	mg/kg dry	1	4.6	=	6	0.39
Columbia River	RM 21	2-S	June 27, 1993	Arsenic	mg/kg dry	1	9.7	=	6	0.39
Columbia River	RM 23	3-S	June 27, 1993	Arsenic	mg/kg dry	1	4.7	=	6	0.39
Columbia River	RM 26	4-S	June 26, 1993	Arsenic	mg/kg dry	1	3.9	=	6	0.39
Columbia River	RM 29	5-S	June 26, 1993	Arsenic	mg/kg dry	1	4.3	=	6	0.39
Columbia River	RM 36	6-S	June 25, 1993	Arsenic	mg/kg dry	1	4.5	=	6	0.39

Table E-10
Summary of Surface Sediment Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Eco Benchmark Value	HH Benchmark Value
Columbia River	RM 59	7-S	June 25, 1993	Arsenic	mg/kg dry	1	3.8	=	6	0.39
Columbia River	Reed Island	88-398-300	July 22, 1987	Arsenic	mg/kg dry	2	2.1	=	6	0.39
Columbia River	Camas Slough	88-398-301	July 22, 1987	Arsenic	mg/kg dry	2	7.2	=	6	0.39
Columbia River	Camas Slough	88-398-302	July 22, 1987	Arsenic	mg/kg dry	2	7.2	=	6	0.39
Columbia River	Vancouver WA	88-398-303	July 22, 1987	Arsenic	mg/kg dry	2	3.8	=	6	0.39
Columbia River	Vancouver WA	88-398-304	July 22, 1987	Arsenic	mg/kg dry	2	3.4	=	6	0.39
Columbia River	Kalama ChemPier	88-398-305	July 22, 1987	Arsenic	mg/kg dry	2	2.4	=	6	0.39
Columbia River	Longview Fibre	88-398-306	July 23, 1987	Arsenic	mg/kg dry	2	0.8	=	6	0.39
Columbia River	Longview WA	88-398-307	July 23, 1987	Arsenic	mg/kg dry	2	1.1	=	6	0.39
Columbia River	Longview WA	88-398-308	July 23, 1987	Arsenic	mg/kg dry	2	1	=	6	0.39
Columbia River	Longview WA	88-398-309	July 23, 1987	Arsenic	mg/kg dry	2	1.1	=	6	0.39
Columbia River	Coal Creek Slg	88-398-310	July 23, 1987	Arsenic	mg/kg dry	2	1.3	=	6	0.39
Columbia River	Ilwaco Boat Bsn	88-398-311	July 24, 1987	Arsenic	mg/kg dry	2	9.1	=	6	0.39
Columbia River	RM 68	8-S	June 24, 1993	Arsenic	mg/kg dry	1	4.3	=	6	0.39
Columbia River	RM 81	9-S	June 29, 1993	Arsenic	mg/kg dry	1	4.6	=	6	0.39
Columbia River	Bachelor Slough	BACH-BC-01	June 3, 2003	Arsenic	mg/kg	1	4.36	=	6	0.39
Columbia River	Bachelor Slough	BACH-BC-02	June 3, 2003	Arsenic	mg/kg	1	3.5	=	6	0.39
Columbia River	Bachelor Slough	BACH-BC-03	June 3, 2003	Arsenic	mg/kg	1	2.14	=	6	0.39
Columbia River	Bachelor Slough	BACH-BC-04	June 3, 2003	Arsenic	mg/kg	1	2.34	=	6	0.39
Columbia River	Bachelor Slough	BACH-BC-05	June 3, 2003	Arsenic	mg/kg	1	1.24	=	6	0.39
Columbia River	Bachelor Slough	BACH-BC-06	June 3, 2003	Arsenic	mg/kg	1	2.89	=	6	0.39
Columbia River	Bachelor Slough	BACH-BC-07	June 3, 2003	Arsenic	mg/kg	1	4.22	=	6	0.39
Columbia River	Bachelor Slough	BACH-BC-08	June 3, 2003	Arsenic	mg/kg	1	6.86	=	6	0.39
Columbia River	Bachelor Slough	BACH-BC-09	June 3, 2003	Arsenic	mg/kg	1	2.97	=	6	0.39
Columbia River	Bachelor Slough	BACH-GC-10	June 3, 2003	Arsenic	mg/kg	1	3.22	=	6	0.39
Columbia River	STA CR-BC-76	CR76-PG-01	June 1, 1997	Arsenic	mg/kg	1	1.2	=	6	0.39
Columbia River	STA CR-BC-76	CR76-PG-02	June 1, 1997	Arsenic	mg/kg	1	1.2	=	6	0.39
Columbia River	STA CR-BC-76	CR76-PG-03	June 1, 1997	Arsenic	mg/kg	1	1.4	=	6	0.39
Columbia River	RM 33	CR-BC-22	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 39	CR-BC-24	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 40	CR-BC-25	June 3, 1997	Arsenic	mg/kg	1	1	=	6	0.39
Columbia River	RM 57	CR-BC-35	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 63	CR-BC-40	June 3, 1997	Arsenic	mg/kg	1	1	=	6	0.39
Columbia River	RM 64	CR-BC-41	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 11	CR-BC-5	June 3, 1997	Arsenic	mg/kg	1	3	=	6	0.39
Columbia River	RM 76	CR-BC-52	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 82	CR-BC-55	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 83	CR-BC-56	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 83	CR-BC-57	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 85	CR-BC-59	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 86	CR-BC-61	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 12	CR-BC-7	June 3, 1997	Arsenic	mg/kg	1	3	=	6	0.39
Columbia River	RM 99	CR-BC-73	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 99	CR-BC-74	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 99	CR-BC-75	June 3, 1997	Arsenic	mg/kg	1	1	=	6	0.39
Columbia River	RM 100	CR-BC-76	June 3, 1997	Arsenic	mg/kg	1	3	=	6	0.39
Columbia River	RM 103	CR-BC-80	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 104	CR-BC-84	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39
Columbia River	RM 104	CR-BC-85	June 3, 1997	Arsenic	mg/kg	1	2	=	6	0.39

Table E-10
Summary of Surface Sediment Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Eco Benchmark Value	HH Benchmark Value
Columbia River	RM 105	CR-BC-86	June 3, 1997	Arsenic	mg/kg	1	1	=	6	0.39
Columbia River	RM 106	CR-BC-88	June 3, 1997	Arsenic	mg/kg	1	1	=	6	0.39
Columbia River	Crims Island	CRIM-SG-01	July 15, 2003	Arsenic	mg/kg	1	2.28	=	6	0.39
Columbia River	Crims Island	CRIM-SG-02	July 15, 2003	Arsenic	mg/kg	1	7.94	=	6	0.39
Columbia River	Crims Island	CRIM-SG-03	July 15, 2003	Arsenic	mg/kg	1	9.21	=	6	0.39
Columbia River	Crims Island	CRIM-SG-04	July 15, 2003	Arsenic	mg/kg	1	3.02	=	6	0.39
Columbia River	Crims Island	CRIM-SG-05	July 15, 2003	Arsenic	mg/kg	1	5.81	=	6	0.39
Columbia River	RM 29	CRM-BC1	August 9, 2000	Arsenic	mg/kg dry	1	2.1	=	6	0.39
Columbia River	RM 29	CRM-BC2	August 9, 2000	Arsenic	mg/kg dry	1	2	=	6	0.39
Columbia River	RM 29	CRM-BC3	August 9, 2000	Arsenic	mg/kg dry	1	1.8	=	6	0.39
Columbia River	RM 29	CRM-BC4	August 9, 2000	Arsenic	mg/kg dry	1	1.6	=	6	0.39
Columbia River	RM 29	CRM-BC5	August 9, 2000	Arsenic	mg/kg dry	1	1.9	=	6	0.39
Columbia River	RM 29	CRM-VC-01	September 7, 2000	Arsenic	mg/kg dry	1	2.2	=	6	0.39
Columbia River	RM 29	CRM-VC-02	September 7, 2000	Arsenic	mg/kg dry	1	2.1	=	6	0.39
Columbia River	RM 29	CRM-VC-03	September 7, 2000	Arsenic	mg/kg dry	1	2.1	=	6	0.39
Columbia River	RM 29	CRM-VC-04	September 7, 2000	Arsenic	mg/kg dry	1	1.8	=	6	0.39
Columbia River	RM 29	CRM-VC-05	September 7, 2000	Arsenic	mg/kg dry	1	1.9	=	6	0.39
Columbia River	RM 73.9-74.8	KR-BC-01	September 10, 2003	Arsenic	mg/kg	1	2.02	=	6	0.39
Columbia River	RM 73.9-74.8	KR-BC-04	September 10, 2003	Arsenic	mg/kg	1	1.78	=	6	0.39
Columbia River	RM 73.9-74.8	KR-BC-04A	September 10, 2003	Arsenic	mg/kg	1	1.82	=	6	0.39
Cowlitz River	OM Cowlitz Rvr	OMCR-BC-04	September 10, 2003	Arsenic	mg/kg	1	1.41	=	6	0.39
Cowlitz River	OM Cowlitz Rvr	OMCR-GC-01	September 10, 2003	Arsenic	mg/kg	1	2.94	=	6	0.39
Cowlitz River	OM Cowlitz Rvr	OMCR-GC-02	September 10, 2003	Arsenic	mg/kg	1	2.28	=	6	0.39
Cowlitz River	OM Cowlitz Rvr	OMCR-GC-03	September 10, 2003	Arsenic	mg/kg	1	1.9	=	6	0.39
Columbia River	Oregon Slough	OR-VC-01	June 19, 2001	Arsenic	mg/kg	1	0.93	B	6	0.39
Columbia River	Oregon Slough	OR-VC-02	June 19, 2001	Arsenic	mg/kg	1	1.6	=	6	0.39
Columbia River	Oregon Slough	OR-VC-03	June 19, 2001	Arsenic	mg/kg	1	0.96	B	6	0.39
Columbia River	Oregon Slough	OR-VC-04	June 19, 2001	Arsenic	mg/kg	1	1.9	=	6	0.39
Skipanon Federal Channel	Warrenton OR	SBIO-GC-01	June 24, 2003	Arsenic	mg/kg	1	8.96	=	6	0.39
Skipanon Federal Channel	Warrenton OR	SBIO-GC-02	June 24, 2003	Arsenic	mg/kg	1	7.51	=	6	0.39
Skipanon Federal Channel	Warrenton OR	SBIO-GC-03	June 24, 2003	Arsenic	mg/kg	1	8.95	=	6	0.39
Skipanon Federal Channel	Warrenton OR	SBIO-GC-04	June 24, 2003	Arsenic	mg/kg	1	9	=	6	0.39
Columbia River	RM 86.5	SH-VC-4	May 4, 1989	Arsenic	mg/kg dry	3	2.1	=	6	0.39
Columbia River	RM 86.5	SH-VC-5	May 4, 1989	Arsenic	mg/kg dry	3	2.6	=	6	0.39
Columbia River	RM 86.5	SH-VC-6	May 4, 1989	Arsenic	mg/kg dry	3	2.8	=	6	0.39
Skipanon Federal channel	Warrenton OR	SKIP-GC-01	September 12, 2001	Arsenic	mg/kg	1	10	=	6	0.39
Skipanon Federal channel	Warrenton OR	SKIP-GC-02	September 12, 2001	Arsenic	mg/kg	1	10	=	6	0.39
Skipanon Federal channel	Warrenton OR	SKIP-GC-03	September 12, 2001	Arsenic	mg/kg	1	11	=	6	0.39
Skipanon Federal channel	Warrenton OR	SKIP-GC-04	September 12, 2001	Arsenic	mg/kg	1	11	=	6	0.39
Skipanon Federal channel	Warrenton OR	SKIP-GC-05	September 12, 2001	Arsenic	mg/kg	1	9.6	=	6	0.39
Skipanon Federal channel	Warrenton OR	SKIP-GC-06	September 12, 2001	Arsenic	mg/kg	1	6.9	=	6	0.39
Skipanon Federal channel	Warrenton OR	SKIP-GC-07	September 12, 2001	Arsenic	mg/kg	1	6.6	=	6	0.39
Columbia River	RM 103	V-VC-01A	June 20, 2001	Arsenic	mg/kg	1	0.98	B	6	0.39
Columbia River	RM 103	V-VC-01B	June 20, 2001	Arsenic	mg/kg	1	0.86	B	6	0.39
Willamette River	RM 0.1 - mouth	WR-BC-1	July 24, 1997	Arsenic	mg/kg	1	1	=	6	0.39
Willamette River	RM 0.4 - mouth	WR-BC-3	July 24, 1997	Arsenic	mg/kg	1	2.7	=	6	0.39
Willamette River	RM 0.1 - mouth	WR-GC-2A	July 24, 1997	Arsenic	mg/kg	1	2.4	=	6	0.39
Willamette River	RM 0.1 - mouth	WR-GC-2B	July 24, 1997	Arsenic	mg/kg	1	1.1	=	6	0.39
Columbia River	RM 88	10-S	June 28, 1993	Benzo(a)anthracene	mg/kg dry	1	0.04	=	0.032	0.62

Table E-10
Summary of Surface Sediment Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Eco Benchmark Value	HH Benchmark Value
Columbia River	RM 124	14-S	July 1, 1993	Benzo(a)anthracene	mg/kg dry	1	0.037	=	0.032	0.62
Columbia River	Vancouver WA	88-398-303	July 22, 1987	Benzo(a)anthracene	mg/kg dry	2	0.062	J	0.032	0.62
Columbia River	Vancouver WA	88-398-304	July 22, 1987	Benzo(a)anthracene	mg/kg dry	2	0.045	J	0.032	0.62
Columbia River	Longview WA	88-398-307	July 23, 1987	Benzo(a)anthracene	mg/kg dry	2	0.066	J	0.032	0.62
Columbia River	Longview WA	88-398-309	July 23, 1987	Benzo(a)anthracene	mg/kg dry	2	2.2	=	0.032	0.62
Columbia River	Ilwaco Boat Bsn	88-398-311	July 24, 1987	Benzo(a)anthracene	mg/kg dry	2	0.18	J	0.032	0.62
Columbia River	RM 81	9-S	June 29, 1993	Benzo(a)anthracene	mg/kg dry	1	0.044	=	0.032	0.62
Columbia River	RM 83	CR-BC-57	June 3, 1997	Benzo(a)anthracene	mg/kg	1	0.036	=	0.032	0.62
Columbia River	RM 100	CR-BC-76	June 3, 1997	Benzo(a)anthracene	mg/kg	1	0.038	=	0.032	0.62
Columbia River	Crims Island	CRIM-SG-03	July 15, 2003	Benzo(a)anthracene	mg/kg	1	0.0493	=	0.032	0.62
Cowlitz River	OM Cowlitz Rvr	OMCR-GC-01	September 10, 2003	Benzo(a)anthracene	mg/kg	1	0.0963	=	0.032	0.62
Columbia River	RM 86.5	SH-VC-4	May 4, 1989	Benzo(a)anthracene	mg/kg	3	0.034	=	0.032	0.62
Columbia River	RM 86.5	SH-VC-5	May 4, 1989	Benzo(a)anthracene	mg/kg	3	0.037	=	0.032	0.62
Columbia River	RM 82	Will-1	September 10, 1997	Benzo(a)anthracene	mg/kg dry	2	0.036	=	0.032	0.62
Willamette River	RM 0.1 - mouth	WR-GC-2A	July 24, 1997	Benzo(a)anthracene	mg/kg	1	0.044	=	0.032	0.62
Columbia River	Oregon Slough	0205-OS-VC-06Z	February 17, 2005	Benzo(a)pyrene	mg/kg	1	0.0368	=	0.032	0.062
Columbia River	RM 88	10-S	June 28, 1993	Benzo(a)pyrene	mg/kg dry	1	0.061	=	0.032	0.062
Columbia River	RM 124	14-S	July 1, 1993	Benzo(a)pyrene	mg/kg dry	1	0.035	=	0.032	0.062
Columbia River	Vancouver WA	88-398-303	July 22, 1987	Benzo(a)pyrene	mg/kg dry	2	0.033	CJ	0.032	0.062
Columbia River	Vancouver WA	88-398-304	July 22, 1987	Benzo(a)pyrene	mg/kg dry	2	0.047	CJ	0.032	0.062
Columbia River	Longview WA	88-398-307	July 23, 1987	Benzo(a)pyrene	mg/kg dry	2	0.066	CJ	0.032	0.062
Columbia River	Longview WA	88-398-309	July 23, 1987	Benzo(a)pyrene	mg/kg dry	2	1.5	C	0.032	0.062
Columbia River	RM 83	CR-BC-57	June 3, 1997	Benzo(a)pyrene	mg/kg	1	0.07	=	0.032	0.062
Columbia River	RM 100	CR-BC-76	June 3, 1997	Benzo(a)pyrene	mg/kg	1	0.037	=	0.032	0.062
Columbia River	Crims Island	CRIM-SG-02	July 15, 2003	Benzo(a)pyrene	mg/kg	1	0.0547	=	0.032	0.062
Columbia River	Crims Island	CRIM-SG-03	July 15, 2003	Benzo(a)pyrene	mg/kg	1	0.0724	=	0.032	0.062
Cowlitz River	OM Cowlitz Rvr	OMCR-GC-01	September 10, 2003	Benzo(a)pyrene	mg/kg	1	0.0423	=	0.032	0.062
Skipanon Federal Channel	Warrenton OR	SBIO-GC-04	June 24, 2003	Benzo(a)pyrene	mg/kg	1	0.0434	=	0.032	0.062
Columbia River	RM 86.5	SH-VC-4	May 4, 1989	Benzo(a)pyrene	mg/kg	3	0.036	=	0.032	0.062
Columbia River	RM 86.5	SH-VC-5	May 4, 1989	Benzo(a)pyrene	mg/kg	3	0.05	=	0.032	0.062
Columbia River	RM 82	Will-1	September 10, 1997	Benzo(a)pyrene	mg/kg dry	2	0.063	=	0.032	0.062
Willamette River	RM 0.1 - mouth	WR-GC-2A	July 24, 1997	Benzo(a)pyrene	mg/kg	1	0.103	=	0.032	0.062
Columbia River	Longview WA	88-398-309	July 23, 1987	Benzo(b)fluoranthene	mg/kg dry	2	1.8	C	0.24	0.62
Columbia River	Longview WA	88-398-309	July 23, 1987	Benzo(ghi)perylene	mg/kg dry	2	1.1	C	0.17	2,400
Columbia River	Camas Slough	88-398-301	July 22, 1987	Benzo(k)fluoranthene	mg/kg dry	2	0.19	CJ	0.027	6.2
Columbia River	Longview WA	88-398-307	July 23, 1987	Benzo(k)fluoranthene	mg/kg dry	2	0.031	CJ	0.027	6.2
Columbia River	Longview WA	88-398-309	July 23, 1987	Benzo(k)fluoranthene	mg/kg dry	2	0.91	C	0.027	6.2
Columbia River	Ilwaco Boat Bsn	88-398-311	July 24, 1987	Benzo(k)fluoranthene	mg/kg dry	2	0.12	CJ	0.027	6.2
Columbia River	RM 82	Will-1	September 10, 1997	Benzo(k)fluoranthene	mg/kg dry	2	0.06	=	0.027	6.2
Columbia River	Kalama ChemPier	88-398-305	July 22, 1987	Bis(2-ethylhexyl) phthalate	mg/kg dry	2	1.9	C	0.64	35
Columbia River	RM 88	10-S	June 28, 1993	Cadmium	mg/kg dry	1	0.63	=	0.6	37
Columbia River	RM 90	11-S	June 29, 1993	Cadmium	mg/kg dry	1	1.1	=	0.6	37
Columbia River	RM 95	12-S	June 30, 1993	Cadmium	mg/kg dry	1	1.9	=	0.6	37
Columbia River	RM 120	13-S	July 1, 1993	Cadmium	mg/kg dry	1	1.3	=	0.6	37
Columbia River	RM 124	14-S	July 1, 1993	Cadmium	mg/kg dry	1	1.9	=	0.6	37
Columbia River	RM 141	15-S	June 30, 1993	Cadmium	mg/kg dry	1	1	=	0.6	37
Columbia River	RM 14	1-S	June 28, 1993	Cadmium	mg/kg dry	1	0.98	=	0.6	37
Columbia River	RM 21	2-S	June 27, 1993	Cadmium	mg/kg dry	1	0.78	=	0.6	37
Columbia River	RM 23	3-S	June 27, 1993	Cadmium	mg/kg dry	1	0.82	=	0.6	37

Table E-10
Summary of Surface Sediment Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Eco Benchmark Value	HH Benchmark Value
Columbia River	RM 26	4-S	June 26, 1993	Cadmium	mg/kg dry	1	1	=	0.6	37
Columbia River	RM 29	5-S	June 26, 1993	Cadmium	mg/kg dry	1	1.1	E	0.6	37
Columbia River	RM 59	7-S	June 25, 1993	Cadmium	mg/kg dry	1	0.61	=	0.6	37
Columbia River	Camas Slough	88-398-301	July 22, 1987	Cadmium	mg/kg dry	2	0.9	=	0.6	37
Columbia River	Camas Slough	88-398-302	July 22, 1987	Cadmium	mg/kg dry	2	0.8	=	0.6	37
Columbia River	RM 68	8-S	June 24, 1993	Cadmium	mg/kg dry	1	1.3	=	0.6	37
Columbia River	RM 81	9-S	June 29, 1993	Cadmium	mg/kg dry	1	1.1	=	0.6	37
Columbia River	Crims Island	CRIM-SG-02	July 15, 2003	Cadmium	mg/kg	1	0.785	J	0.6	37
Columbia River	Crims Island	CRIM-SG-03	July 15, 2003	Cadmium	mg/kg	1	1.12	=	0.6	37
Columbia River	Oregon Slough	OR-VC-04	June 19, 2001	Cadmium	mg/kg	1	0.66	B	0.6	37
Skipanon Federal Channel	Warrenton OR	SBIO-GC-04	June 24, 2003	Cadmium	mg/kg	1	0.852	J	0.6	37
Skipanon Federal channel	Warrenton OR	SKIP-GC-01	September 12, 2001	Cadmium	mg/kg	1	2.1	=	0.6	37
Skipanon Federal channel	Warrenton OR	SKIP-GC-02	September 12, 2001	Cadmium	mg/kg	1	2.4	=	0.6	37
Skipanon Federal channel	Warrenton OR	SKIP-GC-03	September 12, 2001	Cadmium	mg/kg	1	2.2	=	0.6	37
Skipanon Federal channel	Warrenton OR	SKIP-GC-04	September 12, 2001	Cadmium	mg/kg	1	3.3	=	0.6	37
Skipanon Federal channel	Warrenton OR	SKIP-GC-05	September 12, 2001	Cadmium	mg/kg	1	3.2	=	0.6	37
Skipanon Federal channel	Warrenton OR	SKIP-GC-06	September 12, 2001	Cadmium	mg/kg	1	2	=	0.6	37
Skipanon Federal channel	Warrenton OR	SKIP-GC-07	September 12, 2001	Cadmium	mg/kg	1	1.4	=	0.6	37
Columbia River	Crims Island	CRIM-SG-05	July 15, 2003	Chromium	mg/kg	1	34.5	=	37	30
Skipanon Federal Channel	Warrenton OR	SBIO-GC-04	June 24, 2003	Chromium	mg/kg	1	32.3	=	37	30
Columbia River	RM 36	6-S	June 25, 1993	Chromium	mg/kg dry	1	31.1	=	37	30
Columbia River	Camas Slough	88-398-302	July 22, 1987	Chrysene	mg/kg dry	2	0.058	J	0.057	62
Columbia River	Vancouver WA	88-398-303	July 22, 1987	Chrysene	mg/kg dry	2	0.065	J	0.057	62
Columbia River	Vancouver WA	88-398-304	July 22, 1987	Chrysene	mg/kg dry	2	0.066	J	0.057	62
Columbia River	Longview WA	88-398-307	July 23, 1987	Chrysene	mg/kg dry	2	0.073	J	0.057	62
Columbia River	Longview WA	88-398-309	July 23, 1987	Chrysene	mg/kg dry	2	4.1	=	0.057	62
Columbia River	Ilwaco Boat Bsn	88-398-311	July 24, 1987	Chrysene	mg/kg dry	2	0.2	J	0.057	62
Columbia River	RM 81	9-S	June 29, 1993	Chrysene	mg/kg dry	1	0.1	=	0.057	62
Columbia River	Crims Island	CRIM-SG-03	July 15, 2003	Chrysene	mg/kg	1	0.0739	=	0.057	62
Cowlitz River	OM Cowlitz Rvr	OMCR-GC-01	September 10, 2003	Chrysene	mg/kg	1	0.12	=	0.057	62
Columbia River	RM 86.5	SH-VC-4	May 4, 1989	Chrysene	mg/kg	3	0.125	=	0.057	62
Columbia River	RM 86.5	SH-VC-5	May 4, 1989	Chrysene	mg/kg	3	0.129	=	0.057	62
Columbia River	RM 82	Will-1	September 10, 1997	Chrysene	mg/kg dry	2	0.061	=	0.057	62
Columbia River	RM 95	12-S	June 30, 1993	Copper	mg/kg dry	1	32.5	=	32	2,960
Columbia River	RM 29	5-S	June 26, 1993	Copper	mg/kg dry	1	32.2	=	32	2,960
Columbia River	RM 36	6-S	June 25, 1993	Copper	mg/kg dry	1	49.9	=	32	2,960
Columbia River	Vancouver WA	88-398-303	July 22, 1987	Copper	mg/kg dry	2	54	=	32	2,960
Columbia River	Ilwaco Boat Bsn	88-398-311	July 24, 1987	Copper	mg/kg dry	2	75	=	32	2,960
Columbia River	RM 68	8-S	June 24, 1993	Copper	mg/kg dry	1	34	=	32	2,960
Columbia River	RM 100	CR-BC-76	June 3, 1997	Copper	mg/kg	1	33	=	32	2,960
Columbia River	Crims Island	CRIM-SG-02	July 15, 2003	Copper	mg/kg	1	39.8	=	32	2,960
Columbia River	Crims Island	CRIM-SG-05	July 15, 2003	Copper	mg/kg	1	36.7	=	32	2,960
Columbia River	CR-S5	CR-S5 .08-1.0m	October 1, 1984	Copper	mg/kg	3	43	=	32	2,960
Cowlitz River	OM Cowlitz Rvr	OMCR-GC-01	September 10, 2003	Copper	mg/kg	1	53.4	=	32	2,960
Cowlitz River	OM Cowlitz Rvr	OMCR-GC-02	September 10, 2003	Copper	mg/kg	1	35.1	=	32	2,960
Skipanon Federal Channel	Warrenton OR	SBIO-GC-01	June 24, 2003	Copper	mg/kg	1	52.3	=	32	2,960
Skipanon Federal Channel	Warrenton OR	SBIO-GC-02	June 24, 2003	Copper	mg/kg	1	36.4	=	32	2,960
Skipanon Federal Channel	Warrenton OR	SBIO-GC-03	June 24, 2003	Copper	mg/kg	1	56.9	=	32	2,960

Table E-10
Summary of Surface Sediment Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Eco Benchmark Value	HH Benchmark Value
Skipanon Federal Channel	Warrenton OR	SBIO-GC-04	June 24, 2003	Copper	mg/kg	1	46.2	=	32	2,960
Skipanon Federal channel	Warrenton OR	SKIP-GC-01	September 12, 2001	Copper	mg/kg	1	60	=	32	2,960
Skipanon Federal channel	Warrenton OR	SKIP-GC-02	September 12, 2001	Copper	mg/kg	1	59	=	32	2,960
Skipanon Federal channel	Warrenton OR	SKIP-GC-03	September 12, 2001	Copper	mg/kg	1	76	=	32	2,960
Skipanon Federal channel	Warrenton OR	SKIP-GC-04	September 12, 2001	Copper	mg/kg	1	58	=	32	2,960
Skipanon Federal channel	Warrenton OR	SKIP-GC-05	September 12, 2001	Copper	mg/kg	1	55	=	32	2,960
Skipanon Federal channel	Warrenton OR	SKIP-GC-06	September 12, 2001	Copper	mg/kg	1	41	=	32	2,960
Columbia River	Longview WA	88-398-309	July 23, 1987	Dibenz[a,h]anthracene	mg/kg dry	2	0.4	CJ	0.033	0.062
Skipanon Federal channel	Warrenton OR	SKIP-GC-04	September 12, 2001	Dichlorodiphenyldichloroethane	mg/kg	1	0.0048	=	0.004	2.4
Skipanon Federal channel	Warrenton OR	SKIP-GC-05	September 12, 2001	Dichlorodiphenyldichloroethane	mg/kg	1	0.0043	=	0.004	2.4
Columbia River	Oregon Slough	0205-OS-VC-06	February 17, 2005	Dichlorodiphenyldichloroethylene	mg/kg	1	0.00151	CJ	0.0015	1.7
Columbia River	RM 100	CR-BC-76	June 3, 1997	Dichlorodiphenyldichloroethylene	mg/kg	1	0.002	=	0.0015	1.7
Columbia River	RM 37-47	CRJSD120	August 1, 1991	Dichlorodiphenyldichloroethylene	mg/kg dry	1	30	J	0.0015	1.7
Skipanon Federal channel	Warrenton OR	SKIP-GC-01	September 12, 2001	Dichlorodiphenyldichloroethylene	mg/kg	1	0.0034	J	0.0015	1.7
Skipanon Federal channel	Warrenton OR	SKIP-GC-02	September 12, 2001	Dichlorodiphenyldichloroethylene	mg/kg	1	0.0039	J	0.0015	1.7
Skipanon Federal channel	Warrenton OR	SKIP-GC-04	September 12, 2001	Dichlorodiphenyldichloroethylene	mg/kg	1	0.0023	J	0.0015	1.7
Skipanon Federal channel	Warrenton OR	SKIP-GC-05	September 12, 2001	Dichlorodiphenyldichloroethylene	mg/kg	1	0.0023	J	0.0015	1.7
Skipanon Federal channel	Warrenton OR	SKIP-GC-06	September 12, 2001	Dichlorodiphenyldichloroethylene	mg/kg	1	0.0019	J	0.0015	1.7
Columbia River	RM 82	Will-1	September 10, 1997	Dichlorodiphenyldichloroethylene	mg/kg dry	2	0.0018	=	0.0015	1.7
Columbia River	Oregon Slough	0205-OS-VC-01	February 17, 2005	Di-n-butylphthalate	mg/kg	1	0.318	BE	0.043	6,110
Columbia River	Oregon Slough	0205-OS-VC-02	February 17, 2005	Di-n-butylphthalate	mg/kg	1	0.249	BE	0.043	6,110
Columbia River	Oregon Slough	0205-OS-VC-03	February 17, 2005	Di-n-butylphthalate	mg/kg	1	0.252	BE	0.043	6,110
Columbia River	Oregon Slough	0205-OS-VC-03A	February 17, 2005	Di-n-butylphthalate	mg/kg	1	0.217	BE	0.043	6,110
Columbia River	Oregon Slough	0205-OS-VC-04	February 17, 2005	Di-n-butylphthalate	mg/kg	1	0.208	BE	0.043	6,110
Columbia River	Oregon Slough	0205-OS-VC-05	February 17, 2005	Di-n-butylphthalate	mg/kg	1	0.147	B	0.043	6,110
Columbia River	Oregon Slough	0205-OS-VC-06	February 17, 2005	Di-n-butylphthalate	mg/kg	1	0.215	BE	0.043	6,110
Columbia River	Oregon Slough	0205-OS-VC-06Z	February 17, 2005	Di-n-butylphthalate	mg/kg	1	0.207	BE	0.043	6,110
Columbia River	Camas Slough	88-398-302	July 22, 1987	Di-n-butylphthalate	mg/kg dry	2	0.84	J	0.043	6,110
Columbia River	Bachelor Slough	BACH-BC-02	June 3, 2003	Di-n-butylphthalate	mg/kg	1	0.178	C	0.043	6,110
Columbia River	Crims Island	CRIM-SG-02	July 15, 2003	Di-n-butylphthalate	mg/kg	1	0.0575	B	0.043	6,110
Columbia River	Vancouver WA	88-398-303	July 22, 1987	Fluoranthene	mg/kg dry	2	0.16	J	0.11	2,294
Columbia River	Longview WA	88-398-309	July 23, 1987	Fluoranthene	mg/kg dry	2	2.1	=	0.11	2,294
Columbia River	RM 86.5	SH-VC-4	May 4, 1989	Fluorene	mg/kg	3	0.084	=	0.077	2,747
Columbia River	RM 86.5	SH-VC-5	May 4, 1989	Fluorene	mg/kg	3	0.102	=	0.077	2,747
Columbia River	Oregon Slough	0205-OS-VC-06Z	February 17, 2005	Indeno(1,2,3-cd)pyrene	mg/kg	1	0.0225	=	0.017	0.62
Columbia River	RM 88	10-S	June 28, 1993	Indeno(1,2,3-cd)pyrene	mg/kg dry	1	0.041	=	0.017	0.62
Columbia River	RM 95	12-S	June 30, 1993	Indeno(1,2,3-cd)pyrene	mg/kg dry	1	0.02	=	0.017	0.62
Columbia River	RM 124	14-S	July 1, 1993	Indeno(1,2,3-cd)pyrene	mg/kg dry	1	0.024	=	0.017	0.62
Columbia River	RM 14	1-S	June 28, 1993	Indeno(1,2,3-cd)pyrene	mg/kg dry	1	0.033	=	0.017	0.62
Columbia River	RM 26	4-S	June 26, 1993	Indeno(1,2,3-cd)pyrene	mg/kg dry	1	0.022	=	0.017	0.62
Columbia River	RM 29	5-S	June 26, 1993	Indeno(1,2,3-cd)pyrene	mg/kg dry	1	0.027	=	0.017	0.62
Columbia River	Vancouver WA	88-398-304	July 22, 1987	Indeno(1,2,3-cd)pyrene	mg/kg dry	2	0.033	J	0.017	0.62
Columbia River	Longview WA	88-398-307	July 23, 1987	Indeno(1,2,3-cd)pyrene	mg/kg dry	2	0.042	J	0.017	0.62
Columbia River	Longview WA	88-398-309	July 23, 1987	Indeno(1,2,3-cd)pyrene	mg/kg dry	2	0.92	=	0.017	0.62
Columbia River	Ilwaco Boat Bsn	88-398-311	July 24, 1987	Indeno(1,2,3-cd)pyrene	mg/kg dry	2	0.076	J	0.017	0.62
Columbia River	RM 83	CR-BC-57	June 3, 1997	Indeno(1,2,3-cd)pyrene	mg/kg	1	0.056	=	0.017	0.62
Columbia River	RM 100	CR-BC-76	June 3, 1997	Indeno(1,2,3-cd)pyrene	mg/kg	1	0.02	=	0.017	0.62
Columbia River	Crims Island	CRIM-SG-02	July 15, 2003	Indeno(1,2,3-cd)pyrene	mg/kg	1	0.0217	=	0.017	0.62

Table E-10
Summary of Surface Sediment Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Eco Benchmark Value	HH Benchmark Value
Columbia River	Crims Island	CRIM-SG-03	July 15, 2003	Indeno(1,2,3-cd)pyrene	mg/kg	1	0.0475	=	0.017	0.62
Skipanon Federal Channel	Warrenton OR	SBIO-GC-03	June 24, 2003	Indeno(1,2,3-cd)pyrene	mg/kg	1	0.0177	=	0.017	0.62
Skipanon Federal Channel	Warrenton OR	SBIO-GC-04	June 24, 2003	Indeno(1,2,3-cd)pyrene	mg/kg	1	0.0283	=	0.017	0.62
Columbia River	RM 82	Will-1	September 10, 1997	Indeno(1,2,3-cd)pyrene	mg/kg dry	2	0.07	=	0.017	0.62
Willamette River	RM 0.1 - mouth	WR-GC-2A	July 24, 1997	Indeno(1,2,3-cd)pyrene	mg/kg	1	0.076	=	0.017	0.62
Columbia River	RM 88	10-S	June 28, 1993	Iron	mg/kg dry	1	27700	=	20,000	23,463
Columbia River	RM 95	12-S	June 30, 1993	Iron	mg/kg dry	1	26900	=	20,000	23,463
Columbia River	RM 120	13-S	July 1, 1993	Iron	mg/kg dry	1	21100	=	20,000	23,463
Columbia River	RM 14	1-S	June 28, 1993	Iron	mg/kg dry	1	21500	=	20,000	23,463
Columbia River	RM 21	2-S	June 27, 1993	Iron	mg/kg dry	1	21800	=	20,000	23,463
Columbia River	RM 29	5-S	June 26, 1993	Iron	mg/kg dry	1	21100	=	20,000	23,463
Columbia River	RM 36	6-S	June 25, 1993	Iron	mg/kg dry	1	39000	=	20,000	23,463
Columbia River	Camas Slough	88-398-301	July 22, 1987	Iron	mg/kg dry	2	25000	=	20,000	23,463
Columbia River	Camas Slough	88-398-302	July 22, 1987	Iron	mg/kg dry	2	24000	=	20,000	23,463
Columbia River	Ilwaco Boat Bsn	88-398-311	July 24, 1987	Iron	mg/kg dry	2	28000	=	20,000	23,463
Columbia River	RM 68	8-S	June 24, 1993	Iron	mg/kg dry	1	20600	=	20,000	23,463
Columbia River	RM 81	9-S	June 29, 1993	Iron	mg/kg dry	1	21100	=	20,000	23,463
Columbia River	Camas Slough	88-398-301	July 22, 1987	Lead	mg/kg dry	2	38	=	35	250
Columbia River	Vancouver WA	88-398-303	July 22, 1987	Lead	mg/kg	2	140	J	35	250
Columbia River	Bachelor Slough	BACH-GC-10	June 3, 2003	Lead	mg/kg	1	127	=	35	250
Columbia River	Oregon Slough	0205-OS-VC-06	February 17, 2005	Mercury	mg/kg dry	1	0.513	=	0.18	23
Columbia River	Crims Island	CRIM-SG-02	July 15, 2003	Mercury	mg/kg	1	0.267	=	0.18	23
Columbia River	CR-S5	CR-S5 .08-1.0m	October 1, 1984	Mercury	mg/kg	3	0.21	=	0.18	23
Skipanon Federal Channel	Warrenton OR	SBIO-GC-04	June 24, 2003	Mercury	mg/kg	1	0.564	=	0.18	23
Columbia River	RM 88	10-S	June 28, 1993	Nickel	mg/kg dry	1	18.2	=	18	1,564
Columbia River	RM 95	12-S	June 30, 1993	Nickel	mg/kg dry	1	19.4	=	18	1,564
Columbia River	RM 120	13-S	July 1, 1993	Nickel	mg/kg dry	1	18.3	=	18	1,564
Columbia River	RM 36	6-S	June 25, 1993	Nickel	mg/kg dry	1	24.8	=	18	1,564
Columbia River	RM 83	CR-BC-57	June 3, 1997	Nickel	mg/kg	1	21	=	18	1,564
Columbia River	RM 100	CR-BC-76	June 3, 1997	Nickel	mg/kg	1	22	=	18	1,564
Columbia River	Crims Island	CRIM-SG-02	July 15, 2003	Nickel	mg/kg	1	22.8	=	18	1,564
Columbia River	Crims Island	CRIM-SG-03	July 15, 2003	Nickel	mg/kg	1	19.8	=	18	1,564
Columbia River	Crims Island	CRIM-SG-05	July 15, 2003	Nickel	mg/kg	1	26.7	=	18	1,564
Columbia River	CR-S5	CR-S5 .08-1.0m	October 1, 1984	Nickel	mg/kg	3	22	=	18	1,564
Columbia River	CR-S5	CR-S5 1.8-3.8m	October 1, 1984	Nickel	mg/kg	3	70	=	18	1,564
Skipanon Federal Channel	Warrenton OR	SBIO-GC-01	June 24, 2003	Nickel	mg/kg	1	18.2	=	18	1,564
Skipanon Federal Channel	Warrenton OR	SBIO-GC-03	June 24, 2003	Nickel	mg/kg	1	19.9	=	18	1,564
Skipanon Federal Channel	Warrenton OR	SBIO-GC-04	June 24, 2003	Nickel	mg/kg	1	20.3	=	18	1,564
Skipanon Federal channel	Warrenton OR	SKIP-GC-01	September 12, 2001	Nickel	mg/kg	1	20	=	18	1,564
Skipanon Federal channel	Warrenton OR	SKIP-GC-02	September 12, 2001	Nickel	mg/kg	1	22	=	18	1,564
Skipanon Federal channel	Warrenton OR	SKIP-GC-03	September 12, 2001	Nickel	mg/kg	1	21	=	18	1,564
Skipanon Federal channel	Warrenton OR	SKIP-GC-04	September 12, 2001	Nickel	mg/kg	1	21	=	18	1,564
Skipanon Federal channel	Warrenton OR	SKIP-GC-05	September 12, 2001	Nickel	mg/kg	1	25	=	18	1,564
Columbia River	Oregon Slough	0205-OS-VC-01	February 17, 2005	Phenanthrene	mg/kg	1	0.23	E	0.042	--
Columbia River	Oregon Slough	0205-OS-VC-06Z	February 17, 2005	Phenanthrene	mg/kg	1	0.0458	=	0.042	--
Columbia River	Camas Slough	88-398-302	July 22, 1987	Phenanthrene	mg/kg dry	2	0.059	J	0.042	--
Columbia River	Vancouver WA	88-398-303	July 22, 1987	Phenanthrene	mg/kg dry	2	0.065	J	0.042	--
Columbia River	Vancouver WA	88-398-304	July 22, 1987	Phenanthrene	mg/kg dry	2	0.071	J	0.042	--
Columbia River	Longview WA	88-398-309	July 23, 1987	Phenanthrene	mg/kg dry	2	0.58	=	0.042	--

Table E-10
Summary of Surface Sediment Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Eco Benchmark Value	HH Benchmark Value
Columbia River	Ilwaco Boat Bsn	88-398-311	July 24, 1987	Phenanthrene	mg/kg dry	2	0.18	J	0.042	--
Columbia River	RM 100	CR-BC-76	June 3, 1997	Phenanthrene	mg/kg	1	0.049	=	0.042	--
Columbia River	RM 86.5	SH-VC-4	May 4, 1989	Phenanthrene	mg/kg	3	0.224	=	0.042	--
Columbia River	RM 86.5	SH-VC-5	May 4, 1989	Phenanthrene	mg/kg	3	0.332	=	0.042	--
Columbia River	RM 82	Will-1	September 10, 1997	Phenanthrene	mg/kg dry	2	0.079	=	0.042	--
Columbia River	Oregon Slough	0205-OS-VC-06Z	February 17, 2005	Pyrene	mg/kg	1	0.0575	=	0.053	2,316
Columbia River	RM 88	10-S	June 28, 1993	Pyrene	mg/kg dry	1	0.093	=	0.053	2,316
Columbia River	RM 88	10-S	June 28, 1993	Pyrene	mg/kg dry	1	0.093	=	0.053	2,316
Columbia River	Camas Slough	88-398-302	July 22, 1987	Pyrene	mg/kg dry	2	0.08	J	0.053	2,316
Columbia River	Camas Slough	88-398-302	July 22, 1987	Pyrene	mg/kg dry	2	0.08	J	0.053	2,316
Columbia River	Vancouver WA	88-398-303	July 22, 1987	Pyrene	mg/kg dry	2	0.16	J	0.053	2,316
Columbia River	Vancouver WA	88-398-303	July 22, 1987	Pyrene	mg/kg dry	2	0.16	J	0.053	2,316
Columbia River	Vancouver WA	88-398-304	July 22, 1987	Pyrene	mg/kg dry	2	0.078	J	0.053	2,316
Columbia River	Vancouver WA	88-398-304	July 22, 1987	Pyrene	mg/kg dry	2	0.078	J	0.053	2,316
Columbia River	Longview WA	88-398-307	July 23, 1987	Pyrene	mg/kg dry	2	0.13	J	0.053	2,316
Columbia River	Longview WA	88-398-307	July 23, 1987	Pyrene	mg/kg dry	2	0.13	J	0.053	2,316
Columbia River	Longview WA	88-398-309	July 23, 1987	Pyrene	mg/kg dry	2	2.5	=	0.053	2,316
Columbia River	Longview WA	88-398-309	July 23, 1987	Pyrene	mg/kg dry	2	2.5	=	0.053	2,316
Columbia River	Ilwaco Boat Bsn	88-398-311	July 24, 1987	Pyrene	mg/kg dry	2	0.59	J	0.053	2,316
Columbia River	Ilwaco Boat Bsn	88-398-311	July 24, 1987	Pyrene	mg/kg dry	2	0.59	J	0.053	2,316
Columbia River	RM 68	8-S	June 24, 1993	Pyrene	mg/kg dry	1	0.067	=	0.053	2,316
Columbia River	RM 68	8-S	June 24, 1993	Pyrene	mg/kg dry	1	0.067	=	0.053	2,316
Columbia River	RM 81	9-S	June 29, 1993	Pyrene	mg/kg dry	1	0.09	=	0.053	2,316
Columbia River	RM 81	9-S	June 29, 1993	Pyrene	mg/kg dry	1	0.09	=	0.053	2,316
Columbia River	RM 83	CR-BC-57	June 3, 1997	Pyrene	mg/kg	1	0.064	=	0.053	2,316
Columbia River	RM 100	CR-BC-76	June 3, 1997	Pyrene	mg/kg	1	0.077	=	0.053	2,316
Columbia River	Crims Island	CRIM-SG-03	July 15, 2003	Pyrene	mg/kg	1	0.108	=	0.053	2,316
Skipanon Federal Channel	Warrenton OR	SBIO-GC-01	June 24, 2003	Pyrene	mg/kg	1	0.0555	=	0.053	2,316
Columbia River	RM 86.5	SH-VC-4	May 4, 1989	Pyrene	mg/kg	3	0.165	=	0.053	2,316
Columbia River	RM 86.5	SH-VC-5	May 4, 1989	Pyrene	mg/kg	3	0.115	=	0.053	2,316
Columbia River	RM 82	Will-1	September 10, 1997	Pyrene	mg/kg dry	2	0.12	=	0.053	2,316
Columbia River	RM 82	Will-1	September 10, 1997	Pyrene	mg/kg dry	2	0.12	=	0.053	2,316
Willamette River	RM 0.1 - mouth	WR-GC-2A	July 24, 1997	Pyrene	mg/kg	1	0.096	=	0.053	2,316
Columbia River	Oregon Slough	0205-OS-VC-01	February 17, 2005	Zinc	mg/kg dry	1	121	=	120	23,463
Columbia River	RM 95	12-S	June 30, 1993	Zinc	mg/kg dry	1	148	=	120	23,463
Columbia River	RM 120	13-S	July 1, 1993	Zinc	mg/kg dry	1	128	=	120	23,463
Columbia River	RM 124	14-S	July 1, 1993	Zinc	mg/kg dry	1	155	=	120	23,463
Columbia River	Camas Slough	88-398-301	July 22, 1987	Zinc	mg/kg dry	2	130	=	120	23,463
Columbia River	Camas Slough	88-398-302	July 22, 1987	Zinc	mg/kg dry	2	130	=	120	23,463
Columbia River	Ilwaco Boat Bsn	88-398-311	July 24, 1987	Zinc	mg/kg dry	2	140	=	120	23,463
Columbia River	RM 68	8-S	June 24, 1993	Zinc	mg/kg dry	1	136	=	120	23,463
Columbia River	Crims Island	CRIM-SG-02	July 15, 2003	Zinc	mg/kg	1	161	=	120	23,463
Columbia River	Crims Island	CRIM-SG-03	July 15, 2003	Zinc	mg/kg	1	172	=	120	23,463
Columbia River	CR-S5	CR-S5 .08-1.0m	October 1, 1984	Zinc	mg/kg	3	170	=	120	23,463
Columbia River	Oregon Slough	OR-VC-04	June 19, 2001	Zinc	mg/kg	1	150	=	120	23,463
Skipanon Federal Channel	Warrenton OR	SBIO-GC-01	June 24, 2003	Zinc	mg/kg	1	129	=	120	23,463
Skipanon Federal Channel	Warrenton OR	SBIO-GC-03	June 24, 2003	Zinc	mg/kg	1	149	=	120	23,463
Skipanon Federal Channel	Warrenton OR	SBIO-GC-04	June 24, 2003	Zinc	mg/kg	1	143	=	120	23,463
Skipanon Federal channel	Warrenton OR	SKIP-GC-01	September 12, 2001	Zinc	mg/kg	1	160	=	120	23,463

Table E-10
Summary of Surface Sediment Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	SampleID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Eco Benchmark Value	HH Benchmark Value
Skipanon Federal channel	Warrenton OR	SKIP-GC-02	September 12, 2001	Zinc	mg/kg	1	170	=	120	23,463
Skipanon Federal channel	Warrenton OR	SKIP-GC-03	September 12, 2001	Zinc	mg/kg	1	180	=	120	23,463
Skipanon Federal channel	Warrenton OR	SKIP-GC-04	September 12, 2001	Zinc	mg/kg	1	200	=	120	23,463
Skipanon Federal channel	Warrenton OR	SKIP-GC-05	September 12, 2001	Zinc	mg/kg	1	190	=	120	23,463
Skipanon Federal channel	Warrenton OR	SKIP-GC-06	September 12, 2001	Zinc	mg/kg	1	130	=	120	23,463

Table E-11

Summary Statistics for All Categories of Surface Water Samples Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Alkalinity	mg/L	42	42	100%	--	--	22	66	49
CONV	Ammonia	mg/L	12	4	33%	0.010	0.010	0.015	0.019	0.0092
CONV	Chloride	mg/L	50	50	100%	--	--	5.6	14	8.7
CONV	Dissolved organic carbon	mg/L	43	43	100%	--	--	1.0	3.3	1.7
CONV	Dissolved oxygen	mg/L	12	12	100%	--	--	8.9	12	11
CONV	Fluoride	mg/L	50	50	100%	--	--	7.8	14	11
CONV	Hardness	mg/L	6	6	100%	--	--	41	67	59
CONV	Nitrogen in ammonia	mg/L	50	38	76%	0.0020	0.015	0.0020	0.039	0.011
CONV	Nitrogen, Kjeldahl total	mg/L	100	96	96%	0.10	0.10	0.10	0.50	0.16
CONV	Nitrogen, Nitrate-Nitrite	mg/L	12	12	100%	--	--	0.073	0.46	0.22
CONV	Nitrogen, Nitrite	mg/L	50	47	94%	0.0010	0.0010	0.0010	0.0060	0.0031
CONV	Orthophosphate	mg/L	61	59	97%	0.0070	0.0070	0.0010	0.025	0.012
CONV	pH	pH Units	53	53	100%	--	--	6.6	8.5	7.8
CONV	Phosphate	mg/L	12	12	100%	--	--	0.024	0.043	0.030
CONV	Specific Conductance	umhos/cm	100	100	100%	--	--	75	225	132
CONV	Sulfate	mg/L	50	50	100%	--	--	0.10	0.10	0.10
CONV	Total Organic Carbon	mg/L	43	43	100%	--	--	1.0	3.8	1.8
CONV	Total Persulfate Nitrogen	mg/L	12	12	100%	--	--	0.16	0.51	0.30
CONV	Total suspended solids	mg/L	58	58	100%	--	--	1.0	38	9.1
CONV	Turbidity	NTU	65	65	100%	--	--	0.50	68	10
METAL	Antimony	mg/L	18	9	50%	0.0010	0.0010	1.00E-04	2.00E-04	3.06E-04
METAL	Arsenic	mg/L	35	27	77%	0.0010	0.0020	7.00E-04	0.0015	9.33E-04
METAL	Barium	mg/L	18	18	100%	--	--	0.011	0.021	0.017
METAL	Beryllium	mg/L	18	0	0%	1.00E-04	0.0010	--	--	2.75E-04
METAL	Boron	mg/L	18	16	89%	0.016	0.016	0.0081	0.020	0.012
METAL	Cadmium	mg/L	22	1	5%	2.00E-05	0.0010	1.00E-04	1.00E-04	2.02E-04
METAL	Calcium	mg/L	50	50	100%	--	--	8.3	19	14
METAL	Chromium	mg/L	12	3	25%	2.50E-04	5.00E-04	3.60E-04	5.50E-04	2.61E-04
METAL	Cobalt	mg/L	13	4	31%	0.0010	0.0010	1.00E-04	1.00E-04	3.77E-04
METAL	Copper	mg/L	29	29	100%	--	--	6.30E-04	0.0053	0.0013
METAL	Lead	mg/L	12	10	83%	2.00E-05	1.00E-04	2.80E-05	3.80E-04	1.31E-04
METAL	Lithium	mg/L	18	15	83%	0.0039	0.0039	0.0019	0.0038	0.0027
METAL	Magnesium	mg/L	50	50	100%	--	--	2.6	5.7	4.1
METAL	Mercury	mg/L	6	0	0%	2.00E-06	4.00E-06	--	--	1.33E-06
METAL	Nickel	mg/L	12	12	100%	--	--	4.40E-04	9.20E-04	5.84E-04
METAL	Potassium	mg/L	50	50	100%	--	--	2.3	7.4	3.9
METAL	Selenium	mg/L	18	0	0%	3.00E-04	0.0024	--	--	5.58E-04
METAL	Silica	mg/L	50	50	100%	--	--	50	112	83
METAL	Silver	mg/L	12	0	0%	2.00E-05	1.00E-04	--	--	4.00E-05
METAL	Sodium	mg/L	50	50	100%	--	--	3.3	9.1	5.9
METAL	Uranium	mg/L	18	9	50%	0.0010	0.0010	4.00E-04	8.00E-04	5.39E-04
METAL	Zinc	mg/L	29	22	76%	0.0010	0.0050	0.0010	0.0056	0.0020
	Total polychlorinated									
PCB	biphenyl	mg/L	13	8	62%	4.10E-07	2.90E-06	3.30E-07	2.10E-05	3.17E-06
PEST	Acetochlor	mg/L	49	0	0%	2.00E-06	6.00E-06	--	--	1.55E-06

Table E-11

Summary Statistics for All Categories of Surface Water Samples Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Alachlor	mg/L	48	31	65%	2.00E-06	1.30E-05	1.00E-06	1.80E-05	5.14E-06
PEST	Alpha-BHC	mg/L	94	0	0%	4.60E-08	5.00E-06	--	--	1.00E-06
PEST	alpha-Chlordane	mg/L	12	12	100%	--	--	1.90E-08	7.20E-07	1.64E-07
PEST	Atrazine	mg/L	43	32	74%	1.00E-06	7.00E-06	1.00E-06	6.50E-05	1.17E-05
PEST	Azinphos Methyl	mg/L	49	0	0%	1.00E-06	5.00E-05	--	--	1.08E-05
PEST	Benefin (Benfluralin)	mg/L	49	0	0%	2.00E-06	1.00E-05	--	--	2.63E-06
PEST	Butylate	mg/L	39	1	3%	2.00E-06	2.00E-06	2.00E-06	2.00E-06	1.03E-06
PEST	Carbaryl (Sevin)	mg/L	49	1	2%	3.00E-06	4.10E-05	4.00E-06	4.00E-06	8.92E-06
PEST	Carbethoxy malathion	mg/L	43	0	0%	5.00E-06	2.70E-05	--	--	6.62E-06
PEST	Carbofuran	mg/L	49	1	2%	3.00E-06	2.00E-05	1.00E-05	1.00E-05	4.97E-06
PEST	Chlorpyrifos	mg/L	39	2	5%	4.00E-06	5.00E-06	3.00E-06	4.00E-06	2.28E-06
PEST	Cyanazine	mg/L	43	0	0%	4.00E-06	1.80E-05	--	--	5.26E-06
PEST	Dachthal (chlorthal)	mg/L	49	2	4%	2.00E-06	3.00E-06	1.00E-06	2.00E-06	1.22E-06
PEST	Desethyl atrazine	mg/L	39	20	51%	2.00E-06	6.00E-06	2.00E-06	7.00E-06	2.79E-06
PEST	Diazinon	mg/L	43	0	0%	2.00E-06	5.00E-06	--	--	1.56E-06
PEST	Dichlorodiphenyldichloroethane	mg/L	45	34	76%	1.20E-07	4.40E-07	1.90E-07	5.60E-06	7.48E-07
PEST	Dichlorodiphenyldichloroethylene	mg/L	93	42	45%	1.40E-07	6.00E-06	1.50E-08	2.10E-06	1.46E-06
PEST	Dichlorodiphenyltrichloroethane	mg/L	45	39	87%	3.40E-08	3.00E-07	1.30E-08	1.50E-06	1.85E-07
PEST	Dieldrin	mg/L	88	39	44%	1.10E-07	5.00E-06	1.40E-08	5.40E-06	8.50E-07
PEST	Disulfoton	mg/L	49	0	0%	1.70E-05	2.10E-05	--	--	9.32E-06
PEST	Endosulfan I	mg/L	15	3	20%	1.80E-07	1.30E-06	2.70E-07	1.90E-06	5.63E-07
PEST	Endrin	mg/L	45	1	2%	9.00E-09	4.40E-07	1.40E-07	1.40E-07	8.40E-08
PEST	Eptam	mg/L	49	12	24%	2.00E-06	5.00E-06	1.00E-06	9.00E-06	1.99E-06
PEST	Ethalfuralin (Sonalan)	mg/L	49	0	0%	4.00E-06	9.00E-06	--	--	3.02E-06
PEST	Ethoprop	mg/L	49	0	0%	3.00E-06	5.00E-06	--	--	1.91E-06
PEST	Fonofos	mg/L	49	0	0%	3.00E-06	3.00E-06	--	--	1.50E-06
PEST	Gamma-BHC (Lindane)	mg/L	39	0	0%	4.00E-06	4.00E-06	--	--	2.00E-06
PEST	gamma-Chlordane	mg/L	12	9	75%	1.20E-07	3.90E-07	2.10E-08	8.10E-07	1.62E-07
PEST	Heptachlor epoxide	mg/L	45	7	16%	1.10E-08	4.80E-07	2.50E-08	6.70E-08	9.40E-08
PEST	Linuron	mg/L	49	0	0%	2.00E-06	3.50E-05	--	--	7.73E-06
PEST	Methoxychlor	mg/L	45	9	20%	9.00E-09	9.20E-07	2.70E-08	3.20E-07	1.38E-07
PEST	Methyl parathion	mg/L	49	0	0%	6.00E-06	6.00E-06	--	--	3.00E-06
PEST	Metribuzin	mg/L	49	12	24%	4.00E-06	6.00E-06	3.00E-06	2.50E-05	4.76E-06
PEST	Molinate	mg/L	49	0	0%	2.00E-06	4.00E-06	--	--	1.59E-06
PEST	Napropamide	mg/L	49	2	4%	3.00E-06	7.00E-06	3.00E-06	6.00E-06	2.36E-06
PEST	Parathion	mg/L	43	0	0%	4.00E-06	1.00E-05	--	--	2.77E-06
PEST	Pebulate	mg/L	49	0	0%	2.00E-06	4.00E-06	--	--	1.73E-06
PEST	Pendimethalin	mg/L	45	2	4%	4.00E-06	2.20E-05	4.00E-06	4.00E-06	4.36E-06
PEST	Permethrin	mg/L	49	0	0%	5.00E-06	6.00E-06	--	--	2.70E-06
PEST	Phorate	mg/L	49	0	0%	2.00E-06	1.10E-05	--	--	2.84E-06
PEST	Pramitol (Prometon)	mg/L	39	2	5%	1.50E-05	1.80E-05	3.00E-06	8.00E-06	8.21E-06
PEST	PRONARIDE	mg/L	49	8	16%	3.00E-06	4.00E-06	2.00E-06	7.00E-06	2.27E-06

Table E-11

Summary Statistics for All Categories of Surface Water Samples Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Propachlor (Ramrod)	mg/L	39	0	0%	7.00E-06	1.00E-05	--	--	4.12E-06
PEST	Propanil	mg/L	49	0	0%	4.00E-06	1.10E-05	--	--	3.43E-06
PEST	Propargite	mg/L	49	0	0%	1.30E-05	2.30E-05	--	--	8.54E-06
PEST	Simazine	mg/L	39	18	46%	5.00E-06	1.10E-05	3.00E-06	1.80E-05	5.77E-06
PEST	Tebuthiuron	mg/L	49	0	0%	1.00E-05	1.60E-05	--	--	6.22E-06
PEST	Terbacil	mg/L	49	4	8%	7.00E-06	3.40E-05	4.00E-06	6.00E-06	9.17E-06
PEST	Terbufos	mg/L	49	0	0%	1.30E-05	1.70E-05	--	--	7.32E-06
PEST	Thiobencarb	mg/L	49	0	0%	2.00E-06	5.00E-06	--	--	1.61E-06
PEST	Triallate	mg/L	49	2	4%	1.00E-06	2.00E-06	2.00E-06	2.00E-06	7.65E-07
PEST	Trifluralin (Treflan)	mg/L	78	0	0%	2.00E-06	9.00E-06	--	--	1.90E-06
SVOC	Benzo(a)anthracene	mg/L	47	44	94%	3.40E-08	1.00E-07	1.10E-08	2.50E-06	2.00E-07
SVOC	Benzo(a)pyrene	mg/L	47	31	66%	1.30E-08	1.10E-07	4.00E-09	5.20E-07	4.39E-08
SVOC	Benzo(b)fluoranthene	mg/L	47	35	74%	1.60E-08	1.20E-07	9.00E-09	1.20E-06	9.76E-08
SVOC	Benzo(ghi)perylene	mg/L	47	32	68%	2.30E-08	2.00E-07	6.00E-09	2.80E-07	3.77E-08
SVOC	Benzo(k)fluoranthene	mg/L	47	35	74%	1.40E-08	1.10E-07	8.00E-09	1.10E-06	9.40E-08
SVOC	Chrysene	mg/L	47	47	100%	--	--	2.50E-08	2.50E-06	2.39E-07
SVOC	Dibenz[a,h]anthracene	mg/L	34	18	53%	1.70E-08	1.60E-07	3.00E-09	8.30E-08	2.06E-08
SVOC	Dibenzo(a,h)pyrene	mg/L	13	8	62%	1.70E-08	6.00E-08	3.00E-09	8.30E-08	1.65E-08
SVOC	Hexachlorobenzene	mg/L	45	45	100%	--	--	5.70E-08	2.30E-06	3.33E-07
SVOC	Indeno(1,2,3-cd)pyrene	mg/L	47	32	68%	1.30E-08	1.10E-07	3.00E-09	2.00E-07	2.28E-08

