Information submitted by Japan upon the request from the Minamata Convention secretariat on effectiveness evaluation

Pursuant to the Decision MC-2/10 of the COP2 of the Minamata Convention, parties, other governments and relevant organizations are requested to provide information on their monitoring programme to the secretariat. Hereunder, Japan submits relevant information to supplement document UNEP/MC/COP.2/INF/8. This submission supersedes Japan's previous submission for the "information on the availability of monitoring data" for INC7 based on request for further work made at INC6.

Table 1. Monitoring conducted by Ministry of the Environment (MOE) Japan

Programme	Media	Mercury species	Methodology / analytical method	Location / number of samples	Monitoring period and frequency	Details of available data (as of January 2019)
Background Monitoring Survey for Atmospheric Mercury and Other Metal Element Concentrations in Aerosols[1]	Air	Speciated mercury - Gaseous elemental mercury (GEM) - Gaseous oxidized mercury (GOM) - Particulate-bound mercury (PBM)	Using Tekran - Cold vapor atomic fluorescence spectrometry with denuder collection for GOM and quartz fiber filter collection for PBM (heating vaporization method)	Cape Hedo (Okinawa pref.) Oga Peninsula (Akita pref.)	Cape Hedo: Since Oct. 2007 (GEM) Since Oct. 2009 (GOM, PBM) Oga Peninsula: Since Aug. 2014 Continuous sampling - 16 measurements per day (hourly value for GEM) - 8 measurements per day (two-hour value for GOM and PBM)	Monitoring results until FY2017 are available as individual data. The dataset includes latitude/longitude, meteorological elements (wind speed and direction, temperature, humidity, precipitation, atmospheric pressure, etc.)[*1], and metals measuring results of 23 elements (lead, cadmium, copper, zinc, arsenic, etc.)[*2] .
	Precipitation	Total mercury (THg)	Equivalent EPA method 1631, Revision E	Cape Hedo (Okinawa pref.) Oga Peninsula (Akita pref.)	Cape Hedo: Since Apr. 2008 Oga Peninsula: Since Sep. 2014 Weekly 7-day continuous sampling	Monitoring results until FY2017 are available as individual data. The dataset includes latitude/longitude, meteorological elements (wind speed and direction, temperature, humidity, precipitation, atmospheric pressure, etc.)[*1], wet deposition, and sample amounts.
Monitoring Surveillance of Hazardous Air Pollutants[2]	Air	Total gaseous mercury (TGM)	Atomic absorption spectrometry with gold amalgamation and heating vaporization (following “Monitoring Manual for Hazardous Air Pollution Survey” (MOE, 2011))	Nationwide 261 sites (in FY2016) - Ambient air 214 sites - Stationary sources 18 sites - Roadside 39 sites	Since FY1998 Monthly 24 hour continuous sampling	Monitoring results until FY2016 are available as individual data.[3] The dataset includes latitude/longitude, sampling date, meteorological elements (weather, wind speed and direction, temperature, humidity, precipitation, and atmospheric pressure), detection limit, and measurement results of hazardous air pollutants (chromium, nickel, arsenic, beryllium, manganese, acrylonitrile, vinyl chloride, etc.).
Water Quality Survey of Public Water Areas[4]	Water - River - Lake/Reservoir - Sea	THg Alkyl mercury	THg: Atomic absorption spectrometry Alkyl mercury: Gas chromatography analysis (following “Monitoring Manual for Water Quality Survey” (MOE, 1961))	THg: River 2,928 sites, Lake/Reservoir 241 sites, Sea 834 sites (in FY2016) Alkyl mercury: River 505 sites, Lake/Reservoir 65 sites, Sea 167 sites (in FY2016)	Since 1971 Monthly in general	Monitoring results until FY2016 are available as individual data.[5] The dataset includes latitude/longitude, sampling date, depth, and substances of environmental quality standards for water (cadmium, lead, chromium(VI), arsenic, total cyanide, etc.).
Marine Environment Monitoring Survey[6], [7]	Seawater - Surface water - Deep water Sea sediment Biota - Marine species	THg	Seawater: (a) Heated vaporization atomic absorption spectrometry with reduced vaporization and gold amalgamation (b) Atomic fluorescence spectrometry with Cr^{2+} reduced vaporization Sediment and biota: (a) After acid digestion, analyzed using the same method as water media (a) (b) Microwave digestion and ICP-MS measurement (following “Marine Environment Monitoring Guideline” (MOE, 2000))	Seawater and sediment: - Coastal sea and offshore deep sea area around Japan - 8 survey lines (surveillance for land-based pollution) - 1-2 areas per year (surveillance on pollution caused by ocean dumping of wastes) Biota: - 4 bay areas and 4 offshore sea areas around Japan - Target organism: Mussles, Benthic sharks, Squids, Cods, Crustaceans	Annually Seawater and sediment: Since FY1975 The survey is planned to cover Japanese water in 8 years (2-10 year intervals per survey line). Biota: Since FY1998 Bay areas and offshore sea areas are surveyed alternately every year after FY2008.	Monitoring results until FY2015 are available as individual data.[3] The dataset includes: - latitude/longitude, sampling depth, water temperature, salinity, pH, dissolved oxygen, nutrient, chlorophyll a, cadmium, lead, copper, PCB, dioxins, etc. (seawater) - latitude/longitude, moisture content, median diameter, total nitrogen, total phosphorous, organic carbon, sulfide, cadmium, lead, copper, chromium, PCB, dioxins, etc. (sediment) - latitude/longitude, lipid content, PCB, dioxins, etc. (biota)
Japan environment and children’s study (JECS)[8]	Human - Maternal blood - Umbilical cord blood - Urine - Breast Milk - Hair	THg Methyl mercury (MeHg)	Blood samples collected at approximately 22th-28th week of pregnancy	Nationalwide 15 areas Approximately 100,000 pregnant women (60,000 blood samples were determined.)	Since 2014 Start analyzing a part of cord blood samples	Monitoring results are available as statistics. Identified health conditions, ambient environment and lifestyles of participants (pregnant women and children) through questionnaires.

