

Part 3: Other Radioactive Material Monitoring Conducted Nationwide (FY2015)

1. Outline of the Monitoring

1.1 Covered monitoring

As other radioactive material monitoring activity conducted nationwide, the results of the Monitoring of Environmental Radioactivity Levels in FY2015, which has been conducted by the Nuclear Regulation Authority for the purpose of clarifying the existence or nonexistence of the influence of nuclear facilities, etc. nationwide, are compiled here.

Monitoring locations are as shown in Table 1.1-1 and Figure 1.1-1. See the relevant website for more details. (<http://www.env.go.jp/air/rmcm/result/nsr.html>)

1.2 Compilation methods

Measurement data are available on the website of Environmental Radioactivity and Radiation in Japan, "Environmental Radiation Database".¹⁶

Data for this report were collected from this website under the following search criteria.

- (i) Period: April 2015 to March 2016
- (ii) Coverage: Nationwide
- (iii) Targets: All radionuclides
- (iv) Targeted samples: Inland water (river water, lake water, freshwater), seawater, sediments (river sediments, sea sediments)

¹⁶ Environmental Radioactivity and Radiation in Japan "Environmental Radiation Database" <http://search.kankyo-hoshano.go.jp/servlet/search.top>. (Japanese only, accessed 2017-06-14)

Table 1.1-1 Locations for the Monitoring of Environmental Radioactivity Levels (30 in total)

No.	Prefecture	Property	Sampling locations	Water	Sediments
1	Hokkaido	Lake	Oyafuru, Ishikari City (Lake Barato)	○	—
2		Coastal area	Yoichi Town, Yoichi County (Yoichi Bay)	○	○
3	Aomori	Coastal area	Fukaura Town, Nishitsugaru County (off Kasose)	○	○
4		Coastal area	Hiranai Town, Higashitsugaru County (Mutsu Bay)	○	○
5	Iwate	Coastal area	Hirono Town, Kunohe County (off Taneichi)	○	○
6	Akita	River	Asahikawa, Akita City	○	—
7	Fukushima	Coastal area	Soma City (off Haragama Beach)	○	○
8		River	Zainiwasaka, Fukushima City	○	—
9	Ibaraki	Lake	Kasumigaura	○	—
10		Coastal area	Tokai Village, Naka County (off the NPS)	○	○
11	Chiba	Coastal area	Tokyo Bay (off Sodegaura City)	○	○
12	Kanagawa	Coastal area	Yokosuka City (Odawa Bay)	○	○
13	Niigata	Lake	Shichikuyama, Chuo Ward, Niigata City	○	—
14		Coastal area	off Niigata Port	○	○
15	Fukui	Lake	Inogaik Pond, Tsuruga City	○	—
16	Nagano	Lake	Lake Suwa	○	—
17	Aichi	Coastal area	Tokoname City (off Kosugaya)	○	○
18	Mie	River	Seki Town, Kameyama City (Suzuka River)	○	—
19	Kyoto	Freshwater	Tenno, Ogura Town, Uji City	○	—
20	Osaka	Coastal area	Osaka City (Entrance to Osaka Port)	○	○
21	Tottori	River	Katamo (Katamo River System)	○	○
22		River	Kawakami (Kawakami River System)	○	○
23		River	Hotani (Iwakura River System)	○	○
24		River	Bessho (except for Katamo River System)	○	○
25		River	Kannokura (Oshika River System)	○	○
26	Hiroshima	River	Kawate Town, Shobara City (Saijo River)	○	—
27	Yamaguchi	Coastal area	Ajisu, Yamaguchi City (Yamaguchi Bay)	○	○
28	Fukuoka	Coastal area	Higashiminato Town, Moji Ward, Kitakyushu City (off Chichisaki)	○	○
29	Kagoshima	Coastal area	Minamisatsuma City (off the mouth of Manose River)	○	○
30	Okinawa	Coastal area	Katsuren White Beach, Uruma City	○	○

