

Results 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-2	-	○	-	-	○	-
G-3	○	○	○	-	○	-
G-4	-	○	-	-	○	-
G-5	○	○	○	-	○	-

<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°	2016/12/5	11:45	11:55	10.5	9.1	Sand sediment	7.5Y 3/2	Plant pieces	4.9	3.5
G-1(Bottom layer)						8.7						
G-2	37.7267°	140.8223°		-	10:30	-	8.1	Sand sediment	7.5Y 3/2	Plant pieces	-	-
G-3(Surface layer)	37.7302°	140.8307°		09:23	09:35	10.2	10.4	Sand sediment	7.5Y 2/2	Plant pieces	5.7	3.5
G-3(Bottom layer)						10.1						
G-4	37.7382°	140.8035°		-	13:30	-	8.6	Sand sediment	7.5Y 5/3	Plant pieces	-	-
G-5(Surface layer)	37.7341°	140.8088°		11:20	11:35	10.4	10.4	Sand sediment	7.5Y 3/2	Plant pieces	1.7	>1.7
G-5(Bottom layer)						10.3						

<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°	2016/12/5	11:45	7.4	0.9	3.0	10.1	7.0	0.04	1.4	1	1.9	0.0038	0.023	-
G-1(Bottom layer)					7.3	0.7	2.6	10.5	6.9	0.04	1.3	1	1.5	0.011	0.061	0.0012
G-3(Surface layer)	37.7302°	140.8307°		09:23	7.3	0.9	3.1	9.9	6.9	0.04	1.6	1	1.6	0.0043	0.029	-
G-3(Bottom layer)					7.3	<0.5	2.9	9.8	6.8	0.04	1.3	1	1.5	0.0036	0.028	-
G-5(Surface layer)	37.7341°	140.8088°		11:20	7.3	0.7	2.9	9.9	6.8	0.04	1.4	2	1.8	0.0039	0.027	-
G-5(Bottom layer)					7.3	0.8	3.1	10.1	6.8	0.04	1.4	2	1.8	0.0055	0.026	-

<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 _{SHLE} (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°	2016/12/5	11:55	7.2	343	36.4	6.5	6.6	2.657	2.9	5.2	20.1	43.3	18.8	9.7	0.16	9.5	430	2500	2.5
G-2	37.7267°	140.8223°		10:30	6.8	142	64.7	12.3	43.1	2.519	1.7	6.6	11.6	8.7	32.7	38.7	0.012	4.8	1800	11000	-
G-3	37.7302°	140.8307°		09:35	7.1	179	55.0	9.0	26.3	2.555	11.4	8.7	14.5	12.2	25.0	28.2	0.061	19	890	5600	-
G-4	37.7382°	140.8035°		13:30	7.5	226	41.2	5.2	11.4	2.655	0.0	0.3	6.7	41.6	36.5	14.9	0.072	2.0	150	1000	-
G-5	37.7341°	140.8088°		11:35	7.2	267	43.7	8.6	25.5	2.602	3.4	5.3	29.4	26.2	21.9	13.8	0.17	9.5	580	3600	-

<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°	2016/12/5	Algae/plant	-	-	-	-	Plankton (Planktonic algae)	-	0.028	-	-	-	2.4	N.D.(1.4)	2.4	-
G-2		37.7267°	140.8223°	2016/12/8	Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	2	2.3	Mature fish	Fish	Viscera removed	280	40	240	1.4
G-3		37.7302°	140.8307°		Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	1	2.2	Mature fish	Fish	Viscera removed	400	60	340	-
G-4	Inflowing rivers	37.7382°	140.8035°	2016/12/5	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.017	-	-	-	222	32	190	-
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Kamimuria uenoi</i>	Kamimuria uenoi Kohno	122	0.010	Larva	-	-	4.3	N.D.(3.9)	4.3	-
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Oyamia sp.</i>	Oyamia									
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Kamimuria tibialis</i>	<i>Kamimuria tibialis</i>									
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Neoperla sp.</i>	Neoperla									
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Niponiella limbatella Klapalek</i>	Niponiella limbatella Klapalek									
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata									
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Protohermes grandis	66	0.0075	Larva	-	-	103	14	89	-
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Protohermes grandis	87	0.078	Larva	-	-	27.0	4.0	23	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	77	0.050	Immature fish	-	-	32.1	5.1	27	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius flumineus</i>	Rhinogobius flumineus	15	0.024	Immature fish, Mature fish	-	-	28.3	4.3	24	-
					Vertebrata	Amphibia	Anura	Ranidae	<i>Rana ornativentris</i>	Montane brown frog	1	0.022	Imago	-	-	18.4	2.4	16	-
					Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.24	-	-	-	-	-	-	45.5

*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.