

開発成果報告書

ダイオキシン類分析用 模擬排水認証標準物質 (第4ロット)

JSAC 0321-4

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公益社団法人 日本分析化学会

1. はじめに

ダイオキシン類分析用模擬排水標準物質(JSAC 0321-3)の在庫が僅少となったため、第4ロットとなる JSAC 0321-4 の開発・作製を行った。今回は認証のための共同実験を行わず、技能試験のデータをもとに認証値を決定した。

その理由としては、技能試験に参加する全ての試験所が MLAP(特定計量証明事業者認定制度)の認定事業者であり、能力のある試験所とみなされるので、認証共同実験試験所としてふさわしいと考えた。

このため(公社)日本分析化学会で実施した技能試験の結果をもとにして、同学会の標準物質委員会が検討を行って成分濃度の認証値を決定した。本開発報告書はその経緯をまとめたものである。

2. 技能試験の実施と標準物質用試料作製・認証の経緯

2. 1 概要

ISO/IEC 17043 に基づく技能試験 第21回ダイオキシン類分析(模擬排水)が、2019年6月～9月にわたり、(公社)日本分析化学会の主催で行われた。標準物質用の試料の作製と均質性試験も同時に行われた。これらの結果は上記技能試験の「最終報告書」^(文献1)(2019年11月22日)にまとめられているので参照いただきたい。

試料量3L入り220瓶が作製され120瓶が技能試験用に使用され、残り100瓶(50セット)が標準物質用に頒布される予定である。

2. 2 認証値決定のための統計計算の経緯

認証値決定のための共同実験は行わず、第21回ダイオキシン類分析(模擬排水)技能試験のデータをベースにして認証を行った。従って、試験所の個々の値は文献1を参照いただきたい。

全ての技能試験参加試験所が MLAP(特定計量証明事業者認定制度)の認定事業者であるが、認証値を決めるためには認証のために行う共同実験と同じように、技能試験結果から外れ値を見分け、それを除外したうえで平均値や標準偏差を求めることが必要である。

表-1及び表-2は第21回ダイオキシン類分析技能試験結果及び統計計算結果で、「最終報告書」に同じく表-1及び表-2として掲載されたものである。この表-1技能試験結果の統計計算において、まずロバスト法 z スコアの絶対値が3以上となったもの(#マーク)を除外した。また、下記の4試験所については、多くの z スコアの絶対値が3以上となり、分析法に問題があると委員会で判定された試験所の値は、 z スコアの絶対値が3未満でも、同様に除外した。

試験所 10, 52: 各々12、36の項目で z スコアの絶対値が3以上であり、下記項目の値のバイアスが大きい。TEQの値が大きい。

試験所 46: TEQへの寄与率が大きい2,3,4,7,8-PeCDFなどの値は良好で、そのためTEQは正常である。しかし、9個の項目で z スコアの絶対値が3以上であった。

試験所 50: TEQ値は良好だが、各項目の値のバイアスがプラスマイナスにばらつき、8個の項目で z スコアの絶対値が3以上であった。

この結果をもとに、採用した報告値の一覧を表-3に、統計計算結果を表-4に示す。

2. 3 認証値の決定

上記の検討により表-4のAverageとU95%を用い、有効数字を考慮したものを標準物質の認証値と不確かさとした。

不確かさを伴った認証値 : Average±U95%

毒性等量(TEQ)の合計値は、TEQの技能試験データから求めた平均値ではなく、各異性体のTEQの和を用いて認証値とした。PCDD及びPCDFの合計値も同様である(表-4の黄色シャドー部分参照)。

2. 4 認証値表の利用の仕方

この認証標準物質には認証値の不確かさと所間(室間)標準偏差とが表示されている。所間標準偏差は技能試験に参加した試験所(外れ値を除いた後)の測定値の平均値(認証値)を基準として求めた標準偏差である。

認証値±の後に記された不確かさは、平均値の不確かさであり、試験所においてこの標準物質を分析した場合にこの不確かさの範囲に入ることが要求するものではない。

一般に、試験所において標準物質を分析すると、認証値との差が所間標準偏差の2倍以内にあることが望ましい。これは、例えば技能試験でzスコアの絶対値が2以下に入ることと同等である。

$$z \text{ スコア} = (\text{試験所の値} - \text{認証値}) / \text{所間標準偏差}$$

3. 認証書

以上の結果より JSAC 0321-4 の認証書を作成した。

以上

表-1

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

定量値単位 : pg/L

分析所番号	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16	17
PCDD Isomer(異性体)																
2,3,7,8-TeCDD	0.885	0.667	0.629	0.668	0.490	0.773	0.614	0.573	0.784	0.876	0.917	0.591	0.757	0.812	0.967	0.672
z score	2.203	-0.279	-0.706	-0.268	-2.288	0.928	-0.882	-1.343	1.053	2.100	2.573	-1.144	0.746	1.377	3.136	-0.216
															#	
1,2,3,7,8-PeCDD	4.365	3.430	4.045	3.435	3.710	4.080	4.095	3.430	3.955	4.865	4.025	4.090	4.170	3.915	4.725	4.330
z score	1.177	-1.507	0.258	-1.492	-0.703	0.359	0.402	-1.507	0.000	2.612	0.201	0.387	0.617	-0.115	2.210	1.076
1,2,3,4,7,8-HxCDD	3.950	3.515	3.760	3.350	3.395	3.785	3.820	3.135	4.040	4.235	4.375	3.910	4.075	4.400	4.705	3.670
z score	0.667	-0.652	0.091	-1.152	-1.016	0.167	0.273	-1.804	0.940	1.531	1.955	0.546	1.046	2.031	2.956	-0.182
1,2,3,6,7,8-HxCDD	7.865	7.540	7.990	7.305	7.780	8.905	8.340	7.490	8.005	9.240	8.460	8.355	8.470	9.485	8.460	8.595
z score	-0.083	-0.535	0.090	-0.862	-0.202	1.363	0.577	-0.605	0.111	1.829	0.744	0.598	0.758	2.169	0.744	0.932
1,2,3,7,8,9-HxCDD	6.000	5.245	5.480	5.040	5.325	6.210	5.465	5.075	5.915	6.675	6.170	5.565	6.610	6.050	6.465	6.380
z score	0.740	-0.791	-0.314	-1.207	-0.629	1.166	-0.345	-1.136	0.568	2.110	1.085	-0.142	1.978	0.842	1.684	1.511
1,2,3,4,6,7,8-HpCDD	44.50	43.25	43.00	42.40	40.65	48.30	45.10	40.15	43.90	54.20	42.90	42.45	42.10	45.55	43.75	48.45
z score	0.578	0.096	0.000	-0.231	-0.906	2.043	0.809	-1.098	0.347	4.317	-0.039	-0.212	-0.347	0.983	0.289	2.101
										#						
OCDD	76.35	73.85	77.35	74.25	77.80	86.80	79.20	68.05	73.70	90.95	82.05	78.65	78.95	75.95	83.40	80.45
z score	0.000	-0.511	0.204	-0.429	0.296	2.136	0.583	-1.696	-0.542	2.984	1.165	0.470	0.531	-0.082	1.441	0.838
PCDF Isomer(異性体)																
2,3,7,8-TeCDF	6.195	6.510	6.495	5.765	5.725	6.370	6.605	6.725	6.250	7.835	7.895	6.425	6.025	6.365	7.490	6.900
z score	-0.378	0.302	0.270	-1.305	-1.392	0.000	0.507	0.766	-0.259	3.161	3.291	0.119	-0.744	-0.011	2.417	1.144
										#	#					
1,2,3,7,8-PeCDF(単独分離)	10.55	10.02	10.55	9.56	10.15	10.25	11.00	9.45		12.45	12.10	9.81		9.67	10.85	11.40
z score	0.000	-0.541	0.000	-1.000	-0.404	-0.303	0.455	-1.112		1.920	1.566	-0.753		-0.889	0.303	0.859
1,2,3,7,8-PeCDF(他と重なり)									23.85				24.55			
z score									0.387				0.658			
2,3,4,7,8-PeCDF	21.50	20.70	21.75	19.95	19.25	21.90	23.45	20.10	22.55	24.25	21.80	21.30	25.50	17.80	21.20	22.20
z score	0.480	0.000	0.630	-0.450	-0.869	0.719	1.649	-0.360	1.109	2.128	0.660	0.360	2.878	-1.739	0.300	0.899
1,2,3,4,7,8-HxCDF(単独分離)	26.50	24.85	27.95	25.35	25.25	28.65	27.90	24.25		30.95	30.85	25.40		26.40	28.75	29.70
z score	0.000	-0.674	0.593	-0.470	-0.511	0.879	0.572	-0.920		1.819	1.778	-0.450		-0.041	0.920	1.308
1,2,3,4,7,8-HxCDF(他と重なり)									30.600				29.700			
z score									0.863				0.308			
1,2,3,6,7,8-HxCDF	25.35	24.40	27.15	24.90	25.95	29.50	27.30	24.65	26.40	33.30	30.50	25.80	27.10	23.65	29.15	28.65
z score	-0.444	-0.795	0.222	-0.610	-0.222	1.090	0.277	-0.702	-0.055	2.495	1.460	-0.277	0.203	-1.072	0.961	0.776
1,2,3,7,8,9-HxCDF	1.605	1.815	1.555	1.650	1.530	1.925	1.560	1.420	1.760	1.900	1.490	1.545	1.715	1.245	1.360	1.845
z score	-0.093	0.884	-0.326	0.116	-0.442	1.395	-0.302	-0.954	0.628	1.279	-0.628	-0.372	0.419	-1.768	-1.233	1.023
2,3,4,6,7,8-HxCDF(単独分離)	41.75	38.35		37.20	37.20	42.55			43.20	46.45		42.85	45.25	38.75		42.20
z score	0.431	-0.545		-0.875	-0.875	0.660			0.847	1.780		0.746	1.435	-0.431		0.560
2,3,4,6,7,8-HxCDF(他と重なり)			44.85				46.15	41.65			50.65				45.40	
z score			-0.140				0.207	-0.993			1.406				0.007	

表-1

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

定量値単位 : pg/L

分析所番号	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16	17
1,2,3,4,6,7,8-HpCDF	144.5	141.5	144.5	131.0	134.5	157.0	158.0	145.5	139.5	169.5	155.0	147.0	143.0	135.5	140.0	149.0
z score	0.568	0.142	0.568	-1.349	-0.852	2.343	2.485	0.710	-0.142	4.118	2.059	0.923	0.355	-0.710	-0.071	1.207
										#						
1,2,3,4,7,8,9-HpCDF	14.15	14.30	14.55	13.30	13.65	16.40	15.10	14.95	15.75	16.55	16.50	15.30	14.65	13.50	15.85	15.60
z score	-0.450	-0.315	-0.090	-1.214	-0.899	1.574	0.405	0.270	0.989	1.709	1.664	0.585	0.000	-1.034	1.079	0.854
OCDF	133.5	129.5	131.5	124.5	119.5	142.0	142.0	117.5	108.0	158.5	141.5	135.0	131.0	110.5	127.5	145.5
z score	0.327	0.000	0.164	-0.409	-0.818	1.022	1.022	-0.981	-1.758	2.371	0.981	0.450	0.123	-1.553	-0.164	1.308
TEQ Dioxin	26.032	23.881	26.122	23.357	23.442	26.805	27.036	23.818	26.882	29.925	28.095	25.461	28.268	23.993	27.614	26.996
z score	0.312	-0.679	0.353	-0.920	-0.881	0.668	0.774	-0.708	0.703	2.104	1.262	0.049	1.341	-0.627	1.040	0.756
DD Homologue(同族体)																
TeCDDs	94.4	84.6	94.2	93.0	90.4	118.5	82.1	92.9	106.5	118.5	110.0	94.6	102.5	79.6	114.5	111.5
z score	-0.048	-0.989	-0.072	-0.187	-0.432	2.266	-1.234	-0.192	1.114	2.266	1.450	-0.029	0.730	-1.469	1.882	1.594
PeCDDs	104.0	93.1	99.1	95.6	96.1	109.0	94.8	93.6	99.5	119.0	105.0	98.6	103.5	103.0	114.5	109.5
z score	0.688	-0.754	0.033	-0.430	-0.364	1.349	-0.529	-0.694	0.093	2.672	0.820	-0.033	0.622	0.555	2.076	1.415
HxCDDs	101.0	89.4	96.6	96.8	94.0	107.5	98.6	95.3	100.5	114.0	100.0	106.5	108.0	109.0	107.0	102.2
z score	0.265	-1.017	-0.227	-0.199	-0.509	0.984	0.000	-0.365	0.210	1.703	0.155	0.874	1.039	1.150	0.929	0.393
HpCDDs	87.2	86.0	87.4	87.8	79.5	96.9	88.1	85.5	86.2	105.0	84.5	83.5	86.8	86.4	87.9	96.6
z score	0.201	-0.067	0.245	0.323	-1.516	2.364	0.390	-0.178	-0.033	4.170	-0.401	-0.635	0.100	0.022	0.346	2.285
										#						
OCDD(再掲)	76.4	73.9	77.4	74.3	77.8	86.8	79.2	68.1	73.7	91.0	82.1	78.7	79.0	76.0	83.4	80.5
z score	0.000	-0.511	0.204	-0.429	0.296	2.136	0.583	-1.696	-0.542	2.984	1.165	0.470	0.531	-0.082	1.441	0.838
Total PCDDs	463.0	427.0	454.5	447.3	437.8	518.7	442.7	435.3	466.4	547.5	481.6	461.8	479.7	454.0	507.3	500.2
z score	0.273	-0.905	-0.003	-0.239	-0.552	2.099	-0.390	-0.632	0.385	3.040	0.882	0.234	0.822	-0.021	1.724	1.491
										#						
DF Homologue(同族体)																
TeCDFs	327.0	305.0	320.5	320.5	317.5	363.0	338.0	339.0	329.5	402.0	355.0	327.5	337.0	285.5	379.0	345.0
z score	0.107	-0.835	-0.171	-0.171	-0.300	1.649	0.578	0.621	0.214	3.319	1.306	0.128	0.535	-1.670	2.334	0.878
										#						
PeCDFs	328.0	300.5	318.5	311.5	301.0	354.0	334.5	294.0	344.0	366.5	365.0	312.5	353.5	295.5	334.0	366.5
z score	0.526	-0.438	0.193	-0.053	-0.420	1.437	0.753	-0.666	1.086	1.875	1.822	-0.018	1.419	-0.613	0.736	1.875
HxCDFs	290.0	271.5	289.5	279.0	279.0	331.5	296.0	283.5	309.5	342.5	320.0	294.5	311.5	281.0	306.5	313.0
z score	-0.071	-0.947	-0.095	-0.592	-0.592	1.893	0.213	-0.379	0.852	2.414	1.349	0.142	0.947	-0.497	0.710	1.018
HpCDFs	217.5	206.0	216.0	194.0	196.5	234.0	230.0	214.0	235.0	246.0	225.0	216.5	235.0	195.5	210.0	222.0
z score	0.506	-0.270	0.405	-1.079	-0.911	1.619	1.349	0.270	1.686	2.428	1.012	0.438	1.686	-0.978	0.000	0.809
OCDF(再掲)	133.5	129.5	131.5	124.5	119.5	142.0	142.0	117.5	108.0	158.5	141.5	135.0	131.0	110.5	127.5	145.5
z score	0.327	0.000	0.164	-0.409	-0.818	1.022	1.022	-0.981	-1.758	2.371	0.981	0.450	0.123	-1.553	-0.164	1.308
Total PCDFs	1296.0	1212.5	1276.0	1229.5	1213.5	1424.5	1340.5	1248.0	1326.0	1515.5	1406.5	1286.0	1368.0	1168.0	1357.0	1392.0
z score	0.324	-0.577	0.108	-0.394	-0.567	1.711	0.804	-0.194	0.648	2.693	1.516	0.216	1.101	-1.058	0.982	1.360
Total Homologues	1759.0	1639.5	1730.5	1676.8	1651.3	1943.2	1783.2	1683.3	1792.4	2063.0	1888.1	1747.8	1847.7	1622.0	1864.3	1892.2
z score	0.261	-0.836	0.000	-0.493	-0.728	1.953	0.484	-0.433	0.568	3.052	1.446	0.158	1.076	-0.996	1.228	1.484
										#						

