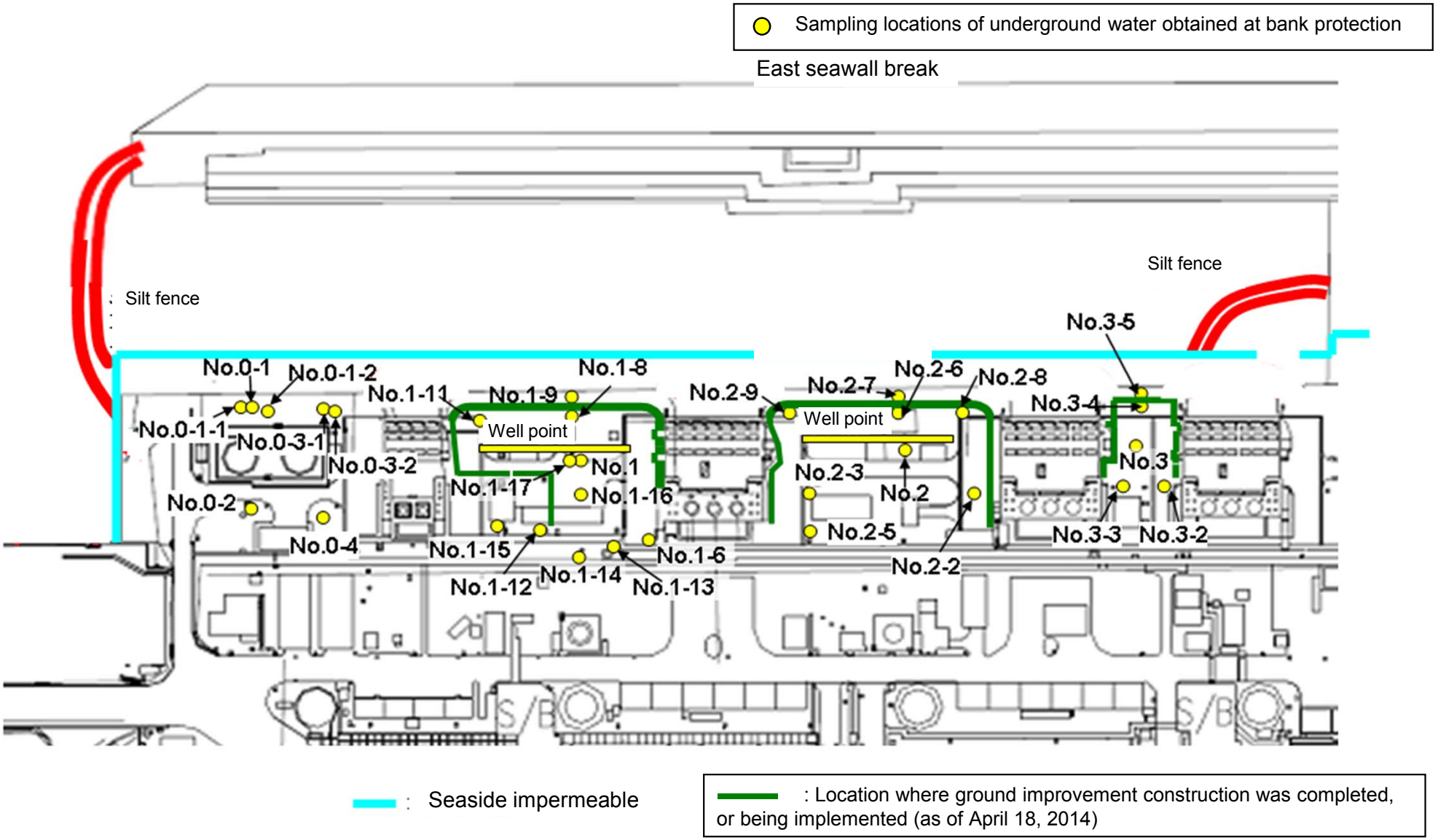
<Reference>
December 22, 2014
Tokyo Electric Power Company

Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (Sampling Locations of Underground Water Obtained at Bank Protection)



Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (1/2)
Underground Water Obtained at Bank Protection

Unit: Bq/L (exclude chloride)