CONV - Conventional parameter

PCB - Polychlorinated Biphenyls

PEST - Pesticide

SVOC - Semivolatile Organic Compound

Table E-12
Comparison of All Categories of Surface Water Concentrations Collected from Segment 5 of the Columbia River to Ecological and Human Health Benchmark Values

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
CONV	Alkalinity	mg/L	42	42	100%	22	66	49	--	--	--	--	--	--	--	--
CONV	Ammonia	mg/L	12	4	33%	0.015	0.019	0.0092	--	--	--	--	--	--	--	--
CONV	Chloride	mg/L	50	50	100%	5.6	14	8.7	230	No	0.061	0	--	--	--	--
CONV	Dissolved organic carbon	mg/L	43	43	100%	1.0	3.3	1.7	--	--	--	--	--	--	--	--
CONV	Dissolved oxygen	mg/L	12	12	100%	8.9	12	11	--	--	--	--	--	--	--	--
CONV	Fluoride	mg/L	50	50	100%	7.8	14	11	--	--	--	--	--	--	--	--
CONV	Hardness	mg/L	6	6	100%	41	67	59	--	--	--	--	--	--	--	--
CONV	Nitrogen in ammonia	mg/L	50	38	76%	0.0020	0.039	0.011	--	--	--	--	--	--	--	--
CONV	Nitrogen, Kjeldahl total	mg/L	100	96	96%	0.10	0.50	0.16	--	--	--	--	--	--	--	--
CONV	Nitrogen, Nitrate-Nitrite	mg/L	12	12	100%	0.073	0.46	0.22	--	--	--	--	--	--	--	--
CONV	Nitrogen, Nitrite	mg/L	50	47	94%	0.0010	0.0060	0.0031	--	--	--	--	--	--	--	--
CONV	Orthophosphate	mg/L	61	59	97%	0.0010	0.025	0.012	--	--	--	--	--	--	--	--
CONV	pH	pH Units	53	53	100%	6.6	8.5	7.8	--	--	--	--	--	--	--	--
CONV	Phosphate	mg/L	12	12	100%	0.024	0.043	0.030	--	--	--	--	--	--	--	--
CONV	Specific Conductance	umhos/cm	100	100	100%	75	225	132	--	--	--	--	--	--	--	--
CONV	Sulfate	mg/L	50	50	100%	0.10	0.10	0.10	--	--	--	--	--	--	--	--
CONV	Total Organic Carbon	mg/L	43	43	100%	1.0	3.8	1.8	--	--	--	--	--	--	--	--
CONV	Total Persulfate Nitrogen	mg/L	12	12	100%	0.16	0.51	0.30	--	--	--	--	--	--	--	--
CONV	Total suspended solids	mg/L	58	58	100%	1.0	38	9.1	--	--	--	--	--	--	--	--
CONV	Turbidity	NTU	65	65	100%	0.50	68	10	--	--	--	--	--	--	--	--
METAL	Antimony	mg/L	18	9	50%	1.00E-04	2.00E-04	3.06E-04	1.6	No	1.25E-04	0	0.0056	No	0.036	0
METAL	Arsenic	mg/L	35	27	77%	7.00E-04	0.0015	9.33E-04	0.15	No	0.010	0	1.80E-05	Yes	83	27
METAL	Barium	mg/L	18	18	100%	0.011	0.021	0.017	0.0040	Yes	5.2	18	1.0	No	0.021	0
METAL	Boron	mg/L	18	16	89%	0.0081	0.020	0.012	0.0016	Yes	12	16	--	--	--	--
METAL	Cadmium	mg/L	22	1	5%	1.00E-04	1.00E-04	2.02E-04	2.50E-04	No	0.40	0	--	--	--	--
METAL	Calcium	mg/L	50	50	100%	8.3	19	14	116	No	0.17	0	--	--	--	--
METAL	Chromium	mg/L	12	3	25%	3.60E-04	5.50E-04	2.61E-04	0.010	No	0.055	0	--	--	--	--
METAL	Cobalt	mg/L	13	4	31%	1.00E-04	1.00E-04	3.77E-04	0.023	No	0.0043	0	--	--	--	--
METAL	Copper	mg/L	29	29	100%	6.30E-04	0.0053	0.0013	0.0060	No	0.89	0	--	--	--	--
METAL	Lead	mg/L	12	10	83%	2.80E-05	3.80E-04	1.31E-04	8.67E-04	No	0.44	0	--	--	--	--
METAL	Lithium	mg/L	18	15	83%	0.0019	0.0038	0.0027	0.014	No	0.27	0	--	--	--	--
METAL	Magnesium	mg/L	50	50	100%	2.6	5.7	4.1	82	No	0.070	0	--	--	--	--
METAL	Nickel	mg/L	12	12	100%	4.40E-04	9.20E-04	5.84E-04	0.028	No	0.033	0	0.61	No	0.0015	0
METAL	Potassium	mg/L	50	50	100%	2.3	7.4	3.9	53	No	0.14	0	--	--	--	--
METAL	Silica	mg/L	50	50	100%	50	112	83	--	--	--	--	--	--	--	--
METAL	Sodium	mg/L	50	50	100%	3.3	9.1	5.9	680	No	0.013	0	--	--	--	--
METAL	Uranium	mg/L	18	9	50%	4.00E-04	8.00E-04	5.39E-04	0.0026	No	0.31	0	0.030	No	0.027	0
METAL	Zinc	mg/L	29	22	76%	0.0010	0.0056	0.0020	0.055	No	0.10	0	7.4	No	7.57E-04	0
PCB	Total polychlorinated biphenyl	mg/L	13	8	62%	3.30E-07	2.10E-05	3.17E-06	1.40E-05	Yes	1.5	1	6.40E-08	Yes	328	8
PEST	Alachlor	mg/L	48	31	65%	1.00E-06	1.80E-05	5.14E-06	--	--	--	--	--	--	--	--
PEST	alpha-Chlordane	mg/L	12	12	100%	1.90E-08	7.20E-07	1.64E-07	--	--	--	--	--	--	--	--
PEST	Atrazine	mg/L	43	32	74%	1.00E-06	6.50E-05	1.17E-05	--	--	--	--	--	--	--	--
PEST	Butylate	mg/L	39	1	3%	2.00E-06	2.00E-06	1.03E-06	--	--	--	--	--	--	--	--
PEST	Carbaryl (Sevin)	mg/L	49	1	2%	4.00E-06	4.00E-06	8.92E-06	--	--	--	--	--	--	--	--
PEST	Carbofuran	mg/L	49	1	2%	1.00E-05	1.00E-05	4.97E-06	--	--	--	--	--	--	--	--
PEST	Chlorpyrifos	mg/L	39	2	5%	3.00E-06	4.00E-06	2.28E-06	4.10E-05	No	0.098	0	--	--	--	--
PEST	Dachthal (chlorthal)	mg/L	49	2	4%	1.00E-06	2.00E-06	1.22E-06	--	--	--	--	--	--	--	--
PEST	Desethyl atrazine	mg/L	39	20	51%	2.00E-06	7.00E-06	2.79E-06	--	--	--	--	--	--	--	--
PEST	Dichlorodiphenyldichloroethane	mg/L	45	34	76%	1.90E-07	5.60E-06	7.48E-07	1.00E-06	Yes	5.6	4	3.10E-07	Yes	18	27
PEST	Dichlorodiphenyldichloroethylene	mg/L	93	42	45%	1.50E-08	2.10E-06	1.46E-06	--	--	--	--	2.20E-07	Yes	9.5	29
PEST	Dichlorodiphenyltrichloroethane	mg/L	45	39	87%	1.30E-08	1.50E-06	1.85E-07	1.00E-06	Yes	1.5	3	2.20E-07	Yes	6.8	8
PEST	Dieldrin	mg/L	88	39	44%	1.40E-08	5.40E-06	8.50E-07	1.90E-06	Yes	2.8	3	5.20E-08	Yes	104	37
PEST	Endosulfan I	mg/L	15	3	20%	2.70E-07	1.90E-06	5.63E-07	--	--	--	--	--	--	--	--
PEST	Endrin	mg/L	45	1	2%	1.40E-07	1.40E-07	8.40E-08	2.30E-06	No	0.061	0	5.90E-05	No	0.0024	0
PEST	Eptam	mg/L	49	12	24%	1.00E-06	9.00E-06	1.99E-06	--	--	--	--	--	--	--	--
PEST	gamma-Chlordane	mg/L	12	9	75%	2.10E-08	8.10E-07	1.62E-07	--	--	--	--	--	--	--	--
PEST	Heptachlor epoxide	mg/L	45	7	16%	2.50E-08	6.70E-08	9.40E-08	3.80E-06	No	0.018	0	3.90E-08	Yes	1.7	3
PEST	Methoxychlor	mg/L	45	9	20%	2.70E-08	3.20E-07	1.38E-07	3.00E-05	No	0.011	0	--	--	--	--
PEST	Metribuzin	mg/L	49	12	24%	3.00E-06	2.50E-05	4.76E-06	--	--	--	--	--	--	--	--

Table E-12
Comparison of All Categories of Surface Water Concentrations Collected from Segment 5 of the Columbia River to Ecological and Human Health Benchmark Values

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Detect	Maximum Detect	Average Concentration	Ecological Benchmark Value	Is Max > Eco Benchmark?	Factor of Exceedance	Number of Exceedances	Human Health Benchmark Value	Is Max > HH Benchmark?	Factor of Exceedance	Number of Exceedances
PEST	Napropamide	mg/L	49	2	4%	3.00E-06	6.00E-06	2.36E-06	--	--	--	--	--	--	--	--
PEST	Pendimethalin	mg/L	45	2	4%	4.00E-06	4.00E-06	4.36E-06	--	--	--	--	--	--	--	--
PEST	Pramitol (Prometon)	mg/L	39	2	5%	3.00E-06	8.00E-06	8.21E-06	--	--	--	--	--	--	--	--
PEST	PRONARIDE	mg/L	49	8	16%	2.00E-06	7.00E-06	2.27E-06	--	--	--	--	--	--	--	--
PEST	Simazine	mg/L	39	18	46%	3.00E-06	1.80E-05	5.77E-06	--	--	--	--	--	--	--	--
PEST	Terbacil	mg/L	49	4	8%	4.00E-06	6.00E-06	9.17E-06	--	--	--	--	--	--	--	--
PEST	Triallate	mg/L	49	2	4%	2.00E-06	2.00E-06	7.65E-07	--	--	--	--	--	--	--	--
SVOC	Benzo(a)anthracene	mg/L	47	44	94%	1.10E-08	2.50E-06	2.00E-07	2.70E-05	No	0.093	0	3.80E-06	No	0.66	0
SVOC	Benzo(a)pyrene	mg/L	47	31	66%	4.00E-09	5.20E-07	4.39E-08	1.40E-05	No	0.037	0	3.80E-06	No	0.14	0
SVOC	Benzo(b)fluoranthene	mg/L	47	35	74%	9.00E-09	1.20E-06	9.76E-08	--	--	--	--	3.80E-06	No	0.32	0
SVOC	Benzo(ghi)perylene	mg/L	47	32	68%	6.00E-09	2.80E-07	3.77E-08	--	--	--	--	--	--	--	--
SVOC	Benzo(k)fluoranthene	mg/L	47	35	74%	8.00E-09	1.10E-06	9.40E-08	--	--	--	--	3.80E-06	No	0.29	0
SVOC	Chrysene	mg/L	47	47	100%	2.50E-08	2.50E-06	2.39E-07	--	--	--	--	3.80E-06	No	0.66	0
SVOC	Dibenz[a,h]anthracene	mg/L	34	18	53%	3.00E-09	8.30E-08	2.06E-08	--	--	--	--	3.80E-06	No	0.022	0
SVOC	Dibenzo(a,h)pyrene	mg/L	13	8	62%	3.00E-09	8.30E-08	1.65E-08	--	--	--	--	--	--	--	--
SVOC	Hexachlorobenzene	mg/L	45	45	100%	5.70E-08	2.30E-06	3.33E-07	--	--	--	--	2.80E-07	Yes	8.2	14
SVOC	Indeno(1,2,3-cd)pyrene	mg/L	47	32	68%	3.00E-09	2.00E-07	2.28E-08	--	--	--	--	3.80E-06	No	0.053	0

CONV - Conventional parameter
PCB - Polychlorinated biphenyls
PEST - Pesticide
SVOC - Semivolatile Organic Compound

Table E-13

Summary of Surface Water Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	Beaver Army TML	14246900-01-11-27-F	January 11, 2001	Arsenic	mg/L	CRC1_Seg5	7.00E-04	=	0.15	1.80E-05
Columbia River	Beaver Army TML	14246900-02-02-14-F	February 2, 2002	Arsenic	mg/L	CRC1_Seg5	7.00E-04	=	0.15	1.80E-05
Columbia River	Beaver Army TML	14246900-02-05-16-F	February 5, 2002	Arsenic	mg/L	CRC1_Seg5	7.00E-04	=	0.15	1.80E-05
Columbia River	Beaver Army TML	14246900-02-05-16-FD	February 5, 2002	Arsenic	mg/L	CRC1_Seg5	7.00E-04	=	0.15	1.80E-05
Columbia River	VANCOUV(28A100)	132084	April 23, 2003	Arsenic	mg/L	CRC1_Seg5	7.40E-04	=	0.15	1.80E-05
Columbia River	Beaver Army TML	14246900-01-02-13-F	January 2, 2001	Arsenic	mg/L	CRC1_Seg5	8.00E-04	=	0.15	1.80E-05
Columbia River	Beaver Army TML	14246900-01-05-15-F	January 5, 2001	Arsenic	mg/L	CRC1_Seg5	8.00E-04	=	0.15	1.80E-05
Columbia River	Beaver Army TML	14246900-02-09-10-F	February 9, 2002	Arsenic	mg/L	CRC1_Seg5	8.00E-04	=	0.15	1.80E-05
Columbia River	VANCOUV(28A100)	132503	August 20, 2003	Arsenic	mg/L	CRC1_Seg5	8.10E-04	=	0.15	1.80E-05
Columbia River	VANCOUV(28A100)	132299	June 18, 2003	Arsenic	mg/L	CRC1_Seg5	8.30E-04	=	0.15	1.80E-05
Columbia River	VANCOUV(28A100)	131716	December 11, 2002	Arsenic	mg/L	CRC1_Seg5	8.50E-04	=	0.15	1.80E-05
Columbia River	VANCOUV(28A100)	132084-F	April 23, 2003	Arsenic	mg/L	CRC1_Seg5	8.90E-04	=	0.15	1.80E-05
Columbia River	Beaver Army TML	14246900-01-09-24-FD	January 9, 2001	Arsenic	mg/L	CRC1_Seg5	9.00E-04	=	0.15	1.80E-05
Columbia River	VANCOUV(28A100)	131716-F	December 11, 2002	Arsenic	mg/L	CRC1_Seg5	9.40E-04	=	0.15	1.80E-05
Columbia River	VANCOUV(28A100)	132503-F	August 20, 2003	Arsenic	mg/L	CRC1_Seg5	9.50E-04	=	0.15	1.80E-05
Columbia River	VANCOUV(28A100)	132299-F	June 18, 2003	Arsenic	mg/L	CRC1_Seg5	9.90E-04	=	0.15	1.80E-05
Columbia River	Beaver Army TML	14246900-01-09-24-F	January 9, 2001	Arsenic	mg/L	CRC1_Seg5	0.0010	=	0.15	1.80E-05
Columbia River	Beaver Army TML	14246900-99-06-08-F	June 8, 1999	Arsenic	mg/L	CRC1_Seg5	0.0010	=	0.15	1.80E-05
Columbia River	VANCOUV(28A100)	131560	October 30, 2002	Arsenic	mg/L	CRC1_Seg5	0.0010	=	0.15	1.80E-05
Columbia River	VANCOUV(28A100)	131897	February 26, 2003	Arsenic	mg/L	CRC1_Seg5	0.0011	=	0.15	1.80E-05
Columbia River	VANCOUV(28A100)	131560-F	October 30, 2002	Arsenic	mg/L	CRC1_Seg5	0.0011	=	0.15	1.80E-05
Columbia River	Columbia CTY OR	1388042	September 25, 2001	Arsenic	mg/L	CRC1_Seg5	0.0011	=	0.15	1.80E-05
Columbia River	VANCOUV(28A100)	131897-F	February 26, 2003	Arsenic	mg/L	CRC1_Seg5	0.0011	=	0.15	1.80E-05
Columbia River	RYAN PT WA	1388041	September 25, 2001	Arsenic	mg/L	CRC1_Seg5	0.0012	=	0.15	1.80E-05
Columbia River	County Line PRK	1388043	September 25, 2001	Arsenic	mg/L	CRC1_Seg5	0.0012	=	0.15	1.80E-05
Columbia River	County Line PRK	1388044	September 25, 2001	Arsenic	mg/L	CRC1_Seg5	0.0012	=	0.15	1.80E-05
Columbia River	Beacon Rock WA	1388040	September 25, 2001	Arsenic	mg/L	CRC1_Seg5	0.0015	=	0.15	1.80E-05
Columbia River	Beaver Army TML	14246900-99-11-30-FD	November 30, 1999	Barium	mg/L	CRC1_Seg5	0.011	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-99-11-30-F	November 30, 1999	Barium	mg/L	CRC1_Seg5	0.011	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-01-11-27-F	January 11, 2001	Barium	mg/L	CRC1_Seg5	0.012	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-99-06-08-F	June 8, 1999	Barium	mg/L	CRC1_Seg5	0.015	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-00-01-18-F	January 18, 2000	Barium	mg/L	CRC1_Seg5	0.015	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-02-02-14-F	February 2, 2002	Barium	mg/L	CRC1_Seg5	0.017	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-00-05-16-F	May 16, 2000	Barium	mg/L	CRC1_Seg5	0.017	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-00-05-16-FD	May 16, 2000	Barium	mg/L	CRC1_Seg5	0.017	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-02-05-16-FD	February 5, 2002	Barium	mg/L	CRC1_Seg5	0.017	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-01-05-15-F	January 5, 2001	Barium	mg/L	CRC1_Seg5	0.018	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-02-05-16-F	February 5, 2002	Barium	mg/L	CRC1_Seg5	0.018	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-99-03-08-F	March 8, 1999	Barium	mg/L	CRC1_Seg5	0.018	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-99-08-03-F	August 3, 1999	Barium	mg/L	CRC1_Seg5	0.018	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-02-09-10-F	February 9, 2002	Barium	mg/L	CRC1_Seg5	0.020	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-01-09-24-FD	January 9, 2001	Barium	mg/L	CRC1_Seg5	0.020	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-01-09-24-F	January 9, 2001	Barium	mg/L	CRC1_Seg5	0.020	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-00-09-12-F	September 12, 2000	Barium	mg/L	CRC1_Seg5	0.021	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-01-02-13-F	January 2, 2001	Barium	mg/L	CRC1_Seg5	0.021	=	0.0040	1.0
Columbia River	Beaver Army TML	14246900-00-05-16-FD	May 16, 2000	Boron	mg/L	CRC1_Seg5	0.0081	E	0.0016	--

Table E-13

Summary of Surface Water Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	Beaver Army TML	14246900-99-11-30-F	November 30, 1999	Boron	mg/L	CRC1_Seg5	0.0083	E	0.0016	--
Columbia River	Beaver Army TML	14246900-02-05-16-FD	February 5, 2002	Boron	mg/L	CRC1_Seg5	0.0085	=	0.0016	--
Columbia River	Beaver Army TML	14246900-99--08-03-F	August 3, 1999	Boron	mg/L	CRC1_Seg5	0.0088	E	0.0016	--
Columbia River	Beaver Army TML	14246900-02-05-16-F	February 5, 2002	Boron	mg/L	CRC1_Seg5	0.0089	=	0.0016	--
Columbia River	Beaver Army TML	14246900-99-03-08-F	March 8, 1999	Boron	mg/L	CRC1_Seg5	0.011	E	0.0016	--
Columbia River	Beaver Army TML	14246900-99-11-30-FD	November 30, 1999	Boron	mg/L	CRC1_Seg5	0.011	E	0.0016	--
Columbia River	Beaver Army TML	14246900-01-05-15-F	January 5, 2001	Boron	mg/L	CRC1_Seg5	0.011	=	0.0016	--
Columbia River	Beaver Army TML	14246900-02-09-10-F	February 9, 2002	Boron	mg/L	CRC1_Seg5	0.012	=	0.0016	--
Columbia River	Beaver Army TML	14246900-00-01-18-F	January 18, 2000	Boron	mg/L	CRC1_Seg5	0.013	E	0.0016	--
Columbia River	Beaver Army TML	14246900-02-02-14-F	February 2, 2002	Boron	mg/L	CRC1_Seg5	0.013	=	0.0016	--
Columbia River	Beaver Army TML	14246900-00-09-12-F	September 12, 2000	Boron	mg/L	CRC1_Seg5	0.015	E	0.0016	--
Columbia River	Beaver Army TML	14246900-01-11-27-F	January 11, 2001	Boron	mg/L	CRC1_Seg5	0.015	=	0.0016	--
Columbia River	Beaver Army TML	14246900-01-02-13-F	January 2, 2001	Boron	mg/L	CRC1_Seg5	0.016	=	0.0016	--
Columbia River	Beaver Army TML	14246900-01-09-24-FD	January 9, 2001	Boron	mg/L	CRC1_Seg5	0.016	=	0.0016	--
Columbia River	Beaver Army TML	14246900-01-09-24-F	January 9, 2001	Boron	mg/L	CRC1_Seg5	0.020	=	0.0016	--
Columbia River	Willamette RVR	3454416	June 25, 2003	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	3.40E-07	=	1.00E-06	3.10E-07
Columbia River	RM142 BONN DAM	loc 02 8/03-9/03	September 1, 2003	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	3.90E-07	=	1.00E-06	3.10E-07
Columbia River	RM102, COL SLGH	loc 05 8/03-9/03	September 1, 2003	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	4.60E-07	=	1.00E-06	3.10E-07
Columbia River	Columbia Slough	4314234	June 22, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	4.70E-07	J	1.00E-06	3.10E-07
Columbia River	RM102, COL SLGH	loc 05 5/04-6/04	June 1, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	4.70E-07	=	1.00E-06	3.10E-07
Columbia River	Bonneville Dam	3454414	September 24, 2003	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	5.30E-07	=	1.00E-06	3.10E-07
Columbia River	Columbia Slough	3454417	September 25, 2003	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	5.80E-07	=	1.00E-06	3.10E-07
Columbia River	RM86, MULT CHNL	loc 09 5/04-6/04	June 1, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	5.90E-07	=	1.00E-06	3.10E-07
Columbia River	Below Longview	4314243	June 23, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	6.20E-07	JN	1.00E-06	3.10E-07
Columbia River	RM88, LAKE R	loc 07 5/04-6/04	June 1, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	6.20E-07	=	1.00E-06	3.10E-07
Columbia River	RM54, LONGVIEW	loc 13 5/04-6/04	June 1, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	6.20E-07	=	1.00E-06	3.10E-07
Columbia River	RM88, LAKE R	loc 07 12/03-1/04	January 1, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	6.60E-07	=	1.00E-06	3.10E-07
Columbia River	Kalama WA	4154241	January 13, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	6.70E-07	J	1.00E-06	3.10E-07
Columbia River	RM75, KALAMA R	loc 10 12/03-1/04	January 1, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	6.70E-07	=	1.00E-06	3.10E-07
Columbia River	RM102, WRVR	loc 06 8/03-9/03	September 1, 2003	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	6.90E-07	=	1.00E-06	3.10E-07
Columbia River	Willamette RVR	4154235	January 12, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	7.50E-07	J	1.00E-06	3.10E-07
Columbia River	RM103, WRVR	loc 04 12/03-1/04	January 1, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	7.50E-07	=	1.00E-06	3.10E-07
Columbia River	RM102, WRVR	loc 06 12/03-1/04	January 1, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	7.60E-07	=	1.00E-06	3.10E-07
Columbia River	Bonneville Dam	4314231	June 22, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	8.80E-07	=	1.00E-06	3.10E-07
Columbia River	RM142 BONN DAM	loc 02 5/04-6/04	June 1, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	8.80E-07	=	1.00E-06	3.10E-07
Columbia River	Willamette RVR	4314233	June 22, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	9.40E-07	=	1.00E-06	3.10E-07
Columbia River	RM103, WRVR	loc 04 5/04-6/04	June 1, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	9.40E-07	=	1.00E-06	3.10E-07
Columbia River	RM86, MULT CHNL	loc 09 8/03-9/03	September 1, 2003	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	9.40E-07	=	1.00E-06	3.10E-07
Columbia River	Columbia Slough	4154236	January 12, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	2.00E-06	J	1.00E-06	3.10E-07
Columbia River	RM102, COL SLGH	loc 05 12/03-1/04	January 1, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	2.00E-06	=	1.00E-06	3.10E-07
Columbia River	Bonneville Dam	4154232	January 12, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	5.60E-06	=	1.00E-06	3.10E-07
Columbia River	RM142 BONN DAM	loc 02 12/03-1/04	January 1, 2004	Dichlorodiphenyldichloroethane	mg/L	CRC1_Seg5	5.60E-06	=	1.00E-06	3.10E-07
Columbia River	RM142 BONN DAM	loc 02 8/03-9/03	September 1, 2003	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	2.60E-07	=	--	2.20E-07
Columbia River	RM102, COL SLGH	loc 05 8/03-9/03	September 1, 2003	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	2.70E-07	=	--	2.20E-07
Columbia River	RM88, LAKE R	loc 07 12/03-1/04	January 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	2.70E-07	=	--	2.20E-07

Table E-13

Summary of Surface Water Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	RM68, COWLITZ R	loc 12 8/03-9/03	September 1, 2003	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	2.70E-07	=	--	2.20E-07
Columbia River	Columbia Slough	4314234	June 22, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.00E-07	J	--	2.20E-07
Columbia River	RM102, COL SLGH	loc 05 5/04-6/04	June 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.00E-07	=	--	2.20E-07
Columbia River	RM86, MULT CHNL	loc 09 12/03-1/04	January 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.10E-07	=	--	2.20E-07
Columbia River	Willamette RVR	4154235	January 12, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.30E-07	=	--	2.20E-07
Columbia River	RM103, WRVR	loc 04 12/03-1/04	January 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.30E-07	=	--	2.20E-07
Columbia River	Columbia Slough	3454417	September 25, 2003	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.40E-07	=	--	2.20E-07
Columbia River	RM86, MULT CHNL	loc 09 5/04-6/04	June 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.40E-07	=	--	2.20E-07
Columbia River	Bonneville Dam	3454414	September 24, 2003	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.50E-07	=	--	2.20E-07
Columbia River	RM88, LAKE R	loc 07 5/04-6/04	June 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.50E-07	=	--	2.20E-07
Columbia River	RM86, MULT CHNL	loc 09 8/03-9/03	September 1, 2003	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.60E-07	=	--	2.20E-07
Columbia River	RM73, KALAMA R	loc 11 8/03-9/03	September 1, 2003	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.60E-07	=	--	2.20E-07
Columbia River	Below Longview	4314243	June 23, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.70E-07	=	--	2.20E-07
Columbia River	RM54, LONGVIEW	loc 13 5/04-6/04	June 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.70E-07	=	--	2.20E-07
Columbia River	RM102, WRVR	loc 06 8/03-9/03	September 1, 2003	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	3.90E-07	=	--	2.20E-07
Columbia River	Kalama WA	4154241	January 13, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	5.20E-07	=	--	2.20E-07
Columbia River	RM75, KALAMA R	loc 10 12/03-1/04	January 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	5.20E-07	=	--	2.20E-07
Columbia River	Bonneville Dam	4314231	June 22, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	6.00E-07	=	--	2.20E-07
Columbia River	RM142 BONN DAM	loc 02 5/04-6/04	June 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	6.00E-07	=	--	2.20E-07
Columbia River	Willamette RVR	4314233	June 22, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	6.40E-07	=	--	2.20E-07
Columbia River	RM103, WRVR	loc 04 5/04-6/04	June 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	6.40E-07	=	--	2.20E-07
Columbia River	RM102, WRVR	loc 06 12/03-1/04	January 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	1.40E-06	=	--	2.20E-07
Columbia River	Columbia Slough	4154236	January 12, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	1.60E-06	=	--	2.20E-07
Columbia River	RM102, COL SLGH	loc 05 12/03-1/04	January 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	1.60E-06	=	--	2.20E-07
Columbia River	Bonneville Dam	4154232	January 12, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	2.10E-06	=	--	2.20E-07
Columbia River	RM142 BONN DAM	loc 02 12/03-1/04	January 1, 2004	Dichlorodiphenyldichloroethylene	mg/L	CRC1_Seg5	2.10E-06	=	--	2.20E-07
Columbia River	Bonneville Dam	4154232	January 12, 2004	Dichlorodiphenyltrichloroethane	mg/L	CRC1_Seg5	2.70E-07	J	1.00E-06	2.20E-07
Columbia River	RM142 BONN DAM	loc 02 12/03-1/04	January 1, 2004	Dichlorodiphenyltrichloroethane	mg/L	CRC1_Seg5	2.70E-07	=	1.00E-06	2.20E-07
Columbia River	RM86, MULT CHNL	loc 09 12/03-1/04	January 1, 2004	Dichlorodiphenyltrichloroethane	mg/L	CRC1_Seg5	2.70E-07	=	1.00E-06	2.20E-07
Columbia River	Kalama WA	4154241	January 13, 2004	Dichlorodiphenyltrichloroethane	mg/L	CRC1_Seg5	3.20E-07	=	1.00E-06	2.20E-07
Columbia River	RM75, KALAMA R	loc 10 12/03-1/04	January 1, 2004	Dichlorodiphenyltrichloroethane	mg/L	CRC1_Seg5	3.20E-07	=	1.00E-06	2.20E-07
Columbia River	Columbia Slough	4154236	January 12, 2004	Dichlorodiphenyltrichloroethane	mg/L	CRC1_Seg5	1.50E-06	J	1.00E-06	2.20E-07
Columbia River	RM102, COL SLGH	loc 05 12/03-1/04	January 1, 2004	Dichlorodiphenyltrichloroethane	mg/L	CRC1_Seg5	1.50E-06	=	1.00E-06	2.20E-07
Columbia River	RM102, WRVR	loc 06 12/03-1/04	January 1, 2004	Dichlorodiphenyltrichloroethane	mg/L	CRC1_Seg5	1.50E-06	=	1.00E-06	2.20E-07
Columbia River	Below Longview	3454426	September 25, 2003	Dieldrin	mg/L	CRC1_Seg5	5.20E-08	=	1.90E-06	5.20E-08
Columbia River	RM88, LAKE R	loc 07 8/03-9/03	September 1, 2003	Dieldrin	mg/L	CRC1_Seg5	5.60E-08	=	1.90E-06	5.20E-08
Columbia River	RM103, WRVR	loc 04 8/03-9/03	September 1, 2003	Dieldrin	mg/L	CRC1_Seg5	5.70E-08	=	1.90E-06	5.20E-08
Columbia River	RM142 BONN DAM	loc 02 8/03-9/03	September 1, 2003	Dieldrin	mg/L	CRC1_Seg5	6.40E-08	=	1.90E-06	5.20E-08
Columbia River	RM102, WRVR	loc 06 5/04-6/04	June 1, 2004	Dieldrin	mg/L	CRC1_Seg5	6.70E-08	=	1.90E-06	5.20E-08
Columbia River	Willamette RVR	3454416	June 25, 2003	Dieldrin	mg/L	CRC1_Seg5	7.00E-08	=	1.90E-06	5.20E-08
Columbia River	Bonneville Dam	3454414	September 24, 2003	Dieldrin	mg/L	CRC1_Seg5	8.60E-08	=	1.90E-06	5.20E-08
Columbia River	Willamette RVR	4154235	January 12, 2004	Dieldrin	mg/L	CRC1_Seg5	8.60E-08	J	1.90E-06	5.20E-08
Columbia River	RM103, WRVR	loc 04 12/03-1/04	January 1, 2004	Dieldrin	mg/L	CRC1_Seg5	8.60E-08	=	1.90E-06	5.20E-08
Columbia River	Bonneville Dam	4314231	June 22, 2004	Dieldrin	mg/L	CRC1_Seg5	1.00E-07	J	1.90E-06	5.20E-08
Columbia River	RM142 BONN DAM	loc 02 5/04-6/04	June 1, 2004	Dieldrin	mg/L	CRC1_Seg5	1.00E-07	=	1.90E-06	5.20E-08

Table E-13

Summary of Surface Water Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	RM87, LEWIS R	loc 08 5/04-6/04	June 1, 2004	Dieldrin	mg/L	CRC1_Seg5	1.10E-07	=	1.90E-06	5.20E-08
Columbia River	Columbia Slough	4314234	June 22, 2004	Dieldrin	mg/L	CRC1_Seg5	1.20E-07	J	1.90E-06	5.20E-08
Columbia River	RM102, COL SLGH	loc 05 5/04-6/04	June 1, 2004	Dieldrin	mg/L	CRC1_Seg5	1.20E-07	=	1.90E-06	5.20E-08
Columbia River	Willamette RVR	4314233	June 22, 2004	Dieldrin	mg/L	CRC1_Seg5	1.30E-07	J	1.90E-06	5.20E-08
Columbia River	Below Longview	4314243	June 23, 2004	Dieldrin	mg/L	CRC1_Seg5	1.30E-07	J	1.90E-06	5.20E-08
Columbia River	RM103, WRVR	loc 04 5/04-6/04	June 1, 2004	Dieldrin	mg/L	CRC1_Seg5	1.30E-07	=	1.90E-06	5.20E-08
Columbia River	RM73, KALAMA R	loc 11 12/3-1/04	January 1, 2004	Dieldrin	mg/L	CRC1_Seg5	1.30E-07	=	1.90E-06	5.20E-08
Columbia River	RM54, LONGVIEW	loc 13 5/04-6/04	June 1, 2004	Dieldrin	mg/L	CRC1_Seg5	1.30E-07	=	1.90E-06	5.20E-08
Columbia River	RM102, COL SLGH	loc 05 8/03-9/03	September 1, 2003	Dieldrin	mg/L	CRC1_Seg5	1.40E-07	=	1.90E-06	5.20E-08
Columbia River	RM102, WRVR	loc 06 8/03-9/03	September 1, 2003	Dieldrin	mg/L	CRC1_Seg5	1.50E-07	=	1.90E-06	5.20E-08
Columbia River	RM87, LEWIS R	loc 08 12/03-1/04	January 1, 2004	Dieldrin	mg/L	CRC1_Seg5	1.70E-07	=	1.90E-06	5.20E-08
Columbia River	Columbia Slough	3454417	September 25, 2003	Dieldrin	mg/L	CRC1_Seg5	1.80E-07	=	1.90E-06	5.20E-08
Columbia River	RM121, WASHRVR	loc 03 5/04-6/04	June 1, 2004	Dieldrin	mg/L	CRC1_Seg5	1.80E-07	=	1.90E-06	5.20E-08
Columbia River	RM88, LAKE R	loc 07 5/04-6/04	June 1, 2004	Dieldrin	mg/L	CRC1_Seg5	2.20E-07	=	1.90E-06	5.20E-08
Columbia River	RM86, MULT CHNL	loc 09 8/03-9/03	September 1, 2003	Dieldrin	mg/L	CRC1_Seg5	2.40E-07	=	1.90E-06	5.20E-08
Columbia River	RM121, WASHRVR	loc 03 12/03-1/04	January 1, 2004	Dieldrin	mg/L	CRC1_Seg5	2.50E-07	=	1.90E-06	5.20E-08
Columbia River	RM86, MULT CHNL	loc 09 5/04-6/04	June 1, 2004	Dieldrin	mg/L	CRC1_Seg5	3.60E-07	=	1.90E-06	5.20E-08
Columbia River	RM88, LAKE R	loc 07 12/03-1/04	January 1, 2004	Dieldrin	mg/L	CRC1_Seg5	4.50E-07	=	1.90E-06	5.20E-08
Columbia River	Kalama WA	4154241	January 13, 2004	Dieldrin	mg/L	CRC1_Seg5	5.00E-07	=	1.90E-06	5.20E-08
Columbia River	RM75, KALAMA R	loc 10 12/03-1/04	January 1, 2004	Dieldrin	mg/L	CRC1_Seg5	5.00E-07	=	1.90E-06	5.20E-08
Columbia River	Bonneville Dam	4154232	January 12, 2004	Dieldrin	mg/L	CRC1_Seg5	5.70E-07	J	1.90E-06	5.20E-08
Columbia River	RM142 BONN DAM	loc 02 12/03-1/04	January 1, 2004	Dieldrin	mg/L	CRC1_Seg5	5.70E-07	=	1.90E-06	5.20E-08
Columbia River	RM86, MULT CHNL	loc 09 12/03-1/04	January 1, 2004	Dieldrin	mg/L	CRC1_Seg5	7.20E-07	=	1.90E-06	5.20E-08
Columbia River	RM102, WRVR	loc 06 12/03-1/04	January 1, 2004	Dieldrin	mg/L	CRC1_Seg5	2.50E-06	=	1.90E-06	5.20E-08
Columbia River	Columbia Slough	4154236	January 12, 2004	Dieldrin	mg/L	CRC1_Seg5	5.40E-06	=	1.90E-06	5.20E-08
Columbia River	RM102, COL SLGH	loc 05 12/03-1/04	January 1, 2004	Dieldrin	mg/L	CRC1_Seg5	5.40E-06	=	1.90E-06	5.20E-08
Columbia River	Willamette RVR	4314233	June 22, 2004	Heptachlor epoxide	mg/L	CRC1_Seg5	4.50E-08	J	3.80E-06	3.90E-08
Columbia River	RM103, WRVR	loc 04 5/04-6/04	June 1, 2004	Heptachlor epoxide	mg/L	CRC1_Seg5	4.50E-08	=	3.80E-06	3.90E-08
Columbia River	RM88, LAKE R	loc 07 5/04-6/04	June 1, 2004	Heptachlor epoxide	mg/L	CRC1_Seg5	6.70E-08	=	3.80E-06	3.90E-08
Columbia River	RM68, COWLITZ R	loc 12 8/03-9/03	September 1, 2003	Hexachlorobenzene	mg/L	CRC1_Seg5	3.40E-07	=	--	2.80E-07
Columbia River	RM73, KALAMA R	loc 11 12/3-1/04	January 1, 2004	Hexachlorobenzene	mg/L	CRC1_Seg5	3.60E-07	=	--	2.80E-07
Columbia River	RM121, WASHRVR	loc 03 12/03-1/04	January 1, 2004	Hexachlorobenzene	mg/L	CRC1_Seg5	3.70E-07	=	--	2.80E-07
Columbia River	RM68, COWLITZ R	loc 12 12/03-1/04	January 1, 2004	Hexachlorobenzene	mg/L	CRC1_Seg5	4.00E-07	=	--	2.80E-07
Columbia River	RM86, MULT CHNL	loc 09 5/04-6/04	June 1, 2004	Hexachlorobenzene	mg/L	CRC1_Seg5	4.10E-07	=	--	2.80E-07
Columbia River	RM86, MULT CHNL	loc 09 12/03-1/04	January 1, 2004	Hexachlorobenzene	mg/L	CRC1_Seg5	4.80E-07	=	--	2.80E-07
Columbia River	Kalama WA	4154241	January 13, 2004	Hexachlorobenzene	mg/L	CRC1_Seg5	5.90E-07	J	--	2.80E-07
Columbia River	RM75, KALAMA R	loc 10 12/03-1/04	January 1, 2004	Hexachlorobenzene	mg/L	CRC1_Seg5	5.90E-07	=	--	2.80E-07
Columbia River	RM73, KALAMA R	loc 11 8/03-9/03	September 1, 2003	Hexachlorobenzene	mg/L	CRC1_Seg5	6.90E-07	=	--	2.80E-07
Columbia River	Bonneville Dam	4154232	January 12, 2004	Hexachlorobenzene	mg/L	CRC1_Seg5	8.00E-07	J	--	2.80E-07
Columbia River	RM142 BONN DAM	loc 02 12/03-1/04	January 1, 2004	Hexachlorobenzene	mg/L	CRC1_Seg5	8.00E-07	=	--	2.80E-07
Columbia River	Columbia Slough	4154236	January 12, 2004	Hexachlorobenzene	mg/L	CRC1_Seg5	1.10E-06	J	--	2.80E-07
Columbia River	RM102, COL SLGH	loc 05 12/03-1/04	January 1, 2004	Hexachlorobenzene	mg/L	CRC1_Seg5	1.10E-06	=	--	2.80E-07
Columbia River	RM102, WRVR	loc 06 12/03-1/04	January 1, 2004	Hexachlorobenzene	mg/L	CRC1_Seg5	2.30E-06	=	--	2.80E-07
Columbia River	Bonneville Dam	4314231	June 22, 2004	Total polychlorinated biphenyl	mg/L	CRC1_Seg5	3.30E-07	=	1.40E-05	6.40E-08
Columbia River	Willamette RVR	4314233	June 22, 2004	Total polychlorinated biphenyl	mg/L	CRC1_Seg5	3.60E-07	=	1.40E-05	6.40E-08

Table E-13**Summary of Surface Water Results From Segment 5 Exceeding Select Ecological or Human Health Benchmark Values**

Sample Area	Sample Site	Sample ID	Date Collected	Constituent Name	Units	QA Category	Analytical Value	Qualifier	Ecological Benchmark Value	Human Health Benchmark Value
Columbia River	Below Longview	3454426	September 25, 2003	Total polychlorinated biphenyl	mg/L	CRC1_Seg5	3.90E-07	=	1.40E-05	6.40E-08
Columbia River	Kalama WA	4314240	June 23, 2004	Total polychlorinated biphenyl	mg/L	CRC1_Seg5	5.90E-07	=	1.40E-05	6.40E-08
Columbia River	Below Longview	4314243	June 23, 2004	Total polychlorinated biphenyl	mg/L	CRC1_Seg5	6.00E-07	=	1.40E-05	6.40E-08
Columbia River	Columbia Slough	3454417	September 25, 2003	Total polychlorinated biphenyl	mg/L	CRC1_Seg5	2.20E-06	JN	1.40E-05	6.40E-08
Columbia River	Columbia Slough	4314234	June 22, 2004	Total polychlorinated biphenyl	mg/L	CRC1_Seg5	1.30E-05	=	1.40E-05	6.40E-08
Columbia River	Columbia Slough	4154236	January 12, 2004	Total polychlorinated biphenyl	mg/L	CRC1_Seg5	2.10E-05	JN	1.40E-05	6.40E-08

APPENDIX F

BIOTA SUMMARY STATISTIC TABLES

Table F-1**Summary Statistics for Asiatic Clam Shells Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Antimony-125	pCi/g	1	0	0%	0.026	0.026	--	--	0.013
RAD	Beryllium-7	pCi/g	2	0	0%	3.6	22	--	--	6.5
RAD	Cesium-134	pCi/g	5	0	0%	0.0035	0.047	--	--	0.0093
RAD	Cesium-137	pCi/g	2	0	0%	8.84E-04	0.0056	--	--	0.0016
RAD	Cobalt-60	pCi/g	4	0	0%	0.0037	0.029	--	--	0.0070
RAD	Europium-152	pCi/g	2	0	0%	0.0094	0.018	--	--	0.0068
RAD	Europium-154	pCi/g	3	0	0%	0.0027	0.042	--	--	0.011
RAD	Europium-155	pCi/g	3	0	0%	0.033	0.073	--	--	0.024
RAD	Potassium-40	pCi/g	1	1	100%	--	--	0.60	0.60	0.60
RAD	Ruthenium-106	pCi/g	1	0	0%	0.11	0.11	--	--	0.054
RAD	Strontium-90	pCi/g	9	9	100%	--	--	0.19	0.37	0.26
RAD	Technetium-99	pCi/g	4	1	25%	0.14	0.41	0.64	0.64	0.25

RAD - Radionuclide

Table F-2**Summary Statistics for Asiatic Clam Soft Tissue Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	14	14	100%	--	--	239	861	456
METAL	Antimony	mg/kg	14	11	79%	0.010	0.019	0.011	0.049	0.018
METAL	Arsenic	mg/kg	14	14	100%	--	--	4.9	9.0	7.0
METAL	Barium	mg/kg	9	9	100%	--	--	8.2	25	12
METAL	Beryllium	mg/kg	14	5	36%	0.0040	0.020	0.060	0.12	0.036
METAL	Cadmium	mg/kg	14	14	100%	--	--	1.5	5.0	2.2
METAL	Chromium	mg/kg	14	14	100%	--	--	1.2	5.8	2.7
METAL	Copper	mg/kg	14	14	100%	--	--	25	63	38
METAL	Lead	mg/kg	14	14	100%	--	--	0.44	2.0	0.89
METAL	Manganese	mg/kg	14	14	100%	--	--	18	62	33
METAL	Mercury	mg/kg	14	12	86%	0.050	0.050	0.031	0.085	0.057
METAL	Nickel	mg/kg	14	14	100%	--	--	0.63	2.2	1.1
METAL	Selenium	mg/kg	14	14	100%	--	--	2.0	3.2	2.4
METAL	Silver	mg/kg	14	14	100%	--	--	0.040	0.086	0.055
METAL	Thallium	mg/kg	14	14	100%	--	--	0.049	0.19	0.099
METAL	Thorium	mg/kg	14	14	100%	--	--	0.023	0.30	0.081
METAL	Uranium	mg/kg	26	26	100%	--	--	0.11	0.24	0.17
METAL	Zinc	mg/kg	14	14	100%	--	--	90	182	117

Table F-3
Summary Statistics for Clam Shells Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Beryllium	mg/kg	2	0	0%	0.20	0.20	--	--	0.10
METAL	Chromium	mg/kg	2	1	50%	0.50	0.50	0.54	0.54	0.40
METAL	Copper	mg/kg	2	2	100%	--	--	3.1	4.0	3.6
METAL	Nickel	mg/kg	2	0	0%	2.0	2.0	--	--	1.0
RAD	Cesium-137	pCi/g	1	1	100%	--	--	0.011	0.011	0.011
RAD	Cobalt-60	pCi/g	1	0	0%	0.0030	0.0030	--	--	0.0015
RAD	Plutonium-238	pCi/g	1	0	0%	0.085	0.085	--	--	0.043
RAD	Plutonium-239/240	pCi/g	1	0	0%	0.090	0.090	--	--	0.045
RAD	Potassium-40	pCi/g	1	1	100%	--	--	0.69	0.69	0.69
RAD	Strontium-90	pCi/g	2	2	100%	--	--	0.20	0.40	0.30
RAD	Uranium-234	pCi/g	1	1	100%	--	--	0.28	0.28	0.28
RAD	Uranium-235	pCi/g	1	1	100%	--	--	0.024	0.024	0.024
RAD	Uranium-238	pCi/g	1	1	100%	--	--	0.14	0.14	0.14

RAD - Radionuclide

Table F-4**Summary Statistics for Bass Fillet with Skin Off Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Antimony-125	pCi/g	3	0	0%	0.016	0.039	--	--	0.014
RAD	Beryllium-7	pCi/g	2	0	0%	0.053	0.12	--	--	0.043
RAD	Cesium-134	pCi/g	2	0	0%	0.017	0.019	--	--	0.0088
RAD	Cesium-137	pCi/g	5	0	0%	8.80E-04	0.015	--	--	0.0040
RAD	Cobalt-60	pCi/g	4	0	0%	0.0039	0.025	--	--	0.0055
RAD	Europium-154	pCi/g	2	0	0%	0.011	0.031	--	--	0.011
RAD	Europium-155	pCi/g	4	0	0%	0.0035	0.044	--	--	0.0088
RAD	Potassium-40	pCi/g	5	5	100%	--	--	4.1	4.7	4.4
RAD	Ruthenium-106	pCi/g	1	0	0%	9.55E-04	9.55E-04	--	--	4.78E-04
RAD	Uranium-234	pCi/g	1	0	0%	4.71E-04	4.71E-04	--	--	2.36E-04
RAD	Uranium-235	pCi/g	1	0	0%	7.97E-04	7.97E-04	--	--	3.99E-04

RAD - Radionuclide

Table F-5
Summary Statistics for Bass Liver Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Solids	%	2	2	100%	--	--	28	28	28
METAL	Aluminum	mg/kg	2	2	100%	--	--	0.25	0.32	0.28
METAL	Antimony	mg/kg	2	0	0%	0.0018	0.0018	--	--	8.85E-04
METAL	Arsenic	mg/kg	2	2	100%	--	--	0.017	0.022	0.020
METAL	Beryllium	mg/kg	2	0	0%	0.0021	0.0021	--	--	0.0010
METAL	Cadmium	mg/kg	2	2	100%	--	--	0.0064	0.015	0.011
METAL	Chromium	mg/kg	2	2	100%	--	--	0.061	0.061	0.061
METAL	Copper	mg/kg	2	2	100%	--	--	0.17	0.19	0.18
METAL	Lead	mg/kg	2	1	50%	9.95E-04	9.95E-04	0.0012	0.0012	8.41E-04
METAL	Manganese	mg/kg	2	2	100%	--	--	0.057	0.065	0.061
METAL	Nickel	mg/kg	2	1	50%	6.94E-04	6.94E-04	8.79E-04	8.79E-04	6.13E-04
METAL	Selenium	mg/kg	2	2	100%	--	--	0.11	0.13	0.12
METAL	Silver	mg/kg	2	0	0%	0.0010	0.0010	--	--	5.06E-04
METAL	Thallium	mg/kg	2	2	100%	--	--	0.0024	0.0039	0.0031
METAL	Thorium	mg/kg	2	0	0%	5.83E-04	5.97E-04	--	--	2.95E-04
METAL	Uranium	mg/kg	2	0	0%	0.0015	0.0015	--	--	7.45E-04
METAL	Zinc	mg/kg	2	2	100%	--	--	1.6	1.8	1.7

Table F-6
Summary Statistics for Whole Body Bass Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Strontium-90	pCi/g	5	2	40%	0.015	0.043	0.018	0.018	0.016
RAD	Uranium-234	pCi/g	2	1	50%	0.0013	0.0013	0.0023	0.0023	0.0015
RAD	Uranium-235	pCi/g	1	0	0%	2.68E-05	2.68E-05	--	--	1.34E-05
RAD	Uranium-238	pCi/g	2	0	0%	8.14E-04	0.0011	--	--	4.89E-04

RAD - Radionuclide

Table F-7

Summary Statistics for Smallmouth Bass Fillet Skin On Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	3	3	100%	--	--	0.70	1.4	1.1
PCB	Aroclor-1016	mg/Kg	3	0	0%	0.0027	0.0028	--	--	0.0014
PCB	Aroclor-1221	mg/Kg	3	0	0%	0.0027	0.0028	--	--	0.0014
PCB	Aroclor-1232	mg/Kg	3	0	0%	0.0027	0.0028	--	--	0.0014
PCB	Aroclor-1242	mg/Kg	3	0	0%	0.0027	0.0028	--	--	0.0014
PCB	Aroclor-1248	mg/Kg	3	1	33%	0.0027	0.0028	0.0029	0.0029	0.0019
PCB	Aroclor-1254	mg/Kg	3	2	67%	0.0028	0.0028	0.0022	0.0095	0.0044
PCB	Aroclor-1260	mg/Kg	3	1	33%	0.0027	0.0028	0.0019	0.0019	0.0016
PCB	Aroclor-1262	mg/Kg	3	0	0%	0.0027	0.0028	--	--	0.0014
PCB	Aroclor-1268	mg/Kg	3	0	0%	0.0027	0.0028	--	--	0.0014
PEST	2,4'-DDD	mg/Kg	3	3	100%	--	--	6.80E-04	0.0022	0.0015
PEST	2,4'-DDE	mg/Kg	3	0	0%	5.40E-04	0.0011	--	--	3.78E-04
PEST	2,4'-DDT	mg/Kg	3	0	0%	5.20E-04	5.40E-04	--	--	2.67E-04
PEST	Dichlorodiphenyldichloroethane	mg/Kg	3	3	100%	--	--	0.0034	0.014	0.0095
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	3	3	100%	--	--	0.059	0.15	0.099
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	3	3	100%	--	--	8.30E-04	0.0030	0.0018

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

Table F-8
Summary Statistics for Whole Body Smallmouth Bass Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	1	1	100%	--	--	8.0	8.0	8.0
CONV	Percent moisture (wet sample)	mg/Kg	1	1	100%	--	--	67	67	67
DIOX/	TCDD-eq	mg/Kg	1	1	100%	--	--	6.0	6.0	6.0
METAL	Aluminum	mg/Kg	1	1	100%	--	--	10	10	10
METAL	Arsenic	mg/Kg	1	0	0%	0.30	0.30	--	--	0.15
METAL	Barium	mg/Kg	1	1	100%	--	--	0.52	0.52	0.52
METAL	Beryllium	mg/Kg	1	0	0%	0.059	0.059	--	--	0.030
METAL	Boron	mg/Kg	1	0	0%	1.2	1.2	--	--	0.59
METAL	Cadmium	mg/Kg	1	0	0%	0.059	0.059	--	--	0.030
METAL	Chromium	mg/Kg	1	1	100%	--	--	0.50	0.50	0.50
METAL	Copper	mg/Kg	1	1	100%	--	--	0.92	0.92	0.92
METAL	Iron	mg/Kg	1	1	100%	--	--	16	16	16
METAL	Lead	mg/Kg	1	0	0%	0.12	0.12	--	--	0.059
METAL	Magnesium	mg/Kg	1	1	100%	--	--	343	343	343
METAL	Manganese	mg/Kg	1	1	100%	--	--	0.54	0.54	0.54
METAL	Mercury	mg/Kg	1	1	100%	--	--	0.15	0.15	0.15
METAL	Molybdenum	mg/Kg	1	0	0%	0.30	0.30	--	--	0.15
METAL	Nickel	mg/Kg	1	0	0%	0.30	0.30	--	--	0.15
METAL	Selenium	mg/Kg	1	1	100%	--	--	0.70	0.70	0.70
METAL	Strontium	mg/Kg	1	1	100%	--	--	9.5	9.5	9.5
METAL	Vanadium	mg/Kg	1	0	0%	0.30	0.30	--	--	0.15
METAL	Zinc	mg/Kg	1	1	100%	--	--	14	14	14
PCB	Total polychlorinated biphenyl	mg/Kg	1	1	100%	--	--	0.30	0.30	0.30
PEST	2,4'-DDD	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	2,4'-DDE	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	2,4'-DDT	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Alpha-BHC	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	alpha-Chlordane	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Beta-BHC	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	cis-Nonachlor	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Delta-BHC	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Dichlorodiphenyldichloroethane	mg/Kg	1	1	100%	--	--	0.13	0.13	0.13
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	1	1	100%	--	--	0.51	0.51	0.51
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	1	1	100%	--	--	0.017	0.017	0.017
PEST	Dieldrin	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Endrin	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Gamma-BHC (Lindane)	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	gamma-Chlordane	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Heptachlor epoxide	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Mirex	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Oxychlordane	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Toxaphene	mg/Kg	1	0	0%	0.030	0.030	--	--	0.015
PEST	trans-Nonachlor	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Hexachlorobenzene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

Table F-9
Summary Statistics for Carp Fillet Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Antimony-125	pCi/g	2	0	0%	0.0041	0.060	--	--	0.016
RAD	Beryllium-7	pCi/g	7	0	0%	0.0039	0.12	--	--	0.026
RAD	Cesium-134	pCi/g	7	0	0%	1.81E-04	0.015	--	--	0.0032
RAD	Cesium-137	pCi/g	8	0	0%	0.0041	0.033	--	--	0.0067
RAD	Cobalt-60	pCi/g	5	0	0%	0.0014	0.018	--	--	0.0035
RAD	Europium-154	pCi/g	7	0	0%	0.0065	0.066	--	--	0.015
RAD	Europium-155	pCi/g	5	1	20%	0.0041	0.018	0.014	0.014	0.0069
RAD	Potassium-40	pCi/g	13	13	100%	--	--	2.0	4.2	2.9
RAD	Ruthenium-106	pCi/g	5	0	0%	0.013	0.10	--	--	0.025
RAD	Uranium-234	pCi/g	4	0	0%	4.11E-04	0.0042	--	--	0.0013
RAD	Uranium-235	pCi/g	4	0	0%	2.23E-05	7.26E-04	--	--	1.03E-04
RAD	Uranium-238	pCi/g	1	0	0%	4.53E-04	4.53E-04	--	--	2.27E-04

RAD - Radionuclide

Table F-10**Summary Statistics for Carp Liver Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Solids	%	5	5	100%	--	--	20	35	28
METAL	Aluminum	mg/kg	5	5	100%	--	--	0.12	0.53	0.29
METAL	Antimony	mg/kg	5	1	20%	0.0016	0.0022	0.0013	0.0013	0.0010
METAL	Arsenic	mg/kg	5	5	100%	--	--	0.0086	0.029	0.019
METAL	Beryllium	mg/kg	5	0	0%	0.0015	0.0026	--	--	0.0010
METAL	Cadmium	mg/kg	5	5	100%	--	--	0.071	2.3	0.58
METAL	Chromium	mg/kg	5	5	100%	--	--	0.028	0.046	0.036
METAL	Copper	mg/kg	5	5	100%	--	--	1.6	8.9	3.6
METAL	Lead	mg/kg	5	5	100%	--	--	0.0024	0.0084	0.0053
METAL	Manganese	mg/kg	5	5	100%	--	--	0.099	0.30	0.16
METAL	Nickel	mg/kg	5	5	100%	--	--	5.85E-04	0.0037	0.0023
METAL	Selenium	mg/kg	5	5	100%	--	--	0.094	0.16	0.13
METAL	Silver	mg/kg	5	5	100%	--	--	0.012	0.066	0.026
METAL	Thallium	mg/kg	5	2	40%	0.0014	0.0017	0.0018	0.0020	0.0012
METAL	Thorium	mg/kg	5	1	20%	5.44E-04	7.31E-04	0.0019	0.0019	6.38E-04
METAL	Uranium	mg/kg	5	3	60%	0.0015	0.0017	0.0017	0.0019	0.0014
METAL	Zinc	mg/kg	5	5	100%	--	--	12	28	20

Table F-11**Summary Statistics for Whole Body Carp Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	2	2	100%	--	--	5.2	6.5	5.8
	Percent moisture (wet sample)	mg/Kg	2	2	100%	--	--	71	72	72
DIOX/	TCDD-eq	mg/Kg	2	2	100%	--	--	6.0	8.0	7.0
METAL	Aluminum	mg/Kg	2	2	100%	--	--	21	43	32
METAL	Arsenic	mg/Kg	2	0	0%	0.27	0.28	--	--	0.14
METAL	Barium	mg/Kg	2	2	100%	--	--	1.6	2.6	2.1
METAL	Beryllium	mg/Kg	2	0	0%	0.055	0.057	--	--	0.028
METAL	Boron	mg/Kg	2	0	0%	1.1	1.1	--	--	0.56
METAL	Cadmium	mg/Kg	2	2	100%	--	--	0.33	0.51	0.42
METAL	Chromium	mg/Kg	2	2	100%	--	--	1.5	2.9	2.2
METAL	Copper	mg/Kg	2	2	100%	--	--	1.5	3.3	2.4
METAL	Iron	mg/Kg	2	2	100%	--	--	50	88	69
METAL	Lead	mg/Kg	2	2	100%	--	--	0.22	0.34	0.28
METAL	Magnesium	mg/Kg	2	2	100%	--	--	296	379	338
METAL	Manganese	mg/Kg	2	2	100%	--	--	3.8	4.5	4.2
METAL	Mercury	mg/Kg	2	2	100%	--	--	0.081	0.10	0.092
METAL	Molybdenum	mg/Kg	2	0	0%	0.27	0.28	--	--	0.14
METAL	Nickel	mg/Kg	2	1	50%	0.27	0.27	0.58	0.58	0.36
METAL	Selenium	mg/Kg	2	2	100%	--	--	0.42	0.59	0.50
METAL	Strontium	mg/Kg	2	2	100%	--	--	14	18	16
METAL	Vanadium	mg/Kg	2	0	0%	0.27	0.28	--	--	0.14
METAL	Zinc	mg/Kg	2	2	100%	--	--	71	76	73
	Total polychlorinated biphenyl	mg/Kg	2	2	100%	--	--	0.20	0.45	0.33
PEST	2,4'-DDD	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	2,4'-DDE	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	2,4'-DDT	mg/Kg	2	1	50%	0.010	0.010	0.043	0.043	0.024
PEST	Alpha-BHC	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	alpha-Chlordane	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Beta-BHC	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	cis-Nonachlor	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Delta-BHC	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Dichlorodiphenyldichloroethane	mg/Kg	2	2	100%	--	--	0.094	0.20	0.15
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	2	2	100%	--	--	0.56	1.1	0.83
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Dieldrin	mg/Kg	2	1	50%	0.010	0.010	0.012	0.012	0.0085
PEST	Endrin	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050

Table F-11**Summary Statistics for Whole Body Carp Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Gamma-BHC (Lindane)	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	gamma-Chlordane	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Heptachlor epoxide	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Mirex	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Oxychlordane	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Toxaphene	mg/Kg	2	0	0%	0.030	0.030	--	--	0.015
PEST	trans-Nonachlor	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
RAD	Strontium-90	pCi/g	12	11	92%	0.052	0.052	0.031	0.10	0.063
RAD	Uranium-234	pCi/g	2	2	100%	--	--	0.0084	0.027	0.017
RAD	Uranium-235	pCi/g	2	0	0%	4.14E-04	0.0012	--	--	3.99E-04
RAD	Uranium-238	pCi/g	2	2	100%	--	--	0.0058	0.023	0.014
SVOC	Hexachlorobenzene	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050

