

The Results of Radioactive Material Monitoring of the Surface Water Bodies within Tochigi Prefecture

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In accordance with the Comprehensive Radiation Monitoring Plan determined by the Monitoring Coordination Meeting, the Ministry of the Environment (MOE) is continuing to monitor radioactive materials in water environments (surface water bodies (rivers, lakes and headwaters, and coasts), etc.).

Samples taken from the surface water bodies of Tochigi Prefecture during the period of October 5-24 have been measured as part of MOE's efforts to monitor radioactive materials; the results have recently been compiled and are released here. (The monitoring results for Miyagi Prefecture (samples taken during October 3-November 7) are simultaneously released.)

*The following monitoring results have already been released: Fukushima Prefecture (September 15-October 14 samples: Released November 15), and Ibaraki Prefecture (August 30-October 8 samples: Released December 2).

1. Survey Overview

(1) Survey Locations

115 environmental reference points, etc. in the surface water bodies within Tochigi Prefecture
(Rivers: 107 locations, Lakes: 8 locations)

(2) Survey Method

- Measurement of concentrations of radioactive materials (radioactive iodine (I-131), radioactive cesium (Cs-134 and Cs-137)) in water and sediment
- Measurement of concentrations of radioactive materials and spatial dose-rate in soil in the surrounding environment of water and sediment sample collection points (river terraces, etc.)

2. Outline of Results

(1) Water Quality

- Radioactive iodine (I-131) Not detectable (ND) at any location (Lower detection limit: 1Bq/L)
- Radioactive cesium (Cs-134, Cs-137)
(Rivers) Detected at one location (Cs-134: ND, Cs-137: 1Bq/L)
(Lakes) ND at any location (Lower detection limit: 1Bq/L)

*“Regulatory Guide: Emergency Preparedness for Nuclear Facilities (Nuclear Safety Commission)”
Standards for Restrictions on the Intake of Food and Drink (Drinking Water)
Radioactive iodine (I-131): 300Bq/kg or more
Radioactive cesium (total for Cs-134 + Cs-137): 200Bq/kg or more

(2) Sediment

- Radioactive iodine (I-131) ND at any location (Lower detection limit: 30Bq/kg (dried mud))
- Radioactive cesium
(Rivers)
Cs-134: ND-2,200Bq/kg (dried mud) (Lower detection limit: 10Bq/kg (dried mud))

Cs-137: ND-2,700Bq/kg (dried mud) (Lower detection limit: 10Bq/kg (dried mud))

(Lakes)

Cs-134: ND-1,900Bq/kg (dried mud) (Lower detection limit: 10Bq/kg (dried mud))

Cs-137: ND-2,500Bq/kg (dried mud) (Lower detection limit: 10Bq/kg (dried mud))

(3) Surrounding Environment

- Radioactive iodine (I-131): ND at any location (Lower detection limit: 30Bq/kg (dry))

- Radioactive cesium

(Rivers)

Cs-134: ND-7,600Bq/kg (Lower detection limit: 10Bq/kg (dry))

Cs-137: 11-9,400Bq/kg (dry)

(Lakes)

Cs-134: 110-1,500Bq/kg (dry)

Cs-137: 150-1,900Bq/kg (dry)

- Spatial dose

(Rivers) 0.05-1.05 μ Sv/h

(Lakes) 0.09-0.74 μ Sv/h

(Annex for details)
(Map attached)

Future Plans

In coordination with relevant organizations, MOE intends to continue to measure radioactive materials in water, sediment, etc. in rivers, lakes, etc. in the following prefectures: Fukushima, Miyagi, Yamagata (some parts), Iwate (some parts), Ibaraki, Tochigi, Gunma and Chiba (some parts).

○River (Tochigi Prefecture-1): Water Quality Monitoring Results

(Annex)

Sampling point			Sampling date	Weather	Air temperature ℃	Full depth m	General items						Concentration of radioactive material Bq/L			Remarks		
Water body	Point	Municipality					Water temperature ℃	Sampling depth m	Transparency cm	Electrical conductivity mS/m	SS mg/L	Turbidity	Radioactive iodine I-131	Radioactive cesium Cs-134 Cs-137				
Kujigawa River System	Oshigawa River	Koshijibashi Bridge	Daigomachi Town	2011/10/6	Sunny	17.2	0.30	15.2	0.0	100 or more	8.1	14	8.4	<1	<1	<1	(Ibaraki Prefecture)	
N a k a g a w a R i v e r S y s t e m	Nakagawa River	Ikuyobashishita	Nasushiobarashi City	2011/10/23	Cloudy	20.4	0.70	14.0	0.0	100 or more	15.9	1	0.8	<1	<1	<1		
		Komeibashi Bridge	Nasushiobarashi City	2011/10/23	Cloudy	20.0	0.80	14.4	0.0	100 or more	13.5	1	0.8	<1	<1	<1		
	Takaomatagawa River	Takaomatabashi Bridge	Nasumachi Town	2011/10/23	Cloudy	19.0	0.40	15.7	0.0	100 or more	19.8	2	1.0	<1	<1	<1		
	Yukawa River	Yukawabashi Bridge	Nasumachi Town	2011/10/5	Rain	15.2	0.30	13.5	0.0	100 or more	27.7	4	3.6	<1	<1	<1		
	Nakagawa River	Kamikuroiso	Nasushiobarashi City	2011/10/5	Rain	16.2	0.52	12.8	0.0	100 or more	12.8	4	3.9	<1	<1	<1		
	Yosasagawa River	Yosasabashi Bridge	Nasumachi Town	2011/10/5	Rain	15.0	0.30	13.4	0.0	100 or more	15.9	2	1.7	<1	<1	<1		
	Kurokawa River	Shindenbashi Bridge	Nasumachi Town	2011/10/5	Rain	14.8	0.30	13.8	0.0	100 or more	9.8	4	4.8	<1	<1	1		
	Yosasagawa River	Kawadabashi Bridge	Otawarashi City	2011/10/6	Cloudy	14.8	0.50	14.6	0.0	55	20.9	24	14	<1	<1	<1		
	Nakagawa River	Kurobane	Otawarashi City	2011/10/6	Cloudy	15.1	0.30	15.0	0.0	82	11.2	6	5.1	<1	<1	<1		
	Matsubagawa River	Tributary	Otawarashi City	2011/10/6	Cloudy	15.1	0.60	15.0	0.0	73	8.1	11	8.9	<1	<1	<1		
	Sabigawa River	Udagawabashi Bridge	Otawarashi City	2011/10/7	Sunny	16.4	0.40	14.6	0.0	100 or more	13.6	2	1.3	<1	<1	<1		
	Momuragawa River	Momuranakabashi Bridge	Otawarashi City	2011/10/7	Sunny	21.0	0.40	16.5	0.0	100 or more	18.3	2	1.3	<1	<1	<1		
	H o k i g a w a R i v e r	Hokigawa River	Yunohara	Nasushiobarashi City	2011/10/17	Sunny	19.6	0.80	15.8	0.0	100 or more	17.3	3	2.8	<1	<1	<1	
			Sekibashi Bridge	Nasushiobarashi City	2011/10/17	Sunny	18.8	0.50	14.8	0.0	100 or more	3.3	2	1.9	<1	<1	<1	
			Iwabashi Bridge	Otawarashi City	2011/10/7	Sunny	21.2	0.40	15.8	0.0	100 or more	15.7	3	1.8	<1	<1	<1	
			Hokigawabashi Bridge	Otawarashi City	2011/10/6	Sunny	22.8	0.40	18.4	0.0	100 or more	14.6	8	4.2	<1	<1	<1	
	Nakagawa River	Shinnakabashi Bridge	Nakagawamachi Town	2011/10/6	Sunny	23.8	0.40	18.0	0.0	100 or more	14.9	7	4.8	<1	<1	<1		
	Mumogawa River	Koseibashi Bridge	Nakagawamachi Town	2011/10/14	Sunny	21.8	0.80	15.9	0.0	65	10.1	31	13	<1	<1	<1		
	A r a k a w a R i v e r	Arakawa River	Saikachibashi Bridge	Shioyamachi Town	2011/10/9	Sunny	19.6	0.50	16.2	0.0	100 or more	7.5	2	2.4	<1	<1	<1	
			Renjobashi Bridge	Sakurashi City	2011/10/10	Cloudy	18.0	0.60	16.6	0.0	67	10.6	2	1.3	<1	<1	<1	
U c h i k a w a R i v e r	Uchikawa River	Tanakabashi Bridge	Yaitashi City	2011/10/10	Cloudy	16.4	0.20	15.6	0.0	100 or more	8.7	1	1.2	<1	<1	<1		
		Asahibashi Bridge	Sakurashi City	2011/10/10	Cloudy	17.0	0.90	16.8	0.0	100 or more	14.0	2	1.1	<1	<1	<1		
Arakawa River	Mukadabashi Bridge	Nasukarasuyamashi City	2011/10/13	Cloudy	18.3	0.30	18.0	0.0	100 or more	14.3	1	1.2	<1	<1	<1			
Egawa River	Tributary	Nasukarasuyamashi City	2011/10/13	Cloudy	19.8	0.30	18.4	0.0	100 or more	13.6	3	3.0	<1	<1	<1			
S a k a g a w a R i v e r	Sakagawa River	Jukkukubashi Bridge	Motegimachi Town	2011/10/13	Cloudy	20.4	1.00	18.8	0.0	100 or more	8.7	1	1.5	<1	<1	<1		
		Tributary	Motegimachi Town	2011/10/13	Cloudy	19.7	0.40	16.9	0.0	100 or more	13.5	1	2.6	<1	<1	<1		
S y s t e m	Kokaigawa River	Benitoribashi Bridge	Mashikomachi Town	2011/10/13	Cloudy	20.6	0.60	18.8	0.0	100 or more	15.5	4	5.0	<1	<1	<1		
		Miyabashi Bridge	Mookashi City	2011/10/13	Cloudy	20.6	0.40	17.7	0.0	100 or more	17.1	3	3.5	<1	<1	<1		
	Gogyogawa River	Hanaoka	Takanezawamachi Town	2011/10/10	Sunny	23.2	0.40	17.6	0.0	100 or more	14.1	3	1.8	<1	<1	<1		
	Nomotogawa River	Tributary	Hagamachi Town	2011/10/14	Sunny	17.8	0.40	16.8	0.0	100 or more	14.8	2	2.3	<1	<1	<1		
	Gyoyagawa River	Tokiwabashi Bridge	Mookashi City	2011/10/13	Cloudy	23.0	1.15	18.0	0.0	100 or more	16.0	2	3.1	<1	<1	<1		
	Egawa River	Sunokobashi Bridge	Mookashi City	2011/10/13	Cloudy	21.2	0.65	17.0	0.0	100 or more	19.6	4	4.0	<1	<1	<1		
	Gogyogawa River	Katsurabashi Bridge	Mookashi City	2011/10/14	Cloudy	23.2	0.50	18.7	0.0	100 or more	19.7	2	2.0	<1	<1	<1		

* Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

ORiver (Tochigi Prefecture-1): Sediment Monitoring Results

Sampling point			Sampling date	Weather	Air temperature ℃	Full depth m	General items				Concentration of radioactive material Bq/kg (dried n			Remarks		
Water body	Point	Municipality					Mud temperature ℃	Mud sampling depth cm	Mud content %	Property	Radioactive iodine I-131	Radioactive cesium Cs-134 Cs-137				
			Kujigawa River System	Oshigawa River	Koshijibashi Bridge	Daigomachi Town	2011/10/6	Sunny	17.2	0.30	15.2	10	81.9	Sand	<30	19
N a k a g a w a R i v e r S y s t e m	Nakagawa River	Ikuoybashishita	Nasushiobarashi City	2011/10/23	Cloudy	20.4	0.70	13.9	10	86.7	Sand with gravel	<30	43	47		
		Komeibashi Bridge	Nasushiobarashi City	2011/10/23	Cloudy	20.0	0.80	14.2	5	78.0	Sand with gravel	<30	120	130		
		Takaomatagawa River	Takaomatabashi Bridge	Nasumachi Town	2011/10/23	Cloudy	19.0	0.40	14.6	5	71.1	Sand	<30	290	360	
		Yukawa River	Yukawabashi Bridge	Nasumachi Town	2011/10/5	Rain	15.2	0.30	13.2	10	73.3	Sand	<30	100	140	
		Nakagawa River	Kamikuroiso	Nasushiobarashi City	2011/10/5	Rain	16.2	0.52	13.0	5	79.7	Sand with gravel	<30	45	56	
		Yosagawa River	Yosasabashi Bridge	Nasumachi Town	2011/10/5	Rain	15.0	0.30	13.4	10	27.4	Silt with sand	<30	470	690	
		Kurokawa River	Shindenbashi Bridge	Nasumachi Town	2011/10/5	Rain	14.8	0.30	14.0	5	86.8	Sand with gravel	<30	27	37	
		Yosagawa River	Kawadabashi Bridge	Otarawashi City	2011/10/6	Cloudy	14.8	0.50	14.8	10	73.6	Sand	<30	270	340	
		Nakagawa River	Kurobane	Otarawashi City	2011/10/6	Cloudy	15.1	0.30	15.0	5	86.5	Sand with gravel	<30	29	28	
		Matsubagawa River	Tributary	Otarawashi City	2011/10/6	Cloudy	15.1	0.60	15.2	10	67.7	Sand	<30	350	430	
		Sabigawa River	Udagawabashi Bridge	Otarawashi City	2011/10/7	Sunny	16.4	0.40	14.6	5	83.7	Sand with gravel	<30	17	15	
		Momuragawa River	Momuranakabashi Bridge	Otarawashi City	2011/10/7	Sunny	21.0	0.40	16.4	5	85.6	Sand with gravel	<30	50	64	
		Hokigawa River	Yunohara	Nasushiobarashi City	2011/10/17	Sunny	19.6	0.80	15.8	3	78.4	Sand with gravel	<30	41	42	
			Sekibabashi Bridge	Nasushiobarashi City	2011/10/17	Sunny	18.8	0.50	15.0	3	80.7	Sand with gravel	<30	53	73	
			Iwaibashi Bridge	Otarawashi City	2011/10/7	Sunny	21.2	0.40	16.4	10	85.4	Sand	<30	10	16	
			Hokigawabashi Bridge	Otarawashi City	2011/10/6	Sunny	22.8	0.40	19.2	5	79.1	Sand with gravel	<30	71	94	
		Nakagawa River	Shinnakabashi Bridge	Nakagawamachi Town	2011/10/6	Sunny	23.8	0.40	18.2	5	84.0	Sand with gravel	<30	15	25	
		Mumogawa River	Koseibashi Bridge	Nakagawamachi Town	2011/10/14	Sunny	21.8	0.80	16.1	5	82.1	Sand	<30	12	16	
		Arakawa River	Saikachibashi Bridge	Shioyamachi Town	2011/10/9	Sunny	19.6	0.50	16.4	3	75.1	Sand with gravel	<30	88	110	
			Renjobashi Bridge	Sakurashi City	2011/10/10	Cloudy	18.0	0.60	17.0	3	87.3	Sand with gravel	<30	<10	<10	
	Uchikawa River	Tanakabashi Bridge	Yaitashi City	2011/10/10	Cloudy	16.4	0.20	16.6	3	62.7	Sand with gravel	<30	650	790		
		Asahibashi Bridge	Sakurashi City	2011/10/10	Cloudy	17.0	0.90	16.8	3	81.2	Sand	<30	<10	18		
	Arakawa River	Mukadabashi Bridge	Nasukarasuyamashi City	2011/10/13	Cloudy	18.3	0.30	18.2	5	79.8	Sand with gravel	<30	42	48		
	Egawa River	Tributary	Nasukarasuyamashi City	2011/10/13	Cloudy	19.8	0.30	17.2	5	67.2	Sand	<30	66	96		
	Sakagawa River	Jukkokubashi Bridge	Motegimachi Town	2011/10/13	Cloudy	20.4	1.00	17.8	5	65.2	Sand with gravel	<30	29	38		
		Tributary	Motegimachi Town	2011/10/13	Cloudy	19.7	0.40	17.8	5	68.5	Sand	<30	36	48		
S y s t e m	T o c h i g a w a	Kokaigawa River	Benitoribashi Bridge	Mashikomachi Town	2011/10/13	Cloudy	20.6	0.60	19.4	5	87.7	Gravel with sand	<30	17	25	
			Miyabashi Bridge	Mookashi City	2011/10/13	Cloudy	20.6	0.40	18.8	5	89.0	Gravel	<30	<10	11	
		Gogyogawa River	Hanaoka	Takanezawamachi Town	2011/10/10	Sunny	23.2	0.40	17.6	3	81.5	Sand with gravel	<30	<10	<10	
		Nomotogawa River	Tributary	Hagamachi Town	2011/10/14	Sunny	17.8	0.40	17.1	5	79.0	Sand with gravel	<30	26	33	
		Gyoyagawa River	Tokiwabashi Bridge	Mookashi City	2011/10/13	Cloudy	23.0	1.15	18.4	10	61.5	Sand	<30	160	190	
		Egawa River	Sunokobashi Bridge	Mookashi City	2011/10/13	Cloudy	21.2	0.65	17.2	10	51.2	Silt with gravel	<30	<10	<10	
		Gogyogawa River	Katsurabashi Bridge	Mookashi City	2011/10/14	Cloudy	23.2	0.50	19.4	10	88.8	Sand with gravel	<30	14	13	

* Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

○River (Tochigi Prefecture-1): Surrounding Environment (River Terrace) Monitoring Results

Sampling point				Sampling date	Weather	Air temperature ℃	Left bank					Right bank					Remarks
							Soil			Air dose μSv/h	Soil			Air dose μSv/h			
															Concentration of radioactive material Bq/kg (dry)		
Water body	Point	Municipality	Property	Radioactive iodine	Radioactive cesium		Property	Radioactive iodine	Radioactive cesium		Property	Radioactive iodine	Radioactive cesium				
				I-131	Cs-134	Cs-137		I-131	Cs-134	Cs-137		I-131	Cs-134	Cs-137			
Kujigawa River System	Oshigawa River	Koshijibashi Bridge	Daigomachi Town	2011/10/6	Sunny	17.2	Loamy	<30	180	230	0.10	Loamy	<30	600	790	0.10	(Ibaraki Prefecture)
N a k a g a w a R i v e r S y s t e m	Nakagawa River	Ikuyobashishita	Nasushiobarashi City	2011/10/23	Cloudy	20.4	-	-	-	-	-	Loamy	<30	480	580	0.41	*
		Komeibashi Bridge	Nasushiobarashi City	2011/10/23	Cloudy	20.0	Loamy	<30	2,800	3,300	0.69	Loamy	<30	1,200	1,500	0.77	*
	Takaomatagawa River	Takaomatabashi Bridge	Nasumachi Town	2011/10/23	Cloudy	19.0	Loamy	<30	1,100	1,400	0.91	Clay-loamy	<30	800	970	0.75	*
	Yukawa River	Yukawabashi Bridge	Nasumachi Town	2011/10/5	Rain	15.2	Loamy	<30	1,200	1,500	0.42	Loamy	<30	7,600	9,400	0.43	
	Nakagawa River	Kamikuroiso	Nasumachi Town/Nasushiobarashi City	2011/10/5	Rain	16.2	Loamy	<30	2,500	3,100	0.53	Loamy	<30	560	620	0.35	
	Yosagawa River	Yosabashi Bridge	Nasumachi Town	2011/10/5	Rain	15.0	Loamy	<30	2,700	3,400	0.55	Loamy	<30	3,700	4,500	0.45	
	Kurokawa River	Shindenbashi Bridge	Nasumachi Town	2011/10/5	Rain	14.8	Loamy	<30	1,000	1,100	0.74	Loamy	<30	3,300	3,900	0.59	
	Yosagawa River	Kawadabashi Bridge	Otarashi City	2011/10/6	Cloudy	14.8	Loamy	<30	860	1,000	0.37	Loamy	<30	2,400	3,000	0.38	
	Nakagawa River	Kurobane	Otarashi City	2011/10/6	Cloudy	15.1	Loamy	<30	560	640	0.19	Loamy	<30	450	530	0.15	
	Matsubagawa River	Tributary	Otarashi City	2011/10/6	Cloudy	15.1	Loamy	<30	700	870	0.17	Loamy	<30	220	290	0.17	
	Sabigawa River	Udagawabashi Bridge	Otarashi City	2011/10/7	Sunny	16.4	Loamy	<30	610	790	0.16	Loamy	<30	470	600	0.14	
	Momuragawa River	Momuranakabashi Bridge	Otarashi City	2011/10/7	Sunny	21.0	Loamy	<30	570	670	0.19	Loamy	<30	660	790	0.20	
	Hokigawa River	Yunohara	Nasushiobarashi City	2011/10/17	Sunny	19.6	Clay-loamy	<30	440	590	0.29	Loamy	<30	830	1,000	0.32	
		Sekibashi Bridge	Nasushiobarashi City	2011/10/17	Sunny	18.8	Clay-loamy	<30	5,200	6,400	1.03	Clay-loamy	<30	2,100	2,500	1.05	
		Iwabashi Bridge	Otarashi City	2011/10/7	Sunny	21.2	Loamy	<30	390	470	0.15	Loamy	<30	1,000	1,100	0.18	
	Nakagawa River	Hokigawabashi Bridge	Otarashi City	2011/10/6	Sunny	22.8	Loamy	<30	2,800	3,300	0.11	Loamy	<30	690	850	0.11	
		Shinnakabashi Bridge	Nakagawamachi Town	2011/10/6	Sunny	23.8	Loamy	<30	320	420	0.09	Loamy	<30	510	570	0.11	
		Mumogawa River	Koseibashi Bridge	Nakagawamachi Town	2011/10/14	Sunny	21.8	Clay-loamy	<30	200	220	0.21	Loamy	<30	350	410	0.21
	Arakawa River	Saikachibashi Bridge	Shioyamachi Town	2011/10/9	Sunny	19.6	Clay-loamy	<30	310	380	0.21	Clay-loamy	<30	510	530	0.21	
		Renjobashi Bridge	Sakurashi City	2011/10/10	Cloudy	18.0	Loamy	<30	210	290	0.12	Loamy	<30	120	160	0.13	
Uchikawa River	Tanakabashi Bridge	Yaitashi City	2011/10/10	Cloudy	16.4	Loamy	<30	330	390	0.20	Loamy	<30	1,100	1,300	0.21		
	Asahibashi Bridge	Sakurashi City	2011/10/10	Cloudy	17.0	Loamy	<30	350	440	0.14	Loamy	<30	180	240	0.11		
Arakawa River	Mukadabashi Bridge	Nasukarasuyamashi City	2011/10/13	Cloudy	18.3	Loamy	<30	350	450	0.18	Clay-loamy	<30	300	350	0.19	*	
Egawa River	Tributary	Nasukarasuyamashi City	2011/10/13	Cloudy	19.8	Loamy	<30	410	500	0.20	Clay-loamy	<30	570	650	0.17	*	
Sakagawa River	Jukkokubashi Bridge	Motegimachi Town	2011/10/13	Cloudy	20.4	Loamy	<30	160	200	0.14	Clay-loamy	<30	180	230	0.14	*	
	Tributary	Motegimachi Town	2011/10/13	Cloudy	19.7	Loamy	<30	140	170	0.15	Clay-loamy	<30	370	440	0.14	*	
S R i v e r S y s t e m	Kokaigawa River	Benitoribashi Bridge	Mashikomachi Town	2011/10/13	Cloudy	20.6	Loamy	<30	100	100	0.06	Loamy	<30	310	380	0.07	
		Miyabashi Bridge	Mookashi City	2011/10/13	Cloudy	20.6	Loamy	<30	200	240	0.06	Loamy	<30	140	190	0.06	
	Gogyogawa River	Hanaoka	Takanezawamachi Town	2011/10/10	Sunny	23.2	Loamy	<30	110	170	0.10	Loamy	<30	270	290	0.10	
	Nomotogawa River	Tributary	Hagamachi Town	2011/10/14	Sunny	17.8	Loamy	<30	85	120	0.16	Loamy	<30	130	150	0.16	*
	Gyoyagawa River	Tokiwabashi Bridge	Mookashi City	2011/10/13	Cloudy	23.0	Loamy	<30	120	140	0.06	-	-	-	-	-	
	Egawa River	Sunokobashi Bridge	Mookashi City	2011/10/13	Cloudy	21.2	Loamy	<30	110	120	0.06	Loamy	<30	100	160	0.06	
	Gogyogawa River	Katsurabashi Bridge	Mookashi City	2011/10/14	Cloudy	23.2	Loamy	<30	200	230	0.05	Loamy	<30	66	80	0.06	

* Air dose was measured with a survey meter, TCS-172 or TCS-161 of Hitachi-Aloka Medical, Ltd. For points with *1 in the Remarks column, a survey meter, Model 3 of Ludlum Measurement Inc., was used. Figures measured with the Model 3 had a tendency to be a little higher than those measured with a TCS-172 or TCS-161 (about 1.6 times higher).

• Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

○River (Tochigi Prefecture-2): Water Quality Monitoring Results

Sampling point			Sampling date	Weather	Air temperature ℃	Full depth m	General items						Concentration of radioactive material Bq/L			Remarks		
Water body	Point	Municipality					Water temperature ℃	Sampling depth m	Transparency cm	Electrical conductivity mS/m	SS mg/L	Turbidity	Radioactive iodine I-131	Radioactive cesium Cs-134 Cs-137				
			Tonegawa River System	Kinugawa River	Kinugawa River	Kawaji Daiichi Power Station, front	Nikkoshi City	2011/10/18	Sunny	16.0	0.70	15.0	0.0	55	6.9	6	9.6	<1
Yunishigawa River	Maesawabashi Bridge	Nikkoshi City			2011/10/18	Sunny	11.8	0.50	11.6	0.0	100 or more	6.5	<1	1.5	<1	<1	<1	
Ojikagawa River	Tributary	Nikkoshi City			2011/10/18	Sunny	16.0	0.50	15.4	0.0	100 or more	7.1	3	4.8	<1	<1	<1	
Kinugawa River	Kosagoe	Nikkoshi City			2011/10/9	Sunny	18.8	1.10	14.4	0.0	87	8.2	5	6.9	<1	<1	<1	
Itaanagawa River	Tributary	Nikkoshi City			2011/10/9	Sunny	18.2	0.80	15.8	0.0	100 or more	6.7	<1	1.0	<1	<1	<1	
Yukawa River	Tributary	Nikkoshi City			2011/10/18	Sunny	11.8	0.24	11.1	0.0	100 or more	16.8	2	2.6	<1	<1	<1	
Daiyagawa River	Shinkyo Bridge	Nikkoshi City			2011/10/17	Cloudy	16.1	0.65	11.1	0.0	100 or more	11.7	<1	0.8	<1	<1	<1	
Shidobuchigawa River	Sujichigaibashi Bridge	Nikkoshi City			2011/10/17	Cloudy	19.8	0.12	15.3	0.0	100 or more	9.9	2	3.0	<1	<1	<1	
Daiyagawa River	Kaishinbashi Bridge (Harigai)	Nikkoshi City			2011/10/9	Sunny	19.4	0.50	15.0	0.0	100 or more	10.4	1	0.9	<1	<1	<1	
Kinugawa River	Sanuki	Shioyama Town			2011/10/9	Sunny	19.8	1.20	15.6	0.0	100 or more	9.3	4	4.8	<1	<1	<1	
Nishikinugawa River	Nishikinugawabashi Bridge	Utsunomiya City			2011/10/10	Sunny	23.4	1.00	16.0	0.0	87	10.6	6	4.8	<1	<1	<1	
Kinugawa River	Kinugawabashi Bridge (Hoshakaji Temple)	Utsunomiya City			2011/10/10	Sunny	25.0	0.80	18.2	0.0	100 or more	11.4	3	3.1	<1	<1	<1	
Egawa River	Daidoizumbashi Bridge	Mookashi City			2011/10/14	Sunny	21.8	0.40	17.0	0.0	100 or more	14.7	2	2.3	<1	<1	<1	
Koshikakaejizo, front	Utsunomiya City	2011/10/7			Sunny	24.8	0.50	20.4	0.0	100 or more	27.3	4	3.7	<1	<1	<1		
Takamiyabashi Bridge	Kaminokawamachi Town	2011/10/13		Cloudy	20.6	0.36	18.4	0.0	100 or more	24.7	6	3.7	<1	<1	<1			
Tributary	Shimotsukeshi City	2011/10/14		Cloudy	19.4	0.50	17.0	0.0	100 or more	27.2	6	3.4	<1	<1	<1			
Nikko City Hall, front	Nikkoshi City	2011/10/15		Cloudy	21.2	0.30	14.2	0.0	100 or more	10.6	1	1.6	<1	<1	<1			
Kiwadajima	Nikkoshi City	2011/10/15		Rain	20.2	0.31	19.6	0.0	100 or more	14.6	3	2.5	<1	<1	<1			
Yamadagawa River	Tributary	Utsunomiya City		2011/10/11	Cloudy	22.3	0.36	18.2	0.0	100 or more	13.5	2	2.1	<1	<1	<1		
Tagawa River	Ozobashi Bridge	Utsunomiya City		2011/10/11	Sunny	25.2	0.80	17.4	0.0	100 or more	14.4	2	1.8	<1	<1	<1		
Goyogawa River	Nishikichuokoen Park	Utsunomiya City		2011/10/11	Sunny	23.0	0.45	19.2	0.0	100 or more	38.8	12	9.1	<1	<1	<1		
Kamagawa River	Tsukushibashi Bridge	Utsunomiya City		2011/10/11	Cloudy	21.4	0.42	17.6	0.0	100 or more	26.3	3	2.6	<1	<1	<1		
Tagawa River	Tetsudobashi Bridge	Utsunomiya City		2011/10/7	Sunny	24.7	0.50	18.8	0.0	100 or more	18.3	6	4.9	<1	<1	<1		
Mejibashi Bridge	Kaminokawamachi Town	2011/10/14		Cloudy	16.6	0.45	15.8	0.0	100 or more	22.2	1	1.0	<1	<1	<1			
Munasegawa River	Tributary	Shimotsukeshi City		2011/10/14	Cloudy	17.6	0.15	17.0	0.0	100 or more	33.2	2	1.6	<1	<1	<1		
Tagawa River	Yanabashi Bridge	Oyamashi City		2011/10/14	Cloudy	24.6	0.88	18.2	0.0	100 or more	24.4	5	3.9	<1	<1	<1		
Tonegawa River	Nishiniregawa River	Takebashi Bridge		Oyamashi City	2011/10/13	Cloudy	17.4	0.43	18.1	0.0	100 or more	33.5	7	7.8	<1	<1	<1	
	Okawa River	Prefectural Route Akenomamada-sen		Oyamashi City	2011/10/13	Cloudy	20.0	0.33	20.3	0.0	100 or more	27.6	6	6.4	<1	<1	<1	
	Miyatogawa River	Kawadabashi Bridge		Nogimachi Town	2011/10/13	Cloudy	22.1	0.28	19.5	0.0	100 or more	26.8	8	8.5	<1	<1	<1	
Sasagawa River	Shinkawa River	Chuojoshiko, west		Utsunomiya City	2011/10/7	Clear	20.2	0.30	17.0	0.0	100 or more	20.1	3	2.7	<1	<1	<1	
		Kokutainishi		Utsunomiya City	2011/10/7	Sunny	25.3	0.15	18.8	0.0	100 or more	21.2	5	5.9	<1	<1	<1	
	Sugatagawa River	Koshijibashi Bridge	Utsunomiya City	2011/10/15	Rain	19.8	0.28	17.5	0.0	100 or more	12.7	8	7.9	<1	<1	<1		
	Yoroigawa River	Nomanjinishi	Utsunomiya City	2011/10/15	Rain	19.6	0.20	17.0	0.0	100 or more	19.6	14	6.8	<1	<1	<1		
	Akagawa River	Underneath the highway	Utsunomiya City	2011/10/14	Cloudy	22.7	0.50	19.3	0.0	100 or more	14.3	4	3.2	<1	<1	<1		
	Sugatagawa River	Kanumakaido Highway	Utsunomiya City	2011/10/14	Sunny	22.9	0.43	19.2	0.0	100 or more	17.1	9	6.2	<1	<1	<1		
	Takeshigawa River	Nakamachibashi Bridge	Utsunomiya City	2011/10/14	Sunny	24.4	0.47	17.5	0.0	100 or more	14.6	2	2.2	<1	<1	<1		
	Sugatagawa River	Yodobashi Bridge	Utsunomiya City	2011/10/14	Clear	22.6	0.15	17.2	0.0	100 or more	18.4	4	3.8	<1	<1	<1		
	Sugatagawa River	Miyamaebashi Bridge	Shimotsukeshi City	2011/10/15	Cloudy	20.4	0.53	18.9	0.0	100 or more	19.5	5	4.8	<1	<1	<1		
	Kurokawa River	Kajimabashi Bridge	Kanumashi City	2011/10/15	Cloudy	21.2	0.45	17.8	0.0	100 or more	8.6	1	2.4	<1	<1	<1		
	Kurokawa River	Onaribashi Bridge	Mibumachi Town	2011/10/15	Rain	19.6	0.20	18.4	0.0	100 or more	15.7	5	3.6	<1	<1	<1		
	Oashigawa River	Akaishibashi Bridge	Kanumashi City	2011/10/14	Cloudy	21.8	0.50	18.8	0.0	100 or more	6.9	1	0.8	<1	<1	<1		
	Koyabugawa River	Koyabubashi Bridge	Kanumashi City	2011/10/15	Rain	20.2	0.60	17.8	0.0	100 or more	13.4	3	3.4	<1	<1	<1		
	Omoigawa River	Tamotsubashi Bridge	Tochigishi City	2011/10/15	Rain	19.6	0.22	17.8	0.0	100 or more	10.8	5	3.1	<1	<1	<1		
Oyamaohashi Bridge	Oyamashi City	2011/10/15	Cloudy	21.1	0.18	19.6	0.0	100 or more	20.8	8	6.1	<1	<1	<1				
Oyamaohashi Bridge	Oyamashi City	2011/10/13	Cloudy	22.1	0.28	19.8	0.0	100 or more	17.3	6	4.5	<1	<1	<1				

* Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

○River (Tochigi Prefecture-2): Sediment Monitoring Results

Sampling point				Sampling date	Weather	Air temperature ℃	Full depth m	General items				Entrance of radioactive material Bq/kg (dried)			Remarks	
Water body	Point	Municipality	Municipality					Mud temperature ℃	Mud sampling depth cm	Mud content %	Property	Radioactive iodine I-131	Radioactive cesium Cs-134 Cs-137			
				K i n u g a w a R i v e r S y s t e m R i v e r S y s t e m	Kinugawa River	Kawaji Daiichi Power Station, front	Nikkoshi City	2011/10/18	Sunny	16.0	0.70	15.6	3	96.9	Sand with gravel	<30
Maesawabashi Bridge	Nikkoshi City	2011/10/18	Sunny			11.8	0.50	12.0	3	85.7	Sand with gravel	<30	11	14		
Ojikagawa River	Tributary	Nikkoshi City	2011/10/18			Sunny	16.0	0.50	15.8	3	86.8	Sand with gravel	<30	15	22	
Kinugawa River	Kosagoe	Nikkoshi City	2011/10/9			Sunny	18.8	1.10	16.2	3	85.5	Sand with gravel	<30	25	30	
Itaanagawa River	Tributary	Nikkoshi City	2011/10/9			Sunny	18.2	0.80	17.2	3	61.0	Sand	<30	2,200	2,700	
Yukawa River	Tributary	Nikkoshi City	2011/10/18			Sunny	11.8	0.24	12.2	5	70.3	Sand	<30	56	62	
Daiyagawa River	Shinkyo Bridge	Nikkoshi City	2011/10/17			Cloudy	16.1	0.65	11.8	5	85.3	Sand with gravel	<30	19	28	
Shidobuchigawa River	Sujichigabashi Bridge	Nikkoshi City	2011/10/17			Cloudy	19.8	0.12	15.8	5	83.0	Sand with gravel	<30	120	140	
Daiyagawa River	Kaishinbashi Bridge (Harigai)	Nikkoshi City	2011/10/9			Sunny	19.4	0.50	15.4	3	85.4	Sand	<30	<10	13	
Kinugawa River	Sanuki	Shiyoumachi Town	2011/10/9			Sunny	19.8	1.20	17.4	3	83.2	Sand	<30	<10	20	
Nishikinugawa River	Nishikinugawabashi Bridge	Utsunomiya City	2011/10/10			Sunny	23.4	1.00	16.2	3	69.8	Sand with gravel	<30	680	840	
Kinugawa River	Kinugawabashi Bridge (Hoshakuji Temple)	Utsunomiya City	2011/10/10			Sunny	25.0	0.80	19.6	3	86.9	Sand with gravel	<30	13	15	
Egawa River	Daidoizumibashi Bridge	Mookashi City	2011/10/14			Sunny	21.8	0.40	18.2	10	72.6	Sand with silt	<30	<10	<10	
Egawa River	Koshikakaejizo, front	Utsunomiya City	2011/10/7			Sunny	24.8	0.50	20.8	5	81.7	Sand with gravel	<30	170	180	
Egawa River	Takamiyabashi Bridge	Kaminokawamachi Town	2011/10/13			Cloudy	20.6	0.36	18.4	10	49.7	Sand with silt	<30	340	390	
Egawa River	Tributary	Shimotsukeshi City	2011/10/14			Cloudy	19.4	0.50	18.2	10	81.9	Sand	<30	75	100	
Akaborigawa River	Nikko City Hall, front	Nikkoshi City	2011/10/15			Cloudy	21.2	0.30	14.2	10	82.4	Sand with gravel	<30	230	280	
Akaborigawa River	Kiwadajima	Nikkoshi City	2011/10/15			Rain	20.2	0.31	19.7	10	79.3	Sand	<30	53	64	
Yamadagawa River	Tributary	Utsunomiya City	2011/10/11			Cloudy	22.3	0.36	18.8	10	80.7	Sand	<30	10	24	
Tagawa River	Ozobashi Bridge	Utsunomiya City	2011/10/11			Sunny	25.2	0.80	17.8	3	81.9	Sand with gravel	<30	30	32	
Goyogawa River	Nishikichuokoen Park	Utsunomiya City	2011/10/11	Sunny	23.0	0.45	19.0	5	83.3	Sand with gravel	<30	42	52			
Kamagawa River	Tsukushibashi Bridge	Utsunomiya City	2011/10/11	Cloudy	21.4	0.42	17.2	10	79.7	Sand with gravel	<30	82	100			
Tagawa River	Tetsudobashi Bridge	Utsunomiya City	2011/10/7	Sunny	24.7	0.50	18.6	5	85.2	Sand with gravel	<30	15	23			
Tagawa River	Meijibashi Bridge	Kaminokawamachi Town	2011/10/14	Cloudy	16.6	0.45	17.2	10	89.1	Gravel	<30	10	<10			
Munasegawa River	Tributary	Shimotsukeshi City	2011/10/14	Cloudy	17.6	0.15	17.8	10	83.0	Sand with gravel	<30	63	86			
Tagawa River	Yanabashi Bridge	Oyamashi City	2011/10/14	Cloudy	24.6	0.88	20.2	10	77.3	Sand with gravel	<30	160	200			
Tonegawa River	Nishiniregawa River	Takeibashi Bridge	Oyamashi City	2011/10/13	Cloudy	17.4	0.43	18.1	5	79.5	Sand with gravel	<30	26	44		
	Okawa River	Prefectural Route Akenomamada-sen	Oyamashi City	2011/10/13	Cloudy	20.0	0.33	20.5	5	64.4	Sand with gravel	<30	150	200		
	Miyotogawa River	Kawadabashi Bridge	Nogimachi Town	2011/10/13	Cloudy	22.1	0.28	21.2	5	85.8	Sand with gravel	<30	84	100		
W a t e r s y s t e m R i v e r	Omaizumi River	Shinkawa River	Chuojoishiko, west	Utsunomiya City	2011/10/7	Clear	20.2	0.30	17.2	5	84.0	Sand with gravel	<30	83	110	
		Sugatagawa River	Kokutainishi	Utsunomiya City	2011/10/7	Sunny	25.3	0.15	-	-	-	-	-	-	-	(River bottom covered with concrete)
		Sugatagawa River	Koshijibashi Bridge	Utsunomiya City	2011/10/15	Rain	19.8	0.28	17.8	5	88.4	Gravel with sand	<30	<10	15	
		Yoroigawa River	Nomanjinishi	Utsunomiya City	2011/10/15	Rain	19.6	0.20	17.2	10	85.2	Gravel with sand	<30	18	20	
		Akagawa River	Underneath the highway	Utsunomiya City	2011/10/14	Cloudy	22.7	0.50	20.0	5	78.5	Sand with gravel	<30	23	30	
		Sugatagawa River	Kanumakaido Highway	Utsunomiya City	2011/10/14	Sunny	22.9	0.43	18.5	5	75.0	Sand	<30	26	38	
		Takeshigawa River	Nakamachibashi Bridge	Utsunomiya City	2011/10/14	Sunny	24.4	0.47	18.0	5	81.4	Sand with gravel	<30	19	22	
		Sugatagawa River	Yodobashi Bridge	Utsunomiya City	2011/10/14	Clear	22.6	0.15	17.6	5	42.0	Silt	<30	<10	<15	
		Sugatagawa River	Miyamaebashi Bridge	Shimotsukeshi City	2011/10/15	Cloudy	20.4	0.53	19.0	5	69.7	Sand with gravel	<30	96	120	
		Kurokawa River	Kajimabashi Bridge	Kanumashi City	2011/10/15	Cloudy	21.2	0.45	18.2	10	81.1	Sand	<30	48	61	
		Kurokawa River	Onaribashi Bridge	Mibumachi Town	2011/10/15	Rain	19.6	0.20	19.1	5	64.4	Sand with gravel	<30	23	33	
		Oashigawa River	Akaishibashi Bridge	Kanumashi City	2011/10/14	Cloudy	21.8	0.50	18.0	10	84.6	Sand	<30	<10	10	
Koyabugawa River	Koyabubashi Bridge	Kanumashi City	2011/10/15	Rain	20.2	0.60	17.6	10	60.9	Sand with silt	<30	430	510			
Omoigawa River	Tamotsubashi Bridge	Tochigishi City	2011/10/15	Rain	19.6	0.22	18.4	5	78.9	Sand	<30	10	20			
	Oyamaohashi Bridge	Oyamashi City	2011/10/15	Cloudy	21.1	0.18	19.8	5	85.0	Sand with gravel	<30	<10	12			
	Otomeohashi Bridge	Oyamashi City	2011/10/13	Cloudy	22.1	0.28	19.4	5	64.0	Sand	<30	76	110			

* Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

○River (Tochigi Prefecture-3): Water Quality Monitoring Results

Sampling point			Sampling date	Weather	Air temperature ℃	Full depth m	General items						Concentration of radioactive material Bq/L			Remarks			
Water body	Point	Municipality					Water temperature ℃	Sampling depth m	Transparency cm	Electrical conductivity mS/m	SS mg/L	Turbidity	Radioactive iodine I-131	Radioactive cesium Cs-134 Cs-137					
			T o c h i g i w a r i v e r s y s t e m	U z u m a g a w a r i v e r	Uzumagawa River	Haranohashi Bridge	Tochigishi City	2011/10/10	Sunny	25.6	0.60	21.2	0.0	100 or more	19.3	8	4.2	<1	<1
Azumabashi Bridge	Tochigishi City	2011/10/11				Cloudy	21.8	0.80	19.8	0.0	100 or more	21.8	4	4.2	<1	<1	<1		
Naganogawa River	Hoshinobashi Bridge	Tochigishi City			2011/10/14	Cloudy	21.1	0.40	18.4	0.0	100 or more	9.5	1	0.8	<1	<1	<1		
	Oiwabashi Bridge	Tochigishi City			2011/10/11	Sunny	24.8	0.20	17.2	0.0	100 or more	22.5	1	1.5	<1	<1	<1		
	Ochiaibashi Bridge (tributary)	Oyamashi City			2011/10/11	Cloudy	18.2	0.60	16.8	0.0	100 or more	21.0	1	2.1	<1	<1	<1		
Uzumagawa River	Uzumabashi Bridge	Tochigishi City		2011/10/13	Cloudy	21.6	1.00	19.0	0.0	100 or more	25.4	6	4.1	<1	<1	<1			
W a t a r a s e g a w a r i v e r s y s t e m	Mikouchigawa River	Tributary		Nikkoshi City	2011/10/17	Cloudy	15.2	1.47	14.2	0.0	100 or more	10.7	<1	0.3	<1	<1	<1		
		Watarasegawa River		Watarasegawa River intake weir at Sori Power Station	Nikkoshi City	2011/10/17	Cloudy	17.2	0.28	14.8	0.0	100 or more	25.5	<1	0.6	<1	<1	<1	
		Omatagawa River		Shinkaminodabashi Bridge	Ashikagashi City	2011/10/10	Clear	23.6	0.35	19.0	0.0	100 or more	31.8	4	4.4	<1	<1	<1	
	Tributary			Ashikagashi City	2011/10/10	Clear	24.0	0.40	20.2	0.0	100 or more	17.9	5	4.5	<1	<1	<1		
	Watarasegawa River	Hajikabashi Bridge		Ashikagashi City	2011/10/10	Clear	25.4	0.43	20.3	0.0	100 or more	13.5	1	1.8	<1	<1	<1		
	Matsudagawa River	Shinmatsudagawabashi Bridge		Ashikagashi City	2011/10/10	Sunny	23.1	0.38	21.5	0.0	100 or more	12.5	3	3.7	<1	<1	<1		
		Tributary		Ashikagashi City	2011/10/11	Cloudy	20.8	0.19	20.8	0.0	100 or more	18.1	3	3.8	<1	<1	<1		
	Rendajigawa River	Tributary		Ashikagashi City	2011/10/11	Sunny	22.0	0.18	20.2	0.0	100 or more	22.2	4	3.8	<1	<1	<1		
	Watarasegawa River	Nakabashi Bridge		Ashikagashi City	2011/10/11	Clear	18.6	0.23	17.3	0.0	100 or more	14.1	1	1.7	<1	<1	<1		
	Fukurogawa River	Sukedo		Ashikagashi City	2011/10/11	Sunny	19.5	0.29	19.1	0.0	100 or more	19.3	5	4.7	<1	<1	<1		
		Fukurogawa Floodgate (tributary)		Ashikagashi City	2011/10/8	Clear	17.4	0.60	17.5	0.0	100 or more	35.8	8	7.3	<1	<1	<1		
	Hatagawa River	Takadabashi Bridge		Sanoshi City	2011/10/8	Clear	21.2	0.30	17.0	0.0	100 or more	16.6	3	2.5	<1	<1	<1		
	Izurugawa River	Tributary		Ashikagashi City	2011/10/8	Clear	22.2	1.10	18.0	0.0	100 or more	24.4	3	3.7	<1	<1	<1		
	Hatagawa River	Tributary		Ashikagashi City	2011/10/8	Sunny	17.4	1.20	16.8	0.0	100 or more	19.4	4	4.2	<1	<1	<1		
	Yabagawa River	Yabagawa Floodgate (tributary)	Ashikagashi City	2011/10/10	Sunny	22.6	2.10	20.8	0.0	60	26.4	5	6.3	<1	<1	<1			
Watarasegawa River	Wataraseohashi Bridge	Tatebayashishi City	2011/10/10	Sunny	18.6	0.38	19.7	0.0	100 or more	18.8	2	3.2	<1	<1	<1	(Gunma Prefecture)			
Saikawa River	Tributary	Sanoshi City	2011/10/10	Sunny	19.9	0.60	18.8	0.0	60	20.3	11	11	<1	<1	<1				
Akiyamagawa River	Koyabashi Bridge (Semba)	Sanoshi City	2011/10/14	Sunny	20.8	0.80	17.8	0.0	100 or more	11.1	<1	0.6	<1	<1	<1				
	Horigomebashi Bridge	Sanoshi City	2011/10/14	Clear	20.8	0.30	19.0	0.0	100 or more	28.3	<1	0.4	<1	<1	<1				
Tributary	Tributary	Sanoshi City	2011/10/10	Cloudy	18.0	0.80	18.6	0.0	100 or more	29.2	2	1.4	<1	<1	<1				
Misugigawa River	Tributary	Sanoshi City	2011/10/14	Clear	18.4	0.40	17.0	0.0	100 or more	38.6	8	8.5	<1	<1	<1				
Watarasegawa River	Shinkaibashi Bridge	Tochigishi City	2011/10/13	Cloudy	20.6	0.30	20.2	0.0	100 or more	25.0	5	5.6	<1	<1	<1				

* Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

○River (Tochigi Prefecture-3): Sediment Monitoring Results

Sampling point			Sampling date	Weather	Air temperature ℃	Full depth m	General items				Concentration of radioactive material (Bq/kg)			Remarks		
Water body	Point	Municipality					Mud temperature ℃	Mud sampling depth cm	Mud content %	Property	Radioactive iodine				Radioactive cesium	
											I-131	Cs-134	Cs-137			
Uzumagawa River	Haranobashi Bridge	Tochigishi City	2011/10/10	Sunny	25.6	0.60	21.4	3	77.7	Silt with gravel	<30	<10	<10			
	Azumabashi Bridge	Tochigishi City	2011/10/11	Cloudy	21.8	0.80	19.6	5	85.1	Sand with gravel	<30	29	33			
Naganogawa River	Hoshinobashi Bridge	Tochigishi City	2011/10/14	Cloudy	21.1	0.40	17.8	5	77.5	Sand with silt	<30	55	49			
	Oiwabashi Bridge	Tochigishi City	2011/10/11	Sunny	24.8	0.20	17.4	3	85.7	Sand with gravel	<30	20	31			
	Ochiaibashi Bridge (tributary)	Oyamashi City	2011/10/11	Cloudy	18.2	0.60	16.8	3	79.6	Sand with gravel	<30	18	28			
Uzumagawa River	Uzumabashi Bridge	Tochigishi City	2011/10/13	Cloudy	21.6	1.00	19.2	5	80.2	Sand with gravel	<30	44	51			
Mikouchigawa River	Tributary	Nikkoshi City	2011/10/17	Cloudy	15.2	1.47	-	-	-	-	-	-	-	(River bottom covered with gravel or concrete)		
	Watarasegawa River	Watarasegawa River intake weir at Sori Power Station	Nikkoshi City	2011/10/17	Cloudy	17.2	0.28	14.7	5	84.7	Sand with gravel	<30	25	38		
Omatagawa River	Shinkaminodabashi Bridge	Ashikagashi City	2011/10/10	Clear	23.6	0.35	18.6	10	55.2	Gravel/sand with silt	<30	<10	26			
	Tributary	Ashikagashi City	2011/10/10	Clear	24.0	0.40	19.0	10	68.7	Gravel/sand with silt	<30	150	200			
Watarasegawa River	Hajikabashi Bridge	Ashikagashi City	2011/10/10	Clear	25.4	0.43	19.8	10	83.4	Sand with gravel	<30	13	13			
Matsudagawa River	Shinmatsudagawabashi Bridge	Ashikagashi City	2011/10/10	Sunny	23.1	0.38	21.5	10	81.7	Gravel/sand with silt	<30	35	43			
	Tributary	Ashikagashi City	2011/10/11	Cloudy	20.8	0.19	20.5	5	84.7	Sand with gravel	<30	24	38			
Rendajigawa River	Tributary	Ashikagashi City	2011/10/11	Sunny	22.0	0.18	20.1	5	81.9	Sand with gravel	<30	95	100			
Watarasegawa River	Nakabashi Bridge	Ashikagashi City	2011/10/11	Clear	18.6	0.23	17.2	5	78.8	Sand	<30	38	33			
	Sukedo	Ashikagashi City	2011/10/11	Sunny	19.5	0.29	19.8	5	76.4	Gravel/sand with silt	<30	73	78			
Fukurogawa River	Fukurogawa Floodgate (tributary)	Ashikagashi City	2011/10/8	Clear	17.4	0.60	17.6	5	78.1	Sand	<30	49	68			
Hatagawa River	Takadabashi Bridge	Sanoshi City	2011/10/8	Clear	21.2	0.30	16.8	5	85.0	Sand with gravel	<30	12	11			
Izurugawa River	Tributary	Ashikagashi City	2011/10/8	Clear	22.2	1.10	17.8	5	57.2	Sand with silt	<30	92	110			
Hatagawa River	Tributary	Ashikagashi City	2011/10/8	Sunny	17.4	1.20	17.0	5	78.8	Gravel/sand with silt	<30	10	<10			
Yabagawa River	Yabagawa Floodgate (tributary)	Ashikagashi City	2011/10/10	Sunny	22.6	2.10	21.2	5	79.5	Sand with silt	<30	99	110			
Watarasegawa River	Wataraseohashi Bridge	Tatebayashishi City	2011/10/10	Sunny	18.6	0.38	19.5	10	47.4	Sand with silt	<30	59	69	(Gunma Prefecture)		
Saikawa River	Tributary	Sanoshi City	2011/10/10	Sunny	19.9	0.60	19.2	5	82.8	Sand/gravel with silt	<30	29	36			
Koyabashi Bridge (Semba)		Sanoshi City	2011/10/14	Sunny	20.8	0.80	17.8	10	78.7	Sand	<30	<10	<10			
	Horigomebashi Bridge	Sanoshi City	2011/10/14	Clear	20.8	0.30	19.2	10	73.6	Sand	<30	31	37			
Akiyamagawa River	Tributary	Sanoshi City	2011/10/10	Cloudy	18.0	0.80	18.6	3	82.7	Gravel/sand with silt	<30	17	23			
Misugigawa River	Tributary	Sanoshi City	2011/10/14	Clear	18.4	0.40	18.2	10	53.3	Silt with sand	<30	240	300			
Watarasegawa River	Shinkaibashi Bridge	Tochigishi City	2011/10/13	Cloudy	20.6	0.30	19.6	10	83.2	Sand	<30	15	33			

* Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

○River (Tochigi Prefecture-3): Surrounding Environment (River Terrace) Monitoring Results

6	T	o	n	e	g	a	w	a	R	i	v	e	r	S	y	s	t	e	m	Sampling point			Sampling date	Weather	Air temperature ℃	Left bank					Right bank					Remarks																																																					
																				Water body	Point	Municipality				Property	Soil			Air dose μSv/h	Property	Soil			Air dose μSv/h																																																						
																											concentration of radioactive material Bq/kg (dry)					concentration of radioactive material Bq/kg (dry)																																																									
																							Radioactive iodine	Radioactive cesium					Radioactive iodine	Radioactive cesium																																																											
			I-131	Cs-134	Cs-137				I-131	Cs-134	Cs-137																																																																														
W	a	t	a	r	a	r	i	v	e	r	S	y	s	t	e	m	R	i	v	e	r	S	y	s	t	e	m	U	z	u	m	a	g	a	w	Uzumagawa River	Haranohashi Bridge	Tochigishi City	2011/10/10	Sunny	25.6	Loamy	<30	190	200	0.08	Loamy	<30	330	460	0.08																																						
																																				Azumabashi Bridge	Tochigishi City	2011/10/11	Cloudy	21.8	Loamy	<30	70	90	0.10	Loamy	<30	95	140	0.10																																							
																																				Naganogawa River	Hoshinobashi Bridge	Tochigishi City	2011/10/14	Cloudy	21.1	Clay-loamy	<30	250	300	0.20	Clay-loamy	<30	840	990	0.20	*2																																					
																																					Oiwabashi Bridge	Tochigishi City	2011/10/11	Sunny	24.8	Loamy	<30	170	230	0.10	Loamy	<30	330	400	0.10																																						
																																				Uzumagawa River	Uzumabashi Bridge	Ochiaibashi Bridge (tributary)	Oyamashi City	2011/10/11	Cloudy	18.2	Clay-loamy	<30	180	200	0.12	Loamy	<30	150	170	0.09																																					
																																						Tochigishi City	2011/10/13	Cloudy	21.6	Clay-loamy	<30	210	280	0.21	Clay-loamy	<30	220	260	0.19	*2																																					
																																				W	a	t	a	r	a	r	i	v	e	r	S	y	s	t	e	m	R	i	v	e	r	S	y	s	t	e	m	W	a	t	a	r	a	g	a	w	Mikouchigawa River	Tributary	Nikkoshi City	2011/10/17	Cloudy	15.2	-	-	-	-	0.54	-	-	-	-	0.48	(Soil not exposed)*1
																																																																									Watarasegawa River	Watarasegawa River intake weir at Sori Power Station	Nikkoshi City	2011/10/17	Cloudy	17.2	-	-	-	-	0.52	Sandy	<30	34	40	0.50	*1
																																																																									Omatagawa River	Shinkaminodabashi Bridge	Ashikagashi City	2011/10/10	Clear	23.6	Loamy	<30	220	220	0.13	Loamy	<30	250	320	0.13	*2
																																																																										Tributary	Ashikagashi City	2011/10/10	Clear	24.0	Loamy	<30	110	130	0.17	Loamy	<30	140	190	0.17	*2
																																																																									Watarasegawa River	Hajikabashi Bridge	Ashikagashi City	2011/10/10	Clear	25.4	Loamy	<30	170	240	0.14	Loamy	<30	370	480	0.16	*2
																																																																									Matsudagawa River	Shinmatsudagawabashi Bridge	Ashikagashi City	2011/10/10	Sunny	23.1	Clay-loamy	<30	230	270	0.15	Clay-loamy	<30	75	99	0.13	*2
																																																																										Tributary	Ashikagashi City	2011/10/11	Cloudy	20.8	Loamy	<30	100	150	0.17	Loamy	<30	170	160	0.19	*2
																																																																									Rendaijigawa River	Tributary	Ashikagashi City	2011/10/11	Sunny	22.0	Clay-loamy	<30	240	310	0.15	Clay-loamy	<30	330	430	0.15	*2
																																																																									Watarasegawa River	Nakabashi Bridge	Ashikagashi City	2011/10/11	Clear	18.6	Loamy	<30	920	1,000	0.14	Loamy	<30	99	120	0.15	*2
																																																																									Fukurogawa River	Sukedo	Ashikagashi City	2011/10/11	Sunny	19.5	Loamy	<30	140	180	0.13	Clay-loamy	<30	100	130	0.14	*2
																																																																										Fukurogawa Floodgate (tributary)	Ashikagashi City	2011/10/8	Clear	17.4	Loamy	<30	360	460	0.10	Loamy	<30	150	200	0.10	
																																																																									Hatagawa River	Takadabashi Bridge	Sanoshi City	2011/10/8	Clear	21.2	Loamy	<30	95	120	0.09	Loamy	<30	71	110	0.09	
																																																																									Izurugawa River	Tributary	Ashikagashi City	2011/10/8	Clear	22.2	Loamy	<30	79	79	0.08	Loamy	<30	170	210	0.08	
																																																																									Hatagawa River	Tributary	Ashikagashi City	2011/10/8	Sunny	17.4	Loamy	<30	73	92	0.10	Loamy	<30	750	950	0.11	
Yabagawa River	Yabagawa Floodgate (tributary)	Ashikagashi City	2011/10/10	Sunny	22.6	Loamy	<30	180	220	0.06	Loamy	<30	110	140	0.06																																																																										
Watarasegawa River	Wataraseohashi Bridge	Tatebayashishi City	2011/10/10	Sunny	18.6	Loamy	<30	58	88	0.07	Loamy	<30	210	280	0.07	(Gunma Prefecture)																																																																									
Saikawa River	Tributary	Sanoshi City	2011/10/10	Sunny	19.9	Loamy	<30	43	56	0.07	Loamy	<30	43	47	0.06																																																																										
Koyabashi Bridge (Semba)	Sanoshi City	2011/10/14	Sunny	20.8	Loamy	<30	520	640	0.19	Loamy	<30	340	390	0.19	*2																																																																										
	Sanoshi City	2011/10/14	Clear	20.8	Loamy	<30	490	590	0.17	Loamy	<30	170	250	0.16	*2																																																																										
Akiyamagawa River	Horigomebashi Bridge	Sanoshi City	2011/10/14	Clear	20.8	Loamy	<30	490	590	0.17	Loamy	<30	170	250	0.16	*2																																																																									
	Tributary	Sanoshi City	2011/10/10	Cloudy	18.0	Loamy	<30	350	480	0.07	Loamy	<30	79	96	0.06																																																																										
Misugigawa River	Tributary	Sanoshi City	2011/10/14	Clear	18.4	Loamy	<30	150	160	0.21	Loamy	<30	240	270	0.22	*2																																																																									
Watarasegawa River	Shinkaibashi Bridge	Tochigishi City	2011/10/13	Cloudy	20.6	Clay-loamy	<30	340	420	0.20	Clay-loamy	<30	220	310	0.19	*2																																																																									

