Hylebos Waterway Fish Injury Studies Individual Data and Quality Assurance Results CASE NARRATIVES

Juvenile Salmon Injury

Semivolatile Organics (Tables 1, 2)

Calibrations

The calibration data used to quantitate the analytes met the initial (Tables U, 2G) and continuing (Tables IK, 1L and 2H) calibration criteria detailed in the "Commencement Bay Quality Assurance Plan, 12/95" (QAP).

Method Blank Analysis

Method blanks were analyzed for CHs (Tables 1E, IF) and AHs (Table 21)). The criteria in the QAP for method blanks were met (no more than 4 analytes to exceed 3 X the MDLs listed in Tables 1M, 21).

Surrogate Recoveries

Surrogate recoveries for samples analyzed by GC/MS for AlIs and by GC/ECD for PCBs, DDTs and pesticides (Tables 1A, 11), 2A, and 2C) were within the guidelines detailed in the QA Plan (50-125% recovery).

SRMAnalyses

An aliquot of NIST tissue SRM 1974a was analyzed with each of the sample sets, and the results (Tables 1E, IF, and 2D) met the criteria in the QA plan (>70% of concentrations for the certified analytes that were present in NIST SRM 1974a in concentrations greater than 10 times the MIDL were within 35% of either end of the NIST values. Noncertified values for the other analytes in the SRM are also shown in the tables.

Sample Duplicates

Four samples were analyzed in duplicate (Tables 1H, 11, and 217) and the criteria in the QAP were met (QA plan, Table 6.2). In several instances, the concentrations of analytes were so low that they were not detected in one sample but were detected in the duplicate--in these cases the RSD may be >50%, but is irrelevant.

Matrix Spike Analyses

The recoveries for the spiked analytes (AHs, PCBs, DDTs, and pesticides; Tables 1M, 21) were within the 50-125% range for at least 80% of the spiked analytes as set forth in the QAP.

Reanalyses

There is no plan to reanalyze any samples.

GUMS Confirmations

Four samples (Table 1 N, 10) were analyzed using GOMS to confirm the presence of the pesticides and PCBs determined previously by GOECD.

Hylebos Juvenile Salmon Injury Study

Analyses for Chlorinated Hydrocarbons Table 1 Notes

- The concentrations of analytes were calculated using 4,4'-dibromooctafluorobiphenyl as the surrogate standard.
- The "less than" symbol (<) indicates that the analyte was not detected in concentrations above the stated value.
- Results were determined by gas chromatography with electron capture detection (GC/ECD).
- Concentrations less than 10 ng/g are rounded to two significant figures; concentrations greater than or equal to 10 ng/g are rounded to three significant figures.
- The percent recoveries of the surrogate standard were calculated using tetrachloro-o-xylene to correct for the fraction of the total extract used for the HPLC cleanup step.
- The concentration reported for "Total PCBs" is the sum of the 17 PCB congeners multiplied by 2 (as defined in the QA Plan).
- Set # and Sample # designations are intended for internal lab use and identification only. Jar # and site name represent Hylebos Damage Assessment official sample identification designations.
- The sample weights used to calculate concentrations for the method blank are the mean sample weights calculated for the field samples in the same set.

contents analyzed for chlorinated hydrocarbons colmon liver and chamach Comple information for Table 1A-p1:

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Information for salmon liver and stomach contents attaiyzed for childrinated iny	
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		as part of the H	lylebos Ju	as part of the Hylebos Juvenile Salmon Injury Study.	ury study.			
a tes	Sample#	Sample Type	Species	Jar #"	Site Site	Collection Date	Sample Wt. (g)	008 Rec. (%)
H278	110-319	Tissue - liver	chum	HY94.076	PUYALLUP TRIBAL HATCHERY	5/11/94	0.76	94
H278	110-320	Tissue - liver	chum	HY94.077	PUYALLUP TRIBAL HATCHERY	5/11/94	- 3 3 - 3	26
H278	110-321	Tissue - liver	chum	HY94.078	PUYALLUP TRIBAL HATCHERY	5/11/94	0.76	95
H278	110-322	Tissue - liver	chum	HY94.079	PUYALLUP TRIBAL HATCHERY	5/12/94	1.11	26
H278	110-323	Tissue - liver	chum	HY94.080/081	SKOHOMISH ESTUARY	5/13/94	0.59	98
H278	110-324	Tissue - liver	chum	HY94.082/083	SKOHOMISH ESTUARY	5/16/94	1.55	87
H278	110-325	Tissue - liver	chum	HY94.084,088	HYLEBOS WATERWAY	5/26/94	1.25	95
H278	110-326	Tissue - liver	chum	HY94.085/086	HYLEBOS WATERWAY	5/25/94	0.79	85
H278	110-327	Tissue - liver	chum	HY94.087	HYLEBOS WATERWAY	5/26/94	0.67	8
H278	110-328	Tissue - liver	chum	HY94.116	HYLEBOS WATERWAY	6/1/94	0.78	03
H279	110-333	Tissue - liver	chum	HY94.117	HYLEBOS WATERWAY	6/1/94	1.06	88
H279	110-335	Tissue - liver	chum	HY94.118	HYLEBOS WATERWAY	6/2/94	1.07	8
H279	110-336	Tissue - liver	chum	HY94.119	HYLEBOS WATERWAY	6/2/94	1.58	86
H279	110-337	Tissue - liver	chinook	HY94.120	HYLEBOS WATERWAY	6/2/94	1.10	86
H281	110-367	Tissue - liver	chinook	HY94.122	NISQUALLY ESTUARY	5/18/94	3.03	107
H281	110-370	Tissue - liver	chinook	HY94.123	NISQUALLY ESTUARY	5/31/94	3.05	104
H281	110-368	Tissue - tiver	chinook	HY94.124	NISQUALLY ESTUARY	5/20/94	3.01	103
H281	110-369	Tissue - liver	chinook	HY94.124	NISQUALLY ESTUARY	5/20/94	3.02	101
H281	110-364	Tissue - liver	chinook	HY94.125	NISOUALLY HATCHERY	5/9/94	3.02	102
H281	110-366	Tissue - liver	chinook	HY94.126	NISQUALLY HATCHERY	5/13/94	3.04	105
H281	110-365	Tissue - fiver	chinook	HY94.127	NISOUALLY HATCHERY	5/13/94	3.02	100
H279	110-334	Tissue - liver	chinook	HY94.152	HYLEBOS WATERWAY	6/1/94	1.14	16
H279	110-338	Tissue - liver	chum	HY94.162	HYLEBOS WATERWAY	6/8/94	1.28	102
H279	110-339	Tissue - liver	chum	HY94.163	HYLEBOS WATERWAY	6/8/94	1.39	100
H279	110-340	Tissue - liver	chinook	HY94.164,167	HYLEBOS WATERWAY	6/8/94	0.31	66
H279	110-341	Tissue - liver	chum	HY94.165	HYLEBOS WATERWAY	6/9/94	0.65	100
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Jar #s represent official Hylebos Damage Assessment sampling numbers. # more than one jar # is given, the sample analyzed was a composite of those jars.

Table 1A-p2: Sample information for salmon liver and stomach contents analyzed for chlorinated hydrocarbons

		as part of the Hylebos Juvenile S	ebos Juv	renile Salmon Injury Study.	iry Study.			
						Collection Date	Sample Wt. (g)	DOB Rec.
Set #	Samples	campie type	apecies	041 #		8/0/04	0.73	101
H279	110-342	Tissue - liver	chum	HY94.165	HYLEBUS WATERWAT			
H280	110-347	Tissue - liver	chum	HY94.166	HYLEBOS WATERWAY	6/9/94	1.39	101
H280	110-348	Tissue - liver	chinook	HY94.226	PUYALLUP STATE HATCHERY	6/13/94	1.67	100
H280	110-349	Tissue - tiver	chinook	HY94.227	PUYALLUP STATE HATCHERY	6/13/94	1.69	101
H280	110-350	Tissue - liver	chinook	HY94.228	PUYALUP STATE HATCHERY	6/13/94	1.01	66
H280	110-351	Tissue - liver	chinook	HY94.228	PUYALLUP STATE HATCHERY	6/13/94	0.91	102
H280	110-352	Tissue - liver	chinook	HY94.229	PUYALLUP STATE HATCHERY	6/13/94	1.60	100
H280	110-353	Tissue - liver	chinook	HY94.230	PUYALLUP STATE HATCHERY	6/13/94	1.35	101
H280	110-354	Tissue - liver	chum	HY94.231,234,235	HYLEBOS WATERWAY	6/15/94	1.35	
H280	110-355	Tissue - kiver	chinook	HY94.232/238	HYLEBOS WATERWAY	6/15/94	0.53	101
H280	110-356	Tissue - liver	chinook	HY94 236	HYLEBOS WATERWAY	6/15/94	0.65	86
H281	110-361	Tissue - liver	chinook	HY94.261	HYLEBOS WATERWAY	6/22/94	1.07	8
H281	110-362	Tissue - liver	chinook	HY94.264	HYLEBOS WATERWAY	6/23/94	0.71	26
H281	110-363	Tissue - liver	chinook	HY94.268	HYLEBOS WATERWAY	6/29/94	0.53	6
H282	110-305	Tissue - stomach contents	chum	HY94.050	PUYALLUP TRIBAL HATCHERY	5/11/94	1.82	108
H282	110-306	Tissue - stomach contents	chum	HY94.053/056	SKOHOMISH ESTUARY	5/13/94	0.62	102
H282	110-312	Tissue - stomach contents	chinook	HY94.128	NISQUALLY ESTUARY	5/18/94	2.46	102
H282	110-313	Tissue - stomach contents	chinook	HY94.128	NISQUALLY ESTUARY	5/18/94	2.50	101
H282	110-307	Tissue - stomach contents	chum	HY94.154	HYLEBOS WATERWAY	6/8/94	2.97	101
H282	110-308	Tissue - stomach contents	chinook	HY94.218/219	PUYALLUP STATE HATCHERY	6/13/94	2.39	101
H282	110-309	Tissue - stomach contents	chum	HY94.220,223/224	HYLEBOS WATERWAY	6/15/94	2.97	100
CRCH	110-310	Tissue - stomach contents	chinook	HY94.225	HYLEBOS WATERWAY	6/16/94	3.02	101
H282	110-311	Tissue - stomach contents	chinook	HY94.262	HYLEBOS WATERWAY	6/22/94	3.01	101

DOB = dibromooctafkuorobiphenyl

"Jar #s represent official Hylebos Damage Assessment sampling numbers. # more than one jar # is given, the sample analyzed was a composite of those jars.

Table 1B-p1: Concentrations (ng/g, wet weight) of pesticides in salmon liver and stomach contents samples analyzed as part of the Hylebos Juvenile Salmon Injury Study.

110-319										
	< 0.12	0.68	< 0.24	< 0.33	< 0.18	-	0.38	Ś.7	1.8	< 0.47
025-011	0.11	0.61	< 0.14	< 0.19	0.44	0.94	0.35	6.1	1.7	0.51
110-321	< 0.11	0.68	< 0.22	< 0.3	< 0.16	1.1	0.42	6.1	1.9	0.61
110-322	0.14	0.68	< 0.14	< 0.2	< 0.1	-	0.4	7.1	1.7	0.64
110-323	< 0.13	0.24	< 0.26	< 0.36	< 0.19	0.62	0.29	3.1	0.6	0.79
110-324	< 0.11	0.23	< 0.22	< 0.3	0.94	0.62	0.27	e	0.6	0.76
110-325	2.9	6.6	0.31	< 0.2	0.19	2.7	1.2	12.4	5.4	4.9
110-326	3.6	7.5	0.37	< 0.29	0.24	2.9	1.1	10.9	4.8	4.3
110-327	2.3	5.9	0.32	< 0.34	0.3	3	1.3	7.3	S	5.2
110-328	1.9	4.3	0.21	< 0.19	< 0.1	2.4	1.3	11.3	5.6	5.6
110-333		3.7	0.18	< 0.17	0.31	2.4	1.6	8.8	5.2	5.3
110-335	2.3	4.4	0.21	< 0.2	< 0.1	2.6	1.6	6.2	5.1	5.6
110-336	1.8	*	< 0.23	< 0.31	0.39	2.4	1.4	7.3	UD	5.7
110-337	1.4	2.3	< 0.28	< 0.30	0.45	1.7	1.8	9.8	2.2	1.8
110-367	< 0.052	0.57	0.12	< 0.13	0.089	0.57	0.36	10.7	1.7	0.74
110-370	< 0.056	1.2	0.22	< 0.14	0.22	1.9	1.4	32.9	4.6	1.9
110-368	< 0.06	0.72	0.15	< 0.15	0.14	1.1	0.56	15.3	2.4	-
110-369	< 0.054	0.71	0.16	< 0.13	0.16	-	0.53	15.4	2.4	-
110-364	< 0.082	0.47	< 0.13	< 0.15	0.15	0.55	0.43	89	1.1	0.26
110-366	< 0.076	0.48	< 0.16	< 0.18	< 0.11	0.46	0.42	8.5	1.3	0.31
110-365	< 0.067	0.47	< 0.14	< 0.16	< 0.093	0.46	0.39	8	1.3	0.24
110-334	0.82	1.2	0.2	< 0.19		1.2	1.2	8.3	1.8	1.4
110-338	2.1	5.5	< 0.36	< 0.49	< 0.26	ෆ	2.3	4.8	5.6	4.7
110-339	4.3	5.2	0.26	< 0.18	0.37	5	1.3	6.9	4.1	3.6
110-340	1.5	2.2	< 0.49	< 0.68	< 0.36	3.1	1.9	10.8	3.4	2.5
110-341	8	4.8	< 0.22	< 0.3	0.46	2.5	1.7	5.4	5.3	4.4
110-342	2.1	4.8	< 0.21	< 0.29	0.44	2.5	1.9	5.3	5.3	4.4
110-347	2.0	7.7	0.26	0.24	0.43	2.4	1.8	c)	4.7	3.3
110-348	< 0.12	0.6	< 0.23	< 0.31	< 0.17	0.95	0.88	5.5	1.8	-
110-349	€60.0 >	0.56	< 0.19	< 0.25	0.22	0.89	0.84	5.2	1.7	0.98

HCBD = hexachlorobutadiene; HCB = hexachlorobenzene; HEPT = heplachlor.

