

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

< Location D along the Mano River: Samples collected >

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

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

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	37.7332°	140.9253°	2014/10/23	9:46	9:55	14.3	14.8	Sand	2.5Y4/2	None	0.46	>50.0
D-2	37.7095°	140.9566°		10:46	10:52	14.9	15.1	Sand	2.5Y4/3	None	0.60	>50.0
D-3	37.7051°	140.9622°		12:32	12:38	16.0	15.4	Sand	2.5Y4/4	None	0.52	>50.0
D-4a	37.7309°	140.9081°		8:36	8:42	13.9	13.5	Sediment with sand	2.5Y4/4	Pebbles	0.41	>50.0
D-4b	37.7312°	140.9095°		9:16	—	13.6	—	—	—	—	0.38	>50.0
D-5	37.7217°	140.8898°		7:53	7:57	13.5	13.5	Sand	2.5Y3/3	None	0.68	>50.0

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

Locations	Latitude and longitude of the location		Survey date and time		pH	BOD (mg/L)	COD (mg/L)	DO (mg/L)	Electrical conductivity (mS/m)	Salinity	TOC (mg/L)	SS (mg/L)	Turbidity (FNU)	Cs-134 (Bq/L)	Cs-137 (Bq/L)	Sr-90 (Bq/L)
	Latitude	Longitude	Date	Time												
D-1	37.7332°	140.9253°	2014/10/23	9:46	7.4	<0.5	2.6	10.8	9.9	0.06	1.2	2	1.2	0.017	0.045	0.0012
D-2	37.7095°	140.9566°		10:46	7.3	<0.5	3.3	10.4	11.3	0.06	1.6	3	1.9	0.014	0.044	—
D-3	37.7051°	140.9622°		12:32	7.2	<0.5	2.8	10.0	11.3	0.06	1.4	2	1.7	0.013	0.038	—
D-4a	37.7309°	140.9081°		8:36	7.5	<0.5	2.6	10.0	9.8	0.05	1.2	1	1.0	0.017	0.052	—
D-4b	37.7312°	140.9095°		9:16	7.5	<0.5	2.6	9.9	9.6	0.05	1.1	2	0.9	0.022	0.061	—
D-5	37.7217°	140.8898°		7:53	7.6	<0.5	2.5	10.3	8.8	0.05	1.2	<1	0.6	0.016	0.047	—

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

Locations	Latitude and longitude of the location		Survey date and time		pH	Redox potential E _{NHE} (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							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	37.7332°	140.9253°	2014/10/23	9:55	7.2	266	18.4	1.7	2.1	2.699	31.7	42.1	17.9	6.6	0.8	0.9	1.4	19	300	910	1.1
D-2	37.7095°	140.9566°		10:52	7.2	272	17.8	1.3	1.6	2.708	20.0	36.0	39.0	3.6	0.8	0.6	0.96	4.75	170	560	—
D-3	37.7051°	140.9622°		12:38	7.2	280	22.6	1.6	1.8	2.703	4.9	15.3	60.9	16.0	1.4	1.5	0.43	4.75	43	170	—
D-4a	37.7309°	140.9081°		8:42	7.2	287	19.6	1.8	2.2	2.744	15.5	31.3	44.3	7.0	1.0	0.9	0.80	4.75	400	1,200	—
D-5	37.7217°	140.8898°		7:57	7.3	234	19.5	1.8	1.9	2.694	25.2	60.0	13.2	0.8	0.4	0.4	1.4	9.5	150	420	—

Note) N.D. means to be below the detection limit and figures in parentheses show the detection limit.

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

Location	Latitude and longitude of the location		Sampling Date	Division	Class	Order	Family	Species name	English name	Population	Sample weight (kg-wet)	Note			Cs-134 (Bq/kg-wet)	Cs-137 (Bq/kg-wet)	Sr-90 (Bq/kg-wet)			
	Latitude	Longitude										Growth stage	Stomach contents	Measurement site						
D-4a D-4b	—	37.7309° 37.7312°	140.9081° 140.9095°	2014/10/26 2014/10/31	Algae/plant	—	—	—	River bottom materials (incl. algae)	Considerable number	0.063	—	—	—	26	77	—			
					Arthropod	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Albardae	41	0.029	Larva (dragonfly larva)	—	—	—	6.0	20	—	
					Arthropod	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>	44	0.030	Larva	—	—	—	9.5	22	—	
					Arthropod	Malacostraca	Decapoda	Procambarus	<i>Procambarus clarkii</i>	Red swamp crawfish	3	0.036	Imago	—	—	—	21	68	—	
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	350	0.063	Imago	—	—	—	22	61	—	
					Mollusca	Gastropoda	Sorbeoconcha	Pleuroceridae	<i>Semisulcospira libertina</i>	<i>Semisulcospira libertina</i>	58	0.097	Imago	—	—	—	Molluscan body	28	76	—
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	5	0.051	Mature fish (2-year-old)	Many unknown content	—	—	Viscera removed	17	49	—
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	1	0.060	Mature fish (1-year-old)	Insects (many)	—	—	Viscera removed	15	46	—
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	2	0.032	Immature fish	Some (details unknown)	—	—	Viscera removed	21	70	—
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius</i> sp.	R. sp. CB	19	0.060	Mature fish	—	—	—	—	32	94	—
			coarse particulate organic matters (CPOMs)	—	—	—	—	Fallen leaves	Considerable number	0.26	—	Aquatic insects	—	27	89	—				

*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 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: A statement in red in the "Growth stage" column shows the age assessed based on squama or otolith.

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

*7: 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.

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

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