	Underground water observation hole No.0-1	Underground water observation hole No.0-1-2	Underground water observation hole No.0-2	Underground water observation hole No.0-3-1	Underground water observation hole No.0-3-2	Underground water observation hole No.0-4	Underground water observation hole No.1	Underground water observation hole No.1-6	Underground water observation hole No.1-8	Underground water observation hole No.1-9 (note)	Underground water observation hole No.1-11	Underground water observation hole No.1-12	Underground water observation hole No.1-14	Underground water observation hole No.1-16	Underground water observation hole No.1-17
Date of sampling															
Time of sampling															
Chloride (unit: ppm)															
Cs-134 (Approx. 2 years)															
Cs-137 (Approx.30 years)															
The other γ: Sb-125 (Approx. 3 years)															
The other γ															
The other γ															
The other γ															
Gross β															
H-3 (Approx. 12 years)															
Sr-90（Approx. 29 years）															

	Groundwater pumped up from the well point (between Unit 1 and 2)	Underground water observation hole No.2	Underground water observation hole No.2-2	Underground water observation hole No.2-3	Underground water observation hole No.2-5 (note)	Underground water observation hole No.2-6	Underground water observation hole No.2-7	Underground water observation hole No.2-8	Groundwater pumped up from the well point (between Unit 2 and 3)	Underground water observation hole No.3	Underground water observation hole No.3-2	Underground water observation hole No.3-3	Underground water observation hole No.3-4	Underground water observation hole No.3-5(note)
Date of sampling		December 17, 2014	December 17, 2014	December 17, 2014			December 19, 2014	December 17, 2014	December 17, 2014	December 17, 2014	December 17, 2014	December 17, 2014	December 17, 2014	December 17, 2014
Time of sampling		9:45 AM	11:32 AM	10:15 AM			8:52 AM	11:05 AM	10:00 AM	9:00 AM	9:55 AM	10:20 AM	9:15 AM	8:30 AM
Chloride (unit: ppm)		—	—	—			700	—	—	—	—	—	—	600
Cs-134 (Approx. 2 years)		ND(0.35)	4.3	ND(0.36)			ND(0.33)	ND(0.33)	ND(0.44)	0.84	8.0	45	3.7	—
Cs-137 (Approx.30 years)		0.71	9.2	0.62			0.85	ND(0.44)	0.55	2.7	32	150	11	—
The other γ: Sb-125 (Approx. 3 years)		ND	ND	ND			ND	ND	ND	1.2	ND	ND	ND	—
The other γ														
The other γ														
The other γ														
Gross β		120	340	760			760	3,000	38,000	ND(21)	2,500	2,800	ND(21)	25
H-3 (Approx. 12 years)		590	360	870			840	780	2,800	ND(100)	2,400	1,600	ND(100)	ND(100)
Sr-90（Approx. 29 years）		—	—	—			—	—	—	—	—	—	—	—

* Data announced this time is provided in a thick-frame. The other data was announced on December 18 and 20, 2014.
* "ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses, except "the other γ".
* "-" indicates that the measurement was out of range.
(Note) As for No. 1-9, 2-5, and 3-5, γ was not measured because they are samlpled by sampler. Gross β were measured after filtation for references.

Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (2/2)
Underground Water Obtained at Bank Protection

Unit: Bq/L (exclude chloride)

	Underground water observation hole No.0-1*	Underground water observation hole No.0-1-2	Underground water observation hole No.0-2	Underground water observation hole No.0-3-1	Underground water observation hole No.0-3-2	Underground water observation hole No.0-4	Underground water observation hole No.1	Underground water observation hole No.1-6	Underground water observation hole No.1-8	Underground water observation hole No.1-9 (note)	Underground water observation hole No.1-11	Underground water observation hole No.1-12	Underground water observation hole No.1-14	Underground water observation hole No.1-16	Underground water observation hole No.1-17
Date of sampling	December 21, 2014	December 21, 2014	December 21, 2014	December 21, 2014		December 21, 2014				December 21, 2014					
Time of sampling	10:40 AM	9:53 AM	9:20 AM	9:38 AM		8:46 AM				7:21 AM					
Chloride (unit: ppm)	–	–	–	–		–				20					
Cs-134 (Approx. 2 years)	–	ND(0.41)	ND(0.34)	ND(0.37)		ND(0.36)				–					
Cs-137 (Approx.30 years)	–	ND(0.57)	ND(0.42)	ND(0.54)		ND(0.52)				–					
The other γ															
Gross β	190	ND(19)	19	ND(19)		ND(19)				ND(19)					
H-3 (Approx. 12 years)	Under analysis	Under analysis	Under analysis	Under analysis		Under analysis				Under analysis					
Sr-90（Approx. 29 years）	–	–	–	–		–				–					