Programme	Media	Mercury species	Methodology / analytical method	Location / number of samples	Monitoring period and frequency	Details of available data (as of January 2019)
Survey of the Exposure to chemical compounds in Human[9]	Human - Blood - Food	Blood: THg Food: THg, MeHg	Age: 40-59 years Blood (THg): Acid digestion and cold vapor atomic absorption spectrometry Food (THg): Freeze drying, acid digestion and cold vapor atomic absorption spectrometry Food (MeHg): Freeze drying, dithizone extraction, and GC-ECD measurement	Nationalwide (Urban, agricultural, and fishery area) Blood: Approximately 80 people per year Total 490 people in 2011-2016 Food: 15 people per year Total 90 people in 2011-2016	Since 2011 Annually 3 regions per year	Monitoring results until FY2016 are available as statistics: mean, standard deviation, median, and range. Tissues are also analyzed for lead, cadmium, total arsenic, copper, selenium, zinc, manganese, dioxins, POPs, etc. Information on personal medical history, residential history, occupational history, smoking habit, dietary history, lifestyle, and birth history are collected by questionnaire and individual interviews.

*1: Observation results in nearby meteorological observation stations. *2: 7-day continuous sampling

References [1] MOE, 2018. “Results on Background Monitoring Survey for Atmospheric Mercury and Other Metal Element Concentrations in Aerosols”, Online: https://www.env.go.jp/en/chemi/mercury/bms2017.html
[2] MOE. “Monitoring Surveillance of Hazardous Air Pollutants”, Online: https://www.env.go.jp/air/osen/monitoring/ (in Japanese).
[3] National Institute for Environmental Studies. “Environment-GIS”, Online: http://tenbou.nies.go.jp/gis/ (in Japanese).
[4] MOE. “Water Quality Survey of Public Water Areas”, Online: https://www.env.go.jp/water/suiiki/index.html (in Japanese).
[5] MOE. “Water Environment Information”, Online: https://water-pub.env.go.jp/water-pub/mizu-site/ (in Japanese).
[6] MOE. “Marine Environment Monitoring Survey”, Online: http://www.env.go.jp/water/kaiyo/monitoring.html (in Japanese).
[7] MOE, Oct. 2009. “Present Status of Marine Pollution in the Sea around Japan”, Online: http://www.env.go.jp/water/kaiyo/monitoring/status_report/en-1.pdf, http://www.env.go.jp/water/kaiyo/monitoring/status_report/en-2.pdf
[8] MOE. “Japan Environment and Children’s Study (JECS)”, Online: http://www.env.go.jp/chemi/ceh/en/index.html
[9] MOE, 2017. “The Exposure to chemical compounds in the Japanese People”, Online: https://www.env.go.jp/chemi/dioxin/pamph/cd/2017en_full.pdf