表-1

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

定量値単位 : pg/L

分析所番号	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16	17
DL-PCB																
3,4,4',5'-TeCB(#81)	7.455	7.715	7.590	7.795	7.100	7.835	7.730	7.295	8.570	9.870	8.345	7.980	8.220	6.240	10.950	7.710
z score	-0.350	0.324	0.000	0.532	-1.271	0.636	0.363	-0.765	2.542	5.915	1.959	1.012	1.634	-3.502	8.716	0.311
										#				#	#	
3,3',4,4'-TeCB(#77)	39.95	42.25	39.80	43.00	37.85	43.85	43.00	37.25	43.50	53.00	46.40	42.40	42.10	33.90	50.20	41.35
z score	0.000	0.757	-0.049	1.004	-0.691	1.283	1.004	-0.888	1.168	4.294	2.122	0.806	0.707	-1.991	3.372	0.461
										#					#	
3,3',4,4',5'-PeCB(#126)	40.05	40.45	38.45	41.20	40.20	44.40	41.10	40.45	38.50	49.40	42.55	38.65	41.15	34.75	46.20	47.15
z score	-0.256	-0.120	-0.803	0.137	-0.205	1.229	0.102	-0.120	-0.785	2.937	0.598	-0.734	0.120	-2.066	1.844	2.169
3,3',4,4',5,5'-HxCB(#169)	12.15	13.05	13.20	12.00	12.50	13.70	12.85	14.10	12.65	13.45	13.60	13.75	13.25	12.10	12.90	14.00
z score	-0.920	0.184	0.368	-1.104	-0.491	0.981	-0.061	1.472	-0.307	0.674	0.858	1.042	0.429	-0.981	0.000	1.349
2',3,4,4',5'-PeCB(#123)	2.985	2.635	2.555	2.990	2.525	2.890	2.820	2.595	2.840	3.305	2.765	2.450	2.995	1.970	4.175	3.035
z score	0.943	-0.195	-0.455	0.959	-0.553	0.634	0.406	-0.325	0.471	1.983	0.228	-0.796	0.975	-2.357	4.811	1.105
															#	
2,3',4,4',5'-PeCB(#118)	15.95	17.05	15.90	18.05	15.95	17.20	16.45	11.85	22.05	23.15	14.15	17.80	19.35	13.00	21.50	15.05
z score	-0.125	0.565	-0.157	1.192	-0.125	0.659	0.188	-2.698	3.702	4.392	-1.255	1.035	2.008	-1.976	3.357	-0.690
									#	#					#	
2,3,3',4,4'-PeCB(#105)	18.60	19.20	17.80	19.80	18.30	20.25	18.70	17.20	18.70	23.30	17.20	20.85	19.95	15.15	22.10	20.00
z score	-0.073	0.365	-0.656	0.802	-0.292	1.130	0.000	-1.094	0.000	3.354	-1.094	1.568	0.911	-2.589	2.479	0.948
										#						
2,3,4,4',5'-PeCB(#114)	4.355	4.200	4.055	4.480	4.125	4.630	3.985	4.115	4.580	5.070	4.440	4.240	4.200	3.250	6.000	4.470
z score	0.492	0.056	-0.351	0.843	-0.155	1.265	-0.548	-0.183	1.124	2.501	0.731	0.169	0.056	-2.614	5.115	0.815
															#	
2,3',4,4',5,5'-HxCB(#167)	7.860	7.815	7.330	7.820	7.100	8.445	7.390	7.595	6.800	7.895	7.920	7.780	7.380	6.435	8.490	7.410
z score	0.480	0.398	-0.480	0.407	-0.896	1.539	-0.371	0.000	-1.440	0.543	0.588	0.335	-0.389	-2.100	1.621	-0.335
2,3,3',4,4',5'-HxCB(#156)	22.55	21.35	20.70	20.15	20.75	21.85	21.40	20.95	21.70	24.50	21.70	20.60	24.10	17.55	21.15	21.40
z score	0.804	0.115	-0.258	-0.574	-0.230	0.402	0.144	-0.115	0.316	1.923	0.316	-0.316	1.693	-2.067	0.000	0.144
2,3,3',4,4',5'-HxCB(#157)	11.10	10.10	10.35	9.13	9.95	10.40	10.40	9.91	10.45	11.85	11.35	10.60	10.27	9.20	10.60	10.75
z score	1.463	-0.163	0.244	-1.739	-0.414	0.325	0.325	-0.471	0.406	2.682	1.869	0.650	0.114	-1.625	0.650	0.894
2,3,3',4,4',5,5'-HpCB(#189)	18.90	17.80	17.65	17.70	18.50	19.40	18.85	17.50	18.25	20.70	18.90	18.05	17.75	14.55	19.30	19.85
z score	0.827	-0.131	-0.261	-0.218	0.479	1.262	0.783	-0.392	0.261	2.393	0.827	0.087	-0.174	-2.959	1.175	1.654
TEQ DL-PCB	4.379	4.446	4.250	4.490	4.404	4.861	4.505	4.477	4.240	5.355	4.673	4.287	4.522	3.846	5.019	5.145
z score	-0.336	-0.105	-0.779	0.045	-0.250	1.321	0.098	0.000	-0.815	3.020	0.675	-0.651	0.157	-2.169	1.863	2.296
										#						
TEQ DXN + DL-PCB	30.411	28.327	30.372	27.847	27.846	31.666	31.541	28.294	31.122	35.280	32.768	29.748	32.790	27.839	32.633	32.141
z score	0.259	-0.663	0.241	-0.875	-0.876	0.814	0.758	-0.677	0.573	2.412	1.301	-0.034	1.311	-0.879	1.241	1.024

表-1

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

定量値単位 : µg/L

分析所番号	18	19	20	21	22	23	24	25	27	28	29	30	31	32	33	34	
PCDD Isomer(異性体)																	
2,3,7,8-TeCDD	0.668	0.745	0.709	0.666	0.794	0.659	0.776	0.555	0.641	0.732	0.702	0.779	0.723	0.584	0.658	0.550	
z score	-0.268	0.615	0.199	-0.290	1.173	-0.364	0.962	-1.548	-0.575	0.461	0.120	0.996	0.364	-1.218	-0.376	-1.605	
1,2,3,7,8-PeCDD	3.870	3.660	4.350	3.615	4.035	3.650	4.445	4.120	3.810	3.655	3.660	3.465	4.430	3.555	3.785	3.700	
z score	-0.244	-0.847	1.134	-0.976	0.230	-0.875	1.406	0.474	-0.416	-0.861	-0.847	-1.406	1.363	-1.148	-0.488	-0.732	
1,2,3,4,7,8-HxCDD	3.360	3.525	3.560	3.530	3.240	3.520	3.940	3.690	3.635	3.620	3.220	3.310	4.460	3.435	3.650	3.300	
z score	-1.122	-0.621	-0.515	-0.606	-1.485	-0.637	0.637	-0.121	-0.288	-0.333	-1.546	-1.273	2.213	-0.894	-0.243	-1.304	
1,2,3,6,7,8-HxCDD	8.445	7.900	7.895	7.755	7.190	7.330	8.635	7.925	8.060	7.450	7.220	7.285	9.295	7.075	7.735	7.600	
z score	0.723	-0.035	-0.042	-0.236	-1.022	-0.827	0.987	0.000	0.188	-0.661	-0.980	-0.890	1.905	-1.182	-0.264	-0.452	
1,2,3,7,8,9-HxCDD	5.215	5.805	5.735	5.495	5.260	5.210	5.635	5.955	5.805	5.210	5.040	4.915	6.180	4.800	5.335	5.650	
z score	-0.852	0.345	0.203	-0.284	-0.761	-0.862	0.000	0.649	0.345	-0.862	-1.207	-1.461	1.106	-1.694	-0.609	0.030	
1,2,3,4,6,7,8-HpCDD	41.35	42.50	39.60	42.80	40.95	41.50	43.55	44.00	42.20	45.80	41.50	43.05	49.70	39.10	44.10	42.40	
z score	-0.636	-0.193	-1.310	-0.077	-0.790	-0.578	0.212	0.385	-0.308	1.079	-0.578	0.019	2.582	-1.503	0.424	-0.231	
OCDD	73.20	79.45	74.00	75.50	72.60	71.55	74.95	78.25	72.45	78.75	75.90	71.40	94.60	67.35	76.90	74.90	
z score	-0.644	0.634	-0.480	-0.174	-0.766	-0.981	-0.286	0.388	-0.797	0.491	-0.092	-1.012	3.730	-1.840	0.112	-0.296	
													#				
PCDF Isomer(異性体)																	
2,3,7,8-TeCDF	6.670	6.855	6.105	5.950	6.075	5.110	6.695	5.780	5.850	6.315	6.285	5.530	6.675	5.760	6.045	5.000	
z score	0.647	1.047	-0.572	-0.906	-0.637	-2.719	0.701	-1.273	-1.122	-0.119	-0.183	-1.813	0.658	-1.316	-0.701	-2.956	
1,2,3,7,8-PeCDF(単独分離)	11.35	10.60	10.33	9.98			11.05	11.50	9.56	10.90	8.72	10.90	10.25	9.27	11.50	9.55	
z score	0.808	0.051	-0.227	-0.576			0.505	0.960	-1.005	0.354	-1.854	0.354	-0.303	-1.298	0.960	-1.010	
1,2,3,7,8-PeCDF(他と重なり)					16.62	21.85											
z score					-2.414	-0.387											
2,3,4,7,8-PeCDF	19.20	20.25	21.00	19.65	19.45	19.65	19.60	20.65	19.65	20.75	20.30	20.15	23.55	17.95	20.75	21.05	
z score	-0.899	-0.270	0.180	-0.630	-0.749	-0.630	-0.660	-0.030	-0.630	0.030	-0.240	-0.330	1.709	-1.649	0.030	0.210	
1,2,3,4,7,8-HxCDF(単独分離)	29.65	27.50	23.55	26.80			25.80	25.50	25.60	27.90	24.40	24.95	29.75	23.25	26.40	24.05	
z score	1.288	0.409	-1.206	0.123			-0.286	-0.409	-0.368	0.572	-0.858	-0.634	1.329	-1.329	-0.041	-1.002	
1,2,3,4,7,8-HxCDF(他と重なり)					24.850	28.700											
z score					-2.683	-0.308											
1,2,3,6,7,8-HxCDF	29.15	27.25	26.55	26.50	21.85	25.45	26.85	26.00	24.80	27.40	24.45	25.90	29.00	23.50	27.20	24.15	
z score	0.961	0.259	0.000	-0.018	-1.737	-0.407	0.111	-0.203	-0.647	0.314	-0.776	-0.240	0.905	-1.127	0.240	-0.887	
1,2,3,7,8,9-HxCDF	1.320	1.905	1.425	1.575	1.355	1.495	1.845	1.450	1.705	1.675	1.820	1.525	1.740	1.415	1.540	1.400	
z score	-1.419	1.302	-0.930	-0.233	-1.256	-0.605	1.023	-0.814	0.372	0.233	0.907	-0.465	0.535	-0.977	-0.395	-1.047	
2,3,4,6,7,8-HxCDF(単独分離)			42.80	40.05			37.95	39.55		38.25	43.15	35.85	41.90	44.05	39.40	41.00	37.00
z score			0.732	-0.057			-0.660	-0.201		-0.574	0.832	-1.263	0.474	1.091	-0.244	0.215	-0.933
2,3,4,6,7,8-HxCDF(他と重なり)	45.95	45.10			40.65				48.25								
z score	0.153	-0.073			-1.259				0.766								

