

(News Release)  
The Results of Radioactive Material Monitoring of the Surface Water Bodies  
within Miyagi Prefecture  
(October-December Samples)

Thursday, January 23, 2014  
Water Environment Division,  
Environment Management Bureau,  
Ministry of the Environment  
Direct line: 03-5521-8316  
Switchboard: 03-3581-3351  
Director: Masanobu Miyazaki (ext. 6610)  
Deputy Director: Saori Nagasawa (ext. 6614)  
Coordinator: Katsuhiko Sato (ext. 6628)

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 Miyagi Prefecture during the period of October 3-December 19, 2013 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 of radioactive materials in surface water bodies carried out to date can be found at the following web page: <http://www.env.go.jp/jishin/rmp.html#monitoring>

1. Survey Overview

(1) Survey Locations

76 environmental reference points, etc. in the surface water bodies within Miyagi Prefecture  
(Rivers: 43 locations, Lakes: 21 locations, Coasts: 12 locations)

(2) Survey Method

- Measurement of concentrations of radioactive materials (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 (\* denotes the results of the previous survey (July-September 2013))

(1) Water Quality (Lower detection limit: 1Bq/L)

Cs-134 + Cs-137: Not detectable (ND) at any location (\* ND at any location)

<Reference>

Specification and Standards for Food, Food Additives, etc. in accordance with the Food Sanitation Act (Drinking Water) (Ministry of Health, Labour and Welfare Public Notice No.130, March 15, 2012)  
Radioactive cesium (total for Cs-134+Cs-137): 10Bq/kg

Target value for radioactive materials in tap water (management target for water supply facilities) (March 5, 2012; 0305 Notice No.1 from the Director of the Water Supply Division, Health Service Bureau, Ministry of Health, Labour and Welfare)

Radioactive cesium (total for Cs-134+Cs-137): 10Bq/kg

(2) Sediment (Lower detection limit: 10Bq/kg (dried mud))

For rivers, the levels were around 1,000Bq/kg or below at most of the locations; for lakes and headwaters, around 1,500Bq/kg or below at most of the locations; and for coasts, around 500Bq/kg or below at all locations. There were variations, but overall they generally have declined or remained constant.

(Rivers)

Cs-134 + Cs-137: ND-1,190Bq/kg (dried mud) (\*ND-2,450Bq/kg (dried mud))

(Lakes and headwaters)

Cs-134 + Cs-137: 18-4,200Bq/kg (dried mud) (\*47-2,180Bq/kg (dried mud))

(Coasts)

Cs-134 + Cs-137: ND-530Bq/kg (dried mud) (\*ND-2,040Bq/kg (dried mud))

<Reference> Number of locations by radioactive cesium concentration (500Bq/kg)  
Numbers in ( ) denote results measured on the previous occasion.

	500 or below	501 -1,000	1,001 -1,500	1,501 -2,000	2,001 -2,500	2,501 -3,000	3,001 or more	Total
Rivers	46 (40)	2 (3)	1 (1)	0 (1)	0 (1)	0 (0)	0 (0)	49 (46)
Lakes and headwaters	25 (10)	4 (3)	5 (0)	2 (3)	0 (1)	1 (0)	1 (0)	38 (17)
Coasts	12 (15)	1 (2)	0 (0)	0 (0)	0 (2)	0 (0)	0 (0)	13 (19)

(3) Surrounding Environment (Lower detection limit: 10Bq/kg (dry))

(Rivers)

Cs-134 + Cs-137: 14-3,400Bq/kg (dry) (\*12-3,500Bq/kg (dry))

Spatial dose: 0.04-0.28μSv/h

(Lakes and headwaters)

Cs-134 + Cs-137: 42-3,000Bq/kg (dry) (\*68-2,660Bq/kg (dry))

Spatial dose: 0.04-0.32μSv/h

(Annex for details)  
(Map attached)

Future Plans

MOE intends to continue to measure radioactive materials in water, sediment, etc. in rivers, lakes, etc., since concentrations of radioactive materials seem to show fluctuations, depending on locations, due to minor differences in sampling points or properties of samples of each survey.

○River: Water Quality Monitoring Results

(Annex)

