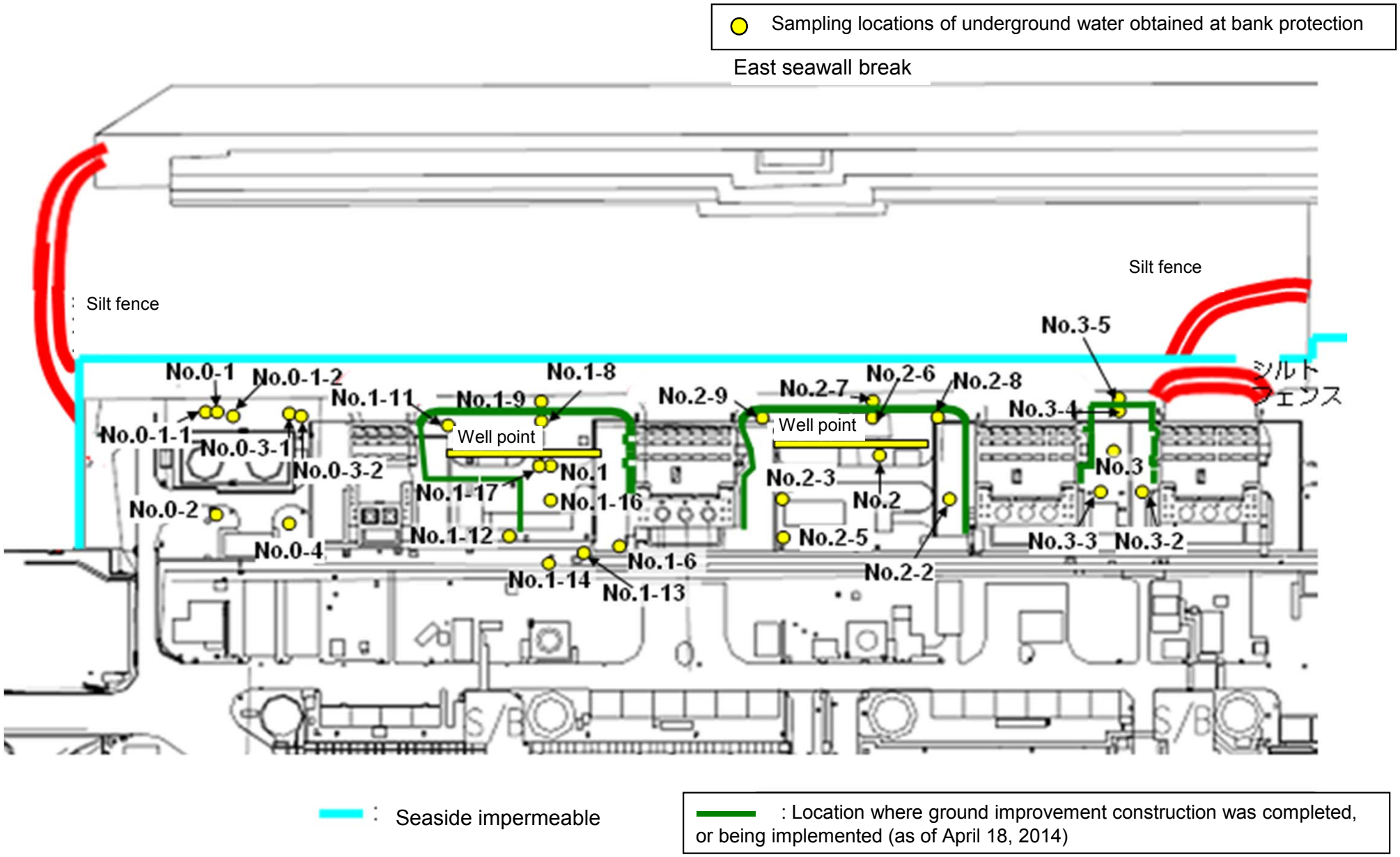
<Reference>
August 4, 2014
Tokyo Electric Power Company

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	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										Jul 31, 2014					
Time of sampling										6:03 AM					
Chloride (unit: ppm)										27					
Cs-134 (Approx. 2 years)										1.8					
Cs-137 (Approx.30 years)										7.5					
The other γ															
The other γ															
The other γ															
The other γ															
Gross β										21					
H-3 (Approx. 12 years)										ND(110)					
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	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
Date of sampling		Jul 30, 2014	Jul 30, 2014	Jul 30, 2014		Jul 31, 2014	Aug 1, 2014	Jul 30, 2014	Jul 30, 2014	Jul 30, 2014	Jul 30, 2014	Jul 30, 2014	Jul 30, 2014	Jul 30, 2014
Time of sampling		9:47 AM	11:24 AM	9:19 AM		10:16 AM	9:28 AM	10:35 AM	10:00 AM	10:00 AM	11:10 AM	11:35 AM	10:30 AM	10:30 AM
Chloride (unit: ppm)		-	-	-		-	900	-	-	-	-	-	-	1,100
Cs-134 (Approx. 2 years)		ND(0.36)	8.2	ND(0.43)		ND(0.40)	0.53	ND(0.39)	ND(0.62)	0.99	18	96	4.0	100
Cs-137 (Approx.30 years)		0.84	24	0.63		0.77	1.5	ND(0.49)	1.7	2.5	54	270	13	310
The other γ														
The other γ														
The other γ														
The other γ														
Gross β		170	390	760		2,000	950	5,200	110,000	ND(19)	2,800	6,100	ND(19)	370
H-3 (Approx. 12 years)		750	480	920		850	690	1,600	7,500*1	ND(110)	3,300	3,700	ND(110)	ND(110)
Sr-90 (Approx. 29 years)		-	-	-		-	-	-	-	-	-	-	-	-