	Groundwater pumped up from the well point (between Unit 1 and 2)	Underground water observation hole No.2	Underground water observation hole No.2-2	Underground water observation hole No.2-3	Underground water observation hole No.2-5 (note)	Underground water observation hole No.2-6**	Underground water observation hole No.2-7	Underground water observation hole No.2-8	Groundwater pumped up from the well point (between Unit 2 and 3)	Underground water observation hole No.3*	Underground water observation hole No.3-2	Underground water observation hole No.3-3	Underground water observation hole No.3-4	Underground water observation hole No.3-5(note)
Date of sampling		December 21, 2014	December 21, 2014	December 21, 2014			December 21, 2014	December 21, 2014	December 21, 2014					
Time of sampling		9:03 AM	11:12 AM	9:42 AM			10:03 AM	10:40 AM	10:00 AM					
Chloride (unit: ppm)		–	–	–			600	–	–					
Cs-134 (Approx. 2 years)		ND(0.43)	2.6	ND(0.35)			ND(0.41)	ND(0.38)	ND(0.38)					
Cs-137 (Approx.30 years)		1.5	11	ND(0.46)			0.67	ND(0.47)	ND(0.57)					
The other γ														
Gross β		76	310	390			780	3,300	11,000					
H-3 (Approx. 12 years)		Under analysis	Under analysis	Under analysis			Under analysis	Under analysis	Under analysis					
Sr-90（Approx. 29 years）		–	–	–			–	–	–					

* "ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses, except "the other γ".
* "-" indicates that the measurement was out of range.
(Note) As for No. 1-9, 2-5, and 3-5, γ was not measured because they are samlpled by sampler. Gross β were measured after filtation for references.
*γ was not measured because the water was highly turbid. (Gross β were measured after filtration as references.)

<Reference> The Highest Dose Until the Previous Measurement (Groundwater Obtained at Bank Protection)

Unit: Bq/L

	Groundwater observation hole No.0-1	Groundwater observation hole No.0-1-1	Groundwater observation hole No.0-1-2	Groundwater observation hole No.0-2	Groundwater observation hole No.0-3-1	Groundwater observation hole No.0-3-2	Groundwater observation hole No.0-4	Groundwater observation hole No.1	Groundwater observation hole No.1-1*	Groundwater observation hole No.1-2*	Groundwater observation hole No.1-3*	Groundwater observation hole No.1-4*	Groundwater observation hole No.1-5*	Groundwater observation hole No.1-6
Cs-134 (Approx. 2 years)	29 〈5/25〉	ND	0.61 〈3/2〉	0.61 〔10/13〕	0.64 〈4/6〉	1.3 〈9/25〉	0.70 〈6/29〉	13 〔8/29〕	1.9 〔7/8〕	11,000 〔7/9〕	10 〔9/2〕	1.5 〔7/8〕	310 〔8/5〕	67,000 〈10/17〉
Cs-137 (Approx.30 years)	78 〈5/25〉	ND	1.5 〈3/2〉	2.2 〈1/12〉	1.1 〈4/6〉	5.1 〈9/25〉	1.6 〈6/29〉	31 〔8/29〕	3.6 〔7/8〕	22,000 〔7/9〕	24 〔9/2〕	3.6 〔7/8〕	650 〔8/5〕	200,000 〈10/16〉
The other γ: Ru-106 (Approx. 370 days)	ND	ND	ND	ND	ND	ND	ND	26 〔5/24〕	7.9 〔7/8〕	160 〔8/15〕	17 〔7/22〕〔8/8〕	3.1 〔8/8〕	ND	ND
The other γ: Mn-54 (Approx. 310 days)	ND	ND	ND	ND	ND	0.64 〈2/20〉	ND	ND	1.0 〔7/5〕	62 〔7/5〕	ND	ND	ND	700 〈10/13〉
The other γ: Co-60 (Approx. 5 years)	ND	ND	ND	ND	ND	ND	ND	0.50 〔7/19〕	ND	3.1 〔7/8〕	ND	ND	ND	3,600 〈10/13〉
The other γ: Sb-125 (Approx. 3 years)	ND	ND	ND	ND	ND	ND	ND	1.7 〔7/11〕	ND	250 〔7/15〕	1.4 〔7/12〕〔8/26〕	ND	12 〔8/8〕	34 〈5/19〉
Gross β	300 〔8/29〕〈5/18〉	21 〔12/7〕	24 〈6/22〉	87 〔10/13〕	ND	74 〈10/9〉	44 〈6/22〉	1,900 〔5/24〕	4,400 〔7/8〕	9,300,000 〔7/8〕	160,000 〔8/12〕〔8/15〕	380 〔8/19〕	56,000 〔8/5〕	7,800,000 〈10/13〉
H-3 (Approx. 12 years)	45,000 〔8/29〕	18,000 〔12/7〕	74,000 〔12/15〕〈1/19〉	6,800 〈2/16〉	ND	76,000 〈2/6〉	56,000 〈2/23〉	500,000 〔5/24〕〔6/7〕	630,000 〔7/8〕	430,000 〔9/16〕	290,000 〔7/12〕	98,000 〔7/11〕	72,000 〔8/15〕	110,000 *2 〈2/6〉
Sr-90(Approx. 29 years)	140 〔8/8〕	7.9 〔12/7〕	2.6 〔11/10〕	0.73 〔9/2〕	1.5 〔11/20〕	2.3 〔12/6〕	ND(0.83) 〔10/27〕	1,300 〔8/22〕	2,300 〔6/28〕	5,000,000 〔7/5〕	130,000 〔8/8〕	200 〔7/8〕	5,100 〔8/22〕	1,100,000 〈8/4〉〈10/2〉