PEST - Pesticide

PCB - Polychlorinated biphenyl

RAD - Radionuclide

SVOC - Semivolatile Organic Compound

Table F-12
Summary Statistics for Sucker Fillet Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Antimony-125	pCi/g	2	0	0%	0.0050	0.0077	--	--	0.0032
RAD	Beryllium-7	pCi/g	4	0	0%	0.022	0.075	--	--	0.029
RAD	Cesium-134	pCi/g	1	0	0%	0.0013	0.0013	--	--	6.70E-04
RAD	Cesium-137	pCi/g	4	0	0%	0.011	0.020	--	--	0.0077
RAD	Cobalt-60	pCi/g	4	0	0%	0.0022	0.016	--	--	0.0039
RAD	Europium-154	pCi/g	3	0	0%	0.0084	0.047	--	--	0.013
RAD	Europium-155	pCi/g	6	0	0%	0.020	0.064	--	--	0.021
RAD	Potassium-40	pCi/g	7	7	100%	--	--	2.9	4.1	3.5
RAD	Ruthenium-106	pCi/g	4	0	0%	0.021	0.36	--	--	0.065

RAD - Radionuclide

Table F-13
Summary Statistics for Whole Body Sucker Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	5	5	100%	--	--	15	529	348
METAL	Antimony	mg/kg	5	5	100%	--	--	0.011	0.024	0.019
METAL	Arsenic	mg/kg	5	5	100%	--	--	0.14	0.54	0.34
METAL	Barium	mg/kg	5	5	100%	--	--	7.2	17	13
METAL	Beryllium	mg/kg	5	0	0%	0.020	0.020	--	--	0.010
METAL	Cadmium	mg/kg	5	5	100%	--	--	0.078	0.18	0.14
METAL	Chromium	mg/kg	5	5	100%	--	--	1.1	2.1	1.6
METAL	Copper	mg/kg	5	5	100%	--	--	2.2	3.2	2.7
METAL	Lead	mg/kg	5	5	100%	--	--	0.070	0.94	0.59
METAL	Manganese	mg/kg	5	5	100%	--	--	24	58	42
METAL	Mercury	mg/kg	5	5	100%	--	--	0.040	0.089	0.064
METAL	Nickel	mg/kg	5	5	100%	--	--	1.3	2.2	1.7
METAL	Selenium	mg/kg	5	5	100%	--	--	1.2	1.8	1.5
METAL	Silver	mg/kg	5	3	60%	0.010	0.010	0.012	0.013	0.0094
METAL	Thallium	mg/kg	5	5	100%	--	--	0.056	0.076	0.066
METAL	Thorium	mg/kg	5	4	80%	0.020	0.020	0.023	0.11	0.067
METAL	Uranium	mg/kg	5	5	100%	--	--	0.015	0.065	0.045
METAL	Zinc	mg/kg	5	5	100%	--	--	88	109	100
RAD	Strontium-90	pCi/g	8	4	50%	0.011	0.026	0.031	0.079	0.028

RAD - Radionuclide

Table F-14**Summary Statistics for Crayfish Hepatopancreas Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	15	13	87%	5.0	5.0	2.8	36	13
METAL	Antimony	mg/kg	15	15	100%	--	--	0.032	0.78	0.17
METAL	Arsenic	mg/kg	15	14	93%	0.10	0.10	1.1	6.9	3.9
METAL	Barium	mg/kg	15	15	100%	--	--	1.7	17	9.0
METAL	Beryllium	mg/kg	15	0	0%	0.019	0.020	--	--	0.0096
METAL	Cadmium	mg/kg	15	15	100%	--	--	2.2	14	5.3
METAL	Chromium	mg/kg	15	15	100%	--	--	0.25	0.76	0.47
METAL	Copper	mg/kg	15	15	100%	--	--	193	2,480	972
METAL	Lead	mg/kg	15	15	100%	--	--	0.074	0.59	0.19
METAL	Manganese	mg/kg	15	15	100%	--	--	28	414	130
METAL	Mercury	mg/kg	15	13	87%	0.050	0.050	0.046	0.34	0.090
METAL	Nickel	mg/kg	15	15	100%	--	--	0.99	3.4	1.9
METAL	Selenium	mg/kg	15	15	100%	--	--	1.4	9.6	4.6
METAL	Silver	mg/kg	15	15	100%	--	--	1.5	8.6	4.9
METAL	Thallium	mg/kg	15	15	100%	--	--	0.076	0.36	0.20
METAL	Thorium	mg/kg	15	2	13%	0.020	0.021	0.049	0.58	0.051
METAL	Uranium	mg/kg	15	15	100%	--	--	0.12	1.0	0.37
METAL	Zinc	mg/kg	15	15	100%	--	--	64	319	179

Table F-15
Summary Statistics for Whole Body Crayfish Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	5	5	100%	--	--	113	307	218
METAL	Antimony	mg/kg	5	5	100%	--	--	0.015	0.083	0.035
METAL	Arsenic	mg/kg	5	3	60%	0.10	0.10	0.23	0.41	0.20
METAL	Barium	mg/kg	5	5	100%	--	--	144	557	299
METAL	Beryllium	mg/kg	5	0	0%	0.020	0.020	--	--	0.010
METAL	Cadmium	mg/kg	5	5	100%	--	--	0.12	0.34	0.21
METAL	Chromium	mg/kg	5	5	100%	--	--	0.61	1.0	0.81
METAL	Copper	mg/kg	5	5	100%	--	--	43	74	65
METAL	Lead	mg/kg	5	5	100%	--	--	0.22	0.84	0.45
METAL	Manganese	mg/kg	5	5	100%	--	--	62	460	166
METAL	Mercury	mg/kg	5	1	20%	0.050	0.050	0.066	0.066	0.033
METAL	Nickel	mg/kg	5	5	100%	--	--	3.0	4.5	3.6
METAL	Selenium	mg/kg	5	5	100%	--	--	0.41	1.3	0.91
METAL	Silver	mg/kg	5	5	100%	--	--	0.040	0.10	0.073
METAL	Thallium	mg/kg	5	5	100%	--	--	0.057	0.12	0.083
METAL	Thorium	mg/kg	5	4	80%	0.020	0.020	0.024	0.046	0.031
METAL	Uranium	mg/kg	5	5	100%	--	--	0.057	0.16	0.11
METAL	Zinc	mg/kg	5	5	100%	--	--	64	98	81
RAD	Antimony-125	pCi/g	3	0	0%	0.040	0.064	--	--	0.025
RAD	Beryllium-7	pCi/g	3	0	0%	0.0080	0.23	--	--	0.054
RAD	Cesium-134	pCi/g	6	0	0%	0.0031	0.13	--	--	0.017
RAD	Cesium-137	pCi/g	4	0	0%	0.0035	0.082	--	--	0.017
RAD	Cobalt-60	pCi/g	4	0	0%	0.031	0.086	--	--	0.029
RAD	Europium-152	pCi/g	1	0	0%	0.076	0.076	--	--	0.038
RAD	Europium-154	pCi/g	3	0	0%	0.0078	0.12	--	--	0.039
RAD	Europium-155	pCi/g	6	0	0%	0.017	0.094	--	--	0.025
RAD	Potassium-40	pCi/g	5	2	40%	0.48	0.87	1.4	1.6	0.81
RAD	Ruthenium-106	pCi/g	2	0	0%	0.29	0.53	--	--	0.20
RAD	Strontium-90	pCi/g	6	6	100%	--	--	0.092	0.14	0.11
RAD	Technetium-99	pCi/g	6	0	0%	2.70E-04	0.12	--	--	0.044

RAD - Radionuclide

Table F-16

Summary Statistics for Chinook Salmon Fillet Skin On Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	3	100%	--	--	3.00E-08	7.00E-08	4.67E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	2.00E-08	4.00E-08	--	--	1.33E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	0	0%	2.00E-08	5.00E-08	--	--	1.67E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	2.00E-08	4.00E-08	--	--	1.33E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	0	0%	2.00E-08	5.00E-08	--	--	1.67E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	0	0%	2.00E-08	4.00E-08	--	--	1.33E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	0	0%	2.00E-08	5.00E-08	--	--	1.67E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	2.00E-08	8.00E-08	8.00E-08	3.17E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	0	0%	2.00E-08	5.00E-08	--	--	1.50E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	2.00E-08	4.00E-08	--	--	1.33E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	2.00E-08	1.60E-07	1.60E-07	5.83E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	8.50E-07	1.38E-06	1.05E-06
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	0	0%	2.00E-08	4.00E-08	--	--	1.33E-08
DIOX/	Octachlorodibenzofuran	mg/kg	3	0	0%	2.00E-08	5.00E-08	--	--	1.67E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	1	33%	1.00E-08	3.00E-08	1.50E-07	1.50E-07	5.67E-08
METAL	Aluminum	mg/kg	3	1	33%	1.0	1.0	1.1	1.1	0.70
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.73	0.79	0.76
METAL	Barium	mg/kg	3	0	0%	0.20	0.20	--	--	0.10
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Chromium	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.0032	0.0035	0.0034
METAL	Copper	mg/kg	3	3	100%	--	--	0.53	0.71	0.61
METAL	Lead	mg/kg	3	0	0%	0.010	0.010	--	--	0.0050
METAL	Manganese	mg/kg	3	3	100%	--	--	0.070	0.070	0.070
METAL	Mercury	mg/kg	3	3	100%	--	--	0.060	0.14	0.11
METAL	Nickel	mg/kg	3	1	33%	0.030	0.030	0.32	0.32	0.12
METAL	Selenium	mg/kg	3	3	100%	--	--	0.29	0.30	0.30
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	0	0%	0.010	0.010	--	--	0.0050
METAL	Zinc	mg/kg	3	3	100%	--	--	6.1	6.8	6.4
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	6.62E-05	8.37E-05	7.23E-05
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	1.97E-04	2.68E-04	2.26E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	1.36E-05	1.78E-05	1.50E-05
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	5.68E-05	7.32E-05	6.33E-05
PCB	2,3,3',4,4',5-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	4.27E-04	6.30E-04	5.14E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	2.86E-05	3.57E-05	3.12E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	1.13E-05	1.52E-05	1.39E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	3.11E-05	4.47E-05	3.63E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	8.84E-04	0.0013	0.0011
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	2.32E-06	3.05E-06	2.70E-06
PCB	3,3',4,4',5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	1.00E-06	1.00E-06	--	--	5.00E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	2	67%	5.00E-07	5.00E-07	3.24E-06	3.58E-06	2.36E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	3.55E-05	5.74E-05	4.42E-05
PCB	Aroclor-1016	mg/kg	2	0	0%	0.020	0.020	--	--	0.010
PCB	Aroclor-1221	mg/kg	3	0	0%	0.020	0.020	--	--	0.010
PCB	Aroclor-1232	mg/kg	3	0	0%	0.020	0.020	--	--	0.010
PCB	Aroclor-1248	mg/kg	3	0	0%	0.020	0.020	--	--	0.010

Table F-16
Summary Statistics for Chinook Salmon Fillet Skin On Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.024	0.035	0.029
PCB	Aroclor-1260	mg/kg	3	0	0%	0.020	0.020	--	--	0.010
PEST	2,4'-DDD	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	2,4'-DDE	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Aldrin	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	alpha-Chlordane	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Beta-BHC	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	cis-Nonachlor	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	DDMU	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Delta-BHC	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.0033	0.0057	0.0042
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.0081	0.012	0.0095
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	2	67%	0.0020	0.0020	0.0018	0.0042	0.0023
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Heptachlor	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Mirex	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Oxychlordane	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Toxaphene	mg/kg	3	0	0%	0.059	0.060	--	--	0.030
PEST	trans-Nonachlor	mg/kg	3	3	100%	--	--	0.0024	0.0041	0.0032
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.15	0.16	--	--	0.077
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.038	0.040	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	Acenaphthene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	Anthracene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Chrysene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	Fluoranthene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Fluorene	mg/kg	3	0	0%	0.0083	0.0099	--	--	0.0046

Table F-16
Summary Statistics for Chinook Salmon Fillet Skin On Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Naphthalene	mg/kg	3	0	0%	0.015	0.025	--	--	0.0097
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0094	0.010	--	--	0.0048
SVOC	Pyrene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
VOC	Retene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-17

Summary Statistics for Whole Body Chinook Salmon Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	2	67%	2.00E-08	2.00E-08	5.00E-08	6.00E-08	4.00E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	6.67E-09
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	6.67E-09
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	8.33E-09
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	0	0%	1.00E-08	3.00E-08	--	--	1.00E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	8.33E-09
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	0	0%	1.00E-08	3.00E-08	--	--	1.00E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	8.33E-09
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	0	0%	1.00E-08	3.00E-08	--	--	1.00E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	0	0%	2.00E-08	3.00E-08	--	--	1.17E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	0	0%	2.00E-08	3.00E-08	--	--	1.33E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	8.33E-09
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	2	67%	3.00E-08	3.00E-08	1.30E-07	1.50E-07	9.83E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	2	67%	1.00E-06	1.00E-06	8.40E-07	1.05E-06	7.97E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	0	0%	2.00E-08	3.00E-08	--	--	1.17E-08
DIOX/	Octachlorodibenzofuran	mg/kg	3	0	0%	3.00E-08	6.00E-08	--	--	2.17E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	0	0%	2.00E-08	5.00E-08	--	--	1.67E-08
METAL	Aluminum	mg/kg	3	0	0%	1.0	1.0	--	--	0.50
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.84	0.99	0.93
METAL	Barium	mg/kg	3	0	0%	0.20	0.20	--	--	0.10
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.0057	0.010	0.0073
METAL	Chromium	mg/kg	3	2	67%	0.10	0.10	0.14	0.15	0.11
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.070	0.19	0.14
METAL	Copper	mg/kg	3	3	100%	--	--	1.1	14	6.1
METAL	Lead	mg/kg	3	3	100%	--	--	0.010	1.2	0.47
METAL	Manganese	mg/kg	3	3	100%	--	--	0.24	0.29	0.27
METAL	Mercury	mg/kg	3	3	100%	--	--	0.050	0.14	0.093
METAL	Nickel	mg/kg	3	3	100%	--	--	0.060	0.24	0.14
METAL	Selenium	mg/kg	3	2	67%	0.50	0.50	0.39	0.53	0.39
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	3	100%	--	--	0.010	0.020	0.017
METAL	Zinc	mg/kg	3	3	100%	--	--	24	27	26
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	7.91E-05	1.11E-04	9.09E-05
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	2.28E-04	3.50E-04	2.76E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	1.79E-05	1.96E-05	1.87E-05
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	7.62E-05	8.28E-05	7.89E-05
PCB	2,3,3',4,4',5-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	4.63E-04	5.91E-04	5.44E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	3.12E-05	3.57E-05	3.34E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	1.34E-05	1.40E-05	1.37E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	4.12E-05	4.19E-05	4.16E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	9.78E-04	0.0012	0.0011
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	2	67%	1.00E-06	1.00E-06	2.92E-06	4.33E-06	2.58E-06
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	1.00E-06	1.00E-06	--	--	5.00E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	3	100%	--	--	5.00E-07	4.31E-06	2.75E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	3.07E-05	4.88E-05	4.19E-05
PCB	Aroclor-1016	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1221	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1232	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1248	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098

Table F-17
Summary Statistics for Whole Body Chinook Salmon Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.023	0.030	0.026
PCB	Aroclor-1260	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
PEST	2,4'-DDD	mg/kg	3	3	100%	--	--	9.60E-04	0.0015	0.0012
PEST	2,4'-DDE	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Aldrin	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	alpha-Chlordane	mg/kg	3	2	67%	0.0020	0.0020	0.0014	0.0016	0.0013
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	cis-Nonachlor	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	DDMU	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Delta-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.0036	0.0069	0.0055
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.0082	0.014	0.010
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Endosulfan sulfate	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Mirex	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Oxychlordane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Toxaphene	mg/kg	3	0	0%	0.058	0.060	--	--	0.030
PEST	trans-Nonachlor	mg/kg	3	3	100%	--	--	0.0022	0.0046	0.0031
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.037	0.039	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	Acenaphthene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	Anthracene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Chrysene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	Fluoranthene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097

Table F-17
Summary Statistics for Whole Body Chinook Salmon Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Fluorene	mg/kg	3	0	0%	0.0048	0.0098	--	--	0.0033
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Naphthalene	mg/kg	3	0	0%	0.012	0.028	--	--	0.010
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0093	0.0098	--	--	0.0048
SVOC	Pyrene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
VOC	Retene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-18**Summary Statistics for Whole Body Juvenile Chinook Salmon Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Solids	%	60	60	100%	--	--	5.1	43	16
METAL	Aluminum	mg/kg	10	10	100%	--	--	0.19	1.3	0.67
METAL	Antimony	mg/kg	10	10	100%	--	--	0.047	0.21	0.092
METAL	Arsenic	mg/kg	10	7	70%	0.0021	0.0039	0.0056	0.020	0.0092
METAL	Beryllium	mg/kg	10	1	10%	3.77E-04	0.0013	0.0054	0.0054	9.42E-04
METAL	Cadmium	mg/kg	10	10	100%	--	--	0.0011	0.0094	0.0049
METAL	Chromium	mg/kg	60	60	100%	--	--	0.020	0.12	0.044
METAL	Copper	mg/kg	10	10	100%	--	--	0.023	0.10	0.064
METAL	Lead	mg/kg	10	10	100%	--	--	7.70E-04	0.0080	0.0026
METAL	Manganese	mg/kg	10	10	100%	--	--	0.021	0.13	0.075
METAL	Nickel	mg/kg	10	10	100%	--	--	6.84E-04	0.016	0.0065
METAL	Selenium	mg/kg	10	10	100%	--	--	0.018	0.068	0.047
METAL	Silver	mg/kg	10	5	50%	3.60E-04	6.52E-04	4.13E-04	0.0048	8.62E-04
METAL	Thallium	mg/kg	10	10	100%	--	--	9.90E-04	0.0082	0.0029
METAL	Thorium	mg/kg	10	8	80%	3.57E-04	3.78E-04	2.50E-04	0.011	0.0018
METAL	Uranium	mg/kg	60	1	2%	2.70E-04	0.0019	0.0078	0.0078	4.68E-04
METAL	Zinc	mg/kg	10	10	100%	--	--	0.64	1.8	1.3

Table F-19**Summary Statistics for Mountain Whitefish Fillet Skin On Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	3	3	100%	--	--	1.6	3.1	2.5
PCB	Aroclor-1016	mg/Kg	3	0	0%	0.0026	0.0028	--	--	0.0014
PCB	Aroclor-1221	mg/Kg	3	0	0%	0.0026	0.0028	--	--	0.0014
PCB	Aroclor-1232	mg/Kg	3	0	0%	0.0026	0.0028	--	--	0.0014
PCB	Aroclor-1242	mg/Kg	3	0	0%	0.0026	0.0028	--	--	0.0014
PCB	Aroclor-1248	mg/Kg	3	2	67%	0.0028	0.0028	0.0025	0.0035	0.0025
PCB	Aroclor-1254	mg/Kg	3	3	100%	--	--	0.0029	0.0098	0.0064
PCB	Aroclor-1260	mg/Kg	3	3	100%	--	--	0.0021	0.0062	0.0035
PCB	Aroclor-1262	mg/Kg	3	0	0%	0.0026	0.0028	--	--	0.0014
PCB	Aroclor-1268	mg/Kg	3	0	0%	0.0026	0.0028	--	--	0.0014
PEST	2,4'-DDD	mg/Kg	3	3	100%	--	--	6.40E-04	0.0022	0.0014
PEST	2,4'-DDE	mg/Kg	3	0	0%	5.30E-04	0.0012	--	--	3.82E-04
PEST	2,4'-DDT	mg/Kg	3	3	100%	--	--	7.60E-04	8.00E-04	7.73E-04
PEST	Dichlorodiphenyldichloroethane	mg/Kg	3	3	100%	--	--	0.0049	0.016	0.012
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	3	3	100%	--	--	0.073	0.12	0.10
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	3	3	100%	--	--	0.0028	0.0037	0.0032

PEST - Pesticide

PCB - Polychlorinated biphenyl

Table F-20**Summary Statistics for Whitefish Fillet Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Beryllium-7	pCi/g	5	0	0%	0.0042	0.19	--	--	0.048
RAD	Cesium-134	pCi/g	3	1	33%	0.0079	0.016	0.024	0.024	0.012
RAD	Cesium-137	pCi/g	7	3	43%	0.0082	0.026	0.022	0.056	0.020
RAD	Cobalt-60	pCi/g	4	0	0%	3.69E-04	0.019	--	--	0.0042
RAD	Europium-154	pCi/g	6	0	0%	0.015	0.16	--	--	0.027
RAD	Europium-155	pCi/g	4	0	0%	0.0027	0.019	--	--	0.0058
RAD	Potassium-40	pCi/g	9	9	100%	--	--	2.1	4.1	3.1
RAD	Ruthenium-106	pCi/g	1	0	0%	0.0036	0.0036	--	--	0.0018
RAD	Strontium-90	pCi/g	3	1	33%	4.64E-04	0.0030	0.0035	0.0035	0.0017

RAD - Radionuclide

Table F-21**Summary Statistics for Whitefish Liver Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	1	1	100%	--	--	2.6	2.6	2.6
METAL	Antimony	mg/kg	1	0	0%	0.019	0.019	--	--	0.0095
METAL	Arsenic	mg/kg	1	1	100%	--	--	1.1	1.1	1.1
METAL	Beryllium	mg/kg	1	1	100%	--	--	0.063	0.063	0.063
METAL	Cadmium	mg/kg	1	1	100%	--	--	1.6	1.6	1.6
METAL	Chromium	mg/kg	1	1	100%	--	--	0.061	0.061	0.061
METAL	Copper	mg/kg	1	1	100%	--	--	34	34	34
METAL	Lead	mg/kg	1	0	0%	0.030	0.030	--	--	0.015
METAL	Manganese	mg/kg	1	1	100%	--	--	4.4	4.4	4.4
METAL	Mercury	mg/kg	1	1	100%	--	--	0.49	0.49	0.49
METAL	Nickel	mg/kg	1	1	100%	--	--	0.069	0.069	0.069
METAL	Selenium	mg/kg	1	1	100%	--	--	6.0	6.0	6.0
METAL	Silver	mg/kg	1	1	100%	--	--	0.34	0.34	0.34
METAL	Thallium	mg/kg	1	1	100%	--	--	1.3	1.3	1.3
METAL	Thorium	mg/kg	1	0	0%	0.021	0.021	--	--	0.011
METAL	Uranium	mg/kg	1	0	0%	0.031	0.031	--	--	0.015
METAL	Zinc	mg/kg	1	1	100%	--	--	105	105	105

Table F-22**Summary Statistics for Wholebody Whitefish Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Strontium-90	pCi/g	8	7	88%	0.0073	0.0073	0.035	0.071	0.044
RAD	Uranium-234	pCi/g	7	7	100%	--	--	0.0030	0.060	0.015
RAD	Uranium-235	pCi/g	4	1	25%	1.75E-04	0.0010	0.0033	0.0033	0.0011
RAD	Uranium-238	pCi/g	7	7	100%	--	--	0.0039	0.050	0.012

RAD - radionuclide

Table F-23
Summary Statistics for Whole Body Northern Squawfish Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	1	1	100%	--	--	4.1	4.1	4.1
CONV	Percent moisture (wet sample)	mg/Kg	1	1	100%	--	--	72	72	72
DIOX/	TCDD-eq	mg/Kg	1	1	100%	--	--	6.0	6.0	6.0
METAL	Aluminum	mg/Kg	1	1	100%	--	--	67	67	67
METAL	Arsenic	mg/Kg	1	0	0%	0.26	0.26	--	--	0.13
METAL	Barium	mg/Kg	1	1	100%	--	--	3.4	3.4	3.4
METAL	Beryllium	mg/Kg	1	0	0%	0.051	0.051	--	--	0.026
METAL	Boron	mg/Kg	1	0	0%	1.0	1.0	--	--	0.52
METAL	Cadmium	mg/Kg	1	1	100%	--	--	0.14	0.14	0.14
METAL	Chromium	mg/Kg	1	1	100%	--	--	3.4	3.4	3.4
METAL	Copper	mg/Kg	1	1	100%	--	--	2.3	2.3	2.3
METAL	Iron	mg/Kg	1	1	100%	--	--	149	149	149
METAL	Lead	mg/Kg	1	0	0%	0.10	0.10	--	--	0.051
METAL	Magnesium	mg/Kg	1	1	100%	--	--	335	335	335
METAL	Manganese	mg/Kg	1	1	100%	--	--	5.8	5.8	5.8
METAL	Mercury	mg/Kg	1	1	100%	--	--	0.30	0.30	0.30
METAL	Molybdenum	mg/Kg	1	0	0%	0.26	0.26	--	--	0.13
METAL	Nickel	mg/Kg	1	1	100%	--	--	0.59	0.59	0.59
METAL	Selenium	mg/Kg	1	1	100%	--	--	0.41	0.41	0.41
METAL	Strontium	mg/Kg	1	1	100%	--	--	15	15	15
METAL	Vanadium	mg/Kg	1	0	0%	0.26	0.26	--	--	0.13
METAL	Zinc	mg/Kg	1	1	100%	--	--	20	20	20
PCB	Total polychlorinated biphenyl	mg/Kg	1	1	100%	--	--	1.3	1.3	1.3
PEST	2,4'-DDD	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	2,4'-DDE	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	2,4'-DDT	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Alpha-BHC	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	alpha-Chlordane	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Beta-BHC	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	cis-Nonachlor	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Delta-BHC	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Dichlorodiphenyldichloroethane	mg/Kg	1	1	100%	--	--	0.067	0.067	0.067
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	1	1	100%	--	--	0.28	0.28	0.28
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Dieldrin	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Endrin	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Gamma-BHC (Lindane)	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	gamma-Chlordane	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Heptachlor epoxide	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Mirex	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Oxychlordane	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
PEST	Toxaphene	mg/Kg	1	0	0%	0.030	0.030	--	--	0.015
PEST	trans-Nonachlor	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050
SVOC	Hexachlorobenzene	mg/Kg	1	0	0%	0.010	0.010	--	--	0.0050

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

Table F-24**Summary Statistics for Sculpin Liver Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	13	13	100%	--	--	1.9	17	6.0
METAL	Antimony	mg/kg	15	11	73%	0.015	0.019	0.024	0.35	0.052
METAL	Arsenic	mg/kg	15	12	80%	0.10	0.10	0.50	2.3	1.1
METAL	Barium	mg/kg	13	13	100%	--	--	0.053	0.80	0.24
METAL	Beryllium	mg/kg	15	0	0%	0.019	0.15	--	--	0.018
METAL	Cadmium	mg/kg	15	15	100%	--	--	1.8	15	5.8
METAL	Chromium	mg/kg	15	15	100%	--	--	0.14	7.9	1.6
METAL	Copper	mg/kg	15	15	100%	--	--	4.9	44	18
METAL	Lead	mg/kg	15	11	73%	0.034	0.034	0.046	0.23	0.090
METAL	Manganese	mg/kg	13	13	100%	--	--	0.75	6.8	2.2
METAL	Mercury	mg/kg	15	15	100%	--	--	0.078	0.63	0.23
METAL	Nickel	mg/kg	15	15	100%	--	--	0.068	0.32	0.15
METAL	Selenium	mg/kg	15	15	100%	--	--	2.6	15	7.1
METAL	Silver	mg/kg	15	4	27%	0.010	0.045	0.026	0.065	0.026
METAL	Thallium	mg/kg	15	15	100%	--	--	0.18	0.39	0.27
METAL	Thorium	mg/kg	13	3	23%	0.020	0.021	0.041	0.27	0.045
METAL	Uranium	mg/kg	13	2	15%	0.010	0.031	0.017	0.018	0.015
METAL	Zinc	mg/kg	15	15	100%	--	--	82	232	157

Table F-25**Summary Statistics for Whole Body Sculpin Collected from Segment 1 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Antimony-125	pCi/g	3	0	0%	0.0039	0.050	--	--	0.011
RAD	Beryllium-7	pCi/g	5	0	0%	0.024	1.2	--	--	0.19
RAD	Cesium-134	pCi/g	4	0	0%	0.0088	0.029	--	--	0.0085
RAD	Cesium-137	pCi/g	4	0	0%	2.42E-05	0.0089	--	--	0.0024
RAD	Cobalt-60	pCi/g	6	0	0%	0.0021	0.068	--	--	0.013
RAD	Europium-152	pCi/g	4	0	0%	0.0028	0.028	--	--	0.0061
RAD	Europium-154	pCi/g	2	0	0%	0.0030	0.011	--	--	0.0035
RAD	Europium-155	pCi/g	4	0	0%	0.0060	0.11	--	--	0.019
RAD	Potassium-40	pCi/g	7	7	100%	--	--	2.5	3.6	3.1
RAD	Ruthenium-106	pCi/g	3	0	0%	0.037	0.082	--	--	0.033
RAD	Strontium-90	pCi/g	10	1	10%	7.61E-04	0.033	0.015	0.015	0.0073
RAD	Technetium-99	pCi/g	8	2	25%	0.053	0.20	0.15	0.33	0.10

RAD - Radionuclide

Table F-26
Summary Statistics for White Sturgeon Fillet Collected from Segment 1 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Beryllium-7	pCi/g	5	0	0%	0.0042	0.19	--	--	0.048
RAD	Cesium-134	pCi/g	3	1	33%	0.0079	0.016	0.024	0.024	0.012
RAD	Cesium-137	pCi/g	7	3	43%	0.0082	0.026	0.022	0.056	0.020
RAD	Cobalt-60	pCi/g	4	0	0%	3.69E-04	0.019	--	--	0.0042
RAD	Europium-154	pCi/g	6	0	0%	0.015	0.16	--	--	0.027
RAD	Europium-155	pCi/g	4	0	0%	0.0027	0.019	--	--	0.0058
RAD	Potassium-40	pCi/g	9	9	100%	--	--	2.1	4.1	3.1
RAD	Ruthenium-106	pCi/g	1	0	0%	0.0036	0.0036	--	--	0.0018
RAD	Strontium-90	pCi/g	3	1	33%	4.64E-04	0.0030	0.0035	0.0035	0.0017

RAD- radionuclide

Table F-27**Summary Statistics for Anadonta Shells Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Strontium-90	pCi/g	1	1	100%	--	--	0.41	0.41	0.41
RAD	Technetium-99	pCi/g	1	1	100%	--	--	0.61	0.61	0.61

RAD - Radionuclide

Table F-28**Summary Statistics for Anadonta Soft Tissue Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Antimony	mg/kg	3	3	100%	--	--	0.037	0.053	0.047
METAL	Arsenic	mg/kg	3	3	100%	--	--	8.0	9.3	8.7
METAL	Beryllium	mg/kg	3	0	0%	0.019	0.019	--	--	0.0094
METAL	Cadmium	mg/kg	3	3	100%	--	--	8.9	10	9.5
METAL	Chromium	mg/kg	3	3	100%	--	--	8.5	22	14
METAL	Copper	mg/kg	3	3	100%	--	--	7.0	9.6	8.2
METAL	Lead	mg/kg	3	3	100%	--	--	0.95	1.2	1.1
METAL	Nickel	mg/kg	3	3	100%	--	--	2.1	3.0	2.5
METAL	Selenium	mg/kg	3	3	100%	--	--	0.72	2.4	1.6
METAL	Silver	mg/kg	3	3	100%	--	--	0.41	0.80	0.66
METAL	Thallium	mg/kg	3	3	100%	--	--	0.080	0.10	0.093
METAL	Zinc	mg/kg	3	3	100%	--	--	538	1,360	912

Table F-29**Summary Statistics for Asiatic Clam Shells Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Strontium-90	pCi/g	76	74	97%	0.075	0.13	0.16	383	6.4
RAD	Technetium-99	pCi/g	23	3	13%	0.0048	0.68	0.47	3.4	0.28

RAD - Radionuclide

Table F-30**Summary Statistics for Asiatic Clam Soft Tissue Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	92	92	100%	--	--	20	3,070	385
METAL	Antimony	mg/kg	150	103	69%	0.010	0.019	0.010	0.094	0.019
METAL	Arsenic	mg/kg	150	150	100%	--	--	3.8	9.3	6.7
METAL	Barium	mg/kg	68	68	100%	--	--	6.0	18	9.7
METAL	Beryllium	mg/kg	150	28	19%	0.0040	0.020	0.021	0.78	0.039
METAL	Cadmium	mg/kg	150	150	100%	--	--	0.81	4.3	2.1
METAL	Chromium	mg/kg	178	178	100%	--	--	0.69	70	8.6
METAL	Copper	mg/kg	150	150	100%	--	--	18	82	40
METAL	Lead	mg/kg	150	150	100%	--	--	0.26	3.6	0.90
METAL	Manganese	mg/kg	92	92	100%	--	--	4.8	97	28
METAL	Mercury	mg/kg	92	79	86%	0.050	0.050	0.018	0.28	0.054
METAL	Nickel	mg/kg	150	150	100%	--	--	0.20	3.7	0.97
METAL	Selenium	mg/kg	178	178	100%	--	--	1.6	5.0	2.4
METAL	Silver	mg/kg	150	144	96%	0.045	0.045	0.034	0.17	0.061
METAL	Thallium	mg/kg	150	150	100%	--	--	0.024	0.26	0.11
METAL	Thorium	mg/kg	92	87	95%	0.020	0.021	0.011	1.5	0.11
METAL	Uranium	mg/kg	132	132	100%	--	--	0.071	9.7	0.84
METAL	Zinc	mg/kg	150	150	100%	--	--	74	221	113
RAD	Beryllium-7	pCi/g	1	0	0%	0.0078	0.0078	--	--	0.0039
RAD	Cesium-134	pCi/g	1	0	0%	0.0039	0.0039	--	--	0.0020
RAD	Cesium-137	pCi/g	1	0	0%	0.0079	0.0079	--	--	0.0039
RAD	Europium-152	pCi/g	1	0	0%	0.11	0.11	--	--	0.055
RAD	Europium-154	pCi/g	1	0	0%	0.051	0.051	--	--	0.025
RAD	Potassium-40	pCi/g	1	0	0%	0.051	0.051	--	--	0.026
RAD	Technetium-99	pCi/g	1	1	100%	--	--	0.16	0.16	0.16

RAD - Radionuclide

Table F-31**Summary Statistics for Clam Shells Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Antimony	mg/kg	2	1	50%	0.015	0.015	0.019	0.019	0.013
METAL	Arsenic	mg/kg	2	2	100%	--	--	0.11	0.51	0.31
METAL	Beryllium	mg/kg	3	0	0%	0.0050	0.15	--	--	0.051
METAL	Cadmium	mg/kg	2	2	100%	--	--	0.066	0.33	0.20
METAL	Chromium	mg/kg	3	2	67%	0.10	0.10	0.25	1.9	0.74
METAL	Copper	mg/kg	3	3	100%	--	--	3.0	12	8.4
METAL	Lead	mg/kg	2	2	100%	--	--	0.21	2.7	1.4
METAL	Mercury	mg/kg	2	2	100%	--	--	0.0014	0.0024	0.0019
METAL	Nickel	mg/kg	2	2	100%	--	--	12	12	12
METAL	Selenium	mg/kg	2	0	0%	1.0	1.0	--	--	0.50
METAL	Silver	mg/kg	2	0	0%	0.045	0.045	--	--	0.023
METAL	Thallium	mg/kg	2	2	100%	--	--	0.048	0.12	0.086
METAL	Zinc	mg/kg	2	2	100%	--	--	2.0	27	14
RAD	Plutonium-238	pCi/g	1	1	100%	--	--	0.068	0.068	0.068
RAD	Plutonium-239/240	pCi/g	1	1	100%	--	--	0.012	0.012	0.012
RAD	Potassium-40	pCi/g dry	2	2	100%	--	--	0.50	0.57	0.54
RAD	Strontium-90	pCi/g	2	2	100%	--	--	0.10	0.23	0.17
RAD	Strontium-90	pCi/g dry	2	1	50%	0.13	0.13	1.5	1.5	0.78
RAD	Uranium-234	pCi/g	1	1	100%	--	--	0.20	0.20	0.20
RAD	Uranium-238	pCi/g	1	1	100%	--	--	0.090	0.090	0.090

RAD - Radionuclide

Table F-32**Summary Statistics for Clam Soft Tissue Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	1	1	100%	--	--	450	450	450
METAL	Antimony	mg/kg	3	1	33%	0.015	0.015	0.020	0.020	0.012
METAL	Arsenic	mg/kg	3	3	100%	--	--	4.3	16	9.3
METAL	Barium	mg/kg	1	1	100%	--	--	15	15	15
METAL	Beryllium	mg/kg	3	1	33%	0.15	0.15	0.14	0.14	0.097
METAL	Cadmium	mg/kg	3	3	100%	--	--	2.5	5.6	3.5
METAL	Chromium	mg/kg	3	3	100%	--	--	2.0	20	8.3
METAL	Copper	mg/kg	3	3	100%	--	--	22	92	50
METAL	Lead	mg/kg	3	3	100%	--	--	0.47	3.0	1.5
METAL	Manganese	mg/kg	1	1	100%	--	--	25	25	25
METAL	Mercury	mg/kg	3	3	100%	--	--	0.030	0.050	0.041
METAL	Nickel	mg/kg	3	3	100%	--	--	0.74	1.5	1.1
METAL	Selenium	mg/kg	3	3	100%	--	--	2.4	3.9	2.9
METAL	Silver	mg/kg	3	3	100%	--	--	0.066	0.13	0.092
METAL	Thallium	mg/kg	3	3	100%	--	--	0.16	0.36	0.25
METAL	Thorium	mg/kg	1	1	100%	--	--	0.058	0.058	0.058
METAL	Uranium	mg/kg	1	1	100%	--	--	0.19	0.19	0.19
METAL	Zinc	mg/kg	3	3	100%	--	--	92	134	111

Table F-33**Summary Statistics for Whole Body Clam Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Beryllium	mg/kg	2	1	50%	0.0050	0.0050	0.017	0.017	0.0098
METAL	Chromium	mg/kg	2	0	0%	0.10	0.10	--	--	0.050
METAL	Copper	mg/kg	2	2	100%	--	--	7.3	9.5	8.4
RAD	Americium-241	pCi/g	2	1	50%	0.085	0.085	0.022	0.022	0.032
RAD	Plutonium-238	pCi/g	3	3	100%	--	--	0.029	0.075	0.058
RAD	Plutonium-239/240	pCi/g	3	2	67%	0.090	0.090	0.0060	0.023	0.025
RAD	Strontium-90	pCi/g	3	3	100%	--	--	0.022	0.35	0.15
RAD	Uranium-234	pCi/g	2	2	100%	--	--	0.19	0.37	0.28
RAD	Uranium-235	pCi/g	2	2	100%	--	--	0.014	0.036	0.025
RAD	Uranium-238	pCi/g	2	2	100%	--	--	0.10	0.33	0.21

RAD - Radionuclide

Table F-34**Summary Statistics for Bass Fillet with Skin Off Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Antimony-125	pCi/g	13	0	0%	0.0013	0.033	--	--	0.0036
RAD	Beryllium-7	pCi/g	18	0	0%	7.12E-04	0.15	--	--	0.033
RAD	Cesium-134	pCi/g	13	0	0%	4.56E-04	0.021	--	--	0.0028
RAD	Cesium-137	pCi/g	27	3	11%	0.0022	0.032	0.016	0.021	0.0069
RAD	Cobalt-58	pCi/g	1	0	0%	0.0011	0.0011	--	--	5.65E-04
RAD	Cobalt-60	pCi/g	19	1	5%	5.34E-04	0.052	0.018	0.018	0.0060
RAD	Europium-152	pCi/g	4	0	0%	4.22E-04	0.028	--	--	0.0047
RAD	Europium-154	pCi/g	15	0	0%	0.0028	0.074	--	--	0.0092
RAD	Europium-155	pCi/g	12	0	0%	0.0019	0.033	--	--	0.0066
RAD	Potassium-40	pCi/g	31	31	100%	--	--	1.7	3.9	3.1
RAD	Ruthenium-106	pCi/g	10	0	0%	0.0069	0.29	--	--	0.034
RAD	Uranium-234	pCi/g	2	2	100%	--	--	0.0095	0.031	0.020
RAD	Uranium-235	pCi/g	1	1	100%	--	--	0.032	0.032	0.032
RAD	Uranium-238	pCi/g	2	1	50%	0.0023	0.0023	0.045	0.045	0.023

RAD - Radionuclide

Table F-35**Summary Statistics for Bass Kidney Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Antimony	mg/kg	14	7	50%	0.015	0.015	0.020	0.040	0.018
METAL	Arsenic	mg/kg	14	14	100%	--	--	0.24	0.60	0.46
METAL	Beryllium	mg/kg	14	0	0%	0.15	0.15	--	--	0.075
METAL	Cadmium	mg/kg	14	14	100%	--	--	0.20	2.3	0.83
METAL	Chromium	mg/kg	14	8	57%	0.20	0.20	0.21	0.55	0.24
METAL	Copper	mg/kg	14	14	100%	--	--	2.6	8.3	5.5
METAL	Lead	mg/kg	14	11	79%	0.036	0.036	0.044	1.4	0.19
METAL	Mercury	mg/kg	14	14	100%	--	--	0.085	0.57	0.22
METAL	Nickel	mg/kg	14	14	100%	--	--	0.060	0.54	0.18
METAL	Selenium	mg/kg	14	14	100%	--	--	4.0	9.0	6.1
METAL	Silver	mg/kg	14	0	0%	0.045	0.045	--	--	0.023
METAL	Thallium	mg/kg	14	14	100%	--	--	0.10	0.26	0.18
METAL	Zinc	mg/kg	14	14	100%	--	--	47	193	72

Table F-36**Summary Statistics for Bass Liver Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Solids	%	7	7	100%	--	--	19	32	24
METAL	Aluminum	mg/kg	7	7	100%	--	--	0.075	0.48	0.19
METAL	Antimony	mg/kg	22	12	55%	0.0012	0.015	0.015	0.14	0.028
METAL	Arsenic	mg/kg	22	22	100%	--	--	0.014	0.66	0.32
METAL	Beryllium	mg/kg	22	0	0%	0.0014	0.15	--	--	0.051
METAL	Cadmium	mg/kg	22	22	100%	--	--	0.029	11	1.8
METAL	Chromium	mg/kg	22	13	59%	0.20	0.20	0.023	0.24	0.11
METAL	Copper	mg/kg	22	22	100%	--	--	0.050	35	7.3
METAL	Lead	mg/kg	22	3	14%	6.81E-04	0.036	0.0039	2.0	0.11
METAL	Manganese	mg/kg	7	7	100%	--	--	0.067	0.16	0.100
METAL	Mercury	mg/kg	15	15	100%	--	--	0.14	1.1	0.37
METAL	Nickel	mg/kg	22	13	59%	4.87E-04	0.020	9.11E-04	0.11	0.029
METAL	Selenium	mg/kg	22	22	100%	--	--	0.071	12	5.4
METAL	Silver	mg/kg	22	1	5%	7.01E-04	0.045	0.11	0.11	0.019
METAL	Thallium	mg/kg	22	22	100%	--	--	0.0029	0.55	0.22
METAL	Thorium	mg/kg	7	0	0%	4.09E-04	6.75E-04	--	--	2.53E-04
METAL	Uranium	mg/kg	7	0	0%	0.0010	0.0017	--	--	6.39E-04
METAL	Zinc	mg/kg	22	22	100%	--	--	1.00	103	50

Table F-37**Summary Statistics for Whole Body Bass Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Strontium-90	pCi/g	22	12	55%	0.0042	0.053	0.019	0.062	0.024
RAD	Uranium-234	pCi/g	5	0	0%	6.50E-04	0.0018	--	--	6.18E-04
RAD	Uranium-235	pCi/g	2	0	0%	4.66E-04	4.92E-04	--	--	2.40E-04
RAD	Uranium-238	pCi/g	3	0	0%	9.62E-04	0.0012	--	--	5.24E-04

RAD - Radionuclide

Table F-38

Summary Statistics for Whole Body Smallmouth Bass Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	3	3	100%	--	--	0.99	1.5	1.3
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.16	0.17	0.17
METAL	Barium	mg/kg	3	3	100%	--	--	0.54	0.96	0.73
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.0048	0.010	0.0083
METAL	Chromium	mg/kg	3	2	67%	0.10	0.10	0.13	0.23	0.14
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.11	0.18	0.14
METAL	Copper	mg/kg	3	3	100%	--	--	0.50	0.55	0.52
METAL	Lead	mg/kg	3	3	100%	--	--	0.010	0.13	0.063
METAL	Manganese	mg/kg	3	3	100%	--	--	2.0	2.4	2.3
METAL	Mercury	mg/kg	3	3	100%	--	--	0.22	0.35	0.30
METAL	Nickel	mg/kg	3	3	100%	--	--	0.050	0.090	0.070
METAL	Selenium	mg/kg	3	3	100%	--	--	0.48	0.70	0.59
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	3	100%	--	--	0.010	0.080	0.057
METAL	Zinc	mg/kg	3	3	100%	--	--	15	18	16
PCB	Aroclor-1016	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097
PCB	Aroclor-1221	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097
PCB	Aroclor-1232	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097
PCB	Aroclor-1248	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.046	0.094	0.066
PCB	Aroclor-1260	mg/kg	3	3	100%	--	--	0.080	0.19	0.13
PEST	2,4'-DDD	mg/kg	3	3	100%	--	--	0.018	0.027	0.021
PEST	2,4'-DDE	mg/kg	3	3	100%	--	--	0.010	0.014	0.012
PEST	2,4'-DDT	mg/kg	3	3	100%	--	--	0.012	0.020	0.017
PEST	Aldrin	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	alpha-Chlordane	mg/kg	3	2	67%	0.0020	0.0020	0.0036	0.0047	0.0031
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	cis-Nonachlor	mg/kg	3	1	33%	0.0018	0.0020	0.0014	0.0014	0.0011
PEST	DDMU	mg/kg	3	3	100%	--	--	0.033	0.055	0.041
PEST	Delta-BHC	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.040	0.063	0.054
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.97	1.7	1.3
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	0.044	0.080	0.062
PEST	Endosulfan sulfate	mg/kg	3	3	100%	--	--	0.0024	0.0056	0.0038
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Mirex	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Oxychlordane	mg/kg	3	3	100%	--	--	0.0014	0.0026	0.0018
PEST	Pentachloroanisole	mg/kg	3	1	33%	0.0018	0.0020	9.90E-04	9.90E-04	9.63E-04

Table F-38

Summary Statistics for Whole Body Smallmouth Bass Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Toxaphene	mg/kg	3	0	0%	0.055	0.060	--	--	0.029
PEST	trans-Nonachlor	mg/kg	3	3	100%	--	--	0.0071	0.014	0.010
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.017	0.018	--	--	0.0087
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.034	0.036	--	--	0.018
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.017	0.018	--	--	0.0087
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	Acenaphthene	mg/kg	3	0	0%	0.017	0.018	--	--	0.0087
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	Anthracene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.017	0.018	--	--	0.0087
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.017	0.018	--	--	0.0087
SVOC	Chrysene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.017	0.018	--	--	0.0087
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	Fluoranthene	mg/kg	3	0	0%	0.017	0.018	--	--	0.0087
SVOC	Fluorene	mg/kg	3	0	0%	0.0046	0.0097	--	--	0.0032
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.017	0.018	--	--	0.0087
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.017	0.018	--	--	0.0087
SVOC	Naphthalene	mg/kg	3	0	0%	0.0094	0.024	--	--	0.0084
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0086	0.0090	--	--	0.0044
SVOC	Phenanthrene	mg/kg	3	1	33%	0.0086	0.0086	0.016	0.016	0.0082
SVOC	Pyrene	mg/kg	3	0	0%	0.017	0.018	--	--	0.0087
VOC	Retene	mg/kg	3	0	0%	0.017	0.018	--	--	0.0087

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-39
Summary Statistics for Carp Fillet Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Actinium-228	pCi/g	4	0	0%	0.043	0.17	--	--	0.062
RAD	Antimony-125	pCi/g	22	0	0%	3.00E-04	0.091	--	--	0.0072
RAD	Barium-140	pCi/g	6	0	0%	0.18	0.77	--	--	0.19
RAD	Beryllium-7	pCi/g	24	0	0%	0.0052	0.43	--	--	0.052
RAD	Cerium-141	pCi/g	6	0	0%	0.029	0.13	--	--	0.029
RAD	Cerium-144	pCi/g	6	0	0%	0.072	0.29	--	--	0.071
RAD	Cesium-134	pCi/g	27	0	0%	3.25E-04	0.036	--	--	0.0040
RAD	Cesium-137	pCi/g	37	0	0%	2.80E-04	0.043	--	--	0.0048
RAD	Cobalt-57	pCi/g	6	0	0%	0.0091	0.036	--	--	0.0098
RAD	Cobalt-58	pCi/g	9	0	0%	5.15E-04	0.046	--	--	0.0090
RAD	Cobalt-60	pCi/g	29	0	0%	3.58E-04	0.042	--	--	0.0047
RAD	Europium-152	pCi/g	11	0	0%	0.0039	0.10	--	--	0.018
RAD	Europium-154	pCi/g	19	0	0%	3.10E-04	0.069	--	--	0.0085
RAD	Europium-155	pCi/g	24	0	0%	0.0012	0.035	--	--	0.0052
RAD	Iodine-131	pCi/g	6	0	0%	0.13	0.84	--	--	0.17
RAD	Iron-59	pCi/g	11	0	0%	0.0039	0.14	--	--	0.023
RAD	Lanthanum-140	pCi/g	6	0	0%	0.055	0.29	--	--	0.066
RAD	Manganese-54	pCi/g	13	0	0%	3.72E-04	0.034	--	--	0.0063
RAD	Niobium-95	pCi/g	6	0	0%	0.015	0.058	--	--	0.016
RAD	Potassium-40	pCi/g	56	55	98%	1.5	1.5	0.27	4.0	2.8
RAD	Radium-226	pCi/g	7	0	0%	0.024	0.97	--	--	0.22
RAD	Ruthenium-103	pCi/g	6	0	0%	0.018	0.058	--	--	0.017
RAD	Ruthenium-106	pCi/g	23	0	0%	0.0020	0.32	--	--	0.034
RAD	Thorium-228	pCi/g	9	0	0%	0.0014	0.82	--	--	0.12
RAD	Uranium-234	pCi/g	2	1	50%	0.0035	0.0035	0.0082	0.0082	0.0050
RAD	Uranium-235	pCi/g	11	0	0%	1.23E-05	0.28	--	--	0.030
RAD	Uranium-238	pCi/g	8	2	25%	3.72E-04	0.0042	0.014	0.017	0.0046
RAD	Zinc-65	pCi/g	9	0	0%	3.20E-04	0.10	--	--	0.021
RAD	Zirconium-95	pCi/g	6	0	0%	0.026	0.085	--	--	0.025

RAD - Radionuclide

Table F-40**Summary Statistics for Carp Kidney Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Antimony	mg/kg	14	11	79%	0.015	0.015	0.018	0.15	0.039
METAL	Arsenic	mg/kg	14	14	100%	--	--	0.30	2.2	1.2
METAL	Beryllium	mg/kg	14	0	0%	0.15	0.15	--	--	0.075
METAL	Cadmium	mg/kg	14	14	100%	--	--	15	322	142
METAL	Chromium	mg/kg	14	14	100%	--	--	0.21	0.50	0.34
METAL	Copper	mg/kg	14	14	100%	--	--	5.2	19	11
METAL	Lead	mg/kg	14	14	100%	--	--	0.81	4.7	1.8
METAL	Mercury	mg/kg	14	14	100%	--	--	0.20	0.87	0.50
METAL	Nickel	mg/kg	14	14	100%	--	--	0.38	1.6	1.0
METAL	Selenium	mg/kg	14	14	100%	--	--	4.6	11	7.6
METAL	Silver	mg/kg	14	10	71%	0.045	0.045	0.045	0.18	0.080
METAL	Thallium	mg/kg	14	14	100%	--	--	0.21	0.95	0.49
METAL	Zinc	mg/kg	14	14	100%	--	--	355	1,690	949

Table F-41**Summary Statistics for Carp Liver Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Solids	%	10	10	100%	--	--	21	27	24
METAL	Aluminum	mg/kg	20	19	95%	1.0	1.0	0.12	36	4.5
METAL	Antimony	mg/kg	35	26	74%	0.0013	0.010	0.0014	0.097	0.036
METAL	Arsenic	mg/kg	35	35	100%	--	--	0.0093	2.9	0.60
METAL	Barium	mg/kg	10	9	90%	0.10	0.10	0.10	0.82	0.29
METAL	Beryllium	mg/kg	35	0	0%	0.0016	0.15	--	--	0.035
METAL	Cadmium	mg/kg	35	35	100%	--	--	0.54	209	37
METAL	Chromium	mg/kg	35	31	89%	0.20	0.20	0.023	12	0.73
METAL	Copper	mg/kg	35	35	100%	--	--	1.7	324	85
METAL	Lead	mg/kg	35	35	100%	--	--	0.0021	1.4	0.33
METAL	Manganese	mg/kg	20	20	100%	--	--	0.078	10	3.4
METAL	Mercury	mg/kg	20	20	100%	--	--	0.088	0.79	0.27
METAL	Nickel	mg/kg	35	29	83%	6.60E-04	0.050	7.04E-04	0.61	0.092
METAL	Selenium	mg/kg	35	35	100%	--	--	0.077	7.4	3.5
METAL	Silver	mg/kg	35	34	97%	0.010	0.010	0.0085	3.6	0.82
METAL	Thallium	mg/kg	35	30	86%	0.0010	0.0014	0.0013	0.24	0.081
METAL	Thorium	mg/kg	20	3	15%	4.41E-04	0.020	8.09E-04	0.028	0.0061
METAL	Uranium	mg/kg	20	18	90%	0.0014	0.0014	0.0019	0.38	0.068
METAL	Zinc	mg/kg	35	35	100%	--	--	6.4	1,900	668

Table F-42

Summary Statistics for Whole Body Carp Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	2	2	100%	--	--	4.4	4.9	4.6
CONV	Percent moisture (wet sample)	mg/Kg	2	2	100%	--	--	73	73	73
DIOX/	TCDD-eq	mg/Kg	2	2	100%	--	--	3.0	6.0	4.5
METAL	Aluminum	mg/Kg	2	2	100%	--	--	67	81	74
METAL	Arsenic	mg/Kg	2	1	50%	0.24	0.24	0.32	0.32	0.22
METAL	Barium	mg/Kg	2	2	100%	--	--	4.3	5.3	4.8
METAL	Beryllium	mg/Kg	2	0	0%	0.048	0.051	--	--	0.025
METAL	Boron	mg/Kg	2	0	0%	0.97	1.0	--	--	0.50
METAL	Cadmium	mg/Kg	2	2	100%	--	--	0.30	0.39	0.35
METAL	Chromium	mg/Kg	2	2	100%	--	--	3.7	3.7	3.7
METAL	Copper	mg/Kg	2	2	100%	--	--	1.5	1.6	1.5
METAL	Iron	mg/Kg	2	2	100%	--	--	119	137	128
METAL	Lead	mg/Kg	2	1	50%	0.10	0.10	0.14	0.14	0.098
METAL	Magnesium	mg/Kg	2	2	100%	--	--	339	352	346
METAL	Manganese	mg/Kg	2	2	100%	--	--	4.8	4.9	4.8
METAL	Mercury	mg/Kg	2	1	50%	0.050	0.050	0.081	0.081	0.053
METAL	Molybdenum	mg/Kg	2	0	0%	0.24	0.26	--	--	0.12
METAL	Nickel	mg/Kg	2	2	100%	--	--	0.50	0.75	0.63
METAL	Selenium	mg/Kg	2	2	100%	--	--	0.89	1.1	1.00
METAL	Strontium	mg/Kg	2	2	100%	--	--	19	21	20
METAL	Vanadium	mg/Kg	2	2	100%	--	--	0.30	0.35	0.32
METAL	Zinc	mg/Kg	2	2	100%	--	--	72	105	88
PCB	Total polychlorinated biphenyl	mg/Kg	1	0	0%	0.030	0.030	--	--	0.015
PEST	2,4'-DDD	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	2,4'-DDE	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	2,4'-DDT	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Alpha-BHC	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	alpha-Chlordane	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Beta-BHC	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	cis-Nonachlor	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Delta-BHC	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Dichlorodiphenyldichloroethane	mg/Kg	2	2	100%	--	--	0.038	0.070	0.054
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	2	2	100%	--	--	0.18	0.35	0.27
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Dieldrin	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Endrin	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Gamma-BHC (Lindane)	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	gamma-Chlordane	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Heptachlor epoxide	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Mirex	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Oxychlordane	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Toxaphene	mg/Kg	2	0	0%	0.030	0.030	--	--	0.015
PEST	trans-Nonachlor	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
RAD	Cesium-137	pCi/g	1	1	100%	--	--	0.0051	0.0051	0.0051
RAD	Cobalt-60	pCi/g	1	0	0%	0.0022	0.0022	--	--	0.0011
RAD	Manganese-54	pCi/g	1	0	0%	2.00E-04	2.00E-04	--	--	1.00E-04
RAD	Potassium-40	pCi/g	1	1	100%	--	--	3.5	3.5	3.5

Table F-42**Summary Statistics for Whole Body Carp Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Strontium-90	pCi/g	38	28	74%	0.0052	0.048	0.016	1.5	0.16
RAD	Uranium	pCi/g	2	2	100%	--	--	0.064	0.077	0.071
RAD	Uranium-234	pCi/g	9	5	56%	8.29E-04	0.0030	0.0099	0.036	0.012
RAD	Uranium-235	pCi/g	6	2	33%	6.29E-04	0.0018	0.0030	0.0050	0.0017
RAD	Uranium-238	pCi/g	9	8	89%	2.33E-04	2.33E-04	0.0056	0.026	0.014
SVOC	Hexachlorobenzene	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050

PEST - Pesticide

PCB - Polychlorinated biphenyl

RAD - Radionuclide

SVOC - Semivolatile Organic Compound

Table F-43
Summary Statistics for Largescale Sucker Fillet Skin On Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	5.00E-08	1.20E-07	5.83E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	2.00E-08	6.00E-08	6.00E-08	2.50E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	8.33E-09
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	1.00E-08	3.00E-08	3.00E-08	1.33E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	8.33E-09
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	1	33%	2.00E-08	2.00E-08	3.00E-08	3.00E-08	1.67E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	1.00E-08	2.00E-08	2.00E-08	1.00E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	2.00E-08	2.00E-08	3.00E-08	5.00E-08	3.00E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	8.33E-09
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	2.00E-08	4.00E-08	2.17E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	2	67%	2.00E-08	2.00E-08	5.00E-08	5.00E-08	3.67E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.02E-06	1.45E-06	1.21E-06
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	1	33%	1.00E-08	2.00E-08	4.00E-08	4.00E-08	1.83E-08
DIOX/	Octachlorodibenzofuran	mg/kg	3	2	67%	2.00E-08	2.00E-08	8.00E-08	1.10E-07	6.67E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	2.30E-07	1.96E-06	8.53E-07
METAL	Aluminum	mg/kg	3	1	33%	1.0	1.0	3.8	3.8	1.6
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.050	0.080	0.060
METAL	Barium	mg/kg	3	3	100%	--	--	0.80	0.97	0.91
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.010	0.020	0.013
METAL	Chromium	mg/kg	3	3	100%	--	--	0.36	0.38	0.37
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.020	0.24	0.15
METAL	Copper	mg/kg	3	3	100%	--	--	0.43	0.44	0.44
METAL	Lead	mg/kg	3	2	67%	0.010	0.010	0.12	0.13	0.085
METAL	Manganese	mg/kg	3	3	100%	--	--	3.7	5.4	4.5
METAL	Mercury	mg/kg	3	3	100%	--	--	0.15	0.22	0.18
METAL	Nickel	mg/kg	3	2	67%	0.030	0.030	0.39	0.50	0.30
METAL	Selenium	mg/kg	3	3	100%	--	--	0.25	0.30	0.28
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	0	0%	0.010	0.010	--	--	0.0050
METAL	Zinc	mg/kg	3	3	100%	--	--	24	26	25
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	9.99E-04	0.0025	0.0018
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0032	0.0077	0.0055
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	1.37E-04	2.72E-04	2.09E-04
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	7.14E-04	0.0014	0.0011
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0016	0.0030	0.0023
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	2.84E-04	6.01E-04	4.54E-04
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	5.86E-05	1.31E-04	9.52E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	1.32E-04	2.75E-04	2.10E-04
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	0.0034	0.0066	0.0051
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	6.10E-05	1.11E-04	8.94E-05
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	1.26E-06	2.43E-06	--	--	8.57E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	3	100%	--	--	6.97E-06	1.28E-05	9.42E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	3.17E-05	4.15E-05	3.51E-05
PCB	Aroclor-1016	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
PCB	Aroclor-1221	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097

Table F-43
Summary Statistics for Largescale Sucker Fillet Skin On Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
PCB	Aroclor-1248	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.019	0.041	0.031
PCB	Aroclor-1260	mg/kg	3	3	100%	--	--	0.028	0.054	0.038
PEST	2,4'-DDD	mg/kg	3	3	100%	--	--	0.0020	0.0042	0.0030
PEST	2,4'-DDE	mg/kg	3	3	100%	--	--	0.0032	0.0050	0.0040
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Aldrin	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	alpha-Chlordane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	cis-Nonachlor	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	DDMU	mg/kg	3	3	100%	--	--	0.0055	0.0094	0.0074
PEST	Delta-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	2	67%	0.0020	0.0020	0.035	0.042	0.026
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.26	0.39	0.32
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	0.0063	0.029	0.020
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Heptachlor epoxide	mg/kg	1	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Mirex	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Oxychlordane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Toxaphene	mg/kg	3	0	0%	0.058	0.059	--	--	0.029
PEST	trans-Nonachlor	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.0096	0.019	--	--	0.0079
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.019	0.038	--	--	0.016
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.0096	0.019	--	--	0.0079
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	Acenaphthene	mg/kg	3	0	0%	0.0096	0.019	--	--	0.0079
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	Anthracene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.0096	0.019	--	--	0.0079
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Chrysene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040