表-1

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

定量値単位 : pg/L

分析所番号	18	19	20	21	22	23	24	25	27	28	29	30	31	32	33	34
1,2,3,4,6,7,8-HpCDF	136.0	145.5	125.5	142.5	110.0	144.5	138.5	143.0	124.5	135.5	133.0	136.0	164.5	131.0	145.0	134.0
z score	-0.639	0.710	-2.130	0.284	-4.331	0.568	-0.284	0.355	-2.272	-0.710	-1.065	-0.639	3.408	-1.349	0.639	-0.923
					#								#			
1,2,3,4,7,8,9-HpCDF	13.50	15.20	13.75	14.35	15.45	14.65	14.55	15.00	13.25	13.50	13.70	14.30	16.10	14.45	14.85	14.45
z score	-1.034	0.495	-0.809	-0.270	0.719	0.000	-0.090	0.315	-1.259	-1.034	-0.854	-0.315	1.304	-0.180	0.180	-0.180
OCDF	134.0	137.0	118.5	124.0	122.0	126.5	131.0	130.0	123.5	136.0	120.5	120.5	146.5	114.5	129.0	138.5
z score	0.368	0.613	-0.899	-0.450	-0.613	-0.245	0.123	0.041	-0.491	0.531	-0.736	-0.736	1.390	-1.226	-0.041	0.736
TEQ Dioxin	25.585	25.479	25.277	24.297	23.932	24.402	25.355	25.752	23.861	25.223	23.482	24.138	28.016	22.566	25.005	23.639
z score	0.106	0.057	-0.036	-0.487	-0.655	-0.439	0.000	0.183	-0.688	-0.061	-0.862	-0.560	1.225	-1.284	-0.161	-0.790
DD Homologue(同族体)																
TeCDDs	77.0	88.9	92.6	88.0	95.1	91.3	95.2	82.7	92.1	96.4	95.7	98.6	102.0	91.2	98.1	77.9
z score	-1.723	-0.576	-0.221	-0.667	0.014	-0.346	0.024	-1.171	-0.274	0.144	0.072	0.355	0.677	-0.355	0.302	-1.637
PeCDDs	91.2	96.7	106.5	93.5	95.9	96.8	99.4	103.5	92.5	93.5	92.3	96.0	108.5	89.2	99.0	87.3
z score	-1.012	-0.278	1.018	-0.701	-0.384	-0.271	0.079	0.622	-0.833	-0.701	-0.860	-0.370	1.283	-1.276	0.020	-1.521
HxCDDs	91.7	98.4	98.2	98.0	92.6	98.9	101.9	96.9	100.0	96.6	88.3	91.8	113.5	88.5	94.8	94.5
z score	-0.768	-0.022	-0.050	-0.066	-0.663	0.028	0.365	-0.188	0.149	-0.227	-1.144	-0.752	1.648	-1.122	-0.420	-0.453
HpCDDs	82.5	87.0	79.8	84.4	79.9	85.2	85.5	89.5	85.3	90.0	75.0	88.4	97.9	75.7	88.5	83.2
z score	-0.847	0.156	-1.460	-0.435	-1.438	-0.245	-0.178	0.714	-0.234	0.825	-2.520	0.457	2.586	-2.375	0.479	-0.702
OCDD(再掲)	73.2	79.5	74.0	75.5	72.6	71.6	75.0	78.3	72.5	78.8	75.9	71.4	94.6	67.4	76.9	74.9
z score	-0.644	0.634	-0.480	-0.174	-0.766	-0.981	-0.286	0.388	-0.797	0.491	-0.092	-1.012	3.730	-1.840	0.112	-0.296
													#			
Total PCDDs	415.5	450.5	451.0	439.3	436.0	443.7	456.9	450.9	442.2	455.2	427.1	446.2	516.5	411.8	457.2	417.7
z score	-1.282	-0.136	-0.118	-0.501	-0.609	-0.359	0.075	-0.123	-0.406	0.020	-0.900	-0.277	2.025	-1.401	0.083	-1.208
DF Homologue(同族体)																
TeCDFs	315.5	314.5	345.5	314.5	375.5	303.0	331.5	299.0	305.5	332.0	299.0	292.0	367.0	261.0	321.0	278.5
z score	-0.385	-0.428	0.899	-0.428	2.184	-0.921	0.300	-1.092	-0.814	0.321	-1.092	-1.392	1.820	-2.719	-0.150	-1.970
PeCDFs	319.5	341.5	312.5	301.5	266.0	312.0	311.5	328.5	298.0	327.0	289.5	312.0	337.5	266.0	328.5	287.0
z score	0.228	0.999	-0.018	-0.403	-1.647	-0.035	-0.053	0.543	-0.526	0.491	-0.823	-0.035	0.858	-1.647	0.543	-0.911
HxCDFs	298.5	300.5	282.5	288.0	298.5	291.0	292.0	291.0	276.5	307.5	290.0	291.0	323.5	263.0	282.0	287.5
z score	0.331	0.426	-0.426	-0.166	0.331	-0.024	0.024	-0.024	-0.710	0.757	-0.071	-0.024	1.515	-1.349	-0.450	-0.189
HpCDFs	198.0	214.5	186.5	206.0	162.5	208.5	217.0	216.5	182.0	214.0	195.5	221.5	240.0	194.5	214.0	199.5
z score	-0.809	0.304	-1.585	-0.270	-3.204	-0.101	0.472	0.438	-1.889	0.270	-0.978	0.776	2.023	-1.045	0.270	-0.708
					#											
OCDF(再掲)	134.0	137.0	118.5	124.0	122.0	126.5	131.0	130.0	123.5	136.0	120.5	120.5	146.5	114.5	129.0	138.5
z score	0.368	0.613	-0.899	-0.450	-0.613	-0.245	0.123	0.041	-0.491	0.531	-0.736	-0.736	1.390	-1.226	-0.041	0.736
Total PCDFs	1265.5	1308.0	1245.5	1234.0	1224.5	1241.0	1283.0	1265.0	1185.5	1316.5	1194.5	1237.0	1414.5	1099.0	1274.5	1191.0
z score	-0.005	0.453	-0.221	-0.345	-0.448	-0.270	0.183	-0.011	-0.869	0.545	-0.772	-0.313	1.603	-1.802	0.092	-0.809
Total Homologues	1681.0	1758.5	1696.5	1673.3	1660.5	1684.7	1739.9	1715.9	1627.7	1771.7	1621.6	1683.2	1931.0	1510.8	1731.7	1608.7
z score	-0.455	0.257	-0.312	-0.525	-0.643	-0.421	0.086	-0.134	-0.944	0.378	-1.000	-0.435	1.840	-2.017	0.011	-1.118

表-1

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

定量値単位 : pg/L

分析所番号	18	19	20	21	22	23	24	25	27	28	29	30	31	32	33	34
DL-PCB																
3,4,4',5-TeCB(#81)	7.690	7.920	7.350	7.645	9.420	7.660	7.760	7.525	7.470	7.565	7.315	6.740	7.565	6.200	7.265	6.650
z score	0.259	0.856	-0.623	0.143	4.747	0.182	0.441	-0.169	-0.311	-0.065	-0.713	-2.205	-0.065	-3.606	-0.843	-2.439
					#									#		
3,3',4,4'-TeCB(#77)	40.05	40.05	37.80	41.35	50.65	37.85	41.90	39.00	38.60	39.65	39.50	38.05	41.85	37.40	40.30	35.05
z score	0.033	0.033	-0.707	0.461	3.521	-0.691	0.642	-0.313	-0.444	-0.099	-0.148	-0.625	0.625	-0.839	0.115	-1.612
					#											
3,3',4,4',5-PeCB(#126)	41.95	37.60	42.70	40.65	44.45	38.20	41.75	38.60	39.45	41.45	41.35	34.15	43.90	34.30	40.50	38.00
z score	0.393	-1.093	0.649	-0.051	1.247	-0.888	0.324	-0.751	-0.461	0.222	0.188	-2.271	1.059	-2.220	-0.102	-0.956
3,3',4,4',5,5'-HxCB(#169)	12.80	13.05	10.65	13.10	14.55	12.15	12.00	12.70	12.40	12.40	12.50	12.70	14.15	12.55	12.70	12.60
z score	-0.123	0.184	-2.759	0.245	2.023	-0.920	-1.104	-0.245	-0.613	-0.613	-0.491	-0.245	1.533	-0.429	-0.245	-0.368
2',3,4,4',5-PeCB(#123)	2.420	2.955	2.655	3.035	3.060	2.585	2.820	2.390	2.695	2.115	2.870	2.385	2.915	2.390	2.415	2.350
z score	-0.894	0.845	-0.130	1.105	1.186	-0.358	0.406	-0.991	0.000	-1.885	0.569	-1.008	0.715	-0.991	-0.910	-1.121
2,3',4,4',5-PeCB(#118)	16.45	16.90	15.55	17.40	22.65	11.90	16.90	13.10	13.10	17.70	16.15	15.20	15.90	20.90	15.00	14.80
z score	0.188	0.471	-0.376	0.784	4.078	-2.667	0.471	-1.914	-1.914	0.973	0.000	-0.596	-0.157	2.980	-0.722	-0.847
					#											
2,3,3',4,4'-PeCB(#105)	18.55	18.95	18.05	20.15	21.55	16.15	18.75	16.40	16.50	20.70	19.30	16.65	18.90	18.75	17.40	17.50
z score	-0.109	0.182	-0.474	1.057	2.078	-1.859	0.036	-1.677	-1.604	1.458	0.438	-1.495	0.146	0.036	-0.948	-0.875
2,3,4,4',5-PeCB(#114)	4.060	4.285	4.620	4.470	4.300	3.890	4.750	4.090	3.595	5.095	4.695	4.025	4.315	3.790	3.920	3.350
z score	-0.337	0.295	1.237	0.815	0.337	-0.815	1.602	-0.253	-1.644	2.571	1.447	-0.436	0.379	-1.096	-0.731	-2.333
2,3',4,4',5,5'-HxCB(#167)	7.085	7.800	6.920	8.070	7.675	6.785	7.555	6.445	7.045	7.925	7.720	7.185	7.670	7.300	7.425	7.700
z score	-0.923	0.371	-1.222	0.860	0.145	-1.467	-0.072	-2.082	-0.996	0.598	0.226	-0.742	0.136	-0.534	-0.308	0.190
2,3,3',4,4',5'-HxCB(#156)	19.70	21.00	22.00	21.60	22.55	21.20	22.90	19.75	19.55	19.60	20.40	22.65	24.45	19.90	20.30	19.30
z score	-0.832	-0.086	0.488	0.258	0.804	0.029	1.005	-0.804	-0.918	-0.890	-0.431	0.861	1.894	-0.718	-0.488	-1.062
2,3,3',4,4',5'-HxCB(#157)	8.98	10.50	10.30	9.98	11.75	10.55	9.08	9.77	9.67	9.92	10.12	10.20	10.42	9.75	9.71	9.35
z score	-1.983	0.488	0.163	-0.358	2.519	0.569	-1.828	-0.699	-0.870	-0.455	-0.130	0.000	0.358	-0.731	-0.796	-1.381
2,3,3',4,4',5,5'-HpCB(#189)	16.75	17.95	17.35	18.40	19.60	17.45	17.10	16.75	17.30	18.30	17.50	17.30	20.00	16.80	17.75	18.15
z score	-1.044	0.000	-0.522	0.392	1.436	-0.435	-0.740	-1.044	-0.566	0.305	-0.392	-0.566	1.784	-1.001	-0.174	0.174
TEQ DL-PCB	4.588	4.161	4.598	4.468	1.248	4.193	4.545	4.250	4.326	4.526	4.519	3.805	4.824	3.815	4.440	4.186
z score	0.383	-1.085	0.418	-0.031	-11.099	-0.974	0.233	-0.780	-0.519	0.171	0.146	-2.310	1.194	-2.274	-0.126	-0.998
					#											
TEQ DXN + DL-PCB	30.173	29.640	29.875	28.764	25.180	28.595	29.899	30.002	28.187	29.749	28.001	27.943	32.840	26.381	29.445	27.825
z score	0.153	-0.082	0.022	-0.470	-2.055	-0.544	0.032	0.078	-0.725	-0.034	-0.807	-0.833	1.333	-1.524	-0.169	-0.885

