

(News Release)

The Results of Radioactive Material Monitoring of the Surface Water Bodies
within Miyagi Prefecture
(January-March Samples)

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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 January 8-March 12, 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

71 environmental reference points, etc. in the surface water bodies within Miyagi Prefecture
(Rivers: 43 locations, Lakes: 16 locations, Coasts: 12 locations)

(2) Survey Method

- Measurement of concentrations of radioactive materials (radioactive cesium (Cs-134 and Cs-137), etc.) 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 (October-December 2012))

(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-2,270Bq/kg (dried mud) (*ND-3,400Bq/kg (dried mud))

(Lakes and headwaters)

Cs-134 + Cs-137: 320-1,670Bq/kg (dried mud) (*44-9,700Bq/kg (dried mud))

(Coasts)

Cs-134 + Cs-137: ND-1,530Bq/kg (dried mud) (*ND-1,530Bq/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	35 (39)	6 (8)	2 (2)	0 (0)	1 (1)	0 (0)	0 (1)	44 (51)
Lakes and headwaters	2 (11)	0 (3)	0 (1)	1 (1)	0 (0)	0 (1)	0 (2)	3 (19)
Coasts	27 (17)	0 (0)	1 (1)	1 (1)	0 (0)	0 (0)	0 (0)	29 (19)

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

(Rivers)

Cs-134 + Cs-137: 13-3,400Bq/kg (dry) (*35-4,300Bq/kg (dry))

Spatial dose: 0.04-0.42μSv/h

(Lakes and headwaters)

Cs-134 + Cs-137: 229-1,860Bq/kg (dry) (*47-4,100Bq/kg (dry))

Spatial dose: 0.05-0.24μSv/h

(Annex for details)

(Map attached)

Future Plans

MOE intends to continue to measure radioactive materials in water, sediment, etc. in rivers, lakes, etc. in FY2013, 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)

