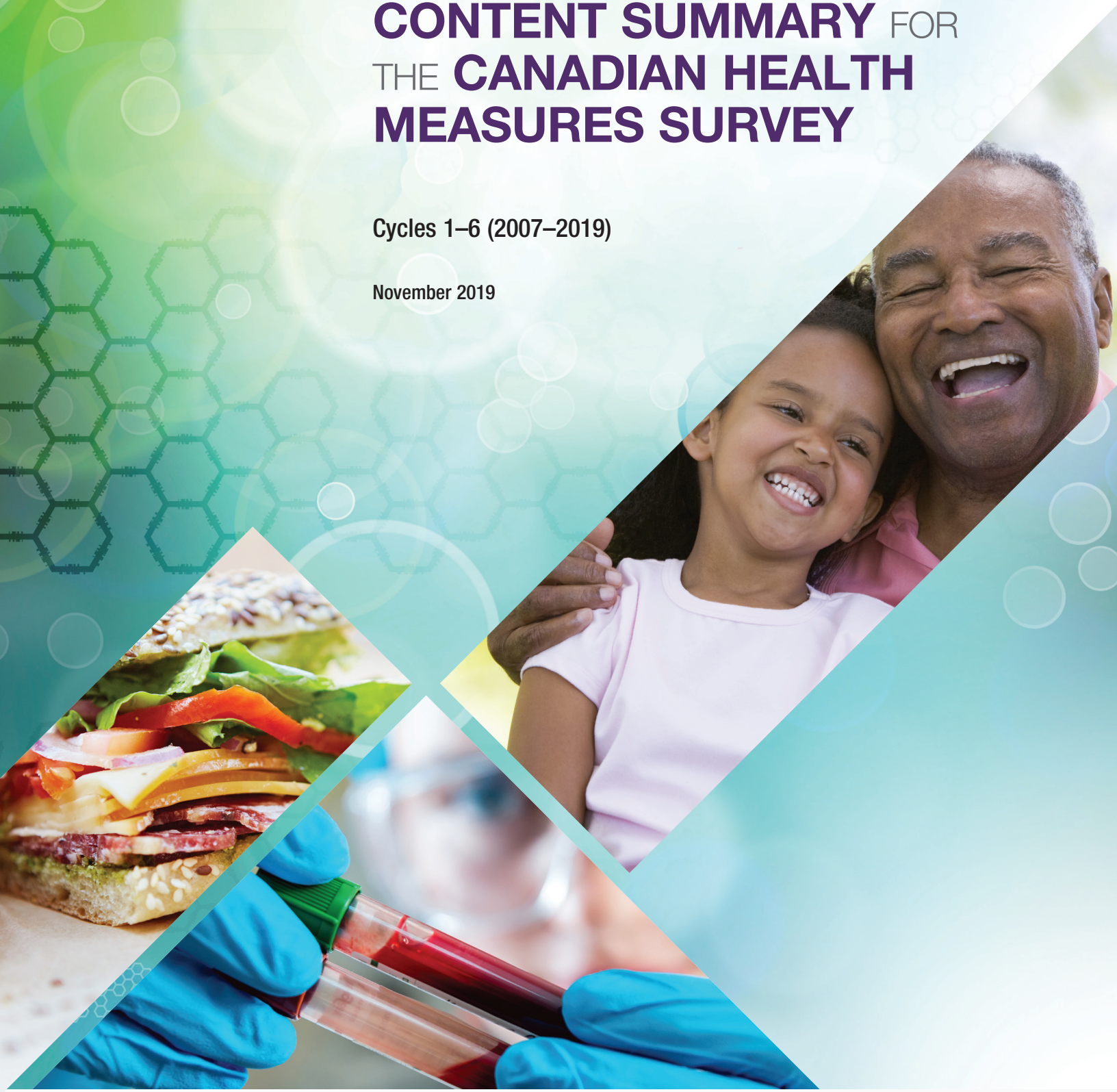
BIOMONITORING CONTENT SUMMARY FOR THE CANADIAN HEALTH MEASURES SURVEY

Cycles 1–6 (2007–2019)