Table F-43
Summary Statistics for Largescale Sucker Fillet Skin On Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.0096	0.019	--	--	0.0079
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	Fluoranthene	mg/kg	3	0	0%	0.0096	0.019	--	--	0.0079
SVOC	Fluorene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.0096	0.019	--	--	0.0079
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.0096	0.019	--	--	0.0079
SVOC	Naphthalene	mg/kg	3	0	0%	0.018	0.027	--	--	0.011
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0048	0.0096	--	--	0.0040
SVOC	Pyrene	mg/kg	3	0	0%	0.0096	0.019	--	--	0.0079
VOC	Retene	mg/kg	3	0	0%	0.0096	0.019	--	--	0.0079

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-44
Summary Statistics for Whole Body Largescale Sucker Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	3	100%	--	--	1.10E-07	1.30E-07	1.20E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	3.00E-08	3.00E-08	2.17E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	6.67E-09
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	2.00E-08	2.00E-08	2.00E-08	1.17E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	1	33%	1.00E-08	2.00E-08	1.00E-08	1.00E-08	8.33E-09
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	2.00E-08	1.00E-08	1.00E-08	8.33E-09
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	4.00E-08	4.00E-08	2.83E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	6.67E-09
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	6.67E-09
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	4.00E-08	9.00E-08	5.67E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	6.67E-09
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	1	33%	2.00E-08	2.00E-08	1.20E-07	1.20E-07	4.67E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.37E-06	2.88E-06	2.03E-06
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	4.00E-08	1.00E-07	4.83E-08
DIOX/	Octachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	1.00E-08	4.00E-08	4.00E-08	1.67E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	4.50E-07	6.40E-07	5.43E-07
METAL	Aluminum	mg/kg	3	3	100%	--	--	85	130	100
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.20	0.26	0.22
METAL	Barium	mg/kg	3	3	100%	--	--	4.1	4.7	4.4
METAL	Beryllium	mg/kg	3	2	67%	0.0040	0.0040	0.0050	0.0054	0.0041
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.18	0.24	0.21
METAL	Chromium	mg/kg	3	3	100%	--	--	0.50	0.52	0.51
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.17	0.21	0.19
METAL	Copper	mg/kg	3	3	100%	--	--	1.5	5.6	2.9
METAL	Lead	mg/kg	3	3	100%	--	--	0.50	1.1	0.74
METAL	Manganese	mg/kg	3	3	100%	--	--	18	21	19
METAL	Mercury	mg/kg	3	3	100%	--	--	0.080	0.14	0.11
METAL	Nickel	mg/kg	3	3	100%	--	--	3.0	11	5.8
METAL	Selenium	mg/kg	3	3	100%	--	--	0.33	0.39	0.36
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	3	100%	--	--	0.32	0.42	0.36
METAL	Zinc	mg/kg	3	3	100%	--	--	33	38	36
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	0.0016	0.0052	0.0037
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0047	0.017	0.011
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	2.03E-04	5.25E-04	3.49E-04
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	0.0010	0.0027	0.0018
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0027	0.0065	0.0042
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	4.52E-04	0.0012	8.02E-04
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	1.12E-04	2.46E-04	1.63E-04
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	2.32E-04	5.41E-04	3.67E-04
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	0.0060	0.014	0.0093
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	7.73E-05	1.98E-04	1.52E-04
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	1.33E-06	2.30E-06	--	--	8.48E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	3	100%	--	--	1.34E-05	2.12E-05	1.63E-05
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	5.38E-05	1.07E-04	7.38E-05
PCB	Aroclor-1016	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1221	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098

Table F-44
Summary Statistics for Whole Body Largescale Sucker Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1248	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.038	0.065	0.048
PCB	Aroclor-1260	mg/kg	3	3	100%	--	--	0.032	0.10	0.077
PEST	2,4'-DDD	mg/kg	3	3	100%	--	--	0.0036	0.015	0.0079
PEST	2,4'-DDE	mg/kg	3	3	100%	--	--	0.0045	0.012	0.0073
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Aldrin	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	alpha-Chlordane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	cis-Nonachlor	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	DDMU	mg/kg	3	3	100%	--	--	0.010	0.024	0.015
PEST	Delta-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	2	67%	0.0020	0.0020	0.038	0.13	0.056
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.36	0.83	0.54
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	0.014	0.052	0.029
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Mirex	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Oxychlordane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Toxaphene	mg/kg	3	0	0%	0.056	0.059	--	--	0.029
PEST	trans-Nonachlor	mg/kg	3	3	100%	--	--	0.0012	0.0024	0.0016
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.017	0.020	--	--	0.0095
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.034	0.040	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.017	0.020	--	--	0.0095
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	Acenaphthene	mg/kg	3	0	0%	0.017	0.020	--	--	0.0095
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	Anthracene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.017	0.020	--	--	0.0095
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.017	0.020	--	--	0.0095
SVOC	Chrysene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.017	0.020	--	--	0.0095

Table F-44
Summary Statistics for Whole Body Largescale Sucker Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	Fluoranthene	mg/kg	3	0	0%	0.017	0.020	--	--	0.0095
SVOC	Fluorene	mg/kg	3	0	0%	0.0048	0.0048	--	--	0.0024
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.017	0.020	--	--	0.0095
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.017	0.020	--	--	0.0095
SVOC	Naphthalene	mg/kg	3	0	0%	0.019	0.021	--	--	0.010
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0086	0.0099	--	--	0.0047
SVOC	Pyrene	mg/kg	3	0	0%	0.017	0.020	--	--	0.0095
VOC	Retene	mg/kg	3	0	0%	0.017	0.020	--	--	0.0095

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-45

Summary Statistics for Sculpin Liver Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	30	30	100%	--	--	1.7	32	8.3
METAL	Antimony	mg/kg	33	27	82%	0.010	0.015	0.011	0.16	0.043
METAL	Arsenic	mg/kg	33	25	76%	0.10	0.10	0.41	2.5	0.81
METAL	Barium	mg/kg	33	30	91%	0.10	0.10	0.076	0.63	0.30
METAL	Beryllium	mg/kg	33	3	9%	0.020	0.15	0.022	0.30	0.026
METAL	Cadmium	mg/kg	36	36	100%	--	--	0.72	25	6.8
METAL	Chromium	mg/kg	36	36	100%	--	--	0.21	4.4	0.74
METAL	Copper	mg/kg	33	33	100%	--	--	6.0	46	21
METAL	Lead	mg/kg	36	36	100%	--	--	0.036	0.27	0.13
METAL	Manganese	mg/kg	33	33	100%	--	--	0.72	12	3.4
METAL	Mercury	mg/kg	36	36	100%	--	--	0.087	0.74	0.25
METAL	Nickel	mg/kg	36	32	89%	0.045	0.050	0.074	0.39	0.18
METAL	Selenium	mg/kg	36	36	100%	--	--	3.0	11	6.5
METAL	Silver	mg/kg	36	29	81%	0.010	0.045	0.010	0.13	0.029
METAL	Thallium	mg/kg	33	33	100%	--	--	0.062	0.36	0.15
METAL	Thorium	mg/kg	33	2	6%	0.020	0.021	0.021	0.026	0.011
METAL	Uranium	mg/kg	33	7	21%	0.010	0.031	0.010	0.048	0.010
METAL	Zinc	mg/kg	33	33	100%	--	--	81	396	160

Table F-46

Summary Statistics for Whole Body Sculpin Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	9	9	100%	--	--	11	243	103
METAL	Antimony	mg/kg	9	2	22%	0.010	0.019	0.012	0.016	0.0075
METAL	Arsenic	mg/kg	9	7	78%	0.097	0.10	0.11	0.68	0.29
METAL	Barium	mg/kg	9	9	100%	--	--	5.2	25	12
METAL	Beryllium	mg/kg	9	1	11%	0.020	0.020	0.053	0.053	0.015
METAL	Cadmium	mg/kg	9	9	100%	--	--	0.028	0.78	0.35
METAL	Chromium	mg/kg	9	9	100%	--	--	0.74	1.8	1.2
METAL	Copper	mg/kg	9	9	100%	--	--	2.2	5.1	3.0
METAL	Lead	mg/kg	9	9	100%	--	--	0.097	0.64	0.30
METAL	Manganese	mg/kg	9	9	100%	--	--	3.2	19	9.9
METAL	Mercury	mg/kg	9	9	100%	--	--	0.061	0.22	0.099
METAL	Nickel	mg/kg	9	9	100%	--	--	0.76	3.1	1.5
METAL	Selenium	mg/kg	9	9	100%	--	--	1.7	2.6	2.2
METAL	Silver	mg/kg	9	0	0%	0.010	0.045	--	--	0.0069
METAL	Thallium	mg/kg	9	9	100%	--	--	0.049	0.21	0.12
METAL	Thorium	mg/kg	9	2	22%	0.020	0.021	0.020	0.031	0.013
METAL	Uranium	mg/kg	9	7	78%	0.010	0.031	0.013	0.040	0.025
METAL	Zinc	mg/kg	9	9	100%	--	--	62	144	104
RAD	Antimony-125	pCi/g	2	0	0%	0.085	0.35	--	--	0.11
RAD	Beryllium-7	pCi/g	4	0	0%	0.23	1.1	--	--	0.23
RAD	Cesium-134	pCi/g	4	0	0%	0.020	0.19	--	--	0.036
RAD	Cesium-137	pCi/g	1	0	0%	0.013	0.013	--	--	0.0064
RAD	Cobalt-60	pCi/g	4	0	0%	0.021	0.052	--	--	0.018
RAD	Europium-152	pCi/g	1	0	0%	0.060	0.060	--	--	0.030
RAD	Europium-154	pCi/g	2	0	0%	0.12	0.31	--	--	0.11
RAD	Europium-155	pCi/g	2	0	0%	0.0091	0.026	--	--	0.0088
RAD	Potassium-40	pCi/g	5	3	60%	0.28	2.4	2.4	3.4	1.9
RAD	Ruthenium-106	pCi/g	3	0	0%	0.13	1.4	--	--	0.30
RAD	Strontium-90	pCi/g	21	3	14%	0.0052	0.079	0.048	0.75	0.055
RAD	Technetium-99	pCi/g	17	5	29%	0.035	0.25	0.27	0.73	0.17

RAD - Radionuclide

Table F-47
Summary Statistics for Sucker Fillet Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Actinium-228	pCi/g	6	0	0%	1.59E-04	0.15	--	--	0.026
RAD	Antimony-124	pCi/g	1	0	0%	0.018	0.018	--	--	0.0089
RAD	Antimony-125	pCi/g	1	0	0%	0.028	0.028	--	--	0.014
RAD	Barium-133	pCi/g	1	0	0%	0.012	0.012	--	--	0.0062
RAD	Barium-140	pCi/g	8	0	0%	6.46E-04	0.88	--	--	0.16
RAD	Beryllium-7	pCi/g	11	0	0%	4.13E-04	0.39	--	--	0.068
RAD	Cerium-139	pCi/g	1	0	0%	0.0091	0.0091	--	--	0.0046
RAD	Cerium-141	pCi/g	8	0	0%	8.12E-05	0.093	--	--	0.019
RAD	Cerium-144	pCi/g	8	0	0%	2.10E-04	0.18	--	--	0.038
RAD	Cesium-134	pCi/g	17	0	0%	3.96E-05	0.037	--	--	0.0044
RAD	Cesium-136	pCi/g	1	0	0%	0.097	0.097	--	--	0.048
RAD	Cesium-137	pCi/g	26	6	23%	4.04E-05	0.035	0.0072	0.036	0.0084
RAD	Chromium-51	pCi/g	1	0	0%	0.23	0.23	--	--	0.12
RAD	Cobalt-57	pCi/g	8	0	0%	2.71E-05	0.025	--	--	0.0051
RAD	Cobalt-58	pCi/g	16	0	0%	4.75E-05	0.039	--	--	0.0046
RAD	Cobalt-60	pCi/g	18	2	11%	3.87E-05	0.028	0.028	0.059	0.0088
RAD	Europium-152	pCi/g	8	0	0%	1.00E-04	0.089	--	--	0.017
RAD	Europium-154	pCi/g	3	0	0%	0.0026	0.053	--	--	0.012
RAD	Europium-155	pCi/g	5	0	0%	0.0022	0.038	--	--	0.0083
RAD	Iodine-131	pCi/g	8	0	0%	4.60E-04	0.72	--	--	0.15
RAD	Iron-59	pCi/g	12	0	0%	9.64E-05	0.12	--	--	0.017
RAD	Lanthanum-140	pCi/g	8	0	0%	1.99E-04	0.25	--	--	0.050
RAD	Manganese-54	pCi/g	19	0	0%	3.85E-05	0.036	--	--	0.0040
RAD	Niobium-94	pCi/g	1	0	0%	0.010	0.010	--	--	0.0051
RAD	Niobium-95	pCi/g	8	0	0%	5.56E-05	0.042	--	--	0.0092
RAD	Potassium-40	pCi/g	27	27	100%	--	--	0.0042	4.1	3.2
RAD	Radium-226	pCi/g	10	0	0%	6.42E-04	0.65	--	--	0.12
RAD	Ruthenium-103	pCi/g	8	0	0%	6.24E-05	0.052	--	--	0.011
RAD	Ruthenium-106	pCi/g	8	0	0%	3.35E-04	0.36	--	--	0.063
RAD	Selenium-75	pCi/g	1	0	0%	0.014	0.014	--	--	0.0072
RAD	Silver-110 metastable	pCi/g	1	0	0%	0.011	0.011	--	--	0.0054
RAD	Strontium-85	pCi/g	1	0	0%	0.024	0.024	--	--	0.012
RAD	Strontium-90	pCi/g	5	0	0%	5.76E-04	0.0020	--	--	5.72E-04
RAD	Tellurium-129M	pCi/g	1	0	0%	0.25	0.25	--	--	0.13
RAD	Thorium-228	pCi/g	13	0	0%	7.90E-04	0.61	--	--	0.057
RAD	Thorium-232	pCi/g	1	0	0%	0.048	0.048	--	--	0.024
RAD	Tin-113	pCi/g	1	0	0%	0.016	0.016	--	--	0.0078
RAD	Uranium-235	pCi/g	6	0	0%	2.11E-04	0.20	--	--	0.036
RAD	Uranium-238	pCi/g	1	0	0%	1.2	1.2	--	--	0.61
RAD	Yttrium	pCi/g	1	0	0%	0.012	0.012	--	--	0.0060
RAD	Zinc-65	pCi/g	15	1	7%	8.87E-05	0.078	0.010	0.010	0.0099
RAD	Zirconium-95	pCi/g	8	0	0%	1.01E-04	0.079	--	--	0.016

RAD - Radionuclide

Table F-48**Summary Statistics for Sucker Kidney Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Antimony	mg/kg	15	6	40%	0.015	0.015	0.021	0.12	0.027
METAL	Arsenic	mg/kg	15	15	100%	--	--	0.17	1.6	0.75
METAL	Beryllium	mg/kg	15	0	0%	0.15	0.15	--	--	0.075
METAL	Cadmium	mg/kg	15	15	100%	--	--	0.060	69	28
METAL	Chromium	mg/kg	15	14	93%	0.20	0.20	0.22	1.2	0.44
METAL	Copper	mg/kg	15	15	100%	--	--	2.5	7.8	5.2
METAL	Lead	mg/kg	15	15	100%	--	--	0.060	0.76	0.28
METAL	Mercury	mg/kg	15	15	100%	--	--	0.035	0.76	0.23
METAL	Nickel	mg/kg	15	15	100%	--	--	0.11	7.3	2.8
METAL	Selenium	mg/kg	15	15	100%	--	--	1.9	7.2	4.3
METAL	Silver	mg/kg	15	1	7%	0.045	0.045	0.055	0.055	0.025
METAL	Thallium	mg/kg	15	15	100%	--	--	0.016	0.11	0.073
METAL	Zinc	mg/kg	15	15	100%	--	--	41	378	136

Table F-49**Summary Statistics for Sucker Liver Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Antimony	mg/kg	15	13	87%	0.015	0.015	0.015	0.15	0.039
METAL	Arsenic	mg/kg	15	15	100%	--	--	0.16	1.5	0.56
METAL	Beryllium	mg/kg	15	0	0%	0.15	0.15	--	--	0.075
METAL	Cadmium	mg/kg	15	14	93%	0.020	0.020	0.027	8.1	1.00
METAL	Chromium	mg/kg	15	4	27%	0.20	0.20	0.23	0.31	0.14
METAL	Copper	mg/kg	15	15	100%	--	--	3.3	26	8.1
METAL	Lead	mg/kg	15	6	40%	0.036	0.036	0.038	0.41	0.063
METAL	Mercury	mg/kg	15	15	100%	--	--	0.11	1.2	0.37
METAL	Nickel	mg/kg	15	15	100%	--	--	0.028	0.67	0.26
METAL	Selenium	mg/kg	15	14	93%	1.0	1.0	1.0	4.4	1.6
METAL	Silver	mg/kg	15	1	7%	0.045	0.045	0.096	0.096	0.027
METAL	Thallium	mg/kg	15	15	100%	--	--	0.040	0.13	0.086
METAL	Zinc	mg/kg	15	15	100%	--	--	17	72	30

Table F-50
Summary Statistics for Whole Body Sucker Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	5	5	100%	--	--	232	655	393
METAL	Antimony	mg/kg	5	1	20%	0.010	0.019	0.022	0.022	0.0093
METAL	Arsenic	mg/kg	5	2	40%	0.097	0.10	0.14	0.48	0.15
METAL	Barium	mg/kg	7	7	100%	--	--	1.2	22	12
METAL	Beryllium	mg/kg	5	2	40%	0.020	0.020	0.038	0.054	0.024
METAL	Cadmium	mg/kg	7	7	100%	--	--	0.015	0.14	0.099
METAL	Chromium	mg/kg	7	7	100%	--	--	0.14	4.3	1.7
METAL	Copper	mg/kg	5	5	100%	--	--	0.27	3.3	2.0
METAL	Lead	mg/kg	7	7	100%	--	--	0.045	1.0	0.41
METAL	Manganese	mg/kg	7	7	100%	--	--	3.7	63	35
METAL	Mercury	mg/kg	7	4	57%	0.050	0.050	0.031	0.12	0.045
METAL	Nickel	mg/kg	7	7	100%	--	--	0.12	1.5	1.0
METAL	Selenium	mg/kg	7	6	86%	0.20	0.20	0.35	2.5	1.4
METAL	Silver	mg/kg	7	2	29%	0.010	0.045	0.013	0.018	0.015
METAL	Thallium	mg/kg	5	5	100%	--	--	0.0081	0.15	0.058
METAL	Thorium	mg/kg	7	6	86%	0.020	0.020	0.022	1.8	0.32
METAL	Uranium	mg/kg	7	5	71%	0.010	0.010	0.032	0.18	0.051
METAL	Zinc	mg/kg	5	5	100%	--	--	8.6	92	53
RAD	Cesium-134	pCi/g	1	0	0%	0.0028	0.0028	--	--	0.0014
RAD	Cesium-137	pCi/g	5	3	60%	0.0040	0.0060	0.0068	0.0080	0.0056
RAD	Cobalt-58	pCi/g	2	1	50%	0.0030	0.0030	0.0070	0.0070	0.0043
RAD	Cobalt-60	pCi/g	4	0	0%	6.00E-04	0.0050	--	--	0.0014
RAD	Iron-59	pCi/g	3	1	33%	0.0060	0.012	0.036	0.036	0.015
RAD	Manganese-54	pCi/g	3	0	0%	2.00E-04	0.0010	--	--	2.67E-04
RAD	Potassium-40	pCi/g	5	5	100%	--	--	3.0	3.6	3.3
RAD	Strontium-90	pCi/g	6	6	100%	--	--	0.032	0.053	0.042
RAD	Uranium-234	pCi/g	6	6	100%	--	--	0.012	0.080	0.031
RAD	Uranium-235	pCi/g	5	4	80%	3.91E-04	3.91E-04	0.0012	0.0036	0.0018
RAD	Uranium-238	pCi/g	6	6	100%	--	--	0.0085	0.056	0.023

RAD - Radionuclide

Table F-51
Summary Statistics for Crayfish Hepatopancreas Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	8	6	75%	5.0	5.0	6.9	26	10
METAL	Antimony	mg/kg	8	8	100%	--	--	0.041	0.39	0.20
METAL	Arsenic	mg/kg	8	8	100%	--	--	2.5	18	8.9
METAL	Barium	mg/kg	8	8	100%	--	--	2.1	11	7.1
METAL	Beryllium	mg/kg	8	6	75%	0.020	0.020	0.12	0.35	0.15
METAL	Cadmium	mg/kg	8	8	100%	--	--	6.3	35	17
METAL	Chromium	mg/kg	8	8	100%	--	--	0.53	3.1	1.1
METAL	Copper	mg/kg	8	8	100%	--	--	514	3,750	1,550
METAL	Lead	mg/kg	8	8	100%	--	--	0.094	0.67	0.36
METAL	Manganese	mg/kg	8	8	100%	--	--	114	477	304
METAL	Mercury	mg/kg	8	8	100%	--	--	0.094	0.36	0.16
METAL	Nickel	mg/kg	8	8	100%	--	--	0.75	12	6.0
METAL	Selenium	mg/kg	8	8	100%	--	--	1.7	12	6.3
METAL	Silver	mg/kg	8	8	100%	--	--	2.7	14	8.5
METAL	Thallium	mg/kg	8	8	100%	--	--	0.10	0.69	0.35
METAL	Thorium	mg/kg	8	3	38%	0.020	0.021	0.023	0.053	0.021
METAL	Uranium	mg/kg	8	8	100%	--	--	0.089	1.4	0.63
METAL	Zinc	mg/kg	8	8	100%	--	--	113	680	339

Table F-52**Summary Statistics for Whole Body Crayfish Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	2	2	100%	--	--	75	101	88
METAL	Antimony	mg/kg	2	2	100%	--	--	0.016	0.023	0.019
METAL	Arsenic	mg/kg	2	0	0%	0.10	0.10	--	--	0.050
METAL	Barium	mg/kg	2	2	100%	--	--	255	434	345
METAL	Beryllium	mg/kg	2	0	0%	0.020	0.020	--	--	0.010
METAL	Cadmium	mg/kg	2	2	100%	--	--	0.12	0.23	0.18
METAL	Chromium	mg/kg	2	2	100%	--	--	0.55	0.61	0.58
METAL	Copper	mg/kg	2	2	100%	--	--	58	86	72
METAL	Lead	mg/kg	2	2	100%	--	--	0.19	0.27	0.23
METAL	Manganese	mg/kg	2	2	100%	--	--	125	146	136
METAL	Mercury	mg/kg	2	0	0%	0.050	0.050	--	--	0.025
METAL	Nickel	mg/kg	2	2	100%	--	--	4.5	4.8	4.6
METAL	Selenium	mg/kg	2	2	100%	--	--	0.49	0.81	0.65
METAL	Silver	mg/kg	2	2	100%	--	--	0.067	0.100	0.083
METAL	Thallium	mg/kg	2	2	100%	--	--	0.075	0.080	0.077
METAL	Thorium	mg/kg	2	1	50%	0.020	0.020	0.61	0.61	0.31
METAL	Uranium	mg/kg	2	2	100%	--	--	0.052	0.072	0.062
METAL	Zinc	mg/kg	2	2	100%	--	--	73	89	81
RAD	Antimony-125	pCi/g	2	0	0%	0.21	0.24	--	--	0.11
RAD	Beryllium-7	pCi/g	3	0	0%	0.47	1.1	--	--	0.41
RAD	Cesium-134	pCi/g	4	0	0%	0.017	0.079	--	--	0.020
RAD	Cesium-137	pCi/g	4	0	0%	0.0082	0.080	--	--	0.021
RAD	Cobalt-60	pCi/g	4	0	0%	0.021	0.11	--	--	0.030
RAD	Europium-154	pCi/g	4	0	0%	0.021	0.051	--	--	0.020
RAD	Europium-155	pCi/g	2	0	0%	0.070	0.086	--	--	0.039
RAD	Potassium-40	pCi/g	5	2	40%	0.50	3.3	2.7	7.1	2.6
RAD	Ruthenium-106	pCi/g	3	0	0%	0.051	2.0	--	--	0.44
RAD	Strontium-90	pCi/g	6	6	100%	--	--	0.079	0.27	0.12
RAD	Technetium-99	pCi/g	6	0	0%	0.031	0.13	--	--	0.037

RAD - Radionuclide

Table F-53**Summary Statistics for Whole Body Juvenile Chinook Salmon Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	104	104	100%	--	--	8.2	19	15
METAL	Aluminum	mg/kg	20	20	100%	--	--	0.28	1.1	0.58
METAL	Antimony	mg/kg	20	20	100%	--	--	0.039	3.0	0.46
METAL	Arsenic	mg/kg	20	12	60%	0.0019	0.0036	0.0056	0.028	0.0070
METAL	Beryllium	mg/kg	20	0	0%	6.44E-04	0.0013	--	--	5.03E-04
METAL	Cadmium	mg/kg	20	20	100%	--	--	0.0011	0.0067	0.0034
METAL	Chromium	mg/kg	104	104	100%	--	--	0.014	0.064	0.043
METAL	Copper	mg/kg	20	20	100%	--	--	0.031	0.083	0.060
METAL	Lead	mg/kg	20	20	100%	--	--	0.0012	0.0068	0.0023
METAL	Manganese	mg/kg	20	20	100%	--	--	0.027	0.14	0.072
METAL	Nickel	mg/kg	20	20	100%	--	--	0.0023	0.020	0.0083
METAL	Selenium	mg/kg	20	20	100%	--	--	0.020	0.087	0.047
METAL	Silver	mg/kg	20	7	35%	4.00E-04	6.12E-04	3.74E-04	7.18E-04	3.67E-04
METAL	Thallium	mg/kg	20	20	100%	--	--	0.0013	0.0048	0.0029
METAL	Thorium	mg/kg	20	8	40%	2.18E-04	3.57E-04	2.88E-04	7.35E-04	2.91E-04
METAL	Uranium	mg/kg	104	0	0%	3.53E-04	9.06E-04	--	--	3.38E-04
METAL	Zinc	mg/kg	20	20	100%	--	--	0.55	1.8	1.3

Table F-54

Summary Statistics for Mountain Whitefish Fillet Skin On Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	1.50E-07	1.50E-07	1.02E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	0	0%	2.00E-08	3.00E-08	--	--	1.17E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	0	0%	2.00E-08	3.00E-08	--	--	1.17E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	3.00E-08	4.00E-08	3.67E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	3.00E-08	4.00E-08	3.33E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	2.00E-08	3.00E-08	1.83E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	1.20E-07	1.30E-07	1.23E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	1.00E-08	2.00E-08	2.00E-08	1.00E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	6.00E-08	6.00E-08	4.17E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.20E-07	1.40E-07	1.30E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	1.70E-07	1.80E-07	1.73E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	2.60E-07	3.50E-07	2.93E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.31E-05	1.38E-05	1.34E-05
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	2.00E-07	2.10E-07	2.07E-07
DIOX/	Octachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	4.00E-08	5.00E-08	3.17E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	1.90E-07	2.80E-07	2.27E-07
METAL	Aluminum	mg/kg	3	2	67%	1.0	1.0	1.3	2.2	1.3
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.12	0.14	0.13
METAL	Barium	mg/kg	3	3	100%	--	--	0.26	0.38	0.33
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.0087	0.010	0.0094
METAL	Chromium	mg/kg	3	3	100%	--	--	0.21	0.45	0.32
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.040	0.060	0.050
METAL	Copper	mg/kg	3	3	100%	--	--	0.50	0.56	0.52
METAL	Lead	mg/kg	3	3	100%	--	--	0.010	0.020	0.017
METAL	Manganese	mg/kg	3	3	100%	--	--	0.68	0.74	0.71
METAL	Mercury	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Nickel	mg/kg	3	3	100%	--	--	0.040	0.12	0.093
METAL	Selenium	mg/kg	3	3	100%	--	--	0.44	0.50	0.47
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	2	67%	0.010	0.010	0.010	0.020	0.012
METAL	Zinc	mg/kg	3	3	100%	--	--	13	15	14
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	0.0043	0.0098	0.0062
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	0.011	0.020	0.014
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	6.45E-04	0.0030	0.0014
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	0.0035	0.015	0.0074
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0085	0.045	0.021
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	9.81E-04	0.0041	0.0020
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	2.89E-04	0.0015	7.20E-04
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	7.86E-04	0.0031	0.0016
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	0.015	0.11	0.049
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	1.57E-04	4.05E-04	2.40E-04
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	6.40E-06	1.58E-05	--	--	4.89E-06
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	3	100%	--	--	3.22E-05	9.56E-05	5.63E-05
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	3.19E-04	8.75E-04	5.16E-04

Table F-54

Summary Statistics for Mountain Whitefish Fillet Skin On Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1016	mg/kg	3	0	0%	0.017	0.019	--	--	0.0092
PCB	Aroclor-1221	mg/kg	3	0	0%	0.017	0.019	--	--	0.0092
PCB	Aroclor-1232	mg/kg	3	0	0%	0.017	0.019	--	--	0.0092
PCB	Aroclor-1248	mg/kg	3	0	0%	0.017	0.019	--	--	0.0092
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.065	0.93	0.36
PCB	Aroclor-1260	mg/kg	3	3	100%	--	--	0.086	0.17	0.12
PEST	2,4'-DDD	mg/kg	3	3	100%	--	--	0.0099	0.012	0.011
PEST	2,4'-DDE	mg/kg	3	3	100%	--	--	0.011	0.056	0.027
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	Aldrin	mg/kg	3	1	33%	0.0017	0.0019	0.0060	0.0060	0.0026
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	alpha-Chlordane	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	cis-Nonachlor	mg/kg	3	3	100%	--	--	0.0063	0.017	0.010
PEST	DDMU	mg/kg	3	3	100%	--	--	0.023	0.040	0.030
PEST	Delta-BHC	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.076	0.096	0.083
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.60	0.71	0.65
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	0.0040	0.013	0.0093
PEST	Endosulfan sulfate	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	Mirex	mg/kg	3	3	100%	--	--	0.0058	0.013	0.0088
PEST	Oxychlordane	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0017	0.0019	--	--	9.17E-04
PEST	Toxaphene	mg/kg	3	0	0%	0.052	0.058	--	--	0.028
PEST	trans-Nonachlor	mg/kg	3	2	67%	0.0017	0.0017	0.0017	0.0037	0.0021
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.037	0.039	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	Acenaphthene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	Anthracene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048

Table F-54

Summary Statistics for Mountain Whitefish Fillet Skin On Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	Chrysene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	Fluoranthene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	Fluorene	mg/kg	3	0	0%	0.0095	0.0099	--	--	0.0049
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	Naphthalene	mg/kg	3	0	0%	0.025	0.026	--	--	0.013
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0092	0.0098	--	--	0.0048
SVOC	Pyrene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
VOC	Retene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-55

Summary Statistics for Whole Body Mountain Whitefish Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	3	100%	--	--	1.30E-07	3.30E-07	2.53E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.30E-07	--	--	2.67E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	1	33%	2.00E-08	1.30E-07	4.00E-08	4.00E-08	3.83E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	2.00E-08	2.00E-08	3.00E-08	6.00E-08	3.33E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	0	0%	1.00E-08	9.00E-08	--	--	2.00E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	2.00E-08	2.00E-08	2.00E-08	4.00E-08	2.33E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	1	33%	1.00E-08	5.00E-08	1.10E-07	1.10E-07	4.67E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	2.00E-08	2.00E-08	1.50E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	2.00E-08	2.00E-08	5.00E-08	1.10E-07	5.67E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.10E-07	2.60E-07	1.60E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	2.00E-08	1.90E-07	1.27E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	7.00E-08	7.00E-08	3.00E-08	4.00E-08	3.50E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	2	67%	3.60E-07	3.60E-07	2.50E-07	2.90E-07	2.40E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	9.00E-06	1.17E-05	1.06E-05
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	2	67%	2.10E-07	2.10E-07	1.50E-07	1.60E-07	1.38E-07
DIOX/	Octachlorodibenzofuran	mg/kg	3	3	100%	--	--	4.00E-08	2.00E-07	1.23E-07
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	2.30E-07	7.60E-07	3.32E-07
METAL	Aluminum	mg/kg	3	3	100%	--	--	14	17	16
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.13	0.15	0.14
METAL	Barium	mg/kg	3	3	100%	--	--	0.57	0.73	0.66
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.040	0.050	0.047
METAL	Chromium	mg/kg	3	3	100%	--	--	0.13	0.18	0.15
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.090	0.12	0.10
METAL	Copper	mg/kg	3	3	100%	--	--	0.61	0.70	0.66
METAL	Lead	mg/kg	3	3	100%	--	--	0.040	0.070	0.057
METAL	Manganese	mg/kg	3	3	100%	--	--	2.9	3.2	3.0
METAL	Mercury	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Nickel	mg/kg	3	3	100%	--	--	0.070	0.080	0.077
METAL	Selenium	mg/kg	3	3	100%	--	--	1.0	1.1	1.1
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	3	100%	--	--	0.060	0.080	0.070
METAL	Zinc	mg/kg	3	3	100%	--	--	24	25	25
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	0.0026	0.0036	0.0032
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0061	0.0097	0.0076
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	3.53E-04	5.70E-04	4.55E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	0.0019	0.0030	0.0024
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0046	0.0073	0.0058
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	5.40E-04	7.04E-04	6.21E-04
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	1.95E-04	2.45E-04	2.15E-04
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	4.45E-04	7.06E-04	5.81E-04
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	0.0087	0.012	0.011
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	9.33E-05	1.31E-04	1.12E-04
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	5.09E-06	5.24E-06	--	--	2.57E-06
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	3	100%	--	--	1.02E-05	1.56E-05	1.28E-05
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	2.78E-04	3.07E-04	2.92E-04

Table F-55

Summary Statistics for Whole Body Mountain Whitefish Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1016	mg/kg	3	0	0%	0.016	0.019	--	--	0.0088
PCB	Aroclor-1221	mg/kg	3	0	0%	0.016	0.019	--	--	0.0088
PCB	Aroclor-1232	mg/kg	3	0	0%	0.016	0.019	--	--	0.0088
PCB	Aroclor-1248	mg/kg	3	0	0%	0.016	0.019	--	--	0.0088
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.11	0.14	0.13
PCB	Aroclor-1260	mg/kg	3	3	100%	--	--	0.055	0.086	0.071
PEST	2,4'-DDD	mg/kg	3	3	100%	--	--	0.017	0.018	0.017
PEST	2,4'-DDE	mg/kg	3	3	100%	--	--	0.014	0.019	0.016
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0016	0.0019	--	--	8.83E-04
PEST	Aldrin	mg/kg	3	3	100%	--	--	0.0016	0.0018	0.0017
PEST	Alpha-BHC	mg/kg	3	3	100%	--	--	0.0013	0.0018	0.0015
PEST	alpha-Chlordane	mg/kg	3	0	0%	0.0016	0.0019	--	--	8.83E-04
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0016	0.0019	--	--	8.83E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0016	0.0019	--	--	8.83E-04
PEST	cis-Nonachlor	mg/kg	3	3	100%	--	--	0.011	0.017	0.014
PEST	DDMU	mg/kg	3	3	100%	--	--	0.025	0.031	0.029
PEST	Delta-BHC	mg/kg	3	0	0%	0.0016	0.0019	--	--	8.83E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.093	0.11	0.099
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.52	0.74	0.64
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	0.0029	0.0064	0.0042
PEST	Endosulfan sulfate	mg/kg	3	0	0%	0.0016	0.0019	--	--	8.83E-04
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0016	0.0019	--	--	8.83E-04
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0016	0.0019	--	--	8.83E-04
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0016	0.0019	--	--	8.83E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0016	0.0019	--	--	8.83E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0016	0.0019	--	--	8.83E-04
PEST	Mirex	mg/kg	3	3	100%	--	--	0.0039	0.0060	0.0051
PEST	Oxychlordane	mg/kg	3	0	0%	0.0016	0.0019	--	--	8.83E-04
PEST	Pentachloroanisole	mg/kg	3	1	33%	0.0016	0.0019	0.0016	0.0016	0.0011
PEST	Toxaphene	mg/kg	3	0	0%	0.048	0.057	--	--	0.027
PEST	trans-Nonachlor	mg/kg	3	3	100%	--	--	0.0027	0.0044	0.0037
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.036	0.040	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	Acenaphthene	mg/kg	3	0	0%	0.019	0.021	--	--	0.010
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	Anthracene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047

Table F-55

Summary Statistics for Whole Body Mountain Whitefish Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	Chrysene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	Fluoranthene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	Fluorene	mg/kg	3	0	0%	0.0091	0.010	--	--	0.0048
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
SVOC	Naphthalene	mg/kg	3	0	0%	0.022	0.027	--	--	0.013
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0089	0.0099	--	--	0.0047
SVOC	Pyrene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095
VOC	Retene	mg/kg	3	0	0%	0.018	0.020	--	--	0.0095

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-56**Summary Statistics for Whitefish Fillet Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Antimony-125	pCi/g	11	0	0%	0.0014	0.065	--	--	0.0082
RAD	Beryllium-7	pCi/g	14	0	0%	0.0063	0.31	--	--	0.053
RAD	Cesium-134	pCi/g	15	0	0%	8.65E-04	0.016	--	--	0.0034
RAD	Cesium-137	pCi/g	26	1	4%	6.82E-04	0.036	0.020	0.020	0.0081
RAD	Cobalt-60	pCi/g	24	3	13%	0.0048	0.041	0.024	0.037	0.010
RAD	Europium-152	pCi/g	2	0	0%	3.13E-04	0.0046	--	--	0.0012
RAD	Europium-154	pCi/g	18	1	6%	0.0056	0.088	0.066	0.066	0.017
RAD	Europium-155	pCi/g	21	1	5%	7.79E-04	0.070	0.030	0.030	0.013
RAD	Manganese-54	pCi/g	1	0	0%	0.0022	0.0022	--	--	0.0011
RAD	Potassium-40	pCi/g	35	34	97%	2.6	2.6	2.2	5.1	3.6
RAD	Ruthenium-106	pCi/g	10	0	0%	0.0089	0.17	--	--	0.030
RAD	Strontium-90	pCi/g	9	0	0%	3.97E-04	0.0048	--	--	8.00E-04
RAD	Technetium-99	pCi/g	1	0	0%	0.047	0.047	--	--	0.024
RAD	Uranium-234	pCi/g	1	0	0%	0.0012	0.0012	--	--	5.80E-04
RAD	Uranium-235	pCi/g	1	0	0%	4.58E-04	4.58E-04	--	--	2.29E-04
RAD	Uranium-238	pCi/g	2	0	0%	4.05E-04	5.38E-04	--	--	2.36E-04
RAD	Zinc-65	pCi/g	1	0	0%	7.91E-04	7.91E-04	--	--	3.96E-04
RAD	Zirconium/Niobium-95	pCi/g	1	0	0%	0.0078	0.0078	--	--	0.0039

RAD - Radionuclide

Table F-57**Summary Statistics for Whitefish Liver Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	5	5	100%	--	--	1.3	6.6	3.6
METAL	Antimony	mg/kg	5	3	60%	0.019	0.019	0.020	0.023	0.017
METAL	Arsenic	mg/kg	5	5	100%	--	--	0.48	0.86	0.71
METAL	Beryllium	mg/kg	5	4	80%	0.019	0.019	0.038	0.054	0.037
METAL	Cadmium	mg/kg	5	5	100%	--	--	1.9	5.5	3.1
METAL	Chromium	mg/kg	5	5	100%	--	--	0.11	1.9	0.50
METAL	Copper	mg/kg	5	5	100%	--	--	11	23	15
METAL	Lead	mg/kg	5	5	100%	--	--	0.058	0.15	0.092
METAL	Manganese	mg/kg	5	5	100%	--	--	4.6	12	7.5
METAL	Nickel	mg/kg	5	5	100%	--	--	0.055	0.37	0.13
METAL	Selenium	mg/kg	5	5	100%	--	--	9.3	14	11
METAL	Silver	mg/kg	5	4	80%	0.045	0.045	0.077	0.36	0.14
METAL	Thallium	mg/kg	5	5	100%	--	--	0.86	1.7	1.2
METAL	Thorium	mg/kg	5	0	0%	0.021	0.021	--	--	0.011
METAL	Uranium	mg/kg	5	2	40%	0.031	0.031	0.035	0.037	0.024
METAL	Zinc	mg/kg	5	5	100%	--	--	86	110	95

Table F-58**Summary Statistics for Wholebody Whitefish Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Strontium-90	pCi/g	28	12	43%	0.0041	0.026	0.0061	0.46	0.028
RAD	Uranium-234	pCi/g	11	9	82%	1.56E-05	0.0015	0.0029	0.022	0.0089
RAD	Uranium-235	pCi/g	10	3	30%	1.50E-04	7.43E-04	8.33E-04	0.0018	4.93E-04
RAD	Uranium-238	pCi/g	11	9	82%	4.16E-04	0.0010	0.0014	0.017	0.0066

RAD - radionuclide

Table F-59
Summary Statistics for Northern Squawfish Fillet Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Cesium-137	pCi/g	1	0	0%	0.011	0.011	--	--	0.0056
RAD	Cobalt-58	pCi/g	1	0	0%	0.0051	0.0051	--	--	0.0025
RAD	Cobalt-60	pCi/g	1	0	0%	0.0078	0.0078	--	--	0.0039
RAD	Iron-59	pCi/g	1	0	0%	0.0097	0.0097	--	--	0.0049
RAD	Manganese-54	pCi/g	1	0	0%	0.0047	0.0047	--	--	0.0024
RAD	Potassium-40	pCi/g	2	2	100%	--	--	2.4	3.8	3.1

RAD - Radionuclide

Table F-60**Summary Statistics for Whole Body Northern Squawfish Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Strontium-90	pCi/g	1	1	100%	--	--	0.20	0.20	0.20

RAD - Radionuclide

Table F-61
Summary Statistics for Trout Fillet Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Potassium-40	pCi/g	1	1	100%	--	--	3.0	3.0	3.0
RAD	Strontium-90	pCi/g	1	0	0%	0.0030	0.0030	--	--	0.0015

RAD - radionuclide

Table F-62**Summary Statistics for Steelhead Fillet Collected from Segment 2 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Actinium-228	pCi/g	5	0	0%	0.088	0.18	--	--	0.071
RAD	Barium-140	pCi/g	6	0	0%	0.19	0.88	--	--	0.23
RAD	Beryllium-7	pCi/g	6	0	0%	0.15	0.46	--	--	0.16
RAD	Cerium-141	pCi/g	6	0	0%	0.043	0.10	--	--	0.033
RAD	Cerium-144	pCi/g	6	0	0%	0.075	0.22	--	--	0.085
RAD	Cesium-134	pCi/g	7	0	0%	0.0063	0.044	--	--	0.013
RAD	Cesium-137	pCi/g	13	0	0%	0.0024	0.045	--	--	0.0095
RAD	Cobalt-57	pCi/g	6	0	0%	0.0098	0.029	--	--	0.011
RAD	Cobalt-58	pCi/g	10	0	0%	6.08E-04	0.061	--	--	0.012
RAD	Cobalt-60	pCi/g	9	0	0%	0.0021	0.047	--	--	0.012
RAD	Europium-152	pCi/g	6	0	0%	0.027	0.12	--	--	0.040
RAD	Iodine-131	pCi/g	6	0	0%	0.096	0.94	--	--	0.18
RAD	Iron-59	pCi/g	13	0	0%	0.0025	0.13	--	--	0.022
RAD	Lanthanum-140	pCi/g	6	0	0%	0.057	0.38	--	--	0.077
RAD	Manganese-54	pCi/g	12	0	0%	7.58E-04	0.047	--	--	0.0089
RAD	Niobium-95	pCi/g	6	0	0%	0.018	0.066	--	--	0.021
RAD	Potassium-40	pCi/g	13	13	100%	--	--	3.2	4.5	3.6
RAD	Radium-226	pCi/g	8	0	0%	0.047	0.95	--	--	0.26
RAD	Ruthenium-103	pCi/g	6	0	0%	0.021	0.077	--	--	0.023
RAD	Ruthenium-106	pCi/g	6	0	0%	0.12	0.37	--	--	0.13
RAD	Thorium-228	pCi/g	10	0	0%	0.0039	0.77	--	--	0.17
RAD	Uranium-235	pCi/g	5	0	0%	0.17	0.22	--	--	0.097
RAD	Zinc-65	pCi/g	9	0	0%	0.011	0.098	--	--	0.026
RAD	Zirconium-95	pCi/g	6	0	0%	0.028	0.12	--	--	0.035

RAD - Radionuclide

Table F-63
Summary Statistics for White Sturgeon Fillet Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	2	2	100%	--	--	5.00E-08	2.70E-07	1.60E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	2	0	0%	8.00E-08	1.00E-07	--	--	4.50E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	2	0	0%	8.00E-08	1.00E-07	--	--	4.50E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	2	1	50%	3.00E-08	3.00E-08	4.00E-08	4.00E-08	2.75E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	2	0	0%	2.00E-08	4.00E-08	--	--	1.50E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	2	1	50%	3.00E-08	3.00E-08	5.00E-08	5.00E-08	3.25E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	9.00E-08	1.40E-07	1.15E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	2	0	0%	3.00E-08	3.00E-08	--	--	1.50E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	2	1	50%	2.00E-08	2.00E-08	6.00E-08	6.00E-08	3.50E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	2	2	100%	--	--	1.50E-07	1.60E-07	1.55E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	5.00E-08	5.00E-08	5.00E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	2	2	100%	--	--	4.00E-08	4.00E-08	4.00E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	2	2	100%	--	--	2.30E-07	2.30E-07	2.30E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	2	2	100%	--	--	2.11E-05	2.35E-05	2.23E-05
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	2.30E-07	2.40E-07	2.35E-07
DIOX/	Octachlorodibenzofuran	mg/kg	2	2	100%	--	--	1.90E-07	2.50E-07	2.20E-07
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	3.00E-08	1.15E-06	5.90E-07
METAL	Aluminum	mg/kg	2	0	0%	1.0	1.0	--	--	0.50
METAL	Antimony	mg/kg	2	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	2	2	100%	--	--	0.26	0.26	0.26
METAL	Barium	mg/kg	2	1	50%	0.20	0.20	0.50	0.50	0.30
METAL	Beryllium	mg/kg	2	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	2	1	50%	0.0040	0.0040	0.0049	0.0049	0.0035
METAL	Chromium	mg/kg	2	2	100%	--	--	0.12	0.16	0.14
METAL	Cobalt	mg/kg	2	2	100%	--	--	0.080	0.080	0.080
METAL	Copper	mg/kg	2	2	100%	--	--	0.23	0.23	0.23
METAL	Lead	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
METAL	Manganese	mg/kg	2	2	100%	--	--	0.14	0.14	0.14
METAL	Mercury	mg/kg	2	2	100%	--	--	0.33	0.38	0.36
METAL	Nickel	mg/kg	2	1	50%	0.030	0.030	0.040	0.040	0.028
METAL	Selenium	mg/kg	2	2	100%	--	--	0.61	0.65	0.63
METAL	Silver	mg/kg	2	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	2	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
METAL	Zinc	mg/kg	2	2	100%	--	--	4.4	4.5	4.5
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	2	2	100%	--	--	0.0068	0.0068	0.0068
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	2	2	100%	--	--	0.023	0.023	0.023
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	2	2	100%	--	--	7.29E-04	7.56E-04	7.43E-04
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	2	2	100%	--	--	0.0035	0.0035	0.0035
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	2	2	100%	--	--	0.0093	0.0099	0.0096
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	2	2	100%	--	--	1.67E-04	1.74E-04	1.71E-04
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	2	2	100%	--	--	1.52E-04	1.73E-04	1.63E-04
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	2	2	100%	--	--	7.39E-04	7.63E-04	7.51E-04
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	2	2	100%	--	--	0.014	0.014	0.014
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	2	2	100%	--	--	3.03E-04	3.09E-04	3.06E-04
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	2	0	0%	3.78E-06	4.24E-06	--	--	2.01E-06
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	2	0	0%	2.07E-06	2.09E-06	--	--	1.04E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	2	2	100%	--	--	5.93E-05	6.25E-05	6.09E-05
PCB	Aroclor-1016	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095

Table F-63
Summary Statistics for White Sturgeon Fillet Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1221	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
PCB	Aroclor-1232	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
PCB	Aroclor-1248	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
PCB	Aroclor-1254	mg/kg	2	2	100%	--	--	0.17	0.21	0.19
PCB	Aroclor-1260	mg/kg	2	2	100%	--	--	0.19	0.21	0.20
PEST	2,4'-DDD	mg/kg	2	2	100%	--	--	0.022	0.025	0.024
PEST	2,4'-DDE	mg/kg	2	2	100%	--	--	0.020	0.020	0.020
PEST	2,4'-DDT	mg/kg	2	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Aldrin	mg/kg	2	2	100%	--	--	9.30E-04	9.40E-04	9.35E-04
PEST	Alpha-BHC	mg/kg	2	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	alpha-Chlordane	mg/kg	2	2	100%	--	--	0.0028	0.0037	0.0033
PEST	alpha-Chlordene	mg/kg	2	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Beta-BHC	mg/kg	2	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	cis-Nonachlor	mg/kg	2	2	100%	--	--	0.027	0.028	0.028
PEST	DDMU	mg/kg	2	2	100%	--	--	0.045	0.046	0.046
PEST	Delta-BHC	mg/kg	2	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	2	2	100%	--	--	0.33	0.36	0.35
PEST	Dichlorodiphenyldichloroethylene	mg/kg	2	2	100%	--	--	1.3	1.4	1.4
PEST	Dichlorodiphenyltrichloroethane	mg/kg	2	2	100%	--	--	0.014	0.019	0.017
PEST	Endosulfan sulfate	mg/kg	2	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Gamma-BHC (Lindane)	mg/kg	2	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	gamma-Chlordane	mg/kg	2	2	100%	--	--	0.0069	0.0071	0.0070
PEST	gamma-Chlordene	mg/kg	2	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Heptachlor	mg/kg	2	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Heptachlor epoxide	mg/kg	2	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Mirex	mg/kg	2	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Oxychlordane	mg/kg	2	2	100%	--	--	0.0023	0.0027	0.0025
PEST	Pentachloroanisole	mg/kg	2	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Toxaphene	mg/kg	2	0	0%	0.056	0.056	--	--	0.028
PEST	trans-Nonachlor	mg/kg	2	2	100%	--	--	0.014	0.014	0.014
RAD	Antimony-125	pCi/g	11	0	0%	0.0014	0.065	--	--	0.0082
RAD	Beryllium-7	pCi/g	14	0	0%	0.0063	0.31	--	--	0.053
RAD	Cesium-134	pCi/g	15	0	0%	8.65E-04	0.016	--	--	0.0034
RAD	Cesium-137	pCi/g	26	1	4%	6.82E-04	0.036	0.020	0.020	0.0081
RAD	Cobalt-60	pCi/g	24	3	13%	0.0048	0.041	0.024	0.037	0.010
RAD	Europium-152	pCi/g	2	0	0%	3.13E-04	0.0046	--	--	0.0012
RAD	Europium-154	pCi/g	18	1	6%	0.0056	0.088	0.066	0.066	0.017
RAD	Europium-155	pCi/g	21	1	5%	7.79E-04	0.070	0.030	0.030	0.013
RAD	Manganese-54	pCi/g	1	0	0%	0.0022	0.0022	--	--	0.0011
RAD	Potassium-40	pCi/g	35	34	97%	2.6	2.6	2.2	5.1	3.6
RAD	Ruthenium-106	pCi/g	10	0	0%	0.0089	0.17	--	--	0.030
RAD	Strontium-90	pCi/g	9	0	0%	3.97E-04	0.0048	--	--	8.00E-04
RAD	Technetium-99	pCi/g	1	0	0%	0.047	0.047	--	--	0.024
RAD	Uranium-234	pCi/g	1	0	0%	0.0012	0.0012	--	--	5.80E-04
RAD	Uranium-235	pCi/g	1	0	0%	4.58E-04	4.58E-04	--	--	2.29E-04
RAD	Uranium-238	pCi/g	2	0	0%	4.05E-04	5.38E-04	--	--	2.36E-04
RAD	Zinc-65	pCi/g	1	0	0%	7.91E-04	7.91E-04	--	--	3.96E-04
RAD	Zirconium/Niobium-95	pCi/g	1	0	0%	0.0078	0.0078	--	--	0.0039
SVOC	1,2,4-Trichlorobenzene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046

Table F-63
Summary Statistics for White Sturgeon Fillet Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	1,2-Dichlorobenzene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	1,2-Diphenylhydrazine	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	1,3-Dichlorobenzene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	1,4-Dichlorobenzene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	1-methylnaphthalene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	2,4-Dinitrotoluene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	2,6-Dinitrotoluene	mg/kg	2	0	0%	0.035	0.038	--	--	0.018
SVOC	2-Chloronaphthalene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	2-Methylnaphthalene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	4-Bromophenylphenyl ether	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	4-Chlorophenylphenyl ether	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Acenaphthene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Acenaphthylene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Anthracene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Benzo(a)anthracene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Benzo(a)pyrene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Benzo(b)fluoranthene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Benzo(ghi)perylene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Benzo(k)fluoranthene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Chrysene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Dibenz[a,h]anthracene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Dibenzofuran	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Fluoranthene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Fluorene	mg/kg	2	0	0%	0.0049	0.024	--	--	0.0072
SVOC	Hexachlorobenzene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Hexachlorobutadiene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Hexachloroethane	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Naphthalene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Nitrobenzene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Phenanthrene	mg/kg	2	0	0%	0.0088	0.0096	--	--	0.0046
SVOC	Pyrene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
VOC	Retene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

RAD- radionuclide

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-64
Summary Statistics for Whole Body White Sturgeon Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	2	2	100%	--	--	3.80E-07	7.50E-07	5.65E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	2	1	50%	1.10E-07	1.10E-07	2.10E-07	2.10E-07	1.33E-07
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	2	0	0%	1.10E-07	1.70E-07	--	--	7.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	2	2	100%	--	--	3.00E-08	1.20E-07	7.50E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	2	0	0%	4.00E-08	5.00E-08	--	--	2.25E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	2	1	50%	5.00E-08	5.00E-08	3.00E-08	3.00E-08	2.75E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	7.00E-08	3.40E-07	2.05E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	2	1	50%	3.00E-08	3.00E-08	5.00E-08	5.00E-08	3.25E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	2	1	50%	4.00E-08	4.00E-08	5.00E-08	5.00E-08	3.50E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	2	2	100%	--	--	1.20E-07	4.70E-07	2.95E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	3.00E-08	9.00E-08	6.00E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	2	1	50%	3.00E-08	3.00E-08	5.00E-08	5.00E-08	3.25E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	2	2	100%	--	--	1.30E-07	5.30E-07	3.30E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	2	2	100%	--	--	9.03E-06	4.73E-05	2.82E-05
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	6.00E-08	1.25E-06	6.55E-07
DIOX/	Octachlorodibenzofuran	mg/kg	2	2	100%	--	--	3.30E-07	9.50E-07	6.40E-07
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	1.53E-06	3.52E-06	2.53E-06
METAL	Aluminum	mg/kg	2	1	50%	1.0	1.0	1.6	1.6	1.1
METAL	Antimony	mg/kg	2	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	2	2	100%	--	--	0.20	0.36	0.28
METAL	Barium	mg/kg	2	2	100%	--	--	0.95	2.1	1.5
METAL	Beryllium	mg/kg	2	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	2	2	100%	--	--	0.010	0.040	0.025
METAL	Chromium	mg/kg	2	2	100%	--	--	0.11	0.39	0.25
METAL	Cobalt	mg/kg	2	2	100%	--	--	0.070	0.33	0.20
METAL	Copper	mg/kg	2	2	100%	--	--	0.26	1.1	0.68
METAL	Lead	mg/kg	2	2	100%	--	--	0.030	0.030	0.030
METAL	Manganese	mg/kg	2	2	100%	--	--	0.32	0.85	0.59
METAL	Mercury	mg/kg	2	1	50%	0.10	0.10	0.13	0.13	0.090
METAL	Nickel	mg/kg	2	2	100%	--	--	0.060	0.17	0.12
METAL	Selenium	mg/kg	2	1	50%	0.50	0.50	1.1	1.1	0.68
METAL	Silver	mg/kg	2	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	2	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	2	1	50%	0.010	0.010	0.040	0.040	0.023
METAL	Zinc	mg/kg	2	2	100%	--	--	2.4	8.5	5.5
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	2	2	100%	--	--	0.0020	0.0024	0.0022
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	2	2	100%	--	--	0.0069	0.011	0.0091
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	2	2	100%	--	--	2.00E-04	2.79E-04	2.40E-04
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	2	2	100%	--	--	0.0011	0.0016	0.0013
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	2	2	100%	--	--	0.0030	0.0039	0.0034
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	2	2	100%	--	--	2.12E-05	3.31E-05	2.72E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	2	2	100%	--	--	4.75E-05	6.18E-05	5.47E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	2	2	100%	--	--	2.19E-04	3.35E-04	2.77E-04
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	2	2	100%	--	--	0.0036	0.0036	0.0036
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	2	2	100%	--	--	8.72E-05	1.21E-04	1.04E-04
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	2	0	0%	1.05E-06	2.12E-06	--	--	7.93E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	2	0	0%	1.22E-06	1.53E-06	--	--	6.88E-07
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	2	2	100%	--	--	1.70E-05	2.79E-05	2.25E-05
PCB	Aroclor-1016	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
PCB	Aroclor-1221	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093

Table F-64
Summary Statistics for Whole Body White Sturgeon Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
PCB	Aroclor-1248	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
PCB	Aroclor-1254	mg/kg	2	2	100%	--	--	0.083	0.090	0.087
PCB	Aroclor-1260	mg/kg	2	2	100%	--	--	0.063	0.087	0.075
PEST	2,4'-DDD	mg/kg	2	2	100%	--	--	0.018	0.022	0.020
PEST	2,4'-DDE	mg/kg	2	2	100%	--	--	0.0079	0.0083	0.0081
PEST	2,4'-DDT	mg/kg	2	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Aldrin	mg/kg	2	1	50%	0.0018	0.0018	0.0011	0.0011	0.0010
PEST	Alpha-BHC	mg/kg	2	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	alpha-Chlordane	mg/kg	2	2	100%	--	--	0.0022	0.0043	0.0033
PEST	alpha-Chlordene	mg/kg	2	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Beta-BHC	mg/kg	2	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	cis-Nonachlor	mg/kg	2	2	100%	--	--	0.012	0.012	0.012
PEST	DDMU	mg/kg	2	2	100%	--	--	0.013	0.016	0.015
PEST	Delta-BHC	mg/kg	2	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	2	2	100%	--	--	0.19	0.20	0.20
PEST	Dichlorodiphenyldichloroethylene	mg/kg	2	2	100%	--	--	0.54	0.64	0.59
PEST	Dichlorodiphenyltrichloroethane	mg/kg	2	2	100%	--	--	0.0039	0.0070	0.0055
PEST	Endosulfan sulfate	mg/kg	2	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Gamma-BHC (Lindane)	mg/kg	2	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	gamma-Chlordane	mg/kg	2	2	100%	--	--	0.0044	0.0072	0.0058
PEST	gamma-Chlordene	mg/kg	2	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Heptachlor	mg/kg	2	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Heptachlor epoxide	mg/kg	2	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Mirex	mg/kg	2	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Oxychlordane	mg/kg	2	1	50%	0.0018	0.0018	0.0016	0.0016	0.0013
PEST	Pentachloroanisole	mg/kg	2	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Toxaphene	mg/kg	2	0	0%	0.055	0.056	--	--	0.028
PEST	trans-Nonachlor	mg/kg	2	2	100%	--	--	0.0046	0.0093	0.0070
SVOC	1,2,4-Trichlorobenzene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	1,2-Dichlorobenzene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	1,2-Diphenylhydrazine	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	1,3-Dichlorobenzene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	1,4-Dichlorobenzene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	1-methylnaphthalene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	2,4-Dinitrotoluene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	2,6-Dinitrotoluene	mg/kg	2	0	0%	0.038	0.039	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	2-Methylnaphthalene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	4-Bromophenylphenyl ether	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	4-Chlorophenylphenyl ether	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Acenaphthene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Acenaphthylene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Anthracene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Benzo(a)anthracene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Benzo(a)pyrene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Benzo(b)fluoranthene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Benzo(ghi)perylene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Benzo(k)fluoranthene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095

Table F-64
Summary Statistics for Whole Body White Sturgeon Collected from Segment 2 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Dibenz[a,h]anthracene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Dibenzofuran	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Fluoranthene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Fluorene	mg/kg	2	0	0%	0.0093	0.0093	--	--	0.0047
SVOC	Hexachlorobenzene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Hexachlorobutadiene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Hexachloroethane	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Naphthalene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Nitrobenzene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Phenanthrene	mg/kg	2	0	0%	0.0094	0.0097	--	--	0.0048
SVOC	Pyrene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
VOC	Retene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-65**Summary Statistics for Bass Fillet with Skin Off Collected from Segment 3 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	11	11	100%	--	--	0.14	1.4	0.48
METAL	Mercury	mg/Kg	11	11	100%	--	--	0.058	0.28	0.19