Sampling point				Sampling date	Weather	Full depth (m)	General items					Radioactive material concentrations (Bq/L)		Remarks
No.	Water body	Point	Municipality				Sampling depth (m)	Transparency (cm)	Electrical conductivity (mS/m)	SS (mg/L)	Turbidity	Radioactive cesium		
												Cs-134	Cs-137	
1	Shishiorigawa River	Kinzanbashi Bridge	Kesenumashi City	2013/11/12	Cloudy	0.2	0.0	>100	15	<1	0	<1	<1	
2		Namiitabashi Bridge		2013/11/12	Cloudy	1.5	0.0	>100	3440	2	1	<1	<1	
3		Tateyamaohashi Bridge		2013/11/12	Sunny	0.5	0.0	>100	13	2	1	<1	<1	
4		Okawa River		Kamiyabashi Bridge	2013/11/13	Sunny	0.8	0.0	>100	275	1	1	<1	<1
5		Okawa River Estuary		Okawa River Estuary	2013/11/13	Sunny	1.0	0.0	>100	4730	5	1	<1	<1
6	Omosegawa River	Ozakibashi Bridge		2013/11/13	Sunny	1.0	0.0	88	3030	4	1	<1	<1	
7	K i t a k a n a S m y i s g t a e w m a R i v e r	Arimagawa River	Kuriharashi City	2013/11/8	Sunny	0.5	0.0	>100	13	1	1	<1	<1	
8		Kinryugawa River		Obatabashi Bridge	2013/11/7	Cloudy	0.3	0.0	>100	13	2	2	<1	<1
9		Kitakamigawa River	Tomeohashi Bridge (Tome)	Tomeshi City	2013/11/28	Cloudy	0.4	0.0	80	11	4	3	<1	<1
10		Sanhasamagawa River	Domanbashi Bridge (Kurikoma Dam)	Kuriharashi City	2013/11/7	Cloudy	2.2	0.0	>100	14	2	2	<1	<1
11		Nihasamagawa River	Kajiyabashi Bridge		2013/11/7	Cloudy	0.3	0.0	>100	13	<1	1	<1	<1
12		Hasamagawa River	Hanayama Dam, inflow area		2013/11/7	Cloudy	0.7	0.0	>100	10	3	3	<1	<1
13		Wakayanagi	Tomeshi City	2013/11/7	Cloudy	0.4	0.0	27	15	16	15	<1	<1	
14		Yamayoshidabashi Bridge		2013/11/28	Cloudy	0.5	0.0	51	19	8	5	<1	<1	
15		Eaigawa River	Todorokibashi Bridge (Todoroki)		2013/11/6	Sunny	0.6	0.0	>100	8	<1	1	<1	<1
16		Shimizuomon Weir	Osakishi City	2013/11/6	Sunny	1.5	0.0	92	11	4	4	<1	<1	
17		In Furukawa District, Osakishi City	Shinborisaihon, entrance		2013/11/6	Sunny	1.6	0.0	56	26	6	6	<1	<1
18		Dekigawa River	Kogotabashi Bridge	Misatomachi Town	2013/11/6	Sunny	0.6	0.0	59	29	7	6	<1	<1
19		Eaigawa River	Oikawabashi Bridge (Tandai)	Wakuyacho Town/Ishinomakishi City	2013/11/22	Sunny	1.0	0.0	65	52	6	4	<1	<1
20		Kyukitakamigawa River	Kadonowaki	Ishinomakishi City	2013/11/22	Cloudy	3.5	0.0	83	463	3	3	<1	<1
21		Narusegawa River	Onobashi Bridge (Ono)	Higashimatsushimashi City	2013/11/22	Sunny	0.5	0.0	40	68	12	7	<1	<1
22		Sunaoshigawa River	Tagajozeki Weir	Tagajoshi City	2013/11/21	Sunny	2.0	0.0	55	641	7	6	<1	<1
23			Nenbutsubashi Bridge		2013/11/22	Sunny	0.7	0.0	>100	3460	2	2	<1	<1
24		Teizan-unga Canal (Kysunaoshigawa River)	Teizanbashi Bridge	Shichigahamamachi Town/Tagajoshi City	2013/11/22	Cloudy	1.7	0.0	98	3940	3	2	<1	<1
25		Nanakita River System	Nanakitagawa River	Sendaiishi City	2013/11/21	Cloudy	0.2	0.0	>100	22	<1	1	<1	<1
26			Nanakitabashi Bridge		2013/11/21	Cloudy	0.3	0.0	>100	463	2	2	<1	<1
27	Umedagawa River		Fukudabashi Bridge		2013/11/21	Cloudy	1.5	0.0	82	646	3	5	<1	<1
28	Nanakitagawa River		Takasagobashi Bridge		2013/11/21	Cloudy	0.5	0.0	89	1856	4	3	<1	<1
29	Natorigawa River	Yuriageohashi Bridge	Sendaiishi City/Natorishi City	2013/11/5	Sunny	2.0	0.0	>100	847	2	2	<1	<1	
30	Natorigawa River System	Yakushibashi Bridge	Natorishi City	2013/11/5	Sunny	0.3	0.0	>100	9	<1	0	<1	<1	
31		Masudagawa River		Koyamabashi Bridge	2013/11/5	Sunny	0.4	0.0	>100	14	4	3	<1	<1
32		Bishamonbashi Bridge		2013/11/5	Sunny	1.2	0.0	70	333	4	6	<1	<1	
33	A b u k u m a S y a g a e m R i v e r	Hadeniwabashi Bridge	Marunorimachi Town	2013/10/8	Sunny	1.5	0.0	>100	19	4	2	<1	<1	
34		Abukumagawa River		Marunoribashi Bridge	2013/12/9	Sunny	1.0	0.0	>100	17	2	1	<1	<1
					2013/10/8	Sunny	1.2	0.0	>100	19	2	2	<1	<1
35		Higashinebashi Bridge	Kakudashi City	2013/12/9	Sunny	1.5	0.0	>100	18	2	2	<1	<1	
				2013/10/8	Sunny	1.2	0.0	>100	19	3	2	<1	<1	
36	Shiroishigawa River	Before the confluence with Kawaragosawa River (Sunaohibashi Bridge)		2013/12/9	Sunny	1.0	0.0	>100	19	2	2	<1	<1	
37	Saikawa River	Etsubobashi Bridge	Shiroishishi City	2013/11/1	Cloudy	2.8	0.0	>100	7	2	2	<1	<1	
38	Matsukawa River	Miyaohashi Bridge	Zaomachi Town	2013/11/1	Cloudy	1.4	0.0	>100	13	2	2	<1	<1	
39	Arakawa River	Niragamibashi Bridge	Muratamachi Town/Ogawaramachi Town	2013/11/1	Cloudy	0.3	0.0	>100	15	<1	1	<1	<1	
40	Shiroishigawa River	Shirahatabashi Bridge	Shibatamachi Town	2013/11/1	Cloudy	0.4	0.0	91	18	4	2	<1	<1	
41	R i v e r	Tsukinokiohashi Bridge	Kakudashi City/Shibatamachi Town	2013/11/1	Cloudy	1.0	0.0	>100	13	3	2	<1	<1	
42				Abukumagawa River	Iwanumashi City/Wataricho Town	2013/10/7	Sunny	0.7	0.0	>100	16	1	2	<1
		2013/12/10	Cloudy			0.5	0.0	>100	19	3	1	<1	<1	
		2013/10/7	Sunny			0.8	0.0	50	18	6	4	<1	<1	
43		Abukumagawa River Estuary (Watariohashi Bridge)		2013/12/10	Cloudy	1.5	0.0	>100	23	2	1	<1	<1	
				2013/10/7	Cloudy	1.0	0.0	>100	506	1	3	<1	<1	
				2013/12/10	Cloudy	0.5	0.0	>100	636	2	1	<1	<1	

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

• Radioactive materials concentrations contain some measurement errors but are not noted here.

