○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	Latitude	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)	37.6207°	140.5220°	2014/12/4	9:15	10:00	6.8	8.2	Sediment with sand	2.5Y3/2	None	7.4	>50.0
A-1 (Deep layer)				9:55		6.9						(1.7m)*
A-2	37.5655°	140.3944°		11:36	11:43	7.6	7.9	Sand	2.5Y4/3	Fallen leaves	0.90	>50.0
B-1	37.7847°	140.4920°		15:40	15:28	8.3	8.4	Sediment with sand	2.5Y3/3	None	0.27	>50.0
B-2	37.8120°	140.5058°		14:38	14:34	8.4	8.7	Sand	2.5Y5/2	None	0.47	>50.0
B-3	37.8162°	140.4719°		13:45	13:38	8.4	8.5	Sand	2.5Y4/2	None	0.64	>50.0

* 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	Latitude	Longitude	Date	Time		(mg/L)	(mg/L)	(mg/L)	(mS/m)		(mg/L)	(mg/L)	(FNU)	(Bq/L)	(Bq/L)	(Bq/L)
A-1 (Surface layer)	37.6207°	140.5220°	2014/12/4	9:15	7.5	1.2	3.6	12.5	16.4	0.09	1.6	3	2.5	0.021	0.059	0.0011
A-1 (Deep layer)				9:55	7.5	1.3	3.6	12.3	16.7	0.09	1.8	7	3.1	0.0099	0.029	—
A-2	37.5655°	140.3944°		11:36	7.5	0.6	2.5	12.4	10.0	0.06	0.9	2	1.8	0.0064	0.020	—
B-1	37.7847°	140.4920°		15:40	7.6	1.3	4.1	12.3	17.0	0.09	1.7	7	3.4	0.0078	0.021	—
B-2	37.8120°	140.5058°		14:38	7.6	0.9	3.3	12.4	13.0	0.07	1.6	3	2.4	0.0053	0.019	—
B-3	37.8162°	140.4719°		13:45	7.6	0.5	3.4	12.2	7.9	0.05	1.5	3	1.6	0.0043	0.014	—

＜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 E_{NHE}	Water content	IL	TOC	Soil particle density	Grain size distribution								Cs-134	Cs-137	Sr-90
											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	Maximum grain diameter			
Locations	Latitude	Longitude	Date	Time		(mV)	(%)	(%)	(mg/g-dry)	(g/cm3)	(%)	(%)	(%)	(%)	(%)	(%)	(mm)	(mm)	(Bq/kg-dry)	(Bq/kg-dry)	(Bq/kg-dry)
A-1	37.6207°	140.5220°	2014/12/4	10:00	7.0	92	42.3	5.4	11.2	2.721	1.4	0.9	32.2	23.0	18.1	24.4	0.15	9.5	220	670	0.22
A-2	37.5655°	140.3944°		11:43	7.0	314	23.1	1.9	2.1	2.744	16.8	44.7	29.9	4.2	0.6	3.8	1.1	19	29	110	—
B-1	37.7847°	140.4920°		15:28	7.0	229	19.7	1.8	2.2	2.751	31.6	23.0	21.5	19.7	0.9	3.3	1.1	19	79	230	—
B-2	37.8120°	140.5058°		14:34	7.1	300	27.8	1.7	1.7	2.765	0.0	1.1	46.5	49.2	1.4	1.8	0.24	2	60	190	—
B-3	37.8162°	140.4719°		13:38	7.2	323	21.7	2.8	3.7	2.689	20.4	25.2	37.4	10.3	3.2	3.5	0.73	9.5	90	310	—