表-1

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

定量値単位 : pg/L

分析所番号	35	36	38	39	40R	41	42	43	44	45	46	48	49	50	51	52
PCDD Isomer(異性体)																
2,3,7,8-TeCDD	0.652	0.759	0.686	0.750	0.723	0.622	0.690	1.127	0.659	0.689	0.789	0.691	0.875	1.025	0.777	0.859
z score	-0.444	0.768	-0.057	0.672	0.359	-0.785	-0.017	4.963	-0.370	-0.023	1.116	0.000	2.089	3.797	0.979	1.907
								#						#		
1,2,3,7,8-PeCDD	3.745	4.070	3.730	4.000	3.765	3.920	4.110	3.495	3.780	4.085	4.090	3.790	4.470	4.670	3.865	5.435
z score	-0.603	0.330	-0.646	0.129	-0.545	-0.100	0.445	-1.320	-0.502	0.373	0.387	-0.474	1.478	2.052	-0.258	4.248
																#
1,2,3,4,7,8-HxCDD	3.410	3.960	3.545	3.850	3.255	3.730	3.770	3.230	3.880	4.070	5.035	3.850	4.075	4.845	3.725	4.940
z score	-0.970	0.697	-0.561	0.364	-1.440	0.000	0.121	-1.516	0.455	1.031	3.956	0.364	1.046	3.380	-0.015	3.668
											#			#		#
1,2,3,6,7,8-HxCDD	7.890	9.005	7.860	8.300	7.260	8.290	8.090	7.015	8.345	9.150	10.140	7.795	8.750	7.210	7.135	10.630
z score	-0.049	1.502	-0.090	0.522	-0.925	0.508	0.229	-1.266	0.584	1.704	3.080	-0.181	1.147	-0.994	-1.099	3.762
											#			#		#
1,2,3,7,8,9-HxCDD	5.625	6.460	5.495	5.800	5.475	5.160	5.400	4.355	5.960	5.670	7.330	5.640	5.970	7.195	5.455	7.575
z score	-0.020	1.674	-0.284	0.335	-0.325	-0.964	-0.477	-2.597	0.659	0.071	3.438	0.010	0.680	3.165	-0.365	3.935
											#			#		#
1,2,3,4,6,7,8-HpCDD	42.25	48.10	41.90	44.30	41.40	44.80	43.40	37.65	46.90	41.85	47.45	41.75	49.20	45.25	46.65	54.55
z score	-0.289	1.966	-0.424	0.501	-0.617	0.694	0.154	-2.062	1.503	-0.443	1.715	-0.482	2.390	0.867	1.407	4.452
																#
OCDD	75.55	83.80	74.05	80.85	74.60	77.40	74.75	67.90	80.25	75.30	99.40	77.40	81.60	69.90	81.30	102.50
z score	-0.164	1.523	-0.470	0.920	-0.358	0.215	-0.327	-1.727	0.797	-0.215	4.711	0.215	1.073	-1.318	1.012	5.345
											#					#
PCDF Isomer(異性体)																
2,3,7,8-TeCDF	6.450	6.370	6.520	6.570	6.050	6.900	6.165	4.720	6.405	6.710	6.185	6.495	7.485	4.595	7.290	7.800
z score	0.173	0.000	0.324	0.432	-0.690	1.144	-0.442	-3.560	0.076	0.734	-0.399	0.270	2.406	-3.830	1.985	3.086
								#						#		#
1,2,3,7,8-PeCDF(単独分離)	9.77	12.00	10.40	11.00	9.13	10.04	10.55	7.86	11.15	10.90	11.55	9.72	10.60	7.04	11.50	13.30
z score	-0.793	1.465	-0.152	0.455	-1.435	-0.515	0.000	-2.718	0.606	0.354	1.010	-0.844	0.051	-3.552	0.960	2.779
														#		
1,2,3,7,8-PeCDF(他と重なり)																
z score																
2,3,4,7,8-PeCDF	18.70	20.95	19.70	21.75	18.40	21.95	20.00	19.00	21.85	21.90	20.40	19.45	24.60	18.60	22.20	26.05
z score	-1.199	0.150	-0.600	0.630	-1.379	0.749	-0.420	-1.019	0.689	0.719	-0.180	-0.749	2.338	-1.259	0.899	3.208
																#
1,2,3,4,7,8-HxCDF(単独分離)	24.80	30.35	25.30	28.20	24.90	27.15	26.45	22.85	28.55	28.45	31.50	25.40	28.40	29.95	31.20	35.85
z score	-0.695	1.574	-0.491	0.695	-0.654	0.266	-0.020	-1.492	0.838	0.797	2.044	-0.450	0.777	1.410	1.921	3.822
																#
1,2,3,4,7,8-HxCDF(他と重なり)																
z score																
1,2,3,6,7,8-HxCDF	25.20	30.15	24.90	28.00	22.70	26.70	26.85	22.75	28.30	26.95	28.70	24.50	28.85	18.70	29.30	37.00
z score	-0.499	1.331	-0.610	0.536	-1.423	0.055	0.111	-1.404	0.647	0.148	0.795	-0.758	0.850	-2.901	1.016	3.862
																#
1,2,3,7,8,9-HxCDF	1.565	1.795	1.585	1.700	1.480	1.670	1.600	3.505	2.865	1.700	2.425	1.640	1.625	2.685	1.535	2.400
z score	-0.279	0.791	-0.186	0.349	-0.674	0.209	-0.116	8.745	5.768	0.349	3.721	0.070	0.000	4.931	-0.419	3.605
								#	#		#			#		#
2,3,4,6,7,8-HxCDF(単独分離)		45.60			40.25	38.15		36.15	42.55				46.20	32.55		57.50
z score		1.536			0.000	-0.603		-1.177	0.660				1.708	-2.210		4.951
																#
2,3,4,6,7,8-HxCDF(他と重なり)	41.30		42.60	45.35			46.00			47.15	48.65	43.75			50.85	
z score	-1.086		-0.739	-0.007			0.167			0.473	0.873	-0.433			1.459	

表-1

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

定量値単位 : pg/L

分析所番号	35	36	38	39	40R	41	42	43	44	45	46	48	49	50	51	52
1,2,3,4,6,7,8-HpCDF	139.5	155.0	140.0	145.5	138.5	143.0	140.5	114.0	147.5	145.0	138.5	138.0	154.0	137.5	149.5	188.5
z score	-0.142	2.059	-0.071	0.710	-0.284	0.355	0.000	-3.763	0.994	0.639	-0.284	-0.355	1.917	-0.426	1.278	6.816
								#								#
1,2,3,4,7,8,9-HpCDF	15.10	15.00	14.15	15.55	13.25	14.05	14.40	12.90	15.20	14.65	16.30	14.15	17.40	16.55	15.95	17.80
z score	0.405	0.315	-0.450	0.809	-1.259	-0.540	-0.225	-1.574	0.495	0.000	1.484	-0.450	2.473	1.709	1.169	2.833
OCDF	122.5	138.5	122.0	140.0	127.0	132.0	126.5	112.0	133.5	133.5	173.5	122.0	138.5	120.0	132.5	163.0
z score	-0.572	0.736	-0.613	0.858	-0.204	0.204	-0.245	-1.431	0.327	0.327	3.597	-0.613	0.736	-0.777	0.245	2.739
											#					
TEQ Dioxin	23.952	27.090	24.438	26.502	23.410	25.285	25.592	22.715	26.174	26.734	27.446	24.513	28.450	24.309	27.481	33.565
z score	-0.646	0.799	-0.422	0.528	-0.895	-0.032	0.109	-1.215	0.377	0.635	0.963	-0.387	1.425	-0.482	0.979	3.780
																#
DD Homologue(同族体)																
TeCDDs	96.3	95.9	94.9	105.5	95.7	93.9	103.0	74.4	85.1	102.0	86.6	96.8	105.5	110.0	111.5	117.0
z score	0.130	0.091	0.000	1.018	0.077	-0.096	0.778	-1.968	-0.941	0.682	-0.797	0.178	1.018	1.450	1.594	2.122
PeCDDs	94.9	113.0	95.4	107.0	99.9	97.3	108.5	86.2	99.5	112.0	97.4	98.8	119.5	132.5	98.0	131.0
z score	-0.522	1.878	-0.450	1.084	0.139	-0.198	1.283	-1.666	0.093	1.746	-0.185	0.000	2.738	4.457	-0.112	4.259
													#			#
HxCDDs	92.0	119.0	93.1	105.5	98.6	97.5	100.9	85.6	100.0	110.0	114.5	102.5	115.5	117.0	95.3	129.0
z score	-0.735	2.256	-0.614	0.763	0.000	-0.122	0.254	-1.437	0.155	1.261	1.758	0.431	1.869	2.035	-0.370	3.361
																#
HpCDDs	83.7	100.9	81.1	86.3	81.9	89.5	84.7	75.0	92.8	87.7	95.1	84.0	98.0	90.3	91.1	110.5
z score	-0.580	3.255	-1.159	0.000	-0.992	0.714	-0.357	-2.520	1.449	0.301	1.951	-0.513	2.609	0.881	1.059	5.396
		#														#
OCDD(再掲)	75.6	83.8	74.1	80.9	74.6	77.4	74.8	67.9	80.3	75.3	99.4	77.4	81.6	69.9	81.3	102.5
z score	-0.164	1.523	-0.470	0.920	-0.358	0.215	-0.327	-1.727	0.797	-0.215	4.711	0.215	1.073	-1.318	1.012	5.345
											#					#
Total PCDDs	442.3	512.6	438.5	485.2	450.6	455.6	471.9	389.1	457.7	487.0	493.0	459.5	520.1	519.7	477.1	590.0
z score	-0.403	1.897	-0.527	1.000	-0.131	0.033	0.565	-2.145	0.100	1.059	1.256	0.159	2.145	2.130	0.735	4.433
																#
DF Homologue(同族体)																
TeCDFs	309.5	360.0	328.0	345.5	321.0	320.5	324.5	243.5	345.0	337.5	321.5	320.0	387.5	337.0	326.0	378.0
z score	-0.642	1.520	0.150	0.899	-0.150	-0.171	0.000	-3.469	0.878	0.557	-0.128	-0.193	2.698	0.535	0.064	2.291
								#								
PeCDFs	301.5	369.5	304.0	333.5	282.5	321.0	322.5	267.5	329.5	305.0	296.0	306.5	363.0	313.0	343.5	455.0
z score	-0.403	1.980	-0.315	0.718	-1.069	0.280	0.333	-1.594	0.578	-0.280	-0.596	-0.228	1.752	0.000	1.069	4.975
																#
HxCDFs	276.5	353.0	269.5	307.0	291.5	286.0	297.5	268.5	316.0	307.5	315.0	290.0	325.5	277.0	306.5	350.5
z score	-0.710	2.911	-1.041	0.734	0.000	-0.260	0.284	-1.089	1.160	0.757	1.112	-0.071	1.609	-0.686	0.710	2.793
HpCDFs	205.0	228.5	205.0	216.5	210.0	206.5	220.0	170.0	200.0	213.5	208.5	200.5	235.5	208.0	231.5	267.0
z score	-0.337	1.248	-0.337	0.438	0.000	-0.236	0.674	-2.698	-0.674	0.236	-0.101	-0.641	1.720	-0.135	1.450	3.845
																#
OCDF(再掲)	122.5	138.5	122.0	140.0	127.0	132.0	126.5	112.0	133.5	133.5	173.5	122.0	138.5	120.0	132.5	163.0
z score	-0.572	0.736	-0.613	0.858	-0.204	0.204	-0.245	-1.431	0.327	0.327	3.597	-0.613	0.736	-0.777	0.245	2.739
											#					
Total PCDFs	1215.0	1449.5	1228.5	1342.5	1232.0	1266.0	1291.0	1061.5	1324.0	1297.0	1314.5	1239.0	1450.0	1255.0	1340.0	1613.5
z score	-0.550	1.980	-0.405	0.826	-0.367	0.000	0.270	-2.207	0.626	0.335	0.523	-0.291	1.986	-0.119	0.799	3.750
																#
Total Homologues	1657.3	1962.1	1667.0	1827.7	1682.6	1721.6	1762.9	1450.6	1781.7	1784.0	1807.5	1698.5	1970.1	1774.7	1817.1	2203.5
z score	-0.672	2.126	-0.583	0.892	-0.440	-0.082	0.297	-2.569	0.470	0.491	0.706	-0.294	2.199	0.405	0.795	4.342
																#

表-1

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

定量値単位 : pg/L

分析所番号	35	36	38	39	40R	41	42	43	44	45	46	48	49	50	51	52
DL-PCB																
3,4,4',5-TeCB(#81)	6.790	7.590	7.350	8.025	5.910	7.745	8.005	5.515	7.660	7.615	8.050	7.005	7.850	7.345	8.615	9.035
z score	-2.075	0.000	-0.623	1.128	-4.358	0.402	1.077	-5.383	0.182	0.065	1.193	-1.518	0.674	-0.636	2.659	3.749
					#			#								#
3,3',4,4'-TeCB(#77)	36.10	42.80	39.55	42.15	39.35	40.00	39.75	30.15	41.60	36.95	45.95	37.90	41.75	38.40	41.15	53.65
z score	-1.267	0.938	-0.132	0.724	-0.197	0.016	-0.066	-3.224	0.543	-0.987	1.974	-0.674	0.592	-0.510	0.395	4.508
								#								#
3,3',4,4',5-PeCB(#126)	39.45	42.35	38.65	43.50	36.60	41.35	41.45	33.20	42.40	39.15	35.85	39.05	42.80	49.00	41.50	51.85
z score	-0.461	0.529	-0.734	0.922	-1.434	0.188	0.222	-2.596	0.546	-0.563	-1.690	-0.598	0.683	2.800	0.239	3.774
																#
3,3',4,4',5,5'-HxCB(#169)	12.10	13.25	13.35	13.45	11.95	13.25	13.35	11.50	13.70	12.05	13.10	12.75	14.50	13.10	13.20	17.45
z score	-0.981	0.429	0.552	0.674	-1.165	0.429	0.552	-1.717	0.981	-1.042	0.245	-0.184	1.962	0.245	0.368	5.580
																#
2',3,4,4',5-PeCB(#123)	2.715	3.490	2.610	3.050	2.605	2.500	2.715	1.910	2.880	2.520	2.765	2.515	2.485	3.700	2.410	3.480
z score	0.065	2.584	-0.276	1.154	-0.293	-0.634	0.065	-2.552	0.601	-0.569	0.228	-0.585	-0.683	3.267	-0.926	2.552
														#		
2,3',4,4',5-PeCB(#118)	13.60	16.45	16.15	16.35	15.80	15.10	17.10	14.95	14.40	15.20	14.10	15.90	15.45	18.15	13.75	27.65
z score	-1.600	0.188	0.000	0.125	-0.220	-0.659	0.596	-0.753	-1.098	-0.596	-1.286	-0.157	-0.439	1.255	-1.506	7.215
																#
2,3,3',4,4'-PeCB(#105)	17.55	19.75	18.30	19.70	17.80	18.60	19.10	16.10	18.25	19.60	16.05	18.95	18.70	21.30	17.25	27.05
z score	-0.839	0.766	-0.292	0.729	-0.656	-0.073	0.292	-1.896	-0.328	0.656	-1.932	0.182	0.000	1.896	-1.057	6.089
																#
2,3,4,4',5-PeCB(#114)	4.205	4.495	4.200	4.350	3.695	4.130	4.120	3.435	3.920	4.000	3.090	3.850	4.025	4.160	4.265	5.415
z score	0.070	0.885	0.056	0.478	-1.363	-0.141	-0.169	-2.094	-0.731	-0.506	-3.063	-0.927	-0.436	-0.056	0.239	3.471
											#					#
2,3',4,4',5,5'-HxCB(#167)	7.100	8.530	7.870	7.700	6.990	7.655	7.890	5.980	7.380	7.155	7.275	7.700	8.365	8.425	7.115	9.940
z score	-0.896	1.693	0.498	0.190	-1.095	0.109	0.534	-2.924	-0.389	-0.797	-0.579	0.190	1.394	1.503	-0.869	4.246
																#
2,3,3',4,4',5-HxCB(#156)	19.40	24.25	20.30	22.00	19.75	21.55	22.65	17.50	22.45	20.15	19.95	20.40	22.65	23.70	21.50	31.00
z score	-1.005	1.780	-0.488	0.488	-0.804	0.230	0.861	-2.095	0.746	-0.574	-0.689	-0.431	0.861	1.464	0.201	5.654
																#
2,3,3',4,4',5'-HxCB(#157)	9.48	10.55	9.43	10.95	8.88	9.72	10.55	8.28	10.80	9.74	10.50	10.25	10.80	10.35	11.15	13.85
z score	-1.170	0.569	-1.251	1.219	-2.153	-0.780	0.569	-3.129	0.975	-0.748	0.488	0.081	0.975	0.244	1.544	5.932
								#								#
2,3,3',4,4',5,5'-HpCB(#189)	16.95	19.00	18.65	18.80	15.10	16.95	17.95	15.30	19.15	17.00	19.40	17.70	18.25	18.80	17.10	26.55
z score	-0.870	0.914	0.609	0.740	-2.480	-0.870	0.000	-2.306	1.044	-0.827	1.262	-0.218	0.261	0.740	-0.740	7.485
																#
TEQ DL-PCB	4.316	4.642	4.275	4.763	4.027	4.542	4.555	3.672	4.660	4.285	3.988	4.296	4.725	5.302	4.556	5.721
z score	-0.551	0.569	-0.695	0.985	-1.546	0.224	0.269	-2.765	0.632	-0.658	-1.680	-0.620	0.852	2.838	0.271	4.277
																#
TEQ DXN + DL-PCB	28.268	31.732	28.712	31.265	27.437	29.826	30.147	26.387	30.834	31.019	31.434	28.810	33.175	29.611	32.037	39.286
z score	-0.689	0.843	-0.493	0.636	-1.056	0.000	0.142	-1.521	0.446	0.527	0.711	-0.450	1.481	-0.095	0.978	4.184
																#