# ○River: Sediment Monitoring Results

No.	Sampling point			Sampling date	Weather	Full depth (m)	General items			Concentration of radioactive material [Bq/kg (dried mud)]			Remarks		
	Water body	Point	Municipality				Mud sampling depth (cm)	Mud content %	Property	Radioactive cesium					
										Cs-134	Cs-137	Total			
1	Shshiorigawa River	Kinzanbashi Bridge		2013/11/12	Cloudy	0.2	10	79	Gravel/sand	27	72	99			
2		Namiitabashi Bridge			2013/11/12	Cloudy	1.5	10	61	Silt	66	120	186		
3	Okawa River	Tateyamaohashi Bridge	Kesenumashi City	2013/11/12	Sunny	0.5	10	76	Sand	15	36	51			
4		Kamiyamabashi Bridge			2013/11/13	Sunny	0.8	10	49	Silt	140	320	460		
5		Okawa River Estuary			2013/11/13	Sunny	1.0	10	77	Sand	<10	<10	-		
6	Omosegawa River	Ozakibashi Bridge		2013/11/13	Sunny	1.0	10	68	Silt	54	140	194			
7	K i t a k a S m y i s g t a e m a R i v e r	Arimagawa River	Kuriharashi City	2013/11/8	Sunny	0.5	6	79	Gravel/sand	69	160	229			
8		Kinryugawa River		Obatabashi Bridge		2013/11/7	Cloudy	0.3	7	75	Sand	56	140	196	
9	S m y i s g t a e m a R i v e r	Kitakamigawa River	Tomeshi City	2013/11/28	Cloudy	0.4	10	70	Sand	18	45	63			
10		Sanhasamagawa River		Domanbashi Bridge (Kurikoma Dam)		2013/11/7	Cloudy	2.2	7	67	Sand	10	28	38	
11	S m y i s g t a e m a R i v e r	Nihasamagawa River	Kuriharashi City	2013/11/7	Cloudy	0.3	6	75	Sand	51	110	161			
12		Hanayama Dam, inflow area			2013/11/7	Cloudy	0.7	6	76	Sand	<10	<10	-		
13	S m y i s g t a e m a R i v e r	Hasamagawa River	Tomeshi City	2013/11/7	Cloudy	0.4	7	83	Sand/gravel	<10	33	33			
14		Yamayoshidabashi Bridge			2013/11/28	Cloudy	0.5	10	82	Sand/gravel	15	53	68		
15	R i v e r	Eaigawa River	Osakishi City	2013/11/6	Sunny	0.6	6	71	Sand	20	46	66			
16		Shimizuomon Weir			2013/11/6	Sunny	1.5	6	77	Sand	<10	17	17		
17	R i v e r	In Furukawa District, Osakishi City	Misatomachi Town	2013/11/6	Sunny	1.6	7	63	Silt	120	330	450			
18		Dekigawa River		Kogotabashi Bridge		2013/11/6	Sunny	0.6	6	76	Sand/silt	34	100	134	
19	R i v e r	Eaigawa River	Wakuyacho Town/Ishinomakishi City	2013/11/22	Sunny	1.0	10	80	Sand	<10	21	21			
20		Kyukitakamigawa River		Kadonowaki		2013/11/22	Cloudy	3.5	10	74	Sand	<10	18	18	
21	Narusegawa River	Onobashi Bridge (Ono)	Higashimatsushimashi City	2013/11/22	Sunny	0.5	10	65	Sand	21	61	82			
22	Sunaoshigawa River	Tagajozeki Weir	Tagajoshi City	2013/11/21	Sunny	2.0	10	61	Sand/silt	82	220	302			
23		Nenbutsubashi Bridge			2013/11/22	Sunny	0.7	10	77	Sand	<10	17	17		
24	Teizan-unga Canal (Kysunaoshigawa River)	Teizanbashi Bridge	Shichigahamamachi Town/Tagajoshi City	2013/11/22	Cloudy	1.7	10	26	Silt	260	560	820			
25	Nanakitagawa River System	Nanakitagawa River	Sendai City	2013/11/21	Cloudy	0.2	10	80	Gravel/sand	70	160	230			
26		Fukudaohashi Bridge			2013/11/21	Cloudy	0.3	10	80	Sand	<10	16	16		
27		Umedagawa River		Fukudabashi Bridge		2013/11/21	Cloudy	1.5	10	79	Sand	63	170	233	
28		Nanakitagawa River		Takasagobashi Bridge		2013/11/21	Cloudy	0.5	10	47	Silt	130	300	430	
29	Natorigawa River System	Natorigawa River	Sendai City/Natorishi City	2013/11/5	Sunny	2.0	5	77	Sand	<10	11	11			
30		Yakushibashi Bridge			2013/11/5	Sunny	0.3	6	74	Sand/gravel	<10	17	17		
31		Masudagawa River	Koyamabashi Bridge	Natorishi City	2013/11/5	Sunny	0.4	6	78	Sand/silt	25	56	81		
32			Bishamonbashi Bridge			2013/11/5	Sunny	1.2	7	43	Silt	350	840	1,190	
33	A b u k u m a g a w a R i v e r	Hadeniwabashi Bridge	Marumomachi Town	2013/10/8	Sunny	1.5	6	75	Sand	63	140	203			
34				Marumoribashi Bridge		2013/12/9	Sunny	1.0	10	76	Sand	66	170	236	
35		Higashinebashi Bridge	Kakudashi City		2013/10/8	Sunny	1.2	6	76	Sand	92	220	312		
36						2013/12/9	Sunny	1.5	10	71	Sand	180	480	660	
37	Shiroishigawa River	Before the confluence with Kawaragosawa River (Sunaoshibashi Bridge)	Shiroishishi City	2013/11/1	Cloudy	2.8	6	69	Sand	26	70	96			
38						2013/12/9	Sunny	1.0	10	76	Sand	62	150	212	
39	Saikawa River	Etsubobashi Bridge		2013/11/1	Cloudy	1.4	6	94	Gravel/sand	56	150	206			
40	Matsukawa River	Miyaohashi Bridge	Zaomachi Town	2013/11/1	Cloudy	0.3	6	74	Sand	12	27	39			
41	Arakawa River	Niragambashi Bridge	Muratamachi Town/Ogawaramachi Town	2013/11/1	Cloudy	0.4	6	81	Sand/silt	<10	<10	-			
42	S y s t e m	Shiroishigawa River	Shibatamachi Town	2013/11/1	Cloudy	1.0	6	76	Sand	11	20	31			
43						2013/10/7	Sunny	0.7	6	79	Sand	26	62	88	
44		Abukumagawa River	Tsukinokiohashi Bridge	Kakudashi City/Shibatamachi Town	2013/12/10	Cloudy	0.5	10	81	Sand	28	66	94		
45								2013/10/7	Sunny	0.8	6	74	Sand	80	190
46	Abukumagawa River	Abukumaohashi Bridge (Iwanuma)	Iwanumashi City/Wataricho Town	2013/12/10	Cloudy	1.5	10	78	Sand	29	62	91			
47							2013/10/7	Cloudy	1.0	6	77	Sand	69	140	209
48	Abukumagawa River Estuary (Watariohashi Bridge)			2013/12/10	Cloudy	0.5	10	79	Sand	15	30	45			

