Appendix 2: Chemical Information and Test Results

Table 2: Chemicals and Breakdown Products Tested

Chemical Group	Specific Chemical Tested	Chemical Name or Explanation
Phthalates	mMeP	Metabolite of DMP (dimethyl phthalate) – used in hair-care products, solid rocket propellant, insect repellants, and plastics
	mEtP	Metabolite of DEP (diethyl phthalate) – found in personal care products such as perfume, cologne, aftershaves, deodorants, shampoo, and hand lotion
	mBuP	Metabolite of DBP (dibutyl phthalate) – found in personal care products such as nail polish and in pharmaceuticals
	mBzP	Metabolite of BzBP (benzylbutyl phthalate) – found in vinyl flooring, car-care products, personal-care products, adhesives, and sealants
	mEHP	Metabolites of DEHP (di-(2-ethylhexyl) phthalate) – found in PVC products including medical products such as tubing; auto interiors; consumer products such as clothing, diaper covers, shower curtains, and furniture
	mEOHP	
	mEHHP	
PBDEs		Measurement of PBDEs (polybrominated diphenyl ethers); value reported is sum of levels of 40 congeners, adjusted for lipid content of blood.
Metals	Lead	
	Arsenic	Measurement of speciated arsenic, which is a summation of inorganic arsenic, demethylarsinic acid, and monomethylarsonic acid. Does not include organic arsenic
	Mercury	
Perfluorinated Compounds	PFOA	Perfluorooctanoic acid
	PFNA	Perfluornonananoic acid
	PFDA	Perfluorodecanoic acid
	PFUnA	Perfluoroundecanoic acid
	PFHxS	Perfluorohexanoic sulfonate
	PFOS	Perfluorooctane sulfonate
	PFOSA	Perfluorooctane sulfonamide
Pesticides	1-napthol	Metabolite of carbaryl pesticide
	DMP	Metabolites of organo-phosphate pesticides: Dimethylphosphate
	DMTP	Dimethylthiophosphate
	DMDTP	Dimethyldithiophosphate
	DEP	Diethylphosphate
	DETP	Diethylthiophosphate
	DEDTP	Diethyldithiophosphate
Persistent Toxic Chemicals (banned)	PCBs	Total PCBs tested in blood
	p,p'-DDE	Metabolite of DDT

