

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

Friday, October 25, 2013  
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 July 2-September 30, 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

72 environmental reference points, etc. in the surface water bodies within Miyagi Prefecture  
(Rivers: 43 locations, Lakes: 17 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 (April-June 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))

Overall, the levels of both the rivers and lakes/headwaters measured were around 1,000Bq/kg or below at most of the locations (coasts: 500Bq/kg or below), and have generally remained constant or had a declining tendency.

(Rivers)

Cs-134 + Cs-137: ND-2,450Bq/kg (dried mud) (\*ND-1,750Bq/kg (dried mud))

(Lakes and headwaters)

Cs-134 + Cs-137: 47-2,1800Bq/kg (dried mud) (\*88-2,930Bq/kg (dried mud))

(Coasts)

Cs-134 + Cs-137: ND-2,040Bq/kg (dried mud) (\*10-1,030Bq/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	40 (45)	3 (5)	1 (1)	1 (1)	1 (0)	0 (0)	0 (0)	46 (52)
Lakes and headwaters	10 (13)	3 (4)	0 (2)	3 (1)	1 (0)	0 (1)	0 (0)	17 (21)
Coasts	15 (6)	2 (0)	0 (1)	0 (0)	2 (0)	0 (0)	0 (0)	19 (7)

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

(Rivers)

Cs-134 + Cs-137: 12-3,500Bq/kg (dry) (\*ND-4,700Bq/kg (dry))

Spatial dose: 0.03-0.38μSv/h

(Lakes and headwaters)

Cs-134 + Cs-137: 68-2,660Bq/kg (dry) (\*53-1,950Bq/kg (dry))

Spatial dose: 0.03-0.214μSv/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 Fukushima Prefecture, its neighboring prefectures, etc.

ORiver: Water Quality Monitoring Results

(Annex)