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

＜Locations A and B along the Abukuma River: Survey 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	Cs-137	Sr-90
		Latitude	Longitude										Growth stage	Stomach contents	Measurement site	(Bq/kg-wet)	(Bq/kg-wet)	(Bq/kg-wet)
A-2	Harase River	37.5655°	140.3944°	2014/12/3	Algae/plant	–	–	–	–	River bottom materials (incl. algae)	Considerable number	0.074	–	–	–	73	260	–
					Arthropod	Insecta	Trichoptera	Stenopsychidae	*Stenopsyche marmorata*	Stenopsyche marmorata	134	0.010	Larva	–	–	39	110	–
					Arthropod	Insecta	Odonata	Corduliidae	*Macromia amphigena amphigena*	Macromia amphigena	70	0.038	Larva (dragonfly larva)	–	–	3.8	13	–
					Arthropod	Insecta	Odonata	Cordulegastridae	*Anotogaster sieboldii*	Anotogester sieboldii								
					Arthropod	Insecta	Odonata	Gomphidae	*Onychogomphus viridicostus*	Onychogomphus viridicostus								
					Arthropod	Insecta	Odonata	Gomphidae	*Sieboldius albardae*	Albardae								
					Arthropod	Insecta	Odonata	Gomphidae	*Asiagomphus melaenops*	Asiagomphus melaenops								
					Arthropod	Malacostraca	Decapoda	Atyidae	*Neocaridina sp.*	Neocaridina sp.	494	0.075	Imago	–	–	5.7	16	–
					Mollusca	Gastropoda	Sorbeoconcha	Pleuroceridae	*Semisulcospira libertina*	Semisulcospira libertina	65	0.086	Imago	–	Molluscan body	7.2	24	–
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	*Phoxinus lagowskii steindachneri*	Amur Minnow	6	0.020	Immature fish/mature fish	–	–	5.3	14	–
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	*Nipponocypris temminckii*	Dark chub	7	0.011	Immature fish	–	–	N.D.(5.2)	14	–
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	*Misgurnus anguillicaudatus*	Oriental weatherfish	38	0.045	Immature fish/mature fish	–	–	2.8	11	–
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	*Oncorhynchus masou*	Yamame trout	1	0.090	Immature fish/mature fish	Aquatic insects	Viscera removed	11	32	–
					Vertebrata	Amphibia	Anura	Ranidae	*Rana rugosa*	Wrinkled Frog	3	0.015	Imago	–	–	2.9	13	–
					Vertebrata	Amphibia	Caudata	Salamandridae	*Cynops pyrrhogaster*	Cynops pyrrhogaster	7	0.047	Imago	–	–	4.9	13	–
					Coarse particulate organic matters	–	–	–	–	Fallen leaves	Considerable number	0.24	–	–	–	12	39	–
B-3	Surikami River	37.8162°	140.4719°	2014/12/2 2014/12/11	Algae/plant	–	–	–	–	River bottom materials (incl. algae)	Considerable number	0.057	–	–	–	23	68	–
					Arthropoda	Insecta	Ephemeroptera	Ephemeridae	*Ephemera strigata*	Ephemeroidea	600	0.030	Larva	–	–	18	54	–
					Arthropoda	Insecta	Plecoptera	Plecoptera	*Kamimuria tibialis*	Kamimura tibialis	292	0.016	Larva	–	–	N.D.(2.9)	N.D.(2.6)	–
					Arthropod	Insecta	Trichoptera	Stenopsychidae	*Stenopsyche marmorata*	Stenopsyche marmorata	196	0.061	Larva	–	–	2.3	6.1	–
					Arthropod	Insecta	Trichoptera	Stenopsychidae	*Stenopsyche marmorata*	Stenopsyche marmorata	340	0.058	Larva	–	–	7.4	24	–
					Arthropod	Insecta	Odonata	Corduliidae	*Macromia amphigena amphigena*	Macromia amphigena	113	0.034	Larva (dragonfly larva)	–	–	11	33	–
					Arthropod	Insecta	Odonata	Cordulegastridae	*Anotogaster sieboldii*	Anotogester sieboldii								
					Arthropod	Insecta	Odonata	Gomphidae	*Onychogomphus viridicostus*	Onychogomphus viridicostus								
					Arthropod	Insecta	Odonata	Gomphidae	*Sieboldius albardae*	Albardae								
					Arthropod	Insecta	Odonata	Gomphidae	*Davidius nanus*	Davidius nanus								
					Arthropod	Insecta	Odonata	Gomphidae	*Davidius sp.*	Davidius								
					Arthropod	Malacostraca	Decapoda	Procambarus	*Procambarus clarkii*	Red swamp crawfish	1	0.011	Imago	–	–	4.4	11	–
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	*Tribolodon hakonensis*	Japanese dace	2	0.064	Mature fish (2-year-old)	Many unknown content	Viscera removed	6.8	19	–
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	*Misgurnus anguillicaudatus*	Oriental weatherfish	10	0.041	Immature fish/mature fish	–	–	4.0	12	–
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	*Oncorhynchus masou*	Yamame trout	2	0.11	Mature fish (2-year-old)	Insects, aquatic insects	Viscera removed	2.8	8.6	–
					Vertebrata	Amphibia	Anura	–	–	Frogs	32	0.026	Larva(tadpole)	–	–	24	75	–
					Vertebrata	Amphibia	Anura	Ranidae	*Rana catesbeiana*	American Bullfrog	1	0.029	Imago	–	–	3.9	8.5	–
					Coarse particulate organic matters	–	–	–	–	Fallen leaves	Considerable number	0.48	–	–	–	9.8	33	–

*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.