Table 3: Results

Chemical Class	Testing Medium	Chemical Tested	Ann Holmes Redding	Patricia Dawson	Pam Tazioli	Denis Hayes	Lisa Brown	Bill Finkbeiner	Laurie Valeriano	Deb Abrahamson	Allyson Schrier	Karen Bowman
Phthalates (shown as ppb)	urine	mMeP	<1.07	<6.08	3.49	1.8	<3.40	11.2	<5.00	4.27	<8.00	8.05
		mEtP	<1.96	85.9	302	52.3	73.2	234	15.2	163	38.1	189
		mBuP	<0.900	24.8	16.4	14.9	158	78.1	17.1	9.13	68.8	134
		mBzP	6.48	12.4	25.7	16.9	59.3	99	23.9	9.2	37.2	96.7
		mEHP	<3	3.8	7.52	3.3	10.3	43.7	<3	3.7	7.8	51.9
		mEOHP	1.68	21.3	35.7	39.8	28.1	73.6	13.5	22.7	38.9	211
		mEHHP	5.16	40	74.1	72	56.7	165	24.5	42.5	60.4	338
Chemical Class	**Testing Medium**	**Chemical Tested**	**Ann Holmes Redding**	**Patricia Dawson**	**Pam Tazioli**	**Denis Hayes**	**Lisa Brown**	**Bill Finkbeiner**	**Laurie Valeriano**	**Deb Abrahamson**	**Allyson Schrier**	**Karen Bowman**
PBDEs (shown as ppt on a lipid weight basis)	blood serum	Br2-DPE-7	< 5.15	< 6.21	< 9.46	< 6.90	< 6.33	< 12.6	< 5.16	< 5.90	< 7.05	< 6.68
		Br2-DPE-8/11	< 5.01	< 5.40	< 8.36	< 5.58	< 5.19	< 10.2	< 5.16	< 4.75	< 5.67	K 5.84
		Br2-DPE-10	6.19	K 8.10	K 14.3	< 8.08	< 7.46	< 14.5	< 5.49	K 7.71	< 8.31	< 7.63
		Br2-DPE-12/13	< 5.01	< 5.40	< 8.36	< 5.14	< 4.81	< 8.49	< 5.16	< 4.75	< 5.67	< 4.53
		Br2-DPE-15	692	278	68.3	417	286	89.8	406	272	94.5	145
		Br3-DPE-17/25	72.9	159	K 36.7	58	65.3	145	35.8	45.3	37.5	92.2
		Br3-DPE-28/33	3030	2540	668	1440	1290	960	759	2180	741	995
		Br3-DPE-30	< 6.92	< 8.64	< 12.7	< 8.37	< 7.72	< 13.2	< 6.16	< 7.05	< 7.94	< 8.58
		Br3-DPE-32	< 5.30	< 6.62	< 9.87	< 6.46	< 5.95	< 10.2	< 5.16	< 5.41	< 6.17	< 6.56
		Br3-DPE-35	8.69	< 5.40	< 8.36	< 5.14	K 5.57	< 8.68	< 5.16	< 4.75	< 5.67	< 5.60
		Br3-DPE-37	10.3	K 14.0	< 8.36	9.55	11.3	K 10.6	K 5.82	18.4	< 5.67	9.78
		Br4-DPE-47	28000	83000	9900	17200	23800	20900	15000	27200	19000	15900
		Br4-DPE-49	82.6	177	95.5	259	190	215	109	203	125	178
		Br4-DPE-51	K 10.5	15.9	< 15.9	< 10.6	12	30.4	< 9.98	< 11.1	< 12.7	14.5
		Br4-DPE-66	197	670	119	142	228	219	108	216	134	142
		Br4-DPE-71	< 12.8	35.6	< 22.8	< 15.1	< 17.1	< 43.4	< 14.3	< 15.9	< 18.1	< 17.6
		Br4-DPE-75	33.7	119	< 18.5	20.7	27.8	< 35.3	16.3	26.1	23.8	20.5
		Br4-DPE-77	< 7.22	< 7.02	< 13.4	< 8.96	< 10.0	< 27.7	< 8.49	< 9.51	< 10.6	< 11.2
		Br4-DPE-79	K 79.4	K 212	K 46.7	K 69.0	K 80.1	K 47.6	K 44.3	K 117	K 53.3	K 32.1
		Br5-DPE-85	439	1490	163	151	392	494	181	885	300	201
		Br5-DPE-99	4550	34200	1860	1970	4520	6380	2100	4490	4020	2600
		Br5-DPE-100	4040	8660	1110	1720	3060	3170	1650	7740	3640	1930
		Br5-DPE-105	< 10.2	< 15.5	< 16.2	< 8.96	< 44.7	< 18.9	< 66.9	< 61.8	< 8.06	< 18.2
