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PTI

ENVIRONMENTAL SERVICES

15375 SE 30th Place
Suite 250
Bellevue, Washington 98007

DATA REPORT

**Puget Sound Estuarine Studies
Procedures for Monitoring Salmon Marine Net-Pens**

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LIST OF ACRONYMS

BOD	biological oxygen demand
CCB	continuing calibration blank
CCV	continuing calibration verification
COD	chemical oxygen demand
DQO	data quality objective
EDTA	ethylenediaminetetraacetic acid
EPA	U.S. Environmental Protection Agency
ICB	initial calibration blank
ICV	initial calibration verification
LCS	laboratory control sample
MRL	method reporting limit
NTU	nephelometric turbidity units
PHA	poly-hydroxy alkanoate
PHB	poly- β -hydroxybutyrate
PLFA	phospholipid fatty acid
PSEP	Puget Sound Estuary Program
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RPD	relative percent difference
RSD	relative standard deviation
SOW	statement of work
TKN	total Kjeldahl nitrogen
TOC	total organic carbon
TON	total organic nitrogen
TVS	total volatile solids

1.0 INTRODUCTION

The culturing of salmon in marine net-pens results in the release of solid wastes (fish feces and unconsumed food) to the surrounding aquatic environment. These wastes can result in increased concentrations of phytoplankton nutrients within the water column and increased bacterial activity among bottom sediments. In the case of bottom dwelling organisms, increased input of organic carbon and associated bacterial activity can produce anoxic conditions that dramatically affect the species composition and abundances of organisms.

The U.S. Environmental Protection Agency (EPA) Region 10 undertook a study of procedures for monitoring the near-field benthic effects of organic deposition from salmon marine net-pens. Sediments and infaunal macroinvertebrates were sampled at five net-pens in Puget Sound, Washington, during the spring of 1991.

Benthic samples were collected by SCUBA divers at each of five salmon net-pen facilities located at ScanAm #1 (Cypress Island, near Anacortes), Sea Farms WA #1 (Port Angeles), Global Aqua #2 (Rich Passage, near Bainbridge Island) and Global Aqua #3 (Clam Bay, near Manchester), and Paradise Bay Seafarms (Port Townsend). Samples were processed in the field and subsequently analyzed for sulfide, grain size, sediment chemistry, and benthic infauna.

One of the five net-pen operations (Paradise Bay Seafarms, Port Townsend) was also sampled using a surface vessel, the research vessel (R/V) *Kittiwake*. Six Port Townsend stations and a reference location were sampled by the R/V *Kittiwake*, with five replicate chemistry and benthic infauna replicate samples collected at each station. Sediments were also collected at each station for analysis of bacterial biomass (i.e., phospholipid). Water samples were collected at two stations.

This report contains the data resulting from these studies. The report is divided into six sections:

- Introduction
- Cruise report for surface vessel sampling
- Cruise report for diver sampling
- Sediment and water chemistry quality assurance/quality control (QA/QC) review
- Benthic infauna QA/QC review.

Eight appendices are also included. Appendix A includes sediment bacterial biomass data and data interpretation. Appendix B contains field notes from the diver sampling events. Appendix C contains all sediment and water chemistry data. Appendix D lists laboratory holding times for all chemistry analyses. Results of the benthic infauna analyses are included in Appendix E, and copies of all chain-of-custody forms are in Appendix F. Appendix G contains field notes from the vessel sampling event and Appendix H contains the EPA divers' field reports.

2.0 CRUISE REPORT PORT TOWNSEND VESSEL SAMPLING

The salmon net-pen monitoring survey was conducted during May 1-3, 1991, aboard the *R/V Kittiwake*. Samples were collected on a transect that extended from the north end of the Paradise Bay Seafarms fish pens in Port Townsend Harbor. Samples were also collected from a reference area near Port Townsend. Station locations are shown in Figure 1. Sediment chemistry, benthic infauna, and bacteria samples were collected at seven stations, and water quality was measured at two stations. The sediment chemistry portion of this study is described in detail in Chapter 4.0 of this report.

Two sizes of sampling gear were used to collect samples, a 0.025 m² Van Veen sampler and a dual 0.1 m² Van Veen grab sampler. Five replicate casts were taken at each station using both samplers (total 10 casts). Each of the five 0.025 m² Van Veen samples was sieved onboard the vessel on a 0.5 mm sieve using gentle streams of sea water. The resulting benthic infauna samples were transferred to sample containers and preserved with 10 percent buffered formalin.

Each cast with the larger Van Veen sampler yielded two 0.1 m² grabs. One of these grab samples was processed for benthic infauna while the second was used for chemical analyses. In the case of benthic infauna samples, sediments were sieved using two stacked sieves (1.0 mm and 0.5 mm) with the resulting infauna samples transferred to sample containers and preserved with 10 percent buffered formalin. The overlying water was siphoned off the sediment chemistry sample and sediments from the upper 2 cm were transferred directly to a sample container for sulfide analyses. The remaining upper 2 cm of sediment was subsequently placed in a stainless steel bowl, mixed thoroughly, and then transferred to sample containers for other laboratory analysis. Specific chemical analyses included BOD, COD, total phosphorous, total organic nitrogen, sulfides, total organic carbon, and total volatile solids. Analytical methods are described in Section 4.

Ten additional marine sediment samples collected near the salmon net-pens during the Port Townsend vessel sampling event were sent to Oak Ridge National Laboratory. Field triplicate samples were submitted for the three stations (PTV1, PTV5, and PTV6) along with one sample from the reference area. The samples were analyzed for fatty-acids to quantitatively define the biomass, community structure, and nutritional status of the associated microbiota. The standard techniques used by the Institute for Applied Microbiology were followed (see Appendix A for detailed description). The specific analyses conducted were poly β -hydroxy alkanate (PHA) and gas chromatography/mass spectrometry for

phospholipid ester-linked fatty acids (PLFA). The methods, resulting data, and interpretation were submitted by the laboratory in report form. The report is included as Appendix A.

In general, the cruise was conducted efficiently and no problems were encountered. Excellent weather conditions prevailed throughout the cruise. The weather conditions facilitated accurate vessel repositioning once a station was established and minimized transit time between the fish pens and the reference area. A summary of the sampling activities that occurred during each day is presented in Table 1. A summary of the samples collected at each station is presented in Table 2. Station coordinates and distances from the commercial fish pens are provided in Table 3. All station and sample logs are on file at PTI.

Sample identifiers used in the field were established as follows. The first three letters of the sample name represented the site name and survey type (i.e., PTV - Port Townsend vessel survey). The next character represented the station number (1 through 6). Following the station number was a letter designating the sample type (e.g., C - chemistry, B - benthic infauna, W - water, or P - bacterial phospholipid). Field replicate numbers followed the sample type. Sample identifier PTV3C2, for example, was the second chemistry field replicate collected at Station 3 during the vessel survey.

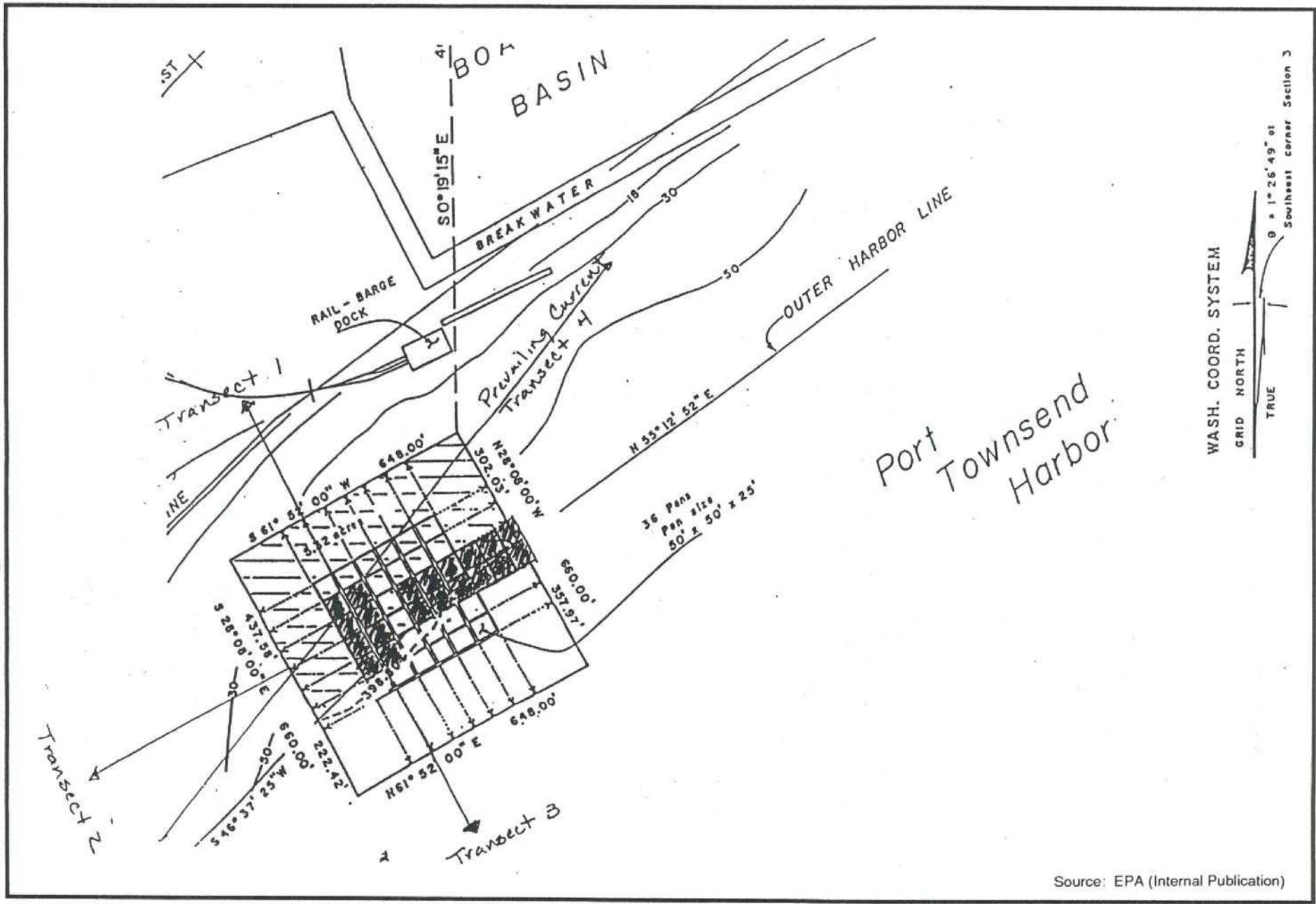
Benthic infauna samples required additional identifiers since two sizes of sampling gear were used at each station (i.e., 0.025- and 0.1-m² van Veen grab samplers) and all samples collected using the larger van Veen sampler were sieved on both 0.5-mm and 1.0-mm mesh sieves. Examples are as follows:

- PTV6BL15 - Port Townsend vessel station 6 (PTV6), benthic infauna sample (B), large van Veen sampler (L), replicate number 1 sieved on a 0.5 mm mesh sieve (15).
- PTV6BL11 - Same as previous example except this sample represents the 1.0-mm sieve size fraction.
- PTV3BS2 - Port Townsend vessel station 3 (PTV3), benthic infauna sample (B), small van Veen samples (S), replicate number 2.

The remainder of this report describes departures from the sampling and analysis plan and general observations made in the field.

DEPARTURES FROM THE SAMPLING PLAN

A few departures were made from the sampling and analysis plan. Most of the departures were related to the minor relocations of sampling stations that resulted from instructions conveyed by the EPA lead investigator as sampling proceeded. The other departures from the sampling and analysis plan were that



Source: EPA (Internal Publication)

Figure 1. Paradise Bay Seafarms fish pens.

TABLE 1. SUMMARY OF SAMPLING ACTIVITIES
FOR SALMON NET-PEN STUDY

Date ^a	Crew	Station Sampled ^b	Variables Sampled ^c	Departed Dock	Arrived Dock
May 1	Chip Hogue, PTI Jane Sexton, PTI Kris Flint, EPA Ann Dailey, EPA	PTV1, reference	C,B,W ^d ,P	0900	1630
May 2	Chip Hogue, PTI Jane Sexton, PTI Burney Hill, EPA Lisa Macchio, EPA	PTV2, PTV3, PTV4 ^e	C,B,P	0830	1900
May 3	Chip Hogue, PTI Jane Sexton, PTI Burney Hill, EPA	PTV4 ^f , PTV5, PTV6	C,B,W ^d ,P	0830	1900

^a All dates are 1991.

^b Fish pen location is shown in Figure 1.

^c C - sediment chemistry
B - benthic infauna
P - phospholipid
W - water quality.

^d Water quality samples collected at Stations PTV1 and PTV6.

^e Only 0.1 m² van Veen samples collected.

^f Only 0.025 m² van Veen samples collected.

TABLE 2. SUMMARY OF SAMPLES COLLECTED DURING THE SALMON NET-PEN STUDY

Station	Distance from Fish-Pens (feet)	Sample Type ^a	Number of Samples ^b	Sample Status
PTV1	1,000	C	5	analyze
		B	10	analyze
		P	3	analyze
		W	1	analyze
PTV2	300	C	5	analyze
		B	10	analyze
		P	3	archive
PTV3	200	C	5	analyze
		B	10	analyze
		P	3	archive
PTV4	100	C	5	analyze
		B	10	analyze
		P	3	archive
PTV5	60	C	5	analyze
		B	10	analyze
		P	3	analyze
		W	1	analyze
PTV6	10	C	5	analyze
		B	10	analyze
		P	3	analyze
		W	1	analyze
Reference	--	C	5	analyze
		B	10	analyze
		P	1	analyze
		P	2	archive

^a C - sediment chemistry
 B - benthic infauna
 P - phospholipid
 W - water quality.

^b Five benthic infauna samples were collected with a 0.1 m² van Veen sampler and five benthic infauna samples were collected with a 0.25 m² van Veen sampler.

TABLE 3. SUMMARY OF STATION CHARACTERISTICS

Station	Loran-C Coordinates	North Latitude	West Longitude	Approx. Distance from Fish-Pens (feet)
PTV1	28342.9 42278.6	48°06.18'	122°46.39'	1,000
PTV2	28343.1 42278.0	48°06.14'	122°46.54'	300
PTV3	28343.1 42278.0	48°06.13'	122°46.55'	200
PTV4	28343.1 42277.8	48°06.13'	122°46.58'	100
PTV5	28343.1 42277.8	48°06.12'	122°46.59'	60
PTV6	28343.1 42277.8	48°06.12'	122°46.60'	10
Reference	28333.6 42275.6	48°05.05'	122°46.59'	--

bacteria samples were collected at all the stations and water samples were collected at two stations.

FIELD OBSERVATIONS

The following notable observations were made during the cruise:

- Specific comments
 - **Station PTV1**—All grabs were full and the sediment was within 1 cm of the top of the grab sampler. The sediment appeared to be brown clay with no odor. Water temperature (1 meter off the bottom) at 1425 on May 3, 1991 (water bottle sample) was 11°C and dissolved oxygen was 7.5 mg/L.
 - **Station PTV2**—All grabs were full and the sediment was within 1 cm of the top of the grab sampler. The sediment was medium brown mud and had no odor.
 - **Station PTV3**—All grabs were full and the sediment was within 1 cm of the top of the grab sampler. The sediment was medium brown in color.
 - **Station PTV4**—All grabs were full and the sediment was within 1 cm of the top of the grab sampler. There appeared to be fewer animals present in this sample compared to stations PTV1, PTV2, PTV3, and the reference station. Approximately 100 grams of wood chips were retained in both the 0.1-m² and 0.05-m² sieves. There were more wood chips in this sample than at the other stations. The mud was approximately 10 cm deep and had a black upper layer.
 - **Station PTV5**—All grabs were full and the sediment was within 1 cm of the top of the grab sampler. Benthic replicate samples numbers 1-4 had 2 cm of brown material on the surface. Sample Number 5 had bacteria on the surface. All of the samples collected contained black mud and had a hydrogen sulfide odor.
 - **Station PTV6**—All grabs were full and the sediment was within 1 cm of the top of the grab sampler. Sediments were black with strong hydrogen sulfide odor. The water sample was collected 1 meter from the bottom at 1415 on May 3, 1991. The water temperature and the dissolved oxygen were measured onboard the vessel. The measurements were 11°C and 8.0 mg/L, respectively.

- **Reference station**—All grabs were full and the sediment was within 1 cm of the top of the grab sampler. The sediment appeared to be brown clay with no odor. There appeared to be fewer animals at the reference station than at PTV1, but the sediment that was collected appeared to be almost identical to that at PTV1.

- **General observations**

- Station positioning or relocation appeared to be very accurate. The accuracy for repeated sampling at a station was usually within 3 meters of the previous sample.
- The abundances of benthic infauna at Stations PTV5 and PTV6 appeared to be low relative to all other stations sampled.

3.0 CRUISE REPORTS DIVER CORE SAMPLING

EPA divers collected sediment and infauna samples at five salmon net-pen facilities: ScanAm #1 (Cypress Island, near Anacortes), Sea Farms WA #1 (Port Angeles), Global Aqua #2 (Rich Passage, near Bainbridge Island) and Global Aqua #3 (Clam Bay, near Manchester), and Paradise Bay Seafarms (Port Townsend). The divers collected the sediment in 0.01-m² core tubes. PTI assisted in this field effort by supplying a field technician who helped EPA sieve (mesh size = 0.5 mm) and preserve all benthic infauna samples collected by the dive team. Station positions were selected in the field by the EPA lead investigator. A total of 191 cores at 32 stations were collected during the diver survey. A summary of the samples collected at each station is presented in Table 4. The field observations made on each diver collected sample are included in Appendix B.

Sample identifiers used for diver collected data are based on a site designator followed by a station number. Sample CLAM3, for example, represents the sample taken at Global Aqua #3 (Clam Bay, near Manchester) Station No. 3.

Additional identifiers were used in the case of Paradise Bay Seafarms (Port Townsend) to distinguish between the diver and vessel surveys performed at that location. Paradise Bay Seafarms' samples were tagged with cruise and sample type in addition to the station and site designators. Station PTD6, for example, was the sample collected at Station Number 6 during the Paradise Bay Seafarms diver survey.

TABLE 4. SUMMARY OF SAMPLES COLLECTED
DURING THE DIVER SAMPLING EVENTS

Sample Type*	Number of Samples ^b	Sample Status
S	1	analyze
C	2	analyze
B	3	analyze

- * S - sulfide
- C - sediment chemistry
- B - benthic infauna.

^b Sediment was collected in 0.01-m² core tubes.

4.0 SEDIMENT AND WATER CHEMISTRY QUALITY ASSURANCE AND QUALITY CONTROL REVIEW

This section documents the results of a quality assurance review of data for conventional analyses of 67 sediment and 2 water samples from Puget Sound salmon net-pen areas. The conventional analyses include determination of total sulfides, ammonia, total Kjeldahl nitrogen (TKN), total phosphorus, biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC), grain size distribution, total solids, miscellaneous nutrients (e.g., nitrate, nitrite), settleable solids, total volatile solids (TVS), total suspended solids, and turbidity. This quality assurance report is provided in support of the quality assurance project plan (QAPP) for the salmon net-pens monitoring project (PTI 1991), which addressed the overall data quality objectives (DQOs) for this project. These DQOs are outlined in Table 5.

Specific quality control QC measures were utilized by the laboratory to ensure that the overall project DQOs for precision, accuracy, comparability, representativeness, and completeness were achieved. These measures included the use of standard methods, adherence to established sample handling procedures and holding times, and the analysis of replicates and control samples. These control samples included method blanks, initial and continuing calibration verification standards, and laboratory control samples. A list of quality control measures, their frequency, and their control limits is given in Table 6.

Quality control check samples reveal a great deal about sampling technique, analyst technique, instrument capability, possible sources of contamination, and difficulties with the matrix. When considered as a whole, these pieces of information allow one to make a determination as to what degree the analytical results are useable. The following quality control check samples were used. Table 7 outlines the control measures, frequency, and control limits.

- Initial calibration verification (ICV) standards were run after each calibration of an instrument to verify that the instrument is operating properly, and that the standards are accurate. An ICV is an independent reference standard made from a source different than that of the calibration standards.
- Continuing calibration verification (CCV) standards were run routinely (e.g., every 10 samples, every 2 hours) to regularly verify the ongoing calibration of the analytical system.

TABLE 5. DATA QUALIFIER CODES

Qualifier Code	Description
<i>E</i>	Estimate
<i>G</i>	Estimate is greater than value shown
<i>M</i>	Value is a mean
<i>Q</i>	Questionable value
<i>U</i>	Undetected at the detection limit shown
<i>UE</i>	Detection limit shown is an estimate

TABLE 6. MINIMUM DATA QUALITY OBJECTIVES

Variable	Matrix	Units	Detection Limit	Analytical			Method, Reference	Method Description	Holding Time*
				Bias	Precision	Completeness			
Benthic macroinvertebrates	sediment	numbers of individuals	N/A	± 5% ^b	NA	95%	Taxonomy to species level PSEP (1986)	Sorting and identification	NA
Bacterial biomass	sediment		N/A	± 5%	± 10%	95%	White et al. (1979)	Phospholipid	NA
Biochemical oxygen demand	sediment	mg/kg	1,200	± 20%	± 35%	95%	PSEP (1986)	5 days at 20°C	7 days
	aqueous	mg/L	4	± 20%	± 35%	95%	405.1, U.S. EPA (1979)		
Chemical oxygen demand	sediment	mg/kg	500	± 20%	± 35%	95%	PSEP (1986)	Titrimetric	7 days
Total organic carbon	sediment	percent dry weight	1	± 20%	± 35%	95%	PSEP (1986)	Combustion at 950°C	28 days
Nitrogen, nitrate and nitrite	aqueous	mg/L	0.2	± 20%	± 35%	95%	353.2, U.S. EPA (1979)	Spectrophotometric, cadmium reduction	28 days
Nitrogen, Kjeldahl	sediment	mg/kg	1	± 20%	± 35%	95%	Mod. 351.4, U.S. EPA (1979)	Potentiometric, ion selective electrode	28 days
	aqueous	mg/L	0.1	± 20%	± 35%	95%	351.4, U.S. EPA (1979)		28 days
Nitrogen, Ammonia	sediment	mg/kg	0.2	± 20%	± 35%	95%	Mod. 350.3, U.S. EPA/OSU ^c	Potentiometric, ion selective electrode	28 days
	aqueous	mg/L	0.05	± 20%	± 35%	95%	350.3, U.S. EPA (1979)		28 days
Nitrogen, total organic	sediment	mg/kg	0.8	± 20%	± 35%	95%	Mod. 351.4-350.3, U.S. EPA/OSU ^c	Kjeldahl minus ammonia nitrogen	28 days
	aqueous	mg/L	0.1	± 20%	± 35%	95%	351.4-350.3, U.S. EPA (1979)		28 days
Total phosphorus	sediment	mg/kg	1	± 20%	± 35%	95%	Mod. 365.3, U.S. EPA (1979)	Colorimetric, ascorbic acid	7 days
	aqueous	mg/L	0.01	± 20%	± 35%	95%	365.3, U.S. EPA (1979)		28 days
Total sulfides	sediment	mg/kg	20	± 20%	± 35%	95%	PSEP (1986)	Titrimetric, iodine	7 days
Grain size	sediment	g dry weight	NA	± 20%	± 35%	95%	PSEP (1986)	Wet seive	6 months
Total volatile solids	sediment	percent	0.1	± 20%	± 35%	95%	PSEP (1986)	Gravimetric, ignition at 550°C	28 days
Total suspended solids	aqueous	mg/L	5	± 20%	± 35%	95%	160.2, U.S. EPA (1979)	Gravimetric, dried at 103-105°C	7 days
Total settleable solids	aqueous	mg/L	0.2	± 20%	± 35%	95%	160.5, U.S. EPA (1979)	Volumetric, Imhoff cone	48 hours

TABLE 6. (Continued)

Variable	Matrix	Units	Detection Limit	Analytical			Method, Reference	Method Description	Holding Time ^a
				Bias	Precision	Completeness			
Turbidity	aqueous	turbidity units	1	20%	± 35%	95%	180.1, U.S. EPA (1979)	Nephelometric	48 hours
pH	aqueous	pH units	NA	NA	± 0.2 pH units	95%	150.1, U.S. EPA (1979)	Electrometric	analyze immediately

^a Based on both a minimum sorting efficiency and minimum taxonomic identification accuracy of 95 percent.

^b The holding times are calculated from time of sampling.

^c Source: Berg and Gardner 1978

TABLE 7. QUALITY CONTROL MEASURES FREQUENCY,
AND CONTROL LIMITS, CONVENTIONAL VARIABLES

Sample Type	Frequency	Control Limit
Method blank	One per analytical batch or per 20 samples of similar matrix, whichever is more frequent	\leq detection limit
Analytical duplicate	One per analytical batch or per 20 samples of similar matrix, whichever is more frequent	\leq 35 relative percent difference
Initial calibration verification	Once for each time instrument is calibrated	90 - 110 percent
Continuing calibration verification	One for every 10 analyses and following the last samples to be analyzed	90 - 110 percent
Laboratory control sample	One per analytical batch or per 20 samples of similar matrix	80 - 120 percent, or EPA advisory limits
Performance evaluation samples	As required for state accreditation	As determined by interlaboratory precision and bias

- Analytical blanks
 - Method blanks were used during sample analyses to evaluate possible sources of laboratory contamination during the analytical procedure. It is carried through the entire procedure using the same reagents, surrogates, etc., as the samples. Method blanks were prepared at the time of sample preparation for each analytical batch of samples using deionized/distilled water.
 - Calibration blanks were used, when appropriate, to "zero" the instrument. The calibration blank is a sample of laboratory water or solvent containing the same reagents at the same concentration as the calibration standards.
- Field replicate analyses were used to assess the overall precision of the investigation. Replicate samples were collected as separate grab samples at each of the locations to be sampled for sediment analysis.
- Laboratory duplicates were used in order to determine the precision of the inorganic analytical method where matrix spike duplicates are not appropriate.
- Laboratory control samples (LCSs) are reference materials that were used, where available, to provide a further evaluation of laboratory accuracy. These LCS are analyzed using the same sample preparation, reagents, and analytical methods employed for samples. Reference materials were obtained from EPA or another well-documented source.

All of the conventional analyses were performed by Columbia Analytical Services in Kelso, Washington. The quality assurance review included examination and validation of the following laboratory data:

- Sample preparation logs and laboratory worksheets
- All instrument printouts
- Instrument calibration and calibration verification procedures and results
- Sample holding times and chain-of-custody records
- Manual data transcriptions.

Data qualifiers are notations that are used by data reviewers to briefly describe or qualify data and the systems producing data. When assigned to individual data points they provide additional information on how, and to what extent, the different QA issues apply to various analytes. Data qualifiers were assigned as necessary during the quality assurance review. Following the validation procedures, data quality was assessed with respect to accuracy, precision, and completeness. All qualifier codes used in this report are defined in Table 5. Sample results, with qualifiers, and summaries of analytical and field precision results are provided in Appendix C. In addition to summarizing the data, the data table in Appendix C provides an integrative presentation of the impact of QA/QC shortfalls on different analytes.

Holding time summaries are presented in Appendix D. Chain-of-custody records are reproduced in Appendix F.

OVERALL CASE ASSESSMENT

This QA/QC review encompassed 1,162 data points. Grain size and total solids determinations constituted 58.6 percent of this total, and none of these data were qualified. Of the remaining conventional analytes, 5.4 percent were qualified as estimates (*E*), 6.9 percent were qualified as minimum estimates (*G*), 6.4 percent were qualified as undetected (*U*) at the corresponding reporting limit, 1.2 percent were qualified as undetected at an estimated detection limit (*UE*), and 0.4 percent (2 data points) were qualified as questionable values (*Q*). The two data points qualified as questionable were BOD samples (PTV3C4 and PTV3C5), two of five replicate samples.

Data qualified as estimates (*E*), minimum estimates (*G*), or undetected at an estimated detection limit (*UE*) are acceptable, but a greater degree of uncertainty is associated with these values than with unqualified data.

COMPLETENESS

Complete data packages were submitted by Columbia Analytical Services for 67 sediment and 2 water samples. The data were reviewed in accordance with requirements of the QAPP and laboratory statement of work (SOW) for this project (PTI 1991). Because of a change in sampling events, several events that were originally planned to be independent were completed concurrently.

HOLDING TIMES

Holding times specified in the QAPP were met for TOC, TVS, total suspended solids, and nitrate and nitrite.

Analyses of nine BOD samples exceeded the 7-day holding time requirement. Six BOD analyses exceeded the holding time by 1 day. One analysis exceeded the holding time by 6 days. Results for these eight analyses were qualified as estimates (*E*). Analyses of two samples (two of five replicates) exceeded the holding time by 33 days because the samples were temporarily lost by the laboratory. Results for these samples were qualified as questionable values (*Q*).

The contract with the laboratory specified the PSEP-recommended holding times. In many instances, the laboratory did not meet these recommendations. In these instances, additional information was considered, and other precedents were reviewed to determine if the data could still be considered valid, without qualification. The largest body of research pertaining to holding times is that which was performed to validate aqueous holding times. When reviewing the data for this project, these holding times were considered and were used to assist in the assignment of qualifiers.

Analyses of 11 sulfide samples did not meet the 7-day holding time requirement. Because of this and other quality control exceedances, the associated results were qualified as minimum estimates (*G*) and undetected values were qualified as estimated detection limits (*UE*).

Analyses of seven samples did not meet the 28-day holding time requirement for total organic nitrogen (TON). Results for these samples were qualified as estimates (*E*).

None of the sediment samples were analyzed for total phosphorus within the SOW holding time of 7 days. However, most analyses did meet the 28-day holding time recommended for wastewater analyses (U.S. EPA 1983). The total phosphorus data were not qualified if this 28-day holding time was met. Analyses of seven samples exceeded the latter holding times, and the associated results were qualified as estimates (*E*).

Twenty-two sediment samples were not analyzed for COD within the SOW holding time of 7 days. However, all of these samples were analyzed within the 28-day holding time recommended for wastewater (U.S. EPA 1983). Therefore, the data were not qualified.

Both water samples were analyzed for ammonia and TKN past the recommended holding time of 28 days. Results for these analyses were qualified as estimates (*E*).

The water samples to be analyzed for settleable solids and turbidity were received at the laboratory past the 48-hour holding time requirement. The laboratory analyzed the samples upon receipt. Because of the possibility of decomposition, the results for these analyses were qualified as estimates (*E*) or as having estimated detection limits (*UE*).

ANALYTICAL METHODS AND QUALITY ASSURANCE REVIEW

All sample extraction and analysis procedures, instrument calibration procedures, and quality control checks conformed to QAPP requirements, except as discussed in the following sections.

Total Volatile Solids

Sediment samples were analyzed for TVS by the Puget Sound Estuary Program (PSEP) method (PSEP 1986). Percent TVS represent the fraction of total solids that are lost on ignition at a temperature that is sufficient to vaporize organic material. Therefore, TVS can be used as an approximate indicator of the amount of organic matter in the total solids (PSEP 1986), although some inorganic material is also vaporized in the procedure.

The sample, which was dried at $103 \pm 2^\circ\text{C}$ for total solids determinations, was ignited at $550 \pm 10^\circ\text{C}$ to a constant weight, cooled in a desiccator, and then weighed. The portion of solids which is lost upon ignition is the percent TVS.

Accuracy—No laboratory control samples (LCSs) were analyzed for TVS with these samples. This omission is acceptable. The low-level LCSs, available commercially are inappropriate for sediment TVS determinations. There were no other available reference standards that may have been used for the determination of TVS in sediment samples.

The analytical balance calibration was verified on each day of use with S-class weights. The drying oven thermometer was not calibrated against a standardized thermometer approved by the National Institute for Standards and Testing, but the oven temperature was monitored on each day using a commercial thermometer. The use of a non-verified commercial thermometer generally introduces an uncertainty of $\pm 5^\circ\text{C}$, but it is not a cause for concern. There are no other controls to be placed on this analysis by the laboratory.

Precision—Triplicate analyses were performed once for every analytical batch of twenty or fewer samples. Replicate field samples were taken at 5 stations and the reference area. The precision, in percent relative standard deviation (RSD), in all cases met the performance criterion of the study, except in the set PTV1C, which yielded a precision of 56 percent RSD. One of the replicate samples of the group was considered to be an outlier; recalculation without this sample yields 1.8 percent RSD.

Total Sulfide

Sediment samples were analyzed for total sulfide by the PSEP/9030 method (PSEP 1986). Total sulfides represent the amount of acid-soluble hydrogen sulfide, HS^- , and S^{2-} in a sample. Sulfides are measured because they may be toxic and may create unaesthetic conditions (PSEP 1986).

Excess iodine was added to a sample which had been treated with zinc acetate to produce zinc sulfide. The iodine oxidizes the sulfide to sulfur under acidic conditions. The excess iodine was then backtitrated with sodium thiosulfate.

Accuracy—The accuracy of the titration was verified through the analysis of an LCS of sodium sulfide. In addition, a sample from each analytical batch was spiked with a known amount of sulfide. Samples were then analyzed. An LCS was analyzed after every 10 samples and following the last analysis.

The effect of matrix interferences on accuracy was assessed through the use of matrix spikes, for which no quality control criteria were specified in the QAPP. The percent recoveries of these matrix spikes ranged from 55 to 98 percent. The implied recovery uncertainty of up to a factor of 2 was acceptable for sediment matrix.

Precision—Duplicate analyses were performed once for every 20 or fewer samples in an analytical batch. Replicate field samples were taken at five stations and the reference area.

Sulfide is volatilized by aeration and any oxygen inadvertently added to the sample may have converted the sulfide to an unmeasurable form. There was a high percent RSD between field samples, probably attributable to aeration in the field or in the laboratory. Therefore, all measurements were considered minimum estimate, and were qualified with a *G* qualifier.

Total Organic Nitrogen

Sediment samples were analyzed for TON through the analysis of TKN and ammonia. These analyses were conducted by revised EPA Methods 351.4 and 350.3, respectively (U.S. EPA 1983). TKN is the sum of ammonia plus TON. Therefore, TON is TKN minus ammonia.

Ammonia (Sediment)—Sediment samples were analyzed for ammonia using a method developed by Oregon State University (Berg and Gardner 1978). An aliquot of sample was extracted with 2M potassium chloride. The extract was

then brought to a known volume and analyzed as an aqueous sample according to EPA Method 350.3 (U.S. EPA 1983). Ammonia in the extract was determined potentiometrically using an ion-selective ammonia electrode and a specific ion meter. The ammonia electrode uses a hydrophobic gas-permeable membrane to separate the sample solution from a solution of ammonium chloride. Ammonia in the sample diffuses through the membrane and alters the pH of the ammonium chloride solution, which is sensed by a pH electrode. The constant level of chloride in the ammonium solution is sensed by a chloride-selective ion electrode, which acts as the reference electrode (U.S. EPA 1983).

Total Kjeldahl Nitrogen (Sediment)—An aliquot of each sediment sample was digested with sulfuric acid for TKN analysis. The digestate was then brought to a known volume and was analyzed as an aqueous sample according to EPA Method 351.4 (U.S. EPA 1983). Following digestion and cooling, distilled water was added to the digestion flask and the pH was adjusted to between 3 and 4.5 by the addition sodium hydroxide. The sample was then cooled and transferred to a 100 mL beaker. After inserting the electrode into the sample, a solution of sodium hydroxide, sodium iodide, and ethylenediaminetetraacetic acid (EDTA) was added and the ammonia measured potentiometrically.

Accuracy—The TKN instrument was calibrated using a blank and four standards. The calibration was then verified with an initial calibration verification (ICV) standard obtained from a commercial source. The concentration of the ICV was verified by the analysis of a continuing calibration verification (CCV) standard. Samples were then analyzed. After every 10 samples, and following the last analysis, a CCV and a continuing calibration blank (CCB) were analyzed.

The laboratory used the ICV standard as an LCS, although the standard was not digested with the samples. Therefore, the laboratory used an 85–115 percent control window for LCS analyses, which exceeded the 95–100 percent control window for ICV standards on several occasions. The results were not qualified for this discrepancy. The CCV standard recoveries were within the 90–110 percent control windows.

Precision—Triplicate analyses were performed once for every 20 or fewer samples in an analytical batch. Replicate field samples were taken at five stations and the reference area. The results, in percent RSD, were well within the goals of the study for analytical precision. However, field replicate precision was very poor for three of the areas tested (PTV1C, PTV2C, and PTV5C). The percent RSD yielded 61, 62, and 70 percent, respectively. None of these instances can be conclusively called an outlier, and the source of variability could not be determined.

Total Phosphorus

Sediment samples were analyzed for total phosphorus by EPA Method 365.3 (U.S. EPA 1983). Ammonium molybdate and antimony potassium tartrate were reacted in an acid medium with dilute solutions of phosphorus to form an antimony-phospho-molybdate complex. This complex was reduced to an intensely blue-colored complex by addition of ascorbic acid. The color is proportional to the phosphorus concentration and was measured spectrometrically.

Accuracy—The total phosphorus instrument was calibrated using a blank and five standards. The calibration was then verified with an ICV standard made from an EPA quality control check sample. An initial calibration blank (ICB) was also analyzed. In all cases the ICV and ICB control limits (90-110 percent and less than the detection limit, respectively) were met. The concentration of the ICV standard was verified by the analysis of a CCV standard obtained from a commercial source. Samples were then analyzed. After every 10 samples, and following the last, analysis a CCV and a CCB were analyzed. In all cases the control windows for the CCVs and CCBs were met.

Precision—Triplicate analyses were performed once for every analytical batch of twenty or fewer samples. The analytical precision, in percent RSD, met the study criteria of ± 35 percent RSD.

Five field replicates were taken from five stations and a reference area. The field precision calculated for these replicate samples met the study criterion in all cases (± 35 percent RSD).

Biochemical Oxygen Demand

Sediment samples were analyzed for BOD by the PSEP (1986) method. An aliquot of sample was weighted and transferred to a BOD bottle. Dilution water was added, making sure that no air bubbles were trapped in the bottle. The initial dissolved oxygen concentration was determined, then the samples were incubated for 5 days at $20 \pm 1^\circ\text{C}$. A dissolved oxygen concentration was again determined. BOD is the measure of the dissolved oxygen consumed by microbial organisms while assimilating and oxidizing the organic matter in a sample. This test is used to estimate the amount of organic matter that is available to organisms, in contrast to other tests used to estimate the total amount of organic matter. In addition to oxygen used for degrading organic matter, BOD may also include oxygen used to oxidize inorganic material and reduced forms of nitrogen (PSEP 1986).

Accuracy—Accuracy of the method was established by the analysis of an LCS of glucose-glutamic acid with each analytical batch of 20 or fewer samples. Results for all LCS standards analyzed were within the LCS control window of 80-120 percent.

Precision—Triplicate analyses were performed once for every 20 or fewer samples in an analytical batch. Replicate field samples were taken at five stations and the reference area. The results, in percent RSD, are within the goals of the study of ± 35 percent RSD, with the exception of the PTV2C field replicates. In this instance, one of the five samples was considered to be an outlier (Crow et al 1960). The recalculation of percent RSD, excluding this result, yields a value of 18.6 percent, which is within the control window. Therefore, no qualification of the data was made based upon precision data.

Chemical Oxygen Demand

Sediment samples were analyzed for COD by the PSEP (1986) method. COD is a measure of the oxygen equivalent of the organic matter content of a sample that is susceptible to oxidation by a strong chemical oxidant at elevated temperature and reduced pH. The test was devised as an alternative to the BOD test for estimating organic matter. For samples from a specific source, COD can be related empirically to BOD, TOC, or TVS and then used for monitoring after a relationship has been established.

Major limitations of the COD test are that it is not specific for organic matter and that correlations with other measures of organic carbon are not always found. Inorganic substances such as Fe^{+2} , Mn^{+2} , and S^{-2} can increase the consumption of oxidizing agent during the test. Plumb (1981) recommends that COD not be equated with organic matter in sediments (PSEP 1986).

The samples were warmed to room temperature, homogenized, and a representative aliquot was taken and weighed. The aliquot was then quantitatively transferred to a COD reflux flask, along with mercuric sulfate and potassium dichromate. Sulfuric acid-silver sulfate solution was added, and the mixture was refluxed for 2 hours, then cooled. Ferroin indicator was added and the sample was titrated with ferrous ammonium sulfate.

Accuracy—The accuracy of the titration was verified through the analysis of an LCS of glucose. The LCS was analyzed once per analytical batch of 20 or fewer samples. The LCS analyses met the 90-110 percent control limit. In addition, method blanks were analyzed at the same frequency, and COD was not detected in these blanks.

Precision—Triplicate analyses were performed once for every analytical batch of 20 or fewer samples. The analytical precision, in percent RSD, met the study criterion of ± 35 percent RSD.

Five field replicates were taken from five stations and a reference area. The field precision calculated for these replicate samples met the study criterion in all cases (± 35 percent RSD).

Total Organic Carbon

Sediment samples were analyzed for TOC by the PSEP (1986) method. TOC is a measure of the total amount of nonvolatile, volatile, partially volatile, and particulate organic compounds in a sample. TOC is independent of the oxidation state of the organic compounds and is not a measure of the organically bound and inorganic elements that can contribute to the BOD and COD tests (PSEP 1986).

Samples were dried to a constant weight at a temperature of $70 \pm 2^\circ\text{C}$. The drying temperature is relatively low to minimize loss of volatile organic compounds. After cooling in a desiccator, the sample was ground by mortar and pestle to break up aggregates. A representative aliquot was transferred to a clean, preweighed combustion boat and weighed. Carbonates were removed from the sample by the addition of hydrochloric acid, then the sample was dried again at $70 \pm 2^\circ\text{C}$. Previously ashed cupric oxide fines were then added to the combustion boat, and the samples were combusted at a temperature of $950 \pm 10^\circ\text{C}$, to yield carbon dioxide, which was measured coulometrically.

Accuracy—The TOC instrument was calibrated according to the manufacturer's directions. The calibration was then verified with an ICV standard of (EPA) municipal digested sludge. The instrument baseline was determined by the analysis of an ICB. The concentration of the ICV was verified by the analysis of a CCV standard of urea. Samples were then analyzed. After every 10 samples, and following the last analysis, a CCV and a CCB were analyzed.

ICV percent recovery was found to be within the 80-120 percent control window. The ICB and CCB were found to be less than the detection limit. The CCV percent recovery was found to be within the 90-110 percent control window.

Precision—Triplicate analyses were performed once for every 20 or fewer samples in an analytical batch. Replicate field samples were taken at five stations and the reference area. The results, in percent RSD, were well within the goals of the study (± 35 percent RSD).

Grain Size and Total Solids

Sediment samples were analyzed for particle size determination by the PSEP (1986) method. Particle size is used to characterize the physical characteristics of sediments. Because particle size influences both chemical and biological variables, it can be used to normalize chemical concentrations according to sediment characteristics and to account for some of the variability found in biological assemblages (PSEP 1986).

Samples were homogenized and a representative subsample of approximately 10 grams (wet weight) was removed. Total solids (percent) was determined by drying the aliquot to a constant weight at a temperature of $103 \pm 2^\circ\text{C}$, cooling to room temperature in a desiccator, then weighing the cooled sample.

A second representative subsample of approximately 30 grams (wet weight) was taken for wet sieving. Wet sieving separates the sample into size fractions greater than $62.5 \mu\text{m}$ (i.e., sand and gravel) and less than $62.5 \mu\text{m}$ (i.e., silt and clay). The sand and gravel fraction was subdivided further by mechanically dry sieving it through a graded series of screens. The silt-clay fraction was subdivided further using a pipet technique that depends upon the differential settling rates of different sized particles.

Precision—Triplicate analyses were performed once for every analytical batch of 20 or fewer samples. The analytical precision, in percent RSD, met the study criterion of ± 35 percent RSD except in two cases (detailed below). For grain size, this criteria was not used when the size fraction constituted less than 10 percent of the total mass because in these small fractions there is greater variability.

For grain size, the analysis of the PTDC set of analytical triplicate samples showed two of the samples to be comparable, while the third (composed primarily of clay) differed in its grain size distribution. Therefore, the percent RSDs for this analytical batch were high. Likewise, the field precision of total solids measurements for the PTDC set was poor. Perhaps because of the high clay content mixing in the laboratory was not effective. It is recommended that averaging the PTDC replicate values be considered during data analysis to account for this heterogeneity. For grain size, the analysis of analytical triplicate samples Station PTVC3C) showed a percent RSD between the slit and clay fraction measurements of 38 percent and 87 percent, respectively.

Five field replicates were taken from five stations and a reference area. For grain size, the analytical precision for fractions that comprised at least 10 percent of the sample was good, within ± 35 percent except for the PTVC (62 percent RSD) and REFCO (38 percent RSD) between replicate factions.

Accuracy—No LCSs were analyzed with these samples for percent solids. This omission is acceptable. The low-level LCSs available commercially are inappropriate for sediment percent solids determinations. There were no other available reference standards that could be used for the determination of total solids in sediment samples.

The analytical balance calibration was verified on each day of use with S-Class weights. The drying oven thermometer was not calibrated against a standardized thermometer approved by the National Institute for Standards and Testing, but the oven temperature was monitored on each day of use by a commercial thermometer and was recorded. The use of a non-verified commercial thermometer generally introduces an uncertainty of $\pm 2^{\circ}\text{C}$, but it is not a cause for concern. As the procedure for determining particle size is a mechanical procedure, there are no other controls to be placed on this experiment by the laboratory.

Ammonia (Water)

Water samples were analyzed for ammonia by EPA Method 350.3 (U.S. EPA 1983). Sample concentrations were determined potentiometrically using an ion selective ammonia electrode and a specific ion meter. The ammonia electrode uses a hydrophobic gas-permeable membrane to separate the sample solution from an ammonium chloride solution. Ammonia in the sample diffuses through the membrane and alters the pH of the ammonium chloride solution, which is sensed by a pH electrode. The constant level of chloride in the ammonium chloride solution is sensed by a chloride selective electrode, which acts as the reference electrode (U.S. EPA 1983).

Accuracy—The instrument was calibrated using a blank and four standards. The calibration was then verified with an LCS obtained from a commercial source. The concentration of the LCS was verified by the analysis of a CCV standard. Samples were then analyzed. After every 10 samples, and following the last analysis, a CCV and a CCB were analyzed. The LCS was within the control limit window of 80-120 percent variation. The CCV was within the control limit window of 90-110 percent variation. There was nothing detected in the method blank or the CCB.

Precision—Triplicate analyses were performed once per analytical batch of 20 or fewer samples. The analytical precision met the percent RSD criterion of ± 35 percent RSD.

Nitrate and Nitrite

Water samples were analyzed for nitrate and nitrite by EPA Method 353.2 (U.S. EPA 1983). The sample was passed through a column containing granulated copper-cadmium to reduce the nitrate to nitrite. The nitrite was determined by diazotizing with sulfanilamide and coupling with N-(1-naphthyl)-ethylenediamine dihydrochloride to form a highly colored azo dye, which was measured calorimetrically.

Accuracy—The nutrient analyzer was calibrated using a blank and four standards. The calibration was then verified with an LCS obtained from a commercial source. The concentration of the LCS was verified by the analysis of a CCV standard. Samples were then analyzed. After every 10 samples, and following the last analysis a CCV and a CCB were analyzed. The LCS was within the control limit window of 80-120 percent variability. The CCV was within the control limit window of 90-110 percent variability. There was nothing detected in the method blank or the CCB.

Precision—Duplicate analyses were performed once per analytical batch of 20 or fewer samples. The analytical precision met the percent RSD criterion of ± 35 percent RSD.

Total Kjeldahl Nitrogen (Water)

Water samples were analyzed for TKN by EPA Method 351.4 (U.S. EPA 1983). Following digestion, distilled water was added to the digestion flask and the pH was adjusted to between 3 and 4.5 by the addition of sodium hydroxide. After inserting the electrode into the sample, sodium hydroxide, sodium iodide, and EDTA was added and the ammonia measured potentiometrically.

Accuracy—The instrument was calibrated using a blank and four standards. The calibration was then verified with an LCS obtained from a commercial source. The concentration of the LCS was verified by the analysis of a CCV standard. Samples were then analyzed. After every 10 samples, and following the last analysis, a CCV and a CCB were analyzed. The LCS was within the control limit window of 80-120 percent variability. The CCV was within the

control limit window of 90-110 percent variability. There was nothing detected in the method blank or the CCB.

Precision—Triplicate analyses were performed once per analytical batch of 20 or fewer samples. The analytical precision met the percent RSD criterion of ± 35 percent RSD.

Settleable Solids

Water samples were analyzed according to EPA Method 160.5 (U.S. EPA 1983). The sample was transferred to an Inhoff cone, and matter was allowed to settle. The cone is marked, like a volumetric flask. The amount of material that settles is determined by reading the closest mark to the separation between the aqueous and solid layers.

Accuracy—There were no accuracy controls specified in this analysis, because the laboratory used volumetric glassware to make the determination.

Precision—No analytical precision measurements were made for this analysis.

Total Suspended Solids

Water samples were analyzed for total suspended solids by EPA Method 160.2 (U.S. EPA 1983). Well mixed samples were filtered through a glass fiber filter, and the residue retained on the filter was dried to a constant weight at 103-105°C.

Accuracy—An LCS obtained from a commercial source and a method blank were analyzed with the samples. The LCS recovery was 97 percent of the true value. This is within the study goal of 80-120 percent and indicates very good accuracy and interlaboratory comparability. The method blank was free of contamination.

The analytical balance calibration was verified on each day of use with S-class weights. The drying oven thermometer was not calibrated against a standardized thermometer approved by the National Institute for Standards and Testing, but the oven temperature was monitored and recorded on each day using a commercial thermometer. The use of a non-verified thermometer generally introduces an uncertainty of $\pm 2^\circ\text{C}$, but it is not a cause for concern.

Precision—Triplicate analyses were performed once per analytical batch of 20 or fewer samples. The analytical precision met the percent RSD criterion of ± 35 percent RSD.

Turbidity

Water samples were analyzed for turbidity by EPA Method 180.1 (U.S. EPA 1983). The method is based upon a comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension. The higher the intensity of scattered light, the higher the turbidity. Readings, in nephelometric turbidity units (NTU), were made in a nephelometer. A standard suspension of formazin, prepared under closely defined conditions, was used to calibrate the instrument.

Accuracy—An LCS obtained from a commercial source and a method blank were analyzed with the samples. The LCS recovery was 97 percent. The method blank was free of contamination.

Precision—Triplicate analyses were performed once per analytical batch of 20 or fewer samples. The analytical precision met the percent RSD criteria of ± 35 percent RSD.

5.0 BENTHIC INFAUNA QUALITY ASSURANCE AND QUALITY CONTROL REVIEW

Benthic infauna assemblages were sampled and analyzed at five salmon net-pen sites in Puget Sound in accordance with PSEP protocols. A total of 32 stations were sampled by EPA divers with three replicates collected at each station using core tubes of approximately 10 cm in diameter. All diver collected samples were sieved using a 0.5 mm mesh size.

A vessel was also used to collect two additional types of benthic samples at one of the net-pen sites. At Paradise Bay Seafarms (Port Townsend), the *R/V Kittiwake* was used to collect five replicate 0.025-m² and five replicate 0.1 m²-van Veen grab samples at each of seven stations (six net-pen stations and one reference station). All vessel-collected samples were sieved using a 0.5-mm mesh size. The samples collected with the 0.1 m²-van Veen sampler were also sieved using a 1.0-mm mesh size. This sampling design was used to compare the 0.5-mm mesh size fraction between the two van Veen samplers and to compare the two size fractions (0.5 mm and 1.0 mm) of infauna for the larger van Veen sampler.

All samples were sorted, and individuals were identified to the lowest possible taxonomic level. Data were reviewed for:

- Sorting efficiency
- Taxonomic identifications
- Numerical abundance.

Benthic data were sorted and identified by E.V.S. Consultants, Seattle, Washington.

SORTING EFFICIENCY

Twenty percent of each sample was resorted by a person other than the one who originally sorted the sample. In 6 of 204 cases (3 percent), the number of organisms found during resorting, when corrected for the volume of the sample that was re-sorted, was greater than 5 percent of the total number of organisms in the sample (i.e., sorting efficiency was less than the desired level of 95 percent). Those samples included:

- PTAN2-2

- PTV1-11 (0.5-mm fraction)
- PTV2-25 3
- PTV3-11 (0.5-mm fraction)
- PTV3-14 (0.5-mm fraction)
- PTV3-15 (0.5-mm fraction)

Each of the above samples was completely resorted and subjected to a second 20 percent QA/QC evaluation. The desired sorting efficiency of ≥ 95 percent was achieved for all of these samples after resorting. No samples sieved on a 1.0 mm sieve required resorting.

TAXONOMY

Five percent of each major taxon were sent to recognized taxonomic experts outside of the E.V.S. laboratory. Mr. Howard Jones of Marine Taxonomic Services provided QA/QC for polychaetes, molluscs, and miscellaneous taxa. Arthropods were checked by Ms. Pamela Sparks. For all groups, external QA/QC confirmed taxonomic accuracy within the 95 percent limits required by the PSEP protocols. Those discrepancies noted are discussed below.

Polychaetes

A discrepancy was reported for polychaete identifications. *Prionospio cirrifera* was re-identified as *Prionospio multibranchiata*. The change was incorporated into the final data set.

Arthropods

Original identification of the crab *Pinnixa* indicated resemblance to *P. schmitti*. External review confirmed this species identification and all occurrences of *Pinnixa* cf. *schmitti* were changed to *Pinnixa schmitti*.

Molluscs

A difference in taxa was noted in sample PTV6-11 (0.5-mm fraction). *Turbonilla* spp. and *Nuculana* spp. (juveniles) were identified by external re-identification, but the sample was originally identified as containing *Alvania* cf. *compacta* and *Acila castrensis*. This difference was probably due to the small size and early life stage of the organisms. Subsequent re-examination by EVS of

the original specimens confirmed the original identifications, and no changes were made to the data.

In addition to the external review of species identifications, the data collected at the Port Townsend reference station (PTVREF) were compared to results of previous studies. The Puget Sound Ambient Monitoring program has collected benthic infauna samples at this location previously. Comparison of the species list from the previous study and that of the salmon net-pen sampling indicated general agreement in the species composition at the station.

NUMERICAL ABUNDANCE

Numerical abundances of benthic infauna are typical for what is expected at the stations sampled. However, the coefficient of variation for total infauna abundance was unusually large at seven stations (ANAC-1, ANAC-4, BAIN-1, CLAM-5, MANC-1, PTAN-5, PTV6). This variability is caused by the presence of large numbers of nematodes in some of the replicate core or grab samples. Nematodes are traditionally not sampled quantitatively on 0.5 or 1.0-mm mesh sieves because the majority of individuals pass through these screens. The presence of mucous or wood debris in a sample can occasionally artificially decrease the effective mesh size of a sieve and result in the capture of large numbers of nematodes. Therefore, the variability present within the data is considered to be an artifact of sampling and not the result of laboratory sorting problems. Users of this data should consider excluding nematodes for data analysis.

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From: BURNEY HILL (BHILL)
To: R10MD2:DKARNA
Date: Friday, January 10, 1992 1:53 pm
Subject: Need your help -Reply

Region 10 Dive Team conducted benthic monitoring studies of salmon marine net-pens in Puget Sound to assess the impacts of organic deposition and develop monitoring guidelines. EPA divers made written and photographic observations and collected sediment samples at five large, commercial net-pens. Samples were analyzed for sediment chemistry and infaunal macroinvertebrates. At one net-pen in Port Townsend additional sampling was conducted from a surface vessel utilizing two sizes of van Veen grabs to establish intergear variability and the precision and cost-effectiveness of samples collected with SCUBA gear. Analytical results have been returned by the labs and data is awaiting the acquisition of suitable statistical software (LAN-based Statistica) for further analysis.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

MEMORANDUM

6/02/93

Subject: Status of "Procedures for monitoring salmon marine net-pens"

From: Burney Hill, Aquatic Environmental Scientist, WMEB, WD-137

B Hill

To: Routing List

EPA Region 10's study of salmon marine net-pens has been inactive for the past seventeen months. It is my hope and intention to carry the project forward into an analytical phase this summer. This effort is a logical, necessary and somewhat delayed continuation of the successful field survey and sampling program carried out by the Dive Team during the spring of 1991. Additional activities and deliverables of note include the following.

- PTI submitted the attached data report for "Procedures for monitoring salmon marine net-pens" in September of 1991. Data was also provided in electronic format on computer diskettes.
- Additional field sampling was conducted at the Port Townsend salmon marine net-pens in October of 1991. Physical, chemical and taxonomic data were provided by TetraTech and KCM Consultants in December of 1991.
- Biomass measurements made by Columbia Science, a TetraTech subcontractor, are forthcoming.

During the above field study EPA divers were able to visually establish severe deposition and degradation around salmon net-pens without the collection and analysis of samples. Gross accumulation and bacterial growth were apparent at a number of net-pens. Stations with visually apparent degradation were also characterized by increased levels of TOC and H₂S and decreased diversity in benthic communities.

A cooperative study by EPA Region 10 and the UW School of Fisheries follows through on this opportunity. We are developing a method for using SCUBA-based observations of epibenthic communities to assess intermediate as well as severe levels of degradation associated with organic deposition. From my review of the literature in refereed journals, this is a new and undeveloped line of inquiry. I have recently submitted a request for participation by the EPA Dive Team in conducting field assessments with the preliminary method.

cc: file

APPENDIX A

Sediment Bacterial Biomass Data
and Data Interpretation

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Department of Microbiology
University of Tennessee
Knoxville

Environmental Sciences
Division
Oak Ridge National
Laboratories

Institute for Applied Microbiology
Analytical Division
July 12, 1991

Puget Sound Salmon Net/Pen Sampling

Ten sediment samples were received from PHI Environmental Services on May 27, 1991 for ester-linked phospholipid fatty acid (PLFA) and poly-hydroxy alkananoate (PHA) analyses. Samples were lyophilized upon arrival, and analyses begun on June 25, 1991.

Materials and Methods

Solvents were high quality distilled in glass and were of residue analysis grade (GC^2) from Burdick & Jackson (Muskegon, MI). Standards and derivitizing reagents were purchased from Supelco Inc. (Bellefonte, PA), Nu Chek Prep (Elysian, MN) and Pierce Chemical Co. (Rockford, IL).

Extraction: Sediment samples (35 to 37g dry weight) were lyophilized upon arrival. The sediments were extracted in a Bligh and Dyer [1959] single phase extraction system as modified to include phosphate buffer [White et. al. 1979b]. The sediments were extracted at room temperature in 142.5ml chloroform:methanol:phosphate buffer (50mM PO_4 , pH=7.5), (1:2:0.8, v:v:v) for three hours after which time 37.5ml each of chloroform and distilled water were added to separate the aqueous (upper) and organic (lower) phases overnight. The organic phase (containing the bacterial lipids) was collected and the solvent removed with a rotary evaporator at 37°C.

Separation: The total lipid extract was separated into neutral, glyco-, and polar lipid classes by silicic acid column chromatography as detailed in Guckert et. al. [1985]. A three solvent system of increasing polarity (chloroform, acetone, methanol) was used to elute the lipid classes from the silicic acid column, and the neutral and glycolipid fractions pooled for poly-

hydroxy alkananoate (PHA) analysis.

Quantification: The phospholipid-containing methanol fraction was further used in the evaluation of bacterial membrane lipid profiles. The phospholipid, ester-linked fatty acids (PLFA) were prepared for gas chromatography (GC) analysis by a mild alkaline transesterification [Guckert et. al. 1985]. The resultant fatty acid methyl esters (PLFAME) were separated, quantified and tentatively identified with capillary gas chromatography (GC). Dry PLFAME were dissolved in iso-octane containing the internal standard of nonadecanoate. Samples of 1.0 ul were injected onto the column in a Shimadzu GC-9A GC. The following conditions were used: analyses were performed on a 60m Rt_x-1 (non-polar methyl silicone) column with a 30s splitless injection at an injection temperature of 290°C. Hydrogen (linear velocity 35 cm/s) was the carrier gas with a temperature program starting with an initial temperature of 100°C. The temperature was programmed at a 10°C/min. rise to 150°C, holding at 150°C for 1 min., rising 3°C/min. to 282°C, and remaining at 282°C for 5 min. Detection was by hydrogen flame (F.I.D.) using a 30 ml/min. nitrogen makeup gas at a temperature of 290°C. An equal detector response was assumed for all components. Peak areas were quantified with a programmable laboratory data system, PE/Nelson 3000 Series Chromatography Data System (Revision 5.0). Verification of PLFAME structure was determined by GC/mass spectrometry as described by Ringelberg et. al. [1989]. Bacterial fatty acid double bond position and geometry was confirmed using GC/MS analysis of the dimethyl disulfide adducts of the monounsaturated PLFAME as described in Nichols et. al. [1986a]. Additional verification was done, as required, by equivalent chain length (ECL) analysis [Christie, 1989].

Poly-hydroxy alkananoates (PHA's): PHA was isolated from the neutral and glycolipid fractions off the silicic acid column and identified as described by Findlay and White [1982].

Fatty acid nomenclature: Fatty acids are designated as A:B_ωC, where A is the total number of carbon atoms, B is the number of double bonds, C is the position of the double bond from the aliphatic (ω) end of the molecule. Geometry of this bond is indicated 'c' for *cis* and 't' for *trans*. The prefixes 'i' and 'a' refer to iso and anteiso methyl-branching respectively [Kates, 1986]. Mid-chain methyl branches are designated by 'me' preceded by the position of the methyl group from the acid end of the molecule. Cyclopropyl fatty acids are designated as 'cy'.

Results

Biomass: PLFA detected (indicating a viable microbial community) showed cell densities in the range of 8.98×10^8 cells/gram dry weight (cells/gdw) for site PTV1 to 5.61×10^9 cells/gdw for site PTV6 (see table 1). These estimates are based on *E. coli.*, which yields 5.9×10^{12} cells/gdw and 10^{-4} mol PLFA/gdw. By treating the three field samples within a sampling site as replicate subsamples, we detected a five to six-fold increase in biomass at site PTV6 over sites PTV1 and PTV5 (see figure 1, table 1). Results are presented as arithmetic mean \pm one standard deviation.

Microbial Physiological Status: Physiological stress indicators such as cyclopropyl/monounsaturate fatty acid ratios (cy/mono) and trans/cis (t/c) isomer ratios indicate no significant differences between communities (fig. 2, table 2). Research has shown elevated t/c ratios (> 0.10 t/c) in isolates and consortia that have undergone some form of physical disturbance. Although all three sites exhibit a t/c ratio above 0.10 for the 16:1 monoenoic, this ratio is not paralleled in the 18:1 monoenoics. These values do not indicate whether the microbial community is undergoing a form of "stress" or are representative of the normal physiological state.

Cultures of bacterial isolates and consortia during log phase exhibit a much smaller cy/mono ratio than the same culture in late log and stationary phases. The increase in cyclopropyl synthesis is a result of transformation of the monoenoic to the ring configuration. This measure can be used as a relative indicator of growth phase within a community. No significant differences in the cy/mono ratio were detected between communities.

Initial experiments did not yield any detectable PHA's. Continued research will explore whether dilution factors were responsible for the lack of signal. Upon completion of these analyses, the information will be forwarded.

Community Structure: Table 3 lists all detected PLFA for the three sampling sites. The three subsamples within each site were treated as replicates, corresponding PLFA for each replicate were averaged, and a sample standard deviation obtained. These results are listed in Table 4.

All three sampling sites show PLFA representative of sulfate reducing bacteria (SRB). SRB-specific fatty acids include branched monoenoics (i17:1w7c and a17:1w7c), mid-chain branched saturates (10me16:0), and

cyclopropyl fatty acids (cyl7:0 and cyl9:0). The predominate PLFA in all the fatty acid profiles of this data set are 16:1w7c, 16:0 and 18:1w7c. The two monoenoics are terminal points in anaerobic desaturation fatty acid biosynthesis. This pathway is utilized by many gram (-) bacteria including SRB's. The fatty acid 16:0 is a very common fatty acid and has been detected in sources other than viable microorganisms.

Other prominent PLFA include the terminally branched saturates (i15:0, a15:0, i17:0, a17:0 etc.) and polyunsaturated fatty acids (PUFA). Terminally branched PLEA are also synthesized by SRB's, but may also be formed through branched chain synthesis, a pathway utilized by many gram (+) organisms. The PUFA's are characteristic of eukaryotes. The fatty acids 20:5w3 and 22:6w3 indicate the presence of diatoms in these samples.

Multivariate cluster analyses were performed on the fatty acid profiles (see figure 3). The samples clustered into three distinct groups, and this arrangement withstood exclusion of fatty acids with mole percents less than 1%.

Discussion

Differences in biomass were observed between the sites. Site PTV6 showed a level of PLFA/gdw five times greater than that of site PTV5 and six times greater than that of site PTV1. Microbial biomass was greatly enhanced next to the salmon pen yet this enhancement was not noticed at sites 5 or 1, which were comparable in the level of biomass detected.

Physiological indicators did not indicate that the communities were under any form of environmental stress. The t/c and cyclo/mono ratios appeared to lie within normal ranges. PHA's were not detected in any of the samples. Although the assay is being repeated for verification of the results, the lack of PHA's suggests that nutrient imbalance is not present at any of the sampling sites.

The microbial communities at each of the sites appear to be dominated by sulfate reducing bacteria. In fact, if PLFA common to SRB species are extracted from the individual profiles, these PLFA amount to 80 % of the total. Since many of the PLFA are also common to other species of bacteria, this estimate would naturally be high. Eukaryotic organisms, specifically diatoms, were also well represented.

Although the profiles are similar in PLFA detected, the relative amounts of these PLFA differ enough to distinguish three separate groups by use of multivariate statistical analysis (clustering). These groups represent different microbial communities based on the relative amounts of PLFA present. The sampling sites fall within these groups with a couple of exceptions, PTV5PL-1 and PTV1PL-1 (Figure 3). The communities represented by groups 2 and 3 are more similar to each other than to the community represented by group 1.

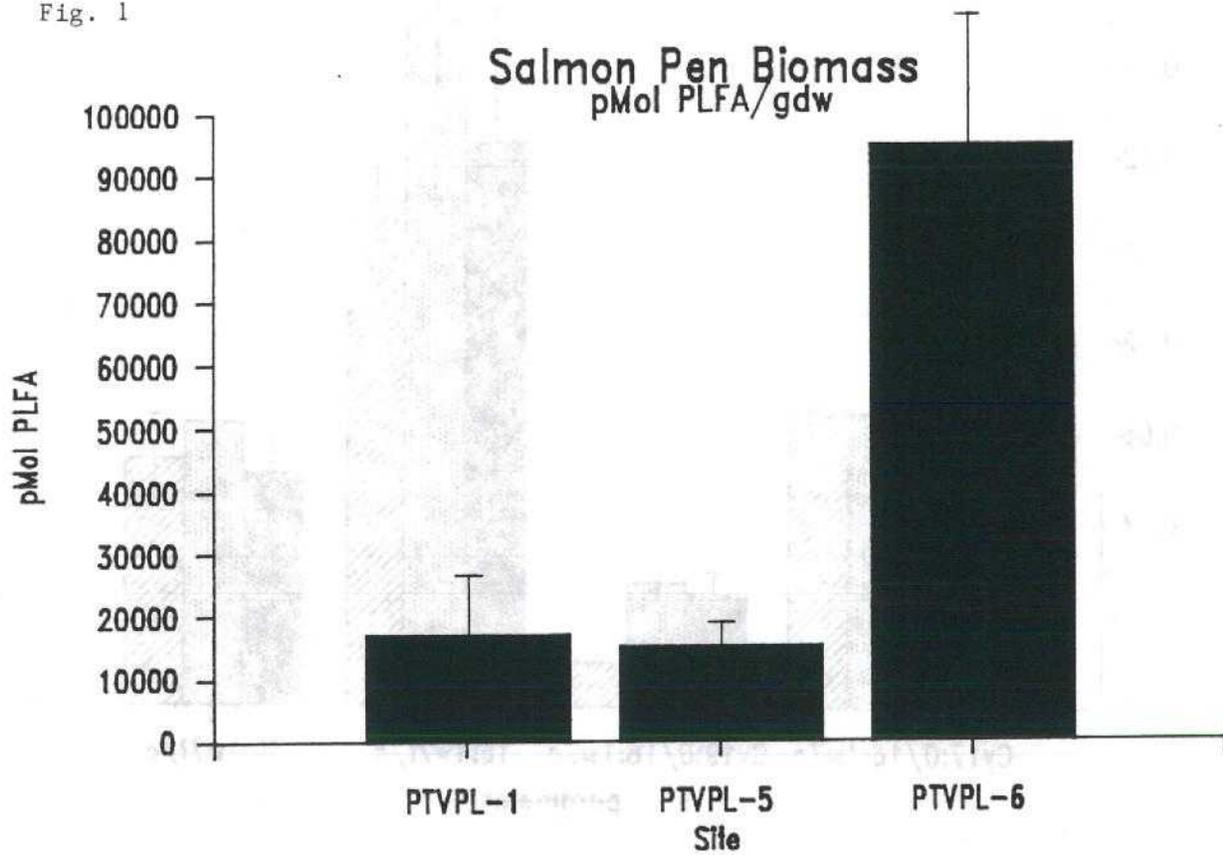
Within each group one sample was singled out based on PLFA characteristic of algae (determined by principal components analysis). Principal components analysis also indicated 18:1w7c carried the most weight in distinguishing group 1 and 16:0 carried the most weight in distinguishing group 2 from group 3. As mentioned above, 18:1w7c is a terminal fatty acid in anaerobic desaturation which is utilized by many gram (-) organisms. It is possible that organisms other than SRB's influenced this community. The excess amount of 16:0 in group 2 may be a result of input from sources other than microbial.