No.	Sampling point			Sampling date	Weather	Full depth (m)	General items					Radioactive material concentrations (Bq/L)		Remarks
	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	2013/8/28	Sunny	0.2	0.0	>100	16	<1	0	<1	<1	
2		Namitabashi Bridge		2013/8/27	Cloudy	2.5	0.0	54	2,520	7	2	<1	<1	
3		Tateyamaohashi Bridge		2013/8/27	Cloudy	1.2	0.0	62	13	6	3	<1	<1	
4		Kamiyamabashi Bridge		2013/8/27	Cloudy	0.8	0.0	77	223	4	2	<1	<1	
5		Okawa River Estuary		2013/8/27	Sunny	2.0	0.0	60	3,980	9	3	<1	<1	
6	Omosegawa River	Ozakibashi Bridge		2013/8/27	Sunny	1.2	0.0	44	343	11	7	<1	<1	
7	K i t a k a S m y i s g t a e w m a R i v e r	Arimagawa River	Kuriharashi City	2013/8/23	Cloudy	0.5	0.0	>100	14	4	3	<1	<1	
8		Kinryugawa River		Obatabashi Bridge	2013/8/23	Cloudy	0.3	0.0	70	14	6	4	<1	<1
9	Kitakamigawa River	Tomeohashi Bridge (Tome)	Tomeshi City	2013/8/21	Sunny	0.7	0.0	55	12	11	6	<1	<1	
10		Sanhasamagawa River		Domanbashi Bridge (Kurikoma Dam)	2013/8/26	Sunny	1.0	0.0	>100	14	1	3	<1	<1
11	Nihasamagawa River	Kajiyabashi Bridge	Kuriharashi City	2013/8/26	Sunny	0.5	0.0	>100	11	2	4	<1	<1	
12		Hanayama Dam, inflow area		2013/8/22	Sunny	0.6	0.0	57	9	4	2	<1	<1	
13		Wakayanagi		2013/8/29	Cloudy	0.5	0.0	90	20	8	4	<1	<1	
14	Yamayoshiabashi Bridge		Tomeshi City	2013/8/21	Sunny	1.2	0.0	32	15	18	9	<1	<1	
15		Todorokibashi Bridge (Todoroki)		2013/8/23	Cloudy	0.7	0.0	>100	9	2	1	<1	<1	
16	Eaigawa River	Shimizucomon Weir	Osakishi City	2013/8/12	Sunny	0.7	0.0	24	11	12	13	<1	<1	
17		In Furukawa District, Osakishi City		Shinborisaion, entrance	2013/8/12	Sunny	0.7	0.0	43	14	14	9	<1	<1
18	Dekigawa River	Kogotabashi Bridge	Misatomachi Town	2013/8/12	Sunny	1.7	0.0	32	15	14	8	<1	<1	
19	Eaigawa River	Oikawabashi Bridge (Tandai)	Wakuyacho Town/Ishinomakishi City	2013/8/21	Sunny	0.5	0.0	38	14	15	7	<1	<1	
20	Kyukitakamigawa River	Kadonowaki	Ishinomakishi City	2013/8/21	Sunny	2.0	0.0	20	50	23	15	<1	<1	
21	Narusegawa River	Onobashi Bridge (Ono)	Higashimatsushimashi City	2013/8/8	Sunny	1.0	0.0	43	10	14	7	<1	<1	
22	Sunaoshigawa River	Tagajozeki Weir	Tagajoshi City	2013/8/7	Sunny	0.7	0.0	22	42	16	15	<1	<1	
23		Nenbutsubashi Bridge		2013/8/6	Cloudy	2.2	0.0	50	2,000	11	7	<1	<1	
24	Teizan-unga Canal (Kysunaoshigawa River)	Teizanbashi Bridge	Shichigahamamachi Town/Tagajoshi City	2013/8/8	Sunny	2.0	0.0	70	2,310	4	3	<1	<1	
25	Nanakitagawa River System	Nanakitabashi Bridge	Sendaishi City	2013/8/6	Cloudy	1.0	0.0	52	13	12	7	<1	<1	
26		Fukudaohashi Bridge		2013/8/6	Cloudy	0.3	0.0	55	22	8	7	<1	<1	
27		Umedagawa River		Fukudabashi Bridge	2013/8/6	Cloudy	1.4	0.0	37	19	18	10	<1	<1
28		Nanakitagawa River		Takasagobashi Bridge	2013/8/6	Cloudy	2.5	0.0	61	357	6	5	<1	<1
29	Natorigawa River	Yuriageohashi Bridge	Sendaishi City/Natorishi City	2013/8/5	Cloudy	0.2	0.0	40	141	11	8	<1	<1	
30	Natorigawa River System	Yakushibashi Bridge	Natorishi City	2013/7/30	Cloudy	0.4	0.0	>100	7	<1	2	<1	<1	
31		Koyamabashi Bridge		2013/8/5	Cloudy	1.0	0.0	47	13	21	8	<1	<1	
32		Bishamonbashi Bridge		2013/8/5	Cloudy	0.5	0.0	26	26	28	14	<1	<1	
33	A b u k u m a S y s t e m	Hadeniwabashi Bridge	Marumorimachi Town	2013/7/17	Cloudy	2.0	0.0	40	17	11	7	<1	<1	
34		Abukumagawa River		Marumoribashi Bridge	2013/7/16	Sunny	1.0	0.0	29	15	18	12	<1	<1
35		Higashinebashi Bridge	Kakudashi City	2013/8/19	Sunny	1.3	0.0	72	19	5	3	<1	<1	
36		Shiroshigawa River	Before the confluence with Kawaragosa River (Sunaoshibashi)	Shiroshishi City	2013/7/29	Cloudy	1.5	0.0	78	7	4	4	<1	<1
37	Saikawa River	Eisubobashi Bridge		2013/7/29	Cloudy	1.7	0.0	60	13	7	5	<1	<1	
38	Matsukawa River	Miyaohashi Bridge	Zaomachi Town	2013/7/29	Cloudy	0.3	0.0	81	14	5	3	<1	<1	
39	Arakawa River	Niragamibashi Bridge	Muratamachi Town/Ogawaramachi Town	2013/8/5	Cloudy	0.3	0.0	35	16	16	9	<1	<1	
40	Shiroshigawa River	Shirahatabashi Bridge	Shibatamachi Town	2013/8/5	Cloudy	0.5	0.0	70	13	8	4	<1	<1	
41	A b u k u m a S y s t e m	Tsukinokiohashi Bridge	Kakudashi City/Shibatamachi Town	2013/8/20	Light rain	0.8	0.0	82	21	3	3	<1	<1	
42		Abukumagawa River	Abukumaohashi Bridge (Iwanuma)	Iwanumashi City/Wataricho Town	2013/7/16	Sunny	1.5	0.0	46	17	10	8	<1	<1
43		Abukumagawa River Estuary (Watariohashi Bridge)	2013/8/20		Light rain	0.8	0.0	42	22	5	6	<1	<1	
				2013/8/20	Cloudy	0.7	0.0	39	549	11	7	<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.

