Hylebos Waterway Fish I njury Studies
Individual Data and Quality Assurance Results
CASE NARRATIVE

Reproductive Toxicology in Flatfish

Reproductive Steroid RlAs-Plasma 17-b Estradiol Analyses

Added explanation for changes in standard curve range for all test dates to the case narrative.

Added explanations for the following test dates to the case narrative:
Date: 6/27/95; Analyzed by: SS;
Date: 7/6/95; Analyzed by: LC;
Date: 7/18/95; Analyzed by: SS.

Tables:
Cleaned up tables, comments and significant digits are now more consistent.

Changes made to Table 3:
specimen# 3406: Non-target species, removed from the table;

specimen# 3528: Non-target species, removed from the table;

specimen# 3638: Non-target species, removed from the table;

specimen# 3721: Non-target species, removed from the table;

specimen# 3594A: Non-target species, removed from the table;

specimen#: 3271, test date 6/22/95: Changed E2 final from 858.03 to875.73(pg/ml);

specimen#: 3532, test date 6/22/95: Changed E2 final from 131.04 to146.75(pg/ml);

specimen# 3540, test date 7/18/95: Changed E2 final from 3520.18 to3726.95(pg/ml);

specimen# 3568, test date 7/10/95: 13% avg 48.33 changed to 31.86;

specimen# 3501, test date 7/14/95: This specimen# tested on 6/22/95 did not meet the QA criteria. It was rerun on 7/14/95, however, not enough plasma was available for triplicate test. The value previously reported, 393.55pg/ml, was deleted because it was calculated based on a single analysis.

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

Reproductive Toxicology in Flatfish

ReRroductive Steroid RIAs-Plasma--17-β Estradiol Analyses

Calibrations

Standard curve: As stated in the SAP, standards for this assay typically range from 0 - 2000 pg estradiol 17-b/100µl; to reflect the typical range of the sample concentrations, the standard curve was modified to range from 0 to 500pg/estradiol 17-b/100µl. Therefore, all final estradiol concentrations are slightly modified from those originally submitted to DARC on 5/30/1996.

The data used to quantitate plasma 17-b estradiol (Table 1) met the calibration criteria outlined in the Hylebos SAP, Table 4, except as following:
Date: 6/22/95
Analyzed by:S.S.
Two of the triplicate NSB samples analyzed were outside the range typically observed, and deleted.
RSD for 250pg/100ml standard (20.62%) exceeded maximum RSD of 200% outlined in the SAP.

Date: 6127/95
Analyzed by:S.S.
Radioactive Liquid scintillation counter (LSC) broke down in the middle of the count. Remaining samples including standards were recounted on another LSC, and plasma estradiol concentrations of the samples were calculated on the new standard curve generated.

Date: 7/6/95
Analyzed by: LC
RSD for 250pg/100ml standard (22.95%) exceeded maximum RSD Of
20% outlined in the SAP.

Date: 7/10/95
Analyzed by: LC
Duplicate rather than triplicate samples were used to calculate NSB for the standard curve.

Date 7/18195
Analyzed by SS
3.9pg/100ml standards were not used in the calculation of standard curve because the values obtained were outside the range typically observed.

Date: 3/13/96
Analyzed by: B.B.
The standard curve regression coefficient, 0.94, was lower than the acceptable limit, 0.95, outlined in the SAP. Nevertheless, other criterias outlined in the SAP were satisfied.

An assay performed on 6/22/95, and two assays performed on 7/10/95 had lower Bo than the acceptable range outlined on Hylebos SAP, Table 4. However, these values were accepted because the binding percentage of the standard curve and samples' (B%) are calculated based on the Bo. The change in Bo shifts the effective range of the assay, not the plasma estradiol concentrations. The change in Bo produced only minor changes in the effective range of the assay, therefore, the assays were not rerun.

Quality Control Sample
All quality, control samples tested (Table 2) met the criteria outlined in the Hylebos SAP, Table 4.

Sample Triplicate and Performance Evaluation
All samples were analyzed in triplicate. Samples in which the estradiol concentration was below effective concentration of the assay (B% > 80%) were retested at a higher concentration (i.e. maximum plasma volume of 100μI of plasma/tube), or given a value equal to half of lower detection limit. Samples in which the estradiol concentrations was above effective concentration of the assay (B% < 20%) were retested at a lower concentration (i.e. minimum volume of 5μI of plasma/tube). A few samples were deleted because reliable measurement could not be obtained with amount of samples available. Samples that did not meet the criteria outlined in the Hylebos SAP, Table 4, i.e. RSD greater than 20%, were reanalyzed, or the outlier of the triplicate was removed. However, some samples in which B% was slightly higher than 80% (i.e. 80.41), and or, RSD slightly higher than 20% (i.e. 21.40) were accepted.

Reanalysis
Samples that were reanalyzed are noted in Table 3.

Reproductive Toxicology in Flatfish

Reproductive Steroid RlAs-Plasma 17:β Estradiol Analyses
Table 1 Notes

Total: counts per minute (cpm) of tritiated 17-β estradiol (label) added to each tubes.

NSB (non specific binding): binding to label in the absence of antigen and steroid.

0 standard: binding to label and antigen, no steroid present.

Bo: binding efficiency of the antibody to labeled antigen.
((0 standard (cpm) - NSB(cpm))/(Total(cpm) - NSB(cpm)))xl00.

B%: binding percentage of sample and standards (3.9 - 500pg/ml 17-β estradiol) relative to Bo.

$$\left(\frac{((sample(cpm) - NSB(cpm)) / Total(cpm) - NSB(cpm)))}{((0s\tan dard(cpm) - NSB(cpm)) / (Total(cpm) - NSB(cpm)} \right.$$

EC80: Lower limit of the assay, where B% of 80 occurs.

EC20: Upper limit of the assay, where B% of 20 occurs.

RSD (relative standard deviation): standard deviation (SD) of each triplicate analyses divided by mean of each triplicate multiplied by 100.

Reproductive Steroid RIAs-Plasma 17-β Estradiol Analyses
Table 2- Notes

B%: binding percentage of sample relative to total, NSB and 0 standard.

Total: counts per minute (cpm) of tritiated 17-β estradiol (label) added to each tubes.

NSB (nonspecific binding): binding to label in the absence of antigen and steroid.

0 standard: binding to label and antigen, no steroid present.

B% is calcuated as following:

$$\left(\frac{((sample(cpm) - NSB(cpm)) / Total(cpm) - NSB(cpm)))}{((0s\tan dard(cpm) - NSB(cpm)) / (Total(cpm) - NSB(cpm)} \right.$$

Plasma 17-β estradiol concentrations (pg/ml plasma) are generated by automatic interpolation from the standard curve fit of the mean B% of protein standards (logistic regression).

RSD (relative standard deviation), unless otherwise noted, is standard deviation (SD) of each triplicate analyses divided by mean of each triplicate multiplied by 100.

Rel2rodugtive Steroid RlAs-Plasma 17-β Estradiol Analyses
TabIe 3 Notes

B%: binding percentage of sample relative to total, NSB and 0 standard.

Total: counts per minute (cpm) of tritiated 17-β estradiol (label) added to each tubes.

NSB (non specific binding): binding to label in the absence of antigen and steroid.

0 standard: binding to label and antigen, no steroid present.

13% is calculated as following:

$$\left(\frac{((sample(cpm) - NSB(cpm)) / Total(cpm) - NSB(cpm)))}{((0s\tan dard(cpm) - NSB(cpm)) / (Total(cpm) - NSB(cpm)} \right.$$

Plasma 17-β estradiol concentrations (pg/ml plasma) are generated by automatic interpolation from the standard curve fit of the mean B% of protein standards (logistic regression).

RSD (relative standard deviation), unless otherwise noted, is standard deviation (SD) of each triplicate analyses divided by mean of each triplicate multiplied by 100.

Intra assay RSD is RSD within a run.

Inter assay RSD is RSD between runs.

Table 1. Standard Curve Calibration for 17-β Estradiol RIA.
Hylebos Waterway Reproductive Toxicology in Flatfish

test date	tested by	Standard pg/ml	CPM	B%	logit B%	Log Std	RSD					
6/20/95	SS	3.9	2404	83.91	1.65	0.59	0.83	Total=	9455	9244	R^2=	0.99
		3.9	2443	85.44	1.77	0.59			9243			
		3.9	2415	84.36	1.68	0.59			9035		Slope b=	-0.48
		7.8	2341	81.49	1.48	0.89	2.75					
		7.8	2234	77.30	1.23	0.89		NSB=	238	243	Y int=	1.52
		7.8	2345	81.65	1.49	0.89			252			
		15.6	1906	64.57	0.60	1.19	3.11		239		EC 20=	155.23
		15.6	2026	69.23	0.81	1.19					EC 50=	33.06
		15.6	1948	66.20	0.67	1.19		0 STD=	2868	2818	EC 80=	7.04
		31.3	1553	50.86	0.03	1.50	6.08		2827			
		31.3	1722	57.43	0.30	1.50			2759		Bind Eff.	
		31.3	1552	50.84	0.03	1.50					Bo=	28.61
		62.5	1214	37.71	-0.50	1.80	0.72					
		62.5	1218	37.87	-0.50	1.80						
		62.5	1202	37.22	-0.52	1.80						
		125	845	23.39	-1.19	2.10	3.01					
		125	898	25.42	-1.08	2.10						
		125	867	24.23	-1.14	2.10						
		250	585	13.29	-1.88	2.40	4.08					
		250	591	13.50	-1.86	2.40						
		250	630	15.04	-1.73	2.40						
		500	413	6.60	-2.65	2.70	3.72					
		500	440	7.66	-2.49	2.70						
		500	442	7.71	-2.48	2.70						
6/21/95		3.9	2796	89.42	2.13	0.59	0.11	Total=	9358	9295	R^2=	1.00
		3.9	2790	89.21	2.11	0.59			9174			
		3.9	2793	89.31	2.12	0.59			9352		Slope b=	-0.47
		7.8	2436	76.86	1.20	0.89	3.46					
		7.8	2409	75.94	1.15	0.89		NSB=	233	231	Y int=	1.55
		7.8	2569	81.50	1.48	0.89			218			
		15.6	2166	67.46	0.73	1.19	1.64		244		EC 20=	160.31
		15.6	2132	66.28	0.68	1.19					EC 50=	35.22
		15.6	2096	65.02	0.62	1.19		0 STD=	3109	3100	EC 80=	7.74
		31.3	1745	52.79	0.11	1.50	1.32		3100			
		31.3	1739	52.56	0.10	1.50			3090		Bind Eff.	
		31.3	1782	54.05	0.16	1.50					Bo=	31.65
		62.5	1310	37.59	-0.51	1.80	2.07					
		62.5	1262	35.95	-0.58	1.80						
		62.5	1308	37.54	-0.51	1.80						
		125	1009	27.12	-0.99	2.10	5.47					
		125	956	25.27	-1.08	2.10						
		125	905	23.48	-1.18	2.10						