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

\* Radioactive materials concentrations contain some measurement errors but are not noted here.

○River: Surrounding Environment Monitoring Results

Sampling point				Sampling date	Weather	Left bank				Right bank				Remarks		
No.	Water body	Point	Municipality			Property	Concentration of radioactive material [Bq/kg (dry)]			Air dose (μSv/h)	Property	Concentration of radioactive material [Bq/kg (dry)]			Air dose (μSv/h)	
							Cs-134	Cs-137	Total			Cs-134	Cs-137			Total
1	Shishiorigawa River	Kinzanbashi Bridge	Kesennumashi City	2013/11/12	Cloudy	Loamy	130	330	460	0.10	Loamy	290	670	960	0.10	
2		Namitabashi Bridge		2013/11/12	Cloudy	Loamy	<10	19	19	0.06	Loamy	13	36	49	0.06	
3	Okawa River	Tateyamahashi Bridge		2013/11/12	Sunny	Loamy	150	350	500	0.10	Sandy	59	130	189	0.09	
4		Kamiyamabashi Bridge		2013/11/13	Sunny	Loamy	82	180	262	0.07	Loamy	130	300	430	0.08	
5		Okawa River Estuary		2013/11/13	Sunny	Loamy	22	44	66	0.06	Loamy	27	48	75	0.07	
6	Omoegawa River	Ozakibashi Bridge		2013/11/13	Sunny	Loamy	47	130	177	0.07	Loamy	150	370	520	0.07	
7	Kiritakasa River	Arimagawa River	Kuriharashi City	2013/11/8	Sunny	Loamy	320	730	1,050	0.22	Loamy	470	1,000	1,470	0.15	
8		Kimryugawa River		Obatabashi Bridge	2013/11/7	Cloudy	Loamy	610	1,300	1,910	0.18	Loamy	290	790	1,080	0.17
9	Smitagawa River	Kitakamigawa River	Tomeshi City	2013/11/28	Cloudy	Loamy	82	220	302	0.07	Loamy	92	250	342	0.07	
10		Sanhasamagawa River		Domanbashi Bridge (Kurikoma Dam)	2013/11/7	Cloudy	Loamy	340	880	1,220	0.13	Loamy	580	1,300	1,880	0.10
11	Smitagawa River	Nihasamagawa River	Kuriharashi City	2013/11/7	Cloudy	Loamy	220	490	710	0.11	Loamy	260	590	850	0.15	
12		Hanayama Dam, inflow area		2013/11/7	Cloudy	Loamy	1,000	2,300	3,300	0.16	Loamy	210	540	750	0.08	
13	Smitagawa River	Hasamagawa River	Tomeshi City	2013/11/7	Cloudy	Loamy	250	610	860	0.09	Sandy	250	620	870	0.08	
14		Yamayoshidabashi Bridge		2013/11/28	Cloudy	Loamy	20	41	61	0.05	Loamy	87	220	307	0.06	
15	Rivier	Eaigawa River	Osakishi City	2013/11/6	Sunny	Loamy	120	270	390	0.08	Loamy	66	140	206	0.07	
16		Shimuzukomon Weir		2013/11/6	Sunny	Loamy	330	720	1,050	0.07	Loamy	52	110	162	0.09	
17	Rivier	In Furukawa District, Osakishi City	Misatomachi Town	2013/11/6	Sunny	Loamy	120	280	400	0.07	Loamy	71	180	251	0.06	
18		Dekigawa River		Kogotabashi Bridge	2013/11/6	Sunny	Sandy	47	120	167	0.07	Loamy	100	240	340	0.07
19	Rivier	Eaigawa River	Wakuyacho Town/Ishinomakishi City	2013/11/22	Sunny	Loamy	85	230	315	0.06	Loamy	21	59	80	0.07	
20		Kyukitakamigawa River		Kadonowaki	2013/11/22	Cloudy	Loamy	44	110	154	0.07	Loamy	30	73	103	0.07
21	Narusegawa River	Onobashi Bridge (Ono)	Higashimatsushima City	2013/11/22	Sunny	Sandy	56	150	206	0.05	Loamy	17	59	76	0.08	
22	Sunaoshigawa River	Tagajozeki Weir	Tagajoshi City	2013/11/21	Sunny	Loamy	45	150	195	0.04	Loamy	88	200	288	0.06	
23		Neubutsuhashi Bridge		2013/11/22	Sunny	Loamy	140	320	460	0.06	Sandy	120	270	390	0.08	
24	Teizan-unga Canal (Kiyusunaoshigawa River)	Teizanbashi Bridge	Shichigahamamachi Town/Tagajoshi City	2013/11/22	Cloudy	Loamy	120	250	370	0.05	Loamy	250	650	900	0.08	
25	Nanakitagawa River System	Nanakitagawa River	Sendashi City	2013/11/21	Cloudy	Loamy	<10	14	14	0.04	Loamy	240	490	730	0.06	
26		Fukudohashi Bridge		2013/11/21	Cloudy	Loamy	65	170	235	0.05	Loamy	110	240	350	0.07	
27		Umedagawa River		Fukudabashi Bridge	2013/11/21	Cloudy	Sandy	92	220	312	0.08	Sandy	11	30	41	0.06
28		Nanakitagawa River		Takasagabashi Bridge	2013/11/21	Cloudy	Loamy	53	140	193	0.05	Sandy	150	380	530	0.06
29	Natorigawa River	Yuriageohashi Bridge	Sendashi City/Natorishi City	2013/11/5	Sunny	Loamy	18	42	60	0.04	Loamy	120	300	420	0.08	
30	Natorigawa River System	Yakushibashi Bridge	Natorishi City	2013/11/5	Sunny	Loamy	230	550	780	0.08	Loamy	130	330	460	0.09	
31		Masudagawa River		Koyamabashi Bridge	2013/11/5	Sunny	Loamy	450	1,100	1,550	0.10	Loamy	510	1,300	1,810	0.11
32		Bishamonbashi Bridge		2013/11/5	Sunny	Loamy	200	440	640	0.07	Loamy	170	420	590	0.08	
33	Abukumagawa River	Hadeniwabashi Bridge	Marumorimachi Town	2013/10/8	Sunny	Sandy	560	1,300	1,860	0.28	Sandy	350	810	1,160	0.26	
34		Marumoribashi Bridge		2013/12/9	Sunny	Sandy	390	910	1,300	0.23	Loamy	420	1,100	1,520	0.24	
35		Higashinebashi Bridge		2013/10/8	Sunny	Sandy	330	790	1,120	0.22	Loamy	63	160	223	0.11	
36	Shiroshigawa River	Before the confluence with Kawaragosa River (Sunaoshibashi Bridge)	Shiroishishi City	2013/12/9	Sunny	Loamy	310	700	1,010	0.19	Loamy	58	150	208	0.10	
37				2013/10/8	Sunny	Loamy	1,000	2,400	3,400	0.21	Loamy	230	540	770	0.15	
38	Rivier	Saikawa River	Zaomachi Town	2013/12/9	Sunny	Loamy	470	1,200	1,670	0.26	Loamy	690	1,600	2,290	0.28	
39		Matsukawa River		Miyaohashi Bridge	2013/11/1	Cloudy	Loamy	250	580	830	0.12	Loamy	320	680	1,000	0.14
40	Rivier	Arakawa River	Shibatamachi Town	2013/11/1	Cloudy	Loamy	200	460	660	0.10	Loamy	130	340	470	0.10	
41		Shiroshigawa River		Shirahatabashi Bridge	2013/11/1	Cloudy	Loamy	140	370	510	0.12	Loamy	100	320	420	0.12
42	Sytam	Abukumagawa River	Iwanumashi City/Wataricho Town	2013/10/7	Sunny	Loamy	300	780	1,080	0.10	Loamy	370	900	1,270	0.11	
43				Tsukinokiohashi Bridge	2013/12/10	Cloudy	Loamy	290	720	1,010	0.12	Loamy	840	2,000	2,840	0.13
44		Abukumaohashi Bridge (Iwanuma)	2013/10/7	Sunny	Loamy	840	1,900	2,740	0.21	Sandy	150	330	480	0.15		
45		Abukumagawa River Estuary (Watariohashi Bridge)	2013/12/10	Cloudy	Loamy	610	1,500	2,110	0.22	Loamy	160	390	550	0.16		
46	Sytam	Abukumagawa River Estuary (Watariohashi Bridge)	Iwanumashi City/Wataricho Town	2013/10/7	Cloudy	Sandy	330	750	1,080	0.14	Loamy	140	320	460	0.12	
47				2013/12/10	Cloudy	Sandy	260	620	880	0.13	Loamy	120	270	390	0.12	