ORiver: 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	Shishiorigawa River	Kinzanbashi Bridge	Kesennumashi City	2013/8/28	Sunny	0.2	6	88	Sand/gravel	23	60	83		
2		Namitabashi Bridge		2013/8/27	Cloudy	2.5	6	77	Sand	11	17	28		
3		Tateyamaohashi Bridge		2013/8/27	Cloudy	1.2	7	82	Sand	15	28	43		
4		Kamiyamabashi Bridge		2013/8/27	Cloudy	0.8	6	72	Sand	21	44	65		
5		Okawa River Estuary		2013/8/27	Sunny	2.0	7	76	Sand	<10	<10	-		
6	Omosegawa River	Ozakibashi Bridge		2013/8/27	Sunny	1.2	7	74	Sand	19	45	64		
7	K i t a k a	Arimagawa River	Kuriharashi City	2013/8/23	Cloudy	0.5	7	77	Sand	53	120	173		
8		Kiryugawa River		Obatabashi Bridge	2013/8/23	Cloudy	0.3	7	81	Sand	55	110	165	
9	S m y i s g t a c e w m a	Kitakamigawa River	Tomeshi City	2013/8/21	Sunny	0.7	7	85	Sand	<10	22	22		
10		Sanhasamagawa River	Domabashi Bridge (Kurikoma Dam)	2013/8/26	Sunny	1.0	7	82	Sand	<10	13	13		
11	R i v e r	Nihasamagawa River	Kuriharashi City	2013/8/26	Sunny	0.5	7	77	Sand/gravel	39	84	123		
12		Hanayama Dam, inflow area		2013/8/22	Sunny	0.6	6	83	Sand	<10	<10	-		
13	R i v e r	Hasamagawa River	Tomeshi City	2013/8/29	Cloudy	0.5	6	78	Sand/gravel	25	46	71		
14		Yamayoshiabashi Bridge		2013/8/21	Sunny	1.2	7	59	Silt	87	240	327		
15	R i v e r	Eaigawa River	Osakishi City	2013/8/23	Cloudy	0.7	7	71	Sand	26	59	85		
16		Shimizuomon Weir		2013/8/12	Sunny	0.7	8	69	Sand	11	26	37		
17	R i v e r	In Furukawa District, Osakishi City	Misatomachi Town	2013/8/12	Sunny	0.7	8	70	Sand/silt	160	330	490		
18		Dekigawa River		Kogiyabashi Bridge	2013/8/12	Sunny	1.7	8	42	Silt/clay	150	360	510	
19	R i v e r	Eaigawa River	Wakuyacho Town/Ishinomakishi City	2013/8/21	Sunny	0.5	7	81	Sand	15	26	41		
20		Kyukitakamigawa River		Kadonowaki	2013/8/21	Sunny	2.0	7	83	Sand	11	16	27	
21	Narusegawa River	Onobashi Bridge (Ono)	Higashimatsushimashi City	2013/8/8	Sunny	1.0	6	78	Sand	<10	19	19		
22	Sunaoshigawa River	Tagajozeki Weir	Tagajoshi City	2013/8/7	Sunny	0.7	7	70	Silt/sand	65	150	215		
23		Nenbutsubashi Bridge		2013/8/6	Cloudy	2.2	8	51	Silt/clay	100	240	340		
24	Teizan-unga Canal (Kyuunaoshigawa River)	Teizabashi Bridge	Shichigahamamachi Town/Tagajoshi City	2013/8/8	Sunny	2.0	8	28	Silt/clay	310	670	980		
25	Nanakitagawa River System	Nanakitabashi Bridge	Sendashi City	2013/8/6	Cloudy	1.0	8	85	Sand/gravel	65	150	215		
26		Fukudaohashi Bridge		2013/8/6	Cloudy	0.3	7	84	Sand	<10	12	12		
27	Nanakitagawa River	Umedagawa River	Sendashi City/Natorishi City	2013/8/6	Cloudy	1.4	7	84	Sand	56	130	186		
28		Takasagobashi Bridge		2013/8/6	Cloudy	2.5	8	43	Silt/clay	190	420	610		
29	Natorigawa River	Yuriogohashi Bridge	Sendashi City/Natorishi City	2013/8/5	Cloudy	0.2	6	67	Sand/silt	16	36	52		
30	Natorigawa River System	Yakushibashi Bridge	Natorishi City	2013/7/30	Cloudy	0.4	8	77	Sand/gravel	<10	23	23		
31		Koyamabashi Bridge		2013/8/5	Cloudy	1.0	7	30	Silt	310	700	1,010		
32		Bishamonbashi Bridge		2013/8/5	Cloudy	0.5	9	44	Silt	580	1,100	1,680		
33	A b u k u m a	Hadeniwabashi Bridge	Marumoriomachi Town	2013/7/17	Cloudy	2.0	5	72	Sand/silt	160	340	500		
34		Abukumagawa River		Hadeniwabashi Bridge	2013/8/19	Sunny	0.7	8	78	Sand	56	140	196	
35				Marumoriomachi Bridge	2013/7/16	Sunny	1.0	5	77	Sand	120	270	390	
36		Higashinebashi Bridge		2013/8/19	Sunny	1.3	8	79	Sand	100	220	320		
37	S a g a t a c e m a	Shiroishigawa River	Shiroishishi City	2013/7/29	Cloudy	1.5	7	73	Sand	92	210	302		
38		Saikawa River		Esuobobashi Bridge	2013/7/29	Cloudy	1.7	10	85	Sand/gravel	120	240	360	
39	Matsukawa River	Miyaoashi Bridge	Zaomachi Town	2013/7/29	Cloudy	0.3	7	73	Sand/silt	23	35	58		
40	Arakawa River	Niragamibashi Bridge	Muratamachi Town/Ogawaramachi Town	2013/8/5	Cloudy	0.3	6	73	Sand/silt	72	150	222		
41	Shiroishigawa River	Shiratabashi Bridge	Shibatamachi Town	2013/8/5	Cloudy	0.5	7	78	Sand	<10	12	12		
42	R i v e r	Tsukinokiohashi Bridge	Iwanumashi City/Wataricho Town	2013/8/20	Light rain	0.8	8	83	Sand	26	48	74		
43		Abukumagawa River		Abukumaohashi Bridge (Iwanuma)	2013/7/16	Sunny	1.5	5	71	Sand	51	130	181	
44	Abukumagawa River Estuary (Watariohashi Bridge)			2013/8/20	Light rain	0.8	7	69	Sand/silt	140	350	490		
45	Abukumagawa River Estuary (Watariohashi Bridge)			2013/8/20	Cloudy	0.7	7	38	Silt/sand	750	1,700	2,450		