* Outlier removed

Table 1. Standard Curve Calibration for 17-β Estradiol RIA.
Hylebos Waterway Reproductive Toxicology in Flatfish

test date	tested by	Standard pg/ml	CPM	B%	logit B%	Log Std	RSD					
		250	608	13.12	-1.89	2.40	4.29					
		250	640	14.25	-1.79	2.40						
		250	588	12.44	-1.95	2.40						
		500	487	8.90	-2.33	2.70	1.83					
		500	470	8.31	-2.40	2.70						
		500	474	8.46	-2.38	2.70						
6/22/95	BB	3.9	2515	90.22	2.22	0.59	2.42	Total=	9170	9051	R^2=	1.00
		3.9	2449	87.55	1.95	0.59			9009			
		3.9	2397	85.46	1.77	0.59			8975		Slope b=	-0.45
		7.8	2264	80.12	1.39	0.89	0.55					
		7.8	2288	81.11	1.46	0.89		NSB=	257	269	Y int=	1.51
		7.8	2280	80.77	1.44	0.89			278			
		15.6	1923	66.45	0.68	1.19	1.18		273		EC 20=	135.96
		15.6	1879	64.66	0.60	1.19					EC 50=	32.28
		15.6	1896	65.34	0.63	1.19		0 STD=	2750	2759	EC 80=	7.67
		31.3	1463	47.94	-0.08	1.50	3.41		2749			
		31.3	1534	50.79	0.03	1.50			2777		Bind Eff.	
		31.3	1564	52.00	0.08	1.50					Bo=	28.35
		62.5	1101	33.39	-0.69	1.80	4.24					
		62.5	1157	35.65	-0.59	1.80						
		62.5	1198	37.30	-0.52	1.80						
		125	870	24.13	-1.15	2.10	1.24					
		125	849	23.28	-1.19	2.10						
		125	856	23.58	-1.18	2.10						
		250	540	10.86	-2.10	2.40	3.88					
		250	567	11.96	-2.00	2.40						
		250	583	12.60	-1.94	2.40						
		500	411	5.69	-2.81	2.70	3.12					
		500	435	6.67	-2.64	2.70						
		500	432	6.55	-2.66	2.70						
6/22/95	SS	3.9	1720	90.56	2.26	0.59	3.20	Total=	9154	9092	R^2=	0.97
		3.9	1708	89.85	2.18	0.59			9062			
		3.9	1621	84.65	1.71	0.59			9062		Slope b=	-0.42
		7.8	1614	84.25	1.68	0.89	9.58					
		7.8	1347	68.21	0.76	0.89		NSB=	209	209	Y int=	1.49
		7.8	1577	82.00	1.52	0.89			209			
		15.6	1408	71.88	0.94	1.19	4.23		209		EC 20=	118.59
		15.6	1301	65.48	0.64	1.19					EC 50=	30.57
		15.6	1321	66.68	0.69	1.19		0 STD=	1917	1877	EC 80=	7.88
		31.3	1093	52.97	0.12	1.50	19.77		1928			
		31.3	1867*						1786		Bind Eff.	
		31.3	825	36.90	-0.54	1.50					Bo=	18.78

* Outlier removed

Table 1. Standard Curve Calibration for 17-β Estradiol RIA.
Hylebos Waterway Reproductive Toxicology in Flatfish

test date	tested by	Standard pg/ml	CPM	B%	logit B%	Log Std	RSD				
		62.5	811	36.08	-0.57	1.80	1.59				
		62.5	835	37.53	-0.51	1.80					
		62.5	814	36.29	-0.56	1.80					
		125	577	22.06	-1.26	2.10	16.89				
		125	413	12.24	-1.97	2.10					
		125	477	16.05	-1.65	2.10					
		250	426	13.01	-1.90	2.40	20.62				
		250	318	6.51	-2.66	2.40					
		250	1021*								
		500	324	6.87	-2.61	2.70	0.74				
		500	326	7.04	-2.58	2.70					
		500	328	7.16	-2.56	2.70					
6/27/95	SS	3.9	2649	90.43	2.25	0.59	2.10	Total=	8992	9179	R^2= 0.99
		3.9	2728	93.49	2.66	0.59			9474		
		3.9	2619	89.29	2.12	0.59			9072		Slope b= -0.43
		7.8	2264	75.51	1.13	0.89	5.77				
		7.8	2437	82.22	1.53	0.89		NSB=	323	318	Y int= 1.57
		7.8	2540	86.20	1.83	0.89			326		
		15.6	2028	66.34	0.68	1.19	2.34		306		EC 20= 144.62
		15.6	2104	69.30	0.81	1.19					EC 50= 36.76
		15.6	2015	65.85	0.66	1.19		0 STD=	2806	2895	EC 80= 9.34
		31.3	1626	50.73	0.03	1.50	6.19		2759		
		31.3	1783	56.83	0.28	1.50			3121		Bind Eff.
		31.3	1833	58.76	0.35	1.50					Bo= 29.08
		62.5	1423	42.88	-0.29	1.80	10.27				
		62.5	1225	35.16	-0.61	1.80					
		62.5	1176	33.29	-0.69	1.80					
		125	902	22.66	-1.23	2.10	3.55				
		125	964	25.05	-1.10	2.10					
		125	913	23.09	-1.20	2.10					
		250	657	13.12	-1.89	2.40	2.07				
		250	630	12.09	-1.98	2.40					
		250	645	12.67	-1.93	2.40					
		500	525	8.00	-2.44	2.70	5.50				
		500	476	6.11	-2.73	2.70					
		500	480	6.26	-2.71	2.70					
6/27/95	SS ADD	3.9	3372	92.70	2.54	0.59	1.32	Total=	11107	11168	R^2= 0.99
		3.9	3389	93.22	2.62	0.59			11179		
		3.9	3305	90.64	2.27	0.59			11219		Slope b= -0.42
		7.8	2874	77.40	1.23	0.89	3.79				
		7.8	2990	80.97	1.45	0.89		NSB=	369	358	Y int= 1.56
		7.8	3101	84.37	1.69	0.89			336		

* Outlier removed

Table 1. Standard Curve Calibration for 17-β Estradiol RIA.
Hylebos Waterway Reproductive Toxicology in Flatfish

test date	tested by	Standard pg/ml	CPM	B%	logit B%	Log Std	RSD					
		15.6	2616	69.44	0.82	1.19	2.27		369		EC 20=	140.79
		15.6	2575	68.18	0.76	1.19					EC 50=	36.70
		15.6	2501	65.91	0.66	1.19		0 STD=	3460	3609	EC 80=	9.57
		31.3	2023	51.20	0.05	1.50	4.06		3514			
		31.3	2165	55.58	0.22	1.50			3854		Bind Eff.	
		31.3	2178	55.98	0.24	1.50					Bo=	30.07
		62.5	1643	39.53	-0.43	1.80	6.67					
		62.5	1543	36.45	-0.56	1.80						
		62.5	1438	33.20	-0.70	1.80						
		125	1124	23.56	-1.18	2.10	0.80					
		125	1124	23.57	-1.18	2.10						
		125	1140	24.04	-1.15	2.10						
		250	0*				2.69					
		250	752	12.11	-1.98	2.40						
		250	781	13.00	-1.90	2.40						
6/28/95	SS	3.9	3222	91.39	2.36	0.59	1.14	Total=	10985	10930	R^2=	0.99
		3.9	3151	89.10	2.10	0.59			10841			
		3.9	3198	90.62	2.27	0.59			10965		Slope b=	-0.45
		7.8	2770	76.91	1.20	0.89	3.97					
		7.8	2996	84.13	1.67	0.89		NSB=	377	368	Y int=	1.57
		7.8	2921	81.74	1.50	0.89			375			
		15.6	2497	68.16	0.76	1.19	1.06		353		EC 20=	157.40
		15.6	2513	68.67	0.78	1.19					EC 50=	37.16
		15.6	2462	67.03	0.71	1.19		0 STD=	3520	3491	EC 80=	8.77
		31.3	1928	49.95	0.00	1.50	4.40		3516			
		31.3	1952	50.71	0.03	1.50			3438		Bind Eff.	
		31.3	2091	55.15	0.21	1.50					Bo=	29.57
		62.5	1556	38.02	-0.49	1.80	2.51					
		62.5	1615	39.91	-0.41	1.80						
		62.5	1540	37.50	-0.51	1.80						
		125	1145	24.88	-1.10	2.10	2.42					
		125	1191	26.34	-1.03	2.10						
		125	1198	26.57	-1.02	2.10						
		250	867	15.97	-1.66	2.40	6.99					
		250	767	12.75	-1.92	2.40						
		250	774	12.99	-1.90	2.40						
		500	629	8.34	-2.40	2.70	6.40					
		500	625	8.20	-2.41	2.70						
		500	560	5.46	-2.85	2.70						
7/6/95	LC	3.9	3032	90.58	2.26	0.59	2.16	Total=	11401	11210	R^2=	0.97
		3.9	2905	86.29	1.84	0.59			11271			
		3.9	2988	89.07	2.10	0.59			10958		Slope b=	-0.41

* Outlier removed

Table 1. Standard Curve Calibration for 17-β Estradiol RIA.
Hylebos Waterway Reproductive Toxicology in Flatfish

test date	tested by	Standard pg/ml	CPM	B%	logit B%	Log Std	RSD					
		7.8	2694	79.14	1.33	0.89	1.06					
		7.8	2696	79.21	1.34	0.89		NSB=	356	357	Y int=	1.50
		7.8	2745	80.86	1.44	0.89			351			
		15.6	2336	66.99	0.71	1.19	2.09		366		EC 20=	119.41
		15.6	2338	67.07	0.71	1.19					EC 50=	31.76
		15.6	2253	64.21	0.58	1.19		0 STD=	3191	3310	EC 80=	8.45
		31.3	1812	49.27	-0.03	1.50	3.49		3369			
		31.3	1923	53.02	0.12	1.50			3371		Bind Eff.	
		31.3	1930	53.26	0.13	1.50					Bo=	27.21
		62.5	1511	39.05	-0.45	1.80	3.01					
		62.5	1488	38.29	-0.48	1.80						
		62.5	1425	36.15	-0.57	1.80						
		125	1021	22.49	-1.24	2.10	2.51					
		125	1073	24.23	-1.14	2.10						
		125	1058	23.71	-1.17	2.10						
		250	501	4.85	-2.98	2.40	22.95					
		250	496	4.70	-3.01	2.40						
		250	727	12.51	-1.95	2.40						
		500	550	6.52	-2.66	2.70	3.50					
		500	560	6.13	-2.73	2.70						
		500	588.10	7.81	-2.47	2.70						
7/10/95	LC	3.9	3223	90.12	2.21	0.59	9.30	Total=	15490	14705	R^2=	0.95
		3.9	3153	87.91	1.98	0.59			13682			
		3.9	2704	73.76	1.03	0.59			14943		Slope b=	-0.49
		7.8	2356	62.78	0.52	0.89	11.08					
		7.8	2940	81.21	1.46	0.89		NSB=	332	366	Y int=	1.52
		7.8	2621	71.15	0.90	0.89			399			
		15.6	2590	70.15	0.85	1.19	2.89				EC 20=	158.05
		15.6	2565	69.37	0.82	1.19					EC 50=	33.34
		15.6	2452	65.81	0.65	1.19		0 STD=	3540	3536	EC 80=	7.03
		31.3	1957	50.20	0.01	1.50	5.50		3478			
		31.3	2144	56.10	0.25	1.50			3590		Bind Eff.	
		31.3	2166	56.79	0.27	1.50					Bo=	22.11
		62.5	1681	41.48	-0.34	1.80	1.13					
		62.5	1672	41.22	-0.35	1.80						
		62.5	1645	40.35	-0.39	1.80						
		125	1221	26.99	-1.00	2.10	1.92					
		125	1246	27.78	-0.96	2.10						
		125	1269	28.50	-0.92	2.10						
		250	893	16.62	-1.61	2.40	6.84					
		250	797	13.61	-1.85	2.40						
		250	792	13.46	-1.86	2.40						
		500	556	6.01	-2.75	2.70	5.26					