Table 1B-p2: Concentrations (ng/g, wet weight) of pesticides in salmon liver and stomach contents samples analyzed as part of the Hylebos Juvenile Salmon Injury Study.

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Sampie#	НСВD	HCB	LIND	HEPT	Aldrin	α + γ Chiordane	Dieldrin	p,p'-DDE	0,0'-'0,q	P.P'-DDT
110-350	< 0.067	0.54	< 0.13	< 0.17	0.41	0.83	0.78	6.1	1.7	- .
110-351	< 0.078	0.55	< 0.15	< 0.2	0.4	0.8	0.82	5.9	1.7	-
110-352	< 0.11	0.57	`< 0.21	< 0.28	0.18	0.83	0.87	5.4	1.7	1.1
110-353	0.69	0.51	0.12	< 0.13	0.15	0.7	0.72	5.6	1.4	0.89
110-354	1.8	3.9	0.32	9 .0	0.51	e	1.3	7.2	7.3	5.8
110-355	7.6	1.7	0.47	< 0.43	0.47	5	1.1	12.7	3.0	2.9
110-356	0.72	1.7	0.41	0.28	< 0.14	1.9	1.2	12.6	3.7	2.5
	e 1	5.1	0.4	< 0.19	0.49	1.6	0.93	13.2	2.7	1.5
	2.6	3.3	0.38	< 0.29	0.38	1.8	1.1	15.2	3.1	1.7
110-363	< 0.16	0.86	< 0.33	< 0.38	0.83	2.4	1.3	11.6	3.7	2.2
110-305	< 0.1	1.3	< 0.17	< 0.16	0.19	2.1	0.62	19.7	2.8	0.85
110-306	< 0.2	< 0.2	< 0.34	< 0.31	0.33	< 0.4	< 0.21	0.69	< 0.32	< 0.3
110-312	< 0.12	0.28	< 0.2	< 0.19	< 0.14	0.36	0.28	1.7	0.32	< 0.18
110-313	< 0.17	0.28	< 0.29	< 0.27	< 0.2	0.47	0.3	Ċ,	0.62	< 0.26
110-307	1.8	3.3	0.25	0.64	0.62	- 	0.76	1.2	1.2	0.55
110-308	< 0.12	2.5	< 0.21	< 0.19	< 0.14	4.3	4.3	59.5	10.3	4.1
110-309	0.95	5.4	< 0.1	0.54	4	2.1	1.8	1.3	- 1.1 -	0.43
110-310	0.57	1.8	0.72	< 0.12	< 0.084	0.96	3.3	13.1	2.1	0.9
110-311	1.5	3.8	0.88	0.39	2.1	5	1.5	5.7	1.3	8.0

HCBD = hexachlorobutadiene; HCB = hexachlorobenzene; HEPT = heptachlor.

Table 1C-p1: Concentrations (ng/g

Concentrations (ng/g, wet weight) of chlorobiphenyl congeners (chlorination level/IUPAC number) in salmon liver and stomach contents samples analyzed as part of the Hylebos Juvenile Salmon

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Total	PCBs.	44	33	46	35	47	36	290	270	320	360	290	310	300	83	43	8	53	53	27	28	26	12	370	340	180	390	
-	10/209	0.37	0.22	0.25	0.22	0.24	0.3	1.9	2.5	2.5	1.8	1.4	1.6	1.8	1.3	0.5	0.53	0.61	0.55	0.49	0.53	0.6	0.91	4	3.8	2.3	LC L	
	9/206	< 0.12	0.087	< 0.11	0.084	< 0.13	< 0.11	2.2	2.5	2.7	2.2	1.7	2.1	2.2	1.3	0.33	0.23	0.43	0.39	0.37	0.41	0.4	0.0	4.6	4.3	1.8	4.9	
	8/195	< 0.12	< 0.069	< 0.11	< 0.072	< 0.13	< 0.11	0.54	0.52	0.68	0.56	0.48	0.56	0.59	0.28	0.038	0.079	0.044	0.042	< 0.042	< 0.051	< 0.045	0.23	-	0.91	0.38	-	
	7/187	0.84	0.77	0.84	0.81	0.85	0.73	9.7	8.7	12	9.8	7.8	8.4	9.6	3.1	1.1	2.1	1.4	1.4	0.67	0.73	0.69	2.5	12.5	11.7	4.8	11.8	
	7/180	0.29	0.26	0.33	0.29	0.36	0.3	7.3	6.7	8.1	8	6.6	7.2	6.7	1.3	2.3	4.2	2.8	2.8	1.1	1.1	1.1	1:2	80	8.6	2.8	8	
	7/170	0.34	0.33	0.34	0.36	0.35	0.31	3.8	3.4	4.4	4.4	3.6	3.9	₹.	1.2	0.5	0.95	0.61	0.59	0.32	0.34	0.3	-	5.4	ŝ	2.1	5.2	
alialyz	6/153	3.2	2.8	3.4	Ċ	4	3.4	30.1	27	32.4	37.4	27.6	30.4	27.4	7.5		7.9	20	4.9	2.3	2.2	2.1	6.3	38	36	16.3	38.7	
saidu	6/138	2.7	2.2	2.8	2.4	3.1	2.6	22.7	20.7	23.5	30	23.6	23.9	23.3	6.2	3.4	6.9	4.3	4.2	1.8	0	1.8	5.2	31.4	28.8	12.7	33.1	
	6/128	0.6	0.5	0.61	0.57	0.52	0.45	3.8	3.5	3.0	5.1	•	3.9	₹.	1.1	0.54	1.1	0.71	0.7	0.28	0.33	0.28	-	5.5	4.7	2.5	5.7	
macn contents samples analyzeu as	5/118	1:6	1.3	1.8	1.4	2.1	1.6	14.6	14.3	15.4	20.7	15.6	16	15.2	3.7	1.7	3.5	2.3	2.2	0.87	0.95	0.86	3.2	20.6	17.8	9.2	21.5	
macn	6/105	0.53	0.39	0.55	0.51	0.58	0.42	-	4 4	4.3	5.9	5.6	4.8	6.6	12	0.69	1.4	0.88	0.93	0.42	0.36	0.26	1.4	6.3	-	2.6	5.9	
na sto	5/101	2.3	1.9	2.6	2.1	2.2	1.9	18.3	17.9	19.6	24.8	20.1	21.1	19.6	4.8	2.2	4.7	2.8	2.8	1.2	1.3	1.1	3.8	25.2	20.4	10.5	26.1	
in saimon liver and sto Injury Study.	4/66	1.2	0.84	1.3	0.95	1.2	0.81	8.3	8	9.1	10.6	9.6	11	9	0.83	0.63	1.1	0.76	0.76	0.42	0.37	0.36	1.8	2.7	8.9	5.2	9.4	
in saimon liv Injury Study.	4/52	1.7	1:2	1.9	12	1.6	1.1	1.7	7.4	8.3	8.8	7.2	7.7	1.1	2.5	1.2	2.4	1.5	1.5	0.68	0.88	0.78	2.1	8.7	6.2	5.4	8.8	
In sa Injur	4/44	2.7	1.8	2.9	1.7	3.1	2.2	5.4	6.3	7.3	1	5.6	5.8	6.2	2.7	÷	1.4	1.2	1.2	1:2	1.1	1.1	2.1	7.1	5.3	6.9	1.1	
	3/28	1.5	0.0	1.7	0.91	1.5	0.93	1.9	1.9	2.5	2.1	2.2	2.3	2.2	0.08	0.47	0.83	0.52	0.65	0.36	0.39	0.32	0.72	1.9	1.2	2.6	2.6	
	3/18	2.1	0.94	1.8	0.86	1.8	11	1.7	1.7	2.4	1.8	1.7	1.6	1.6	1.2	0.66	0.76	0.77	0.84	0.88	0.74	0.81	0.94	4.1	-	2.7	1.8	
	Sample#	110-319	110-320	110-321	110-322	110-323	110-324	110-325	110-326	110-327	110-328	110-333	110-335	110-336	110-337	110-367	110-370	110-368	110-369	110-364	110-366	110-365	110-334	110-338	110-339	110-340	110-341	

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* The concentration reported for "Total PCBs" is the sum of the 17 PCB congeners multiplied by 2 (as defined in the QA Plan).

Concentrations (ng/g, wet weight) of chlorobiphenyl congeners (chlorination level/IUPAC number) in salmon liver and stomach contents samples analyzed as part of the Hylebos Juvenile Salmon

Table 1C-p2:

6/110 6/124 6/153 7/170 7/180 7/187 6/128 6/153 7/170 7/187 6/183 6/163 7/170 7/187 6/183 6/163 6/163 7/170 7/187 6/183 6/163 6/163 7/170 7/187 6/183 6/163 6/163 7/170 7/187 6/183 6/183 6/163 </th <th>ıdy.</th> <th></th> <th>00000</th> <th>Total</th>	ıdy.																	00000	Total
58 332 402 52 78 11.6 1 5 5.1 3 4.8 29.1 32.9 4.8 8.1 10.1 0.82 4.8 4.8 0.46 2.6 3.3 0.36 0.35 0.89 <0.12 0.37 0.37 0.41 2.6 3.3 0.33 0.31 0.86 <0.12 0.37 0.37 0.46 2.7 3.1 0.33 0.31 0.86 <0.11 0.33 0.33 0.45 2.2 2.6 0.3 0.32 0.78 <0.86 0.1 0.33 0.45 2.2 2.6 0.3 0.32 0.78 <0.86 0.1 0.33 2.4 12 11.8 15 12 12 15 15 2.1 12 13 15 12 15 15 2.1 13 15 15 12 15 15 2.1	3/18 3/28 4/44 4/52 4/66 5/101 5/105 5	4/44 4/52 4/66 5/101 5/105	4/52 4/66 5/101 5/105	4/66 5/101 5/105	5/101 5/105	5/105	/105	~	1118	6/128	6/138	6/153	7/170	7/180	7/187	8/195	8/208	10/208	PCB8
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1.7 1.7 7.1 8.2 7.7 25 4.5	7.1 8.2 7.7 25	8.2 7.7 25	7.7 25	25		4.5		21.6	5.8	33.2	40.2	5.2	7.8	11.6	-	S	5.1	380
0.46 2.6 3.3 0.36 0.35 0.39 <0.12 <0.12 0.01 0.33 0.41 2.4 3 0.32 0.31 0.84 <0.097	2.3 1.6 3.8 6.5 8.3 22 5.8	3.8 6.5 8.3 22	6.5 8.3 22	8.3 22	52		5.8		18.2	4.8	29.1	32.9	4.8	8.1	10.1	0.92	4.8	4.8	340
0.41 2.4 3 0.32 0.31 0.84 < 0.007 0.1 0.33 0.46 2.5 3.1 0.33 0.31 0.86 < 0.06	0.58 0.7 2 1.2 0.9 2 0.5	2 1.2 0.9 2	1.2 0.9 2	0.9 2	2		0.5		1.4	0.46	2.6	3.3	0.36	0.35	0.89	< 0.12	< 0.12	0.37	35
0.44 2.5 3.1 0.33 0.31 0.86 < 0.066 0.1 0.27 0.46 2.7 3.3 0.34 0.32 0.88 < 0.077	0.55 1.2 1.9 1.2 0.84 1.9 0.46	1.9 1.2 0.84 1.9	1.2 0.84 1.9	0.84 1.9	1.9		0.46		1.3	0.41	2.4	3	0.32	0.31	0.84	< 0.097	0.1	0.33	34
1.6 0.46 2.7 3.3 0.34 0.32 0.08 < 0.077 0.1 0.33 1.5 0.45 2.8 3.3 0.36 0.34 0.89 < 0.011 0.14 0.35 1.3 0.45 2.2 2.6 0.3 0.32 0.76 < 0.061 0.24 0.35 32.1 1.6 51 7.3 11.8 15 1.2 51.1 0.25 6.8 2.1 12.8 15 12.6 12.7 11.8 12.7 0.26 51.1 0.22 6.1 1.7 8.9 10.4 1.7 81 2.7 0.35 1.7 6.1 1.7 8.1 8.1 8.6 2.7 0.16 0.14 6.3 1.7 1.7 1.7 1.2 0.15 0.17 0.1 0.23 6.3 1.7 1.0 1.7	0.87 0.86 1.8 1.4 0.98 2 0.49	1.8 1.4 0.98 2	1.4 0.98 2	6	6		0.49		1.5	0.44	2.5	3.1	0.33	0.31	0.86	< 0.066	0.1	0.27	36
1.5 0.46 2.8 3.3 0.36 0.34 0.80 < 0.11 0.14 0.35 1.3 0.45 2.2 2.6 0.3 0.32 0.76 < 0.061 0.081 0.22 32.1 8 48 51 7.3 11.8 15 1.2 5.6 51.1 0.22 6.8 2 10.7 12.6 1.7 81 3.8 0.36 1.5 1.5 6.4 1.7 8.9 10.4 1.7 8.1 3.8 0.20 1.5 1.5 6.4 1.7 8.1 3.8 0.20 1.6 2.1 1.5 1.7 6.3 1.7 8.1 3.8 0.20 1.6 0.21 1.2 1.7 6.3 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 $1.$	0.82 0.96 2 1.4 0.94 2 0.5	2 1.4 0.94 2	1.4 0.94 2	0.94 2	2		0.6		1.6	0.46	2.7	3.3	0.34	0.32	0.88	< 0.077	0.1	0.33	38
1.3 0.45 2.2 2.6 0.3 0.32 0.76 <0061 0022 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.5 5.1 5.1 5.2 5.1 5.1 5.2 5.2 4.4 0.33 1.2 1.5 1.1 5.1 1.7 8.9 10.4 1.7 8.1 3.8 0.20 1.7 1.5 1.7 6.1 1.7 8.5 1.7 8.1 1.2 1.7 1.2 1.7 1.2 1.7 1.2 1.7 1.2 1.7 1.2 1.7 1.2 1.2 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 <	1.1 0.9 2.1 1.3 0.87 2 0.51	2.1 1.3 0.67 2	. 1.3 0.67 2	1.3 0.87 2	5		0.51	_	1.5	0.45	2.8	3.3	0.36	0.34	0.89	< 0.11	0.14	0.35	38
32.1 8 48 61 7.3 11.8 15 1.2 5.6 5.1 5 9.3 2.4 12.8 15 2 2.4 4.4 0.33 1.2 15 1 6.8 2 10.7 12.6 2 2.4 4.4 0.33 1.2 1.5 5.4 1.7 8.9 10.4 1.7 8.1 3.8 0.29 1.6 1.1 6.3 1.6 9.2 12.5 1.8 1.7 8.1 3.8 0.29 1.6 1.1 6 1.7 9.5 1.8 1.7 8.1 3.8 0.29 1.7 1 1.9 0.82 1.17 1.8 9.6 2.7 0.13 0.55 0.99 1.9 0.82 1.7 1 1.0 5.8 0.20 1.1 1 1.9 0.82 1.4 0.39 0.50 0.99 0.14 0.14 0.	0.86 0.68 1.4 1.3 0.87 1.8 0.47	1.4 1.3 0.87 1.8	1.3 0.87 1.8	0.87 1.8	1.8		0.4	~	1.3	0.45	2.2	2.6	0.3	0.32	0.76	< 0.051	0.081	0.22	31
9.3 2.4 12.8 15 2 2.4 4.5 0.33 1.2 1.5 6.8 2 10.7 12.5 2 2.4 4.2 0.35 1.3 1.5 5.4 1.7 8.9 10.4 1.7 8.1 3.8 0.29 1.6 2.1 5.3 1.6 9.2 12.7 1.6 9.2 1.7 1.6 2.1 6 1.7 9.5 11.7 1.6 8.6 2.7 0.13 0.55 0.99 1.9 0.82 4.2 0.5 0.41 7.1 1 <0.01	1.3 3.6 5.2 8.9 13.4 35.1 1	5.2 8.9 13.4 35.1	6.9 13.4 35.1	13.4 35.1	35.1		-	2	32.1	80	48	51	7.3	11.8	15	1.2	5.6	5.1	530
6.8 2 10.7 12.5 2 2.4 4.2 0.35 1.3 15 15 5.4 1.7 8.9 10.4 1.7 8.1 3.8 0.29 1.6 2.1 5.3 1.6 9.2 12.5 1.8 10 5.8 0.27 1.2 1.7 6 1.7 9.5 11.7 1.8 10 5.8 0.27 1.2 1.7 1.9 0.82 4.2 5.1 0.42 1.7 1 <0.07	1.8 3.4 3.9 4.3 4 10 3.	3.9 4.3 4 10	4.3 4 10	4			e,	2	9.3	2.4	12.8	15	N	2.4	4.4	0.33	1 2	1.5	160
5.4 1.7 8.9 10.4 1.7 8.1 3.8 0.29 1.6 2.1 5.3 1.6 9.2 12.5 1.8 10 5.8 0.27 1.2 1.7 1.4 6 1.7 9.5 11.7 1.6 8.6 2.7 0.13 0.55 0.99 1.9 0.82 4.2 5.1 0.42 1.7 1 <0.077	1.3 2.3 3.1 3.2 3.7 7.7 2	3.1 3.2 3.7 7.7	3.2 3.7 7.7	3.7 7.7	7.7		N.	ı.	6.8	~	10.7	12.5	2	2.4	4.2	0.35	1.3	1.5	140
6.3 1.6 9.2 12.5 1.8 10 6.8 0.27 1.2 1.7 1.4 1.9 0.82 4.2 5.1 0.42 1.7 1.6 8.6 2.7 0.13 0.55 0.90 1 1.9 0.82 4.2 5.1 0.42 1.7 1 <0077	1.6 1.3 3.3 2.6 2.2 5.8 5	3.3 2.6 2.2 5.8	2.6 2.2 5.8	2.2 5.8	5.0			~	5.4	1.7	8.9	10.4	1.7	8.1	3.8	0.29	1.6	2.1	130
6 1.7 9.5 11.7 1.6 8.6 2.7 0.13 0.55 0.99 1 1.9 0.82 4.2 5.1 0.42 1.7 1 <0077	1.8 1.2 3.5 2.6 2.1 6.5 1.	3.5 2.6 2.1 6.5	2.6 2.1 6.5	2.1 6.5	6.5		1.1		5.3	1.6	9.2	12.5	1.8	10	5.8	0.27	1.2	1.7	140
1.9 0.82 4.2 5.1 0.42 1.7 1 < 0.077 < 0.081 < 0.1 1.6 0.22 1.9 2 < 0.16 0.41 < 0.16 < 0.16 < 0.21 0.98 0.26 1.5 1.8 0.25 0.74 0.39 < 0.092 < 0.037 0.14 0.98 0.26 1.5 1.8 0.25 0.74 0.39 < 0.092 < 0.037 < 0.14 1.2 0.28 2 2.4 0.23 0.9 0.44 < 0.13 < 0.14 < 0.14 6.8 1.4 9.6 11 1.5 7.8 3.3 0.25 1.7 1.7 6.4 1.8 12.8 16.6 1.3 6.7 4 < 0.034 0.23 0.17 1.7 6.7 4.7 0.33 1.4 1.2 1.7 1.2 1.7 6.7 1.9 0.14 0.33 0.14 0.17 0.28 $0.$	1.8 1.7 4.1 2.8 1.9 6.4 1	4.1 2.8 1.9 6.4	2.8 1.9 6.4	1.9 6.4	6.4			9	9	1.7	9.5	11.7	1.6	8.6	2.7	0.13	0.55	0.99	130
1.6 0.22 1.9 2 <0.16	0.55 1.3 2 1.4 1 3.7 0.5	2 1.4 1 3.7	1.4 1 3.7	1 3.7			0.6	g	1.9	0.82	4.2	5.1	0.42	1.7	*	< 0.077	< 0.081	< 0.1	51
0.96 0.26 1.5 1.8 0.25 0.74 0.39 <0.092	1.5 1.1 2.9 1.2 1 1.5 0.47	2.9 1.2 1 1.5	1.2 1 1.5	1 1.5			0.4	2	1.6	0.22	1.9	3	< 0.16	0.41	< 0.19	< 0.15	< 0.16	< 0.21	31
1.2 0.28 2 2.4 0.23 0.9 0.44 <0.13	0.64 0.47 1.2 0.52 0.59 1.3 0	1.2 0.52 0.59 1.3	0.52 0.59 1.3	0.59 1.3	1.3		0	C.	0.98	0.26	1.5	1.8	0.25	0.74	0.39	< 0.092	< 0.097	0.14	52
6.8 1.4 9.6 11 1.5 7.8 3.3 0.25 1.5 1.7 1 6.4 1.8 12.8 16.6 1.3 6.7 4 <0.094	0.9 1.1 1.3 1.1 0.73 1.8 0.	1.3 1.1 0.73 1.8	1.1 0.73 1.8	0.73 1.8	1.8		Ó	0.35	1.2	0.28	2	2.4	0.23	0.0	0.44	< 0.13	< 0.14	< 0.18	50
6.4 1.8 12.8 16.6 1.3 6.7 4 <0.094 0.23 0.17 1 8.2 1.7 11.1 12.3 7 8 4.1 0.33 1.4 1.2 1 4.7 0.93 7.4 9.1 11.4 6.1 2.9 0.14 0.53 0.48 1 3.3 1.1 4.7 0.93 7.4 9.1 11.4 6.1 2.9 0.14 0.53 0.48 1 3.3 1.1 4.7 5.9 2.1 4.7 1.9 0.26 0.77 0.72	0.55 1.6 2.1 2.8 1.8 7.9 1	2.1 2.8 1.8 7.9	2.8 1.8 7.9	1.8 7.9	7.9		-	•	6.8	1.4	9.6	11	1.5	7.8	3.3	0.25	1.5	1.7	130
8.2 1.7 11.1 12.3 7 8 4.1 0.33 1.4 1.2 1 4.7 0.93 7.4 9.1 11.4 6.1 2.9 0.14 0.53 0.48 1 3.3 1.1 4.7 5.9 2.1 4.7 1.9 0.26 0.77 0.72	0.9 0.84 1.7 4.5 2.1 9 0.9	1.7 4.6 2.1 9	4.5 2.1 9	2.1 9	6	5'0 6	6.0	=	6.4	1.8	12.8	16.6	1.3	6.7	. 	< 0.094	0.23	0.17	140
4.7 0.83 7.4 9.1 11.4 6.1 2.9 0.14 0.53 0.48 1 3.3 1.1 4.7 5.9 2.1 4.7 1.9 0.26 0.77 0.72	1.1 0.78 1.6 3 2.8 9.1 1	1.6 3 2.8 9.1	3 2.8 9.1	2.8 9.1	9.1		-	ø	8.2	1.7	11.1	12.3	1	80	-	0.33	1.4	1.2	150
3.3 1.1 4.7 5.9 2.1 4.7 1.9 0.26 0.77 0.72	0.46 0.65 1.3 2.2 2.4 5.3 1	1.3 2.2 2.4 5.3	2.2 2.4 5.3	2.4 5.3	5.3		-	-	4.7	0.93	7.4	9.1	11.4	6.1	2.9	0.14	0.53	0.48	110
	0.79 1.4 2.1 2 1.2 3.8 < 0.074	2.1 2 1.2 3.8 <	2 1.2 3.8 <	1.2 3.8 <	3.8 <	v	< 0.0	2	3.3	1.1	4.7	5.9	2.1	4.7	1.9	0.26	0.77	0.72	73

* The concentration reported for "Total PCBs" is the sum of the 17 PCB congeners multiplied by 2 (as defined in the QA Plan).

I

Quality assurance sample information in method blanks and standard reference material (SRM 1974a) analyzed for chlorinated hydrocarbons as part of the Hylebos Juvenile Salmon Injury Study. Table 1D-p1:

Set #	Sample #	Sampie Type	Sampie Wt (g)	DOB Rec (%)
Metho	Method Blank			
H282	110-315	Method Blank	2.42	16
H278	110-330**	Method Blank	0.94	6 8
H279	110-344	Method Blank	1.03	96
H280	110-358	Method Blank	1.22	104
H281	110-372	Method Blank	2.35	88
		;		
SRM	SRM 1974a			
H282	110-314	SRM 1974a	3.01	105
H278	110-329	SRM 1974a	2.98	8
H279	110-343	SRM 1974a	3.01	26
H280	110-357	SRM 1974a	3.01	
H281	110-371	SRM 1974a	3.03	100

DOB = dibromooclathorobiphenyl

QA: Concentrations (ng/g, wet weight) of pesticides in method blanks and standard reference material (SRM 1974a) analyzed as part of the Hylebos Juvenile Salmon Injury Study. Table 1E-p1:

• •	•						$\alpha + \gamma$				
Sample #	Sample Type	HCBD	нсв	Lindane	HEPT	Aldrin	Chlordane	Dieldrin	p,p'-DDE	p,p'-DDD	p,p'-DDT
Method Blank											
110-315	Method Blank	< 0.035	< 0.035	< 0.059	< 0.054	< 0.04	< 0.07	< 0.037	< 0.032	< 0.056	< 0.053
110-330**	Method Blank	< 0.2	< 0.2	< 0.39	< 0.54	< 0.29	< 0.59	< 0.32	< 0.26	< 0.62	< 0.76
110-344	Method Blank	< 0.073	< 0.073	< 0.15	< 0.2	< 0.11	< 0.22	< 0.12	< 0.098	< 0.23	< 0.28
110-358	Method Blank	< 0.069	< 0.069	< 0.13	< 0.18	< 0.1	< 0.2	< 0.11	< 0.092	< 0.21	< 0.25
110-372	Method Blank	< 0.04	< 0.04	< 0.085	0.53	< 0.055	0.15	0.28	< 0.053	< 0.11	< 0.12
	Average.	0.00	00.0	0.0	0.11	0.00	0.04	0.06	0.00	00.0	0.00
	2 C S	0.00	0.00	0.00	0.21	0.00	0.06	0.11	0.00	0.00	0.00
	RSD	2	6	6	200.0%	2	141.5%	200.0%	٢	2	2
			•								
SRM 1974a											
110-314	SRM 1974a	< 0.12	< 0.12	< 0.19	< 0.18	< 0.13	2.8	1.1	3.1	4.5	0.29
110-329	SRM 1974a	< 0.045	0.12	< 0.09	< 0.12	< 0.065	2.8	0.96	3.7	5.9	0.6
110-343	SRM 1974a	< 0.055	< 0.055	< 0.11	< 0.15	< 0.081	5.0	0.96	3	9	0.35
110-357	SRM 1974a	< 0.044	< 0.044	< 0.085	< 0.11	< 0.064	2.7	0.81	2.8	5.7	0.35
110-371	SRM 1974a	< 0.076	< 0.076	< 0.16	< 0.18	< 0.1	3.1	< 0.11	4.1	9	0.25
	Average*	0.00	0.02	0.00	0.00	0.00	2.86	0.76	3.32	5.61	0.37
	SD.	0.00	0.05	0.00	0.00	0.00	0.15	0.39	0.49	0.59	0.12
	RSD	~	200.0%	6	6	2	5.2%	51.3%	14.8%	10.5%	34.0%
SRM 19	1974a x	1	ł		:		- 6	0.7	5.84	4.90	0.45
Certified	82% 02%		•	•			•		0.63	0.72	0.07
concentrations (ng/g, wel wt)									0.73	7.69	0.69
	าวา								3.38	2.72	0.29
HCBD = hexachlorobutadiv	HCBD = hexachlorobutadiene; HCB = hexachlorobenzene; HEPT = heplachlor.	HEPT = heptach	or.								
\vec{X} is the average concentration (ng/g, wet w)	ration (ng/g, wet wt)							•			

95% CI is the 95% confidence interval UCL is the upper confidence limit (95% confidence limit + 35%) LCL is the lower confidence limit (95% confidence limit - 35%)

Dieldrin is given as a noncertified value.