• 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.

ORiver: Surrounding Environment Monitoring Results

No.	Sampling point			Sampling date	Weather	Left bank					Right bank					Remarks
	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)	
							Radioactive cesium					Radioactive cesium				
							Cs-134	Cs-137	Total			Cs-134	Cs-137	Total		
1	Shishiorigawa River	Kinzanbashi Bridge	Kesennumashi City	2013/8/28	Sunny	Loamy	83	190	273	0.09	Loamy	150	380	530	0.10	
2		Namiwabashi Bridge		2013/8/27	Cloudy	Sandy	<10	12	12	0.04	Loamy	18	38	56	0.04	
3		Tateyamaohashi Bridge		2013/8/27	Cloudy	Loamy	130	310	440	0.09	Loamy	120	300	420	0.10	
4	Okawa River	Kamiyabashi Bridge	Kesennumashi City	2013/8/27	Cloudy	Loamy	59	110	169	0.08	Loamy	170	360	530	0.07	
5		Okawa River Estuary		2013/8/27	Sunny	Sandy	37	86	123	0.05	Sandy	17	36	53	0.07	
6	Omosegawa River	Ozakibashi Bridge	Kuriharashi City	2013/8/27	Sunny	Loamy	83	190	273	0.06	Loamy	100	200	300	0.06	
7	Arimagawa River	Unandabashi Bridge		2013/8/23	Cloudy	Loamy	440	970	1,410	0.19	Loamy	450	980	1,430	0.11	
8		Kiryugawa River		Ohatubashi Bridge	2013/8/23	Cloudy	Loamy	1,000	2,200	3,200	0.17	Loamy	770	1,700	2,470	0.15
9	Kitakamigawa River	Tomochashi Bridge (Tome)	Tomeshi City	2013/8/21	Sunny	Loamy	240	500	740	0.10	Loamy	140	320	460	0.06	
10	Sanhasamagawa River	Domanbashi Bridge (Kurikoma Dam)	Kuriharashi City	2013/8/26	Sunny	Loamy	240	560	800	0.13	Loamy	260	570	830	0.12	
11	Nihasamagawa River	Kajiyabashi Bridge		2013/8/26	Sunny	Loamy	210	480	690	0.15	Loamy	530	1,100	1,630	0.14	
12	Smyisagatawema	Hanayama Dam, inflow area		Kuriharashi City	2013/8/22	Sunny	Loamy	650	1,400	2,050	0.20	Sandy	59	140	199	0.09
13		Wakayanagi	2013/8/29		Cloudy	Loamy	210	520	730	0.09	Sandy	50	100	150	0.09	
14	Rivier	Yamayoshidabashi Bridge	Tomeshi City	2013/8/21	Sunny	Loamy	<10	17	17	0.04	Loamy	240	570	810	0.05	
15		Eaigawa River	Todorokibashi Bridge (Todoroki)	Osakishi City	2013/8/23	Cloudy	Loamy	220	470	690	0.06	Loamy	61	140	201	0.06
16	Shimizucomon Weir	2013/8/12	Sunny		Loamy	110	230	340	0.06	Sandy	100	250	350	0.09		
17	In Furukawa District, Osakishi City	Shinborisaihon, entrance	2013/8/12	Sunny	Loamy	240	500	740	0.06	Loamy	74	160	234	0.05		
18	Dekigawa River	Kogotabashi Bridge	Misatomachi Town	2013/8/12	Sunny	Sandy	130	300	430	0.05	Loamy	57	120	177	0.04	
19	Eaigawa River	Oikawabashi Bridge (Tandai)	Wakuyacho Town/Ishinomakishi City	2013/8/21	Sunny	Loamy	49	100	149	0.06	Loamy	43	95	138	0.05	
20	Kyukitakamigawa River	Kadonowaki	Ishinomakishi City	2013/8/21	Sunny	Loamy	61	130	191	0.07	Loamy	99	230	329	0.06	
21	Narusagawa River	Onobashi Bridge (Ono)	Higashimatsushima City	2013/8/8	Sunny	Sandy	73	180	253	0.04	Loamy	92	220	312	0.08	