* Outlier removed

Table 1. Standard Curve Calibration for 17-β Estradiol RIA.
Hylebos Waterway Reproductive Toxicology in Flatfish

test date	tested by	Standard pg/ml	CPM	B%	logit B%	Log Std	RSD					
		500	605	7.55	-2.51	2.70						
		500	614	7.83	-2.47	2.70						
7/10/95	SS	3.9	2973	94.45	2.83	0.59	5.03	Total=	14706	14631	R^2=	0.97
		3.9	2747	86.56	1.86	0.59			14390			
		3.9	3020	96.08	3.20	0.59			14797		Slope b=	-0.44
		7.8	2774	87.53	1.95	0.89	3.28					
		7.8	2740	86.34	1.84	0.89		NSB=	252	257	Y int=	1.71
		7.8	2607	81.69	1.50	0.89			245			
		15.6	2451	76.27	1.17	1.19	4.16		275		EC 20=	210.23
		15.6	2366	73.33	1.01	1.19					EC 50=	50.86
		15.6	2255	69.47	0.82	1.19		0 STD=	3375	3133	EC 80=	12.30
		31.3	1836	54.91	0.20	1.50	3.67		2973			
		31.3	1971	59.59	0.39	1.50			3051		Bind Eff.	
		31.3	1939	58.49	0.34	1.50					Bo=	20.01
		62.5	1633	47.85	-0.09	1.80	4.32					
		62.5	1600	46.68	-0.13	1.80						
		62.5	1502	43.28	-0.27	1.80						
		125	1203	32.89	-0.71	2.10	3.34					
		125	1155	31.23	-0.79	2.10						
		125	1126	30.22	-0.84	2.10						
		250	808	19.15	-1.44	2.40	4.44					
		250	747	17.02	-1.58	2.40						
		250	751	17.18	-1.57	2.40						
		500	544	9.96	-2.20	2.70	3.49					
		500	583	11.32	-2.06	2.70						
		500	566	10.75	-2.12	2.70						
7/14/95	LC	3.9	2887	88.84	2.07	0.59	2.15	Total=	10734	10597	R^2=	0.99
		3.9	2798	85.82	1.80	0.59			10530			
		3.9	2771	84.91	1.73	0.59			10527		Slope b=	-0.45
		7.8	2498	75.65	1.13	0.89	1.23					
		7.8	2557	77.66	1.25	0.89		NSB=	170	263	Y int=	1.48
		7.8	2511	76.11	1.16	0.89			171			
		15.6	2090	61.84	0.48	1.19	3.29		186		EC 20=	125.89
		15.6	2139	63.51	0.55	1.19					EC 50=	29.98
		15.6	2230	66.57	0.69	1.19		0 STD=	2959	3217	EC 80=	7.14
		31.3	1975	57.96	0.32	1.50	8.64		3309			
		31.3	1661	47.32	-0.11	1.50			3382		Bind Eff.	
		31.3	1824	52.85	0.11	1.50					Bo=	28.58
		62.5	1293	34.85	-0.63	1.80	6.45					
		62.5	1410	38.81	-0.46	1.80						
		62.5	1245	33.23	-0.70	1.80						
		125	916	22.11	-1.26	2.10	5.43					

* Outlier removed

Table 1. Standard Curve Calibration for 17-β Estradiol RIA.
Hylebos Waterway Reproductive Toxicology in Flatfish

test date	tested by	Standard pg/ml	CPM	B%	logit B%	Log Std	RSD					
		125	940	22.91	-1.21	2.10						
		125	1016	25.48	-1.07	2.10						
		250	657	13.32	-1.87	2.40	5.87					
		250	600	11.40	-2.05	2.40						
		250	590	11.04	-2.09	2.40						
		500	399	4.58	-3.04	2.70	2.45					
		500	418	5.25	-2.89	2.70						
		500	411	5.01	-2.94	2.70						
7/14/95	SS	3.9	3071	91.65	2.40	0.59	3.67	Total=	11803	11640	R^2=	0.95
		3.9	3146	94.10	2.77	0.59			11651			
		3.9	3300	99.12	4.73	0.59			11466		Slope b=	-0.36
		7.8	2724	80.30	1.41	0.89	3.45					
		7.8	2918	86.65	1.87	0.89		NSB=	265	265	Y int=	1.64
		7.8	2825	83.60	1.63	0.89			271			
		15.6	2465	71.84	0.94	1.19	0.95		261		EC 20=	136.67
		15.6	2482	72.40	0.96	1.19					EC 50=	43.72
		15.6	2511	73.37	1.01	1.19		0 STD=	3158	3327	EC 80=	13.99
		31.3	1882	52.79	0.11	1.50	3.85		3451			
		31.3	2000	56.67	0.27	1.50			3371		Bind Eff.	
		31.3	2023	57.40	0.30	1.50					Bo=	26.91
		62.5	1531	41.34	-0.35	1.80	3.30					
		62.5	1436	38.23	-0.48	1.80						
		62.5	1465	39.20	-0.44	1.80						
		125	929	21.67	-1.28	2.10	7.27					
		125	1075	26.44	-1.02	2.10						
		125	1007	24.21	-1.14	2.10						
		250	654	12.70	-1.93	2.40	1.35					
		250	672	13.28	-1.88	2.40						
		250	662	12.95	-1.91	2.40						
		500	432	5.44	-2.85	2.70	3.35					
		500	461	6.39	-2.69	2.70						
		500	454	6.16	-2.72	2.70						
7/18/95	LC	3.9	2996	81.15	1.46	0.59	0.93	Total=	11210	11168	R^2=	0.98
		3.9	2980	80.70	1.43	0.59			11142			
		3.9	2942	79.59	1.36	0.59			11151		Slope b=	-0.57
		7.8	2518	67.30	0.72	0.89	1.87					
		7.8	2452	65.39	0.64	0.89		NSB=	201	195	Y int=	1.45
		7.8	2543	68.03	0.76	0.89			190			
		15.6	2581	69.12	0.81	1.19	4.54		196		EC 20=	173.85
		15.6	2540	67.94	0.75	1.19					EC 50=	28.15
		15.6	2367	62.94	0.53	1.19		0 STD=	3699	3646	EC 80=	4.56
		31.3	1948	50.80	0.03	1.50	3.12		3714			

* Outlier removed

Table 1. Standard Curve Calibration for 17-β Estradiol RIA.
Hylebos Waterway Reproductive Toxicology in Flatfish

test date	tested by	Standard pg/ml	CPM	B%	logit B%	Log Std	RSD					
		31.3	2074	54.43	0.18	1.50			3527		Bind Eff.	
		31.3	2015	52.74	0.11	1.50					Bo=	31.45
		62.5	1249	30.52	-0.82	1.80	8.04					
		62.5	1446	36.23	-0.57	1.80						
		62.5	1435	35.91	-0.58	1.80						
		125	1025	24.04	-1.15	2.10	2.41					
		125	1069	25.32	-1.08	2.10						
		125	1026	24.07	-1.15	2.10						
		250	732	15.54	-1.69	2.40	5.58					
		250	764	16.48	-1.62	2.40						
		250	683	14.14	-1.80	2.40						
		500	489	8.51	-2.38	2.70	12.44					
		500	532	9.75	-2.23	2.70						
		500	622	12.37	-1.96	2.70						
7/18/95	SS	3.9	607*					Total=	11671	11382	R^2=	0.96
		3.9	613*						11439			
		3.9	954*						11037		Slope b=	-0.49
		7.8	2434	72.50	0.97	0.89	2.20					
		7.8	1611*					NSB=	207	212	Y int=	1.52
		7.8	2366	70.28	0.86	0.89			225			
		15.6	1953	56.79	0.27	1.19	12.15		205		EC 20=	157.82
		15.6	2413	71.78	0.93	1.19					EC 50=	32.71
		15.6	2092	61.33	0.46	1.19		0 STD=	3133	3277	EC 80=	6.78
		31.3	1799	51.78	0.07	1.50	4.32		3430			
		31.3	1779	51.11	0.04	1.50			3270		Bind Eff.	
		31.3	1909	55.35	0.21	1.50					Bo=	27.44
		62.5	1639	46.53	-0.14	1.80	9.79					
		62.5	1426	39.61	-0.42	1.80						
		62.5	1417	39.29	-0.44	1.80						
		125	1068	27.92	-0.95	2.10	4.39					
		125	1010	26.03	-1.04	2.10						
		125	1079	28.27	-0.93	2.10						
		250	623	13.39	-1.87	2.40	3.23					
		250	630	13.62	-1.85	2.40						
		250	604	12.79	-1.92	2.40						
		500	445	7.58	-2.50	2.70	13.84					
		500	474	8.54	-2.37	2.70						
		500	410	6.46	-2.67	2.70						
3/13/96	BB	3.9	1964	67.23	0.72	0.59	7.12	Total=	8464	8206	R^2=	0.94
		3.9	1985	68.08	0.76	0.59			8049			
		3.9	1777	59.68	0.39	0.59			8107		Slope b=	-0.52
		7.8	1747	58.47	0.34	0.89	3.06					

* Outlier removed

Table 1. Standard Curve Calibration for 17-β Estradiol RIA.
Hylebos Waterway Reproductive Toxicology in Flatfish

test date	tested by	Standard pg/ml	CPM	B%	logit B%	Log Std	RSD					
		7.8	1737	58.08	0.33	0.89		NSB=	286	300	Y int=	1.20
		7.8	1820	61.40	0.46	0.89			298			
		15.6	1906	64.89	0.61	1.19	6.24		316		EC 20=	83.65
		15.6	1738	58.10	0.33	1.19					EC 50=	15.86
		15.6	1751	58.62	0.35	1.19		0 STD=	2738	2775	EC 80=	3.01
		31.3	1439	46.03	-0.16	1.50	6.47		2717			
		31.3	1437	45.93	-0.16	1.50			2871		Bind Eff.	
		31.3	1315	41.01	-0.36	1.50					Bo=	31.31
		62.5	941	25.91	-1.05	1.80	8.25					
		62.5	1000	28.27	-0.93	1.80						
		62.5	1057	30.57	-0.82	1.80						
		125	652	14.22	-1.80	2.10	10.22					
		125	592	11.79	-2.01	2.10						
		125	648	14.08	-1.81	2.10						
		250	533	9.44	-2.26	2.40	5.95					
		250	508	8.41	-2.39	2.40						
		250	516	8.74	-2.35	2.40						
		500	425	5.04	-2.94	2.70	16.75					
		500	451	6.13	-2.73	2.70						
		500	409	4.41	-3.08	2.70						
3/13/96	SS	3.9	2192	64.90	0.61	0.59	2.02	Total=	8320	8075	R^2=	0.95
		3.9	2116	62.33	0.50	0.59			7966			
		3.9	2118	62.42	0.51	0.59			7939		Slope b=	-0.57
		7.8	1725	49.11	-0.04	0.89	0.39					
		7.8	1716	48.81	-0.05	0.89		NSB=	256	271	Y int=	1.05
		7.8	1712	48.67	-0.05	0.89			276			
		15.6	1906	55.24	0.21	1.19	8.24		283		EC 20=	69.06
		15.6	1624	45.70	-0.17	1.19					EC 50=	11.30
		15.6	1839	52.99	0.12	1.19		0 STD=	3399	3230	EC 80=	1.85
		31.3	1443	39.60	-0.42	1.50	3.84		3180			
		31.3	1531	42.57	-0.30	1.50			3112		Bind Eff.	
		31.3	1426	39.01	-0.45	1.50					Bo=	37.92
		62.5	960	23.26	-1.19	1.80	12.05					
		62.5	1032	25.72	-1.06	1.80						
		62.5	811	18.25	-1.50	1.80						
		125	669	13.43	-1.86	2.10	6.65					
		125	585	10.61	-2.13	2.10						
		125	633	12.23	-1.97	2.10						
		250	509	8.02	-2.44	2.40	2.75					
		250	489	7.36	-2.53	2.40						
		250	483	7.13	-2.57	2.40						
		500	455	6.21	-2.71	2.70	2.52					
		500	445	5.85	-2.78	2.70						

* Outlier removed

Table 1. Standard Curve Calibration for 17-β Estradiol RIA. Hylebos Waterway Reproductive Toxicology in Flatfish

test date	tested by	Standard pg/ml	CPM	B%	logit B%	Log Std	RSD
		500	433	5.46	-2.85	2.70	

* Outlier removed

Table 2. Plasma 17β estradiol concentrations (pg/ml Plasma) of quality control. Hylebos Waterway Reproductive Toxicology in Flatfish .