• When an analyte was detected in some, but not all of the method blanks, the average concentration is based on the concentration when detected and zero when not detected. When an analyte was not detected in any of the method blanks or SRMs, zero is reported for the average and the SD and a "?" is reported for the RSD.

•• The sample weights of samples analyzed in the set with method blank 110-330 were near to or less than 1g. The average sample weight for the set (0.94g) is used in calculating the concentrations in the method blank. The sample weight needs to be adjusted to 3g for comparison to MOLs.

Table	Table 1F-p1:	QA: 0 level/ll	QA: Concentrations (ng/g, wet level/IUPAC number) in method	ntratio	ns (ng er) in	g/g, wi		weight) o blanks a	if chia	of chlorobiphenyl congeners (chlorination and standard reference material (SRM 1974a)	d refe	conge	ners (matei	chlori rial (S	nation RM 15)74a)			
		analyz	analyzed as	part c	of the	part of the Hylebos		/enile	Salm	Juvenile Salmon Injury	ILY SU	stuay.							Total
Sample #		3/18	3/28	4/44	4/52	4/66	5/101	5/105	5/118	6/128	6/138	6/153	7/170	7/180	7/187	8/195	9/206 10/209	10/209	PCBS
Method	Blank															ſ			
110-315		0.43	0.46	0.84	0.41	0.42	0.45	0.12	0.4	0.072	0.51	0.55	< 0.028	0.081	0.089	< 0.027	< 0.028	< 0.036	9.7
110-330**	7.	< 0.91	1.4	4.6	1.4	1.1	1.6	0.34	1.5	< 0.23	1.6	1.9	< 0.2	< 0.23	< 0.3	< 0.2	< 0.2	< 0.24	59
110-344		0.57	0.58	1.5	0.5	0.43	0.48	0.13	0.41	< 0.085	0.5	0.5	< 0.076	< 0.086	< 0.11	< 0.073	< 0.074	< 0.088	11
110-358		0.44	0.47	1.3	0.52	0.36	0.52	0.13	0.42	< 0.079	0.46	0.49	< 0.07	< 0.081	< 0.1	< 0.068	< 0.069	< 0.082	10
110-372		0.59	10	1.5	0.61	0.39	0.57	0.17	0.59	< 0.045	0.53	0.55	< 0.039	< 0.044	< 0.058	< 0.027	< 0.034	< 0.041	13
	Average*	0.41	0.83	1.71	0.68	0.54	0.73	0.18	0.66	0.01	0.72	0.79	0.00	0.03	0.02	0.00	0.00	0.0	14.63
	SD	0.21 52.6%	0.41	ú.	0.35 51.0%	0.28 51.6%	0.44 61.0%	0.08	0.41 62.6%	0.03 200.0%	0.44 61.1%	0.54 68.2%	0.00	0.04	0.04	0.00	0.00	0.0	7.09 48.5%
SRM 1	1974a			1															
110-314		-	0	9 .6	13.9	14.1	15.9	4.5	15.2	2.1	16.1	20.7	0.45	3.3	3.9	0.12	< 0.092	< 0.12	260
110.320		32	9.2	8.7	12.3	12.4	14.8	4.6	15.3	2.2	15.8	20.2	0.68	1.1	3.9	0.12	0.16	0.19	250
10.343		32	8.8	8.4	12.3	11.9	1	4.5	13.9	2	14.4	18.3	0.52	0.84	3.6	0.082	0.077	0.11	230
110-357		2.9	30	7.9	11.3	10.3	12.9	4.5	12.9	1.9	13.4	16.9	0.5	0.8	3.3	0.075	0.067	0.099	220
110.371		86	6.9	9.7	14.1	13.7	16	4.6	15.3	2.3	16.1	20.5	0.74	3.3	4	0.084	< 0.064	< 0.079	270
	- character	C.	A 67	8.8 5	12.78	12.50	14.70	4.65	14.52	2.10	15.15	19.31	0.58	1.87	3.78	0.10	0.06	0.08	246.00
			0.55	0.68	1.07	1.36	1.17	0.06	0.94	0.15	1.07	1.49	0.11	1.17	0.28	0.02	0.06	0.07	19.16
	RSD	· •••	6.4%	7.7%	8.3%	10.9%	8.0%	1.2%	6.5%	7.3%	7.1%	7.7%	19.4%	62.4%	7.5%	21.1%	96.6%	90.8%	7.8%
						۰.													~
SRM 1	974a	3.7 CI 3.7	0	8.28 0.84	13.1	11.64	14.6	6.04 0.39	14.0	2.5 0.39	15.2	16.54 0.86	0.12	0.43	0.27		1	ł	
Concentrations concentrations (ng/g, wet wt)		, <u>.</u>		12.31	19.44 7 78	16.25 7 18	21.2	6.68 3.67	20.7 9.43	3.90	22.0	23.5 10.2	1.01 0.33	3.21	6.59 2.34				
X is the a 95% Clist UCL is the LCL is the	T is the average concentration (ng/g, wel W) 55% C1 is the 95% confidence interval UCL is the upper contidence limit (95% confidence limit + 35%) LCL is the lower confidence limit (95% confidence limit - 35%)	:L Tation (ng/g. nce intervat >> limit (95% c b timit (95% c	wel wt) confidence confidence	a limit + 35 limit - 35%															
PCBs 3/16	PCBs 3/18 and 3/28 are given as a noncertified values.	ven as a nor	ncertified vi	alues.									,						
 When an of the method 	* When an analyte was detected in some, but not all of the method blanks, the average concentration is based on the concentration when detected and zero when not detected. When an analyte was not detected in any of the method blanks or SRMs, zero is reported for the average and the SD and a "?" is reported for the RSD.	tected in son Ms. zero is t	ne, but not reported for	all of the r r the avera	nethod blar ge and the	nks, the av t SD and a	erage con "?" is repo	ge concentration is bas is reported for the RSD	is based c a RSD.	on the conc	sentration v	when deter	cled and z	ero when I	not detecte	d. When a	an analyte	was not de	tected in any
"The sam The samp	-The sample weights of samples analyzed in the set with method blank 110-330 were near to or less than 1g. The average sample weight for the set (0.94g) is used in calculating the concentrations in the method blank. The sample weight needs to be adjusted to 3g for comparison to MDLs.	amples analy to be adjuste	yzed in the id to 3g for	set with m compariso	ethod blan in to MDLs	ik 110-330	were near	to or less	than 1g.	The averag	je sample i	weight for	the set (0.1	04g) is use	d in calcul	aling the c	oncentrati	ons in the n	nethod blank.

Table 1G-p1: QA: Sample information for salmon tissue analyzed in replicate for chlorinated hydrocarbons as part of the Hylebos Juvenile Salmon Injury Study.

110-368Tissue - liverchinookHY94.124110-369Tissue - liverchinookHY94.124110-341Tissue - liverchumHY94.165110-342Tissue - liverchumHY94.165110-342Tissue - liverchumHY94.165110-350Tissue - liverchumHY94.165110-351Tissue - liverchumHY94.165110-351Tissue - liverchinookHY94.288110-312Tissue - liverchinookHY94.128110-312Tissue - stomach contentschinookHY94.128	Site Collected	sampie wr. (g)	(%)
110-369 Tissue - liver chinook HY94.124 110-341 Tissue - liver chum HY94.165 110-342 Tissue - liver chum HY94.165 110-350 Tissue - liver chum HY94.165 110-351 Tissue - liver chinook HY94.228 110-351 Tissue - liver chinook HY94.228 110-351 Tissue - liver chinook HY94.128	NISQUALLY ESTUARY 5/20/94	3.01	103
110-341Tissue - IverchumHY94.165110-342Tissue - IverchumHY94.165110-350Tissue - IverchinookHY94.228110-351Tissue - IverchinookHY94.228110-312Tissue - IverchinookHY94.228	NISQUALLY ESTUARY 5/20/94	3.02	101
Tissue - liver chum HY94.165 Tissue - liver chum HY94.165 Tissue - liver chinook HY94.28 Tissue - liver chinook HY94.228 Tissue - liver chinook HY94.228 Tissue - liver chinook HY94.128			
110-342 Tissue - liver chum HY94.165 110-350 Tissue - liver chinook HY94.228 110-351 Tissue - liver chinook HY94.228 110-312 Tissue - liver chinook HY94.228 110-312 Tissue - stomach contents chinook HY94.128	HYLEBOS WATERWAY 6/9/94	0.65	100
110-350 Tissue - liver chinook HY94.228 110-351 Tissue - liver chinook HY94.228 110-312 Tissue - stomach contents chinook HY94.128	HYLEBOS WATERWAY 6/9/94	0.73	101
110-350 Tissue - liver chinook HY94.228 110-351 Tissue - liver chinook HY94.228 110-312 Tissue - stomach contents chinook HY94.128			
110-351 Tissue - liver chinook HY94.228 110-312 Tissue - stomach contents chinook HY94.128	PUYALLUP STATE 6/13/94	1.01	66
110-312 Tissue - stomach contents chinook HY94.128	PUYALLUP STATE 6/13/94	0.01	102
	NISQUALLY ESTUARY 5/18/94	2.46	102
H282 110-313 Tissue - stomach contents chinook HY94.128 NISCUALLY	NISQUALLY ESTUARY 5/18/94	2.50	101

DOB = dibromooctafluoroblphenyl

Replicate sample analyses are identified by jar #.

"Jar #s represent official Hylebos Damage Assessment sampling numbers. If more than one jar # is given, the sample analyzed was a composite of those jars.

Table 1H-p1: QA: Concentrations (ng/g, wet weight) of pesticides in salmon tissue analyzed in replicate as part of the Hylebos Juvenile Salmon Injury Study.

Sample #	Jar #	-	HCBD	HCB	Lindane	HEPT	Aldrin	α+γ Chlordane	Dieldrin	Dieldrin n.nDDF	000-,4 4	100-'a a
Tissue - li	- liver											
110-368	HY94.124		< 0.06	0.72	0.15	< 0.15	0.14	1.1	0.56	15.3	2.4	-
110-369	HY94.124		< 0.054	0.71	0.16	< 0.13	0.16	-	0.53	15.4	2.4	-
		Average	0.00	0.72	0.15	0.00	0.15	1.03	0.54	15.35	2.36	1.03
		SD	0.00	0.00	0.00	0.00	0.01	0.03	0.02	0.02	0.01	0.02
•		RSD	6	0.7%	2.3%	6	5.2%	2.6%	2.8%	0.1%	0.3%	1.5%
110-341	HY94.165		2	4.8	< 0.22	< 0.3	0.46	2.5	1.7	5.4	5.3	4.4
110-342	HY94.165	2	2.1	4.8	< 0.21	< 0.29	0.44	2.5	1.9	5.3	5.3	4.4
		Average	2.05	4.78	0.00	0.00	0.45	2.51	1.83	5.34	5.28	4.41
		SD	0.01	0.03	00.00	0.00	0.01	0.01	0.09	0.03	0.03	0.01
	•	RSD	0.5%	0.6%	د د د	6	2.5%	0.4%	4.9%	0.5%	0.5%	0.1%
110-350	HY94.228		< 0.067	0.54	< 0.13	< 0.17	0.41	0.83	0.78	6.1	1.7	-
110-351	HY94.228		< 0.078	0.55	< 0.15	< 0.2	0.4	0.8	0.82	5.9	1.7	-
		Average	0.00	0.54	0.00	0.00	0.41	0.82	0.80	6.01	1.69	1.04
		SD	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.09	0.03	0.00
		RSD	6	1.1%	6	2	1.0%	2.2%	2.3%	1.5%	1.7%	0.4%
issue - si	stomach contents	. 5								-		
110-312	HY94.128		< 0.12	0.28	< 0.2	< 0.19	< 0.14	0.36	0.28	1.7	0.32	< 0.18
110-313	11794.128		< 0.17	0.20	< 0.29	< 0.27	< 0.2	0.47	0.3	e	0.62	< 0.26
		Average	0.00	0.28	0.00	0.00	0.00	0.42	0.29	2.34	0.47	0.00
		SD	0.00	0.00	0.00	0.00	0.00	0.06	0.01	0.65	0.15	00.00
	×.	ASD	2	1.0%	٢	د	6	13.6%	3.6%	28.0%	31.7%	6

HCBD = hexachlorobutadiene; HCB = hexachlorobenzene; HEPT = heptachlor

Replicate sample analyses are identified by jar #.

Jar #s represent official Hylebos Damage Assessment sampling numbers. If more than one jar # is given, the sample analyzed was a composite of those jars.

* When an analyle was delected in some, but not all of the replicates, the average concentration is based on the concentration when delected and zero when not detected. When an analyte was not detected in any of the replicates, zero is reported for the average and a "?" is reported for the RSD.