• Samples for surrounding environment (soil) were generally collected from 5 points in 3m square in the river terrace, etc., and mixed. Depending on the site situation, factors, such as the area of sampling may be much smaller, may cause figures to vary significantly.

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

• Air dose was measured with a survey meter, TCS-172B of Hitachi-Aloka Medical, Ltd.

• Radioactive materials concentrations contain some measurement errors but are not noted here.

# OLake and Headwater: Water Quality Monitoring Results

Sampling point				Sampling date	Weather	Full depth (m)	General items					Radioactive material concentrations (Bq/L)		Remarks
No.	Point						Sampling depth (m)	Secchi disk depth (m)	Electrical conductivity (mS/m)	SS (mg/L)	Turbidity	Radioactive cesium		
												Cs-134	Cs-137	
1		Kurikoma Dam		Surface layer	2013/10/29	Sunny	10.4	0.5	0.4	8	34	40	<1	<1
				Lower layer				9.4						
				Surface layer	2013/12/2	Cloudy	12.1	0.5	0.9	15	8	8	<1	<1
				Lower layer				11.1						
2	K i t a k a S m y i s t a e w m a	Hanayama Dam	Dam site	Surface layer	2013/10/29	Sunny	25.5	0.5	0.4	8	31	50	<1	<1
				Lower layer				24.5						
				Surface layer	2013/12/2	Sunny	22.9	0.5	0.6	9	11	15	<1	<1
				Lower layer				21.9						
3		Narugo Dam		Surface layer	2013/10/24	Cloudy	54.3	0.5	1.1	11	7	3	<1	<1
				Lower layer				53.3						
				Surface layer	2013/12/16	Sunny	58.0	0.5	1.0	10	7	7	<1	<1
				Lower layer				57.0						
4		Izunuma Lake		Surface layer	2013/10/25	Cloudy	1.2	0.0	0.8	13	23	12	<1	<1
				Lower layer				-						
5	R i v e r	Naganuma Lake	Lake exit	Surface layer	2013/10/17	Sunny	2.0	0.0	>2.0	15	3	2	<1	<1
				Lower layer				-						
				Surface layer	2013/12/17	Sunny	2.8	0.5	1.6	18	5	4	<1	<1
				Lower layer				1.8						
6		Shukunosawatameike Pond	Oikawabashi Bridge(Tandai)	Surface layer	2013/10/15	Cloudy	0.4	0.0	>0.4	10	2	2	<1	<1
				Lower layer				-						
				Surface layer	2013/12/11	Sunny	1.0	0.0	0.9	15	3	2	<1	<1
				Lower layer				-						
7	N a r u s e	Futatsuishi Dam		Surface layer	2013/10/10	Sunny	41.5	0.5	4.0	7	2	1	<1	<1
				Lower layer				40.5						
				Surface layer	2013/12/5	Sunny	42.8	0.5	4.7	6	<1	0	<1	<1
				Lower layer				41.8						
8	S y a s t e m	Urushizawa Dam		Surface layer	2013/10/24	Light rain	21.3	0.5	1.0	5	9	10	<1	<1
				Lower layer				20.3						
				Surface layer	2013/12/19	Cloudy	30.9	0.5	4.0	5	<1	2	<1	<1
				Lower layer				29.9						
9	M i v e r	Minamikawa Dam	Dam site	Surface layer	2013/10/9	Sunny	23.0	0.5	2.2	8	2	2	<1	<1
				Lower layer				22.0						
				Surface layer	2013/12/3	Sunny	30.1	0.5	1.7	9	2	2	<1	<1
				Lower layer				29.1						
10		Miyatoko Dam		Surface layer	2013/10/9	Cloudy	0.8	0.0	>0.8	9	3	4	<1	<1
				Lower layer				-						
11	Sunaoshigawa River System	Sonoseki Dam		Surface layer	2013/10/9	Cloudy	4.5	0.5	0.9	18	17	6	<1	<1
				Lower layer				3.5						
				Surface layer	2013/12/4	Sunny	8.6	0.5	1.7	17	3	2	<1	<1
				Lower layer				7.6						