Unit: Bq/L

	Groundwater observation hole No.1-8	Groundwater observation hole No.1-9	Groundwater observation hole No.1-10	Groundwater observation hole No.1-11	Groundwater observation hole No.1-12	Groundwater observation hole No.1-13	Groundwater observation hole No.1-14	Groundwater observation hole No.1-15	Groundwater observation hole No.1-16	Groundwater observation hole No.1-17	Groundwater pumped up from the well point (between Unit 1 and 2)	Groundwater observation hole No.2	Groundwater observation hole No.2-1*	Groundwater observation hole No.2-2
Cs-134 (Approx. 2 years)	47 〔11/25〕	170 〔9/3〕	－	1.1 〈1/13〉	74 〔10/21〕	37,000 〈2/13〉	130 〈10/18〉〈12/11〉	ND	30 〈7/28〉	1.4 〈7/7〉	920 〈11/13〉	0.88 〈2/26〉	0.66 〔9/1〕	15 〈2/12〉
Cs-137 (Approx.30 years)	110 〔11/25〕	380 〔9/3〕	－	3.4 〈4/28〉	170 〔10/21〕	93,000 〈2/13〉	430 〈12/11〉	0.88 〈7/10〉	86 〈7/28〉	3.0 〈9/29〉	3,000 〈11/13〉	2.5 〈2/26〉	1.1 〔8/29〕〔9/1〕	38 〈2/12〉
The other γ: Ru-106 (Approx. 370 days)	ND	ND	－	ND	5.4 〔10/28〕	ND	ND	ND	9.2 〔10/28〕	5.5 〈4/21〉〈5/1〉	25 〔9/2〕	ND	ND	ND
The other γ: Mn-54 (Approx. 310 days)	12 〈2/3〉	ND	－	ND	ND	ND	3.8 〈12/1〉	ND	11 〈8/25〉	ND	110 〈11/13〉	ND	ND	ND
The other γ: Co-60 (Approx. 5 years)	1.3 〈2/3〉	ND	－	ND	0.51 〔10/24〕	ND	0.44 〈5/29〉	ND	0.9 〔11/7〕	0.61 〔11/25〕	3.0 〈11/24〉	ND	ND	ND
The other γ: Sb-125 (Approx. 3 years)	ND	ND	－	ND	61 〔10/21〕	ND	ND	ND	24 〈6/16〉	2.1 〔11/25〕	ND	ND	ND	ND
Gross β	59,000 〈2/3〉	2,100 *2 〔11/17〕	78 *2 〈1/27〉	2,300 〔12/26〕	1,100 〈5/5〉	260,000 〈2/12〉〈2/13〉	31,000 〈11/20〉〈11/24〉〈12/1〉	110 〈7/10〉	3,100,000 〈1/20〉〈1/30〉〈2/3〉	1,200,000 〈10/9〉	3,200,000 〈11/13〉	1,700 〔7/8〕	380 〔7/29〕	600 〈4/16〉
H-3 (Approx. 12 years)	71,000 〈12/1〉	860 *2 〔11/14〕	270,000 *2 〈1/27〉	85,000 〔9/13〕	440,000 〔10/31〕	88,000 〈2/12〉	23,000 〈2/13〉	74,000 〈7/10〉	43,000 〔9/26〕	160,000 〈10/13〉〈10/16〉〈11/3〉	460,000 〔8/19〕	1,000 〈2/23〉	440 〔8/26〕	660 〈1/8〉
Sr-90(Approx. 29 years)	35,000 〈2/17〉	300 〔10/3〕	—	170 〈8/4〉	290 〔10/21〕	160,000 〈2/12〉	28,000 〈10/2〉	Under analysis	2,700,000 〈2/13〉	990,000 〈10/2〉	—	54 〔5/31〕	5.9 〔7/25〕	320 〔12/25〕