Table 11-p1:

QA: Concentrations (ng/g, wet weight) of chlorobiphenyl congeners (chlorination level/IUPAC number) in salmon tissue analyzed in replicate as part of the Hylebos Juvenile Salmon Injury

			- "	number) in saimon Studv.		salmoi	u ussue		anaiyzeu in repiicaie as	da, u	licare								
Sample #		3/18	3/28	4/44	4/52	4/66	5/101	5/105	5/118	6/128	6/138	6/153	7/170	7/180	7/187	8/195	9/206	10/209	PCB.
Tissue -	- liver																		
110.368		77.0	0.52	1.2	1.5	0.76	2.9	0.88	2.3	0.71	4.3	5	0.61	2.8	1.4	0.044	0.43	0.61	53
110-369		0.84	0.65	12	, ci	0.76	2.8	0.93	2.2	0.7	4.2	4.9	0.59	2.8	1.4	0.042	0.39	0.55	53
		100		101	1 54	O 78	2 87	000	2.25	0.71	4.24	4.98	09.0	2.77	1.38	0.04	0.41	0.58	53.19
	Average				5			0.0	000	00.0	0.03	0.06	0.01	0.01	0.03	00.0	0.02	0.03	0.23
	ASD ASD	4.4%	11.1%	1.0%	0.3%	0.1%	1.1%	2.8%	0.2%	0.5%	0.7%	1.2%	1.6%	0.4%	2.1%	2.2%	4.7%	5.0%	0.4%
											• • • •	7 90	50	a	811	-	4.0	<mark>فا</mark>	300
110-341	. •	1.8	2.6	1.7	8.8	8.4	25.1	D.C	C.12	0.7	1.00	20.7	4 (2 (9 G		•	u	,	380
110-342		1.7	1.7	1.1	8.2	1.7	52	4.5	21.6	5.8	33.2	40.2	2.2	7.8	9.11	-	n	0	
	Averade	1.78	2.17	7.38	8.38	8.53	25.03	5.22	21.58	5.77	33.11	39.41	5.22	7.90	11.69	1.02	4.94	5.05	368.37
	O S	0.07	0.42	0.31	0.19	0.84	0.04	0.68	0.03	0.02	0.05	0.74	0.00	0.06	0.14	0.00	0.04	0.04	3.65
	RSD	3.7%	19.3%	4.2%	2.3%	9.8%	0.2%	13.0%	0.1%	0.4%	0.2%	1.9%	0.0%	0.8%	1.2%	0.5%	0.8%	0.9%	0.9%
																0000		0.07	, yr
110-350		0.87	0.86	1.8	1.4	0.98	N	0.49	1.5	0.44	5.2	3.1	0.33	0.31	0.80	000.0 >	5	0.61	3
110-351		0.92	0.96	2	4.4	0.94	2	0.5	1.6	0.46	2.7	3.3	0.34	0.32	0.88	< 0.077	0.1	0.33	8
		000	100	1 AA	1 42	98.0	1.99	05.0	1.54	0.45	2.61	3.24	0.33	0.32	0.87	0.03	0.10	0.30	36.69
	OS SU	200	0.05	0 12		000	0.01	0.00	0.06	0.01	0.09	0.11	0.01	0.01	0.01	0.00	0.00	0.03	1.05
	RSD	3.1%	5.1%	6.5%	1.0%	1.6%	0.4%	0.6%	3.8%	2.1%	3.6%	3.3%	1.6%	1.9%	1.2%	1.0%	%0.0	9.5%	2.9%
Tissue -	- stomach contents	conten	ts											4					
110.313		0.64	0.47	12	0.52	0.59	1.3	0.3	0.98	0.26	1.5	1.8	0.25	0.74	0.39	< 0.092	< 0.097	0.14	8
110-313		6.0		1.3	1.1	0.73	1.8	0.35	1.2	0.28	8	2.4	0.23	0.9	0.44	< 0.13	 < 0.14 	< 0.18	8
		17.0	17.0	1 91	0.83	0 68	1 59	0.32	1.1	0.27	1.73	2.08	0.24	0.82	0.41	0.00	0.00	0.07	25.76
	Average			0.05	200	0.07	0.25	0.03	0.12	0.01	0.23	0.29	0.01	0.08	0.03	0.00	0.00	0.07	3.64
	RSD	10.13	30.6%	A 196	37 7%	11.0%	15.5%	8.8%	11.0%	3.4%	13.5%	13.8%	3.7%	8.6%	6.6%	6	6	100.0%	14.1%
		2.2.2	1. 2.22																

* When an analyte was detected in some, but not all of the replicates, the average concentration is based on the concentration when detected and zero when not detected. When an analyte was not detected in any of the replicates, zero is reported for the average and the SD and a "?" is reported for the RSD.

** The concentration reported for "Total PCBs" is the sum of the 17 PCB congeners multiplied by 2 (as defined in the CA Plan).

Table 1J-p1: Standard curve correlation (r) from the linear regression of the concentration of the analyte to the area response for the multilevel standards.

	H278	H279	H280	H281	H282
Analyte	3				-
hexachlorobenzene	666.	666.	66.	66.	0.9993
lindane	0.99999	.99	.99	.99	.99
3/18	9	9		Ö	Ô,
3/28	1.0000	.000		000	
heptachlor	0.9998	.997		66	0
4152	0	9	66	1.0000	1.0000
aldrin	66	.999	.999	66	0
4144	9	.999		00	66
4/66	66	0		ō	
gamma-chlordane	0	0	00	00	9
5/101		66		00	00
alpha-chlordane	66	00	00	1.0000	0.9999
dieldrin	0.9999	1.0000		Ö	66
D.D'-DDE	9	66	9		9
5/118				00	666.
0.0-000	9	.999	66	00	0
6/153	1.0000		00		
5/105	Ō	.999	0.99999		66
p.pDDT	0.9998	0.9986	86	66	9
6/138	00	00.		1.0000	
7/187	1.0000	00.	9	00	
6/128	0.9999	0.99999	Ö	0	
7/180		.999	0	0	0
7/170	0.9998	.99	G		66
8/195			66	00	66
9/206		.99	0.99999	5	.99
10/209	0.99999	0.99999	.999	1.0000	0.9998

Based on six concentration levels of standards.

Continuing calibration verification data* for chlorinated pesticides in standards run before, during and after the samples in a salmon tissue set analyzed as part of the Hylebos Juvenile Salmon Injury Study. Table 1K-p1:

$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ML Name	HCB	LIND	HEPT	Adrin	a-Chlor	Y-Chlor	Dieldrin	p,p'-DDE p,p'-DDD p,p'-DDT	000-,d'd	p.pDDT
E1.4 E1.4 E1.4 E2 50 104 103 105 105 103 105 104 E1.10 E1.10 E1.10 104 104 103 105 103 106 104 E1.11 E1.11 E1.15 E1.5 E3 3.3 4.3 4.2 5.4 3.1 5.4 E1.11 E1.14 E1.15 E1.5 E3 3.3 4.3 4.3 5.0% 3.1 5.4 E1.11 E1.14 E1.1	H278							1			
EE13 EF BB D1 D	H278CH5E1-A	84	8	06	96	83	63	63	95	83	91
EI-C 83 104 104 103 105 103 103 103 103 86 96 96 96 96 96 97 97 97 96 99 4.3% 5.1% 5.6% 3.4% 4.4% 4.3% 5.0% 3.1% 5.5% 4.3% 5.1% 5.6% 3.4% 4.4% 4.3% 5.0% 3.1% 5.5% EI-A 86 97 97 97 97 97 99 99 EI-A 86 97 96 90 97 97 97 99 99 EI-A 86 97 96 90 97 97 97 99 99 EI-A 96 97 97 97 97 97 99 99 EI-A 96 97 91 91 91 91 90 96 EI-A 2.4% 6.1% 8.2% 4.0% 4.0% 4.1% 4.1% 4.0% 6.1% EI-A 98 91 91 91 91 91 91 91 EI-A 91 92 94 94 94 93	H278CH5E1-B	87.	86	66	87	96	96	96	67	88	86
- -	H278CH5E1-C	83	105	104	104	103	103	105	103	106	107
3.8 5.1 5.5 3.3 4.3 4.2 4.9 3.1 5.4 6.1% 5.1% 5.0% 3.4% 4.4% 4.3% 5.0% 3.1% 5.5% EEI-A 0 0 0 0 0 0 0 0 0 EEI-A 0	Average	88	66	86	86	87	97	86	96	66	68
4.3% 5.1% 5.6% 3.4% 4.4% 4.3% 5.0% 3.1% 5.5% EE1A 06 97 06 97 07 09 09 06 EE1A 07 08 07 09 07 09 06 06 EE1A 07 08 07 09 07 09 06 06 EE1A 07 08 07 07 09 06 06 EE1A 06 07 08 07 07 06 06 EE1A 2.0 6.7 7.4 3.0 3.1 4.1 3.0 0.1 2.0 6.7 7.4 3.0 3.0 4.1 3.0 07 06 2.0 6.7 7.4 3.0 4.1% 4.3% 4.0% 6.3% 2.1 2.4% 6.1% 4.0% 4.1% 4.3% 4.0% 6.1 2.1 7.4 3.0 3.1 4.1 3.0 07 07 EE1A 2.0 <t< td=""><td>SD</td><td>3.8</td><td>5.1</td><td>5.5</td><td>3.3</td><td>4.3</td><td>4.2</td><td>4.9</td><td>3.1</td><td>5.4</td><td>6.4</td></t<>	SD	3.8	5.1	5.5	3.3	4.3	4.2	4.9	3.1	5.4	6.4
EI-A 86 97 66 100 87 87 89 89 EE-B 87 86 97 86 97 89 89 89 EE-L 83 87 97 97 97 99 99 EE-L 83 94 91 96 99 96 99 EE-L 20 5.7 7.4 3.0 3.8 3.9 4.1 3.8 6.1 2.4% 6.1% 0.2% 4.0% 4.0% 4.1% 4.3% 4.0% 6.5% EI-L 2.4% 6.1% 0.2% 4.0% 4.1% 4.3% 4.0% 6.5% EI-L 2.4% 6.1% 0.2% 4.0% 4.1% 4.3% 4.0% 6.5% EI-L 2.4% 6.1% 0.2% 4.0% 4.1% 4.3% 4.0% 6.5% EI-L 78 74 92 94 91 91 91 92 EI-L 78 74 92 94 94 91 91 92 EI-L 79 70% 195 94 91 91 91 92 EI-L 79 71 </td <td>RSD</td> <td>4.3%</td> <td>5.1%</td> <td>5.6%</td> <td>3.4%</td> <td>4.4%</td> <td>4.3%</td> <td>5.0%</td> <td>3.1%</td> <td>5.5%</td> <td>6.5%</td>	RSD	4.3%	5.1%	5.6%	3.4%	4.4%	4.3%	5.0%	3.1%	5.5%	6.5%
E1.4 06 07 05 100 07 07 09 09 E1.18 07 06 07 06 07 07 09 09 E1.18 07 06 07 06 07 07 09 00 E1.15 05 06 07 06 07 06 09 06 E1.15 05 06 07 06 09 06 06 E1.15 2.0 5.7 7.4 3.0 3.0 4.1 3.0 0.1 2.4% 0.1% 0.2% 4.0% 4.0% 4.1% 4.0% 0.5% E1.15 2.4% 0.1% 0.2% 4.0% 4.1% 4.0% 0.5% E1.4 07 10 09 07 01 01 01 E1.4 07 10% 1.1% 4.1% 4.0% 0.5% E1.1 70 09 09 07 09 09 02 E1.16 101 09 07 09 09 07 02 E1.15 70 10 09 07 01 01 01 E1.15 71 <td></td> <td>:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		:									
E1-A 06 07 05 100 07 07 09 09 E1-B 07 06 07 07 07 09 09 E1-B 07 07 07 07 07 09 09 E1-C 08 07 07 07 07 09 09 E1-C 08 09 07 07 07 09 09 E1-C 08 09 07 07 07 09 06 2.0 5.7 7.4 3.9 3.0 0.1 01 04 2.1% 6.1% 0.2% 4.0% 4.1% 4.1% 1.3% 6.1 0 2.4% 6.1% 0.2% 4.0% 4.1% 4.0% 6.5% E1-A 2.4% 6.1% 0.2% 4.0% 4.1% 4.0% 6.5% E1-A 10 09 09 01 01 01 01 E1-A 10 10 01 01 01 01 02 E1-A 10 10 01 01 01 01 01 E1-A 10 10 01 01 01<					•						
E1-A 06 87 05 100 97 97 97 99 99 E1-B 07 98 97 96 99 97 97 97 99 99 E1-C 03 06 97 96 91 91 91 91 96 99 E1-C 03 06 91 96 91 94 94 94 96 96 2.0 5.7 7.4 3.9 3.3 4.1 3.8 6.1 2.4% 6.1% 0.5% 4.0% 4.1% 4.3% 4.0% 6.5% E1-A 2.9 6.1 38 3.9 4.1% 4.3% 4.0% 6.5% E1-A 2.0 5.7 7.4 3.9 3.9 4.1% 3.8 6.1 2.4 9.1 08 94 91 91 91 93 92 E1-A 78 7.1% 4.1% 4.3% 4.0% 6.5% 2.4 9.7 70 91 91 91 93 92 E1-C 78 78 6.1% 94 91 93 97 76 2.4	· · · · ·										
E1.A 06 97 95 100 97 97 97 99 96 E1.B 87 96 97 96 97 97 97 99 99 E1.C 63 96 90 91 96 99 96 99 E1.C 63 64 91 96 99 99 99 94 2.0 5.7 7.4 3.9 3.1 3.1 3.1 9.1 3.9 2.1 2.4% 6.1% 0.7 4.0% 4.0% 4.1% 4.0% 6.5% 2.1 2.4% 6.1% 0.7 4.0% 4.1% 4.1% 4.0% 6.5% 2.1 2.4% 6.1% 0.7 0.7 0.7 0.7 0.7 0.7 2.1 2.4% 0.7 0.7 0.7 0.7 0.7 0.7 0.7 2.1 2.4 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 2.1 2.4 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 2.1 2.4 0.7 0.7 0.7 0.7 0.7 0.7 <td>H279</td> <td></td> <td></td> <td></td> <td></td> <td>. • .</td> <td></td> <td></td> <td></td> <td></td> <td></td>	H279					. • .					
E1B 87 96 97 97 97 98 98 E1C 83 94 91 99 99 90 95 E1C 85 94 91 96 90 95 96 94 20 5.7 7.4 3.9 3.8 3.4 19 96 94 2.0 5.7 7.4 3.9 3.8 3.4 4.0% 4.1% 3.8 2.4% 6.1% 8.2% 4.0% 4.0% 4.1% 3.8 6.1 2.1 2.4% 6.1% 7.4 3.9 3.8 4.1% 4.0% 6.5% 2.1 2.4% 6.1% 8.2% 4.0% 4.0% 4.1% 4.0% 6.1 2.1 2.1% 8.2% 4.0% 4.0% 4.1% 4.0% 6.5% 2.1 2.1% 8.2% 4.0% 4.0% 4.0% 6.5% 2.1 2.1% 9.1% 9.1 91 91 92 2.1 2.1 9.1 9.1 91 91 92 2.1 2.4 9.1 12.0 5.5 5.5 6.5 91 2.1 2.1	H279CH5E1-A	8	18	6 8	100	67	97	67	66	98	96
EIC 63 86 80 81 89 89 89 80 85 2 6 7 74 39 34 34 34 36 94 2 6 57 7.4 39 34 4.1 36 6.1 2 2.4% 6.1% 0.2% 4.0% 4.0% 4.1% 7.3% 6.1% 2 2.4% 6.1% 0.2% 4.0% 4.0% 4.1% 7.3% 6.5% 2 2 0 10 0.2% 4.0% 4.0% 4.1% 7.3% 6.5% 2 102 102 104 09 01 01 01 02 EI-A 102 104 09 01 01 01 02 EI-B 102 104 09 01 01 01 02 EI-B 102 104 09 01 01 01 02 0 10 10 09 01 01 01 01 0 10 12 14 01 01 01 01 0 10 12 12 12 52 55	H279CH5E1-B	87	8	67	86	87	67	67	86	86	87
85 84 81 86 84 81 86 84 81 86 84 2.0 5.7 7.4 3.9 3.9 4.1 3.9 4.1 3.8 6.1 2.4% 6.1% 6.7 7.4 3.9 3.9 4.1% 3.8 6.1 2.4% 6.1% 6.7% 4.0% 4.0% 4.1% 4.1% 4.0% 6.5% 2.4% 6.1% 6.1% 4.0% 4.0% 4.1% 4.1% 4.0% 6.5% E1-A 82 91 91 91 91 91 93 92 E1-B 85 102 104 99 94 91 91 93 92 E1-C 78 74 86 93 91 91 93 92 2.4 9.7 12.0 5.5 5.2 5.5 6.5 4.5 9.5 2.4 9.7 12.5% 5.9% 5.9% 6.1% 7.1% 4.9% 10.5%	H279CH5E1-C	63	98	80	81	68	69	88	06	85	80
2.0 5.7 7.4 3.8 3.8 3.9 4.1 3.8 6.1 2.4% 6.1% 6.2% 4.0% 4.0% 4.1% 4.3% 4.0% 6.5% E1.A 82 91 89 94 91 91 91 82 82 E1.A 85 102 104 99 97 98 99 102 E1.C 78 74 86 84 81 81 87 78 E1.C 78 74 89 83 81 81 87 78 2.4 9.7 12.0 5.5 5.2 5.5 6.5 4.5 9.5 3.0% 10.7% 13.5% 5.9% 5.8% 6.1% 7.1% 4.9% 10.5% 1	Average	85	2	91	88	8	94	9	96	94	91
2.4% 6.1% 8.2% 4.0% 4.0% 4.1% 4.3% 4.0% 6.5% E1-A E2 91 80 94 91 91 91 92 92 E1-B 85 102 104 99 94 91 91 93 92 E1-C 78 74 86 102 104 99 97 98 90 102 E1-C 78 74 86 83 91 91 91 97 78 * 2.4 9.7 12.0 5.5 5.2 5.5 6.5 9.5 9.5 3.0% 10.7% 13.5% 5.9% 5.8% 6.1% 7.1% 4.9% 10.5%	SD	2.0	5.7	1.4	3.9	3.8	3.9	4.1	3.8	6.1	7.5
E1-A 02 91 09 94 91 91 91 93 92 E1-B 05 102 104 99 97 98 99 92 E1-B 05 102 104 99 97 98 99 102 1 E1-C 78 74 96 65 64 63 07 78 2:4 9.7 12.0 5.5 5.2 5.5 6.5 4.5 9.5 10.5% 12.0 3:0% 10.7% 13.5% 5.9% 6.1% 7.1% 4.9% 10.5% 12.5%	RSD	2.4%	6.1%	8.2%	4.0%	4.0%	4.1%	4.3%	4.0%	6.5%	8.2%
E1-A 82 91 89 94 91 91 91 93 92 E1-B 85 102 104 99 97 98 99 90 102 1 E1-C 79 78 74 90 85 84 83 87 78 E1-C 79 78 74 80 83 81 87 78 2:4 9.7 12.0 5.5 5.2 5.5 6.5 4.5 9.5 3.0% 10.7% 13.5% 5.9% 5.8% 6.1% 7.1% 4.9% 10.5% 12.5						•					
E1-A 82 91 89 94 91 91 93 92 E1-B 65 102 104 99 97 98 99 99 102 1 E1-C 79 78 74 96 83 91 91 91 78 102 1 E1-C 79 78 74 86 85 84 83 87 78 2:4 9.7 12.0 5.5 5.2 5.5 6.5 4.5 9.5 3.0% 10.7% 13.5% 5.9% 5.8% 6.1% 7.1% 4.9% 10.5% 12.5%											
E1-A 82 91 89 91 91 93 92 E1-B 85 102 104 99 94 91 93 92 E1-B 85 102 104 99 97 98 99 96 102 1 E1-C 79 78 74 86 65 84 83 87 78 2:4 9.7 12.0 5.5 5.2 5.5 6.5 4.5 9.5 1 3.0% 10.7% 13.5% 5.9% 5.8% 6.1% 7.1% 4.9% 10.5% 12.5%									· ·		
CH5E1-A 82 91 89 94 91 91 91 93 92 CH5E1-B 85 102 104 99 97 98 89 98 102 1 CH5E1-C 78 78 74 86 85 84 83 97 78 78 CH5E1-C 78 78 74 86 85 84 83 87 78 CH5E1-C 82 90 89 83 91 91 91 92 91 age 2.4 9.7 12.0 5.5 5.5 6.5 4.5 9.5 16 age 2.0% 10.7% 13.5% 5.9% 5.8% 6.1% 7.1% 4.9% 10.5% 12.5%	H280						4 - 14 - 244				
CH5E1-B 65 102 104 99 97 98 99 90 102 CH5E1-C 78 78 74 86 85 64 83 87 78 78 CH5E1-C 78 78 74 80 83 81 87 78 age 2.4 9.7 12.0 5.5 5.2 5.5 6.5 4.5 9.5 a.0% 10.7% 13.5% 5.9% 5.9% 6.1% 7.1% 4.9% 10.5% 1	H280CH5E1-A	82	91	69	94	81	91	91	83	92	06
CHSE1-C 70 76 74 86 85 84 83 87 78 age 82 90 89 93 91 91 91 92 91 age 2.4 9.7 12.0 5.5 5.2 5.5 6.5 4.5 9.5 age 10.7% 13.5% 5.9% 5.9% 6.1% 7.1% 4.9% 10.5% 1	H280CH5E1-B	82	102	104	66	- 26	98	66	88	102	104
age 82 90 89 83 91 91 91 82 91 2.4 9.7 12.0 5.5 5.2 5.5 6.5 4.5 9.5 3.0% 10.7% 13.5% 5.8% 6.1% 7.1% 4.9% 10.5% 1	H280CH5E1-C	38	78	74	86	85	84	68	87	78	11
2.4 9.7 12.0 5.5 5.2 5.5 6.5 4.5 9.5 3.0% 10.7% 13.5% 5.9% 5.8% 6.1% 7.1% 4.9% 10.5% 1	Average	8	8	68	63	91	. 91	91	92	91	8
3.0% 10.7% 13.5% 5.9% 5.8% 6.1% 7.1% 4.9% 10.5%	SD	2.4	9.7	12.0	5.5	5.2	5.5	6.5	4.5	9.5	10.9
	RSD	3.0%	10.7%	13.5%	5.9%	5.8%	6.1%	7.1%	4.9%	10.5%	12.1%