November 2019



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Biomonitoring Content Summary for the Canadian Health Measures Survey: Cycles 1–6 (2007–2019) is available on the Internet at the following address:
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BIOMONITORING CONTENT SUMMARY FOR THE CANADIAN HEALTH MEASURES SURVEY: CYCLES 1–6 (2007–2019)

These chemicals have been measured or are planned for measurement in blood and/or urine samples collected from 2007 to 2019 as part of the Canadian Health Measures Survey (CHMS). The chemicals were selected based on known or suspected health effects resulting from exposure, level of public concern, evidence of exposure in the Canadian population, and technical feasibility and cost of measurement. In addition, factors such as emerging Health Canada priorities are considered while selecting chemicals for inclusion in the CHMS. Summary data for these chemicals have been published in Health Canada's reports on human biomonitoring of environmental chemicals in Canada and scientific articles. The primary source of summary data for each chemical, when available, is provided in the table below.

Summary of environmental chemicals measured in the Canadian Health Measures Survey from 2007 to 2019 including data sources.

Chemical	Cycle 1 2007–2009	Cycle 2 2009–2011	Cycle 3 2012–2013	Cycle 4 2014–2015	Cycle 5 2016–2017	Cycle 6 2018–2019
Metals and trace elements						
Lead	HC, 2010	HC, 2013	HC, 2015	HC, 2017	HC, 2019	NA
Antimony	HC, 2010	HC, 2013	—	—	—	—
Boron	—	—	—	—	HC, 2019	NA
Cadmium	HC, 2010	HC, 2013	HC, 2015	HC, 2017	HC, 2019	NA
Cesium	—	HC, 2013	—	—	—	—
Chromium (VI)[a]	—	—	—	—	HC, 2019	NA
Cobalt	—	HC, 2013	—	—	—	—
Copper	HC, 2010	HC, 2013	—	—	—	—
Fluoride	—	HC, 2013	HC, 2015	HC, 2017	—	—
Manganese	HC, 2010	HC, 2013	—	—	—	—
Molybdenum	HC, 2010	HC, 2013	—	—	—	—
Nickel	HC, 2010	HC, 2013	—	—	—	—
Selenium	HC, 2010	HC, 2013	—	—	HC, 2019	NA
Silver	—	HC, 2013	—	—	—	—
Thallium	—	HC, 2013	—	—	—	—
Tungsten	—	HC, 2013	—	—	—	—
Uranium	HC, 2010	HC, 2013	—	—	—	—
Vanadium	HC, 2010	HC, 2013	—	—	—	—
Zinc	HC, 2010	HC, 2013	—	—	—	—