Unit: Bq/L

	Groundwater observation hole No.2-3	Groundwater observation hole No.2-5	Groundwater observation hole No.2-6	Groundwater observation hole No.2-7	Groundwater observation hole No.2-8	Groundwater observation hole No.2-9	Groundwater pumped up from the well point (between Unit 2 and 3)	Groundwater observation hole No.3	Groundwater observation hole No.3-1*	Groundwater observation hole No.3-2	Groundwater observation hole No.3-3	Groundwater observation hole No.3-4	Groundwater observation hole No.3-5
Cs-134 (Approx. 2 years)	2.2 〈2/26〉	41 〈5/7〉	17 〈3/11〉	3.5 〈2/23〉	1.3 〈7/20〉	ND	2.2 〈9/7〉	3.5 〔7/25〕	1.2 〔7/25〕〔8/8〕	23 〈8/27〉	180 〈7/2〉	5.1 〈7/23〉	100 〈7/30〉
Cs-137 (Approx.30 years)	5.5 〈2/26〉	110 〈5/7〉	50 〈3/11〉	9.0 〈2/23〉	3.4 〈7/20〉	0.58 *2 〈2/11〉	5.7 〈9/7〉	5.9 〔8/8〕	2.6 〔8/1〕	68 〈9/3〉	500 〈7/2〉	16 〈8/27〉	310 〈7/30〉
The other γ: Ru-106 (Approx. 370 days)	ND	ND	ND	ND	ND	6.5 *2 〈2/11〉	ND	ND	ND	ND	ND	ND	－
The other γ: Mn-54 (Approx. 310 days)	0.29 〔12/6〕	0.95 〈6/4〉	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.54 〔10/30〕	－
The other γ: Co-60 (Approx. 5 years)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	－
The other γ: Sb-125 (Approx. 3 years)	ND	74 〈5/7〉	ND	ND	ND	ND	ND	1.6 〈1/1〉	ND	ND	ND	ND	－
Gross β	1,500 〔12/6〕〈1/8〉	150,000 〈2/12〉	3,200 〔12/5〕〈11/6〉	1,300 〈6/20〉	5,800 〈7/23〉	1,700 〈2/7〉	240,000 〔12/12〕	1,400 〔7/11〕	180 〔8/1〕	3,100 〈8/20〉〈8/28〉	8,900 〈7/2〉	46 〈8/13〉	510 〈7/16〉
H-3 (Approx. 12 years)	1,700 〔12/6〕	7,900 〈4/9〉	1,900 〈8/10〉	1,100 〈1/19〉	1,700 〈4/6〉〈8/6〉〈8/13〉	13,000 *2 〈2/7〉〈2/11〉	13,000 〈10/19〉〈10/26〉〈10/29〉	3,200 〔2012. 12/12〕	460 〔8/1〕	3,700 〈7/9〉	8,000 〈5/7〉	170 〔9/18〕	170 〈1/8〉
Sr-90(Approx. 29 years)	1,200 〔12/6〕	34,000 〈5/7〉	Under analysis	ND(1.4) 〔11/21〕	3,900 〈3/30〉	1,200 *2 〈2/11〉	－	8.3 〔2012. 12/12〕	4.4 〔7/23〕	2000 〈4/18〉	3,600 〈4/30〉	ND	200 〈5/28〉

● Since some samples are still under analysis, the highest dose of the Strontium-90 is among those previously announced.
*1 Analysis result of pumped water.
*2 The results are for reference, since the water was highly turbid. (γ and Gross β were measured after filtration.)

* "ND" indicates that the measurement result is below the detection limit.
* Date of sampling is provided in parentheses. [ ]: 2013, < >: 2014
* "*" is provided next to the name of the holes where the sampling could not be performed due to the chemical injection of ground improvement.
(Note) As for No. 1-9, 2-5, and 3-5, since September 17, γ was not measured because they are samlpled by sampler. Gross β were measured after filtation for reference.