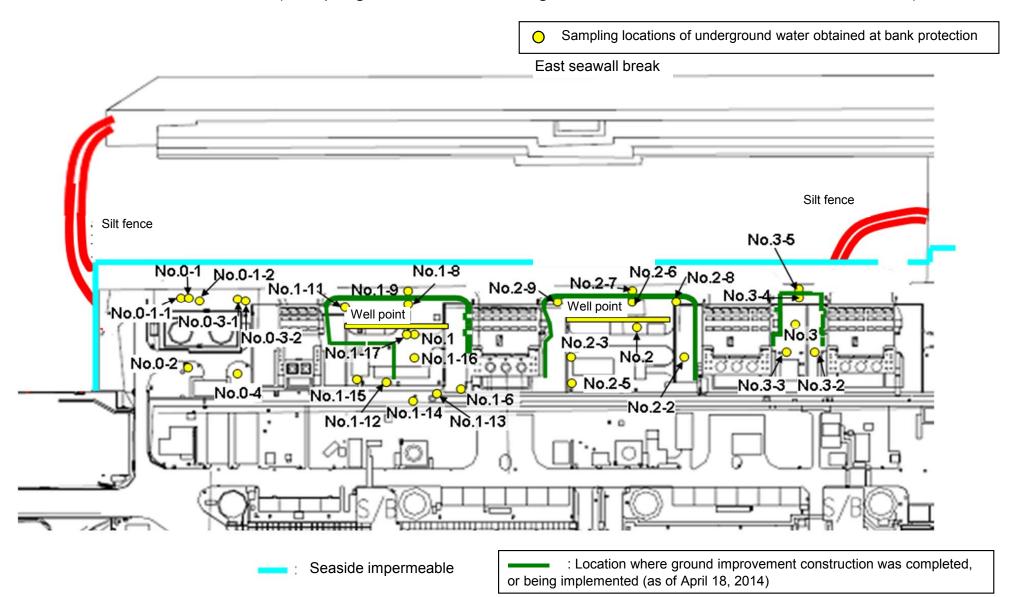
Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (Sampling Locations of Underground Water Obtained at Bank Protection)



## Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (1/4) Underground Water Obtained at Bank Protection

Unit: Bq/L (exclude chloride)

															01111. Bq/	L (exclude chilohui
		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	/	1	1 /	/	/	/	/	1	1	November 30, 2014	/	1	1	1 /	
	Time of sampling									/	7:07 AM			/		,
(	Chloride (unit: ppm)										22					/
Cs-	-134 (Approx. 2 years)										-					
Cs-	137 (Approx.30 years)										-					
The																
other y																
	Gross β										ND(18)					
H-	-3 (Approx. 12 years)				/						ND(100)		/			/
Sr-9	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		1 /	/	1	/	/	/	1	1	/	/	1	1	1 /	1
	Time of sampling									/						
(	Chloride (unit: ppm)															
Cs-	-134 (Approx. 2 years)															
Cs-	137 (Approx.30 years)															
The																
other y																
	Gross β	+/	<del>                                     </del>	/	/	/	/	/	<del>                                     </del>	<del>                                     </del>	+/		<del>                                     </del>	/	<del>                                     </del>	
H-	-3 (Approx. 12 years)	1/	1/	//	/	/		/	1/	1/	1/	/	/	1/	1/	1
	90 (Approx. 29 years)	1/	1/	<del> /</del>	<del> /</del>	<del> /</del>	/	/	1/	1/	1/	/	<del> /</del>	1/	1/	1

<sup>\*</sup> Data announced this time is provided in a thick-frame. The other data was announced on December 1, 2014.

(Note) As for No. 1-9, 2-5, and 3-5,  $\gamma$  was not measured because they are samlpled by sampler. Gross  $\beta$  were measured after filtation for references.

<sup>\* &</sup>quot;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 y".

<sup>\* &</sup>quot;-" indicates that the measurement was out of range.

# Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (2/4) Underground Water Obtained at Bank Protection

Unit: Bq/L (exclude chloride)

		T			T	T	1		T	T		T			PE (CAGIGGE GIT
	Underground wate observation hole No.0-1		r Underground water observation hole No.0-2							underground water observation hole No.1-9 (note)	Underground wate observation hole No.1-11		r Underground wate observation hole No.1-14		
Date of sampling	,	1	1	/	/		/	/	/	December 02, 2014		/	1	/	/
Time of sampling				/					/	6:50 AM	/				
Chloride (unit: ppm)										22					
Cs-134 (Approx. 2 years)										-					
Cs-137 (Approx.30 years)										_					/
The															
other y															
Gross β	1/									ND(18)					
H-3 (Approx. 12 years)	1/		1/				1/		1/	Under analysis			1/		1/
Sr-90 (Approx. 29 years)	/	/	/	/	/	/	/	/	/	Under analysis	/	/	/	/	/
	Groundwater pumped up from the well point (between Unit 1 and 2)		r Underground water observation hole No.2-2				er Underground wate observation hole No.2-7		Groundwater pumped up from the well point (between Unit 2 and 3)	Underground water observation hole No.3*	Underground wate observation hole No.3-2				r
Date of sampling	,	/	/	,	/	December 02, 2014	,	/	/	/		/	/	/	7
Time of sampling						9:36 AM					/				
Chloride (unit: ppm)						-									
Cs-134 (Approx. 2 years)						ND(0.39)									
Cs-137 (Approx.30 years)						ND(0.49)									
The															
other y															
											/				1
Gross β						1,000							1/		
H-3 (Approx. 12 years)						分析中									

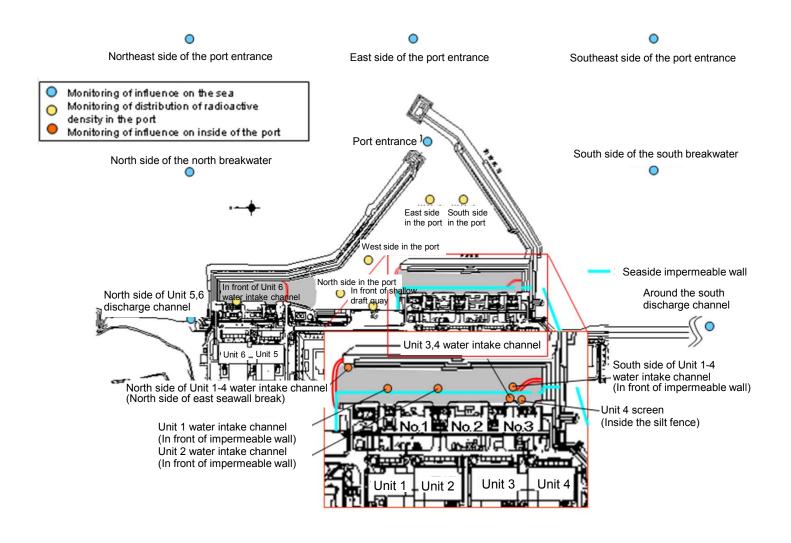
Sr-90 (Approx. 29 years)

(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.

<sup>\* &</sup>quot;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 y".

<sup>\* &</sup>quot;-" indicates that the measurement was out of range.

## Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (Sampling Locations of Seawater)



### Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (3/4) Seawater

Unit: Bq/L

	1F, North side of Unit 5,6 discharge channel	1F, In front of Unit 6 water intake channel	1F, In front of shallow draft quay	1F, North side of Unit 1-4 water intake channel (north side of East Seawall Break)	1F, In front of Unit 1 water intake channel (in front of impermeable wall)	1F, In front of Unit 2 water intake channel (in front of impermeable wall)	1F, In front of Unit 3 & 4 water intake channel	1F, Unit 4 Screen	1F, South side of Unit 1-4 water intake channel (in front of impermeable wall)	1F, Around the south discharge channel		WHO Guidelines for drinking- water quality
Date of Sampling		/	/	/		/	1	/	1 /	/		
Time of sampling				/								
Cs-134(Approx. 2 years)											60	10
Cs-137(Approx.30 years)				/							90	10
Gross β				/								
H-3 (Approx. 12 years)											60,000	10,000
Sr-90 (Approx. 29 years)						/					30	10