test date	tested by	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD following adjustment	comment
6/20/95	S.S.	10	54.48	48.44	49.39	50.77	2708	3544	3398	3217	13.88	3217		
6/21/95	S.S.	10	51.61	48.89	49.28	49.92	3283	3697	3634	3538	6.30	3538		
6/22/95	B.B.	10	52.07	50.3	50.83	51.07	2963	3188	3119	3090	3.73	3090		
6/22/95	S.S.	10	45.8	43.2	38.6	42.53	3602	3992	4808	4134	14.88	4134		
6/27/95	S.S.	10	50.93	48.97	56.69	52.2	3541	3820	2829	3396	15.04	3393		
6/28/95	S.S.	10	59.04	49.65	52.71	53.8	2542	3770	3320	3211	19.35	3211		
7/6/95	LC	10	41.23	46.65	45.2	44.36	4452	3609	3816	3959	11.10	3959		
7/10/95	LC	10	58.61	57.96	56.28	57.62	2258	2327	2513	2366	5.57	2366		
7/10/95	S.S.	10	59.5	61.33	62.8	61.21	3434	3176	2980	3197	7.12	3197		
7/14/95	LC	10	34.41	43.21	45.08	40.9	5834	3975	3676	4495	26.01	3826	5.53	a
7/14/95	S.S.	10	48.31	48.11	49.53	48.65	4621	4652	4440	4571	2.51	4571		
7/18/95	LC	10	49.44	51.53	45.71	48.9	2899	2598	3526	3008	15.74	3008		
7/18/95	S.S.	10	50.42	46.97	47.01	48.13	3210	3753	3746	3569	8.72	3569		
7/18/95	S.S.	10	49.55	47.92	45.92	47.8	3338	3595	3936	3623	8.29	3623		
3/13/96	B.B.	10	41.85	39.23	44.99	42.02	2351	2677	2017	2349	14.05	2349		
3/13/96	S.S.	10	35.23	39.34	35.14	36.57	2468	1987	2511	2332	12.82	2332		
									RSD=	20.49	RSD=	19.13		

a=outlier taken out.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	Intra assay RSD	inter assay RSD	final comment
3271		6/22/95	10	37.91	39.08	42.65	39.88	4945.22	4713.84	4080.44	4579.83	9.78	4579.83			4579.83			
3273		6/22/95	50	42.06	47.90	46.77	45.58	835.47	663.53	693.45	730.81	12.57	730.81			730.81			
3276	R	6/22/95	50	41.2	40.59	30.24	37.34	864.93	886.54	1381.61	1044.36	27.99	875.73	1.74	a	875.73	1.74		a
3276	R	3/13/96	50	0.78	20.39	8.82	10.00	104759.1	1617.52	5189.26	37188.63	157.43			B				
3281		6/22/95	10	63.56	68.56	64.42	65.51	1776.54	1428.83	1712.79	1639.39	11.29	1639.39			1639.39			
3283		6/22/95	50	42.01	36.61	35.65	38.09	837.07	1044.48	1087.7	989.75	13.54	989.75			989.75			
3284		7/10/95	100	67.65	69.28	71.55	69.50	145.99	134.13	118.71	132.94	10.29	132.94			132.94			
3287		6/22/95	50	27.24	26.34	28.76	27.45	1593.79	1666.69	1480.57	1580.35	5.93	1580.35			1580.35			
3288		7/10/95	100	34.62	41.98	35.52	37.38	679.26	478.86	649.8	602.64	17.95	602.64			602.64			
3289		6/22/95	10	39.17	38.70	39.89	39.26	4695.36	4786.3	4559.52	4680.39	2.44	4680.39			4680.39			
3290		7/10/95	100	68.78	65.43	61.63	65.28	137.72	163.24	196.15	165.7	17.68	165.7			165.7			
3291		7/10/95	100	49.67	46.00	46.43	47.37	338.39	398.9	391.38	376.23	8.77	376.23			376.23			
3292		7/10/95	100	47.82	44.29	42.43	44.85	367.62	431.08	469.12	422.61	12.13	422.61			422.61			
3293		6/22/95	10	64.22	60.14	62.71	62.36	1727.69	2046.24	1841.07	1871.67	8.63	1871.67			1871.67			
3294		7/10/95	100	25.82	23.06	22.16	23.68	1086.51	1284.31	1361.18	1244	11.39	1244			1244			
3295		7/10/95	100	48.75	48.52	55.30	50.86	352.54	356.25	262.78	323.86	16.34	323.86			323.86			
3296		7/10/95	100	52.31	52.43	52.76	52.50	300.59	298.98	294.61	298.06	1.04	298.06			298.06			
3298		7/10/95	100	92.02	92.70	82.65	89.12	41.9	38	103.35	61.08	60.02	60.15		A	60.15			A
3299	R	7/10/95	100	65.49	55.25	49.39	56.71	264.43	410.07	521.42	398.64	32.33							
3299	R	7/18/95	100	36.73	38.05	42.32	39.03	605.56	567.97	464.48	546	13.38	546			546			
3300		7/10/95	100	72.76	75.59	69.61	72.65	186.55	160.41	218.18	188.38	15.35	188.38			188.38			
3301		7/14/95	100	27.24	25.34	20.98	24.52	826.55	914.42	1178.27	973.08	18.81	973.08			973.08			

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; O=non-target species; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate; NDB=not included in database.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	intra assay RSD	inter assay RSD	final comment
3271		6/22/95	10	37.91	39.08	42.65	39.88	4945.22	4713.84	4080.44	4579.83	9.78	4579.83			4579.83			
3273		6/22/95	50	42.06	47.90	46.77	45.58	835.47	663.53	693.45	730.81	12.57	730.81			730.81			
3276	R	6/22/95	50	41.2	40.59	30.24	37.34	864.93	886.54	1381.61	1044.36	27.99	875.73	1.74	a	875.73	1.74		a
3276	R	3/13/96	50	0.78	20.39	8.82	10.00	104759.1	1617.52	5189.26	37188.63	157.43			B				
3281		6/22/95	10	63.56	68.56	64.42	65.51	1776.54	1428.83	1712.79	1639.39	11.29	1639.39			1639.39			
3283		6/22/95	50	42.01	36.61	35.65	38.09	837.07	1044.48	1087.7	989.75	13.54	989.75			989.75			
3284		7/10/95	100	67.65	69.28	71.55	69.50	145.99	134.13	118.71	132.94	10.29	132.94			132.94			
3287		6/22/95	50	27.24	26.34	28.76	27.45	1593.79	1666.69	1480.57	1580.35	5.93	1580.35			1580.35			
3288		7/10/95	100	34.62	41.98	35.52	37.38	679.26	478.86	649.8	602.64	17.95	602.64			602.64			
3289		6/22/95	10	39.17	38.70	39.89	39.26	4695.36	4786.3	4559.52	4680.39	2.44	4680.39			4680.39			
3290		7/10/95	100	68.78	65.43	61.63	65.28	137.72	163.24	196.15	165.7	17.68	165.7			165.7			
3291		7/10/95	100	49.67	46.00	46.43	47.37	338.39	398.9	391.38	376.23	8.77	376.23			376.23			
3292		7/10/95	100	47.82	44.29	42.43	44.85	367.62	431.08	469.12	422.61	12.13	422.61			422.61			
3293		6/22/95	10	64.22	60.14	62.71	62.36	1727.69	2046.24	1841.07	1871.67	8.63	1871.67			1871.67			
3294		7/10/95	100	25.82	23.06	22.16	23.68	1086.51	1284.31	1361.18	1244	11.39	1244			1244			
3295*		7/10/95	100	48.75	48.52	55.30	50.86	352.54	356.25	262.78	323.86	16.34	323.86			323.86			
3296		7/10/95	100	52.31	52.43	52.76	52.50	300.59	298.98	294.61	298.06	1.04	298.06			298.06			
3298		7/10/95	100	92.02	92.70	82.65	89.12	41.9	38	103.35	61.08	60.02	60.15		A	60.15			A
3299	R	7/10/95	100	65.49	55.25	49.39	56.71	264.43	410.07	521.42	398.64	32.33							
3299	R	7/18/95	100	36.73	38.05	42.32	39.03	605.56	567.97	464.48	546	13.38	546			546			
3300		7/10/95	100	72.76	75.59	69.61	72.65	186.55	160.41	218.18	188.38	15.35	188.38			188.38			
3301		7/14/95	100	27.24	25.34	20.98	24.52	826.55	914.42	1178.27	973.08	18.81	973.08			973.08			

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	intra assay RSD	inter assay RSD	final comment
3302		6/22/95	10	50.55	51.75	49.88	50.73	2991.63	2854.82	3071.04	2972.5	3.68	2972.5			2972.5			
3303	R	7/10/95	100	78.88	62.06	64.75	68.56	132.49	307.72	273.34	237.85	39.04							
3303	R	7/18/95	100	48.68	47.90	45.80	47.46	347.24	359.79	395.75	367.6	6.85	367.6			367.6			
3304		7/10/95	100	44.61	45.11	41.49	43.74	634.3	621.33	722.42	659.35	8.34	659.35			659.35			
3305		7/14/95	100	35.62	35.85	35.05	35.50	552.38	546.69	566.76	555.27	1.86	555.27			555.27			
3306		7/14/95	100	42.38	40.73	42.15	41.75	411.75	441.58	415.78	423.04	3.83	423.04			423.04			
3307		7/6/95	100	65.32	59.03	58.99	61.11	173.72	224.26	224.62	207.53	14.11	207.53			207.53			
3308		7/14/95	100	54.92	51.58	50.22	52.24	244.49	280.88	297.04	274.14	9.82	274.14			274.14			
3309		7/10/95	100	71.58	73.20	73.30	72.69	198.04	182.37	181.38	187.26	4.99	187.26			187.26			
3310		7/10/95	100	49.24	48.35	49.36	48.98	524.69	544.12	522.01	530.27	2.28	530.27			530.27			
3311		7/14/95	100	40.09	33.93	37.47	37.16	453.91	596.44	508.73	519.69	13.83	519.69			519.69			
3312	R	7/10/95	100	30.81	26.66	23.07	26.85	1161.8	1429.4	1738.88	1443.36	20.01							
3312	R	3/13/96	50	22.07	23.23	23.28	22.86	1168.86	1072.08	1067.86	1102.93	5.18	1102.93			1102.93			
3313		7/6/95	100	70.03	73.91	71.63	71.85	141.47	117.75	131.42	130.21	9.14	130.21			130.21			
3314		7/10/95	100	39.18	38.35	46.28	41.27	796.78	825.65	592.17	738.2	17.24	738.2			738.2			
3315	R	7/6/95	100	13.03	20.66	27.32	20.34	1938.26	1144.84	806.7	1296.6	44.80							
3315	R	7/18/95	100	21.28	19.36	20.30	20.31	1561.68	1823.98	1688.21	1691.29	7.76	1691.29			1691.29			
3316		7/14/95	100	36.07	32.20	29.92	32.73	541.24	646.47	721.67	636.46	14.24	636.46			636.46			
3317		7/6/95	100	63.17	66.00	63.76	64.31	189.95	168.81	185.36	181.38	6.13	181.38			181.38			
3318		7/14/95	100	35.41	37.78	35.79	36.33	557.46	501.66	548.19	535.77	5.58	535.77			535.77			
3319		7/14/95	100	29.29	29.62	29.87	29.59	744.79	732.61	723.6	733.67	1.45	733.67			733.67			
3320		7/14/95	100	49.7	45.25	44.58	46.51	303.59	365.03	375.38	348	11.15	348			348			