Table F-66
Summary Statistics for Whole Body Largemouth Bass Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	2	2	100%	--	--	3.5	5.9	4.7
CONV	Percent moisture (wet sample)	mg/Kg	2	2	100%	--	--	72	72	72
DIOX/	TCDD-eq	mg/Kg	2	2	100%	--	--	5.0	6.0	5.5
METAL	Aluminum	mg/Kg	2	2	100%	--	--	11	17	14
METAL	Arsenic	mg/Kg	2	0	0%	0.24	0.27	--	--	0.13
METAL	Barium	mg/Kg	2	2	100%	--	--	0.34	0.53	0.44
METAL	Beryllium	mg/Kg	2	0	0%	0.047	0.055	--	--	0.025
METAL	Boron	mg/Kg	2	0	0%	0.94	1.1	--	--	0.51
METAL	Cadmium	mg/Kg	2	0	0%	0.047	0.055	--	--	0.025
METAL	Chromium	mg/Kg	2	2	100%	--	--	0.66	1.4	1.0
METAL	Copper	mg/Kg	2	2	100%	--	--	0.47	0.61	0.54
METAL	Iron	mg/Kg	2	2	100%	--	--	15	19	17
METAL	Lead	mg/Kg	2	0	0%	0.094	0.11	--	--	0.051
METAL	Magnesium	mg/Kg	2	2	100%	--	--	299	417	358
METAL	Manganese	mg/Kg	2	2	100%	--	--	1.0	1.0	1.0
METAL	Mercury	mg/Kg	2	2	100%	--	--	0.059	0.18	0.12
METAL	Molybdenum	mg/Kg	2	0	0%	0.24	0.27	--	--	0.13
METAL	Nickel	mg/Kg	2	0	0%	0.24	0.27	--	--	0.13
METAL	Selenium	mg/Kg	2	2	100%	--	--	0.80	0.81	0.81
METAL	Strontium	mg/Kg	2	2	100%	--	--	12	24	18
METAL	Vanadium	mg/Kg	2	0	0%	0.24	0.27	--	--	0.13
METAL	Zinc	mg/Kg	2	2	100%	--	--	15	19	17
PCB	Total polychlorinated biphenyl	mg/Kg	2	1	50%	0.030	0.030	0.042	0.042	0.029
PEST	2,4'-DDD	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	2,4'-DDE	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	2,4'-DDT	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Alpha-BHC	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	alpha-Chlordane	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Beta-BHC	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	cis-Nonachlor	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Delta-BHC	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Dichlorodiphenyldichloroethane	mg/Kg	2	2	100%	--	--	0.023	0.040	0.032
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	2	2	100%	--	--	0.17	0.25	0.21
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Dieldrin	mg/Kg	2	1	50%	0.010	0.010	0.012	0.012	0.0085
PEST	Endrin	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Gamma-BHC (Lindane)	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	gamma-Chlordane	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Heptachlor epoxide	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Mirex	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Oxychlordane	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
PEST	Toxaphene	mg/Kg	2	0	0%	0.030	0.030	--	--	0.015
PEST	trans-Nonachlor	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050
SVOC	Hexachlorobenzene	mg/Kg	2	0	0%	0.010	0.010	--	--	0.0050

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

Table F-67

Summary Statistics for Smallmouth Bass Fillet Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	5	5	100%	--	--	0.78	5.3	1.8
PCB	Aroclor-1016	mg/Kg	4	0	0%	0.0046	0.0055	--	--	0.0025
PCB	Aroclor-1221	mg/Kg	4	0	0%	0.0046	0.0055	--	--	0.0025
PCB	Aroclor-1232	mg/Kg	4	0	0%	0.0046	0.0055	--	--	0.0025
PCB	Aroclor-1242	mg/Kg	4	0	0%	0.0046	0.0055	--	--	0.0025
PCB	Aroclor-1248	mg/Kg	4	0	0%	0.0046	0.0055	--	--	0.0025
PCB	Aroclor-1254	mg/Kg	5	5	100%	--	--	0.0032	0.058	0.016
PCB	Aroclor-1260	mg/Kg	5	3	60%	0.0046	0.0055	0.0026	0.031	0.0083
PCB	Aroclor-1262	mg/Kg	4	0	0%	0.0046	0.0055	--	--	0.0025
PCB	Aroclor-1268	mg/Kg	4	0	0%	0.0046	0.0055	--	--	0.0025
PEST	2,4'-DDD	mg/Kg	5	1	20%	4.60E-04	5.50E-04	0.0028	0.0028	7.62E-04
PEST	2,4'-DDE	mg/Kg	5	2	40%	4.60E-04	5.50E-04	5.40E-04	0.0035	9.59E-04
PEST	2,4'-DDT	mg/Kg	5	1	20%	4.60E-04	5.50E-04	0.0017	0.0017	5.42E-04
PEST	alpha-Chlordane	mg/Kg	5	1	20%	4.60E-04	5.50E-04	0.0013	0.0013	4.62E-04
PEST	cis-Nonachlor	mg/Kg	5	1	20%	4.60E-04	5.50E-04	0.0019	0.0019	5.82E-04
PEST	Dichlorodiphenyldichloroethane	mg/Kg	5	5	100%	--	--	0.0016	0.020	0.0056
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	5	5	100%	--	--	0.025	0.29	0.079
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	5	3	60%	5.10E-04	5.50E-04	5.30E-04	0.0018	6.82E-04
PEST	Dieldrin	mg/Kg	5	1	20%	4.60E-04	5.50E-04	0.0016	0.0016	5.22E-04
PEST	Heptachlor	mg/Kg	5	0	0%	4.60E-04	5.50E-04	--	--	2.53E-04
PEST	Heptachlor epoxide	mg/Kg	5	1	20%	4.60E-04	5.50E-04	0.0016	0.0016	5.22E-04
PEST	Oxychlordane	mg/Kg	5	1	20%	4.60E-04	5.50E-04	0.0017	0.0017	5.42E-04
PEST	Toxaphene	mg/Kg	5	5	100%	--	--	0.0077	0.050	0.018
PEST	trans-Chlordane	mg/Kg	5	1	20%	4.60E-04	5.50E-04	6.20E-04	6.20E-04	3.26E-04
PEST	trans-Nonachlor	mg/Kg	5	5	100%	--	--	6.40E-04	0.0072	0.0020
SVOC	Hexachlorobenzene	mg/Kg	5	5	100%	--	--	7.00E-04	0.0058	0.0018

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

Table F-68

Summary Statistics for Smallmouth Bass Fillet Skin On Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
METAL	Aluminum	mg/kg	3	3	100%	--	--	5.0	8.1	6.5
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.11	0.17	0.14
METAL	Barium	mg/kg	3	3	100%	--	--	0.36	0.60	0.49
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Chromium	mg/kg	3	3	100%	--	--	0.22	0.33	0.28
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.010	0.010	0.010
METAL	Copper	mg/kg	3	3	100%	--	--	0.50	0.56	0.53
METAL	Lead	mg/kg	3	2	67%	0.010	0.010	0.020	0.050	0.025
METAL	Manganese	mg/kg	3	3	100%	--	--	0.74	1.1	0.88
METAL	Mercury	mg/kg	3	3	100%	--	--	0.38	0.47	0.41
METAL	Nickel	mg/kg	3	3	100%	--	--	0.12	0.34	0.20
METAL	Selenium	mg/kg	3	3	100%	--	--	0.45	0.52	0.49
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	1	33%	0.010	0.010	0.010	0.010	0.0067
METAL	Zinc	mg/kg	3	3	100%	--	--	9.2	10	9.7
PCB	Aroclor-1016	mg/kg	3	0	0%	0.018	0.023	--	--	0.010
PCB	Aroclor-1221	mg/kg	3	0	0%	0.018	0.023	--	--	0.010
PCB	Aroclor-1232	mg/kg	3	0	0%	0.018	0.023	--	--	0.010
PCB	Aroclor-1248	mg/kg	3	0	0%	0.018	0.023	--	--	0.010
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.038	0.083	0.055
PCB	Aroclor-1260	mg/kg	3	3	100%	--	--	0.068	0.22	0.12
PEST	2,4'-DDD	mg/kg	3	3	100%	--	--	0.011	0.020	0.015
PEST	2,4'-DDE	mg/kg	3	3	100%	--	--	0.0052	0.0094	0.0067
PEST	2,4'-DDT	mg/kg	3	3	100%	--	--	0.0057	0.018	0.0099
PEST	Aldrin	mg/kg	3	0	0%	0.0018	0.0023	--	--	0.0010
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0018	0.0023	--	--	0.0010
PEST	alpha-Chlordane	mg/kg	3	1	33%	0.0018	0.0023	0.0041	0.0041	0.0021
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0018	0.0023	--	--	0.0010
PEST	Beta-BHC	mg/kg	3	0	0%	0.0018	0.0023	--	--	0.0010
PEST	cis-Nonachlor	mg/kg	3	0	0%	0.0018	0.0023	--	--	0.0010
PEST	DDMU	mg/kg	3	3	100%	--	--	0.020	0.056	0.032
PEST	Delta-BHC	mg/kg	3	0	0%	0.0018	0.0023	--	--	0.0010
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.030	0.085	0.051
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.48	1.2	0.77
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	0.023	0.048	0.034
PEST	Endosulfan sulfate	mg/kg	3	3	100%	--	--	0.0015	0.0030	0.0021
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0018	0.0023	--	--	0.0010
PEST	gamma-Chlordane	mg/kg	3	1	33%	0.0018	0.0023	0.014	0.014	0.0054
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0018	0.0023	--	--	0.0010
PEST	Heptachlor	mg/kg	3	0	0%	0.0018	0.0023	--	--	0.0010
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0018	0.0023	--	--	0.0010
PEST	Mirex	mg/kg	3	0	0%	0.0018	0.0023	--	--	0.0010
PEST	Oxychlordane	mg/kg	3	1	33%	0.0018	0.0023	0.0016	0.0016	0.0012

Table F-68

Summary Statistics for Smallmouth Bass Fillet Skin On Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PEST	Pentachloroanisole	mg/kg	3	1	33%	0.0018	0.0023	7.90E-04	7.90E-04	9.47E-04
PEST	Toxaphene	mg/kg	3	0	0%	0.054	0.068	--	--	0.030
PEST	trans-Nonachlor	mg/kg	3	3	100%	--	--	0.0026	0.0086	0.0047
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.011	0.017	--	--	0.0075
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.023	0.034	--	--	0.015
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.011	0.017	--	--	0.0075
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	Acenaphthene	mg/kg	3	0	0%	0.011	0.017	--	--	0.0075
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	Anthracene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.011	0.017	--	--	0.0075
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.011	0.017	--	--	0.0075
SVOC	Chrysene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.011	0.017	--	--	0.0075
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	Fluoranthene	mg/kg	3	0	0%	0.011	0.017	--	--	0.0075
SVOC	Fluorene	mg/kg	3	0	0%	0.0092	0.0099	--	--	0.0048
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.011	0.017	--	--	0.0075
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.011	0.017	--	--	0.0075
SVOC	Naphthalene	mg/kg	3	0	0%	0.010	0.017	--	--	0.0063
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0057	0.0084	--	--	0.0038
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0057	0.0099	--	--	0.0040
SVOC	Pyrene	mg/kg	3	0	0%	0.011	0.017	--	--	0.0075
VOC	Retene	mg/kg	3	0	0%	0.011	0.017	--	--	0.0075

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-69**Summary Statistics for Carp Fillet Collected from Segment 3 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	4	4	100%	--	--	2.4	7.0	4.6
PCB	Aroclor-1016	mg/Kg	4	0	0%	0.0049	0.0055	--	--	0.0026
PCB	Aroclor-1221	mg/Kg	4	0	0%	0.0049	0.0055	--	--	0.0026
PCB	Aroclor-1232	mg/Kg	4	0	0%	0.0049	0.0055	--	--	0.0026
PCB	Aroclor-1242	mg/Kg	4	0	0%	0.0049	0.0055	--	--	0.0026
PCB	Aroclor-1248	mg/Kg	4	0	0%	0.0049	0.0055	--	--	0.0026
PCB	Aroclor-1254	mg/Kg	4	4	100%	--	--	0.029	0.14	0.081
PCB	Aroclor-1260	mg/Kg	4	4	100%	--	--	0.039	0.27	0.14
PCB	Aroclor-1262	mg/Kg	4	0	0%	0.0049	0.0055	--	--	0.0026
PCB	Aroclor-1268	mg/Kg	4	0	0%	0.0049	0.0055	--	--	0.0026
PEST	2,4'-DDD	mg/Kg	4	4	100%	--	--	9.40E-04	0.0068	0.0036
PEST	2,4'-DDE	mg/Kg	4	4	100%	--	--	0.0018	0.012	0.0065
PEST	2,4'-DDT	mg/Kg	4	4	100%	--	--	0.0011	0.0033	0.0022
PEST	alpha-Chlordane	mg/Kg	4	4	100%	--	--	0.0018	0.0048	0.0031
PEST	cis-Nonachlor	mg/Kg	4	4	100%	--	--	0.0018	0.0045	0.0030
PEST	Dichlorodiphenyldichloroethane	mg/Kg	4	4	100%	--	--	0.021	0.091	0.051
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	4	4	100%	--	--	0.30	0.93	0.55
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	4	4	100%	--	--	7.40E-04	0.0014	9.88E-04
PEST	Dieldrin	mg/Kg	4	4	100%	--	--	0.0011	0.0029	0.0018
PEST	Heptachlor	mg/Kg	4	0	0%	4.90E-04	5.50E-04	--	--	2.61E-04
PEST	Heptachlor epoxide	mg/Kg	4	4	100%	--	--	8.60E-04	0.0021	0.0013
PEST	Oxychlordane	mg/Kg	4	4	100%	--	--	7.00E-04	0.0015	9.80E-04
PEST	Toxaphene	mg/Kg	4	4	100%	--	--	0.046	0.065	0.055
PEST	trans-Chlordane	mg/Kg	4	4	100%	--	--	0.0015	0.0039	0.0023
PEST	trans-Nonachlor	mg/Kg	4	4	100%	--	--	7.30E-04	0.016	0.0076
SVOC	Hexachlorobenzene	mg/Kg	4	4	100%	--	--	0.0053	0.0095	0.0065

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

Table F-70**Summary Statistics for Channel Catfish Fillet Collected from Segment 3 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	1	1	100%	--	--	4.2	4.2	4.2
PCB	Aroclor-1016	mg/Kg	1	0	0%	0.0055	0.0055	--	--	0.0028
PCB	Aroclor-1221	mg/Kg	1	0	0%	0.0055	0.0055	--	--	0.0028
PCB	Aroclor-1232	mg/Kg	1	0	0%	0.0055	0.0055	--	--	0.0028
PCB	Aroclor-1242	mg/Kg	1	0	0%	0.0055	0.0055	--	--	0.0028
PCB	Aroclor-1248	mg/Kg	1	0	0%	0.0055	0.0055	--	--	0.0028
PCB	Aroclor-1254	mg/Kg	1	1	100%	--	--	0.029	0.029	0.029
PCB	Aroclor-1260	mg/Kg	1	1	100%	--	--	0.024	0.024	0.024
PCB	Aroclor-1262	mg/Kg	1	0	0%	0.0055	0.0055	--	--	0.0028
PCB	Aroclor-1268	mg/Kg	1	0	0%	0.0055	0.0055	--	--	0.0028
PEST	2,4'-DDD	mg/Kg	1	1	100%	--	--	0.0012	0.0012	0.0012
PEST	2,4'-DDE	mg/Kg	1	1	100%	--	--	8.20E-04	8.20E-04	8.20E-04
PEST	2,4'-DDT	mg/Kg	1	0	0%	5.50E-04	5.50E-04	--	--	2.75E-04
PEST	alpha-Chlordane	mg/Kg	1	1	100%	--	--	0.0024	0.0024	0.0024
PEST	cis-Nonachlor	mg/Kg	1	1	100%	--	--	0.0017	0.0017	0.0017
PEST	Dichlorodiphenyldichloroethane	mg/Kg	1	1	100%	--	--	0.023	0.023	0.023
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	1	1	100%	--	--	0.22	0.22	0.22
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	1	1	100%	--	--	0.0083	0.0083	0.0083
PEST	Dieldrin	mg/Kg	1	1	100%	--	--	0.0020	0.0020	0.0020
PEST	Heptachlor	mg/Kg	1	0	0%	5.50E-04	5.50E-04	--	--	2.75E-04
PEST	Heptachlor epoxide	mg/Kg	1	1	100%	--	--	6.80E-04	6.80E-04	6.80E-04
PEST	Oxychlordane	mg/Kg	1	1	100%	--	--	0.0011	0.0011	0.0011
PEST	Toxaphene	mg/Kg	1	1	100%	--	--	0.072	0.072	0.072
PEST	trans-Chlordane	mg/Kg	1	1	100%	--	--	0.0019	0.0019	0.0019
PEST	trans-Nonachlor	mg/Kg	1	1	100%	--	--	0.0039	0.0039	0.0039
SVOC	Hexachlorobenzene	mg/Kg	1	1	100%	--	--	0.0025	0.0025	0.0025

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

Table F-71
Summary Statistics for Bridgelip Sucker Fillet Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	5	5	100%	--	--	1.4	4.4	2.7
PCB	Aroclor-1016	mg/Kg	5	0	0%	0.0026	0.0055	--	--	0.0021
PCB	Aroclor-1221	mg/Kg	5	0	0%	0.0026	0.0055	--	--	0.0021
PCB	Aroclor-1232	mg/Kg	5	0	0%	0.0026	0.0055	--	--	0.0021
PCB	Aroclor-1242	mg/Kg	5	0	0%	0.0026	0.0055	--	--	0.0021
PCB	Aroclor-1248	mg/Kg	5	0	0%	0.0026	0.0055	--	--	0.0021
PCB	Aroclor-1254	mg/Kg	5	5	100%	--	--	0.0054	0.016	0.010
PCB	Aroclor-1260	mg/Kg	5	5	100%	--	--	0.0031	0.011	0.0066
PCB	Aroclor-1262	mg/Kg	5	0	0%	0.0040	0.0055	--	--	0.0024
PCB	Aroclor-1268	mg/Kg	5	0	0%	0.0040	0.0055	--	--	0.0024
PEST	2,4'-DDD	mg/Kg	5	5	100%	--	--	5.80E-04	9.40E-04	7.22E-04
PEST	2,4'-DDE	mg/Kg	5	3	60%	4.90E-04	5.50E-04	5.50E-04	0.0014	6.18E-04
PEST	2,4'-DDT	mg/Kg	5	1	20%	4.00E-04	5.50E-04	8.00E-04	8.00E-04	3.56E-04
PEST	alpha-Chlordane	mg/Kg	5	3	60%	4.90E-04	5.50E-04	5.20E-04	8.00E-04	5.04E-04
PEST	cis-Nonachlor	mg/Kg	5	3	60%	4.90E-04	5.50E-04	4.60E-04	6.90E-04	4.54E-04
PEST	Dichlorodiphenyldichloroethane	mg/Kg	5	5	100%	--	--	0.0042	0.0067	0.0055
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	5	5	100%	--	--	0.042	0.17	0.087
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	5	5	100%	--	--	0.0015	0.0044	0.0024
PEST	Dieldrin	mg/Kg	5	3	60%	4.90E-04	5.50E-04	5.50E-04	0.0010	5.70E-04
PEST	Heptachlor	mg/Kg	5	0	0%	4.00E-04	5.50E-04	--	--	2.40E-04
PEST	Heptachlor epoxide	mg/Kg	5	1	20%	4.40E-04	5.50E-04	6.50E-04	6.50E-04	3.30E-04
PEST	Oxychlordane	mg/Kg	5	1	20%	4.40E-04	5.50E-04	6.20E-04	6.20E-04	3.24E-04
PEST	Toxaphene	mg/Kg	5	5	100%	--	--	0.013	0.027	0.021
PEST	trans-Chlordane	mg/Kg	5	1	20%	4.40E-04	5.50E-04	4.40E-04	4.40E-04	2.88E-04
PEST	trans-Nonachlor	mg/Kg	5	4	80%	9.80E-04	9.80E-04	0.0011	0.0037	0.0019
SVOC	Hexachlorobenzene	mg/Kg	5	5	100%	--	--	0.0011	0.0034	0.0018

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

Table F-72
Summary Statistics for Whole Body Bridgelip Sucker Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	3	100%	--	--	3.60E-07	4.20E-07	3.97E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	1.10E-07	1.20E-07	7.83E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	2.00E-08	2.00E-08	2.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	1.20E-07	1.30E-07	1.23E-07
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	3.00E-08	4.00E-08	3.33E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	1.40E-07	1.70E-07	1.50E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	5.00E-08	6.00E-08	5.67E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	5.00E-08	6.00E-08	5.33E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	5.00E-08	6.00E-08	5.33E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	1.80E-07	1.80E-07	1.80E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.30E-07	1.50E-07	1.40E-07
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.10E-07	1.20E-07	1.17E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	7.60E-07	1.11E-06	9.60E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	6.00E-08	8.00E-08	7.00E-08
DIOX/	Octachlorodibenzofuran	mg/kg	3	3	100%	--	--	5.00E-08	8.00E-08	6.67E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	7.50E-07	9.80E-07	8.93E-07
METAL	Aluminum	mg/kg	3	3	100%	--	--	22	64	37
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.26	0.30	0.28
METAL	Barium	mg/kg	3	3	100%	--	--	1.9	2.1	2.0
METAL	Beryllium	mg/kg	3	2	67%	0.0040	0.0040	0.0060	0.0080	0.0053
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.020	0.030	0.027
METAL	Chromium	mg/kg	3	3	100%	--	--	0.12	0.23	0.18
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.080	0.11	0.090
METAL	Copper	mg/kg	3	3	100%	--	--	0.88	1.8	1.2
METAL	Lead	mg/kg	3	2	67%	0.070	0.070	0.030	0.040	0.035
METAL	Manganese	mg/kg	3	3	100%	--	--	17	20	18
METAL	Mercury	mg/kg	3	1	33%	0.040	0.040	0.050	0.050	0.030
METAL	Nickel	mg/kg	3	3	100%	--	--	0.27	0.60	0.39
METAL	Selenium	mg/kg	3	3	100%	--	--	0.28	0.28	0.28
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	3	100%	--	--	0.14	0.26	0.19
METAL	Zinc	mg/kg	3	3	100%	--	--	20	21	20
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	7.42E-04	0.0013	9.44E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0021	0.0041	0.0028
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	0	0%	4.42E-06	6.78E-06	--	--	2.78E-06
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	2.76E-04	3.48E-04	3.02E-04
PCB	2,3,3',4,4',5-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	5.31E-04	5.86E-04	5.65E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	1.29E-04	1.88E-04	1.50E-04
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	2.59E-05	3.87E-05	3.04E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	4.30E-05	4.99E-05	4.69E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	0.0010	0.0013	0.0011
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	2.92E-05	4.45E-05	3.46E-05
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	1	33%	7.30E-07	8.20E-07	5.81E-06	5.81E-06	2.20E-06
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	1	33%	2.09E-06	2.30E-06	1.21E-05	1.21E-05	4.77E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	3.11E-05	3.65E-05	3.42E-05
PCB	Aroclor-1016	mg/kg	3	0	0%	0.021	0.023	--	--	0.011
PCB	Aroclor-1221	mg/kg	3	0	0%	0.021	0.023	--	--	0.011
PCB	Aroclor-1232	mg/kg	3	0	0%	0.021	0.023	--	--	0.011

Table F-72
Summary Statistics for Whole Body Bridgelip Sucker Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1248	mg/kg	3	0	0%	0.021	0.023	--	--	0.011
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.018	0.032	0.025
PCB	Aroclor-1260	mg/kg	3	3	100%	--	--	0.027	0.049	0.034
PEST	2,4'-DDD	mg/kg	3	3	100%	--	--	0.0087	0.011	0.0099
PEST	2,4'-DDE	mg/kg	3	3	100%	--	--	0.0059	0.0079	0.0068
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	Aldrin	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	alpha-Chlordane	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	Beta-BHC	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	cis-Nonachlor	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	DDMU	mg/kg	3	3	100%	--	--	0.010	0.021	0.016
PEST	Delta-BHC	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.052	0.072	0.065
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.31	0.56	0.40
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	0.037	0.052	0.046
PEST	Endosulfan sulfate	mg/kg	3	3	100%	--	--	0.0035	0.0054	0.0046
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	Heptachlor	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	Mirex	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	Oxychlordane	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
PEST	Toxaphene	mg/kg	3	0	0%	0.080	0.085	--	--	0.041
PEST	trans-Nonachlor	mg/kg	3	0	0%	0.0028	0.0035	--	--	0.0015
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	1,2-Diphenylhydrazine	mg/kg	3	1	33%	0.0063	0.0072	0.014	0.014	0.0069
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	1-methylnaphthalene	mg/kg	3	1	33%	0.0063	0.010	0.0075	0.0075	0.0052
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.013	0.020	--	--	0.0080
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.025	0.040	--	--	0.016
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.013	0.020	--	--	0.0080
SVOC	2-Methylnaphthalene	mg/kg	3	3	100%	--	--	0.012	0.020	0.016
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Acenaphthene	mg/kg	3	0	0%	0.013	0.020	--	--	0.0080
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Anthracene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.013	0.020	--	--	0.0080
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.013	0.020	--	--	0.0080
SVOC	Chrysene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.013	0.020	--	--	0.0080

Table F-72
Summary Statistics for Whole Body Bridgelip Sucker Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Fluoranthene	mg/kg	3	0	0%	0.013	0.020	--	--	0.0080
SVOC	Fluorene	mg/kg	3	0	0%	0.0046	0.024	--	--	0.0056
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.013	0.020	--	--	0.0080
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.013	0.020	--	--	0.0080
SVOC	Naphthalene	mg/kg	3	0	0%	0.014	0.029	--	--	0.010
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Pyrene	mg/kg	3	0	0%	0.013	0.020	--	--	0.0080
VOC	Retene	mg/kg	3	0	0%	0.013	0.020	--	--	0.0080

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-73
Summary Statistics for Northern Squawfish Fillet Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	2	2	100%	--	--	1.0	1.3	1.2
PCB	Aroclor-1016	mg/Kg	2	0	0%	0.0054	0.0055	--	--	0.0027
PCB	Aroclor-1221	mg/Kg	2	0	0%	0.0054	0.0055	--	--	0.0027
PCB	Aroclor-1232	mg/Kg	2	0	0%	0.0054	0.0055	--	--	0.0027
PCB	Aroclor-1242	mg/Kg	2	0	0%	0.0054	0.0055	--	--	0.0027
PCB	Aroclor-1248	mg/Kg	2	0	0%	0.0054	0.0055	--	--	0.0027
PCB	Aroclor-1254	mg/Kg	2	2	100%	--	--	0.0062	0.0074	0.0068
PCB	Aroclor-1260	mg/Kg	2	2	100%	--	--	0.0065	0.044	0.025
PCB	Aroclor-1262	mg/Kg	2	0	0%	0.0054	0.0055	--	--	0.0027
PCB	Aroclor-1268	mg/Kg	2	0	0%	0.0054	0.0055	--	--	0.0027
PEST	2,4'-DDD	mg/Kg	2	0	0%	5.40E-04	5.50E-04	--	--	2.73E-04
PEST	2,4'-DDE	mg/Kg	2	0	0%	5.40E-04	5.50E-04	--	--	2.73E-04
PEST	2,4'-DDT	mg/Kg	2	0	0%	5.40E-04	0.0011	--	--	4.10E-04
PEST	alpha-Chlordane	mg/Kg	2	0	0%	5.40E-04	5.50E-04	--	--	2.73E-04
PEST	cis-Nonachlor	mg/Kg	2	0	0%	5.40E-04	5.50E-04	--	--	2.73E-04
PEST	Dichlorodiphenyldichloroethane	mg/Kg	2	2	100%	--	--	0.0021	0.0025	0.0023
PEST	Dichlorodiphenyldichloroethylene	mg/Kg	2	2	100%	--	--	0.048	0.064	0.056
PEST	Dichlorodiphenyltrichloroethane	mg/Kg	2	0	0%	5.40E-04	5.50E-04	--	--	2.73E-04
PEST	Dieldrin	mg/Kg	2	0	0%	5.40E-04	5.50E-04	--	--	2.73E-04
PEST	Heptachlor	mg/Kg	2	0	0%	5.40E-04	5.50E-04	--	--	2.73E-04
PEST	Heptachlor epoxide	mg/Kg	2	0	0%	5.40E-04	5.50E-04	--	--	2.73E-04
PEST	Oxychlordane	mg/Kg	2	0	0%	5.40E-04	5.50E-04	--	--	2.73E-04
PEST	Toxaphene	mg/Kg	2	2	100%	--	--	0.015	0.039	0.027
PEST	trans-Chlordane	mg/Kg	2	0	0%	5.40E-04	5.50E-04	--	--	2.73E-04
PEST	trans-Nonachlor	mg/Kg	2	2	100%	--	--	0.0014	0.0018	0.0016
SVOC	Hexachlorobenzene	mg/Kg	2	2	100%	--	--	0.0012	0.0013	0.0013

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

Table F-74
Summary Statistics for White Sturgeon Fillet Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	4	3	75%	9.00E-08	9.00E-08	3.80E-07	6.80E-07	3.91E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	4	3	75%	1.00E-07	1.00E-07	1.30E-07	2.10E-07	1.33E-07
DIOX/	1,2,3,4,7,8-Heptachlorodibenzofuran	mg/kg	4	0	0%	3.00E-08	1.00E-07	--	--	2.75E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	4	3	75%	4.00E-08	4.00E-08	5.00E-08	8.00E-08	5.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	4	3	75%	5.00E-08	5.00E-08	3.00E-08	5.00E-08	3.63E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	4	3	75%	4.00E-08	4.00E-08	7.00E-08	1.10E-07	7.00E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	4	3	75%	5.00E-08	5.00E-08	1.60E-07	2.80E-07	1.81E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	4	0	0%	2.00E-08	4.00E-08	--	--	1.50E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	4	1	25%	3.00E-08	5.00E-08	6.00E-08	6.00E-08	2.88E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	4	4	100%	--	--	2.80E-07	4.60E-07	3.60E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	4	2	50%	1.00E-08	2.00E-08	5.00E-08	7.00E-08	3.38E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	4	3	75%	3.00E-08	3.00E-08	3.00E-08	5.00E-08	3.63E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	4	4	100%	--	--	2.80E-07	4.00E-07	3.40E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	4	4	100%	--	--	1.69E-05	5.41E-05	3.92E-05
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	4	4	100%	--	--	4.40E-07	1.39E-06	9.78E-07
DIOX/	Octachlorodibenzofuran	mg/kg	4	2	50%	2.00E-08	4.00E-08	3.20E-07	3.60E-07	1.78E-07
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	4	4	100%	--	--	7.20E-07	1.87E-06	1.37E-06
METAL	Aluminum	mg/kg	4	1	25%	1.0	1.0	2.1	2.1	0.90
METAL	Antimony	mg/kg	4	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	4	4	100%	--	--	0.26	0.39	0.35
METAL	Barium	mg/kg	4	2	50%	0.20	0.20	0.34	0.45	0.25
METAL	Beryllium	mg/kg	4	1	25%	0.0040	0.0040	0.0040	0.0040	0.0025
METAL	Cadmium	mg/kg	4	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Chromium	mg/kg	4	2	50%	0.10	0.10	0.15	0.15	0.10
METAL	Cobalt	mg/kg	4	4	100%	--	--	0.0078	0.14	0.054
METAL	Copper	mg/kg	4	4	100%	--	--	0.20	0.34	0.25
METAL	Lead	mg/kg	4	2	50%	0.010	0.010	0.010	0.010	0.0075
METAL	Manganese	mg/kg	4	4	100%	--	--	0.19	0.39	0.28
METAL	Mercury	mg/kg	4	4	100%	--	--	0.10	0.11	0.11
METAL	Nickel	mg/kg	4	1	25%	0.030	0.030	0.040	0.040	0.021
METAL	Selenium	mg/kg	4	4	100%	--	--	1.3	2.7	1.7
METAL	Silver	mg/kg	4	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	4	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	4	1	25%	0.010	0.020	0.010	0.010	0.0075
METAL	Zinc	mg/kg	4	4	100%	--	--	3.1	3.6	3.3
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	4	4	100%	--	--	0.0015	0.0039	0.0031
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	4	4	100%	--	--	0.0047	0.011	0.0087
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	4	4	100%	--	--	1.35E-04	3.26E-04	2.36E-04
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	4	4	100%	--	--	7.32E-04	0.0017	0.0013
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	4	4	100%	--	--	0.0017	0.0036	0.0028
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	4	4	100%	--	--	2.43E-05	7.85E-05	3.93E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	4	4	100%	--	--	3.04E-05	9.39E-05	4.94E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	4	4	100%	--	--	1.37E-04	3.38E-04	2.52E-04
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	4	4	100%	--	--	0.0020	0.0050	0.0031
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	4	4	100%	--	--	5.31E-05	1.38E-04	1.10E-04
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	4	0	0%	1.33E-06	2.16E-06	--	--	7.91E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	4	0	0%	1.27E-06	1.72E-06	--	--	7.55E-07
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	4	4	100%	--	--	7.53E-06	3.08E-05	1.57E-05
PCB	Aroclor-1016	mg/kg	4	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1221	mg/kg	4	0	0%	0.019	0.020	--	--	0.0098

Table F-74
Summary Statistics for White Sturgeon Fillet Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	4	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1248	mg/kg	4	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1254	mg/kg	4	4	100%	--	--	0.049	0.11	0.077
PCB	Aroclor-1260	mg/kg	4	4	100%	--	--	0.048	0.10	0.086
PEST	2,4'-DDD	mg/kg	4	4	100%	--	--	0.015	0.018	0.017
PEST	2,4'-DDE	mg/kg	4	3	75%	0.0019	0.0019	0.0046	0.0080	0.0051
PEST	2,4'-DDT	mg/kg	4	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Aldrin	mg/kg	4	4	100%	--	--	0.0010	0.0013	0.0012
PEST	Alpha-BHC	mg/kg	4	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	alpha-Chlordane	mg/kg	4	4	100%	--	--	0.0030	0.0088	0.0060
PEST	alpha-Chlordene	mg/kg	4	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Beta-BHC	mg/kg	4	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	cis-Nonachlor	mg/kg	4	4	100%	--	--	0.0072	0.015	0.012
PEST	DDMU	mg/kg	4	4	100%	--	--	0.0041	0.015	0.011
PEST	Delta-BHC	mg/kg	4	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	4	4	100%	--	--	0.13	0.16	0.15
PEST	Dichlorodiphenyldichloroethylene	mg/kg	4	4	100%	--	--	0.42	0.67	0.58
PEST	Dichlorodiphenyltrichloroethane	mg/kg	4	4	100%	--	--	0.0051	0.0099	0.0066
PEST	Endosulfan sulfate	mg/kg	4	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Gamma-BHC (Lindane)	mg/kg	4	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	gamma-Chlordane	mg/kg	4	4	100%	--	--	0.0059	0.0074	0.0068
PEST	gamma-Chlordene	mg/kg	4	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Heptachlor	mg/kg	4	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Heptachlor epoxide	mg/kg	4	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Mirex	mg/kg	4	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Oxychlordane	mg/kg	4	3	75%	0.0020	0.0020	7.60E-04	0.0018	0.0012
PEST	Pentachloroanisole	mg/kg	4	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Toxaphene	mg/kg	4	0	0%	0.057	0.059	--	--	0.029
PEST	trans-Nonachlor	mg/kg	4	4	100%	--	--	0.0051	0.013	0.010
SVOC	1,2,4-Trichlorobenzene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	1,2-Dichlorobenzene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	1,2-Diphenylhydrazine	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	1,3-Dichlorobenzene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	1,4-Dichlorobenzene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	1-methylnaphthalene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	2,4-Dinitrotoluene	mg/kg	4	0	0%	0.017	0.020	--	--	0.0094
SVOC	2,6-Dinitrotoluene	mg/kg	4	0	0%	0.034	0.039	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	4	0	0%	0.017	0.020	--	--	0.0094
SVOC	2-Methylnaphthalene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	4-Bromophenylphenyl ether	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	4-Chlorophenylphenyl ether	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Acenaphthene	mg/kg	4	0	0%	0.017	0.020	--	--	0.0094
SVOC	Acenaphthylene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Anthracene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Benzo(a)anthracene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Benzo(a)pyrene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Benzo(b)fluoranthene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Benzo(ghi)perylene	mg/kg	4	0	0%	0.017	0.020	--	--	0.0094
SVOC	Benzo(k)fluoranthene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	4	0	0%	0.017	0.020	--	--	0.0094

Table F-74
Summary Statistics for White Sturgeon Fillet Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Dibenz[a,h]anthracene	mg/kg	4	0	0%	0.017	0.020	--	--	0.0094
SVOC	Dibenzofuran	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Fluoranthene	mg/kg	4	0	0%	0.017	0.020	--	--	0.0094
SVOC	Fluorene	mg/kg	4	0	0%	0.0048	0.025	--	--	0.0059
SVOC	Hexachlorobenzene	mg/kg	4	1	25%	0.019	0.020	0.023	0.023	0.013
SVOC	Hexachlorobutadiene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Hexachloroethane	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	4	0	0%	0.017	0.020	--	--	0.0094
SVOC	Naphthalene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Nitrobenzene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Phenanthrene	mg/kg	4	0	0%	0.0086	0.0098	--	--	0.0047
SVOC	Pyrene	mg/kg	4	0	0%	0.017	0.020	--	--	0.0094
VOC	Retene	mg/kg	4	0	0%	0.017	0.020	--	--	0.0094

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-75
Summary Statistics for Whole Body White Sturgeon Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	2.60E-07	8.40E-07	3.68E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	2	67%	2.00E-08	2.00E-08	9.00E-08	2.00E-07	1.00E-07
DIOX/	1,2,3,4,7,8-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	3.00E-08	--	--	1.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	4.00E-08	1.50E-07	6.50E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	0	0%	1.00E-08	3.00E-08	--	--	8.33E-09
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	8.00E-08	1.50E-07	1.07E-07
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	1.50E-07	4.30E-07	1.95E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	6.67E-09
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	1	33%	1.00E-08	3.00E-08	4.00E-08	4.00E-08	2.00E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	2.70E-07	3.80E-07	3.33E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	2.00E-08	7.00E-08	3.17E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	2.20E-07	4.40E-07	3.57E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	7.97E-06	4.16E-05	2.01E-05
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	2.80E-07	1.19E-06	7.80E-07
DIOX/	Octachlorodibenzofuran	mg/kg	3	2	67%	2.00E-08	2.00E-08	1.00E-07	2.30E-07	1.13E-07
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	6.10E-07	2.46E-06	1.35E-06
METAL	Aluminum	mg/kg	3	3	100%	--	--	6.8	100	56
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.24	0.36	0.30
METAL	Barium	mg/kg	3	3	100%	--	--	1.6	2.8	2.2
METAL	Beryllium	mg/kg	3	2	67%	0.0040	0.0040	0.0057	0.0069	0.0049
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.010	0.070	0.040
METAL	Chromium	mg/kg	3	3	100%	--	--	0.31	0.64	0.48
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.18	0.33	0.27
METAL	Copper	mg/kg	3	3	100%	--	--	0.81	1.8	1.2
METAL	Lead	mg/kg	3	3	100%	--	--	0.020	0.21	0.12
METAL	Manganese	mg/kg	3	3	100%	--	--	1.2	5.4	3.9
METAL	Mercury	mg/kg	3	2	67%	0.10	0.10	0.11	0.22	0.13
METAL	Nickel	mg/kg	3	3	100%	--	--	0.21	2.0	0.86
METAL	Selenium	mg/kg	3	3	100%	--	--	0.65	0.92	0.78
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	3	100%	--	--	0.070	0.52	0.28
METAL	Zinc	mg/kg	3	3	100%	--	--	7.5	12	9.2
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	0.0016	0.0028	0.0023
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0052	0.010	0.0075
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	1.80E-04	3.10E-04	2.29E-04
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	0.0010	0.0018	0.0013
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0025	0.0034	0.0028
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	3.22E-05	5.00E-05	3.83E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	4.41E-05	6.58E-05	5.39E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	1.65E-04	2.55E-04	2.15E-04
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	0.0027	0.0048	0.0037
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	6.56E-05	1.12E-04	8.84E-05
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	1.19E-06	1.49E-06	--	--	6.65E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	0	0%	1.52E-06	1.78E-06	--	--	8.28E-07
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	1.24E-05	1.72E-05	1.52E-05
PCB	Aroclor-1016	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
PCB	Aroclor-1221	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095

Table F-75
Summary Statistics for Whole Body White Sturgeon Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
PCB	Aroclor-1248	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.060	0.079	0.068
PCB	Aroclor-1260	mg/kg	3	3	100%	--	--	0.041	0.078	0.059
PEST	2,4'-DDD	mg/kg	3	3	100%	--	--	0.0093	0.016	0.013
PEST	2,4'-DDE	mg/kg	3	3	100%	--	--	0.0051	0.0060	0.0055
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Aldrin	mg/kg	3	3	100%	--	--	9.70E-04	0.0020	0.0014
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	alpha-Chlordane	mg/kg	3	3	100%	--	--	0.0023	0.0092	0.0051
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	cis-Nonachlor	mg/kg	3	3	100%	--	--	0.0083	0.013	0.010
PEST	DDMU	mg/kg	3	3	100%	--	--	0.0038	0.0095	0.0069
PEST	Delta-BHC	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.10	0.13	0.12
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.40	0.56	0.50
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	0.0056	0.022	0.011
PEST	Endosulfan sulfate	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	gamma-Chlordane	mg/kg	3	3	100%	--	--	0.0034	0.017	0.0088
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Mirex	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Oxychlordane	mg/kg	3	3	100%	--	--	9.50E-04	0.0025	0.0017
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Toxaphene	mg/kg	3	0	0%	0.057	0.058	--	--	0.029
PEST	trans-Nonachlor	mg/kg	3	3	100%	--	--	0.0074	0.011	0.0086
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.017	0.019	--	--	0.0090
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.034	0.038	--	--	0.018
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.017	0.019	--	--	0.0090
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Acenaphthene	mg/kg	3	0	0%	0.017	0.019	--	--	0.0090
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Anthracene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.017	0.019	--	--	0.0090
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.017	0.019	--	--	0.0090

Table F-75
Summary Statistics for Whole Body White Sturgeon Collected from Segment 3 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.017	0.019	--	--	0.0090
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Fluoranthene	mg/kg	3	0	0%	0.017	0.019	--	--	0.0090
SVOC	Fluorene	mg/kg	3	0	0%	0.0077	0.0082	--	--	0.0040
SVOC	Hexachlorobenzene	mg/kg	3	1	33%	0.017	0.018	0.020	0.020	0.013
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.017	0.019	--	--	0.0090
SVOC	Naphthalene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0086	0.0094	--	--	0.0045
SVOC	Pyrene	mg/kg	3	0	0%	0.017	0.019	--	--	0.0090
VOC	Retene	mg/kg	3	0	0%	0.017	0.019	--	--	0.0090

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

RAD- radionuclide

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-76**Summary Statistics for Whole Body Clam Collected from Segment 4 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
RAD	Strontium-90	pCi/g	1	1	100%	--	--	0.38	0.38	0.38

RAD - Radionuclide

Table F-77

Summary Statistics for Channel Catfish Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	2	2	100%	--	--	4.70E-07	1.24E-06	8.55E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	2	0	0%	2.00E-08	5.00E-08	--	--	1.75E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	2	0	0%	2.00E-08	5.00E-08	--	--	1.75E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	2	1	50%	2.00E-08	2.00E-08	9.00E-08	9.00E-08	5.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	1.40E-07	3.00E-07	2.20E-07
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	2	2	100%	--	--	3.00E-08	5.00E-08	4.00E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	5.90E-07	1.10E-06	8.45E-07
DIOX/	1,2,3,7,8-Hexachlorodibenzofuran	mg/kg	2	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	1.40E-07	1.70E-07	1.55E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	2	2	100%	--	--	2.10E-07	3.10E-07	2.60E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	4.90E-07	5.70E-07	5.30E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	2	2	100%	--	--	5.00E-08	5.00E-08	5.00E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	2	2	100%	--	--	5.20E-07	6.60E-07	5.90E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	2	2	100%	--	--	2.17E-06	3.37E-06	2.77E-06
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	1.00E-06	1.41E-06	1.21E-06
DIOX/	Octachlorodibenzofuran	mg/kg	2	2	100%	--	--	3.00E-08	9.00E-08	6.00E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	2	2	100%	--	--	3.70E-07	1.25E-06	8.10E-07
METAL	Aluminum	mg/kg	2	1	50%	1.0	1.0	42	42	21
METAL	Antimony	mg/kg	2	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	2	1	50%	0.050	0.050	0.33	0.33	0.18
METAL	Barium	mg/kg	2	1	50%	0.20	0.20	0.28	0.28	0.19
METAL	Beryllium	mg/kg	2	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	2	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Chromium	mg/kg	2	2	100%	--	--	0.11	0.13	0.12
METAL	Cobalt	mg/kg	2	2	100%	--	--	0.070	0.090	0.080
METAL	Copper	mg/kg	2	2	100%	--	--	0.35	0.36	0.36
METAL	Lead	mg/kg	2	1	50%	0.010	0.010	0.010	0.010	0.0075
METAL	Manganese	mg/kg	2	2	100%	--	--	0.13	0.13	0.13
METAL	Mercury	mg/kg	2	2	100%	--	--	0.23	0.24	0.24
METAL	Nickel	mg/kg	2	0	0%	0.030	0.030	--	--	0.015
METAL	Selenium	mg/kg	2	0	0%	0.50	0.50	--	--	0.25
METAL	Silver	mg/kg	2	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	2	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	2	0	0%	0.010	0.010	--	--	0.0050
METAL	Zinc	mg/kg	2	2	100%	--	--	7.8	9.9	8.9
PCB	2,2',3,3',4,4',5'-Heptachloro-1,1'-biphenyl	mg/kg	2	2	100%	--	--	0.0017	0.0039	0.0028
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	2	2	100%	--	--	0.0043	0.010	0.0073
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	2	2	100%	--	--	1.65E-04	3.56E-04	2.61E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	2	2	100%	--	--	9.06E-04	0.0019	0.0014
PCB	2,3,3',4,4',5'-Pentachlorobiphenyl	mg/kg	2	2	100%	--	--	0.0020	0.0039	0.0030
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	2	2	100%	--	--	3.46E-04	7.51E-04	5.49E-04
PCB	2',3,4,4',5'-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	2	2	100%	--	--	9.17E-05	1.82E-04	1.37E-04
PCB	2,3,4,4',5'-Pentachlorobiphenyl (BZ 114)	mg/kg	2	2	100%	--	--	1.94E-04	4.16E-04	3.05E-04
PCB	2,3',4,4',5'-Pentachlorobiphenyl (BZ 118)	mg/kg	2	2	100%	--	--	0.0046	0.0091	0.0068
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	2	2	100%	--	--	5.83E-05	1.34E-04	9.62E-05
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	2	0	0%	1.79E-06	2.57E-06	--	--	1.09E-06
PCB	3,3',4,4',5'-Pentachlorobiphenyl (BZ 126)	mg/kg	2	1	50%	1.71E-06	1.71E-06	1.37E-05	1.37E-05	7.28E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	2	2	100%	--	--	3.58E-05	3.67E-05	3.63E-05
PCB	Aroclor-1016	mg/kg	2	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1221	mg/kg	2	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1232	mg/kg	2	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1248	mg/kg	2	0	0%	0.019	0.020	--	--	0.0098

Table F-77

Summary Statistics for Channel Catfish Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1254	mg/kg	2	2	100%	--	--	0.036	0.063	0.050
PCB	Aroclor-1260	mg/kg	2	2	100%	--	--	0.037	0.088	0.063
PEST	2,4'-DDD	mg/kg	2	2	100%	--	--	0.0064	0.0094	0.0079
PEST	2,4'-DDE	mg/kg	2	1	50%	0.0020	0.0020	0.0096	0.0096	0.0053
PEST	2,4'-DDT	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Aldrin	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Alpha-BHC	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	alpha-Chlordane	mg/kg	2	1	50%	0.0020	0.0020	0.0032	0.0032	0.0021
PEST	alpha-Chlordene	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Beta-BHC	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	cis-Nonachlor	mg/kg	2	2	100%	--	--	0.0020	0.0052	0.0036
PEST	DDMU	mg/kg	2	2	100%	--	--	0.0065	0.011	0.0088
PEST	Delta-BHC	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	2	2	100%	--	--	0.042	0.068	0.055
PEST	Dichlorodiphenyldichloroethylene	mg/kg	2	2	100%	--	--	0.33	0.52	0.43
PEST	Dichlorodiphenyltrichloroethane	mg/kg	2	2	100%	--	--	0.0019	0.0074	0.0047
PEST	Endosulfan sulfate	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Gamma-BHC (Lindane)	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	gamma-Chlordane	mg/kg	2	2	100%	--	--	0.0021	0.0036	0.0029
PEST	gamma-Chlordene	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Heptachlor	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Heptachlor epoxide	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Mirex	mg/kg	2	2	100%	--	--	0.0028	0.0059	0.0044
PEST	Oxychlordane	mg/kg	2	2	100%	--	--	0.0015	0.0026	0.0021
PEST	Pentachloroanisole	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Toxaphene	mg/kg	2	0	0%	0.058	0.059	--	--	0.029
PEST	trans-Nonachlor	mg/kg	2	2	100%	--	--	0.0053	0.011	0.0082
SVOC	1,2,4-Trichlorobenzene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	1,2-Dichlorobenzene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	1,2-Diphenylhydrazine	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	1,3-Dichlorobenzene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	1,4-Dichlorobenzene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	1-methylnaphthalene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	2,4-Dinitrotoluene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	2,6-Dinitrotoluene	mg/kg	2	0	0%	0.036	0.037	--	--	0.018
SVOC	2-Chloronaphthalene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	2-Methylnaphthalene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	4-Bromophenylphenyl ether	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	4-Chlorophenylphenyl ether	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	Acenaphthene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Acenaphthylene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	Anthracene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	Benzo(a)anthracene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	Benzo(a)pyrene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	Benzo(b)fluoranthene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	Benzo(ghi)perylene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Benzo(k)fluoranthene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Chrysene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	Dibenz[a,h]anthracene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Dibenzofuran	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	Fluoranthene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093

Table F-77
Summary Statistics for Channel Catfish Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Fluorene	mg/kg	2	0	0%	0.024	0.024	--	--	0.012
SVOC	Hexachlorobenzene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Hexachlorobutadiene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	Hexachloroethane	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Naphthalene	mg/kg	2	0	0%	0.024	0.027	--	--	0.013
SVOC	Nitrobenzene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	Phenanthrene	mg/kg	2	0	0%	0.0091	0.0093	--	--	0.0046
SVOC	Pyrene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
VOC	Retene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-78
Summary Statistics for Whole Body Channel Catfish Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	3	100%	--	--	5.90E-07	7.30E-07	6.47E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	3.00E-08	--	--	1.00E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	3.00E-08	--	--	1.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	3.00E-08	8.00E-08	5.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	2.00E-07	2.20E-07	2.07E-07
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	2.00E-08	6.00E-08	6.00E-08	2.50E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	7.00E-07	8.50E-07	7.67E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	8.33E-09
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	1.20E-07	1.40E-07	1.30E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.40E-07	2.90E-07	2.03E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	3.70E-07	5.50E-07	4.70E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	6.00E-08	6.00E-08	4.17E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	3.30E-07	5.50E-07	4.47E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.79E-06	3.06E-06	2.46E-06
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	6.60E-07	1.09E-06	8.73E-07
DIOX/	Octachlorodibenzofuran	mg/kg	3	2	67%	2.00E-08	2.00E-08	1.00E-08	4.00E-08	2.00E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	5.70E-07	8.60E-07	7.40E-07
METAL	Aluminum	mg/kg	3	3	100%	--	--	1.7	9.0	4.3
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.27	0.43	0.33
METAL	Barium	mg/kg	3	3	100%	--	--	0.49	0.58	0.55
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.010	0.010	0.010
METAL	Chromium	mg/kg	3	3	100%	--	--	0.21	0.25	0.23
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.11	0.19	0.16
METAL	Copper	mg/kg	3	3	100%	--	--	0.41	0.58	0.50
METAL	Lead	mg/kg	3	3	100%	--	--	0.010	0.020	0.013
METAL	Manganese	mg/kg	3	3	100%	--	--	1.2	1.8	1.6
METAL	Mercury	mg/kg	3	3	100%	--	--	0.17	0.31	0.22
METAL	Nickel	mg/kg	3	3	100%	--	--	0.090	0.090	0.090
METAL	Selenium	mg/kg	3	3	100%	--	--	0.51	0.62	0.58
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	3	100%	--	--	0.040	0.090	0.067
METAL	Zinc	mg/kg	3	3	100%	--	--	17	19	18
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	9.97E-04	0.0030	0.0020
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0032	0.0092	0.0062
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	9.88E-05	2.81E-04	1.95E-04
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	5.21E-04	0.0015	0.0010
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0013	0.0033	0.0023
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	2.23E-04	5.64E-04	3.97E-04
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	5.87E-05	1.51E-04	1.07E-04
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	1.19E-04	3.28E-04	2.27E-04
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	0.0029	0.0071	0.0049
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	3.30E-05	1.01E-04	6.71E-05
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	1.82E-06	2.69E-06	--	--	1.12E-06
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	2	67%	1.74E-06	1.74E-06	6.80E-06	3.01E-05	1.26E-05
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	2.21E-05	3.67E-05	2.85E-05
PCB	Aroclor-1016	mg/kg	3	0	0%	0.016	0.020	--	--	0.0088
PCB	Aroclor-1221	mg/kg	3	0	0%	0.016	0.020	--	--	0.0088

Table F-78
Summary Statistics for Whole Body Channel Catfish Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	3	0	0%	0.016	0.020	--	--	0.0088
PCB	Aroclor-1248	mg/kg	3	0	0%	0.016	0.020	--	--	0.0088
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.025	0.041	0.033
PCB	Aroclor-1260	mg/kg	3	3	100%	--	--	0.032	0.077	0.052
PEST	2,4'-DDD	mg/kg	3	3	100%	--	--	0.0052	0.0076	0.0064
PEST	2,4'-DDE	mg/kg	3	3	100%	--	--	0.0038	0.0081	0.0061
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0016	0.0020	--	--	8.83E-04
PEST	Aldrin	mg/kg	3	0	0%	0.0016	0.0020	--	--	8.83E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0016	0.0020	--	--	8.83E-04
PEST	alpha-Chlordane	mg/kg	3	1	33%	0.0016	0.0020	9.40E-04	9.40E-04	9.13E-04
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0016	0.0020	--	--	8.83E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0016	0.0020	--	--	8.83E-04
PEST	cis-Nonachlor	mg/kg	3	3	100%	--	--	0.0013	0.0032	0.0025
PEST	DDMU	mg/kg	3	3	100%	--	--	0.0053	0.010	0.0077
PEST	Delta-BHC	mg/kg	3	0	0%	0.0016	0.0020	--	--	8.83E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.037	0.066	0.051
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.28	0.53	0.41
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	8.20E-04	0.0032	0.0019
PEST	Endosulfan sulfate	mg/kg	3	0	0%	0.0016	0.0020	--	--	8.83E-04
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0016	0.0020	--	--	8.83E-04
PEST	gamma-Chlordane	mg/kg	3	3	100%	--	--	0.0015	0.0029	0.0022
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0016	0.0020	--	--	8.83E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0016	0.0020	--	--	8.83E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0016	0.0020	--	--	8.83E-04
PEST	Mirex	mg/kg	3	3	100%	--	--	0.0028	0.0076	0.0056
PEST	Oxychlordane	mg/kg	3	2	67%	0.0016	0.0016	0.0021	0.0027	0.0019
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0016	0.0020	--	--	8.83E-04
PEST	Toxaphene	mg/kg	3	0	0%	0.049	0.060	--	--	0.027
PEST	trans-Nonachlor	mg/kg	3	3	100%	--	--	0.0043	0.0087	0.0065
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.038	0.039	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	Acenaphthene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	Anthracene	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0094	0.049	--	--	0.011
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0094	0.049	--	--	0.011
SVOC	Benzo(ghi)perylene	mg/kg	3	1	33%	0.019	0.098	0.015	0.015	0.025
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0094	0.049	--	--	0.011
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097

Table F-78
Summary Statistics for Whole Body Channel Catfish Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.019	0.098	--	--	0.023
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	Fluoranthene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Fluorene	mg/kg	3	0	0%	0.0095	0.17	--	--	0.054
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.019	0.098	--	--	0.023
SVOC	Naphthalene	mg/kg	3	0	0%	0.020	0.024	--	--	0.011
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0094	0.0098	--	--	0.0048
SVOC	Pyrene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
VOC	Retene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-79
Summary Statistics for Largescale Sucker Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	7	6	86%	1.10E-07	1.10E-07	1.10E-07	2.00E-07	1.32E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	7	5	71%	1.00E-08	1.30E-07	7.00E-08	1.60E-07	8.29E-08
DIOX/	1,2,3,4,7,8-Heptachlorodibenzofuran	mg/kg	7	2	29%	1.00E-08	1.30E-07	4.00E-08	1.30E-07	4.07E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	7	3	43%	1.00E-08	8.00E-08	3.00E-08	8.00E-08	3.29E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	7	5	71%	8.00E-08	1.10E-07	9.00E-08	1.50E-07	9.50E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	7	4	57%	1.00E-08	1.00E-07	3.00E-08	8.00E-08	4.07E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	7	3	43%	1.00E-08	1.10E-07	6.00E-08	1.10E-07	5.21E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	7	5	71%	1.00E-08	8.00E-08	8.00E-08	1.70E-07	8.64E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	7	3	43%	1.00E-08	1.10E-07	5.00E-08	8.00E-08	4.36E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	7	4	57%	1.00E-08	4.00E-08	3.00E-08	6.00E-08	3.00E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	7	5	71%	3.00E-08	4.00E-08	1.10E-07	1.60E-07	1.01E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	7	5	71%	1.00E-08	8.00E-08	1.40E-07	2.10E-07	1.22E-07
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	7	4	57%	1.00E-08	4.00E-08	3.00E-08	7.00E-08	2.86E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	7	7	100%	--	--	1.50E-07	5.80E-07	2.67E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	7	4	57%	1.00E-08	6.00E-08	1.00E-08	7.00E-08	3.71E-08
DIOX/	Octachlorodibenzofuran	mg/kg	7	5	71%	8.00E-08	1.20E-07	2.00E-08	2.20E-07	8.00E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	7	5	71%	1.50E-07	1.90E-07	1.00E-08	3.10E-07	1.53E-07
METAL	Aluminum	mg/kg	7	5	71%	5.0	5.0	1.0	4.6	2.5
METAL	Antimony	mg/kg	7	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	7	7	100%	--	--	0.050	0.10	0.081
METAL	Barium	mg/kg	7	7	100%	--	--	0.46	1.1	0.67
METAL	Beryllium	mg/kg	7	2	29%	0.0040	0.0060	0.0044	0.0045	0.0028
METAL	Cadmium	mg/kg	7	2	29%	0.0040	0.0040	0.0040	0.0057	0.0028
METAL	Chromium	mg/kg	7	1	14%	0.10	0.10	0.13	0.13	0.061
METAL	Cobalt	mg/kg	7	7	100%	--	--	0.010	0.040	0.019
METAL	Copper	mg/kg	7	7	100%	--	--	0.48	0.81	0.59
METAL	Lead	mg/kg	7	5	71%	0.010	0.010	0.010	0.040	0.014
METAL	Manganese	mg/kg	7	7	100%	--	--	1.5	2.5	2.0
METAL	Mercury	mg/kg	7	7	100%	--	--	0.070	0.28	0.19
METAL	Nickel	mg/kg	7	7	100%	--	--	0.050	0.16	0.097
METAL	Selenium	mg/kg	7	7	100%	--	--	0.20	0.31	0.25
METAL	Silver	mg/kg	7	0	0%	0.10	0.20	--	--	0.057
METAL	Thallium	mg/kg	7	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	7	5	71%	0.020	0.020	0.010	0.020	0.011
METAL	Zinc	mg/kg	7	7	100%	--	--	16	21	18
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	7	7	100%	--	--	1.81E-04	6.82E-04	3.77E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	7	7	100%	--	--	5.49E-04	0.0023	0.0012
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	7	3	43%	1.14E-06	2.07E-06	2.34E-05	4.31E-05	1.37E-05
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	7	7	100%	--	--	1.18E-04	3.40E-04	1.89E-04
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	7	7	100%	--	--	2.72E-04	6.07E-04	4.26E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	7	7	100%	--	--	5.54E-05	1.71E-04	8.98E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	7	7	100%	--	--	1.10E-05	2.58E-05	1.75E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	7	7	100%	--	--	2.44E-05	5.53E-05	3.60E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	7	7	100%	--	--	6.33E-04	0.0013	9.43E-04
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	7	7	100%	--	--	7.53E-06	2.89E-05	1.58E-05
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	7	0	0%	5.00E-07	1.50E-06	--	--	4.57E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	7	3	43%	1.38E-06	2.35E-06	2.32E-06	3.72E-06	1.85E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	7	7	100%	--	--	1.21E-05	2.36E-05	1.73E-05
PCB	Aroclor-1016	mg/kg	7	0	0%	0.018	0.021	--	--	0.0096
PCB	Aroclor-1221	mg/kg	7	0	0%	0.018	0.021	--	--	0.0096