With additional sampling, more in-depth interpretations will be possible. Changes to the microbial community could be monitored for reactions to various treatments and more accurate measures of microbial biomass could be made.

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Fig. 1



Data presented as arithmetic mean +/- one standard deviation

Table 1

Sample	PTV1PL	PTV1PL-2	PTV1PL-3	Mean	S.D.
pMol PLFA/gdw	30092.4	9623.6	11675.3	17130.4	9203.7
	PTV5PL-1	PTV5PL-2	PTV5PL-3	Mean	S.D.
	9405.8	15902.7	20346.3	15218.3	4492.6
	PTV6PL	PTV6PL-2	PTV6PL-3	Mean	S.D.
	114077.5	104676.4	66535.0	95096.3	20557.3
	REFPL				
	12937.7				

Fig. 2

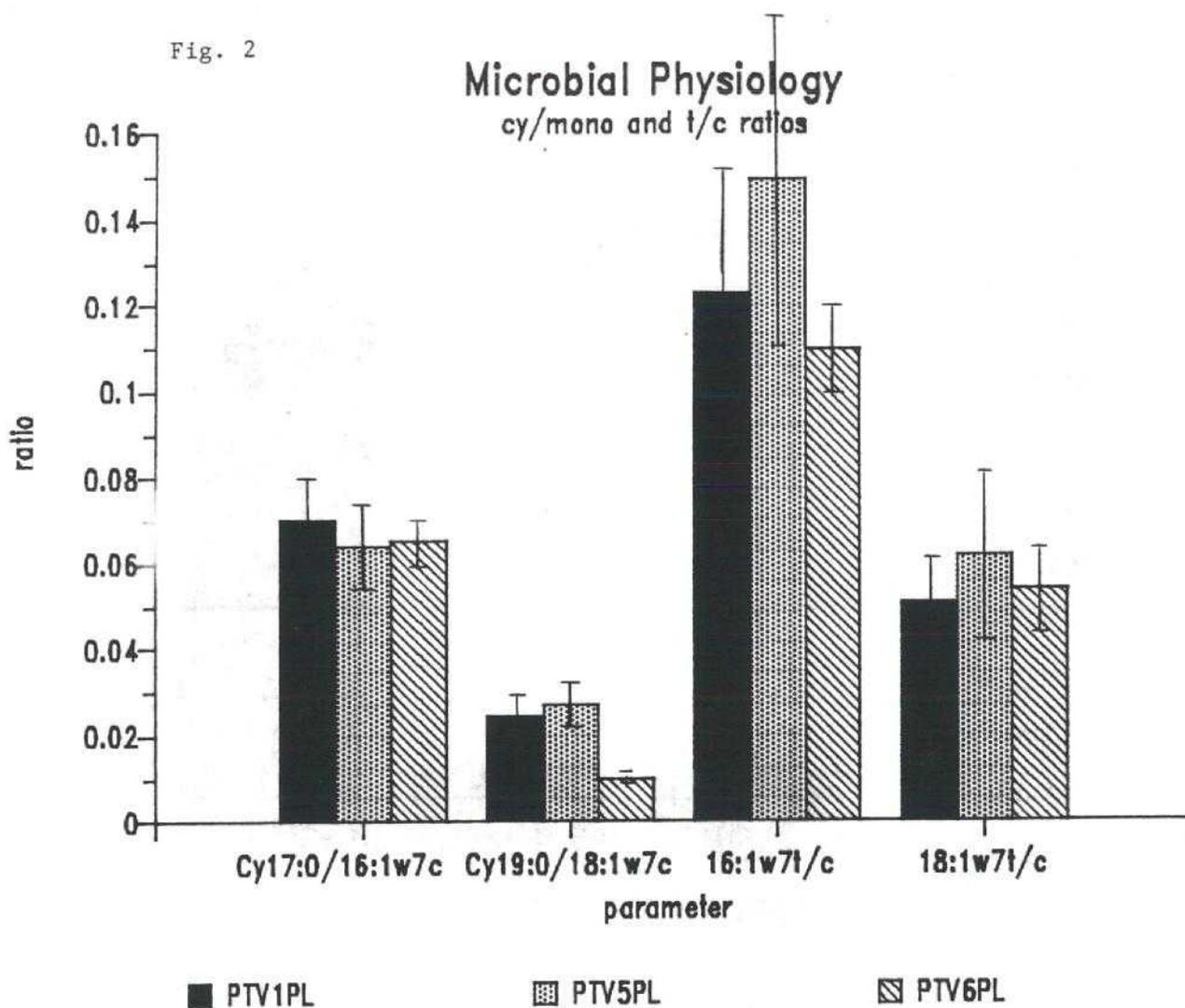


Table 2

Sample	PTV1PL	PTV1PL-2	PTV1PL-3	Mean	S.D.
Cy17:0/16:1w7c Ratio	.06	.08	.08	.07	.01
Cy19:0/18:1w7c Ratio	.02	.03	.02	.02	.00
16:1w7t/c Ratio	.16	.11	.10	.12	.03
18:1w7t/c Ratio	.07	.04	.04	.05	.01

	PTV5PL-1	PTV5PL-2	PTV5PL-3	Mean	S.D.
	.07	.06	.06	.06	.01
	.03	.03	.02	.03	.00
	.11	.14	.20	.15	.04
	.04	.05	.09	.06	.02

	PTV6PL	PTV6PL-2	PTV6PL-3	Mean	S.D.	REFPL
	.07	.06	.06	.07	.00	.08
	.01	.01	.01	.01	.00	.04
	.12	.11	.10	.11	.01	.10
	.06	.06	.05	.05	.01	.04

Table 3

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Mole %

PLFA (1)	ECL (2)	PTV1PL	PTV1PL-2	PTV1PL-3	PTV5PL-1	PTV5PL-2	PTV5PL-3	PTV6PL	PTV6PL-2	PTV6PL-3	REFPL
Br12:0	11916	.00	.00	.00	.00	.00	.00	.18	.14	.04	.00
12:0	12000	.00	.00	.13	.00	.07	.00	.19	.16	.07	.12
i13:0	12684	.00	.00	.26	.09	.16	.19	.24	.23	.16	.22
a13:0	12747	.00	.00	.21	.07	.15	.13	.13	.15	.10	.20
13:0	13000	.00	.00	.00	.04	.00	.04	.06	.06	.05	.07
i14:0	13624	.52	.65	.86	.72	.88	.82	1.40	1.41	1.17	1.02
14:1w9c	13735	.00	.00	.12	.24	.29	.13	.71	.78	.58	.16
14:1w7c	13828	.13	.00	.07	.11	.16	.16	.14	.15	.14	.19
14:1w5c/t(4)	13897	.00	.00	.17	.00	.00	.13	.01	.00	.00	.12
14:0	14000	2.23	2.21	2.90	4.39	3.20	3.40	4.29	4.53	3.91	3.32
Unk F.A.#1	14512	.00	.53	.58	.53	.74	.76	.38	.32	.37	.64
i15:0	14629	2.66	3.23	2.88	3.09	3.40	3.34	4.25	4.20	3.94	3.55
a15:0	14712	5.90	7.22	6.47	5.15	6.59	5.56	6.25	6.59	6.26	6.70
15:1w6c	14781	.24	.33	.36	.32	.40	.39	.07	.59	.44	.35
15:0	15000	1.06	1.20	1.14	1.03	1.01	1.06	.99	1.11	1.03	1.23
10Me15:0	15380	.21	.21	.19	.14	.18	.12	.20	.20	.18	.22
16:4w3(4)	15377	.24	.18	.27	.30	.16	.41	.10	.14	.15	.23
16:3w4	15393	.42	.29	.44	.34	.32	.52	.21	.22	.25	.40
i16:0	15636	1.30	1.38	1.17	.78	1.01	.87	.76	.73	.73	1.27
16:1w9c	15697	1.72	1.90	1.65	1.05	1.34	1.14	.77	.92	.94	2.02
16:1w7c/16:1w6	15739	13.17	14.18	12.37	12.85	14.01	14.79	13.23	14.95	14.39	13.29
16:1w7t	15780	1.49	1.51	1.27	2.05	1.93	2.92	1.61	1.60	1.44	1.38
16:1w5c	15840	3.22	3.59	2.99	2.23	2.84	2.30	2.11	2.35	2.22	3.28
16:1w5t(4)	15868	.10	.00	.08	.09	.08	.07	.08	.08	.09	.09
16:1w13t	15904	.28	.22	.23	.38	.25	.40	.26	.21	.25	.23
16:0	16000	14.71	14.89	12.46	18.38	16.28	17.20	18.31	19.24	20.21	12.99
Mono F.A.	16055	.20	.31	.31	.09	.21	.14	.09	.00	.19	.22
i17:1w7c	16328	.80	.88	.74	.56	.85	.74	.52	.57	.57	1.02
a17:1w7c	16386	.33	.42	.39	.14	.25	.17	.05	.07	.06	.29
10Me16:0	13428	2.00	2.08	1.52	.87	1.51	1.19	.40	.53	.65	1.89
Unk F.A.#2	16499	.23	.18	.23	.26	.14	.14	.22	.21	.20	.14
i17:0	16627	.84	.84	.67	.51	.65	.53	.41	.43	.42	.78
a17:0/17:1w8c	16708	2.68	2.83	2.30	1.35	1.91	1.48	1.02	1.06	1.07	2.48
Cy17:0	16756	.99	1.08	.96	.73	.86	.83	.89	.96	.92	1.08
17:1w6c	16812	.51	.42	.38	.24	.29	.33	.33	.36	.34	.45
17:0	17000	1.19	1.27	1.03	.72	.90	.72	.54	.59	.61	1.08
18:3w6	17392	.22	.15	.35	.14	.12	.22	.11	.12	.15	.16
18:2	17459	.47	.35	.89	.40	.38	.50	.25	.25	.26	.37
18:2	17539	.26	.26	1.06	.47	.58	.72	.98	.83	.75	.60
18:2w6	17592	.69	.64	.73	2.45	1.56	2.22	4.10	3.57	3.81	.53
18:3w3/i18:0(5)	17624	.90	.97	.82	1.08	.95	1.08	1.03	.77	.80	.62
18:1w9c	17694	5.72	5.42	4.68	5.97	5.18	5.28	7.20	6.56	7.09	4.97
18:1w7c/18:1w9t(5)	17758	15.74	15.75	15.24	10.83	13.36	11.64	8.02	8.22	8.62	14.67
18:1w7t	17793	.71	.70	.60	.74	.72	1.01	.48	.45	.41	.65
18:1w5c	17846	.32	.46	.31	.23	.26	.28	.25	.23	.20	.28
18:0	18000	2.43	2.35	2.43	3.59	2.96	3.32	4.69	4.45	4.97	2.42
-19:1	18033	.39	.38	.31	.24	.30	.28	.21	.15	.20	.38
10Me18:0(4)	18388	.24	.20	.24	.14	.16	.13	.06	.06	.07	.23
19:1w12c(4)	18655	.35	.31	.26	.15	.18	.14	.08	.07	.07	.26

Table 3 (cont.)

a19:0(4)	18705	.32	.27	.23	.00	.20	.14	.01	.10	.07	.20
17:1w8c(4)	18780	.00	.00	.00	.07	.00	.06	.06	.05	.05	.00
17:1w9c	18813	.49	.44	.38	.22	.37	.25	.07	.08	.09	.54
20:4w6	19153	2.33	1.84	3.47	1.34	1.64	1.52	1.14	.93	.97	2.27
20:5w3	19195	3.54	1.77	4.32	4.67	2.59	2.83	3.46	2.32	2.03	3.11
20:4w3/20:3w6(4)	19253	.18	.20	.20	.22	.17	.17	.19	.18	.15	.14
20:2w6/20:1w11c(4)	19594	.15	.00	.27	.33	.16	.12	.19	.16	.11	.08
Mono F.A.	19652	.77	.53	1.05	.62	.56	.37	.51	.32	.28	.00
20:1w9c	19681	.66	.57	.72	.68	.75	.52	.52	.44	.46	1.64
20:1w7c	19752	.41	.32	.33	.35	.28	.25	.20	.14	.14	.27
20:0	20000	.60	.37	.36	.35	.41	.40	.29	.27	.31	.39
21:0	21000	.50	.32	.37	.30	.39	.32	.16	.14	.16	.40
22:6w3	21042	1.50	.71	1.20	3.15	1.69	1.95	3.16	2.38	2.49	.95
Polyunsat. F.A.	21157	.00	.00	.18	.18	.16	.16	.18	.13	.13	.18
22:4w6/22:5w3	21202	.00	.20	.30	.60	.28	.28	.47	.29	.43	.21
22:2w6(4)	21653	.00	.00	.00	.00	.00	.15	.01	.14	.14	.00
22:1w9c(4)	21696	.00	.00	.00	.08	.00	.09	.06	.04	.05	.00
22:1w7c(4)	21776	.00	.00	.00	.05	.00	.06	.04	.03	.03	.00
22:0	22000	.34	.32	.23	.21	.25	.24	.20	.15	.18	.20
23:0	23000	.17	.00	.40	.13	.16	.00	.05	.03	.04	.38
24:0	24000	.24	.20	.26	.18	.19	.19	.16	.12	.13	.16

	PTV5PL-1	PTV1PL-2	PTV1PL-3	PTV1PL	PTV5PL-2	PTV5PL-3	PTV6PL	PTV6PL-2	PTV6PL-3	REFPL
Total pMol PLFA	374255.2	368583.3	447396.7	1115826	555959.8	784958.5	4283610	3966190	2417217	500044
pMol PLFA/gdw (3)	9405.8	9623.6	11675.3	30092.4	15902.7	20346.3	114077.5	104676.4	66535.0	12937.7

- (1) - ester-linked phospholipid fatty acid
- (2) - equivalent chain length
- (3) - total picomoles per gram dry weight extracted
- (4) - nomenclature unconfirmed by mass spectral analysis
- (5) - Only trace amounts of i18:0 and 18:1w9t were detected

Table 4

(7-10-91)

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PLFA (1)	ECL (2)	Average Mole %					
		PTV1PL		PTV5PL		PTV6PL	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
Br12:0	11916	.00	.00	.00	.00	.12	.06
12:0	12000	.04	.06	.02	.03	.14	.05
i13:0	12684	.09	.12	.14	.04	.21	.04
a13:0	12747	.07	.10	.12	.03	.13	.02
13:0	13000	.00	.00	.03	.02	.06	.01
i14:0	13624	.68	.14	.81	.07	1.33	.11
14:1w9c	13735	.04	.06	.22	.07	.69	.08
14:1w7c	13828	.06	.05	.15	.02	.14	.00
14:1w5c/t(4)	13897	.06	.08	.04	.06	.00	.01
14:0	14000	2.45	.32	3.67	.52	4.24	.25
Unk F.A.#1	14512	.37	.26	.68	.10	.35	.03
i15:0	14629	2.93	.24	3.28	.13	4.13	.13
a15:0	14712	6.53	.54	5.77	.60	6.37	.16
15:1w6c	14781	.31	.05	.37	.04	.37	.22
15:0	15000	1.13	.06	1.03	.02	1.04	.05
10Me15:0	15380	.20	.01	.15	.02	.20	.01
16:4w3(4)	15377	.23	.04	.29	.10	.13	.02
16:3w4	15393	.38	.07	.39	.09	.22	.02
i16:0	15636	1.28	.09	.89	.10	.74	.02
16:1w9c	15697	1.76	.10	1.18	.12	.88	.08
5:1w7c/16:1w6	15739	13.24	.74	13.89	.80	14.19	.72
16:1w7t	15780	1.42	.11	2.30	.44	1.55	.08
16:1w5c	15840	3.27	.25	2.46	.27	2.22	.10
16:1w5t(4)	15868	.06	.04	.08	.01	.09	.01
16:1w13t	15904	.25	.03	.34	.06	.24	.02
16:0	16000	14.02	1.11	17.29	.86	19.25	.78
Mono F.A.	16055	.27	.05	.15	.05	.10	.08
i17:1w7c	16328	.81	.06	.71	.12	.55	.02
a17:1w7c	16386	.38	.04	.19	.05	.06	.01
10Me16:0	13428	1.87	.25	1.19	.26	.53	.10
Unk F.A.#2	16499	.21	.03	.18	.06	.21	.01
i17:0	16627	.78	.08	.56	.06	.42	.01
a17:0/17:1w8c	16708	2.60	.22	1.58	.24	1.05	.02
Cy17:0	16756	1.01	.05	.80	.06	.93	.03
17:1w6c	16812	.44	.05	.29	.04	.34	.01
17:0	17000	1.16	.10	.78	.09	.58	.03
18:3w6	17392	.24	.08	.16	.04	.13	.02
18:2	17459	.57	.23	.43	.05	.25	.00
18:2	17539	.53	.38	.59	.10	.85	.09
18:2w6	17592	.69	.04	2.08	.38	3.83	.22
18:3w3/i18:0(5)	17624	.89	.06	1.04	.06	.86	.12
18:1w9c	17694	5.27	.44	5.48	.35	6.95	.28
18:1w7c/18:1w9t(5)	17758	15.57	.24	11.94	1.06	8.29	.25
18:1w7t	17793	.67	.05	.82	.13	.45	.03
18:1w5c	17846	.36	.07	.26	.02	.23	.02
9:0	18000	2.40	.04	3.29	.26	4.70	.21
or19:1	18033	.36	.03	.27	.02	.18	.03
10Me18:0(4)	18388	.23	.02	.14	.01	.06	.00

Table 4 (cont.)

19:1w12c(4)	18655	.31	.04	.16	.02	.07	.00
19:0(4)	18705	.27	.04	.11	.08	.06	.03
19:1w8c(4)	18780	.00	.00	.04	.03	.06	.00
Cy19:0	18813	.44	.05	.28	.07	.08	.01
20:4w6	19153	-2.55	.68	1.50	.13	1.01	.09
20:5w3	19195	3.21	1.07	3.36	.93	2.60	.62
20:4w3/20:3w6(4)	19253	.19	.01	.19	.02	.17	.02
20:2w6/20:1w11c(4)	19594	.14	.11	.20	.09	.15	.03
Mono F.A.	19652	.78	.21	.52	.11	.37	.10
20:1w9c	19681	.65	.06	.65	.10	.47	.04
20:1w7c	19752	.35	.04	.29	.04	.16	.03
20:0	20000	.44	.11	.38	.03	.29	.01
21:0	21000	.40	.08	.34	.04	.15	.01
22:6w3	21042	1.14	.33	2.26	.64	2.68	.34
Polyunsat. F.A.	21157	.06	.09	.17	.01	.15	.02
22:4w6/22:5w3	21202	.17	.13	.39	.15	.40	.08
22:2w6(4)	21653	.00	.00	.05	.07	.10	.06
22:1w9c(4)	21696	.00	.00	.06	.04	.05	.01
22:1w7c(4)	21776	.00	.00	.04	.03	.04	.01
22:0	22000	.30	.05	.23	.02	.18	.02
23:0	23000	.19	.17	.10	.07	.04	.01
24:0	24000	.23	.03	.19	.00	.14	.02
		Mean	S.D.	Mean	S.D.	Mean	S.D.
Total pMol PLFA		6.23E+05	3.06E+05	5.72E+05	2.53E+05	3.56E+06	8.15E+05
pMol PLFA/gdw (3)		10234.87	1022.39	22113.79	5926.19	95096.3	20557.3

ATTACHMENT 1

Institute for Applied Microbiology
Oak Ridge National Laboratory/University of Tennessee
10515 Research Drive, Suite 300
Knoxville, Tennessee 37932-2567
615-675-9520
FAX 615-675-9456, Telex 740140

C744-3/

July 30, 1991

Dr. Chip Hogue
PTI Environmental
15375 SE 30th Place, Suite 250
Bellevue, WA 98007

AUG 1 1991
PTI

Dr. Hogue:

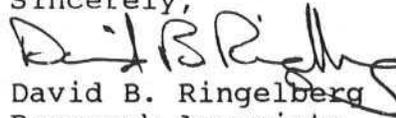
Enclosed is an addendum to our report dated July 12, 1991. The initial PHA analysis was performed on only a small aliquot of each sample to minimize other component interference. Instead of minimizing interference, we minimized the PHA signal. Upon reanalyzing the remainder of each sample, PHA was detected in all but two of the samples.

Although more PHA was detected at site 6, the ratio of the endogenous storage lipids to the cell membrane lipids was similar to the other sites. As described in the report, we use PHA/PLFA as an indicator for a nutrient imbalance in the microbial community. Only site 1 showed a small enhancement in this ratio.

Site 6 showed the highest level of bacteria per gram extracted. The PLFA also suggest this site contains a diverse bacterial community. Site 1 showed a much lower level of bacteria and a less diverse community (there were also indications of a strong algal population). Competition at site 6 may well utilize all carbon sources available leaving little for storage. Whereas, at site 1, little competition or a dilution of the bacterial community results in the capacity to store carbon. It may also be a matter of site 6 bacteria (SRB's) are capable of utilizing the carbon source for fatty acid synthesis and site 1 bacteria are not.

Please let us know if you have any questions regarding the data or the interpretations. Thanks again for the opportunity to analyzing some interesting samples.

Sincerely,


David B. Ringelberg
Research Associate

Department of Microbiology
University of Tennessee
Knoxville

Environmental Sciences
Division
Oak Ridge National
Laboratories

Institute for Applied Microbiology
Analytical Division

Submitted by Stephen C. Nold
July 29, 1991

Salmon Pen Sampling

Ten sediment samples were originally analyzed for PLFA and PHA content and the results reported to PTI Environmental Services July 12, 1991. This report details the results of further analyses performed on these samples.

PLFA Analysis

The original PLFA cluster analysis resulted in three distinct groups representing three microbiotic communities. Based upon subsequent extraction and analysis of sedimentary material, this clustering remains unchanged.

PHA Analysis

Initial analyses did not yield any detectable PHA. The samples were concentrated and the analysis repeated, yielding poly-beta-hydroxybutyrate (PHB) in 8 of the 10 samples (see fig. 1, table 1). No statistically significant differences were detected between the three sites; however, there may be more PHB present at site PTV6. This result is not surprising given the high microbial biomass present at this site. High variability is common in the natural environment.

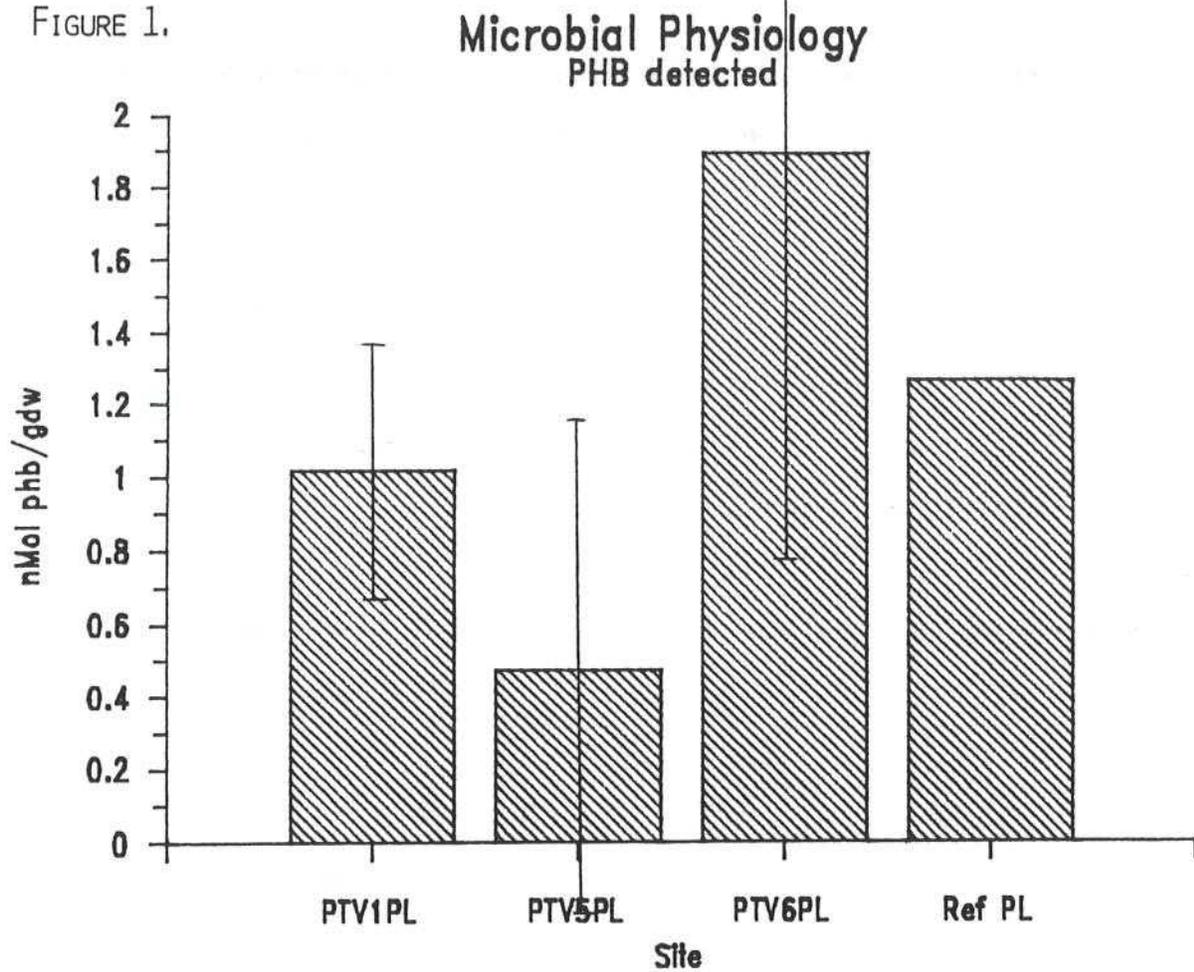
In general, bacteria accumulate PHA as the result of a nutrient imbalance or physical disturbance. We would expect the highest levels of PHA at the site which is experiencing the greatest nutrient imbalance or disturbance (Site PTV6).

By normalizing the PHB data to PLFA detected, an accurate ratio of PHB/biomass may be demonstrated. This ratio shows the amount of carbon stored as PHB to microbial biomass as measured by PLFA. The data is presented in table 2 and figure 2, and also shows no statistically significant differences between the three sites. However, a potential increase in PHB/biomass may be noted at site PTV1. This is not the expected result.

The PLFA profiles from site PTV1 suggested a community of algae and bacteria, with the algae representing a dominant member of the community. The communities at sites PTV5 and PTV6 showed lesser input of algal fatty acids to the profile, thereby indicating a community dominated by bacteria. This information may be a clue to the discrepancy from expected results (an increase in PHB/biomass at site PTV6). It may be speculated that the bacterially dominated communities at sites PTV5 and PTV6 are flooded with nutrients and are experiencing no nutrient imbalance (thereby having less PHB/biomass), while the community at site PTV1 is nutrient limited and shows an elevated PHB/biomass ratio.

All speculation aside, the PHB data statistically indicates the three microbial communities are physiologically similar and are experiencing similar amounts of disturbance. The PHB data agrees with other physiological stress indicators (cy/mono, t/c ratios).

FIGURE 1.



Data presented as arithmetic mean +/- 1 standard deviation

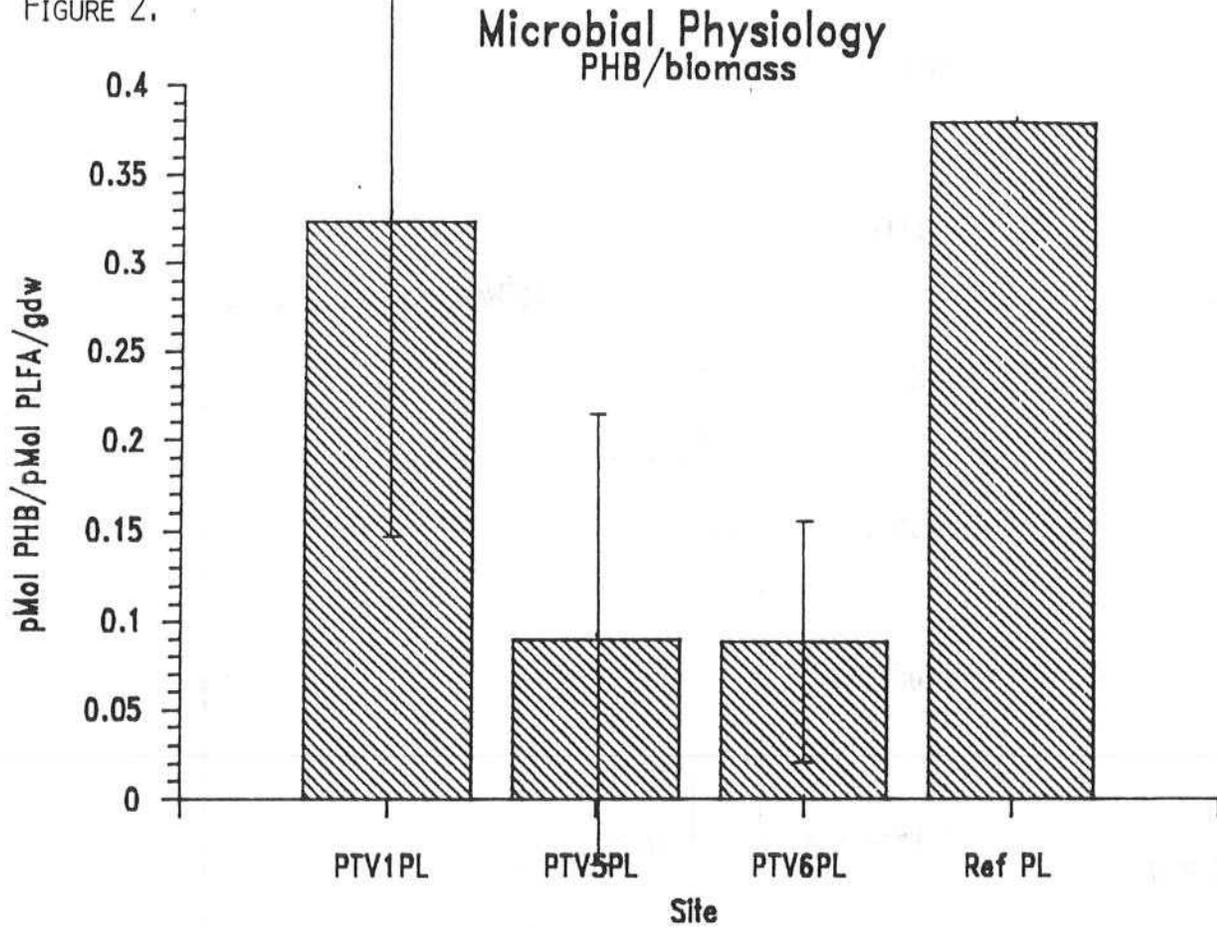
TABLE 1.

Salmon Net/Pen Sampling

Site	nMol PHB/gdw	Mean	S.D.
PTV1PL-1	.539	1.015	.347
-2	1.149		
-3	1.357		
PTV5PL-1	n.d.*	.475	.672
-2	n.d.*		
-3	1.425		
PTV6PL-1	.772	1.888	1.132
-2	1.452		
-3	3.441		
REF PL	1.268		

*none detected

FIGURE 2.



Data presented as arithmetic mean +/- 1 standard deviation

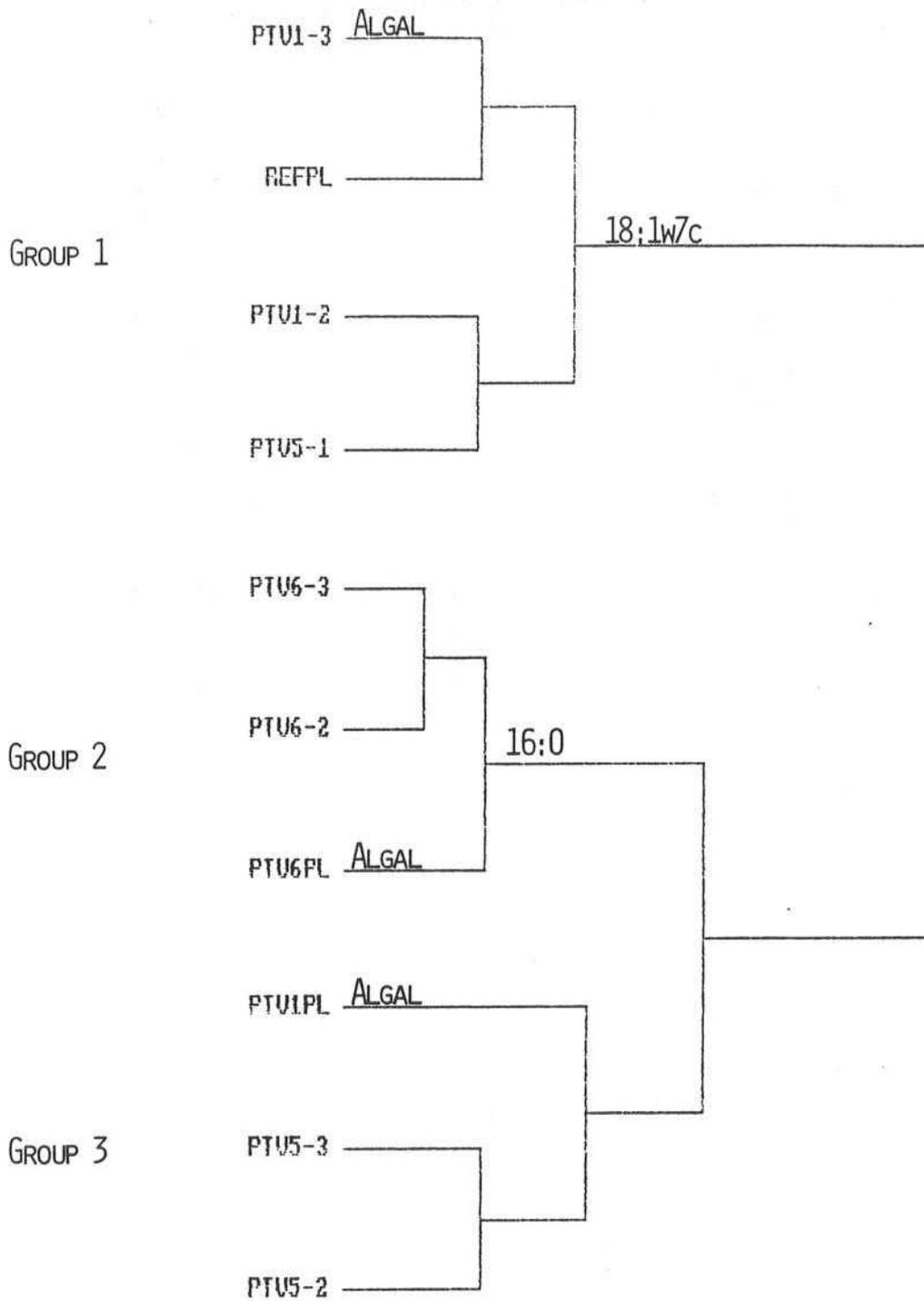
TABLE 2.

Site	Salmon Net/Pen Sampling		
	pMol PHB/Pmol PLFA/gdw Value	Mean	S.D.
PTV1PL-1	.067	.323	.181
-2	.457		
-3	.445		
PTV5PL-1	n.d.*	.090	.127
-2	n.d.*		
-3	.270		
PTV6PL-1	.025	.088	.071
-2	.053		
-3	.187		
REF PL	.379		

*none detected

Fig. 3

DENDROGRAM REPRESENTATION OF SALMON PEN CLUSTER ANALYSIS*



*COMPLETE LINKAGE FARTHEST NEIGHBOR

APPENDIX B

Field Notes from Diver Sampling Events

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**SAMPLING EVENT AT SCANAM #1
(CYPRESS ISLAND, NEAR ANACORTES)
MARCH 27, 1991**

Sediment cores were collected at 0, 20, 60, 100, and 300 feet along the transect, which extended east from the center of the fish pens. Divers Burney Hill and Rick Albright collected sediment cores at Stations 1 and 3. Divers Duane Karna and Glenn Bruck collected sediment cores at Stations 2, 4, and 6. No samples were collected at Station 5 because the substrate was too rocky (i.e., cobble stones) to push the corer through surface. Sea state was calm and the weather was clear.

Station	Purpose	Description
1a	Sulfide	Soft, sandy sediment; black color; shells; 10 cm penetration depth; little water leakage; tube filled with water; no apparent redox layer; hydrogen sulfide odor
1a	Benthic	Soft, sandy sediment; black color; shells; 7 cm penetration depth; little water leakage; tube filled with water; sediment surface in the core slanted; no apparent redox layer; hydrogen sulfide odor
1b	Chemistry	Soft, sandy sediment; black color; shell fragments; 9 cm penetration depth; little water leakage; no water in tube; no apparent redox layer; hydrogen sulfide odor
1b	Benthic	Soft, sandy sediment; black color; shell fragments, crab, clam; 9 cm penetration depth; little water leakage; tube filled with water; no apparent redox layer; hydrogen sulfide odor
1c	Chemistry	Soft, sandy sediment; black color; shell fragments, crab, clam; 7 cm penetration depth; tube filled with water; no apparent redox layer; hydrogen sulfide odor
1c	Benthic	Soft, sandy sediment; black color; shell fragments, crab, clam; 10 cm penetration depth; no water in tube; no apparent redox layer; hydrogen sulfide odor
2a	Sulfide	Black color; shell fragments; organic material on surface; fine grained powder on surface; 13 cm penetration depth; water in tube; possible redox layer; hydrogen sulfide odor, but not as strong as at Station 1
2a	Benthic	Black color; very few shell fragments; fine grained powder on surface; 13 cm penetration depth; water in tube; no visible redox layer; hydrogen sulfide odor, but not as strong as at Station 1
2b	Chemistry	Black color; shell fragments; fine grained powder on surface; 9 cm penetration depth; water in tube; no visible redox layer; hydrogen sulfide odor, but not as strong as at Station 1
2b	Benthic	Black color; wood and shell fragments; fine grained powder on surface; 18 cm penetration depth; water in tube; no visible redox layer; hydrogen sulfide odor, but not as strong as at Station 1

Station	Purpose	Description
2c	Chemistry	Black color; wood and shell fragments; fine grained powder on surface; 13 cm penetration depth; water in tube; no visible redox layer; hydrogen sulfide odor, but not as strong as at Station 1
2c	Benthic	Black color; wood and shell fragments; fine grained powder on surface; 17 cm penetration depth; water in tube; no visible redox layer; hydrogen sulfide odor, but not as strong as at Station 1
3a	Sulfide	Black clay; shell fragments; lots of shells (approximately top 2 cm of core); large rock in tube; 9 cm penetration depth; water in tube; redox layer at 0.25 cm
3a	Benthic	Black clay; shell fragments; 13 cm penetration depth; water in tube; redox layer at 0.25 cm
3b	Chemistry	Black clay; shell fragments; hermit crab in tube; 9 cm penetration depth; water in tube; redox layer at 0.25 cm
3b	Benthic	Black clay; shell fragments; 13 cm penetration depth; water in tube; redox layer at 0.25 cm
3c	Chemistry	Black clay; large shell fragments; 7 cm penetration depth; water in tube; redox layer at 0.25 cm
3c	Benthic	Black clay; shell fragments; 10 cm penetration depth; water in tube; redox layer at 0.25 cm
4a	Sulfide	Black clay; shell fragments; 8 cm penetration depth; water in tube; fine grained powder on surface
4a	Benthic	Black clay; shell fragments; 13 cm penetration depth; water in tube; lots of little white organisms (?) on surface (living or dead?); redox layer at 0.25 cm
4b	Chemistry	Black clay; shell fragments; 13 cm penetration depth; water in tube; sea anenome on surface
4b	Benthic	Black clay; two crabs on surface; 14 cm penetration depth
4c	Chemistry	Black clay; shell fragments; 14 cm penetration depth; water in tube; large rock in tube (approx. 1/4 pound)
4c	Benthic	Black clay; shell fragments; 15 cm penetration depth; water in tube; redox layer at 0.25 cm
6a	Sulfide	Dark gray sediment; fine grained powder on surface; surface very silty; lots of shell fragments; 6 cm penetration depth
6a	Benthic	Dark gray sediment; fine grained powder on surface; surface very silty; lots of shell fragments; 10 cm penetration depth; redox layer at 2 cm
6b	Chemistry	Dark gray sediment; fine grained powder on surface; surface very silty; lots of shell fragments; 8 cm penetration depth; redox layer at 0.5 cm
6b	Benthic	Dark gray sediment; fine grained powder on surface; surface very silty; lots of shell fragments; 13 cm penetration depth; redox layer at 2 cm

Station	Purpose	Description
6c	Chemistry	Dark gray sediment; fine grained powder on surface; surface very silty; lots of shell fragments; 6 cm penetration depth; scallop shell on surface
6c	Benthic	Dark gray sediment; fine grained powder on surface; surface very silty; lots of shell fragments; 10 cm penetration depth; redox layer at 2 cm

**SAMPLING EVENT AT SEA FARMS WA #1
(PORT ANGELES)
APRIL 3, 1991**

Sediment cores were collected at 0 and 60 feet along a transect, which extended west from the center of the fish pens. Divers Duane Karna and Mike Hoshlyk collected sediment cores at Station 1 on this transect. Divers Burney Hill and Lyn Frandsen collected sediment cores at Station 2 on this transect. Cores were collected at 0, 20, 60, and 200 feet along the transect, which extended east from the center of the fish pens. Divers Duane Karna and Mike Hoshlyk collected cores at Stations 3 and 4 on this transect. Divers Burney Hill and Lyn Frandsen collected sediment cores at Stations 5 and 6 on this transect. Sea state was very rough and the weather was stormy.

Station	Purpose	Description
1a	Benthic	Dark black sediment; core tipped over on way to surface; use entire core for benthic; 11 cm penetration depth; bebbiatoa present on what appears to be surface
1a	Benthic	Dark black sediment; splotchy with lighter colored sediment; bebbiatoa present on surface; 22 cm penetration depth
1b	Sulfides	Dark black sediment; very few shell fragments; splotchy with lighter colored sediment; bebbiatoa present on surface; 19 cm penetration depth
1b	Benthic	Dark black sediment; splotchy with lighter colored sediment; bebbiatoa present on surface; 22 cm penetration depth
1c	Chemistry	Dark black sediment with light gray-green sediment approx. 6-8 cm from the bottom; bebbiatoa present on surface; 14 cm penetration depth*
1c	Chemistry	Dark black sediment throughout the core; bebbiatoa present on surface; 12 cm penetration depth*
2a	Sulfide	Dark black sediment; fine grained sediment (silt) on surface; 14 cm penetration depth
2a	Benthic	Dark black sediment; fine grained sediment (silt) on surface; hydrogen sulfide smell; 15 cm penetration depth
2b	Chemistry	Dark black sediment; fine grained sediment (silt) on surface; 16 cm penetration depth
2b	Benthic	Dark black sediment; fine grained sediment (silt) on surface; hydrogen sulfide smell; 14 cm penetration depth
2c	Chemistry	Dark black sediment; fine grained sediment (silt) on surface; slight color change to lighter sediment approx. 1 cm from the surface; 15 cm penetration depth
2c	Benthic	Dark black sediment; fine grained sediment (silt) on surface; hydrogen sulfide smell; 14 cm penetration depth

Station	Purpose	Description
3a	Chemistry	Light band on surface approx. 5 cm; black sediment on bottom of core; fine grained sediment on surface; 15 cm penetration depth
3a	Benthic	Light band on surface approx. 1 cm; black sediment on bottom of core; 13 cm penetration depth
3b	Chemistry	Light band on surface approx. 2 cm; black sediment on bottom of core; 11 cm penetration depth
3b	Benthic	Light band on surface approx. 1 cm; black sediment on bottom of core; 14 cm penetration depth
3c	Sulfide	Dark layer on surface approx. 1 cm; lighter sediment beneath dark surface layer; shell fragments on the surface; black sediment in the center of the core; 8 cm penetration depth
3c	Benthic	Gray sediment with lighter sediment spots throughout core; 13 cm penetration depth
4a	Sulfide	Light band on surface approx. 1 cm; darker sediment in rest of core; 7 cm penetration depth
4a	Chemistry	Light band on surface approx. 1 cm; darker sediment in rest of core; 6 cm penetration depth; possible redox layer at 0.25 cm
4b	Chemistry	Dark gray sediment; splotchy sedimentation throughout core; 10 cm penetration depth
4b	Benthic	Dark gray sediment; splotchy sedimentation throughout core; 11 cm penetration depth; no water in tube
4c	Benthic	Dark band on surface approx. 0.5 cm; dark gray sediment in rest of core; 13 cm penetration depth; no water in tube
4c	Benthic	Dark gray sediment; splotchy sedimentation throughout core; 10 cm penetration depth
5a	Sulfide	Splotchy sediment at surface; dark black sediment throughout rest of core; 10 cm penetration depth
5a	Benthic	Slanted surface; dark band on surface approx. 0.25 cm; black sediment; 10 cm penetration depth
5b	Chemistry	Slanted surface; dark black sediment throughout rest of core; shell fragments; 10 cm penetration depth
5b	Benthic	Light colored sediment on surface approx. 3 cm; shell fragments; black sediment on bottom of core; 13 cm penetration depth
5c	Chemistry	Splotchy sediment at surface; dark black sediment with darker areas throughout rest of core; 10 cm penetration depth
5c	Benthic	Slanted surface; graduated band of light to dark on surface approx. 5 cm; black sediment throughout rest of core; 15.5 cm penetration depth
6a	Sulfide	Uniform gray color; little apparent life; few shell fragments; broken worm tubes; 13 cm penetration depth
6a	Benthic	Uniform gray color; little apparent life; few shell fragments; broken worm tubes; 14 cm penetration depth

Station	Purpose	Description
6b	Chemistry	Uniform gray color; little apparent life; few shell fragments; broken worm tubes; 14 cm penetration depth
6b	Benthic	Uniform gray color; little apparent life; few shell fragments; broken worm tubes; 15 cm penetration depth
6c	Chemistry	Empty—one core (6b) was split for chemistry. An additional cm was collected and stored in a separate chemistry bottle.
6c	Benthic	Uniform gray color; little apparent life; few shell fragments; broken worm tubes; 15 cm penetration depth

* The second team of divers had to retrieve the third set of samples from Station 1.

**SAMPLING EVENT AT GLOBAL AQUA #2
(RICH PASSAGE, NEAR BAINBRIDGE ISLAND)
APRIL 16, 1991**

A sediment core was collected at 0 feet east of the center of the fish pens (Station 1). Sediment cores were also collected at 0, 20, and 100 feet along a transect, which extended south from the center of the fish pens. The northern transect was abandoned due to rocky substrate.

Station	Purpose	Description
1	Redox cores (4.5 cm)	Spotty color; fine silt layer on surface; lighter sediment on surface with darker sediment at 5-7 cm, but distinct band not readily visible; decaying feed/fecal on surface; shell fragments
1a	Sulfide	Medium gray sediment with shell fragments; fine shell fragments on surface; no visible redox; 15 cm penetration depth
1a	Benthic	Medium gray sediment with many shell fragments; silt on surface; no visible redox; dark circular spots in sediment; 13 cm penetration depth
1b	Chemistry	Medium gray sediment with shell fragments; silt and shell fragments on surface; no visible redox; 12 cm penetration depth
1b	Benthic	Slanted sediment surface; medium gray sediment with shell fragments; possible redox layer at 2-3 cm, but not in straight line; 10 cm penetration depth
1c	Chemistry	Medium gray sediment with many shell fragments; shell fragments on surface; possible redox layer at 1 cm; 9 cm penetration depth
1c	Benthic	Medium gray sediment with many shell fragments; fine silt on surface; dark surface layer under silt; 10 cm penetration depth
2a	Sulfide	Slanted sediment surface; medium gray sediment with many shell fragments; pine cone on surface; 9-11 cm penetration depth
2a	Benthic	Medium gray sediment with many shell fragments; fine silt (black) and clam shells on surface; 10 cm penetration depth
2b	Chemistry	Slanted sediment surface; medium gray sediment with many shell fragments; one large clam on surface; 7-10 cm penetration depth
2b	Benthic	Slanted sediment surface; medium gray sediment with many shell fragments; fine silt (black) on surface; no water in tube; 10-12 cm penetration depth
2c	Chemistry	Slanted sediment surface; medium gray sediment with many shell fragments; wood and possibly worm tube on surface; 5-7 cm penetration depth
2c	Benthic	Medium gray sediment with many shell fragments; fine silt (black) on surface; 10 cm penetration depth

Station	Purpose	Description
3a	Benthic*	Medium gray sediment with shells on surface; no water in tube; 13 cm penetration depth
3a	Benthic*	Slanted sediment surface; medium gray sediment with light brownish tint also many shell fragments; 9-10 cm penetration depth
3b	Sulfide	Medium gray sediment with many shell fragments; 8 cm penetration depth
3b	Benthic	Medium gray sediment with shell fragments; slightly silty layer on surface; 9 cm penetration depth
3c	Chemistry	Slanted sediment surface; medium gray sediment with shell fragments; rocks on surface; no water in tube; 6-9 cm penetration depth
3c	Chemistry	Medium gray sediment with shell fragments; rocks and shells on surface; silty layer on surface; 5 cm penetration depth
4a	Sulfide	Medium gray sediment with shell fragments; rock on surface; 11 cm penetration depth
4a	Benthic	Medium gray sediment; algae and kelp on surface; 13 cm penetration depth
4b	Chemistry	Medium gray sediment; shells on surface; silty layer on surface; 10.5 cm penetration depth
4b	Benthic	Sediment surface slanted; medium gray sediment with shell fragments; decaying matter on surface; 11-13 cm penetration depth
4c	Chemistry	Medium gray sediment; shells on surface; silty layer on surface; 10.5 cm penetration depth
4c	Benthic	Sediment surface slanted; medium gray sediment with shell fragments; algae and kelp on surface; 13.5 cm penetration depth

* Had to break sediment pairs to obtain 10 cm of sediment for benthic analyses.

**SAMPLING EVENT AT GLOBAL AQUA #3
(CLAM BAY, NEAR MANCHESTER)
APRIL 17, 1991**

Sediment cores were collected at seven stations along two transects. Sample numbers 1, 2, and 3 were collected on a transect that extended south from the center of the fish pens. Sample numbers 4, 5, 6, and 7 were collected on a northwest diagonal transect that extended out from the fish shack.

Station	Purpose	Description
1a	Sulfide	Uniform dark gray sediment; clay layer 2-3 inches from bottom; beggiatoa on surface; redox layer at 2-3 cm; 18 cm penetration depth
1a	Benthic	Uniform dark gray sediment; clay layer 2-3 inches from bottom; beggiatoa on surface; redox layer at 2-3 cm; 19 cm penetration depth
1b	Chemistry	Uniform dark gray sediment; clay layer 2-3 inches from bottom; siphon hole on surface; hydrogen sulfide odor; beggiatoa on surface; redox layer at 2-3 cm; 18 cm penetration depth
1b	Benthic	Uniform dark gray sediment; clay layer 2-3 inches from bottom; beggiatoa on surface; redox layer at 2-3 cm; 20 cm penetration depth
1c	Chemistry	Uniform dark gray sediment; clay layer 2-3 inches from bottom; hydrogen sulfide odor; beggiatoa on surface; redox layer at 2-3 cm; 18 cm penetration depth
1c	Benthic	Uniform dark gray sediment; clay layer 2-3 inches from bottom; beggiatoa on surface; redox layer at 2-3 cm; 18 cm penetration depth
2a	Sulfide	Dark gray sediment with black sand mixed in; 13 cm dip in sediment on one side of sample; beggiatoa on surface; low water level; redox layer at 2-3 cm; 18 cm penetration depth
2a	Benthic	Dark gray sediment with black sand mixed in; beggiatoa on surface; low water level; redox layer at 2-3 cm; 18 cm penetration depth
2b	Chemistry	Dark gray sediment with black sand mixed in; low water level; redox layer at 2-3 cm; 18 cm penetration depth
2b	Benthic	Dark gray sediment with black sand mixed in; beggiatoa on surface; low water level; redox layer at 2-3 cm; 17 cm penetration depth
2c	Chemistry	Sediment surface slanted; dark gray sediment with black sand mixed in; 14 cm dip in sediment on one side of sample; low water level; redox layer at 2-3 cm; 18 cm penetration depth
2c	Benthic	Dark gray sediment with black sand mixed in; 12 cm dip in sediment on one side of sample; low water level; redox layer at 2-3 cm; 18 cm penetration depth
3a	Sulfide	Dark gray sediment with black sand mixed in; water leaking from tube; 8 cm penetration depth

Station	Purpose	Description
3a	Benthic	Dark gray sediment with black sand mixed in; water leaking from tube; 15 cm penetration depth
3b	Chemistry	Dark gray sediment with black sand mixed in; water leaking from tube; 15.5 cm penetration depth
3b	Benthic	Dark gray sediment with black sand mixed in; 12 cm dip in sediment on one side of sample; water leaking from tube; 14-15 cm penetration depth
3c	Chemistry	Dark gray sediment with black sand mixed in; water leaking from tube; 9 cm penetration depth
3c	Benthic	Dark gray sediment with black sand mixed in; water leaking from tube; 14 cm penetration depth
4a	Sulfide	Medium gray sediment; small of beggiatoa on surface; redox layer at 2.5-3 cm; hydrogen sulfide odor; 15 cm penetration depth
4a	Benthic	Medium gray sediment; small of beggiatoa on surface; redox layer at 2.5-3 cm; hydrogen sulfide odor; 15 cm penetration depth
4b	Chemistry	Medium gray sediment; medium amount of beggiatoa on surface; redox layer at 2.5-3 cm; hydrogen sulfide odor; 15 cm penetration depth
4b	Benthic	Medium gray sediment; small of beggiatoa on surface; redox layer at 2.5-3 cm; hydrogen sulfide odor; 15 cm penetration depth
4c	Chemistry	Medium gray sediment; large amount of beggiatoa on surface; redox layer at 2.5-3 cm; hydrogen sulfide odor; 10.5 cm penetration depth
4c	Benthic	Medium gray sediment; large amount of beggiatoa on surface; redox layer at 2.5-3 cm; hydrogen sulfide odor; 10.5 cm penetration depth
5a	Sulfide	Medium gray sediment; small amount of beggiatoa on surface; slight redox layer at 2 cm; hydrogen sulfide odor; 17 cm penetration depth
5a	Benthic	Medium gray sediment; medium amount of beggiatoa on surface; shell on surface; slight redox layer at 2 cm; hydrogen sulfide odor; 14.5 cm penetration depth
5b	Chemistry	Medium gray sediment; medium amount of beggiatoa on surface; slight redox layer at 2 cm; hydrogen sulfide odor; 15 cm penetration depth
5b	Benthic	Medium gray sediment; medium amount of beggiatoa on surface; redox layer at 2 cm; hydrogen sulfide odor; 14 cm penetration depth
5c	Chemistry	Medium gray sediment; large amount of beggiatoa on surface; slight redox layer at 2 cm; hydrogen sulfide odor; 12.5 cm penetration depth
5c	Benthic	Medium gray sediment; medium amount of beggiatoa on surface; redox layer at 2 cm; hydrogen sulfide odor; 13 cm penetration depth
6a	Sulfide	Sediment surface light brown with dark black on bottom; fine grain size; redox layer at 2-3 cm; hydrogen sulfide odor; 12 cm penetration depth
6a	Benthic	Sediment surface light brown with dark black on bottom; fine grain size; redox layer at 2-3 cm; hydrogen sulfide odor; 14 cm penetration depth

Station	Purpose	Description
6b	Chemistry	Sediment surface light brown with dark black on bottom; dark band approximately 2 mm from surface; seaweed on surface; fine grain size; redox layer at 2-3 cm; hydrogen sulfide odor; 14 cm penetration depth
6b	Benthic	Sediment surface light brown with dark black on bottom; fine grain size; redox layer at 2-3 cm; hydrogen sulfide odor; 13 cm penetration depth
6c	Chemistry	Sediment surface light brown with dark black on bottom; dark band approximately 2 mm from surface; fine grain size; redox layer at 2-3 cm; hydrogen sulfide odor; 10 cm penetration depth
6c	Benthic	Sediment surface slanted; sediment surface light brown with dark black on bottom; fine grain size; redox layer at 2-3 cm; hydrogen sulfide odor; 14-15 cm penetration depth
7a	Sulfide	Dark gray sediment; bebbiatoa on surface; fine grain size; possible redox layer at 2-3 cm; hydrogen sulfide odor; 8 cm penetration depth
7a	Benthic	Dark gray sediment; bebbiatoa on surface; fine grain size; possible redox layer at 2-3 cm; hydrogen sulfide odor; 13 cm penetration depth
7b	Chemistry	Dark gray sediment; bebbiatoa on surface; fine grain size; possible redox layer at 2-3 cm; hydrogen sulfide odor; 11 cm penetration depth
7b	Benthic	Dark gray sediment; bebbiatoa on surface; fine grain size; possible redox layer at 2-3 cm; hydrogen sulfide odor; 10.5 cm penetration depth
7c	Chemistry	Dark gray sediment; bebbiatoa on surface; amphipod on surface; fine grain size; possible redox layer at 2-3 cm; hydrogen sulfide odor; 12 cm penetration depth
7c	Benthic	Dark gray sediment; bebbiatoa on surface; fine grain size; possible redox layer at 2-3 cm; hydrogen sulfide odor; 12.5 cm penetration depth

**SAMPLING EVENT AT PARADISE BAY SEAFARMS
(PORT TOWNSEND)
APRIL 31, 1991**

Sediment cores were collected at 0, 20, 50, 100, 200, 300 and 1,000 feet along a transect, which extended north from the center of the fish pens.

Station	Purpose	Description
1a*	Sulfide	Dark brown silty sediment; bebbiatoa on surface; clay on bottom; turbid water in tube; water leaking from tube; hydrogen sulfide odor; 14-15 cm penetration depth
1a	Benthic	Dark brown silty sediment; bebbiatoa on surface; clay on bottom; turbid water in tube; water leaking from tube; hydrogen sulfide odor; 16 cm penetration depth
1b	Chemistry	Dark brown silty sediment; bebbiatoa on surface; clay on bottom; turbid water in tube; water leaking from tube; hydrogen sulfide odor; 13 cm penetration depth
1b	Benthic	Sediment surface slanted; dark brown silty sediment; bebbiatoa on surface; clay on bottom; turbid water in tube; water leaking from tube; hydrogen sulfide odor; 18 cm penetration depth
1c	Chemistry	Dark brown silty sediment; bebbiatoa on surface; clay on bottom; turbid water in tube; water leaking from tube; hydrogen sulfide odor; 12 cm penetration depth
1c	Benthic	Dark brown silty sediment; bebbiatoa on surface; mussel on surface; clay on bottom; turbid water in tube; water leaking from tube; hydrogen sulfide odor; 19 cm penetration depth
2a	Sulfide	Dark black sediment; large amount of bebbiatoa on surface; bebbiatoa in the top 5 cm of the sample; rest of core clay; no water in tube; hydrogen sulfide odor; 18 cm penetration depth
2a	Benthic	Sediment surface slanted; dark black sediment; large amount of bebbiatoa on surface; bebbiatoa in the top 5 cm of the sample; rest of core clay; no water in tube; hydrogen sulfide odor; 15-18 cm penetration depth
2b	Chemistry	Dark black sediment; large amount of bebbiatoa on surface; bebbiatoa in the top 5 cm of the sample; rest of core clay; hydrogen sulfide odor; 18 cm penetration depth
2b	Benthic	Dark black sediment; large amount of bebbiatoa on surface; bebbiatoa in the top 5 cm of the sample; rest of core clay; mussel shell on surface; hydrogen sulfide odor; 17 cm penetration depth
2c	Chemistry	Sediment surface slanted; dark black sediment; large amount of bebbiatoa on surface; bebbiatoa in the top 5 cm of the sample; rest of core clay; hydrogen sulfide odor; 19 cm penetration depth

Station	Purpose	Description
2c	Benthic	Dark black sediment; large amount of beggiatoa on surface; beggiatoa in the top 5 cm of the sample; rest of core clay; grass blade and mussel shell on surface; hydrogen sulfide odor; 17 cm penetration depth
3a	Sulfide	Black sediment with lighter sediment in the top 2 cm of the sample; beggiatoa on surface; very silty sediment on surface; black clay with gray green streaks; 18 cm penetration depth
3a	Benthic	Black sediment with lighter sediment in the top 2 cm of the sample; beggiatoa on surface; very silty sediment on surface; black clay with gray green streaks; 20 cm penetration depth
3b	Chemistry	Black sediment with lighter sediment in the top 2 cm of the sample; beggiatoa on surface; very silty sediment on surface; black clay with gray green streaks; 18 cm penetration depth
3b	Benthic	Black sediment with lighter sediment in the top 2 cm of the sample; beggiatoa on surface; very silty sediment on surface; black clay with gray green streaks; 17 cm penetration depth
3c	Chemistry	Black sediment; beggiatoa on surface; very silty sediment on surface; black clay with gray green streaks; 16 cm penetration depth
3c	Benthic	Black sediment with lighter sediment in the top 2 cm of the sample; beggiatoa on surface; very silty sediment on surface; black clay with gray green streaks; 18 cm penetration depth
4a	Sulfide	Gray green sediment with black streaks; fine grain size; powdery sediment on surface; very long worm swimming in tube; 14 cm penetration depth
4a	Benthic	Gray green sediment with black streaks; fine grain size; powdery sediment on surface; 15 cm penetration depth
4b	Chemistry	-- ^b
4b	Benthic	Gray green sediment with black streaks very marbled; fine grain size; powdery sediment on surface; 16 cm penetration depth
4c	Chemistry	Gray green sediment with black streaks; fine grain size; powdery sediment on surface; 16 cm penetration depth
4c	Benthic	Gray green sediment with black streaks; fine grain size; powdery sediment on surface; 13 cm penetration depth
5a	Sulfide	Gray green sediment with black streaks; fine grain size; powdery sediment on surface; 20 cm penetration depth
5a	Benthic	Gray green sediment with black streaks; fine grain size; powdery sediment on surface; 19.5 cm penetration depth
5b	Chemistry	Gray green sediment with black streaks; fine grain size; powdery sediment on surface; 17 cm penetration depth
5b	Benthic	Gray green sediment with black streaks; fine grain size; powdery sediment on surface; 17.5 cm penetration depth
5c	Chemistry	Gray green sediment with black streaks; fine grain size; powdery sediment on surface; tube on surface; 19 cm penetration depth

Station	Purpose	Description
5c	Benthic	Gray green sediment with black streaks; fine grain size; powdery sediment on surface; many tubes on surface; 13 cm penetration depth
6a	Sulfide	Gray green sediment with black streaks in bottom of core; powdery sediment on surface; 21 cm penetration depth
6a	Benthic	Gray green sediment with black streaks in bottom of core; powdery sediment on surface; 24 cm penetration depth
6b	Chemistry	Gray green sediment with black streaks in bottom of core; powdery sediment on surface; 23 cm penetration depth
6b	Benthic	Gray green sediment with black streaks in bottom of core; powdery sediment on surface; 25 cm penetration depth
6c	Chemistry	Gray green sediment with black streaks in bottom of core; powdery sediment on surface; 23 cm penetration depth
6c	Benthic	Gray green sediment with black streaks in bottom of core; powdery sediment on surface; 22 cm penetration depth
7a	Sulfide	Light gray sediment with fine particulates; some black clay streaks near bottom of core; powdery sediment on surface; 22.5 cm penetration depth
7a	Benthic	Light gray sediment with fine particulates; some black clay streaks near bottom of core; powdery sediment on surface; 24 cm penetration depth
7b	Chemistry	Light gray sediment with fine particulates; some black clay streaks near bottom of core; powdery sediment on surface; 20 cm penetration depth
7b	Benthic	Light gray sediment with fine particulates; some black clay streaks near bottom of core; powdery sediment on surface; 21 cm penetration depth
7c	Chemistry	Light gray sediment with fine particulates; some black clay streaks near bottom of core; powdery sediment on surface; 19.5 cm penetration depth
7c	Benthic	Light gray sediment with fine particulates; some black clay streaks near bottom of core; powdery sediment on surface; 24 cm penetration depth

^a Station 1 lids were on upside down. Therefore, water was leaking out of the tubes. Immediately placed the tubes in water.

^b One chemistry core was lost (4b). An additional 1 cm of sediment was collected to ensure enough sample for chemistry analysis.

**ADDITIONAL SAMPLING EVENT AT GLOBAL AQUA #3
(CLAM BAY, NEAR MANCHESTER)
MAY 16, 1991**

Sediment cores were collected at various stations around the fish pens. Station 1 was directly under the center of the fish pens. Station 2 was off the northeast corner of the old pens. Station 3 was approximately 300 feet off the northwest corner between the fish pens and the EPA Manchester pier.