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	Intra assay RSD	Inter assay RSD	final comment
3321		7/6/95	100	80.19	80.71	23.66	61.52	83.81	81.2	969.41	378.14	135.41	82.51	2.23	a	82.51	2.23		a
3322		7/6/95	100	55.42	62.90	59.33	59.22	258.05	192.07	221.58	223.9	14.76	223.9			223.9			
3323		7/6/95	100	68.63	70.96	71.94	70.51	150.65	135.54	129.5	138.56	7.86	138.56			138.56			
3332		6/22/95	50	77.92	71.29	72.61	73.94	178.65	251.72	236.17	222.18	17.33	222.18			222.18			
3333	R	7/6/95	10	77.91	68.21	74.89	73.67	955.81	1534.63	1121.04	1203.83	24.77							
3333	R	7/18/95	10	49.06	46.06	48.91	48.01	3413.4	3910.69	3435.67	3586.59	7.83	3586.59			3586.59			
3335	R	7/6/95	100	64.11	87.65	72.69	74.82	182.73	49.07	124.95	118.92	56.37							
3335	R	7/18/95	100	54.54	57.15	55.50	55.73	221.79	193.04	210.78	208.54	6.96	208.54			208.54			
3340	R	7/10/95	50	84.67	92.86	96.88	91.47	98.43	37.7	14.23	50.12	86.70			A				
3340	R	7/18/95	100	47.18	107.70	87.16	80.68	371.71	CNC	37.41	CNC		33.9		A	33.9			A
3341	R	7/10/95	50	84.28	86.26	88.10	86.21	101.78	85.28	70.94	86	17.94			A				
3341	R	7/18/95	100	80.98	86.69	82.32	83.33	63.41	39.18	57.34	53.31	23.65	33.9		A	33.9			A
3347	R	7/6/95	100	50.72	68.42	69.78	62.97	309.02	152.05	143.09	201.38	46.34							
3347	R	3/13/96	100	46.3	49.76	46.85	47.64	189.39	160.39	184.46	178.08	8.71	178.08			178.08			
3348		7/10/95	100	80.03	83.50	77.60	80.38	70.5	54.29	82.94	69.24	20.74	35.15		A	35.15			A
3350		7/10/95	100	79.66	86.15	80.62	82.14	72.31	43.1	67.6	61	25.71	35.15		A	35.15			A
3352		6/22/95	100	74.77	70.57	70.40	71.92	105.93	130.22	131.25	122.46	11.70	122.46			122.46			
3355		6/22/95	100	81	98.40	88.86	89.42	74.28	5.49	40.33	40.03	85.90	39.4		A	39.4			A
3358	R	6/22/95	100	67.35	49.49	71.94	62.93	150.85	311.74	122.01	194.86	52.47	136.43	14.94	a	167.91		27.00	C
3358	R	7/18/95	100	57.63	60.70	30.57	49.63	230.94	199.95	827.86	419.58	84.35	215.44	10.17	a				
3358	R	3/13/96	50	86.02			86.02	21.23			21.23				A				
3359	R	6/28/95	50	77.19	81.44	82.60	80.41	209.63	160.05	147.5	172.39	19.06							

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	Intra assay RSD	Inter assay RSD	final comment
3359	R	7/14/95	100	79.46			79.46	144.18			144.07		144.07						
3359	R	3/13/96	25	67.25			67.25	177.16			177.16		177.16			160.62		15.00	C
3360		6/22/95	100	89.82	93.47	86.58	89.96	36.56	22.78	49.6	36.31	36.93	39.4		A	39.4			A
3361		6/28/95	100	85.47	84.69	85.58	85.24	59.03	62.9	58.5	60.14	3.99	43.85		A	43.85			A
3362		6/28/95	100	90.83	95.15	101.82	95.94	34.34	16.89	CNC	CNC		43.85		A	43.85			A
3363	R	6/28/95	100	70.15	81.81	78.79	76.92	153	77.99	95.14	108.71	36.15							D
3363	R	7/14/95	100	76.43			76.43	166.64			166.75								D
3363	R	3/13/96	100	53.13	58.31	49.94	53.79	96.04	73.03	113.38	94.15	21.50							D
3366		6/28/95	50	34	35.15	33.09	34.08	1480.06	1403.77	1544.11	1475.98	4.76	1475.98			1475.98			
3368		6/28/95	50	68.83	64.13	62.39	65.12	326.43	406.61	439.4	390.81	14.87	390.81			390.81			
3369	R	6/28/95	10	86.5	84.32	87.00	85.94	539.83	647.79	516.31	567.97	12.34			A				
3369	R	7/14/95	50	63.93	61.65	66.97	64.18	546.89	592.6	489.82	543.1	9.48	543.1			543.1			
3370	R	6/28/95	100	65.04	56.68	55.30	59.01	195.02	281.13	297.93	258.03	21.40	289.53	4.10	a				D,R
3370	R	3/13/96	100	48.63	45.85	48.17	47.55	121.4	140.37	124.34	128.7	7.93	128.7						D,R
3372	R	6/28/95	50	29.26	22.96	21.66	24.62	1859.49	2612.92	2824.64	2432.35	20.86							
3372	R	7/14/95	10	54.36	55.75	57.02	55.71	3788.22	3618.28	3467.79	3624.76	4.42	3624.76			3624.76			
3374	R	6/20/95	100	79.13	77.34	76.79	77.75	75.06	84.35	87.33	82.25	7.79	82.25			82.25			
3374	R	7/14/95	50	90.05	92.06	87.34	89.82	143.62	117.26	179.53	146.8	21.29			A				
3374	R	3/13/96	100	22.38	33.54	53.88	36.60	570.61	275.32	92.34	312.76	77.16							
3376	R	6/20/95	100	86.55	84.72	88.85	86.70	41.68	49.17	32.86	41.24	19.80	35.2		A	35.2			A
3376	R	6/22/95	50	49.83	1.19	44.30	31.77	615.36	CNC	764.21	689.78								
3377		6/22/95	100	44.37	47.42	45.89	45.89	381.02	338.04	359	359.36	5.98	359.36			359.36			

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	intra assay RSD	inter assay RSD	final comment
3378		6/28/95	50	32.47	33.92	32.49	32.96	1589.99	1485.34	1588.54	1554.62	3.86	1554.62			1554.62			
3380	R	6/22/95	100	16.03	14.66	14.82	15.17	1537.19	1703.42	1682.93	1641.18	5.52			B				
3380	R	3/13/96	5	78.37	79.45	75.17	77.67	679.76	628.85	842.74	717.12	15.58	717.12			717.12			
3381	R	6/28/95	100	67.45	76.15	65.56	69.72	174.38	111.28	190.5	158.72	26.38							
3381	R	7/14/95	100	75.57	76.27	77.15	76.33	173.23	167.83	161.22	167.43	3.59	167.43			167.43			
3383		6/22/95	50	21.45	19.78	21.63	20.95	2168.31	2394.85	2145.92	2236.36	6.16	2236.36			2236.36			
3384		6/28/95	100	32.11	28.83	30.91	30.62	808.9	949.76	856.89	871.85	8.21	871.85			871.85			
3385	R	6/20/95	50	29	28.36	27.69	28.35	1790.87	1854.01	1924.42	1856.43	3.60	1856.43			1856.43			
3385	R	3/13/96	10	52.29	34.60	45.59	44.16	1421.01	3397.04	1959.15	2259.07	45.22							
3386		6/28/95	100	45.98	42.38	40.97	43.11	439.27	511.34	543.06	497.89	10.68	497.89			497.89			
3387		6/28/95	100	24.56	22.27	20.96	22.59	1191.85	1361.2	1475.31	1342.79	10.62	1342.79			1342.79			
3389		6/22/95	10	67.04	66.12	64.52	65.89	1529.43	1591.77	1705.81	1609	5.46	1609			1609			
3391		6/22/95	50	30.55	29.28	31.07	30.30	1361.89	1444.86	1330.14	1378.96	4.30	1378.96			1378.96			
3392		6/28/95	50	37.04	31.36	34.62	34.34	1289.66	1676.45	1438.3	1468.14	13.29	1468.14			1468.14			
3393	R	6/28/95	100	37.11	27.92	25.94	30.32	642.63	995.27	1104.88	914.26	26.42							
3393	R	7/14/95	50	49.22	47.66	37.94	44.94	897.15	944.14	1308.99	1050.09	21.47							
3393	R	3/13/96	50	31.66	36.01	31.91	33.19	615.75	477.9	606.57	566.74	13.60	566.74			566.74			
3398		6/22/95	100	30.48	30.92	31.10	30.83	683.2	669.45	663.98	672.21	1.47	672.21			672.21			
3400		6/22/95	10	50.48	49.41	47.98	49.29	3000.04	3127.59	3306.78	3144.8	4.90	3144.8			3144.8			
3401		6/27/95	100	36.41	32.35	34.99	34.58	636.86	760.52	676.9	691.43	9.13	691.43			691.43			
3402		6/27/95	50	36.61	37.25	38.84	37.57	1262.83	1228.88	1150.17	1213.96	4.76	1213.96			1213.96			
3403		6/22/95	50	65.36	63.80	66.44	65.20	329.11	351.73	314.05	331.63	5.72	331.63			331.63			

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Hylebos Waterway Reproductive Toxicology in Flatfish - Reproductive Steroid RIAs

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	intra assay RSD	inter assay RSD	final comment
3404		6/27/95	50	27.53	24.42	23.40	25.12	1908.26	2237.67	2365.35	2170.43	10.87	2170.43			2170.43			
3405	R	6/27/95	50	55.09	68.09	59.76	60.98	601.15	348.27	497.89	482.44	26.35							
3405	R	7/18/95	50	72.08	49.05	44.93	55.35	223.54	682.88	823.76	576.73	54.42	753.32	13.22	a				D,R
3405	R	3/13/96	50	35.71	30.03	36.32	34.02	486.2	680.14	469.6	545.31	21.47	477.9	2.46	a				D,R
3407	R	6/22/95	10	84.49	85.38	81.99	83.95	584.81	546.55	696.99	609.45	12.83			A				
3407	R	7/14/95	50	62.89	50.38	61.63	58.30	567.34	863.57	592.87	674.59	24.33							
3407	R	7/18/95	50	53.31	51.43	51.38	52.04	473.41	522.31	523.74	506.49	5.66	506.49			506.49			
3408	R	6/22/95	10	80.64	76.28	71.86	76.26	759.77	978.11	1225.04	987.64	23.57							
3408	R	7/14/95	100	32.41	33.83	31.28	32.51	798.84	757.81	833.69	796.78	4.77	796.78			796.78			
3410		6/27/95	100	75.94	76.20	77.14	76.43	118.42	116.74	110.9	115.35	3.42	115.35			115.35			
3411		6/27/95	100	37.43	39.78	38.83	38.68	603.33	548.14	569.61	573.69	4.85	573.69			573.69			
3412	R	6/22/95	50	35.56	27.29	27.91	30.25	1091.6	1590.03	1542.37	1408	19.53	1408						D,R
3412	R	3/13/96	10	66.06	67.29	62.36	65.24	475.06	441.84	585.85	500.92	15.05	500.92						D,R
3413		6/27/95	100	26.53	27.03	24.04	25.87	983.17	959	1116.67	1019.62	8.33	1019.62			1019.62			
3414		6/27/95	10	71.37	72.75	70.69	71.60	1494.28	1396.57	1543.96	1478.27	5.07	1478.27			1478.27			
3415		6/27/95	10	66.15	66.26	68.44	66.95	1899.65	1889.93	1714.52	1834.7	5.68	1834.7			1834.7			
3466		6/22/95	10	59.41	58.88	64.69	60.99	2177.14	2226.36	1726.08	2043.19	13.50	2043.19			2043.19			
3467		6/22/95	10	80.11	75.90	74.44	76.82	763.9	985.25	1068.44	939.2	16.76	939.2			939.2			
3468		6/22/95	10	64.95	63.63	61.44	63.34	1674.64	1771.16	1940.62	1795.47	7.50	1795.47			1795.47			
3469	R	6/22/95	100	55.44	36.73	38.69	43.62	257.55	566.7	519.82	448.02	37.19							
3469	R	7/14/95	100	61.2	59.69	60.15	60.34	300.96	316.94	311.95	309.95	2.64	309.95			309.95			
3493		6/22/95	50	41.51	36.43	35.65	37.86	920.39	1148.53	1189.41	1086.11	13.35	1086.11			1086.11			