* Data announced this time is provided in a thick-frame. The other data was announced on June 31, August 1, and 2.
* "ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses.
* "-" indicates that the measurement was out of range.
* The results obtained in the observation hole No.2-2 are for a reference, since the water was highly turbid. (γ and Gross β will be measured after filtration. If filtration takes a long time, γ will not be measured.)
*1 The highest measurement value (compared to the previous values provided in the handouts published in 'Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection')

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	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	Aug 3, 2014	41,854	Aug 3, 2014	Aug 3, 2014		Aug 3, 2014				Aug 3, 2014					
Time of sampling	11:52 AM	11:06 AM	10:32 AM	10:50 AM		9:57 AM				5:20 AM					
Chloride (unit: ppm)	-	-	-	-		-				25					
Cs-134 (Approx. 2 years)	22	ND(0.38)	ND(0.39)	ND(0.44)		ND(0.39)				3.8					
Cs-137 (Approx.30 years)	65	ND(0.45)	ND(0.44)	0.77		ND(0.46)				11					
The other γ															
The other γ															
The other γ															
The other γ															
Gross β	180	ND(18)	ND(18)	ND(18)		ND(18)				ND(18)					
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	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
Date of sampling		Aug 3, 2014	Aug 3, 2014	Aug 3, 2014			Aug 3, 2014	Aug 3, 2014	Aug 3, 2014					
Time of sampling		9:56 AM	10:58 AM	9:29 AM			10:16 AM	10:35 AM	10:00 AM					
Chloride (unit: ppm)		-	-	-			750	-	-					
Cs-134 (Approx. 2 years)		ND(0.35)	7.9	ND(0.45)			0.56	ND(0.37)	ND(1.3)					
Cs-137 (Approx.30 years)		ND(0.44)	23	ND(0.53)			1.5	0.49	1.7					
The other γ														
The other γ														
The other γ														
The other γ														
Gross β		160	460	760			890	5,700	110,000					
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.
* "-" indicates that the measurement was out of range.
* The results obtained in the observation hole No.0-1 are for a reference, since the water was highly turbid. (γ and Gross β will be measured after filtration. If filtration takes a long time, γ will not be measured.)

<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>	0.82 <1/14>	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〕	9,600 <7/28>
Cs-137 (Approx.30 years)	78 <5/25>	ND	1.5 <3/2>	2.2 <1/12>	1.1 <4/6>	2.1 <1/14>	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〕	28,000 <7/28>
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	320 <2/13> <2/17>
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	830 <2/20>
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	67*1 〔12/11〕	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〕	1,200,000 <7/21>
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〕	*2 110,000 <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〕	590,000 <2/13>

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>	*2 88 <2/27>	ND *1	30 <7/28>	1.4 <7/7>	110 〔9/23〕	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>	*2 230 <2/27>	0.88 <7/10>	86 <7/28>	2.8 <4/28>	250 〔9/23〕	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	0.84 <7/28>	ND	1.3 <7/30>	ND	8.5 <4/28>	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〕	0.61 <6/9>	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 2,100 〔11/17〕	*2 78 <1/27>	2,300 〔12/26〕	1,100 <5/5>	260,000 <2/12> <2/13>	13,000 <7/31>	110 <7/10>	3,100,000 <1/20> <1/30> <2/3>	150,000 <7/28>	1,900,000 〔9/23〕	1,700 〔7/8〕	380 〔7/29〕	600 <4/16>
H-3 (Approx. 12 years)	33,000 <6/2>	*2 860 〔11/14〕	*2 270,000 <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〕	32,000 <1/20>	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〕	—	22 <1/9>	290 〔10/21〕	160,000 <2/12>	770 <3/10>	Under analysis	2,700,000 <2/13>	620 <3/10>	—	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	2.0 <4/23>	3.5 〔7/25〕	1.2 〔7/25〕〔8/8〕	18 <7/9>	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>	*2 3.4 <7/20>	0.58 <2/11>	4.7 <4/23>	5.9 〔8/8〕	2.6 〔8/1〕	54 <7/9>	500 <7/2>	14 <7/23>	310 <7/30>
The other γ: Ru-106 (Approx. 370 days)	ND	ND	ND	ND	*2 ND	6.5 <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〕	1,300 <6/20>	*2 5,800 <7/23>	1,700 <2/7>	240,000 〔12/12〕	1,400 〔7/11〕	*2 180 〔8/1〕	3,000 <7/23>	8900 <7/2>	35 <7/23>	510 <7/16>
H-3 (Approx. 12 years)	1,700 〔12/6〕	7,900 <4/9>	1,200 〔11/24〕〔11/27〕	1,100 <1/19>	*2 1,700 <4/6> <6/8>	13,000 <2/7> <2/11>	7,300 <7/27>	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〕	Under analysis	Under analysis	ND(1.4) 〔11/21〕	3,900 <3/30>	1,200 <2/11>	-	8.3 〔2012 12/12〕	4.4 〔7/23〕	Under analysis	-	ND	-

● 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 a 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.