Unit: Bq/L

	1F, Port entrance	1F, East side in the port	1F, West side in the port	1F, North side in the port	1F, South side in the port	1F, North side of the north breakwater	1F, Port entrance (north-east side)	1F, Port entrance (east side)	1F, Port entrance (south-east side)	1F, South side of the south breakwater	Density Limit Specified by the Reactor Regulation *	WHO Guidelines for drinking- water quality
Date of Sampling	/				/	November 29, 2014	November 29, 2014	November 29, 2014	November 29, 2014	November 29, 2014		
Time of sampling						7:38 AM	7:41 AM	7:48 AM	7:51 AM	7:56 AM		
Cs-134(Approx. 2 years)						ND(0.59)	ND(0.70)	ND(0.76)	ND(0.70)	ND(0.69)	60	10
Cs-137(Approx.30 years)						ND(0.54)	ND(0.62)	ND(0.67)	ND(0.59)	ND(0.70)	90	10
Gross β		/	/	/		ND(17)	ND(17)	ND(17)	ND(17)	ND(17)		
H-3 (Approx. 12 years)						ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	60,000	10,000
Sr-90 (Approx. 29 years)	/	/	/	/	/	_	_	-	_	_	30	10

<sup>\*</sup> Data announced this time is provided in a thick-frame. The other data was announced on December 1, 2014.

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses.

<sup>\* &</sup>quot;-" indicates that the measurement was out of range.

<sup>\*</sup> Density Limit Specified by the Rule for the Installation, Operation, etc. of Commercial Nuclear Power Reactors (the density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2 [the amount is converted from Bq/cm³ to Bq/L]).

### Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (4/4) Seawater

Unit: Bq/L

	1F, North side of Unit 5,6 discharge channel	1F, In front of Unit 6 water intake channel	1F, In front of shallow draft quay	1F, North side of Unit 1-4 water intake channel (north side of East Seawall Break)	1F, In front of Unit 1 water intake channel (in front of impermeable wall)	1F, In front of Unit 2 water intake channel (in front of impermeable wall)	1F, In front of Unit 3 & 4 water intake channel	1F, Unit 4 Screen	1F, South side of Unit 1-4 water intake channel (in front of impermeable wall)	1F, Around the south discharge channel	Density Limit Specified by the Reactor Regulation *	WHO Guidelines for drinking- water quality
Date of Sampling		/	/	/	/	/	1 /	/	1 /	December 02, 2014		
Time of sampling						/				5:45 AM		
Cs-134(Approx. 2 years)				/		/			/	ND(0.74)	60	10
Cs-137(Approx.30 years)				/		/				ND(0.65)	90	10
Gross β			/	/	/					14		
H-3 (Approx. 12 years)										Under analysis	60,000	10,000
Sr-90 (Approx. 29 years)	/	/		/		/	/			-	30	10

Unit: Bq/L

	1F, Port entrance	1F, East side in the port	1F, West side in the port	1F, North side in the port	1F, South side in the port	1F, North side of the north breakwater	1F, Port entrance (north-east side)	1F, Port entrance (east side)	1F, Port entrance (south-east side)	the south	Density Limit Specified by the Reactor Regulation *	WHO Guidelines for drinking- water quality
Date of Sampling		/		/	/			/	1 /			
Time of sampling									/			
Cs-134(Approx. 2 years)											60	10
Cs-137(Approx.30 years)											90	10
Gross β			/		/	/				/		
H-3 (Approx. 12 years)											60,000	10,000
Sr-90 (Approx. 29 years)	/	/	/	/	/	/	/	/	/	/	30	10

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses.

<sup>\* &</sup>quot;-" indicates that the measurement was out of range.

<sup>\*</sup> Density Limit Specified by the Rule for the Installation, Operation, etc. of Commercial Nuclear Power Reactors (the density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2 [the amount is converted from Bq/cm³ to Bq/L]).

