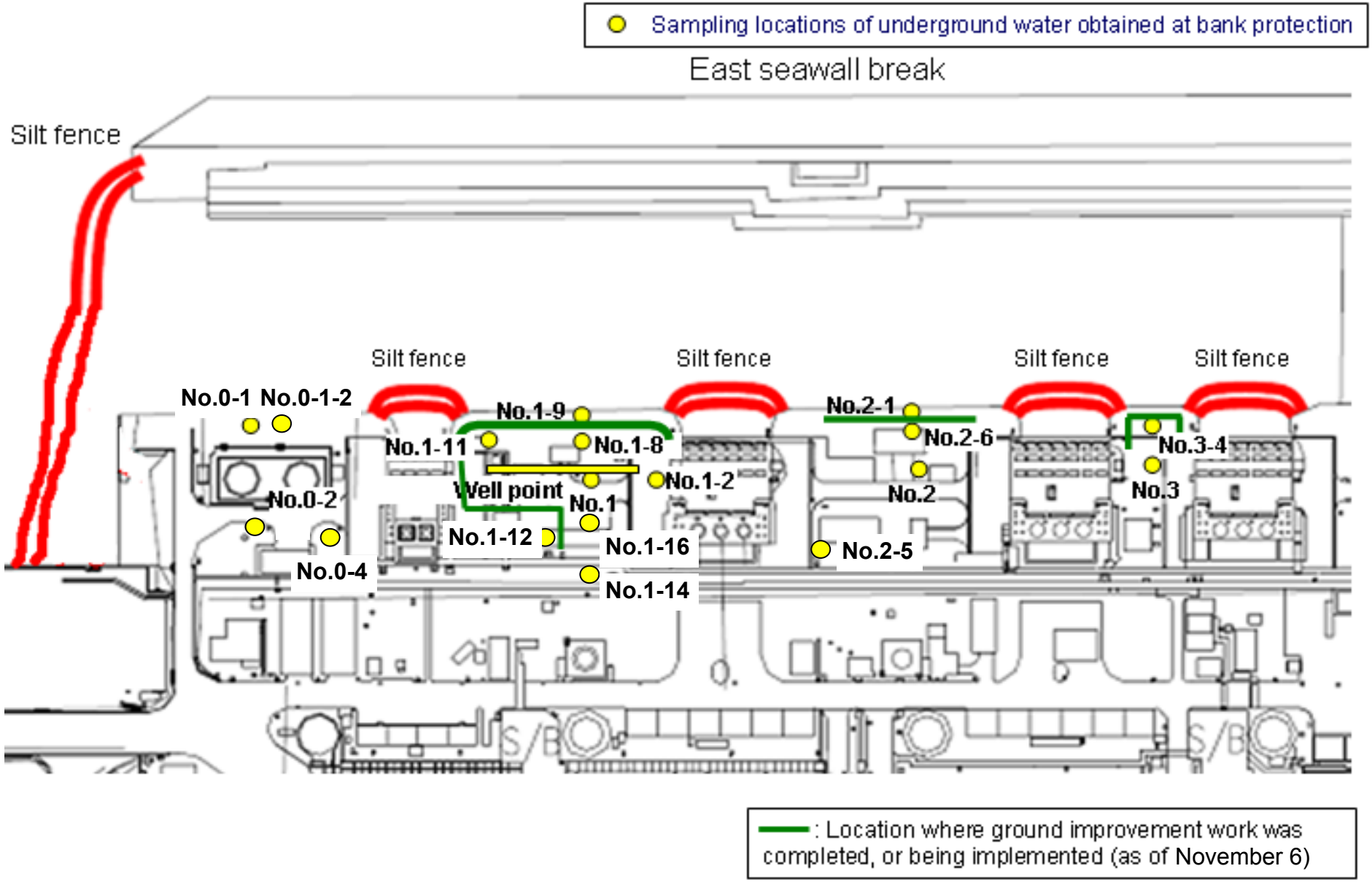
<Reference>
November 21, 2013
Tokyo Electric Power Company