22	Sunaoshigawa River	Tagajozeki Weir	Tagajoshi City	2013/8/7	Sunny	Loamy	100	220	320	0.06	Loamy	70	160	230	0.07	
23		Nenbutsubashi Bridge		2013/8/6	Cloudy	Sandy	140	310	450	0.06	Sandy	120	250	370	0.06	
24	Teizan-unga Canal (Kiyusunaoshigawa River)	Teizabashi Bridge	Shichigahamamachi Town/Tagajoshi City	2013/8/8	Sunny	Sandy	180	400	580	0.05	Loamy	170	370	540	0.06	
25	Nanakitagawa River System	Nanakitabashi Bridge	Sendaiishi City	2013/8/6	Cloudy	Loamy	12	26	38	0.03	Loamy	180	380	560	0.05	
26		Fukudobashi Bridge		2013/8/6	Cloudy	Loamy	120	260	380	0.04	Loamy	110	210	320	0.08	
27		Umedagawa River		Fukudabashi Bridge	2013/8/6	Cloudy	Sandy	96	210	306	0.07	Loamy	380	910	1,290	0.08
28	Nanakitagawa River	Takasagabashi Bridge	2013/8/6	Cloudy	Loamy	30	67	97	0.04	Sandy	71	170	241	0.04		
29	Natorigawa River	Yuriagebashi Bridge	Sendaiishi City/Natorishi City	2013/8/5	Cloudy	Sandy	59	120	179	0.06	Clay-loamy	260	600	860	0.08	
30	Natorigawa River System	Yakushibashi Bridge	Natorishi City	2013/7/30	Cloudy	Loamy	140	310	450	0.07	Loamy	230	480	710	0.07	
31		Masudagawa River		Koyanabashi Bridge	2013/8/5	Cloudy	Loamy	310	710	1,020	0.08	Loamy	510	1,200	1,710	0.08
32		Bishamonbashi Bridge		2013/8/5	Cloudy	Loamy	150	360	510	0.06	Loamy	150	330	480	0.07	
33	Abukumagawa River	Hadeniwabashi Bridge	Marumoriomachi Town	2013/7/17	Cloudy	Sandy	310	670	980	0.38	Loamy	490	1,000	1,490	0.29	
34		Marumoriomachi Bridge		2013/8/19	Sunny	Sandy	430	930	1,360	0.28	Sandy	710	1,500	2,210	0.25	
				2013/7/16	Sunny	Loamy	280	640	920	0.24	Loamy	50	120	170	0.10	
35	Higashinebashi Bridge	Kakudashi City	2013/8/19	Sunny	Sandy	240	560	800	0.17	Sandy	160	340	500	0.12		
36	Shiroishigawa River	Before the confluence with Kawaragawa River (Sunaoshibashi Bridge)	Shiroishishi City	2013/8/19	Sunny	Loamy	1,100	2,400	3,500	0.25	Loamy	280	590	870	0.10	
37	Saikawa River	Etsubobashi Bridge		2013/7/29	Cloudy	Loamy	560	1,300	1,860	0.15	Loamy	380	860	1,240	0.21	
38	Matsukawa River	Miyaobashi Bridge	Zaomachi Town	2013/7/29	Cloudy	Loamy	160	370	530	0.12	Loamy	370	810	1,180	0.13	
39	Arakawa River	Niragamibashi Bridge	Marutamachi Town/Ogawaramachi Town	2013/7/29	Cloudy	Loamy	140	330	470	0.13	Loamy	500	1,000	1,500	0.14	
40	Shiroishigawa River	Shirahatubashi Bridge	Shibatamachi Town	2013/8/5	Cloudy	Loamy	210	460	670	0.16	Loamy	480	1,100	1,580	0.10	
41	Abukumagawa River	Tsukimokiohashi Bridge	Kakudashi City/Shibatamachi Town	2013/8/20	Light rain	Loamy	280	610	890	0.12	Loamy	130	280	410	0.11	
42		Abukumaohashi Bridge (Iwanuma)	Iwanumashi City/Wataricho Town	2013/8/20	Light rain	Loamy	630	1,400	2,030	0.19	Loamy	370	860	1,230	0.14	
		2013/7/16		Sunny	Loamy	880	1,800	2,680	0.26	Loamy	740	1,600	2,340	0.16		
43	Abukumagawa River Estuary (Watariohashi Bridge)	2013/8/20	Cloudy	Sandy	200	400	600	0.26	Loamy	190	400	590	0.17			