No.	Sampling point			Sampling date	Weather	Full depth m	General items					Concentration of radioactive material Bq/L			Remarks
	Water body	Point	Municipality				Sampling depth m	Transparency cm	Electrical conductivity mS/m	SS mg/L	Turbidity	Radioactive iodine I-131	Radioactive cesium		
													Cs-134	Cs-137	
1	Shishioigawa River	Kinzanbashi Bridge	Kesennumashi City	2013/1/29	Sunny	0.2	0.0	>100	15	<1	0	<1	<1	<1	
2		Namitabashi Bridge		2013/1/29	Sunny	1.8	0.0	>100	3,700	3	1	<1	<1	<1	
3		Tatayamahashi Bridge		2013/1/8	Sunny	2.2	0.0	>100	16	<1	1	<1	<1	<1	
4	Okawa River	Kamiyamabashi Bridge	Kesennumashi City	2013/1/8	Sunny	1.5	0.0	53	820	5	2	<1	<1	<1	
5		Okawa River Estuary		2013/1/8	Cloudy	1.8	0.0	>100	5,250	4	1	<1	<1	<1	
6	Omosegawa River	Ozakbashi Bridge	Kesennumashi City	2013/1/29	Sunny	0.6	0.0	65	4,170	6	3	<1	<1	<1	
7		Unandabashi Bridge		2013/1/29	Cloudy	0.2	0.0	>100	26	<1	1	<1	<1	<1	
8	Kitryugawa River	Ohatabashi Bridge	Kesennumashi City	2013/1/29	Cloudy	0.2	0.0	>100	24	1	2	<1	<1	<1	
9		Tomobashi Bridge (Tome)		2013/1/30	Sunny	0.3	0.0	87	18	2	1	<1	<1	<1	
10	Sanbasamagawa River	Domanbashi Bridge (Kurikoma Dam)	Kurharashi City	2013/1/29	Snow	0.6	0.0	>100	22	3	3	<1	<1	<1	
11		Kaiyabashi Bridge		2013/1/29	Sunny	0.3	0.0	>100	18	<1	1	<1	<1	<1	
12	Nihasamagawa River	Harayama Dam, inflow area	Tomeshi City	2013/1/29	Snow	0.8	0.0	40	13	9	6	<1	<1	<1	
13		Wakayanagi		2013/1/30	Sunny	0.2	0.0	75	28	2	3	<1	<1	<1	
14	Yamayoshihashi Bridge	Yamayoshihashi Bridge	Tomeshi City	2013/1/30	Sunny	0.6	0.0	64	27	6	6	<1	<1	<1	
15		Todorokibashi Bridge (Todoroki)		2013/2/1	Sunny	1.0	0.0	>100	13	<1	1	<1	<1	<1	
16	Eaigawa River	Shimizakomon Weir	Osakishi City	2013/1/31	Sunny	1.2	0.0	>100	19	1	1	<1	<1	<1	
17		In Furukawa District, Osakishi City		Shimobasahon, entrance	2013/1/31	Sunny	1.8	0.0	48	38	6	5	<1	<1	<1
18	Dekigawa River	Kogotabashi Bridge	Misatomachi Town	2013/1/31	Sunny	0.2	0.0	52	37	15	14	<1	<1	<1	
19		Okawabashi Bridge (Tanda)		Wakayacho Town/Ishinomakishi City	2013/1/30	Cloudy	0.4	0.0	>100	21	5	3	<1	<1	<1
20	Kyubatakamagawa River	Kadonowaki	Ishinomakishi City	2013/1/8	Sunny	0.2	0.0	>100	179	1	2	<1	<1	<1	
21	Narusagawa River	Onobashi Bridge (Ooo)	Higashimatsushiro City	2013/1/29	Sunny	0.3	0.0	17	30	28	14	<1	<1	<1	
22	Sumaoshigawa River	Tagajozeki Weir	Tagajoshi City	2013/1/9	Snow	2.2	0.0	62	708	14	10	<1	<1	<1	
23		Nerubutsubashi Bridge		2013/1/9	Snow	2.5	0.0	8	6	8	3	<1	<1	<1	
24	Teizan-ungu Canal (Kusunosohigawa River)	Teizanbashi Bridge	Shogamashi City/Shichigahamamachi Town/Tagajoshi City	2013/1/9	Snow	2.5	0.0	65	5	11	5	<1	<1	<1	
25	Nanaktagawa River System	Nanaktabashi Bridge	Sendai City	2013/2/27	Cloudy	0.2	0.0	>100	34	3	2	<1	<1	<1	
26		Fukudabashi Bridge		2013/2/27	Cloudy	0.2	0.0	72	344	5	4	<1	<1	<1	
27		Umedagawa River		Fukudabashi Bridge	2013/2/27	Cloudy	0.3	0.0	84	277	12	5	<1	<1	<1
28	Nanaktagawa River	Takasagobashi Bridge	Sendai City/Natorishi City	2013/1/9	Snow	0.4	0.0	53	3,770	10	4	<1	<1	<1	
29		Natorigawa River		Yuriagobashi Bridge	2013/1/23	Sunny	0.7	0.0	>100	1,577	2	2	<1	<1	<1
30	Natorigawa River System	Yakubashi Bridge	Natorishi City	2013/1/23	Sunny	0.3	0.0	>100	29	<1	1	<1	<1	<1	
31		Koyamabashi Bridge		2013/1/23	Sunny	0.4	0.0	>100	32	1	2	<1	<1	<1	
32		Bishamonbashi Bridge		2013/1/23	Sunny	1.8	0.0	43	482	5	9	<1	<1	<1	
33	Abukumagawa River	Hadeniwabashi Bridge	Marumomachi Town	2013/1/10	Sunny	0.5	0.0	>100	34	3	2	<1	<1	<1	
34		2013/2/7		Sunny	0.4	0.0	40	15	5	4	<1	<1	<1		
35		Marumomabashi Bridge	Kakudashi City	2013/1/10	Sunny	0.2	0.0	>100	47	6	3	<1	<1	<1	
36		2013/2/7		Sunny	1.0	0.0	52	26	3	3	<1	<1	<1		
37	Shiroshigawa River	Ejiribashi Bridge	Kakudashi City	2013/1/10	Sunny	1.0	0.0	>100	48	2	2	<1	<1	<1	
38		2013/2/7		Cloudy	0.8	0.0	56	24	3	3	<1	<1	<1		
39		Shiroshigawa River	Before the confluence with Kawaragawa River (Sumaobashi Bridge)	Shiroshishi City	2013/1/22	Rain	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
40		Sakawa River	Etsubashi Bridge	Shiroshishi City	2013/1/24	Sunny	1.8	0.0	>100	23	2	2	<1	<1	<1
41	Arakawa River	Miyashashi Bridge	Zaonashi Town	2013/1/24	Sunny	0.2	0.0	>100	29	<1	1	<1	<1	<1	
42		Niragomabashi Bridge	Muritamachi Town/Ogawaramachi Town	2013/1/24	Sunny	0.3	0.0	72	38	4	4	<1	<1	<1	
43	Shiroshigawa River	Shirahatabashi Bridge	Shibatamachi Town	2013/1/24	Sunny	0.3	0.0	>100	36	1	1	<1	<1	<1	
44		Tsukinokobashi Bridge	Kakudashi City/Shibatamachi Town	2013/1/10	Sunny	1.0	0.0	>100	18	<1	1	<1	<1	<1	
45	Abukumagawa River	2013/2/7	Cloudy	0.8	0.0	90	23	<1	2	<1	<1	<1	<1		
46		Abukumabashi Bridge (Iwanuma)	Iwanumashi City/Wataricho Town	2013/1/10	Sunny	0.7	0.0	>100	23	1	2	<1	<1	<1	
47		2013/2/7		Sunny	0.5	0.0	53	24	12	6	<1	<1	<1		
48	Abukumagawa River Estuary (Wataribashi Bridge)			2013/1/10	Sunny	1.0	0.0	71	213	1	1	<1	<1	<1	
49				2013/2/7	Sunny	1.0	0.0	63	362	3	3	<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: Sediment Monitoring Results

