○Results of Radioactive Material Monitoring of Aquatic Organisms (Location D along the Mano River)

<Location D along the Mano River: Samples collected>

Items / Locations	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
D-1	○	○	○	○	○	○
D-2	○	○	○	-	○	-
D-3	○	○	○	-	○	-
D-4 a	○	○	○	-	○	-
D-4 b	○	-	○	-	-	-
D-5	○	○	○	-	○	-

<Location D along the Mano River: Site measurement item>

Items / Locations	Latitude and longitude of the location		Survey date and time			Water	Sediment				Other	
	Latitude	Longitude	Date	Time (water)	Time (sediment)	Water temperature (degrees C)	Sediment temperature (degrees C)	Property	Color	Contaminants	Water depth (m)	Transparency (cm)
D-1	37.7331°	140.9254°	2016/5/31	10:07	10:27	19.7	19.0	Sand	2.5Y4/2	Plant pieces a little	0.25	>50
D-2	37.7095°	140.9566°		11:27	11:39	19.3	19.6	Sand	2.5Y3/3	Plant pieces a little	0.39	>50
D-3	37.7051°	140.9623°		13:12	13:25	20.4	19.7	Sand	2.5Y3/2	None	0.49	>50
D-4 a	37.7308°	140.9081°		08:30	08:44	17.7	17.8	Sand	2.5Y4/2	None	0.36	>50
D-4 b	37.7312°	140.9096°		09:24	-	18.1	-	-	-	-	0.36	>50
D-5	37.7214°	140.8889°		07:37	07:53	17.7	17.8	Sand	2.5Y4/4	Tubifex (Many) Total length approx.2mm	0.54	>50

<Location D along the Mano River: General survey items/Analysis of radioactive materials Water>

Items / Locations	Latitude and longitude of the location		Survey date and time		pH	BOD	COD	DO	Electric conductivity	Salinity	TOC	SS	Turbidity	Cs-134	Cs-137	Sr-90
	Latitude	Longitude	Date	Time (water)		(mg/L)	(mg/L)	(mg/L)	(mS/m)		(mg/L)	(mg/L)	(FNU)	(Bq/L)	(Bq/L)	(Bq/L)
D-1	37.7331°	140.9254°	2016/5/31	10:07	7.4	0.9	2.9	10.1	8.6	0.05	1.1	1	1.7	0.0047	0.021	0.0015
D-2	37.7095°	140.9566°		11:27	7.4	1.0	2.9	9.8	10.3	0.06	1.1	2	2.0	0.0041	0.021	-
D-3	37.7051°	140.9623°		13:12	7.2	0.9	3.0	10.4	11.1	0.06	1.2	2	2.4	0.0035	0.016	-
D-4 a	37.7308°	140.9081°		08:30	7.4	0.8	3.0	9.8	8.7	0.05	1.1	1	1.5	0.0037	0.022	-
D-4 b	37.7312°	140.9096°		09:24	7.5	0.9	3.2	9.9	8.6	0.05	1.2	2	1.6	0.0055	0.024	-
D-5	37.7214°	140.8889°		07:37	7.6	0.9	3.0	10.2	8.0	0.04	1.2	1	1.4	0.0057	0.026	-

<Location D along the Mano River: General survey items/Analysis of radioactive materials Sediment>

Items / Locations	Latitude and longitude of the location		Survey date and time		pH	Redox potential $E_{N.H.E}$ (mV)	Water content (%)	IL (%)	TOC (mg/g-dry)	Soil particle density (g/cm^3)	Grain size distribution								Cs-134 (Bq/kg-dry)	Cs-137 (Bq/kg-dry)	Sr-90 (Bq/kg-dry)
	Latitude	Longitude	Date	Time (sediment)							Gravel (2-75mm) (%)	Coarse sand (0.85-2mm) (%)	Medium sand (0.25-0.85mm) (%)	Fine sand (0.075-0.25mm) (%)	Silt (0.005-0.075mm) (%)	Clay (Less than 0.005mm) (%)	Median grain diameter (mm)	Maximum grain diameter (mm)			
D-1	37.7331°	140.9254°	2016/5/31	10:27	7.3	385	16.6	1.6	1.1	2.719	23.6	31.1	36.3	8.0	0.4	0.6	0.97	4.8	49	240	0.65
D-2	37.7095°	140.9566°		11:39	7.3	388	19.0	1.9	2.0	2.705	14.5	27.0	48.2	8.1	0.7	1.5	0.70	4.8	66	340	-
D-3	37.7051°	140.9623°		13:25	7.3	392	17.6	1.8	1.7	2.696	25.4	35.7	29.2	7.3	1.0	1.4	1.1	4.8	36	190	-
D-4 a	37.7308°	140.9081°		08:44	7.4	391	17.0	1.8	1.5	2.719	31.0	43.4	21.4	3.2	0.4	0.6	1.4	4.8	72	380	-
D-5	37.7214°	140.8889°		07:53	7.4	390	22.7	2.6	2.6	2.705	9.7	23.7	48.9	12.6	2.4	2.7	0.56	4.8	95	440	-