Station	Purpose	Description
1a	Sulfide	Medium gray sediment; bebbiata on surface; sand and coarse grained material; some leaking in the tubes; dead eggs on surface; strong hydrogen sulfide odor; 3.5-6 cm penetration depth
1a	Benthic	Medium gray sediment; bebbiata on surface; sand and coarse grained material; some leaking in the tubes; strong hydrogen sulfide odor; 17 cm penetration depth
1b	Chemistry	Medium gray sediment; bebbiata on surface; sand and coarse grained material; some leaking in the tubes; strong hydrogen sulfide odor; possible redox layer at 3 cm; 11 cm penetration depth
1b	Benthic	Medium gray sediment; bebbiata on surface; sand and coarse grained material; some leaking in the tubes; strong hydrogen sulfide odor; snail on surface; 11 cm penetration depth (entire 11 cm sieved)
1c	Chemistry	Medium gray sediment; bebbiata on surface; sand and coarse grained material; some leaking in the tubes; strong hydrogen sulfide odor; possible redox layer at 3 cm; 11 cm penetration depth
1c	Benthic	Sediment surface slanted; medium gray sediment; bebbiata on surface; sand and coarse grained material; some leaking in the tubes; strong hydrogen sulfide odor; 15-16 cm penetration depth
2a	Sulfide	Sediment surface slanted; medium gray sediment; shells on surface; coarse grain with rocks; dark black band approximately 0.5 cm from surface; 3.5-6 cm penetration depth
2a	Benthic	Sediment surface slanted; medium gray sediment; shells on surface; coarse grain with rocks; dark black band approximately 0.5 cm from surface; 6-8 cm penetration depth
2b	Chemistry	Sediment surface slanted; medium gray sediment; shells on surface; coarse grain with rocks; dark black band approximately 0.5 cm from surface; 4.5-8.5 cm penetration depth
2b	Benthic	Sediment surface slanted; medium gray sediment; shells on surface; coarse grain with rocks; dark black band approximately 0.5 cm from surface; 6-9 cm penetration depth

Station	Purpose	Description
2c	Chemistry	Sediment surface slanted; medium gray sediment; shells on surface; coarse grain with rocks; dark black band approximately 0.5 cm from surface; 4.5-7.5 cm penetration depth
2c	Benthic	Sediment surface slanted; medium gray sediment; kelp and shells on surface; coarse grain with rocks; dark black band approximately 0.5 cm from surface; 5-7.5 cm penetration depth
3a	Sulfide	Light gray sediment; bebbiatoa on surface; water leaking from tube; fine grain; 9.5 cm penetration depth
3a	Benthic	Light gray sediment; bebbiatoa on surface; water leaking from tube; fine grain; nudibranch on surface; 11 cm penetration depth
3b	Chemistry	Light gray sediment; bebbiatoa on surface; water leaking from tube; fine grain; 8 cm penetration depth
3b	Benthic	Light gray sediment; bebbiatoa on surface; water leaking from tube; fine grain; 17 cm penetration depth
3c	Chemistry	Light gray sediment; bebbiatoa on surface; water leaking from tube; fine grain; 9 cm penetration depth
3c	Benthic	Light gray sediment; bebbiatoa on surface; water leaking from tube; fine grain; 10 cm penetration depth

APPENDIX C

Sediment and Water Chemistry Data

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Salmon Net Pen
Quality Control Summary
Results and Precision

	Result (%)	MRL (%)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
TOTAL VOLATILE SOLIDS				
ANAC1	3.5	0.1	4.2	
ANAC2	3.0	0.1		
ANAC3	3.5	0.1		
ANAC4	7.0	0.1		
ANAC6	2.2	0.1		
PANG1	13.0	0.1		
PANG2	8.8	0.1		
PANG3	4.4	0.1		
PANG4	5.9	0.1		
PANG5	2.7	0.1		
PANG6	24.7	0.1		
BAIN1	4.4	0.1	29.0	
BAIN2	2.8	0.1		
BAIN3	2.3	0.1		
BAIN4	2.2	0.1		
CLAM1	1.6	0.1		
CLAM2	1.3	0.1		
CLAM3	1.1	0.1		
CLAM4	1.3	0.1		
CLAM5	1.0	0.1		
CLAM6	1.5	0.1		
CLAM7	1.1	0.1		
PTDC1	14.7	0.1	1.4	
PTDC2	22.3	0.1		
PTDC3	8.6	0.1		
PTDC4	6.7	0.1		
PTDC5	7.0	0.1		
PTDC6	6.4	0.1		
PTDC7	6.5	0.1		
REFCO1	6.6	0.1	4.7	
REFCO2	7.0	0.1		
REFCO3	6.9	0.1		

Salmon Net Pen
 Quality Control Summary
 Results and Precision

TOTAL VOLATILE SOLIDS	Result (%)	MRL (%)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
REFC04	6.7	0.1		
REFC05	7.3	0.1		4.0
PTV1C1	6.7	0.1		
PTV1C2	6.5	0.1		
PTV1C3	6.5	0.1		
PTV1C4	17.5	0.1		
PTV1C5	6.6	0.1		55.8
PTV2C1	6.8	0.1		
PTV2C2	6.2	0.1		
PTV2C3	5.7	0.1		
PTV2C4	5.8	0.1		
PTV2C5	6.6	0.1		7.7
PTV3C1	6.6	0.1		
PTV3C2	6.0	0.1		
PTV3C3	6.2	0.1		
PTV3C4	6.7	0.1	1.5	
PTV3C5	6.4	0.1	1.6	4.5
PTV4C1	5.4	0.1		
PTV4C2	7.0	0.1		
PTV4C3	6.9	0.1		
PTV4C4	4.8	0.1		
PTV4C5	5.6	0.1		16.3
PTV5C1	6.8	0.1	18.7	
PTV5C2	7.1	0.1		
PTV5C3	6.7	0.1		
PTV5C4	6.1	0.1		
PTV5C5	7.7	0.1		8.5
PTV6C1	9.9	0.1		
PTV6C2	9.3	0.1		
PTV6C3	8.4	0.1		
PTV6C4	9.7	0.1		

Salmon Net Pen
Quality Control Summary
Results and Precision

	Result (%)	MRL (%)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
TOTAL VOLATILE SOLIDS				
PTV6C5	11.1	0.1		10.1
MANCH1	2.4	0.1	8.0	
MANCH2	2.9	0.1		
MANCH3	0.9	0.1		

Salmon Net Pen
 Quality Control Summary
 Results and Precision

SULFIDE, TOTAL	Result (mg/kg)		MRL (mg/kg)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
ANAC1	386	G	100	4.1	
ANAC2	436	G	100		
ANAC3	776	G	100		
ANAC4	656	G	40		
ANAC6	123	G	20		
PANG1	1,760	G	115	1.1	
PANG2	767	G	85		
PANG3	623	G	75		
PANG4		L	20		
PANG5		L	20		
PANG6		L	20		
BAIN1	129	G	30	6.7	
BAIN2		U	30		
BAIN3		U	30		
BAIN4		U	30		
CLAM1	220	G	30		
CLAM2	37	G	30		
CLAM3		U	30		
CLAM4	48	G	30		
CLAM5		U	30		
CLAM6		U	30		
CLAM7		U	30		
PTDC1	2,560	G	60	3.5	
PTDC2	2,500	G	60		
PTDC3	1,050	G	60		
PTDC4	217	G	60		
PTDC5		U	60		
PTDC6		U	60		
PTDC7		U	60		
REFCO1		U	50	0.0	
REFCO2		U	50		
REFCO3		U	50		

Salmon Net Pen
 Quality Control Summary
 Results and Precision

	Result (mg/kg)	MRL (mg/kg)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
SULFIDE, TOTAL				
REFC04	U	50		
REFC05	U	50		0.0
PTV1C1	U	50		
PTV1C2	U	50		
PTV1C3	U	50		
PTV1C4	U	50		
PTV1C5	U	50		0.0
PTV2C1	U	60		
PTV2C2	U	60		
PTV2C3	U	60		
PTV2C4	U	60		
PTV2C5	U	60	0.0	0.0
PTV3C1	U	60		
PTV3C2	U	60		
PTV3C3	U	60		
PTV3C4	U	60		
PTV3C5	U	60		0.0
PTV4C1	72 G	60		
PTV4C2	U	60		
PTV4C3	297 G	60		
PTV4C4	218 G	30		
PTV4C5	136 G	30		52.4
PTV5C1	192 G	20	5.9	
PTV5C2	479 G	20		
PTV5C3	95 G	20		
PTV5C4	58 G	20		
PTV5C5	1,040 G	20		109.4
PTV6C1	2,420 G	20		
PTV6C2	3,040 G	20		
PTV6C3	3,010 G	20		
PTV6C4	2,600 G	20		

Salmon Net Pen
 Quality Control Summary
 Results and Precision

	Result (mg/kg)		MRL (mg/kg)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
SULFIDE, TOTAL					
PTV6C5	283 G		20		50.3
MANCH1	216 G		30	6.7	
MANCH2	2,120 G		30		
MANCH3	42 G		30		

Salmon Net Pen
 Quality Control Summary
 Results and Precision

	Result	MRL	TKN Analytical Precision, RSD or RPD	Ammonia Analytical Precision, RSD or RPD	TON Field Precision, RSD or RPD
TOTAL ORGANIC NITROGEN	(%)	(%)	(%)	(%)	(%)
ANAC1	2,030 E	10		1.8	
ANAC2	2,460 E	10	5.2		
ANAC3	1,030 E	10			
ANAC4	1,980 E	10			
ANAC6	539 E	10			
PANG1	4,340	10			
PANG2	1,680	10			
PANG3	1,210	10			
PANG4	712	10			
PANG5	885	10			
PANG6	461	10			
BAIN1	1,280	10	9.7	7.1	
BAIN2	574	10			
BAIN3	257	10			
BAIN4	330	10			
CLAM1	410	10			
CLAM2	293	10			
CLAM3	256	10			
CLAM4	466	10			
CLAM5	254	10			
CLAM6	178	10			
CLAM7	393	10			
PTDC1	8,610	20	0.9	3.9	
PTDC2	2,510	20			
PTDC3	2,850	20			
PTDC4	2,650	20			
PTDC5	2,060	20			
PTDC6	1,520	20			
PTDC7	1,060	20			
REFC01	1,910	20			
REFC02	1,930	20			

Salmon Net Pen
 Quality Control Summary
 Results and Precision

TOTAL ORGANIC NITROGEN	Result (%)	MRL (%)	TKN Analytical Precision, RSD or RPD (%)	Ammonia Analytical Precision, RSD or RPD (%)	TON Field Precision, RSD or RPD (%)
REFC03	2,060	20			
REFC04	2,050	20			
REFC05	2,380	20			9.1
PTV1C1	3,200	20			
PTV1C2	2,120	20			
PTV1C3	1,180	20			
PTV1C4	4,630	20			
PTV1C5	1,060	20			61.4
PTV2C1	2,260	20			
PTV2C2	1,250	20			
PTV2C3	4,600	20			
PTV2C4	3,880	20			
PTV2C5	984	20			61.5
PTV3C1	2,080	20			
PTV3C2	2,690	20			
PTV3C3	2,210	20			
PTV3C4	2,560 E	20		4.8	
PTV3C5	1,990 E	20	7.3		13.2
PTV4C1	1,980	20			
PTV4C2	1,610	20			
PTV4C3	2,090	20			
PTV4C4	1,380	20			
PTV4C5	2,170	20			18.3
PTV5C1	650	20			
PTV5C2	3,740	20	1.6	5.3	
PTV5C3	445	20			
PTV5C4	2,780	20			
PTV5C5	3,270	20			70.2
PTV6C1	6,260	20			
PTV6C2	4,430	20			

Salmon Net Pen
 Quality Control Summary
 Results and Precision

TOTAL ORGANIC NITROGEN	Result (%)	MRL (%)	TKN Analytical Precision, RSD or RPD (%)	Ammonia Analytical Precision, RSD or RPD (%)	TON Field Precision, RSD or RPD (%)
PTV6C3	4,310	20			
PTV6C4	4,890	20			
PTV6C5	6,030	20			17.5
MANCH1	994	5	5.0	3.3	
MANCH2	1,970	5			
MANCH3	285	5			

Salmon Net Pen
Quality Control Summary

PHOSPHORUS, TOTAL	Result (mg/kg)	MRL (mg/kg)	Analytical Precision, RSD (%)	Field Precision, RSD (%)
ANAC1	1,260 E	5		
ANAC2	1,070 E	5	4.5	
ANAC3	672 E	5		
ANAC4	161 E	5		
ANAC6	182 E	5		
PANG1	866	25		
PANG2	406	25		
PANG3	143	25		
PANG4	334	25		
PANG5	248	25		
PANG6	202	25		
BAIN1	413	5	22.2	
BAIN2	135	5		
BAIN3	124	5		
BAIN4	787	5		
CLAM1	302	5		
CLAM2	915	5		
CLAM3	759	5		
CLAM4	1,320	5		
CLAM5	771	5		
CLAM6	1,140	5		
CLAM7	1,290	5		
PTDC1	3,110	20	5.8	
PTDC2	340	20		
PTDC3	1,080	20		
PTDC4	856	20		
PTDC5	834	20		
PTDC6	582	20		
PTDC7	942	20		
REFCO1	1,510	20		
REFCO2	1,690	20	2.6	
REFCO3	1,560	20		
REFCO4	165	20		

Salmon Net Pen
Quality Control Summary

Quality Control Summary
Net Pen Salmon

PHOSPHORUS, TOTAL	Result (mg/kg)	MRL (mg/kg)	Analytical Precision, RSD (%)	Field Precision, RSD (%)
REFC05	994	20		53.1
PTV1C1	782	20		
PTV1C2	662	20		
PTV1C3	843	20		
PTV1C4	836	20		
PTV1C5	666	20		11.7
PTV2C1	979	25		
PTV2C2	549	25		
PTV2C3	1,300	25		
PTV2C4	976	25		
PTV2C5	758	25		30.7
PTV3C1	886	25		
PTV3C2	1,150	25		
PTV3C3	836	25		
PTV3C4	939	25		
PTV3C5	1,010	25	2.3	12.7
PTV4C1	854	25		
PTV4C2	1,300	25		
PTV4C3	1,040	25		
PTV4C4	1,280	25		
PTV4C5	1,000	25		17.5
PTV5C1	813	25		
PTV5C2	1,090	25	0.9	
PTV5C3	1,040	25		
PTV5C4	1,120	25		
PTV5C5	843	25		14.6
PTV6C1	1,640	25		
PTV6C2	1,130	25		
PTV6C3	1,950	25		
PTV6C4	2,720	25		
PTV6C5	1,760	25		31.4

Salmon Net Pen
Quality Control Summary

PHOSPHORUS, TOTAL	Result (mg/kg)	MRL (mg/kg)	Analytical Precision, RSD (%)	Field Precision, RSD (%)
MANCH1	1,000	2	2.0	
MANCH2	1,290	2		
MANCH3	256	2		

Salmon Net Pen
 Quality Control Summary
 Results and Precision

	Result, (mg/kg)	MRL (mg/kg)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD
BIOCHEMICAL OXYGEN DEMAND				
ANAC1	2,860	1,900	37.9	
ANAC2	1,960	1,600		
ANAC3	2,470	1,900		
ANAC4	5,690	5,500		
ANAC6	728	700		
PANG1	6,910 E	2,500	17.0	
PANG2	3,100 E	1,200		
PANG3	1,150 E	900		
PANG4	660 E	650		
PANG5	868 E	800		
PANG6	310 E	300		
BAIN1	2,470	2,000	5.3	
BAIN2	1,310	1,000		
BAIN3	655	300		
BAIN4	366	150		
CLAM1	955	300		
CLAM2	680	300		
CLAM3	517	300		
CLAM4	604	300		
CLAM5	512	300		
CLAM6	653	300		
CLAM7	360 E	300		
PTDC1	13,100	3,000	12.2	
PTDC2	5,930	600		
PTDC3	4,030	460		
PTDC4	1,150	900		
PTDC5	1,030	500		
PTDC6	595	500		
PTDC7	451	400		
REFCO1	675	400	1.4	
REFCO2	479	400		
REFCO3	570	400		

Salmon Net Pen
 Quality Control Summary
 Results and Precision

BIOCHEMICAL OXYGEN DEMAND	Result, (mg/kg)	MRL (mg/kg)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD
REFCO4	635	400		
REFCO5	581	400		12.6
PTV1C1	801	400		
PTV1C2	636	400		
PTV1C3	600	400		
PTV1C4	668	400		
PTV1C5	497	400		17.2
PTV2C1	956	600	12.3	
PTV2C2	1,260	600		
PTV2C3	886	600		
PTV2C4	2,780	1,200		
PTV2C5	877	600		60.2
PTV3C1	946	600		
PTV3C2	1,200	600		
PTV3C3	897	600		
PTV3C4	602 Q	300		
PTV3C5	650 Q	300		28.2
PTV4C1	1,310	600		
PTV4C2	1,720	600		
PTV4C3	2,310	600		
PTV4C4	1,390	600		
PTV4C5	2,210	600		25.7
PTV5C1	2,420	2,000	9.4	
PTV5C2	3,470	2,000		
PTV5C3	3,510	2,000		
PTV5C4	2,000	1,200		
PTV5C5	3,760	1,200		25.5
PTV6C1	6,240	1,200		
PTV6C2	8,680	2,000		
PTV6C3	8,720	6,000		
PTV6C4	9,350	6,000		

Salmon Net Pen
Quality Control Summary
Results and Precision

BIOCHEMICAL OXYGEN DEMAND	Result, (mg/kg)	MRL (mg/kg)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD
PTV6C5	8,270	6,000		14.4
MANCH1	1,230	600	6.5	
MANCH2	2,160	600		
MANCH3	235	100		

Salmon Net Pen
Quality Control Summary

CHEMICAL OXYGEN DEMAND	Result (mg/kg)	MRL (mg/kg)	Analytical Precision, RSD (%)	Field Precision, RSD (%)
ANAC1	21,700	2,500	7.4	
ANAC2	23,700	2,500		
ANAC3	25,900	2,500		
ANAC4	50,500	2,500		
ANAC6	44,800	2,500		
PANG1	47,100	5,330		
PANG2	56,400	4,860		
PANG3	20,300	4,020		
PANG4	32,700	3,890		
PANG5	53,700	3,690		
PANG6	23,200	3,430		
BAIN1	56,600	1,000	0.4	
BAIN2	18,800	1,000		
BAIN3	15,500	1,000		
BAIN4	38,400	1,000		
CLAM1	13,800	1,000		
CLAM2	14,300	1,000		
CLAM3	6,870	1,000		
CLAM4	9,760	1,000		
CLAM5	8,400	1,000		
CLAM6	16,100	1,000		
CLAM7	12,500	1,000		
PTDC1	18,300	2,500	2.1	
PTDC2	87,600	2,500		
PTDC3	50,500	2,500		
PTDC4	48,000	2,500		
PTDC5	37,300	2,500		
PTDC6	57,900	2,500		
PTDC7	64,300	2,500		
REFCO1	54,100	2,500		
REFCO2	62,500	2,500		
REFCO3	62,700	2,500		
REFCO4	56,400	2,500		

Salmon Net Pen
Quality Control Summary

	Result (mg/kg)	MRL (mg/kg)	Analytical Precision, RSD (%)	Field Precision, RSD (%)
CHEMICAL OXYGEN DEMAND				
REFC05	51,800	2,500		8.6
PTV1C1	59,700	2,500		
PTV1C2	56,400	2,500		
PTV1C3	60,100	2,500		
PTV1C4	46,300	2,500		
PTV1C5	50,100	2,500		11.2
PTV2C1	65,000	3,000		
PTV2C2	54,600	3,000		
PTV2C3	43,400	3,000		
PTV2C4	51,100	3,000		
PTV2C5	68,400	3,000		18.1
PTV3C1	60,400	3,000		
PTV3C2	52,100	3,000		
PTV3C3	43,400	3,000		
PTV3C4	60,100	3,000		
PTV3C5	55,100	3,000		12.9
PTV4C1	31,100	3,000		
PTV4C2	93,800	3,000		
PTV4C3	64,100	3,000		
PTV4C4	59,400	3,000		
PTV4C5	56,500	3,000	0.5	36.7
PTV5C1	51,300	3,000		
PTV5C2	64,000	3,000		
PTV5C3	78,000	3,000		
PTV5C4	55,100	3,000	2.5	
PTV5C5	53,900	3,000		18.0
PTV6C1	92,800	3,000		
PTV6C2	87,300	3,000		
PTV6C3	98,700	3,000		
PTV6C4	104,000	3,000		
PTV6C5	114,000	3,000		10.4

Salmon Net Pen
Quality Control Summary

CHEMICAL OXYGEN DEMAND	Result (mg/kg)	MRL (mg/kg)	Analytical Precision, RSD (%)	Field Precision, RSD (%)
MANCH1	28,000	1,500	5.5	
MANCH2	35,500	1,500		
MANCH3	8,650	1,500		

Salmon Net Pen
Quality Control Summary
Results and Precision

	Result (%)	MRL (%)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
TOTAL ORGANIC CARBON (TOC)				
ANAC1	1.5	0.1	3.9	
ANAC2	1.0	0.1		
ANAC3	1.1	0.1		
ANAC4	1.7	0.1		
ANAC6	0.6	0.1		
PANG1	4.7	0.1		
PANG2	5.5	0.1		
PANG3	1.1	0.1		
PANG4	1.8	0.1		
PANG5	0.8	0.1		
PANG6	0.5	0.1		
BAIN1	1.2	0.1	9.1	
BAIN2	1.0	0.1		
BAIN3	0.3	0.1		
BAIN4	0.4	0.1		
CLAM1	0.5	0.1		
CLAM2	0.3	0.1		
CLAM3	0.3	0.1		
CLAM4	0.4	0.1		
CLAM5	0.7	0.1		
CLAM6	0.5	0.1		
CLAM7	0.3	0.1	0.0	
PTDC1	6.3	0.1	0.9	
PTDC2	4.6	0.1		
PTDC3	3.3	0.1		
PTDC4	2.3	0.1		
PTDC5	2.2	0.1		
PTDC6	2.2	0.1		
PTDC7	2.1	0.1		

Salmon Net Pen
 Quality Control Summary
 Results and Precision

TOTAL ORGANIC CARBON (TOC)	Result (%)	MRL (%)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
REFCO1	1.9	0.1		
REFCO2	1.9	0.1		
REFCO3	1.9	0.1		
REFCO4	1.9	0.1		
REFCO5	1.9	0.1		0.0
PTV1C1	2.0	0.1		
PTV1C2	2.2	0.1		
PTV1C3	2.1	0.1		
PTV1C4	2.0	0.1		
PTV1C5	2.1	0.1		4.0
PTV2C1	2.3	0.1		
PTV2C2	2.3	0.1		
PTV2C3	2.2	0.1		
PTV2C4	2.2	0.1		
PTV2C5	2.2	0.1		2.4
PTV3C1	2.4	0.1		
PTV3C2	2.5	0.1		
PTV3C3	2.4	0.1		
PTV3C4	2.2	0.1		
PTV3C5	2.3	0.1	0.0	4.8
PTV4C1	2.2	0.1		
PTV4C2	2.4	0.1		
PTV4C3	2.4	0.1		
PTV4C4	2.0	0.1		
PTV4C5	2.1	0.1		8.1
PTV5C1	2.4	0.1	2.4	
PTV5C2	2.8	0.1		
PTV5C3	2.7	0.1		
PTV5C4	2.5	0.1		

**Salmon Net Pen
Quality Control Summary
Results and Precision**

TOTAL ORGANIC CARBON (TOC)	Result (%)	MRL (%)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
PTV5C5	2.9	0.1		7.8
PTV6C1	4.0	0.1		
PTV6C2	4.8	0.1		
PTV6C3	4.2	0.1		
PTV6C4	4.9	0.1		
PTV6C5	4.9	0.1		9.4
MANCH1	1.0	0.1		
MANCH2	1.0	0.1		
MANCH3	0.3	0.1		

Salmon Net Pen
Quality Control Summary

TOTAL SOLIDS	Result (%)	MRL (%)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
ANAC1	62.2	0.1		
ANAC1	63.5	0.1		
ANAC1	63.2	0.1	0.9	1.1
ANAC2	61.9	0.1		
ANAC2	67.6	0.1		
ANAC2	63.2	0.1		4.7
ANAC3	56.8	0.1		
ANAC3	62.1	0.1		
ANAC3	62.2	0.1		5.1
ANAC4	51.8	0.1		
ANAC4	51.1	0.1		
ANAC4	54.5	0.1		3.4
ANAC6	71.5	0.1		
ANAC6	71.9	0.1		
ANAC6	72.0	0.1		0.4
PANG1	34.9	0.1		
PANG1	44.2	0.1		
PANG1	46.9	0.1		15.0
PANG2	48.1	0.1		
PANG2	51.4	0.1		
PANG2	48.2	0.1		3.8
PANG3	54.6	0.1		
PANG3	64.6	0.1		
PANG3	62.1	0.1		8.6
PANG4	67.5	0.1		
PANG4	64.2	0.1		
PANG4	64.2	0.1	0.5	2.9
PANG5	60.0	0.1		
PANG5	70.3	0.1		

Salmon Net Pen
Quality Control Summary

Sample	Result (%)	MRL (%)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
TOTAL SOLIDS				
PANG5	67.8	0.1		8.1
PANG6	72.7	0.1		
PANG6	75.0	0.1		
PANG6	72.8	0.1		1.8
BAIN1	69.8	0.1	4.2	
BAIN1	53.0	0.1	2.7	27.4
BAIN2	76.8	0.1		
BAIN2	76.4	0.1		0.5
BAIN3	75.4	0.1		
BAIN3	75.3	0.1		0.1
BAIN4	74.4	0.1		
BAIN4	75.5	0.1		1.5
CLAM1	76.6	0.1		
CLAM1	72.6	0.1		5.4
CLAM2	75.8	0.1		
CLAM2	77.7	0.1		2.5
CLAM3	79.6	0.1		
CLAM3	77.9	0.1		2.2
CLAM4	75.2	0.1		
CLAM4	76.2	0.1		1.3
CLAM5	79.2	0.1		
CLAM5	76.7	0.1		3.2
CLAM6	72.6	0.1		
CLAM6	70.2	0.1		3.4
CLAM7	74.3	0.1		
CLAM7	75.3	0.1		1.3

Salmon Net Pen
Quality Control Summary

TOTAL SOLIDS	Result (%)	MRL (%)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
PTDC1	32.1	0.1		
PTDC1	32.3	0.1	3.9	0.6
PTDC2	27.6	0.1		
PTDC2	43.4	0.1		44.5
PTDC3	36.4	0.1		
PTDC3	49.6	0.1		30.7
PTDC4	33.2	0.1		
PTDC4	55.1	0.1		49.6
PTDC5	34.9	0.1		
PTDC5	45.3	0.1		25.9
PTDC6	34.0	0.1		
PTDC6	49.6	0.1		37.3
PTDC7	35.2	0.1		
PTDC7	50.9	0.1		36.5
REFCO1	36.8	0.1	0.6	
REFCO1	35.5	0.1		3.6
REFCO2	35.5	0.1		
REFCO2	37.6	0.1		5.7
REFCO3	36.3	0.1		
REFCO3	37.5	0.1		3.3
REFCO4	35.4	0.1		
REFCO4	35.8	0.1		1.1
REFCO5	36.2	0.1		
REFCO5	38.4	0.1		5.9
PTV1C1	38.5	0.1		

Salmon Net Pen
Quality Control Summary

	Result (%)	MRL (%)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
TOTAL SOLIDS				
PTV1C1	36.2	0.1		6.2
PTV1C2	37.0	0.1		
PTV1C2	37.6	0.1		1.6
PTV1C3	37.1	0.1		
PTV1C3	37.1	0.1		0.0
PTV1C4	37.8	0.1		
PTV1C4	43.2	0.1		13.3
PTV1C5	37.4	0.1		
PTV1C5	38.5	0.1		2.9
PTV2C1	37.4	0.1		
PTV2C1	35.0	0.1		6.6
PTV2C2	37.9	0.1		
PTV2C2	36.2	0.1		4.6
PTV2C3	36.4	0.1		
PTV2C3	37.0	0.1		1.6
PTV2C4	37.2	0.1		
PTV2C4	35.8	0.1		3.8
PTV2C5	36.7	0.1	2.5	
PTV2C5	37.3	0.1		1.6
PTV3C1	37.7	0.1		
PTV3C1	37.6	0.1		0.3
PTV3C2	37.2	0.1		
PTV3C2	37.4	0.1		0.5
PTV3C3	36.3	0.1		
PTV3C3	35.5	0.1		2.2

Salmon Net Pen
Quality Control Summary

TOTAL SOLIDS	Result (%)	MRL (%)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
PTV3C4	35.6	0.1		
PTV3C4	35.1	0.1	1.1	1.4
PTV3C5	38.0	0.1		
PTV3C5	37.0	0.1	1.1	2.7
PTV4C1	42.7	0.1		
PTV4C1	41.9	0.1		1.9
PTV4C2	35.3	0.1		
PTV4C2	34.8	0.1		1.4
PTV4C3	36.8	0.1		
PTV4C3	37.4	0.1		1.6
PTV4C4	42.9	0.1		
PTV4C4	43.5	0.1		1.4
PTV4C5	40.2	0.1		
PTV4C5	39.7	0.1		1.3
PTV5C1	38.8	0.1	1.6	
PTV5C1	39.0	0.1	0.8	0.5
PTV5C2	35.9	0.1		
PTV5C2	35.8	0.1		0.3
PTV5C3	36.8	0.1		
PTV5C3	36.8	0.1		0.0
PTV5C4	36.3	0.1		
PTV5C4	37.0	0.1		1.9
PTV5C5	38.7	0.1		
PTV5C5	37.5	0.1		3.1
PTV6C1	36.0	0.1		
PTV6C1	34.4	0.1		4.5

**Salmon Net Pen
Quality Control Summary**

	Result (%)	MRL (%)	Analytical Precision, RSD or RPD (%)	Field Precision, RSD or RPD (%)
TOTAL SOLIDS				
PTV6C2	37.8	0.1		
PTV6C2	34.7	0.1		8.6
PTV6C3	37.5	0.1		
PTV6C3	31.9	0.1		16.1
PTV6C4	37.0	0.1		
PTV6C4	33.2	0.1		10.8
PTV6C5	38.0	0.1		
PTV6C5	36.8	0.1		3.2
MANCH1	73.8	0.1	0.8	
MANCH1	73.1	0.1		1.0
MANCH2	61.8	0.1		
MANCH2	67.0	0.1		8.1
MANCH3	74.6	0.1		
MANCH3	72.8	0.1		2.4

Salmon Net Pen
 Quality Control Summary
 Sample Results and Precision Summary

Sample Name	Result (%)	MRL (%)	Analytical Precision (%)
Total suspended solids, mg/L			
PTV1W	52	5	6.0 RSD
PTV6W	52	5	
Total settleable solids, mg/L			
PTV1W	U	0.1	
PTV6W	U	0.1	
Turbidity, NTU			
PTV1W	1	1	0.0 RSD
PTV6W	U	1	
Ammonia, nitrogen, mg/L			
PTV1W	0.09 E	0.05	6.7 RSD
PTV6W	0.09 E	0.05	
Nitrate + nitrite, nitrogen, mg/L			
PTV1W	0.4	0.2	25.0 RPD
PTV6W	U	0.2	
Total Kjeldahl nitrogen, mg/L			
PTV1W	0.9 E	0.1	9.1 RSD
PTV6W	0.2 E	0.1	

Grain Size

Sample Name	ANAC1	Dup. ANAC1	Trip. ANAC1	ANAC2	ANAC3	ANAC4	ANAC6
Gravel	18.24	17.92	9.00	13.74	3.41	14.84	4.90
Very Course Sand	2.59	2.15	3.24	1.33	0.96	2.91	2.70
Course Sand	5.37	3.30	4.87	2.57	2.49	5.05	8.20
Medium Sand	35.06	33.70	40.58	35.56	43.50	32.35	60.03
Fine Sand	16.91	24.44	20.98	27.67	27.11	16.73	12.84
Very Fine Sand	2.97	4.52	3.66	5.10	6.46	6.93	2.41
Silt	9.42	6.72	6.55	9.36	4.24	12.59	4.82
Clay	9.45	7.26	11.13	4.66	11.83	8.60	4.11

Analytical Precision

	Relative Standard Deviation
Gravel	34.8
Very Course Sand	20.6
Course Sand	23.9
Medium Sand	10.0
Fine Sand	18.1
Very Fine Sand	20.9
Silt	21.3
Clay	20.9

Grain Size

Grain Size

Sample Name	PANG1	PANG2	PANG3	PANG4	PANG5	PANG6
Gravel	10.35	4.56	10.26	1.04	6.10	3.67
Very Course Sand	3.86	2.04	3.46	1.06	1.13	1.00
Course Sand	3.36	2.84	2.23	0.96	0.91	1.49
Medium Sand	8.05	5.14	3.20	3.10	2.56	6.39
Fine Sand	19.76	15.06	43.41	55.77	52.23	59.89
Very Fine Sand	19.26	15.92	23.81	24.43	25.38	21.13
Silt	19.67	40.15	8.05	6.51	5.62	2.62
Clay	15.68	14.31	5.58	7.13	6.07	3.81

Grain Size

Sample Name	CLAM1	CLAM2	CLAM3	CLAM4	CLAM5	CLAM6	CLAM7
Gravel	0.33	0.02	1.06	0.14	1.61	0.48	0.11
Very Course Sand	4.69	4.52	6.26	1.20	1.72	2.08	0.48
Course Sand	14.88	16.93	23.96	6.40	6.70	5.57	3.73
Medium Sand	39.25	42.34	40.62	30.49	27.50	26.58	20.25
Fine Sand	33.24	30.62	24.58	52.09	53.65	56.09	56.85
Very Fine Sand	4.67	3.01	3.07	6.75	7.37	7.39	12.69
Silt	1.47	1.36	0.42	2.48	0.11	1.70	2.64
Clay	1.46	1.20	0.02	0.44	1.33	0.11	3.25

Grain Size

Sample Name	BAIN1	Sup. BAIN1	Trip. BAIN1	BAIN2	BAIN3	BAIN4
Gravel	63.80	62.57	44.16	25.95	13.53	15.73
Very Course Sand	5.27	4.97	7.78	13.97	11.93	9.42
Course Sand	3.37	3.55	5.44	17.63	16.28	19.58
Medium Sand	5.71	5.72	8.83	23.36	28.34	30.26
Fine Sand	6.58	6.04	10.48	14.85	21.51	18.82
Very Fine Sand	5.13	3.65	7.59	1.14	2.34	2.15
Silt	4.51	8.55	7.94	3.09	0.50	2.93
Clay	5.63	4.94	7.78	0.00	5.57	1.12

Analytical Precision

	Relative Standard Deviation
Gravel	19.4
Very Course Sand	25.7
Course Sand	27.8
Medium Sand	26.6
Fine Sand	31.5
Very Fine Sand	36.5
Silt	31.1
Clay	24.2

Grain Size

Sample Name	PTDC1	Dup. PTDC1	Trip. PTDC1	PTDC2	PTDC3	PTDC4	PTDC5	PTDC6	PTDC7
Gravel	4.54	14.48	10.43	18.30	0.12	4.65	1.48	2.90	2.76
Very Course Sand	2.01	4.57	4.73	2.63	0.18	1.86	1.71	2.09	3.56
Course Sand	2.85	6.23	5.32	2.43	0.17	1.84	1.81	2.30	2.47
Medium Sand	5.03	18.13	7.85	4.24	0.32	3.00	3.37	4.51	4.39
Fine Sand	3.92	10.12	4.21	2.98	0.31	2.86	2.45	4.46	3.47
Very Fine Sand	4.36	8.01	4.48	4.54	0.82	7.99	5.14	6.85	6.13
Silt	7.07	22.54	35.08	48.23	7.02	53.07	58.41	36.46	51.11
Clay	70.21	15.91	27.90	16.64	91.05	24.74	25.62	40.45	26.11

Analytical Precision

	Relative Standard Deviation
Gravel	50.9
Very Course Sand	40.5
Course Sand	36.4
Medium Sand	66.7
Fine Sand	57.5
Very Fine Sand	36.9
Silt	65.1
Clay	75.1

Grain Size

Sample Name	REFC01	REFC02	REFC03	REFC04	REFC05
Gravel	0.37	0.50	0.99	0.56	0.13
Very Course Sand	0.73	1.37	1.39	3.65	1.92
Course Sand	0.77	1.70	1.18	2.21	1.39
Medium Sand	1.16	2.72	2.02	3.80	1.87
Fine Sand	1.91	3.59	3.06	3.15	2.51
Very Fine Sand	6.41	9.60	7.09	8.25	5.77
Silt	58.81	50.40	31.52	51.14	65.86
Clay	29.85	30.13	52.75	27.24	20.55

Field Precision

	Relative Standard Deviation
Gravel	61.8
Very Course Sand	61.3
Course Sand	37.4
Medium Sand	43.2
Fine Sand	22.8
Very Fine Sand	20.5
Silt	24.9
Clay	37.9

Grain Size

Sample Name	PTV1C1	PTV1C2	PTV1C3	PTV1C4	PTV1C5
Gravel	0.38	0.00	0.29	0.07	0.59
Very Course Sand	1.11	0.14	1.67	0.96	1.56
Course Sand	1.59	0.71	1.84	1.38	2.45
Medium Sand	3.90	3.42	4.26	3.56	4.40
Fine Sand	3.78	3.11	5.57	3.64	3.92
Very Fine Sand	7.08	7.01	9.14	7.46	9.12
Silt	49.97	62.56	51.62	59.20	52.11
Clay	32.19	23.05	25.60	23.73	25.85

Field Precision

	Relative Standard Deviation
Gravel	89.7
Very Course Sand	55.9
Course Sand	39.9
Medium Sand	10.9
Fine Sand	23.2
Very Fine Sand	13.6
Silt	9.9
Clay	13.9

Grain Size

Sample Name	PTV2C1	PTV2C2	PTV2C3	PTV2C4	PTV2C5
Gravel	0.33	0.94	0.41	0.73	0.07
Very Course Sand	1.61	0.28	1.74	1.08	0.27
Course Sand	1.48	1.45	2.47	1.54	1.27
Medium Sand	4.01	5.65	5.59	5.39	4.26
Fine Sand	4.43	4.67	5.38	4.52	3.93
Very Fine Sand	6.94	8.32	8.69	7.52	6.44
Silt	58.95	52.68	50.70	53.88	59.34
Clay	22.26	26.01	25.03	25.35	24.42

Field Precision

	Relative Standard Deviation
Gravel	69.0
Very Course Sand	70.6
Course Sand	28.8
Medium Sand	15.7
Fine Sand	11.4
Very Fine Sand	12.3
Silt	7.0
Clay	5.8

Grain Size

Sample Name	PTV3C1	PTV3C2	PTV3C3	PTV3C4	PTV3C5	Dup. PTV3C4	Trip. PTV3C4
Gravel	0.92	0.41	0.19	0.74	1.21	1.23	0.35
Very Course Sand	1.15	1.50	1.63	1.26	3.17	2.56	1.48
Course Sand	1.91	3.35	2.04	2.04	4.09	2.61	1.31
Medium Sand	4.25	6.18	5.07	4.57	6.93	5.86	4.65
Fine Sand	3.32	5.11	3.81	3.49	4.60	4.78	3.66
Very Fine Sand	6.21	10.13	7.12	6.15	8.05	7.41	6.61
Silt	58.89	34.19	80.13	51.17	47.79	39.76	81.93
Clay	23.35	39.13	0.00	30.58	24.16	35.80	0.00

Field Precision

	Relative Standard Deviation
Gravel	58.3
Very Course Sand	47.1
Course Sand	36.5
Medium Sand	20.8
Fine Sand	18.8
Very Fine Sand	21.9
Silt	31.1
Clay	62.1

Analytical Precision

	Relative Standard Deviation
Gravel	57.0
Very Course Sand	39.4
Course Sand	32.8
Medium Sand	14.4
Fine Sand	17.6
Very Fine Sand	9.5
Silt	37.9
Clay	87.4

Grain Size

Sample Name	PTV4C1	PTV4C2	PTV4C3	PTV4C4	PTV4C5
Gravel	0.04	0.27	0.33	0.47	0.53
Very Course Sand	0.64	2.33	2.70	1.02	2.54
Course Sand	1.04	2.07	2.40	1.25	2.81
Medium Sand	3.87	5.24	5.47	5.93	5.92
Fine Sand	3.98	4.48	4.82	7.14	8.22
Very Fine Sand	8.40	8.93	11.20	15.16	21.15
Silt	37.61	53.93	54.18	51.47	35.32
Clay	44.43	22.75	18.91	17.56	23.51

Field Precision

	Relative Standard Deviation
Gravel	58.5
Very Course Sand	51.3
Course Sand	39.3
Medium Sand	16.0
Fine Sand	32.2
Very Fine Sand	40.8
Silt	19.9
Clay	42.9

Grain Size

Sample Name	PTV5C1	PTV5C2	PTV5C3	PTV5C4	PTV5C5	Dup. PTV5C1	Trip. PTV5C1
Gravel	0.30	2.43	1.23	1.43	0.94	0.45	1.17
Very Course Sand	1.10	2.83	1.66	1.75	2.51	1.18	1.81
Course Sand	1.40	3.34	2.23	1.78	2.43	1.76	1.50
Medium Sand	3.04	5.32	6.70	5.10	6.74	3.97	4.00
Fine Sand	2.74	4.46	4.95	5.23	5.56	3.18	3.13
Very Fine Sand	6.47	7.42	8.82	8.13	9.06	7.04	6.14
Silt	65.51	53.07	54.20	55.61	54.88	60.26	57.78
Clay	19.42	21.14	20.20	20.97	17.89	22.17	24.49

Field Precision

	Relative Standard Deviation
Gravel	61.5
Very Course Sand	35.3
Course Sand	32.9
Medium Sand	28.1
Fine Sand	24.2
Very Fine Sand	13.3
Silt	8.9
Clay	6.7

Analytical Precision

	Relative Standard Deviation
Gravel	72.7
Very Course Sand	28.5
Course Sand	12.0
Medium Sand	14.9
Fine Sand	8.0
Very Fine Sand	7.0
Silt	6.5
Clay	11.5

Grain Size

Sample Name	PTV6C1	PTV6C2	PTV6C3	PTV6C4	PTV6C5
Gravel	7.13	3.25	4.29	14.31	5.04
Very Course Sand	2.77	2.85	3.14	4.15	4.86
Course Sand	4.36	4.52	4.35	5.28	4.17
Medium Sand	12.37	13.11	12.71	13.63	16.03
Fine Sand	8.30	8.13	9.16	8.43	9.65
Very Fine Sand	8.96	9.30	10.06	7.88	7.41
Silt	38.91	39.17	24.17	22.61	34.14
Clay	17.19	19.66	32.12	23.71	18.70

Field Precision

	Relative Standard Deviation
Gravel	65.1
Very Course Sand	25.7
Course Sand	9.6
Medium Sand	10.7
Fine Sand	7.4
Very Fine Sand	12.3
Silt	25.0
Clay	27.0

Grain Size

Sample Name	MANCH1	MANCH2	MANCH3
Gravel	2.31	21.30	0.02
Very Course Sand	4.90	11.56	0.32
Course Sand	15.78	13.03	3.05
Medium Sand	43.92	23.26	20.22
Fine Sand	27.80	14.62	59.90
Very Fine Sand	1.95	2.31	12.02
Silt	0.27	13.85	1.76
Clay	3.07	0.08	2.71

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APPENDIX D

Laboratory Holding Times for
Chemistry Analyses

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Salmon Net Pen
 Quality Control Summary
 Results and Precision

TOTAL VOLATILE SOLIDS	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
ANAC1	03/27/91	04/09/91	13	28
ANAC2	03/27/91	04/09/91	13	28
ANAC3	03/27/91	04/09/91	13	28
ANAC4	03/27/91	04/09/91	13	28
ANAC6	03/27/91	04/09/91	13	28
PANG1	04/03/91	04/09/91	6	28
PANG2	04/03/91	04/09/91	6	28
PANG3	04/03/91	04/09/91	6	28
PANG4	04/03/91	04/09/91	6	28
PANG5	04/03/91	04/09/91	6	28
PANG6	04/03/91	04/09/91	6	28
BAIN1	04/16/91	04/25/91	9	28
BAIN2	04/16/91	04/25/91	9	28
BAIN3	04/16/91	04/25/91	9	28
BAIN4	04/16/91	04/25/91	9	28
CLAM1	04/17/91	04/25/91	8	28
CLAM2	04/17/91	04/25/91	8	28
CLAM3	04/17/91	04/25/91	8	28
CLAM4	04/17/91	04/25/91	8	28
CLAM5	04/17/91	04/25/91	8	28
CLAM6	04/17/91	04/25/91	8	28
CLAM7	04/17/91	04/25/91	8	28
PTDC1	04/30/91	05/09/91	9	28
PTDC2	04/30/91	05/09/91	9	28
PTDC3	04/30/91	05/09/91	9	28
PTDC4	04/30/91	05/09/91	9	28
PTDC5	04/30/91	05/09/91	9	28
PTDC6	04/30/91	05/09/91	9	28
PTDC7	04/30/91	05/09/91	9	28
REFCO1	05/01/91	05/09/91	8	28
REFCO2	05/01/91	05/09/91	8	28
REFCO3	05/01/91	05/09/91	8	28

Salmon Net Pen
Quality Control Summary
Results and Precision

TOTAL VOLATILE SOLIDS	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
REFC04	05/01/91	05/09/91	8	28
REFC05	05/01/91	05/09/91	8	28
PTV1C1	05/01/91	05/09/91	8	28
PTV1C2	05/01/91	05/09/91	8	28
PTV1C3	05/01/91	05/09/91	8	28
PTV1C4	05/01/91	05/09/91	8	28
PTV1C5	05/01/91	05/09/91	8	28
PTV2C1	05/02/91	05/16/91	14	28
PTV2C2	05/02/91	05/16/91	14	28
PTV2C3	05/02/91	05/16/91	14	28
PTV2C4	05/02/91	05/16/91	14	28
PTV2C5	05/02/91	05/16/91	14	28
PTV3C1	05/02/91	05/16/91	14	28
PTV3C2	05/02/91	05/16/91	14	28
PTV3C3	05/02/91	05/16/91	14	28
PTV3C4	05/02/91	05/16/91	14	28
PTV3C5	05/02/91	05/16/91	14	28
PTV4C1	05/02/91	05/16/91	14	28
PTV4C2	05/02/91	05/16/91	14	28
PTV4C3	05/02/91	05/16/91	14	28
PTV4C4	05/02/91	05/16/91	14	28
PTV4C5	05/02/91	05/16/91	14	28
PTV5C1	05/03/91	05/16/91	13	28
PTV5C2	05/03/91	05/16/91	13	28
PTV5C3	05/03/91	05/16/91	13	28
PTV5C4	05/03/91	05/16/91	13	28
PTV5C5	05/03/91	05/16/91	13	28
PTV6C1	05/03/91	05/16/91	13	28
PTV6C2	05/03/91	05/16/91	13	28
PTV6C3	05/03/91	05/16/91	13	28
PTV6C4	05/03/91	05/16/91	13	28

Salmon Net Pen
Quality Control Summary
Results and Precision

TOTAL VOLATILE SOLIDS	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
PTV6C5	05/03/91	05/16/91	13	28
MANCH1	05/16/91	06/12/91	27	28
MANCH2	05/16/91	06/12/91	27	28
MANCH3	05/16/91	06/12/91	27	28

Salmon Net Pen
 Quality Control Summary
 Results and Precision

SULFIDE, TOTAL	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
ANAC1	03/27/91	04/05/91	9	7
ANAC2	03/27/91	04/05/91	9	7
ANAC3	03/27/91	04/05/91	9	7
ANAC4	03/27/91	04/05/91	9	7
ANAC6	03/27/91	04/05/91	9	7
PANG1	04/03/91	04/15/91	12	7
PANG2	04/03/91	04/15/91	12	7
PANG3	04/03/91	04/15/91	12	7
PANG4	04/03/91	04/15/91	12	7
PANG5	04/03/91	04/15/91	12	7
PANG6	04/03/91	04/15/91	12	7
BAIN1	04/16/91	04/22/91	6	7
BAIN2	04/16/91	04/22/91	6	7
BAIN3	04/16/91	04/22/91	6	7
BAIN4	04/16/91	04/22/91	6	7
CLAM1	04/17/91	04/22/91	5	7
CLAM2	04/17/91	04/22/91	5	7
CLAM3	04/17/91	04/22/91	5	7
CLAM4	04/17/91	04/22/91	5	7
CLAM5	04/17/91	04/22/91	5	7
CLAM6	04/17/91	04/22/91	5	7
CLAM7	04/17/91	04/22/91	5	7
PTDC1	04/30/91	05/06/91	6	7
PTDC2	04/30/91	05/06/91	6	7
PTDC3	04/30/91	05/06/91	6	7
PTDC4	04/30/91	05/06/91	6	7
PTDC5	04/30/91	05/06/91	6	7
PTDC6	04/30/91	05/06/91	6	7
PTDC7	04/30/91	05/06/91	6	7
REFCO1	05/01/91	05/06/91	5	7
REFCO2	05/01/91	05/06/91	5	7
REFCO3	05/01/91	05/06/91	5	7

Salmon Net Pen
 Quality Control Summary
 Results and Precision

SULFIDE, TOTAL	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
REFC04	05/01/91	05/06/91	5	7
REFC05	05/01/91	05/06/91	5	7
PTV1C1	05/01/91	05/06/91	5	7
PTV1C2	05/01/91	05/06/91	5	7
PTV1C3	05/01/91	05/06/91	5	7
PTV1C4	05/01/91	05/06/91	5	7
PTV1C5	05/01/91	05/06/91	5	7
PTV2C1	05/02/91	05/08/91	6	7
PTV2C2	05/02/91	05/08/91	6	7
PTV2C3	05/02/91	05/08/91	6	7
PTV2C4	05/02/91	05/08/91	6	7
PTV2C5	05/02/91	05/08/91	6	7
PTV3C1	05/02/91	05/08/91	6	7
PTV3C2	05/02/91	05/08/91	6	7
PTV3C3	05/02/91	05/08/91	6	7
PTV3C4	05/02/91	05/08/91	6	7
PTV3C5	05/02/91	05/08/91	6	7
PTV4C1	05/02/91	05/08/91	6	7
PTV4C2	05/02/91	05/08/91	6	7
PTV4C3	05/02/91	05/08/91	6	7
PTV4C4	05/02/91	05/08/91	6	7
PTV4C5	05/02/91	05/08/91	6	7
PTV5C1	05/03/91	05/08/91	5	7
PTV5C2	05/03/91	05/08/91	5	7
PTV5C3	05/03/91	05/08/91	5	7
PTV5C4	05/03/91	05/08/91	5	7
PTV5C5	05/03/91	05/08/91	5	7
PTV6C1	05/03/91	05/08/91	5	7
PTV6C2	05/03/91	05/08/91	5	7
PTV6C3	05/03/91	05/08/91	5	7
PTV6C4	05/03/91	05/08/91	5	7

Salmon Net Pen
Quality Control Summary
Results and Precision

SULFIDE, TOTAL	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
PTV6C5	05/03/91	05/08/91	5	7
MANCH1	05/16/91	05/22/91	6	7
MANCH2	05/16/91	05/22/91	6	7
MANCH3	05/16/91	05/22/91	6	7

Salmon Net Pen
 Quality Control Summary
 Results and Precision

TOTAL ORGANIC NITROGEN	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
ANAC1	03/27/91	04/28/91	32	28
ANAC2	03/27/91	04/28/91	32	28
ANAC3	03/27/91	04/28/91	32	28
ANAC4	03/27/91	04/28/91	32	28
ANAC6	03/27/91	04/28/91	32	28
PANG1	04/03/91	04/30/91	27	28
PANG2	04/03/91	04/30/91	27	28
PANG3	04/03/91	04/30/91	27	28
PANG4	04/03/91	04/30/91	27	28
PANG5	04/03/91	04/30/91	27	28
PANG6	04/03/91	04/30/91	27	28
BAIN1	04/16/91	04/30/91	14	28
BAIN2	04/16/91	04/30/91	14	28
BAIN3	04/16/91	04/30/91	14	28
BAIN4	04/16/91	04/30/91	14	28
CLAM1	04/17/91	04/30/91	13	28
CLAM2	04/17/91	04/30/91	13	28
CLAM3	04/17/91	04/30/91	13	28
CLAM4	04/17/91	04/30/91	13	28
CLAM5	04/17/91	04/30/91	13	28
CLAM6	04/17/91	04/30/91	13	28
CLAM7	04/17/91	04/30/91	13	28
PTDC1	04/30/91	05/18/91	18	28
PTDC2	04/30/91	05/18/91	18	28
PTDC3	04/30/91	05/18/91	18	28
PTDC4	04/30/91	05/18/91	18	28
PTDC5	04/30/91	05/18/91	18	28
PTDC6	04/30/91	05/18/91	18	28
PTDC7	04/30/91	05/18/91	18	28
REFCO1	05/01/91	05/18/91	17	28
REFCO2	05/01/91	05/18/91	17	28

Salmon Net Pen
 Quality Control Summary
 Results and Precision

TOTAL ORGANIC NITROGEN	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
REFCO3	05/01/91	05/18/91	17	28
REFCO4	05/01/91	05/18/91	17	28
REFCO5	05/01/91	05/18/91	17	28
PTV1C1	05/01/91	05/18/91	17	28
PTV1C2	05/01/91	05/18/91	17	28
PTV1C3	05/01/91	05/18/91	17	28
PTV1C4	05/01/91	05/18/91	17	28
PTV1C5	05/01/91	05/18/91	17	28
PTV2C1	05/02/91	05/18/91	16	28
PTV2C2	05/02/91	05/18/91	16	28
PTV2C3	05/02/91	05/18/91	16	28
PTV2C4	05/02/91	05/18/91	16	28
PTV2C5	05/02/91	05/18/91	16	28
PTV3C1	05/02/91	05/18/91	16	28
PTV3C2	05/02/91	05/18/91	16	28
PTV3C3	05/02/91	05/18/91	16	28
PTV3C4	05/02/91	06/11/91	40	28
PTV3C5	05/02/91	06/12/91	41	28
PTV4C1	05/02/91	05/18/91	16	28
PTV4C2	05/02/91	05/18/91	16	28
PTV4C3	05/02/91	05/18/91	16	28
PTV4C4	05/02/91	05/18/91	16	28
PTV4C5	05/02/91	05/18/91	16	28
PTV5C1	05/03/91	05/18/91	15	28
PTV5C2	05/03/91	05/18/91	15	28
PTV5C3	05/03/91	05/18/91	15	28
PTV5C4	05/03/91	05/18/91	15	28
PTV5C5	05/03/91	05/18/91	15	28
PTV6C1	05/03/91	05/18/91	15	28
PTV6C2	05/03/91	05/18/91	15	28

Salmon Net Pen
Quality Control Summary
Results and Precision

			Sampling Date	Analysis Date	Holding Time	Contract Holding Time
TOTAL ORGANIC NITROGEN						
PTV6C3			05/03/91	05/18/91	15	28
PTV6C4			05/03/91	05/18/91	15	28
PTV6C5			05/03/91	05/18/91	15	28
MANCH1			05/16/91	06/13/91	28	28
MANCH2			05/16/91	06/13/91	28	28
MANCH3			05/16/91	06/13/91	28	28

Salmon Net Pen
 Quality Control Summary
 Results and Precision

NITROGEN, AMMONIA	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
ANAC1	03/27/91	04/24/91	28	28
ANAC2	03/27/91	04/24/91	28	28
ANAC3	03/27/91	04/24/91	28	28
ANAC4	03/27/91	04/24/91	28	28
ANAC6	03/27/91	04/24/91	28	28
PANG1	04/03/91	04/24/91	21	28
PANG2	04/03/91	04/24/91	21	28
PANG3	04/03/91	04/24/91	21	28
PANG4	04/03/91	04/24/91	21	28
PANG5	04/03/91	04/24/91	21	28
PANG6	04/03/91	04/24/91	21	28
BAIN1	04/16/91	04/24/91	8	28
BAIN2	04/16/91	04/24/91	8	28
BAIN3	04/16/91	04/24/91	8	28
BAIN4	04/16/91	04/24/91	8	28
CLAM1	04/17/91	04/24/91	7	28
CLAM2	04/17/91	04/24/91	7	28
CLAM3	04/17/91	04/24/91	7	28
CLAM4	04/17/91	04/24/91	7	28
CLAM5	04/17/91	04/24/91	7	28
CLAM6	04/17/91	04/24/91	7	28
CLAM7	04/17/91	04/24/91	7	28
PTDC1	04/30/91	05/17/91	17	28
PTDC2	04/30/91	05/17/91	17	28
PTDC3	04/30/91	05/17/91	17	28
PTDC4	04/30/91	05/17/91	17	28
PTDC5	04/30/91	05/17/91	17	28
PTDC6	04/30/91	05/17/91	17	28
PTDC7	04/30/91	05/17/91	17	28
REFCO1	05/01/91	05/17/91	16	28
REFCO2	05/01/91	05/17/91	16	28

Salmon Net Pen
 Quality Control Summary
 Results and Precision

NO. 100-100-100
 100-100-100
 100-100-100

NITROGEN, AMMONIA	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
REFC03	05/01/91	05/17/91	16	28
REFC04	05/01/91	05/17/91	16	28
REFC05	05/01/91	05/17/91	16	28
PTV1C1	05/01/91	05/17/91	16	28
PTV1C2	05/01/91	05/17/91	16	28
PTV1C3	05/01/91	05/17/91	16	28
PTV1C4	05/01/91	05/17/91	16	28
PTV1C5	05/01/91	05/17/91	16	28
PTV2C1	05/02/91	05/17/91	15	28
PTV2C2	05/02/91	05/17/91	15	28
PTV2C3	05/02/91	05/17/91	15	28
PTV2C4	05/02/91	05/17/91	15	28
PTV2C5	05/02/91	05/17/91	15	28
PTV3C1	05/02/91	05/17/91	15	28
PTV3C2	05/02/91	05/17/91	15	28
PTV3C3	05/02/91	05/17/91	15	28
PTV3C4	05/02/91	06/11/91	40	28
PTV3C5	05/02/91	06/12/91	41	28
PTV4C1	05/02/91	05/17/91	15	28
PTV4C2	05/02/91	05/17/91	15	28
PTV4C3	05/02/91	05/17/91	15	28
PTV4C4	05/02/91	05/17/91	15	28
PTV4C5	05/02/91	05/17/91	15	28
PTV5C1	05/03/91	05/17/91	14	28
PTV5C2	05/03/91	05/17/91	14	28
PTV5C3	05/03/91	05/17/91	14	28
PTV5C4	05/03/91	05/17/91	14	28
PTV5C5	05/03/91	05/17/91	14	28
PTV6C1	05/03/91	05/17/91	14	28
PTV6C2	05/03/91	05/17/91	14	28

Salmon Net Pen
Quality Control Summary
Results and Precision

NITROGEN, AMMONIA	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
PTV6C3	05/03/91	05/17/91	14	28
PTV6C4	05/03/91	05/17/91	14	28
PTV6C5	05/03/91	05/17/91	14	28
MANCH1	05/16/91	06/11/91	26	28
MANCH2	05/16/91	06/11/91	26	28
MANCH3	05/16/91	06/11/91	26	28

Salmon Net Pen
Quality Control Summary

PHOSPHORUS, TOTAL	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
ANAC1	03/27/91	04/30/91	34	7
ANAC2	03/27/91	04/30/91	34	7
ANAC3	03/27/91	04/30/91	34	7
ANAC4	03/27/91	04/30/91	34	7
ANAC6	03/27/91	04/30/91	34	7
PANG1	04/03/91	04/30/91	27	7
PANG2	04/03/91	04/30/91	27	7
PANG3	04/03/91	04/30/91	27	7
PANG4	04/03/91	04/30/91	27	7
PANG5	04/03/91	04/30/91	27	7
PANG6	04/03/91	04/30/91	27	7
BAIN1	04/16/91	04/30/91	14	7
BAIN2	04/16/91	04/30/91	14	7
BAIN3	04/16/91	04/30/91	14	7
BAIN4	04/16/91	04/30/91	14	7
CLAM1	04/17/91	04/30/91	13	7
CLAM2	04/17/91	04/30/91	13	7
CLAM3	04/17/91	04/30/91	13	7
CLAM4	04/17/91	04/30/91	13	7
CLAM5	04/17/91	04/30/91	13	7
CLAM6	04/17/91	04/30/91	13	7
CLAM7	04/17/91	04/30/91	13	7
PTDC1	04/30/91	05/16/91	16	7
PTDC2	04/30/91	05/16/91	16	7
PTDC3	04/30/91	05/16/91	16	7
PTDC4	04/30/91	05/16/91	16	7
PTDC5	04/30/91	05/16/91	16	7
PTDC6	04/30/91	05/16/91	16	7
PTDC7	04/30/91	05/16/91	16	7
REFCO1	05/01/91	05/16/91	15	7
REFCO2	05/01/91	05/16/91	15	7
REFCO3	05/01/91	05/16/91	15	7
REFCO4	05/01/91	05/16/91	15	7

Salmon Net Pen
Quality Control Summary

PHOSPHORUS, TOTAL	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
REFC05	05/01/91	05/16/91	15	7
PTV1C1	05/01/91	05/16/91	15	7
PTV1C2	05/01/91	05/16/91	15	7
PTV1C3	05/01/91	05/16/91	15	7
PTV1C4	05/01/91	05/16/91	15	7
PTV1C5	05/01/91	05/16/91	15	7
PTV2C1	05/02/91	05/16/91	14	7
PTV2C2	05/02/91	05/16/91	14	7
PTV2C3	05/02/91	05/16/91	14	7
PTV2C4	05/02/91	05/16/91	14	7
PTV2C5	05/02/91	05/16/91	14	7
PTV3C1	05/02/91	05/16/91	14	7
PTV3C2	05/02/91	05/16/91	14	7
PTV3C3	05/02/91	05/16/91	14	7
PTV3C4	05/02/91	06/12/91	41	7
PTV3C5	05/02/91	06/12/91	41	7
PTV4C1	05/02/91	05/16/91	14	7
PTV4C2	05/02/91	05/16/91	14	7
PTV4C3	05/02/91	05/16/91	14	7
PTV4C4	05/02/91	05/16/91	14	7
PTV4C5	05/02/91	05/16/91	14	7
PTV5C1	05/03/91	05/16/91	13	7
PTV5C2	05/03/91	05/16/91	13	7
PTV5C3	05/03/91	05/16/91	13	7
PTV5C4	05/03/91	05/16/91	13	7
PTV5C5	05/03/91	05/16/91	13	7
PTV6C1	05/03/91	05/16/91	13	7
PTV6C2	05/03/91	05/16/91	13	7
PTV6C3	05/03/91	05/16/91	13	7
PTV6C4	05/03/91	05/16/91	13	7
PTV6C5	05/03/91	05/16/91	13	7

Salmon Net Pen
Quality Control Summary

PHOSPHORUS, TOTAL	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
MANCH1	05/16/91	06/12/91	27	7
MANCH2	05/16/91	06/12/91	27	7
MANCH3	05/16/91	06/12/91	27	7

Salmon Net Pen
 Quality Control Summary
 Results and Precision

BIOCHEMICAL OXYGEN DEMAND	Sampling Date	Analysis Date	Holding Time	Contract Holding Time (%)
ANAC1	03/27/91	04/03/91	7	7
ANAC2	03/27/91	04/03/91	7	7
ANAC3	03/27/91	04/03/91	7	7
ANAC4	03/27/91	04/03/91	7	7
ANAC6	03/27/91	04/03/91	7	7
PANG1	04/03/91	04/11/91	8	7
PANG2	04/03/91	04/11/91	8	7
PANG3	04/03/91	04/11/91	8	7
PANG4	04/03/91	04/11/91	8	7
PANG5	04/03/91	04/11/91	8	7
PANG6	04/03/91	04/11/91	8	7
BAIN1	04/16/91	04/22/91	6	7
BAIN2	04/16/91	04/22/91	6	7
BAIN3	04/16/91	04/22/91	6	7
BAIN4	04/16/91	04/22/91	6	7
CLAM1	04/17/91	04/23/91	6	7
CLAM2	04/17/91	04/23/91	6	7
CLAM3	04/17/91	04/23/91	6	7
CLAM4	04/17/91	04/23/91	6	7
CLAM5	04/17/91	04/23/91	6	7
CLAM6	04/17/91	04/23/91	6	7
CLAM7	04/17/91	05/01/91	13	7
PTDC1	04/30/91	05/06/91	6	7
PTDC2	04/30/91	05/06/91	6	7
PTDC3	04/30/91	05/06/91	6	7
PTDC4	04/30/91	05/06/91	6	7
PTDC5	04/30/91	05/06/91	6	7
PTDC6	04/30/91	05/06/91	6	7
PTDC7	04/30/91	05/06/91	6	7
REFCO1	05/01/91	05/07/91	6	7
REFCO2	05/01/91	05/07/91	6	7
REFCO3	05/01/91	05/07/91	6	7

Salmon Net Pen
 Quality Control Summary
 Results and Precision

BIOCHEMICAL OXYGEN DEMAND	Sampling Date	Analysis Date	Holding Time	Contract Holding Time (%)
REFC04	05/01/91	05/07/91	6	7
REFC05	05/01/91	05/07/91	6	7
PTV1C1	05/01/91	05/07/91	6	7
PTV1C2	05/01/91	05/07/91	6	7
PTV1C3	05/01/91	05/07/91	6	7
PTV1C4	05/01/91	05/07/91	6	7
PTV1C5	05/01/91	05/07/91	6	7
PTV2C1	05/02/91	05/08/91	6	7
PTV2C2	05/02/91	05/08/91	6	7
PTV2C3	05/02/91	05/08/91	6	7
PTV2C4	05/02/91	05/08/91	6	7
PTV2C5	05/02/91	05/08/91	6	7
PTV3C1	05/02/91	05/08/91	6	7
PTV3C2	05/02/91	05/08/91	6	7
PTV3C3	05/02/91	05/08/91	6	7
PTV3C4	05/02/91	06/11/91	40	7
PTV3C5	05/02/91	06/12/91	41	7
PTV4C1	05/02/91	05/08/91	6	7
PTV4C2	05/02/91	05/08/91	6	7
PTV4C3	05/02/91	05/08/91	6	7
PTV4C4	05/02/91	05/08/91	6	7
PTV4C5	05/02/91	05/08/91	6	7
PTV5C1	05/03/91	05/09/91	6	7
PTV5C2	05/03/91	05/09/91	6	7
PTV5C3	05/03/91	05/09/91	6	7
PTV5C4	05/03/91	05/09/91	6	7
PTV5C5	05/03/91	05/09/91	6	7
PTV6C1	05/03/91	05/09/91	6	7
PTV6C2	05/03/91	05/09/91	6	7
PTV6C3	05/03/91	05/09/91	6	7
PTV6C4	05/03/91	05/09/91	6	7

Salmon Net Pen
Quality Control Summary
Results and Precision

BIOCHEMICAL OXYGEN DEMAND	Sampling Date	Analysis Date	Holding Time	Contract Holding Time (%)
PTV6C5	05/03/91	05/09/91	6	7
MANCH1	05/16/91	05/21/91	5	7
MANCH2	05/16/91	05/21/91	5	7
MANCH3	05/16/91	05/21/91	5	7

Salmon Net Pen
Quality Control Summary

net = 1000
1000 = 1000

			Sampling Date	Analysis Date	Holding Time	Contract Holding Time
CHEMICAL OXYGEN DEMAND						
ANAC1			03/27/91	04/19/91	23	7
ANAC2			03/27/91	04/19/91	23	7
ANAC3			03/27/91	04/19/91	23	7
ANAC4			03/27/91	04/19/91	23	7
ANAC6			03/27/91	04/19/91	23	7
PANG1			04/03/91	04/19/91	16	7
PANG2			04/03/91	04/19/91	16	7
PANG3			04/03/91	04/19/91	16	7
PANG4			04/03/91	04/19/91	16	7
PANG5			04/03/91	04/19/91	16	7
PANG6			04/03/91	04/19/91	16	7
BAIN1			04/16/91	04/25/91	9	7
BAIN2			04/16/91	04/25/91	9	7
BAIN3			04/16/91	04/25/91	9	7
BAIN4			04/16/91	04/25/91	9	7
CLAM1			04/17/91	04/25/91	8	7
CLAM2			04/17/91	04/25/91	8	7
CLAM3			04/17/91	04/25/91	8	7
CLAM4			04/17/91	04/25/91	8	7
CLAM5			04/17/91	04/25/91	8	7
CLAM6			04/17/91	04/25/91	8	7
CLAM7			04/17/91	04/25/91	8	7
PTDC1			04/30/91	05/07/91	7	7
PTDC2			04/30/91	05/07/91	7	7
PTDC3			04/30/91	05/07/91	7	7
PTDC4			04/30/91	05/07/91	7	7
PTDC5			04/30/91	05/07/91	7	7
PTDC6			04/30/91	05/07/91	7	7
PTDC7			04/30/91	05/07/91	7	7
REFCO1			05/01/91	05/07/91	6	7
REFCO2			05/01/91	05/07/91	6	7
REFCO3			05/01/91	05/07/91	6	7
REFCO4			05/01/91	05/07/91	6	7

Salmon Net Pen
Quality Control Summary

CHEMICAL OXYGEN DEMAND	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
REFC05	05/01/91	05/07/91	6	7
PTV1C1	05/01/91	05/07/91	6	7
PTV1C2	05/01/91	05/07/91	6	7
PTV1C3	05/01/91	05/07/91	6	7
PTV1C4	05/01/91	05/07/91	6	7
PTV1C5	05/01/91	05/07/91	6	7
PTV2C1	05/02/91	05/08/91	6	7
PTV2C2	05/02/91	05/08/91	6	7
PTV2C3	05/02/91	05/08/91	6	7
PTV2C4	05/02/91	05/08/91	6	7
PTV2C5	05/02/91	05/08/91	6	7
PTV3C1	05/02/91	05/08/91	6	7
PTV3C2	05/02/91	05/08/91	6	7
PTV3C3	05/02/91	05/08/91	6	7
PTV3C4	05/02/91	05/08/91	6	7
PTV3C5	05/02/91	05/08/91	6	7
PTV4C1	05/02/91	05/08/91	6	7
PTV4C2	05/02/91	05/08/91	6	7
PTV4C3	05/02/91	05/08/91	6	7
PTV4C4	05/02/91	05/08/91	6	7
PTV4C5	05/02/91	05/08/91	6	7
PTV5C1	05/03/91	05/08/91	5	7
PTV5C2	05/03/91	05/08/91	5	7
PTV5C3	05/03/91	05/08/91	5	7
PTV5C4	05/03/91	05/08/91	5	7
PTV5C5	05/03/91	05/08/91	5	7
PTV6C1	05/03/91	05/08/91	5	7
PTV6C2	05/03/91	05/08/91	5	7
PTV6C3	05/03/91	05/08/91	5	7
PTV6C4	05/03/91	05/08/91	5	7
PTV6C5	05/03/91	05/08/91	5	7