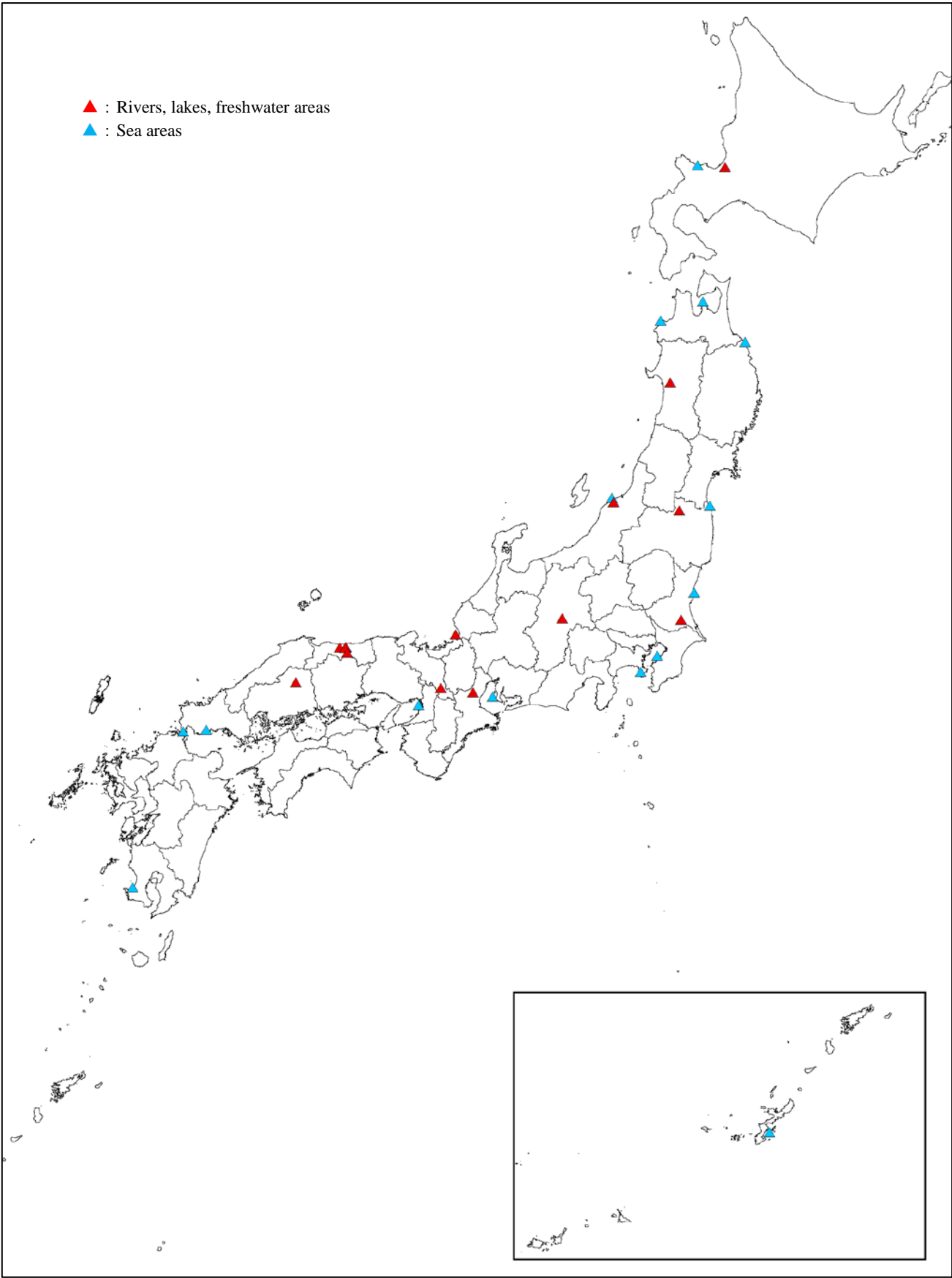


Figure 1.1-1 Survey Locations for the Monitoring of Environmental Radioactivity Levels

2. Results

2.1 Water

(1) Inland water¹⁷

In the Monitoring of Levels performed in FY2015, inland water samples were reported for 9 radionuclides (Be-7, K-40, U-234, U-235, U-238, Cs-134, Cs-137, I-131 and Sr-90), as shown in Table 2.1-1.

A comparison with the results of the Monitoring of Levels for the last twenty years (excluding data from March 11, 2011, to March 10, 2012) revealed that detected values for all these radionuclides were within the past measurement trends (see Figure 2.1-1).