Sampling point				Sampling date	Weather	Full depth (m)	General items					Radioactive material concentrations (Bq/L)		Remarks		
No.	Point						Sampling depth (m)	Secchi disk depth (m)	Electrical conductivity (mS/m)	SS (mg/L)	Turbidity	Radioactive cesium				
												Cs-134	Cs-137			
12	Nanakitagawa River System	Nanakita Dam	Dam Site	Surface layer	2013/10/15	Cloudy	0.7	0.0	>0.7	7	1	2	<1	<1		
				Lower layer												Collected only from the surface layer due to shallow water
				Surface layer	2013/12/3	Sunny	5.0	0.5	2.3	8	2	1	<1	<1		
				Lower layer						8	2	1	<1	<1		
13	Marutazawatameike Pond	Marutazawatameike Pond	Pond exit	Surface layer	2013/10/3	Cloudy	0.2	0.0	>0.2	31	6	5	<1	<1		
				Lower layer												Collected only from the surface layer due to shallow water
				Surface layer	2013/12/4	Sunny	0.3	0.0	>0.3	34	12	8	<1	<1		
				Lower layer												Collected only from the surface layer due to shallow water
14	Natorigawa River System	Okura Dam	Dam site	Surface layer	2013/10/15	Cloudy	19.0	0.5	1.6	8	4	4	<1	<1		
				Lower layer												
				Surface layer	2013/12/3	Sunny	26.5	0.5	1.8	8	2	2	<1	<1		
				Lower layer						8	1	2	<1	<1		
15	Amanuma Lake	Amanuma Lake	Lake exit	Surface layer	2013/10/3	Cloudy	0.6	0.0	>0.6	18	3	2	<1	<1		
				Lower layer												Collected only from the surface layer due to shallow water
				Surface layer	2013/12/4	Sunny	1.0	0.0	>1.0	22	1	1	<1	<1		
				Lower layer												Collected only from the surface layer due to shallow water
16	Natorigawa River System	Kamafusa Dam	Dam site	Surface layer	2013/10/28	Sunny	30.1	0.5	2.5	9	4	2	<1	<1		
				Lower layer												
				Surface layer	2013/12/13	Sunny	17.9	0.5	1.7	10	4	4	<1	<1		
				Lower layer						9	4	4	<1	<1		
17	Abukumagawa River System	Kawarago Dam	Dam site	Surface layer	2013/10/3	Cloudy	1.2	0.0	>1.2	9	<1	1	<1	<1		
				Lower layer												Collected only from the surface layer due to shallow water
18	Abukumagawa River System	Murata Dam	Dam site	Surface layer	2013/10/4	Cloudy	0.5	0.0	>0.5	8	<1	1	<1	<1		
				Lower layer												Collected only from the surface layer due to shallow water
19	Abukumagawa River System	Kawarago Dam	Dam site	Surface layer	2013/10/4	Cloudy	0.5	0.0	>0.5	7	3	2	<1	<1		
				Lower layer												Collected only from the surface layer due to shallow water
				Surface layer	2013/12/6	Sunny	0.3	0.0	>0.3	8	58	16	<1	<1		
				Lower layer												Collected only from the surface layer due to shallow water
20	Abukumagawa River System	Shichikashuku Dam	Dam site	Surface layer	2013/10/23	Cloudy	37.3	0.5	3.0	6	2	4	<1	<1		
				Lower layer												
				Surface layer	2013/12/13	Sunny	41.7	0.5	2.9	7	2	1	<1	<1		
				Lower layer						7	2	2	<1	<1		
21	Bagyunuma Lake	Bagyunuma Lake	Lake exit	Surface layer	2013/10/4	Cloudy	0.2	0.0	>0.2	16	42	23	<1	<1		
				Lower layer												Collected only from the surface layer due to shallow water
				Surface layer	2013/12/6	Cloudy	0.2	0.0	0.1	18	14	14	<1	<1		
				Lower layer												Collected only from the surface layer due to shallow water

- Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.
- Radioactive materials concentrations contain some measurement errors but are not noted here.