**Salmon Net Pen
Quality Control Summary**

05/16/91
05/22/91
05/22/91

			Sampling Date	Analysis Date	Holding Time	Contract Holding Time
CHEMICAL OXYGEN DEMAND						
			05/16/91	05/22/91	6	7
			05/16/91	05/22/91	6	7
			05/16/91	05/22/91	6	7

Salmon Net Pen
Quality Control Summary
Results and Precision

TOTAL ORGANIC CARBON (TOC)	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
ANAC1	03/27/91	04/11/91	15	28
ANAC2	03/27/91	04/11/91	15	28
ANAC3	03/27/91	04/11/91	15	28
ANAC4	03/27/91	04/11/91	15	28
ANAC6	03/27/91	04/11/91	15	28
PANG1	04/03/91	04/11/91	8	28
PANG2	04/03/91	04/11/91	8	28
PANG3	04/03/91	04/11/91	8	28
PANG4	04/03/91	04/11/91	8	28
PANG5	04/03/91	04/11/91	8	28
PANG6	04/03/91	04/11/91	8	28
BAIN1	04/16/91	04/23/91	7	28
BAIN2	04/16/91	04/23/91	7	28
BAIN3	04/16/91	04/23/91	7	28
BAIN4	04/16/91	04/23/91	7	28
CLAM1	04/17/91	04/23/91	6	28
CLAM2	04/17/91	04/23/91	6	28
CLAM3	04/17/91	04/23/91	6	28
CLAM4	04/17/91	04/23/91	6	28
CLAM5	04/17/91	04/23/91	6	28
CLAM6	04/17/91	04/23/91	6	28
CLAM7	04/17/91	04/23/91	6	28
PTDC1	04/30/91	05/17/91	17	28
PTDC2	04/30/91	05/17/91	17	28
PTDC3	04/30/91	05/17/91	17	28
PTDC4	04/30/91	05/17/91	17	28
PTDC5	04/30/91	05/17/91	17	28
PTDC6	04/30/91	05/17/91	17	28
PTDC7	04/30/91	05/17/91	17	28

Salmon Net Pen
Quality Control Summary
Results and Precision

TOTAL ORGANIC CARBON (TOC)	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
REFCO1	05/01/91	05/16/91	15	28
REFCO2	05/01/91	05/16/91	15	28
REFCO3	05/01/91	05/16/91	15	28
REFCO4	05/01/91	05/16/91	15	28
REFCO5	05/01/91	05/16/91	15	28
PTV1C1	05/01/91	05/16/91	15	28
PTV1C2	05/01/91	05/16/91	15	28
PTV1C3	05/01/91	05/16/91	15	28
PTV1C4	05/01/91	05/16/91	15	28
PTV1C5	05/01/91	05/16/91	15	28
PTV2C1	05/02/91	05/17/91	15	28
PTV2C2	05/02/91	05/17/91	15	28
PTV2C3	05/02/91	05/17/91	15	28
PTV2C4	05/02/91	05/17/91	15	28
PTV2C5	05/02/91	05/17/91	15	28
PTV3C1	05/02/91	05/17/91	15	28
PTV3C2	05/02/91	05/17/91	15	28
PTV3C3	05/02/91	05/17/91	15	28
PTV3C4	05/02/91	05/17/91	15	28
PTV3C5	05/02/91	05/17/91	15	28
PTV4C1	05/02/91	05/17/91	15	28
PTV4C2	05/02/91	05/17/91	15	28
PTV4C3	05/02/91	05/17/91	15	28
PTV4C4	05/02/91	05/17/91	15	28
PTV4C5	05/02/91	05/17/91	15	28
PTV5C1	05/03/91	05/17/91	14	28
PTV5C2	05/03/91	05/17/91	14	28
PTV5C3	05/03/91	05/17/91	14	28
PTV5C4	05/03/91	05/17/91	14	28

Salmon Net Pen
Quality Control Summary
Results and Precision

TOTAL ORGANIC CARBON (TOC)	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
PTV5C5	05/03/91	05/17/91	14	28
PTV6C1	05/03/91	05/17/91	14	28
PTV6C2	05/03/91	05/17/91	14	28
PTV6C3	05/03/91	05/17/91	14	28
PTV6C4	05/03/91	05/17/91	14	28
PTV6C5	05/03/91	05/17/91	14	28
MANCH1	05/16/91	05/31/91	15	28
MANCH2	05/16/91	05/31/91	15	28
MANCH3	05/16/91	05/31/91	15	28

Salmon Net Pen
 Quality Control Summary
 Sample Results and Precision Summary

2005/08/18

Sample Name	Sampling Date	Analysis Date	Holding Time	Contract Holding Time
PTV1W	05/03/91	05/08/91	5	7
PTV6W	05/03/91	05/08/91	5	7
Total settleable solids, mg/L				
PTV1W	05/03/91	05/09/91	6	48 hours
PTV6W	05/03/91	05/09/91	6	48 hours
Turbidity, NTU				
PTV1W	05/03/91	05/09/91	6	48 hours
PTV6W	05/03/91	05/09/91	6	48 hours
Ammonia, nitrogen, mg/L				
PTV1W	05/03/91	06/12/91	40	28
PTV6W	05/03/91	06/12/91	40	28
Nitrate + nitrite, nitrogen, mg/L				
PTV1W	05/03/91	05/23/91	20	28
PTV6W	05/03/91	05/23/91	20	28
Total Kjeldahl nitrogen, mg/L				
PTV1W	05/03/91	06/13/91	41	28
PTV6W	05/03/91	06/13/91	41	28

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APPENDIX E

Results of Benthic Infauna Analyses

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SPECIES ABUNDANCE BY SAMPLE AND SUBSAMPLE

09/11/91

Columns in the output identify, in order from left to right:

Subsample
 Species name
 Abundance
 Units of abundance

Survey: NETPEN91 Station: ANAC-1 Date: 03/27/91 Sample: ANAC-1

Replicate: 1

--	Aoroides columbiae	29	IND
--	Calanoida	19	IND
--	Decapoda	10	IND
--	Nematoda	7	IND
--	Alvania spp.	2	IND
--	Capitella capitata	2	IND
--	Glycinde armigera	2	IND
--	Margarites spp.	2	IND
--	Ampharete labrops	1	IND
--	Bivalvia	1	IND
--	Foxiphalus similis	1	IND
--	Gyptis brevipalpa	1	IND
--	Mediomastus spp.	1	IND
--	Munna ubiquita	1	IND
--	Oligochaeta	1	IND
--	Prionospio multibranchiata	1	IND
--	Psephidia lordi	1	IND
--	Sabellaria cementarium	1	IND

Survey: NETPEN91 Station: ANAC-1 Date: 03/27/91 Sample: ANAC-1

Replicate: 2

--	Nematoda	341	IND
--	Aoroides columbiae	60	IND
--	Capitella capitata	43	IND
--	COPEPODA	14	IND
--	Melita dentata	13	IND
--	Mysella tumida	10	IND
--	Alvania spp.	9	IND
--	Armandia brevis	5	IND
--	Munna ubiquita	5	IND
--	Phyllodoce (Anaitides) groenlandica	5	IND
--	Pleusymptes subglaber	5	IND
--	Macoma obliqua	4	IND
--	Melita desdichada	4	IND
--	Janiralata occidentalis	3	IND
--	Macoma inquinata	3	IND
--	Cancer productus	2	IND
--	Macoma spp.	2	IND
--	Margarites spp.	2	IND
--	Saxidomus giganteus	2	IND
--	Cirratulidae	1	IND

-- Eulalia (Eulalia) sp.	1 IND
-- Jaeropsis dubia	1 IND
-- Jassa spp.	1 IND
-- Lacuna sp.	1 IND
-- Metopella spp.	1 IND
-- Modiolus spp.	1 IND
-- Nereis sp.	1 IND
-- Oligochaeta	1 IND
-- Oregonia gracilis	1 IND
-- Sabellaria cementarium	1 IND

Survey: NETPEN91 Station: ANAC-1 Date: 03/27/91 Sample: ANAC-1
Replicate: 3

-- Nematoda	78 IND
-- Mysella tumida	36 IND
-- Oligochaeta	21 IND
-- Aoroides columbiae	18 IND
-- Mediomastus spp.	7 IND
-- Capitella capitata	4 IND
-- Alvania spp.	3 IND
-- Macoma spp.	3 IND
-- Calanoida	2 IND
-- Chaetozone spp.	2 IND
-- Macoma inquinata	2 IND
-- Ampharete labrops	1 IND
-- Amphiodia occidentalis	1 IND
-- Armandia brevis	1 IND
-- Foxiphalus similis	1 IND
-- Lumbrineris sp.	1 IND
-- Margarites spp.	1 IND
-- Nereis sp.	1 IND
-- Photis spp.	1 IND
-- Pinnixa faba	1 IND
-- Pleusymptes subglaber	1 IND
-- Prionospio multibranchiata	1 IND
-- Protodorvillea gracilis	1 IND
-- Sabellaria cementarium	1 IND
-- Schistomeringos rudolphi	1 IND
-- Tharyx secundus	1 IND

Survey: NETPEN91 Station: ANAC-2 Date: 03/27/91 Sample: ANAC-2
Replicate: 1

-- Nematoda	28 IND
-- Capitella capitata	24 IND
-- COPEPODA	19 IND
-- Mysella tumida	7 IND
-- Decapoda	6 IND
-- Pinnixa franciscana	5 IND
-- Gyptis brevipalpa	3 IND
-- Macoma spp.	2 IND
-- Margarites spp.	2 IND
-- Alvania spp.	1 IND
-- Aoroides columbiae	1 IND
-- Armandia brevis	1 IND
-- Glycinde armigera	1 IND
-- Mytilus edulis	1 IND

--	Oligochaeta	1	IND
--	Pleustidae	1	IND
--	Saxidomus giganteus	1	IND

Survey: NETPEN91 Station: ANAC-2 Date: 03/27/91 Sample: ANAC-2
Replicate: 2

--	Aroides columbiae	36	IND
--	Nematoda	32	IND
--	Mysella tumida	18	IND
--	Oligochaeta	14	IND
--	Mediomastus spp.	10	IND
--	Capitella capitata	9	IND
--	Macoma spp.	7	IND
--	COPEPODA	4	IND
--	Saxidomus giganteus	3	IND
--	Glycinde picta	2	IND
--	Schistomeringos rudolphi	2	IND
--	Barantolla americana	1	IND
--	Decapoda	1	IND
--	Goniada annulata	1	IND
--	Macoma inquinata	1	IND
--	Micrura spp.	1	IND
--	Nebalia pugettensis	1	IND
--	Ophiodromus pugettensis	1	IND
--	Parvilucina tenuisculpta	1	IND
--	Platynereis bicanaliculata	1	IND

Survey: NETPEN91 Station: ANAC-2 Date: 03/27/91 Sample: ANAC-2
Replicate: 3

--	Aroides columbiae	39	IND
--	Nematoda	10	IND
--	Capitella capitata	4	IND
--	COPEPODA	2	IND
--	Macoma carlottensis	2	IND
--	Glycinde picta	1	IND
--	Macoma inquinata	1	IND
--	Melita desdichada	1	IND
--	Nebalia pugettensis	1	IND
--	Nereis procera	1	IND
--	Saxidomus giganteus	1	IND

Survey: NETPEN91 Station: ANAC-3 Date: 03/27/91 Sample: ANAC-3
Replicate: 1

--	Mysella tumida	78	IND
--	Nematoda	19	IND
--	Owenia fusiformis	10	IND
--	Lumbrineris sp.	6	IND
--	Melita desdichada	6	IND
--	Prionospio steenstrupi	5	IND
--	Alvania spp.	4	IND
--	Glycinde armigera	4	IND
--	Aroides columbiae	3	IND
--	Chaetozone spp.	3	IND
--	Barantolla americana	2	IND
--	Gyptis brevivalpa	2	IND
--	Macoma inquinata	2	IND

--	Nereis sp.	2 IND
--	Pinnixa franciscana	2 IND
--	Amphiodia occidentalis	1 IND
--	Capitella capitata	1 IND
--	Cauleriella spp.	1 IND
--	Chaetozone setosa	1 IND
--	Cumella sp.	1 IND
--	Diastylis pellucida	1 IND
--	Galathowenia nr. G. oculata	1 IND
--	Glycera capitata	1 IND
--	Leitoscoloplos elongatus	1 IND
--	Macoma spp.	1 IND
--	Mediomastus spp.	1 IND
--	Micrura spp.	1 IND
--	Parvilucina tenuisculpta	1 IND
--	Pholoe minuta	1 IND
--	Photis spp.	1 IND
--	Scoloplos acmeceps	1 IND
--	Turbonilla spp.	1 IND

Survey: NETPEN91 Station: ANAC-3 Date: 03/27/91 Sample: ANAC-3
Replicate: 2

--	Nematoda	449 IND
--	Oligochaeta	52 IND
--	Capitella capitata	23 IND
--	Aoroides columbiae	14 IND
--	Mysella tumida	8 IND
--	Mediomastus spp.	6 IND
--	Pholooides aspera	5 IND
--	Alvania spp.	4 IND
--	Calanoidea	3 IND
--	Foxiphalus cognatus	2 IND
--	Glycinde picta	2 IND
--	Gyptis brevipalpa	2 IND
--	Leptochelia savignyi	2 IND
--	Margarites spp.	2 IND
--	Melita dentata	2 IND
--	Micrura spp.	2 IND
--	Protodorvillea gracilis	2 IND
--	Amphipoda	1 IND
--	Clinocardium spp.	1 IND
--	Glycera capitata	1 IND
--	Glycinde armigera	1 IND
--	Macoma obliqua	1 IND
--	Macoma spp.	1 IND
--	Melita desdichada	1 IND
--	Prionospio multibranchiata	1 IND
--	Schistomeringos rudolphi	1 IND

Survey: NETPEN91 Station: ANAC-3 Date: 03/27/91 Sample: ANAC-3
Replicate: 3

--	Nematoda	230 IND
--	Mediomastus spp.	13 IND
--	Melita dentata	13 IND
--	Oligochaeta	13 IND
--	Macoma spp.	11 IND

--	Alvania spp.	5	8 IND
--	Mysella tumida		6 IND
--	Capitella capitata	5	5 IND
--	Platynereis bicanaliculata		5 IND
--	Prionospio multibranchiata	3	3 IND
--	Calanoida	2	2 IND
--	Mytilus edulis	2	2 IND
--	Sabellaria cementarium	2	2 IND
--	Ueptochelia savignyi	2	2 IND
--	Zygonemertes virescens	2	2 IND
--	Amphissa spp.	1	1 IND
--	Cancer oregonensis	1	1 IND
--	Cauleriella alata	1	1 IND
--	Chaetozone spp.	1	1 IND
--	Eupentacta spp.	1	1 IND
--	Glycinde picta	1	1 IND
--	Macoma inquinata	1	1 IND
--	Micrura spp.	1	1 IND
--	Nebalia pugettensis	1	1 IND
--	Nereis procera	1	1 IND
--	Oregonia gracilis	1	1 IND
--	Owenia fusiformis	1	1 IND
--	Pholooides aspera	1	1 IND
--	Pinnixa spp.	1	1 IND
--	Polynoidea	1	1 IND
--	Saxidomus giganteus	1	1 IND

Survey: NETPEN91 Station: ANAC-4 Date: 03/27/91 Sample: ANAC-4

Replicate: 1

--	Nematoda	810	810 IND
--	Oligochaeta	151	151 IND
--	Capitella capitata	33	33 IND
--	Calanoida	23	23 IND
--	Copepoda harpacticoida	15	15 IND
--	Macoma spp.	15	15 IND
--	Mediomastus spp.	14	14 IND
--	Macoma inquinata	8	8 IND
--	Alvania spp.	6	6 IND
--	Chaetozone spp.	4	4 IND
--	Copepoda cyclopoida	3	3 IND
--	Cossura soyeri	2	2 IND
--	Cumella vulgaris	2	2 IND
--	Glycinde picta	2	2 IND
--	Melita desdichada	2	2 IND
--	Saxidomus giganteus	2	2 IND
--	Syllis sp.	2	2 IND
--	Aoroides columbiae	1	1 IND
--	Armandia brevis	1	1 IND
--	Decapoda	1	1 IND
--	Macoma nasuta	1	1 IND
--	Margarites spp.	1	1 IND
--	Munna sp.	1	1 IND
--	Odostomia spp.	1	1 IND
--	Pleurogonium rubicundum	1	1 IND
--	Polynoidea	1	1 IND
--	Prionospio steenstrupi	1	1 IND

-- *Scoloplos acmeceps* 1 IND

Survey: NETPEN91 Station: ANAC-4 Date: 03/27/91 Sample: ANAC-4
Replicate: 2

-- Nematoda	810 IND
-- Oligochaeta	109 IND
-- Capitella capitata	17 IND
-- Alvania spp.	12 IND
-- Melita dentata	11 IND
-- Mediomastus spp.	5 IND
-- Mysella tumida	5 IND
-- Margarites spp.	4 IND
-- Aoroides columbiae	3 IND
-- Macoma inquinata	3 IND
-- Melita desdichada	3 IND
-- Prionospio multibranchiata	3 IND
-- COPEPODA	2 IND
-- Pentamera spp.	2 IND
-- Prionospio steenstrupi	2 IND
-- Ampelisca sp.	1 IND
-- Amphipholis squamata	1 IND
-- Cancer productus	1 IND
-- Foxiphalus cognatus	1 IND
-- Glycinde picta	1 IND
-- Jassa spp.	1 IND
-- Leptochelia savignyi	1 IND
-- Lumbrineris sp.	1 IND
-- Mesocrangon munitella	1 IND
-- Micrura spp.	1 IND
-- Nephtys cornuta franciscana	1 IND
-- Oregonia gracilis	1 IND
-- Pholoe minuta	1 IND
-- Pugettia richii	1 IND
-- Sabellaria cementarium	1 IND
-- Spiophanes spp.	1 IND

Survey: NETPEN91 Station: ANAC-4 Date: 03/27/91 Sample: ANAC-4
Replicate: 3

-- Oligochaeta	21 IND
-- Alvania spp.	7 IND
-- Mediomastus spp.	7 IND
-- Nematoda	7 IND
-- Pinnixa franciscana	6 IND
-- Armandia brevis	5 IND
-- Macoma inquinata	4 IND
-- Melita desdichada	3 IND
-- Glycinde picta	2 IND
-- Mysella tumida	2 IND
-- Parvilucina tenuisculpta	2 IND
-- Prionospio steenstrupi	2 IND
-- Capitella capitata	1 IND
-- Gyptis brevipalpa	1 IND
-- Lumbrineris sp.	1 IND
-- Micrura spp.	1 IND
-- Nereis procera	1 IND
-- Sabellaria cementarium	1 IND

Survey: NETPEN91 Station: ANAC-6 Date: 03/27/91 Sample: ANAC-6
Replicate: 1

--	Nephasoma spp.	51	IND
--	Oligochaeta	50	IND
--	Mediomastus spp.	20	IND
--	Macoma spp.	15	IND
--	Nematoda	14	IND
--	Foxiphalus cognatus	7	IND
--	Glycinde picta	4	IND
--	Melita desdichada	4	IND
--	Micrura spp.	4	IND
--	Protothaca staminea	4	IND
--	Calyptraea fastigiata	3	IND
--	Cumella sp.	3	IND
--	LEPIDEPECREUM GURJANOVAE	3	IND
--	Macoma obliqua	3	IND
--	Ampharete acutifrons	2	IND
--	Chaetozone spp.	2	IND
--	Saxidomus giganteus	2	IND
--	Acesta/Aricidea spp.	1	IND
--	Armandia brevis	1	IND
--	COPEPODA	1	IND
--	Cirratulidae	1	IND
--	Cumella vulgaris	1	IND
--	Eteone longa	1	IND
--	Hiatella arctica	1	IND
--	Monoculodes simplex	1	IND
--	Photis spp.	1	IND

Survey: NETPEN91 Station: ANAC-6 Date: 03/27/91 Sample: ANAC-6
Replicate: 2

--	Oligochaeta	61	IND
--	Macoma spp.	30	IND
--	Nematoda	28	IND
--	Mediomastus spp.	21	IND
--	Alvania spp.	13	IND
--	Melita desdichada	12	IND
--	Cirratulidae	9	IND
--	Prionospio steenstrupi	8	IND
--	Dexamonica reducans	6	IND
--	Aoroides columbiae	5	IND
--	Mysella tumida	5	IND
--	Armandia brevis	4	IND
--	Eobrolgus spinosus	4	IND
--	Macoma inquinata	3	IND
--	Protothaca staminea	3	IND
--	Ampelisca pugetica	2	IND
--	Campylaspis sp.	2	IND
--	Crepipatella lingulata	2	IND
--	Decapoda	2	IND
--	Scoloplos acmeceps	2	IND
--	Calanoida	1	IND
--	Chaetozone spinosa	1	IND
--	Glycinde picta	1	IND
--	Gyptis brevipalpa	1	IND

--	<i>Leptochelia savignyi</i>	1 IND
--	<i>Monoculodes zernovi</i>	1 IND
--	<i>Munna</i> sp.	1 IND
--	<i>Parametopella</i> spp.	1 IND
--	<i>Saxidomus giganteus</i>	1 IND
--	<i>Turbonilla</i> spp.	1 IND

Survey: NETPEN91 Station: ANAC-6 Date: 03/27/91 Sample: ANAC-6
Replicate: 3

--	Nematoda	63 IND
--	<i>Mediomastus</i> spp.	9 IND
--	<i>Tharyx secundus</i>	8 IND
--	<i>Prionospio steenstrupi</i>	6 IND
--	<i>Syllis</i> sp.	6 IND
--	<i>Chaetozone</i> spp.	5 IND
--	<i>Nephasoma</i> spp.	4 IND
--	<i>Oligochaeta</i>	4 IND
--	<i>Protothaca staminea</i>	4 IND
--	<i>Sabellaria cementarium</i>	4 IND
--	Calanoidea	3 IND
--	<i>Melita desdichada</i>	3 IND
--	<i>Mysella tumida</i>	3 IND
--	<i>Eualus pusiolus</i>	2 IND
--	<i>Foxiphalus cognatus</i>	2 IND
--	<i>Glycinde picta</i>	2 IND
--	<i>Munna ubiquita</i>	2 IND
--	<i>Scoloplos acmeceps</i>	2 IND
--	<i>Spiophanes</i> spp.	2 IND
--	<i>Alvania</i> spp.	1 IND
--	<i>Amphissa</i> spp.	1 IND
--	<i>Armandia brevis</i>	1 IND
--	<i>Barantolla americana</i>	1 IND
--	Callioplanidae	1 IND
--	<i>Cumella vulgaris</i>	1 IND
--	Decapoda	1 IND
--	Diastylidae	1 IND
--	<i>Galathowenia</i> nr. <i>G. oculata</i>	1 IND
--	<i>Heterophoxus oculatus</i>	1 IND
--	LEPIDEPECREUM GURJANOVAE	1 IND
--	<i>Leptosynapta</i> sp.	1 IND
--	<i>Lumbrineris</i> sp.	1 IND
--	<i>Microjassa</i> spp.	1 IND
--	<i>Micrura</i> spp.	1 IND
--	Neorhabdocoelida	1 IND
--	<i>Nereis</i> sp.	1 IND
--	<i>Owenia fusiformis</i>	1 IND
--	<i>Parvilucina tenuisculpta</i>	1 IND
--	<i>Saxidomus giganteus</i>	1 IND

Survey: NETPEN91 Station: BAIN-1 Date: 04/16/91 Sample: BAIN-1
Replicate: 1

--	Nematoda	96 IND
--	<i>Oligochaeta</i>	26 IND
--	<i>Mediomastus</i> spp.	9 IND
--	<i>Crepidatella lingulata</i>	8 IND
--	Cirratulidae	7 IND

-- Trophonia sp.	7 IND
-- Lumbrineris sp.	6 IND
-- Prionospio steenstrupi	6 IND
-- Copepoda harpacticoida	5 IND
-- Calanoidea	4 IND
-- Nebalia pugettensis	4 IND
-- Odontosyllis phosphorea	4 IND
-- Pholoides aspera	4 IND
-- Ischnochiton spp.	3 IND
-- Munna sp.	3 IND
-- Mysella tumida	3 IND
-- Odostomia spp.	3 IND
-- Prionospio spp.	3 IND
-- Tetrastemma spp.	3 IND
-- Alvania spp.	2 IND
-- Amphiuridae	2 IND
-- Calliopius spp.	2 IND
-- Capitella capitata	2 IND
-- Paraphoxus oculatus	2 IND
-- Caprella laeviscula	1 IND
-- Copepoda cyclopoidea	1 IND
-- Cylindroleberididae	1 IND
-- Eudorella pacifica	1 IND
-- Leptochelia savignyi	1 IND
-- Lineidae	1 IND
-- Macoma obliqua	1 IND
-- Odontosyllis sp.	1 IND
-- Pentamera spp.	1 IND
-- Pododesmus macroschisma	1 IND
-- Polynoidea	1 IND

Survey: NETPEN91 Station: BAIN-1 Date: 04/16/91 Sample: BAIN-1
Replicate: 2

-- Nematoda	473 IND
-- Pholoides aspera	26 IND
-- Chaetozone spp.	19 IND
-- Oligochaeta	16 IND
-- COPEPODA	14 IND
-- Mediomastus spp.	9 IND
-- Lumbrineris sp.	8 IND
-- Balanus crenatus	7 IND
-- Trophonia sp.	7 IND
-- Crepipatella lingulata	6 IND
-- Decapoda	5 IND
-- Hesionidae	4 IND
-- Odontosyllis phosphorea	4 IND
-- Capitella capitata	3 IND
-- Leptochelia savignyi	3 IND
-- Nebalia pugettensis	3 IND
-- Alvania spp.	2 IND
-- Carinoma mutabilis	2 IND
-- Cyprididae	2 IND
-- Pentamera spp.	2 IND
-- Spiophanes spp.	2 IND
-- Ascidiacea	1 IND
-- Axinopsida serricata	1 IND

-- Cucumaria piperata	1 IND
-- Eudorella pacifica	1 IND
-- Eulalia (Eulalia) sp.	1 IND
-- Heterophoxus oculatus	1 IND
-- Hiatella arctica	1 IND
-- Ischnochiton spp.	1 IND
-- Melanella	1 IND
-- Metaphoxus fultoni	1 IND
-- Metridium senile	1 IND
-- Micrura spp.	1 IND
-- Pleustidae	1 IND
-- Polycladida	1 IND

Survey: NETPEN91 Station: BAIN-1 Date: 04/16/91 Sample: BAIN-1
Replicate: 3

-- Nematoda	1643 IND
-- COPEPODA	162 IND
-- Pholoides aspera	40 IND
-- Tetrastemma spp.	15 IND
-- Oligochaeta	13 IND
-- Mediomastus spp.	11 IND
-- Trophonia sp.	8 IND
-- Protodorvillea gracilis	6 IND
-- Micropodarke spp.	5 IND
-- Prionospio multibranchiata	5 IND
-- Amphipholis squamata	4 IND
-- Capitella capitata	4 IND
-- Decapoda	4 IND
-- Alvania spp.	3 IND
-- Amphiruridae	3 IND
-- Caulleriella alata	3 IND
-- Chaetozone spp.	3 IND
-- Cirratulidae	3 IND
-- Lumbrineris sp.	3 IND
-- Schistomeringos rudolphi	3 IND
-- Amphiporus spp.	2 IND
-- Gitanopsis vilordes	2 IND
-- Melita dentata	2 IND
-- Mysella tumida	2 IND
-- Prionospio steenstrupi	2 IND
-- Eteone longa	1 IND
-- Hydrozoa hydroida	1 IND
-- Macoma inquinata	1 IND
-- Macoma obliqua	1 IND
-- Micrura spp.	1 IND
-- Parvilucina tenuisculpta	1 IND
-- Pholoe minuta	1 IND
-- Protothaca staminea	1 IND
-- Tharyx spp.	1 IND
-- Yoldia scissurata	1 IND

Survey: NETPEN91 Station: BAIN-2 Date: 04/16/91 Sample: BAIN-2
Replicate: 1

-- Nematoda	129 IND
-- Mediomastus spp.	42 IND
-- Micropodarke dubia	34 IND

--	Protodorvillea gracilis	22	IND
--	Oligochaeta	18	IND
--	COPEPODA	15	IND
--	Mysella tumida	9	IND
--	Aoroides columbiae	8	IND
--	Capitella capitata	7	IND
--	Leptochelia savignyi	6	IND
--	Prionospio steenstrupi	6	IND
--	Caulleriella alata	4	IND
--	Streptosyllis spp.	4	IND
--	Nereis procera	3	IND
--	Decapoda	2	IND
--	EHLERSIA HYPERIONI	2	IND
--	Platynereis bicanaliculata	2	IND
--	Amphipoda	1	IND
--	Diopatra ornata	1	IND
--	Hemipodus borealis	1	IND
--	Lyonsia arenosa	1	IND
--	Macoma balthica	1	IND
--	Macoma spp.	1	IND
--	Mytilus edulis	1	IND
--	Notomastus tenuis	1	IND
--	Podarkeopsis glabra	1	IND
--	Psephidia lordi	1	IND
--	Scoloplos acmeceps	1	IND
--	Tharyx spp.	1	IND

Survey: NETPEN91 Station: BAIN-2 Date: 04/16/91 Sample: BAIN-2

Replicate: 2

--	Aoroides spp	25	IND
--	Mediomastus spp.	18	IND
--	Nematoda	15	IND
--	Aoroides columbiae	9	IND
--	Micropodarke dubia	9	IND
--	Streptosyllis spp.	5	IND
--	Capitella capitata	4	IND
--	Protodorvillea gracilis	4	IND
--	Leptochelia savignyi	3	IND
--	Mysella tumida	3	IND
--	Prionospio steenstrupi	3	IND
--	Macoma spp.	2	IND
--	Micrura spp.	2	IND
--	Oligochaeta	2	IND
--	Nereis procera	1	IND
--	Notomastus lineatus	1	IND
--	Pionosyllis uraga	1	IND
--	Polydora socialis	1	IND
--	Psephidia lordi	1	IND
--	Saxidomus giganteus	1	IND
--	Scoloplos acmeceps	1	IND
--	Turbonilla spp.	1	IND

Survey: NETPEN91 Station: BAIN-2 Date: 04/16/91 Sample: BAIN-2

Replicate: 3

--	Nematoda	163	IND
--	Mediomastus spp.	27	IND

-- Aoroides columbiae	26 IND
-- Capitella capitata	8 IND
-- Oligochaeta	8 IND
-- Protodorvillea gracilis	7 IND
-- Leptochelia savignyi	6 IND
-- Mysella tumida	3 IND
-- Nebalia pugettensis	3 IND
-- Platynereis bicanaliculata	3 IND
-- Podarkeopsis glabra	3 IND
-- Cyprididae	2 IND
-- Glycera americana	2 IND
-- Nereis procera	2 IND
-- Paleonotus bellis	2 IND
-- Streptosyllis spp.	2 IND
-- Allia ramosa	1 IND
-- Brania brevipharyngea	1 IND
-- COPEPODA	1 IND
-- EHLERSIA HYPERIONI	1 IND
-- Eteone spp.	1 IND
-- Euphilomedes carcharodonta	1 IND
-- Glycinde picta	1 IND
-- Hirudinea	1 IND
-- Micropodarke dubia	1 IND
-- Mya arenaria	1 IND
-- Nephtys cornuta franciscana	1 IND
-- Prionospio cirrifera	1 IND
-- Prionospio steenstrupi	1 IND
-- Scoloplos acmeceps	1 IND
-- Tharyx spp.	1 IND

Survey: NETPEN91 Station: BAIN-3 Date: 04/16/91 Sample: BAIN-3
Replicate: 1

-- Nematoda	60 IND
-- Micropodarke dubia	37 IND
-- Mysella tumida	26 IND
-- Protodorvillea gracilis	24 IND
-- Streptosyllis spp.	19 IND
-- Capitella capitata	10 IND
-- Mediomastus spp.	7 IND
-- Caulleriella alata	5 IND
-- Glycera capitata	5 IND
-- Turbonilla spp.	5 IND
-- Brania brevipharyngea	4 IND
-- Leptochelia savignyi	4 IND
-- Nebalia pugettensis	4 IND
-- Prionospio steenstrupi	4 IND
-- Nereis procera	2 IND
-- Parvilucina tenuisculpta	2 IND
-- Podarkeopsis glabra	2 IND
-- Polydora socialis	2 IND
-- Saxidomus giganteus	2 IND
-- Aoroides columbiae	1 IND
-- Calyptraea fastigiata	1 IND
-- Chone duneri	1 IND
-- Dexamonica reduncaris	1 IND
-- Lumbrineris californiensis	1 IND

--	Lumbrineris sp.	1	IND
--	Oligochaeta	1	IND
--	Pholoe minuta	1	IND
--	Pionosyllis uraga	1	IND
--	Polycirrus californicus	1	IND
--	Polycirrus spp.	1	IND
--	Prionospio cirrifera	1	IND
--	Psephidia lordi	1	IND
--	Scoloplos acmeceps	1	IND

Survey: NETPEN91 Station: BAIN-3 Date: 04/16/91 Sample: BAIN-3
Replicate: 2

--	Mysella tumida	53	IND
--	Micropodarke dubia	42	IND
--	Nematoda	25	IND
--	Mediomastus spp.	23	IND
--	Protodorvillea gracilis	12	IND
--	Capitella capitata	6	IND
--	Streptosyllis spp.	4	IND
--	Glycera capitata	3	IND
--	Prionospio steenstrupi	3	IND
--	Aoroides columbiae	2	IND
--	Brania brevipharyngea	2	IND
--	Leptochelia savignyi	2	IND
--	Ophiodromus pugettensis	2	IND
--	Armandia brevis	1	IND
--	Carinoma mutabilis	1	IND
--	Chaetopteridae	1	IND
--	Chaetozone spp.	1	IND
--	Decapoda	1	IND
--	Macoma spp.	1	IND
--	Micrura spp.	1	IND
--	Oligochaeta	1	IND
--	Synchelidium rectipalmum	1	IND

Survey: NETPEN91 Station: BAIN-3 Date: 04/16/91 Sample: BAIN-3
Replicate: 3

--	Micropodarke dubia	42	IND
--	Nematoda	39	IND
--	Leptochelia savignyi	26	IND
--	Mysella tumida	16	IND
--	Mediomastus spp.	15	IND
--	Protodorvillea gracilis	9	IND
--	Oligochaeta	3	IND
--	Calliopius spp.	2	IND
--	Caulleriella alata	2	IND
--	Humilaria kennerlyi	2	IND
--	Lumbrineris sp.	2	IND
--	Orbiniidae	2	IND
--	Prionospio steenstrupi	2	IND
--	Psephidia lordi	2	IND
--	Saxidomus giganteus	2	IND
--	Scoloplos acmeceps	2	IND
--	Streptosyllis spp.	2	IND
--	Brania brevipharyngea	1	IND
--	Capitella capitata	1	IND

-- Chaetozone spp.	1 IND
-- Copepoda harpacticoida	1 IND
-- Glycera sp.	1 IND
-- Hiatella arctica	1 IND
-- Lumbrineris californiensis	1 IND
-- Macoma spp.	1 IND
-- Maldanidae	1 IND
-- Motomastus lineatus	1 IND
-- Olivella baetica	1 IND
-- Ophiodromus pugettensis	1 IND
-- Parvilucina tenuisculpta	1 IND
-- Phyllochaetopterus prolifica	1 IND
-- Polydora socialis	1 IND
-- Spiochaetopterus costarum	1 IND

Survey: NETPEN91 Station: BAIN-4 Date: 04/16/91 Sample: BAIN-4

Replicate: 1

-- Nematoda	108 IND
-- Mediomastus spp.	33 IND
-- Leptochelia savignyi	25 IND
-- Oligochaeta	17 IND
-- Protodorvillea gracilis	12 IND
-- Streptosyllis spp.	11 IND
-- Tritella pilimana	10 IND
-- Brania brevipharyngea	9 IND
-- Pentamera (Cucumaria) populifera	9 IND
-- Aoroïdes columbiae	8 IND
-- EHLERSIA HYPERIONI	8 IND
-- Micropodarke dubia	7 IND
-- Prionospio steenstrupi	IND
-- COPEPODA	0
-- Ophiodromus pugettensis	
-- Tharyx spp.	
-- Lineidae	
-- Phyllodoce sp.	
-- Spionidae	
-- Caulleriella alata	
-- Crepipatella lingulata	
-- Lumbrineris californiensis	40
-- Chaetozone spp.	2 IND
-- Dexamonica reducans	2 IND
-- Eulalia (Eumida) sanguinea	2 IND
-- Heterophoxus oculatus	2 IND
-- Hiatella arctica	2 IND
-- Lumbrineris sp.	2 IND
-- Melanella	2 IND
-- Mysella tumida	2 IND
-- Pholoe minuta	2 IND
-- Pholoides aspera	2 IND
-- Prionospio multibranchiata	2 IND
-- Cerebratulus spp.	1 IND
-- Chaetopteridae	1 IND
-- Cumella sp.	1 IND
-- Cyprididae	1 IND
-- Diopatra ornata	1 IND
-- Macoma spp.	1 IND

--	<i>Microphthalmus</i> spp.	1	IND
--	<i>Mya arenaria</i>	1	IND
--	<i>Notomastus lineatus</i>	1	IND
--	<i>Owenia fusiformis collaris</i>	1	IND
--	<i>Paleonotus bellis</i>	1	IND
--	<i>Phyllochaetopterus prolifica</i>	1	IND
--	<i>Phyllodoce (Anaitides) longipes</i>	1	IND
--	<i>Pionosyllis uraga</i>	1	IND
--	<i>Platynereis bicanaliculata</i>	1	IND
--	<i>Polycirrus</i> spp.	1	IND
--	<i>Polydora socialis</i>	1	IND
--	<i>Psephidia lordi</i>	1	IND
--	Terebellidae	1	IND
--	<i>Turbonilla</i> spp.	1	IND

Survey: NETPEN91 Station: BAIN-4 Date: 04/16/91 Sample: BAIN-4
Replicate: 2

--	Nematoda	67	IND
--	<i>Mediomastus</i> spp.	20	IND
--	<i>Micropodarke dubia</i>	20	IND
--	<i>Protodorvillea gracilis</i>	20	IND
--	Oligochaeta	14	IND
--	<i>Euphilomedes</i> spp.	11	IND
--	EHLERSIA HYPERIONI	5	IND
--	<i>Leptochelia savignyi</i>	5	IND
--	<i>Polydora socialis</i>	5	IND
--	<i>Brania brevipharyngea</i>	4	IND
--	Copepoda harpacticoida	4	IND
--	<i>Psephidia lordi</i>	4	IND
--	<i>Cauleriella alata</i>	3	IND
--	<i>Micrura</i> spp.	3	IND
--	<i>Mysella tumida</i>	3	IND
--	<i>Pentamera (Cucumaria) populifera</i>	3	IND
--	<i>Prionospio steenstrupi</i>	3	IND
--	<i>Carinoma mutabilis</i>	2	IND
--	<i>Hiatella arctica</i>	2	IND
--	<i>Lumbrineris californiensis</i>	2	IND
--	<i>Notomastus lineatus</i>	2	IND
--	<i>Phyllodoce</i> sp.	2	IND
--	<i>Spiochaetopterus costarum</i>	2	IND
--	<i>Tharyx</i> spp.	2	IND
--	<i>Turbonilla</i> spp.	2	IND
--	<i>Amphipholis squamata</i>	1	IND
--	<i>Aoroides columbiae</i>	1	IND
--	<i>Autolytus</i> spp.	1	IND
--	<i>Byblis millsii</i>	1	IND
--	<i>Calyptraea fastigiata</i>	1	IND
--	<i>Carinoma</i> spp.	1	IND
--	Cirratulidae	1	IND
--	Copepoda cyclopoida	1	IND
--	<i>Dexamonica reduncans</i>	1	IND
--	<i>Diopatra ornata</i>	1	IND
--	<i>Dyopodos</i> spp.	1	IND
--	Euclymeninae spp.	1	IND
--	<i>Macoma yoldiformis</i>	1	IND
--	<i>Malacoceros</i> spp.	1	IND

-- Maldanidae	1 IND
-- Margarites spp.	1 IND
-- Microphthalmus spp.	1 IND
-- Nephtys ferruginea	1 IND
-- Odostomia spp.	1 IND
-- Owenia fusiformis collaris	1 IND
-- Parvilucina tenuisculpta	1 IND
-- Pholoides aspera	1 IND
-- Polycirrus californicus	1 IND
-- Saxidomus giganteus	1 IND
-- Typosyllis sp.	1 IND

Survey: NETPEN91 Station: BAIN-4 Date: 04/16/91 Sample: BAIN-4

Replicate: 3

-- Nematoda	95 IND
-- Leptochelia savignyi	32 IND
-- Mediomastus spp.	24 IND
-- Protodorvillea gracilis	15 IND
-- Micropodarke dubia	12 IND
-- EHLERSIA HYPERIONI	11 IND
-- Mysella tumida	9 IND
-- Oligochaeta	8 IND
-- COPEPODA	5 IND
-- Brania brevipharyngea	4 IND
-- Caulleriella alata	4 IND
-- Notomastus lineatus	4 IND
-- Polydora socialis	4 IND
-- Aoroides columbiae	3 IND
-- Euphilomedes carcharodonta	3 IND
-- Pentamera (Cucumaria) populifera	3 IND
-- Spiochaetopterus costarum	3 IND
-- Bivalvia	2 IND
-- Cumella vulgaris	2 IND
-- Dexamonica reduncans	2 IND
-- Eulalia (Eumida) sanguinea	2 IND
-- Heterophoxus oculatus	2 IND
-- Metridium senile	2 IND
-- Nereis procera	2 IND
-- Pentamera spp.	2 IND
-- Pholoides aspera	2 IND
-- Streptosyllis spp.	2 IND
-- Turbonilla spp.	2 IND
-- Armandia brevis	1 IND
-- Axinopsida serricata	1 IND
-- Axiothella rubrocincta	1 IND
-- Bittium spp.	1 IND
-- Cyprididae	1 IND
-- Diopatra ornata	1 IND
-- Eteone spp.	1 IND
-- Euclymeninae spp.	1 IND
-- Eulalia quadrioculata	1 IND
-- Exogone gemmifera	1 IND
-- Foxiphalus cognatus	1 IND
-- Foxiphalus similis	1 IND
-- Glycera americana	1 IND
-- Glycera sp.	1 IND

--	<i>Hiatella arctica</i>	1	IND
--	<i>Lumbrineris californiensis</i>	1	IND
--	<i>Macoma</i> spp.	1	IND
--	Maldanidae	1	IND
--	<i>Margarites</i> spp.	1	IND
--	<i>Melita desdichada</i>	1	IND
--	<i>Micrura</i> spp.	1	IND
--	<i>Munna ubiquita</i>	1	IND
--	<i>Ophiodromus pugettensis</i>	1	IND
--	<i>Parvilucina tenuisculpta</i>	1	IND
--	<i>Phyllodoce</i> sp.	1	IND
--	<i>Platynereis bicanaliculata</i>	1	IND
--	Pleustidae	1	IND
--	<i>Polycirrus</i> spp.	1	IND
--	<i>Semele rubropicta</i>	1	IND
--	<i>Spiophanes berkeleyorum</i>	1	IND

Survey: NETPEN91 Station: CLAM-1 Date: 04/17/91 Sample: CLAM-1

Replicate: 1

--	Nematoda	34	IND
--	COPEPODA	16	IND
--	<i>Scoloplos acmeceps</i>	9	IND
--	<i>Aoroides columbiae</i>	8	IND
--	<i>Micropodarke dubia</i>	8	IND
--	<i>Photis</i> spp.	8	IND
--	<i>Capitella capitata</i>	5	IND
--	<i>Lumbrineris</i> sp.	5	IND
--	<i>Nephtys cornuta franciscana</i>	5	IND
--	<i>Epidiopatra hupferiana monroi</i>	4	IND
--	<i>Munna ubiquita</i>	4	IND
--	<i>Nereis procera</i>	4	IND
--	<i>Axinopsida serricata</i>	3	IND
--	<i>Macoma</i> spp.	3	IND
--	<i>Gyptis brevipalpa</i>	2	IND
--	<i>Macoma balthica</i>	2	IND
--	<i>Oligochaeta</i>	2	IND
--	<i>Photis bifurcata</i>	2	IND
--	<i>Polydora</i> spp.	2	IND
--	<i>Prionospio</i> spp.	2	IND
--	<i>Schistomeringos rudolphi</i>	2	IND
--	<i>Cephalaspidea</i>	1	IND
--	Cirratulidae	1	IND
--	<i>Cumella vulgaris</i>	1	IND
--	Decapoda	1	IND
--	<i>Eteone longa</i>	1	IND
--	<i>Euphilomedes carcharodonta</i>	1	IND
--	<i>Lyonsia arenosa</i>	1	IND
--	<i>Macoma obliqua</i>	1	IND
--	Maldanidae	1	IND
--	<i>Mayerella banksia</i>	1	IND
--	<i>Monoculodes</i> spp.	1	IND
--	<i>Nephtys ferruginea</i>	1	IND
--	<i>Orchomene anaguella</i>	1	IND
--	<i>Tellina modesta</i>	1	IND
--	<i>Tharyx</i> spp.	1	IND

Survey: NETPEN91 Station: CLAM-1 Date: 04/17/91 Sample: CLAM-1
Replicate: 2

-- Nematoda	23 IND
-- Nephtys cornuta franciscana	9 IND
-- COPEPODA	8 IND
-- Capitella capitata	8 IND
-- Polycirrus spp.	6 IND
-- Macoma spp.	5 IND
-- Protomedea articulata	5 IND
-- Nereis procera	4 IND
-- Photis spp.	3 IND
-- Scoloplos acmeceps	3 IND
-- Euphilomedes carcharodonta	2 IND
-- Nephtys ferruginea	2 IND
-- Pinnixa franciscana	2 IND
-- Aoroidea columbiae	1 IND
-- Axinopsida serricata	1 IND
-- Byblis millsii	1 IND
-- Cephalaspidea	1 IND
-- Glycera americana	1 IND
-- Macoma obliqua	1 IND
-- Spiophanes berkeleyorum	1 IND
-- Tellina modesta	1 IND
-- Tharyx spp.	1 IND

Survey: NETPEN91 Station: CLAM-1 Date: 04/17/91 Sample: CLAM-1
Replicate: 3

-- Nephtys cornuta franciscana	8 IND
-- Micropodarke dubia	6 IND
-- Polycirrus spp.	6 IND
-- Aoroidea columbiae	3 IND
-- Capitella capitata	3 IND
-- Macoma nasuta	3 IND
-- Macoma spp.	3 IND
-- Scoloplos acmeceps	3 IND
-- COPEPODA	2 IND
-- Glycera americana	2 IND
-- Lumbrineris sp.	2 IND
-- Lyonsia arenosa	2 IND
-- Nebelia pugettensis	2 IND
-- Nematoda	2 IND
-- Tharyx spp.	2 IND
-- Alvanella spp.	1 IND
-- Cephalaspidea	1 IND
-- Diopatra ornata	1 IND
-- Margarites spp.	1 IND
-- Nereis procera	1 IND
-- Photis spp.	1 IND
-- Pista spp.	1 IND
-- Pleusymptes subglaber	1 IND
-- Prionospio steenstrupi	1 IND
-- Psephidia lordi	1 IND
-- Schistomeringos rudolphi	1 IND
-- Turbonilla spp.	1 IND

Survey: NETPEN91 Station: CLAM-2 Date: 04/17/91 Sample: CLAM-2

Replicate: 1

-- Nematoda	31	IND
-- Capitella capitata	15	IND
-- Polycirrus spp.	11	IND
-- Alvania spp.	7	IND
-- COPEPODA	7	IND
-- Diopatra ornata	7	IND
-- Euphilomedes carcharodonta	7	IND
-- Micropodarke dubia	6	IND
-- Lumbrineris sp.	5	IND
-- Macoma spp.	4	IND
-- Photis bifurcata	4	IND
-- Macoma inquinata	3	IND
-- Scoloplos acmeceps	3	IND
-- Axinopsida serricata	2	IND
-- Caulleriella alata	2	IND
-- Exogone gemmifera	2	IND
-- Nephtys cornuta franciscana	2	IND
-- Polydora socialis	2	IND
-- Tharyx spp.	2	IND
-- Amage anops	1	IND
-- Aroides columbiae	1	IND
-- Chaetopteridae	1	IND
-- Cumella vulgaris	1	IND
-- Decapoda	1	IND
-- Glycinde armigera	1	IND
-- Glycinde picta	1	IND
-- Lyonsia arenosa	1	IND
-- Macoma nasuta	1	IND
-- Margarites spp.	1	IND
-- Mediomastus spp.	1	IND
-- Munna ubiquta	1	IND
-- Mysella tumida	1	IND
-- Nephtys ferruginea	1	IND
-- Odostomia spp.	1	IND
-- Oligochaeta	1	IND
-- Orchomene anaguela	1	IND
-- Parvilucina tenuisculpta	1	IND
-- Pista spp.	1	IND
-- Pleusymptes subglaber	1	IND
-- Polycladida	1	IND
-- Psephidia lordi	1	IND
-- Schistomeringos rudolphi	1	IND
-- Spiophanes berkeleyorum	1	IND

Survey: NETPEN91 Station: CLAM-2 Date: 04/17/91 Sample: CLAM-2

Replicate: 2

-- Capitella capitata	24	IND
-- Polycirrus spp.	24	IND
-- Euphilomedes carcharodonta	15	IND
-- Photis spp.	14	IND
-- Photis bifurcata	11	IND
-- Axinopsida serricata	5	IND
-- Macoma spp.	4	IND
-- Nephtys cornuta franciscana	3	IND
-- Scoloplos acmeceps	3	IND

-- Tharyx spp.	3 IND
-- Macoma nasuta	2 IND
-- Spiophanes berkeleyorum	2 IND
-- Anoplodactylus viridintestinale	1 IND
-- Aoroides columbiae	1 IND
-- COPEPODA	1 IND
-- Cerebratulus spp.	1 IND
-- Cyprididae	1 IND
-- Decapoda	1 IND
-- Exogone gemmifera	1 IND
-- Lumbrineris sp.	1 IND
-- Lyonsia arenosa	1 IND
-- Macoma carlottensis	1 IND
-- Micropodarke dubia	1 IND
-- Munna ubiquita	1 IND
-- Mysella tumida	1 IND
-- Nematoda	1 IND
-- Nereis procera	1 IND
-- Oligochaeta	1 IND
-- Phyllodoce (Aponaitides) hartmanae	1 IND
-- Phyllodoce sp.	1 IND
-- Prionospio steenstrupi	1 IND
-- Psephidia lordi	1 IND
-- Schistomeringos rudolphi	1 IND
-- Tellina modesta	1 IND
-- Westwoodilla caecula	1 IND

Survey: NETPEN91 Station: CLAM-2 Date: 04/17/91 Sample: CLAM-2
Replicate: 3

-- Polycirrus spp.	20 IND
-- Photis spp.	9 IND
-- Photis bifurcata	5 IND
-- Euphilomedes carcharodonta	4 IND
-- Macoma spp.	4 IND
-- Micropodarke dubia	3 IND
-- Capitella capitata	2 IND
-- Lyonsia arenosa	2 IND
-- Munna ubiquita	2 IND
-- Nephtys cornuta franciscana	2 IND
-- Nephtys ferruginea	2 IND
-- Scoloplos acmeceps	2 IND
-- Amage anops	1 IND
-- COPEPODA	1 IND
-- Caprella sp.	1 IND
-- Decapoda	1 IND
-- Lumbrineris californiensis	1 IND
-- Mysella tumida	1 IND
-- Pleusymptes subglaber	1 IND
-- Spiophanes berkeleyorum	1 IND
-- Synchelidium rectipalmmum	1 IND

Survey: NETPEN91 Station: CLAM-3 Date: 04/17/91 Sample: CLAM-3
Replicate: 1

-- Photis spp.	17 IND
-- Euphilomedes carcharodonta	6 IND
-- Photis brevipes	6 IND

--	Scoloplos acmeceps	6	IND
--	Tellina modesta	6	IND
--	COPEPODA	4	IND
--	Mysella tumida	3	IND
--	Nematoda	3	IND
--	Polydora socialis	3	IND
--	Caulleriella alata	2	IND
--	Macoma balthica	2	IND
--	Nephtys cornuta franciscana	2	IND
--	Polycirrus spp.	2	IND
--	Spiophanes berkeleyorum	2	IND
--	Diastylis pellucida	1	IND
--	Glycera americana	1	IND
--	Maldanidae	1	IND
--	Micropodarke dubia	1	IND
--	Parvilucina tenuisculpta	1	IND
--	Prionospio steenstrupi	1	IND

Survey: NETPEN91 Station: CLAM-3 Date: 04/17/91 Sample: CLAM-3

Replicate: 2

--	Psephidia lordi	11	IND
--	Euphilomedes carcharodonta	9	IND
--	Tellina modesta	7	IND
--	Scoloplos acmeceps	5	IND
--	Photis spp.	4	IND
--	Alvania spp.	3	IND
--	Photis bifurcata	3	IND
--	Polycirrus spp.	3	IND
--	Caulleriella alata	2	IND
--	Glycera americana	2	IND
--	Macoma yoldiformis	2	IND
--	Prionospio steenstrupi	2	IND
--	Axinopsida serricata	1	IND
--	AxiotHELLa rubrocincta	1	IND
--	COPEPODA	1	IND
--	Micropodarke dubia	1	IND
--	Munna ubiqUITa	1	IND
--	Nematoda	1	IND
--	Nephtys ferruginea	1	IND
--	Nephtys sp.	1	IND
--	Nereis procera	1	IND
--	Prionospio cirrifera	1	IND
--	Protomedeia articulata	1	IND
--	Synchelidium rectipalmm	1	IND
--	Synchelidium shoemakeri	1	IND
--	Tharyx spp.	1	IND
--	Turbonilla spp.	1	IND
--	Westwoodilla caecula	1	IND

Survey: NETPEN91 Station: CLAM-3 Date: 04/17/91 Sample: CLAM-3

Replicate: 3

--	Euphilomedes carcharodonta	9	IND
--	Psephidia lordi	7	IND
--	Scoloplos acmeceps	6	IND
--	COPEPODA	5	IND
--	Margarites spp.	5	IND

-- Photis spp.	4 IND
-- Phyllodoce sp.	4 IND
-- Tellina modesta	4 IND
-- Micrura spp.	3 IND
-- Polycirrus spp.	3 IND
-- Cumella vulgaris	2 IND
-- Mysella tumida	2 IND
-- Nephtys ferruginea	2 IND
-- Capitella capitata	1 IND
-- Glycera americana	1 IND
-- Leitoscoloplos elongatus	1 IND
-- Nematoda	1 IND
-- Nereis procera	1 IND
-- Orchomene anaguelis	1 IND
-- Phyllodoce (Aonitoides) longipes	1 IND
-- Polydora socialis	1 IND
-- Prionospio steenstrupi	1 IND
-- Spiophanes berkeleyorum	1 IND
-- Streptosyllis spp.	1 IND

Survey: NETPEN91 Station: CLAM-4 Date: 04/17/91 Sample: CLAM-4

Replicate: 1

-- Nematoda	35 IND
-- Decapoda	2 IND
-- Nereis procera	2 IND
-- COPEPODA	1 IND
-- Capitella capitata	1 IND
-- Spiophanes berkeleyorum	1 IND

Survey: NETPEN91 Station: CLAM-4 Date: 04/17/91 Sample: CLAM-4

Replicate: 2

-- Nematoda	177 IND
-- COPEPODA	2 IND
-- Capitella capitata	2 IND
-- Nereis procera	2 IND
-- Glycinde armigera	1 IND
-- Macoma balthica	1 IND
-- Nephtys sp.	1 IND
-- Phyllodoce (Aponitides) hartmanae	1 IND
-- Podarkeopsis glabra	1 IND
-- Polydora socialis	1 IND
-- Tellina modesta	1 IND

Survey: NETPEN91 Station: CLAM-4 Date: 04/17/91 Sample: CLAM-4

Replicate: 3

-- Nematoda	138 IND
-- Capitella capitata	20 IND
-- Nephtys cornuta franciscana	8 IND
-- Synchelidium rectipalatum	4 IND
-- Euphilomedes spp.	3 IND
-- Paleonotus bellis	3 IND
-- Photis mcinerneyi	3 IND
-- Cephalaspidea	2 IND
-- Copepoda harpacticoida	2 IND
-- Westwoodilla caecula	2 IND
-- Alvania spp.	1 IND

--	Aoroides columbiae	1	IND
--	Calanoida	1	IND
--	Campylaspis sp.	1	IND
--	Cumella vulgaris	1	IND
--	Glycera americana	1	IND
--	Glycinde armigera	1	IND
--	Macoma nasuta	1	IND
--	Munna sp.	1	IND
--	Mysella tumida	1	IND
--	Pionosyllis uraga	1	IND
--	Polydora socialis	1	IND
--	Spionidae	1	IND
--	Spiophanes berkeleyorum	1	IND

Survey: NETPEN91 Station: CLAM-5 Date: 04/17/91 Sample: CLAM-5

Replicate: 1

--	Nematoda	225	IND
--	Capitella capitata	13	IND
--	Aoroides columbiae	1	IND
--	COPEPODA	1	IND
--	Euphilomedes carcharodonta	1	IND
--	Eusyllis sp.	1	IND
--	Glycera americana	1	IND
--	Polynoidae	1	IND
--	Prionospio cirrifera	1	IND

Survey: NETPEN91 Station: CLAM-5 Date: 04/17/91 Sample: CLAM-5

Replicate: 2

--	Nematoda	12	IND
--	Westwoodilla caecula	2	IND
--	Capitella capitata	1	IND
--	Synchelidium shoemakeri	1	IND
--	Tellina modesta	1	IND

Survey: NETPEN91 Station: CLAM-5 Date: 04/17/91 Sample: CLAM-5

Replicate: 3

--	Nematoda	14	IND
--	Synchelidium shoemakeri	2	IND
--	COPEPODA	1	IND
--	Capitella capitata	1	IND
--	Euphilomedes carcharodonta	1	IND
--	Munna ubiquita	1	IND
--	Nereis procera	1	IND
--	Scleroplax granulata	1	IND

Survey: NETPEN91 Station: CLAM-6 Date: 04/17/91 Sample: CLAM-6

Replicate: 1

--	Photis bifurcata	38	IND
--	Euphilomedes carcharodonta	30	IND
--	Nephtys cornuta franciscana	14	IND
--	Photis mcinerneyi	10	IND
--	Photis spp.	8	IND
--	Capitella capitata	6	IND
--	Munna sp.	3	IND
--	Spiophanes berkeleyorum	3	IND
--	Leptochelia savignyi	2	IND

--	<i>Copepoda harpacticoida</i>	1 IND
--	<i>Eudorella pacifica</i>	1 IND
--	<i>Lumbrineris cruzensis</i>	1 IND
--	<i>Lyonsia arenosa</i>	1 IND
--	<i>Macoma</i> spp.	1 IND
--	Nematoda	1 IND
--	<i>Nephtys ferruginea</i>	1 IND
--	<i>Nephtys</i> sp.	1 IND
--	<i>Phyllodoce (Anaitides) longipes</i>	1 IND
--	Phyllodocidae	1 IND
--	<i>Polydora socialis</i>	1 IND
--	<i>Prionospio cirrifera</i>	1 IND
--	<i>Tellina modesta</i>	1 IND
--	<i>Westwoodilla caecula</i>	1 IND

Survey: NETPEN91 Station: CLAM-6 Date: 04/17/91 Sample: CLAM-6
Replicate: 2

--	<i>Euphilomedes carcharodonta</i>	24 IND
--	<i>Photis</i> spp.	17 IND
--	Nematoda	16 IND
--	<i>Capitella capitata</i>	12 IND
--	<i>Photis bifurcata</i>	10 IND
--	<i>Nephtys cornuta franciscana</i>	9 IND
--	<i>Photis mcinerneyi</i>	9 IND
--	<i>Aoroides columbiae</i>	5 IND
--	<i>Munna</i> sp.	2 IND
--	<i>Scoloplos acmeceps</i>	2 IND
--	<i>Westwoodilla caecula</i>	2 IND
--	Cephalaspidea	1 IND
--	<i>Eobroigus spinosus</i>	1 IND
--	<i>Glycera americana</i>	1 IND
--	Goniadidae	1 IND
--	<i>Leptocheilia savignyi</i>	1 IND
--	<i>Lumbrineris</i> sp.	1 IND
--	<i>Lyonsia arenosa</i>	1 IND
--	<i>Macoma nasuta</i>	1 IND
--	<i>Macoma</i> spp.	1 IND
--	<i>Micropodarke dubia</i>	1 IND
--	<i>Nephtys ferruginea</i>	1 IND
--	<i>Onuphis</i> spp.	1 IND
--	<i>Phyllodoce (Aponaitides) hartmanae</i>	1 IND
--	<i>Polycirrus californicus</i>	1 IND
--	<i>Prionospio cirrifera</i>	1 IND
--	<i>Prionospio steenstrupi</i>	1 IND
--	<i>Spiochaetopterus costarum</i>	1 IND
--	Spiionidae	1 IND
--	<i>Spiophanes berkeleyorum</i>	1 IND
--	<i>Tellina modesta</i>	1 IND

Survey: NETPEN91 Station: CLAM-6 Date: 04/17/91 Sample: CLAM-6
Replicate: 3

--	<i>Photis</i> spp.	25 IND
--	<i>Euphilomedes carcharodonta</i>	23 IND
--	<i>Capitella capitata</i>	18 IND
--	<i>Photis bifurcata</i>	12 IND
--	Nematoda	9 IND

--	<i>Nephtys cornuta franciscana</i>	9	IND
--	COPEPODA	8	IND
--	<i>Munna ubiquita</i>	4	IND
--	<i>Macoma</i> spp.	3	IND
--	<i>Alvania</i> spp.	2	IND
--	<i>Glycinde picta</i>	2	IND
--	<i>Phyllodoce</i> sp.	2	IND
--	<i>Westwoodilla caecula</i>	2	IND
--	<i>Amphipholis squamata</i>	1	IND
--	Amphiuridae	1	IND
--	<i>Leitoscoloplos elongatus</i>	1	IND
--	<i>Lyonsia arenosa</i>	1	IND
--	<i>Mayerella banksia</i>	1	IND
--	<i>Micropodarke dubia</i>	1	IND
--	<i>Micrura</i> spp.	1	IND
--	<i>Nephtys ferruginea</i>	1	IND
--	<i>Nereis procera</i>	1	IND
--	<i>Polydora socialis</i>	1	IND
--	<i>Protomedea articulata</i>	1	IND
--	<i>Scoloplos acmeceps</i>	1	IND
--	<i>Sphaerodoropsis minuta</i>	1	IND
--	<i>Tiron biocellata</i>	1	IND

Survey: NETPEN91 Station: CLAM-7 Date: 04/17/91 Sample: CLAM-7

Replicate: 1

--	<i>Euphilomedes carcharodonta</i>	23	IND
--	<i>Photis</i> spp.	19	IND
--	<i>Photis bifurcata</i>	4	IND
--	COPEPODA	3	IND
--	<i>Macoma</i> spp.	2	IND
--	Nematoda	2	IND
--	<i>Nephtys ferruginea</i>	2	IND
--	<i>Polydora socialis</i>	2	IND
--	<i>Argissa hamatipes</i>	1	IND
--	Chaetopteridae	1	IND
--	<i>Diopatra ornata</i>	1	IND
--	<i>Glycera americana</i>	1	IND
--	<i>Ophiodromus pugettensis</i>	1	IND
--	<i>Paleonotus bellis</i>	1	IND
--	<i>Phyllodoce (Aponaitides) hartmanae</i>	1	IND
--	<i>Polycirrus</i> spp.	1	IND
--	<i>Psephidia lordi</i>	1	IND
--	<i>Scoloplos acmeceps</i>	1	IND
--	<i>Spiophanes berkeleyorum</i>	1	IND
--	<i>Synchelidium shoemakeri</i>	1	IND
--	<i>Tellina modesta</i>	1	IND

Survey: NETPEN91 Station: CLAM-7 Date: 04/17/91 Sample: CLAM-7

Replicate: 2

--	<i>Euphilomedes carcharodonta</i>	26	IND
--	<i>Photis mcinerneyi</i>	24	IND
--	<i>Polycirrus</i> spp.	5	IND
--	<i>Spiophanes berkeleyorum</i>	5	IND
--	Nematoda	3	IND
--	<i>Prionospio</i> spp.	3	IND
--	<i>Scoloplos acmeceps</i>	3	IND

--	Macoma nasuta	2	IND
--	Mediomastus spp.	2	IND
--	Photis bifurcata	2	IND
--	Phyllodoce sp.	2	IND
--	Protomedea prudens	2	IND
--	Tellina modesta	2	IND
--	Diopatra ornata	1	IND
--	Dyopetos spp.	1	IND
--	EHLERSIA HYPERIONI	1	IND
--	Glycera americana	1	IND
--	Leitoscoloplos elongatus	1	IND
--	Nephtys ferruginea	1	IND
--	Onuphis spp.	1	IND
--	Paraprionospio pinnata	1	IND
--	Solen sicarius	1	IND
--	Synchelidium rectipalium	1	IND

Survey: NETPEN91 Station: CLAM-7 Date: 04/17/91 Sample: CLAM-7
Replicate: 3

--	Photis spp.	23	IND
--	Euphilomedes carcharodonta	18	IND
--	Photis bifurcata	11	IND
--	Prionospio spp.	4	IND
--	Scoloplos acmeceps	4	IND
--	COPEPODA	3	IND
--	Capitella capitata	3	IND
--	Polycirrus spp.	3	IND
--	Axinopsida serricata	2	IND
--	Prionospio cirrifera	2	IND
--	Spiophanes berkeleyorum	2	IND
--	Amphiuridae	1	IND
--	Argissa hamatipes	1	IND
--	Hesionidae	1	IND
--	Lyonsia arenosa	1	IND
--	Macoma nasuta	1	IND
--	Macoma spp.	1	IND
--	Mediomastus spp.	1	IND
--	Micropodarke dubia	1	IND
--	Micrura spp.	1	IND
--	Munna ubiquita	1	IND
--	Orbiniidae	1	IND
--	Phyllodoce (Aponaitides) hartmanae	1	IND
--	Polydora socialis	1	IND
--	Psephidia lordi	1	IND

Survey: NETPEN91 Station: MANC-1 Date: 05/16/91 Sample: MANC-1
Replicate: 1

--	Nematode	41	IND
--	Capitella capitata	32	IND
--	Aoroides spp	6	IND
--	Scoloplos acmeceps	4	IND
--	Acesta/Aricidea spp.	1	IND
--	Calanoida	1	IND
--	Corycaeus spp.	1	IND
--	Glycera americana	1	IND
--	Jassa spp.	1	IND

-- *Munna ubiquita* 1 IND
 -- *Nephtys cornuta cornuta* 1 IND
 -- *Photis* spp. 1 IND

Survey: NETPEN91 Station: MANC-1 Date: 05/16/91 Sample: MANC-1
 Replicate: 2

-- Nematoda 384 IND
 -- *Aoroides columbiae* 56 IND
 -- *Capitella capitata* 54 IND
 -- *Scoloplos acmeceps* 8 IND
 -- Calanoida 6 IND
 -- *Munna ubiquita* 4 IND
 -- *Photis bifurcata* 2 IND
 -- *Protodorvillea gracilis* 2 IND
 -- *Schistomeringos japonica* 2 IND
 -- *Axinopsida serricata* 1 IND
 -- *Euphilomedes carcharodonta* 1 IND
 -- *Gastropterion pacificum* 1 IND
 -- *Glycera americana* 1 IND
 -- *Macoma nasuta* 1 IND
 -- *Mysella tumida* 1 IND
 -- *Nassarius mendicus cooperi* 1 IND
 -- *Oligochaeta* 1 IND