表-1

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

定量値単位 : pg/L

40, 56は最初に報告された値、37Rは締切を過ぎて報告された値、22R, 54Rは中間報告書の後で報告された値。

分析所番号	53	54	55	56R	57	58	59	60	61
PCDD Isomer(異性体)									
2,3,7,8-TeCDD	0.514	0.765	0.674	0.750	0.691	0.631	0.671	0.791	0.681
z score	-2.015	0.842	-0.194	0.672	0.000	-0.689	-0.233	1.138	-0.120
1,2,3,7,8-PeCDD	3.155	4.140	4.185	2.850	4.220	4.350	4.205	3.435	3.730
z score	-2.296	0.531	0.660	-3.172	0.761	1.134	0.718	-1.492	-0.646
1,2,3,4,7,8-HxCDD	3.880	4.050	3.700	4.300	3.900	3.920	3.730	3.505	2.990
z score	0.455	0.970	-0.091	1.728	0.515	0.576	0.000	-0.682	-2.243
1,2,3,6,7,8-HxCDD	7.460	8.965	7.990	7.450	7.830	8.580	8.155	7.785	6.995
z score	-0.647	1.446	0.090	-0.661	-0.132	0.911	0.320	-0.195	-1.293
1,2,3,7,8,9-HxCDD	5.485	6.050	5.520	6.055	5.470	5.735	5.850	5.480	4.710
z score	-0.304	0.842	-0.233	0.852	-0.335	0.203	0.436	-0.314	-1.876
1,2,3,4,6,7,8-HpCDD	35.80	48.80	43.35	37.45	41.55	41.60	44.55	42.15	41.60
z score	-2.775	2.235	0.135	-2.139	-0.559	-0.540	0.597	-0.328	-0.540
OCDD	59.85	83.70	73.55	73.75	81.25	77.80	80.60	72.65	74.95
z score	-3.372	1.502	-0.572	-0.531	1.002	0.296	0.869	-0.756	-0.286
PCDF Isomer(異性体)									
2,3,7,8-TeCDF	5.320	6.615	5.880	6.610	6.175	6.775	6.660	6.155	6.060
z score	-2.266	0.529	-1.057	0.518	-0.421	0.874	0.626	-0.464	-0.669
1,2,3,7,8-PeCDF(単独分離)	8.13	11.90	10.60	11.30	9.63	10.40	9.97	11.00	8.61
z score	-2.450	1.364	0.051	0.758	-0.930	-0.152	-0.586	0.455	-1.960
1,2,3,7,8-PeCDF(他と重なり)									
z score									
2,3,4,7,8-PeCDF	19.95	22.25	19.90	22.95	18.45	23.35	23.60	16.90	19.10
z score	-0.450	0.929	-0.480	1.349	-1.349	1.589	1.739	-2.278	-0.959
1,2,3,4,7,8-HxCDF(単独分離)	25.50	29.85	25.05	27.20	25.25	27.20	27.90	24.80	23.50
z score	-0.409	1.369	-0.593	0.286	-0.511	0.286	0.572	-0.695	-1.226
1,2,3,4,7,8-HxCDF(他と重なり)									
z score									
1,2,3,6,7,8-HxCDF	21.55	29.60	26.80	24.40	25.00	29.00	26.90	24.10	23.25
z score	-1.848	1.127	0.092	-0.795	-0.573	0.905	0.129	-0.905	-1.220
1,2,3,7,8,9-HxCDF	1.045	3.845	1.675	2.455	1.615	1.780	1.875	1.455	1.585
z score	-2.698	10.327	0.233	3.861	-0.047	0.721	1.163	-0.791	-0.186
2,3,4,6,7,8-HxCDF(単独分離)	34.80	42.20		39.45		45.45	39.10		37.15
z score	-1.564	0.560		-0.230		1.492	-0.330		-0.890
2,3,4,6,7,8-HxCDF(他と重なり)			51.65		39.95			41.40	
z score			1.672		-1.446			-1.059	

40	56	37R	22R	54R
1.080	1.490	0.943	0.794	0.765
4.428	9.096	2.863	1.173	0.842
#	#			
5.650	5.705	4.175	4.035	4.140
4.865	5.023	0.631	0.230	0.531
#	#			
4.875	8.600	3.705	3.240	4.050
3.471	14.763	-0.076	-1.485	0.970
#	#			
10.900	14.900	7.600	7.190	8.965
4.137	9.700	-0.452	-1.022	1.446
#	#			
8.215	12.125	4.945	5.260	6.050
5.234	13.165	-1.400	-0.761	0.842
#	#			
62.10	74.85	38.90	40.95	48.80
7.362	12.276	-1.580	-0.790	2.235
#	#			
112.00	147.50	70.00	72.60	83.70
7.287	14.542	-1.298	-0.766	1.502
#	#			
9.080	13.200	6.400	6.075	6.615
5.848	14.738	0.065	-0.637	0.529
#	#			
13.70	22.65	9.37		11.90
3.183	12.227	-1.197		1.364
#	#			
			16.62	
			-2.414	
27.60	45.95	20.45	19.45	22.25
4.137	15.139	-0.150	-0.749	0.929
#	#			
37.40	54.35	24.45		29.85
4.456	11.385	-0.838		1.369
#	#			
			24.85	
			-2.683	
34.05	48.80	24.25	21.85	29.60
2.772	8.223	-0.850	-1.737	1.127
#	#			
2.225	4.905	1.195	1.355	1.685
2.791	15.257	-2.000	-1.256	0.279
#	#			
60.35	78.95	36.75		42.20
5.769	11.108	-1.005		0.560
#	#			
190.50	251.00	131.00	40.65	
38.671	54.792	22.816	-1.259	
#	#	#		

表-1

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

定量値単位 : pg/L

40, 56は最初に報告された値、37Rは締切を過ぎて報告された値、22R, 54Rは中間報告書の後で報告された値。

分析所番号	53	54	55	56R	57	58	59	60	61
1,2,3,4,6,7,8-HpCDF	127.5	151.5	144.5	137.5	139.0	146.0	138.5	129.0	127.0
z score	-1.846	1.562	0.568	-0.426	-0.213	0.781	-0.284	-1.633	-1.917
1,2,3,4,7,8,9-HpCDF	12.10	15.60	15.65	15.10	13.85	15.55	14.80	13.35	13.20
z score	-2.293	0.854	0.899	0.405	-0.719	0.809	0.135	-1.169	-1.304
OCDF	114.5	144.0	125.0	125.5	117.5	148.5	138.5	121.5	126.5
z score	-1.226	1.185	-0.368	-0.327	-0.981	1.553	0.736	-0.654	-0.245
TEQ Dioxin	22.208	27.282	26.068	24.576	24.258	27.241	26.316	22.997	22.901
z score	-1.449	0.887	0.328	-0.358	-0.505	0.868	0.442	-1.085	-1.130
DD Homologue(同族体)									
TeCDDs	79.5	92.1	86.4	61.0	104.0	97.2	86.2	100.9	88.0
z score	-1.479	-0.269	-0.821	-3.255	0.874	0.216	-0.840	0.576	-0.667
PeCDDs	88.4	103.0	95.8	83.2	100.3	106.0	102.0	90.6	92.3
z score	-1.382	0.555	-0.403	-2.070	0.198	0.952	0.423	-1.084	-0.866
HxCDDs	107.0	109.5	87.5	97.1	95.2	107.0	97.0	93.0	88.5
z score	0.929	1.205	-1.233	-0.171	-0.376	0.929	-0.182	-0.625	-1.122
HpCDDs	81.1	95.9	83.5	81.3	85.3	86.8	88.9	79.9	83.1
z score	-1.159	2.129	-0.624	-1.126	-0.234	0.111	0.580	-1.427	-0.714
OCDD(再掲)	59.9	83.7	73.6	73.8	81.3	77.8	80.6	72.7	75.0
z score	-3.372	1.502	-0.572	-0.531	1.002	0.296	0.869	-0.756	-0.286
Total PCDDs	415.8	484.2	426.6	396.2	466.0	474.8	454.6	437.0	426.7
z score	-1.270	0.968	-0.917	-1.912	0.373	0.660	0.000	-0.576	-0.914
DF Homologue(同族体)									
TeCDFs	280.5	341.0	263.0	231.0	322.5	327.5	335.0	307.5	277.5
z score	-1.884	0.707	-2.634	-4.004	-0.086	0.128	0.450	-0.728	-2.013
PeCDFs	295.5	339.0	313.0	295.0	294.0	337.5	336.5	296.5	276.5
z score	-0.613	0.911	0.000	-0.631	-0.666	0.858	0.823	-0.578	-1.279
HxCDFs	269.0	322.5	298.5	278.0	271.0	325.5	313.0	264.5	251.5
z score	-1.065	1.467	0.331	-0.639	-0.970	1.609	1.018	-1.278	-1.893
HpCDFs	194.0	227.0	214.5	208.5	204.5	214.5	204.5	191.0	186.5
z score	-1.079	1.147	0.304	-0.101	-0.371	0.304	-0.371	-1.282	-1.585
OCDF(再掲)	114.5	144.0	125.0	125.5	117.5	148.5	138.5	121.5	126.5
z score	-1.226	1.185	-0.368	-0.327	-0.981	1.553	0.736	-0.654	-0.245
Total PCDFs	1153.5	1373.5	1214.0	1138.0	1209.5	1353.5	1327.5	1181.0	1118.5
z score	-1.214	1.160	-0.561	-1.381	-0.610	0.944	0.664	-0.917	-1.592
Total Homologues	1569.3	1857.7	1640.6	1534.2	1675.5	1828.3	1782.1	1618.0	1545.2
z score	-1.480	1.167	-0.825	-1.802	-0.505	0.897	0.474	-1.033	-1.701

40	56	37R	22R	54R
207.5	276.0	133.0	110.0	151.5
9.514	19.241	-1.065	-4.331	1.562
#	#	#	#	#
19.95	30.15	14.25	15.45	15.60
4.766	13.939	-0.360	0.719	0.854
#	#	#	#	#
190.5	251.0	131.0	122.0	144.0
4.987	9.933	0.123	-0.613	1.185
#	#	#	#	#
35.117	49.172	24.385	23.932	27.066
4.494	10.965	-0.447	-0.655	0.788
#	#	#	#	#
144.0	122.0	97.0	95.1	92.1
4.714	2.602	0.197	0.014	-0.269
#	#	#	#	#
150.0	166.5	109.5	95.9	103.0
6.771	8.954	1.415	-0.384	0.555
#	#	#	#	#
148.0	194.0	93.7	92.6	109.5
5.462	10.549	-0.547	-0.663	1.205
#	#	#	#	#
123.0	162.5	77.1	79.9	95.9
8.183	16.990	-2.051	-1.438	2.129
#	#	#	#	#
112.0	147.5	70.0	72.6	83.7
7.287	14.542	-1.298	-0.766	1.502
#	#	#	#	#
677.0	792.5	447.2	436.0	484.2
7.282	11.064	-0.242	-0.609	0.968
#	#	#	#	#
482.0	461.5	299.0	375.5	341.0
6.745	5.867	-1.092	2.184	0.707
#	#	#	#	#
423.0	589.5	294.0	266.0	339.0
3.854	9.688	-0.666	-1.647	0.911
#	#	#	#	#
436.5	556.0	277.5	298.5	320.0
6.863	12.519	-0.663	0.331	1.349
#	#	#	#	#
315.0	416.5	196.0	162.5	227.0
7.082	13.928	-0.944	-3.204	1.147
#	#	#	#	#
190.5	251.0	131.0	122.0	144.0
4.987	9.933	0.123	-0.613	1.185
#	#	#	#	#
1847.0	2274.5	1197.5	1224.5	1371.0
6.270	10.884	-0.739	-0.448	1.133
#	#	#	#	#
2524.0	3067.0	1644.7	1660.5	1855.2
7.284	12.269	-0.788	-0.643	1.144
#	#	#	#	#