Sampling point				Sampling date	Weather	Full depth m	General items			Concentration of radioactive material Bq/kg (dried mud)				Remarks			
No.	Water body	Point	Municipality				Mud sampling depth cm	Mud content %	Property	Radioactive iodine	Radioactive cesium						
										I-131	Cs-134	Cs-137	Total				
1	Shshiorigawa River	Kinzanbashi Bridge	Kesennumashi City	2013/1/29	Sunny	0.2	2	87	Gravel	<30	31	55	86				
2		Namitabashi Bridge		2013/1/29	Sunny	1.8	5	53	Silt	<30	92	170	262				
3		Tateyamaohashi Bridge		2013/1/8	Sunny	2.2	3	89	Sand	<30	19	37	56				
4	Okawa River	Kamiyamabashi Bridge	Kesennumashi City	2013/1/8	Sunny	1.5	3	70	Sand	<30	70	120	190				
5		Okawa River Estuary		2013/1/8	Cloudy	1.8	5	93	Sand	<30	<10	<10	-				
6	Omosogawa River	Ozakibashi Bridge		2013/1/29	Sunny	0.6	5	56	Silt	<30	230	440	670				
7	Kiritakama River	Arimagawa River	Kuriharashi City	2013/1/29	Cloudy	0.2	3	90	Gravel	<30	150	290	440				
8		Kiryugawa River		Obatabashi Bridge	2013/1/29	Cloudy	0.2	3	80	Sand	<30	210	360	570			
9		Kitakamigawa River		Tomeohashi Bridge (Tome)	2013/1/30	Sunny	0.3	3	84	Sand/silt	<30	26	45	71			
10	Saisyotewa River	Hasamagawa River	Kuriharashi City	2013/1/29	Snow	0.6	3	85	Sand	<30	<10	20	20				
11				Sanhasamagawa River	Domanbashi Bridge (Kurikoma Dam)	2013/1/29	Sunny	0.3	-	-	-	-	-	-	Unable to collect mud due to snow on the ground		
12		Nihasamagawa River	Kajiyabashi Bridge	2013/1/29	Snow	0.8	2	90	Gravel/sand	<30	<10	14	14				
13		Hasamagawa River	Hanayama Dam, inflow area	2013/1/30	Sunny	0.2	2	90	Gravel/sand	<30	21	44	65				
14	Riveter	Eaigawa River	Tomeshi City	2013/1/30	Sunny	0.6	5	53	Silt	<30	220	380	600				
15				Todorokibashi Bridge (Todoroki)	2013/2/1	Sunny	1.0	4	90	Sand	<30	23	43	66			
16				Shimuzukom Weir	Osakishi City	2013/1/31	Sunny	1.2	2	93	Sand	<30	<10	<10	-		
17	Eaigawa River	In Furukawa District, Osakishi City	Misatomachi Town	2013/1/31	Sunny	1.8	2	70	Sand/silt	<30	240	450	690				
18				Dekigawa River	2013/1/31	Sunny	0.2	3	82	Sand/silt	<30	83	150	233			
19				Eaigawa River	Okawabashi Bridge (Tandai)	Wakuyacho Town/Ishinomakishi City	2013/1/30	Cloudy	0.4	3	82	Sand/silt	<30	22	51	73	
20	Kyukitakamigawa River	Kadonowaki	Ishinomakishi City	2013/1/8	Sunny	0.2	3	91	Sand	<30	<10	10	10				
21	Narusegawa River	Onobashi Bridge (Ono)	Higashimatsushimashi City	2013/1/29	Sunny	0.3	5	83	Sand	<30	<10	17	17				
22	Sanaoishigawa River	Tagajozeki Weir	Tagajoshi City	2013/1/9	Snow	2.2	10	45	Silt	<30	420	760	1,180				
23		Nembutsubashi Bridge	2013/1/9	Snow	2.5	5	65	Silt	<30	180	310	490					
24	Teizan-unga Canal (Kiyusunaishigawa River)	Teizanbashi Bridge	Shiogamashi City/Shichigahamamachi Town/Tagajoshi City	2013/1/9	Snow	2.5	3	72	Gravel/sand	<30	37	64	101				
25	Nanakitagawa River System	Nanakitagawa River	Sendashi City	2013/2/27	Cloudy	0.2	3	84	Sand	<30	16	27	43				
26				Fukudaohashi Bridge	2013/2/27	Cloudy	0.2	5	89	Sand	<30	<10	17	17			
27				Umedagawa River	Fukudabashi Bridge	2013/2/27	Cloudy	0.3	5	57	Sand	<30	290	530	820		
28	Nanakitagawa River	Takasagobashi Bridge		2013/1/9	Snow	0.4	3	60	Silt	<30	160	290	450				
29	Natorigawa River System	Natorigawa River	Sendashi City/Natorishi City	2013/1/23	Sunny	0.7	-	-	-	-	-	-	-	Unable to collect mud due to increased water level			
30				Yakushibashi Bridge	2013/1/23	Sunny	0.3	-	-	-	-	-	-	-	Unable to collect mud due to snow on the ground		
31				Koyamabashi Bridge	Natorishi City	2013/1/23	Sunny	0.4	2	80	Mud	<30	86	150	236		
32	Abukumagawa River	Abukumagawa River	Marumorimachi Town	2013/1/23	Sunny	1.8	6	53	Clay/sludge	<30	770	1,500	2,270				
33				Hadeniwabashi Bridge	2013/1/10	Sunny	0.5	3	86	Sand	<30	130	240	370			
34				Marumoribashi Bridge	2013/2/7	Sunny	0.4	5	88	Sand/gravel	<30	120	210	330			
35				Ejiribashi Bridge	2013/1/10	Sunny	0.2	3	86	Sand	<30	200	380	580			
36				2013/2/7	Sunny	1.0	5	82	Sand	<30	440	790	1,230				
37	Shiroishigawa River	Shiroishigawa River	Shiroishishi City	2013/1/10	Sunny	1.0	3	95	Sand	<30	56	110	166				
38				Before the confluence with Kawaragawa River (Sanaoishashi Bridge)	2013/2/7	Cloudy	0.8	10	93	Sand	<30	60	120	180			
39				Saikawa River	Etsubobashi Bridge	2013/1/24	Sunny	1.8	-	-	-	-	-	-	-	Unable to collect mud due to snow on the ground	
40				Matsukawa River	Miyaobashi Bridge	Zaomachi Town	2013/1/24	Sunny	0.2	2	78	Sand	<30	24	42	66	Unable to collect mud due to construction
41	Riveter	Abukumagawa River	Iwanumashi City/Wataricho Town	2013/1/24	Sunny	0.3	2	86	Sand/silt	<30	37	64	101				
42				Arakawa River	Niragamibashi Bridge	Muratamachi Town/Ogawaramachi Town	2013/1/24	Sunny	0.3	2	83	Sand	<30	23	45	68	
43				Shirahatabashi Bridge	Shibatamachi Town	2013/1/10	Sunny	1.0	5	85	Sand	<30	55	99	154		
44	Abukumagawa River	Abukumagawa River Estuary (Watariohashi Bridge)	Iwanumashi City/Wataricho Town	2013/2/7	Cloudy	0.8	5	88	Sand/gravel	<30	52	100	152				
45				2013/1/10	Sunny	0.7	5	80	Sand	<30	87	160	247				
46				2013/2/7	Sunny	0.5	3	81	Sand	<30	180	320	500				
47	Abukumagawa River Estuary (Watariohashi Bridge)	Abukumagawa River Estuary (Watariohashi Bridge)	Iwanumashi City/Wataricho Town	2013/1/10	Sunny	1.0	3	89	Gravel/sand	<30	67	120	187				
48				2013/2/7	Sunny	1.0	2	90	Sand	<30	16	33	49				