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	intra assay RSD	inter assay RSD	final comment
3494		6/22/95	50	29.81	31.52	29.16	30.16	1565.86	1440.74	1617.4	1541.34	5.89	1541.34			1541.34			
3496		6/22/95	50	15.59	17.58	17.01	16.73	3703.6	3192.44	3326.91	3407.65	7.78			B				
3497	R	7/10/95	100	49.68	37.03	36.14	40.95	338.2	604.03	630.53	524.25	30.84							
3497	R	7/18/95	50	39.7	46.32	46.91	44.31	973.24	682.95	662.03	772.74	22.51							
3497	R	3/13/96	50	26.61	30.57	31.28	29.49	847.15	657.84	629.99	711.66	16.60	711.66			711.66			
3498	R	7/10/95	100	19.71	20.19	16.77	18.89	1605.81	1552.74	2004.06	1720.87	14.33			B				
3498	R	3/13/96	50	20.3	26.22	18.60	21.71	1629.14	1093.52	1854.62	1525.76	25.62	1741.88	9.15	a	1741.88	9.15		a
3500	R	6/22/95	10	42.2	41.25	39.79	41.08	4470.3	4654.29	4954.07	4692.88	5.20	4692.88						D,R
3500	R	7/10/95	10	86.33	86.77	93.50	88.87	423.63	406.01	168.48	332.71	42.83			A				D,R
3500	R	7/18/95	50	72.38	75.11	72.12	73.20	219.71	187.37	222.97	210.01	9.37	210.01						D,R
3501	R	6/22/95	100	124.73	60.79	33.28	72.93	CNC	205.11	662.92	CNC								
3501	R	7/14/95	100	53.2			53.20	393.55			393.55								
3503	R	7/10/95	100	40.7	52.10	48.08	46.96	508.03	303.5	363.38	391.64	26.85							
3503	R	7/18/95	100	41.72	36.29	14.95	30.99	477.62	618.63	2341.25	1145.83	90.56							
3503	R	3/13/96	100	26.8	29.36	29.41	28.52	418.09	354.56	353.51	375.39	9.85	375.39			375.39			
3504	R	6/22/95	100	40.58	40.06	51.12	43.92	478.9	489.77	308.16	425.61	23.93							
3504	R	3/13/96	100	24.65	25.75	23.01	24.47	484.29	448.8	544.6	492.56	9.83	492.56			492.56			
3514		6/20/95	50	81.92	83.38	81.74	82.34	123.14	109.94	124.79	119.29	6.82			A				
3515		6/20/95	10	56.51	59.08	61.86	59.15	2470.6	2197.15	1930.33	2199.36	12.28	2199.36			2199.36			
3516		6/20/95	50	39.71	39.40	40.92	40.01	1052.34	1067.66	994.99	1038.33	3.69	1038.33			1038.33			
3518		6/21/95	10	37.85	33.50	34.17	35.18	6047.86	7435.87	7197.34	6893.69	10.77	6893.69			6893.69			
3520	R	6/21/95	50	86.09	88.11	86.37	86.86	96.51	79.29	94.07	89.96	10.36			A				

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	intra assay RSD	inter assay RSD	final comment
3520	R	7/18/95	100	86.22	82.60	85.45	84.76	41	56.09	44.05	47.05	16.96	33.9		A	33.9			A
3521		6/27/95	10	57.11	57.18	56.93	57.07	2771.7	2764.78	2791.66	2776.05	0.50	2776.05			2776.05			
3523		6/21/95	50	48.43	48.60	43.98	47.00	754.34	748.62	917.03	806.66	11.85	806.66			806.66			
3524		7/14/95	100	41.05	37.10	40.70	39.62	435.49	517.01	442.22	464.91	9.73	464.91			464.91			
3525		7/10/95	100	62.68	61.42	61.55	61.89	299.54	316.35	314.55	310.15	2.97	310.15			310.15			
3526	R	6/20/95	100	86.66	84.36	85.73	85.59	41.21	50.69	44.97	45.62	10.45			A				
3526	R	3/13/96	100	63.05	58.09	56.74	59.29	83.7	107.29	114.62	101.87	15.86	101.87			101.87			
3527		7/14/95	10	31.38	36.40	36.93	34.90	6724.03	5334.38	5209.02	5755.81	14.61	5755.81			5755.81			
3529	R	7/6/95	50	24.5	41.58	81.34	49.14	1856.43	878.21	156.19	963.61	88.56							
3529	R	7/14/95	100	22.59	24.78		23.69	1200.34	1086.51		1143.42	7.04	1143.42	7.04	a	1143.42	7.04		a
3529	R	3/13/96	100	12.92	11.24	10.99	11.71	1355.57	1666.75	1722.62	1581.65	12.50			B				
3530		7/6/95	100	45.83	49.08	55.05	49.99	372.37	328.94	261.78	321.03	17.36	321.03			321.03			
3531		7/6/95	100	19.63	21.78	19.71	20.37	1216.35	1073.76	1210.9	1167	6.92	1167			1167			
3532	R	7/6/95	100	71.71	77.15	66.87	71.91	130.88	99.63	162.63	131.04	24.04	146.75	15.30	a	146.75	15.30		a
3532	R	3/13/96	100	68.16	50.03	81.68	66.62	63.8	158.36	26.53	82.9	81.98							
3533		7/6/95	10	55.65	53.24	54.09	54.33	2557.68	2806.72	2716.41	2693.6	4.68	2693.6			2693.6			
3535		7/6/95	100	80.5	76.68	73.79	76.99	82.25	102.16	118.42	100.94	17.95	100.94			100.94			
3536	R	7/6/95	100	22.1	31.38	18.28	23.92	1054.91	669.34	1323.01	1015.75	32.35							
3536	R	7/18/95	50	35.48	32.70	33.57	33.92	1231.94	1449.4	1376.32	1352.55	8.18	1352.55			1352.55			
3537		6/21/95	10	49.35	48.04	49.40	48.93	3622.1	3835.4	3614.4	3690.63	3.40	3690.63			3690.63			
3538	R	7/6/95	50	17.64	17.80	18.62	18.02	2758.47	2729.31	2588.76	2692.18	3.37			B				
3538	R	3/13/96	10	44.9	45.37	28.56	39.61	2026.01	1980.65	4748.54	2918.4	54.31	2003.33	1.60	a	2003.33	1.60		a

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	intra assay RSD	inter assay RSD	final comment
3539		6/20/95	50	72.87	78.80	74.49	75.39	220.3	153.51	200.7	191.5	17.93	191.5			191.5			
3540	R	7/6/95	10	45.41	48.69	36.05	43.39	3784.29	3338.18	5482.79	4201.75	26.93							
3540	R	7/18/95	10	47.52	49.11	44.94	47.19	3659.19	3405.33	4116.32	3726.95	9.67	3726.95			3726.95			
3541		7/6/95	100	53.74	57.00	62.07	57.61	275.26	242.76	198.63	238.88	16.10	238.88			238.88			
3542		6/21/95	100	69.56	71.33	68.18	69.69	142.99	130.32	153.4	142.24	8.12	142.24			142.24			
3543		7/10/95	100	74.04	73.56	74.97	74.19	174.48	178.96	165.95	173.13	3.81	173.13			173.13			
3544		7/14/95	100	27.35	26.16	26.29	26.60	821.9	875.16	868.86	855.31	3.40	855.31			855.31			
3546		6/20/95	10	49.19	46.79	42.09	46.02	3428.39	3814.28	4714.62	3985.77	16.56	3985.77			3985.77			
3548		7/10/95	50	29.01	29.73	34.24	30.99	1816.16	1746.43	1384.7	1649.1	14.04	1649.1			1649.1			
3550	R	7/10/95	50	33.66	23.77	20.46	25.96	1425.41	2458.74	3049.11	2311.09	35.56	2753.93	7.58	a	2753.93	7.60		a
3550	R	7/18/95	50	16.86	15.42	17.65	16.64	3984.4	4493.07	3740.63	4072.7	9.43			B				
3550	R	3/13/96	50	9.37	33.31	12.83	18.50	4792.47	727.61	3138.46	2886.18	70.83			B				
3552		6/20/95	10	63.03	60.30	61.75	61.69	1826.52	2076.67	1940.96	1948.05	6.43	1948.05			1948.05			
3554	R	6/20/95	50	85.76	82.90	86.84	85.17	89.68	114.23	81.01	94.97	18.14			A				
3554	R	3/13/96	50	57.29	69.78	63.18	63.42	223.17	116.52	166.22	168.64	31.65							
3558		7/10/95	10	55.45	49.79	52.79	52.68	2609.09	3365.8	2942.76	2972.55	12.76	2972.55			2972.55			
3560		7/6/95	50	27.27	25.74	22.58	25.20	1617.61	1742.84	2054.81	1805.09	12.47	1805.09			1805.09			
3562		7/6/95	100	71	65.10	66.18	67.43	135.33	175.3	167.51	159.38	13.30	159.38			159.38			
3564	R	7/6/95	50	16.94	17.73	22.16	18.94	2889.76	2741.4	2102.71	2577.96	16.22			B				
3564	R	3/13/96	10	37.05	59.77	38.05	44.96	2990.61	987.41	2841.58	2273.2	49.09	2916.1	3.60	a	2916.1	3.60		a
3565		7/6/95	10	38.41	39.66	37.47	38.51	4980.26	4737.82	5172.26	4963.45	4.39	4963.45			4963.45			
3566	R	7/6/95	50	24.45	23.34	43.08	30.29	1860.98	1972.53	828.15	1553.88	40.61							

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Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	intra assay RSD	inter assay RSD	final comment
3566	R	7/18/95	10	72.8	70.19	70.47	71.15	1072.74	1240.24	1221.93	1178.3	7.80	1178.3			1178.3			
3567	R	7/6/95	10	45.79	31.28	31.26	36.11	3729.55	6723.6	6727.64	5726.93	30.20							
3567	R	7/18/95	10	46.87	46.33	47.12	46.77	3317.22	3413.71	3275.04	3335.33	2.13	3335.33			3086.28		11.00	C
3567	R	3/13/96	10	36.6	37.95	39.84	38.13	3059.73	2855.61	2596.35	2837.23	8.19	2837.23						
3568	R	7/10/95	50		30.23	33.48	31.86	CNC	1701.19	1438.11	1569.65	11.85	1569.65	11.85	a	1569.65	11.85		a
3568	R	7/18/95	100	15.1	16.42	17.09	16.20	2311.64	2064.58	1954.96	2110.39	8.66			B				
3568	R	3/13/96	50	17.64	19.34	18.97	18.65	2004.15	1750.38	1801.35	1851.96	7.25			B				
3569		7/10/95	10	47.52	49.57	50.19	49.09	3725.4	3399.24	3306.42	3477.02	6.33	3477.02			3477.02			
3572	R	6/20/95	100	92.41	100.64	95.18	96.08	20.49	CNC	11.95	CNC				A				
3572	R	3/13/96	100	90.74	83.15	82.22	85.37	10.34	23.5	25.39	19.74	41.54	15.05		A	15.05			A
3574		6/20/95	10	50.61	48.11	48.58	49.10	3217.11	3597.28	3522.14	3445.51	5.84	3445.51			3445.51			
3575		6/27/95	10	46.9	44.31	47.61	46.27	4154.18	4604.86	4038.55	4265.86	7.01	4265.86			4265.86			
3576		6/20/95	10	53.44	57.01	54.88	55.11	2836.05	2415.54	2659.17	2636.92	8.01	2636.92			2636.92			
3577		6/27/95	10	40.12	34.71	34.56	36.46	5454.96	6851.58	6895.7	6400.75	12.80	6400.75			6400.75			
3578	R	6/27/95	10	82.81	90.97	88.68	87.49	780.73	377.17	483.28	547.06	38.24			A				D,R
3578	R	7/18/95	50	80.83	82.68	79.62	81.05	128.22	111.44	139.82	126.49	11.28			A				D,R
3581		6/20/95	10	45.57	44.94	47.70	46.07	4029.71	4143.74	3662.64	3945.36	6.37	3945.36			3945.36			
3586		6/20/95	10	77.75	75.03	72.32	75.03	822.06	972.28	1135.98	976.77	16.07	976.77			976.77			
3587	R	6/20/95	50	91.33	94.63	93.82	93.26	48.15	27.15	32.04	35.78	30.71			A				
3587	R	3/13/96	100	27.34	32.27	73.14	44.25	510.55	384.98	47.83	314.45	76.10	447.77	19.80	a	447.77	19.80		a
3588		6/27/95	10	75.17	77.73	70.96	74.62	1233.73	1072.71	1524.09	1276.84	17.92	1276.84			1276.84			
3589		6/27/95	50	76.07	79.83	74.71	76.87	244.59	189.51	252.85	228.99	15.04	228.99			228.99			