Table F-79
Summary Statistics for Largescale Sucker Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	7	0	0%	0.018	0.021	--	--	0.0096
PCB	Aroclor-1248	mg/kg	7	0	0%	0.018	0.021	--	--	0.0096
PCB	Aroclor-1254	mg/kg	7	2	29%	0.018	0.020	0.010	0.014	0.010
PCB	Aroclor-1260	mg/kg	7	3	43%	0.019	0.021	0.011	0.030	0.013
PEST	2,4'-DDD	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	2,4'-DDE	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	2,4'-DDT	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	Aldrin	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	Alpha-BHC	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	alpha-Chlordane	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	alpha-Chlordene	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	Beta-BHC	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	cis-Nonachlor	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	DDMU	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	Delta-BHC	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	Dichlorodiphenyldichloroethane	mg/kg	7	4	57%	0.0019	0.0021	0.0027	0.0097	0.0038
PEST	Dichlorodiphenyldichloroethylene	mg/kg	7	7	100%	--	--	0.014	0.10	0.044
PEST	Dichlorodiphenyltrichloroethane	mg/kg	7	4	57%	0.0019	0.0022	0.0024	0.0038	0.0022
PEST	Endosulfan sulfate	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	Gamma-BHC (Lindane)	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	gamma-Chlordane	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	gamma-Chlordene	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	Heptachlor	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	Heptachlor epoxide	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	Mirex	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	Oxychlordane	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	Pentachloroanisole	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
PEST	Toxaphene	mg/kg	7	0	0%	0.054	0.068	--	--	0.030
PEST	trans-Nonachlor	mg/kg	7	0	0%	0.0019	0.0024	--	--	0.0011
SVOC	1,2,4-Trichlorobenzene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	1,2-Dichlorobenzene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	1,2-Diphenylhydrazine	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	1,3-Dichlorobenzene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	1,4-Dichlorobenzene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	1-methylnaphthalene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	2,4-Dinitrotoluene	mg/kg	7	0	0%	0.0094	0.047	--	--	0.013
SVOC	2,6-Dinitrotoluene	mg/kg	7	0	0%	0.019	0.095	--	--	0.025
SVOC	2-Chloronaphthalene	mg/kg	7	0	0%	0.0094	0.047	--	--	0.013
SVOC	2-Methylnaphthalene	mg/kg	7	2	29%	0.0054	0.024	0.0064	0.0075	0.0077
SVOC	4-Bromophenylphenyl ether	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	4-Chlorophenylphenyl ether	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	Acenaphthene	mg/kg	7	0	0%	0.0094	0.047	--	--	0.013
SVOC	Acenaphthylene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	Anthracene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	Benzo(a)anthracene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	Benzo(a)pyrene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	Benzo(b)fluoranthene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	Benzo(ghi)perylene	mg/kg	7	0	0%	0.0094	0.047	--	--	0.013
SVOC	Benzo(k)fluoranthene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	7	0	0%	0.0094	0.047	--	--	0.013

Table F-79
Summary Statistics for Largescale Sucker Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	Dibenz[a,h]anthracene	mg/kg	7	0	0%	0.0094	0.047	--	--	0.013
SVOC	Dibenzofuran	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	Fluoranthene	mg/kg	7	0	0%	0.0094	0.047	--	--	0.013
SVOC	Fluorene	mg/kg	7	0	0%	0.0092	0.0099	--	--	0.0047
SVOC	Hexachlorobenzene	mg/kg	7	0	0%	0.0094	0.045	--	--	0.011
SVOC	Hexachlorobutadiene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	Hexachloroethane	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	7	0	0%	0.0094	0.047	--	--	0.013
SVOC	Naphthalene	mg/kg	7	0	0%	0.0064	0.028	--	--	0.0082
SVOC	Nitrobenzene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	Phenanthrene	mg/kg	7	0	0%	0.0047	0.024	--	--	0.0063
SVOC	Pyrene	mg/kg	7	0	0%	0.0094	0.047	--	--	0.013
VOC	Retene	mg/kg	7	0	0%	0.0094	0.047	--	--	0.013

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-80
Summary Statistics for Whole Body Largescale Sucker Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	11	9	82%	1.00E-08	2.00E-08	1.50E-07	4.60E-07	2.20E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	11	10	91%	2.00E-08	2.00E-08	6.00E-08	1.20E-07	8.64E-08
DIOX/	1,2,3,4,7,8-Heptachlorodibenzofuran	mg/kg	11	1	9%	1.00E-08	4.00E-08	3.00E-08	3.00E-08	1.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	11	7	64%	1.00E-08	2.00E-08	2.00E-08	3.00E-08	1.77E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	11	10	91%	2.00E-08	2.00E-08	3.00E-08	1.40E-07	9.64E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	11	6	55%	1.00E-08	2.00E-08	2.00E-08	4.00E-08	2.05E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	11	7	64%	1.00E-08	3.00E-08	5.00E-08	2.10E-07	8.18E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	11	6	55%	1.00E-08	2.00E-08	5.00E-08	8.00E-08	3.59E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	11	9	82%	2.00E-08	3.00E-08	3.00E-08	7.00E-08	4.14E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	11	10	91%	2.00E-08	2.00E-08	3.00E-08	6.00E-08	4.09E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	11	11	100%	--	--	5.00E-08	2.30E-07	1.43E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	11	10	91%	2.00E-08	2.00E-08	1.00E-08	1.70E-07	1.20E-07
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	11	11	100%	--	--	3.00E-08	1.90E-07	8.27E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	11	11	100%	--	--	2.80E-07	3.62E-06	9.91E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	11	7	64%	1.00E-08	2.00E-08	5.00E-08	2.10E-07	7.00E-08
DIOX/	Octachlorodibenzofuran	mg/kg	11	7	64%	1.00E-08	4.00E-08	6.00E-08	1.10E-07	5.45E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	11	9	82%	4.00E-08	4.00E-08	3.50E-07	1.02E-06	5.79E-07
METAL	Aluminum	mg/kg	11	8	73%	5.0	20	42	190	59
METAL	Antimony	mg/kg	11	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	11	11	100%	--	--	0.080	0.32	0.16
METAL	Barium	mg/kg	11	11	100%	--	--	0.87	3.3	1.9
METAL	Beryllium	mg/kg	11	3	27%	0.0040	0.010	0.0069	0.0086	0.0045
METAL	Cadmium	mg/kg	11	11	100%	--	--	0.010	0.10	0.028
METAL	Chromium	mg/kg	11	11	100%	--	--	0.13	0.60	0.26
METAL	Cobalt	mg/kg	11	11	100%	--	--	0.060	0.26	0.13
METAL	Copper	mg/kg	11	11	100%	--	--	0.79	1.4	1.1
METAL	Lead	mg/kg	11	11	100%	--	--	0.030	0.22	0.094
METAL	Manganese	mg/kg	11	11	100%	--	--	6.4	19	11
METAL	Mercury	mg/kg	11	10	91%	0.10	0.10	0.050	0.20	0.094
METAL	Nickel	mg/kg	11	11	100%	--	--	0.050	0.51	0.34
METAL	Selenium	mg/kg	11	9	82%	0.50	0.50	0.25	0.34	0.28
METAL	Silver	mg/kg	11	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	11	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	11	11	100%	--	--	0.10	0.61	0.28
METAL	Zinc	mg/kg	11	11	100%	--	--	16	27	21
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	11	11	100%	--	--	3.18E-04	0.0015	7.74E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	11	11	100%	--	--	9.05E-04	0.0043	0.0023
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	11	5	45%	8.70E-07	9.50E-06	7.14E-05	8.97E-05	3.83E-05
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	11	11	100%	--	--	1.53E-04	6.79E-04	3.93E-04
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	11	11	100%	--	--	3.35E-04	0.0013	8.06E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	11	11	100%	--	--	6.69E-05	3.33E-04	1.80E-04
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	11	11	100%	--	--	1.21E-05	5.26E-05	3.12E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	11	11	100%	--	--	2.62E-05	9.60E-05	6.14E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	11	11	100%	--	--	7.12E-04	0.0027	0.0016
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	11	11	100%	--	--	1.39E-05	8.59E-05	3.67E-05
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	11	0	0%	8.00E-07	3.83E-06	--	--	8.44E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	11	3	27%	2.60E-07	6.06E-06	7.15E-06	8.07E-06	2.78E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	11	11	100%	--	--	2.87E-05	5.56E-05	3.91E-05
PCB	Aroclor-1016	mg/kg	11	0	0%	0.017	0.022	--	--	0.0098
PCB	Aroclor-1221	mg/kg	11	0	0%	0.017	0.022	--	--	0.0098

Table F-80
Summary Statistics for Whole Body Largescale Sucker Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	11	0	0%	0.017	0.022	--	--	0.0098
PCB	Aroclor-1248	mg/kg	11	0	0%	0.017	0.022	--	--	0.0098
PCB	Aroclor-1254	mg/kg	11	7	64%	0.018	0.021	0.023	0.058	0.028
PCB	Aroclor-1260	mg/kg	11	8	73%	0.017	0.020	0.012	0.093	0.030
PEST	2,4'-DDD	mg/kg	11	5	45%	0.0017	0.0027	0.0078	0.016	0.0050
PEST	2,4'-DDE	mg/kg	11	8	73%	0.0017	0.0020	0.0031	0.0058	0.0037
PEST	2,4'-DDT	mg/kg	11	0	0%	0.0017	0.0027	--	--	0.0011
PEST	Aldrin	mg/kg	11	0	0%	0.0017	0.0027	--	--	0.0011
PEST	Alpha-BHC	mg/kg	11	0	0%	0.0017	0.0027	--	--	0.0011
PEST	alpha-Chlordane	mg/kg	11	2	18%	0.0017	0.0027	9.30E-04	0.0011	0.0011
PEST	alpha-Chlordene	mg/kg	11	0	0%	0.0017	0.0027	--	--	0.0011
PEST	Beta-BHC	mg/kg	11	0	0%	0.0017	0.0027	--	--	0.0011
PEST	cis-Nonachlor	mg/kg	11	2	18%	0.0017	0.0027	0.0019	0.0019	0.0013
PEST	DDMU	mg/kg	11	5	45%	0.0017	0.0027	0.0048	0.040	0.0091
PEST	Delta-BHC	mg/kg	11	0	0%	0.0017	0.0027	--	--	0.0011
PEST	Dichlorodiphenyldichloroethane	mg/kg	11	11	100%	--	--	0.0016	0.084	0.028
PEST	Dichlorodiphenyldichloroethylene	mg/kg	11	11	100%	--	--	0.028	0.97	0.27
PEST	Dichlorodiphenyltrichloroethane	mg/kg	11	10	91%	0.0020	0.0020	0.0011	0.072	0.017
PEST	Endosulfan sulfate	mg/kg	11	1	9%	0.0017	0.0027	0.0065	0.0065	0.0016
PEST	Gamma-BHC (Lindane)	mg/kg	11	0	0%	0.0017	0.0027	--	--	0.0011
PEST	gamma-Chlordane	mg/kg	11	2	18%	0.0017	0.0027	0.0014	0.0016	0.0012
PEST	gamma-Chlordene	mg/kg	11	0	0%	0.0017	0.0027	--	--	0.0011
PEST	Heptachlor	mg/kg	11	0	0%	0.0017	0.0027	--	--	0.0011
PEST	Heptachlor epoxide	mg/kg	11	0	0%	0.0017	0.0027	--	--	0.0011
PEST	Mirex	mg/kg	11	2	18%	0.0017	0.0027	9.60E-04	0.0012	0.0012
PEST	Oxychlordane	mg/kg	11	0	0%	0.0017	0.0027	--	--	0.0011
PEST	Pentachloroanisole	mg/kg	11	0	0%	0.0017	0.0027	--	--	0.0011
PEST	Toxaphene	mg/kg	11	0	0%	0.051	0.081	--	--	0.034
PEST	trans-Nonachlor	mg/kg	11	2	18%	0.0017	0.0027	0.0027	0.0030	0.0015
SVOC	1,2,4-Trichlorobenzene	mg/kg	11	0	0%	0.0047	0.010	--	--	0.0031
SVOC	1,2-Dichlorobenzene	mg/kg	11	0	0%	0.0047	0.010	--	--	0.0031
SVOC	1,2-Diphenylhydrazine	mg/kg	11	0	0%	0.0047	0.095	--	--	0.0072
SVOC	1,3-Dichlorobenzene	mg/kg	11	0	0%	0.0047	0.010	--	--	0.0031
SVOC	1,4-Dichlorobenzene	mg/kg	11	0	0%	0.0047	0.010	--	--	0.0031
SVOC	1-methylnaphthalene	mg/kg	11	2	18%	0.0048	0.010	0.0049	0.0085	0.0039
SVOC	2,4-Dinitrotoluene	mg/kg	11	0	0%	0.0093	0.020	--	--	0.0063
SVOC	2,6-Dinitrotoluene	mg/kg	11	0	0%	0.019	0.040	--	--	0.013
SVOC	2-Chloronaphthalene	mg/kg	11	0	0%	0.0048	0.020	--	--	0.0056
SVOC	2-Methylnaphthalene	mg/kg	11	7	64%	0.0048	0.012	0.0076	0.018	0.0084
SVOC	4-Bromophenylphenyl ether	mg/kg	11	0	0%	0.0047	0.095	--	--	0.0072
SVOC	4-Chlorophenylphenyl ether	mg/kg	11	0	0%	0.0047	0.010	--	--	0.0031
SVOC	Acenaphthene	mg/kg	11	1	9%	0.0093	0.020	0.037	0.037	0.0092
SVOC	Acenaphthylene	mg/kg	11	2	18%	0.0047	0.010	0.0028	0.0065	0.0036
SVOC	Anthracene	mg/kg	11	0	0%	0.0047	0.095	--	--	0.0072
SVOC	Benzo(a)anthracene	mg/kg	11	0	0%	0.0047	0.099	--	--	0.012
SVOC	Benzo(a)pyrene	mg/kg	11	0	0%	0.0047	0.099	--	--	0.016
SVOC	Benzo(b)fluoranthene	mg/kg	11	0	0%	0.0047	0.20	--	--	0.029
SVOC	Benzo(ghi)perylene	mg/kg	11	0	0%	0.0093	0.20	--	--	0.031
SVOC	Benzo(k)fluoranthene	mg/kg	11	0	0%	0.0047	0.20	--	--	0.029
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	11	0	0%	0.0093	0.020	--	--	0.0063

Table F-80
Summary Statistics for Whole Body Largescale Sucker Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	11	0	0%	0.0047	0.099	--	--	0.012
SVOC	Dibenz[a,h]anthracene	mg/kg	11	0	0%	0.0093	0.20	--	--	0.031
SVOC	Dibenzofuran	mg/kg	11	0	0%	0.0047	0.010	--	--	0.0031
SVOC	Fluoranthene	mg/kg	11	0	0%	0.0093	0.19	--	--	0.014
SVOC	Fluorene	mg/kg	11	0	0%	0.0042	0.023	--	--	0.0056
SVOC	Hexachlorobenzene	mg/kg	11	0	0%	0.0093	0.19	--	--	0.014
SVOC	Hexachlorobutadiene	mg/kg	11	0	0%	0.0047	0.010	--	--	0.0031
SVOC	Hexachloroethane	mg/kg	11	0	0%	0.0047	0.13	--	--	0.0088
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	11	0	0%	0.0093	0.20	--	--	0.031
SVOC	Naphthalene	mg/kg	11	0	0%	0.0062	0.034	--	--	0.0093
SVOC	Nitrobenzene	mg/kg	11	0	0%	0.0047	0.010	--	--	0.0031
SVOC	Phenanthrene	mg/kg	11	1	9%	0.0048	0.095	0.0048	0.0048	0.0077
SVOC	Pyrene	mg/kg	11	2	18%	0.0093	0.020	0.0055	0.0065	0.0065
VOC	Retene	mg/kg	11	2	18%	0.0093	0.20	0.019	0.039	0.019

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-81

Summary Statistics for Coho Salmon Eggs and Ovum Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	3	100%	--	--	8.00E-08	2.10E-07	1.43E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	1.00E-08	1.90E-07	1.90E-07	6.67E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	4.00E-08	5.00E-08	3.17E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	2.00E-08	5.00E-08	2.50E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	1	33%	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.67E-09
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	1.00E-08	3.00E-08	3.00E-08	1.33E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	6.00E-08	8.00E-08	4.83E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	3.00E-08	3.00E-08	2.17E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	1.00E-08	3.00E-08	3.00E-08	1.33E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	1	33%	1.00E-08	1.00E-08	1.00E-07	1.00E-07	3.67E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	1.00E-08	4.00E-08	4.00E-08	1.67E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	1.00E-07	1.00E-07	6.83E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	2.90E-07	6.60E-07	5.13E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	5.00E-08	5.00E-08	3.50E-08
DIOX/	Octachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	1.80E-07	2.20E-07	1.35E-07
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	1.32E-06	2.53E-06	1.77E-06
METAL	Aluminum	mg/kg	3	1	33%	1.0	1.0	1.6	1.6	0.87
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.31	0.36	0.33
METAL	Barium	mg/kg	3	0	0%	0.20	0.20	--	--	0.10
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Chromium	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.010	0.010	0.010
METAL	Copper	mg/kg	3	3	100%	--	--	4.1	5.0	4.4
METAL	Lead	mg/kg	3	0	0%	0.010	0.010	--	--	0.0050
METAL	Manganese	mg/kg	3	3	100%	--	--	0.62	0.79	0.70
METAL	Mercury	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Nickel	mg/kg	3	3	100%	--	--	0.030	0.14	0.080
METAL	Selenium	mg/kg	3	3	100%	--	--	1.1	1.3	1.2
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	3	100%	--	--	0.010	0.040	0.023
METAL	Zinc	mg/kg	3	3	100%	--	--	30	34	31
PCB	2,2',3,3',4,4',5'-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	1.45E-04	1.89E-04	1.64E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	4.44E-04	5.78E-04	5.05E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	1.77E-05	2.34E-05	2.01E-05
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	8.23E-05	1.00E-04	8.91E-05
PCB	2,3,3',4,4',5'-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	2.71E-04	3.48E-04	3.17E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	3.53E-05	3.83E-05	3.67E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	1.12E-05	1.31E-05	1.24E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	2.39E-05	3.44E-05	2.91E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	6.77E-04	7.59E-04	7.22E-04
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	5.12E-06	6.79E-06	5.80E-06
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	1.00E-06	1.27E-06	--	--	5.48E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	0	0%	7.70E-07	1.08E-06	--	--	4.77E-07
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	1.01E-05	1.07E-05	1.04E-05
PCB	Aroclor-1016	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
PCB	Aroclor-1221	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
PCB	Aroclor-1232	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
PCB	Aroclor-1248	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095

Table F-81

Summary Statistics for Coho Salmon Eggs and Ovum Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.011	0.017	0.015
PCB	Aroclor-1260	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
PEST	2,4'-DDD	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	2,4'-DDE	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Aldrin	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	alpha-Chlordane	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	cis-Nonachlor	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	DDMU	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Delta-BHC	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.0027	0.0029	0.0028
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.031	0.033	0.032
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Endosulfan sulfate	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Mirex	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Oxychlordane	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Toxaphene	mg/kg	3	0	0%	0.056	0.057	--	--	0.028
PEST	trans-Nonachlor	mg/kg	3	0	0%	0.0019	0.0019	--	--	9.50E-04
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.038	0.040	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Acenaphthene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Anthracene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Chrysene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Fluoranthene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097

Table F-81
Summary Statistics for Coho Salmon Eggs and Ovum Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Fluorene	mg/kg	3	0	0%	0.0048	0.0094	--	--	0.0039
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
SVOC	Naphthalene	mg/kg	3	0	0%	0.021	0.024	--	--	0.011
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Pyrene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
VOC	Retene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-82

Summary Statistics for Coho Salmon Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	1.00E-07	1.80E-07	9.50E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	3.00E-08	5.00E-08	2.83E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	5.00E-08	5.00E-08	3.50E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	1	33%	1.00E-08	1.00E-08	3.00E-08	3.00E-08	1.33E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	5.00E-08	6.00E-08	3.83E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	5.00E-08	9.00E-08	4.83E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	3.50E-07	5.40E-07	4.57E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	1	33%	1.00E-08	1.00E-08	4.00E-08	4.00E-08	1.67E-08
DIOX/	Octachlorodibenzofuran	mg/kg	3	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	9.00E-08	8.50E-07	3.70E-07
METAL	Aluminum	mg/kg	3	0	0%	1.0	1.0	--	--	0.50
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.45	0.59	0.54
METAL	Barium	mg/kg	3	1	33%	0.20	0.20	0.27	0.27	0.16
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Chromium	mg/kg	3	3	100%	--	--	0.12	0.19	0.14
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.11	0.13	0.12
METAL	Copper	mg/kg	3	3	100%	--	--	0.68	3.6	1.7
METAL	Lead	mg/kg	3	2	67%	0.010	0.010	0.010	0.22	0.078
METAL	Manganese	mg/kg	3	3	100%	--	--	0.11	0.32	0.19
METAL	Mercury	mg/kg	3	3	100%	--	--	0.10	0.12	0.11
METAL	Nickel	mg/kg	3	2	67%	0.030	0.030	0.040	0.10	0.052
METAL	Selenium	mg/kg	3	3	100%	--	--	0.27	0.31	0.29
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	1	33%	0.010	0.010	0.010	0.010	0.0067
METAL	Zinc	mg/kg	3	3	100%	--	--	6.7	7.8	7.2
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	1.95E-04	2.18E-04	2.09E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	6.42E-04	7.27E-04	6.89E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	2.05E-05	2.59E-05	2.24E-05
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	9.51E-05	1.21E-04	1.08E-04
PCB	2,3,3',4,4',5-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	2.67E-04	3.13E-04	2.97E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	4.48E-05	5.07E-05	4.68E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	9.42E-06	1.50E-05	1.18E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	2.39E-05	3.19E-05	2.82E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	6.74E-04	7.44E-04	7.19E-04
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	7.93E-06	9.08E-06	8.60E-06
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	1.00E-06	1.06E-06	--	--	5.15E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	0	0%	8.50E-07	1.99E-06	--	--	7.10E-07
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	8.03E-06	8.35E-06	8.15E-06
PCB	Aroclor-1016	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097
PCB	Aroclor-1221	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097
PCB	Aroclor-1232	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097
PCB	Aroclor-1248	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097

Table F-82

Summary Statistics for Coho Salmon Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.012	0.019	0.016
PCB	Aroclor-1260	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097
PEST	2,4'-DDD	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	2,4'-DDE	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Aldrin	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	alpha-Chlordane	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	cis-Nonachlor	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	DDMU	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Delta-BHC	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.0025	0.0029	0.0027
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.029	0.035	0.033
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	1	33%	0.0018	0.0020	0.0040	0.0040	0.0020
PEST	Endosulfan sulfate	mg/kg	2	0	0%	0.0018	0.0020	--	--	9.50E-04
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Mirex	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Oxychlordane	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Toxaphene	mg/kg	3	0	0%	0.055	0.060	--	--	0.029
PEST	trans-Nonachlor	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.019	0.15	--	--	0.031
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.038	0.039	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	Acenaphthene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	Anthracene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	Chrysene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	Fluoranthene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095

Table F-82
Summary Statistics for Coho Salmon Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Fluorene	mg/kg	3	0	0%	0.0047	0.0086	--	--	0.0031
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	Naphthalene	mg/kg	3	0	0%	0.017	0.026	--	--	0.011
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0095	0.0097	--	--	0.0048
SVOC	Pyrene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
VOC	Retene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-83

Summary Statistics for Whole Body Coho Salmon Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	2	1	50%	1.00E-08	1.00E-08	6.00E-08	6.00E-08	3.25E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	2	0	0%	1.00E-08	3.00E-08	--	--	1.00E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	2	0	0%	1.00E-08	3.00E-08	--	--	1.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	2	0	0%	1.00E-08	2.00E-08	--	--	7.50E-09
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	2	0	0%	1.00E-08	2.00E-08	--	--	7.50E-09
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	2	0	0%	1.00E-08	2.00E-08	--	--	7.50E-09
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	2	0	0%	1.00E-08	2.00E-08	--	--	7.50E-09
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	2	0	0%	1.00E-08	2.00E-08	--	--	7.50E-09
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	2	1	50%	2.00E-08	2.00E-08	2.00E-08	2.00E-08	1.50E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	2	0	0%	2.00E-08	3.00E-08	--	--	1.25E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	2	0	0%	1.00E-08	6.00E-08	--	--	1.75E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	2	0	0%	1.00E-08	2.00E-08	--	--	7.50E-09
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	2	1	50%	2.00E-08	2.00E-08	8.00E-08	8.00E-08	4.50E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	2	2	100%	--	--	4.80E-07	4.90E-07	4.85E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	2	0	0%	1.00E-08	5.00E-08	--	--	1.50E-08
DIOX/	Octachlorodibenzofuran	mg/kg	2	0	0%	3.00E-08	6.00E-08	--	--	2.25E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	2	1	50%	1.00E-08	1.00E-08	2.50E-07	2.50E-07	1.28E-07
METAL	Aluminum	mg/kg	2	0	0%	1.0	1.0	--	--	0.50
METAL	Antimony	mg/kg	2	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	2	2	100%	--	--	0.49	0.55	0.52
METAL	Barium	mg/kg	2	0	0%	0.20	0.20	--	--	0.10
METAL	Beryllium	mg/kg	2	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	2	2	100%	--	--	0.010	0.020	0.015
METAL	Chromium	mg/kg	2	2	100%	--	--	0.12	0.13	0.13
METAL	Cobalt	mg/kg	2	2	100%	--	--	0.11	0.11	0.11
METAL	Copper	mg/kg	2	2	100%	--	--	0.72	0.96	0.84
METAL	Lead	mg/kg	2	2	100%	--	--	0.010	0.010	0.010
METAL	Manganese	mg/kg	2	2	100%	--	--	0.39	0.56	0.48
METAL	Mercury	mg/kg	2	2	100%	--	--	0.070	0.11	0.090
METAL	Nickel	mg/kg	2	2	100%	--	--	0.050	0.050	0.050
METAL	Selenium	mg/kg	2	2	100%	--	--	0.33	0.34	0.34
METAL	Silver	mg/kg	2	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	2	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	2	2	100%	--	--	0.030	0.030	0.030
METAL	Zinc	mg/kg	2	2	100%	--	--	31	32	32
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	2	2	100%	--	--	1.83E-04	1.90E-04	1.87E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	2	2	100%	--	--	5.76E-04	6.21E-04	5.99E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	2	2	100%	--	--	2.00E-05	2.17E-05	2.09E-05
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	2	2	100%	--	--	9.03E-05	1.05E-04	9.77E-05
PCB	2,3,3',4,4',5'-Pentachlorobiphenyl	mg/kg	2	2	100%	--	--	2.91E-04	3.30E-04	3.11E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	2	2	100%	--	--	4.16E-05	4.82E-05	4.49E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	2	2	100%	--	--	9.64E-06	1.12E-05	1.04E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	2	2	100%	--	--	2.35E-05	3.07E-05	2.71E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	2	2	100%	--	--	6.84E-04	7.74E-04	7.29E-04
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	2	2	100%	--	--	7.58E-06	7.93E-06	7.76E-06
PCB	3,3',4,4',5'-Hexachlorobiphenyl (BZ 169)	mg/kg	2	0	0%	1.00E-06	1.00E-06	--	--	5.00E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	2	2	100%	--	--	3.11E-06	3.30E-06	3.21E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	2	2	100%	--	--	9.66E-06	1.13E-05	1.05E-05
PCB	Aroclor-1016	mg/kg	2	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1221	mg/kg	2	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1232	mg/kg	2	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1248	mg/kg	2	0	0%	0.019	0.020	--	--	0.0098

Table F-83
Summary Statistics for Whole Body Coho Salmon Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1254	mg/kg	2	2	100%	--	--	0.019	0.019	0.019
PCB	Aroclor-1260	mg/kg	2	0	0%	0.019	0.020	--	--	0.0098
PEST	2,4'-DDD	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	2,4'-DDE	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	2,4'-DDT	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Aldrin	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Alpha-BHC	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	alpha-Chlordane	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	alpha-Chlordene	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Beta-BHC	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	cis-Nonachlor	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	DDMU	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Delta-BHC	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	2	2	100%	--	--	0.0018	0.0021	0.0020
PEST	Dichlorodiphenyldichloroethylene	mg/kg	2	2	100%	--	--	0.031	0.037	0.034
PEST	Dichlorodiphenyltrichloroethane	mg/kg	2	1	50%	0.0020	0.0020	0.0040	0.0040	0.0025
PEST	Gamma-BHC (Lindane)	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	gamma-Chlordane	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	gamma-Chlordene	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Heptachlor	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Heptachlor epoxide	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Mirex	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Oxychlordane	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Pentachloroanisole	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
PEST	Toxaphene	mg/kg	2	0	0%	0.058	0.059	--	--	0.029
PEST	trans-Nonachlor	mg/kg	2	0	0%	0.0019	0.0020	--	--	9.75E-04
SVOC	1,2,4-Trichlorobenzene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	1,2-Dichlorobenzene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	1,2-Diphenylhydrazine	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	1,3-Dichlorobenzene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	1,4-Dichlorobenzene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	1-methylnaphthalene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	2,4-Dinitrotoluene	mg/kg	2	0	0%	0.15	0.15	--	--	0.075
SVOC	2,6-Dinitrotoluene	mg/kg	2	0	0%	0.037	0.039	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	2-Methylnaphthalene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	4-Bromophenylphenyl ether	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	4-Chlorophenylphenyl ether	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	Acenaphthene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Acenaphthylene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	Anthracene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	Benzo(a)anthracene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	Benzo(a)pyrene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	Benzo(b)fluoranthene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	Benzo(ghi)perylene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Benzo(k)fluoranthene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Chrysene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	Dibenz[a,h]anthracene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Dibenzofuran	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	Fluoranthene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Fluorene	mg/kg	2	0	0%	0.0087	0.0094	--	--	0.0045

Table F-83**Summary Statistics for Whole Body Coho Salmon Collected from Segment 4 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Hexachlorobenzene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Hexachlorobutadiene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	Hexachloroethane	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
SVOC	Naphthalene	mg/kg	2	0	0%	0.018	0.019	--	--	0.0093
SVOC	Nitrobenzene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	Phenanthrene	mg/kg	2	0	0%	0.0092	0.0096	--	--	0.0047
SVOC	Pyrene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095
VOC	Retene	mg/kg	2	0	0%	0.019	0.019	--	--	0.0095

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-84

Summary Statistics for Chinook Salmon Eggs and Ovum Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	4	3	75%	1.30E-07	1.30E-07	5.00E-08	1.40E-07	9.63E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	4	1	25%	2.00E-08	3.00E-08	6.00E-08	6.00E-08	2.50E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	4	0	0%	2.00E-08	3.00E-08	--	--	1.25E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	4	0	0%	1.00E-08	4.00E-08	--	--	1.25E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	4	2	50%	1.00E-08	2.00E-08	1.00E-07	1.20E-07	5.88E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	4	1	25%	2.00E-08	4.00E-08	2.00E-08	2.00E-08	1.63E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	4	2	50%	1.00E-08	2.00E-08	6.00E-08	9.00E-08	4.13E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	4	0	0%	1.00E-08	4.00E-08	--	--	1.25E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	4	2	50%	1.00E-08	5.00E-08	3.00E-08	3.00E-08	2.25E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	4	0	0%	2.00E-08	3.00E-08	--	--	1.38E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	4	3	75%	4.00E-08	4.00E-08	1.40E-07	1.50E-07	1.15E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	4	3	75%	2.00E-08	2.00E-08	1.30E-07	1.40E-07	1.05E-07
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	4	2	50%	3.00E-08	3.00E-08	6.00E-08	9.00E-08	4.50E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	4	4	100%	--	--	3.60E-07	4.60E-07	4.28E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	4	1	25%	1.00E-08	4.00E-08	3.00E-08	3.00E-08	1.88E-08
DIOX/	Octachlorodibenzofuran	mg/kg	4	0	0%	3.00E-08	6.00E-08	--	--	2.13E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	4	4	100%	--	--	2.40E-07	3.90E-07	3.25E-07
METAL	Aluminum	mg/kg	4	0	0%	1.0	1.0	--	--	0.50
METAL	Antimony	mg/kg	4	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	4	4	100%	--	--	0.24	0.53	0.45
METAL	Barium	mg/kg	4	0	0%	0.20	0.20	--	--	0.10
METAL	Beryllium	mg/kg	4	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	4	3	75%	0.0040	0.0040	0.020	0.030	0.021
METAL	Chromium	mg/kg	4	2	50%	0.10	0.10	0.11	0.11	0.080
METAL	Cobalt	mg/kg	4	4	100%	--	--	0.030	0.060	0.048
METAL	Copper	mg/kg	4	4	100%	--	--	5.8	6.6	6.3
METAL	Lead	mg/kg	4	1	25%	0.010	0.010	0.010	0.010	0.0063
METAL	Manganese	mg/kg	4	4	100%	--	--	0.96	1.6	1.4
METAL	Mercury	mg/kg	4	0	0%	0.050	0.090	--	--	0.036
METAL	Nickel	mg/kg	4	4	100%	--	--	0.050	0.12	0.078
METAL	Selenium	mg/kg	4	4	100%	--	--	2.4	5.5	3.9
METAL	Silver	mg/kg	4	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	4	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	4	1	25%	0.010	0.010	0.010	0.010	0.0063
METAL	Zinc	mg/kg	4	4	100%	--	--	36	40	39
PCB	2,2',3,3',4,4',5'-Heptachloro-1,1'-biphenyl	mg/kg	4	4	100%	--	--	2.94E-05	5.14E-05	4.44E-05
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	4	4	100%	--	--	9.47E-05	1.38E-04	1.26E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	4	4	100%	--	--	4.31E-06	1.10E-05	7.49E-06
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	4	4	100%	--	--	1.23E-05	2.61E-05	2.21E-05
PCB	2,3,3',4,4',5'-Pentachlorobiphenyl	mg/kg	4	4	100%	--	--	1.08E-04	1.90E-04	1.63E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	4	4	100%	--	--	9.93E-06	1.78E-05	1.53E-05
PCB	2',3,4,4',5'-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	4	4	100%	--	--	4.85E-06	1.06E-05	7.23E-06
PCB	2,3,4,4',5'-Pentachlorobiphenyl (BZ 114)	mg/kg	4	4	100%	--	--	9.76E-06	2.03E-05	1.53E-05
PCB	2,3',4,4',5'-Pentachlorobiphenyl (BZ 118)	mg/kg	4	4	100%	--	--	2.54E-04	4.40E-04	3.74E-04
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	4	3	75%	1.00E-06	1.00E-06	1.26E-06	1.66E-06	1.22E-06
PCB	3,3',4,4',5'-Hexachlorobiphenyl (BZ 169)	mg/kg	4	0	0%	1.00E-06	1.00E-06	--	--	5.00E-07
PCB	3,3',4,4',5'-Pentachlorobiphenyl (BZ 126)	mg/kg	4	2	50%	5.00E-07	9.00E-07	2.22E-06	2.28E-06	1.30E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	4	4	100%	--	--	4.64E-06	1.06E-05	8.63E-06
PCB	Aroclor-1016	mg/kg	4	0	0%	0.019	0.038	--	--	0.014
PCB	Aroclor-1221	mg/kg	4	0	0%	0.019	0.038	--	--	0.014
PCB	Aroclor-1232	mg/kg	4	0	0%	0.019	0.038	--	--	0.014
PCB	Aroclor-1248	mg/kg	4	0	0%	0.019	0.038	--	--	0.014

Table F-84
Summary Statistics for Chinook Salmon Eggs and Ovum Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1254	mg/kg	4	4	100%	--	--	0.012	0.020	0.016
PCB	Aroclor-1260	mg/kg	4	0	0%	0.019	0.038	--	--	0.014
PEST	2,4'-DDD	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	2,4'-DDE	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	2,4'-DDT	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	Aldrin	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	Alpha-BHC	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	alpha-Chlordane	mg/kg	4	1	25%	0.0019	0.0038	0.0017	0.0017	0.0016
PEST	alpha-Chlordene	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	Beta-BHC	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	cis-Nonachlor	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	DDMU	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	Delta-BHC	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	Dichlorodiphenyldichloroethane	mg/kg	4	4	100%	--	--	0.0025	0.0037	0.0030
PEST	Dichlorodiphenyldichloroethylene	mg/kg	4	4	100%	--	--	0.0066	0.010	0.0090
PEST	Dichlorodiphenyltrichloroethane	mg/kg	4	3	75%	0.0019	0.0019	0.0040	0.0042	0.0033
PEST	Endosulfan sulfate	mg/kg	1	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Gamma-BHC (Lindane)	mg/kg	4	1	25%	0.0019	0.0038	0.0019	0.0019	0.0014
PEST	gamma-Chlordane	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	gamma-Chlordene	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	Heptachlor	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	Heptachlor epoxide	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	Mirex	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	Oxychlordane	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	Pentachloroanisole	mg/kg	4	0	0%	0.0019	0.0038	--	--	0.0014
PEST	Toxaphene	mg/kg	4	0	0%	0.056	0.11	--	--	0.042
PEST	trans-Nonachlor	mg/kg	4	2	50%	0.0038	0.0038	0.0029	0.0032	0.0025
SVOC	1,2,4-Trichlorobenzene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	1,2-Dichlorobenzene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	1,2-Diphenylhydrazine	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	1,3-Dichlorobenzene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	1,4-Dichlorobenzene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	1-methylnaphthalene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	2,4-Dinitrotoluene	mg/kg	4	0	0%	0.019	0.074	--	--	0.020
SVOC	2,6-Dinitrotoluene	mg/kg	4	0	0%	0.038	0.15	--	--	0.041
SVOC	2-Chloronaphthalene	mg/kg	4	0	0%	0.019	0.074	--	--	0.020
SVOC	2-Methylnaphthalene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.011
SVOC	4-Bromophenylphenyl ether	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	4-Chlorophenylphenyl ether	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	Acenaphthene	mg/kg	4	1	25%	0.019	0.074	0.026	0.026	0.024
SVOC	Acenaphthylene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	Anthracene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	Benzo(a)anthracene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	Benzo(a)pyrene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	Benzo(b)fluoranthene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	Benzo(ghi)perylene	mg/kg	4	0	0%	0.019	0.074	--	--	0.020
SVOC	Benzo(k)fluoranthene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	4	0	0%	0.019	0.074	--	--	0.020
SVOC	Chrysene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	Dibenz[a,h]anthracene	mg/kg	4	0	0%	0.019	0.074	--	--	0.020
SVOC	Dibenzofuran	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	Fluoranthene	mg/kg	4	0	0%	0.019	0.074	--	--	0.020

Table F-84
Summary Statistics for Chinook Salmon Eggs and Ovum Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Fluorene	mg/kg	4	0	0%	0.0045	0.026	--	--	0.0056
SVOC	Hexachlorobenzene	mg/kg	4	0	0%	0.019	0.074	--	--	0.020
SVOC	Hexachlorobutadiene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	Hexachloroethane	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	4	0	0%	0.019	0.074	--	--	0.020
SVOC	Naphthalene	mg/kg	4	0	0%	0.044	0.11	--	--	0.031
SVOC	Nitrobenzene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	Phenanthrene	mg/kg	4	0	0%	0.0096	0.037	--	--	0.010
SVOC	Pyrene	mg/kg	4	0	0%	0.019	0.074	--	--	0.020
VOC	Retene	mg/kg	4	0	0%	0.019	0.074	--	--	0.020

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-85
Summary Statistics for Chinook Salmon Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	19	12	63%	1.00E-08	6.00E-08	3.00E-08	5.70E-07	9.08E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	19	3	16%	1.00E-08	7.00E-08	2.00E-08	2.00E-07	2.50E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	19	2	11%	1.00E-08	7.00E-08	2.00E-08	2.00E-08	1.21E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	19	0	0%	1.00E-08	6.00E-08	--	--	9.47E-09
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	19	3	16%	1.00E-08	4.00E-08	2.00E-08	1.30E-07	1.74E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	19	6	32%	1.00E-08	6.00E-08	3.00E-08	5.00E-08	1.92E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	19	9	47%	1.00E-08	2.00E-08	2.00E-08	1.20E-07	3.68E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	19	2	11%	1.00E-08	6.00E-08	6.00E-08	7.00E-08	1.50E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	19	6	32%	1.00E-08	4.00E-08	2.00E-08	6.00E-08	1.92E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	19	6	32%	1.00E-08	4.00E-08	8.00E-08	1.40E-07	4.26E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	19	5	26%	1.00E-08	5.00E-08	6.00E-08	1.80E-07	3.76E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	19	6	32%	1.00E-08	6.00E-08	4.00E-08	1.60E-07	3.61E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	19	11	58%	1.00E-08	4.00E-08	5.00E-08	1.80E-07	7.50E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	19	19	100%	--	--	3.00E-08	8.20E-07	5.98E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	19	3	16%	1.00E-08	4.00E-08	2.00E-08	4.00E-08	1.39E-08
DIOX/	Octachlorodibenzofuran	mg/kg	19	3	16%	1.00E-08	1.70E-07	8.00E-08	1.30E-07	3.53E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	19	12	63%	1.00E-08	4.00E-08	1.10E-07	2.68E-06	3.20E-07
METAL	Aluminum	mg/kg	19	3	16%	1.0	1.0	1.2	1.9	0.65
METAL	Antimony	mg/kg	19	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	19	19	100%	--	--	0.52	1.2	0.84
METAL	Barium	mg/kg	19	0	0%	0.20	0.20	--	--	0.10
METAL	Beryllium	mg/kg	19	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	19	9	47%	0.0040	0.0040	0.0078	0.010	0.0056
METAL	Chromium	mg/kg	19	5	26%	0.10	0.10	0.14	0.49	0.11
METAL	Cobalt	mg/kg	19	18	95%	0.0010	0.0010	0.0029	0.18	0.033
METAL	Copper	mg/kg	19	19	100%	--	--	0.55	2.1	0.77
METAL	Lead	mg/kg	19	5	26%	0.010	0.010	0.010	0.14	0.015
METAL	Manganese	mg/kg	19	19	100%	--	--	0.070	0.11	0.087
METAL	Mercury	mg/kg	19	14	74%	0.050	0.11	0.050	0.51	0.11
METAL	Nickel	mg/kg	19	11	58%	0.030	0.030	0.030	0.37	0.083
METAL	Selenium	mg/kg	19	19	100%	--	--	0.28	0.43	0.34
METAL	Silver	mg/kg	19	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	19	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	19	1	5%	0.010	0.010	0.010	0.010	0.0053
METAL	Zinc	mg/kg	19	19	100%	--	--	5.6	7.1	6.3
PCB	2,2',3,3',4,4',5'-Heptachloro-1,1'-biphenyl	mg/kg	19	19	100%	--	--	3.84E-05	1.69E-04	8.05E-05
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	19	19	100%	--	--	1.22E-04	5.30E-04	2.57E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	19	19	100%	--	--	4.06E-06	1.89E-05	9.99E-06
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	19	19	100%	--	--	1.55E-05	7.25E-05	3.69E-05
PCB	2,3,3',4,4',5'-Pentachlorobiphenyl	mg/kg	19	19	100%	--	--	8.01E-05	2.58E-04	1.90E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	19	19	100%	--	--	1.01E-05	3.41E-05	2.29E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	19	19	100%	--	--	3.33E-06	1.42E-05	8.46E-06
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	19	19	100%	--	--	8.28E-06	0.020	0.0011
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	19	19	100%	--	--	1.96E-04	0.042	0.0026
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	19	15	79%	1.00E-06	1.72E-06	1.55E-06	5.66E-06	2.66E-06
PCB	3,3',4,4',5'-Hexachlorobiphenyl (BZ 169)	mg/kg	19	0	0%	1.00E-06	2.57E-06	--	--	5.87E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	19	11	58%	5.00E-07	2.22E-06	8.70E-07	3.63E-06	1.63E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	19	18	95%	7.60E-07	7.60E-07	4.07E-06	1.31E-05	7.46E-06
PCB	Aroclor-1016	mg/kg	19	0	0%	0.017	0.038	--	--	0.011
PCB	Aroclor-1221	mg/kg	19	0	0%	0.017	0.038	--	--	0.011
PCB	Aroclor-1232	mg/kg	19	0	0%	0.017	0.038	--	--	0.011
PCB	Aroclor-1248	mg/kg	19	0	0%	0.017	0.038	--	--	0.011

Table F-85
Summary Statistics for Chinook Salmon Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1254	mg/kg	19	19	100%	--	--	0.0086	0.024	0.016
PCB	Aroclor-1260	mg/kg	19	0	0%	0.017	0.038	--	--	0.011
PEST	2,4'-DDD	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	2,4'-DDE	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	2,4'-DDT	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	Aldrin	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	Alpha-BHC	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	alpha-Chlordane	mg/kg	19	2	11%	0.0017	0.0038	0.0012	0.0017	0.0012
PEST	alpha-Chlordene	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	Beta-BHC	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	cis-Nonachlor	mg/kg	19	2	11%	0.0017	0.0038	0.0011	0.0012	0.0011
PEST	DDMU	mg/kg	19	3	16%	0.0017	0.0038	0.0012	0.0024	0.0012
PEST	Delta-BHC	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	Dichlorodiphenyldichloroethane	mg/kg	19	18	95%	0.0020	0.0020	0.0014	0.0033	0.0024
PEST	Dichlorodiphenyldichloroethylene	mg/kg	19	19	100%	--	--	0.0042	0.018	0.010
PEST	Dichlorodiphenyltrichloroethane	mg/kg	19	12	63%	0.0019	0.0020	0.0017	0.0058	0.0027
PEST	Endosulfan sulfate	mg/kg	7	0	0%	0.0017	0.0020	--	--	9.57E-04
PEST	Gamma-BHC (Lindane)	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	gamma-Chlordane	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	gamma-Chlordene	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	Heptachlor	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	Heptachlor epoxide	mg/kg	13	0	0%	0.0017	0.0038	--	--	0.0012
PEST	Mirex	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	Oxychlordane	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	Pentachloroanisole	mg/kg	19	0	0%	0.0017	0.0038	--	--	0.0011
PEST	Toxaphene	mg/kg	19	0	0%	0.051	0.11	--	--	0.033
PEST	trans-Nonachlor	mg/kg	19	15	79%	0.0019	0.0038	0.0012	0.0044	0.0027
SVOC	1,2,4-Trichlorobenzene	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	1,2-Dichlorobenzene	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	1,2-Diphenylhydrazine	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	1,3-Dichlorobenzene	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	1,4-Dichlorobenzene	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	1-methylnaphthalene	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0047
SVOC	2,4-Dinitrotoluene	mg/kg	19	0	0%	0.016	0.16	--	--	0.019
SVOC	2,6-Dinitrotoluene	mg/kg	19	0	0%	0.031	0.040	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	19	0	0%	0.016	0.020	--	--	0.0093
SVOC	2-Methylnaphthalene	mg/kg	19	1	5%	0.0078	0.021	0.011	0.011	0.0054
SVOC	4-Bromophenylphenyl ether	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	4-Chlorophenylphenyl ether	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	Acenaphthene	mg/kg	19	0	0%	0.016	0.020	--	--	0.0093
SVOC	Acenaphthylene	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	Anthracene	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	Benzo(a)anthracene	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	Benzo(a)pyrene	mg/kg	19	0	0%	0.0083	0.010	--	--	0.0047
SVOC	Benzo(b)fluoranthene	mg/kg	19	0	0%	0.0083	0.010	--	--	0.0047
SVOC	Benzo(ghi)perylene	mg/kg	19	0	0%	0.017	0.020	--	--	0.0094
SVOC	Benzo(k)fluoranthene	mg/kg	19	0	0%	0.0083	0.010	--	--	0.0047
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	19	0	0%	0.016	0.020	--	--	0.0093
SVOC	Chrysene	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	Dibenz[a,h]anthracene	mg/kg	19	0	0%	0.017	0.020	--	--	0.0094
SVOC	Dibenzofuran	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	Fluoranthene	mg/kg	19	0	0%	0.016	0.020	--	--	0.0093

Table F-85
Summary Statistics for Chinook Salmon Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Fluorene	mg/kg	19	0	0%	0.0046	0.037	--	--	0.0050
SVOC	Hexachlorobenzene	mg/kg	19	0	0%	0.016	0.020	--	--	0.0093
SVOC	Hexachlorobutadiene	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	Hexachloroethane	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	19	0	0%	0.017	0.020	--	--	0.0094
SVOC	Naphthalene	mg/kg	19	0	0%	0.013	0.067	--	--	0.016
SVOC	Nitrobenzene	mg/kg	19	0	0%	0.0078	0.010	--	--	0.0046
SVOC	Phenanthrene	mg/kg	19	0	0%	0.0078	0.013	--	--	0.0048
SVOC	Pyrene	mg/kg	19	0	0%	0.016	0.020	--	--	0.0093
VOC	Retene	mg/kg	19	0	0%	0.016	0.020	--	--	0.0093

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-86

Summary Statistics for Whole Body Chinook Salmon Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	18	9	50%	1.00E-08	8.00E-08	8.00E-08	2.00E-07	7.72E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	18	7	39%	1.00E-08	3.00E-08	3.00E-08	1.10E-07	3.19E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	18	0	0%	1.00E-08	6.00E-08	--	--	1.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	18	3	17%	1.00E-08	5.00E-08	3.00E-08	6.00E-08	1.64E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	18	6	33%	1.00E-08	4.00E-08	2.00E-08	1.40E-07	3.11E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	18	7	39%	1.00E-08	5.00E-08	2.00E-08	5.00E-08	2.11E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	18	6	33%	1.00E-08	4.00E-08	2.00E-08	1.30E-07	3.06E-08
DIOX/	1,2,3,7,8-Hexachlorodibenzofuran	mg/kg	18	2	11%	1.00E-08	5.00E-08	1.00E-08	7.00E-08	1.42E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	18	4	22%	1.00E-08	4.00E-08	3.00E-08	5.00E-08	1.75E-08
DIOX/	1,2,3,7,8-Tetrachlorodibenzofuran	mg/kg	18	9	50%	1.00E-08	4.00E-08	4.00E-08	1.40E-07	5.86E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	18	5	28%	1.00E-08	6.00E-08	8.00E-08	2.10E-07	5.08E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	18	6	33%	1.00E-08	5.00E-08	3.00E-08	1.70E-07	3.97E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	18	10	56%	2.00E-08	4.00E-08	6.00E-08	1.80E-07	8.42E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	18	18	100%	--	--	4.30E-07	1.35E-06	6.94E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	18	2	11%	1.00E-08	4.00E-08	4.00E-08	4.00E-08	1.39E-08
DIOX/	Octachlorodibenzofuran	mg/kg	18	3	17%	1.00E-08	9.00E-08	2.00E-08	1.70E-07	3.36E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	18	10	56%	1.00E-08	6.00E-08	2.10E-07	6.90E-07	1.98E-07
METAL	Aluminum	mg/kg	18	1	6%	1.0	1.0	1.4	1.4	0.55
METAL	Antimony	mg/kg	18	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	18	18	100%	--	--	0.56	1.0	0.78
METAL	Barium	mg/kg	18	1	6%	0.20	0.20	0.29	0.29	0.11
METAL	Beryllium	mg/kg	18	0	0%	0.0040	0.0060	--	--	0.0021
METAL	Cadmium	mg/kg	18	18	100%	--	--	0.0046	0.14	0.063
METAL	Chromium	mg/kg	18	12	67%	0.10	0.10	0.11	0.19	0.12
METAL	Cobalt	mg/kg	18	18	100%	--	--	0.040	0.21	0.12
METAL	Copper	mg/kg	18	18	100%	--	--	1.1	6.6	2.3
METAL	Lead	mg/kg	18	18	100%	--	--	0.010	0.52	0.11
METAL	Manganese	mg/kg	18	18	100%	--	--	0.24	0.41	0.35
METAL	Mercury	mg/kg	18	9	50%	0.050	0.11	0.060	0.19	0.067
METAL	Nickel	mg/kg	18	15	83%	0.030	0.030	0.030	0.63	0.16
METAL	Selenium	mg/kg	18	18	100%	--	--	0.38	0.61	0.52
METAL	Silver	mg/kg	18	0	0%	0.10	0.20	--	--	0.053
METAL	Thallium	mg/kg	18	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	18	16	89%	0.010	0.010	0.010	0.040	0.017
METAL	Zinc	mg/kg	18	18	100%	--	--	20	34	27
PCB	2,2',3,3',4,4',5'-Heptachloro-1,1'-biphenyl	mg/kg	18	18	100%	--	--	4.37E-05	3.54E-04	9.58E-05
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	18	18	100%	--	--	1.38E-04	0.0012	3.08E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	18	18	100%	--	--	5.33E-06	0.042	0.0023
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	18	18	100%	--	--	7.72E-06	1.95E-04	4.86E-05
PCB	2,3,3',4,4',5'-Pentachlorobiphenyl	mg/kg	18	18	100%	--	--	1.14E-04	0.034	0.0021
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	18	18	100%	--	--	1.28E-05	0.042	0.0024
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	18	18	100%	--	--	4.95E-06	0.037	0.0021
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	18	18	100%	--	--	1.14E-05	0.020	0.0011
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	18	18	100%	--	--	1.00E-06	0.0015	5.21E-04
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	18	16	89%	1.00E-06	1.77E-06	7.60E-07	1.42E-05	3.33E-06
PCB	3,3',4,4',5'-Hexachlorobiphenyl (BZ 169)	mg/kg	18	0	0%	1.00E-06	0.042	--	--	0.0012
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	18	11	61%	5.00E-07	1.88E-06	5.00E-07	4.74E-04	2.83E-05
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	18	18	100%	--	--	5.14E-06	0.037	0.0035
PCB	Aroclor-1016	mg/kg	18	0	0%	0.019	0.042	--	--	0.011
PCB	Aroclor-1221	mg/kg	18	0	0%	2.77E-05	0.034	--	--	0.0094
PCB	Aroclor-1232	mg/kg	18	0	0%	1.00E-06	0.034	--	--	0.0091
PCB	Aroclor-1248	mg/kg	18	0	0%	1.78E-05	0.034	--	--	0.0091

Table F-86
Summary Statistics for Whole Body Chinook Salmon Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1254	mg/kg	18	18	100%	--	--	1.23E-05	0.047	0.015
PCB	Aroclor-1260	mg/kg	18	0	0%	1.09E-05	0.034	--	--	0.0091
PEST	2,4'-DDD	mg/kg	18	1	6%	0.0019	0.0042	0.0012	0.0012	0.0011
PEST	2,4'-DDE	mg/kg	18	1	6%	0.0019	0.0042	0.0014	0.0014	0.0012
PEST	2,4'-DDT	mg/kg	18	0	0%	0.0019	0.0042	--	--	0.0011
PEST	Aldrin	mg/kg	18	0	0%	0.0019	0.0042	--	--	0.0011
PEST	Alpha-BHC	mg/kg	18	0	0%	0.0019	0.0042	--	--	0.0011
PEST	alpha-Chlordane	mg/kg	18	6	33%	0.0019	0.0042	0.0012	0.0023	0.0013
PEST	alpha-Chlordene	mg/kg	18	0	0%	0.0019	0.0042	--	--	0.0011
PEST	Beta-BHC	mg/kg	18	0	0%	0.0019	0.0042	--	--	0.0011
PEST	cis-Nonachlor	mg/kg	18	3	17%	0.0019	0.0042	0.0012	0.0019	0.0012
PEST	DDMU	mg/kg	18	4	22%	0.0019	0.0042	0.0014	0.0028	0.0014
PEST	Delta-BHC	mg/kg	18	0	0%	0.0019	0.0042	--	--	0.0011
PEST	Dichlorodiphenyldichloroethane	mg/kg	18	16	89%	0.0020	0.0042	0.0014	0.0041	0.0027
PEST	Dichlorodiphenyldichloroethylene	mg/kg	18	18	100%	--	--	0.0045	0.053	0.014
PEST	Dichlorodiphenyltrichloroethane	mg/kg	18	13	72%	0.0019	0.0020	0.0020	0.0070	0.0034
PEST	Endosulfan sulfate	mg/kg	4	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Gamma-BHC (Lindane)	mg/kg	18	0	0%	0.0019	0.0042	--	--	0.0011
PEST	gamma-Chlordane	mg/kg	18	0	0%	0.0019	0.0042	--	--	0.0011
PEST	gamma-Chlordene	mg/kg	18	0	0%	0.0019	0.0042	--	--	0.0011
PEST	Heptachlor	mg/kg	18	0	0%	0.0019	0.0042	--	--	0.0011
PEST	Heptachlor epoxide	mg/kg	10	0	0%	0.0019	0.0042	--	--	0.0012
PEST	Mirex	mg/kg	18	0	0%	0.0019	0.0042	--	--	0.0011
PEST	Oxychlordane	mg/kg	18	0	0%	0.0019	0.0042	--	--	0.0011
PEST	Pentachloroanisole	mg/kg	18	0	0%	0.0019	0.0042	--	--	0.0011
PEST	Toxaphene	mg/kg	18	0	0%	0.056	0.12	--	--	0.034
PEST	trans-Nonachlor	mg/kg	18	14	78%	0.0020	0.0042	0.0020	0.0065	0.0030
SVOC	1,2,4-Trichlorobenzene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	1,2-Dichlorobenzene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	1,2-Diphenylhydrazine	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	1,3-Dichlorobenzene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	1,4-Dichlorobenzene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	1-methylnaphthalene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	2,4-Dinitrotoluene	mg/kg	18	0	0%	0.017	0.15	--	--	0.022
SVOC	2,6-Dinitrotoluene	mg/kg	18	0	0%	0.035	0.16	--	--	0.022
SVOC	2-Chloronaphthalene	mg/kg	18	0	0%	0.017	0.081	--	--	0.011
SVOC	2-Methylnaphthalene	mg/kg	18	2	11%	0.0087	0.040	0.0096	0.010	0.0063
SVOC	4-Bromophenylphenyl ether	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	4-Chlorophenylphenyl ether	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	Acenaphthene	mg/kg	18	0	0%	0.017	0.081	--	--	0.011
SVOC	Acenaphthylene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	Anthracene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	Benzo(a)anthracene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	Benzo(a)pyrene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	Benzo(b)fluoranthene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	Benzo(ghi)perylene	mg/kg	18	0	0%	0.017	0.081	--	--	0.011
SVOC	Benzo(k)fluoranthene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	18	0	0%	0.017	0.081	--	--	0.011
SVOC	Chrysene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	Dibenz[a,h]anthracene	mg/kg	18	0	0%	0.017	0.081	--	--	0.011
SVOC	Dibenzofuran	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	Fluoranthene	mg/kg	18	0	0%	0.017	0.081	--	--	0.011

Table F-86
Summary Statistics for Whole Body Chinook Salmon Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Fluorene	mg/kg	18	0	0%	0.0046	0.025	--	--	0.0049
SVOC	Hexachlorobenzene	mg/kg	18	0	0%	0.017	0.081	--	--	0.011
SVOC	Hexachlorobutadiene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	Hexachloroethane	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0055
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	18	0	0%	0.017	0.081	--	--	0.011
SVOC	Naphthalene	mg/kg	18	0	0%	0.015	0.17	--	--	0.021
SVOC	Nitrobenzene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0056
SVOC	Phenanthrene	mg/kg	18	0	0%	0.0087	0.040	--	--	0.0056
SVOC	Pyrene	mg/kg	18	0	0%	0.017	0.081	--	--	0.011
VOC	Retene	mg/kg	18	0	0%	0.017	0.081	--	--	0.011

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-87

Summary Statistics for Mountain Whitefish Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	7	7	100%	--	--	1.90E-07	2.90E-07	2.49E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	7	6	86%	1.00E-08	1.00E-08	7.00E-08	1.10E-07	7.50E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	7	4	57%	1.00E-08	1.00E-08	2.00E-08	6.00E-08	2.79E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	7	5	71%	1.00E-08	1.00E-08	2.00E-08	5.00E-08	2.86E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	7	6	86%	1.00E-08	1.00E-08	1.00E-07	1.40E-07	9.93E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	7	7	100%	--	--	3.00E-08	6.00E-08	4.43E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	7	7	100%	--	--	1.00E-07	2.00E-07	1.49E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	7	7	100%	--	--	6.00E-08	1.60E-07	9.43E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	7	7	100%	--	--	3.00E-08	1.20E-07	6.86E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	7	7	100%	--	--	4.00E-08	1.00E-07	6.86E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	7	7	100%	--	--	1.50E-07	2.10E-07	1.71E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	7	7	100%	--	--	1.30E-07	1.70E-07	1.44E-07
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	7	6	86%	1.00E-08	1.00E-08	4.00E-08	1.10E-07	6.64E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	7	7	100%	--	--	1.40E-07	7.00E-07	4.30E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	7	6	86%	1.00E-08	1.00E-08	5.00E-08	8.00E-08	5.36E-08
DIOX/	Octachlorodibenzofuran	mg/kg	7	6	86%	1.00E-08	1.00E-08	2.00E-08	1.00E-07	4.93E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	7	7	100%	--	--	2.10E-07	5.20E-07	3.33E-07
METAL	Aluminum	mg/kg	7	3	43%	5.0	20	1.3	3.1	4.4
METAL	Antimony	mg/kg	7	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	7	7	100%	--	--	0.050	0.11	0.079
METAL	Barium	mg/kg	7	5	71%	0.20	0.20	0.23	0.40	0.25
METAL	Beryllium	mg/kg	7	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	7	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Chromium	mg/kg	7	2	29%	0.10	0.10	0.11	0.12	0.069
METAL	Cobalt	mg/kg	7	7	100%	--	--	0.020	0.040	0.027
METAL	Copper	mg/kg	7	7	100%	--	--	0.53	0.83	0.65
METAL	Lead	mg/kg	7	4	57%	0.010	0.010	0.010	0.020	0.0093
METAL	Manganese	mg/kg	7	7	100%	--	--	0.54	0.90	0.70
METAL	Mercury	mg/kg	7	7	100%	--	--	0.040	0.090	0.066
METAL	Nickel	mg/kg	7	7	100%	--	--	0.040	0.15	0.083
METAL	Selenium	mg/kg	7	7	100%	--	--	0.30	0.55	0.42
METAL	Silver	mg/kg	7	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	7	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	7	7	100%	--	--	0.020	0.050	0.031
METAL	Zinc	mg/kg	7	7	100%	--	--	15	20	17
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	7	7	100%	--	--	2.32E-04	6.38E-04	3.34E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	7	7	100%	--	--	6.51E-04	0.0019	9.34E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	7	5	71%	7.30E-07	1.12E-06	5.78E-05	7.23E-05	4.68E-05
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	7	7	100%	--	--	5.23E-05	3.92E-04	2.47E-04
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	7	7	100%	--	--	1.48E-04	0.0011	7.15E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	7	7	100%	--	--	2.12E-05	1.33E-04	9.02E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	7	7	100%	--	--	7.53E-06	2.85E-05	2.07E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	7	7	100%	--	--	1.30E-05	8.45E-05	5.56E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	7	7	100%	--	--	2.63E-04	0.0024	0.0015
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	7	7	100%	--	--	6.11E-06	1.99E-05	1.27E-05
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	7	1	14%	5.00E-07	3.00E-06	4.38E-06	4.38E-06	1.18E-06
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	7	4	57%	6.10E-07	6.90E-07	5.10E-06	6.49E-06	3.60E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	7	7	100%	--	--	1.37E-05	5.61E-05	2.50E-05