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

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 μ Sv/h	Property	Concentration of radioactive material Bq/kg (dry)			Air dose μ Sv/h		
							I-131	Cs-134	Cs-137			Total	I-131	Cs-134			Cs-137
1	Shioborigawa River	Kizanbashi Bridge	Kesennumashi City	2013/1/29	Sunny	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground	
2		Namatubashi Bridge		2013/1/29	Sunny	Skeletal	<30	68	110	178	0.08	Skeletal	<30	30	67	97	0.09
3	Okawa River	Tateyamaohashi Bridge	Kesennumashi City	2013/1/8	Sunny	Loamy	<30	85	150	235	0.11	Loamy	<30	670	1,200	1,870	0.10
4		Kamiyamabashi Bridge		2013/1/8	Sunny	Loamy	<30	<10	13	13	0.11	Loamy	<30	380	700	1,080	0.11
5	Omosegawa River	Okawa River Estuary	Kesennumashi City	2013/1/8	Cloudy	Loamy/skeletal	<30	91	170	261	0.07	Loamy	<30	31	57	88	0.07
6		Ozakubashi Bridge		2013/1/29	Sunny	Loamy	<30	160	310	470	0.07	Sandy	<30	21	53	74	0.05
7	K i t a k a m i s a g a w a R i v e r	Arimagawa River	Kurihara City	2013/1/29	Cloudy	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
8		Kiryugawa River		Obatabashi Bridge	2013/1/29	Cloudy	-	-	-	-	-	-	-	-	-	-	-
9	S i t a k a m i s a g a w a R i v e r	Ktakamigawa River	Kurihara City	2013/1/30	Sunny	-	-	-	-	-	Loamy	<30	95	190	285	0.10	
10		Sanhasamagawa River		Domanbashi Bridge (Kurikoma Dam)	2013/1/29	Snow	-	-	-	-	-	-	-	-	-	-	-
11	H a s a m a g a w a R i v e r	Nihasamagawa River	Kurihara City	2013/1/29	Sunny	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
12		Hasamagawa River		Hasayama Dam, inflow area	2013/1/29	Snow	-	-	-	-	-	-	-	-	-	-	-
13	R i v e r	Hasamagawa River	Tomeshi City	2013/1/30	Sunny	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
14		Yamayoshidabashi Bridge		2013/1/30	Sunny	-	-	-	-	-	-	-	-	-	-	-	-
15	E a i g a w a R i v e r	Eaigawa River	Oaishiri City	2013/2/1	Sunny	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
16		Todorokibashi Bridge (Todoroki)		2013/1/31	Sunny	-	-	-	-	-	-	-	-	-	-	-	-
17	I n F u r u k a w a D i s t r i c t, O a i s h i r i C i t y	In Furukawa District, Oaishiri City	Misatomachi Town	2013/1/31	Sunny	Loamy	<30	380	690	1,070	0.11	-	-	-	-	-	Unable to collect samples due to snow on the ground
18		Dokigawa River		2013/1/31	Sunny	Loamy	<30	380	690	1,070	0.11	-	-	-	-	-	-
19	K y u k i t a k a m i g a w a R i v e r	Eaigawa River	Wakuyascho Town/Ishinomaki City	2013/1/30	Cloudy	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
20		Okawabashi Bridge (Tanda)		2013/1/8	Sunny	Loamy	<30	92	150	242	0.07	Loamy	<30	94	170	264	0.08
21	Narusugawa River	Kadonowaki	Ishinomaki City	2013/1/29	Sunny	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
22	S u m a o s h i g a w a R i v e r	Onobashi Bridge (Ono)	Tagajoshi City	2013/1/9	Snow	Loamy	<30	110	200	310	0.08	Loamy	<30	270	490	760	0.07
23		Tagajozeki Weir		2013/1/9	Snow	-	-	-	-	-	-	-	-	-	-	-	-
24	T e i z a n - u n g a C a n a l (K y u s u a o s h i g a w a R i v e r)	Nenbutsubashi Bridge	Shiogama City/Shiogamamachi Town/Tagajoshi City	2013/1/9	Snow	Sandy	<30	89	150	239	0.07	Loamy	<30	250	420	670	0.10
25		Tagajozeki Weir		2013/2/27	Cloudy	Loamy	<30	11	22	33	0.04	Loamy	<30	280	570	850	0.06
26	N a n a k i t a g a w a R i v e r S y s t e m	Nanakitagawa River	Sendai City	2013/2/27	Cloudy	Loamy	<30	270	560	830	0.07	Loamy	<30	97	190	287	0.07