Chemical	Cycle 1 2007–2009	Cycle 2 2009–2011	Cycle 3 2012–2013	Cycle 4 2014–2015	Cycle 5 2016–2017	Cycle 6 2018–2019
Metals and trace elements: Arsenic						
Arsenic (total)	HC, 2010	HC, 2013	—	—	—	—
Inorganic-related arsenic species[b]	—	HC, 2017	HC, 2017	HC, 2017	HC, 2019	NA
Arsenite	—	HC, 2013	HC, 2015	HC, 2017	HC, 2019	NA
Arsenate	—	HC, 2013	HC, 2015	HC, 2017	HC, 2019	NA
Monomethylarsonic acid	—	HC, 2013	HC, 2015	HC, 2017	HC, 2019	NA
Dimethylarsinic acid	—	HC, 2013	HC, 2015	HC, 2017	HC, 2019	NA
Arsenocholine and arsenobetaine	—	HC, 2013	HC, 2015	HC, 2017	HC, 2019	NA
Arsenocholine	—	—	HC, 2015	HC, 2017	—	—
Metals and trace elements: Mercury						
Mercury (total)	HC, 2010	HC, 2013	HC, 2015	HC, 2017	HC, 2019	NA
Methylmercury	—	—	HC, 2015	HC, 2017	HC, 2019	NA
Mercury (inorganic)	HC, 2010	—	HC, 2015	HC, 2017	HC, 2019	NA
Self-care and consumer product chemicals						
Bisphenol A (BPA)	HC, 2010	HC, 2013	HC, 2015	HC, 2017	HC, 2019	NA
Triclocarban	—	HC, 2013	—	—	—	—
Triclosan	—	HC, 2013	HC, 2015	HC, 2017	—	—
Self-care and consumer product chemicals: Parabens						
Methyl paraben	—	—	HC, 2019	HC, 2017	HC, 2019	NA
Ethyl paraben	—	—	HC, 2019	HC, 2017	HC, 2019	NA
Propyl paraben	—	—	HC, 2019	HC, 2017	HC, 2019	NA
Butyl paraben	—	—	HC, 2019	HC, 2017	HC, 2019	NA
Nicotine						
Cotinine	HC, 2010	HC, 2013	HC, 2015	HC, 2017	HC, 2019	NA
Acrylamide						
Acrylamide haemoglobin adduct	—	—	HC, 2015	HC, 2017	HC, 2019	NA
Glycidamide haemoglobin adduct	—	—	HC, 2015	HC, 2017	HC, 2019	NA
Chlorophenols						
2,4-Dichlorophenol	HC, 2010	HC, 2013	—	—	—	—
2,5-Dichlorophenol	—	HC, 2013	—	—	—	—
2,4,5-Trichlorophenol	—	HC, 2013	—	—	—	—
2,4,6-Trichlorophenol	—	HC, 2013	—	—	—	—
Pentachlorophenol	—	HC, 2013	—	—	—	—
Dioxins						
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (TCDD)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin (PeCDD)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin (HxCDD)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin (HxCDD)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin (HxCDD)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin (HpCDD)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
1,2,3,4,6,7,8,9-Octachlorodibenzo-*p*-dioxin (OCDD)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]

Chemical	Cycle 1 2007–2009	Cycle 2 2009–2011	Cycle 3 2012–2013	Cycle 4 2014–2015	Cycle 5 2016–2017	Cycle 6 2018–2019
Furans						
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
Flame retardants						
2,2',4,4',5,5'-Hexabromobiphenyl (PBB 153)	HC, 2010	—	—	—	—	—
Tetrabromobisphenol A (TBBPA)	—	—	NA[c]	NA[c]	NA[c]	NA[c]
Flame retardants: Hexabromocyclododecane (HBCD)						
HBCD α	Rawn et al., 2014	—	NA[c]	NA[c]	NA[c]	NA[c]
HBCD β	Rawn et al., 2014	—	NA[c]	NA[c]	NA[c]	NA[c]
HBCD γ	Rawn et al., 2014	—	NA[c]	NA[c]	NA[c]	NA[c]
Flame retardants: Polybrominated diphenyl ethers (PBDEs)						
4,4'-Dibromodiphenyl ether (PBDE 15)	HC, 2010, Rawn et al., 2014	—	—	—	—	—
2,2',4-Tribromodiphenyl ether (PBDE 17)	HC, 2010, Rawn et al., 2014	—	—	—	—	—
2,3',4-Tribromodiphenyl ether (PBDE 25)	HC, 2010	—	—	—	—	—
2,4,4'-Tribromodiphenyl ether (PBDE 28)	HC, 2010, Rawn et al., 2014	—	—	—	—	—
2',3,4'-Tribromodiphenyl ether (PBDE 33)	HC, 2010	—	—	—	—	—
3,4,4'-Tribromodiphenyl ether (PBDE 37)	Rawn et al., 2014	—	—	—	—	—
2,2',4,4'-Tetrabromodiphenyl ether (PBDE 47)	HC, 2010, Rawn et al., 2014	—	NA[c]	NA[c]	NA[c]	NA[c]
2,3',4,4'-Tetrabromodiphenyl ether (PBDE 66)	Rawn et al., 2014	—	—	—	—	—
2,3',4',6-Tetrabromodiphenyl ether (PBDE 71)	Rawn et al., 2014	—	—	—	—	—
2,4,4',6-Tetrabromodiphenyl ether (PBDE 75)	Rawn et al., 2014	—	—	—	—	—
3,3',4,4'-Tetrabromodiphenyl ether (PBDE 77)	Rawn et al., 2014	—	—	—	—	—
2,2',3,4,4'-Pentabromodiphenyl ether (PBDE 85)	Rawn et al., 2014	—	—	—	—	—
2,2',4,4',5-Pentabromodiphenyl ether (PBDE 99)	HC, 2010, Rawn et al., 2014	—	NA[c]	NA[c]	NA[c]	NA[c]
2,2',4,4',6-Pentabromodiphenyl ether (PBDE 100)	HC, 2010, Rawn et al., 2014	—	NA[c]	NA[c]	NA[c]	NA[c]
2,3',4,4',6-Pentabromodiphenyl ether (PBDE 119)	Rawn et al., 2014	—	—	—	—	—
3,3',4,4',5-Pentabromodiphenyl ether (PBDE 126)	Rawn et al., 2014	—	—	—	—	—
2,2',3,4,4',5'-Hexabromodiphenyl ether (PBDE 138)	Rawn et al., 2014	—	—	—	—	—
2,2',4,4',5,5'-Hexabromodiphenyl ether (PBDE 153)	HC, 2010, Rawn et al., 2014	—	NA[c]	NA[c]	NA[c]	NA[c]
2,2',4,4',5,6'-Hexabromodiphenyl ether (PBDE 154)	Rawn et al., 2014	—	—	—	—	—