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	intra assay RSD	inter assay RSD	final comment
3590		6/20/95	10	51.61	52.92	53.17	52.57	3077.79	2902.78	2870.73	2950.43	3.78	2950.43			2950.43			
3591	R	6/27/95	50	18.08	17.22	17.93	17.74	3257.71	3453.66	3291.64	3334.34	3.14			B				
3591	R	3/13/96	10	36.29	33.07	40.67	36.68	3108.64	3685.92	2492.06	3095.54	19.29	3095.54			3095.54			
3592		6/20/95	10	57.03	52.84	52.22	54.03	2412.99	2913.88	2995.79	2774.22	11.37	2774.22			2774.22			
3594	R	6/27/95	50	97.53	94.60	105.68	99.27	19.63	43.77	CNC	21.13	53.85			A				
3594	R	3/13/96	100	72.01	64.14	60.47	65.54	33.04	53.01	65.01	50.35	32.07	59	14.37	a	59	14.37		a
3595		6/21/95	10	20.53	22.14	23.30	21.99	15408.44	13876.74	12908.46	14064.55	8.96	14064.55			14064.55			
3596		6/20/95	10	58.34	53.42	57.61	56.45	2273.65	2839.01	2350.73	2487.8	12.32	2487.8			2487.8			
3598		6/21/95	100	92.65	90.15	88.90	90.57	22.21	31.5	36.43	30.05	24.03	35.2		A	35.2			A
3600		7/6/95	100	90.4	88.35	72.32	83.69	37.48	46.07	127.16	70.24	70.45	43.85		A	43.85			A
3602		6/21/95	10	60.99	60.47	57.54	59.67	2162.97	2215.32	2528.09	2302.13	8.58	2302.13			2302.13			
3603		7/10/95	100	92.42	96.22	98.14	95.59	20.27	8.89	3.94	11.03	75.90	35.15		A	35.15			A
3604	R	6/21/95	10	88.42	94.63	91.47	91.51	383.83	154.1	264.89	267.61	42.93			A				
3604	R	7/18/95	50	64.03	82.64	82.44	76.37	340.46	111.84	113.57	188.62	69.71							
3604	R	3/13/96	50	72.5	60.89	73.22	68.87	64	127.03	61.05	84.02	44.36	62.53	3.26	a	62.53	3.26		a
3605		7/10/95	100	101.36	95.89	90.61	95.95	CNC	9.82	26.37	CNC		35.15		A	35.15			A
3607	R	6/21/95	10	19.96	19.89	17.17	19.01	16007.57	16084.03	19590.79	17227.46	11.88			B				
3607	R	3/13/96	5	34.87	20.65	32.38	29.30	6696.31	15871.37	7652.13	10073.27	50.07	7174.22	9.42	a	7174.22	9.42		a
3615		7/10/95	10	27.88	28.09	29.22	28.40	9659.42	9548.37	8978.84	9395.54	3.89	9395.54			9395.54			
3616		7/10/95	10	27.04	25.46	28.15	26.88	10129.43	11101.06	9518.39	10249.63	7.79	10249.63			10249.63			
3617		7/10/95	10	39.98	38.34	37.06	38.46	5254.68	5675.75	6033.03	5654.48	6.89	5654.48			5654.48			
3618		6/20/95	100	69.37	73.08	65.90	69.45	133.13	108.85	158.85	133.61	18.71	133.61			133.61			

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	intra assay RSD	inter assay RSD	final comment
3628	R	6/20/95	10	8.38	9.14	8.13	8.55	47349.4	42540.31	49111.08	46333.6	7.34			B				
3628	R	3/13/96	5	27.12	21.93	24.04	24.36	10351.42	14488.63	12563.15	12467.73	16.60	12467.73			12467.73			
3629		6/20/95	10	58.85	63.86	59.76	60.82	2220.82	1755.12	2129.7	2035.21	12.13	2035.21			2035.21			
3630		6/21/95	10	20.23	20.41	20.92	20.52	15714.69	15531.28	15007.3	15417.76	2.38	15417.76			15417.76			
3631	R	6/27/95	100	64.59	45.33	43.54	51.16	205.22	439.87	471.83	372.3	39.10							
3631	R	7/18/95	100	46.96	47.10	45.47	46.51	375.48	373.04	401.81	383.44	4.16	383.44			383.44			
3632		6/22/95	50	72.58	75.84	79.32	75.91	235.94	197.77	160.75	198.15	18.97	198.15			198.15			
3633		6/21/95	50	48.95	44.08	47.33	46.78	737.32	913.08	791.54	813.98	11.06	813.98			813.98			
3634	R	6/27/95	100	71.17	79.39	77.33	75.96	153.17	99.61	112.05	121.61	23.19	116.83	5.78	a				D,R
3634	R	3/13/96	100	68.74	78.96	75.36	74.35	61.77	32.59	41.64	45.33	32.96	36.17	8.70	a				D,R
3635		6/27/95	100	88.31	82.32	87.13	85.92	51.93	82.9	57.74	64.19	25.64	47.8		A	47.8			A
3636		6/21/95	10	32.9	32.97	31.17	32.35	7658.37	7632.05	8354.24	7881.55	5.20	7881.55			7881.55			
3637		6/22/95	100	87.63	85.03	86.76	86.48	42.59	53.54	46.16	47.43	11.77	38.35		A	38.35			A
3639		6/27/95	100	93.12	91.02	87.74	90.63	29.54	39.09	54.7	41.11	30.89	47.8		A	47.8			A
3644		6/27/95	100	89.4	94.13	91.59	91.71	46.69	25.05	36.46	36.07	30.01	47.8		A	47.8			A
3645	R	6/20/95	10	27.45	24.54	24.61	25.53	9747.85	11537.89	11489.58	10925.1	9.33	10925.1						D,R
3645	R	3/13/96	5	36.94	33.53	32.98	34.49	5972.71	7191.23	7407.35	6870.71	10.92	6870.71						D,R
3647		6/20/95	10	42.44	43.33	48.07	44.62	4640.08	4457.15	3602.26	4233.17	13.09	4233.17			4233.17			
3648		7/14/95	100	47.36	51.20	49.66	49.41	334.37	285.32	304.02	307.9	8.04	307.9			307.9			
3649		6/20/95	100	89.68	88.34	93.82	90.61	29.84	34.74	32.04	32.2	7.62	35.2		A	35.2			A
3650		6/22/95	10	36.4	37.77	36.26	36.81	5750.91	5411.03	5786.14	5649.36	3.67	5649.36			5649.36			
3651	R	7/10/95	100	76.16	73.74	62.81	70.91	155.33	177.26	297.82	210.14	36.51							

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Hylebos Waterway Reproductive Toxicology in Flatfish - Reproductive Steroid RIAs

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	Intra assay RSD	Inter assay RSD	final comment
3651	R	7/18/95	100	74.92	75.07	74.92	74.97	94.76	93.91	94.76	94.48	0.52	94.48			94.48			
3652		6/22/95	10	49.6	46.72	43.20	46.51	3282.54	3698.12	4284.45	3755.04	13.41	3755.04			3755.04			
3653		6/27/95	10	22.92	23.01	22.99	22.97	12146.13	12083.29	12098.95	12109.46	0.27	12109.46			12109.46			
3654		6/28/95	50	32.59	30.79	30.54	31.31	1580.86	1723.43	1745.13	1683.14	5.30	1683.14			1683.14			
3655		6/27/95	10	25.88	25.88	27.20	26.32	10365.5	10369.64	9696.74	10143.96	3.82	10143.96			10143.96			
3656		6/28/95	10	26.21	24.26	23.98	24.82	10886.06	12122.16	12313.05	11773.76	6.58	11773.76			11773.76			
3657	R	6/28/95	10	95.46	94.69	95.30	95.15	157.07	186.6	163.29	168.98	9.21			A				
3657	R	7/14/95	100	67.79	68.83	65.90	67.51	237.5	228.39	254.75	240.22	5.57	240.22			240.22			
3658		6/27/95	10	23.13	24.43	21.32	22.96	12005.43	11183.7	13309.78	12166.3	8.81	12166.3			12166.3			
3659		6/28/95	10	29.4	30.36	29.84	29.87	9229.09	8799.95	9028.16	9019.07	2.38	9019.07			9019.07			
3660		6/27/95	10	61.27	64.97	58.98	61.74	2338.8	1999.34	2570.45	2302.86	12.47	2302.86			2302.86			
3661	R	6/21/95	50	80.87	88.75	83.38	84.33	146.28	74.1	121.3	113.9	32.19			A				
3661	R	7/18/95	100	68.98	69.74	69.89	69.54	132.34	127.07	126.05	128.49	2.63	128.49			128.49			
3662		6/22/95	10	51.17	45.08	44.79	47.02	3075.44	3959.46	4007.63	3680.85	14.26	3680.85			3680.85			
3663		6/22/95	10	52.06	54.47	52.96	53.16	2963.91	2681.37	2856.26	2833.84	5.03	2833.84			2833.84			
3664		6/21/95	10	46.25	40.44	40.80	42.50	4148.32	5370.58	5284.92	4934.61	13.83	4934.61			4934.61			
3666		6/22/95	100	76.18	79.11	76.28	77.19	97.01	81.44	96.43	91.63	9.63	91.63			91.63			
3667	R	6/21/95	50	19.15	19.96	16.96	18.69	3386.15	3201.51	3981.83	3523.16	11.57			B				
3669		7/10/95	10	35.56	37.71	37.00	36.76	9330.08	8491.09	8755.34	8858.84	4.84	8858.84			8858.84			
3670		6/21/95	10	25.18	25.74	25.44	25.45	11547.44	11178.71	11376.85	11367.67	1.62	11367.67			11367.67			
3671		6/21/95	50	82.82	80.46	84.69	82.66	126.74	150.48	.109.1	128.77	16.12			A				
3672	R	6/21/95	100	61.77	70.90	64.01	65.56	208.66	133.39	188	176.69	22.01							D

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Hylebos Waterway Reproductive Toxicology in Flatfish - Reproductive Steroid RIAs

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	intra assay RSD	inter assay RSD	final comment
3672	R	3/13/96	100	54.01	56.74	62.49	57.75	91.69	79.43	58.17	76.43	22.19							D
3681	R	6/22/95	10	19.57	16.49	17.95	18.01	13927.19	17281.3	15549.86	15586.12	10.76			B				
3681	R	3/13/96	5	43.97	20.47	42.98	35.81	4238.61	16088.88	4446.97	8258.15	82.13	4342.79	3.39	a	4342.79	3.39		a
3682		6/22/95	10	20.95	20.82	19.32	20.36	12747.56	12857.03	14158.14	13254.24	5.92	13254.24			13254.24			
3683		7/14/95	10	29.46	33.55	29.60	30.87	7382.94	6071.67	7331.05	6928.55	10.72	6928.55			6928.55			
3684	R	6/21/95	10	18.47	17.65	19.20	18.44	17777.31	18888.72	16880.96	17849	5.64			B				
3684	R	2/13/96	5	31.62	33.81	29.71	31.71	7981.96	7086.18	8886.22	7984.79	11.27	7984.79			7984.79			
3685		6/22/95	100	72.26	72.50	71.91	72.22	119.9	118.41	122.1	120.14	1.54	120.14			120.14			
3687	R	7/10/95	10	18.95	17.58	19.46	18.66	22424.73	24628.19	21687.99	22913.64	6.68			B				
3687	R	3/13/96	5	40.49	33.10	32.63	35.40	5028.27	7362.18	7551.66	6647.37	21.14	7456.92	1.80	a	7456.92	1.80		a
3688		6/22/95	10	33.83	34.49	34.36	34.23	6463.23	6268	6305.03	6345.42	1.63	6345.42			6345.42			
3689		7/10/95	100	78.83	81.68	77.19	79.23	132.88	110.56	146.46	129.97	13.95	129.97			129.97			
3690		6/22/95	50	69.86	68.16	69.95	69.32	270.61	293.85	269.44	277.97	4.95	277.97			277.97			
3716		6/21/95	100	65.54	64.99	72.21	67.58	174.71	179.4	124.3	159.47	19.16	159.47			159.47			
3717		6/28/95	10	24.39	24.79	25.02	24.73	12030.54	11765.99	11620.45	11805.66	1.76	11805.66			11805.66			
3719	R	6/28/95	50	82.83	75.91	82.29	80.34	145.05	225.68	150.79	173.84	25.88			A				
3719	R	7/14/95	100	78.78	70.20	74.03	74.34	149.17	216.53	185.2	183.63	18.35	183.63			183.63			
3720		6/21/95	100	75.83	76.59	73.10	75.17	101.21	96.69	118.4	105.43	10.87	105.43			105.43			
3722		6/21/95	10	28.97	28.11	29.21	28.77	9362.46	9801.79	9245.86	9470.04	3.10	9470.04			9470.04			
3724		6/28/95	100	92.54	83.60	92.64	89.60	27.18	68.46	26.79	40.81	58.68	43.85		A	43.85			A
3725	R	6/21/95	50	91.49	85.55	79.47	85.50	52.82	101.33	160.97	105.04	51.57			A				
3725	R	7/18/95	100	81.34	78.84	81.72	80.63	61.74	73.75	60.04	65.18	11.46	33.9		A	33.9			A