27		Umedagawa River		Fukudabashi Bridge	2013/2/27	Cloudy	Loamy/sandy	<30	35	69	104	0.10	-	-	-	-	-
28	N a n a k i t a g a w a R i v e r	Nanakitagawa River	Sendai City/Natori City	2013/1/9	Snow	Loamy	<30	140	250	390	0.09	-	-	-	-	-	Unable to collect samples on the right bank due to snow on the ground
29		Natorigawa River		Yuriageohashi Bridge	2013/1/23	Sunny	Loamy	<30	27	60	87	0.06	-	-	-	-	-
30	N a t o r i g a w a R i v e r S y s t e m	Masudagawa River	Natori City	2013/1/23	Sunny	Sandy	<30	110	190	300	0.09	-	-	-	-	-	Unable to collect samples on the right bank due to snow on the ground
31		Yakushibashi Bridge		2013/1/23	Sunny	Loamy	<30	470	890	1,360	0.13	-	-	-	-	-	-
32	A b u k u m a g a w a R i v e r	Koyamabashi Bridge	Marumori Town	2013/1/23	Sunny	Loamy	<30	260	510	770	0.10	-	-	-	-	-	Unable to collect samples on the right bank due to snow on the ground
33		Bishamonbashi Bridge		2013/1/10	Sunny	Sandy	<30	410	550	960	0.30	Loamy	<30	370	570	940	0.42
34	S h i r o i s h i g a w a R i v e r	Hadenwabashi Bridge	Kakudashi City	2013/2/7	Sunny	Sandy	<30	410	560	970	0.36	Loamy	<30	500	740	1,240	0.36
35		Marumorbashi Bridge		2013/1/10	Sunny	Sandy	<30	170	260	430	0.22	Sandy/skeletal	<30	130	180	310	0.12
36	S h i r o i s h i g a w a R i v e r	Ejirabashi Bridge	Kakudashi City	2013/2/7	Sunny	Sandy	<30	240	340	580	0.21	Sandy/skeletal	<30	85	120	205	0.13
37		Shiroishigawa River		2013/1/10	Sunny	-	-	-	-	-	-	-	-	-	-	-	-
38	S h i r o i s h i g a w a R i v e r	Shiroishigawa River	Shiroishi City	2013/2/7	Cloudy	Loamy	<30	810	1,200	2,010	0.38	Loamy	<30	1,100	1,600	2,700	0.32
39		Saikawa River		2013/1/22	Rain	-	-	-	-	-	-	-	-	-	-	-	-
40	S h i r o i s h i g a w a R i v e r	Saikawa River	Shiroishi City	2013/1/24	Sunny	-	-	-	-	-	Loamy	<30	280	500	780	0.17	Unable to collect samples due to snow on the ground
41		Matsukawa River		2013/1/24	Sunny	Loamy	<30	120	230	350	0.10	-	-	-	-	-	-
42	A r a k a w a R i v e r	Miyaohashi Bridge	Muratamachi Town/Ogawaramachi Town	2013/1/24	Sunny	Loamy	<30	180	340	520	0.15	-	-	-	-	-	Unable to collect samples on the right bank due to snow on the ground
43		Niragambashi Bridge		2013/1/24	Sunny	-	-	-	-	-	-	-	-	-	-	-	-
44	S h i r o i s h i g a w a R i v e r	Shirahabashi Bridge	Kakudashi City/Shibatamachi Town	2013/1/24	Sunny	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
45		Shibatamachi Town		2013/1/10	Sunny	Loamy/sandy	<30	440	840	1,280	0.16	Loamy/skeletal	<30	290	540	830	0.16
46	A b u k u m a g a w a R i v e r	Tsukinokibashi Bridge	Iwanumashi City/Wataricho Town	2013/2/7	Cloudy	Loamy	<30	110	190	300	0.17	Loamy	<30	84	120	204	0.19
47		Abukumagawa River (Iwanuma)		2013/1/10	Sunny	Silty	<30	1,200	1,800	3,000	0.33	Sandy/skeletal	<30	120	190	310	0.21
48	A b u k u m a g a w a R i v e r	Abukumagawa River Estuary (Watarichashi Bridge)	Iwanumashi City/Wataricho Town	2013/2/7	Sunny	Clayish	<30	1,400	2,000	3,400	0.31	Loamy	<30	160	240	400	0.20
49		Abukumagawa River Estuary (Watarichashi Bridge)		2013/1/10	Sunny	-	-	-	-	-	0.15	Loamy/skeletal	<30	250	430	680	0.16
50	A b u k u m a g a w a R i v e r	Abukumagawa River Estuary (Watarichashi Bridge)	Iwanumashi City/Wataricho Town	2013/2/7	Sunny	Sandy	<30	640	950	1,590	0.18	Loamy	<30	380	570	950	0.15

*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-171 or TCS-172 of Hitachi-Aloka Medical, Ltd.

