○Results of Radioactive Material Monitoring of Aquatic Organisms (Locations A and B along the Abukuma River)

＜Locations A and B along the Abukuma River: Samples collected＞

Items	General items		Radioactive materials			
Locations	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
A-1	○	○	○	○	○	○
A-2	○	○	○	-	○	-
B-1	○	○	○	-	○	-
B-2	○	○	○	-	○	-
B-3	○	○	○	-	○	-

＜Locations A and B along the Abukuma River: Site measurement item＞

Items	Latitude and longitude of the location		Survey date and time			Water	Sediment				Other	
Locations	Scheduled latitude	Scheduled longitude	Date	Time (water)	Time (sediment)	Water temperature (degrees C)	Sediment temperature (degrees C)	Property	Color	Contaminants	Water depth (m)	Transparency(cm)
A-1(Surface layer)	37.6210°	140.5218°	2015/12/1	08:53	09:08	8.1	8.5	Sediment with sand	2.5Y3/1	Fallen leaves a little	8.10	>50
A-1(Deep layer)	37.6210°	140.5218°		08:40		8.3						(1.5m)*
A-2	37.5673°	140.3946°		10:38	10:45	8.8	10.3	Sand with	10YR4/3	Plant	0.90	>50
B-1	37.7843°	140.4924°		14:38	14:53	9.0	9.2	Sediment with	2.5Y4/2	Plant	0.20	>50
B-2	37.8121°	140.5058°		13:40	13:46	9.4	10.4	Sand	2.5Y4/4	Plant pieces a little	0.48	>50
B-3	37.8182°	140.4679°		12:48	12:58	9.9	9.9	Sand	2.5Y4/2	None	0.45	>50

* The numbers in ( ) indicates the degree of transparency.

＜Locations A and B along the Abukuma River: General survey items/Analysis of radioactive materials Water＞

Items	Latitude and longitude of the location		Survey date and time		pH	BOD	COD	DO	Electrical conductivity	Salinity	TOC	SS	Turbidity	Cs-134	Cs-137	Sr-90
Locations	Scheduled latitude	Scheduled longitude	Date	Time (water)		(mg/L)	(mg/L)	(mg/L)	(mS/m)		(mg/L)	(mg/L)	(FNU)	(Bq/L)	(Bq/L)	(Bq/L)
A-1(Surface layer)	37.6210°	140.5218°	2015/12/1	8:53	7.4	1.7	4.0	11.7	16.4	0.09	1.6	5	2.5	0.0031	0.014	0.0014
A-1(Deep layer)	37.6210°	140.5218°		8:40	7.5	2.1	4.4	11.4	17.3	0.09	1.6	6	2.8	0.0041	0.019	-
A-2	37.5673°	140.3946°		10:38	7.5	0.9	2.4	11.7	11.2	0.06	0.9	5	3.4	0.0072	0.032	-
B-1	37.7843°	140.4924°		14:38	7.5	1.4	3.4	12.0	17.7	0.09	1.5	5	3.2	0.0080	0.034	-
B-2	37.8121°	140.5058°		13:40	7.5	1.1	3.8	11.5	15.2	0.08	1.4	4	2.6	0.0066	0.026	-
B-3	37.8182°	140.4679°		12:48	7.6	0.7	2.6	11.3	8.3	0.05	1.3	2	1.6	0.0059	0.024	-

＜Locations A and B along the Abukuma River: General survey items/Analysis of radioactive materials Sediment＞