* Air dose was measured with a survey meter, TCS-172 or TCS-161 of Hitachi-Aloka Medical, Ltd. For points with *1 in the Remarks column, a survey meter, Model 3 of Ludlum Measurement Inc., and for those with *2, a Model 5000 of Health Physics Instruments was used. Figures measured with either a Model 3 or a Model 5000 had a tendency to be a little higher than those measured with a TCS-172 or TCS-161 (about 1.6 times higher).

* Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

OLake (Tochigi Prefecture): Water Quality Monitoring Results

Sampling point			Sampling date	Weather	Air temperature °C	Full depth m	General items						Concentration of radioactive material Bq/L			Remarks
Water body	Point	Water temperature °C					Sampling depth m	Secchi disk depth m	Electrical conductivity mS/m	SS mg/L	Turbidity	Radioactive iodine I-131	Radioactive cesium			
													Cs-134	Cs-137		
S a N a y R k s i a t v g e e a m r w	Miyama Dam Reservoir	Center	2011/10/24	Rain	14.0	14.3	12.4	0.5	1.8	10.9	7	11	<1	<1	<1	
		1 m from the bottom	-	-	-	-	11.4	13.3	-	11.1	2	3	<1	<1	<1	
	Shiobara Dam Reservoir	Center	2011/10/17	Cloudy	18.0	22.7	15.7	0.5	2.2	13.2	4	3	<1	<1	<1	
		1 m from the bottom	-	-	-	-	15.0	21.7	-	13.9	2	3	<1	<1	<1	
K i n u S g a s w a m R i v e r	Ikari Dam Reservoir	Center	2011/10/18	Sunny	17.0	62.0	16.3	0.5	3.5	4.8	1	2	<1	<1	<1	
		1 m from the bottom	-	-	-	-	13.7	61.0	-	4.6	15	25	<1	<1	<1	
	Kawaji Dam Reservoir	Center	2011/10/19	Cloudy	13.7	69.4	15.9	0.5	0.8	4.6	7	10	<1	<1	<1	
		1 m from the bottom	-	-	-	-	15.3	68.4	-	5.4	160	220	<1	<1	<1	
	Kawamata Dam Reservoir	Center	2011/10/19	Sunny	11.0	71.2	14.5	0.5	1.2	5.3	5	8	<1	<1	<1	
		1 m from the bottom	-	-	-	-	14.4	70.2	-	4.9	12	19	<1	<1	<1	
	Yunoko Lake	Center	2011/10/18	Sunny	13.2	12.1	11.6	0.5	3.7	14.6	2	2	<1	<1	<1	
		1 m from the bottom	-	-	-	-	9.5	11.1	-	15.5	2	3	<1	<1	<1	
Chuzenjiko Lake	St-7	2011/10/18	Sunny	11.1	7.8	14.7	0.5	6.3	9.8	1	1	<1	<1	<1		
	1 m from the bottom	-	-	-	-	14.9	6.8	-	9.8	1	1	<1	<1	<1		
Watarase Reservoir		2011/10/13	Cloudy	17.6	5.3	20.1	0.5	0.8	19.7	6	10	<1	<1	<1		
	1 m from the bottom	-	-	-	-	19.2	4.3	-	20.2	11	10	<1	<1	<1		

• Sampling points are listed from north to south.

○Lakes (Tochigi Prefecture): Sediment and Surrounding Environment (lake shore) Monitoring Results

Sampling point		Sampling date	Weather	Air temperature °C	Full depth m	Sediment							Surrounding environment (lake shore)					Remarks	
						General items				Concentration of radioactive material Bq/kg (dried mud)			Soil			Air dose μSv/h			
						Mud temperature °C	Mud sampling depth cm	Mud content %	Property	Radioactive iodine I-131	Radioactive cesium Cs-134 Cs-137		Property	Concentration of radioactive material Bq/kg (dry)					
S y s t e m	Miyama Dam Reservoir	Center	2011/10/24	Rain	14.0	14.3	10.8	10	40.9	Silt	<30	20	28	Loamy	<30	670	860	0.31	*1
	Shiobara Dam Reservoir	Center	2011/10/17	Cloudy	18.0	22.7	14.6	3	36.5	Silt	<30	1,200	1,500	Clay-loamy	<30	1,500	1,900	0.74	
K i n u s w a m R i v e r	Ikari Dam Reservoir	Center	2011/10/18	Sunny	17.0	62.0	12.4	10	34.8	Silt	<30	1,900	2,500	Sandy	<30	650	790	0.32	
	Kawaji Dam Reservoir	Center	2011/10/19	Cloudy	13.7	69.4	12.2	5	43.2	Silt	<30	430	490	Loamy	<30	1,500	1,800	0.52	
	Kawamata Dam Reservoir	Center	2011/10/19	Sunny	11.0	71.2	9.2	5	29.0	Silt	<30	<10	<11	Sandy	<30	180	210	0.09	
	Yunoko Lake	Center	2011/10/18	Sunny	13.2	12.1	9.1	10	18.6	Silt	<30	<10	<43	Sandy	<30	110	150	0.17	*1
	Chuzenjiko Lake	St-7	2011/10/18	Sunny	11.1	7.8	14.6	5	46.6	Gravel/silt with sand	<30	64	89	Loamy	<30	380	470	0.22	*1
Watarase Reservoir			2011/10/13	Cloudy	17.6	5.3	19.4	10	43.7	Silt	<30	91	160	Loamy	<30	160	180	0.15	*2

* Air dose was measured with a survey meter, TCS-172 or TCS-161 of Hitachi-Aloka Medical, Ltd. For points with *1 in the Remarks column, a survey meter, Model 3 of Ludlum Measurement Inc., and for those with *2, a Model 5000 of Health Physics Instruments was used. Figures measured with either a Model 3 or a Model 5000 had a tendency to be a little higher than those measured with a TCS-172 or TCS-161 (about 1.6 times higher).

• Sampling points are listed from north to south.