OLake and Headwater: Water Quality Monitoring Results

Sampling point					Sampling date	Weather	Full depth m	General items					Concentration of radioactive material Bq/L			Remarks	
No.	Point			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			
1	Kiritaka River System	Kurikoma Dam	Dam site	Surface layer	2013/1/29	Snow		-	-	-	-	-	-	-	-	-	Unable to collect samples due to freezing
				Lower layer				-	-	-	-	-	-	-	-	-	-
2	Kiritaka River System	Hanayama Dam	Dam site	Surface layer	2013/1/29	Sunny		-	-	-	-	-	-	-	-	-	Unable to collect samples due to freezing
				Lower layer				-	-	-	-	-	-	-	-	-	-
3	Kiritaka River System	Narugo Dam	Dam site	Surface layer	2013/1/22	-		-	-	-	-	-	-	-	-	-	Unable to collect samples due to freezing
				Lower layer				-	-	-	-	-	-	-	-	-	-
4	Kiritaka River System	Izunuma Lake	Lake exit	Surface layer	2013/1/30	Sunny	0.9	0.0	0.6	27	22	20	<1	<1	<1	-	Collected only from the surface layer due to shallow water
				Lower layer				-	-	-	-	-	-	-	-	-	-
5	Kiritaka River System	Naganuma Lake	Lake exit	Surface layer	2013/1/30	Sunny		-	-	-	-	-	-	-	-	-	Unable to collect samples due to freezing
				Lower layer				-	-	-	-	-	-	-	-	-	-
6	Narusegawa River System	Futatsushu Dam	Dam site	Surface layer	2013/1/31	Sunny		-	-	-	-	-	-	-	-	-	Unable to collect samples due to freezing
				Lower layer				-	-	-	-	-	-	-	-	-	-
7	Narusegawa River System	Urushizawa Dam	Dam site	Surface layer	2013/1/16	-		-	-	-	-	-	-	-	-	-	Unable to collect samples due to freezing
				Lower layer				-	-	-	-	-	-	-	-	-	-
8	Narusegawa River System	Minamikawa Dam	Dam site	Surface layer	2013/1/22	Snow		-	-	-	-	-	-	-	-	-	Unable to collect samples due to freezing
				Lower layer				-	-	-	-	-	-	-	-	-	-
9	Nanakitagawa River System	Nanakita Dam	Dam site	Surface layer	2013/1/22	Snow		-	-	-	-	-	-	-	-	-	Unable to collect samples due to freezing
				Lower layer				-	-	-	-	-	-	-	-	-	-
10	Natorigawa River System	Okura Dam	Dam site	Surface layer	2013/1/23	Sunny		-	-	-	-	-	-	-	-	-	Unable to collect samples due to freezing
				Lower layer				-	-	-	-	-	-	-	-	-	-
11	Amanuma Lake		Lake exit	Surface layer	2013/1/21	Cloudy		-	-	-	-	-	-	-	-	-	Unable to collect samples due to freezing
				Lower layer				-	-	-	-	-	-	-	-	-	-
12	Natorigawa River System	Kamafusa Dam	Dam site	Surface layer	2013/1/23	Sunny		-	-	-	-	-	-	-	-	-	Unable to collect samples due to freezing
				Lower layer				-	-	-	-	-	-	-	-	-	-
13	Natorigawa River System	Kawarago Dam	Dam site	Surface layer	2013/1/23	Sunny		-	-	-	-	-	-	-	-	-	Unable to collect samples due to freezing
				Lower layer				-	-	-	-	-	-	-	-	-	-
14	Abukumagawa River System	Kawarago Dam	Dam site	Surface layer	2013/1/24	Sunny	0.2	0.0	0.2	11	<1	1	<1	<1	<1	-	Collected only from the surface layer due to shallow water
				Lower layer				-	-	-	-	-	-	-	-	-	-
15	Abukumagawa River System	Shichikashuku Dam	Dam site	Surface layer	2013/1/24	Sunny	20.2	0.5	3.4	9	<1	2	<1	<1	<1	-	Unable to collect samples due to freezing
				Lower layer				19.2	-	9	6	2	<1	<1	<1	-	-
16	Bagyunuma Lake		Lake exit	Surface layer	2013/1/24	Sunny		-	-	-	-	-	-	-	-	-	Unable to collect samples due to freezing
				Lower layer				-	-	-	-	-	-	-	-	-	-

*Sampling points are listed from north to south.