Chemical	Cycle 1 2007–2009	Cycle 2 2009–2011	Cycle 3 2012–2013	Cycle 4 2014–2015	Cycle 5 2016–2017	Cycle 6 2018–2019
2,3,3',4,5,6-Hexabromodiphenyl ether (PBDE 160)	Rawn et al., 2014	—	—	—	—	—
2,2',3,4,4',5,6-Heptabromodiphenyl ether (PBDE 181)	Rawn et al., 2014	—	—	—	—	—
2,2',3,4,4',5',6-Heptabromodiphenyl ether (PBDE 183)	Rawn et al., 2014	—	—	—	—	—
2,3,3',4,4',5,6-Heptabromodiphenyl ether (PBDE 190)	Rawn et al., 2014	—	—	—	—	—
2,3,3',4,4',5,5',6-Octabromodiphenyl ether (PBDE 205)	Rawn et al., 2014	—	—	—	—	—
2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (PBDE 209)	Rawn et al., 2014	—	NA[c]	NA[c]	NA[c]	NA[c]
Organochlorines						
Aldrin	HC, 2010	—	—	—	—	—
Hexachlorobenzene	HC, 2010	—	NA[c]	NA[c]	NA[c]	NA[c]
Mirex	HC, 2010	—	—	—	—	—
Organochlorines: Chlordane						
α-Chlordane	HC, 2010	—	—	—	—	—
γ-Chlordane	HC, 2010	—	—	—	—	—
cis-Nonachlor	HC, 2010	—	—	—	—	—
trans-Nonachlor	HC, 2010	—	NA[c]	NA[c]	NA[c]	NA[c]
Oxychlordane	HC, 2010	—	NA[c]	NA[c]	NA[c]	NA[c]
Organochlorines: Dichlorodiphenyltrichloroethane (DDT)						
o,p'-Dichlorodiphenyldichloroethylene (*o,p'*-DDE)	—	—	NA[c]	NA[c]	NA[c]	NA[c]
p,p'-Dichlorodiphenyldichloroethylene (*p,p'*-DDE)	HC, 2010	—	NA[c]	NA[c]	NA[c]	NA[c]
p,p'-Dichlorodiphenyltrichloroethane (*p,p'*-DDT)	HC, 2010	—	—	—	—	—
Organochlorines: Endosulfan						
Endosulfan I	—	—	NA[c]	NA[c]	NA[c]	NA[c]
Endosulfan II	—	—	NA[c]	NA[c]	NA[c]	NA[c]
Organochlorines: Hexachlorocyclohexane (HCH)						
β-HCH	HC, 2010	—	—	—	—	—
γ-HCH	HC, 2010	—	—	—	—	—
Organochlorines: Toxaphene						
Toxaphene parlar 26	HC, 2010	—	—	—	—	—
Toxaphene parlar 50	HC, 2010	—	—	—	—	—
Per- and polyfluoroalkyl substances						
Perfluorobutanoic acid (PFBA)	—	HC, 2013	—	—	HC, 2019	NA
Perfluorobutane sulfonate (PFBS)	—	HC, 2013	—	—	HC, 2019	NA
Perfluorohexanoic acid (PFHxA)	—	HC, 2013	—	—	HC, 2019	NA
Perfluorohexane sulfonate (PFHxS)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
Perfluorooctanoic acid (PFOA)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
Perfluorooctane sulfonate (PFOS)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
Perfluorononanoic acid (PFNA)	—	HC, 2013	—	—	HC, 2019	NA
Perfluorodecanoic acid (PFDA)	—	HC, 2013	—	—	HC, 2019	NA
Perfluoroundecanoic acid (PFUnDA)	—	HC, 2013	—	—	HC, 2019	NA
Pesticides: 2,4-Dichlorophenoxyacetic acid (2,4-D)						
2,4-D	HC, 2010	HC, 2013	—	—	—	—