表-1

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

定量値単位 : pg/L

40, 56は最初に報告された値、37Rは締切を過ぎて報告された値、22R, 54Rは中間報告書の後で報告された値。

分析所番号	53	54	55	56R	57	58	59	60	61
DL-PCB									
3,4,4',5'-TeCB(#81)	7.255	7.565	7.775	7.570	7.315	7.450	7.580	7.805	6.640
z score	-0.869	-0.065	0.480	-0.052	-0.713	-0.363	-0.026	0.558	-2.464
3,3',4,4'-TeCB(#77)	39.70	39.60	38.85	38.40	37.30	37.10	40.90	42.50	35.65
z score	-0.082	-0.115	-0.362	-0.510	-0.872	-0.938	0.313	0.839	-1.415
3,3',4,4',5'-PeCB(#126)	44.25	44.15	40.80	36.50	39.55	36.70	41.90	42.75	38.55
z score	1.178	1.144	0.000	-1.469	-0.427	-1.400	0.376	0.666	-0.768
3,3',4,4',5,5'-HxCB(#169)	12.00	14.25	13.05	10.71	12.10	13.30	12.25	13.70	11.75
z score	-1.104	1.656	0.184	-2.692	-0.981	0.491	-0.797	0.981	-1.410
2',3,4,4',5'-PeCB(#123)	2.120	2.955	2.740	2.380	2.560	2.840	2.620	2.745	2.610
z score	-1.869	0.845	0.146	-1.024	-0.439	0.471	-0.244	0.163	-0.276
2,3',4,4',5'-PeCB(#118)	17.05	16.35	16.25	14.55	14.15	12.95	17.10	18.15	16.70
z score	0.565	0.125	0.063	-1.004	-1.255	-2.008	0.596	1.255	0.345
2,3,3',4,4'-PeCB(#105)	18.15	18.75	19.65	18.35	18.35	16.90	19.55	18.90	18.55
z score	-0.401	0.036	0.693	-0.255	-0.255	-1.313	0.620	0.146	-0.109
2,3,4,4',5'-PeCB(#114)	4.075	4.200	4.750	4.180	3.895	4.070	4.465	3.655	3.965
z score	-0.295	0.056	1.602	0.000	-0.801	-0.309	0.801	-1.475	-0.604
2,3',4,4',5,5'-HxCB(#167)	7.610	8.450	7.825	8.010	7.080	6.745	7.340	7.525	6.830
z score	0.027	1.548	0.416	0.751	-0.933	-1.539	-0.462	-0.127	-1.385
2,3,3',4,4',5'-HxCB(#156)	20.20	22.85	23.60	21.15	19.90	20.10	19.85	21.25	19.40
z score	-0.545	0.976	1.406	0.000	-0.718	-0.603	-0.746	0.057	-1.005
2,3,3',4,4',5'-HxCB(#157)	9.89	11.50	10.45	9.10	9.55	9.81	10.15	9.75	9.10
z score	-0.504	2.113	0.406	-1.796	-1.065	-0.634	-0.081	-0.731	-1.788
2,3,3',4,4',5,5'-HpCB(#189)	17.40	19.40	19.30	18.65	17.30	18.00	17.70	18.55	17.05
z score	-0.479	1.262	1.175	0.609	-0.566	0.044	-0.218	0.522	-0.783
TEQ DL-PCB	4.794	4.852	4.481	3.980	4.327	4.078	4.567	4.696	4.216
z score	1.091	1.290	0.014	-1.707	-0.515	-1.371	0.310	0.753	-0.896
TEQ DXN + DL-PCB	27.002	32.134	30.549	28.556	28.584	31.319	30.883	27.693	27.000
z score	-1.249	1.020	0.320	-0.562	-0.549	0.660	0.467	-0.943	-1.250

40	56	37R	22R	54R
8.865	15.150	6.045	9.420	7.565
3.308	19.612	-4.008	4.747	-0.065
#	#	#	#	#
59.05	76.85	32.70	50.65	39.60
6.284	12.141	-2.385	3.521	-0.115
#	#	#	#	#
54.90	72.95	35.90	44.45	44.15
4.815	10.980	-1.673	1.247	1.144
#	#	#	#	#
17.95	21.40	12.70	14.55	14.25
6.193	10.424	-0.245	2.023	1.656
#	#	#	#	#
3.905	4.755	2.545	3.060	2.955
3.933	6.696	-0.488	1.186	0.845
#	#	#	#	#
23.70	29.15	13.10	22.65	16.35
4.737	8.157	-1.914	4.078	0.125
#	#	#	#	#
26.75	36.70	15.45	21.55	18.75
5.870	13.125	-2.370	2.078	0.036
#	#	#	#	#
5.540	8.350	5.995	4.300	4.200
3.822	11.719	5.101	0.337	0.056
#	#	#	#	#
10.450	16.000	7.125	7.675	8.450
5.170	15.219	-0.851	0.145	1.548
#	#	#	#	#
29.65	42.20	19.80	22.55	22.85
4.879	12.083	-0.775	0.804	0.976
#	#	#	#	#
13.30	18.20	10.25	11.75	11.50
5.038	13.002	0.081	2.519	2.113
#	#	#	#	#
22.70	37.35	16.65	19.60	19.40
4.134	16.884	-1.131	1.436	1.262
#	#	#	#	#
6.041	7.955	3.979	4.893	4.852
5.378	11.957	-1.711	1.430	1.290
#	#	#	#	#
41.158	57.127	28.364	28.825	31.918
5.011	12.074	-0.647	-0.443	0.925
#	#	#	#	#

表-2 第21回ダイオキシン類分析 技能試験 結果 (模擬排水) 統計計算結果

分析所番号	TEF	TEQ寄与率%	N	z >3	average	median	U95%	SD	NIQR	U95%*CV%	CV%clas	CV%rob
PCDD Isomer(異性体)												
2,3,7,8-TeCDD	1	2.3	57	3 5%	0.722	0.691	0.029	0.119	0.088	4	16	13
1,2,3,7,8-PeCDD	1	13.3	57	2 4%	3.961	3.955	0.115	0.431	0.348	3	11	9
1,2,3,4,7,8-HxCDD	0.1	1.3	57	3 5%	3.794	3.730	0.109	0.446	0.330	3	12	9
1,2,3,6,7,8-HxCDD	0.1	2.7	57	2 4%	8.09	7.93	0.24	0.77	0.72	3	9	9
1,2,3,7,8,9-HxCDD	0.1	1.9	57	3 5%	5.72	5.64	0.163	0.61	0.49	3	11	9
1,2,3,4,6,7,8-HpCDD	0.01	1.4	57	2 4%	43.7	43.0	0.86	3.5	2.6	2	8	6
OCDD	0.0003	0.077	57	4 7%	77.6	76.4	1.62	7.1	4.9	2	9	6
PCDF Isomer(異性体)												
2,3,7,8-TeCDF	0.1	2.14	57	5 9%	6.337	6.370	0.153	0.679	0.463	2	11	7
1,2,3,7,8-PeCDF(単独分離)	0.03	1.1	53	1 2%	10.40	10.55	0.34	1.15	0.99	3	11	9
1,2,3,7,8-PeCDF(他と重なり)	0.03	2.3	4	0 0%	21.72	22.85	3.2	3.59	2.58	15	17	11
2,3,4,7,8-PeCDF	0.3	20.8	57	1 2%	20.89	20.70	0.55	1.92	1.67	3	9	8
1,2,3,4,7,8-HxCDF(単独分離)	0.1	8.9	53	1 2%	27.05	26.50	0.84	2.58	2.45	3	10	9
1,2,3,4,7,8-HxCDF(他と重なり)	0.1	9.8	4	0 0%	28.46	29.20	2.0	2.53	1.62	7	9	6
1,2,3,6,7,8-HxCDF	0.1	8.9	57	1 2%	26.49	26.55	0.90	2.91	2.71	3	11	10
1,2,3,7,8,9-HxCDF	0.1	0.5	57	7 12%	1.76	1.63	0.071	0.49	0.21	4	28	13
2,3,4,6,7,8-HxCDF(単独分離)	0.1	13.5	37	1 3%	40.9	40.3	1.43	4.4	3.5	3	11	9
2,3,4,6,7,8-HxCDF(他と重なり)	0.1	15.2	20	0 0%	45.4	45.4	2.1	3.5	3.8	5	8	8

表-2 第21回ダイオキシン類分析 技能試験 結果 (模擬排水) 統計計算結果

分析所番号	TEF	TEQ寄与率%	N	z >3	average	median	U95%	SD	NIQR	U95%*CV%	CV%clas	CV%rob
1,2,3,4,6,7,8-HpCDF	0.01	4.7	57	5 9%	141.7	140.5	2.3	12.3	7.0	2	9	5
1,2,3,4,7,8,9-HpCDF	0.01	0.5	57	0 0%	14.8	14.7	0.37	1.2	1.1	2	8	8
OCDF	0.0003	0.13	57	1 2%	130.7	129.5	4.1	12.6	12.2	3	10	9
TEQ Dioxin		85.0	57	1 2%	25.53	25.35	0.72	2.05	2.17	3	8	9
DD Homologue(同族体)												
TeCDDs			57	1 2%	95.07	94.90	3.4	11.44	10.42	4	12	11
PeCDDs			57	0 0%	100.55	98.80	2.5	9.83	7.56	2	10	8
HxCDDs			57	1 2%	100.5	98.6	3.0	8.9	9.0	3	9	9
HpCDDs			57	3 5%	87.2	86.3	1.5	6.8	4.5	2	8	5
OCDD(再掲)			57	4 7%	77.6	76.4	1.62	7.1	4.9	2	9	6
Total PCDDs			57	2 4%	460.9	454.6	10.1	36.9	30.5	2	8	7
DF Homologue(同族体)												
TeCDFs			57	0 0%	323.4	324.5	7.7	33.4	23.4	2	10	7
PeCDFs			57	1 2%	319.6	313.0	9.5	31.7	28.5	3	10	9
HxCDFs			57	0 0%	296.4	291.5	7.0	21.8	21.1	2	7	7
HpCDFs			57	2 4%	211.1	210.0	4.9	18.1	14.8	2	9	7
OCDF(再掲)			57	1 2%	130.7	129.5	4.1	12.6	12.2	3	10	9
Total PCDFs			57	1 2%	1281	1266	31	101	93	2	8	7
Total Homologues			57	2 4%	1742	1731	36	135	109	2	8	6

表-2 第21回ダイオキシン類分析 技能試験 結果 (模擬排水) 統計計算結果

分析所番号	TEF	TEQ寄与率%	N	z >3	average	median	U95%	SD	NIQR	U95%*CV%	CV%clas	CV%rob
DL-PCB												
3,4,4',5'-TeCB(#81)	0.0003	0.00763	57	8 14%	7.635	7.590	0.13	0.859	0.385	2	11	5
3,3',4,4'-TeCB(#77)	0.0001	0.0134	57	5 9%	40.63	39.95	1.01	4.20	3.04	2	10	8
3,3',4,4',5'-PeCB(#126)	0.1	13.7	57	1 2%	40.82	40.80	0.97	3.66	2.93	2	9	7
3,3',4,4',5,5'-HxCB(#169)	0.03	1.30	57	1 2%	12.94	12.90	0.27	1.03	0.82	2	8	6
2',3,4,4',5'-PeCB(#123)	0.00003	0.00027	57	2 4%	2.728	2.695	0.102	0.395	0.308	2	8	6
2,3',4,4',5'-PeCB(#118)	0.00003	0.0016	57	5 9%	16.45	16.15	0.53	2.85	1.59	3	17	10
2,3,3',4,4'-PeCB(#105)	0.00003	0.0019	57	2 4%	18.82	18.70	0.45	1.91	1.37	2	10	7
2,3,4,4',5'-PeCB(#114)	0.00003	0.0004	57	3 5%	4.211	4.180	0.118	0.490	0.356	3	12	9
2,3',4,4',5,5'-HxCB(#167)	0.00003	0.00076	57	1 2%	7.548	7.595	0.183	0.629	0.552	2	8	7
2,3,3',4,4',5'-HxCB(#156)	0.00003	0.0021	57	1 2%	21.35	21.15	0.58	2.03	1.74	3	9	8
2,3,3',4,4',5'-HxCB(#157)	0.00003	0.0010	57	2 4%	10.193	10.200	0.20	0.877	0.615	2	9	6
2,3,3',4,4',5,5'-HpCB(#189)	0.00003	0.0018	57	1 2%	18.14	17.95	0.38	1.62	1.15	2	9	6
TEQ DL-PCB		15.0	57	3 5%	4.416	4.477	0.096	0.572	0.291	2	13	6
TEQ DXN + DL-PCB		100.0	57	1 2%	29.94	29.83	0.75	2.37	2.26	3	8	8