		Br5-DPE-116	< 13.8	< 20.9	< 22.3	< 12.5	< 54.8	< 23.0	< 82.4	< 75.7	< 11.1	< 22.4
		Br5-DPE-119/120	24.7	66.8	< 14.8	20.9	< 29.5	< 12.5	< 48.3	< 40.8	< 7.31	18.1
		Br5-DPE-126	< 5.01	K 12.2	< 8.36	< 5.14	< 15.7	< 7.74	< 23.3	K 22.0	< 5.67	< 7.15
		Br6-DPE-128	< 42.4	< 46.4	< 89.9	< 27.5	< 34.3	< 66.6	< 44.3	< 32.3	< 55.2	< 44.3
		Br6-DPE-138/166	79.2	232	< 84.9	K 32.9	63.6	K 140	30.5	177	68.3	45.8
		Br6-DPE-140	33.1	96.1	< 52.6	33.5	35.7	< 51.9	16.5	105	81	21.5
		Br6-DPE-153	1590	2960	1030	6240	2490	17300	1380	7920	11700	1410
		Br6-DPE-154	409	2030	144	176	354	381	151	723	402	197
		Br6-DPE-155	48.5	207	< 32.9	K 38.0	K 55.4	38.3	K 26.0	83.3	K 79.0	K 34.6
		Br7-DPE-181	< 19.3	< 30.5	< 27.0	< 20.7	< 21.5	< 62.1	< 23.0	< 21.8	< 26.6	< 38.5
		Br7-DPE-183	249	1660	149	223	183	K 153	331	213	249	169
		Br7-DPE-190	36.1	102	< 40.3	68.6	K 41.0	< 96.2	52.6	K 43.1	39.7	< 59.7
		Br8-DPE-203	118	124	K 84.7	151	175	K 179	156	152	K 116	K 173
		Br9-DPE-206	< 801	< 735	< 1220	< 799	< 688	< 1030	< 905	1000	< 685	< 649
		Br9-DPE-207	885	1230	< 1150	< 756	2280	1120	894	1570	679	K 1100
		Br9-DPE-208	< 524	< 481	< 799	< 523	543	808	< 592	620	< 448	736
		Br10-DPE-209	< 9720	< 8910	< 14800	< 9690	< 8350	< 12500	< 11000	< 10800	< 8310	< 7870
Chemical Class	**Testing Medium**	**Chemical Tested**	**Ann Holmes Redding**	**Patricia Dawson**	**Pam Tazioli**	**Denis Hayes**	**Lisa Brown**	**Bill Finkbeiner**	**Laurie Valeriano**	**Deb Abrahamson**	**Allyson Schrier**	**Karen Bowman**
PFCs, or perfluorinated compounds (shown as ppb)	blood serum	PFBA	< 0.548	< 0.548	< 0.548	< 0.548	< 0.548	< 0.548	< 0.548	< 0.548	< 0.548	< 0.548
		PFPeA	< 0.518	< 0.518	< 0.518	< 0.518	< 0.518	< 0.518	< 0.518	< 0.518	< 0.518	< 0.518
		PFHxA	< 0.506	< 0.506	< 0.506	< 0.506	< 0.506	< 0.506	< 0.506	< 0.506	< 0.506	< 0.506
		PFHpA	< 0.508	< 0.508	< 0.508	< 0.508	< 0.508	< 0.508	< 0.508	< 0.508	< 0.508	< 0.508
		PFOA	3.45	3.64	3.6	5.24	4.1	7.35	0.65	2.88	2.07	4.6
		PFNA	0.712	1.51	1.53	0.953	1.83	1.96	< 0.522	0.761	0.598	1.34
		PFDA	< 0.518	0.648	< 0.518	< 0.518	0.78	0.711	< 0.518	< 0.518	< 0.518	< 0.518
		PFUnA	< 0.524	< 0.524	0.553	0.538	< 0.524	0.779	< 0.524	< 0.524	< 0.524	< 0.524
		PFDoA	< 0.530	< 0.530	< 0.530	< 0.530	< 0.530	< 0.530	< 0.530	< 0.530	< 0.530	< 0.530
		PFBS	< 0.996	< 0.996	< 0.996	< 0.996	< 0.996	< 0.996	< 0.996	< 0.996	< 0.996	< 0.996
		PFHxS	1.7	1.33	< 1.02	5.32	1.69	< 1.02	< 1.02	3.57	< 1.02	1.59
		PFOS	6.36	19.4	20.2	26.3	25.2	49.4	3.27	29.8	8.15	22.3
		PFOSA	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500