Chemical	Cycle 1 2007–2009	Cycle 2 2009–2011	Cycle 3 2012–2013	Cycle 4 2014–2015	Cycle 5 2016–2017	Cycle 6 2018–2019
Pesticides: Atrazine						
Atrazine mercapturate	—	HC, 2013	—	—	—	—
Desethylatrazine	—	HC, 2013	—	—	—	—
Diaminochlorotriazine	—	HC, 2013	—	—	—	—
Pesticides: Carbamates						
Carbofuranphenol	—	HC, 2013	—	—	—	—
2-Isopropoxyphenol	—	HC, 2013	—	—	—	—
Pesticides: Ethylene bisdithiocarbamates						
Ethylene thiourea (ETU)	—	—	—	—	HC, 2019	NA
Pesticides: Organophosphates						
Acephate	—	—	HC, 2019	—	—	—
Dimethylphosphate (DMP)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
Dimethylthiophosphate (DMTP)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
Dimethyldithiophosphate (DMDTP)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
Diethylphosphate (DEP)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
Diethylthiophosphate (DETP)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
Diethyldithiophosphate (DEDTP)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
Malathion dicarboxylic acid	—	—	HC, 2019	HC, 2017	—	—
Methamidophos	—	—	HC, 2019	—	—	—
3,5,6-Trichloro-2-pyridinol	—	—	HC, 2019	HC, 2017	—	—
Pesticides: *ortho*-Phenylphenol (OPP)						
OPP-glucuronide	—	—	—	—	HC, 2019	NA
OPP-sulfate	—	—	—	—	HC, 2019	NA
Pesticides: Pyrethroids						
3-Phenoxybenzoic acid (3-PBA)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
4-Fluoro-3-phenoxybenzoic acid (4-F-3-PBA)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
cis-3-(2,2-Dibromovinyl)-2,2-dimethylcyclopropane carboxylic acid (*cis*-DBCA)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
cis-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid (*cis*-DCCA)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
trans-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid (*trans*-DCCA)	HC, 2010	HC, 2013	—	—	HC, 2019	NA
Plasticizers: Phthalates						
Monomethyl phthalate (MMP)	HC, 2013	HC, 2013	—	—	HC, 2019	NA
Monoethyl phthalate (MEP)	HC, 2013	HC, 2013	—	—	HC, 2019	NA
Mono(3-carboxypropyl) phthalate (MCPP)	HC, 2013	HC, 2013	—	—	HC, 2019	NA
Mono-*n*-butyl phthalate (M*n*BP)	HC, 2013	HC, 2013	—	—	HC, 2019	NA
Monoisobutyl phthalate (MiBP)	—	HC, 2013	—	—	HC, 2019	NA
Mono-3-hydroxy-*n*-butyl phthalate (3OH-MBP)	—	—	—	—	HC, 2019	NA
Monocyclohexyl phthalate (MCHP)	HC, 2013	HC, 2013	—	—	HC, 2019	NA
Monobenzyl phthalate (MBzP)	HC, 2013	HC, 2013	—	—	HC, 2019	NA
Mono[2-(carboxymethyl)hexyl] phthalate (MCMHP)	—	—	—	—	HC, 2019	NA
Mono(2-ethylhexyl) phthalate (MEHP)	HC, 2013	HC, 2013	—	—	HC, 2019	NA
Mono(2-ethyl-5-carboxypentyl) phthalate (MECPP)	—	—	—	—	HC, 2019	NA