表-3

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

zスコアの絶対値が3以上、及び試験所10,46,50,52のデータを除外。 定量値単位 : pg/L

分析所番号	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16	17
PCDD Isomer(異性体)																
2,3,7,8-TeCDD	0.885	0.667	0.629	0.668	0.490	0.773	0.614	0.573	0.784		0.917	0.591	0.757	0.812		0.672
z score	2.203	-0.279	-0.706	-0.268	-2.288	0.928	-0.882	-1.343	1.053	2.100	2.573	-1.144	0.746	1.377	3.136	-0.216
															#	
1,2,3,7,8-PeCDD	4.365	3.430	4.045	3.435	3.710	4.080	4.095	3.430	3.955		4.025	4.090	4.170	3.915	4.725	4.330
z score	1.177	-1.507	0.258	-1.492	-0.703	0.359	0.402	-1.507	0.000	2.612	0.201	0.387	0.617	-0.115	2.210	1.076
1,2,3,4,7,8-HxCDD	3.950	3.515	3.760	3.350	3.395	3.785	3.820	3.135	4.040		4.375	3.910	4.075	4.400	4.705	3.670
z score	0.667	-0.652	0.091	-1.152	-1.016	0.167	0.273	-1.804	0.940	1.531	1.955	0.546	1.046	2.031	2.956	-0.182
1,2,3,6,7,8-HxCDD	7.865	7.540	7.990	7.305	7.780	8.905	8.340	7.490	8.005		8.460	8.355	8.470	9.485	8.460	8.595
z score	-0.083	-0.535	0.090	-0.862	-0.202	1.363	0.577	-0.605	0.111	1.829	0.744	0.598	0.758	2.169	0.744	0.932
1,2,3,7,8,9-HxCDD	6.000	5.245	5.480	5.040	5.325	6.210	5.465	5.075	5.915		6.170	5.565	6.610	6.050	6.465	6.380
z score	0.740	-0.791	-0.314	-1.207	-0.629	1.166	-0.345	-1.136	0.568	2.110	1.085	-0.142	1.978	0.842	1.684	1.511
1,2,3,4,6,7,8-HpCDD	44.50	43.25	43.00	42.40	40.65	48.30	45.10	40.15	43.90		42.90	42.45	42.10	45.55	43.75	48.45
z score	0.578	0.096	0.000	-0.231	-0.906	2.043	0.809	-1.098	0.347	4.317	-0.039	-0.212	-0.347	0.983	0.289	2.101
										#						
OCDD	76.35	73.85	77.35	74.25	77.80	86.80	79.20	68.05	73.70		82.05	78.65	78.95	75.95	83.40	80.45
z score	0.000	-0.511	0.204	-0.429	0.296	2.136	0.583	-1.696	-0.542	2.984	1.165	0.470	0.531	-0.082	1.441	0.838
PCDF Isomer(異性体)																
2,3,7,8-TeCDF	6.195	6.510	6.495	5.765	5.725	6.370	6.605	6.725	6.250			6.425	6.025	6.365	7.490	6.900
z score	-0.378	0.302	0.270	-1.305	-1.392	0.000	0.507	0.766	-0.259	3.161	3.291	0.119	-0.744	-0.011	2.417	1.144
										#	#					
1,2,3,7,8-PeCDF(単独分離)	10.55	10.02	10.55	9.56	10.15	10.25	11.00	9.45			12.10	9.81		9.67	10.85	11.40
z score	0.000	-0.541	0.000	-1.000	-0.404	-0.303	0.455	-1.112		1.920	1.566	-0.753		-0.889	0.303	0.859
1,2,3,7,8-PeCDF(他と重なり)									23.85				24.55			
z score									0.387				0.658			
2,3,4,7,8-PeCDF	21.50	20.70	21.75	19.95	19.25	21.90	23.45	20.10	22.55		21.80	21.30	25.50	17.80	21.20	22.20
z score	0.480	0.000	0.630	-0.450	-0.869	0.719	1.649	-0.360	1.109	2.128	0.660	0.360	2.878	-1.739	0.300	0.899
1,2,3,4,7,8-HxCDF(単独分離)	26.50	24.85	27.95	25.35	25.25	28.65	27.90	24.25			30.85	25.40		26.40	28.75	29.70
z score	0.000	-0.674	0.593	-0.470	-0.511	0.879	0.572	-0.920		1.819	1.778	-0.450		-0.041	0.920	1.308
1,2,3,4,7,8-HxCDF(他と重なり)									30.600				29.700			
z score									0.863				0.308			
1,2,3,6,7,8-HxCDF	25.35	24.40	27.15	24.90	25.95	29.50	27.30	24.65	26.40		30.50	25.80	27.10	23.65	29.15	28.65
z score	-0.444	-0.795	0.222	-0.610	-0.222	1.090	0.277	-0.702	-0.055	2.495	1.460	-0.277	0.203	-1.072	0.961	0.776
1,2,3,7,8,9-HxCDF	1.605	1.815	1.555	1.650	1.530	1.925	1.560	1.420	1.760		1.490	1.545	1.715	1.245	1.360	1.845
z score	-0.093	0.884	-0.326	0.116	-0.442	1.395	-0.302	-0.954	0.628	1.279	-0.628	-0.372	0.419	-1.768	-1.233	1.023
2,3,4,6,7,8-HxCDF(単独分離)	41.75	38.35		37.20	37.20	42.55			43.20			42.85	45.25	38.75		42.20
z score	0.431	-0.545		-0.875	-0.875	0.660			0.847	1.780		0.746	1.435	-0.431		0.560
2,3,4,6,7,8-HxCDF(他と重なり)			44.85				46.15	41.65			50.65				45.40	
z score			-0.140				0.207	-0.993			1.406				0.007	
1,2,3,4,6,7,8-HpCDF	144.5	141.5	144.5	131.0	134.5	157.0	158.0	145.5	139.5		155.0	147.0	143.0	135.5	140.0	149.0

表-3

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

zスコアの絶対値が3以上、及び試験所10,46,50,52のデータを除外。

定量値単位 : pg/L

分析所番号	18	19	20	21	22	23	24	25	27	28	29	30	31	32	33	34
PCDD Isomer(異性体)																
2,3,7,8-TeCDD	0.668	0.745	0.709	0.666	0.794	0.659	0.776	0.555	0.641	0.732	0.702	0.779	0.723	0.584	0.658	0.550
z score	-0.268	0.615	0.199	-0.290	1.173	-0.364	0.962	-1.548	-0.575	0.461	0.120	0.996	0.364	-1.218	-0.376	-1.605
1,2,3,7,8-PeCDD	3.870	3.660	4.350	3.615	4.035	3.650	4.445	4.120	3.810	3.655	3.660	3.465	4.430	3.555	3.785	3.700
z score	-0.244	-0.847	1.134	-0.976	0.230	-0.875	1.406	0.474	-0.416	-0.861	-0.847	-1.406	1.363	-1.148	-0.488	-0.732
1,2,3,4,7,8-HxCDD	3.360	3.525	3.560	3.530	3.240	3.520	3.940	3.690	3.635	3.620	3.220	3.310	4.460	3.435	3.650	3.300
z score	-1.122	-0.621	-0.515	-0.606	-1.485	-0.637	0.637	-0.121	-0.288	-0.333	-1.546	-1.273	2.213	-0.894	-0.243	-1.304
1,2,3,6,7,8-HxCDD	8.445	7.900	7.895	7.755	7.190	7.330	8.635	7.925	8.060	7.450	7.220	7.285	9.295	7.075	7.735	7.600
z score	0.723	-0.035	-0.042	-0.236	-1.022	-0.827	0.987	0.000	0.188	-0.661	-0.980	-0.890	1.905	-1.182	-0.264	-0.452
1,2,3,7,8,9-HxCDD	5.215	5.805	5.735	5.495	5.260	5.210	5.635	5.955	5.805	5.210	5.040	4.915	6.180	4.800	5.335	5.650
z score	-0.852	0.345	0.203	-0.284	-0.761	-0.862	0.000	0.649	0.345	-0.862	-1.207	-1.461	1.106	-1.694	-0.609	0.030
1,2,3,4,6,7,8-HpCDD	41.35	42.50	39.60	42.80	40.95	41.50	43.55	44.00	42.20	45.80	41.50	43.05	49.70	39.10	44.10	42.40
z score	-0.636	-0.193	-1.310	-0.077	-0.790	-0.578	0.212	0.385	-0.308	1.079	-0.578	0.019	2.582	-1.503	0.424	-0.231
OCDD	73.20	79.45	74.00	75.50	72.60	71.55	74.95	78.25	72.45	78.75	75.90	71.40		67.35	76.90	74.90
z score	-0.644	0.634	-0.480	-0.174	-0.766	-0.981	-0.286	0.388	-0.797	0.491	-0.092	-1.012	3.730	-1.840	0.112	-0.296
													#			
PCDF Isomer(異性体)																
2,3,7,8-TeCDF	6.670	6.855	6.105	5.950	6.075	5.110	6.695	5.780	5.850	6.315	6.285	5.530	6.675	5.760	6.045	5.000
z score	0.647	1.047	-0.572	-0.906	-0.637	-2.719	0.701	-1.273	-1.122	-0.119	-0.183	-1.813	0.658	-1.316	-0.701	-2.956
1,2,3,7,8-PeCDF(単独分離)	11.35	10.60	10.33	9.98			11.05	11.50	9.56	10.90	8.72	10.90	10.25	9.27	11.50	9.55
z score	0.808	0.051	-0.227	-0.576			0.505	0.960	-1.005	0.354	-1.854	0.354	-0.303	-1.298	0.960	-1.010
1,2,3,7,8-PeCDF(他と重なり)					16.62	21.85										
z score					-2.414	-0.387										
2,3,4,7,8-PeCDF	19.20	20.25	21.00	19.65	19.45	19.65	19.60	20.65	19.65	20.75	20.30	20.15	23.55	17.95	20.75	21.05
z score	-0.899	-0.270	0.180	-0.630	-0.749	-0.630	-0.660	-0.030	-0.630	0.030	-0.240	-0.330	1.709	-1.649	0.030	0.210
1,2,3,4,7,8-HxCDF(単独分離)	29.65	27.50	23.55	26.80			25.80	25.50	25.60	27.90	24.40	24.95	29.75	23.25	26.40	24.05
z score	1.288	0.409	-1.206	0.123			-0.286	-0.409	-0.368	0.572	-0.858	-0.634	1.329	-1.329	-0.041	-1.002
1,2,3,4,7,8-HxCDF(他と重なり)					24.850	28.700										
z score					-2.683	-0.308										
1,2,3,6,7,8-HxCDF	29.15	27.25	26.55	26.50	21.85	25.45	26.85	26.00	24.80	27.40	24.45	25.90	29.00	23.50	27.20	24.15
z score	0.961	0.259	0.000	-0.018	-1.737	-0.407	0.111	-0.203	-0.647	0.314	-0.776	-0.240	0.905	-1.127	0.240	-0.887
1,2,3,7,8,9-HxCDF	1.320	1.905	1.425	1.575	1.355	1.495	1.845	1.450	1.705	1.675	1.820	1.525	1.740	1.415	1.540	1.400
z score	-1.419	1.302	-0.930	-0.233	-1.256	-0.605	1.023	-0.814	0.372	0.233	0.907	-0.465	0.535	-0.977	-0.395	-1.047
2,3,4,6,7,8-HxCDF(単独分離)			42.80	40.05			37.95	39.55		38.25	43.15	35.85	41.90	44.05	39.40	41.00
z score			0.732	-0.057			-0.660	-0.201		-0.574	0.832	-1.263	0.474	1.091	-0.244	0.215
2,3,4,6,7,8-HxCDF(他と重なり)	45.95	45.10			40.65				48.25							
z score	0.153	-0.073			-1.259				0.766							
1,2,3,4,6,7,8-HpCDF	136.0	145.5	125.5	142.5			144.5	138.5	143.0	124.5	135.5	133.0	136.0		131.0	145.0