Items	Latitude and longitude of the location		Survey date and time		pH	Redox potential EN.H.E	Water content	IL	TOC	Soil particle density	Grain size distribution								Cs-134	Cs-137	Sr-90
Locations	Scheduled latitude	Scheduled longitude	Date	Time (sediment)		(mV)	(%)	(%)	(mg/g-dry)	(g/cm3)	Gravel (2-75mm) (%)	Coarse sand (0.85-2mm) (%)	Medium sand (0.25-0.85mm) (%)	Fine sand (0.075-0.25mm) (%)	Silt (0.005-0.0075mm) (%)	Clay (Less than 0.005mm) (%)	Median grain diameter	Maximum grain diameter	(Bq/kg-dry)	(Bq/kg-dry)	(Bq/kg-dry)
A-1	37.6210°	140.5218°	2015/12/1	9:08	6.8	71	38.9	3.2	9.7	2.721	0.8	1.0	20.8	51.0	15.0	11.4	0.16	4.8	390	1700	0.28
A-2	37.5673°	140.3946°		10:45	6.7	418	23.1	2.0	3.8	2.734	20.1	50.1	26.1	1.7	1.0	1.0	1.2	9.5	34	200	-
B-1	37.7843°	140.4924°		14:53	6.9	261	26.9	2.3	7.3	2.712	12.7	10.0	19.5	46.5	4.6	6.7	0.21	9.5	76	310	-
B-2	37.8121°	140.5058°		13:46	6.9	348	23.5	1.6	1.9	2.735	0.1	0.8	58.0	37.2	2.1	1.8	0.28	4.8	38	160	-
B-3	37.8182°	140.4679°		12:58	7.0	398	21.0	1.3	2.6	2.681	17.8	37.6	34.2	7.6	1.4	1.4	0.96	4.8	38	160	-