H281

HCB = hexachlorobenzene; LIND = findane; HEPT = heptachtor; Chlor = chlordane *Data are reported as percent recovery calculated using the multilevel curve analyzed with each set.

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Continuing calibration verification data* for chlorinated pesticides in standards run before, during and after the samples in a salmon tissue set analyzed as part of the Hylebox, Juvenile Salmon Injury Study. Table 1K-p2:

ML Name	HCB	LIND	HEPT	Adrln	u-Chlor	Y-Chlor	Dieldrin	P.P'-DDE	p.p'-DDE p.p'-DDD	P,P'-DDT
H2B1CH5E1A	92	102	88	106	103	102	103	105	102	100
H201CHSE1B	65	6	82	87	96	96	97	66	87	96
H201CH5E1C	84	8	88	92	84	94	94	96	85	6
Average	87	86	2	68	86	- 18	88	100	87	95
SD SD	3.5	4.8	4.9	4.9	3.7	3.7	3.7	3.6	4.3	4.4
RSD	4.0%	5.0%	5.2%	4.9%	3.8%	3.8%	3.8%	3.6%	4.4%	4.7%
H 282										
H282CH5E1-A	69	. 87	82 82	101	88	98	88	101	100	81
H282CH5E1-B	98	88	66	66	87	97	88	66	66	100
H282CH5E1-C	85	5	91	95	8 96	95	95	96	96	94
Average	98	96	8	86	96	96	87	66	66	97
SD	1.7	2.1	3.5 3.5	2.5	1.5	1.3	1.5	1.7	1.5	2.6
	2.0%	2.2%	3.7%	2.6%	1.6%	1.4%	1.5%	1.7%	1.5%	2.7%

HCB = hexachlorobenzene; LIND = lindane; HEPT = heptachlor; Chlor = chlordane *Data are reported as percent recovery calculated using the multilevel curve analyzed with each set.

Table 1L-p1:		Continuing number) in of the Hylet	Continuing calibration verification data* for number) in standards run before, during and of the Hylebos Juvenile Salmon Injury Study	bratior Idards Juveni	calibration verification standards run before, c bos Juvenile Salmon Inj	cation sfore, (non In	i data* during ijury St	for cland and a tudy.	for chlorobip and after the udy.	iphen) ie sam	henyl cong samples i	ngeners in a sal	ers (chlorinatic salmon tissue	rinatio issue	data* for chlorobiphenyl congeners (chlorination level/IUPAC during and after the samples in a salmon tissue set analyzed a jury Study.	svel/JUPA analyzed	C as part
ML Name	3/18	3/28	4/44	4/52	4/66	5/101	5/105	5/118	6/128	6/138	6/153	7/170	7/180	7/187	8/195	9/206	10/209
H278																	
H278CH5E1-A	6	92	81	6	82	6	63	92	93	85	92	94	83	92	94	6	93
H278CH5E1-B	95	6 2	82	92	95	95	97	96	67	96	98	86	67	96	96	66	86
H278CH5E1-C	100	102	101	102	102	102	104	66	103	102	101	104	103	102	102	102	101
Average	95	87	96	96	96	8	86	96	86	67	8	66	96	97	98	96	86
SD	4.2	4.4	4.4	4.9	4.4	4.5	4.6	2.8	3.9	4.2	3.7	4.2	4.0	4.0	3.4	3.4	3.3
RSD	4.5%	4.5%	4.5%	5.1%	4.5%	4.7%	4.7%	3.0%	4.0%	4.3%	3.9%	4.2%	4.0%	4.2%	3.5%	3.4%	3.4%
			:														
•						•											
H279			•											•			
H279CH5E1-A	94	96	92	6	65	95	97	96	67	8	8	86	88	96	98	88	86
H279CH5E1-B	82	96	82	92	96	98	8	96	96	8	67	87	96	96	87	97	96
H279CH5E1-C	80	88	68	88	69	88	87	88	87	88	88	87	87	88	87	86	87
Average	93	94	63 63	63	83	83	64	63	2	83	63	94	94	693	94	94	2
SD	2.3	3.0	2.7	2.7	3.3	3.2	4.3	4.1	4.4	3.9	3.8	5.1	4.7	3.7	5.1	5.2	4.9
RSD	2.4%	3.2%	. 2.9%	2.9%	3.5%	3.5%	4.6%	4.4%	4.7%	4.2%	4.1%	5.4%	5.0%	3.9%	5.4%	5.6%	5.2%
H280	•																
H2B0CH5E1-A	88	80	68	88	69	88	85	6	91	8	88	82	16	6	83	85	91
H200CH5E1-B	83	96	84	6	82	82	96	96	87	98	97	86	87	95	98	96	86
H280CH5E1-C	87	98	87	87	98	87	85	98	86	88	86	85	85	87	85	85	85
Average	69	66	6	06	8	8	91	91	16	91	91	91	81	91	92	92	92
SD	3.0	3.9	3.2	3.0	3.8	3.3	4.4	4.0	4.5	4.1	4.4	5.1	5.0	3.6	5.2	5.6	5.6
RSD	3.3%	4.3%	3.6%	3.4%	4.2%	3.7%	4.9%	4.4%	5.0%	4.6%	4.8%	5.6%	5.5%	4.0%	5.7%	6.1%	6.1%
											•						

*Data are reported as percent recovery calcutated using the multitevel curve analyzed with each set.