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.0-4	Underground water observation hole No.1	Underground water observation hole No.1-2	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	Groundwater pumped up from the well point
Date of sampling								Nov 18, 2013					
Time of sampling								5:55 AM					
Chloride (unit: ppm)								360					
Cs-134 (Approx. 2 years)								9					
Cs-137 (Approx.30 years)								23					
The other γ													
The other γ													
The other γ													
All β								470					
H-3 (Approx. 12 years)								550					
Sr-90（Approx. 29 years）								-					

	Underground water observation hole No.2	Underground water observation hole No.2-5	Underground water observation hole No.2-6	Underground water observation hole No.3	Underground water observation hole No.3-4
Date of sampling	Nov 17, 2013		Nov 17, 2013		
Time of sampling	9:20 AM		9:45 AM		
Cs-134 (Approx. 2 years)	ND(0.44)		ND(0.40)		
Cs-137 (Approx.30 years)	0.84		0.60		
The other γ					
The other γ					
The other γ					
All β	270		2,100		
H-3 (Approx. 12 years)	710		980		
Sr-90（Approx. 29 years）	-		-		

* Data announced this time is provided in a thick-frame. The other data was announced on November 17 and 18.
* "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.

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.0-4	Underground water observation hole No.1	Underground water observation hole No.1-2	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	Groundwater pumped up from the well point
Date of sampling													
Time of sampling													
Chloride (unit: ppm)													
Cs-134 (Approx. 2 years)													
Cs-137 (Approx.30 years)													
The other γ													
The other γ													
The other γ													
All β													
H-3 (Approx. 12 years)													
Sr-90（Approx. 29 years）													

	Underground water observation hole No.2	Underground water observation hole No.2-5	Underground water observation hole No.2-6	Underground water observation hole No.3	Underground water observation hole No.3-4
Date of sampling	Nov 20, 2013		Nov 20, 2013		Nov 20, 2013
Time of sampling	9:28 AM		10:06 AM		12:57 PM
Cs-134 (Approx. 2 years)	ND(0.41)		ND(0.37)		1.3
Cs-137 (Approx.30 years)	ND(0.45)		ND(0.46)		3.0
The other γ					
The other γ					
The other γ					
All β	310		2,000		ND(21)
H-3 (Approx. 12 years)	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.

<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.0-1-2	Groundwater observation hole No.0-2	Groundwater observation hole No.0-3-1	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.1-8
Cs-134 (Approx. 2 years)		6.3 〔11/10〕	ND	0.61 〔10/13〕	ND	ND	13 〔8/29〕	1.9 〔7/8〕	11,000 〔7/9〕	10 〔9/2〕	1.5 〔7/8〕	310 〔8/5〕	43 〔10/28〕
Cs-137 (Approx.30 years)		14 〔11/10〕	0.51 〔11/17〕	1.6 〔10/13〕	0.86 〔11/20〕	0.48 〔11/10〕	31 〔8/29〕	3.6 〔7/8〕	22,000 〔7/9〕	24 〔9/2〕	3.6 〔7/8〕	650 〔8/5〕	96 〔11/18〕
The other γ	Ru-106 (Approx. 370 days)	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	ND	1.0 〔7/5〕	62 〔7/5〕	ND	ND	ND	5.2 〔11/18〕
	Co-60 (Approx. 5 years)	ND	ND	ND	ND	ND	0.50 〔7/19〕	ND	3.1 〔7/8〕	ND	ND	ND	0.58 〔11/18〕
	Sb-125 (Approx. 3 years)	ND	ND	ND	ND	ND	1.7 〔7/11〕	ND	250 〔7/15〕	1.4 〔7/12〕〔8/26〕	ND	12 〔8/8〕	ND
All β		300 〔8/22〕	21 〔11/10〕	87 〔10/13〕	ND	ND	1,900 〔5/24〕	4,400 〔7/8〕	900,000 〔7/5〕〔7/9〕	160,000 〔8/12〕〔8/15〕	380 〔8/19〕	56,000 〔8/5〕	14,000 〔11/18〕
H-3 (Approx. 12 years)		45,000 〔8/29〕	36,000 〔11/10〕	ND	Under analysis	19,000 〔11/10〕	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〕	2,700 〔11/11〕
Sr-90(Approx. 29 years)		Under analysis	Under analysis	Under analysis	Under analysis	1,200 〔6/7〕	Under analysis	Under analysis	Under analysis	Under analysis	Under analysis	Under analysis	Under analysis