\* 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.

# ○Lake 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	K i t	Kurikoma Dam	Dam site	Surface layer	2013/8/26	Sunny	8.0	0.5	0.6	14	16	27	<1	<1	
				Lower layer											
2	S y i a	Hanayama Dam	Dam site	Surface layer	2013/8/22	Cloudy	16.5	0.5	1.5	8	2	3	<1	<1	
				Lower layer											
3	S t v m	Narugo Dam	Dam site	Surface layer	2013/8/30	Cloudy	47.9	0.5	1.2	12	5	5	<1	<1	
				Lower layer											
4	e r g a	Naganuma Lake	Lake exit	Surface layer	2013/8/21	Sunny	1.5	0.0	1.0	16	2	2	<1	<1	
				Lower layer											
5	w a	Shukunosawatameike Pond	Pond exit	Surface layer	2013/8/20	Cloudy	0.7	0.0	>0.7	11	2	2	<1	<1	
				Lower layer											
6	w N	Futatsuishi Dam	Dam site	Surface layer	2013/8/22	Sunny	48.8	0.5	3.0	6	2	1	<1	<1	
				Lower layer											
7	S a a	Urushizawa Dam	Dam site	Surface layer	2013/8/30	Sunny	27.6	0.5	1.8	5	4	4	<1	<1	
				Lower layer											
8	y r	Minamikawa Dam	Dam site	Surface layer	2013/8/7	Sunny	27.9	0.5	3.5	9	4	1	<1	<1	
				Lower layer											
9	s R u	Sonoseki Dam	Dam site	Surface layer	2013/8/7	Sunny	9.9	0.5	3.5	9	16	3	<1	<1	
				Lower layer											
10	t i s	Nanakita Dam	Dam site	Surface layer	2013/8/8	Cloudy	0.8	0.0	>0.8	6	8	4	<1	<1	
				Lower layer											
11	e v e	Marutazawatameike Pond	Pond exit	Surface layer	2013/8/1	Cloudy	0.2	0.0	>0.2	13	15	12	<1	<1	
				Lower layer											
12	m e g	Okura Dam	Dam site	Surface layer	2013/8/8	Cloudy	32.3	0.5	1.5	6	5	4	<1	<1	
				Lower layer											
13	r a	Amanuma Lake	Lake exit	Surface layer	2013/8/1	Cloudy	0.3	0.0	>0.3	11	4	4	<1	<1	
				Lower layer											
14	Natorigawa River System	Kamafusa Dam	Dam site	Surface layer	2013/9/3	Cloudy	25.1	0.5	2.1	10	<1	4	<1	<1	
				Lower layer											
15	Abukumagawa River System	Kawarago Dam	Dam site	Surface layer	2013/8/2	Cloudy	0.8	0.0	>0.8	6	4	3	<1	<1	
				Lower layer											
16	Shichikashuku Dam	Dam site	Dam site	Surface layer	2013/9/2	Cloudy	32.4	0.5	4.8	7	1	1	<1	<1	
				Lower layer											
17	Bagyunuma Lake	Lake exit	Lake exit	Surface layer	2013/8/2	Cloudy	0.5	0.0	>0.5	20	15	12	<1	<1	
				Lower layer											