Survey: NETPEN91 Station: MANC-1 Date: 05/16/91 Sample: MANC-1
 Replicate: 3

-- Nematoda 746 IND
 -- *Capitella capitata* 48 IND
 -- *Aoroides columbiae* 28 IND
 -- *Nephtys cornuta franciscana* 3 IND
 -- *Euphilomedes carcharodonta* 2 IND
 -- *Nephtys ferruginea* 2 IND
 -- Caprellidae 1 IND
 -- *Jassa* spp. 1 IND
 -- *Macoma yoldiformis* 1 IND
 -- *Nereis* sp. 1 IND
 -- *Platynereis bicanaliculata* 1 IND
 -- *Prionospio* spp. 1 IND
 -- *Schistomeringos* sp. 1 IND
 -- *Scoloplos acmeceps* 1 IND
 -- *Tharyx* spp. 1 IND

Survey: NETPEN91 Station: MANC-2 Date: 05/16/91 Sample: MANC-2
 Replicate: 1

-- Nematoda 83 IND
 -- *Aoroides columbiae* 67 IND
 -- *Oligochaeta* 40 IND
 -- *Mediomastus* spp. 9 IND
 -- *Macoma inquinata* 5 IND
 -- *Mysella tumida* 5 IND
 -- *Micropodarke dubia* 3 IND
 -- *Prionospio* spp. 3 IND
 -- *Axinopsida serricata* 2 IND
 -- *Capitella capitata* 2 IND
 -- *Eteone* spp. 2 IND
 -- *Lumbrineris* sp. 2 IND

-- Nereis sp.	2 IND
-- Scoloplos acmeceps	2 IND
-- Calanoida	1 IND
-- Cirratulidae	1 IND
-- Cumella vulgaris	1 IND
-- Decapoda	1 IND
-- Euphilomedes carcharodonta	1 IND
-- Glycinde picta	1 IND
-- Leptochelia savignyi	1 IND
-- Melita dentata	1 IND
-- Nephtys ferruginea	1 IND
-- Parvilucina tenuisculpta	1 IND
-- Polynoidea	1 IND
-- Prionospio steenstrupi	1 IND
-- Protothaca staminea	1 IND
-- Saxidomus giganteus	1 IND

Survey: NETPEN91 Station: MANC-2 Date: 05/16/91 Sample: MANC-2
Replicate: 2

-- Oligochaeta	84 IND
-- Nematoda	74 IND
-- Mediomastus spp.	25 IND
-- Aoroides columbiae	19 IND
-- Micropodarke dubia	17 IND
-- Mysella tumida	13 IND
-- Calanoida	8 IND
-- Melita desdichada	8 IND
-- Lumbrineris sp.	4 IND
-- Cirratulidae	3 IND
-- Macoma spp.	3 IND
-- Micrura spp.	3 IND
-- Notomastus tenuis	3 IND
-- Cumella vulgaris	2 IND
-- Prionospio spp.	2 IND
-- Axinopsida serricata	1 IND
-- Corycaeus spp.	1 IND
-- Cucumeria sp.	1 IND
-- Decapoda	1 IND
-- Gyptis brevipalpa	1 IND
-- Hiatella arctica	1 IND
-- Metridium senile	1 IND
-- Munna ubiquita	1 IND
-- Nereis procera	1 IND
-- Orchomene decipiens	1 IND
-- Pectinaria granulata	1 IND
-- Pholoe minuta	1 IND
-- Prionospio steenstrupi	1 IND
-- Protodorvillea gracilis	1 IND
-- Psephidia lordi	1 IND
-- Schistomeringos sp.	1 IND
-- Synchelidium shoemakeri	1 IND
-- Tetrastemma spp.	1 IND

Survey: NETPEN91 Station: MANC-2 Date: 05/16/91 Sample: MANC-2
Replicate: 3

-- Oligochaeta	30 IND
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--	Mysella tumida	21	IND
--	Aoroides columbiae	17	IND
--	Micropodarke dubia	12	IND
--	Nematoda	12	IND
--	Melita dentata	8	IND
--	Schistomeringos sp.	8	IND
--	Caulleriella hamata	6	IND
--	Prionospio spp.	5	IND
--	Alvania spp.	3	IND
--	Cumella vulgaris	3	IND
--	Macoma spp.	2	IND
--	Mediomastus spp.	2	IND
--	Pinnixa schmitti	2	IND
--	Schistomeringos japonica	2	IND
--	Scoloplos acmeceps	2	IND
--	Tharyx spp.	2	IND
--	Balanus sp.	1	IND
--	Capitella capitata	1	IND
--	Copepoda harpacticoida	1	IND
--	Dexamonica reduncans	1	IND
--	Diopatra ornata	1	IND
--	Dyopedos spp.	1	IND
--	Glycera capitata	1	IND
--	Glycine picta	1	IND
--	Leitoscoloplos elongatus	1	IND
--	Leptochelia savignyi	1	IND
--	Lumbrineris sp.	1	IND
--	Margarites spp.	1	IND
--	Nebalia pugettensis	1	IND
--	Pectinaria granulata	1	IND
--	Pholoe minuta	1	IND
--	Saxidomus giganteus	1	IND

Survey: NETPEN91 Station: MANC-3 Date: 05/16/91 Sample: MANC-3
Replicate: 1

--	Photis bifurcata	83	IND
--	Euphilomedes carcharodonta	32	IND
--	Hoplonemertea	5	IND
--	Axinopsida serricata	3	IND
--	Ophiuridae	3	IND
--	Calanoida	2	IND
--	Lyonsia arenosa	2	IND
--	Mysella tumida	2	IND
--	Parvilucina tenuisculpta	2	IND
--	Polycirrus spp.	2	IND
--	Psephidia lordi	2	IND
--	Alia spp.	1	IND
--	Alvania spp.	1	IND
--	Caprellidae	1	IND
--	Edwardsia sipunculoides	1	IND
--	Eualus pusiolus	1	IND
--	Eulalia (Eulalia) sp.	1	IND
--	Glycera capitata	1	IND
--	Gyptis brevipalpa	1	IND
--	Leitoscoloplos elongatus	1	IND
--	Lumbrineris sp.	1	IND

--	<i>Nephtys ferruginea</i>	1 IND
--	<i>Ophelina acuminata</i>	1 IND
--	<i>Polydora</i> spp.	1 IND
--	<i>Prionospio steenstrupi</i>	1 IND
--	<i>Scoloplos acmeceps</i>	1 IND

Survey: NETPEN91 Station: MANC-3 Date: 05/16/91 Sample: MANC-3
Replicate: 2

--	Nematoda	29 IND
--	<i>Euphilomedes carcharodonta</i>	27 IND
--	<i>Photis bifurcata</i>	16 IND
--	<i>Scoloplos acmeceps</i>	8 IND
--	<i>Mysella tumida</i>	7 IND
--	<i>Prionospio steenstrupi</i>	6 IND
--	Calanoidea	5 IND
--	Axinopsida serricata	4 IND
--	<i>Nephtys cornuta franciscana</i>	3 IND
--	<i>Nephtys ferruginea</i>	2 IND
--	<i>Platynereis bicanaliculata</i>	2 IND
--	<i>Tellina modesta</i>	2 IND
--	<i>Capitella capitata</i>	1 IND
--	<i>Corycaeus</i> spp.	1 IND
--	<i>Eteone</i> spp.	1 IND
--	<i>Leitoscoloplos elongatus</i>	1 IND
--	<i>Leucon subnasica</i>	1 IND
--	<i>Macoma</i> spp.	1 IND
--	<i>Munna ubiquita</i>	1 IND
--	<i>Nereis procera</i>	1 IND
--	<i>Protomedea articulata</i>	1 IND
--	<i>Psephidia lordi</i>	1 IND
--	<i>Spiophanes</i> spp.	1 IND
--	<i>Synchelidium shoemakeri</i>	1 IND

Survey: NETPEN91 Station: MANC-3 Date: 05/16/91 Sample: MANC-3
Replicate: 3

--	<i>Photis bifurcata</i>	33 IND
--	<i>Euphilomedes carcharodonta</i>	27 IND
--	<i>Mysella tumida</i>	6 IND
--	<i>Munna ubiquita</i>	4 IND
--	<i>Macoma</i> spp.	3 IND
--	<i>Westwoodilla caecula</i>	3 IND
--	<i>Amphiodia</i> spp.	2 IND
--	Nematoda	2 IND
--	<i>Spiophanes</i> spp.	2 IND
--	Cirratulidae	1 IND
--	<i>Eulalia (Eulalia) sp.</i>	1 IND
--	<i>Euphilomedes producta</i>	1 IND
--	<i>Jassa</i> spp.	1 IND
--	<i>Leitoscoloplos elongatus</i>	1 IND
--	<i>Lyonsia arenosa</i>	1 IND
--	<i>Micropodarke dubia</i>	1 IND
--	<i>Nephtys cornuta cornuta</i>	1 IND
--	<i>Paraprionospio pinnata</i>	1 IND
--	<i>Pectinaria granulata</i>	1 IND
--	<i>Pholoe minuta</i>	1 IND
--	<i>Polydora</i> spp.	1 IND

--	<i>Prionospio steenstrupi</i>	1	IND
--	<i>Psephidia lordi</i>	1	IND
--	<i>Scoloplos acmeceps</i>	1	IND
--	<i>Spiochaetopterus costarum</i>	1	IND
--	<i>Synchelidium shoemakeri</i>	1	IND
--	<i>Tellina modesta</i>	1	IND

Survey: NETPEN91 Station: PTAN-1 Date: 04/03/91 Sample: PTAN-1

Replicate: 1

--	Nematoda	95	IND
--	<i>Capitella capitata</i>	29	IND
--	<i>Nebalia pugettensis</i>	20	IND
--	<i>Alvania</i> spp.	2	IND
--	<i>Macoma nasuta</i>	2	IND
--	<i>Mytilus edulis</i>	2	IND
--	<i>Euphilomedes producta</i>	1	IND
--	<i>Glycinde armigera</i>	1	IND
--	<i>Hiatella arctica</i>	1	IND
--	<i>Ophiodromus pugettensis</i>	1	IND
--	<i>Podarkeopsis glabra</i>	1	IND
--	<i>Protomedeia</i> spp.	1	IND

Survey: NETPEN91 Station: PTAN-1 Date: 04/03/91 Sample: PTAN-1

Replicate: 2

--	Nematoda	82	IND
--	<i>Capitella capitata</i>	39	IND
--	Decapoda	3	IND
--	<i>Mysella tumida</i>	3	IND
--	Copepoda harpacticoida	2	IND
--	EHLERSIA HYPERIONI	2	IND
--	<i>Nebalia pugettensis</i>	2	IND
--	Calanoidea	1	IND
--	<i>Mytilus edulis</i>	1	IND
--	Oligochaeta	1	IND
--	<i>Schistomeringos rudolphi</i>	1	IND

Survey: NETPEN91 Station: PTAN-1 Date: 04/03/91 Sample: PTAN-1

Replicate: 3

--	Nematoda	126	IND
--	<i>Capitella capitata</i>	26	IND
--	<i>Nebalia pugettensis</i>	13	IND
--	<i>Alvania</i> spp.	2	IND
--	Copepoda harpacticoida	2	IND
--	Arthropoda pycnogonida	1	IND
--	Axinopsida serricata	1	IND
--	<i>Glycinde picta</i>	1	IND
--	<i>Mytilus edulis</i>	1	IND
--	Oligochaeta	1	IND
--	<i>Ophiodromus pugettensis</i>	1	IND
--	<i>Podarkeopsis glabra</i>	1	IND
--	<i>Protomedeia</i> spp.	1	IND
--	<i>Schistomeringos rudolphi</i>	1	IND

Survey: NETPEN91 Station: PTAN-2 Date: 04/03/91 Sample: PTAN-2

Replicate: 1

--	Nematoda	555	IND
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-- Barantolla americana	13 IND
-- Oligochaeta	4 IND
-- Mysella tumida	3 IND
-- Capitella capitata	2 IND
-- Mytilus edulis	2 IND
-- Prionospio cirrifera	2 IND
-- Axinopsida serricata	1 IND
-- Brania brevipharyngea	1 IND
-- Caulleriella alata	1 IND
-- Diastylis alaskensis	1 IND
-- Eudorella pacifica	1 IND
-- Macoma carlottensis	1 IND
-- Nebalia pugettensis	1 IND
-- Podarkeopsis glabra	1 IND
-- Protodorvillea gracilis	1 IND
-- Spiophanes berkeleyorum	1 IND
-- Spiophanes spp.	1 IND
-- Tellina modesta	1 IND
-- Tharyx spp.	1 IND

Survey: NETPEN91 Station: PTAN-2 Date: 04/03/91 Sample: PTAN-2

Replicate: 2

-- Nematoda	711 IND
-- Oligochaeta	21 IND
-- Barantolla americana	15 IND
-- Podarkeopsis glabra	6 IND
-- Nebalia pugettensis	4 IND
-- Aoroides columbiae	3 IND
-- Melita dentata	3 IND
-- Mysella tumida	3 IND
-- Axinopsida serricata	2 IND
-- Calanoida	2 IND
-- Capitella capitata	2 IND
-- Glycinde armigera	2 IND
-- Mytilus edulis	2 IND
-- Alvania spp.	1 IND
-- Euclymeninae spp.	1 IND
-- Glycinde picta	1 IND
-- Macoma spp.	1 IND
-- Prionospio cirrifera	1 IND
-- Prionospio multibranchiata	1 IND
-- Prionospio steenstrupi	1 IND

Survey: NETPEN91 Station: PTAN-2 Date: 04/03/91 Sample: PTAN-2

Replicate: 3

-- Nematoda	106 IND
-- Barantolla americana	2 IND
-- Capitella capitata	2 IND
-- Mytilus edulis	2 IND
-- Nebalia pugettensis	2 IND
-- Oligochaeta	2 IND
-- Axinopsida serricata	1 IND
-- Capitellidae	1 IND
-- Euphilomedes producta	1 IND
-- Glycinde armigera	1 IND
-- Macoma nasuta	1 IND

-- *Mediomastus* spp. 1 IND
 -- *Platynereis bicanaliculata* 1 IND

Survey: NETPEN91 Station: PTAN-3 Date: 04/03/91 Sample: PTAN-3

Replicate: 1

-- Nematoda 1173 IND
 -- *Mysella tumida* 21 IND
 -- *Oligochaeta* 10 IND
 -- *Micropodarke dubia* 8 IND
 -- *Schistomeringos rudolphi* 8 IND
 -- *Aoroides* spp. 7 IND
 -- *Armandia brevis* 5 IND
 -- *Owenia fusiformis collaris* 5 IND
 -- COPEPODA 4 IND
 -- *Heterophoxus oculatus* 4 IND
 -- *Protodorvillea gracilis* 4 IND
 -- *Macoma inquinata* 3 IND
 -- *Macoma* spp. 3 IND
 -- *Podarkeopsis glabra* 3 IND
 -- *Caulleriella alata* 2 IND
 -- Cumacea 2 IND
 -- EHLERSIA HYPERIONI 2 IND
 -- *Euclymeninae* spp. 2 IND
 -- *Euphilomedes carcharodonta* 2 IND
 -- *Lumbrineris* sp. 2 IND
 -- *Macoma nasuta* 2 IND
 -- *Mediomastus* spp. 2 IND
 -- *Melita desdichada* 2 IND
 -- *Pleurogonium rubicundum* 2 IND
 -- *Sphaerosyllis* cf. *hystrix* 2 IND
 -- *Spiophanes bombyx* 2 IND
 -- *Acila castrensis* 1 IND
 -- *Ampelisca pugetica* 1 IND
 -- *Amphipholis squamata* 1 IND
 -- *Axinopsida serricata* 1 IND
 -- BOCCARDIA PROBOSCIDEA 1 IND
 -- *Brania brevipharyngea* 1 IND
 -- *Capitella capitata* 1 IND
 -- *Foxiphalus cognatus* 1 IND
 -- *Glycinde picta* 1 IND
 -- *Ianiropsis kincaidi* 1 IND
 -- *Leitoscoloplos elongatus* 1 IND
 -- Maldanidae 1 IND
 -- *Margarites* spp. 1 IND
 -- *Micrura* spp. 1 IND
 -- *Natica clausa* 1 IND
 -- *Nebalis pugettensis* 1 IND
 -- *Nereis procera* 1 IND
 -- *Ophiodromus pugettensis* 1 IND
 -- *Orchomene decipiens* 1 IND
 -- *Pherusa neopapillata* 1 IND
 -- *Pionosyllis uraga* 1 IND
 -- *Platynereis bicanaliculata* 1 IND
 -- *Polycirrus californicus* 1 IND
 -- Polyclinidae 1 IND
 -- *Polydora* spp. 1 IND

--	<i>Prionospio cirrifera</i>	1 IND
--	<i>Saxidomus giganteus</i>	1 IND
--	<i>Spiophanes berkeleyorum</i>	1 IND
--	<i>Tellina modesta</i>	1 IND

Survey: NETPEN91 Station: PTAN-3 Date: 04/03/91 Sample: PTAN-3

Replicate: 2

--	Nematoda	351 IND
--	<i>Mysella tumida</i>	31 IND
--	<i>Alvania</i> spp.	8 IND
--	<i>Mediomastus</i> spp.	7 IND
--	<i>Aoroides columbiae</i>	5 IND
--	<i>Capitella capitata</i>	4 IND
--	<i>Prionospio cirrifera</i>	4 IND
--	<i>Armandia brevis</i>	3 IND
--	<i>Macoma elimata</i>	3 IND
--	<i>Melita desdichada</i>	3 IND
--	<i>Micropodarke dubia</i>	3 IND
--	<i>Psephidia lordi</i>	3 IND
--	<i>Scoloplos acmeceps</i>	3 IND
--	<i>Macoma carlottensis</i>	2 IND
--	<i>Axinopsida serricata</i>	1 IND
--	<i>Barantolla americana</i>	1 IND
--	<i>Cauleriella alata</i>	1 IND
--	EHLERSIA HYPERIONI	1 IND
--	<i>Eobrolgus spinosus</i>	1 IND
--	<i>Euclymene reticulata</i>	1 IND
--	<i>Exogone</i> sp.	1 IND
--	<i>Hiatella arctica</i>	1 IND
--	<i>Macoma inquinata</i>	1 IND
--	<i>Macoma nasuta</i>	1 IND
--	Maldanidae	1 IND
--	<i>Nebalia pugettensis</i>	1 IND
--	<i>Nereis procera</i>	1 IND
--	<i>Owenia fusiformis collaris</i>	1 IND
--	<i>Phyllochaetopterus prolifica</i>	1 IND
--	<i>Prionospio multibranchiata</i>	1 IND
--	<i>Rhodine bitorquata</i>	1 IND
--	<i>Saxidomus giganteus</i>	1 IND
--	<i>Schistomeringos rudolphi</i>	1 IND
--	<i>Sphaerosyllis brandhorsti</i>	1 IND
--	<i>Spiophanes bombyx</i>	1 IND

Survey: NETPEN91 Station: PTAN-3 Date: 04/03/91 Sample: PTAN-3

Replicate: 3

--	Nematoda	637 IND
--	<i>Aoroides columbiae</i>	26 IND
--	<i>Alvania</i> spp.	18 IND
--	<i>Nebalia pugettensis</i>	13 IND
--	<i>Mysella tumida</i>	10 IND
--	<i>Melita desdichada</i>	8 IND
--	<i>Capitella capitata</i>	6 IND
--	<i>Micropodarke dubia</i>	5 IND
--	<i>Scoloplos acmeceps</i>	5 IND
--	COPEPODA	4 IND
--	<i>Macoma</i> spp.	4 IND

--	Cumella vulgaris	3	IND
--	Mediomastus spp.	3	IND
--	Mytilidae	3	IND
--	Polycirrus spp.	3	IND
--	Sphaerosyllis brandhorsti	3	IND
--	Armandia brevis	2	IND
--	Exogone lourei	2	IND
--	Exogone sp.	2	IND
--	Leptochelia savignyi	2	IND
--	Margarites spp.	2	IND
--	Ampharete labrops	1	IND
--	Amphissa spp.	1	IND
--	Balanus sp.	1	IND
--	Barantolla americana	1	IND
--	Cyprididae	1	IND
--	Eulalia (Eumida) sp.	1	IND
--	Eusyllis sp.	1	IND
--	Heterophoxus oculatus	1	IND
--	Hiatella arctica	1	IND
--	Maldanidae	1	IND
--	Metaphoxus fultoni	1	IND
--	Mytilus edulis	1	IND
--	Ophiodromus pugettensis	1	IND
--	Ophryotrocha spp.	1	IND
--	Pectinaria spp.	1	IND
--	Pionosyllis spp.	1	IND
--	Platynereis bicanaliculata	1	IND
--	Prionospio spp.	1	IND
--	Pugettia richii	1	IND
--	Schistomeringos rudolphi	1	IND
--	Tellina modesta	1	IND
--	Tiron biocellata	1	IND

Survey: NETPEN91 Station: PTAN-4 Date: 04/03/91 Sample: PTAN-4
Replicate: 1

--	Nematoda	73	IND
--	Mediomastus spp.	52	IND
--	EHLERSIA HYPERIONI	12	IND
--	Mysella tumida	10	IND
--	Platynereis bicanaliculata	8	IND
--	Sphaerosyllis brandhorsti	8	IND
--	Axinopsida serricata	6	IND
--	Barantolla americana	6	IND
--	Capitella capitata	5	IND
--	Macoma nasuta	5	IND
--	Tellina modesta	4	IND
--	Copepoda cyclopoida	3	IND
--	Lumbrineris luti	3	IND
--	Nephasoma spp.	3	IND
--	Podarkeopsis glabra	3	IND
--	Protomedea prudens	3	IND
--	Cumella vulgaris	2	IND
--	Euclymene reticulata	2	IND
--	Euphilomedes carcharodonta	2	IND
--	Glycinde armigera	2	IND
--	Leptochelia savignyi	2	IND

--	<i>Polydora socialis</i>	2	IND
--	<i>Psephidia lordi</i>	2	IND
--	<i>Syllis heterochaeta</i>	2	IND
--	<i>Ampharete labrops</i>	1	IND
--	<i>Chaetozone setosa</i>	1	IND
--	<i>Copepoda harpacticoida</i>	1	IND
--	<i>Exogone lourei</i>	1	IND
--	<i>Exogone sp.</i>	1	IND
--	GLYCINDE	1	IND
--	<i>Glycera americana</i>	1	IND
--	<i>Glycinde picta</i>	1	IND
--	<i>Lumbrineris californiensis</i>	1	IND
--	<i>Micropodarke dubia</i>	1	IND
--	<i>Micrura spp.</i>	1	IND
--	<i>Nebalia pugettensis</i>	1	IND
--	<i>Nephtys caecoides</i>	1	IND
--	<i>Nucula tenuis</i>	1	IND
--	<i>Oligochaeta</i>	1	IND
--	Onuphidae	1	IND
--	<i>Parvilucina tenuisculpta</i>	1	IND
--	<i>Pectinaria granulata</i>	1	IND
--	<i>Prionospio steenstrupi</i>	1	IND
--	<i>Protothaca staminea</i>	1	IND
--	<i>Scoloplos acmeceps</i>	1	IND
--	<i>Synchelidium rectipalmum</i>	1	IND
--	<i>Synchelidium sp.</i>	1	IND
--	<i>Tharyx spp.</i>	1	IND
--	<i>Westwoodilla caecula</i>	1	IND

Survey: NETPEN91 Station: PTAM-4 Date: 04/03/91 Sample: PTAM-4
Replicate: 2

--	Nematoda	25	IND
--	<i>Mediomastus spp.</i>	21	IND
--	<i>Euphilomedes carcharodonta</i>	20	IND
--	<i>Mysella tumida</i>	18	IND
--	<i>Rhepoxynius variatus</i>	8	IND
--	<i>Axinopsida serricata</i>	6	IND
--	<i>Barantolla americana</i>	6	IND
--	<i>Euclymene reticulata</i>	6	IND
--	COPEPODA	3	IND
--	<i>Exogone lourei</i>	3	IND
--	<i>Glycinde armigera</i>	3	IND
--	<i>Heterophoxus oculatus</i>	3	IND
--	<i>Leitoscoloplos elongatus</i>	3	IND
--	<i>Protomedeia spp.</i>	3	IND
--	<i>Tharyx spp.</i>	3	IND
--	<i>Capitella capitata</i>	2	IND
--	<i>Euclymeninae spp.</i>	2	IND
--	<i>Parvilucina tenuisculpta</i>	2	IND
--	<i>Polydora quadrilobata</i>	2	IND
--	<i>Syllis heterochaeta</i>	2	IND
--	<i>Tellina modesta</i>	2	IND
--	<i>Alia spp.</i>	1	IND
--	<i>Decamastus gracilis</i>	1	IND
--	Decapoda	1	IND
--	<i>Glycera americana</i>	1	IND

-- Lumbrineris sp.	1	IND
-- Macoma spp.	1	IND
-- Magelona hartmanae	1	IND
-- Nereis procera	1	IND
-- Phyllodoce (Aponaitides) hartmanae	1	IND
-- Platynereis bicanaliculata	1	IND
-- Protodorvillea gracilis	1	IND
-- Protothaca staminea	1	IND
-- Sphaerosyllis brandhorsti	1	IND
-- Westwoodilla caecula	1	IND

Survey: NETPEN91 Station: PTAN-4 Date: 04/03/91 Sample: PTAN-4

Replicate: 3

-- Nematoda	164	IND
-- Mediomastus spp.	21	IND
-- COPEPODA	9	IND
-- Euclymene reticulata	6	IND
-- Capitella capitata	5	IND
-- Axinopsida serricata	4	IND
-- Euphilomedes carcharodonta	4	IND
-- Macoma nasuta	4	IND
-- Mysella tumida	4	IND
-- Protodorvillea gracilis	4	IND
-- EHLERSIA HYPERIONI	3	IND
-- Leitoscoloplos elongatus	3	IND
-- Psephidia lordi	3	IND
-- Decapoda	2	IND
-- Exogone lourei	2	IND
-- Micrura spp.	2	IND
-- Orbiniidae	2	IND
-- Podarkeopsis glabra	2	IND
-- Polycirrus spp.	2	IND
-- Rhepoxynius variatus	2	IND
-- Saxidomus giganteus	2	IND
-- Synchelidium shoemakeri	2	IND
-- Barantolla americana	1	IND
-- Chone minuta	1	IND
-- Compsomyax subdiaphana	1	IND
-- Cyprididae	1	IND
-- Glycinde picta	1	IND
-- Hesionella mccullochae	1	IND
-- Kurtziella sp.	1	IND
-- Lucinoma acutilineata	1	IND
-- Lumbrineris luti	1	IND
-- Lumbrineris sp.	1	IND
-- Nephtys sp.	1	IND
-- Nucula tenuis	1	IND
-- Oligochaeta	1	IND
-- Onuphis elegans	1	IND
-- Onuphis spp.	1	IND
-- Polydora (Boccardia) pugettensis	1	IND
-- Polydora socialis	1	IND
-- Prionospio cirrifera	1	IND
-- Prionospio steenstrupi	1	IND
-- Sphaerodoropsis sphaerulifer	1	IND
-- Sphaerosyllis brandhorsti	1	IND

-- Tharyx spp. 1 IND

Survey: NETPEN91 Station: PTAN-5 Date: 04/03/91 Sample: PTAN-5

Replicate: 1

-- Nematoda	540 IND
-- Mytilidae	8 IND
-- Metridium senile	7 IND
-- Armandia brevis	4 IND
-- Copepoda harpacticoida	3 IND
-- Macoma inquinata	3 IND
-- Oligochaeta	3 IND
-- Calanoida	2 IND
-- Platynereis bicanaliculata	2 IND
-- Pontogeneia cf. rostrata	2 IND
-- Capitella capitata	1 IND
-- Caulleriella alata	1 IND
-- Cephalaspidea	1 IND
-- Decapoda	1 IND
-- Euclymene reticulata	1 IND
-- Exogone lourei	1 IND
-- Leptochelia savignyi	1 IND
-- Lysianassidae	1 IND
-- Melita dentata	1 IND
-- Micropodarke dubia	1 IND
-- Munna sp.	1 IND
-- Mysella tumida	1 IND
-- Nebalia pugettensis	1 IND
-- Ophiodromus pugettensis	1 IND
-- Oregonia gracilis	1 IND
-- Pholoe minuta	1 IND
-- Podarkeopsis glabra	1 IND
-- Polydora pygidialis	1 IND
-- Prionospio multibranchiata	1 IND
-- Tharyx spp.	1 IND

Survey: NETPEN91 Station: PTAN-5 Date: 04/03/91 Sample: PTAN-5

Replicate: 2

-- Nematoda	1326 IND
-- Mediomastus spp.	27 IND
-- Oligochaeta	14 IND
-- Armandia brevis	6 IND
-- Capitella capitata	6 IND
-- Aoroides columbiae	4 IND
-- Macoma nasuta	4 IND
-- Micropodarke dubia	4 IND
-- Sphaerosyllis brandhorsti	4 IND
-- Axinopsida serricata	3 IND
-- Caulleriella alata	3 IND
-- Exogone sp.	3 IND
-- Melita desdichada	3 IND
-- Pleurogonium rubicundum	3 IND
-- Polycirrus spp.	3 IND
-- Scoloplos acmeceps	3 IND
-- Spiophanes bombyx	3 IND
-- Alvania spp.	2 IND
-- Barantolla americana	2 IND

-- COPEPODA	2	IND
-- Euphilomedes carcharodonta	2	IND
-- Mysella tumida	2	IND
-- Mytilus edulis	2	IND
-- Ophiodromus pugettensis	2	IND
-- Orchomene decipiens	2	IND
-- Owenia fusiformis collaris	2	IND
-- Paleonotus bellis	2	IND
-- Prionospio cirrifera	2	IND
-- Tellina modesta	2	IND
-- Westwoodilla caecula	2	IND
-- Ampharete sp.	1	IND
-- Capitellidae	1	IND
-- Chaetozone setosa	1	IND
-- Clinocardium spp.	1	IND
-- Decapoda	1	IND
-- Eteone spp.	1	IND
-- Glycera americana	1	IND
-- Glycinde armigera	1	IND
-- Glycinde picta	1	IND
-- Leitoscoloplos elongatus	1	IND
-- Leptochelia savignyi	1	IND
-- Lumbrineris sp.	1	IND
-- Macoma inquinata	1	IND
-- Macoma obliqua	1	IND
-- Pectinaria granulata	1	IND
-- Prionospio multibranchiata	1	IND
-- Prionospio steenstrupi	1	IND
-- Protothaca staminea	1	IND
-- Psephidia lordi	1	IND
-- Sphaerodoropsis sphaerulifer	1	IND
-- Spiophanes berkeleyorum	1	IND
-- Streblosoma crassibranchia	1	IND
-- Thyasira flexuosa	1	IND

Survey: NETPEN91 Station: PTAN-5 Date: 04/03/91 Sample: PTAN-5
Replicate: 3

-- Nematoda	288	IND
-- Mediomastus spp.	29	IND
-- Capitella capitata	5	IND
-- Macoma nasuta	5	IND
-- Mysella tumida	4	IND
-- Oligochaeta	4	IND
-- Psephidia lordi	4	IND
-- Mytilidae	3	IND
-- Barantolla americana	2	IND
-- Cephalaspidea	2	IND
-- Copepoda harpacticoida	2	IND
-- Euclymene reticulata	2	IND
-- Euphilomedes carcharodonta	2	IND
-- Macoma spp.	2	IND
-- Munna sp.	2	IND
-- Pectinaria californiensis	2	IND
-- Scoloplos acmeceps	2	IND
-- Alvania spp.	1	IND
-- Calanoida	1	IND

-- Decapoda	1 IND
-- Diastylis alaskensis	1 IND
-- Euphilomedes producta	1 IND
-- Glycinde armigera	1 IND
-- Glycinde picta	1 IND
-- Hesionella mccullochae	1 IND
-- Leitoscoloplos elongatus	1 IND
-- Lumbrineris cruzensis	1 IND
-- Macoma inquinata	1 IND
-- Macoma obliqua	1 IND
-- Melita desdichada	1 IND
-- Onuphis spp.	1 IND
-- Peracarida isopoda valvifera	1 IND
-- Pinnixa spp.	1 IND
-- Podarkeopsis glabra	1 IND
-- Prionospio steenstrupi	1 IND
-- Sphaerosyllis brandhorsti	1 IND
-- Spiophanes berkeleyorum	1 IND
-- Spiophanes bombyx	1 IND
-- Syllis heterochaeta	1 IND
-- Tellina modesta	1 IND
-- Westwoodilla caecula	1 IND

Survey: NETPEN91 Station: PTAN-6 Date: 04/03/91 Sample: PTAN-6

Replicate: 1

-- Mediomastus spp.	18 IND
-- Axinopsida serricata	8 IND
-- Mysella tumida	7 IND
-- Nematoda	6 IND
-- Magelona longicornis	5 IND
-- Psephidia lordi	5 IND
-- Rhepoxynius variatus	5 IND
-- Micrura spp.	4 IND
-- Euphilomedes carcharodonta	3 IND
-- Exogone molesta	3 IND
-- Barantolla americana	2 IND
-- Nereis procera	2 IND
-- Prionospio steenstrupi	2 IND
-- Spiophanes bombyx	2 IND
-- Capitella capitata	1 IND
-- Chaetozone spp.	1 IND
-- EHLERSIA HYPERIONI	1 IND
-- Euclymene reticulata	1 IND
-- Eulalia (Eumida) sp.	1 IND
-- Glycinde picta	1 IND
-- Mesochaetopterus taylori	1 IND
-- Munna sp.	1 IND
-- Onuphis spp.	1 IND
-- Ophelina acuminata	1 IND
-- Parvilucina tenuisculpta	1 IND
-- Phyllodoce (Aponaitides) hartmanae	1 IND
-- Podarkeopsis glabra	1 IND
-- Prionospio cirrifera	1 IND
-- Tellina modesta	1 IND
-- Westwoodilla caecula	1 IND

Survey: NETPEN91 Station: PTAN-6 Date: 04/03/91 Sample: PTAN-6

Replicate: 2

--	Mediomastus spp.	29	IND
--	Nematoda	29	IND
--	Axinopsida serricata	15	IND
--	Mysella tumida	15	IND
--	Psephidia lordi	9	IND
--	Euphilomedes carcharodonta	7	IND
--	Rhepoxynius variatus	7	IND
--	Heteromastus filiformis	5	IND
--	Leitoscoloplos elongatus	5	IND
--	Euclymene reticulata	4	IND
--	Tellina modesta	4	IND
--	Copepoda harpacticoida	2	IND
--	EHLERSIA HYPERIONI	2	IND
--	Magelona longicornis	2	IND
--	Onuphis spp.	2	IND
--	Protothaca staminea	2	IND
--	Scoloplos acmeceps	2	IND
--	Spiophanes bombyx	2	IND
--	Asabellides sibirica	1	IND
--	Capitella capitata	1	IND
--	Decamastus gracilis	1	IND
--	Diastylopsis dawsoni	1	IND
--	Euphilomedes producta	1	IND
--	Exogone sp.	1	IND
--	Glycinde armigera	1	IND
--	Kurtziella sp.	1	IND
--	Magelona sacculata	1	IND
--	Maldanidae	1	IND
--	Melinna elisabethae	1	IND
--	Nephasoma spp.	1	IND
--	Nereis procera	1	IND
--	Platynereis bicanaliculata	1	IND
--	Polydora socialis	1	IND
--	Prionospio cirrifera	1	IND
--	Prionospio steenstrupi	1	IND
--	Saxidomus giganteus	1	IND
--	Sphaerodoropsis sphaerulifer	1	IND
--	Spiochaetopterus costarum	1	IND
--	Tharyx spp.	1	IND
--	Tubulanus spp.	1	IND

Survey: NETPEN91 Station: PTAN-6 Date: 04/03/91 Sample: PTAN-6

Replicate: 3

--	Axinopsida serricata	17	IND
--	Mysella tumida	14	IND
--	Mediomastus spp.	9	IND
--	Psephidia lordi	8	IND
--	Euphilomedes carcharodonta	6	IND
--	Tellina modesta	5	IND
--	Parvilucina tenuisculpta	4	IND
--	Capitella capitata	3	IND
--	Copepoda harpacticoida	2	IND
--	Decamastus gracilis	2	IND
--	Euclymene reticulata	2	IND

--	<i>Magelona longicornis</i>	2	IND
--	Nematoda	2	IND
--	<i>Odostomia</i> spp.	2	IND
--	<i>Podarkeopsis glabra</i>	2	IND
--	<i>Scoloplos acmeceps</i>	2	IND
--	<i>Alvania</i> spp.	1	IND
--	<i>Ampharete labrops</i>	1	IND
--	<i>Eteone</i> spp.	1	IND
--	<i>Exogone lourei</i>	1	IND
--	<i>Exogone molesta</i>	1	IND
--	<i>Exogone</i> sp.	1	IND
--	<i>Glycinde picta</i>	1	IND
--	<i>Laonice</i> spp.	1	IND
--	<i>Lumbrineris</i> sp.	1	IND
--	<i>Macoma nasuta</i>	1	IND
--	<i>Macoma</i> spp.	1	IND
--	Mytilidae	1	IND
--	<i>Nephasoma</i> spp.	1	IND
--	<i>Onuphis</i> spp.	1	IND
--	<i>Owenia fusiformis collaris</i>	1	IND
--	<i>Polycirrus</i> spp.	1	IND
--	<i>Polydora (Boccardia) pugettensis</i>	1	IND
--	<i>Polydora socialis</i>	1	IND
--	<i>Rhepoxynius variatus</i>	1	IND
--	<i>Sphaerodoropsis sphaerulifer</i>	1	IND
--	<i>Sphaerosyllis brandhorsti</i>	1	IND
--	<i>Spiophanes berkeleyorum</i>	1	IND
--	Terebellidae	1	IND
--	<i>Westwoodilla caecula</i>	1	IND

Survey: NETPEN91 Station: PTREF Date: 05/01/91 Sample: PTREF-1

Replicate: 1

.5MM	<i>Eudorella pacifica</i>	156	IND
.5MM	<i>Nephtys cornuta franciscana</i>	69	IND
.5MM	<i>Levinsenia gracilis</i>	67	IND
.5MM	<i>Allia ramosa</i>	54	IND
.5MM	<i>Mysella tumida</i>	49	IND
.5MM	<i>Prionopsio minuspio lighti</i>	46	IND
.5MM	<i>Oligochaeta</i>	36	IND
.5MM	<i>Heterophoxus oculatus</i>	29	IND
.5MM	<i>Pholoe minuta</i>	25	IND
.5MM	Calanoidea	22	IND
.5MM	<i>Cossura soyeri</i>	21	IND
.5MM	<i>Ampelisca</i> sp.	16	IND
.5MM	<i>Euphilomedes producta</i>	15	IND
.5MM	Amphiuridae	12	IND
.5MM	<i>Acila castrensis</i>	11	IND
.5MM	<i>Nucula tenuis</i>	10	IND
.5MM	<i>Mediomastus</i> spp.	9	IND
.5MM	<i>Dentalium</i> sp.	5	IND
.5MM	<i>Macoma carlottensis</i>	5	IND
.5MM	<i>Sphaerodoropsis sphaerulifer</i>	5	IND
.5MM	Decapoda	3	IND
.5MM	<i>Leptochelia savignyi</i>	3	IND
.5MM	<i>Lyonsia arenosa</i>	3	IND
.5MM	Nematoda	3	IND

.5MM	Odostomia spp.	3	IND
.5MM	TEREBELLIDES	3	IND
.5MM	Acmira lopezi	2	IND
.5MM	Polydora socialis	2	IND
.5MM	Tharyx spp.	2	IND
.5MM	Axinopsida serricata	1	IND
.5MM	Cylindroleberididae	1	IND
.5MM	Hyperia medusarum	1	IND
.5MM	Lumbrineris sp.	1	IND
.5MM	Paraonella spp.	1	IND
.5MM	Paraprionospio pinnata	1	IND
.5MM	Peracarida isopoda valvifera	1	IND
.5MM	Prionospio steenstrupi	1	IND
.5MM	Turbonilla spp.	1	IND
1MM	Amphiodia spp.	167	IND
1MM	Mysella tumida	65	IND
1MM	Pholoe minuta	40	IND
1MM	Eudorella pacifica	39	IND
1MM	Heterophoxus oculatus	11	IND
1MM	Nucula tenuis	8	IND
1MM	Compsomyax subdiaphana	7	IND
1MM	Levinsenia gracilis	7	IND
1MM	Axinopsida serricata	6	IND
1MM	Praxillella affinis pacifica	5	IND
1MM	Allia ramosa	4	IND
1MM	Lumbrineris sp.	4	IND
1MM	Nematoda	4	IND
1MM	Acila castrensis	3	IND
1MM	Amphiuridae	3	IND
1MM	Cylichna attonsa	3	IND
1MM	Dentalium sp.	3	IND
1MM	Euclymene reticulata	3	IND
1MM	Odostomia spp.	3	IND
1MM	Euclymeninae spp.	2	IND
1MM	Euphilomedes producta	2	IND
1MM	Macoma carlottensis	2	IND
1MM	Mediomastus spp.	2	IND
1MM	Nephtys ferruginea	2	IND
1MM	Oligochaeta	2	IND
1MM	Paraprionospio pinnata	2	IND
1MM	Pinnixa spp.	2	IND
1MM	Sternaspis scutata	2	IND
1MM	Acanthomysis spp.	1	IND
1MM	Acmira lopezi	1	IND
1MM	Alvania spp.	1	IND
1MM	Amage anops	1	IND
1MM	Ampelisca unsocalae	1	IND
1MM	Cardiomya californica	1	IND
1MM	Galathowenia nr. G. oculata	1	IND
1MM	Glycinde armigera	1	IND
1MM	Laonice cirrata	1	IND
1MM	Lucinoma acutilineata	1	IND
1MM	Lyonsia arenosa	1	IND
1MM	Ophelina acuminata	1	IND
1MM	Pectinaria granulata	1	IND
1MM	Praxillella gracilis	1	IND

1MM	Prionopsio minuspio lighti	1 IND
1MM	Scalibregma inflatum	1 IND
1MM	Tharyx spp.	1 IND

Survey: NETPEN91 Station: PTREF Date: 05/01/91 Sample: PTREF-1

Replicate: 2

.5MM	Eudorella pacifica	200 IND
.5MM	Levinsenia gracilis	59 IND
.5MM	Pholoe minuta	46 IND
.5MM	Mysella tumida	36 IND
.5MM	Allia ramosa	34 IND
.5MM	Heterophoxus oculatus	25 IND
.5MM	Amphiuridae	20 IND
.5MM	Nephtys cornuta franciscana	19 IND
.5MM	Euphilomedes producta	18 IND
.5MM	Acila castrensis	13 IND
.5MM	Prionopsio minuspio lighti	13 IND
.5MM	Nucula tenuis	11 IND
.5MM	Ampelisca sp.	10 IND
.5MM	Oligochaeta	10 IND
.5MM	COPEPODA	9 IND
.5MM	Axinopsida serricata	7 IND
.5MM	Acmira lopezi	5 IND
.5MM	Cossura soyeri	5 IND
.5MM	Mediomastus spp.	5 IND
.5MM	Decapoda	4 IND
.5MM	Polydora brachycephala	4 IND
.5MM	Bathyleberis garthi	3 IND
.5MM	Bittium spp.	3 IND
.5MM	Mytilus edulis	3 IND
.5MM	Psephidia lordi	3 IND
.5MM	Compsomyax subdiaphana	2 IND
.5MM	Leptognathia gracilis	2 IND
.5MM	Macoma carlottensis	2 IND
.5MM	Nematoda	2 IND
.5MM	Peracarida tanaidacea	2 IND
.5MM	Alvania spp.	1 IND
.5MM	Amphiodia spp.	1 IND
.5MM	Laonice spp.	1 IND
.5MM	Leitoscoloplos elongatus	1 IND
.5MM	Leptoplanidae	1 IND
.5MM	Lumbrineris sp.	1 IND
.5MM	Lyonsia arenosa	1 IND
.5MM	Paraonella spp.	1 IND
.5MM	Pleurogonium californiensis	1 IND
.5MM	Podarkeopsis glabra	1 IND
.5MM	Prachynella lodo	1 IND
1MM	Amphiodia spp.	171 IND
1MM	Eudorella pacifica	23 IND
1MM	Mysella tumida	21 IND
1MM	Pholoe minuta	19 IND
1MM	Nematoda	14 IND
1MM	Axinopsida serricata	10 IND
1MM	Levinsenia gracilis	9 IND
1MM	Lumbrineris sp.	8 IND
1MM	Heterophoxus oculatus	7 IND

1MM	Euphilomedes producta	6	IND
1MM	Nucula tenuis	6	IND
1MM	Pectinaria granulata	6	IND
1MM	Amphiuridae	5	IND
1MM	Dentalium sp.	5	IND
1MM	Cylichna attonsa	4	IND
1MM	Galathowenia nr. G. oculata	4	IND
1MM	Macoma carlottensis	4	IND
1MM	Tharyx spp.	4	IND
1MM	Euclymene reticulata	3	IND
1MM	Sternaspis scutata	3	IND
1MM	Acila castrensis	2	IND
1MM	Compsomyax subdiaphana	2	IND
1MM	Euclymeninae spp.	2	IND
1MM	Parvilucina tenuisculpta	2	IND
1MM	Praxillella affinis pacifica	2	IND
1MM	Rhepoxynius variatus	2	IND
1MM	Alia spp.	1	IND
1MM	Allia ramosa	1	IND
1MM	Ampelisca unsocalae	1	IND
1MM	Byblis veleronis	1	IND
1MM	COPEPODA	1	IND
1MM	Cossura soyeri	1	IND
1MM	Glycera sp.	1	IND
1MM	Laonice cirrata	1	IND
1MM	Magelona longicornis	1	IND
1MM	Mediomastus spp.	1	IND
1MM	Nephtys ferruginea	1	IND
1MM	Notomastus lineatus	1	IND
1MM	Onuphis iridescens	1	IND
1MM	Paraprionospio pinnata	1	IND
1MM	Prionospio minuspio lighti	1	IND
1MM	Terebellides stroemi	1	IND
1MM	Turbonilla spp.	1	IND

Survey: NETPEN91 Station: PTREF Date: 05/01/91 Sample: PTREF-1

Replicate: 3

.5MM	Eudorella pacifica	134	IND
.5MM	Mysella tumida	63	IND
.5MM	Nephtys cornuta franciscana	42	IND
.5MM	Heterophoxus oculatus	35	IND
.5MM	Pholoe minuta	34	IND
.5MM	Euphilomedes producta	33	IND
.5MM	Allia ramosa	32	IND
.5MM	Levinsenia gracilis	26	IND
.5MM	Polydora brachycephala	16	IND
.5MM	Nucula tenuis	13	IND
.5MM	Amphiuridae	7	IND
.5MM	Acila castrensis	6	IND
.5MM	COPEPODA	6	IND
.5MM	Sphaerodoropsis sphaerulifer	6	IND
.5MM	Acmira lopezi	5	IND
.5MM	Mediomastus spp.	4	IND
.5MM	Odostomia spp.	4	IND
.5MM	Prionospio cirrifera	4	IND
.5MM	Cossura soyeri	3	IND

.5MM	Dentalium sp.	3	IND
.5MM	Macoma carlottensis	3	IND
.5MM	Ampelisca sp.	2	IND
.5MM	Cardiomya californica	2	IND
.5MM	Costelloleda sp.	2	IND
.5MM	Harmothoinae	2	IND
.5MM	Leptognathia gracilis	2	IND
.5MM	Lyonsia arenosa	2	IND
.5MM	Tharyx spp.	2	IND
.5MM	Alvania spp.	1	IND
.5MM	Bathyleberis garthi	1	IND
.5MM	Compsomyax subdiaphana	1	IND
.5MM	Cumella vulgaris	1	IND
.5MM	Decapoda	1	IND
.5MM	Leptoplanidae	1	IND
.5MM	Lineidae	1	IND
.5MM	Malacoceros glutaeus	1	IND
.5MM	Modiolus spp.	1	IND
.5MM	Nematoda	1	IND
.5MM	Octocorallia pennatulacea	1	IND
.5MM	Oligochaeta	1	IND
.5MM	Parvilucina tenuisculpta	1	IND
.5MM	Pleurogonium rubicundum	1	IND
.5MM	Psephidia lordi	1	IND
.5MM	Scalibregma inflatum	1	IND
1MM	Amphiodia spp.	158	IND
1MM	Mysella tumida	57	IND
1MM	Eudorella pacifica	24	IND
1MM	Pholoe minuta	24	IND
1MM	Heterophoxus oculatus	19	IND
1MM	Axinopsida serricata	14	IND
1MM	Euphilomedes producta	9	IND
1MM	Dentalium sp.	8	IND
1MM	Nucula tenuis	8	IND
1MM	Amphiuridae	7	IND
1MM	Allia ramosa	5	IND
1MM	Compsomyax subdiaphana	5	IND
1MM	Lumbrineris sp.	5	IND
1MM	Macoma carlottensis	5	IND
1MM	Nematoda	5	IND
1MM	Euclymeninae spp.	4	IND
1MM	Praxillella affinis pacifica	4	IND
1MM	Laonice cirrata	3	IND
1MM	Acila castrensis	2	IND
1MM	Bittium spp.	2	IND
1MM	Cylichna attonsa	2	IND
1MM	Galathowenia nr. G. oculata	2	IND
1MM	Harmothoinae	2	IND
1MM	Levinsenia gracilis	2	IND
1MM	Polydora brachycephala	2	IND
1MM	Prionospio minuspio lighti	2	IND
1MM	Tubulanus spp.	2	IND
1MM	Alvania spp.	1	IND
1MM	Ampelisca sp.	1	IND
1MM	Brada villosa	1	IND
1MM	Costelloleda sp.	1	IND

1MM	Decapoda		1 IND
1MM	Euclymene reticulata		1 IND
1MM	Leptoplanidae		1 IND
1MM	Lyonsia arenosa		1 IND
1MM	Maldane sarsi		1 IND
1MM	Micrura spp.		1 IND
1MM	Nephtys cornuta franciscana		1 IND
1MM	Nephtys ferruginea		1 IND
1MM	Paraprionospio pinnata		1 IND
1MM	Pectinaria granulata		1 IND
1MM	Podarkeopsis glabra		1 IND
1MM	Sternaspis scutata		1 IND
1MM	TEREBELLIDES REISHI		1 IND
1MM	Terebellides stroemi		1 IND
1MM	Tharyx spp.		1 IND
1MM	Thelepus setosus		1 IND

Survey: NETPEN91 Station: PTREF Date: 05/01/91 Sample: PTREF-1
Replicate: 4

.5MM	Eudorella pacifica		159 IND
.5MM	Mysella tumida		41 IND
.5MM	Nephtys cornuta franciscana		38 IND
.5MM	Heterophoxus oculatus		28 IND
.5MM	Levinsenia gracilis		25 IND
.5MM	Allia ramosa		20 IND
.5MM	Euphilomedes producta		20 IND
.5MM	Prionospio minuspio lighti		16 IND
.5MM	Pholoe minuta		15 IND
.5MM	Nucula tenuis		12 IND
.5MM	Amphiuridae		11 IND
.5MM	Acila castrensis		10 IND
.5MM	Ampelisca sp.		7 IND
.5MM	COPEPODA		7 IND
.5MM	Cossura soyeri		7 IND
.5MM	Sphaerodoropsis sphaerulifer		4 IND
.5MM	Leptognathia gracilis		3 IND
.5MM	Mediomastus spp.		3 IND
.5MM	Acmira lopezi		2 IND
.5MM	Nematoda		2 IND
.5MM	Pleurogonium rubicundum		2 IND
.5MM	Tharyx spp.		2 IND
.5MM	Alvania spp.		1 IND
.5MM	Axinopsida serricata		1 IND
.5MM	Compsomyx subdiaphana		1 IND
.5MM	Euclymeninae spp.		1 IND
.5MM	Leucon subnasica		1 IND
.5MM	Lumbrineris sp.		1 IND
.5MM	Lyonsia arenosa		1 IND
.5MM	Macoma spp.		1 IND
.5MM	Odostomia spp.		1 IND
.5MM	Paraonella spp.		1 IND
.5MM	Serolidae		1 IND
.5MM	Turbonilla spp.		1 IND
1MM	Amphiodia spp.		174 IND
1MM	Eudorella pacifica		69 IND
1MM	Mysella tumida		58 IND

1MM	Levinsenia gracilis	46	IND
1MM	Pholoe minuta	33	IND
1MM	Allia ramosa	24	IND
1MM	Oligochaeta	20	IND
1MM	Nephtys cornuta franciscana	17	IND
1MM	Prionospio minuspio lighti	17	IND
1MM	Heterophoxus oculatus	15	IND
1MM	Axinopsida serricata	14	IND
1MM	Euphilomedes producta	14	IND
1MM	Nematoda	13	IND
1MM	Dentalium sp.	12	IND
1MM	Euclymeninae spp.	11	IND
1MM	Lumbrineris sp.	9	IND
1MM	Cossura soyeri	8	IND
1MM	Amphiuridae	7	IND
1MM	Acila castrensis	6	IND
1MM	Cylichna attonsa	6	IND
1MM	Macoma carlottensis	4	IND
1MM	Praxillella affinis pacifica	4	IND
1MM	Sternaspis scutata	4	IND
1MM	Compsomyax subdiaphana	3	IND
1MM	Pectinaria granulata	3	IND
1MM	Brada villosa	2	IND
1MM	Decapoda	2	IND
1MM	Galathowenia nr. G. oculata	2	IND
1MM	Leptognathia gracilis	2	IND
1MM	Maldane sarsi	2	IND
1MM	Mediomastus spp.	2	IND
1MM	Nephtys ferruginea	2	IND
1MM	Acmira lopezi	1	IND
1MM	Amage anops	1	IND
1MM	Ampelisca brevisimulata	1	IND
1MM	Cyprididae	1	IND
1MM	Driloneris falcata minor	1	IND
1MM	Euclymene reticulata	1	IND
1MM	Harmothoinae	1	IND
1MM	Heteromastus filobranchus	1	IND
1MM	Laonice cirrata	1	IND
1MM	Lepidasthenia berkeleyae	1	IND
1MM	Leucon subnasica	1	IND
1MM	Macoma spp.	1	IND
1MM	Micrura spp.	1	IND
1MM	Nephasoma spp.	1	IND
1MM	Nephtys sp.	1	IND
1MM	Odostomia spp.	1	IND
1MM	Polinices pallida	1	IND
1MM	Polydora cardalia	1	IND
1MM	Prionospio steenstrupi	1	IND
1MM	Protomedeia grandimana	1	IND
1MM	Tenonia kitsapensis	1	IND
1MM	Tharyx spp.	1	IND

Survey: NETPEN91 Station: PTREF Date: 05/01/91 Sample: PTREF-1
Replicate: 5

.5MM	Eudorella pacifica	206	IND
.5MM	Levinsenia gracilis	90	IND

.5MM	Nephtys cornuta franciscana	67	IND
.5MM	Mysella tumida	59	IND
.5MM	Allia ramosa	36	IND
.5MM	Heterophoxus oculatus	29	IND
.5MM	Oligochaeta	27	IND
.5MM	Pholoe minuta	24	IND
.5MM	Euphilomedes producta	23	IND
.5MM	Prionospio minuspio lighti	23	IND
.5MM	COPEPODA	18	IND
.5MM	Nucula tenuis	14	IND
.5MM	Amphiuridae	13	IND
.5MM	Mediomastus spp.	12	IND
.5MM	Acila castrensis	10	IND
.5MM	Cossura soyeri	9	IND
.5MM	Decapoda	7	IND
.5MM	Ampelisca sp.	6	IND
.5MM	Nematoda	6	IND
.5MM	Leptognathia gracilis	3	IND
.5MM	Paraonella spp.	3	IND
.5MM	Axinopsida serricata	2	IND
.5MM	Glycinde armigera	2	IND
.5MM	Modiolus spp.	2	IND
.5MM	Pleurogonium rubicundum	2	IND
.5MM	Sphaerodoropsis sphaerulifer	2	IND
.5MM	Acmira lopezi	1	IND
.5MM	Alvania spp.	1	IND
.5MM	Campylaspis canaliculata	1	IND
.5MM	Cardiomya californica	1	IND
.5MM	Compsomyx subdiaphana	1	IND
.5MM	Cumella vulgaris	1	IND
.5MM	Lucinoma acutilineata	1	IND
.5MM	Lumbrineris sp.	1	IND
.5MM	Macoma spp.	1	IND
.5MM	Nephasoma spp.	1	IND
.5MM	Odostomia spp.	1	IND
.5MM	Podarkeopsis glabra	1	IND
.5MM	Prachynella lodo	1	IND
.5MM	Prionospio steenstrupi	1	IND
.5MM	Rutiderma lomae	1	IND
.5MM	TEREBELLIDES	1	IND
1MM	Amphiodia spp.	137	IND
1MM	Mysella tumida	63	IND
1MM	Eudorella pacifica	54	IND
1MM	Pholoe minuta	34	IND
1MM	Nematoda	26	IND
1MM	Axinopsida serricata	20	IND
1MM	Heterophoxus oculatus	16	IND
1MM	Nucula tenuis	15	IND
1MM	Levinsenia gracilis	12	IND
1MM	Euclymeninae spp.	8	IND
1MM	Dentalium sp.	6	IND
1MM	Allia ramosa	5	IND
1MM	Amphiuridae	5	IND
1MM	Decapoda	5	IND
1MM	Lumbrineris sp.	5	IND
1MM	Macoma carlottensis	5	IND

1MM	Parvilucina tenuisculpta	5	IND
1MM	COPEPODA	4	IND
1MM	Compsomyax subdiaphana	4	IND
1MM	Euphilomedes producta	4	IND
1MM	Acila castrensis	3	IND
1MM	Acmira lopezi	3	IND
1MM	Pectinaria granulata	3	IND
1MM	Praxillella affinis pacifica	3	IND
1MM	Prionopsio minuspio lighti	3	IND
1MM	Sternaspis scutata	3	IND
1MM	Adontorhina cyclica	2	IND
1MM	Bittium spp.	2	IND
1MM	Cossura soyeri	2	IND
1MM	Cylichna attonsa	2	IND
1MM	Driloneris falcata minor	2	IND
1MM	Nephtys ferruginea	2	IND
1MM	Odostomia spp.	2	IND
1MM	Oligochaeta	2	IND
1MM	Pinnixa franciscana	2	IND
1MM	Alienacanthomysis macropsis	1	IND
1MM	Alvania spp.	1	IND
1MM	Ampelisca unsocalae	1	IND
1MM	Brada villosa	1	IND
1MM	Galathowenia nr. G. oculata	1	IND
1MM	Harmothoinae	1	IND
1MM	Laonice cirrata	1	IND
1MM	Leptoplanidae	1	IND
1MM	Nephtys cornuta franciscana	1	IND
1MM	Ophelina acuminata	1	IND
1MM	Polinices pallida	1	IND
1MM	Polydora brachycephala	1	IND
1MM	Protomedeia articulata	1	IND
1MM	Tharyx spp.	1	IND
1MM	Thelepus setosus	1	IND
1MM	Tubularus spp.	1	IND

Survey: NETPEN91 Station: PTREF Date: 05/01/91 Sample: PTREF-25

Replicate: 1

--	Amphiodia spp.	27	IND
--	Eudorella pacifica	20	IND
--	Levinsenia gracilis	18	IND
--	Mysella tumida	18	IND
--	Heterophoxus oculatus	11	IND
--	Nematoda	9	IND
--	Oligochaeta	9	IND
--	Pholoe minuta	9	IND
--	COPEPODA	7	IND
--	Nephtys cornuta franciscana	7	IND
--	Allia ramosa	6	IND
--	Cossura soyeri	5	IND
--	Euphilomedes producta	4	IND
--	Nucula tenuis	3	IND
--	Lumbrineris sp.	2	IND
--	Prionopsio minuspio lighti	2	IND
--	Acila castrensis	1	IND
--	Amphiuridae	1	IND

-- Decapoda	1 IND
-- Lyonsia arenosa	1 IND
-- Macoma obliqua	1 IND
-- Pectinaria granulata	1 IND
-- Praxillella affinis pacifica	1 IND
-- Priapulid caudatus	1 IND
-- Spirochaetopterus costarum	1 IND
-- Terebellides stroemi	1 IND
-- Westwoodilla caecula	1 IND

Survey: NETPEN91 Station: PTREF Date: 05/01/91 Sample: PTREF-25
Replicate: 2

-- Amphiodia spp.	26 IND
-- Eudorella pacifica	22 IND
-- Levinsenia gracilis	20 IND
-- Mysella tumida	16 IND
-- Allia ramosa	10 IND
-- Pholoe minuta	10 IND
-- COPEPODA	7 IND
-- Oligochaeta	6 IND
-- Prionospio minuspio lighti	6 IND
-- Nephtys cornuta franciscana	4 IND
-- Cossura soyeri	3 IND
-- Euphilomedes producta	3 IND
-- Nucula tenuis	3 IND
-- Acila castrensis	2 IND
-- Ampelisca brevisimulata	2 IND
-- Ampelisca sp.	2 IND
-- Amphiuridae	2 IND
-- Axinopsida serricata	2 IND
-- Heterophoxus oculatus	2 IND
-- Mediomastus spp.	2 IND
-- Alvania spp.	1 IND
-- Bittium spp.	1 IND
-- Compsomyx subdiaphana	1 IND
-- Cumella sp.	1 IND
-- Dentalium sp.	1 IND
-- Diaphana spp.	1 IND
-- Driloneris falcata minor	1 IND
-- Euclymeninae spp.	1 IND
-- Galathowenia nr. G. oculata	1 IND
-- Laonice cirrata	1 IND
-- Leptoplanidae	1 IND
-- Macoma carlottensis	1 IND
-- Micrura spp.	1 IND
-- Nematoda	1 IND
-- Ophelina acuminata	1 IND
-- Pectinaria granulata	1 IND
-- Pinnixa occidentalis	1 IND
-- Praxillella affinis pacifica	1 IND
-- Sphaerodoropsis sphaerulifer	1 IND

Survey: NETPEN91 Station: PTREF Date: 05/01/91 Sample: PTREF-25
Replicate: 3

-- Levinsenia gracilis	31 IND
-- Amphiodia spp.	28 IND

--	<i>Cossura soyeri</i>	27	IND
--	<i>Mysella tumida</i>	24	IND
--	<i>Allia ramosa</i>	20	IND
--	<i>Prionopsio minuspio lighti</i>	17	IND
--	<i>Eudorella pacifica</i>	12	IND
--	<i>Pholoe minuta</i>	12	IND
--	<i>Oligochaeta</i>	11	IND
--	COPEPODA	9	IND
--	Nematoda	7	IND
--	<i>Nephtys cornuta franciscana</i>	6	IND
--	<i>Heterophoxus oculatus</i>	5	IND
--	<i>Axinopsida serricata</i>	4	IND
--	<i>Maldane sarsi</i>	3	IND
--	<i>Mediomastus</i> spp.	3	IND
--	<i>Sternaspis scutata</i>	3	IND
--	Amphiuridae	2	IND
--	<i>Lumbrineris</i> sp.	2	IND
--	<i>Nucula tenuis</i>	2	IND
--	<i>Acila castrensis</i>	1	IND
--	<i>Acmira lopezi</i>	1	IND
--	<i>Ampelisca brevisimulata</i>	1	IND
--	<i>Compsomyx subdiaphana</i>	1	IND
--	<i>Cylichna attonsa</i>	1	IND
--	<i>Euphilomedes producta</i>	1	IND
--	<i>Glycinde armigera</i>	1	IND
--	<i>Macoma carlottensis</i>	1	IND
--	<i>Paraonella</i> spp.	1	IND
--	<i>Polinices pallida</i>	1	IND
--	<i>Polydora cardalia</i>	1	IND
--	<i>Praxillella affinis pacifica</i>	1	IND

Survey: NETPEN91 Station: PTREF Date: 05/01/91 Sample: PTREF-25

Replicate: 4

--	<i>Amphiodia</i> spp.	26	IND
--	COPEPODA	20	IND
--	<i>Eudorella pacifica</i>	14	IND
--	<i>Mysella tumida</i>	13	IND
--	<i>Levinsenia gracilis</i>	12	IND
--	<i>Pholoe minuta</i>	11	IND
--	<i>Allia ramosa</i>	8	IND
--	<i>Prionopsio minuspio lighti</i>	8	IND
--	Nematoda	7	IND
--	<i>Oligochaeta</i>	7	IND
--	<i>Nephtys cornuta franciscana</i>	5	IND
--	<i>Cossura soyeri</i>	4	IND
--	<i>Heterophoxus oculatus</i>	4	IND
--	<i>Ampelisca</i> sp.	2	IND
--	<i>Euphilomedes producta</i>	2	IND
--	<i>Alvania</i> spp.	1	IND
--	Amphiuridae	1	IND
--	<i>Brada villosa</i>	1	IND
--	<i>Compsomyx subdiaphana</i>	1	IND
--	Decapoda	1	IND
--	<i>Euclymeninae</i> spp.	1	IND
--	<i>Harmothoe lunulata</i>	1	IND
--	<i>Laonice cirrata</i>	1	IND

--	<i>Leptognathia gracilis</i>	1	IND
--	<i>Lumbrineris</i> sp.	1	IND
--	<i>Mediomastus</i> spp.	1	IND
--	<i>Paraprionospio pinnata</i>	1	IND
--	<i>Pinnixa occidentalis</i>	1	IND

Survey: NETPEN91 Station: PTREF Date: 05/01/91 Sample: PTREF-25

Replicate: 5

--	<i>Polydora brachycephala</i>	33	IND
--	<i>Amphiodia</i> spp.	22	IND
--	<i>Pholoe minuta</i>	19	IND
--	<i>Eudorella pacifica</i>	17	IND
--	<i>Levinsenia gracilis</i>	17	IND
--	<i>Mysella tumida</i>	12	IND
--	COPEPODA	10	IND
--	<i>Allia ramosa</i>	8	IND
--	<i>Cossura soyeri</i>	6	IND
--	<i>Nephtys cornuta franciscana</i>	6	IND
--	<i>Oligochaeta</i>	6	IND
--	<i>Lumbrineris</i> sp.	4	IND
--	<i>Prionospio minuspio lighti</i>	4	IND
--	Amphiuridae	3	IND
--	<i>Euphilomedes producta</i>	3	IND
--	<i>Heterophoxus oculatus</i>	3	IND
--	<i>Nucula tenuis</i>	3	IND
--	<i>Acmira lopezi</i>	2	IND
--	Nematoda	2	IND
--	<i>Praxillella affinis pacifica</i>	2	IND
--	<i>Axinopsida serricata</i>	1	IND
--	<i>Mediomastus</i> spp.	1	IND
--	<i>Paranemertes</i> sp.	1	IND
--	<i>Pectinaria granulata</i>	1	IND
--	<i>Spiochaetopterus costarum</i>	1	IND
--	<i>Turbonilla</i> spp.	1	IND

Survey: NETPEN91 Station: PTV1 Date: 05/01/91 Sample: PTV1-1

Replicate: 1

.5MM	<i>Eudorella pacifica</i>	107	IND
.5MM	<i>Euphilomedes producta</i>	49	IND
.5MM	<i>Nephtys cornuta franciscana</i>	32	IND
.5MM	<i>Acesta/Aricidea</i> spp.	27	IND
.5MM	Calanoidea	20	IND
.5MM	<i>Heterophoxus oculatus</i>	19	IND
.5MM	<i>Cossura</i> spp.	12	IND
.5MM	<i>Ampelisca</i> sp.	6	IND
.5MM	<i>Acila castrensis</i>	5	IND
.5MM	<i>Nucula tenuis</i>	5	IND
.5MM	<i>Mysella tumida</i>	4	IND
.5MM	<i>Odostomia</i> spp.	4	IND
.5MM	<i>Pachynus bernardi</i>	3	IND
.5MM	<i>Cumella vulgaris</i>	2	IND
.5MM	<i>Levinsenia gracilis</i>	2	IND
.5MM	Nematoda	2	IND
.5MM	Amphiuridae	1	IND
.5MM	Cylindroleberididae	1	IND
.5MM	<i>Euphilomedes carcharodonta</i>	1	IND