Table continued on next page

Table 3: Results (continued from previous page)

Chemical Class	Testing Medium	Chemical Tested	Ann Holmes Redding	Patricia Dawson	Pam Tazioli	Denis Hayes	Lisa Brown	Bill Finkbeiner	Laurie Valeriano	Deb Abrahamson	Allyson Schrier	Karen Bowman
Metals	whole blood	Pb (µg/dl)	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	3.4
	urine	As (ppb)	<10	12	13	16	15	<10	<10	<10	<10	14
		As (creatinine corrected, ppb)	N/A	10	54	10	9	N/A	N/A	N/A	N/A	34
	hair	Hg (ppb)	787	E987	587	2020	1080	1840	397	59.5	634	1860
Chemical Class	**Testing Medium**	**Chemical Tested**	**Ann Holmes Redding**	**Patricia Dawson**	**Pam Tazioli**	**Denis Hayes**	**Lisa Brown**	**Bill Finkbeiner**	**Laurie Valeriano**	**Deb Abrahamson**	**Allyson Schrier**	**Karen Bowman**
Organochlorine pesticides (shown as ppb)	blood serum	p,p'-DDT	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
		p,p'-DDE	8.67	12.56	0.8	0.42	1.8	<0.20	<0.20	2.21	0.26	1.94
		p,p'-DDD	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		alpha-chlordane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		gamma-chlordane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		trans-nonachlor	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		heptachlor	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		heptachlor epoxide	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		oxychlordane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		lindane (gamma-BHC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		beta-BHC	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
		dieldrin	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		hexachlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chemical Class	**Testing Medium**	**Chemical Tested**	**Ann Holmes Redding**	**Patricia Dawson**	**Pam Tazioli**	**Denis Hayes**	**Lisa Brown**	**Bill Finkbeiner**	**Laurie Valeriano**	**Deb Abrahamson**	**Allyson Schrier**	**Karen Bowman**
PCBs (shown as ppb)	blood serum	PCBs	1.5	2.3	1	0.9	1.2	0.6	0.2	0.8	0.4	1.1
Chemical Class	**Testing Medium**	**Chemical Tested**	**Ann Holmes Redding**	**Patricia Dawson**	**Pam Tazioli**	**Denis Hayes**	**Lisa Brown**	**Bill Finkbeiner**	**Laurie Valeriano**	**Deb Abrahamson**	**Allyson Schrier**	**Karen Bowman**
Carbaryl (shown as ppb)	urine	1-napthol	4.4	<1.0	<1.0	<20	6.8	9.9	<1	1.3	6.8	<10
		1-napthol (creatinine corrected)	11.3	N/A	N/A	N/A	4.1	25.4	N/A	1.7	N/A	N/A
Chemical Class	**Testing Medium**	**Chemical Tested**	**Ann Holmes Redding**	**Patricia Dawson**	**Pam Tazioli**	**Denis Hayes**	**Lisa Brown**	**Bill Finkbeiner**	**Laurie Valeriano**	**Deb Abrahamson**	**Allyson Schrier**	**Karen Bowman**
Organophosphate pesticides (shown as ppb)	urine	DMP	5.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	16.1	<5.0	<5.0
		DMP (creatinine corrected)	14	N/A	N/A	N/A	N/A	N/A	N/A	21	N/A	N/A
		DMTP	12.8	7.4	<5.0	<5.0	13.5	<5.0	<5.0	13.9	<5.0	<5.0
		DMTP (creatinine corrected)	33	6	N/A	N/A	8	N/A	N/A	19	N/A	N/A
		DMDTP	<10.0	<10	<10	<10	<10.0	<10.0	<10.0	<10	<10.0	<10.0
		DEP	<5.0	<5	<5	<5	<5.0	<5.0	<5.0	5.6	<5.0	<5.0
		DEP (creatinine corrected)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7	N/A	N/A
		DETP	<5.0	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
		DEDTP	<10.0	<10	<10	<10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chemical Class	**Testing Medium**	**Chemical Tested**	**Ann Holmes Redding**	**Patricia Dawson**	**Pam Tazioli**	**Denis Hayes**	**Lisa Brown**	**Bill Finkbeiner**	**Laurie Valeriano**	**Deb Abrahamson**	**Allyson Schrier**	**Karen Bowman**
Chlorpyrifos (shown as ppb)	urine	3,5,6-TCP	<2	<2	<2	<2	<2	<2	<2	<2	<2	<50
Chemical Class	**Testing Medium**	**Chemical Tested**	**Ann Holmes Redding**	**Patricia Dawson**	**Pam Tazioli**	**Denis Hayes**	**Lisa Brown**	**Bill Finkbeiner**	**Laurie Valeriano**	**Deb Abrahamson**	**Allyson Schrier**	**Karen Bowman**
2,4-D (shown as ppb)	urine	2,4-D	<2	<2	<2	<20	<2	<2	<2	<2	<2	<20

K-flagged values indicate a peak was detected but did not meet quantification criteria; the result represents the estimated maximum possible concentration. These values were not included in calculations of sums.

E-flagged value: the laboratory has qualified this value as an estimate due to sample inhomogeneity.

Table 4: Results Summary

Chemical	Anne Holmes Redding	Patricia Dawson	Pam Tazioli	Denis Hayes	Lisa Brown	Bill Finkbeiner	Laurie Valeriano	Deb Abrahamson	Allyson Schrier	Karen Bowman	Study Median	National Median/ Median Range
MBP	<LOD	24.8	16.4	14.9	158	78.1	17.1	9.13	68.8	134	30	19.1
MEHP	<LOD	3.8	7.52	3.3	10.3	43.7	<LOD	3.7	7.8	51.9	5.7	4.1
PBDEs	52.6	147.5	28.5	38.8	46.7	62.6	32.5	63.8	48.3	40	47.5	47.9
PFOS	6.36	19.4	20.2	26.3	25.2	49.4	3.27	29.8	8.15	22.3	21.3	10.4-40.2
PFOA	3.45	3.64	3.6	5.24	4.1	7.35	0.65	2.88	2.07	4.6	3.6	2.1-7
Mercury	787	987	587	2020	1080	1840	397	59.5	634	1860	887	430-620
Carbaryl (measured as 1-napthol)	4.4	<1.0	<1.0	<20	6.8	9.9	<1	1.3	6.8	<10	<LOD	<LOD
DMP	5.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	16.1	<5.0	<5.0	<LOD	<LOD
DMTP	12.8	7.4	<5.0	<5.0	13.5	<5.0	<5.0	13.9	<5.0	<5.0	<LOD	<LOD
DDT (measured as DDE)	8.67	12.56	0.8	0.42	1.8	<0.20	<0.20	2.21	0.26	1.94	1.3	1.8
PCBs	1.5	2.3	1	0.9	1.2	0.6	0.2	0.8	0.4	1.1	0.95	0.9-1.5

Notes:
LOD = limit of detection
Results are presented in ppb (parts per billion)