Table 2.1-1 Detection of radionuclides in the Monitoring of Levels
[inland water]

Nuclides		Number of reported data	Number of detections	Range of measured values [Bq/L]	The range of past measurement records (*1) [Bq/L]
Naturally occurring radionuclides	Be-7	7	1	ND - 0.0055	ND - 0.021
	K-40	10	10	0.013 - 0.28	0.0067 - 0.30
	U-234	10	10	0.00094 - 0.0044	ND - 0.015
	U-235	10	0	ND - ND	ND - 0.00054
	U-238	10	10	0.00076 - 0.0036	ND - 0.013
Artificial radionuclides	Cs-134	9	1	ND - 0.0062	ND - 0.041
	Cs-137	9	4	ND - 0.022	ND - 0.084
	I-131	7	0	ND - ND	ND - 0.016
	Sr-90	10	8	ND - 0.0026	ND - 0.0050

ND = Not detectable

(*1) Results of the Monitoring of Levels from FY1995 to FY2014 (excluding data from March 11, 2011 to March 10, 2012)

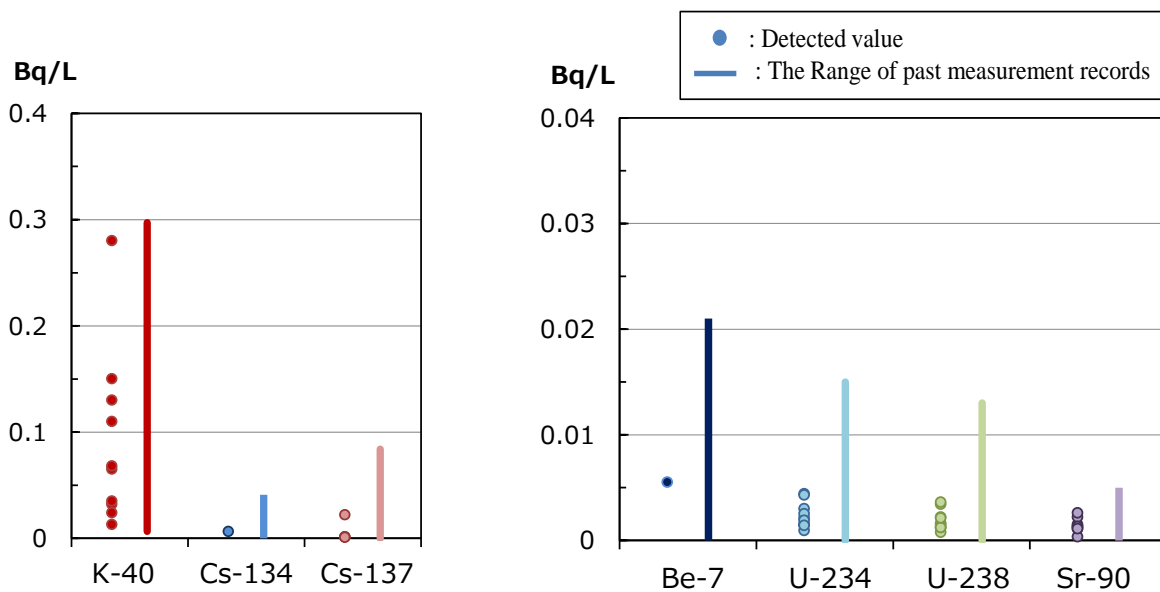


Figure 2.1-1 Detection of radionuclides in the Monitoring of Levels [inland water]

¹⁷ This report only covers data for river water, lake water, and freshwater in the Monitoring of Levels.

(2) Seawater

In the Monitoring of Levels in FY2015, seawater samples were reported for 6 radionuclides (Be-7, K-40, Cs-134, Cs-137, I-131 and Sr-90) as shown in Table 2.1-2.

A comparison with the results of the Monitoring of Levels for the last twenty years (excluding data from March 11, 2011, to March 10, 2012) revealed that detected values for both of these radionuclides were within the past measurement trends (see Figure 2.1-2).

Table 2.1-2 Detection of radionuclides in the Monitoring of Levels [seawater]

Nuclides		Number of reported data	Number of detections	Range of measured values[Bq/L]			The range of past measurement records [Bq/L] (*1)		
Naturally occurring radionuclides	Be-7	2	0	ND	-	ND	ND	-	ND
	K-40	16	16	0.18	-	12	0.078	-	14
Artificial radionuclides	Cs-134	16	0	ND	-	ND	ND	-	ND
	Cs-137	16	1	ND	-	0.0019	ND	-	0.040
	I-131	13	0	ND	-	ND	ND	-	ND
	Sr-90	15	15	0.00073	-	0.0013	ND	-	0.0084

ND = Not detectable

(*1) Results of the Monitoring of Levels from FY1995 to FY2014 (excluding data from March 11, 2011 to March 10, 2012)