<Location D along the Mano River: Analysis items Aquatic organisms>

Locations	Sampling point	Latitude and longitude of the location		Sampling date	Division	Class	Order	Family	Scientific name	English name	Population	Sample weight (kg-wet)	Note			Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)
		Latitude	Longitude										Growth stage	Stomach contents	Measurement site	Total	Cs-134	Cs-137	
D-3	-	37.7051°	140.9623°	2016/6/1	Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	*Anguilla japonica*	Japanese eel	10	1.4	Immature fish,Mature fish	Fish	Viscera removed	43.0	7.0	36	1.2
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	*Plecoglossus altivelis*	Sweetfish	9	0.19	Immature fish,Mature fish	-	-	26.7	5.7	21	-
D-4b	-	37.7312°	140.9096°	2016/6/1	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.014	-	-	-	170	30	140	-
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	*Stenopsyche marmorata*	Stenopsyche marmorata	180	0.025	Larva	-	-	47.8	8.8	39	-
					Arthropoda	Insecta	Odonata	Corduliidae	*Macromia amphigena amphigena*	Macromia amphigena	50	0.0084	Larva (Dragonfly larva)	-	-	22	N.D.(4.3)	22	-
					Arthropoda	Insecta	Odonata	Gomphidae	*Stylogomphus suzukii*	Stylogomphus suzukii									
					Arthropoda	Insecta	Odonata	Gomphidae	*Onychogomphus viridicostus*	Melligomphus viridicostus									
					Arthropoda	Insecta	Odonata	Gomphidae	*Sieboldius albardae*	Sieboldius albardae									
					Arthropoda	Insecta	Odonata	Gomphidae	*Davidius sp.*	Davidius									
					Arthropoda	Insecta	Odonata	Gomphidae	*Sinogomphus flavolimbatus*	Sinogomphus flavolimbatus									
					Arthropoda	Insecta	Odonata	Gomphidae	*Asiagomphus melaenops*	Asiagomphus melaenops									
					Arthropoda	Insecta	Odonata	Aeshnidae	*Boyeria maclachlani*	Boyeria maclachlani									
					Arthropoda	Insecta	Megaloptera	Corydalidae	*Protohermes grandis*	Protohermes grandis	45	0.049	Larva	-	-	30.8	5.8	25	-
					Arthropoda	Malacostraca	Decapoda	Cambaridae	*Procambarus clarkii*	Red swamp crawfish	1	0.015	Imago	-	-	144	24	120	-
					Arthropoda	Malacostraca	Decapoda	Atyidae	*Paratya improvisa*	Freshwater shrimp	150	0.11	Imago	-	-	31.5	5.5	26	-
					Arthropoda	Malacostraca	Decapoda	Varunidae	*Eriocheir japonica*	Japanese mitten crab	5	0.093	Imago	-	-	32.4	5.4	27	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	*Tribolodon hakonensis*	Japanese dace	2	0.022	Immature fish	-	-	34.9	5.9	29	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	*Zacco platypus*	Pale chub	38	0.088	Immature fish	-	-	14.8	2.8	12	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	*Gnathopogon elongatus elongatus*	Gnathopogon elongatus elongatus	2	0.0060	Immature fish	-	-	20	N.D.(6.5)	20	-
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	*Cobitis biwae*	Cobitis biwae	9	0.016	Mature fish	-	-	25.5	3.5	22	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	*Rhinogobius fluviatilis*	Rhinogobius fluviatilis	19	0.051	Immature fish,Mature fish	-	-	54.6	8.6	46	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	*Rhinogobius sp. CB*	Rhinogobius nagoyae									
					Vertebrata	Osteichthyes	Siluriformes	Siluridae	*Silurus asotus*	Amur catfish	2	0.062	Immature fish	Fish	Viscera removed	74	12	62	-
					Vertebrata	Amphibia	Anura	Rhacophoridae	*Buergeria buergeri*	Kajika frog	2	0.016	Imago	-	-	444	74	370	-
					Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.13	-	-	-	38.4	5.4	33	-

*1: Organisms were collected in or around the targeted water areas.

*2: When multiple types of aquatic organisms were collected, a sample was prepared by mixing them.

*3: For a sample made of multiple types of aquatic organisms, the English name of the dominant one largest in number is underlined.

*4: Basically, measurement was conducted for all organism samples. Viscera (stomach and bowels) were removed for the measurement when possible so that undigested food and sediments, etc. in the digestive system would be excluded.

*5: Plankton (suspended algae) is the residue remaining after the filtration of lake water or seawater with a plankton net (40μm-mesh).

*6: River bottom materials (incl. algae) are algae, etc. that were scratched off stones with a brush, etc. and may include very fine particles such as inorganic silt and clay.

*7: N.D. means to be below the detection limit and figures in parentheses show the detection limit.

*8: Activity concentrations include counting errors, but the details are omitted here.