.5MM	Leucon subnasica	1	IND
.5MM	Pholoe minuta	1	IND
1MM	Eudorella pacifica	106	IND
1MM	Amphiodia spp.	46	IND
1MM	Euphilomedes producta	43	IND
1MM	Heterophoxus oculatus	40	IND
1MM	Allia ramosa	15	IND
1MM	Nematoda	15	IND
1MM	Levinsenia gracilis	13	IND
1MM	Acmira lopezi	11	IND
1MM	Axinopsida serricata	8	IND
1MM	Praxillella affinis pacifica	7	IND
1MM	Nephtys cornuta franciscana	6	IND
1MM	Acila castrensis	5	IND
1MM	Alvania spp.	5	IND
1MM	Laonice cirrata	5	IND
1MM	Nucula tenuis	5	IND
1MM	Paraprionospio pinnata	5	IND
1MM	Pholoe minuta	5	IND
1MM	Lumbrineris cruzensis	4	IND
1MM	Mysella tumida	4	IND
1MM	Pinnixa spp.	4	IND
1MM	Ampelisca sp.	3	IND
1MM	Chaetopteridae	3	IND
1MM	Compsomyx subdiaphana	3	IND
1MM	Mediomastus spp.	3	IND
1MM	Odostomia spp.	3	IND
1MM	Parvilucina tenuisculpta	3	IND
1MM	Pectinaria californiensis	3	IND
1MM	Prionospio cirrifera	3	IND
1MM	Ampelisca unsocalae	2	IND
1MM	Amphiuridae	2	IND
1MM	Bittium spp.	2	IND
1MM	Capitella capitata	2	IND
1MM	Drilonereis sp.	2	IND
1MM	Lepidasthenia berkeleyae	2	IND
1MM	Macoma carlottensis	2	IND
1MM	Magelona longicornis	2	IND
1MM	Podarkeopsis glabra	2	IND
1MM	Protomedea prudens	2	IND
1MM	Psephidia lordi	2	IND
1MM	Spiophanes berkeleyorum	2	IND
1MM	Sternaspis fossor	2	IND
1MM	Tharyx spp.	2	IND
1MM	Alia spp.	1	IND
1MM	Arachnida spp.	1	IND
1MM	Caridea	1	IND
1MM	Cylichna attonsa	1	IND
1MM	Decapoda	1	IND
1MM	Diastylis alaskensis	1	IND
1MM	Glycera capitata	1	IND
1MM	Glycinde armigera	1	IND
1MM	Glycinde picta	1	IND
1MM	LANASSA SP. D	1	IND
1MM	Levinsenia oculata	1	IND
1MM	Lumbrineris bicirrata	1	IND

1MM	Lumbrineris luti	1	IND
1MM	Megacrenella columbiana	1	IND
1MM	Oligochaeta	1	IND
1MM	Ophiopholis cf. bakeri	1	IND
1MM	Pandora bilirata	1	IND
1MM	Prionospio steenstrupi	1	IND
1MM	Sphaerodoropsis sphaerulifer	1	IND
1MM	TEREBELLIDES REISHI	1	IND

Survey: NETPEN91 Station: PTV1 Date: 05/01/91 Sample: PTV1-1

Replicate: 2

.5MM	Eudorella pacifica	249	IND
.5MM	Allia ramosa	53	IND
.5MM	Heterophoxus oculatus	50	IND
.5MM	Nephtys cornuta franciscana	43	IND
.5MM	Levinsenia gracilis	42	IND
.5MM	Acmira lopezi	28	IND
.5MM	COPEPODA	20	IND
.5MM	Euphilomedes producta	19	IND
.5MM	Pholoe minuta	18	IND
.5MM	Prionospio steenstrupi	8	IND
.5MM	Amphiuridae	7	IND
.5MM	Cirrophorus branchiatus	7	IND
.5MM	Leptognathia gracilis	7	IND
.5MM	Nematoda	5	IND
.5MM	Prionospio cirrifera	5	IND
.5MM	Acila castrensis	4	IND
.5MM	Ampelisca sp.	4	IND
.5MM	Capitella capitata	4	IND
.5MM	Cossura soyeri	4	IND
.5MM	Decapoda	4	IND
.5MM	Lumbrineris cruzensis	4	IND
.5MM	Nucula tenuis	4	IND
.5MM	Sphaerosyllis spp.	4	IND
.5MM	Tharyx spp.	4	IND
.5MM	Macoma carlottensis	3	IND
.5MM	Mysella tumida	3	IND
.5MM	Odostomia spp.	3	IND
.5MM	Paraonella spp.	3	IND
.5MM	Paraprionospio pinnata	3	IND
.5MM	Podarkeopsis glabra	3	IND
.5MM	Mediomastus spp.	2	IND
.5MM	Ampelisca unsocalae	1	IND
.5MM	Bathyleberis sp.	1	IND
.5MM	Laonice cirrata	1	IND
.5MM	Levinsenia oculata	1	IND
.5MM	Micrura spp.	1	IND
.5MM	Sternaspis fossor	1	IND
.5MM	Turbonilla spp.	1	IND
1MM	Amphiodia spp.	85	IND
1MM	Eudorella pacifica	63	IND
1MM	Nucula tenuis	19	IND
1MM	Heterophoxus oculatus	15	IND
1MM	Acila castrensis	12	IND
1MM	Macoma carlottensis	8	IND
1MM	Mysella tumida	8	IND

1MM	Paraprionospio pinnata	8	IND
1MM	Euphilomedes producta	7	IND
1MM	Nematoda	6	IND
1MM	Prionospio steenstrupi	6	IND
1MM	Axinopsida serricata	5	IND
1MM	Lumbrineris luti	5	IND
1MM	Odostomia spp.	5	IND
1MM	Parvilucina tenuisculpta	5	IND
1MM	Compsomyax subdiaphana	4	IND
1MM	Pholoe minuta	3	IND
1MM	Pinnixa franciscana	3	IND
1MM	Tharyx spp.	3	IND
1MM	Glycinde armigera	2	IND
1MM	Laonice cirrata	2	IND
1MM	Lumbrineris sp.	2	IND
1MM	Sternaspis fossor	2	IND
1MM	TEREBELLIDES REISHI	2	IND
1MM	Acmira lopezi	1	IND
1MM	Allia ramosa	1	IND
1MM	Alvania spp.	1	IND
1MM	Amage anops	1	IND
1MM	Ampelisca hancocki	1	IND
1MM	Ampelisca unsocalae	1	IND
1MM	Ampharete arctica	1	IND
1MM	Artacama coniferi	1	IND
1MM	COPEPODA	1	IND
1MM	Dentalium sp.	1	IND
1MM	Galathowenia nr. G. oculata	1	IND
1MM	Glycinde picta	1	IND
1MM	Heteromastus filiformis	1	IND
1MM	Lepidasthenia berkeleyae	1	IND
1MM	Levinsenia gracilis	1	IND
1MM	Lumbrineris cruzensis	1	IND
1MM	Lyonsia arenosa	1	IND
1MM	Mediomastus spp.	1	IND
1MM	Micrura spp.	1	IND
1MM	Ophelina acuminata	1	IND
1MM	Paranemertes sp.	1	IND
1MM	Spiophanes berkeleyorum	1	IND
1MM	Turbonilla spp.	1	IND
1MM	Yoldia scissurata	1	IND

Survey: NETPEN91 Station: PTV1 Date: 05/01/91 Sample: PTV1-1

Replicate: 3

.5MM	Eudorella pefifica	184	IND
.5MM	Allia ramosa	70	IND
.5MM	Nephtys cornuta franciscana	60	IND
.5MM	Heterophoxus oculatus	44	IND
.5MM	Euphilomedes producta	40	IND
.5MM	Levinsenia gracilis	36	IND
.5MM	Nematoda	36	IND
.5MM	Cossura soyeri	21	IND
.5MM	Acmira lopezi	16	IND
.5MM	Ampelisca sp.	15	IND
.5MM	Leptognathia gracilis	15	IND
.5MM	Paraonella spp.	15	IND

.5MM	Prionospio cirrifera	15	IND
.5MM	COPEPODA	11	IND
.5MM	Nucula tenuis	11	IND
.5MM	Amphiuridae	10	IND
.5MM	Mysella tumida	6	IND
.5MM	Pholoe minuta	6	IND
.5MM	Sphaerodoropsis sphaerulifer	5	IND
.5MM	Mediomastus spp.	4	IND
.5MM	Lumbrineris cruzensis	3	IND
.5MM	Odostomia spp.	3	IND
.5MM	Oligochaeta	3	IND
.5MM	Polinices cf. pallidus	3	IND
.5MM	Prachynella lodo	3	IND
.5MM	Tharyx spp.	3	IND
.5MM	Acila castrensis	2	IND
.5MM	Axinopsida serricata	2	IND
.5MM	Bivalvia	2	IND
.5MM	Cumella sp.	2	IND
.5MM	Harmothoe spp.	2	IND
.5MM	Prionospio steenstrupi	2	IND
.5MM	Byblis spp.	1	IND
.5MM	Levinsenia oculata	1	IND
.5MM	Lumbrineris luti	1	IND
.5MM	Lumbrineris sp.	1	IND
.5MM	Macoma spp.	1	IND
.5MM	Mytilus edulis	1	IND
.5MM	Paleonemertea	1	IND
.5MM	Parvilucina tenuisculpta	1	IND
.5MM	Pilargis berkeleyi	1	IND
.5MM	Podarkeopsis glabra	1	IND
1MM	Amphiodia spp.	100	IND
1MM	Nematoda	84	IND
1MM	Eudorella pacifica	59	IND
1MM	Heterophoxus oculatus	34	IND
1MM	Nucula tenuis	15	IND
1MM	Alvania spp.	9	IND
1MM	Pholoe minuta	9	IND
1MM	Allia ramosa	7	IND
1MM	Axinopsida serricata	7	IND
1MM	Euphilomedes producta	7	IND
1MM	Prionospio steenstrupi	7	IND
1MM	Mysella tumida	6	IND
1MM	Prionospio cirrifera	6	IND
1MM	Acila castrensis	5	IND
1MM	Cossura soyeri	5	IND
1MM	Lumbrineris cruzensis	5	IND
1MM	Macoma carlottensis	5	IND
1MM	Praxillella affinis pacifica	5	IND
1MM	Acmira lopezi	4	IND
1MM	Alia spp.	4	IND
1MM	Paraprionospio pinnata	4	IND
1MM	Parvilucina tenuisculpta	3	IND
1MM	Pinnixa franciscana	3	IND
1MM	Sternaspis fossor	3	IND
1MM	Ampelisca sp.	2	IND
1MM	Bittium spp.	2	IND

1MM	Carinoma spp.	2	IND
1MM	Cylichna attonsa	2	IND
1MM	Laonice cirrata	2	IND
1MM	Levinsenia gracilis	2	IND
1MM	Mediomastus spp.	2	IND
1MM	TEREBELLIDES REISHI	2	IND
1MM	Acanthomysis nephrophthalma	1	IND
1MM	Ampelisca brevisimulata	1	IND
1MM	Aoroides columbiae	1	IND
1MM	Artacama coniferi	1	IND
1MM	Brada villosa	1	IND
1MM	Cardiomya californica	1	IND
1MM	Compsomyax subdiaphana	1	IND
1MM	Drilonereis sp.	1	IND
1MM	Euclymene reticulata	1	IND
1MM	Glycera capitata	1	IND
1MM	Glycinde armigera	1	IND
1MM	Harmothoe spp.	1	IND
1MM	Lumbrineris luti	1	IND
1MM	Macoma elimata	1	IND
1MM	Maldane sarsi	1	IND
1MM	Micrura spp.	1	IND
1MM	Odostomia spp.	1	IND
1MM	Pinnixa occidentalis	1	IND
1MM	Polydora socialis	1	IND
1MM	Psephidia lordi	1	IND
1MM	Yoldia scissurata	1	IND
1MM	Yoldia thraciaeformis	1	IND

Survey: NETPEN91 Station: PTV1 Date: 05/01/91 Sample: PTV1-1

Replicate: 4

.5MM	Eudorella pacifica	411	IND
.5MM	Nephtys cornuta franciscana	63	IND
.5MM	Allia ramosa	41	IND
.5MM	Heterophoxus oculatus	38	IND
.5MM	Euphilomedes producta	25	IND
.5MM	Levinsenia gracilis	20	IND
.5MM	Acmira lopezi	18	IND
.5MM	COPEPODA	12	IND
.5MM	Ampelisca sp.	11	IND
.5MM	Cossura soyeri	11	IND
.5MM	Nematoda	10	IND
.5MM	Amphiuridae	9	IND
.5MM	Pholoe minuta	9	IND
.5MM	Prionospio cirrifera	9	IND
.5MM	Sphaerodoropsis sphaerulifer	9	IND
.5MM	Nucula tenuis	8	IND
.5MM	Leptognathia gracilis	7	IND
.5MM	Mysella tumida	5	IND
.5MM	Prionospio steenstrupi	5	IND
.5MM	Odostomia spp.	4	IND
.5MM	Paraonella spp.	4	IND
.5MM	Acila castrensis	3	IND
.5MM	Alvania spp.	3	IND
.5MM	Bittium spp.	3	IND
.5MM	Cirrophorus branchiatus	3	IND

.5MM	Decapoda	3	IND
.5MM	Cumella sp.	2	IND
.5MM	Dentalium sp.	2	IND
.5MM	Levinsenia oculata	2	IND
.5MM	Mediomastus spp.	2	IND
.5MM	Psephidia lordi	2	IND
.5MM	Ampelisca unsocatae	1	IND
.5MM	Amphiodia spp.	1	IND
.5MM	Axinopsida serricata	1	IND
.5MM	Bathyleberis sp.	1	IND
.5MM	Capitella capitata	1	IND
.5MM	Compsomyax subdiaphana	1	IND
.5MM	Diastylis pellucida	1	IND
.5MM	Euclymeninae spp.	1	IND
.5MM	Margarites spp.	1	IND
.5MM	Ophelina acuminata	1	IND
.5MM	Pachynus barnardi	1	IND
.5MM	Paraprionospio pinnata	1	IND
.5MM	Podarkeopsis glabra	1	IND
.5MM	Prachynella lodo	1	IND
.5MM	Tharyx spp.	1	IND
.5MM	Turbonilla spp.	1	IND
1MM	Eudorella pacifica	74	IND
1MM	Amphiodia spp.	68	IND
1MM	Heterophoxus oculatus	19	IND
1MM	Nucula tenuis	15	IND
1MM	Acila castrensis	9	IND
1MM	Lumbrineris cruzensis	8	IND
1MM	Praxillella affinis pacifica	7	IND
1MM	Axinopsida serricata	6	IND
1MM	Levinsenia gracilis	6	IND
1MM	Mysella tumida	6	IND
1MM	Nematoda	6	IND
1MM	Paraprionospio pinnata	6	IND
1MM	Tharyx spp.	6	IND
1MM	Euphilomedes producta	5	IND
1MM	Odostomia spp.	5	IND
1MM	Prionospio spp.	5	IND
1MM	Alvania spp.	4	IND
1MM	Bittium spp.	4	IND
1MM	Macoma carlottensis	4	IND
1MM	Alia spp.	3	IND
1MM	Allia ramosa	3	IND
1MM	Drilonereis sp.	3	IND
1MM	Laonice cirrata	3	IND
1MM	Acmira lopezi	2	IND
1MM	Ampelisca unsocatae	2	IND
1MM	Lepidasthenia berkeleyae	2	IND
1MM	Nephtys cornuta franciscana	2	IND
1MM	Nephtys ferruginea	2	IND
1MM	Pinnixa spp.	2	IND
1MM	Protomedea prudens	2	IND
1MM	TEREBELLIDES REISHI	2	IND
1MM	Amphiuridae	1	IND
1MM	Brada villosa	1	IND
1MM	Compsomyax subdiaphana	1	IND

1MM	<i>Cucumaria piperata</i>	1	IND
1MM	Cylindroleberididae	1	IND
1MM	Decapoda	1	IND
1MM	<i>Glycera capitata</i>	1	IND
1MM	Lineidae	1	IND
1MM	<i>Lumbrineris luti</i>	1	IND
1MM	<i>Ophelina acuminata</i>	1	IND
1MM	<i>Parvilucina tenuisculpta</i>	1	IND
1MM	<i>Pholoe minuta</i>	1	IND
1MM	<i>Praxillella gracilis</i>	1	IND
1MM	<i>Psephidia lordi</i>	1	IND
1MM	<i>Sternaspis fossor</i>	1	IND
1MM	<i>Tenonia kitsapensis</i>	1	IND
1MM	<i>Terebellides stroemi</i>	1	IND
1MM	<i>Tubulanus</i> spp.	1	IND
1MM	<i>Westwoodilla caecula</i>	1	IND
1MM	<i>Yoldia scissurata</i>	1	IND

Survey: NETPEN91 Station: PTV1 Date: 05/01/91 Sample: PTV1-1

Replicate: 5

.5MM	<i>Eudorella pacifica</i>	274	IND
.5MM	<i>Heterophoxus oculatus</i>	57	IND
.5MM	<i>Allia ramosa</i>	56	IND
.5MM	<i>Nephtys cornuta franciscana</i>	53	IND
.5MM	<i>Euphilomedes producta</i>	38	IND
.5MM	<i>Levinsenia gracilis</i>	30	IND
.5MM	<i>Acmira lopezi</i>	16	IND
.5MM	<i>Pholoe minuta</i>	16	IND
.5MM	<i>Odostomia</i> spp.	13	IND
.5MM	<i>Paraonella</i> spp.	11	IND
.5MM	Amphiuridae	8	IND
.5MM	<i>Cossura soyeri</i>	8	IND
.5MM	<i>Leptochelia savignyi</i>	8	IND
.5MM	Nematoda	8	IND
.5MM	<i>Nucula tenuis</i>	8	IND
.5MM	<i>Levinsenia oculata</i>	7	IND
.5MM	<i>Acila castrensis</i>	6	IND
.5MM	Calanoidea	6	IND
.5MM	<i>Prionospio cirrifera</i>	6	IND
.5MM	<i>Mysella tumida</i>	5	IND
.5MM	<i>Sphaerodoropsis sphaerulifer</i>	5	IND
.5MM	<i>Tharyx</i> spp.	5	IND
.5MM	<i>Mediomastus</i> spp.	4	IND
.5MM	<i>Lumbrineris cruzensis</i>	3	IND
.5MM	Oligochaeta	3	IND
.5MM	<i>Prionospio steenstrupi</i>	3	IND
.5MM	<i>Psephidia lordi</i>	3	IND
.5MM	<i>Turbonilla</i> spp.	3	IND
.5MM	<i>Ampelisca</i> sp.	2	IND
.5MM	Axinopsida serricata	2	IND
.5MM	Bivalvia	2	IND
.5MM	<i>Cirrophorus branchiatus</i>	2	IND
.5MM	<i>Dentalium</i> sp.	2	IND
.5MM	Euclymeninae spp.	2	IND
.5MM	<i>Capitella capitata</i>	1	IND
.5MM	Cylindroleberididae	1	IND

.5MM	Decapoda	1	IND
.5MM	Diastylis alaskensis	1	IND
.5MM	Lineidae	1	IND
.5MM	Lyonsia arenosa	1	IND
.5MM	Maldane sarsi	1	IND
.5MM	Paraprionospio pinnata	1	IND
.5MM	Pilargis berkeleyi	1	IND
.5MM	Sternaspis fossor	1	IND
1MM	Nematoda	74	IND
1MM	Eudorella pacifica	70	IND
1MM	Amphiodia spp.	63	IND
1MM	Maldane sarsi	30	IND
1MM	Acila castrensis	25	IND
1MM	Heterophoxus oculatus	17	IND
1MM	Axinopsida serricata	16	IND
1MM	Euphilomedes producta	14	IND
1MM	Nucula tenuis	11	IND
1MM	Mysella tumida	10	IND
1MM	Sternaspis fossor	8	IND
1MM	Praxillella affinis pacifica	6	IND
1MM	Tharyx spp.	6	IND
1MM	Alvania spp.	4	IND
1MM	Cossura soyeri	4	IND
1MM	Laonice cirrata	4	IND
1MM	Acmira lopezi	3	IND
1MM	Balanus sp.	3	IND
1MM	Dentalium sp.	3	IND
1MM	Lepidasthenia berkeleyae	3	IND
1MM	Parvilucina tenuisculpta	3	IND
1MM	Pholoe minuta	3	IND
1MM	Alia spp.	2	IND
1MM	Drilonereis sp.	2	IND
1MM	Levinsenia gracilis	2	IND
1MM	Lumbrineris sp.	2	IND
1MM	Odostomia spp.	2	IND
1MM	Protomedeia spp.	2	IND
1MM	TEREBELLIDES REISHI	2	IND
1MM	Turbonilla spp.	2	IND
1MM	Allia ramosa	1	IND
1MM	Ampelisca sp.	1	IND
1MM	Cirrophorus branchiatus	1	IND
1MM	Compsomyx subdiaphana	1	IND
1MM	Decapoda	1	IND
1MM	Euclymene reticulata	1	IND
1MM	Glycera capitata	1	IND
1MM	Hirudinea	1	IND
1MM	Levinsenia oculata	1	IND
1MM	Lucinoma acutilineata	1	IND
1MM	Lumbrineris bicirrata	1	IND
1MM	Lumbrineris luti	1	IND
1MM	Macoma spp.	1	IND
1MM	Monoculodes simplex	1	IND
1MM	Nephtys cornuta franciscana	1	IND
1MM	Nephtys ferruginea	1	IND
1MM	Paraonella spp.	1	IND
1MM	Paraprionospio pinnata	1	IND

1MM	<i>Pinnixa occidentalis</i>	1 IND
1MM	<i>Pista</i> spp.	1 IND
1MM	<i>Podarkeopsis glabra</i>	1 IND
1MM	<i>Prachynella lodo</i>	1 IND
1MM	<i>Prionospio steenstrupi</i>	1 IND
1MM	<i>Psephidia lordi</i>	1 IND

Survey: NETPEN91 Station: PTV1 Date: 05/01/91 Sample: PTV1-25

Replicate: 1

--	<i>Heterophoxus oculatus</i>	70 IND
--	<i>Amphiodia</i> spp.	20 IND
--	<i>Levinsenia gracilis</i>	12 IND
--	<i>Nephtys cornuta franciscana</i>	10 IND
--	<i>Allia ramosa</i>	9 IND
--	Nematoda	7 IND
--	<i>Cossura soyeri</i>	6 IND
--	<i>Euphilomedes producta</i>	6 IND
--	<i>Oligochaeta</i>	5 IND
--	<i>Acmira lopezi</i>	4 IND
--	COPEPODA	4 IND
--	<i>Laonice cirrata</i>	4 IND
--	<i>Pholoe minuta</i>	4 IND
--	<i>Ampelisca</i> sp.	3 IND
--	<i>Compsomyax subdiaphana</i>	3 IND
--	<i>Lumbrineris</i> sp.	3 IND
--	<i>Paraonella</i> spp.	3 IND
--	<i>Polydora</i> spp.	3 IND
--	<i>Prionospio cirrifera</i>	3 IND
--	<i>Prionospio steenstrupi</i>	3 IND
--	<i>Tharyx</i> spp.	3 IND
--	Amphiuridae	2 IND
--	<i>Axinopsida serricata</i>	2 IND
--	<i>Nucula tenuis</i>	2 IND
--	<i>Odostomia</i> spp.	2 IND
--	ACMIRA CERRUTII	1 IND
--	<i>Acila castrensis</i>	1 IND
--	<i>Alvania</i> spp.	1 IND
--	<i>Amage anops</i>	1 IND
--	<i>Capitella capitata</i>	1 IND
--	<i>Euclymeninae</i> spp.	1 IND
--	<i>Leptognathia gracilis</i>	1 IND
--	<i>Lucinoma acutilineata</i>	1 IND
--	<i>Mysella tumida</i>	1 IND
--	<i>Polycirrus californicus</i>	1 IND

Survey: NETPEN91 Station: PTV1 Date: 05/01/91 Sample: PTV1-25

Replicate: 2

--	<i>Eudorella pacifica</i>	34 IND
--	<i>Cossura soyeri</i>	21 IND
--	<i>Allia ramosa</i>	15 IND
--	<i>Amphiodia</i> spp.	15 IND
--	<i>Nephtys cornuta franciscana</i>	14 IND
--	<i>Bivalvia</i>	11 IND
--	<i>Nucula tenuis</i>	10 IND
--	<i>Heterophoxus oculatus</i>	9 IND
--	<i>Prionospio steenstrupi</i>	9 IND

-- Calanoida	8	IND
-- Prionospio minuspio lighti	8	IND
-- Euphilomedes producta	7	IND
-- Levinsenia gracilis	6	IND
-- Nematoda	5	IND
-- Pholoe minuta	5	IND
-- Acmira lopezi	4	IND
-- Acila castrensis	3	IND
-- Decapoda	3	IND
-- Tharyx spp.	3	IND
-- Ampelisca sp.	2	IND
-- Amphiuridae	2	IND
-- Mediomastus spp.	2	IND
-- Mysella tumida	2	IND
-- Odostomia spp.	2	IND
-- Oligochaeta	2	IND
-- Paraonella spp.	2	IND
-- Paraprionospio pinnata	2	IND
-- Pista spp.	2	IND
-- Praxillella affinis pacifica	2	IND
-- Sphaerodoropsis sphaerulifer	2	IND
-- Bittium spp.	1	IND
-- Dyopedos spp.	1	IND
-- Glycinde armigera	1	IND
-- Laonice spp.	1	IND
-- Lumbrineris sp.	1	IND
-- Macoma carlottensis	1	IND
-- Platynereis bicanaliculata	1	IND
-- Polycirrus spp.	1	IND
-- Psephidia lordi	1	IND
-- Sternaspis scutata	1	IND
-- TEREBELLIDES REISHI	1	IND
-- Yoldia thraciaeformis	1	IND

Survey: NETPEN91 Station: PTV1 Date: 05/01/91 Sample: PTV1-25

Replicate: 3

-- Eudorella pacifica	65	IND
-- Nematoda	32	IND
-- Allia ramosa	20	IND
-- Cossura soyeri	17	IND
-- Nephtys cornuta franciscana	15	IND
-- Amphiodia spp.	14	IND
-- Heterophoxus oculatus	11	IND
-- Euphilomedes producta	10	IND
-- Oligochaeta	10	IND
-- Acmira lopezi	8	IND
-- Mysella tumida	8	IND
-- Nucula tenuis	8	IND
-- COPEPODA	7	IND
-- Levinsenia gracilis	7	IND
-- Prionospio minuspio lighti	7	IND
-- Leptognathia gracilis	5	IND
-- Prionospio steenstrupi	4	IND
-- Macoma carlottensis	3	IND
-- Acila castrensis	2	IND
-- Alvania spp.	2	IND

--	<i>Ampelisca</i> sp.	2	IND
--	<i>Axinopsida</i> <i>serricata</i>	2	IND
--	<i>Mediomastus</i> spp.	2	IND
--	<i>Odostomia</i> spp.	2	IND
--	<i>Paraonella</i> spp.	2	IND
--	<i>Praxillella</i> <i>affinis pacifica</i>	2	IND
--	<i>Sphaerodoropsis</i> <i>sphaerulifer</i>	2	IND
--	<i>Tharyx</i> spp.	2	IND
--	Amphiuridae	1	IND
--	<i>Cirrophorus</i> <i>branchiatus</i>	1	IND
--	Decapoda	1	IND
--	<i>Dentalium</i> sp.	1	IND
--	<i>Euclymene</i> <i>reticulata</i>	1	IND
--	Euclymeninae spp.	1	IND
--	<i>Laonice</i> spp.	1	IND
--	<i>Lepidasthenia</i> <i>berkeleyae</i>	1	IND
--	<i>Nephtys</i> <i>ferruginea</i>	1	IND
--	<i>Paraprionospio</i> <i>pinnata</i>	1	IND
--	<i>Pinnixa</i> <i>franciscana</i>	1	IND
--	<i>Podarkeopsis</i> <i>glabra</i>	1	IND
--	<i>Protomedeia</i> <i>articulata</i>	1	IND
--	<i>Sternaspis</i> <i>scutata</i>	1	IND
--	<i>Sthenelais</i> <i>tertiaglabra</i>	1	IND
--	TEREBELLIDES REISHI	1	IND

Survey: NETPEN91 Station: PTV1 Date: 05/01/91 Sample: PTV1-25

Replicate: 4

--	<i>Eudorella</i> <i>pacifica</i>	25	IND
--	Nematoda	15	IND
--	Amphiodia spp.	13	IND
--	<i>Prionospio</i> <i>minuspio lighti</i>	11	IND
--	COPEPODA	9	IND
--	<i>Euphilomedes</i> <i>producta</i>	6	IND
--	<i>Allia</i> <i>ramosa</i>	5	IND
--	<i>Levinsenia</i> <i>gracilis</i>	5	IND
--	<i>Heterophoxus</i> <i>oculatus</i>	4	IND
--	<i>Protomedeia</i> <i>articulata</i>	4	IND
--	<i>Acila</i> <i>castrensis</i>	3	IND
--	<i>Acmira</i> <i>lopezi</i>	2	IND
--	Decapoda	2	IND
--	<i>Mysella</i> <i>tumida</i>	2	IND
--	<i>Nucula</i> <i>tenuis</i>	2	IND
--	<i>Pholoe</i> <i>glabra</i>	2	IND
--	<i>Polydora</i> <i>socialis</i>	2	IND
--	<i>Ampelisca</i> sp.	1	IND
--	<i>Axinopsida</i> <i>serricata</i>	1	IND
--	<i>Cossura</i> <i>soyeri</i>	1	IND
--	<i>Lumbrineris</i> <i>luti</i>	1	IND
--	<i>Macoma</i> <i>carlottensis</i>	1	IND
--	<i>Nephtys</i> <i>cornuta franciscana</i>	1	IND
--	<i>Odostomia</i> spp.	1	IND
--	<i>Paraonella</i> spp.	1	IND
--	<i>Paraprionospio</i> <i>pinnata</i>	1	IND
--	<i>Pista</i> spp.	1	IND
--	<i>Praxillella</i> <i>affinis pacifica</i>	1	IND
--	<i>Sternaspis</i> <i>scutata</i>	1	IND

Survey: NETPEN91 Station: PTV1 Date: 05/01/91 Sample: PTV1-25

Replicate: 5

-- Eudorella pacifica	66 IND
-- Allia ramosa	18 IND
-- COPEPODA	15 IND
-- Nematoda	15 IND
-- Heterophoxus oculatus	13 IND
-- Amphiodia spp.	11 IND
-- Euphilomedes producta	10 IND
-- Levinsenia gracilis	8 IND
-- Nephtys cornuta franciscana	8 IND
-- Nucula tenuis	7 IND
-- Mysella tumida	6 IND
-- Mediomastus spp.	5 IND
-- Acmira lopezi	4 IND
-- Axinopsida serricata	4 IND
-- Lumbrineris sp.	4 IND
-- Acila castrensis	3 IND
-- Cossura soyeri	3 IND
-- Prionospio minuspio lighti	3 IND
-- Lepidasthenia berkeleyae	2 IND
-- Oligochaeta	2 IND
-- Paraprionospio pinnata	2 IND
-- Parvilucina tenuisculpta	2 IND
-- Alvania spp.	1 IND
-- Amphiuridae	1 IND
-- Compsomyax subdiaphana	1 IND
-- Decapoda	1 IND
-- Laonice cirrata	1 IND
-- Lysilla loveni	1 IND
-- Microspio pigmentata	1 IND
-- Pholoe glabra	1 IND
-- Praxillella affinis pacifica	1 IND
-- Prionospio steenstrupi	1 IND
-- Sphaerodoropsis sphaerulifer	1 IND
-- TEREBELLIDES REISHI	1 IND
-- Tharyx spp.	1 IND
-- Tubularanus spp.	1 IND

Survey: NETPEN91 Station: PTV2 Date: 05/02/91 Sample: PTV2-1

Replicate: 1

.5MM Eudorella pacifica	246 IND
.5MM Nephtys cornuta franciscana	85 IND
.5MM Allia ramosa	70 IND
.5MM Levinsenia gracilis	47 IND
.5MM Heterophoxus oculatus	32 IND
.5MM Euphilomedes producta	27 IND
.5MM Pholoe minuta	26 IND
.5MM COPEPODA	24 IND
.5MM Prionospio cirrifera	24 IND
.5MM Acmira lopezi	23 IND
.5MM Nucula tenuis	9 IND
.5MM Levinsenia spp.	8 IND
.5MM Decapoda	7 IND
.5MM Sphaerodoropsis sphaerulifer	7 IND

.5MM	Cossura soyeri	6	IND
.5MM	Mysella tumida	6	IND
.5MM	Paraonella spp.	6	IND
.5MM	Podarkeopsis glabra	6	IND
.5MM	Ampelisca sp.	5	IND
.5MM	Lumbrineris cruzensis	5	IND
.5MM	Nematoda	5	IND
.5MM	Prionospio steenstrupi	5	IND
.5MM	Alvania spp.	4	IND
.5MM	Amphiuridae	3	IND
.5MM	Axinopsida serricata	3	IND
.5MM	Monoculodes spp.	3	IND
.5MM	Protomedea articulata	3	IND
.5MM	Tharyx spp.	3	IND
.5MM	Cirrophorus branchiatus	2	IND
.5MM	Euclymeninae spp.	2	IND
.5MM	Lumbrineris sp.	2	IND
.5MM	Acila castrensis	1	IND
.5MM	Cumella sp.	1	IND
.5MM	Glycinde picta	1	IND
.5MM	Hyperiidae	1	IND
.5MM	Insecta	1	IND
.5MM	Ischyrocerus anguipes	1	IND
.5MM	Laonice cirrata	1	IND
.5MM	Lepidasthenia berkeleyae	1	IND
.5MM	Macoma spp.	1	IND
.5MM	Mediomastus spp.	1	IND
.5MM	Odostomia spp.	1	IND
.5MM	Ophelina acuminata	1	IND
.5MM	Parvilucina tenuisculpta	1	IND
.5MM	Phyllodoce (Aponaitides) hartmanae	1	IND
.5MM	Pleurogonium californiense	1	IND
.5MM	Psephidia lordi	1	IND
.5MM	Spiophanes berkeleyorum	1	IND
.5MM	Turbonilla spp.	1	IND
1MM	Amphiodia spp.	100	IND
1MM	Eudorella pacifica	71	IND
1MM	Heterophoxus oculatus	25	IND
1MM	Nematoda	23	IND
1MM	Pinnixa franciscana	15	IND
1MM	Nucula tenuis	13	IND
1MM	Euphilomedes producta	10	IND
1MM	Praxillella affinis pacifica	10	IND
1MM	Alvania spp.	9	IND
1MM	Paraprionospio pinnata	8	IND
1MM	Acmira lopezi	7	IND
1MM	Mysella tumida	7	IND
1MM	TEREBELLIDES REISHI	7	IND
1MM	Laonice cirrata	6	IND
1MM	Parvilucina tenuisculpta	6	IND
1MM	Acila castrensis	4	IND
1MM	Axinopsida serricata	4	IND
1MM	Cylichna attonsa	4	IND
1MM	Maldane sarsi	4	IND
1MM	Ophelina acuminata	4	IND
1MM	Pholoe minuta	4	IND

1MM	Lumbrineris cruzensis	3	IND
1MM	Prionospio steenstrupi	3	IND
1MM	Tharyx spp.	3	IND
1MM	Compsomyax subdiaphana	2	IND
1MM	Heteromastus filiformis	2	IND
1MM	Lumbrineris sp.	2	IND
1MM	Pinnixa spp.	2	IND
1MM	Polydora socialis	2	IND
1MM	Tubulanus spp.	2	IND
1MM	Turbonilla spp.	2	IND
1MM	Alia spp.	1	IND
1MM	Allia ramosa	1	IND
1MM	Balanus sp.	1	IND
1MM	Brada pleuribranchiata	1	IND
1MM	COPEPODA	1	IND
1MM	Corambe pacifica	1	IND
1MM	Enteropneusta	1	IND
1MM	Galathowenia nr. G. oculata	1	IND
1MM	Glycinde picta	1	IND
1MM	Jassa spp.	1	IND
1MM	Lepidasthenia berkeleyae	1	IND
1MM	Levinsenia oculata	1	IND
1MM	Lumbrineris luti	1	IND
1MM	Macoma yoldiformis	1	IND
1MM	Myriochele gracilis	1	IND
1MM	Nephtys cornuta franciscana	1	IND
1MM	Onuphis spp.	1	IND
1MM	Pandora bilirata	1	IND
1MM	Pinnixa occidentalis	1	IND
1MM	Podarkeopsis glabra	1	IND
1MM	Polinices pallida	1	IND
1MM	Prionospio cirrifera	1	IND
1MM	Protomedeia articulata	1	IND
1MM	Psephidia lordi	1	IND
1MM	Sternaspis fossor	1	IND
1MM	Yoldia scissurata	1	IND

Survey: NETPEN91 Station: PTV2 Date: 05/02/91 Sample: PTV2-1

Replicate: 2

.5MM	Eudorella pacifica	243	IND
.5MM	Allia ramosa	59	IND
.5MM	Nephtys cornuta franciscana	49	IND
.5MM	Heterophoxus oculatus	34	IND
.5MM	Acmira lopezi	21	IND
.5MM	Levinsenia gracilis	20	IND
.5MM	Pholoe minuta	20	IND
.5MM	Nucula tenuis	19	IND
.5MM	Prionospio cirrifera	19	IND
.5MM	COPEPODA	17	IND
.5MM	Euphilomedes producta	14	IND
.5MM	Bivalvia	13	IND
.5MM	Mysella tumida	13	IND
.5MM	Sphaerodoropsis sphaerulifer	9	IND
.5MM	Prionospio steenstrupi	8	IND
.5MM	Protomedeia articulata	8	IND
.5MM	Amphiuridae	7	IND

.5MM	Decapoda	7	IND
.5MM	Ampelisca sp.	6	IND
.5MM	Paraonella spp.	5	IND
.5MM	Cossura soyeri	4	IND
.5MM	Lumbrineris cruzensis	4	IND
.5MM	Lumbrineris sp.	3	IND
.5MM	Psephidia lordi	3	IND
.5MM	Turbonilla spp.	3	IND
.5MM	Acila castrensis	2	IND
.5MM	Alvania spp.	2	IND
.5MM	Bittium spp.	2	IND
.5MM	Cirrophorus branchiatus	2	IND
.5MM	Macoma carlottensis	2	IND
.5MM	Macoma spp.	2	IND
.5MM	Nematoda	2	IND
.5MM	Odostomia spp.	2	IND
.5MM	Pleurogonium rubicundum	2	IND
.5MM	Aoroides columbiae	1	IND
.5MM	Axinopsida serricata	1	IND
.5MM	Brada villosa	1	IND
.5MM	Capitella capitata	1	IND
.5MM	Caprella sp.	1	IND
.5MM	Glycinde picta	1	IND
.5MM	Laonice cirrata	1	IND
.5MM	Myriochele gracilis	1	IND
.5MM	Pachynus barnardi	1	IND
.5MM	Parvilucina tenuisculpta	1	IND
.5MM	Spiophanes berkeleyorum	1	IND
.5MM	TEREBELLIDES REISHI	1	IND
.5MM	Tellina modesta	1	IND
.5MM	Tharyx spp.	1	IND
1MM	Amphiodia spp.	79	IND
1MM	Nematoda	52	IND
1MM	Eudorella pacifica	38	IND
1MM	Heterophoxus oculatus	36	IND
1MM	Maldane sarsi	17	IND
1MM	Alvania spp.	13	IND
1MM	Nucula tenuis	11	IND
1MM	Acmira lopezi	9	IND
1MM	Mysella tumida	9	IND
1MM	Pinnixa franciscana	9	IND
1MM	Acila castrensis	7	IND
1MM	Allia ramosa	7	IND
1MM	Euphilomedes producta	7	IND
1MM	Prionospio cirrifera	7	IND
1MM	Bittium spp.	5	IND
1MM	Laonice cirrata	5	IND
1MM	Parvilucina tenuisculpta	4	IND
1MM	Pholoe minuta	4	IND
1MM	Psephidia lordi	4	IND
1MM	Alia spp.	3	IND
1MM	Levinsenia gracilis	3	IND
1MM	Ophelina acuminata	3	IND
1MM	Tharyx spp.	3	IND
1MM	Compsomyx subdiaphana	2	IND
1MM	Euclymene reticulata	2	IND

1MM	Heteromastus filobranchus	2	IND
1MM	Macoma carlottensis	2	IND
1MM	Protomedeia articulata	2	IND
1MM	Sternaspis fossor	2	IND
1MM	Axinopsida serricata	1	IND
1MM	Bivalvia	1	IND
1MM	Cerebratulus spp.	1	IND
1MM	Cylichna attonsa	1	IND
1MM	Galathowenia nr. G. oculata	1	IND
1MM	Harmothoe spp.	1	IND
1MM	Lumbrineris bicirrata	1	IND
1MM	Lumbrineris cruzensis	1	IND
1MM	Mediomastus spp.	1	IND
1MM	Metaphoxus frequens	1	IND
1MM	Monoculodes norvegicus	1	IND
1MM	Pagurus spp.	1	IND
1MM	Pandora bilirata	1	IND
1MM	Pista spp.	1	IND
1MM	Podarkeopsis glabra	1	IND
1MM	Polycirrus californicus	1	IND
1MM	Praxillella affinis pacifica	1	IND
1MM	Prionospio steenstrupi	1	IND
1MM	Spiophanes berkeleyorum	1	IND
1MM	TEREBELLIDES REISHI	1	IND
1MM	Tubulanus spp.	1	IND
1MM	Westwoodilla caecula	1	IND

Survey: NETPEN91 Station: PTV2 Date: 05/02/91 Sample: PTV2-1

Replicate: 3

.5MM	Eudorella pacifica	127	IND
.5MM	Allia ramosa	66	IND
.5MM	Nephtys cornuta franciscana	52	IND
.5MM	Heterophoxus oculatus	29	IND
.5MM	Acmira lopezi	28	IND
.5MM	Euphilomedes producta	23	IND
.5MM	COPEPODA	21	IND
.5MM	Prionospio cirrifera	19	IND
.5MM	Pholoe minuta	17	IND
.5MM	Mysella tumida	16	IND
.5MM	Levinsenia gracilis	15	IND
.5MM	Prionospio steenstrupi	12	IND
.5MM	Ampelisca sp.	9	IND
.5MM	Alvania spp.	8	IND
.5MM	Sphaerodoropsis sphaerulifer	8	IND
.5MM	Amphiuridae	7	IND
.5MM	Acila castrensis	6	IND
.5MM	Nucula tenuis	6	IND
.5MM	Paraonella spp.	6	IND
.5MM	Cirrophorus branchiatus	4	IND
.5MM	Cossura soyeri	3	IND
.5MM	Decapoda	3	IND
.5MM	Glycinde picta	3	IND
.5MM	Lumbrineris cruzensis	3	IND
.5MM	Paranemertes sp.	3	IND
.5MM	Podarkeopsis glabra	3	IND
.5MM	Nematoda	2	IND

.5MM	<i>Psephidia lordi</i>	2	IND
.5MM	<i>Tharyx</i> spp.	2	IND
.5MM	<i>Aoroides columbiae</i>	1	IND
.5MM	<i>Bittium</i> spp.	1	IND
.5MM	<i>Levinsenia oculata</i>	1	IND
.5MM	<i>Modiolus</i> spp.	1	IND
.5MM	<i>Nephtys ferruginea</i>	1	IND
.5MM	<i>Ophiodromus pugettensis</i>	1	IND
.5MM	<i>Pachynus barnardi</i>	1	IND
.5MM	<i>Paraprionospio pinnata</i>	1	IND
.5MM	<i>Parvilucina tenuisculpta</i>	1	IND
.5MM	<i>Turbonilla</i> spp.	1	IND
1MM	<i>Amphiodia</i> spp.	54	IND
1MM	<i>Heterophoxus oculatus</i>	30	IND
1MM	<i>Eudorella pacifica</i>	28	IND
1MM	<i>Alvania</i> spp.	23	IND
1MM	<i>Pinnixa franciscana</i>	20	IND
1MM	Nematoda	17	IND
1MM	<i>Axinopsida serricata</i>	16	IND
1MM	<i>Praxillella affinis pacifica</i>	12	IND
1MM	<i>Nucula tenuis</i>	10	IND
1MM	<i>Allia ramosa</i>	9	IND
1MM	<i>Lumbrineris cruzensis</i>	9	IND
1MM	TEREBELLIDES REISHI	9	IND
1MM	<i>Macoma carlottensis</i>	8	IND
1MM	<i>Bittium</i> spp.	7	IND
1MM	<i>Paraprionospio pinnata</i>	7	IND
1MM	<i>Acmira lopezi</i>	6	IND
1MM	<i>Acila castrensis</i>	5	IND
1MM	<i>Levinsenia gracilis</i>	5	IND
1MM	<i>Lumbrineris luti</i>	5	IND
1MM	<i>Mysella tumida</i>	5	IND
1MM	<i>Prionospio cirrifera</i>	5	IND
1MM	<i>Euphilomedes producta</i>	4	IND
1MM	<i>Psephidia lordi</i>	4	IND
1MM	<i>Sternaspis fossor</i>	4	IND
1MM	<i>Cirrophorus branchiatus</i>	3	IND
1MM	<i>Compsomyx subdiaphana</i>	3	IND
1MM	<i>Euclymene reticulata</i>	3	IND
1MM	<i>Laonice cirrata</i>	3	IND
1MM	<i>Maldane sarsi</i>	3	IND
1MM	<i>Heteromastus filiformis</i>	2	IND
1MM	<i>Ophelina acuminata</i>	2	IND
1MM	<i>Prionospio steenstrupi</i>	2	IND
1MM	<i>Protomedeia articulata</i>	2	IND
1MM	<i>Adontorhina cyclica</i>	1	IND
1MM	<i>Alia</i> spp.	1	IND
1MM	<i>Ampelisca</i> sp.	1	IND
1MM	<i>Cylichna attonsa</i>	1	IND
1MM	<i>Dentalium</i> sp.	1	IND
1MM	<i>Diopatra ornata</i>	1	IND
1MM	<i>Glycera americana</i>	1	IND
1MM	<i>Glycinde picta</i>	1	IND
1MM	LANASSA SP. D	1	IND
1MM	<i>Lepidasthenia berkeleyae</i>	1	IND
1MM	<i>Lucinoma acutilineata</i>	1	IND

1MM	Lyonsia arenosa	1	IND
1MM	Macoma yoldiformis	1	IND
1MM	Nephtys ferruginea	1	IND
1MM	Nereis procera	1	IND
1MM	Odostomia spp.	1	IND
1MM	Parvilucina tenuisculpta	1	IND
1MM	Pholoe minuta	1	IND
1MM	Pinnixa occidentalis	1	IND
1MM	Pista spp.	1	IND
1MM	Podarkeopsis glabra	1	IND
1MM	Protomedeia grandimena	1	IND
1MM	Protomedeia prudens	1	IND
1MM	Tharyx spp.	1	IND
1MM	Thyasira flexuosa	1	IND
1MM	Turbonilla spp.	1	IND

Survey: NETPEN91 Station: PTV2 Date: 05/02/91 Sample: PTV2-1

Replicate: 4

.5MM	Eudorella pacifica	240	IND
.5MM	Allia ramosa	52	IND
.5MM	Nephtys cornuta franciscana	34	IND
.5MM	Heterophoxus oculatus	33	IND
.5MM	Acmira lopezi	27	IND
.5MM	Euphilomedes producta	26	IND
.5MM	Levinsenia gracilis	26	IND
.5MM	Prionospio cirrifera	25	IND
.5MM	Aoroides columbiae	16	IND
.5MM	Pholoe minuta	15	IND
.5MM	COPEPODA	14	IND
.5MM	Oraderea	13	IND
.5MM	Ampelisca sp.	9	IND
.5MM	Sphaerodoropsis sphaerulifer	9	IND
.5MM	Decapoda	7	IND
.5MM	Tharyx spp.	7	IND
.5MM	Amphiuridae	6	IND
.5MM	Cossura soyeri	6	IND
.5MM	Paraonella spp.	6	IND
.5MM	Lumbrineris cruzensis	4	IND
.5MM	Amphiodia spp.	3	IND
.5MM	Podarkeopsis glabra	3	IND
.5MM	Cirrophorus branchiatus	2	IND
.5MM	Euclymeninae spp.	2	IND
.5MM	Glycinde picta	2	IND
.5MM	Levinsenia oculata	2	IND
.5MM	Nematoda	2	IND
.5MM	Prionospio steenstrupi	2	IND
.5MM	Brada villosa	1	IND
.5MM	Idotea (Pentidotea) montereyensis	1	IND
.5MM	Ischyrocercus anguipes	1	IND
.5MM	Laonice cirrata	1	IND
.5MM	Lumbrineris sp.	1	IND
.5MM	Mediomastus spp.	1	IND
.5MM	Oligochaeta	1	IND
.5MM	Ophelina acuminata	1	IND
.5MM	Paleonotus bellis	1	IND
.5MM	Paraprionospio pinnata	1	IND

.5MM	TEREBELLIDES REISHI	1	IND
1MM	Nematoda	33	IND
1MM	Eudorella pacifica	32	IND
1MM	Heterophoxus oculatus	28	IND
1MM	Pinnixa spp.	15	IND
1MM	Alvania spp.	13	IND
1MM	Axinopsida serricata	7	IND
1MM	Mysella tumida	7	IND
1MM	Nucula tenuis	7	IND
1MM	Paraprionospio pinnata	7	IND
1MM	Pholoe minuta	7	IND
1MM	Allia ramosa	6	IND
1MM	TEREBELLIDES REISHI	6	IND
1MM	Euphilomedes producta	5	IND
1MM	Parvilucina tenuisculpta	4	IND
1MM	Praxillella affinis pacifica	4	IND
1MM	Prionospio steenstrupi	4	IND
1MM	Acmira lopezi	3	IND
1MM	Bittium spp.	3	IND
1MM	Lumbrineris cruzensis	3	IND
1MM	Macoma carlottensis	3	IND
1MM	Pontogeneia rostrata	3	IND
1MM	Psephidia lordi	3	IND
1MM	Sternaspis fossor	3	IND
1MM	Acila castrensis	2	IND
1MM	Cossura soyeri	2	IND
1MM	Laonice cirrata	2	IND
1MM	Lumbrineris luti	2	IND
1MM	Lumbrineris sp.	2	IND
1MM	Prionospio cirrifera	2	IND
1MM	Protomedea prudens	2	IND
1MM	Tharyx spp.	2	IND
1MM	Ampelisca unsocalae	1	IND
1MM	Capitellidae	1	IND
1MM	Cardiomya californica	1	IND
1MM	Cirrophorus branchiatus	1	IND
1MM	Compsomyx subdiaphana	1	IND
1MM	Diopatra ornata	1	IND
1MM	Drilonereis sp.	1	IND
1MM	Galathowenia nr. G. oculata	1	IND
1MM	Glycera capitata	1	IND
1MM	Lepidasthenia berkeleyae	1	IND
1MM	Levinsenia gracilis	1	IND
1MM	Magelona longicornis	1	IND
1MM	Mediomastus spp.	1	IND
1MM	Nephtys cornuta franciscana	1	IND
1MM	Onuphis spp.	1	IND
1MM	Platynereis bicanaliculata	1	IND
1MM	Polydora socialis	1	IND
1MM	Yoldia scissurata	1	IND

Survey: NETPEN91 Station: PTV2 Date: 05/02/91 Sample: PTV2-1

Replicate: 5

.5MM	Eudorella pacifica	146	IND
.5MM	Allia ramosa	52	IND
.5MM	Heterophoxus oculatus	25	IND

.5MM	<i>Acmira lopezi</i>	22	IND
.5MM	<i>Nephtys cornuta franciscana</i>	21	IND
.5MM	<i>Prionospio cirrifera</i>	21	IND
.5MM	<i>Levinsenia gracilis</i>	17	IND
.5MM	COPEPODA	16	IND
.5MM	<i>Cossura soyeri</i>	15	IND
.5MM	<i>Paraonella</i> spp.	14	IND
.5MM	<i>Pholoe minuta</i>	13	IND
.5MM	<i>Euphilomedes producta</i>	11	IND
.5MM	<i>Ampelisca</i> sp.	7	IND
.5MM	<i>Mysella tumida</i>	7	IND
.5MM	Nematoda	7	IND
.5MM	<i>Sphaerodoropsis sphaerulifer</i>	6	IND
.5MM	Amphiuridae	5	IND
.5MM	<i>Aoroides columbiae</i>	3	IND
.5MM	<i>Nucula tenuis</i>	3	IND
.5MM	<i>Oligochaeta</i>	3	IND
.5MM	<i>Prionospio steenstrupi</i>	3	IND
.5MM	<i>Tharyx</i> spp.	3	IND
.5MM	<i>Acila castrensis</i>	2	IND
.5MM	<i>Ampelisca hancocki</i>	2	IND
.5MM	<i>Bathyleberis</i> sp.	2	IND
.5MM	<i>Capitella capitata</i>	2	IND
.5MM	<i>Laonice cirrata</i>	2	IND
.5MM	<i>Lumbrineris cruzensis</i>	2	IND
.5MM	<i>Amphiodia</i> spp.	1	IND
.5MM	<i>Axinopsida serricata</i>	1	IND
.5MM	<i>Drilonereis</i> sp.	1	IND
.5MM	<i>Harmothoe</i> spp.	1	IND
.5MM	<i>Levinsenia oculata</i>	1	IND
.5MM	<i>Lucinoma acutilineata</i>	1	IND
.5MM	<i>Lumbrineris</i> sp.	1	IND
.5MM	<i>Nephtys ferruginea</i>	1	IND
.5MM	<i>Paraprionospio pinnata</i>	1	IND
.5MM	<i>Psephidia lordi</i>	1	IND
.5MM	<i>Schistomeringos</i> sp.	1	IND
.5MM	<i>Sphaerosyllis brandhorsti</i>	1	IND
1MM	<i>Amphiodia</i> spp.	138	IND
1MM	<i>Eudorella pacifica</i>	43	IND
1MM	Nematoda	39	IND
1MM	<i>Axinopsida serricata</i>	14	IND
1MM	<i>Heterophoxus oculatus</i>	13	IND
1MM	<i>Nucula tenuis</i>	12	IND
1MM	<i>Pinnixa</i> spp.	7	IND
1MM	<i>Mysella tumida</i>	6	IND
1MM	<i>Praxillella affinis pacifica</i>	6	IND
1MM	<i>Acmira lopezi</i>	5	IND
1MM	<i>Allia ramosa</i>	5	IND
1MM	<i>Cossura soyeri</i>	5	IND
1MM	<i>Levinsenia gracilis</i>	4	IND
1MM	<i>Macoma carlottensis</i>	4	IND
1MM	<i>Paraprionospio pinnata</i>	4	IND
1MM	TEREBELLIDES REISHI	4	IND
1MM	<i>Laonice cirrata</i>	3	IND
1MM	<i>Prionospio steenstrupi</i>	3	IND
1MM	<i>Aoroides columbiae</i>	2	IND

1MM	<i>Cirrophorus branchiatus</i>	2	IND
1MM	<i>Cylichna attonsa</i>	2	IND
1MM	<i>Lumbrineris cruzensis</i>	2	IND
1MM	<i>Parvilucina tenuisculpta</i>	2	IND
1MM	<i>Pholoe minuta</i>	2	IND
1MM	<i>Prionospio cirrifera</i>	2	IND
1MM	<i>Sternaspis fossor</i>	2	IND
1MM	<i>Acila castrensis</i>	1	IND
1MM	<i>Alvania</i> spp.	1	IND
1MM	<i>Capitella capitata</i>	1	IND
1MM	<i>Compsomyx subdiaphana</i>	1	IND
1MM	<i>Drilonereis</i> sp.	1	IND
1MM	<i>Euclymeninae</i> spp.	1	IND
1MM	<i>Euphilomedes producta</i>	1	IND
1MM	<i>Glycinde armigera</i>	1	IND
1MM	<i>Heteromastus filiformis</i>	1	IND
1MM	<i>Lanassa venusta venusta</i>	1	IND
1MM	<i>Lumbrineris luti</i>	1	IND
1MM	<i>Macoma nasuta</i>	1	IND
1MM	<i>Monostylifera</i>	1	IND
1MM	<i>Pectinaria californiensis</i>	1	IND
1MM	<i>Pilargis berkeleyi</i>	1	IND
1MM	<i>Podarkeopsis glabra</i>	1	IND
1MM	<i>Polycirrus californicus</i>	1	IND
1MM	<i>Polydora socialis</i>	1	IND
1MM	<i>Psephidia lordi</i>	1	IND
1MM	TEREBELLIDES	1	IND

Survey: NETPEN91 Station: PTV2 Date: 05/02/91 Sample: PTV2-25

Replicate: 1

--	<i>Eudorella pacifica</i>	44	IND
--	<i>Amphiodia</i> spp.	18	IND
--	<i>Nephtys cornuta franciscana</i>	17	IND
--	<i>Allia ramosa</i>	15	IND
--	<i>Heterophoxus oculatus</i>	15	IND
--	<i>Levinsenia gracilis</i>	11	IND
--	<i>Prionospio minuspio lighti</i>	11	IND
--	<i>Pholoe minuta</i>	9	IND
--	<i>Acmira lopezi</i>	5	IND
--	<i>Nucula tenuis</i>	5	IND
--	<i>Prionospio steenstrupi</i>	4	IND
--	COPEPODA	3	IND
--	Amphiuridae	2	IND
--	<i>Cossura soyeri</i>	2	IND
--	<i>Euphilomedes producta</i>	2	IND
--	<i>Paraonella</i> spp.	2	IND
--	<i>Parvilucina tenuisculpta</i>	2	IND
--	<i>Pinnixa franciscana</i>	2	IND
--	<i>Rutiderma lomae</i>	2	IND
--	<i>Sphaerodoropsis sphaerulifer</i>	2	IND
--	<i>Alvania</i> spp.	1	IND
--	<i>Bittium</i> spp.	1	IND
--	<i>Chaetozone setosa</i>	1	IND
--	<i>Cylichna attonsa</i>	1	IND
--	Decapoda	1	IND
--	Harmothoinae	1	IND

--	Laonice cirrata	1	IND
--	Lepidasthenia berkeleyae	1	IND
--	Lumbrineris sp.	1	IND
--	Macoma carlottensis	1	IND
--	Mysella tumida	1	IND
--	Nematoda	1	IND
--	Neorhabdocoelida	1	IND
--	Pachynus barnardi	1	IND
--	Paraprionospio pinnata	1	IND
--	TEREBELLIDES REISHI	1	IND
--	Tharyx spp.	1	IND

Survey: NETPEN91 Station: PTV2 Date: 05/02/91 Sample: PTV2-25

Replicate: 2

--	Eudorella pacifica	32	IND
--	Amphiodia spp.	19	IND
--	Polydora brachycephala	14	IND
--	Allia ramosa	12	IND
--	Acmira lopezi	10	IND
--	Prionospio minuspio lighti	8	IND
--	Levinsenia gracilis	7	IND
--	Nephtys cornuta franciscana	6	IND
--	Pholoe minuta	6	IND
--	Oligochaeta	5	IND
--	Mysella tumida	4	IND
--	Paranella spp.	4	IND
--	Heterocrypta occidentalis	3	IND
--	Lumbrineris sp.	3	IND
--	Nucula tenuis	3	IND
--	Ampelisca sp.	2	IND
--	COPEPODA	2	IND
--	Cirrophorus branchiatus	2	IND
--	Decapoda	2	IND
--	Parvilucina tenuisculpta	2	IND
--	ACHIRA CERRUTII	1	IND
--	Bathyleberis garthi	1	IND
--	Cossura soyeri	1	IND
--	Euclymeninae spp.	1	IND
--	Euphilomedes producta	1	IND
--	Lepidasthenia berkeleyae	1	IND
--	Pagurus spp.	1	IND
--	Paraprionospio pinnata	1	IND
--	Prionospio steenstrupi	1	IND
--	Sphaerodoropsis sphaerulifer	1	IND
--	Spiophanes berkeleyorum	1	IND
--	Sternaspis scutata	1	IND
--	Tharyx spp.	1	IND

Survey: NETPEN91 Station: PTV2 Date: 05/02/91 Sample: PTV2-25

Replicate: 3

--	Eudorella pacifica	51	IND
--	Amphiodia spp.	25	IND
--	Nephtys cornuta franciscana	20	IND
--	Euphilomedes producta	16	IND
--	Allia ramosa	13	IND
--	Heterophoxus oculatus	13	IND

-- Prionospio minuspio lighti	13 IND
-- Nematoda	11 IND
-- Levinsenia gracilis	9 IND
-- Oligochaeta	8 IND
-- Cossura soyeri	7 IND
-- Pholoe minuta	6 IND
-- Pinnixa schmitti	5 IND
-- Amphiridae	4 IND
-- Prionospio steenstrupi	4 IND
-- Calanoida	3 IND
-- Decapoda	3 IND
-- Macoma carlottensis	3 IND
-- Nucula tenuis	3 IND
-- Sphaerodoropsis sphaerulifer	3 IND
-- Acmira lopezi	2 IND
-- Glycinde armigera	2 IND
-- Laonice cirrata	2 IND
-- Protomedea articulata	2 IND
-- Adontorhina cyclica	1 IND
-- Ampelisca sp.	1 IND
-- Axinopsida serricata	1 IND
-- Lumbrineris sp.	1 IND
-- Macoma spp.	1 IND
-- Paraonella spp.	1 IND
-- Paraprionospio pinnata	1 IND
-- Parvilucina tenuisculpta	1 IND
-- Pectinaria granulata	1 IND
-- Podarkeopsis glabra	1 IND
-- Praxillella affinis pacifica	1 IND
-- Sternaspis scutata	1 IND
-- Terebellides stroemi	1 IND
-- Tharyx spp.	1 IND

Survey: NETPEN91 Station: PTV2 Date: 05/02/91 Sample: PTV2-25

Replicate: 4

-- Eudorella pacifica	60 IND
-- Nematoda	35 IND
-- Heterophoxus oculatus	13 IND
-- Allia ramosa	11 IND
-- Amphiodia spp.	10 IND
-- Euphilomedes producta	10 IND
-- Prionospio minuspio lighti	8 IND
-- Acmira lopezi	7 IND
-- Decapoda	6 IND
-- Tharyx spp.	6 IND
-- Cossura soyeri	5 IND
-- COPEPODA	4 IND
-- Nephtys cornuta franciscana	4 IND
-- Pholoe minuta	4 IND
-- Levinsenia gracilis	3 IND
-- Prionospio steenstrupi	3 IND
-- Lumbrineris sp.	2 IND
-- Mysella tumida	2 IND
-- Nucula tenuis	2 IND
-- Paraonella spp.	2 IND
-- Paraprionospio pinnata	2 IND

-- Pinnixa franciscana	2	IND
-- Psephidia lordi	2	IND
-- Sphaerodoropsis sphaerulifer	2	IND
-- Alvania spp.	1	IND
-- Amphipoda	1	IND
-- Axinopsida serricata	1	IND
-- Capitella capitata	1	IND
-- Cirrophorus branchiatus	1	IND
-- Ischyrocerus anguipes	1	IND
-- Lumbrineris luti	1	IND
-- Melinna elisabethae	1	IND
-- Metaphoxus frequens	1	IND
-- Ophelina acuminata	1	IND
-- Parvilucina tenuisculpta	1	IND
-- Pentamera spp.	1	IND
-- Phyllodoce sp.	1	IND
-- Pinnixa occidentalis	1	IND
-- Praxillella affinis pacifica	1	IND
-- Schistomeringos sp.	1	IND

Survey: NETPEN91 Station: PTV2 Date: 05/02/91 Sample: PTV2-25

Replicate: 5

-- Eudorella pacifica	32	IND
-- Amphiodia spp.	23	IND
-- Heterophoxus oculatus	20	IND
-- Decapoda	12	IND
-- Allia ramosa	10	IND
-- Acmira lopezi	8	IND
-- COPEPODA	7	IND
-- Pholoe minuta	7	IND
-- Acila castrensis	6	IND
-- Nucula tenuis	6	IND
-- Euphilomedes producta	5	IND
-- Levinsenia gracilis	5	IND
-- Nephtys cornuta franciscana	5	IND
-- Nematoda	4	IND
-- Cossura soyeri	3	IND
-- Laonice cirrata	3	IND
-- Prionospio minuspio lighti	3	IND
-- Alvania spp.	2	IND
-- Pinnixa franciscana	2	IND
-- Axinopsida serricata	1	IND
-- Driloneris falcata minor	1	IND
-- Macoma carlottensis	1	IND
-- Mediomastus spp.	1	IND
-- Mysella tumida	1	IND
-- Odostomia spp.	1	IND
-- Paraprionospio pinnata	1	IND
-- Parvilucina tenuisculpta	1	IND
-- Pista spp.	1	IND
-- Podarkeopsis glabra	1	IND
-- Polinices pallida	1	IND
-- Praxillella affinis pacifica	1	IND
-- Praxillella gracilis	1	IND
-- Prionospio steenstrupi	1	IND
-- Psephidia lordi	1	IND

-- TEREBELLIDES REISHI 1 IND
 -- Tharyx spp. 1 IND

Survey: NETPEN91 Station: PTV3 Date: 05/02/91 Sample: PTV3-1

Replicate: 1

.5MM	Eudorella pacifica	261 IND
.5MM	Acesta/Aricidea spp.	90 IND
.5MM	Nephtys cornuta franciscana	75 IND
.5MM	Levinsenia gracilis	41 IND
.5MM	Dyopodos spp.	31 IND
.5MM	Heterophoxus oculatus	30 IND
.5MM	Prionospio spp.	29 IND
.5MM	Pholoe minuta	23 IND
.5MM	Euphilomedes producta	18 IND
.5MM	Cossura spp.	13 IND
.5MM	Nematoda	12 IND
.5MM	Mysella tumida	11 IND
.5MM	Aoroides spp	8 IND
.5MM	Prionospio steenstrupi	8 IND
.5MM	Decapoda	7 IND
.5MM	Lumbrineris sp.	7 IND
.5MM	Mucula tenuis	7 IND
.5MM	Sphaerodoropsis sphaerulifer	7 IND
.5MM	Amphiuridae	6 IND
.5MM	Odostomia spp.	5 IND
.5MM	Ampelisca sp.	4 IND
.5MM	Munna ubiquita	3 IND
.5MM	Pachynus barnardi	3 IND
.5MM	Acila castrensis	2 IND
.5MM	Alvania spp.	2 IND
.5MM	Bittium spp.	2 IND
.5MM	Calanoidea	2 IND
.5MM	Gyptis brevipalpa	2 IND
.5MM	Mediomastus spp.	2 IND
.5MM	Nephtys ferruginea	2 IND
.5MM	Paraprionospio pinnata	2 IND
.5MM	Terebellides stroemi	2 IND
.5MM	Turbonilla spp.	2 IND
.5MM	Cumella vulgaris	1 IND
.5MM	Cylindroleberididae	1 IND
.5MM	Diaphana spp.	1 IND
.5MM	Glycinde picta	1 IND
.5MM	Jassa spp.	1 IND
.5MM	Leptoplanidae	1 IND
.5MM	Micropodarke dubia	1 IND
.5MM	Psephidia lordi	1 IND
.5MM	Tharyx spp.	1 IND
1MM	Amphiodia spp.	81 IND
1MM	Eudorella pacifica	40 IND
1MM	Dyopodos spp.	30 IND
1MM	Heterophoxus oculatus	19 IND
1MM	Nematoda	12 IND
1MM	Mysella tumida	11 IND
1MM	Pinnixa spp.	11 IND
1MM	Acila castrensis	9 IND
1MM	Axinopsida serricata	8 IND