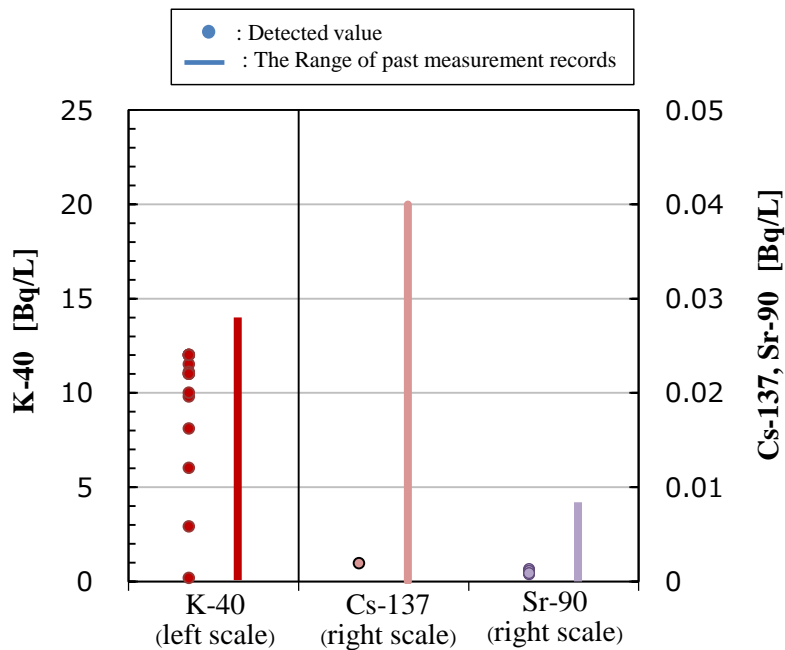


Figure 2.1-2 Detection of radionuclides in the Monitoring of Levels [seawater]

2.2 Sediments

(1) Inland water sediments (river sediments)

In the Monitoring of Levels in FY2015, inland water sediment samples (river sediments) were reported for three radionuclides (U-234, U-235 and U-238) as shown in Table 2.2-1.

A comparison with the results of the Monitoring of Levels for the last twenty years (excluding data from March 11, 2011, to March 10, 2012) revealed that detected values for all the 3 detected radionuclides were within the past measurement trends (see Figure 2.2-1).

Table 2.2-1 Detection of radionuclides in the Monitoring of Levels
[Inland water sediments (river sediments)]

Nuclides		Number of reported data	Number of detections	Range of measured values [Bq/kg(dry)]			The range of past measurement records [Bq/kg(dry)] (*1)		
Naturally occurring radionuclides	U-234	5	5	11	-	38	6.5	-	76
	U-235	5	5	0.43	-	1.4	0.20	-	3.4
	U-238	5	5	11	-	39	6.6	-	94

(*1) Results of the Monitoring of Environmental Radioactivity Levels from FY1995 to FY2014 (excluding data from March 11, 2011 to March 10, 2012 and results reported in mg/kg units)

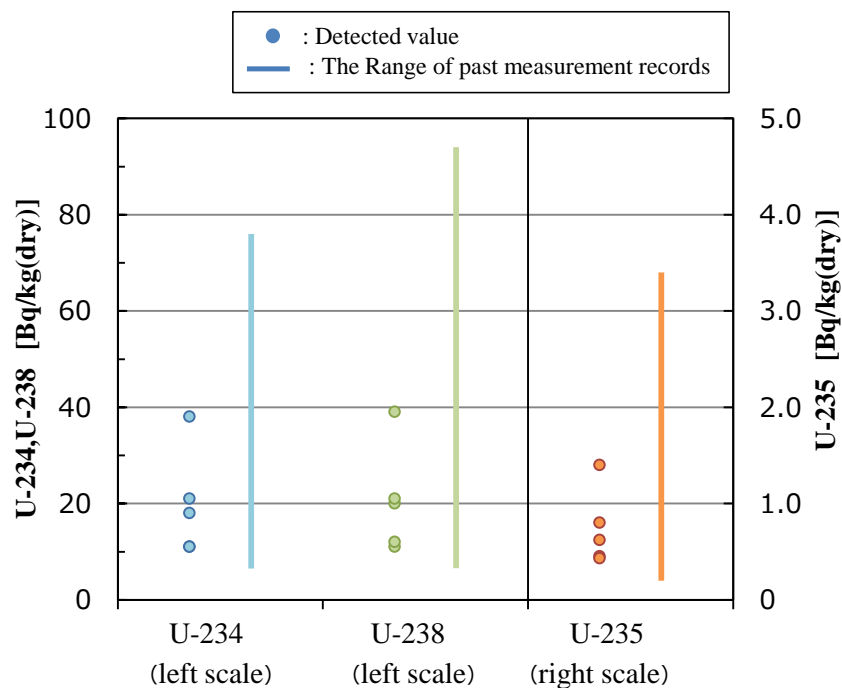


Figure 2.2-1 Detection of radionuclides in the Monitoring of Levels [Inland water sediments (river sediments)]

(2) Sea sediments

In the Monitoring of Levels in FY2015, seawater sediment samples were reported for 8 radionuclides (Ac-228, Be-7, Bi-214, K-40, Cs-134, Cs-137, I-131 and Sr-90) as shown in Table 2.2-2.