Table 2. Monitoring conducted by National Institute for Minamata Disease (NIMD)

Programme	Media	Mercury species	Methodology / analytical method	Location / number of samples	Monitoring period and frequency	Details of available data (as of January 2019)
-	Air Precipitation	Air: Speciated mercury (GEM, GOM, PBM), PBM, TGM Precipitation: THg, MeHg	Speciated mercury: Atomic absorption spectrometry with gold amalgamation and heating vaporization (following “Monitoring Manual for Hazardous Air Pollution Survey”, (MOE, 2011)) PBM: Filter pack method TGM: Continuous mercury monitor using gold amalgamation and cold vapor atomic fluorescence spectrometry (Nippon Instruments Co., Ltd.) THg and MeHg: Equivalent EPA method 1631, Revision E	Minamata (Kumamoto pref.)	Speciated mercury: Jan. 2011- Dec. 2013, 6-8 days every month or season PBM: Since Sep. 2008, weekly TGM: Since Mar. 2011, continuous sampling Precipitation: Since Sep. 2008, weekly (MeHg finished measurement in May 2013)	Monitoring results are available as individual data. Heavy metal concentrations in atmosphere, carbon monoxide, and meteorological elements are also observed.
				Hirado (Nagasaki pref.)	Speciated mercury: Aug. 2011- Apr. 2014, 6-8 days every season PBM: Since Jun. 2011, weekly Precipitation: Since Sep. 2008, weekly (MeHg finished measurement in May 2013)	Monitoring results are available as individual data. Heavy metal concentrations in atmosphere and meteorological elements are also observed.
		Air: Speciated mercury (GEM, GOM, PBM), PBM Precipitation: THg	Speciated mercury: Using Tekran - Cold vapor atomic fluorescence spectrometry with denuder collection for GOM and quartz fiber filter collection for PBM (heating vaporization method) PBM: Filter pack method THg: Equivalent EPA method 1631, Revision E	Fukuoka (Fukuoka pref.)	Speciated mercury: Since Jun. 2013 (continuous sampling) PBM: Since Jun. 2013, weekly Precipitation: Since Jun. 2013, weekly	Monitoring results are available as individual data. Meteorological elements are also observed.
		Air: PBM Precipitation: THg	PBM: Filter pack method THg: Equivalent EPA method 1631, Revision E	Omaezaki (Shizuoka pref.)	PBM: Since Dec. 2013, weekly Precipitation: Since Dec. 2013, weekly	Monitoring results are available as individual data. Precipitation is also observed.

References [1] Marumoto, K. and Matsuyama, A. (2014). Mercury speciation in wet deposition samples collected from a coastal area of Minamata Bay. *Atmospheric Environment* **86**, 220-227.
[2] Marumoto, K., Hayashi, M., Takami, A. (2015). Atmospheric mercury concentrations at two sites in the Kyushu Islands, Japan, and evidence of long-range transport from East Asia. *Atmospheric Environment* **117**, 147-155.

