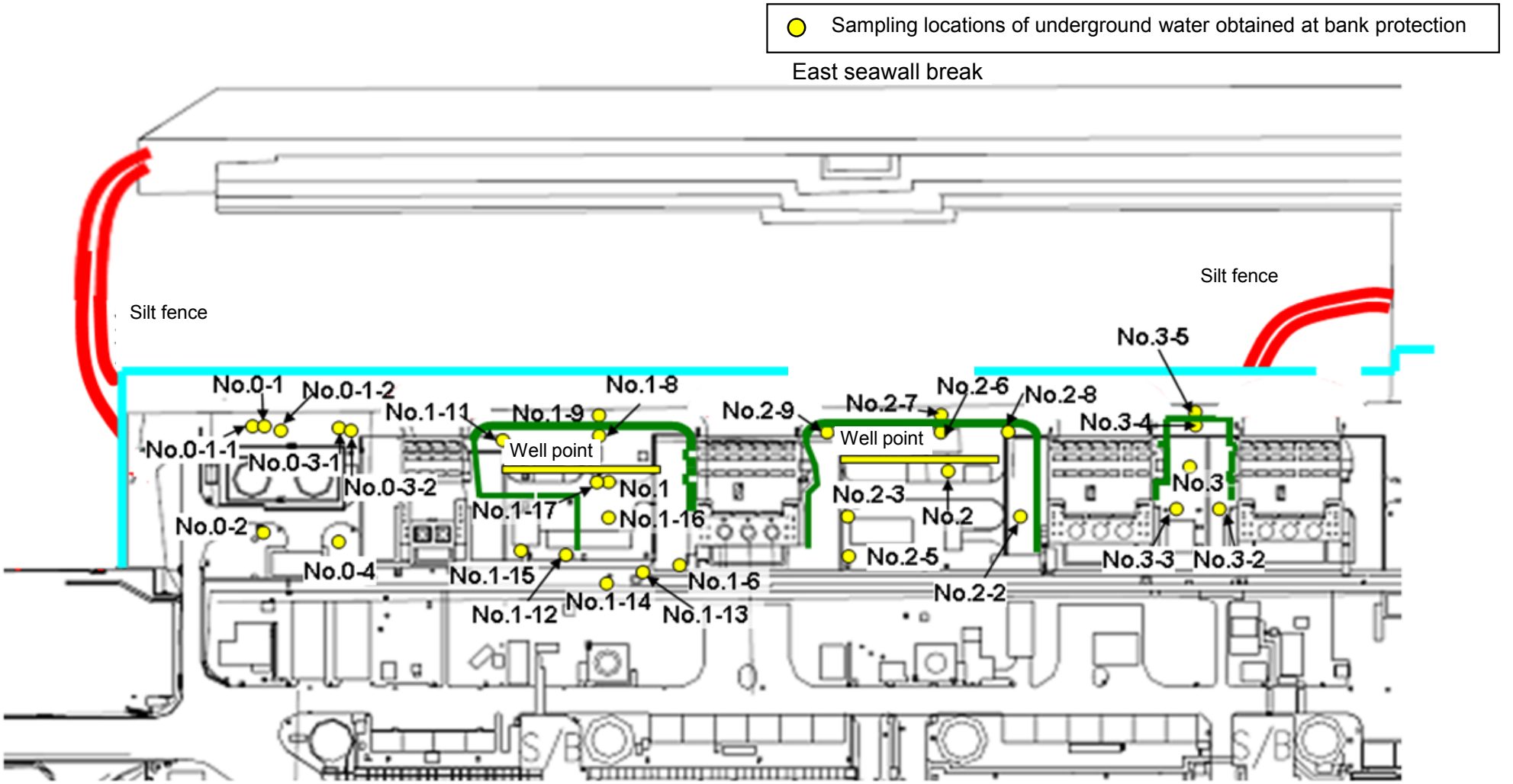
<Reference>
October 22, 2014
Tokyo Electric Power Company