表-3

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

zスコアの絶対値が3以上、及び試験所10,46,50,52のデータを除外。

定量値単位 : pg/L

分析所番号	35	36	38	39	40R	41	42	43	44	45	46	48	49	50	51	52
PCDD Isomer(異性体)																
2,3,7,8-TeCDD	0.652	0.759	0.686	0.750	0.723	0.622	0.690		0.659	0.689		0.691	0.875		0.777	
z score	-0.444	0.768	-0.057	0.672	0.359	-0.785	-0.017	4.963	-0.370	-0.023	1.116	0.000	2.089	3.797	0.979	1.907
								#						#		
1,2,3,7,8-PeCDD	3.745	4.070	3.730	4.000	3.765	3.920	4.110	3.495	3.780	4.085		3.790	4.470		3.865	
z score	-0.603	0.330	-0.646	0.129	-0.545	-0.100	0.445	-1.320	-0.502	0.373	0.387	-0.474	1.478	2.052	-0.258	4.248
																#
1,2,3,4,7,8-HxCDD	3.410	3.960	3.545	3.850	3.255	3.730	3.770	3.230	3.880	4.070		3.850	4.075		3.725	
z score	-0.970	0.697	-0.561	0.364	-1.440	0.000	0.121	-1.516	0.455	1.031	3.956	0.364	1.046	3.380	-0.015	3.668
											#			#		#
1,2,3,6,7,8-HxCDD	7.890	9.005	7.860	8.300	7.260	8.290	8.090	7.015	8.345	9.150		7.795	8.750		7.135	
z score	-0.049	1.502	-0.090	0.522	-0.925	0.508	0.229	-1.266	0.584	1.704	3.080	-0.181	1.147	-0.994	-1.099	3.762
											#					#
1,2,3,7,8,9-HxCDD	5.625	6.460	5.495	5.800	5.475	5.160	5.400	4.355	5.960	5.670		5.640	5.970		5.455	
z score	-0.020	1.674	-0.284	0.335	-0.325	-0.964	-0.477	-2.597	0.659	0.071	3.438	0.010	0.680	3.165	-0.365	3.935
											#			#		#
1,2,3,4,6,7,8-HpCDD	42.25	48.10	41.90	44.30	41.40	44.80	43.40	37.65	46.90	41.85		41.75	49.20		46.65	
z score	-0.289	1.966	-0.424	0.501	-0.617	0.694	0.154	-2.062	1.503	-0.443	1.715	-0.482	2.390	0.867	1.407	4.452
																#
OCDD	75.55	83.80	74.05	80.85	74.60	77.40	74.75	67.90	80.25	75.30		77.40	81.60		81.30	
z score	-0.164	1.523	-0.470	0.920	-0.358	0.215	-0.327	-1.727	0.797	-0.215	4.711	0.215	1.073	-1.318	1.012	5.345
											#					#
PCDF Isomer(異性体)																
2,3,7,8-TeCDF	6.450	6.370	6.520	6.570	6.050	6.900	6.165		6.405	6.710		6.495	7.485		7.290	
z score	0.173	0.000	0.324	0.432	-0.690	1.144	-0.442	-3.560	0.076	0.734	-0.399	0.270	2.406	-3.830	1.985	3.086
								#						#		#
1,2,3,7,8-PeCDF(単独分離)	9.77	12.00	10.40	11.00	9.13	10.04	10.55	7.86	11.15	10.90		9.72	10.60		11.50	
z score	-0.793	1.465	-0.152	0.455	-1.435	-0.515	0.000	-2.718	0.606	0.354	1.010	-0.844	0.051	-3.552	0.960	2.779
														#		
1,2,3,7,8-PeCDF(他と重なり)																
z score																
2,3,4,7,8-PeCDF	18.70	20.95	19.70	21.75	18.40	21.95	20.00	19.00	21.85	21.90		19.45	24.60		22.20	
z score	-1.199	0.150	-0.600	0.630	-1.379	0.749	-0.420	-1.019	0.689	0.719	-0.180	-0.749	2.338	-1.259	0.899	3.208
																#
1,2,3,4,7,8-HxCDF(単独分離)	24.80	30.35	25.30	28.20	24.90	27.15	26.45	22.85	28.55	28.45		25.40	28.40		31.20	
z score	-0.695	1.574	-0.491	0.695	-0.654	0.266	-0.020	-1.492	0.838	0.797	2.044	-0.450	0.777	1.410	1.921	3.822
																#
1,2,3,4,7,8-HxCDF(他と重なり)																
z score																
1,2,3,6,7,8-HxCDF	25.20	30.15	24.90	28.00	22.70	26.70	26.85	22.75	28.30	26.95		24.50	28.85		29.30	
z score	-0.499	1.331	-0.610	0.536	-1.423	0.055	0.111	-1.404	0.647	0.148	0.795	-0.758	0.850	-2.901	1.016	3.862
																#
1,2,3,7,8,9-HxCDF	1.565	1.795	1.585	1.700	1.480	1.670	1.600			1.700		1.640	1.625		1.535	
z score	-0.279	0.791	-0.186	0.349	-0.674	0.209	-0.116	8.745	5.768	0.349	3.721	0.070	0.000	4.931	-0.419	3.605
								#	#		#			#		#
2,3,4,6,7,8-HxCDF(単独分離)		45.60			40.25	38.15		36.15	42.55				46.20			
z score		1.536			0.000	-0.603		-1.177	0.660				1.708	-2.210		4.951
																#
2,3,4,6,7,8-HxCDF(他と重なり)	41.30		42.60	45.35			46.00			47.15		43.75			50.85	
z score	-1.086		-0.739	-0.007			0.167			0.473	0.873	-0.433			1.459	
1,2,3,4,6,7,8-HpCDF	139.5	155.0	140.0	145.5	138.5	143.0	140.5		147.5	145.0		138.0	154.0		149.5	

表-3

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

zスコアの絶対値が3以上、及び試験所10,46,50,52のデータを除外。

定量値単位 : pg/L

分析所番号	53	54	55	56R	57	58	59	60	61
PCDD Isomer(異性体)									
2,3,7,8-TeCDD	0.514	0.765	0.674	0.750	0.691	0.631	0.671	0.791	0.681
z score	-2.015	0.842	-0.194	0.672	0.000	-0.689	-0.233	1.138	-0.120
1,2,3,7,8-PeCDD	3.155	4.140	4.185		4.220	4.350	4.205	3.435	3.730
z score	-2.296	0.531	0.660		-3.172	0.761	1.134	0.718	-1.492
				#					
1,2,3,4,7,8-HxCDD	3.880	4.050	3.700	4.300	3.900	3.920	3.730	3.505	2.990
z score	0.455	0.970	-0.091	1.728	0.515	0.576	0.000	-0.682	-2.243
1,2,3,6,7,8-HxCDD	7.460	8.965	7.990	7.450	7.830	8.580	8.155	7.785	6.995
z score	-0.647	1.446	0.090	-0.661	-0.132	0.911	0.320	-0.195	-1.293
1,2,3,7,8,9-HxCDD	5.485	6.050	5.520	6.055	5.470	5.735	5.850	5.480	4.710
z score	-0.304	0.842	-0.233	0.852	-0.335	0.203	0.436	-0.314	-1.876
1,2,3,4,6,7,8-HpCDD	35.80	48.80	43.35	37.45	41.55	41.60	44.55	42.15	41.60
z score	-2.775	2.235	0.135	-2.139	-0.559	-0.540	0.597	-0.328	-0.540
OCDD	59.85	83.70	73.55	73.75	81.25	77.80	80.60	72.65	74.95
z score	-3.372	1.502	-0.572	-0.531	1.002	0.296	0.869	-0.756	-0.286
	#								
PCDF Isomer(異性体)									
2,3,7,8-TeCDF	5.320	6.615	5.880	6.610	6.175	6.775	6.660	6.155	6.060
z score	-2.266	0.529	-1.057	0.518	-0.421	0.874	0.626	-0.464	-0.669
1,2,3,7,8-PeCDF(単独分離)	8.13	11.90	10.60	11.30	9.63	10.40	9.97	11.00	8.61
z score	-2.450	1.364	0.051	0.758	-0.930	-0.152	-0.586	0.455	-1.960
1,2,3,7,8-PeCDF(他と重なり)									
z score									
2,3,4,7,8-PeCDF	19.95	22.25	19.90	22.95	18.45	23.35	23.60	16.90	19.10
z score	-0.450	0.929	-0.480	1.349	-1.349	1.589	1.739	-2.278	-0.959
1,2,3,4,7,8-HxCDF(単独分離)	25.50	29.85	25.05	27.20	25.25	27.20	27.90	24.80	23.50
z score	-0.409	1.369	-0.593	0.286	-0.511	0.286	0.572	-0.695	-1.226
1,2,3,4,7,8-HxCDF(他と重なり)									
z score									
1,2,3,6,7,8-HxCDF	21.55	29.60	26.80	24.40	25.00	29.00	26.90	24.10	23.25
z score	-1.848	1.127	0.092	-0.795	-0.573	0.905	0.129	-0.905	-1.220
1,2,3,7,8,9-HxCDF	1.045	3.845	1.675		1.615	1.780	1.875	1.455	1.585
z score	-2.698	10.327	0.233		3.861	-0.047	0.721	1.163	-0.791
		#		#					
2,3,4,6,7,8-HxCDF(単独分離)	34.80	42.20		39.45		45.45	39.10		37.15
z score	-1.564	0.560		-0.230		1.492	-0.330		-0.890
2,3,4,6,7,8-HxCDF(他と重なり)			51.65		39.95			41.40	
z score			1.672		-1.446			-1.059	
1,2,3,4,6,7,8-HpCDF	127.5	151.5	144.5	137.5	139.0	146.0	138.5	129.0	127.0

表-3

第21回ダイオキシン類分析 技能試験 結果 (模擬排水)

zスコアの絶対値が3以上、及び試験所10,46,50,52のデータを除外。

定量値単位 : pg/L

分析所番号	53	54	55	56R	57	58	59	60	61
3,4,4',5-TeCB(#81)	7.255	7.565	7.775	7.570	7.315	7.450	7.580	7.805	6.640
z score	-0.869	-0.065	0.480	-0.052	-0.713	-0.363	-0.026	0.558	-2.464
3,3',4,4'-TeCB(#77)	39.70	39.60	38.85	38.40	37.30	37.10	40.90	42.50	35.65
z score	-0.082	-0.115	-0.362	-0.510	-0.872	-0.938	0.313	0.839	-1.415
3,3',4,4',5-PeCB(#126)	44.25	44.15	40.80	36.50	39.55	36.70	41.90	42.75	38.55
z score	1.178	1.144	0.000	-1.469	-0.427	-1.400	0.376	0.666	-0.768
3,3',4,4',5,5'-HxCB(#169)	12.00	14.25	13.05	10.71	12.10	13.30	12.25	13.70	11.75
z score	-1.104	1.656	0.184	-2.692	-0.981	0.491	-0.797	0.981	-1.410
2',3,4,4',5-PeCB(#123)	2.120	2.955	2.740	2.380	2.560	2.840	2.620	2.745	2.610
z score	-1.869	0.845	0.146	-1.024	-0.439	0.471	-0.244	0.163	-0.276
2,3',4,4',5-PeCB(#118)	17.05	16.35	16.25	14.55	14.15	12.95	17.10	18.15	16.70
z score	0.565	0.125	0.063	-1.004	-1.255	-2.008	0.596	1.255	0.345
2,3,3',4,4'-PeCB(#105)	18.15	18.75	19.65	18.35	18.35	16.90	19.55	18.90	18.55
z score	-0.401	0.036	0.693	-0.255	-0.255	-1.313	0.620	0.146	-0.109
2,3,4,4',5-PeCB(#114)	4.075	4.200	4.750	4.180	3.895	4.070	4.465	3.655	3.965
z score	-0.295	0.056	1.602	0.000	-0.801	-0.309	0.801	-1.475	-0.604
2,3',4,4',5,5'-HxCB(#167)	7.610	8.450	7.825	8.010	7.080	6.745	7.340	7.525	6.830
z score	0.027	1.548	0.416	0.751	-0.933	-1.539	-0.462	-0.127	-1.385
2,3,3',4,4',5-HxCB(#156)	20.20	22.85	23.60	21.15	19.90	20.10	19.85	21.25	19.40
z score	-0.545	0.976	1.406	0.000	-0.718	-0.603	-0.746	0.057	-1.005
2,3,3',4,4',5'-HxCB(#157)	9.89	11.50	10.45	9.10	9.55	9.81	10.15	9.75	9.10
z score	-0.504	2.113	0.406	-1.796	-1.065	-0.634	-0.081	-0.731	-1.788
2,3,3',4,4',5,5'-HpCB(#189)	17.40	19.40	19.30	18.65	17.30	18.00	17.70	18.55	17.05
z score	-0.479	1.262	1.175	0.609	-0.566	0.044	-0.218	0.522	-0.783
TEQ DL-PCB	4.794	4.852	4.481	3.980	4.327	4.078	4.567	4.696	4.216
z score	1.091	1.290	0.014	-1.707	-0.515	-1.371	0.310	0.753	-0.896
TEQ DXN + DL-PCB	27.002	32.134	30.549	28.556	28.584	31.319	30.883	27.693	27.000
z score	-1.249	1.020	0.320	-0.562	-0.549	0.660	0.467	-0.943	-1.250

表-4 第21回ダイオキシン類分析 技能試験 結果 (模擬排水) 統計計算結果

分析所番号	TEF	TEQ寄与率%	N	z >3	average	median	U95%	SD	NIQR	U95%*CV%	CV%clas	CV%rob	TEQ
PCDD Isomer(異性体)													
2,3,7,8-TeCDD	1	2.3	51	3	0.696	0.689	0.025	0.089	0.076	4	13	11	0.696
				6%									
1,2,3,7,8-PeCDD	1	13.2	52	2	3.920	3.918	0.092	0.330	0.322	2	8	8	3.92
				4%									
1,2,3,4,7,8-HxCDD	0.1	1.3	53	3	3.721	3.725	0.099	0.359	0.308	3	10	8	0.372
				6%									
1,2,3,6,7,8-HxCDD	0.1	2.7	53	2	8.00	7.90	0.170	0.62	0.71	2	8	9	0.800
				4%									
1,2,3,7,8,9-HxCDD	0.1	1.9	53	3	5.60	5.57	0.128	0.46	0.47	2	8	8	0.560
				6%									
1,2,3,4,6,7,8-HpCDD	0.01	1.4	53	2	43.2	42.8	0.802	2.9	2.1	2	7	5	0.4316
				4%									
OCDD	0.0003	0.077	52	4	76.3	75.9	1.319	4.7	4.0	2	6	5	0.02289
				8%									
PCDF Isomer(異性体)													
2,3,7,8-TeCDF	0.1	2.14	51	5	6.318	6.370	0.145	0.516	0.437	2	8	7	0.632
				10%									
1,2,3,7,8-PeCDF(単独分離)	0.03	1.0	49	1	10.35	10.40	0.274	0.96	0.95	3	9	9	0.310
				2%									
1,2,3,7,8-PeCDF(他と重なり)	0.03	2.3	4	0	21.72	22.85	4.981	3.59	2.58	23	17	11	
				0%									
2,3,4,7,8-PeCDF	0.3	20.9	53	1	20.78	20.70	0.486	1.76	1.67	2	8	8	6.23
				2%									
1,2,3,4,7,8-HxCDF(単独分離)	0.1	8.9	49	1	26.64	26.40	0.609	2.12	2.34	2	8	9	2.664
				2%									
1,2,3,4,7,8-HxCDF(他と重なり)	0.1	9.8	4	0	28.46	29.20	3.513	2.53	1.62	12	9	6	
				0%									
1,2,3,6,7,8-HxCDF	0.1	8.9	53	1	26.27	26.50	0.603	2.19	2.04	2	8	8	2.627
				2%									
1,2,3,7,8,9-HxCDF	0.1	0.5	50	7	1.64	1.59	0.104	0.36	0.16	6	22	10	0.164
				14%									
2,3,4,6,7,8-HxCDF(単独分離)	0.1	13.5	34	1	40.5	40.2	1.068	3.1	3.4	3	8	8	4.05
				3%									
2,3,4,6,7,8-HxCDF(他と重なり)	0.1	15.2	19	0	45.2	45.4	1.671	3.5	3.4	4	8	7	
				0%									
1,2,3,4,6,7,8-HpCDF	0.01	4.7	50	5	141.1	141.0	2.282	8.0	7.0	2	6	5	1.411