Table 3. Monitoring conducted by Japan Meteorological Agency (JMA)

Programme	Media	Mercury species	Methodology / analytical method	Location / number of samples	Monitoring period and frequency	Details of available data (as of January 2019)
Atmospheric and Marine Environment Monitoring[1], [2], [3]	Precipitation	THg	Cold vaper atomic absorption spectrophotometry (following method of World Meteorological Organization (WMO) (2004))	Minamitorishima (Tokyo Metropolis) Ryori (Iwate pref.)	Minamitorishima: Since Jan. 1996 Ryori: Jan. 1976- Dec. 2011 Daily	Monitoring results until FY2016 are available as individual data. The dataset includes sampling date, precipitation, sample amount, pH, electrical conductivity, alkalinity, concentrations of cadmium, ammonium ion, sodium ion, potassium ion, calcium ion, magnesium ion, chloride, nitrite ion, nitrate ion, and sulfate ion. Meteorological elements (maximum wind speed and wind direction) are also observed.
	Seawater - Surface water - Deep water	THg	Water samples are collected at the depth of 0m and approximately 1,000m. Analysis: Flameless atomic absorption spectrophotometry	Sea area around Japan (9 sites) and the western North Pacific (long 137E and 165E observation lines.)	Since 1972 (Reliable data is available since 1995. Several monitoring sites were altered in 2010.) Seasonally (1-4 times per year in each site)	Monitoring results until FY2016 are available as individual data. The dataset includes sampling date, latitude/longitude, sampling depth, water temperature, salinity, and concentrations of cadmium.

References [1] JMA. “Annual Report on Atmospheric and Marine Environment Monitoring Data”, Online: https://www.data.jma.go.jp/gmd/env/data/report/data/index_e.html
[2] JMA. “Chemical analysis of precipitation and dry deposition”, Online: https://www.data.jma.go.jp/gmd/env/acid/acid_obs.html (in Japanese).
[3] JMA, 2015. “Health Diagnosis of the Ocean, Comprehensive Diagnosis Result - rev. 2”, Online: http://www.data.jma.go.jp/kaiyou/shindan/sougou/index.html (in Japanese).

Table 4. Monitoring conducted by Japan Coast Guard

Programme	Media	Mercury species	Methodology / analytical method	Location / number of samples	Monitoring period and frequency	Details of available data (as of January 2019)
Report of Marine Pollution Surveys[1]	Surface sea water Sea sediment	THg	Seawater: Atomic fluorescence spectrometry (cold vapor method) with reduced vaporization and gold trap separation Sediment: Atomic absorption spectrophotometry (cold vapor method) with heating vaporization, and in turn gold trap separation	13 coastal seas, 53 sites (including Tokyo Bay, Ise Bay, and Osaka Bay) and offshore sea area 10 sites	Since 1973 Annually	Monitoring results until FY2016 are available as individual data. The dataset includes sampling date, latitude/longitude, and depth. Sea water monitoring additionally include sampling depth, water temperature, salinity, pH, dissolved oxygen, chemical oxygen demand, concentrations of oil (Aliphatic Hydrocarbons) and cadmium. Sediment monitoring results include ignition loss, particle size distribution, bottom character, concentrations of oil (Aliphatic Hydrocarbons), PCB, TBT, cadmium, copper, zinc, chromium, and lead.

References [1] The Hydrographic and Oceanographic Department, Japan Coast Guard. “Report of Marine Pollution Surveys”, Online: http://www1.kaiho.mlit.go.jp/KANKYO/OSEN/osen.html (in Japanese).

Table 5. Monitoring conducted by Ministry of Agriculture, Forestry and Fisheries (MAFF)