Table 1L-p2: Continuing calibration verification data* for chlorobiphenyl congeners (chlorination level/IUPAC number) in standards run before, during and after the samples in a salmon tissue set analyzed as part of the Hylebos Juvenile Salmon Injury Study.	2 4/66 5/101 5/105 5/118 6/128 6/138 6/153 7/170 7/180 7/187 8/195 9/206 10/209
cation da More, duri Non Injury	0
tion verifi rds run be enile Saln	/52 4/66
ng calibra in standau rlebos Juv	3/16 3/28 4/44 4/52 4/66
Continuli number) of the Hy	3/28
1L-p2: 0	3/18
Table	ML Name H281

H281CH5E1A	100	101	100	100	101	100	103	<u>10</u>	102	101	101	102	102	101	103	103	103
H201CH5E1B	83	96	95	95	96	96	96	97	67	96	97	96	97	97	98	96	96
H281CH5E1C	83	94	84	36	82	8	5 8	95	95	92	8	82	92	92	92	84	- 16
Average	95	97	96	96	87	87	88	86	86	67	96	96	9 8	9 6	66	86	8 6
SD	3.3	2.8	2.8	2.7	2.5	2.6	3.4	2.8	2.9	2.9	2.1	3.0	3.2	2.6	3.2	4.1	3.9
RSD	3.4%	3.0%	2.9%	2.9%	2.6%	2.7%	3.5%	2.9%	2.9%	3.0%	2.2%	3.1%	3.3%	2.7%	3.3%	4.2%	4.0%
			:			•							-				
H282																	
H282CH5E1-A	2	98	95	82	96	8	86	18	86	67	67	86	86	87	66	86	86
H282CH5E1-B	94	92	84	32	92	82	87	96	92	82	8	95	95	94	94	94	63
H282CH5E1-C	85	8	84	83	92	8	81	92	96	36	8	87	96	96	96	101	86
Average	63	95	94	94	92	95	67	96	8	8	85	18	16	96	96	67	86
SD	0.9	1.0	0.5	0.9	0.7	0.4	0.7	0.7	1.3	0.8	1.4	1.2	1.3	0.9	1.8	3.0	2.3
RSD	0.9%	1.1%	0.5%	0.9%	0.7%	0.4%	0.8%	0.0%	1.4%	0.9%	1.5%	1.3%	1.3%	1.0%	1.9%	3.0%	2.4%

*Data are reported as percent recovery calculated using the multilevel curve analyzed with each set.

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Table 1M-p1: Concentrations of analytes in 7 replicates of spiked clean matrix and calculated method detection limits (MDL, ng/g, wet weight) for pesticides, DDTs and chlorobiphenyl congeners. MDLs were calculated by the method in appendix B of 40CFR part 136 (sample set H28B, 3/95).

4\52	6.9	7.0	6.8	6.9	6.8	6.8	6.9	6.9	0.07	0.21	0.63												
4/44	1.7	7.1	7.0	7.1	7.2	7.1	7.1	1.7	0.05	0.16	0.48	0\209	6.3	6.2	6.1	6.3	6.3	6.4	6.3	6.3	0.09	0.29	0.86
3\28	6.7	6.5	6.5	6.8	6.7	6.4	6.5	6.6	0.15	0.46	. 1.38	9/206 1	6.2	6.0	6.1	6.2	6.3	6.3	6.2	6.2	0.10	0.31	0.92
3/18	6.7	6.7	6.4	6.1	6.1	6.4	6.6	6.4	0.25	0.78	2.34	8\195	6.1	5.9	6.0	6.1	6.2	6.1	6.1	6.1	0.08	0.27	0.80
p,p'-DDT	7.4	7.2	7.4	7.6	7.7	7.4	7.8	7.5	0.22	0.70	2.11	7/187	. 6.4	6.3	6.3	6.4	6.4	6.2	6.4	6.3	0.09	0.27	0.82
p.p'-DDE p	7.3	7.0	1.7	7.3	7.5	7.2	7.2	7.2	0.17	0.54	1.63	7/180	6.3	6.1	6.0	6.1	6.2	6.2	6.3	6.2	0.11	0.33	1.00
q 000-'q,q	6.9	6.4	6.5	6.8	7.8	6.8	6.7	6.8	0.45	1.41	4.23	7/170	6.4	6.1	6.1	6.3	6.3	6.4	6.3	6.3	0.12	0.38	1.14
Dieldrin p.	6.5	6.1	6.2	6.4	6.6	6.3	6.3	6.4	0.18	0.57	1.70	6\153	6.9	6.9	6.7	6.9	6.9	9.9	6.8	6.8	0.10	0.32	0.96
gamma chlordan	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.02	0.06	0.18	6\138	6.9	6.8	6.8	1.7	7.0	7.0	7.0	10.7	0.11	0.34	1.03
alpha chlordan	Ι	6.2	6.3	6.4	6.5	6.3	6.4	6.4	0.13	0.41	1.24	6/128	6.3	6.1	6.1	6.2	6.3	6.1	6.2	6.2	0.09	0.28	0.85
Aldrin 6	1	5.4	5.5	5.7	5.9	5.4	5.5	5.61	0.21	0.65	1.95	5/118	5.6	5.4	5.5	5.6	5.5	5.7	5.5	5.5	0.08	0.26	0.77
HEPT	7.3	7.1	7.2	7.4	7.7	7.5	7.4	7.4	0.19	0.58	1.75	5/105	6.2	5.8	6.0	6.2	6.2	6.2	6.2	6.11	0.15	0.48	1.43
LIND	6.5	6.2	6.2	6.4	6.9	9.9	6.4	6.4	0.22	0.68	2.03	5/101	6.7	6.7	9.9	6.7	9.9	6.7	6.7	6.7	0.06	0.18	0.55
HCB	6.7	6.6	6.4	6.5	9.9	6.3	6.5	6.51	0.13	0.41	1.22	4\66	6.8	6.7	6.6	6.8	6.8	6.7	6.7	6.71	0.06	0.20	0.60
Sample#	110-288	110-289	110-290	110-291	110-292	110-293	110-294	Average	Std Dev	MDL	3XMDL	Sample#	110-288	110-289	110-290	110-291	110-292	110-293	110-294	Average	Std Dev	MDL	3XMDL

HCB = Hexachlorobutadiene, LIND = Lindane, HEPT = Heptachlor.

MDLs were determined using 3g of tissue. MDLs for samples that are smaller that 3g will need to be adjusted for the difference in sample weight.

HCBD = hexachlorobutadiene; HCB = hexachlorobenzene; LIND = findane; HEPT = heptachlor

Jar #s represent official Hylebos Damage Assessment sampling numbers. If more than one jar # is given, the sample analyzed was a composite of those jars.

¹ The presence of this analyte has been confirmed by GCMS using a selected ion monitoring mode for the samples listed. ² The concentration of this analyte was too low to be confirmed by GCMS in these sediments. ³ The concentration of this analyte was confirmed by GCMS using a selected ion monitoring mode in samples 110-326, 110-354 and 110-339.

Approximate detection limits determined by GCMS (based on the CH3E1 ML Std. for chlorinated pesticides) range from ≈0.5 to ≈ 3 ng/g.

on of chlorobiphenyl congeners (chlorination level/IUPAC number) in 10% of	e samples analyzed as part of the Hylebos Juvenile Salmon Injury Study.	own are three determined by GC/ECD and reported in Tables 1C)
GC/MS confirmation of chlorobiphenyl conger	the salmon tissue samples analyzed as part of	Concentratione chown are those determined
Table 10-p1:		

		(Con	centra	tions	(Concentrations shown are those determined by GC/ECD and reported in Tables 1C.)	are ti	hose d	etermi	ned by	/ GC/E	ECD an	id repo	orted i	n Tabl	es 1C.			
Sample#	3/182	3/18 ² 3/28 ³ 4/44 ⁴ 4/52 ⁴ 4/66	4/44	4/52		5/101	6/101 ¹ 6/105 ¹ 5/118 ¹ 6/128 ¹ 6/138 ¹ 6/153 ¹ 7/170 ¹ 7/180 ¹ 7/187 ¹ 8/195 ¹ 9/206 ¹ 10/209 ¹	5/118	6/128 ¹	6/138	6/153	7/170	7/180	7/187	8/195	9/206	10/200	
110-326	1.7	1.9	6.3	1.4	8.1	17.9	4	14.3	3.5	20.7	27	3.4	6.7	8.7	0.52	2.5	2.5	
110-354	1.3	3.8	5.2	8.9	13.4	35.1	12	12 32.1	6	48	51	7.3	11.8	15	1.2	5.6	5.1	
110-309	1.1	0.78	1.6	ෆ .	2.0	9.1	1.8	8.2	1.7	11.1	11.1 12.3	1		4.1	0.33	4 .	1.2	
110-339	-	1.2	5.3	6.2	8.9	20.4	*	17.8	4.7	28.8	36	S	8.6	6.6 11.7	0.91	4,3	3.8	

¹The presence of this analyte has been confirmed by GCMS using a selected fon monitoring mode for the samples listed. ²The concentration of this analyte was confirmed by GCMS using a selected ion monitoring mode in samples 110-326, 110-354 and 110-309. ³The concentration of this analyte was confirmed by GCMS using a selected ion monitoring mode in samples 110-326, 110-354 and 110-339.

Detection limits determined by GC/MS (based on the CH3E1 ML Std. for chlorobiphenyl congeners) rarige from =0.5 to =1 ng/g.

nfirmatic h tissue	
GC/MS con the flatfish	•
Table 10-p1:	

	10/209	13.8	10.8	2.3	42.4	0.81	1.9
	9/206 ¹	21.2	16.4	3.7	120	8. 0	5.6
ECU,	8/195	4.2	5.8	-	10	0.23	0.35
	7/187	58.9	39.6	14	73.8	4 .3	9.9
ined t	7/160	R	8	8.4	72.9	1 .8	3.2
determ	7/170	37.5	26.2	6.3	44.3	0	9.2
data	6/153	561	443	36.2	255	43.6	Ħ
ported	6/101' 5/105' 5/118' 6/128' 6/138' 6/153' 7/170' 7/180' 7/187' 8/195' 9/206' 10/209'	437	348	27.6	176	33	100
ally re	6/128	8	43.2	3.7	30	5.8	14.4
origin	5/118 ¹	< 0.21	345	10.7	89.8	38.5	190
n are	5/105	116	63.1	2.3	23.8	8.5	50.2
show	5/101 ¹	581	437	12.2	83.2	47.7	286
rations	Table 1C.) Table 3.100 5/100 5/100 5/100 7/100	54.3	30.9	2. 8	19.3	10.7	35.2
oncent	4/52	167	110	3.5	28.9	20.2	110
č Č		49.2	34.1	2.2	7.7	10.8	36.2
Stud	Table	19.8	15.1	0.95	3.7	7.4	6.7
	144	10.8	17.1	0.58	56.7	4.5	6.8
		110-397R	110-419	110-433	110-443	110-402	110-465

¹The presence of this analyte has been confirmed by GCMS using a selected ion monitoring mode for the samples listed.

Detection limits determined by GC/MS (based on the CH3E1 ML Std, for chlorobiphenyl congeners) range from =0.5 to =1 ng/g.

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Sample information for salmon stomach contents analyzed for aromatic hydrocarbons as part of the Hylebos Juvenile Salmon Jujury Study Table 2A-p1:

		Hylebos Juvenile Salm	le Salmo	on Injury Study	Υ.	1					
Set #	Sample#	Set # Sample# Sample Type	Speciee	Jar #	Site	Date Collected	Date Sample WI. ected (g)	DNPH Rec.	DACE Hec.	UBAP Nec. (%)	
H282	110-305	Tissue - stomach contents	chum	HY94.050	PUYALLUP TRIBAL HATCHERY	5/11/94	1.82	20	76	78	
H282	110-306	Tissue - stomach contents	chum	HY94.053/056	SKOHOMISH ESTUARY	5/13/94	0.62	81	83	0	
H282	110-312	Tissue - stomach contents	chinook	HY94.128	NISQUALLY ESTUARY	5/18/94	2.46	81	2	88	
H282	110-313	Tissue - stomach contents	chinook	HY94.128	NISQUALLY ESTUARY	5/18/94	2.50	81	82	94	
H282	110-307	Tissue - stomach contents	chum	HY94.154	HYLEBOS WATERWAY	6/8/94	2.97	67	75	85	
H282	110-308	Tissue - stomach contents	chinook	HY94.218/219	PUYALUP STATE HATCHERY	6/13/04	2.30	67	98	6 2	
H282	110-309	Tissue - stomach contents	t, chum	HY94.220,223/224	HYLEBOS WATERWAY	6/15/94	2.97	67	76	98	
H282	110-310	Tissue - stomach contents	chinook	HY94.225	HYLEBOS WATERWAY	6/16/04	3.02	89	15	83	
H282	110-311	Tissue - stomach contents	chinook	HY04.262	HYLEBOS WATERWAY	6/22/94	3.01	61		64	
			×								

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DNPH = naphthalene-dB; DACE = accenaphthene-d10; DBAP = benzo(alpyrene-d12 *Jar #s represent official Hyleboos Damage Assessment sampling numbers. If more than one jar # is given, the sample analyzed was a composite of those jars.

Concentrations (ng/g, wet weight) of aromatic hydrocarbons in stomach contents analyzed as part of the Hylebos Juvenile Salmon Injury Study. Table 2B-p1:

Sample #	HUPH	2MN	ACY	ACE	FLU	NHd	ANT	2.LAHe	FLA	PYR	BAA	CHR	BFLA	BAP	đQI	DBA	BZP	5 НАНа
110.305	9.28	7.47	< 0.593	< 0.886	1.14	5.45	< 0.501	23.3	1.89	1.75	< 0.374	1.25	0.944	< 0.337		< 0.282	1	5.82
110-306	10.6	8.24	1.31	< 1.26	1.26	4.36	< 0.711	25.8	1.74	1.85	< 0.501	< 0.498	< 0.418	< 0.451	< 0.388	< 0.378	< 0.359	3.59
110-312	4.04	3.42	< 0.407 < 0.609	< 0.609	< 0.528	1.72	< 0.344	9.18	1:1	0.66	< 0.251	0.538	< 0.21	< 0.226	< 0.194	< 0.189	< 0.18	2.29
110-313	4.16	3.56	< 0.438	< 0.654	< 0.567	1.96	< 0.37	9.68	1.6	0.739	< 0.277	0.588	< 0.231	< 0.249	< 0.214	< 0.208	< 0.198	2.83
110-307	6.89	12.6	1.59	13	13.1	86.6	0	146	184	106	41.7	94.8	102	36.6	17.4	3.72	16.7	603
110-308	21.6	26.4	0.781	6.64	5.90	10.3	1.28	61	1.82	1.61	0.368	0.769	< 0.269	< 0.29	< 0.25	< 0.243	< 0.231	4.57
110-308	18.2	37.6	4.15	51,5	74.6	704	30.7	030	808	263	126	178	208	61.4	28.6	ø	24.6	2090
110-310	44.0	109	10.5	226	270	1060	50.4	1780	964	582	147	596	204	61.1	43.6	0.76	37	2740
110-311	36	68.4	4.75	77.6	74.6	308	29.6	500	342	0	69.7	119	100	34.4	21.6	4.86	20.2	821

NPH = naphhalene; ZMN = 2-meitryinaphihalene; ACY = acenaphihane; FLU = fluorene; PHN = phenanthrene; ANT = anthracene; FLA = fluoranthene; PYR = pyrene; BAA = benz[a]arthracene; CHR = chrysene; BFLA = benzo[b]fluoranthene + benzo[k]fluoranthene; BAP = benz[a]pyrene; DP = indeno[1,2,3-cd]pyrene; DBA = dibenz[a,h]anthracene; BZP = benz[a]prene; BAA = benz[a]printecene;
 Date = NPH + 2MN + ACY + ACE + FLU + PHN + ANT;
 DH44= FLA + PYR + BAA + CHR + BLFA + BAP + IDP + DBA + BZP.