Table F-87

Summary Statistics for Mountain Whitefish Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1016	mg/kg	7	0	0%	0.016	0.019	--	--	0.0088
PCB	Aroclor-1221	mg/kg	7	0	0%	0.016	0.019	--	--	0.0088
PCB	Aroclor-1232	mg/kg	7	0	0%	0.016	0.019	--	--	0.0088
PCB	Aroclor-1248	mg/kg	7	0	0%	0.016	0.019	--	--	0.0088
PCB	Aroclor-1254	mg/kg	7	4	57%	0.016	0.019	0.021	0.030	0.019
PCB	Aroclor-1260	mg/kg	7	2	29%	0.017	0.019	0.0085	0.022	0.011
PEST	2,4'-DDD	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	2,4'-DDE	mg/kg	7	1	14%	0.0017	0.0024	0.0029	0.0029	0.0013
PEST	2,4'-DDT	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	Aldrin	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	Alpha-BHC	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	alpha-Chlordane	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	alpha-Chlordene	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	Beta-BHC	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	cis-Nonachlor	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	DDMU	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	Delta-BHC	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	Dichlorodiphenyldichloroethylene	mg/kg	7	7	100%	--	--	0.0066	0.030	0.014
PEST	Dichlorodiphenyltrichloroethane	mg/kg	7	3	43%	0.0017	0.0019	0.0026	0.0028	0.0017
PEST	Endosulfan sulfate	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	Gamma-BHC (Lindane)	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	gamma-Chlordane	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	gamma-Chlordene	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	Heptachlor	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	Heptachlor epoxide	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	Mirex	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	Oxychlordane	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	Pentachloroanisole	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
PEST	Toxaphene	mg/kg	7	0	0%	0.050	0.073	--	--	0.030
PEST	trans-Nonachlor	mg/kg	7	0	0%	0.0017	0.0024	--	--	9.93E-04
SVOC	1,2,4-Trichlorobenzene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	1,2-Dichlorobenzene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	1,2-Diphenylhydrazine	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	1,3-Dichlorobenzene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	1,4-Dichlorobenzene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	1-methylnaphthalene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	2,4-Dinitrotoluene	mg/kg	7	0	0%	0.024	0.049	--	--	0.019
SVOC	2,6-Dinitrotoluene	mg/kg	7	0	0%	0.047	0.098	--	--	0.037
SVOC	2-Chloronaphthalene	mg/kg	7	0	0%	0.022	0.046	--	--	0.014
SVOC	2-Methylnaphthalene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	4-Bromophenylphenyl ether	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	4-Chlorophenylphenyl ether	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	Acenaphthene	mg/kg	7	0	0%	0.024	0.049	--	--	0.019
SVOC	Acenaphthylene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	Anthracene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	Benzo(a)anthracene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	Benzo(a)pyrene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093

Table F-87**Summary Statistics for Mountain Whitefish Fillet Skin On Collected from Segment 4 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Benzo(b)fluoranthene	mg/kg	7	0	0%	0.012	0.049	--	--	0.014
SVOC	Benzo(ghi)perylene	mg/kg	7	0	0%	0.024	0.049	--	--	0.019
SVOC	Benzo(k)fluoranthene	mg/kg	7	0	0%	0.012	0.049	--	--	0.014
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	7	0	0%	0.024	0.049	--	--	0.019
SVOC	Chrysene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	Dibenz[a,h]anthracene	mg/kg	7	0	0%	0.024	0.049	--	--	0.019
SVOC	Dibenzofuran	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	Fluoranthene	mg/kg	7	0	0%	0.024	0.049	--	--	0.019
SVOC	Fluorene	mg/kg	7	0	0%	0.0051	0.0099	--	--	0.0043
SVOC	Hexachlorobenzene	mg/kg	7	0	0%	0.024	0.049	--	--	0.019
SVOC	Hexachlorobutadiene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	Hexachloroethane	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	7	0	0%	0.024	0.049	--	--	0.019
SVOC	Naphthalene	mg/kg	7	0	0%	0.013	0.025	--	--	0.0098
SVOC	Nitrobenzene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	Phenanthrene	mg/kg	7	0	0%	0.012	0.025	--	--	0.0093
SVOC	Pyrene	mg/kg	7	0	0%	0.024	0.049	--	--	0.019
VOC	Retene	mg/kg	7	0	0%	0.024	0.049	--	--	0.019

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-88

Summary Statistics for Whole Body Mountain Whitefish Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	5	5	100%	--	--	2.60E-07	4.10E-07	3.42E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	5	4	80%	6.00E-08	6.00E-08	9.00E-08	1.00E-07	8.20E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	5	1	20%	1.00E-08	8.00E-08	2.00E-08	2.00E-08	2.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	5	3	60%	6.00E-08	9.00E-08	3.00E-08	4.00E-08	3.50E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	5	5	100%	--	--	1.10E-07	1.50E-07	1.24E-07
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	5	3	60%	6.00E-08	9.00E-08	3.00E-08	4.00E-08	3.70E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	5	5	100%	--	--	1.40E-07	2.70E-07	2.06E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	5	4	80%	1.00E-08	1.00E-08	6.00E-08	1.50E-07	7.90E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	5	4	80%	7.00E-08	7.00E-08	5.00E-08	9.00E-08	6.30E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	5	4	80%	4.00E-08	4.00E-08	6.00E-08	8.00E-08	5.80E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	5	4	80%	3.00E-08	3.00E-08	1.80E-07	2.40E-07	1.69E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	5	5	100%	--	--	1.30E-07	1.70E-07	1.48E-07
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	5	5	100%	--	--	7.00E-08	1.00E-07	8.60E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	5	5	100%	--	--	2.30E-07	1.24E-06	7.60E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	5	3	60%	1.00E-08	5.00E-08	7.00E-08	9.00E-08	5.40E-08
DIOX/	Octachlorodibenzofuran	mg/kg	5	2	40%	1.00E-08	9.00E-08	2.00E-08	4.00E-08	2.90E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	5	5	100%	--	--	2.70E-07	5.70E-07	4.04E-07
METAL	Aluminum	mg/kg	5	4	80%	20	20	7.2	22	12
METAL	Antimony	mg/kg	5	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	5	5	100%	--	--	0.13	0.18	0.15
METAL	Barium	mg/kg	5	5	100%	--	--	0.50	0.93	0.71
METAL	Beryllium	mg/kg	5	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	5	4	80%	0.0040	0.0040	0.0042	0.010	0.0057
METAL	Chromium	mg/kg	5	4	80%	0.10	0.10	0.10	0.11	0.096
METAL	Cobalt	mg/kg	5	5	100%	--	--	0.050	0.10	0.076
METAL	Copper	mg/kg	5	5	100%	--	--	0.95	5.0	1.9
METAL	Lead	mg/kg	5	5	100%	--	--	0.010	0.040	0.016
METAL	Manganese	mg/kg	5	5	100%	--	--	2.1	4.6	3.5
METAL	Mercury	mg/kg	5	5	100%	--	--	0.040	0.11	0.060
METAL	Nickel	mg/kg	5	5	100%	--	--	0.22	1.3	0.47
METAL	Selenium	mg/kg	5	5	100%	--	--	0.58	1.6	0.89
METAL	Silver	mg/kg	5	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	5	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	5	5	100%	--	--	0.13	0.28	0.21
METAL	Zinc	mg/kg	5	5	100%	--	--	24	40	31
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	5	5	100%	--	--	2.74E-04	8.20E-04	4.76E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	5	5	100%	--	--	7.01E-04	0.0025	0.0013
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	5	3	60%	6.80E-07	2.19E-06	7.38E-05	8.49E-05	4.68E-05
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	5	5	100%	--	--	1.31E-04	4.67E-04	3.30E-04
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	5	5	100%	--	--	3.10E-04	0.0016	0.0011
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	5	5	100%	--	--	5.55E-05	1.72E-04	1.27E-04
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	5	5	100%	--	--	9.99E-06	4.94E-05	3.24E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	5	5	100%	--	--	2.22E-05	1.15E-04	8.79E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	5	5	100%	--	--	2.74E-05	0.0033	0.0016
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	5	5	100%	--	--	1.36E-05	2.74E-05	1.83E-05
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	5	1	20%	5.40E-07	1.85E-06	9.90E-07	9.90E-07	7.13E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	5	3	60%	8.10E-07	1.73E-06	7.18E-06	9.86E-06	5.18E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	5	5	100%	--	--	2.17E-05	1.22E-04	5.15E-05

Table F-88

Summary Statistics for Whole Body Mountain Whitefish Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1016	mg/kg	5	0	0%	0.018	0.022	--	--	0.010
PCB	Aroclor-1221	mg/kg	5	0	0%	0.018	0.022	--	--	0.010
PCB	Aroclor-1232	mg/kg	5	0	0%	0.018	0.022	--	--	0.010
PCB	Aroclor-1248	mg/kg	5	0	0%	0.018	0.022	--	--	0.010
PCB	Aroclor-1254	mg/kg	5	3	60%	0.021	0.022	0.036	0.046	0.030
PCB	Aroclor-1260	mg/kg	5	2	40%	0.018	0.020	0.026	0.030	0.017
PEST	2,4'-DDD	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	2,4'-DDE	mg/kg	5	1	20%	0.0018	0.0028	0.0027	0.0027	0.0014
PEST	2,4'-DDT	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	Aldrin	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	Alpha-BHC	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	alpha-Chlordane	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	alpha-Chlordene	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	Beta-BHC	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	cis-Nonachlor	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	DDMU	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	Delta-BHC	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	Dichlorodiphenyldichloroethane	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	Dichlorodiphenyldichloroethylene	mg/kg	5	5	100%	--	--	0.013	0.047	0.026
PEST	Dichlorodiphenyltrichloroethane	mg/kg	5	2	40%	0.0018	0.0020	0.0051	0.0054	0.0027
PEST	Endosulfan sulfate	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	Gamma-BHC (Lindane)	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	gamma-Chlordane	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	gamma-Chlordene	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	Heptachlor	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	Heptachlor epoxide	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	Mirex	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	Oxychlordane	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	Pentachloroanisole	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
PEST	Toxaphene	mg/kg	5	0	0%	0.055	0.083	--	--	0.033
PEST	trans-Nonachlor	mg/kg	5	0	0%	0.0018	0.0028	--	--	0.0011
SVOC	1,2,4-Trichlorobenzene	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	1,2-Dichlorobenzene	mg/kg	5	0	0%	0.0043	0.0049	--	--	0.0023
SVOC	1,2-Diphenylhydrazine	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	1,3-Dichlorobenzene	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	1,4-Dichlorobenzene	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	1-methylnaphthalene	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	2,4-Dinitrotoluene	mg/kg	5	0	0%	0.0084	0.0098	--	--	0.0046
SVOC	2,6-Dinitrotoluene	mg/kg	5	1	20%	0.017	0.019	0.026	0.026	0.013
SVOC	2-Chloronaphthalene	mg/kg	5	0	0%	0.0042	0.0098	--	--	0.0033
SVOC	2-Methylnaphthalene	mg/kg	5	3	60%	0.0047	0.0049	0.0073	0.0089	0.0057
SVOC	4-Bromophenylphenyl ether	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	4-Chlorophenylphenyl ether	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	Acenaphthene	mg/kg	5	0	0%	0.0084	0.0098	--	--	0.0046
SVOC	Acenaphthylene	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	Anthracene	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	Benzo(a)anthracene	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	Benzo(a)pyrene	mg/kg	5	0	0%	0.0047	0.096	--	--	0.028

Table F-88

Summary Statistics for Whole Body Mountain Whitefish Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Benzo(b)fluoranthene	mg/kg	5	0	0%	0.0047	0.19	--	--	0.056
SVOC	Benzo(ghi)perylene	mg/kg	5	0	0%	0.0094	0.19	--	--	0.057
SVOC	Benzo(k)fluoranthene	mg/kg	5	0	0%	0.0047	0.19	--	--	0.056
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	5	0	0%	0.0084	0.0098	--	--	0.0046
SVOC	Chrysene	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	Dibenz[a,h]anthracene	mg/kg	5	0	0%	0.0094	0.19	--	--	0.057
SVOC	Dibenzofuran	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	Fluoranthene	mg/kg	5	0	0%	0.0084	0.0098	--	--	0.0046
SVOC	Fluorene	mg/kg	5	0	0%	0.0092	0.010	--	--	0.0048
SVOC	Hexachlorobenzene	mg/kg	5	0	0%	0.0084	0.0098	--	--	0.0046
SVOC	Hexachlorobutadiene	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	Hexachloroethane	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	5	0	0%	0.0094	0.19	--	--	0.057
SVOC	Naphthalene	mg/kg	5	0	0%	0.010	0.030	--	--	0.011
SVOC	Nitrobenzene	mg/kg	5	0	0%	0.0042	0.0049	--	--	0.0023
SVOC	Phenanthrene	mg/kg	5	0	0%	0.0044	0.0059	--	--	0.0025
SVOC	Pyrene	mg/kg	5	0	0%	0.0084	0.0098	--	--	0.0046
VOC	Retene	mg/kg	5	1	20%	0.0084	0.0098	0.020	0.020	0.0077

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-89
Summary Statistics for Rainbow Trout Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	4	4	100%	--	--	1.90E-07	3.00E-07	2.40E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	4	3	75%	7.00E-08	7.00E-08	7.00E-08	1.50E-07	8.38E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	4	0	0%	1.00E-08	7.00E-08	--	--	1.50E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	4	1	25%	1.00E-08	5.00E-08	2.00E-08	2.00E-08	1.38E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	4	3	75%	1.00E-08	1.00E-08	1.00E-07	1.30E-07	8.38E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	4	1	25%	1.00E-08	5.00E-08	4.00E-08	4.00E-08	1.88E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	4	3	75%	5.00E-08	5.00E-08	1.60E-07	2.10E-07	1.41E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	4	2	50%	1.00E-08	5.00E-08	6.00E-08	6.00E-08	3.75E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	4	4	100%	--	--	4.00E-08	7.00E-08	5.50E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	4	3	75%	1.00E-08	1.00E-08	4.00E-08	6.00E-08	3.63E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	4	3	75%	2.00E-08	2.00E-08	1.60E-07	1.90E-07	1.30E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	4	4	100%	--	--	1.40E-07	1.90E-07	1.53E-07
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	4	3	75%	1.00E-08	1.00E-08	6.00E-08	7.00E-08	4.88E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	4	4	100%	--	--	2.40E-07	2.80E-07	2.63E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	4	1	25%	1.00E-08	6.00E-08	6.00E-08	6.00E-08	2.50E-08
DIOX/	Octachlorodibenzofuran	mg/kg	4	3	75%	5.00E-08	5.00E-08	3.00E-08	6.00E-08	3.88E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	4	3	75%	9.00E-08	9.00E-08	2.30E-07	6.90E-07	3.36E-07
METAL	Aluminum	mg/kg	4	3	75%	5.0	5.0	1.0	1.4	1.5
METAL	Antimony	mg/kg	4	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	4	0	0%	0.050	0.050	--	--	0.025
METAL	Barium	mg/kg	4	4	100%	--	--	0.29	0.72	0.56
METAL	Beryllium	mg/kg	4	2	50%	0.0040	0.0060	0.0077	0.0090	0.0054
METAL	Cadmium	mg/kg	4	1	25%	0.0040	0.0040	0.0050	0.0050	0.0028
METAL	Chromium	mg/kg	4	2	50%	0.10	0.10	0.12	0.12	0.085
METAL	Cobalt	mg/kg	4	4	100%	--	--	0.030	0.030	0.030
METAL	Copper	mg/kg	4	4	100%	--	--	0.45	0.60	0.52
METAL	Lead	mg/kg	4	0	0%	0.010	0.010	--	--	0.0050
METAL	Manganese	mg/kg	4	4	100%	--	--	0.37	0.44	0.41
METAL	Mercury	mg/kg	4	4	100%	--	--	0.040	0.14	0.078
METAL	Nickel	mg/kg	4	4	100%	--	--	0.040	0.060	0.050
METAL	Selenium	mg/kg	4	4	100%	--	--	0.18	0.24	0.21
METAL	Silver	mg/kg	4	0	0%	0.10	0.20	--	--	0.088
METAL	Thallium	mg/kg	4	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	4	3	75%	0.020	0.020	0.020	0.020	0.018
METAL	Zinc	mg/kg	4	4	100%	--	--	13	19	15
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	4	4	100%	--	--	1.14E-05	2.07E-04	1.34E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	4	4	100%	--	--	4.28E-04	5.91E-04	4.87E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	4	4	100%	--	--	2.67E-05	3.89E-05	3.22E-05
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	4	4	100%	--	--	1.55E-04	2.20E-04	1.83E-04
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	4	4	100%	--	--	4.49E-04	0.042	0.011
PCB	2,3',4,4',5'-Hexachlorobiphenyl (BZ 167)	mg/kg	4	4	100%	--	--	2.22E-05	8.88E-05	6.17E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	4	4	100%	--	--	1.63E-05	1.98E-05	1.79E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	4	4	100%	--	--	3.49E-05	4.97E-05	4.06E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	4	4	100%	--	--	0.0010	0.0014	0.0011
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	4	2	50%	9.82E-06	4.06E-05	6.98E-06	7.41E-06	9.90E-06
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	4	0	0%	6.50E-07	5.44E-04	--	--	6.83E-05
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	4	4	100%	--	--	3.24E-06	4.77E-06	4.17E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	4	4	100%	--	--	1.21E-05	1.58E-05	1.36E-05
PCB	Aroclor-1016	mg/kg	4	0	0%	0.018	0.019	--	--	0.0093
PCB	Aroclor-1221	mg/kg	4	0	0%	0.018	0.019	--	--	0.0093

Table F-89
Summary Statistics for Rainbow Trout Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	4	0	0%	0.018	0.019	--	--	0.0093
PCB	Aroclor-1248	mg/kg	4	0	0%	0.018	0.019	--	--	0.0093
PCB	Aroclor-1254	mg/kg	4	4	100%	--	--	0.0099	0.020	0.015
PCB	Aroclor-1260	mg/kg	4	0	0%	0.018	0.019	--	--	0.0093
PEST	2,4'-DDD	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	2,4'-DDE	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	2,4'-DDT	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Aldrin	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Alpha-BHC	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	alpha-Chlordane	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	alpha-Chlordene	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Beta-BHC	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	cis-Nonachlor	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	DDMU	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Delta-BHC	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Dichlorodiphenyldichloroethylene	mg/kg	4	4	100%	--	--	0.0041	0.0065	0.0051
PEST	Dichlorodiphenyltrichloroethane	mg/kg	4	3	75%	0.0019	0.0019	0.0027	0.0037	0.0026
PEST	Endosulfan sulfate	mg/kg	1	0	0%	0.0019	0.0019	--	--	9.50E-04
PEST	Gamma-BHC (Lindane)	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	gamma-Chlordane	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	gamma-Chlordene	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Heptachlor	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Heptachlor epoxide	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Mirex	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Oxychlordane	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Pentachloroanisole	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
PEST	Toxaphene	mg/kg	4	0	0%	0.055	0.057	--	--	0.028
PEST	trans-Nonachlor	mg/kg	4	0	0%	0.0018	0.0019	--	--	9.25E-04
SVOC	1,2,4-Trichlorobenzene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	1,2-Dichlorobenzene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	1,2-Diphenylhydrazine	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	1,3-Dichlorobenzene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	1,4-Dichlorobenzene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	1-methylnaphthalene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	2,4-Dinitrotoluene	mg/kg	4	0	0%	0.0096	0.010	--	--	0.0049
SVOC	2,6-Dinitrotoluene	mg/kg	4	0	0%	0.019	0.020	--	--	0.0096
SVOC	2-Chloronaphthalene	mg/kg	4	0	0%	0.0096	0.010	--	--	0.0049
SVOC	2-Methylnaphthalene	mg/kg	4	0	0%	0.0048	0.010	--	--	0.0031
SVOC	4-Bromophenylphenyl ether	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	4-Chlorophenylphenyl ether	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	Acenaphthene	mg/kg	4	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Acenaphthylene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	Anthracene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	Benzo(a)anthracene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	Benzo(a)pyrene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	Benzo(b)fluoranthene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	Benzo(ghi)perylene	mg/kg	4	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Benzo(k)fluoranthene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	4	0	0%	0.0096	0.010	--	--	0.0049

Table F-89
Summary Statistics for Rainbow Trout Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	Dibenz[a,h]anthracene	mg/kg	4	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Dibenzofuran	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	Fluoranthene	mg/kg	4	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Fluorene	mg/kg	4	0	0%	0.0049	0.0099	--	--	0.0037
SVOC	Hexachlorobenzene	mg/kg	4	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Hexachlorobutadiene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	Hexachloroethane	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	4	0	0%	0.0096	0.010	--	--	0.0049
SVOC	Naphthalene	mg/kg	4	0	0%	0.017	0.024	--	--	0.010
SVOC	Nitrobenzene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	Phenanthrene	mg/kg	4	0	0%	0.0048	0.0051	--	--	0.0024
SVOC	Pyrene	mg/kg	4	0	0%	0.0096	0.010	--	--	0.0049
VOC	Retene	mg/kg	4	0	0%	0.0096	0.010	--	--	0.0049

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-90
Summary Statistics for Whole Body Rainbow Trout Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	6	5	83%	2.00E-08	2.00E-08	1.60E-07	3.20E-07	1.98E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	6	3	50%	2.00E-08	9.00E-08	7.00E-08	8.00E-08	4.83E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	6	2	33%	1.00E-08	9.00E-08	2.00E-08	3.00E-08	2.08E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	6	1	17%	1.00E-08	1.20E-07	4.00E-08	4.00E-08	2.17E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	6	3	50%	2.00E-08	1.00E-07	1.10E-07	1.20E-07	6.92E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	6	3	50%	1.00E-08	1.20E-07	3.00E-08	5.00E-08	3.33E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	6	4	67%	2.00E-08	1.00E-07	7.00E-08	2.60E-07	1.10E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	6	3	50%	1.00E-08	1.20E-07	6.00E-08	9.00E-08	5.17E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	6	4	67%	3.00E-08	1.00E-07	4.00E-08	1.00E-07	5.42E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	6	4	67%	3.00E-08	3.00E-08	4.00E-08	9.00E-08	5.00E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	6	3	50%	4.00E-08	5.00E-08	1.40E-07	2.20E-07	1.07E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	6	3	50%	1.00E-08	1.20E-07	1.30E-07	1.60E-07	8.33E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	6	3	50%	3.00E-08	5.00E-08	4.00E-08	1.20E-07	5.25E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	6	6	100%	--	--	4.00E-08	4.80E-07	2.68E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	6	4	67%	1.00E-08	2.00E-08	6.00E-08	1.00E-07	5.25E-08
DIOX/	Octachlorodibenzofuran	mg/kg	6	3	50%	6.00E-08	1.00E-07	2.00E-08	5.00E-08	3.50E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	6	6	100%	--	--	2.00E-07	2.97E-06	8.60E-07
METAL	Aluminum	mg/kg	6	4	67%	5.0	20	7.4	150	32
METAL	Antimony	mg/kg	6	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	6	3	50%	0.050	0.050	0.050	0.56	0.18
METAL	Barium	mg/kg	6	6	100%	--	--	0.22	4.0	1.1
METAL	Beryllium	mg/kg	6	1	17%	0.0040	0.0040	0.010	0.010	0.0033
METAL	Cadmium	mg/kg	6	4	67%	0.0040	0.0040	0.0046	0.050	0.013
METAL	Chromium	mg/kg	6	4	67%	0.10	0.10	0.10	0.16	0.097
METAL	Cobalt	mg/kg	6	6	100%	--	--	0.050	0.20	0.090
METAL	Copper	mg/kg	6	6	100%	--	--	1.1	5.0	2.0
METAL	Lead	mg/kg	6	5	83%	0.010	0.010	0.010	0.080	0.021
METAL	Manganese	mg/kg	6	6	100%	--	--	1.5	9.7	3.3
METAL	Mercury	mg/kg	6	4	67%	0.040	0.040	0.030	0.38	0.10
METAL	Nickel	mg/kg	6	6	100%	--	--	0.060	1.1	0.28
METAL	Selenium	mg/kg	6	6	100%	--	--	0.24	0.79	0.43
METAL	Silver	mg/kg	6	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	6	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	6	6	100%	--	--	0.040	0.77	0.19
METAL	Zinc	mg/kg	6	6	100%	--	--	23	39	31
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	6	6	100%	--	--	3.45E-05	2.48E-04	1.67E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	6	6	100%	--	--	1.13E-04	6.94E-04	4.80E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	6	5	83%	5.00E-07	5.00E-07	4.67E-06	4.71E-05	2.65E-05
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	6	6	100%	--	--	1.31E-05	2.59E-04	1.43E-04
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	6	6	100%	--	--	4.19E-05	7.89E-04	4.40E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	6	6	100%	--	--	7.64E-06	1.05E-04	6.18E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	6	6	100%	--	--	2.16E-06	2.85E-05	1.39E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	6	6	100%	--	--	3.62E-06	6.05E-05	3.34E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	6	6	100%	--	--	7.76E-05	0.0017	9.40E-04
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	6	5	83%	5.00E-07	5.00E-07	2.51E-06	1.11E-05	7.19E-06
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	6	0	0%	5.00E-07	1.03E-06	--	--	4.45E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	6	5	83%	5.00E-07	5.00E-07	1.35E-06	6.15E-06	3.62E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	6	6	100%	--	--	2.17E-06	2.05E-05	1.24E-05
PCB	Aroclor-1016	mg/kg	6	0	0%	0.018	0.020	--	--	0.0094
PCB	Aroclor-1221	mg/kg	6	0	0%	0.018	0.020	--	--	0.0094

Table F-90
Summary Statistics for Whole Body Rainbow Trout Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	6	0	0%	0.018	0.020	--	--	0.0094
PCB	Aroclor-1248	mg/kg	6	0	0%	0.018	0.020	--	--	0.0094
PCB	Aroclor-1254	mg/kg	6	4	67%	0.018	0.019	0.0069	0.030	0.015
PCB	Aroclor-1260	mg/kg	6	0	0%	0.018	0.020	--	--	0.0094
PEST	2,4'-DDD	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	2,4'-DDE	mg/kg	6	2	33%	0.0019	0.0024	0.0016	0.0017	0.0012
PEST	2,4'-DDT	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	Aldrin	mg/kg	6	0	0%	0.0018	0.0020	--	--	9.42E-04
PEST	Alpha-BHC	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	alpha-Chlordane	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	alpha-Chlordene	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	Beta-BHC	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	cis-Nonachlor	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	DDMU	mg/kg	5	0	0%	0.0018	0.0020	--	--	9.40E-04
PEST	Delta-BHC	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	6	1	17%	0.0018	0.0024	0.0018	0.0018	0.0011
PEST	Dichlorodiphenyldichloroethylene	mg/kg	6	6	100%	--	--	0.0029	0.017	0.011
PEST	Dichlorodiphenyltrichloroethane	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	Endosulfan sulfate	mg/kg	4	0	0%	0.0018	0.0024	--	--	9.88E-04
PEST	Gamma-BHC (Lindane)	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	gamma-Chlordane	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	gamma-Chlordene	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	Heptachlor	mg/kg	6	0	0%	0.0018	0.0020	--	--	9.42E-04
PEST	Heptachlor epoxide	mg/kg	4	0	0%	0.0018	0.0024	--	--	9.88E-04
PEST	Mirex	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	Oxychlordane	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	Pentachloroanisole	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
PEST	Toxaphene	mg/kg	6	0	0%	0.053	0.071	--	--	0.030
PEST	trans-Nonachlor	mg/kg	6	0	0%	0.0018	0.0024	--	--	9.83E-04
SVOC	1,2,4-Trichlorobenzene	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	1,2-Dichlorobenzene	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	1,2-Diphenylhydrazine	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	1,3-Dichlorobenzene	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	1,4-Dichlorobenzene	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	1-methylnaphthalene	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	2,4-Dinitrotoluene	mg/kg	6	0	0%	0.0098	0.023	--	--	0.0074
SVOC	2,6-Dinitrotoluene	mg/kg	6	0	0%	0.020	0.046	--	--	0.015
SVOC	2-Chloronaphthalene	mg/kg	6	0	0%	0.0049	0.023	--	--	0.0070
SVOC	2-Methylnaphthalene	mg/kg	6	1	17%	0.0073	0.012	0.0059	0.0059	0.0048
SVOC	4-Bromophenylphenyl ether	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	4-Chlorophenylphenyl ether	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	Acenaphthene	mg/kg	6	0	0%	0.0098	0.023	--	--	0.0074
SVOC	Acenaphthylene	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	Anthracene	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	Benzo(a)anthracene	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	Benzo(a)pyrene	mg/kg	6	0	0%	0.0080	0.098	--	--	0.015
SVOC	Benzo(b)fluoranthene	mg/kg	6	0	0%	0.0080	0.20	--	--	0.023
SVOC	Benzo(ghi)perylene	mg/kg	6	0	0%	0.016	0.20	--	--	0.030
SVOC	Benzo(k)fluoranthene	mg/kg	6	0	0%	0.0080	0.20	--	--	0.023
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	6	0	0%	0.0098	0.023	--	--	0.0074

Table F-90
Summary Statistics for Whole Body Rainbow Trout Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	Dibenz[a,h]anthracene	mg/kg	6	0	0%	0.016	0.20	--	--	0.030
SVOC	Dibenzofuran	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	Fluoranthene	mg/kg	6	0	0%	0.0098	0.023	--	--	0.0074
SVOC	Fluorene	mg/kg	6	0	0%	0.0050	0.048	--	--	0.0084
SVOC	Hexachlorobenzene	mg/kg	6	0	0%	0.0098	0.023	--	--	0.0074
SVOC	Hexachlorobutadiene	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	Hexachloroethane	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	6	0	0%	0.016	0.20	--	--	0.030
SVOC	Naphthalene	mg/kg	6	0	0%	0.012	0.033	--	--	0.012
SVOC	Nitrobenzene	mg/kg	6	0	0%	0.0049	0.012	--	--	0.0037
SVOC	Phenanthrene	mg/kg	6	0	0%	0.0050	0.012	--	--	0.0038
SVOC	Pyrene	mg/kg	6	0	0%	0.0098	0.023	--	--	0.0074
VOC	Retene	mg/kg	6	1	17%	0.010	0.023	0.013	0.013	0.0088

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-91

Summary Statistics for Steelhead Eggs and Ovum Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	1	1	100%	--	--	7.00E-08	7.00E-08	7.00E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	1	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	1	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	1	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	1	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	1	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	1	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	1	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	1	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	1	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	1	0	0%	3.00E-08	3.00E-08	--	--	1.50E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	1	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	1	0	0%	2.00E-08	2.00E-08	--	--	1.00E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	1	1	100%	--	--	2.20E-07	2.20E-07	2.20E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	1	0	0%	3.00E-08	3.00E-08	--	--	1.50E-08
DIOX/	Octachlorodibenzofuran	mg/kg	1	0	0%	3.00E-08	3.00E-08	--	--	1.50E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	1	1	100%	--	--	3.80E-07	3.80E-07	3.80E-07
METAL	Aluminum	mg/kg	1	1	100%	--	--	4.5	4.5	4.5
METAL	Antimony	mg/kg	1	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	1	0	0%	0.050	0.050	--	--	0.025
METAL	Barium	mg/kg	1	0	0%	0.20	0.20	--	--	0.10
METAL	Beryllium	mg/kg	1	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	1	1	100%	--	--	0.030	0.030	0.030
METAL	Chromium	mg/kg	1	1	100%	--	--	0.22	0.22	0.22
METAL	Cobalt	mg/kg	1	1	100%	--	--	0.17	0.17	0.17
METAL	Copper	mg/kg	1	1	100%	--	--	18	18	18
METAL	Lead	mg/kg	1	1	100%	--	--	0.040	0.040	0.040
METAL	Manganese	mg/kg	1	1	100%	--	--	2.2	2.2	2.2
METAL	Mercury	mg/kg	1	0	0%	0.040	0.040	--	--	0.020
METAL	Nickel	mg/kg	1	1	100%	--	--	0.51	0.51	0.51
METAL	Selenium	mg/kg	1	1	100%	--	--	4.5	4.5	4.5
METAL	Silver	mg/kg	1	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	1	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	1	1	100%	--	--	0.11	0.11	0.11
METAL	Zinc	mg/kg	1	1	100%	--	--	76	76	76
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	1	1	100%	--	--	5.45E-05	5.45E-05	5.45E-05
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	1	1	100%	--	--	1.60E-04	1.60E-04	1.60E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	1	1	100%	--	--	7.66E-06	7.66E-06	7.66E-06
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	1	1	100%	--	--	2.80E-05	2.80E-05	2.80E-05
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	1	1	100%	--	--	1.53E-04	1.53E-04	1.53E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	1	1	100%	--	--	1.81E-05	1.81E-05	1.81E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	1	1	100%	--	--	5.75E-06	5.75E-06	5.75E-06
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	1	1	100%	--	--	1.46E-05	1.46E-05	1.46E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	1	1	100%	--	--	3.51E-04	3.51E-04	3.51E-04
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	1	0	0%	1.00E-06	1.00E-06	--	--	5.00E-07
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	1	0	0%	1.00E-06	1.00E-06	--	--	5.00E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	1	1	100%	--	--	2.12E-06	2.12E-06	2.12E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	1	1	100%	--	--	7.98E-06	7.98E-06	7.98E-06

Table F-91

Summary Statistics for Steelhead Eggs and Ovum Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1016	mg/kg	1	0	0%	0.020	0.020	--	--	0.010
PCB	Aroclor-1221	mg/kg	1	0	0%	0.020	0.020	--	--	0.010
PCB	Aroclor-1232	mg/kg	1	0	0%	0.020	0.020	--	--	0.010
PCB	Aroclor-1248	mg/kg	1	0	0%	0.020	0.020	--	--	0.010
PCB	Aroclor-1254	mg/kg	1	1	100%	--	--	0.015	0.015	0.015
PCB	Aroclor-1260	mg/kg	1	0	0%	0.020	0.020	--	--	0.010
PEST	2,4'-DDD	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	2,4'-DDE	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	2,4'-DDT	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Aldrin	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Alpha-BHC	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	alpha-Chlordane	mg/kg	1	1	100%	--	--	0.0013	0.0013	0.0013
PEST	alpha-Chlordene	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Beta-BHC	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	cis-Nonachlor	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	DDMU	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Delta-BHC	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Dichlorodiphenyldichloroethane	mg/kg	1	1	100%	--	--	0.0033	0.0033	0.0033
PEST	Dichlorodiphenyldichloroethylene	mg/kg	1	1	100%	--	--	0.0065	0.0065	0.0065
PEST	Dichlorodiphenyltrichloroethane	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Endosulfan sulfate	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Gamma-BHC (Lindane)	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	gamma-Chlordane	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	gamma-Chlordene	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Heptachlor	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Heptachlor epoxide	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Mirex	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Oxychlordane	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Pentachloroanisole	mg/kg	1	0	0%	0.0020	0.0020	--	--	0.0010
PEST	Toxaphene	mg/kg	1	0	0%	0.060	0.060	--	--	0.030
PEST	trans-Nonachlor	mg/kg	1	1	100%	--	--	0.0010	0.0010	0.0010
SVOC	1,2,4-Trichlorobenzene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	1,2-Dichlorobenzene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	1,2-Diphenylhydrazine	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	1,3-Dichlorobenzene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	1,4-Dichlorobenzene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	1-methylnaphthalene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	2,4-Dinitrotoluene	mg/kg	1	0	0%	0.018	0.018	--	--	0.0090
SVOC	2,6-Dinitrotoluene	mg/kg	1	0	0%	0.037	0.037	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	1	0	0%	0.018	0.018	--	--	0.0090
SVOC	2-Methylnaphthalene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	4-Bromophenylphenyl ether	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	4-Chlorophenylphenyl ether	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	Acenaphthene	mg/kg	1	0	0%	0.018	0.018	--	--	0.0090
SVOC	Acenaphthylene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	Anthracene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	Benzo(a)anthracene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	Benzo(a)pyrene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046

Table F-91**Summary Statistics for Steelhead Eggs and Ovum Collected from Segment 4 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Benzo(b)fluoranthene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	Benzo(ghi)perylene	mg/kg	1	0	0%	0.018	0.018	--	--	0.0090
SVOC	Benzo(k)fluoranthene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	1	0	0%	0.018	0.018	--	--	0.0090
SVOC	Chrysene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	Dibenz[a,h]anthracene	mg/kg	1	0	0%	0.018	0.018	--	--	0.0090
SVOC	Dibenzofuran	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	Fluoranthene	mg/kg	1	0	0%	0.018	0.018	--	--	0.0090
SVOC	Fluorene	mg/kg	1	0	0%	0.0053	0.0053	--	--	0.0027
SVOC	Hexachlorobenzene	mg/kg	1	0	0%	0.018	0.018	--	--	0.0090
SVOC	Hexachlorobutadiene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	Hexachloroethane	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	1	0	0%	0.018	0.018	--	--	0.0090
SVOC	Naphthalene	mg/kg	1	0	0%	0.022	0.022	--	--	0.011
SVOC	Nitrobenzene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	Phenanthrene	mg/kg	1	0	0%	0.0092	0.0092	--	--	0.0046
SVOC	Pyrene	mg/kg	1	0	0%	0.018	0.018	--	--	0.0090
VOC	Retene	mg/kg	1	0	0%	0.018	0.018	--	--	0.0090

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-92

Summary Statistics for Steelhead Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	12	5	42%	1.00E-08	4.00E-08	6.00E-08	1.40E-07	4.54E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	12	2	17%	1.00E-08	4.00E-08	4.00E-08	5.00E-08	1.88E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	12	0	0%	1.00E-08	4.00E-08	--	--	1.38E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	12	3	25%	1.00E-08	5.00E-08	3.00E-08	3.00E-08	1.63E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	12	2	17%	1.00E-08	3.00E-08	2.00E-08	2.00E-08	1.29E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	12	1	8%	1.00E-08	4.00E-08	3.00E-08	3.00E-08	1.21E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	12	2	17%	1.00E-08	3.00E-08	4.00E-08	5.00E-08	1.71E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	12	1	8%	1.00E-08	5.00E-08	1.00E-08	1.00E-08	1.08E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	12	2	17%	1.00E-08	3.00E-08	2.00E-08	4.00E-08	1.42E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	12	4	33%	1.00E-08	4.00E-08	3.00E-08	1.20E-07	3.46E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	12	8	67%	1.00E-08	4.00E-08	5.00E-08	1.20E-07	6.33E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	12	2	17%	1.00E-08	5.00E-08	3.00E-08	5.00E-08	1.58E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	12	8	67%	1.00E-08	4.00E-08	7.00E-08	3.20E-07	1.65E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	12	12	100%	--	--	1.80E-07	4.50E-07	3.42E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	12	1	8%	1.00E-08	5.00E-08	4.00E-08	4.00E-08	1.46E-08
DIOX/	Octachlorodibenzofuran	mg/kg	12	1	8%	3.00E-08	8.00E-08	6.00E-08	6.00E-08	2.75E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	12	8	67%	2.00E-08	6.00E-08	1.10E-07	7.80E-07	1.90E-07
METAL	Aluminum	mg/kg	12	4	33%	1.0	1.0	1.1	1.6	0.78
METAL	Antimony	mg/kg	12	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	12	12	100%	--	--	0.47	1.5	0.69
METAL	Barium	mg/kg	12	1	8%	0.20	0.20	0.32	0.32	0.12
METAL	Beryllium	mg/kg	12	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	12	11	92%	0.0040	0.0040	0.0046	0.0087	0.0057
METAL	Chromium	mg/kg	12	4	33%	0.10	0.10	0.15	0.21	0.093
METAL	Cobalt	mg/kg	12	12	100%	--	--	0.0059	0.19	0.066
METAL	Copper	mg/kg	12	12	100%	--	--	0.54	0.82	0.65
METAL	Lead	mg/kg	12	3	25%	0.010	0.010	0.010	0.020	0.0071
METAL	Manganese	mg/kg	12	12	100%	--	--	0.10	0.20	0.13
METAL	Mercury	mg/kg	12	12	100%	--	--	0.070	0.18	0.11
METAL	Nickel	mg/kg	12	9	75%	0.030	0.030	0.030	0.070	0.037
METAL	Selenium	mg/kg	12	11	92%	0.50	0.50	0.31	0.40	0.35
METAL	Silver	mg/kg	12	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	12	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	12	6	50%	0.010	0.020	0.010	0.020	0.010
METAL	Zinc	mg/kg	12	12	100%	--	--	6.3	9.3	7.5
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	12	12	100%	--	--	6.04E-05	1.28E-04	9.00E-05
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	12	12	100%	--	--	1.98E-04	3.84E-04	2.80E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	12	12	100%	--	--	8.40E-06	2.54E-05	1.35E-05
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	12	12	100%	--	--	3.35E-05	8.05E-05	4.79E-05
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	12	12	100%	--	--	1.52E-04	3.02E-04	2.10E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	12	12	100%	--	--	2.17E-05	4.55E-05	3.07E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	12	12	100%	--	--	6.50E-06	1.21E-05	8.53E-06
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	12	12	100%	--	--	1.56E-05	3.02E-05	2.13E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	12	12	100%	--	--	3.67E-04	7.24E-04	5.11E-04
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	12	12	100%	--	--	2.26E-06	6.20E-06	3.93E-06
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	12	0	0%	1.00E-06	3.94E-06	--	--	7.50E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	12	10	83%	5.00E-07	5.00E-07	1.84E-06	5.58E-06	3.67E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	12	12	100%	--	--	8.15E-06	1.83E-05	1.27E-05
PCB	Aroclor-1016	mg/kg	12	0	0%	0.016	0.020	--	--	0.0096
PCB	Aroclor-1221	mg/kg	12	0	0%	0.016	0.020	--	--	0.0096

Table F-92
Summary Statistics for Steelhead Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	12	0	0%	0.016	0.020	--	--	0.0096
PCB	Aroclor-1248	mg/kg	12	0	0%	0.016	0.020	--	--	0.0096
PCB	Aroclor-1254	mg/kg	12	12	100%	--	--	0.0084	0.019	0.014
PCB	Aroclor-1260	mg/kg	12	3	25%	0.019	0.020	0.0058	0.0085	0.0091
PEST	2,4'-DDD	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	2,4'-DDE	mg/kg	12	3	25%	0.0016	0.0020	7.80E-04	0.0012	9.59E-04
PEST	2,4'-DDT	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	Aldrin	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	Alpha-BHC	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	alpha-Chlordane	mg/kg	12	5	42%	0.0016	0.0020	0.0012	0.0018	0.0011
PEST	alpha-Chlordene	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	Beta-BHC	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	cis-Nonachlor	mg/kg	12	2	17%	0.0019	0.0020	0.0015	0.0017	0.0011
PEST	DDMU	mg/kg	12	2	17%	0.0019	0.0020	0.0013	0.0019	0.0011
PEST	Delta-BHC	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	12	12	100%	--	--	0.0017	0.0090	0.0035
PEST	Dichlorodiphenyldichloroethylene	mg/kg	12	12	100%	--	--	0.0051	0.011	0.0071
PEST	Dichlorodiphenyltrichloroethane	mg/kg	12	9	75%	0.0020	0.0020	0.0012	0.0045	0.0020
PEST	Endosulfan sulfate	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	Gamma-BHC (Lindane)	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	gamma-Chlordane	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	gamma-Chlordene	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	Heptachlor	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	Heptachlor epoxide	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	Mirex	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	Oxychlordane	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	Pentachloroanisole	mg/kg	12	0	0%	0.0016	0.0020	--	--	9.63E-04
PEST	Toxaphene	mg/kg	12	0	0%	0.048	0.060	--	--	0.029
PEST	trans-Nonachlor	mg/kg	12	7	58%	0.0019	0.0020	0.0012	0.0024	0.0013
SVOC	1,2,4-Trichlorobenzene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	1,2-Dichlorobenzene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	1,2-Diphenylhydrazine	mg/kg	11	0	0%	0.0092	0.10	--	--	0.0089
SVOC	1,3-Dichlorobenzene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	1,4-Dichlorobenzene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	1-methylnaphthalene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	2,4-Dinitrotoluene	mg/kg	10	0	0%	0.018	0.020	--	--	0.0096
SVOC	2,6-Dinitrotoluene	mg/kg	12	0	0%	0.034	0.040	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	12	0	0%	0.017	0.020	--	--	0.0095
SVOC	2-Methylnaphthalene	mg/kg	12	0	0%	0.0092	0.011	--	--	0.0049
SVOC	4-Bromophenylphenyl ether	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	4-Chlorophenylphenyl ether	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	Acenaphthene	mg/kg	12	0	0%	0.017	0.020	--	--	0.0095
SVOC	Acenaphthylene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	Anthracene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	Benzo(a)anthracene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	Benzo(a)pyrene	mg/kg	11	0	0%	0.0092	0.0099	--	--	0.0048
SVOC	Benzo(b)fluoranthene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	Benzo(ghi)perylene	mg/kg	12	0	0%	0.017	0.020	--	--	0.0095
SVOC	Benzo(k)fluoranthene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	12	0	0%	0.017	0.020	--	--	0.0095

Table F-92**Summary Statistics for Steelhead Fillet Skin On Collected from Segment 4 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	Dibenz[a,h]anthracene	mg/kg	12	0	0%	0.017	0.020	--	--	0.0095
SVOC	Dibenzofuran	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	Fluoranthene	mg/kg	12	0	0%	0.017	0.020	--	--	0.0095
SVOC	Fluorene	mg/kg	12	0	0%	0.0078	0.027	--	--	0.0084
SVOC	Hexachlorobenzene	mg/kg	12	0	0%	0.0092	0.020	--	--	0.0091
SVOC	Hexachlorobutadiene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	Hexachloroethane	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	12	0	0%	0.017	0.020	--	--	0.0095
SVOC	Naphthalene	mg/kg	12	0	0%	0.0095	0.030	--	--	0.0076
SVOC	Nitrobenzene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	Phenanthrene	mg/kg	12	0	0%	0.0084	0.0099	--	--	0.0048
SVOC	Pyrene	mg/kg	12	0	0%	0.017	0.020	--	--	0.0095
VOC	Retene	mg/kg	12	0	0%	0.017	0.020	--	--	0.0095

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-93

Summary Statistics for Whole Body Steelhead Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	12	5	42%	2.00E-08	9.00E-08	6.00E-08	2.00E-07	5.88E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	12	0	0%	1.00E-08	7.00E-08	--	--	1.71E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	12	0	0%	1.00E-08	7.00E-08	--	--	1.71E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	12	2	17%	1.00E-08	4.00E-08	4.00E-08	4.00E-08	1.54E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	12	1	8%	1.00E-08	4.00E-08	3.00E-08	3.00E-08	1.13E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	12	3	25%	1.00E-08	4.00E-08	4.00E-08	7.00E-08	2.17E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	12	4	33%	1.00E-08	4.00E-08	3.00E-08	7.00E-08	2.58E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	12	0	0%	1.00E-08	4.00E-08	--	--	1.08E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	12	3	25%	1.00E-08	4.00E-08	3.00E-08	4.00E-08	1.71E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	12	4	33%	1.00E-08	5.00E-08	6.00E-08	1.90E-07	5.04E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	12	3	25%	1.00E-08	5.00E-08	9.00E-08	1.90E-07	4.33E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	12	3	25%	1.00E-08	4.00E-08	3.00E-08	8.00E-08	2.33E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	12	8	67%	1.00E-08	5.00E-08	1.30E-07	3.70E-07	1.65E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	12	12	100%	--	--	2.50E-07	6.00E-07	3.86E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	12	3	25%	1.00E-08	5.00E-08	2.00E-08	6.00E-08	1.83E-08
DIOX/	Octachlorodibenzofuran	mg/kg	12	1	8%	3.00E-08	2.50E-07	4.30E-07	4.30E-07	7.75E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	12	6	50%	2.00E-08	7.00E-08	8.00E-08	2.56E-06	5.93E-07
METAL	Aluminum	mg/kg	12	2	17%	1.0	1.0	0.67	0.77	0.54
METAL	Antimony	mg/kg	12	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	12	12	100%	--	--	0.43	1.2	0.69
METAL	Barium	mg/kg	12	1	8%	0.20	0.20	0.22	0.22	0.11
METAL	Beryllium	mg/kg	12	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	12	12	100%	--	--	0.020	0.070	0.048
METAL	Chromium	mg/kg	12	8	67%	0.10	0.10	0.11	0.24	0.12
METAL	Cobalt	mg/kg	12	12	100%	--	--	0.050	0.19	0.12
METAL	Copper	mg/kg	12	12	100%	--	--	2.0	6.8	3.5
METAL	Lead	mg/kg	12	6	50%	0.010	0.010	0.010	0.35	0.048
METAL	Manganese	mg/kg	12	12	100%	--	--	0.24	0.64	0.41
METAL	Mercury	mg/kg	12	10	83%	0.050	0.10	0.050	0.12	0.080
METAL	Nickel	mg/kg	12	11	92%	0.030	0.030	0.050	17	1.5
METAL	Selenium	mg/kg	12	12	100%	--	--	0.48	0.94	0.73
METAL	Silver	mg/kg	12	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	12	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	12	12	100%	--	--	0.010	0.14	0.058
METAL	Zinc	mg/kg	12	12	100%	--	--	18	28	22
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	12	12	100%	--	--	7.61E-05	1.42E-04	1.07E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	12	12	100%	--	--	2.36E-04	4.05E-04	3.23E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	12	12	100%	--	--	1.03E-05	2.47E-05	1.65E-05
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	12	12	100%	--	--	3.32E-05	8.09E-05	5.70E-05
PCB	2,3,3',4,4',5-Pentachlorobiphenyl	mg/kg	12	12	100%	--	--	1.67E-04	3.30E-04	2.52E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	12	12	100%	--	--	2.23E-05	4.77E-05	3.59E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	12	12	100%	--	--	7.07E-06	1.61E-05	1.14E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	12	12	100%	--	--	1.82E-05	3.27E-05	2.55E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	12	12	100%	--	--	4.09E-04	7.88E-04	6.14E-04

Table F-93

Summary Statistics for Whole Body Steelhead Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	12	10	83%	1.00E-06	1.00E-06	2.47E-06	8.15E-06	3.73E-06
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	12	0	0%	1.00E-06	3.24E-06	--	--	7.64E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	12	9	75%	6.70E-07	9.50E-07	2.54E-06	9.03E-06	4.07E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	12	12	100%	--	--	9.55E-06	2.22E-05	1.50E-05
PCB	Aroclor-1016	mg/kg	12	0	0%	0.018	0.020	--	--	0.0095
PCB	Aroclor-1221	mg/kg	12	0	0%	0.018	0.020	--	--	0.0095
PCB	Aroclor-1232	mg/kg	12	0	0%	0.018	0.020	--	--	0.0095
PCB	Aroclor-1248	mg/kg	12	0	0%	0.018	0.020	--	--	0.0095
PCB	Aroclor-1254	mg/kg	12	12	100%	--	--	0.0089	0.024	0.016
PCB	Aroclor-1260	mg/kg	12	3	25%	0.019	0.020	0.0064	0.0096	0.0093
PEST	2,4'-DDD	mg/kg	12	0	0%	0.0018	0.0020	--	--	9.54E-04
PEST	2,4'-DDE	mg/kg	12	3	25%	0.0018	0.0020	0.0012	0.0015	0.0011
PEST	2,4'-DDT	mg/kg	12	0	0%	0.0018	0.0020	--	--	9.54E-04
PEST	Aldrin	mg/kg	12	0	0%	0.0018	0.0020	--	--	9.54E-04
PEST	Alpha-BHC	mg/kg	12	0	0%	0.0018	0.0020	--	--	9.54E-04
PEST	alpha-Chlordane	mg/kg	12	3	25%	0.0018	0.0020	0.0016	0.0023	0.0012
PEST	alpha-Chlordene	mg/kg	12	0	0%	0.0018	0.0020	--	--	9.54E-04
PEST	Beta-BHC	mg/kg	12	0	0%	0.0018	0.0020	--	--	9.54E-04
PEST	cis-Nonachlor	mg/kg	12	4	33%	0.0018	0.0020	0.0014	0.0021	0.0012
PEST	DDMU	mg/kg	12	4	33%	0.0018	0.0020	0.0014	0.0018	0.0012
PEST	Delta-BHC	mg/kg	12	0	0%	0.0018	0.0020	--	--	9.54E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	12	12	100%	--	--	0.0021	0.011	0.0045
PEST	Dichlorodiphenyldichloroethylene	mg/kg	12	12	100%	--	--	0.0053	0.015	0.0087
PEST	Dichlorodiphenyltrichloroethane	mg/kg	12	8	67%	0.0019	0.0020	0.0014	0.0060	0.0024
PEST	Endosulfan sulfate	mg/kg	9	0	0%	0.0018	0.0020	--	--	9.44E-04
PEST	Gamma-BHC (Lindane)	mg/kg	12	0	0%	0.0018	0.0020	--	--	9.54E-04
PEST	gamma-Chlordane	mg/kg	12	0	0%	0.0018	0.0020	--	--	9.54E-04
PEST	gamma-Chlordene	mg/kg	12	0	0%	0.0018	0.0020	--	--	9.54E-04
PEST	Heptachlor	mg/kg	12	0	0%	0.0018	0.0020	--	--	9.54E-04
PEST	Heptachlor epoxide	mg/kg	9	0	0%	0.0018	0.0020	--	--	9.44E-04
PEST	Mirex	mg/kg	12	0	0%	0.0018	0.0020	--	--	9.54E-04
PEST	Oxychlordane	mg/kg	12	0	0%	0.0018	0.0020	--	--	9.54E-04
PEST	Pentachloroanisole	mg/kg	12	2	17%	0.0018	0.0020	9.10E-04	0.0017	0.0010
PEST	Toxaphene	mg/kg	12	0	0%	0.053	0.060	--	--	0.029
PEST	trans-Nonachlor	mg/kg	12	9	75%	0.0018	0.0020	0.0014	0.0028	0.0018
SVOC	1,2,4-Trichlorobenzene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	1,2-Dichlorobenzene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	1,2-Diphenylhydrazine	mg/kg	11	0	0%	0.0072	0.010	--	--	0.0047
SVOC	1,3-Dichlorobenzene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	1,4-Dichlorobenzene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	1-methylnaphthalene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	2,4-Dinitrotoluene	mg/kg	11	0	0%	0.014	0.020	--	--	0.0094
SVOC	2,6-Dinitrotoluene	mg/kg	12	0	0%	0.029	0.040	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	12	0	0%	0.014	0.020	--	--	0.0094
SVOC	2-Methylnaphthalene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	4-Bromophenylphenyl ether	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047

Table F-93

Summary Statistics for Whole Body Steelhead Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	4-Chlorophenylphenyl ether	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	Acenaphthene	mg/kg	12	0	0%	0.014	0.020	--	--	0.0094
SVOC	Acenaphthylene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	Anthracene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	Benzo(a)anthracene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	Benzo(a)pyrene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	Benzo(b)fluoranthene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	Benzo(ghi)perylene	mg/kg	12	0	0%	0.014	0.020	--	--	0.0094
SVOC	Benzo(k)fluoranthene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	12	0	0%	0.014	0.020	--	--	0.0094
SVOC	Chrysene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	Dibenz[a,h]anthracene	mg/kg	12	0	0%	0.014	0.020	--	--	0.0094
SVOC	Dibenzofuran	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	Fluoranthene	mg/kg	12	0	0%	0.014	0.020	--	--	0.0094
SVOC	Fluorene	mg/kg	12	0	0%	0.0048	0.0095	--	--	0.0040
SVOC	Hexachlorobenzene	mg/kg	12	0	0%	0.014	0.020	--	--	0.0094
SVOC	Hexachlorobutadiene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	Hexachloroethane	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	12	0	0%	0.014	0.020	--	--	0.0094
SVOC	Naphthalene	mg/kg	12	0	0%	0.0072	0.070	--	--	0.010
SVOC	Nitrobenzene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	Phenanthrene	mg/kg	12	0	0%	0.0072	0.010	--	--	0.0047
SVOC	Pyrene	mg/kg	12	0	0%	0.014	0.020	--	--	0.0094
VOC	Retene	mg/kg	12	0	0%	0.014	0.020	--	--	0.0094

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-94
Summary Statistics for Walleye Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	9.00E-08	1.00E-07	6.50E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	5.00E-08	7.00E-08	4.17E-08
DIOX/	1,2,3,4,7,8-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	8.00E-08	9.00E-08	8.67E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	2.00E-08	3.00E-08	2.33E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	4.00E-08	5.00E-08	4.67E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	5.00E-08	6.00E-08	5.33E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	2.00E-08	2.00E-08	1.50E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	3.00E-08	4.00E-08	3.33E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	1.10E-07	1.20E-07	7.83E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.20E-07	1.30E-07	1.23E-07
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	2.00E-08	4.00E-08	3.00E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	6.00E-07	7.50E-07	6.67E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	7.00E-08	8.00E-08	7.67E-08
DIOX/	Octachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	1.00E-08	--	--	5.00E-09
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	1.30E-07	1.60E-07	9.83E-08
METAL	Aluminum	mg/kg	3	3	100%	--	--	2.3	2.7	2.5
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.29	0.40	0.36
METAL	Barium	mg/kg	3	3	100%	--	--	0.23	0.24	0.24
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Chromium	mg/kg	3	2	67%	0.10	0.10	0.11	0.11	0.090
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.0080	0.0090	0.0083
METAL	Copper	mg/kg	3	3	100%	--	--	0.50	0.61	0.56
METAL	Lead	mg/kg	3	0	0%	0.010	0.010	--	--	0.0050
METAL	Manganese	mg/kg	3	3	100%	--	--	0.35	0.38	0.36
METAL	Mercury	mg/kg	3	3	100%	--	--	0.16	0.20	0.17
METAL	Nickel	mg/kg	3	3	100%	--	--	0.25	0.28	0.26
METAL	Selenium	mg/kg	3	3	100%	--	--	0.38	0.40	0.39
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	1	33%	0.050	0.050	0.060	0.060	0.037
METAL	Vanadium	mg/kg	3	0	0%	0.010	0.010	--	--	0.0050
METAL	Zinc	mg/kg	3	3	100%	--	--	8.5	9.0	8.7
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	1.57E-04	2.87E-04	2.20E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	4.68E-04	0.0010	7.26E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	0	0%	7.30E-07	1.41E-06	--	--	5.70E-07
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	1.08E-04	1.49E-04	1.22E-04
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	3.10E-04	3.78E-04	3.35E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	4.09E-05	4.42E-05	4.26E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	1.18E-05	1.57E-05	1.39E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	2.49E-05	3.05E-05	2.68E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	6.18E-04	7.40E-04	6.63E-04
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	6.36E-06	7.41E-06	6.83E-06
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	5.00E-07	7.50E-07	--	--	2.92E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	0	0%	6.70E-07	7.00E-07	--	--	3.45E-07
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	1.20E-05	1.44E-05	1.35E-05
PCB	Aroclor-1016	mg/kg	3	0	0%	0.0020	0.020	--	--	0.0068
PCB	Aroclor-1221	mg/kg	3	0	0%	0.0020	0.020	--	--	0.0068

Table F-94
Summary Statistics for Walleye Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	3	0	0%	0.0020	0.020	--	--	0.0068
PCB	Aroclor-1248	mg/kg	3	0	0%	0.0020	0.020	--	--	0.0068
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.012	0.014	0.013
PCB	Aroclor-1260	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
PEST	2,4'-DDD	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	2,4'-DDE	mg/kg	3	0	0%	0.0024	0.0028	--	--	0.0013
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	Aldrin	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	alpha-Chlordane	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	Beta-BHC	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	cis-Nonachlor	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	Delta-BHC	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.0063	0.0071	0.0067
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.044	0.052	0.047
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	2	67%	0.0025	0.0025	0.0020	0.0027	0.0020
PEST	Endosulfan sulfate	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	Heptachlor	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	Mirex	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	Oxychlordane	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
PEST	Toxaphene	mg/kg	3	0	0%	0.073	0.074	--	--	0.037
PEST	trans-Nonachlor	mg/kg	3	0	0%	0.0024	0.0025	--	--	0.0012
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.010	0.019	--	--	0.0067
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.021	0.038	--	--	0.013
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.010	0.019	--	--	0.0067
SVOC	2-Methylnaphthalene	mg/kg	3	2	67%	0.0096	0.0096	0.0060	0.0076	0.0061
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	Acenaphthene	mg/kg	3	0	0%	0.010	0.019	--	--	0.0067
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	Anthracene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.010	0.019	--	--	0.0067
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.010	0.019	--	--	0.0067
SVOC	Chrysene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034

Table F-94
Summary Statistics for Walleye Fillet Skin On Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.010	0.019	--	--	0.0067
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	Fluoranthene	mg/kg	3	0	0%	0.010	0.019	--	--	0.0067
SVOC	Fluorene	mg/kg	3	0	0%	0.0063	0.010	--	--	0.0039
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.010	0.019	--	--	0.0067
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.010	0.019	--	--	0.0067
SVOC	Naphthalene	mg/kg	3	0	0%	0.0053	0.013	--	--	0.0047
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0052	0.0096	--	--	0.0034
SVOC	Pyrene	mg/kg	3	0	0%	0.010	0.019	--	--	0.0067
VOC	Retene	mg/kg	3	0	0%	0.010	0.019	--	--	0.0067