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

u	Init:	Bo	1/

		observa	ndwater ation hole o.0-1	observa	dwater tion hole 0-1-1	observa	ndwater ation hole 0-1-2	observa	ndwater ation hole .0-2	observa	ndwater ation hole .0-3-1	observa	dwater tion hole 0-3-2	observa	dwater tion hole .0-4	Ground observat No	ion hole	Ground observat No.	ion hole	Ground observat No.1	ion hole	Ground observati No.	ion hole		dwater tion hole 1-4*		dwater tion hole .1-5	Ground observati No.1	ion hole
C	s-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>
С	s-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>
	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	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>
other y	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>
	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>
5	Gr-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/

Groundwater pumped up from Groundwater Groundwater observation hole the well point No.1-8 No.2-2 No.1-9 No.1-10 No.1-11 No.1-12 No.1-13 No.1-14 No.1-15 No.1-16 No.1-17 (between Unit 1 No.2 No.2-1 Cs-134 (Approx. 2 years) 170 [9/3] 1.1 <1/13> 74 [10/21] 37,000 <2/13> 130 <10/18> ND 30 <7/28> 1.4 <7/7> 920 <11/13> 0.88 <2/26> 0.66 [9/1] 15 <2/12> [8/29] Cs-137 (Approx.30 years) [9/3] 380 3.4 <4/28> [10/21] <7/10> <7/28> <11/13> <2/26> <2/12> 170 93,000 <2/13> 390 <10/20> 0.88 86 3.0 <9/29> 3,000 2.5 1.1 38 <4/21> Ru-106 (Approx. 370 days 5.4 [10/28] ND ND 9.2 [10/28] 5.5 25 [9/2] ND ND Mn-54 (Approx. 310 days) ND ND ND ND 3.8 <12/1> ND 11 <8/25> ND 110 <11/13 ND ND ND The othery Co-60 (Approx. 5 years) ND ND [10/24] ND 0.44 <5/29> 0.9 [11/7] 0.61 [11/25] 3.0 <11/24> ND ND 0.51 Sb-125 (Approx. 3 years) ND ND 61 [10/21] ND ND ND 24 <6/16> 2 1 [11/25] ND ND ND ND <11/20> (1/20) 2.100 78 \* 2 Gross B <1/27> 2.300 [12/26] 1,100 <5/5> 260,000 31,000 <7/10> 3,100,000 <1/30> ,200,000 <10/9> 3,200,000 <11/13> 1,700 [7/8] 380 [7/29] 600 <4/16> <11/24> 110 <2/13> <12/1> <2/3> <10/13> 270,000 H-3 (Approx. 12 years) 860 [11/14] <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 <10/16> 460.000 [8/19] 1.000 <2/23> 440 [8/26] 660 <1/8> <11/3> Under Sr-90(Approx. 29 years) 300 [10/3] 170 <8/4> 290 [10/21] 160,000 <2/12> 28,000 <10/2> 2,700,000 <2/13> 990,000 <10/2> 54 [5/31] 5.9 [7/25] 320 [12/25]

																											Unit: Bq/L
		observa	ndwater ation hole 0.2-3	observa	dwater tion hole .2-5	Ground observat No.	ion hole	observa	ndwater ation hole 0.2-7	observa	ndwater ation hole 0.2-8	observa	dwater tion hole .2-9	the we	dwater up from ly point on Unit 2 d 3)	observa	ndwater ation hole lo.3	observa	ndwater ation hole b.3-1	observa	ndwater ation hole 0.3-2	observa	ndwater ation hole o.3-3	observa	ndwater ation hole 5.3-4	observa	ndwater ition hole i.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/ <b>2</b> >	16	<8/27>	310	<7/30>
	Ru-106 (Approx. 370 days)	ND		ND		ND		ND		ND		6.5*2	<2/11>	ND		ND		ND		ND		ND		ND		-	
The	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]	-	
other	Co-60 (Approx. 5 years)	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		-	
	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/ <b>2</b> >	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>	* 2 13,000	<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>

<sup>•</sup> Since some samples are still under analysis, the highest dose of the Strontium-90 is among those previously announced.

<sup>\*1</sup> Analysis result of pumped water.

<sup>\*2</sup> The results are for reference, since the water was highly turbid. (γ and Gross β were measured after filtration.)

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

<sup>\*</sup> Date of sampling is provided in parentheses. []: 2013, <>: 2014

<sup>\* &</sup>quot;\*\*" is provided next to the name of the holes where the sampling could not be performed due to the chemical injection of ground improvement.