Chemical	Cycle 1 2007–2009	Cycle 2 2009–2011	Cycle 3 2012–2013	Cycle 4 2014–2015	Cycle 5 2016–2017	Cycle 6 2018–2019
Mono(2-ethyl-5-oxohexyl) phthalate (MEOHP)	HC, 2013	HC, 2013	—	—	HC, 2019	NA
Mono(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)	HC, 2013	HC, 2013	—	—	HC, 2019	NA
Mono-carboxy-*n*-heptyl phthalate (MCHpP)	—	—	—	—	HC, 2019	NA
Mono-*n*-octyl phthalate (MOP)	HC, 2013	HC, 2013	—	—	HC, 2019	NA
Mono(carboxyisooctyl) phthalate (MCiOP)	—	—	—	—	HC, 2019	NA
Monoisononyl phthalate (MiNP)	HC, 2013	HC, 2013	—	—	HC, 2019	NA
Monocarboxyisononyl phthalate (MCiNP)	—	—	—	—	HC, 2019	NA
Monooxoisononyl phthalate (MOiNP)	—	—	—	—	HC, 2019	NA
Monohydroxyisononyl phthalate (MHiNP)	—	—	—	—	HC, 2019	NA
Monoisodecyl phthalate (MiDP)	—	—	—	—	HC, 2019	NA
Monooxoisodecyl phthalate (MOiDP)	—	—	—	—	HC, 2019	NA
Monohydroxyisodecyl phthalate (MHiDP)	—	—	—	—	HC, 2019	NA
Plasticizers: Di(isononyl)cyclohexane-1,2-dicarboxylate (DINCH)						
trans-Cyclohexane-1,2-dicarboxylic mono isononyl ester (*trans*-MINCH)	—	—	—	—	HC, 2019	NA
Cyclohexane-1,2-dicarboxylic mono oxoisononyl ester (oxo-MINCH)	—	—	—	—	HC, 2019	NA
Cyclohexane-1,2-dicarboxylic mono hydroxyisononyl ester (OH-MINCH)	—	—	—	—	HC, 2019	NA
cis-Cyclohexane-1,2-dicarboxylic mono carboxy-isononyl ester (*cis*-cx-MINCH)	—	—	—	—	HC, 2019	NA
trans-Cyclohexane-1,2-diarboxylic mono carboxy-isononyl ester (*trans*-cx-MINCH)	—	—	—	—	HC, 2019	NA
Cyclohexane-1,2-dicarboxylic acid (CHDA)	—	—	—	—	HC, 2019	NA
Plasticizers: 2,2,4-Trimethyl-1,3-pentanediol diisobutyrate (TXIB)						
2,2,4-Trimethyl-1,3-pentanediol (TMPD)	—	—	—	—	HC, 2019	NA
2,2,4-Trimethyl-3-hydroxy valeric acid (HTMV)	—	—	—	—	HC, 2019	NA
Plasticizers: Tri-(2-ethylhexyl) trimellitate (TEHT)						
1-Mono(2-ethylhexyl)trimellitate (1-MEHTM)	—	—	—	—	HC, 2019	NA
2-Mono(2-ethylhexyl)trimellitate (2-MEHTM)	—	—	—	—	HC, 2019	NA
4-Mono(2-ethylhexyl)trimellitate (4-MEHTM)	—	—	—	—	HC, 2019	NA
Polychlorinated biphenyls (PCBs)						
Aroclor 1260	HC, 2010	—	—	—	—	—
2,2',5-Trichlorobiphenyl (PCB 18)	Rawn et al., 2012	—	—	—	—	—
2,4,4'-Trichlorobiphenyl (PCB 28)	HC, 2010, Rawn et al., 2012	—	—	—	—	—
2,2',4,5'-Tetrachlorobiphenyl (PCB 49)	Rawn et al., 2012	—	—	—	—	—
2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	HC, 2010, Rawn et al., 2012	—	—	—	—	—
2,3',4,4'-Tetrachlorobiphenyl (PCB 66)	HC, 2010, Rawn et al., 2012	—	—	—	—	—
2,4,4',5-Tetrachlorobiphenyl (PCB 74)	HC, 2010, Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
3,3',4,4'-Tetrachlorobiphenyl (PCB 77)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
3,4,4',5-Tetrachlorobiphenyl (PCB 81)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]