A comparison with the results of the Monitoring of Levels for the last twenty years (excluding data from March 11, 2011, to March 10, 2012) revealed that detected values for all these radionuclides were within the past measurement trends (see Figure 2.2-2).

Table 2.2-2 Detection of radionuclides in the Monitoring of Levels
[Sea sediments]

Nuclides		Number of reported data	Number of detections	Range of measured values [Bq/kg(dry)]			The range of past measurement records [Bq/kg(dry)](*1)		
Naturally occurring radionuclides	Ac-228	1	1	25	-	25	20	-	53
	Be-7	4	1	ND	-	6.2	ND	-	13
	Bi-214	1	1	17	-	17	4.8	-	31
	K-40	15	15	99	-	750	33	-	720
Artificial radionuclides	Cs-134	15	4	ND	-	3.0	ND	-	35
	Cs-137	15	10	ND	-	12	ND	-	76
	I-131	8	0	ND	-	ND	ND	-	ND
	Sr-90	15	0	ND	-	ND	ND	-	0.46

ND = Not detectable

(*1) Results of the Monitoring of Environmental Radioactivity Levels from FY1995 to FY2014 (excluding data from March 11, 2011 to March 10, 2012)

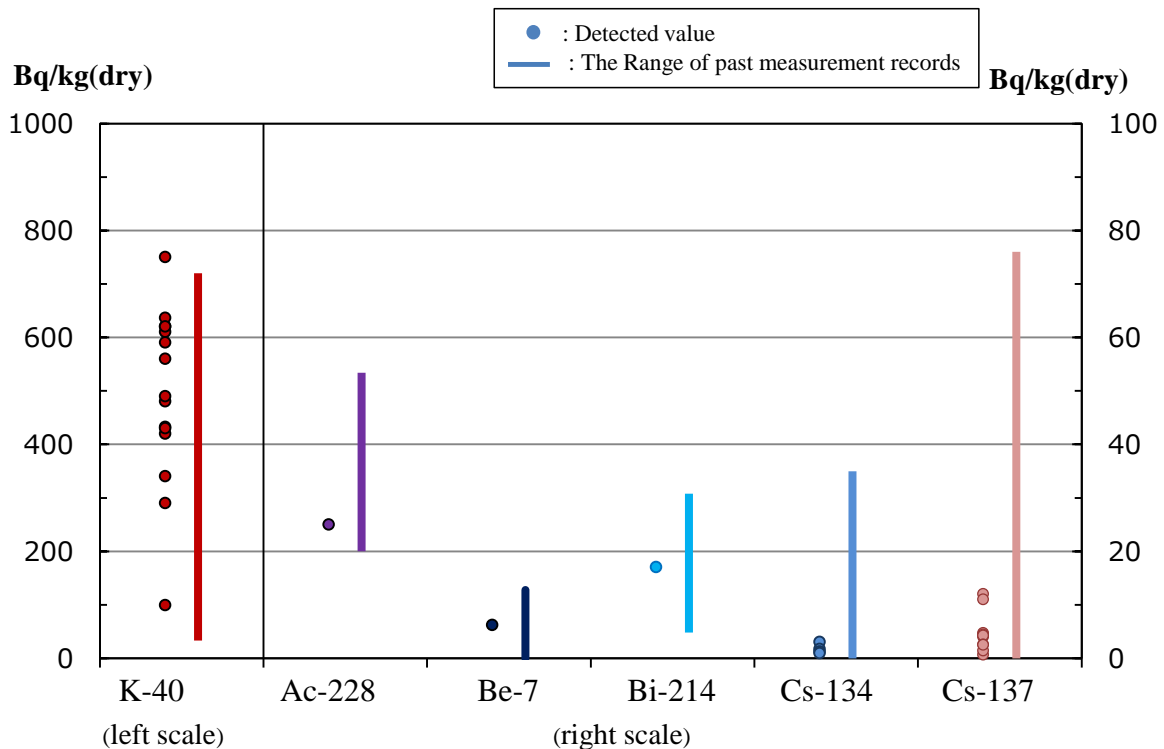


Figure 2.2-2 Detection of radionuclides in the Monitoring of Levels [Sea sediments]