Programme	Media	Mercury species	Methodology / analytical method	Location / number of samples	Monitoring period and frequency	Details of available data (as of January 2019)
Monitoring for Chemical Hazards in Foods[1], [2], [3], [4]	Food - Agricultural products - Fishery products	Agricultural products: THg Fishery products: THg, MeHg	Rice, wheat and soybeans were obtained from grain drying and processing facilities. Vegetables and fruits were obtained from fields and collection/shipment facilities. Fishery products were obtained at main fishing ports and edible portion was used for analysis. THg analysis of agricultural products: Wet digestion and atomic absorption spectrophotometry with reduced vaporization (Equivalent AOAC Official Method 971.21) THg analysis of fishery products: Using mercury analyzer HG-200 (Hiranuma Inc.) after digestion with nitric acid, perchloric acid and sulfuric acid. MeHg analysis of fishery products: Gas chromatography analysis after solvent extraction with solutions of chloric acid, benzene, cysteine	Agricultural products: 31 food items (grains, beans, vegetables, fruits, etc.) - Total 1,420 samples Fishery products: Tunas, Marlins, Splendid alfonsino, Blue shark, Cods - Total 1,800 samples (120 samples for each 15 fish species) within 4 fiscal years	Agricultural products: In FY2006 Fishery products: In FY2007-2010	FY2007-FY2010 monitoring results are available as statistics: mean, median, minimum, maximum, detection limit (0.01 mg/kg), and a number of undetected samples.
	Food - Canned vegetables	THg	Cans were purchased at supermarkets and at retail stores in Tokyo region. Analysis: Microwave digestion and ICP-MS measurement	Sweet corns: 39 samples Red beans: 39 samples Tomatoes: 33 sample	In FY2011	FY2011 monitoring results are available as statistics: mean, median, minimum, maximum, detection limit (0.01 mg/kg), and a number of undetected samples.
	Food - Agricultural products - Livestock products - Processed food	THg	Food samples were purchased at department stores and at local supermarkets all over Japan. Analysis: Microwave digestion and ICP-MS measurement	Agricultural products: Fruits - Total 101 samples Livestock products: Milk - Total 40 samples Processed food: Dairy products, fruits juices, etc. - Total 90 samples	In FY2013	FY2013 monitoring results are available as statistics: mean, median, minimum, maximum, detection limit (0.01 mg/kg), and a number of undetected samples.
	Food - Agricultural products - Processed food	THg		Agricultural product: Celery, Asparagus - Total 120 samples Processed food: Canned soybeans, pickled vegetables, jams, fruits juices, etc. - Total 108 samples	In FY2015	FY2015 monitoring results are available as statistics: mean, median, minimum, maximum, detection limit (0.01 mg/kg), and a number of undetected samples.

References
[1] MAFF, 2012. “Data Collection of the Results of Surveillance / Monitoring for Chemical Hazards in Foods 2003-2010”, Online: http://www.maff.go.jp/j/syouan/seisaku/risk_analysis/survei/pdf/chem_15-22.pdf (in Japanese).
[2] MAFF, 2014. “Data Collection of the Results of Surveillance / Monitoring for Chemical Hazards in Foods 2011-2012”, Online: http://www.maff.go.jp/j/syouan/seisaku/risk_analysis/survei/pdf/chem_23-24_.pdf (in Japanese).
[3] MAFF, 2016. “Data Collection of the Results of Surveillance / Monitoring for Chemical Hazards in Foods 2013-2014”, Online: http://www.maff.go.jp/j/syouan/seisaku/risk_analysis/survei/pdf/chem_25-26.pdf (in Japanese).
[4] MAFF, 2018. “Data Collection of the Results of Surveillance / Monitoring for Chemical Hazards in Foods 2015-2016”, Online: http://www.maff.go.jp/j/syouan/seisaku/risk_analysis/survei/pdf/chem_27-28.pdf (in Japanese).