Chemical	Cycle 1 2007–2009	Cycle 2 2009–2011	Cycle 3 2012–2013	Cycle 4 2014–2015	Cycle 5 2016–2017	Cycle 6 2018–2019
2,2',4,4',5-Pentachlorobiphenyl (PCB 99)	HC, 2010, Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,2',4,5,5'-Pentachlorobiphenyl (PCB 101)	HC, 2010, Rawn et al., 2012	—	—	—	—	—
2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	HC, 2010, Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,3,3',4',6-Pentachlorobiphenyl (PCB 110)	Rawn et al., 2012	—	—	—	—	—
2,3,3',4,4'-Pentachlorobiphenyl (PCB 114)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	HC, 2010, Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2',3,4,4',5-Pentachlorobiphenyl (PCB 123)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
3,3',4,4',5-Pentachlorobiphenyl (PCB 126)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128)	HC, 2010, Rawn et al., 2012	—	—	—	—	—
2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)	HC, 2010, Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,2',3,4,5,5'-Hexachlorobiphenyl (PCB 141)	Rawn et al., 2012	—	—	—	—	—
2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146)	HC, 2010	—	NA[c]	NA[c]	NA[c]	NA[c]
2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153)	HC, 2010, Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156)	HC, 2010, Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,3,3',4',5,6-Hexachlorobiphenyl (PCB 163)	HC, 2010	—	—	—	—	—
2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)	HC, 2010, Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)	HC, 2010, Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178)	HC, 2010, Rawn et al., 2012	—	—	—	—	—
2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)	HC, 2010, Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183)	HC, 2010, Rawn et al., 2012	—	—	—	—	—
2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187)	HC, 2010, Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)	Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194)	HC, 2010, Rawn et al., 2012	—	NA[c]	NA[c]	NA[c]	NA[c]
2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195)	Rawn et al., 2012	—	—	—	—	—
2,2',3,3',4,5,5',6-Octachlorobiphenyl (PCB 201)	HC, 2010, Rawn et al., 2012	—	—	—	—	—
2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 203)	HC, 2010, Rawn et al., 2012	—	—	—	—	—
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206)	HC, 2010, Rawn et al., 2012	—	—	—	—	—
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (PCB 209)	Rawn et al., 2012	—	—	—	—	—