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

Sampling point					Sampling date	Weather	Full depth m	Sediment					Surrounding environment (lake shore)					Remarks		
No.	Point			General items				Concentration of radioactive material Bq/kg (dried mad)				Property	Soil							
				Mud sampling depth cm				Mud content %	Property	Radioactive iodine I-131	Radioactive cesium			Concentration of radioactive material Bq/kg (dry)					Air dose µSv/h	
1	Kitakamigawa River System	Kurikoma Dam	Dam site	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Kitakamigawa River System	Hanayama Dam	Dam site	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Kitakamigawa River System	Narugo Dam	Dam site	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	Kitakamigawa River System	Izunuma Lake	Lake exit	3	43	Silt	<30	120	200	320	Loamy	<30	79	150	229	0.05	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	Kitakamigawa River System	Naganuma Lake	Lake exit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Narusegawa River System	Futatsushu Dam	Dam site	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	Narusegawa River System	Urushizawa Dam	Dam site	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Narusegawa River System	Minamikawa Dam	Dam site	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Nanakitagawa River System	Nanakita Dam	Dam site	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Natorigawa River System	Okura Dam	Dam site	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Amanuma Lake		Lake exit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Natorigawa River System	Kamafusa Dam	Dam site	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Natorigawa River System	Kawarago Dam	Dam site	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Abukumagawa River System	Kawarago Dam	Dam site	8	68	Sand	<30	170	290	460	Loamy	<30	360	690	1,050	0.09	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Abukumagawa River System	Shichikashuku Dam	Dam site	10	46	Silt	<30	570	1,100	1,670	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	Bagyunuma Lake		Lake exit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*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-171 or TCS-172 of Hitachi-Aloka Medical, Ltd.

OCoast: Water Quality Monitoring Results

No.	Sampling point		Sampling date	Weather	Full depth	General items					Concentration of radioactive material Bq/L			Remarks			
	Water body					Sampling depth m	Secchi disk depth m	Salinity ‰	SS mg/L	Turbidity	Radioactive iodine I-131	Radioactive cesium					
												Cs-134	Cs-137				
1	Kesennumawan Bay (B)	Offshore of Hachigasaki	Surface layer	2013/1/8	Cloudy	10.0	0.5	7.4	31	4	1	<1	<1	<1			
			Lower layer				9.0		32								
			Surface layer	2013/2/13	Sunny	13.9	0.5	6.1	34	3	1	<1	<1	<1			
			Lower layer				12.9		35								
			Surface layer	2013/3/5	Sunny	10.0	0.5	4.2	35	5	1	<1	<1	<1			
			Lower layer				9.0		36								
2	Kesennumawan Bay (C)	Offshore of Ohimakita	Surface layer	2013/1/8	Cloudy	21.0	0.5	6.5	32	5	1	<1	<1	<1			
			Lower layer				20.0		34								
			Surface layer	2013/2/13	Sunny	40.8	0.9	6.4	35	5	1	<1	<1	<1			
			Lower layer				39.8		35								
			Surface layer	2013/3/5	Sunny	40.2	0.5	6.7	35	2	2	<1	<1	<1			
			Lower layer				39.2		36								
3	Offshore of Tsuyagawa River Estuary		Surface layer	2013/2/27	Cloudy	12.8	0.5	7.1	35	8	2	<1	<1	<1			
			Lower layer				11.8		35								
4	All other neighboring sea areas	Oppawan Bay (Jyusanhama Beach)	Surface layer	2013/1/9	Cloudy	19.0	0.5	5.1	31	5	1	<1	<1	<1			
			Lower layer				18.0		33								
			Surface layer	2013/2/5	Sunny	18.5	0.5	5.4	35	4	1	<1	<1	<1			
			Lower layer				17.5		39								
			Surface layer	2013/3/5	Sunny	19.0	0.5	9.5	28	5	1	<1	<1	<1			
			Lower layer				18.0		30								
5	Neighboring sea area of Ishinomaki (C)	Mangokura Lake, M-6 (center)	Surface layer	2013/1/9	Cloudy	3.7	0.5	3.5	34	4	1	<1	<1	<1			
			Lower layer				2.7		34								
			Surface layer	2013/2/6	Snow	3.4	0.5	1.6	38	6	2	<1	<1	<1			
			Lower layer				2.4		38								
			Surface layer	2013/3/7	Sunny	3.9	0.5	2.5	35	10	2	<1	<1	<1			
			Lower layer				2.9		36								
6	Neighboring sea area of Ishinomaki (B-3)	Offshore of Kitakamigawa River Estuary	Surface layer	2013/1/8	Cloudy	8.2	0.5	5.2	27	5	1	<1	<1	<1			
			Lower layer				7.2		34								
			Surface layer	2013/2/6	Snow	8.4	0.5	2.1	20	3	2	<1	<1	<1			
			Lower layer				7.4		38								
			Surface layer	2013/1/8	Cloudy	14.9	0.5	4.8	31	5	1	<1	<1	<1			
			Lower layer				13.9		34								
Surface layer	2013/2/6	Cloudy	14.8	0.5	3.5	36	6	2	<1	<1	<1						
Lower layer				13.8		39											
8	Matsushima Bay (B)	Nishihamu Beach	Surface layer	2013/1/8	Snow	10.0	0.5	8.0	33	5	2	<1	<1	<1			
			Lower layer				9.0		33								
			Surface layer	2013/2/7	Cloudy	13.5	0.5	1.8	37	6	3	<1	<1	<1			
			Lower layer				12.5		38								
			9	Neighboring sea area of Sendai Port (A)	Naiko Inner Port, 4-Nai	Surface layer	2013/1/8	Snow	19.0	0.5	5.0	33	5	1	<1	<1	<1
						Lower layer				18.0		34					
Surface layer	2013/2/7	Cloudy				18.0	0.5	2.8	39	6	2	<1	<1	<1			
Lower layer							17.0		39								
Surface layer	2013/1/8	Snow				13.5	0.5	5.0	32	5	5	<1	<1	<1			
Lower layer							12.5		33								
Surface layer	2013/2/7	Cloudy	17.4	0.5	2.4	38	6	3	<1	<1	<1						
Lower layer				16.4		38											
11	All other neighboring sea areas	Ido-5	Surface layer	2013/1/9	Cloudy	9.5	0.5	5.0	32	4	1	<1	<1	<1			
			Lower layer				8.5		33								
			Surface layer	2013/2/22	Sunny	4.0	0.5	2.8	33	7	2	<1	<1	<1			
			Lower layer				3.0		35								
			12	Offshore of Abukumagawa River Estuary		Surface layer	2013/1/9	Snow	4.2	0.5	6.0	20	4	2	<1	<1	<1
						Lower layer				3.2		34					
Surface layer	2013/1/30	Sunny				9.5	0.5	3.3	23	6	2	<1	<1	<1			
Lower layer							8.5		35								
Surface layer	2013/2/22	Sunny				9.3	0.5	5.9	27	8	2	<1	<1	<1			
Lower layer							8.3		35								
Surface layer	2013/3/12	Sunny	9.0	0.5	5.3	20	5	2	<1	<1	<1						
Lower layer				8.0		32											