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	Intra assay RSD	Inter assay RSD	final comment
3726	R	6/28/95	50	84.26	89.74	83.19	85.73	130.14	78.19	141.27	116.54	28.89			A				
3726	R	7/14/95	50	92.01	43.40	91.64	75.68	117.95	1087.02	122.76	442.58	126.10			A				
3726	R	7/18/95	50	80.39	83.48	84.95	82.94	88.71	67.49	58.34	71.51	21.78			A				
3726	R	3/13/96	100	53.11	47.47	53.93	51.50	96.11	128.99	92.08	105.73	19.15	105.73			105.73			
3732		6/21/95	100	36.97	37.83	37.30	37.37	630.05	605.37	620.47	618.63	2.01	618.63			618.63			
3737	R	6/22/95	50	74.91	86.46	74.30	78.56	208.31	94.87	215.28	172.82	39.11							
3737	R	7/14/95	100	70.2	62.60	69.85	67.55	216.53	286.61	219.53	240.89	16.45	240.89			240.89			
3738		6/22/95	100	84.61	83.47	80.16	82.75	55.37	60.46	76.15	63.99	16.93	38.35		A	38.35			A
3739	R	6/28/95	10	14.79	15.86	16.59	15.75	22895.55	21027.64	19886.53	21269.91	7.14			B				
3739	R	3/13/96	5	21.95	26.36	25.86	24.72	14464.12	10842.89	11185.02	12164.01	16.44	12164.01			12164.01			
3740	R	6/21/95	50	71.49	79.54	77.61	76.21	258.51	160.3	181.59	200.13	25.82							
3740	R	7/18/95	100	70.94	74.28	71.00	72.08	119.05	98.41	118.67	112.04	10.54	112.04			112.04			
3741		6/22/95	100	95.8	89.75	92.73	92.76	12.7	34.2	23.2	23.37	46.02	38.35		A	38.35			A
3742	R	6/22/95	100	60.31	85.90	74.42	73.55	209.37	49.77	106.98	122.04	66.25							
3742	R	7/14/95	100	64.61	67.65	75.53	69.26	266.89	238.79	173.58	226.4	21.16	252.84	7.90	a	252.84	7.90		a
3743		6/21/95	100	41.34	44.57	42.22	42.71	515.7	446.66	495.78	486.05	7.31	486.05			486.05			
3744		6/28/95	10	30.36	28.76	26.57	28.56	8799.95	9534.66	10682.98	9672.53	9.81	9672.53			9672.53			
3745		6/22/95	100	84.21	82.46	84.92	83.86	57.14	65.11	54	58.75	9.75	38.35		A	38.35			A
3756	R	7/14/95	100	62.25	83.53	82.27	76.02	290.1	115.51	124.25	176.62	55.70							
3756	R	7/18/95	100	83.95	83.01	86.32	84.43	50.26	54.26	40.65	48.39	14.46	33.9		A	33.9			A
3761	R	7/10/95	50	89.93	98.82	92.66	93.80	108.73	11.11	76.4	65.41	76.02			A				
3761	R	7/18/95	100	74.75	103.18	73.42	83.78	95.73	CNC	103.51	CNC		99.62	5.52	a	99.62	5.52		a

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	intra assay RSD	inter assay RSD	final comment
3762		7/10/95	100	55.3	53.68	52.57	53.85	409.25	437.49	457.91	434.88	5.62	434.88			434.88			
3764	R	7/14/95	100	82.32	78.97	82.96	81.42	123.89	147.74	119.44	130.36	11.68			A				
3764	R	3/13/96	100	73.95	77.73	79.53	77.07	29.07	22.2	19.31	23.53	21.29	20.76	9.84	a	20.76	9.80		a
3766	R	7/14/95	100	89.03	75.01	72.88	78.98	34.52	96.37	108.05	79.65	49.61							
3766	R	7/18/95	100	82.57	81.62	86.52	83.57	36.7	39.97	24.67	33.78	23.86	22.8		A	22.8			A
3768		7/10/95	100	72.51	77.64	77.90	76.02	188.97	142.71	140.5	157.39	17.39	157.39			157.39			
3769		7/10/95	100	75.25	77.57	73.01	75.28	163.45	143.29	184.09	163.61	12.47	163.61			163.61			
3771		7/14/95	100	92.73	90.18	84.95	89.29	54.24	70.95	105.78	76.99	34.15	69.95		A	69.95			A
3775		7/14/95	100	99.54	81.31	84.66	88.50	5.32	131	107.73	81.35	82.20	69.95		A	69.95			A
3780	R	7/10/95	50	105.05	103.20	101.32	103.19	CNC	CNC	CNC	CNC				A				
3780	R	7/18/95	100	87.12	94.54	106.51	96.05	37.56	12.96	CNC	CNC		33.9		A	33.9			A
3781	R	7/10/95	10	107.17	107.23	113.61	109.34	CNC	CNC	CNC	CNC				A				
3781	R	7/18/95	100	86.18	87.25	86.63	86.69	41.18	37.07	39.41	39.22	5.26	33.9		A	33.9			A
3783		7/10/95	100	106.91	102.66	103.93	104.50	CNC	CNC	CNC	CNC		60.15		A	60.15			A
3793	R	7/14/95	50	61.96	51.35	50.91	54.74	362.39	567.13	577.54	502.35	24.15							
3793	R	3/13/96	50	47.68	54.64	51.15	51.16	255.08	177.43	212.92	215.14	18.07	215.14			215.14			
3794		7/10/95	100	76.14	73.24	74.76	74.71	155.57	181.97	167.84	168.46	7.84	168.46			168.46			
3795		7/10/95	100	98.54	102.42	103.54	101.50	6.88	CNC	CNC	CNC		60.15		A	60.15			A
3803		7/14/95	100	79.45	89.08	75.12	81.22	144.27	78.22	176.66	133.05	37.71	69.95		A	69.95			A
3805		7/14/95	100	93.03	93.42	74.67	87.04	52.22	49.67	180.17	94.02	79.37	69.95		A	69.95			A
3806	R	7/14/95	100	76.44	67.84	90.91	78.40	88.98	138.76	27.81	85.18	65.24							
3806	R	7/18/95	100	74.92	71.79	79.87	75.52	67.17	82.85	46.3	65.44	28.02							

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Hylebos Waterway Reproductive Toxicology in Flatfish - Reproductive Steroid RIAs

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	Intra assay RSD	Inter assay RSD	final comment
3806	R	3/13/96	100	64.31	63.35	71.06	66.24	52.53	55.45	35.1	47.69	23.07	53.99	3.83	a	53.99	3.80		a
3829		7/14/95	100	89.42	89.15	80.82	86.46	33.09	34.1	67.93	45.04	44.02	35.7		A	35.7			A
3830		7/14/95	100	67.49	73.92	73.82	71.75	141.04	102.25	102.81	115.37	19.27	115.37			115.37			
3831		7/14/95	100	66.52	62.09	70.94	66.52	147.56	180.12	119.33	149.01	20.41	149.01		s	149.01			s
3832	R	7/14/95	100	47.26	56.41	60.18	54.62	335.69	229.72	195.76	253.72	28.77							
3832	R	7/18/95	100	55.8	54.33	54.02	54.72	251.17	268.7	272.49	264.12	4.31	264.12			264.12			
3834		7/14/95	100	63.71	65.90	64.89	64.83	167.67	151.87	159.02	159.52	4.96	159.52			159.52			
3835		7/14/95	100	48.06	56.89	54.90	53.28	465.93	348.3	372.17	395.46	15.72	395.46			395.46			
3836		7/14/95	100	99.87	76.91	84.23	87.00	1.92	162.99	110.67	91.86	89.45	69.95		A	69.95			A
3838	R	7/14/95	100	81.17	77.20	84.57	80.98	131.97	160.88	108.36	133.73	19.67	69.95		A				D,R
3838	R	3/13/96	100	81.45	81.44	79.07	80.65	16.47	16.49	20.03	17.66	11.61	9.25		A				D,R
3839		7/14/95	100	72.84	80.14	75.59	76.19	108.28	71.02	93.34	90.88	20.63	90.88		s	90.88			s
3840	R	7/14/95	50	67.82	76.29	56.28	66.80	277.7	179.47	461.92	306.37	46.80							
3840	R	7/18/95	50	66.03	63.42	63.33	64.26	235.83	273.81	275.25	261.63	8.54	261.63			261.63			
3841	R	7/10/95	100	81.89	80.82	77.40	80.04	108.99	117.08	144.76	123.61	15.17	123.61		B%	123.61			B%
3841.	R	3/13/96	100	50.82	59.37	54.77	54.99	108.31	69.01	88.12	88.48	22.21							
3842		7/10/95	100	70.62	69.29	65.93	68.61	207.78	221.56	259.23	229.53	11.60	229.53			229.53			
3843		7/10/95	100	91.08	89.52	88.00	89.54	47.43	56.9	66.51	56.94	16.75	60.15		A	60.15			A
3844		7/14/95	100	48.57	56.76	52.23	52.52	318.02	226.41	273.36	272.59	16.81	272.59			272.59			
3845		7/14/95	100	55.15	53.25	50.37	52.92	369.12	392.96	431.97	398.02	7.97	398.02			398.02			
3846		7/14/95	100	55.38	62.92	62.57	60.29	366.25	283.41	286.87	312.18	15.01	312.18			312.18			
3847	R	7/14/95	100	56.76	70.75	64.21	63.90	349.82	211.95	270.79	277.52	24.93							

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.

Table 3. Plasma 17-β estradiol concentrations(pg/ml Plasma). Hylebos Waterway Reproductive Toxicology in Flatfish.

specimen #	re-runs	test date	sample volume (µl)	B% rep1	B% rep2	B% rep3	B% avg	E2 (pg/ml) rep1	E2 (pg/ml) rep2	E2 (pg/ml) rep3	E2 (pg/ml) avg	RSD	E2 (pg/ml) adjusted	RSD	com-ment	E2 (pg/ml) final	intra assay RSD	inter assay RSD	final comment
3847	R	3/13/96	100	46.73	48.87	34.36	43.32	134.05	119.87	262.55	172.16	45.66	126.96	7.90	a	126.96	7.90		a
3848	R	7/14/95	10	19.65	91.29	96.58	69.17	12829.14	265.02	95.44	4396.54	166.12							
3848	R	7/18/95	50	66.38	71.91	72.46	70.25	231	164.41	158.61	184.67	21.78	161.51	2.54	a	157.59		3.50	C
3848	R	3/13/96	100	42.5	45.93	30.69	39.71	167.56	139.77	326.48	211.27	47.68	153.66	12.79	a				
3855	R	7/14/95	100	62.12	57.39	28.45	49.32	179.91	220.48	776.64	392.34	84.98	200.19	10.13	a	215.39		10.00	C
3855	R	7/18/95	100	54.02	53.59	61.71	56.44	227.98	233.19	150.69	203.96	22.65	230.59	1.60	a				

A=below effective concentrations of the assay ; B=above effective concentrations of the assay; C=average of 2 or more runs; D=Delete; R=run to run RSD of outside limit; a=outlier taken out; s=within run RSD slightly above limit; B%=B% slightly above limit; CNC=could not calculate.