

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

<Location G in Lake Hayama: Samples collected>

Items Locations	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
G-1	○	○	○	○	○	○
G-2	○	○	○	-	○	-
G-4	○	○	○	-	○	-

<Location G in Lake Hayama: 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)	Secchi disk depth (m)
G-1(Surface layer)	37.7348°	140.8102°	2022/8/22	12:56	12:30	27.9	24.0	Sediment	5Y4/2	Plant pieces	5.8	1.2
G-1(Bottom layer)						24.3						
G-2(Surface layer)	37.7267°	140.8223°		11:15	11:00	27.3	28.4	Sand gravel	10Y5/1	None	6.2	1.6
G-2(Bottom layer)						22.0						
G-4	37.7382°	140.8035°			14:00	14:00	23.2	23.0	Sand gravel	7.5Y5/3	Plant pieces	0.3

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

Items 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)	37.7348°	140.8102°	2022/8/22	12:56	7.3	0.9	4.1	8.1	7.5	0.04	1.9	5	3.9	N.D.(0.0014)	0.016	-
G-1(Bottom layer)					7.4	0.8	3.6	8.7	6.7	0.05	1.6	7	2.6	N.D.(0.0015)	0.020	0.00068
G-2(Surface layer)	37.7267°	140.8223°		11:15	7.8	0.7	3.6	8.6	7.7	0.04	1.8	2	1.5	N.D.(0.0014)	0.0082	-
G-2(Bottom layer)					7.0	0.5	3.1	4.5	7.6	0.04	1.6	3	3.1	N.D.(0.0013)	0.021	-
G-4	37.7382°	140.8035°			14:00	7.7	<0.5	2.3	8.3	9.0	0.05	1.1	<1	1.0	N.D.(0.0013)	0.014

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>

Items 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 (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	37.7348°	140.8102°	2022/8/22	12:30	7.5	171	38.0	8.3	25.4	2.560	7.7	6.2	15.0	21.8	36.6	12.7	0.078	19	27	910	1.9
G-2	37.7267°	140.8223°		11:00	7.4	359	19.7	1.3	2.4	2.630	16.8	18.8	30.5	16.3	12.0	5.6	0.50	19	4.6	180	-
G-4	37.7382°	140.8035°		14:00	7.6	476	14.9	2.1	3.3	2.650	3.0	16.6	55.2	15.5	4.6	5.1	0.46	9.5	8.3	300	-

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 G-2 G-3	In the lake	37.7348° 37.7267° 37.7302°	140.8102° 140.8223° 140.8307°	2022/8/22	Algae/plant	-	-	-	-	Plankton (Planktonic algae)	-	0.011	-	-	-	N.D.	N.D.(3.4)	N.D.(2.7)	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	1.2	Mature fish	Obscure digesta	Viscera removed	16	N.D.(1.3)	16	0.45	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	1.3	Mature fish	Obscure digesta	Viscera removed	15	N.D.(1.3)	15	0.44	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	1.4	Mature fish	Obscure digesta	Viscera removed	20	N.D.(1.3)	20	0.53	
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	2	1.8	Mature fish	Empty stomach	Viscera removed	93.6	2.6	91	0.49	
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Lepomis macrochirus</i>	Bluegill	41	0.56	Immature fish, Mature fish	Ant,Spiders	Viscera removed	26	N.D.(1.3)	26	-	
G-4	Inflowing rivers	37.7382°	140.8035°	2022/8/22	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0043	-	-	-	51	N.D.(8.3)	51	-	
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>	85	0.015	Larva	-	-	-	44	N.D.(6.9)	44	-
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>	25	0.022	Larva	-	-	-	9.7	N.D.(2.0)	9.7	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	112	1.4	Immature fish	-	-	-	21	N.D.(1.4)	21	0.27
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsariichthys platypus</i>	Pale chub	61	0.45	Immature fish, Mature fish	-	-	-	32	N.D.(1.2)	32	-
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	14	0.16	Immature fish	Rhinogobius flumineus	Viscera removed	12	N.D.(1.5)	12	-	
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	<i>Rhinogobius fluviatilis</i>	19	0.056	Immature fish, Mature fish	-	-	-	13	N.D.(1.9)	13	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius flumineus</i>	<i>Rhinogobius flumineus</i>										
					Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	2	1.8	Mature fish	Empty stomach	Viscera removed	122.3	2.3	120	0.50	
					Coarse Particulate Organic Matter					-	-	-	-	Bottom fallen leaves	-	0.26	-	-	-	46.4

*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.