<sup>(</sup>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.

### <Reference> The Highest Dose Until the Previous Measurement\* (Seawater)

Unit: Bq/L

		side of Unit arge channel	,	ont of Unit 6 ake channel		nt of shallow t quay	4 water in (north s	side of Unit 1- take channel ide of East all Break)	water int (in front of	ont of Unit 1 take channel impermeable wall)	water int (in front of	ont of Unit 2 ake channel impermeable wall)	intake char	en the water nnel of Unit 3 Unit 4		t 4 screen e silt fense)	4 water in (in front of	side of Unit 1- take channel impermeable vall)		and sounth ge channel
Cs-134(Approx. 2 years)	1.8	[6/21]	2.8	[12/2]	5.3	[8/5]	32	[10/11]	12	<6/23>	12	<9/8>	50	<9/22>	62	[9/16]	24	<11/3>	1.8	<6/9>
Cs-137(Approx.30 years)	4.5	<3/17>	5.8	[12/2]	8.6	[8/5]	73	[10/11]	33	<5/12>	40	<9/8>	150	<9/22>	140	[9/16] <9/22>	64	<11/3>	4.9	<6/9>
Gross β	17	<1/6>	46	[8/19]	40	[7/3]	320	[8/12]	140	<5/5> <7/14> <8/18> <9/1> <11/17>	170	<11/ <b>24</b> >	660	<6/9>	680	<9/22>	380	⟨3/10⟩	16	<6/9><8/4>
H-3 (Approx. 12 years)	8.7	<5/1 <b>2</b> >	24	[8/19]	340	[6/26]	600	[8/18]	460	<8/18>	350	<8/18>	2,500	<6/23>	2,200	<7/21>	810	<8/4> <11/3>	5.6	<5/19>
Sr-90 (Approx. 29 years)	4.7	[6/26]	-		7.2	[6/26]	220	[8/19]	-		-		660	<6/9>	470	<8/4>	-		0.29	[6/26]

Unit: Bg/L

		East side he port		Vest side he port		orth side ne port		outh side he port	1F, Cent	ter in the port	1F, No of the north	rth side i breakwater		heast side rt entrance		ast side ort entrance		east side rt entrance		outh side h breakwater
Cs-134(Approx. 2 years)	3.3	[12/24]	3.3	[10/17]	4.4	[12/24]	5.0	[12/2]	3.5	[10/17]	ND		ND		ND		ND		ND	
Cs-137(Approx.30 years)	7.3	[10/11]	9.0	[10/17]	10.0	[12/24]	8.4	[12/2]	7.8	[10/17]	ND		0.7	<10/8>	1.6	[10/18]	ND		ND	
Gross β	69	[8/19]	74	[8/19]	60	[7/4]	69	[8/19]	79	[8/19]	ND		ND		ND		ND		ND	
H-3 (Approx. 12 years)	68	[8/19]	67	[8/19]	59	[8/19]	52	[8/19]	60	[8/19]	4.7	[8/14]	1.8	<10/1>	6.4	[10/8]	1.8	<b>&lt;5/29&gt;</b>	2.8	<4/23>
Sr-90 (Approx. 29 years)	49	[8/19]	_		_		_		_		_		_		_		_		_	

<sup>\*</sup> The highest result announced in "Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection" or the other handouts is provided.

As for "1F, North side of Unit 1-4 water intake channel", the data is obtained since January 14, 2013. For the other locations, the data is obtained since June 14.

#### [Reference] Standard values

Unit: Bq/L

	Cs-134	Cs-137	H-3	Sr-90
Density Limit Specified by the Rule for the Installation, Operation, etc. of Commercial Nuclear Power Reactors (the density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2)	60	90	60,000	30
WHO Guidelines for drinking-water quality	10	10	10,000	10

<sup>•</sup> Since some samples are still under analysis, the highest dose of the Strontium-90 is among those previously announced.

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

<sup>\*</sup> Date of sampling is provided in parentheses. []: 2013, <>: 2014

 $<sup>^{\</sup>star}$  "-" indicates that the measurement was out of range.