*Sampling points are listed from north to south.

○Coast: Sediment Monitoring Results

Sampling point			Sampling date	Weather	Full depth	General items			Concentration of radioactive material Bq/kg (dried mud)				Remarks
No.	Water body					Mud sampling depth cm	Mud content %	Property	Radioactive iodine I-131	Radioactive cesium			
									Cs-134	Cs-137	Total		
1	Kesenumawan Bay (B)	Offshore of Hachigasaki	2013/1/8	Cloudy	10.0	4	76	Gravel/silt	<30	16	34	50	
			2013/2/13	Sunny	13.9	3	83	Sand	<30	<10	16	16	
			2013/3/5	Sunny	10.0	3	76	Sand	<30	16	32	48	
2	Kesenumawan Bay (C)	Offshore of Oshimakita	2013/1/8	Cloudy	21.0	5	47	Silt	<30	140	270	410	
			2013/2/13	Sunny	40.8	15	47	Sludge	<30	31	60	91	
			2013/3/5	Sunny	40.2	5	45	Silt	<30	26	52	78	
3	Offshore of Tsuyagawa River Estuary		2013/2/27	Cloudy	12.8	3	85	Sand	<30	<10	<10	-	
4	All other neighboring sea areas	Oppawan Bay (Jyusanhama Beach)	2013/1/9	Cloudy	19.0	10	63	Silt	<30	91	190	281	
			2013/2/5	Sunny	18.5	5	83	Sand	<30	<10	12	12	
			2013/3/5	Sunny	19.0	5	69	Sand/silt	<30	33	68	101	
5	Neighboring sea area of Ishinomaki (C)	Mangokuura Lake, M-6 (center)	2013/1/9	Cloudy	3.7	10	60	Sand/silt	<30	38	63	101	
			2013/2/6	Snow	3.4	10	62	Sand/sludge	<30	28	49	77	
			2013/3/7	Sunny	3.9	5	59	Silt	<30	53	92	145	
6	Neighboring sea area of Ishinomaki (B-3)	Offshore of Kitakamigawa River Estuary	2013/1/8	Cloudy	8.2	5	89	Sand	<30	<10	<10	-	
			2013/2/6	Snow	8.4	5	84	Sand	<30	<10	<10	-	
7	Neighboring sea area of Ishinomaki (C)	Offshore of Naruse	2013/1/8	Cloudy	14.9	10	56	Sludge	<30	21	35	56	
			2013/2/6	Cloudy	14.8	5	64	Sludge	<30	28	65	93	
8	Matsushimawan Bay (B)	Nishihama Beach	2013/1/8	Snow	10.0	5	45	Silt	<30	160	310	470	
			2013/2/7	Cloudy	13.5	15	41	Sludge	<30	110	290	400	
9	Neighboring sea area of Sendai Port (A)	Naiko Inner Port, 4-Nai	2013/1/8	Snow	19.0	5	40	Silt	<30	530	1,000	1,530	
			2013/2/7	Cloudy	18.0	15	43	Sludge	<30	330	690	1,020	
10	Neighboring sea area of Sendai Port (B)	Gamo-3	2013/1/8	Snow	13.5	5	81	Sand	<30	13	20	33	
			2013/2/7	Cloudy	17.4	5	84	Sand	<30	<10	10	10	
11	All other neighboring sea areas	Ido-5	2013/1/9	Cloudy	9.5	5	90	Sand	<30	<10	<10	-	
			2013/2/22	Sunny	4.0	6	91	Sand	<30	<10	<10	-	
12	Offshore of Abukumagawa River Estuary		2013/1/9	Snow	4.2	5	81	Sand	<30	63	130	193	
			2013/1/30	Sunny	9.5	3	85	Sand	<30	45	86	131	
			2013/2/22	Sunny	9.3	5	85	Sand	<30	37	66	103	
			2013/3/12	Sunny	9.0	3	81	Sand	<30	39	76	115	

*Sampling points are listed from north to south.