Unit: Bq/L

		Groundwater observation hole No.1-9	Groundwater observation hole No.1-11	Groundwater observation hole No.1-12	Groundwater observation hole No.1-14	Groundwater observation hole No.1-16	Groundwater pumped up from the well point (notch tank)
Cs-134 (Approx. 2 years)		170 〔9/3〕	0.94 〔10/31〕	74 〔10/21〕	1.2 〔11/14〕	1.6 〔11/14〕	110 〔9/23〕
Cs-137 (Approx.30 years)		380 〔9/3〕	2.0 〔10/10〕〔11/11〕	170 〔10/21〕	2.1 〔11/18〕	3.4 〔10/10〕	250 〔9/23〕
The other γ	Ru-106 (Approx. 370 days)	ND	ND	5.4 〔10/28〕	ND	9.2 〔10/28〕	25 〔9/2〕
	Mn-54 (Approx. 310 days)	ND	ND	ND	ND	ND	ND
	Co-60 (Approx. 5 years)	ND	ND	0.51 〔10/24〕	ND	0.9 〔11/7〕	ND
	Sb-125 (Approx. 3 years)	ND	ND	61 〔10/21〕	ND	8.6 〔11/18〕	ND
All β		2,100 〔11/17〕	72 〔10/3〕	730 〔10/21〕	33 〔11/10〕	880,000 〔10/14〕	700,000 〔9/23〕
H-3 (Approx. 12 years)		860 〔11/14〕	85,000 〔9/13〕	440,000 〔10/31〕	3,600 〔11/14〕	43,000 〔9/26〕	460,000 〔8/19〕
Sr-90(Approx. 29 years)		Under analysis	Under analysis	Under analysis 〔10/21〕	Under analysis	Under analysis	—

Unit: Bq/L

		Groundwater observation hole No.2	Groundwater observation hole No.2-1*	Groundwater observation hole No.2-5*1	Groundwater observation hole No.2-6	Groundwater observation hole No.3	Groundwater observation hole No.3-1	Groundwater observation hole No.3-4
Cs-134 (Approx. 2 years)		0.50 〔7/9〕	0.66 〔9/1〕	3.9 〔11/7〕	0.56 〔10/30〕	3.5 〔7/25〕	1.2 〔7/25〕〔8/8〕	1.8 〔10/30〕
Cs-137 (Approx.30 years)		1.2 〔7/11〕〔8/1〕	1.1 〔8/29〕〔9/1〕	10 〔9/29〕	0.61 〔10/13〕	5.9 〔8/8〕	2.6 〔8/1〕	3.8 〔10/30〕
The other γ	Ru-106 (Approx. 370 days)	ND	ND	ND	ND	ND	ND	ND
	Mn-54 (Approx. 310 days)	ND	ND	0.77 〔9/29〕	ND	ND	ND	0.54 〔10/30〕
	Co-60 (Approx. 5 years)	ND	ND	ND	ND	ND	ND	ND
	Sb-125 (Approx. 3 years)	ND	ND	26 〔9/29〕	ND	1.1 〔9/5〕	ND	ND
All β		1,700 〔7/8〕	380 〔7/29〕	46,000 〔9/29〕	2,100 〔11/17〕	1,400 〔7/11〕	180 〔8/1〕	ND
H-3 (Approx. 12 years)		850 〔6/26〕	440 〔8/26〕	3,100 〔11/7〕	1,100 〔10/13〕〔10/17〕〔11/6〕〔11/10〕〔11/13〕	3,200 〔H24. 12/12〕	460 〔8/1〕	170 〔9/18〕
Sr-90(Approx. 29 years)		54 〔5/31〕	Under analysis	Under analysis	Under analysis	8.3 〔2012/12/12〕	Under analysis	Under analysis

*1 Although we previously announced the analysis result of γ and all β on September 29, we have reanalyze the sample.
The analysis result of No.2-5 is the reference value, since we could not sample groundwater by a regular procedure.
* "ND" indicates that the measurement result is below the detection limit.
* Date of sampling is provided in parentheses.
* "*" is provided next to the name of the holes where the sampling could not be performed due to the chemical injection of ground improvement.