＜Locations A and B along the Abukuma River: Survey items Aquatic organisms＞

Location	Sampling point	Latitude and longitude of the location		Sampling Date	Division	Class	Order	Family	Species name	English name	Population	Sample weight (kg-wet)	Note			Radioactive cesium (Bq/kg-wet)		Sr-900 (Bq/kg-
		Latitude	Longitude										Growth stage	Stomach contents	Measurement site	Cs-134	Cs-137	
A-2	Harase River	37.5673°	140.3946°	2015/12/2	Phycophyta	-	-	-	-	Riverbed Deposits (include algae)	-	0.053	-	-	-	32	110	-
					Arthropod	Insecta	Trichoptera	Stenopsychidae	*Stenopsyche marmorata*	Stenopsyche marmorata	247	0.077	Larva	-	-	5.9	24	-
					Arthropod	Insecta	Odonata	Cordulegastridae	*Anotogaster sieboldii*	Anotogester sieboldii	51	0.063	Larva (dragonfly larva)	-	-	6.2	21	-
					Arthropod	Insecta	Odonata	Aeshnidae	*Anax parthenope julius*	Anax parthenope								
					Arthropod	Insecta	Odonata	Gomphidae	*Sieboldius albardae*	Sieboldius albardae								
					Arthropod	Insecta	Odonata	Corduliidae	*Macromia amphigena amphigena*	Macromia amphigena								
					Arthropod	Insecta	Odonata	Gomphidae	-	Davidius								
					Arthropod	Insecta	Odonata	Gomphidae	*Asiagomphus melaenops*	Asiagomphus melaenops								
					Arthropod	Malacostraca	Decapoda	Atyidae	-	Neocaridina sp.	481	0.063	Imago	-	-	4.1	15	-
					Mollusca	Gastropoda	Sorbeoconcha	Pleuroceridae	*Semisulcospira libertina*	Semisulcospira libertina	40	0.029	Imago	-	Molluscan body	N.D.(2.0)	7.4	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	*Phoxinus lagowskii steindachneri*	Amur Minnow	30	0.11	Immature fish (1-year-old)	Goera japonica Banks, Algae, Aquatic insects	Viscera removed	1.5	8.2	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	*Opsariichthys platypus*	Zacco platypus	3	0.029	Mature fish (2-year-old)	Algae	Viscera removed	3.6	13	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	*Candidia temminckii*	Dark chub	15	0.20	Immature fish (0-year-old)/Mature fish (2-year-old)	Amorphous residue	Viscera removed	3.1	13	-
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	*Misgurnus anguillicaudatus*	Oriental weatherfish	19	0.060	Immature fish/Mature fish	-	-	2.5	9.2	-
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	*Nemacheilus toni*	Stone loach	13	0.11	Immature fish/Mature fish	Trichoptera, Ephemerellidae	Viscera removed	1.7	8.0	-
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	*Oncorhynchus masou masou*	Yamame trout	2	0.021	Immature fish (1-year-old)	Trichoptera, Grasshopper, Bioinfal snail, Ephemeridae, Water boatman	Viscera removed	2.6	9.9	-
					Vertebrata	Amphibia	Anura	-	-	Tadpole	14	0.011	Larva (tadpoles)	-	-	N.D.(5.3)	19	-
					Vertebrata	Amphibia	Anura	Ranidae	*Glandirana rugosa*	Wrinkled Frog	4	0.020	Imago	-	-	2.9	10	-
					Vertebrata	Amphibia	Caudata	Salamandridae	*Cynops pyrrhogaster*	Cynops pyrrhogaster	4	0.025	Imago	-	-	N.D.(2.8)	8.9	-
					Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.18	-	-	-	4.6	19	-
B-2	Abukuma River	37.8121°	140.5058°	2015/12/11	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	*Carassius cuvieri*	Japanese crucian carp	3	3.1	Mature fish (7-year-old)	Amorphous residue	Viscera removed	12	43	0.42
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	*Cyprinus carpio*	Common carp	1	4.8	Mature fish (8-year-old)	Empty stomach	Viscera removed	2.3	9.5	0.30
B-3	Surikami River	37.8182°	140.4679°	2015/12/8	Phycophyta	-	-	-	-	Riverbed Deposits (include algae)	-	0.016	-	-	-	8.7	32	-
					Arthropoda	Insecta	Ephemeroptera	Ephemeridae	*Ephemera strigata*	Monkagerou	298	0.035	Larva	-	-	10	46	-
					Arthropoda	Insecta	Plecoptera	Perlidae	*Kamimuria tibialis*	Kamimura tibialis	170	0.014	Larva	-	-	N.D.(4.3)	3.8	-
					Arthropod	Insecta	Trichoptera	Stenopsychidae	*Stenopsyche marmorata*	Stenopsyche marmorata	635	0.16	Larva	-	-	8.4	38	-
					Arthropod	Insecta	Odonata	Gomphidae	*Melligomphus viridicostus*	Onychogomphus viridicostus	108	0.035	Larva (dragonfly larva)	-	-	N.D.(2.0)	4.3	-
					Arthropod	Insecta	Odonata	Gomphidae	*Sieboldius albardae*	Sieboldius albardae								
					Arthropod	Insecta	Odonata	Corduliidae	*Macromia amphigena amphigena*	Macromia amphigena								
					Arthropod	Insecta	Odonata	Gomphidae	-	Davidius								
					Arthropod	Insecta	Odonata	Calopterygidae	*Mnais costalis*	Mnais costalis								
					Arthropod	Insecta	Odonata	Calopterygidae	*Calopteryx cornelia*	Calopteryx cornelia								
					Arthropod	Insecta	Megaloptera	Corydalidae	*Protohermes grandis*	Protohermes grandis	50	0.047	Larva	-	-	N.D.(1.4)	2.2	-
					Vertebrata	Osteichthyes	Scorpaeniformes	Cottidae	*Cottus pollux*	Japanese fluvial sculpin	12	0.17	Immature fish /Mature fish	Stenopsyche marmorata	Viscera removed	1.2	5.3	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	*Phoxinus lagowskii steindachneri*	Amur Minnow	14	0.079	Mature fish (2-year-old)	Amorphous residue	Viscera removed	1.9	8.2	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	*Candidia temminckii*	Dark chub	18	0.11	Immature fish /Mature fish (1-year-old)	Empty stomach	Viscera removed	2.1	8.5	-
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	*Nemacheilus toni*	Stone loach	4	0.031	Immature fish /Mature fish	-	-	N.D.(2.2)	5.5	-
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	*Oncorhynchus masou masou*	Yamame trout	2	0.045	Immature fish (1-year-old)	Stenopsyche marmorata	Viscera removed	N.D.(1.5)	3.8	-
					Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.15	-	-	-	5.0	18	-

*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.