1MM	<i>Euphilomedes producta</i>	8	IND
1MM	<i>Lumbrineris</i> sp.	8	IND
1MM	<i>Nucula tenuis</i>	8	IND
1MM	<i>Alvania</i> spp.	7	IND
1MM	<i>Pholoe minuta</i>	7	IND
1MM	<i>Praxillella affinis pacifica</i>	7	IND
1MM	<i>Protomedeia prudens</i>	6	IND
1MM	<i>Macoma carlottensis</i>	5	IND
1MM	TEREBELLIDES REISHI	5	IND
1MM	<i>Levinsenia gracilis</i>	3	IND
1MM	<i>Lucinoma acutilineata</i>	3	IND
1MM	<i>Ophelina acuminata</i>	3	IND
1MM	<i>Prionospio minuspio lighti</i>	3	IND
1MM	<i>Acmira lopezi</i>	2	IND
1MM	Decapoda	2	IND
1MM	<i>Monoculodes zernovi</i>	2	IND
1MM	<i>Notomastus lineatus</i>	2	IND
1MM	<i>Parvilucina tenuisculpta</i>	2	IND
1MM	<i>Tharyx</i> spp.	2	IND
1MM	<i>Turbonilla</i> spp.	2	IND
1MM	<i>Alia</i> spp.	1	IND
1MM	<i>Allia ramosa</i>	1	IND
1MM	<i>Ampelisca unsocalae</i>	1	IND
1MM	<i>Brada villosa</i>	1	IND
1MM	<i>Diaphana</i> spp.	1	IND
1MM	<i>Driloneris falcata minor</i>	1	IND
1MM	<i>Glycinde armigera</i>	1	IND
1MM	<i>Harmothoe lunulata</i>	1	IND
1MM	<i>Laonice cirrata</i>	1	IND
1MM	<i>Lepidasthenia berkeleyae</i>	1	IND
1MM	Leptoplanidae	1	IND
1MM	<i>Macoma yoldiformis</i>	1	IND
1MM	<i>Mediomastus</i> spp.	1	IND
1MM	<i>Oligochaeta</i>	1	IND
1MM	<i>Paranemertes</i> sp.	1	IND
1MM	<i>Parsonella</i> spp.	1	IND
1MM	<i>Paraprionospio pinnata</i>	1	IND
1MM	<i>Pentamera</i> spp.	1	IND
1MM	<i>Polydora socialis</i>	1	IND
1MM	<i>Praxillella gracilis</i>	1	IND
1MM	<i>Prionospio steenstrupi</i>	1	IND
1MM	<i>Psephidia lordi</i>	1	IND
1MM	<i>Spiochaetopterus costarum</i>	1	IND
1MM	<i>Spiophanes berkeleyorum</i>	1	IND
1MM	<i>Sternaspis scutata</i>	1	IND
1MM	Terebellidae	1	IND
1MM	<i>Yoldia scissurata</i>	1	IND

Survey: NETPEN91 Station: PTV3 Date: 05/02/91 Sample: PTV3-1

Replicate: 2

.5MM	<i>Eudorella pacifica</i>	120	IND
.5MM	<i>Allia ramosa</i>	52	IND
.5MM	<i>Levinsenia gracilis</i>	42	IND
.5MM	<i>Nephtys cornuta franciscana</i>	29	IND
.5MM	<i>Heterophoxus oculatus</i>	26	IND
.5MM	<i>Euphilomedes producta</i>	24	IND

.5MM	Prionospio minuspio lighti	24	IND
.5MM	Pholoe minuta	21	IND
.5MM	Acmira lopezi	18	IND
.5MM	Odostomia spp.	11	IND
.5MM	Prionospio steenstrupi	9	IND
.5MM	Decapoda	8	IND
.5MM	Alvania spp.	7	IND
.5MM	COPEPODA	7	IND
.5MM	Lumbrineris sp.	7	IND
.5MM	Mysella tumida	7	IND
.5MM	Cossura soyeri	6	IND
.5MM	Oligochaeta	6	IND
.5MM	Sphaerodoropsis sphaerulifer	6	IND
.5MM	Amphiuridae	5	IND
.5MM	Nucula tenuis	5	IND
.5MM	Podarkeopsis glabra	5	IND
.5MM	Protomedeia spp.	5	IND
.5MM	Nematoda	3	IND
.5MM	Paraonella spp.	3	IND
.5MM	Spiophanes berkeleyorum	3	IND
.5MM	Turbonilla spp.	3	IND
.5MM	Acila castrensis	2	IND
.5MM	Axinopsida serricata	2	IND
.5MM	Bathyleberis sp.	2	IND
.5MM	Cirrophorus branchiatus	2	IND
.5MM	Bittium spp.	1	IND
.5MM	Cumella sp.	1	IND
.5MM	Driloneris falcata minor	1	IND
.5MM	Edwardsia sipunculoides	1	IND
.5MM	Macoma carlottensis	1	IND
.5MM	Nemertea	1	IND
.5MM	Nephtys ferruginea	1	IND
.5MM	Nephtys punctata	1	IND
.5MM	Pachynus barnardi	1	IND
.5MM	Paraprionospio pinnata	1	IND
.5MM	Pleurogonium rubicundum	1	IND
.5MM	Psephidia lordi	1	IND
.5MM	TEREBELLIDES	1	IND
.5MM	Tharyx spp.	1	IND
.5MM	Westwoodilla caecula	1	IND
1MM	Amphiodia spp.	81	IND
1MM	Eudorella pacifica	54	IND
1MM	Heterophoxus oculatus	23	IND
1MM	Nucula tenuis	16	IND
1MM	Pinnixa franciscana	16	IND
1MM	Euphilomedes producta	13	IND
1MM	Axinopsida serricata	10	IND
1MM	Alvania spp.	9	IND
1MM	Acmira lopezi	7	IND
1MM	Praxillella affinis pacifica	6	IND
1MM	Protomedeia grandimana	6	IND
1MM	Sternaspis scutata	6	IND
1MM	Bittium spp.	5	IND
1MM	Laonice cirrata	4	IND
1MM	Macoma carlottensis	4	IND
1MM	Lumbrineris sp.	3	IND

1MM	Paraprionospio pinnata	3	IND
1MM	Glycinde armigera	2	IND
1MM	Lepidasthenia berkeleyae	2	IND
1MM	Ophelina acuminata	2	IND
1MM	Pholoe minuta	2	IND
1MM	Prionospio minuspio lighti	2	IND
1MM	Prionospio steenstrupi	2	IND
1MM	TEREBELLIDES REISHI	2	IND
1MM	Acila castrensis	1	IND
1MM	Alia spp.	1	IND
1MM	Ampelisca unsocalae	1	IND
1MM	Brada villosa	1	IND
1MM	Costelloleda sp.	1	IND
1MM	Cylichna attonsa	1	IND
1MM	Euclymene reticulata	1	IND
1MM	Levinsenia gracilis	1	IND
1MM	Metaphoxus frequens	1	IND
1MM	Micrura spp.	1	IND
1MM	Monoculodes simplex	1	IND
1MM	Mysella tumida	1	IND
1MM	Nematoda	1	IND
1MM	Nephtys punctata	1	IND
1MM	Opisa tridentata	1	IND
1MM	Parvilucina tenuisculpta	1	IND
1MM	Pinnixa occidentalis	1	IND
1MM	Spiochaetopterus costarum	1	IND
1MM	Tenonia kitsapensis	1	IND
1MM	Terebellidae	1	IND
1MM	Tharyx spp.	1	IND
1MM	Travisia brevis	1	IND
1MM	Tubulanus spp.	1	IND
1MM	Turbonilla spp.	1	IND
1MM	Yoldia thraciaeformis	1	IND

Survey: NETPEN91 Station: PTV3 Date: 05/02/91 Sample: PTV3-1

Replicate: 3

.5MM	Eudorella pacifica	207	IND
.5MM	Allia ramosa	69	IND
.5MM	Nephtys cornuta franciscana	56	IND
.5MM	Levinsenia gracilis	44	IND
.5MM	Heterophoxus oculatus	27	IND
.5MM	Pholoe minuta	19	IND
.5MM	Decapoda	18	IND
.5MM	Prionospio minuspio lighti	16	IND
.5MM	Acmira lopezi	15	IND
.5MM	Euphilomedes producta	13	IND
.5MM	Sphaerodoropsis sphaerulifer	12	IND
.5MM	Lumbrineris sp.	10	IND
.5MM	Nucula tenuis	10	IND
.5MM	Protomedeia spp.	10	IND
.5MM	Cossura soyeri	9	IND
.5MM	Mysella tumida	9	IND
.5MM	Calanoida	7	IND
.5MM	Prionospio steenstrupi	7	IND
.5MM	Ampelisca sp.	6	IND
.5MM	Amphiuridae	5	IND

.5MM	Mediomastus spp.	3	IND
.5MM	Oligochaeta	3	IND
.5MM	Paraonella spp.	3	IND
.5MM	Axinopsida serricata	2	IND
.5MM	Diastylis alaskensis	2	IND
.5MM	Nephtys ferruginea	2	IND
.5MM	Paraprionospio pinnata	2	IND
.5MM	TEREBELLIDES	2	IND
.5MM	Tharyx spp.	2	IND
.5MM	Turbonilla spp.	2	IND
.5MM	Alvania spp.	1	IND
.5MM	Capitella capitata	1	IND
.5MM	Cerebratulus spp.	1	IND
.5MM	Cirrophorus branchiatus	1	IND
.5MM	Euclymeninae spp.	1	IND
.5MM	Glycinde armigera	1	IND
.5MM	Leitoscoloplos elongatus	1	IND
.5MM	Nematoda	1	IND
.5MM	Odostomia spp.	1	IND
.5MM	Polydora socialis	1	IND
.5MM	Psephidia lordi	1	IND
.5MM	Schistomeringos sp.	1	IND
.5MM	Terebellidae	1	IND
1MM	Amphiodia spp.	58	IND
1MM	Eudorella pacifica	49	IND
1MM	Heterophoxus oculatus	34	IND
1MM	Maldane sarsi	15	IND
1MM	Nucula tenuis	13	IND
1MM	Axinopsida serricata	10	IND
1MM	Pinnixa franciscana	8	IND
1MM	Parvilucina tenuisculpta	7	IND
1MM	Nematoda	6	IND
1MM	Acila castrensis	5	IND
1MM	Macoma carlottensis	5	IND
1MM	Paraprionospio pinnata	5	IND
1MM	Praxillella affinis pacifica	5	IND
1MM	Prionospio steenstrupi	5	IND
1MM	Protomedea grandimana	5	IND
1MM	TEREBELLIDES REISHI	5	IND
1MM	Bittium spp.	4	IND
1MM	Turbonilla spp.	4	IND
1MM	Alvania spp.	3	IND
1MM	Compsomyx subdiaphana	3	IND
1MM	Euphilomedes producta	3	IND
1MM	Glycinde armigera	3	IND
1MM	Mysella tumida	3	IND
1MM	Pinnixa occidentalis	3	IND
1MM	Allia ramosa	2	IND
1MM	Aoroides columbiae	2	IND
1MM	Balanus improvisus	2	IND
1MM	Galathowenia nr. G. oculata	2	IND
1MM	Laonice cirrata	2	IND
1MM	Lepidasthenia berkeleyae	2	IND
1MM	Lumbrineris sp.	2	IND
1MM	Polydora socialis	2	IND
1MM	Psephidia lordi	2	IND

1MM	Sternaspis scutata	2	IND
1MM	Yoldia scissurata	2	IND
1MM	Ampelisca sp.	1	IND
1MM	Cirrophorus branchiatus	1	IND
1MM	Cossura soyeri	1	IND
1MM	Cucumaria piperata	1	IND
1MM	Decapoda	1	IND
1MM	Euclymene reticulata	1	IND
1MM	Euclymeninae spp.	1	IND
1MM	Lacuna sp.	1	IND
1MM	Leptoplanidae	1	IND
1MM	Levinsenia gracilis	1	IND
1MM	Lucinoma acutilineata	1	IND
1MM	Lumbrineris bicirrata	1	IND
1MM	Metridium senile	1	IND
1MM	Micrura spp.	1	IND
1MM	Monoculodes spp.	1	IND
1MM	Nephtys ferruginea	1	IND
1MM	Odostomia spp.	1	IND
1MM	Pholoe minuta	1	IND
1MM	Polycirrus spp.	1	IND
1MM	Schistomeringos caeca	1	IND
1MM	Westwoodilla caecula	1	IND

Survey: NETPEN91 Station: PTV3 Date: 05/02/91 Sample: PTV3-1

Replicate: 4

.5MM	Eudorella pacifica	172	IND
.5MM	Acesta/Aricidea spp.	47	IND
.5MM	Nephtys cornuta franciscana	45	IND
.5MM	Heterophoxus oculatus	32	IND
.5MM	Levinsenia gracilis	29	IND
.5MM	Pholoe minuta	19	IND
.5MM	Decapoda	17	IND
.5MM	Euphilomedes producta	13	IND
.5MM	Prionospio spp.	11	IND
.5MM	Prionospio steenstrupi	11	IND
.5MM	Calanoida	10	IND
.5MM	Mysella tumida	9	IND
.5MM	Aoroides columbiae	8	IND
.5MM	Nucula tenuis	6	IND
.5MM	Sphaerodoropsis sphaerulifer	6	IND
.5MM	Cumella vulgaris	5	IND
.5MM	Lumbrineris sp.	5	IND
.5MM	Odostomia spp.	5	IND
.5MM	Acila castrensis	4	IND
.5MM	Ampelisca sp.	4	IND
.5MM	Amphiuridae	4	IND
.5MM	Cossura spp.	4	IND
.5MM	Gyptis brevipalpa	3	IND
.5MM	Psephidia lordi	2	IND
.5MM	Alvania spp.	1	IND
.5MM	Axinopsida serricata	1	IND
.5MM	Bittium spp.	1	IND
.5MM	Glycinde picta	1	IND
.5MM	Hiatella arctica	1	IND
.5MM	Hyperidae	1	IND

.5MM	Macoma spp.	1	IND
.5MM	Monoculodes spp.	1	IND
.5MM	Nematoda	1	IND
.5MM	Nephtys ferruginea	1	IND
.5MM	Paraprionospio pinnata	1	IND
.5MM	Platynereis bicanaliculata	1	IND
.5MM	Priapulus caudatus	1	IND
.5MM	Terebellides stroemi	1	IND
.5MM	Tharyx spp.	1	IND
.5MM	Turbonilla spp.	1	IND
1MM	Amphiodia spp.	72	IND
1MM	Eudorella pacifica	54	IND
1MM	Heterophoxus oculatus	29	IND
1MM	Nucula tenuis	11	IND
1MM	Pinnixa spp.	10	IND
1MM	Axinopsida serricata	7	IND
1MM	Euphilomedes producta	7	IND
1MM	Protomedea prudens	7	IND
1MM	Nematoda	6	IND
1MM	Paraprionospio pinnata	6	IND
1MM	Parvilucina tenuisculpta	6	IND
1MM	Psephidia lordi	6	IND
1MM	Acmira lopezi	5	IND
1MM	Macoma nasuta	5	IND
1MM	Pholoe minuta	4	IND
1MM	Praxillella affinis pacifica	4	IND
1MM	Allia ramosa	3	IND
1MM	Alvania spp.	3	IND
1MM	Bittium spp.	3	IND
1MM	Laonice cirrata	3	IND
1MM	Levinsenia gracilis	3	IND
1MM	Lumbrineris sp.	3	IND
1MM	Macoma carlottensis	3	IND
1MM	Mysella tumida	3	IND
1MM	Prionospio minuspio lighti	3	IND
1MM	Acila castrensis	2	IND
1MM	Glycinde armigera	2	IND
1MM	Polydora spp.	2	IND
1MM	Sternaspis scutata	2	IND
1MM	Tharyx spp.	2	IND
1MM	Ampelisca sp.	1	IND
1MM	Cerebratulus spp.	1	IND
1MM	Compsomyax subdiaphana	1	IND
1MM	Crangon spp.	1	IND
1MM	Driloneris falcata minor	1	IND
1MM	Euclymeninae spp.	1	IND
1MM	Galathowenia nr. G. oculata	1	IND
1MM	Glycera capitata	1	IND
1MM	Hyperia medusarum	1	IND
1MM	Lepidasthenia berkeleyae	1	IND
1MM	Lucinoma acutilineata	1	IND
1MM	Macoma yoldiformis	1	IND
1MM	Ophelina acuminata	1	IND
1MM	Pentamera spp.	1	IND
1MM	Podarkeopsis glabra	1	IND
1MM	Prionospio stenstrupi	1	IND

1MM Yoldia thraciaeformis 1 IND

Survey: NETPEN91 Station: PTV3 Date: 05/02/91 Sample: PTV3-1

Replicate: 5

.5MM Eudorella pacifica	247 IND
.5MM Allia ramosa	69 IND
.5MM Nephtys cornuta franciscana	51 IND
.5MM Levinsenia gracilis	35 IND
.5MM Acmira lopezi	26 IND
.5MM Pholoe minuta	25 IND
.5MM Calanoida	19 IND
.5MM Prionospio minuspio lighti	14 IND
.5MM Cossura soyeri	13 IND
.5MM Heterophoxus oculatus	12 IND
.5MM Amphiuroidae	11 IND
.5MM Euphilomedes producta	11 IND
.5MM Prionospio steenstrupi	11 IND
.5MM Aoroides spp	9 IND
.5MM Ampelisca sp.	8 IND
.5MM Sphaerodoropsis sphaerulifer	8 IND
.5MM Mysella tumida	6 IND
.5MM Odostomia spp.	6 IND
.5MM Tharyx spp.	6 IND
.5MM Bittium spp.	5 IND
.5MM TERESELLIDES	5 IND
.5MM Lumbrineris sp.	3 IND
.5MM Acila castrensis	2 IND
.5MM Decapoda	2 IND
.5MM Glycinde armigera	2 IND
.5MM Nucula tenuis	2 IND
.5MM Paraprionospio pinnata	2 IND
.5MM Podarkeopsis glabra	2 IND
.5MM Bivalvia	1 IND
.5MM Brada sp.	1 IND
.5MM Capitella capitata	1 IND
.5MM Cirrophorus branchiatus	1 IND
.5MM Jassa spp.	1 IND
.5MM Laonice cirrata	1 IND
.5MM Lumbrineris cruzensis	1 IND
.5MM Mediomastus spp.	1 IND
.5MM Munna ubiquita	1 IND
.5MM Ophiodromus pugettensis	1 IND
.5MM Paraonella spp.	1 IND
1MM Amphiodia spp.	81 IND
1MM Eudorella pacifica	34 IND
1MM Heterophoxus oculatus	28 IND
1MM Alvania spp.	17 IND
1MM Nucula tenuis	15 IND
1MM Euphilomedes producta	13 IND
1MM Paraprionospio pinnata	9 IND
1MM Pholoe minuta	9 IND
1MM Acila castrensis	8 IND
1MM Bittium spp.	8 IND
1MM TERESELLIDES REISHI	7 IND
1MM Lumbrineris sp.	5 IND
1MM Macoma carlottensis	5 IND

1MM	<i>Protomedeia prudens</i>	5	IND
1MM	<i>Protomedeia</i> spp.	5	IND
1MM	<i>Parvilucina tenuisculpta</i>	4	IND
1MM	<i>Psephidia lordi</i>	4	IND
1MM	<i>Axinopsida serricata</i>	3	IND
1MM	<i>Glycinde armigera</i>	3	IND
1MM	<i>Mysella tumida</i>	3	IND
1MM	<i>Prionospio steenstrupi</i>	3	IND
1MM	<i>Compsomyx subdiaphana</i>	2	IND
1MM	<i>Laonice cirrata</i>	2	IND
1MM	<i>Lepidasthenia berkeleyae</i>	2	IND
1MM	<i>Odostomia</i> spp.	2	IND
1MM	<i>Pinnixa franciscana</i>	2	IND
1MM	<i>Polycirrus</i> spp.	2	IND
1MM	<i>Sternaspis scutata</i>	2	IND
1MM	<i>Tharyx</i> spp.	2	IND
1MM	<i>Alia</i> spp.	1	IND
1MM	<i>Allia ramosa</i>	1	IND
1MM	<i>Ampelisca</i> sp.	1	IND
1MM	<i>Ampelisca unsocatae</i>	1	IND
1MM	<i>Chaetozone setosa</i>	1	IND
1MM	<i>Cossura soyeri</i>	1	IND
1MM	<i>Driloneris falcata minor</i>	1	IND
1MM	<i>Euclymene reticulata</i>	1	IND
1MM	<i>Galathowenia</i> nr. <i>G. oculata</i>	1	IND
1MM	Hydrozoa hydroids	1	IND
1MM	<i>Leitoscoloplos elongatus</i>	1	IND
1MM	<i>Mediomastus</i> spp.	1	IND
1MM	<i>Monoculodes simplex</i>	1	IND
1MM	Nematoda	1	IND
1MM	<i>Nephtys cornuta franciscana</i>	1	IND
1MM	<i>Nephtys ferruginea</i>	1	IND
1MM	<i>Ophelina acuminata</i>	1	IND
1MM	<i>Podarkeopsis glabra</i>	1	IND
1MM	<i>Praxillella affinis pacifica</i>	1	IND
1MM	<i>Protomedeia grandimana</i>	1	IND
1MM	<i>Scalibregma inflatum</i>	1	IND
1MM	<i>Terebellides stroemi</i>	1	IND
1MM	<i>Turbonilla</i> spp.	1	IND
1MM	<i>Yoldia thraciaeformis</i>	1	IND

Survey: NETPEN91 Station: PTV3 Date: 05/02/91 Sample: PTV3-25

Replicate: 1

--	<i>Eudorella pacifica</i>	54	IND
--	<i>Allia ramosa</i>	23	IND
--	<i>Amphiodia</i> spp.	20	IND
--	<i>Levinsenia gracilis</i>	14	IND
--	Decapoda	13	IND
--	<i>Nephtys cornuta franciscana</i>	13	IND
--	<i>Mysella tumida</i>	9	IND
--	<i>Pholoe glabra</i>	7	IND
--	<i>Acmira lopezi</i>	6	IND
--	Calanoids	6	IND
--	<i>Heterophoxus oculatus</i>	6	IND
--	<i>Prionospio minuspio lighti</i>	6	IND
--	<i>Nucula tenuis</i>	5	IND

-- Prionospio steenstrupi	4	IND
-- Axinopsida serricata	3	IND
-- Protomedeia prudens	3	IND
-- Alvania spp.	2	IND
-- Cossura soyeri	2	IND
-- Laonice cirrata	2	IND
-- Pachynus cf barnardi	2	IND
-- Polydora socialis	2	IND
-- Spiophanes berkeleyorum	2	IND
-- Acila castrensis	1	IND
-- Cirrophorus branchiatus	1	IND
-- Euphilomedes producta	1	IND
-- Glycinde armigera	1	IND
-- Harmothoe lunulata	1	IND
-- Hyperia medusarum	1	IND
-- Lucinoma acutilineata	1	IND
-- Lumbrineris sp.	1	IND
-- Macoma spp.	1	IND
-- Metaphoxus frequens	1	IND
-- Nematoda	1	IND
-- Odostomia spp.	1	IND
-- Paraonella spp.	1	IND
-- Paraprionospio pinnata	1	IND
-- Pinnixa spp.	1	IND
-- Podarkeopsis glabra	1	IND
-- Praxillella affinis pacifica	1	IND
-- Psephidia lordi	1	IND
-- TEREBELLIDES	1	IND
-- Tharyx spp.	1	IND
-- Turbonilla spp.	1	IND

Survey: NETPEN91 Station: PTV3 Date: 05/02/91 Sample: PTV3-25

Replicate: 2

-- Eudorella pacifica	41	IND
-- Amphiodia spp.	24	IND
-- Allia ramosa	21	IND
-- Nephtys cornuta franciscana	12	IND
-- Prionospio minuspio lighti	11	IND
-- Pholoe glabra	10	IND
-- Acmira lopezi	9	IND
-- Decapoda	8	IND
-- Calanoida	7	IND
-- Nucula tenuis	7	IND
-- Euphilomedes producta	5	IND
-- Levinsenia gracilis	5	IND
-- Cossura soyeri	4	IND
-- Heterophoxus oculatus	4	IND
-- Macoma carlottensis	3	IND
-- Amphiuridae	2	IND
-- Bittium spp.	2	IND
-- Euclymeninae spp.	2	IND
-- Laonice cirrata	2	IND
-- Lumbrineris sp.	2	IND
-- Maldane sarsi	2	IND
-- Paraonella spp.	2	IND
-- Prionospio steenstrupi	2	IND

-- Protomedeia spp.	2 IND
-- TERESELLIDES REISHI	2 IND
-- Axinopsida serricata	1 IND
-- Mysella tumida	1 IND
-- Nematoda	1 IND
-- Paraprionospio pinnata	1 IND
-- Pinnixa spp.	1 IND
-- Podarkeopsis glabra	1 IND
-- Protomedeia prudens	1 IND
-- Sphaerodoropsis sphaerulifer	1 IND
-- Spiophanes berkeleyorum	1 IND
-- Tharyx spp.	1 IND

Survey: NETPEN91 Station: PTV3 Date: 05/02/91 Sample: PTV3-25

Replicate: 3

-- Eudorella pacifica	31 IND
-- Decapoda	25 IND
-- Allia ramosa	15 IND
-- Nephtys cornuta franciscana	14 IND
-- Amphiodia spp.	13 IND
-- Calanoida	13 IND
-- Levinsenia gracilis	13 IND
-- Prionospio minuspio lighti	12 IND
-- Acmira lopezi	8 IND
-- Heterophoxus oculatus	8 IND
-- Mysella tumida	8 IND
-- Nematoda	8 IND
-- Alvania spp.	5 IND
-- Euphilomedes producta	5 IND
-- Prionospio steenstrupi	5 IND
-- Axinopsida serricata	4 IND
-- Cossura soyeri	4 IND
-- Lumbrineris sp.	4 IND
-- Nucula tenuis	4 IND
-- Sphaerodoropsis sphaerulifer	4 IND
-- Pholoe glabra	3 IND
-- Acila castrensis	2 IND
-- Compsomyx subdiaphana	2 IND
-- Paraonella spp.	2 IND
-- Protomedeia spp.	2 IND
-- Ampelisca unsocalae	1 IND
-- Chaetozone setosa	1 IND
-- Cirrophorus branchiatus	1 IND
-- Heteromastus filobranchus	1 IND
-- Lepidasthenia berkeleyae	1 IND
-- Macoma carlottensis	1 IND
-- Nephrosoma spp.	1 IND
-- Paraprionospio pinnata	1 IND
-- Parvilucina tenuisculpta	1 IND
-- Pista spp.	1 IND
-- Podarkeopsis glabra	1 IND
-- TERESELLIDES	1 IND

Survey: NETPEN91 Station: PTV3 Date: 05/02/91 Sample: PTV3-25

Replicate: 4

-- Eudorella pacifica	73 IND
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--	Allia ramosa	19	IND
--	Amphiodia spp.	16	IND
--	Heterophoxus oculatus	15	IND
--	Prionospio minuspio lighti	11	IND
--	Nematoda	9	IND
--	Nephtys cornuta franciscana	8	IND
--	Axinopsida serricata	7	IND
--	Mysella tumida	7	IND
--	Acmira lopezi	6	IND
--	Decapoda	6	IND
--	Levinsenia gracilis	5	IND
--	Euphilomedes producta	4	IND
--	Nucula tenuis	4	IND
--	Ophelina acuminata	4	IND
--	Prionospio steenstrupi	4	IND
--	Sphaerodoropsis sphaerulifer	4	IND
--	Euclymeninae spp.	3	IND
--	Lumbrineris sp.	3	IND
--	Macoma carlottensis	3	IND
--	Parvilucina tenuisculpta	3	IND
--	Praxillella affinis pacifica	3	IND
--	Lepidasthenia berkeleyae	2	IND
--	Paraonella spp.	2	IND
--	Pholoe minuta	2	IND
--	Pinnixa spp.	2	IND
--	Protomedeia prudens	2	IND
--	TEREBELLIDES REISHI	2	IND
--	Acila castrensis	1	IND
--	Alvania spp.	1	IND
--	Compsomyax subdiaphana	1	IND
--	Cossura soyeri	1	IND
--	Driloneris falcata minor	1	IND
--	Eteone spilotus	1	IND
--	Modiolus spp.	1	IND
--	Odostomia spp.	1	IND
--	Paraprionospio pinnata	1	IND
--	Psephidia lordi	1	IND
--	TEREBELLIDES	1	IND

Survey: NETPEN91 Station: PTV3 Date: 05/02/91 Sample: PTV3-25

Replicate: 5

--	Eudorella pacifica	51	IND
--	Levinsenia gracilis	25	IND
--	Allia ramosa	19	IND
--	Amphiodia spp.	17	IND
--	Acmira lopezi	9	IND
--	Nephtys cornuta franciscana	9	IND
--	Heterophoxus oculatus	7	IND
--	Pholoe minuta	7	IND
--	Calanoida	6	IND
--	Nucula tenuis	6	IND
--	Nematoda	5	IND
--	Lumbrineris sp.	4	IND
--	Prionospio minuspio lighti	4	IND
--	Macoma spp.	3	IND
--	Parvilucina tenuisculpta	3	IND

-- Acila castrensis	2 IND
-- Axinopsida serricata	2 IND
-- Cossura soyeri	2 IND
-- Decapoda	2 IND
-- Mysella tumida	2 IND
-- Paraonella spp.	2 IND
-- Amphiridae	1 IND
-- Cirrophorus branchiatus	1 IND
-- Compsomyax subdiaphana	1 IND
-- Cumella vulgaris	1 IND
-- Euclymeninae spp.	1 IND
-- Glycinde armigera	1 IND
-- Laonice cirrata	1 IND
-- Monoculodes zernovi	1 IND
-- Pilargis berkeleyi	1 IND
-- Protomedeia spp.	1 IND
-- Sphaerodoropsis sphaerulifer	1 IND
-- Tubulanus spp.	1 IND

Survey: NETPEN91 Station: PTV4 Date: 05/02/91 Sample: PTV4-1

Replicate: 1

.5MM Nephtys cornuta franciscana	78 IND
.5MM Alvania spp.	31 IND
.5MM Acesta/Aricidea spp.	19 IND
.5MM Prionospio spp.	19 IND
.5MM Levinsenia gracilis	15 IND
.5MM Calanoida	14 IND
.5MM Cossura spp.	12 IND
.5MM Odostomia spp.	12 IND
.5MM Acila castrensis	11 IND
.5MM Paraprionospio pinnata	9 IND
.5MM Eudorella pacifica	7 IND
.5MM Prionospio steenstrupi	7 IND
.5MM Pachynus cf barnardi	6 IND
.5MM Psephidia lordi	6 IND
.5MM Decapoda	5 IND
.5MM Mysella tumida	5 IND
.5MM Pholoe minuta	5 IND
.5MM Axinopsida serricata	4 IND
.5MM Gyptis brevipalpa	4 IND
.5MM Lumbrineris sp.	4 IND
.5MM Nucula tenuis	4 IND
.5MM Amphiridae	3 IND
.5MM Glycinde picta	3 IND
.5MM Heterophoxus oculatus	3 IND
.5MM Nematoda	3 IND
.5MM Protomedeia spp.	3 IND
.5MM Gastropoda	2 IND
.5MM Leitoscoloplos elongatus	2 IND
.5MM Macoma spp.	2 IND
.5MM Ophelina acuminata	2 IND
.5MM Tharyx spp.	2 IND
.5MM Ampelisca sp.	1 IND
.5MM Heteromastus spp.	1 IND
.5MM Murina sp.	1 IND
.5MM Nephtys ferruginea	1 IND

.5MM	Polydora spp.	1	IND
.5MM	Turbonilla spp.	1	IND
1MM	Paraprionospio pinnata	35	IND
1MM	Alvania spp.	34	IND
1MM	Ophelina acuminata	29	IND
1MM	Amphiodia spp.	28	IND
1MM	Eudorella pacifica	11	IND
1MM	Pholoe minuta	6	IND
1MM	Pinnixa schmitti	5	IND
1MM	Leitoscoloplos elongatus	4	IND
1MM	Macoma nasuta	4	IND
1MM	Acila castrensis	3	IND
1MM	Heteromastus spp.	3	IND
1MM	Lumbrineris sp.	3	IND
1MM	Monoculodes spp.	3	IND
1MM	Nephtys cornuta cornuta	3	IND
1MM	Spiophanes spp.	3	IND
1MM	Axinopsida serricata	2	IND
1MM	Cephalaspidea	2	IND
1MM	Glycinde picta	2	IND
1MM	Lumbrineris luti	2	IND
1MM	Nucula tenuis	2	IND
1MM	Parvilucina tenuisculpta	2	IND
1MM	Amphiuridae	1	IND
1MM	Bittium spp.	1	IND
1MM	Calanoida	1	IND
1MM	Calanus spp.	1	IND
1MM	Cancer gracilis	1	IND
1MM	Cossura spp.	1	IND
1MM	Crangon nigricauda	1	IND
1MM	Gyptis brevipalpa	1	IND
1MM	Heteromastus filobranthus	1	IND
1MM	Heterophoxus oculatus	1	IND
1MM	Laonice cirrata	1	IND
1MM	Levinsenia gracilis	1	IND
1MM	Macoma carlottensis	1	IND
1MM	Mysella tumida	1	IND
1MM	Nephtys ferruginea	1	IND
1MM	Odostomia spp.	1	IND
1MM	Pilargis berkeleyi	1	IND
1MM	Prionospio steenstrupi	1	IND
1MM	Psephidia lordi	1	IND
1MM	Pseudocalanus spp.	1	IND
1MM	Sternaspis scutata	1	IND
1MM	Westwoodilla caecula	1	IND

Survey: NETPEN91 Station: PTV4 Date: 05/02/91 Sample: PTV4-1

Replicate: 2

.5MM	Nephtys cornuta franciscana	130	IND
.5MM	Eudorella pacifica	57	IND
.5MM	Acesta/Aricidea spp.	44	IND
.5MM	Cossura spp.	41	IND
.5MM	Levinsenia gracilis	35	IND
.5MM	Calanoida	26	IND
.5MM	Protomedeia spp.	24	IND
.5MM	Axinopsida serricata	22	IND

.5MM	Prionospio spp.	18 IND
.5MM	Lumbrineris sp.	11 IND
.5MM	Prionospio steenstrupi	11 IND
.5MM	Pholoe minuta	9 IND
.5MM	Decapoda	8 IND
.5MM	Heterophoxus oculatus	8 IND
.5MM	Mysella tumida	8 IND
.5MM	Nematoda	8 IND
.5MM	Nucula tenuis	7 IND
.5MM	Terebellides stroemi	7 IND
.5MM	Ampelisca sp.	6 IND
.5MM	Gyptis brevipalpa	6 IND
.5MM	Sphaerodoropsis sphaerulifer	5 IND
.5MM	Pachynus cf barnardi	4 IND
.5MM	Amphiuridae	3 IND
.5MM	Cumella vulgaris	3 IND
.5MM	Glycinde picta	3 IND
.5MM	Spiophanes spp.	3 IND
.5MM	Cirratulidae	2 IND
.5MM	Munna sp.	2 IND
.5MM	Acila castrensis	1 IND
.5MM	Caprellidae	1 IND
.5MM	Macoma spp.	1 IND
.5MM	Odostomia spp.	1 IND
.5MM	Paraprionospio pinnata	1 IND
.5MM	Psephidia lordi	1 IND
.5MM	Yoldia scissurata	1 IND
1MM	Amphiodia spp.	54 IND
1MM	Paraprionospio pinnata	45 IND
1MM	Eudorella pacifica	37 IND
1MM	Acesta/Aricidea spp.	29 IND
1MM	Levinsenia gracilis	10 IND
1MM	Nucula tenuis	9 IND
1MM	Prionospio steenstrupi	9 IND
1MM	Protomedeia prudens	8 IND
1MM	Gyptis brevipalpa	7 IND
1MM	Lumbrineris sp.	7 IND
1MM	Pinnixa spp.	7 IND
1MM	Lucinoma acutilineata	6 IND
1MM	Mysella tumida	6 IND
1MM	Nematoda	6 IND
1MM	Parvilucina tenuisculpta	6 IND
1MM	Psephidia lordi	6 IND
1MM	Pholoe minuta	5 IND
1MM	Sternaspis scutata	5 IND
1MM	Glycinde picta	4 IND
1MM	Heterophoxus oculatus	4 IND
1MM	Lumbrineris luti	4 IND
1MM	Spiophanes spp.	4 IND
1MM	Macoma carlottensis	3 IND
1MM	Macoma nasuta	3 IND
1MM	Axinopsida serricata	2 IND
1MM	Cossura spp.	2 IND
1MM	Heteromastus filobranchus	2 IND
1MM	Heteromastus spp.	2 IND
1MM	Laonice cirrata	2 IND

1MM	Prionospio spp.	2	IND
1MM	Acila castrensis	1	IND
1MM	Ampelisca unsocatae	1	IND
1MM	Amphiuridae	1	IND
1MM	Cerebratulus spp.	1	IND
1MM	Cirratulidae	1	IND
1MM	Compsomyx subdiaphana	1	IND
1MM	Cylichna attonsa	1	IND
1MM	Decapoda	1	IND
1MM	Nephtys cornuta franciscana	1	IND
1MM	Ophelina acuminata	1	IND
1MM	Tubulanus spp.	1	IND
1MM	Yoldia scissurata	1	IND

Survey: NETPEN91 Station: PTV4 Date: 05/02/91 Sample: PTV4-1

Replicate: 3

.5MM	Nephtys cornuta franciscana	153	IND
.5MM	Eudorella pacifica	52	IND
.5MM	Axinopsida serricata	41	IND
.5MM	Acesta/Aricidea spp.	40	IND
.5MM	Cossura spp.	38	IND
.5MM	Levinsenia gracilis	35	IND
.5MM	Pseudocalanus spp.	33	IND
.5MM	Mysella tumida	29	IND
.5MM	Odostomia spp.	19	IND
.5MM	Prionospio spp.	17	IND
.5MM	Centropages abdominalis	12	IND
.5MM	Pholoe minuta	10	IND
.5MM	Terebellides stroemi	10	IND
.5MM	Brachyura	8	IND
.5MM	Sphaerodoropsis sphaerulifer	8	IND
.5MM	Thysanoessa raschii	8	IND
.5MM	Cirratulidae	7	IND
.5MM	Gyptis brevipalpa	6	IND
.5MM	Lumbrineris sp.	6	IND
.5MM	Schistomeringos rudolphi	6	IND
.5MM	Turbonilla spp.	6	IND
.5MM	Calanus spp.	5	IND
.5MM	Nucula tenuis	5	IND
.5MM	Ophelina acuminata	5	IND
.5MM	Pachynus cf barnardi	5	IND
.5MM	Spiophanes spp.	5	IND
.5MM	Alvania spp.	3	IND
.5MM	Glycinde picta	3	IND
.5MM	Hemilamprops spp.	3	IND
.5MM	Nematoda	3	IND
.5MM	Psephidia lordi	3	IND
.5MM	Amphiuridae	2	IND
.5MM	Calanoida	2	IND
.5MM	Metridia spp.	2	IND
.5MM	Platynereis bicanaliculata	2	IND
.5MM	Poecilastomatoida (TEMP)	2	IND
.5MM	Ampelisca sp.	1	IND
.5MM	Balanomorpha	1	IND
.5MM	Bittium spp.	1	IND
.5MM	Cephalaspidea	1	IND

.5MM	<i>Corycaeus anglicus</i>	1 IND
.5MM	<i>Cumella vulgaris</i>	1 IND
.5MM	Diosaccidae	1 IND
.5MM	<i>Eteone longa</i>	1 IND
.5MM	<i>Euphilomedes producta</i>	1 IND
.5MM	<i>Margarites</i> spp.	1 IND
.5MM	<i>Nephtys cornuta cornuta</i>	1 IND
.5MM	Oedicerotidae	1 IND
.5MM	<i>Orchomene pinquis</i>	1 IND
.5MM	<i>Paraprionospio pinnata</i>	1 IND
.5MM	Pinnotheridae	1 IND
.5MM	<i>Tharyx</i> spp.	1 IND
.5MM	<i>Yoldia scissurata</i>	1 IND
1MM	<i>Amphiodia</i> spp.	66 IND
1MM	<i>Paraprionospio pinnata</i>	47 IND
1MM	<i>Eudorella pacifica</i>	30 IND
1MM	<i>Ophelina acuminata</i>	25 IND
1MM	<i>Levinsenia gracilis</i>	19 IND
1MM	Nematoda	19 IND
1MM	<i>Lumbrineris</i> sp.	16 IND
1MM	<i>Spiophanes</i> spp.	15 IND
1MM	<i>Acesta/Aricidea</i> spp.	14 IND
1MM	<i>Pinnixa</i> spp.	12 IND
1MM	<i>Pholoe minuta</i>	11 IND
1MM	<i>Prionospio</i> spp.	10 IND
1MM	<i>Terebellides stroemi</i>	7 IND
1MM	<i>Glycinde picta</i>	6 IND
1MM	<i>Nephtys cornuta franciscana</i>	6 IND
1MM	<i>Prionospio steenstrupi</i>	6 IND
1MM	<i>Cossura</i> spp.	5 IND
1MM	<i>Gyptis brevipalpa</i>	4 IND
1MM	<i>Heterophoxus oculatus</i>	4 IND
1MM	<i>Polydora</i> spp.	4 IND
1MM	Decapoda	3 IND
1MM	<i>Protomedeia prudens</i>	3 IND
1MM	<i>Tubulanus</i> spp.	3 IND
1MM	<i>Monoculodes zernovi</i>	2 IND
1MM	<i>Schistomeringos rudolphi</i>	2 IND
1MM	<i>Sternaspis scutata</i>	2 IND
1MM	<i>Tharyx</i> spp.	2 IND
1MM	<i>Amphicteis scaphobranchiata</i>	1 IND
1MM	<i>Jassa</i> spp.	1 IND
1MM	<i>Laonice cirrata</i>	1 IND
1MM	Maldanidae	1 IND
1MM	<i>Nephtys cornuta cornuta</i>	1 IND
1MM	<i>Nephtys ferruginea</i>	1 IND
1MM	<i>Orchomene pinquis</i>	1 IND
1MM	Pandalidae spp.	1 IND
1MM	<i>Sphaerodoropsis sphaerulifer</i>	1 IND

Survey: NETPEN91 Station: PTV4 Date: 05/02/91 Sample: PTV4-1

Replicate: 4

.5MM	<i>Nephtys cornuta franciscana</i>	148 IND
.5MM	<i>Prionospio</i> spp.	32 IND
.5MM	<i>Levinsenia gracilis</i>	31 IND
.5MM	<i>Acesta/Aricidea</i> spp.	30 IND

.5MM	Calanoida	29	IND
.5MM	Cossura spp.	15	IND
.5MM	Decapoda	14	IND
.5MM	Alvania spp.	12	IND
.5MM	Mysella tumida	8	IND
.5MM	Odostomia spp.	8	IND
.5MM	Pholoe minuta	8	IND
.5MM	Gyptis brevipalpa	7	IND
.5MM	Prionospio steenstrupi	7	IND
.5MM	Cirratulidae	6	IND
.5MM	Nematoda	6	IND
.5MM	Pachynus cf barnardi	6	IND
.5MM	Glycinde picta	5	IND
.5MM	Lumbrineris sp.	5	IND
.5MM	Axinopsida serricata	4	IND
.5MM	Eudorella pacifica	4	IND
.5MM	Aoroides spp	3	IND
.5MM	Nucula tenuis	3	IND
.5MM	Ophelina acuminata	3	IND
.5MM	Platynereis bicanaliculata	3	IND
.5MM	Amphiuridae	2	IND
.5MM	Cylindroleberididae	2	IND
.5MM	Jassa spp.	2	IND
.5MM	Nephtys cornuta cornuta	2	IND
.5MM	Polydora spp.	2	IND
.5MM	Sphaerodoropsis sphaerulifer	2	IND
.5MM	Caprellidae	1	IND
.5MM	Cephalaspidea	1	IND
.5MM	Diastylis alaskensis	1	IND
.5MM	Margarites spp.	1	IND
.5MM	Paraprionospio pinnata	1	IND
.5MM	Psephidia lordi	1	IND
.5MM	Turbonilla spp.	1	IND
1MM	Paraprionospio pinnata	50	IND
1MM	Amphiodia spp.	37	IND
1MM	Ophelina acuminata	31	IND
1MM	Nematoda	14	IND
1MM	Pinnixa spp.	7	IND
1MM	Platynereis bicanaliculata	6	IND
1MM	Spiophanes spp.	6	IND
1MM	Cephalaspidea	5	IND
1MM	Mysella tumida	5	IND
1MM	Eudorella pacifica	4	IND
1MM	Pholoe minuta	4	IND
1MM	Acila castrensis	3	IND
1MM	Axinopsida serricata	3	IND
1MM	Laonice cirrata	3	IND
1MM	Lumbrineris sp.	3	IND
1MM	Parvilucina tenuisculpta	3	IND
1MM	Sternaspis scutata	3	IND
1MM	Acesta/Aricidea spp.	2	IND
1MM	Cossura spp.	2	IND
1MM	Glycinde picta	2	IND
1MM	Heteromastus spp.	2	IND
1MM	Heterophoxus oculatus	2	IND
1MM	Levinsenia gracilis	2	IND

1MM	Macoma nasuta	2	IND
1MM	Metaphoxus frequens	2	IND
1MM	Polydora spp.	2	IND
1MM	Prionospio spp.	2	IND
1MM	Prionospio steenstrupi	2	IND
1MM	Aoroides spp	1	IND
1MM	Decapoda	1	IND
1MM	Glycera americana	1	IND
1MM	Heteromastus filobranchus	1	IND
1MM	Lumbrineris luti	1	IND
1MM	Macoma carlottensis	1	IND
1MM	Melita dentata	1	IND
1MM	Pontogeneia cf. rostrata	1	IND

Survey: NETPEN91 Station: PTV4 Date: 05/02/91 Sample: PTV4-1

Replicate: 5

.5MM	Nephtys cornuta franciscana	211	IND
.5MM	Stephidae	108	IND
.5MM	Prionospio spp.	43	IND
.5MM	Cossura spp.	39	IND
.5MM	Nematoda	37	IND
.5MM	Odostomia spp.	27	IND
.5MM	Cirratulidae	24	IND
.5MM	Alvania spp.	14	IND
.5MM	Axinopsida serricata	14	IND
.5MM	Melita dentata	14	IND
.5MM	Acesta/Aricidea spp.	13	IND
.5MM	Levinsenia gracilis	13	IND
.5MM	Nephtys cornuta cornuta	11	IND
.5MM	Pseudocalanus spp.	11	IND
.5MM	Gyptis brevipalpa	10	IND
.5MM	Turbonilla spp.	9	IND
.5MM	Aoroides spp	8	IND
.5MM	Ophelina acuminata	8	IND
.5MM	Pholoe minuta	7	IND
.5MM	Sphaerodoropsis sphaerulifer	7	IND
.5MM	Cephalaspidea	6	IND
.5MM	Acila castrensis	5	IND
.5MM	Centropages abdominalis	5	IND
.5MM	Gastropteron pacificum	5	IND
.5MM	Mysella tumida	5	IND
.5MM	Glycinde picta	4	IND
.5MM	Macoma spp.	4	IND
.5MM	Nucula tenuis	4	IND
.5MM	Paraprionospio pinnata	4	IND
.5MM	Amphiuridae	3	IND
.5MM	Eudorella pacifica	3	IND
.5MM	Lumbrineris sp.	3	IND
.5MM	Psephidia lordi	3	IND
.5MM	Balanomorpha	2	IND
.5MM	Calanus spp.	2	IND
.5MM	Platynereis bicanaliculata	2	IND
.5MM	Thysanoessa raschii	2	IND
.5MM	Acartia longiremis	1	IND
.5MM	Brachyura	1	IND
.5MM	Caprellidae	1	IND

.5MM	Copepoda harpacticoida	1	IND
.5MM	Eteone longa	1	IND
.5MM	Eucarida euphausiacea	1	IND
.5MM	Evadne spp.	1	IND
.5MM	Harpiniopsis fulgens	1	IND
.5MM	Heterophoxus oculatus	1	IND
.5MM	Metridia spp.	1	IND
.5MM	Micropodarke dubia	1	IND
.5MM	Pachynus cf barnardi	1	IND
.5MM	Phyllodoce (Anaitides) groenlandica	1	IND
.5MM	Pleusymptes subglaber	1	IND
.5MM	Podoceridae	1	IND
.5MM	Prionospio steenstrupi	1	IND
1MM	Paraprionospio pinnata	72	IND
1MM	Alvania spp.	50	IND
1MM	Amphiodia spp.	44	IND
1MM	Nematoda	31	IND
1MM	Ophelina acuminata	25	IND
1MM	Prionospio spp.	22	IND
1MM	Platynereis bicanaliculata	12	IND
1MM	Cephalaspidea	11	IND
1MM	Heteromastus filobranthus	10	IND
1MM	Prionospio steenstrupi	10	IND
1MM	Acesta/Aricidea spp.	9	IND
1MM	Axinopsida serricata	8	IND
1MM	Glycinde picta	8	IND
1MM	Nephtys cornuta franciscana	8	IND
1MM	Pholoe minuta	8	IND
1MM	Pinnixa schmitti	7	IND
1MM	Cossura spp.	6	IND
1MM	Spiophanes spp.	6	IND
1MM	Macoma nasuta	5	IND
1MM	Nucula tenuis	4	IND
1MM	Sternaspis scutata	4	IND
1MM	Eudorella pacifica	3	IND
1MM	Gyptis brevipalpa	3	IND
1MM	Mysella tumida	3	IND
1MM	Odostomia spp.	3	IND
1MM	Ampharete labrops	2	IND
1MM	Aoroides spp	2	IND
1MM	Cirratulidae	2	IND
1MM	Eualus pusiolus	2	IND
1MM	Levinsenia gracilis	2	IND
1MM	Lumbrineris luti	2	IND
1MM	Macoma carlottensis	2	IND
1MM	Melita dentata	2	IND
1MM	Micrura spp.	2	IND
1MM	Monoculodes spp.	2	IND
1MM	Parvilucina tenuisculpta	2	IND
1MM	Protomedeia spp.	2	IND
1MM	Psephidia lordi	2	IND
1MM	Tharyx spp.	2	IND
1MM	Turbonilla spp.	2	IND
1MM	Yoldia scissurata	2	IND
1MM	Acila castrensis	1	IND
1MM	Calanoidea	1	IND

1MM	Chaetozone setosa	1	IND
1MM	Clinocardium spp.	1	IND
1MM	Cylichna attonsa	1	IND
1MM	Galathowenia nr. G. oculata	1	IND
1MM	Glycinde armigera	1	IND
1MM	Heterophoxus oculatus	1	IND
1MM	Lumbrineris sp.	1	IND
1MM	Maldanidae	1	IND
1MM	Metacaprella spp.	1	IND
1MM	Nephasoma spp.	1	IND
1MM	Nephtys cornuta cornuta	1	IND
1MM	Parathemisto pacifica	1	IND
1MM	Polydora spp.	1	IND
1MM	Pontogeneia cf. rostrata	1	IND
1MM	Prachynella lodo	1	IND
1MM	Schistomeringos rudolphi	1	IND
1MM	Stephidae	1	IND
1MM	Terebellides stroemi	1	IND
1MM	Thysanoessa raschii	1	IND

Survey: NETPEN91 Station: PTV4 Date: 05/03/91 Sample: PTV4-25

Replicate: 1

--	Nematoda	35	IND
--	Paraprionospio pinnata	26	IND
--	Prionospio minuspio lighti	26	IND
--	Amphiodia spp.	16	IND
--	Nephtys cornuta franciscana	15	IND
--	Tharyx spp.	14	IND
--	Cossura soyeri	12	IND
--	Calanoida	10	IND
--	Pinnixa spp.	9	IND
--	Acmira lopezi	8	IND
--	Heteromastus filobranchus	8	IND
--	Mysella tumida	8	IND
--	Levinsenia gracilis	7	IND
--	Allia ramosa	6	IND
--	Spiophanes berkeleyorum	4	IND
--	Glycinde armigera	3	IND
--	Lumbrineris sp.	3	IND
--	Nucula tenuis	3	IND
--	Allia sp.	2	IND
--	Ophelina acuminata	2	IND
--	Psephidia lordi	2	IND
--	TEREBELLIDES	2	IND
--	Acila castrensis	1	IND
--	Amphiuridae	1	IND
--	Axinopsida serricata	1	IND
--	Decapoda	1	IND
--	Euclymeninae spp.	1	IND
--	Heterophoxus oculatus	1	IND
--	Leitoscoloplos elongatus	1	IND
--	Lumbrineris luti	1	IND
--	Macoma carlottensis	1	IND
--	Micropodarke dubia	1	IND
--	Odostomia spp.	1	IND
--	Parvilucina tenuisculpta	1	IND

--	<i>Pholoe minuta</i>	1 IND
--	<i>Polydora socialis</i>	1 IND
--	<i>Prionospio steenstrupi</i>	1 IND
--	<i>Protomedea prudens</i>	1 IND

Survey: NETPEN91 Station: PTV4 Date: 05/03/91 Sample: PTV4-25

Replicate: 2

--	<i>Paraprionospio pinnata</i>	13 IND
--	<i>Amphiodia</i> spp.	12 IND
--	<i>Nephtys cornuta franciscana</i>	12 IND
--	Calanoida	10 IND
--	<i>Pinnixa</i> spp.	7 IND
--	<i>Axinopsida serricata</i>	5 IND
--	<i>Prionospio cirrifera</i>	5 IND
--	<i>Cossura soyeri</i>	4 IND
--	<i>Levinsenia gracilis</i>	4 IND
--	<i>Allia ramosa</i>	3 IND
--	<i>Heteromastus filobranchus</i>	3 IND
--	<i>Mysella tumida</i>	3 IND
--	<i>Podarkeopsis glabra</i>	3 IND
--	<i>Chaetozone setosa</i>	2 IND
--	<i>Eudorella pacifica</i>	2 IND
--	<i>Nucula tenuis</i>	2 IND
--	<i>Pholoe minuta</i>	2 IND
--	<i>Tharyx</i> spp.	2 IND
--	<i>Acmira lopezi</i>	1 IND
--	<i>Dyopodos</i> spp.	1 IND
--	<i>Eteone pacifica</i>	1 IND
--	<i>Eteone spilotus</i>	1 IND
--	Nematoda	1 IND
--	<i>Ophiodromus pugettensis</i>	1 IND
--	<i>Parvilucina tenuisculpta</i>	1 IND
--	<i>Platynereis bicanaliculata</i>	1 IND
--	<i>Pontogeneia cf. rostrata</i>	1 IND
--	Porcellanidae	1 IND
--	<i>Priapulid caudatus</i>	1 IND
--	<i>Prionospio steenstrupi</i>	1 IND
--	<i>Spiophanes berkeleyorum</i>	1 IND

Survey: NETPEN91 Station: PTV4 Date: 05/03/91 Sample: PTV4-25

Replicate: 3

--	<i>Paraprionospio pinnata</i>	16 IND
--	<i>Nephtys cornuta franciscana</i>	15 IND
--	<i>Prionospio minuspio lighti</i>	12 IND
--	<i>Tharyx</i> spp.	12 IND
--	<i>Amphiodia</i> spp.	10 IND
--	<i>Levinsenia gracilis</i>	9 IND
--	<i>Mysella tumida</i>	6 IND
--	Calanoida	5 IND
--	<i>Cossura soyeri</i>	4 IND
--	<i>Allia ramosa</i>	3 IND
--	<i>Axinopsida serricata</i>	3 IND
--	Nematoda	3 IND
--	<i>Alvania</i> spp.	2 IND
--	<i>Eudorella pacifica</i>	2 IND
--	<i>Heteromastus filobranchus</i>	2 IND

-- Schistomeringos rudolphi	2 IND
-- Acmira lopezi	1 IND
-- Chaetozone setosa	1 IND
-- Cylindroleberididae	1 IND
-- Decapoda	1 IND
-- Gammaridae	1 IND
-- Glycinde armigera	1 IND
-- Lucinoma acutilineata	1 IND
-- Lumbrineris sp.	1 IND
-- Micropodarke dubia	1 IND
-- Ophelina acuminata	1 IND
-- Paraonella spp.	1 IND
-- Parvilucina tenuisculpta	1 IND
-- Pinnixa spp.	1 IND
-- Psephidia lordi	1 IND
-- Scoloplos acmeceps	1 IND
-- Sphaerodoropsis sphaerulifer	1 IND
-- TEREHELLIDES	1 IND

Survey: NETPEN91 Station: PTV4 Date: 05/03/91 Sample: PTV4-25

Replicate: 4

-- Paraprionospio pinnata	35 IND
-- Prionospio minuspio lighti	20 IND
-- Nephtys cornuta franciscana	19 IND
-- Amphiodia spp.	17 IND
-- Nematoda	15 IND
-- Tharyx spp.	10 IND
-- Cossura soyeri	9 IND
-- Allia ramosa	8 IND
-- Jassa spp.	8 IND
-- Calanoidea	5 IND
-- Levinsenia gracilis	5 IND
-- Axinopsida serricata	3 IND
-- Eudorella pacifica	3 IND
-- Heteromastus filobranchus	3 IND
-- Nucula tenuis	3 IND
-- Alvania spp.	2 IND
-- Caprellidae	2 IND
-- Chaetozone setosa	2 IND
-- Macoma nasuta	2 IND
-- Micropodarke dubia	2 IND
-- Mysella tumida	2 IND
-- Ophelina acuminata	2 IND
-- Podarkeopsis glabra	2 IND
-- Terebellides stroemi	2 IND
-- Ampharete labrops	1 IND
-- Glycinde armigera	1 IND
-- Heterophoxus oculatus	1 IND
-- Lumbrineris luti	1 IND
-- Lumbrineris sp.	1 IND
-- Macoma carlottensis	1 IND
-- Macoma spp.	1 IND
-- Metaphoxus frequens	1 IND
-- Pholoe minuta	1 IND
-- Phyllodoce (Anaitides) mucosa	1 IND
-- Pinnixa spp.	1 IND

--	Platynereis bicanaliculata	1	IND
--	Polydora socialis	1	IND
--	Prionospio steenstrupi	1	IND
--	Psephidia lordi	1	IND
--	Sternaspis scutata	1	IND

Survey: NETPEN91 Station: PTV4 Date: 05/03/91 Sample: PTV4-25

Replicate: 5

--	Nephtys cornuta franciscana	33	IND
--	Amphiodia spp.	31	IND
--	Nematoda	26	IND
--	Allia ramosa	20	IND
--	Paraprionospio pinnata	14	IND
--	Prionospio minuspio lighti	14	IND
--	Acmira lopezi	11	IND
--	Eudorella pacifica	11	IND
--	Pholoe minuta	10	IND
--	COPEPODA	9	IND
--	Levinsenia gracilis	9	IND
--	Axinopsida serricata	7	IND
--	Mysella tumida	7	IND
--	Pinnixa franciscana	6	IND
--	Euclymeninae spp.	5	IND
--	Spiophanes berkeleyorum	5	IND
--	Terebellides stroemi	5	IND
--	Cossura soyeri	4	IND
--	Lumbrineris sp.	4	IND
--	Pachynus barnardi	4	IND
--	Podarkeopsis glabra	4	IND
--	Tharyx spp.	4	IND
--	Heteromastus filobranchus	3	IND
--	Heterophoxus oculatus	2	IND
--	Lumbrineris luti	2	IND
--	Maldane sarsi	2	IND
--	Oraderea	2	IND
--	Ampelisca sp.	1	IND
--	Cerebratulus spp.	1	IND
--	Decapoda	1	IND
--	Glycinde armigera	1	IND
--	Jassa spp.	1	IND
--	Leucon subnasica	1	IND
--	Nucula tenuis	1	IND
--	Ophelina acuminata	1	IND
--	Pandora bilirata	1	IND
--	Platynereis bicanaliculata	1	IND
--	Pleurogonium rubicundum	1	IND
--	Polycirrinae	1	IND
--	Schistomeringos rudolphi	1	IND

Survey: NETPEN91 Station: PTV5 Date: 05/03/91 Sample: PTV5-1

Replicate: 1

.5MM	Nephtys cornuta franciscana	96	IND
.5MM	Polydora spp.	61	IND
.5MM	Acesta/Aricidea spp.	52	IND
.5MM	Levinsenia gracilis	35	IND
.5MM	Eudorella pacifica	28	IND

.5MM	Prionospio spp.	22	IND
.5MM	Cossura spp.	18	IND
.5MM	Mysella tumida	14	IND
.5MM	Tharyx spp.	10	IND
.5MM	Axinopsida serricata	9	IND
.5MM	Gyptis brevipalpa	9	IND
.5MM	Alvania spp.	6	IND
.5MM	Paraprionospio pinnata	6	IND
.5MM	Terebellides stroemi	6	IND
.5MM	Nephtys cornuta cornuta	5	IND
.5MM	COPEPODA	4	IND
.5MM	Pachynus cf barnardi	4	IND
.5MM	Pholoe minuta	4	IND
.5MM	Prionospio steenstrupi	4	IND
.5MM	Ampelisca unsocalae	3	IND
.5MM	Cephalaspidea	3	IND
.5MM	Glycinde picta	3	IND
.5MM	Heterophoxus oculatus	3	IND
.5MM	Lumbrineris sp.	3	IND
.5MM	Turbonilla spp.	3	IND
.5MM	Acila castrensis	2	IND
.5MM	Eteone longa	2	IND
.5MM	Ophelina acuminata	2	IND
.5MM	Protomedeia spp.	2	IND
.5MM	Amphiuridae	1	IND
.5MM	Gastroteron pacificum	1	IND
.5MM	Hyperia medusarum	1	IND
.5MM	Laonice cirrata	1	IND
.5MM	Micropodarke dubia	1	IND
.5MM	Monoculodes zernovi	1	IND
.5MM	Nephtys ferruginea	1	IND
.5MM	Schistomeringos rudolphi	1	IND
.5MM	Sphaerodoropsis sphaerulifer	1	IND
1MM	Paraprionospio pinnata	64	IND
1MM	Amphiodia spp.	56	IND
1MM	Eudorella pacifica	23	IND
1MM	Nematoda	18	IND
1MM	Polydora spp.	15	IND
1MM	Pinnixa spp.	11	IND
1MM	Ophelina acuminata	10	IND
1MM	Acesta/Aricidea spp.	9	IND
1MM	Mysella tumida	8	IND
1MM	Prionospio spp.	7	IND
1MM	Spiophanes spp.	7	IND
1MM	Pholoe minuta	6	IND
1MM	Prionospio steenstrupi	6	IND
1MM	Spiophanes berkeleyorum	5	IND
1MM	Sternaspis scutata	5	IND
1MM	Axinopsida serricata	4	IND
1MM	Cossura spp.	4	IND
1MM	Euphilomedes producta	4	IND
1MM	Glycinde picta	4	IND
1MM	Lumbrineris luti	4	IND
1MM	Macoma carlottensis	4	IND
1MM	Parvilucina tenuisculpta	4	IND
1MM	Protomedeia prudens	4	IND

1MM	Heterophoxus oculatus	3	IND
1MM	Levinsenia gracilis	3	IND
1MM	Nucula tenuis	3	IND
1MM	Orchomene pinquis	3	IND
1MM	Acila castrensis	2	IND
1MM	Laonice cirrata	2	IND
1MM	Lumbrineris sp.	2	IND
1MM	Macoma nasuta	2	IND
1MM	Micrura spp.	2	IND
1MM	Psephidia lordi	2	IND
1MM	Terebellides stroemi	2	IND
1MM	Ampelisca unsocalae	1	IND
1MM	Caprellidae	1	IND
1MM	Cirratulidae	1	IND
1MM	Cucumaria sp.	1	IND
1MM	Gastropteron pacificum	1	IND
1MM	Gyptis brevipalpa	1	IND
1MM	Heteromastus spp.	1	IND
1MM	Jassa spp.	1	IND
1MM	Lumbrineris lagunae	1	IND
1MM	Maldanidae	1	IND
1MM	Phyllodocidae	1	IND
1MM	Tubulanus spp.	1	IND

Survey: NETPEN91 Station: PTV5 Date: 05/03/91 Sample: PTV5-1

Replicate: 2

.5MM	Nephtys cornuta franciscana	135	IND
.5MM	Cirratulidae	40	IND
.5MM	Prionospio spp.	39	IND
.5MM	Levinsenia gracilis	33	IND
.5MM	Acesta/Aricidea spp.	27	IND
.5MM	Oligochaeta	27	IND
.5MM	Axinopsida serricata	20	IND
.5MM	Gyptis brevipalpa	9	IND
.5MM	Nysella tumida	7	IND
.5MM	Nematoda	7	IND
.5MM	Pholoe minuta	6	IND
.5MM	Calanoida	5	IND
.5MM	Cossura spp.	5	IND
.5MM	Eudorella pacifica	4	IND
.5MM	Lumbrineris sp.	4	IND
.5MM	Alvania spp.	3	IND
.5MM	Heterophoxus oculatus	3	IND
.5MM	Prionospio steenstrupi	3	IND
.5MM	Glycinde picta	2	IND
.5MM	Heteromastus filobranchus	2	IND
.5MM	Macoma spp.	2	IND
.5MM	Ophelina acuminata	2	IND
.5MM	Pachynus cf barnardi	2	IND
.5MM	Paraprionospio pinnata	2	IND
.5MM	Psephidia lordi	2	IND
.5MM	Diastylis alaskensis	1	IND
.5MM	Leitoscoloplos elongatus	1	IND
.5MM	Micropodarke dubia	1	IND
.5MM	Micrura spp.	1	IND
.5MM	Nebalia pugettensis	1	IND

.5MM	Nucula tenuis	1	IND
.5MM	Odostomia spp.	1	IND
.5MM	Platynereis bicanaliculata	1	IND
.5MM	Turbonilla spp.	1	IND
1MM	Paraprionospio pinnata	82	IND
1MM	Amphiodia spp.	52	IND
1MM	Mysella tumida	31	IND
1MM	Pinnixa schmitti	21	IND
1MM	Axinopsida serricata	16	IND
1MM	Prionospio cirrifera	13	IND
1MM	Alvania spp.	12	IND
1MM	Eudorella pacifica	8	IND
1MM	Macoma nasuta	8	IND
1MM	Nematoda	8	IND
1MM	Parvilucina tenuisculpta	7	IND
1MM	Spiophanes berkeleyorum	6	IND
1MM	Pholoe minuta	5	IND
1MM	Acesta/Aricidea spp.	4	IND
1MM	Ampharete labrops	4	IND
1MM	Odostomia spp.	4	IND
1MM	Ophelina acuminata	4	IND
1MM	Acila castrensis	3	IND
1MM	Cirratulidae	3	IND
1MM	Cossura spp.	3	IND
1MM	Levinsenia gracilis	3	IND
1MM	Macoma carlottensis	3	IND
1MM	Nucula tenuis	3	IND
1MM	Sternaspis scutata	3	IND
1MM	Tharyx spp.	3	IND
1MM	Compsomyax subdiaphana	2	IND
1MM	Gyptis brevipalpa	2	IND
1MM	Heteromastus spp.	2	IND
1MM	Lumbrineris sp.	2	IND
1MM	Maldanidae	2	IND
1MM	Platynereis bicanaliculata	2	IND
1MM	Polynoidae	2	IND
1MM	Turbonilla spp.	2	IND
1MM	CUCUMARIIDAE	1	IND
1MM	Cerebratulus spp.	1	IND
1MM	Gastropteron pacificum	1	IND
1MM	Heteromastus filobranchus	1	IND
1MM	Lucinoma acutilineata	1	IND
1MM	Metaphoxus frequens	1	IND
1MM	Mytilidae	1	IND
1MM	Nephtys cornuta franciscana	1	IND
1MM	Oligochaeta	1	IND
1MM	Phyllodoce (Anaitides) groenlandica	1	IND
1MM	Prionospio spp.	1	IND

Survey: NETPEN91 Station: PTV5 Date: 05/03/91 Sample: PTV5-1

Replicate: 3

.5MM	Nephtys cornuta franciscana	147	IND
.5MM	Cirratulidae	40	IND
.5MM	Acesta/Aricidea spp.	35	IND
.5MM	Cossura spp.	32	IND
.5MM	Prionospio spp.	32	IND