## Lake and Headwater: Sediment and Surrounding Environment (Lake Shore) Monitoring Results

Sampling point				Sampling date	Weather	Full depth (m)	Sediment						Surrounding environment (lake shore)					Remarks
							General items			Concentration of radioactive material [Bq/kg (dried mud)]			Property	Soil				
No.	Point			Mud sampling depth (cm)	Mud content (%)	Property	Radioactive cesium			Property	Concentration of radioactive material [Bq/kg (dry)]			Air dose (μSv/h)				
							Cs-134	Cs-137	Total		Cs-134	Cs-137			Total			
1	Kiritaka River System	Kurikoma Dam	Dam site	2013/10/29	Sunny	10.4	7	39	Silt/clay	44	110	154	Loamy	370	830	1,200	0.11	
				2013/12/2	Cloudy	12.1	10	60	Silt	18	51	69	Loamy	180	420	600	0.12	
2	Kiritaka River System	Hanayama Dam	Dam site	2013/10/29	Sunny	25.5	7	28	Silt/clay	65	160	225	Loamy	470	1,100	1,570	0.15	
				2013/12/2	Sunny	22.9	10	32	Silt	54	130	184	Loamy	400	940	1,340	0.18	
3	Kiritaka River System	Narugo Dam	Dam site	2013/10/24	Cloudy	54.3	10	30	Silt	140	380	520	Loamy	75	170	245	0.08	
				2013/12/16	Sunny	58.0	10	27	Silt	170	370	540	-	-	-	-	Unable to collect soil due to snow on the ground	
4	Kiritaka River System	Izunuma Lake	Lake exit	2013/10/25	Cloudy	1.2	7	27	Silt/clay	90	260	350	Loamy	13	29	42	0.05	
5		Naganuma Lake	Lake exit	2013/10/17	Sunny	2.0	7	34	Silt	88	230	318	Loamy	84	210	294	0.05	
6	Kiritaka River System	Shukunosawatameike Pond	Pond exit	2013/12/17	Sunny	2.8	8	41	Sand/silt	78	160	238	Loamy	44	130	174	0.04	
				2013/10/15	Cloudy	0.4	6	74	Sand	66	150	216	Loamy	71	190	261	0.06	
7	Narusegawa River System	Futatsuisi Dam	Dam site	2013/12/11	Sunny	1.0	10	60	Silt/sand	65	160	225	Loamy	60	170	230	0.06	
				2013/10/10	Sunny	41.5	7	22	Silt	89	280	369	Loamy	75	210	285	0.06	
8	Narusegawa River System	Urushizawa Dam	Dam site	2013/12/5	Sunny	42.8	10	20	Silt	190	570	760	Loamy	36	89	125	0.06	
				2013/10/24	Light rain	21.3	9	32	Silt	93	250	343	Loamy	120	240	360	0.06	
9	Narusegawa River System	Minamikawa Dam	Dam site	2013/12/19	Cloudy	30.9	10	29	Silt	94	270	364	-	-	-	-	Unable to collect soil due to snow on the ground	
				2013/10/9	Sunny	23.0	7	22	Silt	350	730	1,080	Loamy	280	590	870	0.05	
10	Narusegawa River System	Miyatoko Dam	Dam site	2013/12/3	Sunny	30.1	10	22	Silt	300	730	1,030	Loamy	160	390	550	0.06	
				2013/10/9	Cloudy	0.8	6	57	Sand/silt	<10	18	18	Loamy	130	300	430	0.06	
11	Sunaoshigawa River System	Sonoseki Dam	Dam site	2013/10/9	Cloudy	4.5	6	77	Sand/silt	31	57	88	Loamy	84	200	284	0.07	
				2013/12/4	Sunny	8.6	10	17	Silt	740	1,800	2,540	Loamy	74	180	254	0.07	
12	Nanakitagawa River System	Nanakita Dam	Dam site	2013/10/15	Cloudy	0.7	6	44	Sand/silt	23	57	80	Loamy	250	600	850	0.05	
				2013/12/3	Sunny	5.0	10	36	Silt	110	270	380	Loamy	20	46	66	0.05	
13	Marutazawatameike Pond	Marutazawatameike Pond	Pond exit	2013/10/3	Cloudy	0.2	6	77	Sand/silt	37	92	129	Loamy	220	510	730	0.05	
				2013/12/4	Sunny	0.3	10	68	Gravel/clay	51	130	181	Loamy	150	360	510	0.04	
14	Natorigawa River System	Okura Dam	Dam site	2013/10/15	Cloudy	19.0	6	32	Sand/silt	45	130	175	Loamy	43	110	153	0.04	
				2013/12/3	Sunny	26.5	10	77	Sand/gravel	15	53	68	Loamy	84	180	264	0.04	
15	Amanuma Lake	Amanuma Lake	Lake exit	2013/10/3	Cloudy	0.6	6	39	Silt	390	830	1,220	Sandy	75	160	235	0.08	
				2013/12/4	Sunny	1.0	10	58	Silt	450	1,100	1,550	Sandy	140	390	530	0.08	
16	Natorigawa River System	Kamafusa Dam	Dam site	2013/10/28	Sunny	30.1	10	25	Silt/clay	170	420	590	Loamy	100	240	340	0.05	
				2013/12/13	Sunny	17.9	10	27	Silt	150	300	450	Loamy	130	310	440	0.06	
17	Natorigawa River System	Kawarago Dam	Dam site	2013/10/3	Cloudy	1.2	7	64	Sand/silt	88	200	288	Loamy	120	300	420	0.09	
18		Murata Dam		2013/10/4	Cloudy	0.5	6	81	Sand/gravel	24	68	92	Loamy	240	540	780	0.07	
19	Abukumagawa River System	Kawarago Dam	Dam site	2013/10/4	Cloudy	0.5	6	64	Sand	110	270	380	Loamy	180	440	620	0.11	
				2013/12/6	Sunny	0.3	10	74	Sand/silt	87	210	297	Loamy	160	410	570	0.12	
20	Abukumagawa River System	Shichikashuku Dam	Dam site	2013/10/23	Cloudy	37.3	10	33	Silt	430	970	1,400	Loamy	270	640	910	0.18	
				2013/12/13	Sunny	41.7	10	31	Silt	450	1,100	1,550	Loamy	390	930	1,320	0.19	
21	Bagyunuma Lake	Bagyunuma Lake	Lake exit	2013/10/4	Cloudy	0.2	6	25	Silt	430	950	1,380	Loamy	900	2,100	3,000	0.30	
				2013/12/6	Cloudy	0.2	10	43	Sand/silt	1,300	2,900	4,200	Loamy	570	1,400	1,970	0.32	

• Samples for surrounding environment (lake shore) were generally collected from 5 points in 3m square on the lake shore, etc., and mixed. Depending on the site situation, factors, such as the area of sampling may be much smaller, may cause figures to vary significantly.

