

OResults of Radioactive Material Monitoring of Aquatic Organisms (Location G in Lake Hayama)

<Location G in Lake Hayama: Samples collected>

Locations	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
G-1	○	○	○	○	○	○
G-4	○	○	○	-	○	-

<Location G in Lake Hayama: 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)	Secchi disk depth (m)
G-1(Surface layer)	37.7321°	140.8127°	2017/6/16	11:30	12:00	21.6	20.1	Sand sediment	7.5Y 3/2	None	2.4	1.8
G-1(Bottom layer)						21.4						
G-4	37.7382°	140.8035°		14:25	14:40	19.5						

<Location G in Lake Hayama: 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)	Electric 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 (water)												
G-1(Surface layer)	37.7321°	140.8127°	2017/6/16	11:30	7.7	1.5	4.6	10.8	6.9	0.04	1.7	6	4.5	0.0054	0.033	-
G-1(Bottom layer)					7.5	0.8	3.9	9.5	7.2	0.04	1.6	4	3.5	0.0048	0.033	0.00090
G-4	37.7382°	140.8035°		14:25	7.6	<0.5	2.1	9.4	7.9	0.04	1.2	1	0.8	0.0034	0.023	-

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

<Location G in Lake Hayama: General survey items/Analysis of radioactive materials Sediment>

Locations	Latitude and longitude of the location		Survey date and time		pH	Redox potential E _{SHE} (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)			
G-1	37.7321°	140.8127°	2017/6/16	12:00	7.3	234	54.6	10.0	17.1	2.626	0.0	0.1	8.2	42.5	34.7	14.5	0.080	2.0	410	2900	3.5
G-4	37.7382°	140.8035°		14:40	7.6	250	42.6	5.1	8.5	2.699	0.1	0.1	9.0	25.1	53.7	12.0	0.044	4.8	76	570	-

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

<Location G in Lake Hayama: 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				
G-1	In the lake	37.7321°	140.8127°	2017/6/16	Algae/plant	-	-	-	-	Plankton (Planktonic algae)	-	0.018	-	-	-	30.3	3.3	27	-			
G-2		37.7267°	140.8223°		Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	4	2.9	Mature fish	Bluegill	Viscera removed	218	28	190	1.5			
G-3		37.7302°	140.8307°		Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Lepomis macrochirus</i>	Bluegill	80	1.4	Immature fish	-	-	44.8	4.8	40	0.58			
G-4	Inflowing rivers	37.7382°	140.8035°	2017/6/16	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0042	-	-	-	284	34	250	-			
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	25	0.0062	Larva	-	-	-	70.6	8.6	62	-		
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	Macromia amphigena	12	0.0024	Larva (Dragonfly larva)	-	-	-	27	N.D.(14)	27	-		
					Arthropoda	Insecta	Odonata	Cordulegastriidae	<i>Anotogaster sieboldii</i>	Anotogaster sieboldii												
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Sieboldius albardae												
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	Davidius												
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Protohermes grandis	4	0.0037	Larva	-	-	-	14	N.D.(12)	14	-		
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	26	0.0047	Juvenile,Imago	-	-	-	9.8	N.D.(6.9)	9.8	-		
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Phoxinus lagowskii steindachneri</i>	Amur Minnow	2	0.0021	Immature fish	-	-	-	19	N.D.(16)	19	-		
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	23	0.063	Immature fish	-	-	-	33.3	4.3	29	-		
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	1	0.011	Mature fish	-	-	-	36.0	5.0	31	-		
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Hypomesus nipponensis</i>	Japanese smelt	30	0.031	Immature fish	-	-	-	41.9	5.9	36	-		
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	10	0.035	Immature fish	-	-	-	38.1	5.1	33	-		
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	1	1.1	Mature fish	Japanese smelt	Viscera removed	453	53	400	1.4			
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Lepomis macrochirus</i>	Bluegill	2	0.0035	Immature fish	-	-	-	29	N.D.(26)	29	-		
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius flumineus</i>	Rhinogobius flumineus	24	0.011	Immature fish	-	-	-	9.3	N.D.(5.2)	9.3	-		
Vertebrata	Amphibia	Anura	-	-	Frog	49	0.013	Larva (Tadpole)	-	-	-	282	32	250	-							
Coarse Particulate Organic Matter	-	-	-	-	-	-	-	Bottom fallen leaves	-	-	0.25	-	-	-	59.4	8.4	51	-				

*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.