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-95
Summary Statistics for Whole Body Walleye Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	3	100%	--	--	1.10E-07	2.80E-07	1.73E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	1	33%	2.00E-08	2.00E-08	1.10E-07	1.10E-07	4.33E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	1	33%	2.00E-08	2.00E-08	4.00E-08	4.00E-08	2.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	3.00E-08	4.00E-08	3.33E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	2.00E-08	1.30E-07	6.33E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	3.00E-08	5.00E-08	2.83E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	1.20E-07	2.00E-07	1.63E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	1.00E-08	1.10E-07	1.10E-07	4.00E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	3.00E-08	8.00E-08	5.67E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.20E-07	1.50E-07	1.37E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	1.90E-07	2.70E-07	2.37E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	4.00E-08	1.60E-07	8.00E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.90E-07	2.40E-07	2.10E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	3.82E-06	5.53E-06	4.55E-06
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	3.60E-07	4.20E-07	3.87E-07
DIOX/	Octachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	1.00E-08	1.00E-07	1.00E-07	3.67E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	1.50E-07	3.20E-07	2.10E-07
METAL	Aluminum	mg/kg	3	1	33%	1.0	1.0	6.2	6.2	2.4
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.48	0.50	0.49
METAL	Barium	mg/kg	3	3	100%	--	--	0.51	0.85	0.67
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.0070	0.0079	0.0074
METAL	Chromium	mg/kg	3	3	100%	--	--	0.10	0.12	0.11
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.010	0.080	0.050
METAL	Copper	mg/kg	3	3	100%	--	--	0.73	5.7	2.5
METAL	Lead	mg/kg	3	2	67%	0.010	0.010	0.060	0.48	0.18
METAL	Manganese	mg/kg	3	3	100%	--	--	0.89	0.97	0.94
METAL	Mercury	mg/kg	3	3	100%	--	--	0.12	0.21	0.17
METAL	Nickel	mg/kg	3	3	100%	--	--	0.12	0.39	0.25
METAL	Selenium	mg/kg	3	3	100%	--	--	0.41	0.54	0.47
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	3	100%	--	--	0.010	0.020	0.013
METAL	Zinc	mg/kg	3	3	100%	--	--	13	15	14
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	9.65E-04	0.0028	0.0019
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0028	0.0069	0.0049
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	2	67%	1.67E-06	1.67E-06	2.17E-04	4.53E-04	2.24E-04
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	8.00E-04	0.0023	0.0014
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0012	0.0053	0.0031
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	3.22E-04	6.71E-04	4.52E-04
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	5.13E-05	2.29E-04	1.20E-04
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	1.26E-04	5.06E-04	2.88E-04
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	0.0026	0.010	0.0060
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	5.32E-05	9.54E-05	6.92E-05
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	2.35E-06	4.91E-06	--	--	1.63E-06
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	2	67%	1.00E-06	1.00E-06	8.89E-06	1.79E-05	9.10E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	7.43E-05	9.10E-05	8.19E-05
PCB	Aroclor-1016	mg/kg	3	0	0%	0.018	0.019	--	--	0.0093
PCB	Aroclor-1221	mg/kg	3	0	0%	0.018	0.019	--	--	0.0093

Table F-95
Summary Statistics for Whole Body Walleye Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	3	0	0%	0.018	0.019	--	--	0.0093
PCB	Aroclor-1248	mg/kg	3	0	0%	0.018	0.019	--	--	0.0093
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.054	0.098	0.074
PCB	Aroclor-1260	mg/kg	3	3	100%	--	--	0.047	0.061	0.052
PEST	2,4'-DDD	mg/kg	3	3	100%	--	--	0.0058	0.0073	0.0066
PEST	2,4'-DDE	mg/kg	3	3	100%	--	--	0.0068	0.012	0.0089
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0018	0.0024	--	--	0.0010
PEST	Aldrin	mg/kg	3	0	0%	0.0018	0.0019	--	--	9.33E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0018	0.0024	--	--	0.0010
PEST	alpha-Chlordane	mg/kg	3	3	100%	--	--	0.0035	0.0058	0.0043
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0018	0.0024	--	--	0.0010
PEST	Beta-BHC	mg/kg	3	0	0%	0.0018	0.0024	--	--	0.0010
PEST	cis-Nonachlor	mg/kg	3	2	67%	0.0024	0.0024	0.0035	0.0043	0.0030
PEST	DDMU	mg/kg	2	2	100%	--	--	0.0079	0.0083	0.0081
PEST	Delta-BHC	mg/kg	3	0	0%	0.0018	0.0024	--	--	0.0010
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.050	0.057	0.053
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.35	0.44	0.41
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	0.0066	0.012	0.0092
PEST	Endosulfan sulfate	mg/kg	3	0	0%	0.0018	0.0024	--	--	0.0010
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0018	0.0024	--	--	0.0010
PEST	gamma-Chlordane	mg/kg	3	3	100%	--	--	0.0036	0.0043	0.0040
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0018	0.0024	--	--	0.0010
PEST	Heptachlor	mg/kg	3	0	0%	0.0018	0.0019	--	--	9.33E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0018	0.0024	--	--	0.0010
PEST	Mirex	mg/kg	3	2	67%	0.0024	0.0024	0.0030	0.0041	0.0028
PEST	Oxychlordane	mg/kg	3	3	100%	--	--	0.0016	0.0024	0.0019
PEST	Pentachloroanisole	mg/kg	3	1	33%	0.0018	0.0019	0.0012	0.0012	0.0010
PEST	Toxaphene	mg/kg	3	0	0%	0.055	0.072	--	--	0.031
PEST	trans-Nonachlor	mg/kg	3	3	100%	--	--	0.0030	0.0086	0.0066
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	1-methylnaphthalene	mg/kg	3	1	33%	0.0096	0.0099	0.0077	0.0077	0.0058
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.010	0.020	--	--	0.0082
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.020	0.040	--	--	0.016
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.010	0.020	--	--	0.0082
SVOC	2-Methylnaphthalene	mg/kg	3	1	33%	0.0096	0.0099	0.016	0.016	0.0086
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	Acenaphthene	mg/kg	3	0	0%	0.010	0.020	--	--	0.0082
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	Anthracene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.010	0.020	--	--	0.0082
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.010	0.020	--	--	0.0082

Table F-95
Summary Statistics for Whole Body Walleye Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.010	0.020	--	--	0.0082
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	Fluoranthene	mg/kg	3	0	0%	0.010	0.020	--	--	0.0082
SVOC	Fluorene	mg/kg	3	0	0%	0.0088	0.0099	--	--	0.0046
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.010	0.020	--	--	0.0082
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.010	0.020	--	--	0.0082
SVOC	Naphthalene	mg/kg	3	0	0%	0.016	0.028	--	--	0.011
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0050	0.0099	--	--	0.0041
SVOC	Pyrene	mg/kg	3	0	0%	0.010	0.020	--	--	0.0082
VOC	Retene	mg/kg	3	0	0%	0.010	0.020	--	--	0.0082

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-96
Summary Statistics for White Sturgeon Fillet Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	10	10	100%	--	--	1.70E-07	4.50E-07	2.87E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	10	10	100%	--	--	7.00E-08	1.30E-07	9.60E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	10	4	40%	1.00E-08	6.00E-08	2.00E-08	7.00E-08	2.15E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	10	9	90%	5.00E-08	5.00E-08	2.00E-08	6.00E-08	4.05E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	10	10	100%	--	--	9.00E-08	1.60E-07	1.25E-07
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	10	9	90%	5.00E-08	5.00E-08	4.00E-08	9.00E-08	6.25E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	10	8	80%	3.00E-08	8.00E-08	8.00E-08	2.60E-07	1.29E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	10	8	80%	1.00E-08	5.00E-08	6.00E-08	1.30E-07	7.70E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	10	8	80%	1.00E-08	8.00E-08	5.00E-08	1.00E-07	6.45E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	10	10	100%	--	--	8.00E-08	3.30E-07	2.33E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	10	8	80%	1.00E-08	1.00E-08	1.20E-07	1.80E-07	1.23E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	10	10	100%	--	--	1.20E-07	1.80E-07	1.47E-07
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	10	10	100%	--	--	6.00E-08	2.90E-07	1.95E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	10	10	100%	--	--	6.23E-06	2.26E-05	1.50E-05
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	10	10	100%	--	--	1.30E-07	5.20E-07	3.53E-07
DIOX/	Octachlorodibenzofuran	mg/kg	10	7	70%	1.00E-08	4.00E-08	4.00E-08	8.00E-08	4.70E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	10	10	100%	--	--	2.90E-07	7.00E-07	4.65E-07
METAL	Aluminum	mg/kg	10	0	0%	5.0	20	--	--	6.3
METAL	Antimony	mg/kg	10	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	10	10	100%	--	--	0.18	0.64	0.33
METAL	Barium	mg/kg	10	5	50%	0.20	0.20	0.27	0.63	0.26
METAL	Beryllium	mg/kg	10	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	10	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Chromium	mg/kg	10	0	0%	0.10	0.10	--	--	0.050
METAL	Cobalt	mg/kg	10	9	90%	0.0010	0.0010	0.0013	0.0089	0.0049
METAL	Copper	mg/kg	10	7	70%	0.25	0.29	0.21	0.41	0.23
METAL	Lead	mg/kg	10	4	40%	0.010	0.010	0.010	0.020	0.0080
METAL	Manganese	mg/kg	10	10	100%	--	--	0.24	0.31	0.27
METAL	Mercury	mg/kg	10	7	70%	0.030	0.040	0.050	0.28	0.091
METAL	Nickel	mg/kg	10	5	50%	0.030	0.030	0.030	0.060	0.033
METAL	Selenium	mg/kg	10	10	100%	--	--	0.31	1.9	0.93
METAL	Silver	mg/kg	10	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	10	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	10	4	40%	0.010	0.020	0.010	0.010	0.0095
METAL	Zinc	mg/kg	10	10	100%	--	--	2.9	4.7	3.6
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	10	10	100%	--	--	3.56E-04	0.0014	8.83E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	10	10	100%	--	--	0.0012	0.0045	0.0030
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	10	10	100%	--	--	2.31E-05	1.69E-04	9.84E-05
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	10	10	100%	--	--	1.35E-04	8.39E-04	4.93E-04
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	10	10	100%	--	--	3.50E-04	0.0028	0.0015
PCB	2,3',4,4',5'-Hexachlorobiphenyl (BZ 167)	mg/kg	10	3	30%	1.24E-06	1.10E-05	9.44E-06	2.15E-05	6.85E-06
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	10	10	100%	--	--	4.44E-06	2.87E-05	1.75E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	10	10	100%	--	--	2.77E-05	2.13E-04	1.24E-04
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	10	10	100%	--	--	2.72E-04	0.0027	0.0016
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	10	10	100%	--	--	1.47E-05	5.27E-05	3.49E-05
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	10	0	0%	5.00E-07	2.00E-06	--	--	4.34E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	10	1	10%	7.40E-07	2.85E-06	2.57E-06	2.57E-06	1.07E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	10	10	100%	--	--	1.10E-06	2.25E-05	1.10E-05
PCB	Aroclor-1016	mg/kg	10	0	0%	0.017	0.020	--	--	0.0093
PCB	Aroclor-1221	mg/kg	10	0	0%	0.017	0.020	--	--	0.0093

Table F-96
Summary Statistics for White Sturgeon Fillet Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	10	0	0%	0.017	0.020	--	--	0.0093
PCB	Aroclor-1248	mg/kg	10	0	0%	0.017	0.020	--	--	0.0093
PCB	Aroclor-1254	mg/kg	10	10	100%	--	--	0.010	0.16	0.047
PCB	Aroclor-1260	mg/kg	10	10	100%	--	--	2.32E-04	0.046	0.032
PEST	2,4'-DDD	mg/kg	10	10	100%	--	--	0.0022	0.013	0.0067
PEST	2,4'-DDE	mg/kg	10	9	90%	0.0020	0.0020	0.0026	0.0064	0.0041
PEST	2,4'-DDT	mg/kg	10	8	80%	0.0018	0.0020	0.0023	0.0095	0.0034
PEST	Aldrin	mg/kg	10	0	0%	0.0017	0.0020	--	--	9.30E-04
PEST	Alpha-BHC	mg/kg	10	0	0%	0.0017	0.0020	--	--	9.30E-04
PEST	alpha-Chlordane	mg/kg	10	4	40%	0.0017	0.0020	0.0023	0.0080	0.0022
PEST	alpha-Chlordene	mg/kg	10	0	0%	0.0017	0.0020	--	--	9.30E-04
PEST	Beta-BHC	mg/kg	10	0	0%	0.0017	0.0020	--	--	9.30E-04
PEST	cis-Nonachlor	mg/kg	10	7	70%	0.0017	0.0020	0.0039	0.0080	0.0042
PEST	DDMU	mg/kg	10	10	100%	--	--	0.0020	0.018	0.0066
PEST	Delta-BHC	mg/kg	10	0	0%	0.0017	0.0020	--	--	9.30E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	10	10	100%	--	--	0.016	0.074	0.045
PEST	Dichlorodiphenyldichloroethylene	mg/kg	10	10	100%	--	--	0.10	0.59	0.36
PEST	Dichlorodiphenyltrichloroethane	mg/kg	10	9	90%	0.0020	0.0020	0.0014	0.0053	0.0030
PEST	Endosulfan sulfate	mg/kg	10	0	0%	0.0017	0.0020	--	--	9.30E-04
PEST	Gamma-BHC (Lindane)	mg/kg	10	0	0%	0.0017	0.0020	--	--	9.30E-04
PEST	gamma-Chlordane	mg/kg	10	8	80%	0.0018	0.0020	0.0022	0.0081	0.0033
PEST	gamma-Chlordene	mg/kg	10	0	0%	0.0017	0.0020	--	--	9.30E-04
PEST	Heptachlor	mg/kg	10	0	0%	0.0017	0.0020	--	--	9.30E-04
PEST	Heptachlor epoxide	mg/kg	10	1	10%	0.0018	0.0020	0.0012	0.0012	9.65E-04
PEST	Mirex	mg/kg	10	0	0%	0.0017	0.0020	--	--	9.30E-04
PEST	Oxychlordane	mg/kg	10	0	0%	0.0018	0.0020	--	--	9.40E-04
PEST	Pentachloroanisole	mg/kg	10	0	0%	0.0017	0.0020	--	--	9.30E-04
PEST	Toxaphene	mg/kg	10	0	0%	0.052	0.059	--	--	0.028
PEST	trans-Nonachlor	mg/kg	10	9	90%	0.0020	0.0020	0.0035	0.0096	0.0054
SVOC	1,2,4-Trichlorobenzene	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0034
SVOC	1,2-Dichlorobenzene	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0034
SVOC	1,2-Diphenylhydrazine	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0034
SVOC	1,3-Dichlorobenzene	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0034
SVOC	1,4-Dichlorobenzene	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0034
SVOC	1-methylnaphthalene	mg/kg	10	1	10%	0.0046	0.025	0.010	0.010	0.0042
SVOC	2,4-Dinitrotoluene	mg/kg	10	0	0%	0.0093	0.051	--	--	0.0069
SVOC	2,6-Dinitrotoluene	mg/kg	10	0	0%	0.019	0.10	--	--	0.014
SVOC	2-Chloronaphthalene	mg/kg	10	0	0%	0.0093	0.025	--	--	0.0056
SVOC	2-Methylnaphthalene	mg/kg	10	1	10%	0.0046	0.025	0.025	0.025	0.0061
SVOC	4-Bromophenylphenyl ether	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0034
SVOC	4-Chlorophenylphenyl ether	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0034
SVOC	Acenaphthene	mg/kg	10	0	0%	0.0093	0.051	--	--	0.0069
SVOC	Acenaphthylene	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0034
SVOC	Anthracene	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0034
SVOC	Benzo(a)anthracene	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0044
SVOC	Benzo(a)pyrene	mg/kg	10	0	0%	0.0047	0.025	--	--	0.0053
SVOC	Benzo(b)fluoranthene	mg/kg	10	0	0%	0.0047	0.051	--	--	0.0066
SVOC	Benzo(ghi)perylene	mg/kg	10	0	0%	0.0094	0.051	--	--	0.011
SVOC	Benzo(k)fluoranthene	mg/kg	10	0	0%	0.0047	0.051	--	--	0.0066
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	10	0	0%	0.0093	0.051	--	--	0.0069

Table F-96
Summary Statistics for White Sturgeon Fillet Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0044
SVOC	Dibenz[a,h]anthracene	mg/kg	10	0	0%	0.0094	0.051	--	--	0.011
SVOC	Dibenzofuran	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0034
SVOC	Fluoranthene	mg/kg	10	0	0%	0.0093	0.051	--	--	0.0069
SVOC	Fluorene	mg/kg	10	0	0%	0.0074	0.0099	--	--	0.0046
SVOC	Hexachlorobenzene	mg/kg	10	1	10%	0.0093	0.051	0.0099	0.0099	0.0074
SVOC	Hexachlorobutadiene	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0034
SVOC	Hexachloroethane	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0034
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	10	0	0%	0.0094	0.051	--	--	0.011
SVOC	Naphthalene	mg/kg	10	0	0%	0.019	0.060	--	--	0.014
SVOC	Nitrobenzene	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0034
SVOC	Phenanthrene	mg/kg	10	0	0%	0.0046	0.025	--	--	0.0038
SVOC	Pyrene	mg/kg	10	0	0%	0.0093	0.051	--	--	0.0089
VOC	Retene	mg/kg	10	0	0%	0.0093	0.051	--	--	0.0089

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-97
Summary Statistics for Whole Body White Sturgeon Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	3	100%	--	--	3.40E-07	4.90E-07	4.27E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	2	67%	3.00E-08	3.00E-08	1.30E-07	1.70E-07	1.05E-07
DIOX/	1,2,3,4,7,8-Heptachlorodibenzofuran	mg/kg	3	1	33%	3.00E-08	3.00E-08	5.00E-08	5.00E-08	2.67E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	4.00E-08	6.00E-08	5.00E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	1.20E-07	1.30E-07	8.50E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	2.00E-08	2.00E-08	7.00E-08	1.00E-07	6.00E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	2.00E-08	2.00E-08	2.40E-07	2.50E-07	1.67E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	5.00E-08	7.00E-08	6.00E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	2.00E-08	2.00E-08	5.00E-08	7.00E-08	4.33E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	2.90E-07	3.60E-07	3.27E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	1	33%	1.00E-08	1.00E-08	1.70E-07	1.70E-07	6.00E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	2.00E-08	2.00E-08	1.90E-07	1.90E-07	1.30E-07
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	2.50E-07	3.50E-07	2.87E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.57E-05	2.10E-05	1.84E-05
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	4.50E-07	8.90E-07	6.13E-07
DIOX/	Octachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	2.00E-08	1.80E-07	1.80E-07	6.50E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	6.00E-07	1.26E-06	8.50E-07
METAL	Aluminum	mg/kg	3	3	100%	--	--	3.4	180	69
METAL	Antimony	mg/kg	3	0	0%	0.050	0.50	--	--	0.10
METAL	Arsenic	mg/kg	3	2	67%	0.50	0.50	0.59	0.65	0.50
METAL	Barium	mg/kg	3	3	100%	--	--	1.1	2.7	1.9
METAL	Beryllium	mg/kg	3	2	67%	0.060	0.060	0.0080	0.0092	0.016
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.020	0.090	0.043
METAL	Chromium	mg/kg	3	2	67%	1.0	1.0	0.14	0.27	0.30
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.10	0.42	0.28
METAL	Copper	mg/kg	3	3	100%	--	--	0.76	1.5	1.0
METAL	Lead	mg/kg	3	3	100%	--	--	0.10	0.33	0.18
METAL	Manganese	mg/kg	3	3	100%	--	--	1.0	6.7	3.0
METAL	Mercury	mg/kg	3	3	100%	--	--	0.070	0.24	0.17
METAL	Nickel	mg/kg	3	3	100%	--	--	0.050	0.33	0.15
METAL	Selenium	mg/kg	3	2	67%	1.0	1.0	0.42	0.62	0.51
METAL	Silver	mg/kg	3	0	0%	0.20	2.0	--	--	0.40
METAL	Thallium	mg/kg	3	0	0%	0.050	0.50	--	--	0.10
METAL	Vanadium	mg/kg	3	3	100%	--	--	0.050	0.67	0.27
METAL	Zinc	mg/kg	3	3	100%	--	--	8.9	9.6	9.1
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	0.0015	0.0044	0.0034
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0048	0.016	0.012
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	1.45E-04	4.00E-04	3.12E-04
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	7.73E-04	0.0022	0.0017
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0020	0.0056	0.0044
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	1.48E-05	1.30E-04	5.99E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	1.54E-05	3.94E-05	2.87E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	1.60E-04	4.71E-04	3.51E-04
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	0.0022	0.0072	0.0052
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	6.04E-05	1.64E-04	1.28E-04
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	1	33%	4.01E-06	4.70E-06	1.67E-06	1.67E-06	2.01E-06
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	0	0%	5.00E-07	4.18E-06	--	--	1.22E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	8.18E-06	1.64E-05	1.14E-05
PCB	Aroclor-1016	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1221	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098

Table F-97
Summary Statistics for Whole Body White Sturgeon Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1248	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.038	0.12	0.082
PCB	Aroclor-1260	mg/kg	3	3	100%	--	--	0.053	0.16	0.12
PEST	2,4'-DDD	mg/kg	3	3	100%	--	--	0.0049	0.0077	0.0066
PEST	2,4'-DDE	mg/kg	3	3	100%	--	--	0.0052	0.012	0.0089
PEST	2,4'-DDT	mg/kg	3	2	67%	0.0020	0.0020	0.0032	0.0063	0.0035
PEST	Aldrin	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	alpha-Chlordane	mg/kg	3	2	67%	0.0020	0.0020	0.0035	0.0036	0.0027
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	cis-Nonachlor	mg/kg	3	3	100%	--	--	0.0051	0.0081	0.0069
PEST	DDMU	mg/kg	3	1	33%	0.0019	0.0020	0.011	0.011	0.0043
PEST	Delta-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.078	0.14	0.10
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.40	1.1	0.75
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	0.016	0.038	0.025
PEST	Endosulfan sulfate	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	gamma-Chlordane	mg/kg	3	3	100%	--	--	0.0019	0.010	0.0057
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Mirex	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Oxychlordane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.83E-04
PEST	Toxaphene	mg/kg	3	0	0%	0.057	0.060	--	--	0.029
PEST	trans-Nonachlor	mg/kg	3	1	33%	0.0019	0.0020	0.018	0.018	0.0067
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0048	0.046	--	--	0.013
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.0092	0.092	--	--	0.025
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.018	0.18	--	--	0.050
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.0092	0.092	--	--	0.025
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.010	0.046	--	--	0.014
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	Acenaphthene	mg/kg	3	0	0%	0.0092	0.092	--	--	0.025
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	Anthracene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.0092	0.092	--	--	0.025
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.0092	0.092	--	--	0.025

Table F-97
Summary Statistics for Whole Body White Sturgeon Collected from Segment 4 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.0092	0.092	--	--	0.025
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	Fluoranthene	mg/kg	3	0	0%	0.0092	0.092	--	--	0.025
SVOC	Fluorene	mg/kg	3	0	0%	0.0049	0.0094	--	--	0.0032
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.0092	0.092	--	--	0.025
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.0092	0.092	--	--	0.025
SVOC	Naphthalene	mg/kg	3	0	0%	0.025	0.046	--	--	0.016
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0046	0.046	--	--	0.013
SVOC	Pyrene	mg/kg	3	0	0%	0.0092	0.092	--	--	0.025
VOC	Retene	mg/kg	3	0	0%	0.0092	0.092	--	--	0.025

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

RAD- radionuclide

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-98

Summary Statistics for Chinook Salmon Fillet Skin On Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	2	67%	2.00E-08	2.00E-08	7.00E-08	8.00E-08	5.33E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	2.00E-08	2.00E-08	1.50E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	8.33E-09
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	1	33%	1.00E-08	2.00E-08	3.00E-08	3.00E-08	1.50E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	2.00E-08	3.00E-08	1.83E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	3.00E-08	4.00E-08	3.33E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	6.00E-08	8.00E-08	4.83E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	8.33E-09
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	3.00E-08	4.00E-08	2.50E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.20E-07	1.40E-07	1.27E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-08	1.00E-08	7.00E-08	1.10E-07	6.17E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	1	33%	2.00E-08	2.00E-08	4.00E-08	4.00E-08	2.00E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.50E-07	1.70E-07	1.60E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	5.30E-07	6.10E-07	5.80E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	0	0%	1.00E-08	2.00E-08	--	--	8.33E-09
DIOX/	Octachlorodibenzofuran	mg/kg	3	0	0%	3.00E-08	4.00E-08	--	--	1.67E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	1	33%	2.00E-08	2.00E-08	1.00E-07	1.00E-07	4.00E-08
METAL	Aluminum	mg/kg	3	1	33%	1.0	1.0	1.3	1.3	0.77
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.76	1.2	0.95
METAL	Barium	mg/kg	3	0	0%	0.20	0.20	--	--	0.10
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.010	0.010	0.010
METAL	Chromium	mg/kg	3	2	67%	0.10	0.10	0.45	0.48	0.33
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.0033	0.0048	0.0038
METAL	Copper	mg/kg	3	3	100%	--	--	0.64	0.67	0.65
METAL	Lead	mg/kg	3	0	0%	0.010	0.010	--	--	0.0050
METAL	Manganese	mg/kg	3	3	100%	--	--	0.070	0.090	0.080
METAL	Mercury	mg/kg	3	0	0%	0.090	0.12	--	--	0.055
METAL	Nickel	mg/kg	3	0	0%	0.030	0.030	--	--	0.015
METAL	Selenium	mg/kg	3	3	100%	--	--	0.33	0.36	0.35
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	0	0%	0.010	0.010	--	--	0.0050
METAL	Zinc	mg/kg	3	3	100%	--	--	6.2	6.5	6.3
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	5.84E-05	8.02E-05	6.94E-05
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	2.10E-04	2.71E-04	2.43E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	1.05E-05	1.52E-05	1.28E-05
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	3.22E-05	4.65E-05	3.91E-05
PCB	2,3,3',4,4',5-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	2.01E-04	2.61E-04	2.28E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	2.69E-05	2.84E-05	2.75E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	1.11E-05	1.24E-05	1.18E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	2.04E-05	2.56E-05	2.23E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	4.80E-04	5.90E-04	5.25E-04
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	2	67%	1.00E-06	1.00E-06	2.45E-06	2.70E-06	1.88E-06
PCB	3,3',4,4',5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	1.14E-06	1.60E-06	--	--	6.60E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	3	100%	--	--	8.50E-07	3.43E-06	2.44E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	9.87E-06	1.32E-05	1.11E-05
PCB	Aroclor-1016	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097
PCB	Aroclor-1221	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097
PCB	Aroclor-1232	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097
PCB	Aroclor-1248	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097

Table F-98

Summary Statistics for Chinook Salmon Fillet Skin On Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.015	0.019	0.017
PCB	Aroclor-1260	mg/kg	3	0	0%	0.018	0.020	--	--	0.0097
PEST	2,4'-DDD	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	2,4'-DDE	mg/kg	3	1	33%	0.0018	0.0020	0.0014	0.0014	0.0011
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Aldrin	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	alpha-Chlordane	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	cis-Nonachlor	mg/kg	3	1	33%	0.0018	0.0020	0.0013	0.0013	0.0011
PEST	DDMU	mg/kg	3	1	33%	0.0018	0.0020	0.0014	0.0014	0.0011
PEST	Delta-BHC	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.0015	0.0030	0.0022
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.0088	0.013	0.011
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	0.0040	0.0053	0.0046
PEST	Endosulfan sulfate	mg/kg	1	0	0%	0.0018	0.0018	--	--	9.00E-04
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Heptachlor epoxide	mg/kg	1	0	0%	0.0018	0.0018	--	--	9.00E-04
PEST	Mirex	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Oxychlordane	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0018	0.0020	--	--	9.67E-04
PEST	Toxaphene	mg/kg	3	0	0%	0.055	0.060	--	--	0.029
PEST	trans-Nonachlor	mg/kg	3	3	100%	--	--	0.0024	0.0029	0.0027
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.020	0.020	--	--	0.010
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.039	0.039	--	--	0.020
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.020	0.020	--	--	0.010
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0098	0.011	--	--	0.0051
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	Acenaphthene	mg/kg	3	0	0%	0.020	0.020	--	--	0.010
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	Anthracene	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0095	0.0099	--	--	0.0049
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0095	0.0099	--	--	0.0049
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0095	0.0099	--	--	0.0049
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0095	0.0099	--	--	0.0049
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.020	0.020	--	--	0.010
SVOC	Chrysene	mg/kg	3	0	0%	0.0095	0.0099	--	--	0.0049
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	Fluoranthene	mg/kg	3	0	0%	0.020	0.020	--	--	0.010

Table F-98**Summary Statistics for Chinook Salmon Fillet Skin On Collected from Segment 5 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Fluorene	mg/kg	3	0	0%	0.0052	0.040	--	--	0.0091
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.020	0.020	--	--	0.010
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
SVOC	Naphthalene	mg/kg	3	0	0%	0.020	0.040	--	--	0.016
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0098	0.0099	--	--	0.0049
SVOC	Pyrene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098
VOC	Retene	mg/kg	3	0	0%	0.019	0.020	--	--	0.0098

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-99

Summary Statistics for Whole Body Chinook Salmon Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	2	67%	6.00E-08	6.00E-08	1.00E-07	1.50E-07	9.33E-08
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	1	33%	3.00E-08	4.00E-08	4.00E-08	4.00E-08	2.50E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	4.00E-08	--	--	1.33E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	1	33%	5.00E-08	6.00E-08	3.00E-08	3.00E-08	2.83E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	0	0%	1.00E-08	4.00E-08	--	--	1.33E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	1	33%	5.00E-08	6.00E-08	3.00E-08	3.00E-08	2.83E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	3.00E-08	3.00E-08	7.00E-08	8.00E-08	5.50E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	2	67%	6.00E-08	6.00E-08	2.00E-08	5.00E-08	3.33E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	1	33%	3.00E-08	4.00E-08	6.00E-08	6.00E-08	3.17E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	1	33%	4.00E-08	5.00E-08	1.10E-07	1.10E-07	5.17E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	1	33%	2.00E-08	3.00E-08	8.00E-08	8.00E-08	3.50E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	1	33%	5.00E-08	6.00E-08	3.00E-08	3.00E-08	2.83E-08
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	2	67%	5.00E-08	5.00E-08	1.40E-07	1.50E-07	1.05E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	5.90E-07	6.90E-07	6.33E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	0	0%	1.00E-08	3.00E-08	--	--	8.33E-09
DIOX/	Octachlorodibenzofuran	mg/kg	3	1	33%	6.00E-08	7.00E-08	3.00E-08	3.00E-08	3.17E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	2.50E-07	3.00E-07	2.73E-07
METAL	Aluminum	mg/kg	3	2	67%	1.0	1.0	1.0	1.7	1.1
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.85	0.86	0.86
METAL	Barium	mg/kg	3	0	0%	0.20	0.20	--	--	0.10
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.13	0.14	0.13
METAL	Chromium	mg/kg	3	3	100%	--	--	0.47	0.50	0.49
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.090	0.13	0.11
METAL	Copper	mg/kg	3	3	100%	--	--	1.3	1.5	1.4
METAL	Lead	mg/kg	3	0	0%	0.010	0.010	--	--	0.0050
METAL	Manganese	mg/kg	3	3	100%	--	--	0.32	0.38	0.35
METAL	Mercury	mg/kg	3	0	0%	0.090	0.11	--	--	0.052
METAL	Nickel	mg/kg	3	3	100%	--	--	0.34	0.75	0.53
METAL	Selenium	mg/kg	3	3	100%	--	--	0.51	0.64	0.57
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	3	100%	--	--	0.010	0.020	0.013
METAL	Zinc	mg/kg	3	3	100%	--	--	20	20	20
PCB	2,2',3,3',4,4',5'-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	6.62E-05	7.42E-05	6.97E-05
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	2.35E-04	2.51E-04	2.42E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	1.15E-05	1.59E-05	1.31E-05
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	4.24E-05	4.59E-05	4.36E-05
PCB	2,3,3',4,4',5'-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	2.33E-04	2.57E-04	2.44E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	2.75E-05	3.09E-05	2.87E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	7.82E-06	1.27E-05	1.07E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	2.12E-05	2.18E-05	2.14E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	5.31E-04	5.55E-04	5.45E-04
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	1	33%	1.00E-06	1.00E-06	2.89E-06	2.89E-06	1.30E-06
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	1.09E-06	1.53E-06	--	--	6.27E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	2	67%	6.40E-07	6.40E-07	3.10E-06	3.42E-06	2.28E-06
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	1.07E-05	1.26E-05	1.17E-05
PCB	Aroclor-1016	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
PCB	Aroclor-1221	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
PCB	Aroclor-1232	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
PCB	Aroclor-1248	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097

Table F-99
Summary Statistics for Whole Body Chinook Salmon Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.017	0.018	0.018
PCB	Aroclor-1260	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
PEST	2,4'-DDD	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	2,4'-DDE	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Aldrin	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	alpha-Chlordane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	cis-Nonachlor	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	DDMU	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Delta-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.0021	0.0034	0.0026
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.013	0.015	0.014
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	0.0042	0.0067	0.0054
PEST	Endosulfan sulfate	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Mirex	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Oxychlordane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Toxaphene	mg/kg	3	0	0%	0.057	0.059	--	--	0.029
PEST	trans-Nonachlor	mg/kg	3	3	100%	--	--	0.0031	0.0033	0.0032
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.037	0.038	--	--	0.019
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	2-Methylnaphthalene	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	Acenaphthene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	Anthracene	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.0096	0.0097	--	--	0.0048
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.0096	0.0097	--	--	0.0048
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.0096	0.0097	--	--	0.0048
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.0096	0.0097	--	--	0.0048
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	Chrysene	mg/kg	3	0	0%	0.0096	0.0097	--	--	0.0048
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	Fluoranthene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095

Table F-99
Summary Statistics for Whole Body Chinook Salmon Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Fluorene	mg/kg	3	0	0%	0.0047	0.012	--	--	0.0044
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
SVOC	Naphthalene	mg/kg	3	0	0%	0.037	0.055	--	--	0.024
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	Phenanthrene	mg/kg	3	0	0%	0.0093	0.0096	--	--	0.0047
SVOC	Pyrene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095
VOC	Retene	mg/kg	3	0	0%	0.019	0.019	--	--	0.0095

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-100

Summary Statistics for Whole Body Eulachon Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	3	100%	--	--	4.00E-07	6.00E-07	4.87E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	2.40E-07	2.60E-07	1.68E-07
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	2	67%	9.00E-08	9.00E-08	2.00E-08	1.10E-07	5.83E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	9.00E-08	9.00E-08	3.00E-08	9.00E-08	5.50E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	1	33%	1.00E-08	1.00E-07	1.70E-07	1.70E-07	7.50E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	9.00E-08	9.00E-08	5.00E-08	1.00E-07	6.50E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-07	1.00E-07	2.20E-07	2.60E-07	1.77E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	7.00E-08	2.00E-07	1.40E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	1.00E-07	1.00E-07	1.00E-07	1.70E-07	1.07E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	8.00E-08	1.50E-07	1.10E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	2.10E-07	2.80E-07	2.40E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.50E-07	2.10E-07	1.87E-07
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.00E-07	1.50E-07	1.30E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	5.80E-07	7.80E-07	6.70E-07
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	2	67%	5.00E-08	5.00E-08	8.00E-08	1.00E-07	6.83E-08
DIOX/	Octachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.00E-07	2.70E-07	2.10E-07
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	1.25E-06	1.71E-06	1.49E-06
METAL	Aluminum	mg/kg	3	1	33%	20	20	6.5	6.5	8.8
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.86	0.92	0.89
METAL	Barium	mg/kg	3	1	33%	0.20	0.20	0.35	0.35	0.18
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.0085	0.010	0.0092
METAL	Chromium	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.0063	0.0079	0.0071
METAL	Copper	mg/kg	3	3	100%	--	--	0.91	0.96	0.94
METAL	Lead	mg/kg	3	3	100%	--	--	0.37	0.68	0.49
METAL	Manganese	mg/kg	3	3	100%	--	--	0.47	0.52	0.50
METAL	Mercury	mg/kg	3	0	0%	0.030	0.040	--	--	0.017
METAL	Nickel	mg/kg	3	3	100%	--	--	0.030	0.060	0.047
METAL	Selenium	mg/kg	3	3	100%	--	--	0.27	0.30	0.29
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	2	67%	0.020	0.020	0.020	0.020	0.017
METAL	Zinc	mg/kg	3	3	100%	--	--	13	14	14
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	5.78E-05	6.44E-05	6.17E-05
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	1.69E-04	1.83E-04	1.78E-04
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	8.12E-06	9.47E-06	8.74E-06
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	2.78E-05	3.04E-05	2.89E-05
PCB	2,3,3',4,4',5-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	1.45E-04	1.50E-04	1.48E-04
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	1.72E-05	1.84E-05	1.79E-05
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	1.00E-05	1.17E-05	1.08E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	1.04E-05	1.13E-05	1.09E-05
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	2.85E-04	2.91E-04	2.88E-04
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	2.33E-06	2.46E-06	2.37E-06
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	5.00E-07	5.50E-07	--	--	2.58E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	0	0%	1.68E-06	2.14E-06	--	--	9.52E-07
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	8.08E-06	8.31E-06	8.19E-06
PCB	Aroclor-1016	mg/kg	3	0	0%	0.037	0.038	--	--	0.019
PCB	Aroclor-1221	mg/kg	3	0	0%	0.037	0.038	--	--	0.019
PCB	Aroclor-1232	mg/kg	3	0	0%	0.037	0.038	--	--	0.019
PCB	Aroclor-1248	mg/kg	3	0	0%	0.037	0.038	--	--	0.019

Table F-100

Summary Statistics for Whole Body Eulachon Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1254	mg/kg	3	0	0%	0.037	0.038	--	--	0.019
PCB	Aroclor-1260	mg/kg	3	0	0%	0.037	0.038	--	--	0.019
PEST	2,4'-DDD	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	2,4'-DDE	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Aldrin	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	alpha-Chlordane	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Beta-BHC	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	cis-Nonachlor	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	DDMU	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Delta-BHC	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.0098	0.011	0.011
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Endosulfan sulfate	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	gamma-Chlordane	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Heptachlor	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Mirex	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Oxychlordane	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Pentachloroanisole	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
PEST	Toxaphene	mg/kg	3	0	0%	0.11	0.11	--	--	0.055
PEST	trans-Nonachlor	mg/kg	3	0	0%	0.0037	0.0038	--	--	0.0019
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.0073	0.0083	--	--	0.0039
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.0073	0.0083	--	--	0.0039
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.15	0.17	--	--	0.078
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.0073	0.0083	--	--	0.0039
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.0073	0.0083	--	--	0.0039
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.0073	0.0083	--	--	0.0039
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.29	0.33	--	--	0.15
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.59	0.66	--	--	0.31
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.15	0.17	--	--	0.078
SVOC	2-Methylnaphthalene	mg/kg	3	1	33%	0.0078	0.0086	0.011	0.011	0.0064
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.15	0.17	--	--	0.078
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.15	0.17	--	--	0.078
SVOC	Acenaphthene	mg/kg	3	0	0%	0.29	0.33	--	--	0.15
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.15	0.17	--	--	0.078
SVOC	Anthracene	mg/kg	3	0	0%	0.15	0.17	--	--	0.078
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.15	0.17	--	--	0.078
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.15	0.17	--	--	0.078
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.29	0.33	--	--	0.15
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.29	0.33	--	--	0.15
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.29	0.33	--	--	0.15
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.015	0.017	--	--	0.0078
SVOC	Chrysene	mg/kg	3	0	0%	0.15	0.17	--	--	0.078
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.29	0.33	--	--	0.15
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.15	0.17	--	--	0.078
SVOC	Fluoranthene	mg/kg	3	0	0%	0.15	0.33	--	--	0.13

Table F-100**Summary Statistics for Whole Body Eulachon Collected from Segment 5 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Fluorene	mg/kg	3	0	0%	0.0093	0.025	--	--	0.0074
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.29	0.33	--	--	0.15
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.0073	0.0083	--	--	0.0039
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.0073	0.0083	--	--	0.0039
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.29	0.33	--	--	0.15
SVOC	Naphthalene	mg/kg	3	0	0%	0.030	0.040	--	--	0.018
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.0075	0.017	--	--	0.0055
SVOC	Phenanthrene	mg/kg	3	1	33%	0.15	0.17	0.021	0.021	0.060
SVOC	Pyrene	mg/kg	3	0	0%	0.29	0.33	--	--	0.15
VOC	Retene	mg/kg	3	0	0%	0.29	0.33	--	--	0.15

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-101
Summary Statistics for Pacific Lamprey Fillet Skin On Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	3	2	67%	1.00E-07	1.00E-07	2.50E-07	2.80E-07	1.93E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	7.00E-08	--	--	1.67E-08
DIOX/	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3	0	0%	1.00E-08	7.00E-08	--	--	1.67E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	3	2	67%	1.00E-08	1.00E-08	1.20E-07	1.20E-07	8.17E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	4.00E-08	4.00E-08	1.00E-07	1.10E-07	7.67E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	8.00E-08	1.00E-07	8.67E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	1.60E-07	2.10E-07	1.80E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	3	2	67%	4.00E-08	4.00E-08	5.00E-08	6.00E-08	4.33E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	3	2	67%	4.00E-08	4.00E-08	5.00E-08	7.00E-08	4.67E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3	1	33%	2.00E-08	4.00E-08	3.20E-07	3.20E-07	1.17E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	3	2	67%	4.00E-08	4.00E-08	1.30E-07	1.70E-07	1.07E-07
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	3	3	100%	--	--	8.00E-08	2.00E-07	1.60E-07
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.00E-07	1.30E-07	1.13E-07
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	3	3	100%	--	--	1.17E-06	1.71E-06	1.41E-06
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	3	1	33%	1.00E-08	3.00E-08	6.00E-08	6.00E-08	2.67E-08
DIOX/	Octachlorodibenzofuran	mg/kg	3	0	0%	2.00E-08	1.10E-07	--	--	2.67E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	3	3	100%	--	--	3.00E-07	4.30E-07	3.70E-07
METAL	Aluminum	mg/kg	3	0	0%	1.0	1.0	--	--	0.50
METAL	Antimony	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	3	3	100%	--	--	0.28	0.36	0.31
METAL	Barium	mg/kg	3	0	0%	0.20	0.20	--	--	0.10
METAL	Beryllium	mg/kg	3	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	3	3	100%	--	--	0.010	0.030	0.020
METAL	Chromium	mg/kg	3	1	33%	0.10	0.10	0.14	0.14	0.080
METAL	Cobalt	mg/kg	3	3	100%	--	--	0.010	0.070	0.030
METAL	Copper	mg/kg	3	3	100%	--	--	1.1	1.4	1.2
METAL	Lead	mg/kg	3	0	0%	0.010	0.010	--	--	0.0050
METAL	Manganese	mg/kg	3	3	100%	--	--	0.36	0.38	0.37
METAL	Mercury	mg/kg	3	0	0%	0.10	0.11	--	--	0.052
METAL	Nickel	mg/kg	3	0	0%	0.030	0.030	--	--	0.015
METAL	Selenium	mg/kg	3	3	100%	--	--	0.41	0.45	0.43
METAL	Silver	mg/kg	3	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	3	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	3	2	67%	0.010	0.010	0.010	0.010	0.0083
METAL	Zinc	mg/kg	3	3	100%	--	--	19	21	20
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	3	3	100%	--	--	4.17E-04	4.83E-04	4.58E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0015	0.0017	0.0016
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	3	3	100%	--	--	4.50E-05	5.68E-05	5.06E-05
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	3	3	100%	--	--	2.56E-04	2.98E-04	2.74E-04
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	3	3	100%	--	--	0.0011	0.0014	0.0012
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	3	3	100%	--	--	1.63E-04	1.70E-04	1.68E-04
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	3	3	100%	--	--	4.70E-05	7.00E-05	5.83E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	3	3	100%	--	--	1.30E-04	1.45E-04	1.37E-04
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	3	3	100%	--	--	0.0034	0.0038	0.0036
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	3	3	100%	--	--	1.94E-05	2.03E-05	1.98E-05
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	3	0	0%	1.00E-06	1.00E-06	--	--	5.00E-07
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	3	3	100%	--	--	1.35E-05	1.86E-05	1.56E-05
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	3	3	100%	--	--	2.21E-05	2.38E-05	2.30E-05
PCB	Aroclor-1016	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
PCB	Aroclor-1221	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097

Table F-101
Summary Statistics for Pacific Lamprey Fillet Skin On Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
PCB	Aroclor-1248	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
PCB	Aroclor-1254	mg/kg	3	3	100%	--	--	0.080	0.10	0.087
PCB	Aroclor-1260	mg/kg	3	0	0%	0.019	0.020	--	--	0.0097
PEST	2,4'-DDD	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	2,4'-DDE	mg/kg	3	3	100%	--	--	0.0043	0.0048	0.0045
PEST	2,4'-DDT	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Aldrin	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Alpha-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	alpha-Chlordane	mg/kg	3	3	100%	--	--	0.0073	0.011	0.0092
PEST	alpha-Chlordene	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Beta-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	cis-Nonachlor	mg/kg	3	3	100%	--	--	0.0085	0.011	0.0097
PEST	DDMU	mg/kg	3	3	100%	--	--	0.0036	0.0056	0.0045
PEST	Delta-BHC	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Dichlorodiphenyldichloroethane	mg/kg	3	3	100%	--	--	0.0048	0.0093	0.0077
PEST	Dichlorodiphenyldichloroethylene	mg/kg	3	3	100%	--	--	0.046	0.055	0.050
PEST	Dichlorodiphenyltrichloroethane	mg/kg	3	3	100%	--	--	0.028	0.038	0.031
PEST	Gamma-BHC (Lindane)	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	gamma-Chlordane	mg/kg	3	2	67%	0.0020	0.0020	0.0013	0.0025	0.0016
PEST	gamma-Chlordene	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Heptachlor	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Heptachlor epoxide	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Mirex	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Oxychlordane	mg/kg	3	0	0%	0.0019	0.0020	--	--	9.67E-04
PEST	Pentachloroanisole	mg/kg	3	3	100%	--	--	0.0015	0.0017	0.0016
PEST	Toxaphene	mg/kg	3	0	0%	0.057	0.060	--	--	0.029
PEST	trans-Nonachlor	mg/kg	3	3	100%	--	--	0.021	0.024	0.022
SVOC	1,2,4-Trichlorobenzene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	1,2-Dichlorobenzene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	1,2-Diphenylhydrazine	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	1,3-Dichlorobenzene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	1,4-Dichlorobenzene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	1-methylnaphthalene	mg/kg	3	0	0%	0.024	0.026	--	--	0.013
SVOC	2,4-Dinitrotoluene	mg/kg	3	0	0%	0.049	0.050	--	--	0.025
SVOC	2,6-Dinitrotoluene	mg/kg	3	0	0%	0.097	0.10	--	--	0.049
SVOC	2-Chloronaphthalene	mg/kg	3	0	0%	0.049	0.050	--	--	0.025
SVOC	2-Methylnaphthalene	mg/kg	3	1	33%	0.049	0.052	0.077	0.077	0.043
SVOC	4-Bromophenylphenyl ether	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	4-Chlorophenylphenyl ether	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	Acenaphthene	mg/kg	3	0	0%	0.049	0.050	--	--	0.025
SVOC	Acenaphthylene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	Anthracene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	Benzo(a)anthracene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	Benzo(a)pyrene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	Benzo(b)fluoranthene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	Benzo(ghi)perylene	mg/kg	3	0	0%	0.049	0.050	--	--	0.025
SVOC	Benzo(k)fluoranthene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	3	0	0%	0.049	0.050	--	--	0.025
SVOC	Chrysene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012

Table F-101
Summary Statistics for Pacific Lamprey Fillet Skin On Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Dibenz[a,h]anthracene	mg/kg	3	0	0%	0.049	0.050	--	--	0.025
SVOC	Dibenzofuran	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	Fluoranthene	mg/kg	3	0	0%	0.049	0.050	--	--	0.025
SVOC	Fluorene	mg/kg	3	0	0%	0.0084	0.0097	--	--	0.0046
SVOC	Hexachlorobenzene	mg/kg	3	0	0%	0.049	0.050	--	--	0.025
SVOC	Hexachlorobutadiene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	Hexachloroethane	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	3	0	0%	0.049	0.050	--	--	0.025
SVOC	Naphthalene	mg/kg	3	0	0%	0.054	0.085	--	--	0.033
SVOC	Nitrobenzene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	Phenanthrene	mg/kg	3	0	0%	0.024	0.025	--	--	0.012
SVOC	Pyrene	mg/kg	3	0	0%	0.049	0.050	--	--	0.025
VOC	Retene	mg/kg	3	0	0%	0.049	0.050	--	--	0.025

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-102
Summary Statistics for Whole Body Pacific Lamprey Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzodioxin	mg/kg	9	9	100%	--	--	2.10E-07	2.80E-07	2.40E-07
DIOX/	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	9	5	56%	1.00E-08	6.00E-08	7.00E-08	1.00E-07	5.61E-08
DIOX/	1,2,3,4,7,8-Heptachlorodibenzofuran	mg/kg	9	3	33%	1.00E-08	6.00E-08	1.00E-08	3.00E-08	1.56E-08
DIOX/	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	9	8	89%	1.00E-08	1.00E-08	7.00E-08	1.90E-07	1.09E-07
DIOX/	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	9	4	44%	1.00E-08	3.00E-08	4.00E-08	1.30E-07	4.83E-08
DIOX/	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	9	7	78%	1.00E-08	2.00E-08	8.00E-08	1.60E-07	1.01E-07
DIOX/	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	9	7	78%	2.00E-08	3.00E-08	1.60E-07	2.50E-07	1.53E-07
DIOX/	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	9	4	44%	2.00E-08	7.00E-08	6.00E-08	6.00E-08	3.61E-08
DIOX/	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	9	5	56%	1.00E-08	3.00E-08	3.00E-08	7.00E-08	3.56E-08
DIOX/	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	9	9	100%	--	--	1.80E-07	4.70E-07	3.18E-07
DIOX/	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	9	5	56%	2.00E-08	3.00E-08	7.00E-08	1.50E-07	7.67E-08
DIOX/	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	9	6	67%	1.00E-08	3.00E-08	1.00E-07	1.90E-07	1.03E-07
DIOX/	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	9	5	56%	1.00E-08	1.40E-07	1.10E-07	1.60E-07	8.56E-08
DIOX/	2,3,7,8-Tetrachlorodibenzofuran	mg/kg	9	9	100%	--	--	1.10E-06	3.18E-06	2.00E-06
DIOX/	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	9	3	33%	2.00E-08	4.00E-08	5.00E-08	7.00E-08	2.89E-08
DIOX/	Octachlorodibenzofuran	mg/kg	9	6	67%	2.00E-08	9.00E-08	2.00E-08	9.00E-08	4.61E-08
DIOX/	Octachlorodibenzo-p-dioxin	mg/kg	9	8	89%	2.00E-08	2.00E-08	3.00E-07	9.90E-07	4.33E-07
METAL	Aluminum	mg/kg	9	4	44%	1.0	1.0	1.9	2.2	1.2
METAL	Antimony	mg/kg	9	0	0%	0.050	0.050	--	--	0.025
METAL	Arsenic	mg/kg	9	9	100%	--	--	0.15	0.37	0.26
METAL	Barium	mg/kg	9	0	0%	0.20	0.20	--	--	0.10
METAL	Beryllium	mg/kg	9	0	0%	0.0040	0.0040	--	--	0.0020
METAL	Cadmium	mg/kg	9	9	100%	--	--	0.050	0.15	0.11
METAL	Chromium	mg/kg	9	4	44%	0.10	0.10	0.10	0.29	0.10
METAL	Cobalt	mg/kg	9	9	100%	--	--	0.010	0.39	0.091
METAL	Copper	mg/kg	9	9	100%	--	--	3.7	5.5	4.5
METAL	Lead	mg/kg	9	3	33%	0.010	0.010	0.010	0.060	0.014
METAL	Manganese	mg/kg	9	9	100%	--	--	0.24	0.53	0.39
METAL	Mercury	mg/kg	9	7	78%	0.10	0.10	0.090	0.25	0.11
METAL	Nickel	mg/kg	9	4	44%	0.030	0.030	0.030	0.56	0.11
METAL	Selenium	mg/kg	9	9	100%	--	--	0.51	0.75	0.58
METAL	Silver	mg/kg	9	0	0%	0.10	0.10	--	--	0.050
METAL	Thallium	mg/kg	9	0	0%	0.050	0.050	--	--	0.025
METAL	Vanadium	mg/kg	9	9	100%	--	--	0.030	0.040	0.037
METAL	Zinc	mg/kg	9	9	100%	--	--	18	27	22
PCB	2,2',3,3',4,4',5-Heptachloro-1,1'-biphenyl	mg/kg	9	9	100%	--	--	2.56E-04	7.04E-04	4.29E-04
PCB	2,2',3,4,4',5,5'-Heptachlorobiphenyl	mg/kg	9	9	100%	--	--	9.04E-04	0.0024	0.0015
PCB	2,3,3',4,4',5'-Hexachlorobiphenyl	mg/kg	9	6	67%	1.96E-06	3.28E-06	3.70E-05	9.39E-05	4.06E-05
PCB	2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	mg/kg	9	9	100%	--	--	2.00E-04	4.64E-04	3.18E-04
PCB	2,3,3',4,4'-Pentachlorobiphenyl	mg/kg	9	9	100%	--	--	8.06E-04	0.0020	0.0012
PCB	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	mg/kg	9	9	100%	--	--	1.25E-04	2.76E-04	1.92E-04
PCB	2',3,4,4',5-Pentachloro-1,1'-biphenyl (BZ 123)	mg/kg	9	9	100%	--	--	3.27E-05	6.83E-05	4.83E-05
PCB	2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	mg/kg	9	9	100%	--	--	1.00E-04	2.06E-04	1.43E-04
PCB	2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	mg/kg	9	9	100%	--	--	0.0024	0.0055	0.0035
PCB	2,3,4,5,3',4',5'-Heptachlorobiphenyl	mg/kg	9	9	100%	--	--	1.37E-05	2.84E-05	2.09E-05
PCB	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	mg/kg	9	0	0%	1.00E-06	9.96E-06	--	--	1.45E-06
PCB	3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	mg/kg	9	9	100%	--	--	1.09E-05	3.11E-05	2.19E-05
PCB	3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	mg/kg	9	9	100%	--	--	1.81E-05	3.74E-05	2.74E-05
PCB	Aroclor-1016	mg/kg	9	0	0%	0.019	0.029	--	--	0.011
PCB	Aroclor-1221	mg/kg	9	0	0%	0.019	0.029	--	--	0.011

Table F-102
Summary Statistics for Whole Body Pacific Lamprey Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
PCB	Aroclor-1232	mg/kg	9	0	0%	0.019	0.029	--	--	0.011
PCB	Aroclor-1248	mg/kg	9	0	0%	0.019	0.029	--	--	0.011
PCB	Aroclor-1254	mg/kg	9	9	100%	--	--	0.060	0.15	0.092
PCB	Aroclor-1260	mg/kg	9	3	33%	0.019	0.020	0.013	0.016	0.011
PEST	2,4'-DDD	mg/kg	9	4	44%	0.0020	0.0036	0.0015	0.0048	0.0024
PEST	2,4'-DDE	mg/kg	9	8	89%	0.0020	0.0020	0.0033	0.0085	0.0046
PEST	2,4'-DDT	mg/kg	9	2	22%	0.0019	0.0036	0.0022	0.0030	0.0015
PEST	Aldrin	mg/kg	9	0	0%	0.0019	0.0036	--	--	0.0012
PEST	Alpha-BHC	mg/kg	9	0	0%	0.0019	0.0036	--	--	0.0012
PEST	alpha-Chlordane	mg/kg	9	6	67%	0.0026	0.0036	0.0036	0.018	0.0069
PEST	alpha-Chlordene	mg/kg	9	0	0%	0.0019	0.0036	--	--	0.0012
PEST	Beta-BHC	mg/kg	9	0	0%	0.0019	0.0036	--	--	0.0012
PEST	cis-Nonachlor	mg/kg	9	6	67%	0.0026	0.0036	0.0066	0.015	0.0075
PEST	DDMU	mg/kg	9	6	67%	0.0026	0.0036	0.0037	0.0069	0.0039
PEST	Delta-BHC	mg/kg	9	0	0%	0.0019	0.0036	--	--	0.0012
PEST	Dichlorodiphenyldichloroethane	mg/kg	9	9	100%	--	--	0.0032	0.025	0.012
PEST	Dichlorodiphenyldichloroethylene	mg/kg	9	9	100%	--	--	0.035	0.077	0.053
PEST	Dichlorodiphenyltrichloroethane	mg/kg	9	9	100%	--	--	0.0063	0.029	0.016
PEST	Endosulfan sulfate	mg/kg	3	0	0%	0.0026	0.0036	--	--	0.0016
PEST	Gamma-BHC (Lindane)	mg/kg	9	0	0%	0.0019	0.0036	--	--	0.0012
PEST	gamma-Chlordane	mg/kg	9	4	44%	0.0020	0.0036	0.0015	0.0031	0.0019
PEST	gamma-Chlordene	mg/kg	9	0	0%	0.0019	0.0036	--	--	0.0012
PEST	Heptachlor	mg/kg	9	0	0%	0.0019	0.0036	--	--	0.0012
PEST	Heptachlor epoxide	mg/kg	6	0	0%	0.0019	0.0036	--	--	0.0013
PEST	Mirex	mg/kg	9	0	0%	0.0019	0.0036	--	--	0.0012
PEST	Oxychlordane	mg/kg	9	3	33%	0.0019	0.0036	0.0046	0.0057	0.0026
PEST	Pentachloroanisole	mg/kg	9	6	67%	0.0026	0.0036	0.0011	0.0016	0.0014
PEST	Toxaphene	mg/kg	8	0	0%	0.056	0.11	--	--	0.034
PEST	trans-Nonachlor	mg/kg	9	6	67%	0.0026	0.0036	0.016	0.025	0.014
SVOC	1,2,4-Trichlorobenzene	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	1,2-Dichlorobenzene	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	1,2-Diphenylhydrazine	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	1,3-Dichlorobenzene	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	1,4-Dichlorobenzene	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	1-methylnaphthalene	mg/kg	9	4	44%	0.0091	0.025	0.013	0.019	0.012
SVOC	2,4-Dinitrotoluene	mg/kg	9	0	0%	0.010	0.050	--	--	0.013
SVOC	2,6-Dinitrotoluene	mg/kg	9	0	0%	0.020	0.10	--	--	0.026
SVOC	2-Chloronaphthalene	mg/kg	9	0	0%	0.010	0.050	--	--	0.013
SVOC	2-Methylnaphthalene	mg/kg	9	4	44%	0.0091	0.044	0.031	0.039	0.022
SVOC	4-Bromophenylphenyl ether	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	4-Chlorophenylphenyl ether	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	Acenaphthene	mg/kg	9	0	0%	0.010	0.050	--	--	0.013
SVOC	Acenaphthylene	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	Anthracene	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	Benzo(a)anthracene	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	Benzo(a)pyrene	mg/kg	9	0	0%	0.0050	0.049	--	--	0.0087
SVOC	Benzo(b)fluoranthene	mg/kg	9	0	0%	0.0050	0.049	--	--	0.0087
SVOC	Benzo(ghi)perylene	mg/kg	9	0	0%	0.010	0.098	--	--	0.017
SVOC	Benzo(k)fluoranthene	mg/kg	9	0	0%	0.0050	0.049	--	--	0.0087
SVOC	Bis(2-chloro-1-methylethyl)ether	mg/kg	9	0	0%	0.010	0.050	--	--	0.013

Table F-102
Summary Statistics for Whole Body Pacific Lamprey Collected from Segment 5 of the Columbia River

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
SVOC	Chrysene	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	Dibenz[a,h]anthracene	mg/kg	9	0	0%	0.010	0.098	--	--	0.017
SVOC	Dibenzofuran	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	Fluoranthene	mg/kg	9	1	11%	0.010	0.050	0.017	0.017	0.014
SVOC	Fluorene	mg/kg	9	0	0%	0.0080	0.0099	--	--	0.0046
SVOC	Hexachlorobenzene	mg/kg	9	1	11%	0.010	0.050	0.012	0.012	0.013
SVOC	Hexachlorobutadiene	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	Hexachloroethane	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	Indeno(1,2,3-cd)pyrene	mg/kg	9	0	0%	0.010	0.098	--	--	0.017
SVOC	Naphthalene	mg/kg	9	0	0%	0.0091	0.059	--	--	0.016
SVOC	Nitrobenzene	mg/kg	9	0	0%	0.0050	0.025	--	--	0.0065
SVOC	Phenanthrene	mg/kg	9	3	33%	0.0073	0.025	0.013	0.015	0.0096
SVOC	Pyrene	mg/kg	9	0	0%	0.010	0.050	--	--	0.013
VOC	Retene	mg/kg	9	0	0%	0.010	0.050	--	--	0.013

DIOX/ - Dioxins and Furans

PEST - Pesticide

PCB - Polychlorinated biphenyl

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table F-103**Summary Statistics for Whole Body Starry Flounder Collected from Segment 5 of the Columbia River**

Constituent Class	Constituent Name	Units	Number Analyzed	Number Detected	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Concentration
CONV	Percent Lipids	%	1	1	100%	--	--	4.3	4.3	4.3
PEST	Hexabromodiphenyl ethe	mg/Kg	1	1	100%	--	--	8.40E-04	8.40E-04	8.40E-04
PEST	Pentabromodiphenyl ethe	mg/Kg	1	1	100%	--	--	0.0081	0.0081	0.0081
PEST	Tetrabromodiphenyl ethe	mg/Kg	1	1	100%	--	--	0.021	0.021	0.021

PEST - Pesticide