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									Oct 20		Oct 19			Oct 20	Oct 20	
Time of sampling									10:00 AM		7:35 AM			9:25 AM	9:35 AM	
Chloride (unit: ppm)									–		25			–	–	
Cs-134 (Approx. 2 years)									54,000		–			130	5.6	
Cs-137 (Approx.30 years)									170,000		–			390	14	
The other γ	Mn-54 (Approx. 310 days)								240		–			ND	2.3	
	Co-60 (Approx. 5 years)								1100		–			ND	ND	
	Sb-125 (Approx. 3 years)								ND		–			ND	15	
Gross β									3,500,000		ND(17)			15,000	630,000	
H-3 (Approx. 12 years)									7,500		ND(110)			870	3,600	
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															
Time of sampling															
Chloride (unit: ppm)															
Cs-134 (Approx. 2 years)															
Cs-137 (Approx.30 years)															
The other γ	Mn-54 (Approx. 310 days)														
	Co-60 (Approx. 5 years)														
	Sb-125 (Approx. 3 years)														
Gross β															
H-3 (Approx. 12 years)															
Sr-90（Approx. 29 years）															

* Data announced this time is provided in a thick-frame. The other data was announced on October 20, and 21, 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 of No. 1-9, 2-5, and 3-5, γwas not measured because they are samlpled by sampler. Gross βwere 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									Oct 21		Oct 21			Oct 21	Oct 21	
Time of sampling									9:55 AM		7:36 AM			9:35 AM	9:20 AM	
Chloride (unit: ppm)									–		23			–	–	
Cs-134 (Approx. 2 years)									41,000		–			79	7.7	
Cs-137 (Approx.30 years)									130,000		–			250	25	
The other γ	Mn-54 (Approx. 310 days)								240		–			ND	2.5	
	Co-60 (Approx. 5 years)								890		–			ND	ND	
	Sb-125 (Approx. 3 years)								ND		–			ND	14	
Gross β									2,800,000		ND(18)			20,000	570,000	
H-3 (Approx. 12 years)									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							Oct 21								
Time of sampling							10:20 AM								
Chloride (unit: ppm)							–								
Cs-134 (Approx. 2 years)							ND(0.43)								
Cs-137 (Approx.30 years)							0.66								
The other γ	Mn-54 (Approx. 310 days)						ND								
	Co-60 (Approx. 5 years)						ND								
	Sb-125 (Approx. 3 years)						ND								
Gross β							1,600								
H-3 (Approx. 12 years)							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 of No. 1-9, 2-5, and 3-5, γwas not measured because they are samlpled by sampler. Gross βwere measured after filtation for 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
	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>
	Co-60 (Approx. 5 years)	ND	ND	ND	ND	ND	ND	ND	0.50 〔7/19〕	ND	3.1 〔7/8〕	ND	ND	ND	3600 <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〕	*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〕	1,100,000 <8/4>

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>	ND	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>	390 <10/20>	0.88 <7/10>	86 <7/28>	3.0 <9/29>	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
	Mn-54 (Approx. 310 days)	12 <2/3>	ND	-	ND	ND	ND	2.1 <9/8>	ND	11 <8/25>	ND	8.5 <4/28>	ND	ND	ND
	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
	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>	29,000 <10/3>	110 <7/10>	3,100,000 <1/20> <1/30> <2/3>	1,200,000 <10/9>	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〕	160,000 I/13><10/16	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>	13,000 <8/4>	Under analysis	2,700,000 <2/13>	170,000 <8/4>	—	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〉	*2 0.58 〈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	*2 6.5 〈2/11〉	ND	ND	ND	ND	ND	ND	–
	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〕	–
	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〕	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>	*2 13,000 <2/7> <2/11>	12,000 <10/12> <10/15>	3,200 〔Dec,12, 2012〕	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>	*2 1,200 <2/11>	-	8.3 〔Dec,12, 2012〕	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 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 for the ground improvement.
(Note) As of 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 references.