.5MM	Oligochaeta	20	IND
.5MM	Axinopsida serricata	19	IND
.5MM	Levinsenia gracilis	16	IND
.5MM	Mysella tumida	12	IND
.5MM	Gyptis brevipalpa	11	IND
.5MM	Polydora spp.	11	IND
.5MM	Macoma spp.	8	IND
.5MM	Calanoida	6	IND
.5MM	Psephidia lordi	5	IND
.5MM	Amphiuridae	4	IND
.5MM	Arthropoda pycnogonida	4	IND
.5MM	Nematoda	4	IND
.5MM	Ampelisca unsocalae	3	IND
.5MM	Eudorella pacifica	3	IND
.5MM	Lumbrineris sp.	3	IND
.5MM	Protomeleia prudens	3	IND
.5MM	Eteone spp.	2	IND
.5MM	Glycinde picta	2	IND
.5MM	Nucula tenuis	2	IND
.5MM	Ophelina acuminata	2	IND
.5MM	Pholoe minuta	2	IND
.5MM	Prionospio steenstrupi	2	IND
.5MM	Acila castrensis	1	IND
.5MM	Alvania spp.	1	IND
.5MM	Micrura spp.	1	IND
.5MM	Mytilus edulis	1	IND
.5MM	Nephtys ferruginea	1	IND
.5MM	Pachynus cf barnardi	1	IND
.5MM	Paraprionospio pinnata	1	IND
.5MM	Tharyx secundus	1	IND
1MM	Paraprionospio pinnata	106	IND
1MM	Amphiodia spp.	76	IND
1MM	Nematoda	65	IND
1MM	Ophelina acuminata	44	IND
1MM	Prionospio cirrifera	29	IND
1MM	Pinnixa schmitti	22	IND
1MM	Mysella tumida	21	IND
1MM	Polydora spp.	19	IND
1MM	Alvania spp.	14	IND
1MM	Spiophanes berkeleyorum	14	IND
1MM	Axinopsida serricata	12	IND
1MM	Acesta/Aricidea spp.	9	IND
1MM	Eudorella pacifica	9	IND
1MM	Glycinde picta	6	IND
1MM	Macoma nasuta	5	IND
1MM	Prionospio steenstrupi	5	IND
1MM	Lumbrineris sp.	4	IND
1MM	Nephtys cornuta cornuta	4	IND
1MM	Nephtys cornuta franciscana	4	IND
1MM	Nucula tenuis	4	IND
1MM	Parvilucina tenuisculpta	4	IND
1MM	Tharyx spp.	4	IND
1MM	Acila castrensis	3	IND
1MM	Cephalaspidea	3	IND
1MM	Gyptis brevipalpa	3	IND
1MM	Heteromastus filobranthus	3	IND

1MM	Macoma carlottensis	3	IND
1MM	Odostomia spp.	3	IND
1MM	Levinsenia gracilis	2	IND
1MM	Micrura spp.	2	IND
1MM	Pholoe minuta	2	IND
1MM	Turbonilla spp.	2	IND
1MM	Cerebratulus spp.	1	IND
1MM	Chaetozone setosa	1	IND
1MM	Cylichna attonsa	1	IND
1MM	Eteone longa	1	IND
1MM	Hemilamprops spp.	1	IND
1MM	Heterophoxus oculatus	1	IND
1MM	Macoma elimata	1	IND
1MM	Maldanidae	1	IND
1MM	Mytilus edulis	1	IND
1MM	Phyllodoce (Anaitides) groenlandica	1	IND
1MM	Phyllodocidae	1	IND
1MM	Platynereis bicanaliculata	1	IND
1MM	Polynoidea	1	IND
1MM	Pseudocalanus spp.	1	IND
1MM	Schistomeringos rudolphi	1	IND
1MM	Sternaspis scutata	1	IND

Survey: NETPEN91 Station: PTV5 Date: 05/03/91 Sample: PTV5-1

Replicate: 4

.5MM	Nephtys cornuta franciscana	135	IND
.5MM	Levinsenia gracilis	31	IND
.5MM	Cossura spp.	29	IND
.5MM	Cirratulidae	26	IND
.5MM	Acesta/Aricidea spp.	21	IND
.5MM	Prionospio spp.	18	IND
.5MM	Prionospio cirrifera	15	IND
.5MM	Eudorella pacifica	14	IND
.5MM	Nematoda	13	IND
.5MM	Alvania spp.	10	IND
.5MM	Gyptis brevipalpa	8	IND
.5MM	Mysella tumida	8	IND
.5MM	Axinopsida serricata	5	IND
.5MM	Oligochaeta	5	IND
.5MM	Pachynus cf barnardi	5	IND
.5MM	Sphaerodoropsis sphaerulifer	5	IND
.5MM	Lumbrineris sp.	4	IND
.5MM	Ophelina acuminata	4	IND
.5MM	Pholoe minuta	4	IND
.5MM	Pseudocalanus spp.	4	IND
.5MM	Brachyura	3	IND
.5MM	Odostomia spp.	3	IND
.5MM	Paraprionospio pinnata	3	IND
.5MM	Tharyx spp.	3	IND
.5MM	Turbonilla spp.	3	IND
.5MM	Ampelisca sp.	2	IND
.5MM	Calanoidea	2	IND
.5MM	Chaetozone setosa	2	IND
.5MM	Eteone longa	2	IND
.5MM	Heteromastus spp.	2	IND
.5MM	Stephidae	2	IND

.5MM	Acila castrensis	1	IND
.5MM	Amphiporus spp.	1	IND
.5MM	Amphiuridae	1	IND
.5MM	Cylindroleberididae	1	IND
.5MM	Hemilamprops spp.	1	IND
.5MM	Heteromastus filobranchus	1	IND
.5MM	Lumbrineris luti	1	IND
.5MM	Metridia spp.	1	IND
.5MM	Nucula tenuis	1	IND
.5MM	Pleurogonium rubicundum	1	IND
.5MM	Psephidia lordi	1	IND
1MM	Paraprionospio pinnata	99	IND
1MM	Amphiodia spp.	65	IND
1MM	Nematoda	56	IND
1MM	Ophelina acuminata	27	IND
1MM	Eudorella pacifica	22	IND
1MM	Mysella tumida	19	IND
1MM	Alvania spp.	12	IND
1MM	Acesta/Aricidea spp.	9	IND
1MM	Prionospio cirrifera	9	IND
1MM	Pholoe minuta	8	IND
1MM	Parvilucina tenuisculpta	7	IND
1MM	Spiophanes spp.	7	IND
1MM	Glycinde picta	5	IND
1MM	Nucula tenuis	5	IND
1MM	Spiophanes berkeleyorum	5	IND
1MM	Cossura spp.	4	IND
1MM	Gyptis brevipalpa	3	IND
1MM	Heteromastus spp.	3	IND
1MM	Heterophoxus oculatus	3	IND
1MM	Levinsenia gracilis	3	IND
1MM	Pinnixa schmitti	3	IND
1MM	Cancer gracilis	2	IND
1MM	Lumbrineris sp.	2	IND
1MM	Nephtys cornuta cornuta	2	IND
1MM	Odostomia spp.	2	IND
1MM	Amphiuridae	1	IND
1MM	Compsomyx subdiaphana	1	IND
1MM	Crangonidae	1	IND
1MM	Gastropteron pacificum	1	IND
1MM	Glycinde armigera	1	IND
1MM	Ischyrocerus anguipes	1	IND
1MM	Lumbrineris luti	1	IND
1MM	Macoma carlottensis	1	IND
1MM	Macoma spp.	1	IND
1MM	Maldanidae	1	IND
1MM	Nephtys cornuta franciscana	1	IND
1MM	Pectinaria californiensis	1	IND
1MM	Prionospio steenstrupi	1	IND
1MM	Protomedeia spp.	1	IND
1MM	Schistomeringos rudolphi	1	IND
1MM	Sternaspis scutata	1	IND
1MM	Tharyx spp.	1	IND
1MM	Tortanus discaudatus	1	IND
1MM	Turbonilla spp.	1	IND
1MM	Westwoodilla caecula	1	IND

Survey: NETPEN91 Station: PTV5 Date: 05/03/91 Sample: PTV5-1

Replicate: 5

.5MM	Capitella capitata	179	IND
.5MM	Nephtys cornuta franciscana	36	IND
.5MM	Nematoda	35	IND
.5MM	Alvania spp.	16	IND
.5MM	Macoma spp.	12	IND
.5MM	Cirratulidae	7	IND
.5MM	Nephtys cornuta cornuta	5	IND
.5MM	Polydora spp.	5	IND
.5MM	Gyptis brevipalpa	4	IND
.5MM	Ophelina acuminata	4	IND
.5MM	Acila castrensis	3	IND
.5MM	Prionospio cirrifera	3	IND
.5MM	Aoroides spp	2	IND
.5MM	Cossura spp.	2	IND
.5MM	Acesta/Aricidea spp.	1	IND
.5MM	Archaeogastropoda	1	IND
.5MM	Balanomorpha	1	IND
.5MM	Calanoida	1	IND
.5MM	Cephalaspidea	1	IND
.5MM	Cumella vulgaris	1	IND
.5MM	Gastropteron pacificum	1	IND
.5MM	Mysella tumida	1	IND
.5MM	Nucula tenuis	1	IND
.5MM	Paraprionospio pinnata	1	IND
.5MM	Pseudocalanus spp.	1	IND
.5MM	Sphaerodoropsis sphaerulifer	1	IND
.5MM	Turbonilla spp.	1	IND
1MM	Ophelina acuminata	32	IND
1MM	Nematoda	28	IND
1MM	Paraprionospio pinnata	19	IND
1MM	Capitella capitata	12	IND
1MM	Mysella tumida	9	IND
1MM	Polydora spp.	5	IND
1MM	Axinopsida serricata	4	IND
1MM	Glycinde picta	4	IND
1MM	Macoma nasuta	4	IND
1MM	Macoma carlottensis	3	IND
1MM	Nephtys cornuta franciscana	3	IND
1MM	Amphiodia spp.	2	IND
1MM	Eudorella pacifica	2	IND
1MM	Spiophanes spp.	2	IND
1MM	Acila castrensis	1	IND
1MM	Cancer gracilis	1	IND
1MM	Chaetozone setosa	1	IND
1MM	Gastropteron pacificum	1	IND
1MM	Heterophoxus oculatus	1	IND
1MM	Kefersteinia cirrata	1	IND
1MM	Lumbrineris sp.	1	IND
1MM	Macoma spp.	1	IND
1MM	Micrura spp.	1	IND
1MM	Mytilidae	1	IND
1MM	Nephtys cornuta cornuta	1	IND
1MM	Orchomene pinquis	1	IND

1MM	Paraphoxus sp.	1	IND
1MM	Pholoe minuta	1	IND
1MM	Pinnixa schmitti	1	IND
1MM	Pseudocalanus spp.	1	IND
1MM	Rhepoxynius variatus	1	IND
1MM	Tharyx spp.	1	IND

Survey: NETPEN91 Station: PTV5 Date: 05/03/91 Sample: PTV5-25

Replicate: 1

--	Nephtys cornuta franciscana	19	IND
--	Cossura spp.	15	IND
--	Paraprionospio pinnata	9	IND
--	Calanoida	7	IND
--	Prionospio spp.	6	IND
--	Mysella tumida	4	IND
--	Glycinde picta	3	IND
--	Levinsenia gracilis	3	IND
--	Nematoda	3	IND
--	Polydora spp.	3	IND
--	Cirratulidae	2	IND
--	Heteromastus spp.	2	IND
--	Amphiodia spp.	1	IND
--	Gyptis brevipalpa	1	IND
--	Hyperia medusarum	1	IND
--	Leitoscoloplos elongatus	1	IND
--	Nucula tenuis	1	IND
--	Orchomene pinquis	1	IND
--	Parvilucina tenuisculpta	1	IND
--	Sternaspis scutata	1	IND
--	Terebellides stroemi	1	IND

Survey: NETPEN91 Station: PTV5 Date: 05/03/91 Sample: PTV5-25

Replicate: 2

--	Polydora spp.	74	IND
--	Prionospio spp.	26	IND
--	Oligochaeta	22	IND
--	Paraprionospio pinnata	22	IND
--	Acesta/Aricidea spp.	20	IND
--	Nephtys cornuta franciscana	20	IND
--	Cossura spp.	17	IND
--	Calanoida	16	IND
--	Amphiodia spp.	14	IND
--	Levinsenia gracilis	14	IND
--	Cirratulidae	9	IND
--	Gyptis brevipalpa	6	IND
--	Ophelina acuminata	6	IND
--	Axinopsida serricata	5	IND
--	Mysella tumida	5	IND
--	Pinnixa spp.	5	IND
--	Eudorella pacifica	4	IND
--	Nematoda	4	IND
--	Parvilucina tenuisculpta	4	IND
--	Prionospio steenstrupi	3	IND
--	Eteone longa	2	IND
--	Pholoe minuta	2	IND
--	Glycinde picta	1	IND

-- Ischyrocerus spp.	1 IND
-- Macoma carlottensis	1 IND
-- Macoma nasuta	1 IND
-- Metaphoxus frequens	1 IND
-- Microjassa spp.	1 IND
-- Sphaerodoropsis sphaerulifer	1 IND
-- Terebellides stroemi	1 IND

Survey: NETPEN91 Station: PTV5 Date: 05/03/91 Sample: PTV5-25

Replicate: 3

-- Nephtys cornuta franciscana	25 IND
-- Acesta/Aricidea spp.	24 IND
-- Paraprionospio pinnata	19 IND
-- Amphiodia spp.	10 IND
-- Prionospio spp.	9 IND
-- Levinsenia gracilis	8 IND
-- Spiophanes berkeleyorum	6 IND
-- Cossura spp.	5 IND
-- Prionospio steenstrupi	5 IND
-- Lumbrineris luti	4 IND
-- Axinopsida serricata	3 IND
-- Cirratulidae	3 IND
-- Nematoda	3 IND
-- Pachynus cf barnardi	3 IND
-- Eudorella pacifica	2 IND
-- Heteromastus filobranthus	2 IND
-- Mysella tumida	2 IND
-- Nucula tenuis	2 IND
-- Ophelina acuminata	2 IND
-- Pholoe minuta	2 IND
-- Acila castrensis	1 IND
-- Euphilomedes producta	1 IND
-- Gastroteron pacificum	1 IND
-- Glycinde armigera	1 IND
-- Heterophoxus oculatus	1 IND
-- Laonice spp.	1 IND
-- Macoma nasuta	1 IND
-- Nebalia pugettensis	1 IND
-- Odostomia spp.	1 IND
-- Parvilucina tenuisculpta	1 IND
-- Pentamera spp.	1 IND
-- Psephidia lordi	1 IND
-- Yoldia scissurata	1 IND

Survey: NETPEN91 Station: PTV5 Date: 05/03/91 Sample: PTV5-25

Replicate: 4

-- Nephtys cornuta franciscana	27 IND
-- Paraprionospio pinnata	18 IND
-- Acesta/Aricidea spp.	15 IND
-- Amphiodia spp.	9 IND
-- Nematoda	9 IND
-- Spiophanes berkeleyorum	8 IND
-- Prionospio spp.	7 IND
-- Cossura spp.	6 IND
-- Axinopsida serricata	4 IND
-- Eudorella pacifica	4 IND

--	<i>Glycinde picta</i>	4	IND
--	<i>Mysella tumida</i>	4	IND
--	Calanoïda	3	IND
--	<i>Levinsenia gracilis</i>	3	IND
--	<i>Terebellides stroemi</i>	3	IND
--	<i>Heterophoxus oculus</i>	2	IND
--	Maldanidae	2	IND
--	Copepoda cyclopoida	1	IND
--	<i>Cucumaria vegae</i>	1	IND
--	<i>Gastropteron pacificum</i>	1	IND
--	<i>Lumbrineris</i> sp.	1	IND
--	<i>Macoma nasuta</i>	1	IND
--	<i>Nucula tenuis</i>	1	IND
--	<i>Ophelina acuminata</i>	1	IND
--	<i>Parvilucina tenuisculpta</i>	1	IND
--	<i>Pholoe minuta</i>	1	IND
--	<i>Pinnixa</i> spp.	1	IND
--	<i>Platynereis bicanaliculata</i>	1	IND
--	<i>Prionospio steenstrupi</i>	1	IND
--	<i>Psephidia lordi</i>	1	IND
--	<i>Sternaspis scutata</i>	1	IND
--	<i>Tharyx secundus</i>	1	IND

Survey: NETPEN91 Station: PTV5 Date: 05/03/91 Sample: PTV5-25

Replicate: 5

--	<i>Paraprionospio pinnata</i>	48	IND
--	<i>Nephtys cornuta franciscana</i>	24	IND
--	<i>Prionospio</i> spp.	22	IND
--	<i>Amphiodia</i> spp.	14	IND
--	<i>Cossura</i> spp.	14	IND
--	<i>Acesta/Aricidea</i> spp.	11	IND
--	<i>Tharyx</i> spp.	9	IND
--	<i>Ophelina acuminata</i>	8	IND
--	Nematoda	7	IND
--	<i>Levinsenia gracilis</i>	5	IND
--	<i>Polydora</i> spp.	4	IND
--	<i>Prionospio steenstrupi</i>	4	IND
--	<i>Spiophanes</i> spp.	4	IND
--	Cirratulidae	3	IND
--	<i>Eudorella pacifica</i>	3	IND
--	<i>Pholoe minuta</i>	3	IND
--	<i>Protomedea prudens</i>	3	IND
--	<i>Axinopsida serricata</i>	2	IND
--	<i>Chaetozone setosa</i>	2	IND
--	<i>Gyptis brevipalpa</i>	2	IND
--	<i>Lumbrineris luti</i>	2	IND
--	<i>Mysella tumida</i>	2	IND
--	<i>Nucula tenuis</i>	2	IND
--	<i>Parvilucina tenuisculpta</i>	2	IND
--	<i>Platynereis bicanaliculata</i>	2	IND
--	<i>Alvania</i> spp.	1	IND
--	<i>Ampelisca unsocalae</i>	1	IND
--	<i>Ischyrocerus</i> spp.	1	IND
--	<i>Lucinoma acutilineata</i>	1	IND
--	<i>Mytilus edulis</i>	1	IND
--	<i>Pachynus cf barnardi</i>	1	IND

--	Phylodoce (Anaitides) groenlandica	1	IND
--	Sphaerodoropsis sphaerulifer	1	IND
--	Terebellides stroemi	1	IND
--	Turbonilla spp.	1	IND

Survey: NETPEN91 Station: PTV6 Date: 05/03/91 Sample: PTV6-1

Replicate: 1

.5MM	Nematoda	2036	IND
.5MM	Capitella capitata	1130	IND
.5MM	Tisbe spp.	12	IND
.5MM	Nebalia spp.	10	IND
.5MM	Calanoida	8	IND
.5MM	Caprellidae	4	IND
.5MM	Copepoda harpacticoida	3	IND
.5MM	Acesta/Aricidea spp.	2	IND
.5MM	Acila castrensis	2	IND
.5MM	Brachyura	2	IND
.5MM	Gyptis brevipalpa	2	IND
.5MM	Metridia spp.	2	IND
.5MM	Schistomeringos rudolphi	2	IND
.5MM	Alvania spp.	1	IND
.5MM	Balanomorpha	1	IND
.5MM	Nephtys cornuta franciscana	1	IND
.5MM	Nucula tenuis	1	IND
.5MM	Oligochaeta	1	IND
.5MM	Platynereis bicanaliculata	1	IND
.5MM	Pseudocalanus spp.	1	IND
1MM	Capitella capitata	569	IND
1MM	Nematoda	392	IND
1MM	Brachyura	2	IND
1MM	Macoma nasuta	2	IND
1MM	Nephtys cornuta cornuta	2	IND
1MM	Acila castrensis	1	IND
1MM	Alvania spp.	1	IND
1MM	Eudorella pacifica	1	IND
1MM	Gyptis brevipalpa	1	IND
1MM	Jassa spp.	1	IND
1MM	Mereis procera	1	IND
1MM	Paraprionospio pinnata	1	IND
1MM	Prionospio cirrifera	1	IND
1MM	Prionospio spp.	1	IND
1MM	Schistomeringos rudolphi	1	IND

Survey: NETPEN91 Station: PTV6 Date: 05/03/91 Sample: PTV6-1

Replicate: 2

.5MM	Capitella capitata	568	IND
.5MM	Nematoda	216	IND
.5MM	Alvania spp.	2	IND
.5MM	Eudorella pacifica	2	IND
.5MM	Micropodarke dubia	2	IND
.5MM	Nebalia spp.	2	IND
.5MM	Nephtys cornuta cornuta	2	IND
.5MM	Pseudocalanus spp.	2	IND
.5MM	Acila castrensis	1	IND
.5MM	Brachyura	1	IND
.5MM	Calanoida	1	IND

.5MM	Cumella vulgaris	1	IND
.5MM	Macoma spp.	1	IND
.5MM	Metridia spp.	1	IND
.5MM	Mytilidae	1	IND
.5MM	Nereis procera	1	IND
.5MM	Nucula tenuis	1	IND
.5MM	Pinnotheridae	1	IND
.5MM	Schistomeringos rudolphi	1	IND
.5MM	Tisbe spp.	1	IND
.5MM	Tortanus discaudatus	1	IND
1MM	Nematoda	225	IND
1MM	Capitella capitata	169	IND
1MM	Alvania spp.	6	IND
1MM	Brachyura	3	IND
1MM	Nephtys cornuta cornuta	2	IND
1MM	Metacaprella spp.	1	IND

Survey: NETPEN91 Station: PTV6 Date: 05/03/91 Sample: PTV6-1

Replicate: 3

.5MM	Capitella capitata	592	IND
.5MM	Nematoda	20	IND
.5MM	Nebalia spp.	7	IND
.5MM	Gyptis brevipalpa	5	IND
.5MM	Prionospio cirrifera	4	IND
.5MM	Pseudocalanus spp.	2	IND
.5MM	Acila castrensis	1	IND
.5MM	Aetidius spp.	1	IND
.5MM	Alvania spp.	1	IND
.5MM	Calanoida	1	IND
.5MM	Gammaridae	1	IND
.5MM	Nephtys cornuta cornuta	1	IND
.5MM	Nephtys cornuta franciscana	1	IND
1MM	Capitella capitata	889	IND
1MM	Nematoda	174	IND
1MM	Gyptis brevipalpa	5	IND
1MM	Nephtys cornuta cornuta	4	IND
1MM	Metaphoxus frequens	3	IND
1MM	Axinopsida serricata	2	IND
1MM	Schistomeringos rudolphi	2	IND
1MM	Calanus spp.	1	IND
1MM	Cancer spp.	1	IND
1MM	Jassa spp.	1	IND
1MM	Nebalia spp.	1	IND
1MM	Ophelina acuminata	1	IND
1MM	Paraprionospio pinnata	1	IND
1MM	Pinnotheridae	1	IND
1MM	Prionospio cirrifera	1	IND

Survey: NETPEN91 Station: PTV6 Date: 05/03/91 Sample: PTV6-1

Replicate: 4

.5MM	Nematoda	772	IND
.5MM	Capitella capitata	216	IND
.5MM	Copepoda harpacticoida	28	IND
.5MM	Nebalia pugettensis	25	IND
.5MM	Alvania spp.	4	IND
.5MM	Jassa spp.	4	IND

.5MM	Schistomeringos rudolphi	4	IND
.5MM	Decapoda	2	IND
.5MM	Mysella tumida	1	IND
.5MM	Nucula tenuis	1	IND
1MM	Capitella capitata	440	IND
1MM	Nematoda	429	IND
1MM	Alvania spp.	10	IND
1MM	Schistomeringos rudolphi	8	IND
1MM	Gyptis brevipalpa	4	IND
1MM	Jassa spp.	3	IND
1MM	Nebalia spp.	3	IND
1MM	Brachyura	2	IND
1MM	Acila castrensis	1	IND
1MM	Caprellidae	1	IND
1MM	Glycinde picta	1	IND
1MM	Macoma nasuta	1	IND
1MM	Metaphoxus frequens	1	IND
1MM	Nephtys cornuta cornuta	1	IND
1MM	Platynereis bicanaliculata	1	IND

Survey: NETPEN91 Station: PTV6 Date: 05/03/91 Sample: PTV6-1

Replicate: 5

.5MM	Nematoda	787	IND
.5MM	Capitella capitata	740	IND
.5MM	Copepoda harpacticoida	14	IND
.5MM	Nebalia pugettensis	10	IND
.5MM	Decapoda	9	IND
.5MM	Gyptis brevipalpa	8	IND
.5MM	Syllidae	8	IND
.5MM	Schistomeringos rudolphi	3	IND
.5MM	Aoroides spp	2	IND
.5MM	Alvania spp.	1	IND
.5MM	Balanus sp.	1	IND
.5MM	Caprellidae	1	IND
.5MM	Nephtys cornuta franciscana	1	IND
.5MM	Oligochaeta	1	IND
1MM	Capitella capitata	845	IND
1MM	Nematoda	45	IND
1MM	Alvania spp.	11	IND
1MM	Schistomeringos rudolphi	8	IND
1MM	Gyptis brevipalpa	3	IND
1MM	Metaphoxus frequens	3	IND
1MM	Nephtys cornuta franciscana	2	IND
1MM	Prionospio cirrifera	2	IND
1MM	Acartia spp.	1	IND
1MM	Acila castrensis	1	IND
1MM	Jassa spp.	1	IND
1MM	Nebalia spp.	1	IND
1MM	Nephtys cornuta cornuta	1	IND
1MM	Platynereis bicanaliculata	1	IND

Survey: NETPEN91 Station: PTV6 Date: 05/03/91 Sample: PTV6-25

Replicate: 1

--	Capitella capitata	22	IND
--	Nematoda	5	IND
--	Prionospio steenstrupi	1	IND

Survey: NETPEN91 Station: PTV6 Date: 05/03/91 Sample: PTV6-25

Replicate: 2

-- Nematoda	176 IND
-- Capitella capitata	65 IND
-- Nebalia spp.	3 IND
-- Brachyura	2 IND
-- Acarina	1 IND
-- Maldanidae	1 IND
-- Metaphoxus frequens	1 IND
-- Pseudocalanus spp.	1 IND
-- Tisbe spp.	1 IND

Survey: NETPEN91 Station: PTV6 Date: 05/03/91 Sample: PTV6-25

Replicate: 3

-- Capitella capitata	74 IND
-- Nematoda	16 IND
-- Nebalia spp.	6 IND
-- Cancer spp.	4 IND
-- Alvania spp.	3 IND
-- Gyptis brevipalpa	3 IND
-- Calanus spp.	1 IND
-- Centropages abdominalis	1 IND
-- Insecta	1 IND
-- Schistomeringos rudolphi	1 IND
-- Tortanus discaudatus	1 IND

Survey: NETPEN91 Station: PTV6 Date: 05/03/91 Sample: PTV6-25

Replicate: 4

-- Capitella capitata	4 IND
-- Nematoda	2 IND
-- Calanoida	1 IND
-- Cancer spp.	1 IND
-- Nebalia spp.	1 IND
-- Pseudocalanus spp.	1 IND

Survey: NETPEN91 Station: PTV6 Date: 05/03/91 Sample: PTV6-25

Replicate: 5

-- Capitella capitata	176 IND
-- Nematoda	47 IND
-- Schistomeringos rudolphi	3 IND
-- Gyptis brevipalpa	2 IND
-- Pseudocalanus spp.	2 IND
-- Balanomorpha	1 IND
-- Calanus spp.	1 IND
-- Caridea	1 IND
-- Nebalia spp.	1 IND
-- Porcellanidae	1 IND
-- Prionospio spp.	1 IND
-- Tortanus discaudatus	1 IND

Survey: NETPEN91 Station: PTD-1 Date: 04/30/91 Sample: PTD-1
 Replicate: 1

-- Nematoda	104 IND
-- Capitella capitata	21 IND
-- Calanoida	4 IND
-- Prionospio cirrifera	1 IND
-- Pseudoleiocypris spp.	1 IND

Survey: NETPEN91 Station: PTD-1 Date: 04/30/91 Sample: PTD-1
 Replicate: 2

-- Nematoda	1221 IND
-- Capitella capitata	103 IND
-- Calanoida	6 IND
-- Alvania spp.	3 IND
-- Nebalia pugettensis	2 IND
-- Podarkeopsis glabra	2 IND
-- Aoroides columbiae	1 IND
-- Capitellidae	1 IND
-- Eudorella pacifica	1 IND
-- Microphthalmus spp.	1 IND

Survey: NETPEN91 Station: PTD-1 Date: 04/30/91 Sample: PTD-1
 Replicate: 3

-- Nematoda	134 IND
-- Capitella capitata	5 IND
-- Calanoida	2 IND
-- Jassa spp.	2 IND
-- Alvania spp.	1 IND
-- Decapoda	1 IND
-- Podarkeopsis glabra	1 IND

Survey: NETPEN91 Station: PTD-2 Date: 04/30/91 Sample: PTD-2
 Replicate: 1

-- Capitella capitata	81 IND
-- Nematoda	45 IND
-- COPEPODA	12 IND
-- Decapoda	6 IND
-- Alvania spp.	2 IND
-- Schistomeringos rudolphi	2 IND
-- Cumella sp.	1 IND
-- Metaphoxus frequens	1 IND
-- Microphthalmus spp.	1 IND
-- Nephtys cornuta franciscana	1 IND
-- Prionospio minuspio lighti	1 IND

Survey: NETPEN91 Station: PTD-2 Date: 04/30/91 Sample: PTD-2
 Replicate: 2

-- Capitella capitata	21 IND
-- Nematoda	17 IND
-- Aoroides columbiae	3 IND
-- Schistomeringos rudolphi	3 IND
-- Decapoda	1 IND
-- Metaphoxus frequens	1 IND
-- Micropodarke dubia	1 IND

Survey: NETPEN91 Station: PTD-2 Date: 04/30/91 Sample: PTD-2

Replicate: 3

-- Nematoda	58	IND
-- Capitella capitata	14	IND
-- Alvania spp.	5	IND
-- Aoroides columbiae	4	IND
-- Nephtys cornuta franciscana	4	IND
-- Platynereis bicanaliculata	3	IND
-- Copepoda harpacticoida	2	IND
-- Ophelina acuminata	2	IND
-- Polydora spp.	2	IND
-- Acila castrensis	1	IND
-- Cephalaspidea	1	IND
-- Glycinde armigera	1	IND
-- Harmothoe spp.	1	IND
-- Jassa spp.	1	IND
-- Schistomeringos rudolphi	1	IND

Survey: NETPEN91 Station: PTD-3 Date: 04/30/91 Sample: PTD-3

Replicate: 1

-- Nematoda	315	IND
-- Capitella capitata	119	IND
-- Prionospio minuspio lighti	3	IND
-- Aoroides columbiae	2	IND
-- Glycinde armigera	2	IND
-- Jassa spp.	2	IND
-- Phyllodoce sp.	2	IND
-- Alvania spp.	1	IND
-- COPEPODA	1	IND
-- Nebalia pugettensis	1	IND
-- Nephtys cornuta franciscana	1	IND
-- Polydora spp.	1	IND

Survey: NETPEN91 Station: PTD-3 Date: 04/30/91 Sample: PTD-3

Replicate: 2

-- Nematoda	154	IND
-- Nephtys cornuta franciscana	8	IND
-- Capitella capitata	6	IND
-- Alvania spp.	4	IND
-- Cephalaspidea	3	IND
-- Aoroides columbiae	2	IND
-- Tharyx spp.	2	IND
-- Calanoidea	1	IND
-- Diastylis alaskensis	1	IND
-- Eudorella pacifica	1	IND
-- Ophelina acuminata	1	IND
-- Paraprionospio pinnata	1	IND
-- Platynereis bicanaliculata	1	IND
-- Podarkeopsis glabra	1	IND

Survey: NETPEN91 Station: PTD-3 Date: 04/30/91 Sample: PTD-3

Replicate: 3

-- Nematoda	49	IND
-- Capitella capitata	48	IND
-- Nephtys cornuta franciscana	7	IND

--	<i>Polydora</i> spp.	5	IND
--	<i>Alvania</i> spp.	4	IND
--	<i>Prionospio minuspio lighti</i>	3	IND
--	<i>Chaetozone setosa</i>	2	IND
--	<i>Macoma carlottensis</i>	2	IND
--	<i>Nucula tenuis</i>	2	IND
--	<i>Paraprionospio pinnata</i>	2	IND
--	<i>Amphiodia</i> spp.	1	IND
--	<i>Glycinde armigera</i>	1	IND
--	<i>Paleonotus bellis</i>	1	IND
--	<i>Podarkeopsis glabra</i>	1	IND
--	<i>Protothaca staminea</i>	1	IND

Survey: NETPEN91 Station: PTD-4 Date: 04/30/91 Sample: PTD-4

Replicate: 1

--	Nematoda	18	IND
--	<i>Nephtys cornuta franciscana</i>	16	IND
--	<i>Paraprionospio pinnata</i>	6	IND
--	<i>Cossura soyeri</i>	5	IND
--	<i>Tharyx</i> spp.	5	IND
--	<i>Acmira lopezi</i>	4	IND
--	<i>Spiophanes berkeleyorum</i>	4	IND
--	<i>Axinopsida serricata</i>	3	IND
--	<i>Levinsenia gracilis</i>	3	IND
--	<i>Macoma carlottensis</i>	3	IND
--	<i>Mysella tumida</i>	3	IND
--	<i>Prionospio steenstrupi</i>	3	IND
--	<i>Allia ramosa</i>	2	IND
--	<i>Amphiodia</i> spp.	2	IND
--	<i>Ampharete labrops</i>	1	IND
--	<i>Bittium</i> spp.	1	IND
--	<i>Eudorella pacifica</i>	1	IND
--	<i>Glycinde armigera</i>	1	IND
--	<i>Nucula tenuis</i>	1	IND
--	<i>Pachynus cf barnardi</i>	1	IND
--	<i>Paraonella</i> spp.	1	IND
--	<i>Pholoe minuta</i>	1	IND
--	<i>Phyllodoce (Aponaitides) hartmanae</i>	1	IND
--	<i>Prionospio minuspio lighti</i>	1	IND
--	<i>Sphaerodoropsis sphaerulifer</i>	1	IND

Survey: NETPEN91 Station: PTD-4 Date: 04/30/91 Sample: PTD-4

Replicate: 2

--	<i>Nephtys cornuta franciscana</i>	15	IND
--	<i>Tharyx</i> spp.	12	IND
--	<i>Pinnixa</i> spp.	10	IND
--	Nematoda	8	IND
--	<i>Lumbrineris</i> sp.	5	IND
--	<i>Paraprionospio pinnata</i>	4	IND
--	<i>Allia ramosa</i>	3	IND
--	<i>Cossura soyeri</i>	3	IND
--	<i>Levinsenia gracilis</i>	3	IND
--	<i>Prionospio minuspio lighti</i>	3	IND
--	<i>Spiophanes berkeleyorum</i>	3	IND
--	<i>Acmira lopezi</i>	2	IND
--	<i>Axinopsida serricata</i>	2	IND

--	<i>Odostomia</i> spp.	2	IND
--	<i>Parvilucina tenuisculpta</i>	2	IND
--	<i>Podarkeopsis glabra</i>	2	IND
--	<i>Polydora socialis</i>	2	IND
--	<i>Ampharete</i> sp.	1	IND
--	<i>Amphiodia</i> spp.	1	IND
--	<i>Chaetozone setosa</i>	1	IND
--	<i>Euclymeninae</i> spp.	1	IND
--	<i>Heterophoxus oculatus</i>	1	IND
--	<i>Leitoscoloplos elongatus</i>	1	IND
--	<i>Mysella tumida</i>	1	IND
--	<i>Nephtys ferruginea</i>	1	IND
--	<i>Ophelina acuminata</i>	1	IND
--	<i>Pholoe glabra</i>	1	IND
--	<i>Platynereis bicanaliculata</i>	1	IND
--	<i>Sphaerodoropsis sphaerulifer</i>	1	IND

Survey: NETPEN91 Station: PTD-4 Date: 04/30/91 Sample: PTD-4

Replicate: 3

--	Nematoda	29	IND
--	<i>Paraprionospio pinnata</i>	9	IND
--	<i>Allia ramosa</i>	5	IND
--	<i>Cossura soyeri</i>	5	IND
--	<i>Nephtys cornuta franciscana</i>	5	IND
--	<i>Acila castrensis</i>	4	IND
--	<i>Amphiodia</i> spp.	4	IND
--	<i>Axinopsida serricata</i>	4	IND
--	<i>Gastropteron pacificum</i>	4	IND
--	<i>Odostomia</i> spp.	4	IND
--	<i>Pinnixa</i> spp.	4	IND
--	<i>Prionospio minuspio lighti</i>	3	IND
--	<i>Spiophanes berkeleyorum</i>	3	IND
--	<i>Acmira lopezi</i>	2	IND
--	<i>Cephalaspidea</i>	2	IND
--	<i>Alvania</i> spp.	1	IND
--	<i>Exacanthomysis alaskensis</i>	1	IND
--	<i>Glycinde armigera</i>	1	IND
--	<i>Levinsenia gracilis</i>	1	IND
--	<i>Lumbrineris</i> sp.	1	IND
--	<i>Monoculodes</i> spp.	1	IND
--	<i>Mysella tumida</i>	1	IND
--	<i>Parvilucina tenuisculpta</i>	1	IND
--	<i>Phyllodoce</i> sp.	1	IND
--	<i>Podarkeopsis glabra</i>	1	IND
--	<i>Tharyx</i> spp.	1	IND

Survey: NETPEN91 Station: PTD-5 Date: 04/30/91 Sample: PTD-5

Replicate: 1

--	<i>Eudorella pacifica</i>	23	IND
--	<i>Nephtys cornuta franciscana</i>	6	IND
--	<i>Euphilomedes producta</i>	5	IND
--	<i>Levinsenia gracilis</i>	5	IND
--	<i>Allia ramosa</i>	3	IND
--	<i>Alvania</i> spp.	3	IND
--	<i>Amphiodia</i> spp.	3	IND
--	<i>Heterophoxus oculatus</i>	3	IND

--	<i>Mysella tumida</i>	3	IND
--	Nematoda	3	IND
--	<i>Acmira lopezi</i>	2	IND
--	<i>Lumbrineris cruzensis</i>	2	IND
--	<i>Paraprionospio pinnata</i>	2	IND
--	<i>Psephidia lordi</i>	2	IND
--	<i>Cossura soyeri</i>	1	IND
--	Euclymeninae spp.	1	IND
--	<i>Eupentacta</i> spp.	1	IND
--	<i>Glycinde armigera</i>	1	IND
--	<i>Lepidasthenia longicirrata</i>	1	IND
--	<i>Lumbrineris</i> sp.	1	IND
--	<i>Nucula tenuis</i>	1	IND
--	<i>Paraonella</i> spp.	1	IND
--	<i>Pinnixa</i> spp.	1	IND
--	<i>Prionospio minuspio lighti</i>	1	IND
--	<i>Tharyx</i> spp.	1	IND

Survey: NETPEN91 Station: PTD-5 Date: 04/30/91 Sample: PTD-5

Replicate: 2

--	<i>Amphiodia</i> spp.	10	IND
--	<i>Eudorella pacifica</i>	9	IND
--	<i>Allia ramosa</i>	7	IND
--	Nematoda	7	IND
--	<i>Heterophoxus oculatus</i>	4	IND
--	<i>Levinsenia gracilis</i>	4	IND
--	<i>Pholoe minuta</i>	4	IND
--	<i>Acmira lopezi</i>	3	IND
--	<i>Euphilomedes producta</i>	3	IND
--	<i>Mysella tumida</i>	3	IND
--	<i>Prionospio minuspio lighti</i>	3	IND
--	<i>Axinopsida serricata</i>	2	IND
--	<i>Cossura soyeri</i>	2	IND
--	<i>Lumbrineris</i> sp.	2	IND
--	<i>Paraprionospio pinnata</i>	2	IND
--	<i>Pinnixa</i> spp.	2	IND
--	<i>Acila castrensis</i>	1	IND
--	<i>Glycinde armigera</i>	1	IND
--	Harmothoinae	1	IND
--	<i>Macoma elmata</i>	1	IND
--	<i>Nephtys cornuta franciscana</i>	1	IND
--	<i>Ophiodromus pugettensis</i>	1	IND
--	<i>Prionospio steenstrupi</i>	1	IND

Survey: NETPEN91 Station: PTD-5 Date: 04/30/91 Sample: PTD-5

Replicate: 3

--	<i>Eudorella pacifica</i>	18	IND
--	Nematode	13	IND
--	<i>Allia ramosa</i>	8	IND
--	<i>Nephtys cornuta franciscana</i>	8	IND
--	<i>Amphiodia</i> spp.	5	IND
--	<i>Cossura soyeri</i>	4	IND
--	<i>Pholoe minuta</i>	4	IND
--	<i>Prionospio minuspio lighti</i>	4	IND
--	<i>Levinsenia gracilis</i>	3	IND
--	<i>Lumbrineris</i> sp.	3	IND

-- Euphilomedes producta	2 IND
-- Heterophoxus oculatus	2 IND
-- Paraonella spp.	2 IND
-- Paraprionospio pinnata	2 IND
-- Prionospio steenstrupi	2 IND
-- Acmira lopezi	1 IND
-- Ampelisca sp.	1 IND
-- COPEPODA	1 IND
-- Chaetozone setosa	1 IND
-- Pinnixa franciscana	1 IND
-- Protomedeia articulata	1 IND
-- Sternaspis scutata	1 IND
-- TERESELLIDES REISHI	1 IND

Survey: NETPEN91 Station: PTD-6 Date: 04/30/91 Sample: PTD-6

Replicate: 1

-- Eudorella pacifica	26 IND
-- Amphiodia spp.	12 IND
-- Allia ramosa	9 IND
-- Heterophoxus oculatus	5 IND
-- Nucula tenuis	5 IND
-- Levinsenia gracilis	4 IND
-- Nematoda	4 IND
-- Prionospio minuspio lighti	4 IND
-- Parvilucina tenuisculpta	3 IND
-- Alvania spp.	2 IND
-- Amphiuroidae	2 IND
-- Euphilomedes producta	2 IND
-- Mysella tumida	2 IND
-- Acmira lopezi	1 IND
-- Axinopsida serricata	1 IND
-- Calanoidea	1 IND
-- Cossura soyeri	1 IND
-- Cylichna attonsa	1 IND
-- Glycera americana	1 IND
-- Nephtys cornuta franciscana	1 IND
-- Oligochaeta	1 IND
-- Ophelina acuminata	1 IND
-- Prionospio steenstrupi	1 IND
-- Sphaerodoropsis sphaerulifer	1 IND
-- Sternaspis scutata	1 IND
-- TERESELLIDES	1 IND

Survey: NETPEN91 Station: PTD-6 Date: 04/30/91 Sample: PTD-6

Replicate: 2

-- Eudorella pacifica	22 IND
-- Nematoda	7 IND
-- Amphiodia spp.	5 IND
-- Allia ramosa	4 IND
-- Heterophoxus oculatus	3 IND
-- Alvania spp.	2 IND
-- Bittium spp.	2 IND
-- Levinsenia gracilis	2 IND
-- Mysella tumida	2 IND
-- Nephtys cornuta franciscana	2 IND
-- Paraonella spp.	2 IND

--	Amphiuridae	1	IND
--	Axinopsida serricata	1	IND
--	Calanoida	1	IND
--	Lepidasthenia berkeleyae	1	IND
--	Nucula tenuis	1	IND
--	Pachynus cf barnardi	1	IND
--	Paraprionospio pinnata	1	IND
--	Pholoe minuta	1	IND
--	Prionospio minuspio lighti	1	IND

Survey: NETPEN91 Station: PTD-6 Date: 04/30/91 Sample: PTD-6

Replicate: 3

--	Eudorella pacifica	17	IND
--	Allia ramosa	8	IND
--	Acmira lopezi	7	IND
--	Amphiodia spp.	4	IND
--	Alvania spp.	3	IND
--	Nephtys cornuta franciscana	3	IND
--	Nucula tenuis	3	IND
--	Platynereis bicanaliculata	3	IND
--	Prionospio minuspio lighti	3	IND
--	Amphiuridae	2	IND
--	Heterophoxus oculatus	2	IND
--	Nematoda	2	IND
--	Ophiodromus pugettensis	2	IND
--	Prionospio steenstrupi	2	IND
--	Acila castrensis	1	IND
--	Axinopsida serricata	1	IND
--	Decapoda	1	IND
--	Euphilomedes producta	1	IND
--	Levinsenia gracilis	1	IND
--	Lumbrineris sp.	1	IND
--	Oligochaeta	1	IND
--	Paranella spp.	1	IND
--	TEREBELLIDES REISHI	1	IND

Survey: NETPEN91 Station: PTD-7 Date: 04/30/91 Sample: PTD-7

Replicate: 1

--	Eudorella pacifica	21	IND
--	Heterophoxus oculatus	9	IND
--	Nematoda	7	IND
--	Euphilomedes producta	5	IND
--	Nephtys cornuta franciscana	4	IND
--	Amphiodia spp.	3	IND
--	Maldane sarsi	3	IND
--	Bittium spp.	2	IND
--	Acmira lopezi	1	IND
--	Allia ramosa	1	IND
--	Cossura soyeri	1	IND
--	Lumbrineris sp.	1	IND
--	Macoma obliqua	1	IND
--	Myriochele sp.	1	IND
--	Mysella tumida	1	IND
--	Nucula tenuis	1	IND
--	Paraprionospio pinnata	1	IND
--	Pholoe minuta	1	IND

--	<i>Pinnixa</i> spp.	1	IND
--	<i>Prionospio minuspio lighti</i>	1	IND
--	<i>Prionospio steenstrupi</i>	1	IND
--	<i>Psephidia lordi</i>	1	IND

Survey: NETPEN91 Station: PTD-7 Date: 04/30/91 Sample: PTD-7

Replicate: 2

--	<i>Eudorella pacifica</i>	30	IND
--	<i>Heterophoxus oculatus</i>	11	IND
--	<i>Amphiodia</i> spp.	10	IND
--	<i>Nephtys cornuta franciscana</i>	7	IND
--	<i>Euphilomedes producta</i>	6	IND
--	<i>Allia ramosa</i>	4	IND
--	<i>Cossura soyeri</i>	4	IND
--	<i>Nucula tenuis</i>	4	IND
--	<i>Levinsenia gracilis</i>	3	IND
--	<i>Paraonella</i> spp.	3	IND
--	<i>Pholoe minuta</i>	2	IND
--	<i>Prionospio minuspio lighti</i>	2	IND
--	<i>Protomedeia prudens</i>	2	IND
--	<i>Sphaerodoropsis sphaerulifer</i>	2	IND
--	<i>Acmira lopezi</i>	1	IND
--	<i>Alia</i> spp.	1	IND
--	<i>Alvania</i> spp.	1	IND
--	<i>Calanoida</i>	1	IND
--	<i>Cirrophorus branchiatus</i>	1	IND
--	<i>Decapoda</i>	1	IND
--	<i>Glycinde armigera</i>	1	IND
--	<i>Lumbrineris</i> sp.	1	IND
--	<i>Paraprionospio pinnata</i>	1	IND
--	<i>Prionospio steenstrupi</i>	1	IND
--	<i>Tharyx</i> spp.	1	IND

Survey: NETPEN91 Station: PTD-7 Date: 04/30/91 Sample: PTD-7

Replicate: 3

--	<i>Eudorella pacifica</i>	26	IND
--	<i>Nephtys cornuta franciscana</i>	10	IND
--	<i>Euphilomedes producta</i>	7	IND
--	<i>Allia ramosa</i>	5	IND
--	<i>Amphiodia</i> spp.	5	IND
--	<i>Pholoe minuta</i>	5	IND
--	<i>Heterophoxus oculatus</i>	4	IND
--	<i>Laonice cirrata</i>	3	IND
--	<i>Prionospio steenstrupi</i>	2	IND
--	<i>Acmira lopezi</i>	1	IND
--	<i>Bittium</i> spp.	1	IND
--	<i>Cossura soyeri</i>	1	IND
--	<i>Eupentacta</i> spp.	1	IND
--	<i>Levinsenia gracilis</i>	1	IND
--	<i>Lumbrineris cruzensis</i>	1	IND
--	<i>Macoma carlottensis</i>	1	IND
--	<i>Myriochele</i> sp.	1	IND
--	<i>Mysella tumida</i>	1	IND
--	<i>Nematoda</i>	1	IND
--	<i>Nucula tenuis</i>	1	IND
--	<i>Paraprionospio pinnata</i>	1	IND

--	Prionospio minuspio lighti	1 IND
--	Sternaspis scutata	1 IND

APPENDIX F

Chain-of-Custody Forms

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CHAIN OF CUSTODY RECORD/
SAMPLE ANALYSIS REQUEST FORM

K1688

Project: (Name and Number) SALMON NET-PEN STUDIES ; C744-31				Samplers: (Signature) <i>J. Sexton</i>										Sampling Contact: J. SEXTON Phone: 643-9803				
Sample No	Tag No	Date	Time	Sample Matrix							Analysis Requested					Remarks		
				Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab	TOTAL SULPHIDES	GRAIN SIZE	TVS, TON, TOTAL PHOSPHORUS	BOD, TDC, COD		Extra Container	Archive
ANAC 1	32736	3/27/91	12:10 pm								G	✓						
ANAC 1	32737		12:18								C		✓					
ANAC 1	32738		12:18								C				✓			
ANAC 2	32740		1:05								G	✓						
ANAC 2	32741		1:17								C		✓					
ANAC 2	32742		1:17								C				✓			
ANAC 3	32745		5:10								G	✓						
ANAC 3	32747		5:36								C		✓					
ANAC 3	32748		3:36								C				✓			
ANAC 4	32749		3:45								G	✓						
ANAC 4	32751		4:00								C		✓					
ANAC 4	32752		4:00								C				✓			
ANAC 6	32754		5:47								G	✓						
ANAC 6	32755		5:49								C		✓					
Method of Shipment: _____				Condition of Samples Upon Receipt: _____							Custody Seal Intact: Yes <input type="checkbox"/> No <input type="checkbox"/> None <input type="checkbox"/> Broken by _____							

Relinquished by: *J. Sexton* (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time: _____

Received for Lab by: *Lance Jady* (Signature) Date/Time: **4/1/91 10:00**

00030

CHAIN OF CUSTODY RECORD/
SAMPLE ANALYSIS REQUEST FORM

K 2023

Project: (Name and Number) SALMON NET PEN STUDIES; C744-3B				Samplers: (Signature) <i>J. Sexton</i>										Sampling Contact: J. SEXTON															
Sample No				Tag No				Date				Time				Sample Matrix				Analyses Requested				Phone: (206) 643-9803					
																Water				Sediment				Ship Samples to: 1317 S. 13th Ave. Kelso, WA 98626					
																Tissue				Soil				Columbia Analytical Services					
																Air				Other				Attn: Abbie Spielman					
																Concentration (L M H)				Composite or Grab				Remarks					
																TOTAL SULFIDE				GRAIN SIZE, TVS, TSS									
																				TOTAL P, BOD, TOL, COD									
																Extra Container				Archive									
BAIN 1				32600				4/18/91												G				✓					
BAIN 1				32601																C									
BAIN 2				32603																G				✓					
BAIN 2				32604																C				✓					
BAIN 3				32606																G				✓					
BAIN 3				32607																C				✓					
BAIN 4				32609																G				✓					
BAIN 4				32610																C				✓					
BAIN 5				32612																G				✓					
BAIN 5				32613																C				✓				NO SAMPLES WERE COLLECTED AT STATIONS NO IMPACT VISIBLE AT STATION 4.	
Method of Shipment: FedEx										Condition of Samples Upon Receipt										Custody Seal Intact: Yes <input type="checkbox"/> No <input type="checkbox"/> None <input type="checkbox"/> Broken by									

Relinquished by: *Jane C. Sexton* (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time: _____

Received for Lab by: *Lance Fordy* (Signature) Date/Time: **4/18/91 10:00am**

00035

CHAIN OF CUSTODY RECORD/
SAMPLE ANALYSIS REQUEST FORM

Project: (Name and Number)				Samplers: (Signature)										Sampling Contact			
SALMON NET-PEN PROJECT; C799-31				J. Sexton										Jane Sexton			
Sample No.	Tag No.	Date	Time	Sample Matrix										Analyses Requested		Remarks	
				Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab	SULFIDES	ALL OTHERS*	Extra Container	Archive		
PTDC 1	32852	4/30/91											G	✓		*refer to QAPP for project	
PTDC 1	32853												C		✓		
PTDC 2	32854												G	✓			
PTDC 2	32855												C		✓		
PTDC 3	32856												G	✓			
PTDC 3	32857												C		✓		
PTDC 4	32858												G	✓			
PTDC 4	32859												C		✓	Composite of 1cm outside core and core 4C. Core 4b lost by diver.	
PTDC 4†	32661												G			took extra 1cm from core to be used only if not enough sediment in sample #PTDC 4, Tag # 32859.	
PTDC 5	32860												G	✓			
PTDC 5	32861												C		✓		
PTDC 6	32862												G	✓			
PTDC 6	32863												C		✓		
PTDC 7	32864												G	✓			
Method of Shipment: UPS - next day				Condition of Samples Upon Receipt: OK						Custody Seal Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> None <input type="checkbox"/> Broken by: R. Allison							

Relinquished by: J. Sexton (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: Ruth Allison (Signature) Date/Time 5/2/91 0930

00030

CHAIN OF CUSTODY RECORD/
SAMPLE ANALYSIS REQUEST FORM

Project: (Name and Number) SALMON NET-PEN PROJECT; C744-31				Samplers: (Signature) <i>J. Sexton</i>				Sampling Contact: Jane Sexton																																							
Sample No.				Tag No.				Date				Time				Sample Matrix				Analyses Requested				Ship Samples to: CAS 1317 S. 13th Ave. Kelso, WA																							
Water				Sediment				Tissue				Soil				Air				Other				Concentration (L M H)				Composite or Grab				ALL OTHERS*				Extra Container				Archive				Remarks			
PTDC 7				32865				4/30/91																												* refer to QAPP for project											
Method of Shipment: UPS - next day								Condition of Samples Upon Receipt: OK								Custody Seal Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> None <input type="checkbox"/> Broken by: R. Allison																															

Relinquished by: *J. Sexton* (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time: _____

Received for Lab by: *Ruth Allison* (Signature) Date/Time: **5/2/91 09:30**

00031

CVTS

CHAIN OF CUSTODY RECORD/
SAMPLE ANALYSIS REQUEST FORM

Project: (Name and Number) <i>Salmon Net Pen C74431</i>				Samplers: (Signature) <i>E.W. Hega</i>										Sampling Contact							
Sample No.				Tag No.		Date		Time		Sample Matrix					Analyses Requested					Phone	
																				Ship Samples to	
																				Attn:	
																				Remarks	
REFC01				33002		5/1/91														Sulfide	
REFC02				33006																↓	
REFC03				33018																↓	
REFC04				33023																↓	
REFC05				33028																↓	
REFC01				33003																Others [see	
REFC02				33005																Contract]	
REFC03				33017																↓	
REFC04				33022																↓	
REFC05				33027																↓	
REFW				33029																	
REFW				33030																	
REFW				33031																	
REFW				33032																	
Method of Shipment:						Condition of Samples Upon Receipt: <i>OK</i>						Custody Seal Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> None <input type="checkbox"/> Broken by <i>R Alluson</i>									

Relinquished by: *E.W. Hega* (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: *Ruth Alluson* (Signature) Date/Time *5/3/91 09:30*

00030

**CHAIN OF CUSTODY RECORD/
SAMPLE ANALYSIS REQUEST FORM**

CAS

Project: (Name and Number) <i>Selma Wet Pcn C74431</i>				Samplers: (Signature) <i>EW. Hog</i>										Sampling Contact _____				
Sample No.	Tag No.	Date	Time	Sample Matrix							Analyses Requested					Phone _____		
				Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab					Extra Container	Archive	Ship Samples to _____
																		Attn: _____
Remarks																		
PTVIC-1	33040	5/1/91																<i>Sulfide</i>
PTVIC-2	33046																	
PTVIC-3	33051																	
PTVIC-4	33056																	
PTVIC-5	33061																	
PTVIC-1	33041																	<i>Others [See Contract]</i>
PTVIC-2	33045																	
PTVIC-3	33050																	
PTVIC-4	33055																	
PTVIC-5	33060																	
PTVIC-1	33065																	<i>Sulfide</i>
PTVIC-2	33070																	
PTVIC-3	33075																	
PTVIC-4	33080																	
Method of Shipment: _____				Condition of Samples Upon Receipt: <i>OK</i>							Custody Seal Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> None <input type="checkbox"/> Broken by <i>R. Anderson</i>							

Relinquished by: *EW Hog* (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time: _____

Received for Lab by: *Ruth Anderson* (Signature) Date/Time: *5/3/91 0930*

00033

**CHAIN OF CUSTODY RECORD/
SAMPLE ANALYSIS REQUEST FORM**

CAS

1033
Page 3 of

Project: (Name and Number) <i>Edman Oct Ken C74431</i>				Samplers: (Signature) <i>E.W. Hg</i>										Sampling Contact: _____																	
Sample No.				Tag No.		Date		Time		Sample Matrix						Analyses Requested		Phone: _____													
										Water		Sediment		Tissue		Soil		Air		Other		Concentration (L M H)		Composite or Grab		Extra Container		Archive		Ship Samples to: _____	
																												Attn: _____			
																												Remarks			
✓ PTV2C-5				33085		5/3/91																						Sulfide			
✓ PTV2C-1				33066																								Other (see contract)			
✓ PTV2C-2				33071																								}			
✓ PTV2C-3				33076																								}			
✓ PTV2C-4				33081																								}			
✓ PTV2C-5				33086																								}			
✓ PTV3C-1				33090																								Sulfide			
✓ PTV3C-2				33095																								}			
✓ PTV3C-3				33100																								}			
✓ PTV3C-4				33105																								}			
✓ PTV3C-5				33110																								}			
✓ PTV3C-1				33091																								Other (see contract)			
✓ PTV3C-2				33096																								}			
✓ PTV3C-3				33101																								}			
Method of Shipment: _____										Condition of Samples Upon Receipt: _____										Custody Seal Intact: Yes <input type="checkbox"/> No <input type="checkbox"/> None <input type="checkbox"/> Broken by: _____											

Relinquished by: *E.W. Hg* (Signature) Received by: _____ (Signature) Date/Time: *5/3/91*

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time: _____

Received for Lab by: *Frank Edman* (Signature) Date/Time: *5/7/91 930*

00083

CHAIN OF CUSTODY RECORD/
SAMPLE ANALYSIS REQUEST FORM

CAS

Project: (Name and Number) <i>Salmon Pass</i>				C747-31				Samplers: (Signature) <i>E. W. H.</i>				Sampling Contact: _____																																															
Sample No.				Tag No.				Date				Time				Sample Matrix				Analyses Requested				Phone: _____																																			
																Water				Sediment				Tissue				Soil				Air				Other				Concentration (L M H)				Composite or Grab				Extra Container				Archive				Ship Samples to: _____			
																																												Attn: _____															
																																																Remarks											
✓ PTVCS				33154				5/24																																				other															
✓ PTVC1				32691																																								sulfide															
✓ PTVC2				32697																																																							
✓ PTVC3				33143																																																							
✓ PTVC4				33148																																																							
✓ PTVCS				33153																																																							
✓ PTV1W				33166																																																							
✓ PTV1W				33164																																																							
✓ PTV1W				32665																																																							
✓ PTV1W				33167																																																							
✓ PTV6W				33162																																																							
✓ PTV6W				33163																																																							
✓ PTV6W				33160																																																							
✓ PTV6W				33161																																																							
Method of Shipment: _____								Condition of Samples Upon Receipt: _____								Custody Seal Intact: Yes <input type="checkbox"/> No <input type="checkbox"/> None <input type="checkbox"/> Broken by _____																																											

Relinquished by: *E. W. H.* (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: *Jan O'Neil* (Signature) Date/Time *5/24/91 9:30*

00084

CHS

CHAIN OF CUSTODY RECORD/
SAMPLE ANALYSIS REQUEST FORM

Project: (Name and Number) <i>Selma Pen C744-31</i>				Samplers: (Signature) <i>E. G. Hg</i>										Sampling Contact: _____					
Sample No.	Tag No.	Date	Time	Sample Matrix							Analyses Requested					Phone: _____			
				Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab					Extra Container	Archive	Ship Samples to _____	
Attn: _____																		Remarks	
<i>PTV5C1</i>	<i>32666</i>	<i>5/1/91</i>																<i>Sulfid</i>	
<i>PTV5C2</i>	<i>32671</i>																	↓	
<i>PTV5C3</i>	<i>32676</i>																	↓	
<i>PTV5C4</i>	<i>32681</i>																	↓	
<i>PTV5C5</i>	<i>32686</i>																	↓	
<i>PTV6C1</i>	<i>32667</i>																	<i>Others [see Contract]</i>	
<i>PTV5C2</i>	<i>32672</i>																	↓	
<i>PTV5C3</i>	<i>32677</i>																	↓	
<i>PTV5C4</i>	<i>32682</i>																	↓	
<i>PTV5C5</i>	<i>32687</i>																	↓	
<i>PTV6C1</i>	<i>32693</i>																	↓	
<i>PTV6C2</i>	<i>32698</i>																	↓	
<i>PTV6C3</i>	<i>33144</i>																	↓	
<i>PTV6C4</i>	<i>33149</i>																	↓	
Method of Shipment: _____				Condition of Samples Upon Receipt: _____							Custody Seal Intact: Yes <input type="checkbox"/> No <input type="checkbox"/> None <input type="checkbox"/> Broken by _____								

Relinquished by: *E. G. Hg* (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time: _____

Received for Lab by: *Jan Chavis* (Signature) Date/Time: *5/1/91 9:30*

CAS

CHAIN OF CUSTODY RECORD/
SAMPLE ANALYSIS REQUEST FORM

Project: (Name and Number) <i>Seamon Wet Pan C744-31</i>				Samplers: (Signature) <i>E.W. Hg</i>										Sampling Contact: _____						
Sample No.	Tag No.	Date	Time	Sample Matrix							Analyses Requested							Phone: _____		
				Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab							Extra Container	Archive	Ship Samples to: _____
																				Attn: _____
Remarks																				
✓	PTV3C-4	33106	5/2/11																	Sulfide
	PTV3C-5	33111																		↓
	PTV3C-1	33116																		Others (see Contract)
✓	PTV3C-2	33121																		↓
	PTV3C-3	33126																		↓
	PTV3C-4	33131																		↓
	PTV3C-5	33136																		↓
	PTV2C-1	33065																		Sulfide
✓	PTV2C-2	33070																		↓
	PTV2C-3	33075																		↓
	PTV2C-4	33080																		↓
✓	PTV4C-1	33115																		
	PTV4C-2	33120																		
	PTV4C-3	33125																		
Method of Shipment: _____				Condition of Samples Upon Receipt: _____							Custody Seal Intact: Yes <input type="checkbox"/> No <input type="checkbox"/> None <input type="checkbox"/> Broken by: _____									

Relinquished by: *E.W. Hg* (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time: _____

Received for Lab by: *Paul Davis* (Signature) Date/Time: *5/7/11 9:30*

98000

**CHAIN OF CUSTODY RECORD/
SAMPLE ANALYSIS REQUEST FORM**

Project: (Name and Number) <i>Salmon Net Pen C744-31</i>				Samplers: (Signature) <i>E.W. Hogan</i>										Sampling Contact _____				
Sample No.		Tag No.	Date	Time	Sample Matrix							Analyses Requested					Phone: _____	
					Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab						Ship Samples to: _____
																		Attn: _____
																		Remarks
<i>PTV4C-4</i>	<i>33130</i>	<i>5/2/11</i>																
<i>PTV4C-5</i>	<i>33135</i>	<i>5/2/11</i>																
Method of Shipment: _____					Condition of Samples Upon Receipt: _____							Custody Seal Intact: Yes <input type="checkbox"/> No <input type="checkbox"/> None <input type="checkbox"/> Broken by _____						

Relinquished by: *E.W. Hogan* (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: *Fred Adams* (Signature) Date/Time *5/2/11 930*

00087

CHAIN OF CUSTODY RECORD/
SAMPLE ANALYSIS REQUEST FORM

Project: (Name and Number) SALMON NET-PEN PROJECT					Samplers: (Signature) <i>J. Sexton</i>										Sampling Contact: J. SEXTON Phone: 206/643-4803 Ship Samples to: CAS 1317 South 13th Ave Kelso, Washington 98626 Attn: Abbie Spielman			
Sample No	Tag No	Date	Time	Sample Matrix								Analyses Requested						Remarks
				Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab	SULFIDES	ALL OTHERS*	Extra Container	Archive			
MANCH-1	25500	5/16/91										G	✓					*refer to QAPP for project.
MANCH-1	25501											C		✓				
MANCH-2	25502											G	✓					
MANCH-2	25503											C		✓				
MANCH-3	25504											G	✓					
MANCH-3	25505											C		✓				
Method of Shipment: <u>UPS</u>				Condition of Samples Upon Receipt: <u>OK</u>				Custody Seal Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> None <input type="checkbox"/> Broken by: <u>LDJ</u>										

Relinquished by: J. Sexton (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time: _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time: _____

Received for Lab by: Ruthauson (Signature) Date/Time: 5/21/91 0800

00024

APPENDIX G

Field Notes from Vessel Sampling Event

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C744-31

SAMPLE LOG

Survey: Sulmon Station: REF Date: 1 May 91

Sample type: Sediment Infauna Tissue Water

Composite? Y N

If composite, deployment numbers

Sample ID: REF Field Replicate ID: _____ Subsample ID: _____

Sample Number: _____

Subo	^{No} <u>Sample Tag</u>	^{Time} <u>Penetration</u>	<u>Preservative</u>	<u>Analyses</u>
1	<u>.1VV Chem; Biology</u>	<u>(1.0m; 0.5m series)</u>		
2	"			
3	"			
4	"			
5	"			
6	<u>- Phospholipid</u>			<u>10 small cores/side = total 20 cores</u>
	<u>1-5 .025 m² VV</u>	<u>(0.5 m²)</u>		

Sample size: _____ g kg
_____ l ml gal
_____ individuals
_____ cm m

.1VV = 17cm To Top
.025 = 12cm To Top

Comments: All grabs full to 1cm from top (16cm .1VV / 11cm .025 VV)
Sediment light brown clay - No odor
Appear to have fewer animals than PTVL, but
sediment appear almost identical to PTVL
Sampled from 13⁰⁰ to 16⁰⁰

SAMPLE LOG

Survey: Saline Station: PTV I Date: 1 May 91

Sample type: Sediment Infauna Tissue Water

Composite? Y N If composite, deployment numbers

Sample ID: _____ Field Replicate ID: _____ Subsample ID: _____

Sample Number: _____

<u>Sample Tag</u>	<u>Time</u>	<u>Penetration</u> <u>Preservative</u>	<u>Box</u> <u>Analyses</u>
1 .1vV density		Berthel (10 mm & 0.5 mm)	
2 4			
3 "			
4 "			
5 "			
6 = Phospholipid			20 small cores/sample
1-5 .025 vV		(0.5 mm)	

Sample size: _____ g kg
 _____ l ml gal
 _____ individuals
 _____ cm m

Comments: All samples full in 1cm of top of grab.
Sediment: Brown, No Odor - clay
Sampled from 10⁰⁰ to 12²⁰ local

SAMPLE LOG

Survey: Sediment Station: PTV2 Date: 5/2/91

Sample type: Sediment Infauna Tissue Water

Composite? Y N

If composite, deployment numbers

Sample ID: PTV2 Field Replicate ID: _____ Subsample ID: _____

Sample Number: _____

<u>Sample Tag</u>	<u>Preservative</u>	<u>Analyses</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Sample size: _____ g kg
_____ l ml gal
_____ Individuals
_____ cm m

Comments: Sediment Med Brown - No Odor - Mud

SAMPLE LOG

Survey: Selma Station: PTUS Date: 5/3/91

Sample type: Sediment Infauna Tissue Water

Composite? Y N

If composite, deployment numbers

Sample ID: _____ Field Replicate ID: _____ Subsample ID: _____

Sample Number: _____

<u>Sample Tag</u>	<u>Preservative</u>	<u>Analyses</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

*Water sample @ 1 M off Bottom
 T = 11 °C
 DO = 8.0 ppm*

Sample size: _____ g kg
 _____ l ml gal
 _____ Individuals
 _____ cm m

Comments: Benthic 1-4 had 2cm Brown material overlying } 1/10
Black H₂S mud. Sample #5 had Benthic } 1/10
such as Black mud throughout.

*153 PhosphoP samples were like Benthic sample 1-4
 2 " sample was Black mud throughout*

APPENDIX H

Field Notes from EPA Diver Reports

(To be provided by EPA)

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