Chemical	Cycle 1 2007–2009	Cycle 2 2009–2011	Cycle 3 2012–2013	Cycle 4 2014–2015	Cycle 5 2016–2017	Cycle 6 2018–2019
Polycyclic aromatic hydrocarbons: Benzo[*a*]pyrene						
3-Hydroxybenzo[*a*]pyrene	—	HC, 2013	HC, 2015	HC, 2017	—	—
Polycyclic aromatic hydrocarbons: Chrysene						
2-Hydroxychrysene	—	HC, 2013	HC, 2015	HC, 2017	—	—
3-Hydroxychrysene	—	HC, 2013	HC, 2015	HC, 2017	—	—
4-Hydroxychrysene	—	HC, 2013	HC, 2015	HC, 2017	—	—
6-Hydroxychrysene	—	HC, 2013	HC, 2015	HC, 2017	—	—
Polycyclic aromatic hydrocarbons: Fluoranthene						
3-Hydroxyfluoranthene	—	HC, 2013	HC, 2015	HC, 2017	—	—
Polycyclic aromatic hydrocarbons: Fluorene						
2-Hydroxyfluorene	—	HC, 2013	HC, 2015	HC, 2017	—	—
3-Hydroxyfluorene	—	HC, 2013	HC, 2015	HC, 2017	—	—
9-Hydroxyfluorene	—	HC, 2013	HC, 2015	HC, 2017	—	—
Polycyclic aromatic hydrocarbons: Napthalene						
1-Hydroxynaphthalene	—	HC, 2013	HC, 2015	HC, 2017	—	—
2-Hydroxynaphthalene	—	HC, 2013	HC, 2015	HC, 2017	—	—
Polycyclic aromatic hydrocarbons: Phenanthrene						
1-Hydroxyphenanthrene	—	HC, 2013	HC, 2015	HC, 2017	—	—
2-Hydroxyphenanthrene	—	HC, 2013	HC, 2015	HC, 2017	—	—
3-Hydroxyphenanthrene	—	HC, 2013	HC, 2015	HC, 2017	—	—
4-Hydroxyphenanthrene	—	HC, 2013	HC, 2015	HC, 2017	—	—
9-Hydroxyphenanthrene	—	HC, 2013	HC, 2015	HC, 2017	—	—
Polycyclic aromatic hydrocarbons: Pyrene						
1-Hydroxypyrene	—	HC, 2013	HC, 2015	HC, 2017	—	—
Volatile organic compounds						
Carbon tetrachloride	—	—	—	—	HC, 2019	—
1,4-Dichlorobenzene	—	—	—	—	HC, 2019	—
2,5-Dimethylfuran	—	—	—	—	HC, 2019	—
Ethylbenzene	—	—	HC, 2015	HC, 2017	HC, 2019	—
Isopropylbenzene	—	—	—	—	HC, 2019	—
Methyl isobutyl ketone	—	—	—	—	HC, 2019	—
Nitrobenzene	—	—	—	—	HC, 2019	—
Styrene	—	—	HC, 2015	HC, 2017	HC, 2019	—
1,1,1,2-Tetrachloroethane	—	—	—	—	HC, 2019	—
Tetrachloroethylene	—	—	HC, 2015	HC, 2017	HC, 2019	—
Tetrahydrofuran	—	—	—	—	HC, 2019	—
Toluene	—	—	HC, 2015	HC, 2017	HC, 2019	—
Trichloroethylene	—	—	HC, 2015	HC, 2017	HC, 2019	—
m-Xylene and *p*-xylene	—	—	HC, 2015	HC, 2017	HC, 2019	—
o-Xylene	—	—	HC, 2015	HC, 2017	HC, 2019	—

Chemical	Cycle 1 2007–2009	Cycle 2 2009–2011	Cycle 3 2012–2013	Cycle 4 2014–2015	Cycle 5 2016–2017	Cycle 6 2018–2019
Volatile organic compounds: Benzene						
Benzene	—	—	HC, 2015	HC, 2017	HC, 2019	—
trans,*trans*-Muconic acid	—	HC, 2013	HC, 2015	HC, 2017	—	—
Phenol	—	HC, 2013	—	—	—	—
S-Phenylmercapturic acid	—	HC, 2013	HC, 2015	HC, 2017	—	—
Volatile organic compounds: Trihalomethanes						
Bromodichloromethane	—	—	HC, 2015	HC, 2017	HC, 2019	—
Dibromochloromethane	—	—	HC, 2015	HC, 2017	HC, 2019	—
Tribromomethane (bromoform)	—	—	HC, 2015	HC, 2017	HC, 2019	—
Trichloromethane (chloroform)	—	—	HC, 2015	HC, 2017	HC, 2019	—
General characterization						
Creatinine	HC, 2010	HC, 2013	HC, 2015	HC, 2017	HC, 2019	NA

— Not measured

NA Measured but data not yet available

a Chromium (VI) was measured indirectly as total chromium in red blood cells

b Sum of arsenate, arsenite, dimethylarsinic acid, and monomethylarsonic acid

c Planned for release as part of Health Canada's pooled serum reports on human biomonitoring

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