Chrysene (CHR) and triphenyiene are not resolved by our gas chromatographic procedure. In addition, the two compounds have very similar mass spectra, therefore we report their combined concentrations as "CHR."

Quality assurance sample information in method blanks and standard reference material (SRM 1974a) analyzed for aromatic hydrocarbons as part of the Hylebos Juvenile Salmon Injury Study. Table 2C-p1:

65 DBAP Rec. (%) 8 DACE Rec. (%) 8 DNPH Rec. (%) 2.42 Sampie W1. (g) Sample type Method Blank Sample # 110-315 **Method Blank** Set # H282

	88	
	85	
	78	
	3.01	
	SRM 1974a	
1974a	110-314	
NAS	H282	

DNPH = naphthatene-d8; DACE = acenaphthene-d10; DBAP = benzo(alpyrene-d12.

QA: Concentrations (ng/g, wet weight) of aromatic hydrocarbons in method blanks and standard reference Table 2D-p1:

Sample #	Sample & Sample Type	4De	HAN	2MN	ACY	ACE	FLU	PHN	ANT ELAHS	LAHs	FLA	РҮВ	BAA	CHR	BFLA	BAP	10P	DBA	BZP	BZP EHAHs
Method Blank	Blank					•														
110-315	Method Blank	ž	1.69	1.25	< 0.213	< 0.319	< 0.277	0.61	< 0.18	3.55	0.217	< 0.144	< 0.177	< 0.176	< 0.148	< 0.158	< 0.137	< 0.133	< 0.127	.217
	2		· •														•			
I																				
SRM 1974a	974a																			
110-314	SRM 1974a		2.27	1.68	0.305	< 0.461	¢0.4	2.12	0.464	7.13	22.7	20.9	3.26	10.9	9.24	1.81	1.45	0.351	2.84	73.5
				•																
SRM 1974a Cartillad)74a	esx ci ×i	2.60	1.16	0.698	0.350	0.65	2.60	0.69 0.20		10.6	17.3	3.7 0.54	5.04 0.26	7.58	1.78	1.62 0.32	0.142	2.50 0.25	

NPH = naphhalone; ZMN = 2-metryinaphthalene; ACY = accenaphthene; FLU = Ruorene; PHN = phenanthrone; ANT = anthracone; FLA = fluoranthene; PYA = pyrene; BAA = benz[a]anthracone; CHR = chrysene; BFLA = benz0[b]fluoranthene + benz0[k]fluoranthene; BAP = benz0[a]pyrene; 10P = fluoranthracone; DBA = dibenz[a,h]anthracone; BZP = benz0[ph]peryfene; BAA = benz[a]anthracone;

0.32 2.62 0.85

0.073 2.50 41.1

0.26 7.16 3.11

0.20 1.20 0.32

> 95% CI NCL LCL

> > Concentrations

(ng/g, wet wt) Certified

1.42 4.28

6.74 2.06

24.3 10.7

26.5

4.00 1.56

11.4

3.71 1.46

<u>DLAHs = NPH + 2MN + ACY + ACE + FLU + PHN + ANT; DHAHs = FLA + PYR + BAA + CHR + BLFA + BAP + 1DP + OBA + BZP.</u>

1 = Chrysene (CHR) and triphenylene are not resolved by our gas chromatographic procedure, whereas these compounds are resolved by the NIST procedure. In addition, the two compounds have very similar mass
spectra, therefore we report their combined concentrations as "CHR." Consequently, the value we report for CHR is higher than the NIST value.

X is the average concentration (ng/g, wel wi) 95% CI is the 95% confidence interval

UCL is the upper confidence limit (95% confidence limit + 35%) LCL is the lower confidence limit (95% confidence limit - 35%)

2MN, ACY, ACE, FLU, BFLA, and DBA are reported as noncertified values.

• When an analyte was detected in some, but not all of the method blanks, the average concentration is based on the concentration when detected and zero when not detected. When an analyte was not detected in any of the method blanks or SRMs, zero is reported for the average and the SD and a "?" is reported for the RSD.

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contents	avul. sod
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r salmon	as part of
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QA: Sample information for salmon stomach contents analyzed in repli	hvdrocarbon
Sample	aromatic
QA:	for
Table 2E-p1:	
Ta	

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DNPH = naphthalene d8; DACE = acenaphthene d10; DBAP = benzo(a)pyrene d12 Replicate sample analyses are identified by jar 4.

-Jar #s represent official Hylebos Damage Assessment sampling numbers. If more than one jar # is given, the sample analyzed was a composite of those jars.

QA: Concentrations (ng/g, wet weight) of aromatic hydrocarbons in salmon stomach contents analyzed in replicate as part of the Hylebos Juvenile Salmon Injury Study. Table 2F-p1:

Sample #		NPH 2MN ACY ACE	ACY	ACE	FLU	PHN	ANT	FLU PHN ANT XLAHS FLA PYR BAA CHR BFLA BAP IDP DBA BZP	FLA	РҮВ	BAA	CHR	BFLA	BAP	401	DBA	BZP	2 HAHe
Tissue	stomach conte																	
110-312	0.4	4.04 3.42 < 0.407 < 0.609	< 0.407	< 0.609	< 0.528	1.72	1.72 < 0.344	9.18		1.1 0.66	< 0.251	0.538	0.538 < 0.21 < 0.226 < 0.194 < 0.189	< 0.226	< 0.194	< 0.189	< 0.18	2.29
110-313	4.16		3.56 < 0.438 < 0.654	< 0.654	< 0.567	1.96	< 0.37	9.68	1.6	0.739	< 0.277	0.588	< 0.231	< 0.249 < 0.214	< 0.214	< 0.208	< 0.198	2.83
												.						
		•	c	c	c	0	C	9.43	-	-	0	-	0	0	0	0	0	2.61
				, c	• •	0.1	0.0	0.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.32
	-	0	~		, ~	6.4%	6	2.6%	18.7%	5.6%	٢	4.4%	۲	٢	2	۶.	۲	12.1%
		- 1																

NPH = naphhalene; 2MN = 2-methylnaphthalene; ACY = acenaphthene; ALE = acenaphthene; FLU = fluorene; PHN = phenauthrene; ANT = arthracene; FLA = thuoranthene; PYR = pyrene; BA = benz(ajarthracene; CHA = chrysene; BFLA = benzo(phiperylene; BA = benz(ajarthracene; benz(ajarthracene; benz(ajarthracene; benz(ajarthracene; BA = benz(ajarthracene; BA = benz(ajarthracene; benz(ajarthracene

DLAHs = NPH + 2MN + ACY + ACE + FLU + PHN + ANT; DHAHs = FLA + PYR + BAA + CHR + BLFA + BAP + IDP + DBA + B2P.

Replicate sample analyses are identified by Jar #.

f Chrysene (CHR) and triphenylene are not resolved by our gas chromatographic procedure. In addition, the two compounds have very similar mass spectra, therefore we report their combined concentrations as "CHR."

Table 2G-p1: Standard curve correlation (r) from the linear regression of the concentration of the analyte to the area response for the multilevel standards.

	Set H282
Analyte	-
naphthalene	0.9914
2-methylnaphthalene	0.9907
acenaphthylene	0.9926
acenaphthene	0.9911
fluorene	0.9924
phenanthrene	0.9909
anthracene	0.9927
fluoranthene	0.9908
pyrene	0.9907
benz[a]anthracene	0.9919
chrysene	0.9911
benzofluoranthenes (b+k)	0.9904
benzo[a]pyrene	0.9917
indeno[1,2,3-cd]pyrene	0.9914
dibenz[a,h]anthracene	0.9910
benzo[ghi]perylene	0.9906
d8-naphthalene	0.9965
d10-acenaphthene	0.9965
d12-benzofalpyrene	0.9976

Based on four concentration levels of standards.

Continuing calibration verification data* for aromatic hydrocarbons in standards run before, during and after the samples in a tissue set analyzed as part of the Hylebos Juvenile Salmon Injury Study. Table 2H-p1:

ML Name	HAN	MN2	ACY	ACE	FLU	NHA	ANT	FLA	PYR	BAA	CHR	BFLA	BAP	10P	DBA	BZP
H282																
H282AH4J2A	100	66	86	100	66	66	94	66	101	81	86	66	101	86	66	103
H282AH4J2B	100	100	1 00	100	100	100	100	100	100	100	100	100	100	<u>10</u>	100	100
H282AH4J2C	66	101	66	88	101	102	94	101	104	90	101	96	101	100	66	102
Average	100	5 8	66	<u>8</u>	100	100	98	õ	103	96	100	88	101	8	66	102
SD	0.3	0.9	0.8	0.2	0.6	1.2	2.9	0.6	1.9	3.6	0.9	1.7	0.5	0.9	0.6	1.1
RSD	0.3%	0.9%	0.8%	0.2%	0.6%	1.2%	3.1%	0.6%	1.9%	3.7%	0.9%	1.7%	0.5%	1.0%	0.6%	1.1%
					•				·							

NPH = naphthalene; 2MN = 2-metrylnaphthalene; ACY = acenaphtylene; ACE = acenaphthene; FLU = fluorene; PHN = phenanthrene; ANT = anthracene; FLA = fluoranthene; PYR = pyrene; BAA = benz[a]anthracene; CHR = chrysene; BFLA = benzo[b]fluoranthene + benzo[k]fluoranthene; BAP = benzo[a]pyrene; IDP = indeno[1,2,3-cd]pyrene; DBA = dibenz[a,h]anthracene; BZP = benzo[g]nilperylene.

*Data are reported as percent recovery calculated using the -B standard.

Table 2I-p1: Concentrations of analytes In 7 replicates of spiked clean matrix and calculated method detection limits (MDL, ng/g, wet weight) for aromatic hydrocarbons. MDLs were calculated by the method in appendix B of 40CFR part 136 (sample set H288, 3/95).

7 5.3 5.0 5.5 4.8 6 5.4 4.8 5.7 4.6 4 5.2 4.6 5.6 4.5	4.9 5.5 0.20 0.19 0.62 0.60 1.85 1.80	
5.3 5.3 5.4 5.2 4.6 4.6	4.9 0.20 0.62 1.85	
, , , , , , , , , , , , , , , , , , , ,		
	5.2 0.20 0.64 1.91	
*~~94		
1 4 4 4 4	4.5 0.14 0.45 1.35	
0.0 0.7 0.9 0.9 0.9 0.9	6.9 0.18 0.56 1.67	
6.9 7.0 7.0 7.0	7.0 0.16 0.52 1.55	
4 4 4 4 8 6 8 9 9 8 9	4.8 0.15 0.48 1.44	
6.9 7.3 7.3 7.0	7.1 0.16 0.51 1.52	
6.3 6.5 7 7	6.4 0.16 0.51 1.54	
6.3 6.6 7 7	6.5 0.18 0.55 1.66	
5.6 5.8 7.8 7.9 7.9 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0	5.7 0.18 0.57 1.70	82P 4.4 4.4 4.4
8.7 2.9 7.7 7.7	7.9 0.21 0.66	DBA 3.7 3.9 3.9
9.6 9.9 10.4	10.1 0.47 1.47	10P 4.1 4.6 4.6
0-290 0-291 0-292 0-293	Average Std Dev MDL XMDI	Sample 110-288 110-289 110-290
	9.6 7.8 5.6 6.3 5.1 6.4 0.3 0.3 0.4 0.6 9.9 7.9 5.7 6.5 6.3 7.1 4.8 6.9 6.8 10.4 8.0 5.8 6.6 6.6 7.3 4.9 7.2 7.2 10.0 7.7 5.8 6.6 6.5 7.3 4.8 7.0 6.9 10.0 7.7 5.8 6.6 6.5 7.3 4.8 7.0 6.9 0.0 7.7 5.8 6.6 6.5 7.3 4.8 7.0 6.9 0.0 7.6 5.3 6.5 6.7 7.0 6.9 6.8	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$

BZP	4.4	4.4	4.4	4.5	4.5	4.4	3.6	4.3	0.33	1.03	3.08
DBA	3.7	3.8	3.9	3.9	3.8	3.7	3.1	3.7	0.28	0.87	2.62
IDP	4.1	4.8	4.6	4.6	4.6	4.1	3.8	4.4	0.37	1.17	3.50
Sample	110-288	110-289	110-290	110-291	110-292	110-293	110-294	Average	Std Dev	MDI	3XMDL

NPH = naphthalene; 2MN = 2-methylnaphthalene; ACY = acenaphthylene; ACE = acenaphthene; FLU = fluorene; PHN = phenanthrene; ANT = anthracene; FLA = fluoranthene; PYR = pyrene; BAA = benz[a]anthracene; CHR = chrysene; BBF = benzo[b]fluoranthene; BBK = benzo[k]fluoranthene; BAP = benzo[a]pyrene; IDP = indeno[1,2,3-cd]pyrene; DBA = dibenz[a,h]anthracene; BZP = benzo[ghi[perytene.

MDLs were determined using 3g of tissue. MDLs for samples that are smaller that 3g will need to be adjusted for the difference in sample weight.