• 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	Kitakamigawa River System	Kurikoma Dam	Dam site	2013/8/26	Sunny	8.0	8	41	Silt	71	170	241	Loamy	230	500	730	0.15
2		Hanayama Dam		2013/8/22	Cloudy	16.5	8	32	Silt/clay	73	170	243	Loamy	570	1,300	1,870	0.19
3		Narugo Dam	Lake exit	2013/8/30	Cloudy	47.9	10	29	Silt	210	440	650	Loamy	140	320	460	0.08
4		Naganuma Lake		2013/8/21	Sunny	1.5	7	72	Silt/sand	46	100	146	Loamy	73	170	243	0.06
5		Shukunosawatameike Pond		Pond exit	2013/8/20	Cloudy	0.7	8	74	Sand	56	120	176	Loamy	87	170	257
6	Narusegawa River System	Putatsuishi Dam	Dam site	2013/8/22	Sunny	48.8	8	18	Silt/clay	91	240	331	Loamy	19	49	68	0.06
7		Urushizawa Dam		2013/8/30	Sunny	27.6	10	35	Silt	110	280	390	Loamy	59	110	169	0.06
8		Minamikawa Dam		2013/8/7	Sunny	27.9	9	22	Clay	570	1,400	1,970	Loamy	110	230	340	0.03
9		Sunaoshigawa River System		Sonoseki Dam	2013/8/7	Sunny	9.9	9	16	Clay	650	1,300	1,950	Loamy	92	220	312
10	Nanakitagawa River System	Nanakita Dam	Pond exit	2013/8/8	Cloudy	0.8	7	39	Sand/silt	63	150	213	Loamy	210	420	630	0.06
11	Marutazawatameike Pond	Marutazawatameike Pond		2013/8/1	Cloudy	0.2	8	84	Sand	62	160	222	Loamy	120	260	380	0.05
12	Natorigawa River System	Okura Dam	Lake exit	2013/8/8	Cloudy	32.3	8	74	Sand	15	32	47	Loamy	64	170	234	0.03
13	Amanuma Lake	Amanuma Lake		2013/8/1	Cloudy	0.3	10	82	Silt	680	1,500	2,180	Loamy	170	380	550	0.08
14	Natorigawa River System	Kamafusa Dam	Dam site	2013/9/3	Cloudy	25.1	7	25	Silt	220	470	690	Loamy	140	320	460	0.05
15	Abukumagawa River System	Kawarago Dam		2013/8/2	Cloudy	0.8	10	79	Sand	250	540	790	Loamy	92	200	292	0.09
16		Shichikashuku Dam		2013/9/2	Cloudy	32.4	7	33	Silt	550	1,200	1,750	Loamy	240	540	780	0.20
17	Bagyunuma Lake	Bagyunuma Lake	Lake exit	2013/8/2	Cloudy	0.5	8	75	Sand/silt	71	160	231	Loamy	860	1,800	2,660	0.21

- 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

No.	Sampling point		Sampling date	Weather	Full depth (m)	General items				Radioactive material concentrations (Bq/L)		Remarks	
	Water body	Surface layer				Sampling depth (m)	Secchi disk depth (m)	Salinity (‰)	SS (mg/L)	Turbidity	Radioactive cesium		
											Cs-134		Cs-137
1	Kesennumawan Bay (B)	Offshore of Hachigasaki	Surface layer	2013/7/23	Cloudy	17.9	0.5	4.5	21	<1	1	<1	<1
			Lower layer				16.9		29	<1	1	<1	<1
			Surface layer	2013/8/13	Sunny	17.2	0.5	2.3	29	3	4	<1	<1
			Lower layer				16.2		30	2	1	<1	<1
2	Kesennumawan Bay (C)	Offshore of Oshimakita	Surface layer	2013/7/23	Cloudy	37.3	0.5	3.5	21	<1	2	<1	<1
			Lower layer				36.3		29	<1	1	<1	<1
			Surface layer	2013/8/13	Sunny	41.0	0.5	2.5	28	3	3	<1	<1
			Lower layer				40.0		31	16	5	<1	<1
3	Offshore of Tsuyagawa River Estuary	Offshore of Tsuyagawa River Estuary	Surface layer	2013/7/23	Cloudy	12.2	0.5	4.5	26	3	1	<1	<1
			Lower layer				11.2		29	<1	1	<1	<1
4	All other neighboring sea areas	Oppawan Bay (Jyusanhama Beach)	Surface layer	2013/8/20	Cloudy	18.0	0.5	2.0	29	2	3	<1	<1
			Lower layer				17.0		31	2	1	<1	<1
5	Neighboring sea area of Ishinomaki (C)	Mangokuura Lake, M-6 (center)	Surface layer	2013/8/13	Sunny	3.8	0.5	2.9	29	<1	1	<1	<1
			Lower layer				2.8		29	2	1	<1	<1
6	Neighboring sea area of Ishinomaki (B-3)	Offshore of Kitakamigawa River Estuary	Surface layer	2013/7/26	Cloudy	6.5	0.5	1.5	11	4	6	<1	<1
			Lower layer				5.5		23	2	2	<1	<1
			Surface layer	2013/8/19	Sunny	6.8	0.5	0.8	12	23	6	<1	<1
			Lower layer				5.8		26	8	2	<1	<1
7	Neighboring sea area of Ishinomaki (C)	Offshore of Naruse	Surface layer	2013/7/26	Light rain	14.0	0.5	2.8	23	3	4	<1	<1
			Lower layer				13.0		29	<1	1	<1	<1
			Surface layer	2013/8/19	Sunny	13.5	0.5	2.2	20	4	5	<1	<1
			Lower layer				12.5		28	1	1	<1	<1
8	Matsushimawan Bay (B)	Nishihama Beach	Surface layer	2013/8/21	Sunny	12.4	0.5	1.5	26	7	4	<1	<1
			Lower layer				11.4		27	18	7	<1	<1
9	Neighboring sea area of Sendai Port (A)	Naiko Inner Port, 4-Nai	Surface layer	2013/8/21	Sunny	16.3	0.5	2.5	24	3	3	<1	<1
			Lower layer				15.3		29	3	2	<1	<1
10	Neighboring sea area of Sendai Port (B)	Gamo-3	Surface layer	2013/8/21	Sunny	15.2	0.5	2.5	25	4	3	<1	<1
			Lower layer				14.2		29	2	1	<1	<1
11	All other neighboring sea areas	Ido-5	Surface layer	2013/8/21	Sunny	15.2	0.5	3.0	16	4	2	<1	<1
			Lower layer				14.2		30	3	1	<1	<1
12	Offshore of Abukumagawa River Estuary	Offshore of Abukumagawa River Estuary	Surface layer	2013/7/2	Sunny	8.8	0.5	5.1	26	1	1	<1	<1
			Lower layer				7.8		30	1	1	<1	<1
			Surface layer	2013/7/17	Cloudy	9.3	0.5	2.8	21	3	3	<1	<1
			Lower layer				8.3		27	2	2	<1	<1
			Surface layer	2013/8/20	Light rain	10.2	0.5	4.0	27	2	1	<1	<1
			Lower layer				9.2		29	4	2	<1	<1
			Surface layer	2013/9/30	Sunny	10.0	0.5	7.0	28	6	1	<1	<1
			Lower layer				9.0		28	2	1	<1	<1