• Sampling points are listed from north to south.

• Air dose was measured with a survey meter, TCS-172B of Hitachi-Aloka Medical, Ltd.

• Radioactive materials concentrations contain some measurement errors but are not noted here.



# ○Coast: Water Quality Monitoring Results

Sampling point			Sampling date	Weather	Full depth (m)						Radioactive material concentrations (Bq/L)		Remarks
No.	Water body					Sampling depth (m)	Secchi disk depth (m)	Salinity (‰)	SS (mg/L)	Turbidity	Radioactive cesium		
											Cs-134	Cs-137	
1	Kesenumawan Bay (B)	Offshore of Hachigasaki	2013/11/13	Sunny	18.6	0.5	4.5	29	2	1	<1	<1	
		Surface layer				17.6							29
2	Kesenumawan Bay (C)	Offshore of Oshimakita	2013/11/13	Sunny	40.8	0.5	5.5	29	1	1	<1	<1	
		Surface layer				39.8							30
3	Offshore of Tsuyagawa River Estuary	Offshore of Tsuyagawa River Estuary	2013/11/13	Sunny	12.5	0.5	5.4	29	2	1	<1	<1	
		Surface layer				11.5							29
4	All other neighboring sea areas	Oppawan Bay (Jyusanhama Beach)	2013/11/5	Sunny	18.5	0.5	3.2	18	3	2	<1	<1	
		Surface layer				17.5							30
5	Neighboring sea area of Ishinomaki (C)	Mangukuura Lake, M-6 (center)	2013/11/6	Sunny	3.8	0.5	2.7	28	3	3	<1	<1	
		Surface layer				2.8							28
6	Neighboring sea area of Ishinomaki (B-3)	Offshore of Kitakamigawa River Estuary	2013/11/14	Sunny	6.9	0.5	2.0	21	4	3	<1	<1	
		Surface layer				5.9							29
7	Neighboring sea area of Ishinomaki (C)	Offshore of Naruse	2013/11/14	Sunny	13.8	0.5	2.8	27	2	4	<1	<1	
		Surface layer				12.8							29
8	Matsushimawan Bay (B)	Nishihama Beach	2013/11/12	Cloudy	13.2	0.5	2.0	28	6	3	<1	<1	
		Surface layer				12.2							29
9	Neighboring sea area of Sendai Port (A)	Naiko Inner Port, 4-Nai	2013/11/12	Sunny	17.2	0.5	2.8	29	4	3	<1	<1	
		Surface layer				16.2							29
10	Neighboring sea area of Sendai Port (B)	Gamo-3	2013/11/12	Cloudy	15.4	0.5	1.8	29	5	4	<1	<1	
		Surface layer				14.4							30
11	All other neighboring sea areas	Ido-5	2013/11/12	Cloudy	13.9	0.5	2.3	28	3	2	<1	<1	
		Surface layer				12.9							28
12	Offshore of Abukumagawa River Estuary	Offshore of Abukumagawa River Estuary	2013/10/29	Cloudy	11.0	0.5	2.0	24	6	3	<1	<1	
		Surface layer				10.0							28
		Surface layer	2013/12/18	Cloudy	8.9	0.5	3.7	27	3	2	2	<1	<1
		Surface layer				7.9							

• Sampling points are listed from north to south.

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## ○Coast: Sediment Monitoring Results

No.	Water body		Sampling date	Weather	Full depth (m)	General items			Concentration of radioactive material [Bq/kg (dried mud)]			Remarks
						Mud sampling depth (cm)	Mud content %	Property	Radioactive cesium			
									Cs-134	Cs-137	Total	
1	Kesenumawan Bay (B)	Offshore of Hachigasaki	2013/11/13	Sunny	18.6	10	37	Silt/gravel	61	130	191	
2	Kesenumawan Bay (C)	Offshore of Oshimakita	2013/11/13	Sunny	40.8	10	31	Silt	110	340	450	
3	Offshore of Tsuyagawa River Estuary	Offshore of Tsuyagawa River Estuary	2013/11/13	Sunny	12.5	10	76	Sand	<10	<10	-	
4	All other neighboring sea areas	Oppawan Bay (Jyusanhama Beach)	2013/11/5	Sunny	18.5	10	60	Silt/sand	20	56	76	
5	Neighboring sea area of Ishinomaki (C)	Mangokuura Lake, M-6 (center)	2013/11/6	Sunny	3.8	10	42	Silt/sand	19	52	71	
6	Neighboring sea area of Ishinomaki (B-3)	Offshore of Kitakamigawa River Estuary	2013/11/14	Sunny	6.9	5	84	Sand	<10	<10	-	
7	Neighboring sea area of Ishinomaki (C)	Offshore of Naruse	2013/11/14	Sunny	13.8	5	65	Sand/silt	<10	17	17	
8	Matsushimawan Bay (B)	Nishihama Beach	2013/11/12	Cloudy	13.2	10	33	Silt	100	260	360	
9	Neighboring sea area of Sendai Port (A)	Naiko Inner Port, 4-Nai	2013/11/12	Sunny	17.2	10	36	Silt	160	370	530	
10	Neighboring sea area of Sendai Port (B)	Gamo-3	2013/11/12	Cloudy	15.4	10	69	Sand/silt	<10	31	31	
11	All other neighboring sea areas	Ido-5	2013/11/12	Cloudy	13.9	5	68	Sand	24	78	102	
12	Offshore of Abukumagawa River Estuary	Offshore of Abukumagawa River Estuary	2013/10/29	Cloudy	11.0	10	71	Sand	90	200	290	
			2013/12/18	Cloudy	8.9	10	74	Sand	50	120	170	

• Sampling points are listed from north to south.

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