Table 6. Monitoring conducted by Local Governments in Japan

Responsible party	Programme	Media	Mercury species	Methodology / analytical method	Location / number of samples	Monitoring period and frequency	Details of available data (as of January 2019)
Niigata Prefectural Government, Niigata Prefectural Institute of Public Health and Environmental Science	Water quality survey for public water body and groundwater[1]	Groundwater Spring water	THg Alkyl mercury	Ground water and spring water samples are collected at solid waste landfill sites around factories.	Agano river Total 24 samples (in FY2017)	Since FY2006 3 times per year (in FY2017)	Monitoring results until FY2017 are available as statistics: range of mercury concentrations.
	Sediment Mercury Survey at the Agano River[1]	Sediment	THg Alkyl mercury		Agano river basin Total 4 samples (in FY2017)	Since FY2008 4 times per year (in FY2017)	Monitoring results until FY2017 are available as statistics: range of mercury concentrations.
	Mercury Content Survey in Fish at the Agano River[1]	Fish	THg MeHg		Agano river 3 sites Total 45 samples (in FY2017) - Japanese dace	Since FY1987 Annually	Monitoring results until FY2017 are available as statistics: mean and range of mercury concentrations and methyl ratio, range of body length, and a number of samples.
	Mercury survey at the Seki River[1]	Fish	THg MeHg	MeHg analysis is performed if THg exceed interim regulation value of 0.4 μg/g wet.	Seki river Total 45 samples (in FY2017) - Japanese dace	Since FY2006 Annually	Monitoring results until FY2017 are available as statistics: range of mercury concentrations.
			THg Alkyl mercury	Analysis of Alkyl mercury is performed if THg exceed interim regulation value of 0.4 μg/g wet.	Seki river Total 90 samples (in FY 2017) - 9 fish species (Japanese fluvial sculpin, Amur minnow, Weather loach, Pale bleak, etc.)	Since FY2003 Annually	Monitoring results until FY2017 are available as statistics: average and concentration range of all species. Body length, total length, body weight, sex and age are also observed (not reported).
Saitama Prefecture	River Water Monitoring Survey[2]	Water - River	THg Alkyl mercury	THg: Atomic absorption spectrometry Alkyl mercury: Gas chromatography analysis (following “Monitoring Manual for Water Quality Survey” (MOE, 1961))	Shingashi river 2 sites - Upstream and downstream of industrial waste disposal sites	Since FY1995 Annually	Monitoring results until FY2017 are available as individual data. The dataset includes water temperature, pH, transparency, odor, suspended solids, cadmium, lead, arsenic, dioxins etc.
Bureau of Social Welfare and Public Health, Tokyo Metropolitan Government	Mercury Contamination Survey in Seafood[3]	Seafood	THg MeHg	Seafood is obtained from central wholesale market in Tokyo (including fish and shellfish caught in various locations in Japan and foreign countries.)	Total 428 samples 139 species of fish and shellfish	Since FY1973 Annually	Monitoring results until FY2016 are available as statistics: mean, minimum, maximum, a number of samples positive for THg or MeHg, and geographic origin of fish and shellfish.
Kumamoto Prefectural Government, Kumamoto Prefectural Institute of Public Health and Environmental Science	Minamata bay Water Environment[4]	Seawater Groundwater Sediment	THg		Minamata Bay - Seawater: 8 samples - Groundwater: 4 samples - Sediment: 3 samples (in FY2017)	Since FY1998 Annually	Monitoring results are not published. Water samples are analyzed for 27 items: THg, turbidity, chloride ion etc.
Kagoshima Prefecture	Mercury analysis contained in human hair[5]	Human - Hair	THg		Residents in coastal area of the Siranui sea (member of fisheries cooperative association) Total 15 people (in FY2016)	Since 1977 Annually	Monitoring results until FY2016 are available as statistics: mean, minimum, maximum, and sampling month.
Kagoshima Prefectural Institute for Environmental Research and Public Health	Mercury Content Survey in Fish[6]	Fish	THg MeHg		Kagoshima Bay Total 40 samples (in FY2016) - 7 fish species (Areolate grouper, Young Japanese amberjack, Red seabream, Japanese whiting, etc.)	Annually	Whether THg and MeHg exceed interim regulation values or not is reported. Monitoring results until FY2016 are available.

Responsible party	Programme	Media	Mercury species	Methodology / analytical method	Location / number of samples	Monitoring period and frequency	Details of available data (as of January 2019)
Public Water Supplier	Water Quality Inspection of Raw Water and Clarified Water[7]	Tap water	THg	The method determined by the Minister of Health, Labour and Welfare on the basis of the Ordinance of the provisions relating to water quality standards (Ministry of Health, Labour and Welfare Notification No. 261, 2003)	Raw water: 5,954 sites (surface stream water, lake/reservoir, and groundwater) Clarified water: 6,343 sites (surface stream water, lake/reservoir, and groundwater)	Annually	Monitoring results until FY2016 are available as statistics: mean, minimum, maximum, and a number of measurements [8]. Water samples are also analyzed for substances of environmental quality standards for water (cadmium, lead, chromium(VI), arsenic, carbon tetrachloride, Dichloromethane, etc.) and pesticides.