• Sampling points are listed from north to south.

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



## ○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	2013/7/23	Cloudy	17.9	10	50	Silt/sand	24	33	57	
			2013/8/13	Sunny	17.2	10	44	Silt	44	130	174	
2	Kesenumawan Bay (C)	Offshore of Oshimakita	2013/7/23	Cloudy	37.3	10	25	Silt	140	260	400	
			2013/8/13	Sunny	41.0	10	33	Silt/clay	220	520	740	
3	Offshore of Tsuyagawa River Estuary	Offshore of Tsuyagawa River Estuary	2013/7/23	Cloudy	12.2	10	70	Sand	<10	<10	-	
4	All other neighboring sea areas	Oppawan Bay (Jyusanhama Beach)	2013/8/20	Cloudy	18.0	10	36	Silt	53	150	203	
5	Neighboring sea area of Ishinomaki (C)	Mangokuura Lake, M-6 (center)	2013/8/13	Sunny	3.8	10	53	Silt/sand	13	38	51	
6	Neighboring sea area of Ishinomaki (B-3)	Offshore of Kitakamigawa River Estuary	2013/7/26	Cloudy	6.5	5	49	Silt/sand	33	76	109	
			2013/8/19	Sunny	6.8	10	55	Silt/sand	38	110	148	
7	Neighboring sea area of Ishinomaki (C)	Offshore of Naruse	2013/7/26	Light rain	14.0	5	40	Silt	41	110	151	
			2013/8/19	Sunny	13.5	10	39	Sand/silt	42	86	128	
8	Matsushimawan Bay (B)	Nishihama Beach	2013/8/21	Sunny	12.4	10	30	Silt	170	370	540	
9	Neighboring sea area of Sendai Port (A)	Naiko Inner Port, 4-Nai	2013/8/21	Sunny	16.3	10	28	Silt	640	1,400	2,040	
10	Neighboring sea area of Sendai Port (B)	Gamo-3	2013/8/21	Sunny	15.2	10	47	Silt/sand	15	35	50	
11	All other neighboring sea areas	Ido-5	2013/8/21	Sunny	15.2	5	72	Sand	<10	12	12	
12	Offshore of Abukumagawa River Estuary	Offshore of Abukumagawa River Estuary	2013/7/2	Sunny	8.8	10	80	Sand/silt	<10	13	13	
			2013/7/17	Cloudy	9.3	10	73	Sand/silt	39	69	108	
			2013/8/20	Light rain	10.2	10	58	Silt/sand	630	1,400	2,030	
			2013/9/30	Sunny	10.0	10	74	Sand/silt	<10	21	21	

• Sampling points are listed from north to south.

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