References
[1] Niigata Prefectural Institute of Public Health and Environmental Science, 2018. “FY2017 Annual Report of Niigata Prefectural Institute of Public Health and Environmental Science Volume 33” , Online: http://www.pref.niigata.lg.jp/hokanken/1356857836913.html (in Japanese).
[2] Saitama Prefecture 2018. “River Water Monitoring Survey”, Online: https://www.pref.saitama.lg.jp/b1002/kasenmonitorling.html (in Japanese).
[3] Bureau of Social Welfare and Public Health, Tokyo Metropolitan Government. “Results of Mercury Contamination Survey in Seafood”, Online: http://www.fukushihoken.metro.tokyo.jp/shokuhin/osen/01_suigin.html (in Japanese).
[4] Kumamoto Prefectural Government, Kumamoto Prefectural Institute of Public Health and Environmental Science, 2017. “Annual Report Vol.47 (2017), Kumamoto Prefectural Institute of Public Health and Environmental Science”, Online: https://www.pref.kumamoto.jp/common/UploadFileOutput.ashx?c_id=3&id=25845&sub_id=2&flid=174271 (in Japanese).
[5] Kagoshima Prefecture, 2018. “Environmental White Paper (2017), Kagoshima Prefecture”, Online: https://www.pref.kagoshima.jp/ad01/kurashi-kankyo/kankyo/sougou/hakusho/h29/documents/65100_20180330003345-1.pdf (in Japanese).
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[7] Public Interest Incorporated Association Japan Water Work Association, 2018. “Water Supply Statistics FY2016, Volume 99” (in Japanese).
[8] Public Interest Incorporated Association Japan Water Work Association. “Database of Water Quality of Aqueduct”, Online: http://www.jwwa.or.jp/mizu/index.html (in Japanese).

Table 7. Monitoring conducted in the past decade

Responsible party	Programme	Media	Mercury species	Methodology / analytical method	Location / number of samples	Monitoring period and frequency	Details of available data (as of January 2019)
MOE	Soil Quality Monitoring in the Disaster Area of Great East Japan Earthquake[1], [2]	Soil	THg	Soil quality examination though leaching and content tests.	Primary survey: 78 sites Secondary survey: 122 sites	Primary survey: In 2011 Secondary survey: In 2012	Monitoring results are available as individual data. The Dataset includes address, sampling date and depth. Soils are also analyzed for substances of environmental quality standards for soil pollution (cadmium, chromium(VI), cyanide compounds, lead, arsenic, etc.), dioxins, pH and electrical conductivity of soil suspensions.
National Institute for Environmental Studies, Niigata Institute of Technology	-	Air	Speciated mercury (GEM, GOM, PBM)	Using Tekran - Cold vapor atomic fluorescence spectrometry with denuder collection for GOM and quartz fiber filter collection for PBM (heating vaporization method)	Kashiwazaki (Niigata pref.)	1 Nov.-17 Dec. 2013	Monitoring results are available as individual data.
NIES	-				Yaizu (Shizuoka pref.)	Feb.-Mar. 2010, Jan.-Mar. 2011, Dec. 2011-Mar. 2012, Jan.-Mar. 2013	Monitoring results are available as individual data.
NIMD	Survey of Mercury and Health Effects in Taiji Town[3]	Human - Hair	THg	Heated vaporization atomic absorption spectrometry	Residents in Taiji town, Wakayama prerf. (Including members of fisheries cooperative association) Total 1,137 people: - 765 people only in summer; 120 people only in winter; and 252 people in both seasons	Jun.-Aug. 2009 and Feb. 2010	Monitoring results are available as statistics: geometric mean, minimum, maximum, mean age by sex. Information on age, sex and seafood consumptions are collected by questionnaires.

References
[1] MOE, Aug. 2011. “Survey results of soil quality monitoring in the disaster area”, Online: http://www.env.go.jp/press/press.php?serial=14130 (in Japanese).
[2] MOE, Feb. 2012. “2nd survey results of soil quality monitoring in the disaster area”, Online: http://www.env.go.jp/press/press.php?serial=14840 (in Japanese).
[3] NIMD, Apr. 2010. “FY2009 Results of the Survey of Mercury and Health Effects in Taiji Town”, Online: http://nimd.env.go.jp/kenkyu/report/20100427_taiji_report.html (in Japanese).